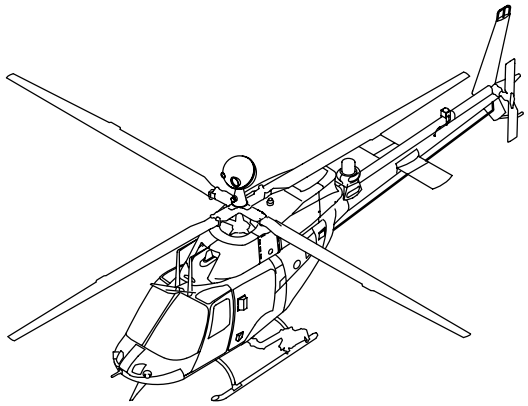
TECHNICAL MANUAL

AVIATION UNIT AND INTERMEDIATE MAINTENANCE MANUAL



ARMY MODEL OH-58D HELICOPTER

***This manual together with TM 1-1520-248-23-1, TM 1-1520-248-23-2, TM 1-1520-248-23-3, TM 1-1520-248-23-4, TM 1-1520-248-23-5 and TM 1-1520-248-23-7, all dated 28 February 2000, supersedes TM 55-1520-248-23-1, TM 55-1520-248-23-2, TM 55-1520-248-23-3, TM 55-1520-248-23-4, TM 55-1520-248-23-5, TM 55-1520-248-23-6, TM 55-1520-248-23-7, TM 55-1520-248-23-8-1, TM 55-1520-248-23-8-2, and TM 55-1520-248-23-9, all dated 12 January 1988, including all changes.**

THIS VOLUME IS ONE OF A SERIES OF SEVEN VOLUMES AND IS INCOMPLETE WITHOUT TM 1-1520-248-23-1, TM 1-1520-248-23-2, TM 1-1520-248-23-3, TM 1-1520-248-23-4, TM 1-1520-248-23-5, AND TM 1-1520-248-23-7.

Headquarters, Department of the Army

28 FEBRUARY 2000

CHANGE
NO. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 30 November 2000

Aviation Unit and Intermediate Maintenance Manual For

ARMY MODEL OH–58D HELICOPTER

DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.

TM 1–1520–248–23–6, 28 February 2000, is changed as follows:

1. Remove and insert pages as indicated below. New or changed text material is indicated by a vertical bar in the margin. An illustration change is indicated by a miniature pointing hand.

Remove pages	Insert pages
A/(B blank)	A/(B blank)
a through d	a through d
i through xii	i through xii
xv through xxix/(xxx blank)	xv through xxix/(xxx blank)
A–1 through A–4	A–1 through A–4
––––––––––––	B–20.1 through B–20.4
B–21 and B–22	B–21 and B–22
B–27 and B–28	B–27 and B–28
B–33 and B–34	B–33 and B–34
B–37 and B–38	B–37 and B–38
––––––––––––	C–2.1/C–2.2 blank)
C–3 through C–17/(C–18 blank)	C–3 through C–17/(C–18 blank)
D–1 through D–4	D–1 through D–4
D–9 and D–10	D–9 and D–10
D–13 through D–16	D–13 through D–16
D–19/(D–20 blank)	D–19/(D–20 blank)
E–3 through E–12	E–3 through E–12
E–15 through E–18	E–15 through E–18
E–21 through E–28	E–21 through E–28
F–43 through F–46	F–43 through F–46
F–57 and F–58	F–57 and F–58
F–75 and F–76	F–75 and F–76

TM 1–1520–248–23–6

C 1

Remove pages	Insert pages
F–79 through F–84	F–79 through F–84
F–91 through F–94	F–91 through F–94
G–31 and G–32	G–31 and G–32
G–45 and G–46	G–45 and G–46
G–47 and G–48	–––––––––––
G–49 and G–50	(G–49 blank)/G–50
H–1 through H–6	H–1 through H–6
H–19 and H–20	H–19 and H–20
H–151 and H–152	H–151 and H–152
H–181 through H–198	H–181 through H–198
H–205 and H–206	H–205 and H–206
H–219 and H–220	H–219 and H–220
–––––––––––	H–281 through H–284
Glossary–1 through Glossary–5/(Glossary–6 blank)	Glossary–1 through Glossary–8
Index–1 through Index–4	Index–1 through Index–74

2. Retain this sheet in front of manual for reference purposes.

By Order of the Secretary of the Army:

Official:

ERIC K. SHINSEKI
General, United States Army
Chief of Staff

JOEL B. HUDSON
Administrative Assistant to the
Secretary of the Army
0023004

DISTRIBUTION:
To be distributed in accordance with initial distribution number (IDN) 311435, requirements for TM 1-1520-248-23-6.

WARNING

HIGH VOLTAGE

The helicopter contains high voltage and shall be electrically grounded when parked. Serious burns and electrical shock can result from contact with exposed electrical wires or connectors.

WARNING

HIGH VOLTAGE

High voltage may be stored in the ignition system after operation of the APU. This high voltage can cause injury or death.

- Do not make contact with exposed wires or connectors.
- Allow at least 5 minutes after operation of the ignition system before disconnecting or removing ignition system components.
- Turn all power switches off before making any connections or disconnections.
- Observe instructions for grounding the power cable to discharge high voltage.
- For artificial respiration, refer to FM 21-11.

WARNING

STRAY VOLTAGE

Stray voltage may exist in electronic equipment installed in the helicopter. These voltages present an explosive hazard to fuel and fuel fumes. Severe injury or death could result.

WARNING

PITOT HEAT

The pitot tube assembly is very hot during and immediately after operation requiring pitot heat. Severe burns will result if contacted by hands or other parts of the body.

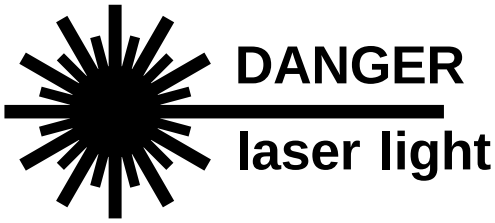
WARNING

LUBRICATING OILS HAZARDOUS

Lubricating oils DOD-L-85734, MIL-L-7808, and MIL-L-23699 contain materials hazardous to health. They can cause paralysis if swallowed. Prolonged contact with skin can cause irritation. Fire can result if oil is exposed to heat or flames.

- Use only in areas with adequate ventilation.
- Wash hands thoroughly after handling.

WARNING



The laser rangefinder/designator (LRF/D) is very dangerous. Looking at the laser beam or its reflection from a shiny surface can cause permanent blindness. Under noncombat conditions, the laser shall be used only in controlled areas and at times specified by a range control officer.

BATTERY ELECTROLYTE

Corrosive battery electrolyte (potassium hydroxide) requires rubber gloves, apron, and face shield when handling leaking batteries. Potassium hydroxide spilled on clothing or other material shall be washed immediately with clean water. If spilled on personnel, severe skin burns will result. Immediately start flushing the affected area with clean water and continue flushing until medical assistance arrives.

WARNING
RADIATION HAZARD

SELF-LUMINOUS DIALS

Self-luminous instrument dials contain radioactive materials.

- If glass is broken or case becomes unsealed, avoid personal contact. Injury to personnel could result.
- Forceps or gloves made of rubber or polyethylene shall be used to pick up contaminated material.
- Place material and gloves in a plastic bag. Seal bag and dispose of it as radioactive waste in accordance with AR 755-15 and TM 3-261.
- Repair procedure shall conform to requirements in AR 700-52.

WARNING

DRYCLEANING SOLVENT

Drycleaning solvent is flammable and toxic. It can irritate skin and cause burns.

- Use only in well-ventilated area away from heat and open flame.
- Wear rubber gloves and goggles.
- In case of contact, immediately flush skin or eyes with water for at least 15 minutes.
- Get medical attention for eyes.

WARNING

SOUND LEVEL

Sound pressure levels in this helicopter during operating conditions exceed the Surgeon General hearing conservation criteria. Hearing protection devices, such as aviator helmet or ear plugs or ear sound suppressors, are required to be worn by all personnel in and around the helicopter during its operation.

WARNING

MAIN AND TAIL ROTOR BLADES

Stay clear of turning main and tail rotor blades. Wind gusts, coast down or cyclic movement may cause the main rotor blade to flap down below the height of a person. Dangerous winds are created by the main rotor blades when blades are operated at or near top rpm. Adequate distance must be maintained from main and tail rotor blades during operation. Severe injury or death may result.

WARNING

ARMAMENT

Loaded weapons, or weapons being loaded or unloaded, shall be pointed in a direction which offers the least exposure to personnel or property in the event of accidental firing. Personnel should remain clear of hazardous area of all loaded weapons. Death or severe injury may result.

WARNING

HF ANTENNA

Ensure that HF antenna is not operating while performing maintenance. When operating, HF antenna emits infrared radiation that can cause radiation burns. If exposed to infrared radiation, seek medical aid immediately.

WARNING

ASBESTOS DUST

Avoid creating dust. Breathing asbestos dust may cause serious long-term bodily harm.

LIST OF EFFECTIVE PAGES

INSERT LATEST CHANGED PAGES. DESTROY SUPERSEDED PAGES.

NOTE: The portion of the text affected by the changes is indicated by a vertical bar in the outer margins of the page. Changes to illustrations are indicated by a vertical bar or a pointing hand adjacent to the area of the change.

Dates of issue for original and changed pages are:

Original . . . . . 0 . . . . . 28 February 2000
Change . . . . . 1 . . . . 30 November 2000

TOTAL NUMBER OF PAGES IN THIS VOLUME IS 858, CONSISTING OF THE FOLLOWING:

Page No.	*Change No.
Cover-1	0
Cover-2 Blank	0
A	1
B Blank	0
a — d	1
i — xii	1
xiii — xiv	0
xv	1
xvi — xvii	0
xviii — xxix	1
xxx Blank	0
A-1	1
A-2	0
A-3 — A-4	1
B-1 — B-20	0
B-20.1 — B-20.4 Added	1
B-21	1
B-22 — B-26	0
B-27 — B-28	1
B-29 — B-32	0
B-33 — B-34	1
B-35 — B-36	0
B-37	1
B-38	0
C-1 — C-2	0
C-2.1 Added	1
C-2.2 Blank	1
C-3 — C-17	1
C-18 Blank	0
D-1 — D-3	1
D-4 — D-8	0
D-9	1
D-10 — D-12	0
D-13 — D-15	1
D-16 — D-18	0
D-19	1
D-20 Blank	0
E-1 — E-3	0
E-4 — E-5	1
E-6	0
E-7 — E-11	1
E-12 — E-14	0
E-15	1
E-16	0
E-17	1
E-18 — E-20	0
E-21 — E-24	1
E-25	0
E-26 — E-27	1
E-28 — E-30	0
F-1 — F-43	0
F-44 — F-45	1
F-46 — F-57	0
F-58	1
F-59 — F-74	0
F-75	1
F-76 — F-78	0
F-79 — F-81	1
F-82	0
F-83	1
F-84 — F-91	0
F-92 — F-94	1
F-95 — F-188	0
G-1 — G-30	0
G-31	1
G-32 — G-44	0
G-45 — G-46	1
G-47 — G-48 Deleted	1
G-49 Blank	1
G-50	1
G-51 — G-69	0
G-70 Blank	0
H-1 — H-5	1
H-6 — H-19	0
H-20	1
H-21 — H-150	0
H-151	1
H-152 — H-181	0
H-182 — H-186	1
H-187	0
H-188 — H-197	1
H-198 — H-205	0
H-206	1
H-207 — H-218	0
H-219	1
H-220 — H-280	0
H-281 — H-284 Added	1
J-1	0
J-2 Blank	0
K-1	0
K-2 Blank	0
L-1	0
L-2 Blank	0
M-1 — M-28	0
N-1	0
N-2 Blank	0
P-1 — P-15	0
P-16 Blank	0
Q-1 — Q-31	0
Q-32 Blank	0
R-1	0
R-2 Blank	0
Glossary-1	1
Glossary-2 — Glossary-4	0
Glossary-5	1
Glossary-6 — Glossary-7	0
Glossary-8	1
Index 1 — Index 68	1
Index 69 — Index 74 Added	1

* Zero in this column indicates an original page.

TECHNICAL MANUAL
NO. TM 1-1520-248-23

HEADQUARTERS
Department of the Army
Washington, D.C., 28 February 2000

AVIATION UNIT AND INTERMEDIATE MAINTENANCE MANUAL FOR ARMY MODEL OH-58D HELICOPTER

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in back of this manual direct to: Commander, U.S. Army Aviation and Missile Command, ATTN: AMSAM-MMC-LS-P, Redstone Arsenal, AL 35898-5230. You may also submit your recommended changes by E-mail directly to ls-lp@redstone.army.mil in the format provided in the back of this manual immediately preceding the hard copy 2028. DA Form 2028's may also be faxed to DSN 788-6546 or commercial fax 256-842-6546. A reply will be furnished to you.

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

TABLE OF CONTENTS **PAGE**

*This manual together with TM 1-1520-248-23-1, TM 1-1520-248-23-2, TM 1-1520-248-23-3, TM 1-1520-248-23-4, TM 1-1520-248-23-5 and TM 1-1520-248-23-7, all dated 28 February 2000, supersedes TM 55-1520-248-23-1, TM 55-1520-248-23-2, TM 55-1520-248-23-3, TM 55-1520-248-23-4, TM 55-1520-248-23-5, TM 55-1520-248-23-6, TM 55-1520-248-23-7, TM 55-1520-248-23-8-1, TM 55-1520-248-23-8-2, and TM 55-1520-248-23-9, all dated 12 January 1988, including all changes.

TABLE OF CONTENTS (Cont) **PAGE**

TABLE OF CONTENTS (Cont) **PAGE**

TABLE OF CONTENTS (Cont) **PAGE**

TABLE OF CONTENTS (Cont) **PAGE**

HOW TO USE THIS MANUAL

1. GENERAL

To get the job done correctly, you must be able to find all the information you need. Knowing how to use this manual is the key. You should know what is in this manual, how the manual is organized, and how to use it.

2. ORGANIZATION

a. The complete OH-58D/OH-58D(R) Kiowa Warrior helicopter (AVUM/AVIM) maintenance manual consists of a set of seven volumes. These volumes are numbered as follows: TM 1-1520-248-23-1 through TM 1-1520-248-23-7.

b. Volumes are made up of chapters. Each chapter is numbered in Arabic numerals (1, 2, 3, etc.). Each chapter has maintenance information on a particular helicopter system.

c. Chapters are broken down into sections. Sections are numbered in Roman numerals (I, II, III, etc.).

d. Sections are made up of paragraphs and tasks. The first three sections of Chapter 1 are made up of paragraphs that describe and locate the helicopter systems and components. Other sections throughout the manual are made up primarily of tasks, but all sections contain introductory paragraphs that describe the section contents. Sections cover major parts of a system.

e. Tasks are detailed descriptions of maintenance procedures. Some tasks are brief. Some are several pages long.

f. The title of each task contains the name of the component followed by the type of operation that is being described, e.g., Removal, Cleaning, Inspection, Repair, Installation, and others as applicable.

g. A task starts with an initial setup (content detailed in paragraph 8.) which is followed by a step-by-step procedure on how to perform the task correctly. The steps in the procedures have illustrations to help make things clear.

h. The words **"**INSPECT**"** or **"**INSPECT**"** may be seen in a task. **"**INSPECT**"** means that the repairer shall stop and check the component. **"**INSPECT**"** means that a Technical Inspector (TI) is required. Do not go beyond that point in the procedure until the TI has completed his inspection.

i. If applicable, a paragraph at the end of a task called **"**FOLLOW-ON MAINTENANCE**"** may be seen. The steps listed will be required to place the helicopter in a flyable state following the completion of the maintenance task.

j. Operational checks and troubleshooting procedures are contained in the three-volume TM 1-1520-248-T manual. A reference to TM 1-1520-248-T will be made if an operational check must be performed to ensure serviceability.

3. PARAGRAPH NUMBERING

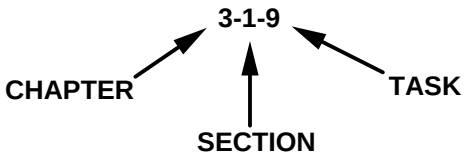
a. Paragraph numbers are assigned to each major information subject.

b. Paragraphs are individually numbered by chapter and sequence.

4. TASK NUMBERING

Task numbers are in three parts. The first is the chapter number. The second is the section number in that chapter. The third number is the task's actual sequence in the section. Each number is separated by a (–) as shown in the example:

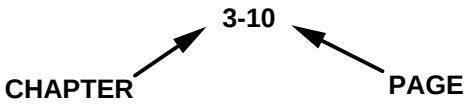
HOW TO USE THIS MANUAL — continued



Task numbers are the most important numbers in the manual. Always use the task number, NOT the page number, to find information.

5. PAGE NUMBERING

Except for front matter (all material that precedes Chapter 1), appendices, glossary, alphabetical index, and foldouts, all page numbering is by chapters. The first number is the number of the chapter; the second number is the number of the page in that chapter. The numbers are separated by a dash as shown in the example:



6. MANUAL INDEX

a. The alphabetical index for the entire manual is located at the end of each volume of volumes 1 through 6. The index lists all task titles and certain key paragraphs of non-task text in alphabetical order. After you find the title in the index, it tells the task number or paragraph number of that task or text. For example, if you need information on the wire cutter, go to the **"**C**"** section of the index and look under **"**Cutter.**"**

There you will find:

Cutter (Rapid Deployment), Lower Wire — Removal/Installation 2-2-60

The index tells that the wire cutter information for the lower wire cutter is in Chapter 2, section 2, task 60.

b. You can find your task in the index, even if you only know a single word in the title. In the sample title above you could also find your tasks by looking under **"**Wire**"**. Examples:

Wire Cutter (Rapid Deployment), Lower — Removal/Installation 2-2-60

Or, you could look under **"**Lower**"**:

Lower Wire Cutter (Rapid Deployment) — Removal/Installation 2-2-60

In using the manual index, many similar task titles will be encountered. Some titles are similar though in different systems. This is true with shafts, brackets, supports, bearings, etc. The index will provide the name of the correct system to help you avoid going to the wrong paragraph/task.

c. Any task can be located in the way described. If you know the name, job, part, assembly, procedure, description, etc., you can use one of the words to find the paragraph number in the index.

7. GLOSSARY

a. A glossary of words used throughout the manual is located just before the alphabetical index in each volume of volumes 1 through 6. Section I of the glossary is the list of abbreviations and acronyms. Abbreviations are shortened terms for words. Acronyms are shortened terms for several words and use only the first letter of each of the words. Abbreviations and acronyms are defined where first used. The glossary provides a good place to check if there is any doubt.

HOW TO USE THIS MANUAL — continued

b. Section II of the glossary contains definitions of unusual terms that appear in the manual. Many words have more than one meaning. A word that has a certain meaning in everyday language could have a different meaning for the helicopter. This is the reason for the definitions. If you see an unfamiliar word in the manual, check the list of definitions.

c. Review the glossary periodically to ensure familiarity with the abbreviations, acronyms, and unusual terms.

8. INITIAL SETUP

The first page of each maintenance task in the manual contains the initial setup. Always check the initial setup before starting a task on the helicopter. The initial setup contains information you must know. DON'T START A TASK UNTIL:

- You understand the task
- You understand what you are to do
- You understand what is needed to do the work
- You have the things you need.

An example initial setup is shown below. Not all tasks have the headings shown.

Each part of the initial setup is explained by the following subparagraphs (a. through h.). Each subparagraph describes initial setup entries in order of their appearance in the example.

a. **Title:** The title in the upper border contains the chapter/section/task number and title of the task as listed in the index. The task is performed at the intermediate level if (AVIM) appears in the title.

b. **This Task Covers:** This entry appears in the border below the title. The task may require one or more operations (such as removal and installation).

c. **Applicable Configurations:** This entry specifies the model or models for which the task is used, i.e., OH-58D, OH-58D(R), or All.

d. **Tools:** This heading identifies the list of tool kit(s) by MOS(s). The tools in the kit(s) and any others listed will be all that are required to perform the task. Tasks requiring tools other than those in this tool kit are considered SPECIAL TOOLS. Special tools could be: (1) tools from the shop set: (2) tools from the kits of other MOSs, or (3) tools made especially for the OH-58D helicopter. Special tools will be listed in addition to MOS tool kits when needed. Tool kits and special tools have an item number assigned to them and are located in Appendix B. Appendix B contains a **"**Tools and Test Equipment Requirements**"** listing. Each item listed has an Equipment Reference Code. This code is used to clearly identify a tool or item of test equipment, e.g., (B127). It is acceptable to use a torque wrench other than that which is listed as long as the torque range is the same. Example: 1/4 - inch drive torque wrench **30 INCH-POUNDS to 150 INCH-POUNDS** or 3/8 - inch drive torque wrench **30 INCH-POUNDS to 150 INCH-POUNDS.** If a tool or a part will have to be made, it is listed in an index in Appendix H. The index will identify the tool or part by name or part number, and a figure number in Appendix H will be referenced. All information required to construct a part or tool is provided in the figure.

HOW TO USE THIS MANUAL — continued

INITIAL SETUP EXAMPLE

9-6-1. WEIGHT-ON-GEAR SWITCH (RAPID DEPLOYMENT LANDING GEAR) — REMOVAL/ INSTALLATION

This task covers: Removal and Installation (On Helicopter)

INITIAL SETUP

Applicable Configurations:
All

Personnel Required:
67S Scout Helicopter Technical Inspection (TI)
68F Aircraft Electrician

Tools:
Electrical Repairer Tool Kit (B177)

Material:
Sealing Compound (D179)
Lockwire (D132)
Rubber Gloves (D111)

References:
TM 11-1520-248-23

Equipment Condition:
Helicopter Safed (Task 1-6-7)
Helicopter on Jacks (Task 1-6-8)

e. **Material:** This heading identifies the list of materials needed to complete the task. Most materials cannot be used on the helicopter a second time; they are expendable. Expendable materials are items such as solvent, grease, oil, hydraulic fluid, etc.

(1) Each expendable has an item number assigned to it and is located in Appendix D. The item number is placed in parentheses following the item name on the initial setup page. A typical example of an expendable item is:

Lockwire (D132)

See the expendable and durable item list in Appendix D for more information about expendable and durable materials.

(2) Some parts are also expendable.

(3) It may be necessary to use a part as a tool to do a step in a task. These parts do not appear in TM 1-1520-248-23P. A typical example would be when a bolt is used to temporarily hold an assembly in place or to align two pieces of material to be fastened.

f. **Personnel Required:** This heading lists the people required to perform the task. It also tells the MOS of each person and the number of persons required. For example:

67S Scout Helicopter Repairer (2)
67S Scout Helicopter Technical Inspector (TI)

This listing would indicate that two 67S repairers and a 67S technical inspector will be needed to complete the task.

IF YOUR MOS IS NOT LISTED IN THE PERSONNEL REQUIRED COLUMN IN THE INITIAL SETUP, CHECK WITH YOUR MAINTENANCE SUPERVISOR FIRST BEFORE STARTING THE TASK.

g. **References:** This heading identifies the list of other technical manuals (TMs) needed to complete a task. The steps in the task will tell you when you must refer to another TM.

h. **Equipment Condition:** This heading identifies the list of tasks or parts of tasks that must be accomplished before starting a task. It may require an operation such as jacking the helicopter, or just the tailboom; or removing parts, assemblies, etc. These operations are described in other tasks or technical manuals. The paragraphs or TMs that describe how to do these operations are referenced here. If the job is to be done on the helicopter, the statement **"**Helicopter Safed**"** will appear here. The reference will be to Task 1-6-7 where armament safing is described. It is essential that equipment conditions listed in a particular task be followed in sequence so that required conditions are not missed and all required tasks are reviewed prior to start of maintenance.

9. WARNINGS, CAUTIONS AND NOTES

The warnings used in this manual may be in text or icon format. Text warnings are used to describe hazardous situations, and icons are for hazardous materials and certain operations where defined.

Icon warnings are pictorial images which may be used in place of words. The safety summary sheet, which is located immediately after the title page, explains in detail what each icon means.

WARNING AND CAUTION STATEMENTS

WARNING and CAUTION statements are used prior to operating or maintenance procedures, practices, or conditions considered essential to the protection of personnel (WARNING) or equipment and property (CAUTION). A WARNING or CAUTION will apply each time the related step is repeated. Prior to starting any task, the WARNINGS or CAUTIONS included in the text for that task will be reviewed and understood. Refer to the materials list figure at the beginning of the appropriate manual section for material used during maintenance of this equipment. The detailed warnings for hazardous material and operations are listed separately in the safety summary as **"**Hazardous Materials and Operations Icons**"**.

HAZARDOUS MATERIALS

This publication describes physical and chemical processes which may require the use of chemicals, solvents, paints, or other commercially available material. The user of this publication should obtain the material safety data sheets (Occupational Safety and Health Administration (OSHA) Form 20 or equivalent) from the manufacturers or suppliers of materials to be used. The user must become completely familiar with the manufacturer/supplier information and adhere to the procedures, recommendations, warnings, and cautions of the manufacturer/supplier for the safe use, handling, storage, and disposal of these materials.

HAZARDOUS MATERIALS WARNINGS

Warnings for hazardous material in this manual are designed to warn personnel of hazards associated with such items when they come in contact with them during actual use. For each hazardous material used, material safety data sheet (MSDS) is required to be provided and available for review by the users. Consult your local safety and health staff concerning any questions on hazardous chemicals, MSDSs, personnel protective equipment requirements, and appropriate handling and emergency procedures.

This Safety Summary gives the complete warnings for hazardous material used in this manual.

NOTES

Notes tell something extra or special a person must know to do the task. They can appear before or after the item they tell about. Notes shall be read and remembered when working on the helicopter.

10. USE OF SHALL, WILL, SHOULD, AND MAY

Within this technical manual the word shall is used to indicate a mandatory requirement. The word will is used to express a declaration of purpose or futurity. The word should is used to indicate a desired result

HOW TO USE THIS MANUAL — continued

or a nonmandatory but preferred method of accomplishment. The word may is used to indicate an acceptable method of accomplishment.

11. TORQUING INFORMATION

a. An inspector shall be present to verify all torques specified in this manual.

b. Each hardware fastener (except types used in sheet metal work) is assigned an applied torque.

c. There are two types of applied torques. They are: special torques and standard torques.

(1) Special torques differ from standard torques as determined by engineers who look at each application. Special torques are given in bold type. Torque wrenches and adapters to be used when a special torque is given are listed under Tools in the initial setup.

(2) Standard torques are listed in Appendix P. Standard torques not listed in Appendix P can be found in TM 1-1500-204-23. Standard torque applies to all fasteners for which a special torque is not specified.

12. INSPECTION INFORMATION

General inspection information is in the front of each chapter or section for the equipment covered in that chapter or section. Inspection criteria peculiar to a specific part, assembly, or component are in the inspection steps of the removal/installation task for that part, assembly, or component.

13. GENERAL MAINTENANCE INFORMATION

The following are considered standard maintenance practices. Instructions about these practices are not normally included in maintenance procedure task steps.

a. Lines shall be tagged before they are disconnected. Tubes and parts shall be capped or plugged when they are disconnected.

b. Used preformed packings, retainers, gaskets, cotter pins, lockwashers, etc., shall be discarded. New parts shall be installed.

c. Packings shall be lubricated before installation. Specific instructions are provided in each maintenance procedure.

d. Tubes and related parts shall be tied out of the way with twine, not lockwire.

e. Disassembly procedures reflect disassembly needed to support total authorized repair. You may not need to disassemble a part as far as described in the task. Follow the steps to disassemble as far as needed to repair/replace worn or damaged parts.

f. Before a component or the disassembled parts of a component are inspected, they are cleaned as required.

g. Components and mating surface areas shall be inspected for serviceable condition before installation.

h. Guide lines shall be used when any item is hoisted overhead.

i. When a nut is tightened or loosened on a bolt, the bolt head shall be held with a wrench.

j. When a coupling nut on a line is tightened or loosened, the mating fitting shall be held with a wrench.

k. A special torque shall be cited when a direction to torque is given. A standard torque is required when no specific torque is given. Standard torque information is located in Appendix P of this manual and TM 1-1500-204-23.

l. When torquing hardware, observe compliance with drag torque as required. To determine drag torque, thread nut onto screw or bolt until at least two threads protrude. The nut shall not contact the mating part. The torque necessary to begin turning the nut is the drag torque. Drag torque is explained in more detail in TM 1-1500-204-23.

m. Chafing is a condition which occurs when two or more components contact each other in such a manner that friction and consequent wear occur. This condition is not acceptable. Proper routing, clamping, and component installation are required.

14. ELECTRICAL WIRING AND CABLING

This technical manual contains removal and installation procedures for wiring harness/cable assemblies that are permanently installed in the helicopter. Wiring harnesses/cable assemblies that can or are normally removed with avionic/electronic equipment are contained in TM 11-1520-248-23. Wiring harnesses/cable assemblies applicable to armament systems are contained in TM 9-1090-214-23&P where these wiring harnesses/cable assemblies are external to the helicopter fuselage.

15. GENERAL REFERENCES

a. Refer to TM 55-1500-323-24 for all electrical tasks of a general nature not peculiar to the OH-58D helicopter.

b. Refer to TM 1-1500-204-23 for mechanical tasks of a general nature not peculiar to the OH-58D helicopter.

c. Refer to TM 1-1520-266-23 for approved nondestructive inspection methods.

16. APPENDICES

The organization and content of Appendices to this manual are provided for reference as required during performance of maintenance tasks.

Appendix A is a list of References.
Appendix B is the Maintenance Allocation Chart and Tool and Test Equipment Requirements List.
Appendix C is the Helicopter Inventory Master Guide.
Appendix D is an Expendable Supplies and Materials List.
Appendix E describes Storage of Helicopter.
Appendix F is Wiring Data.
Appendix G provides Weight and Balance Data.
Appendix H provides Locally Manufactured Items Data.
Appendices J, K and L are reserved for future use.
Appendix M provides Electrical Bonding Procedures.
Appendix N is reserved for future use.
Appendix P provides Standard Torque Values.
Appendix Q provides Corrosion Control Information.
Appendix R is reserved for future use.

Table 1. Organization and Content of Appendix A

Organization	Content
References List	List of additional manuals required for use by maintenance personnel in the performance of their duties.

Table 2. Organization and Content of Appendix B

Organization	Content
Section I	Introduction to Maintenance Allocation Chart.
Section II	Maintenance Allocation Chart.
Section III	Tool and Test Equipment Requirements. Tools and test equipment, including special tools and common tool sets required for each maintenance function as referenced in Maintenance Allocation Chart and individual tasks.
Section IV	List of remarks for each maintenance function as referenced in the Maintenance Allocation Chart.

Table 3. Organization and Content of Appendix C

Organization	Content
Helicopter Inventory Master Guide	Paragraph that provides general information.
Security	Normally, helicopter inventory records are not classified.
Inventoriable Items	List of mission equipment, loose equipment, modification kits, and special environment equipment.
Periods of Inventory	Guidelines on the events and frequency of events that mandate an inventory accounting of listed items.

Table 4. Organization and Content of Appendix D

Organization	Content
Scope	Description of purpose and limits for the Appendix.
Explanation of Columns	Description of the tabular layout by function.
	Expendable Supplies and Material List in both numerical and alphabetical order.

Table 5. Organization and Content of Appendix E

Organization	Content
Section I	General Information including components involved in accidents, Requirements, Storage Categories, Procedures, and Inspection.
Section II	Description of procedures required to store the OH-58D in a flyable state.
Section III	Description of procedures required to store the OH-58D for a short term.
Section IV	Description of procedures required to store the OH-58D for an intermediate period of time.

Table 6. Organization and Content of Appendix F

Organization	Content
Wiring Diagrams	Essential general wiring information about electrical systems and circuits.
Equipment List	Electrical equipment items listed by reference designator, and their nomenclature, location, and access in tabular form.
Wire Repair and Replacement	Wiring repair and replacement data including wire sizes and part numbers, wire construction, marking, soldering, support, and stripping.
Routing and Clamping	Diagrams of OH-58D wire bundle clamping arrangements.

Table 7. Organization and Content of Appendix G

Organization	Content
Section I	General information required for intermediate maintenance personnel to perform their phase of weight and balance control.
Section II	Instruction on proper use of forms and charts required for calculations and documentation of weight and balance data.
Section III	Specific instructions for properly weighing the OH-58D helicopter.

Table 8. Organization and Content of Appendix H

Organization	Content
Part Number Index	Part numbers arranged in alphanumeric order along with figure reference for each part number.
Illustrations of Locally Manufactured Items	Illustrations of locally manufactured items in sufficient detail to enable their construction.

Appendices J, K and L are reserved for future use.

Table 9. Organization and Content of Appendix M

Organization	Content
Section I	Introduction and general information including intended purpose, definitions, electrical bonding classes, and tools.
Section II	Description of tools required.
Section III	Resistance requirements for each class of bonding.
Section IV	Surface preparation and methods of bonding.
Section V	Testing of completed bonds.

Appendix N is reserved for future use.

Table 10. Organization and Content of Appendix P

Organization	Content
Introduction	General information about the Appendix.
Torque Values	General and specific information about torquing procedures including Torque Tables.
Selection and Use of Torque Wrench	Methods of choosing torque wrenches and procedures and calculations.

Table 11. Organization and Content of Appendix Q

Organization	Content
Section I	An introduction that explains purpose of Appendix and defines corrosion.
Section II	Explanation of Inspection and Corrosion Prone Areas as to Purpose of Inspection and Responsibilities for Corrosion Control.
Section III	Preventive Maintenance described in terms of Prevention and Preservation.
Section IV	Required references to appropriate manuals for Corrosion Control Processes and Equipment Requirements.
Section V	Description of Corrosion Prone Areas. Provision of and reference to Inspection and Repair Procedures. Data is both tabular and pictorial.

Appendix R is reserved for future use.

SAFETY SUMMARY

1. GENERAL SAFETY INSTRUCTIONS.

This manual contains procedures which, if not followed properly, can cause injury or long-term health hazards to personnel. This safety summary includes general safety precautions and instructions that must be understood and applied during operation and maintenance to ensure personnel safety. Prior to performing any task, the WARNINGs included in that task shall be reviewed and understood.

2. WARNINGS.

WARNINGs are used in this manual to highlight operating or maintenance procedures, practices, conditions, statements which are considered essential to protection of personnel (WARNING). WARNINGs immediately precede the step or procedure to which they apply. WARNINGs consist of four parts: heading (WARNING or icon [see HAZARDOUS MATERIALS WARNINGS]), or statement of the hazard, maintenance precautions, and possible result if disregarded.

WARNING

Highlights an essential operating or maintenance procedure, practice, condition, statement, etc., which, if not strictly observed, could result in injury or long-term health hazards to personnel.

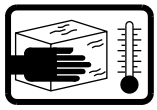
3. HAZARDOUS MATERIALS WARNINGS.

Hazardous Materials Warnings in this manual are provided through use of the Hazard Symbols listed below. Consult the HAZARDOUS MATERIALS DESCRIPTION below or Material Safety Data Sheets (MSDS) (Occupational Safety and Health Administration (OSHA) Form 20 or equivalent) for specific information on hazards, effects, and protective equipment requirements. If you do not have an MSDS for the material involved, contact your supervisor or the base Safety or Bioenvironmental Engineering Office.

3.1 Hazardous Materials and Operations Icons. Icons are used in this manual to identify dangers associated with hazardous materials and certain conditions. The symbols used and their definitions are as follows.

The abstract bug symbol shows that a material may contain bacteria or viruses that present a danger to your life or health.

The symbol of drops of a liquid onto a hand shows that the material will cause burns or irritation of human skin or tissue.



The symbol of a hand in a block of ice shows that the material is extremely cold and can injure human skin or tissue.

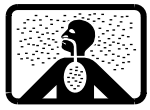
The rapidly expanding symbol shows that the material may explode if subjected to high temperatures, sources of ignition, or high pressure.

The symbol of a person wearing goggles shows that the material will injure your eyes.

The symbol of a flame shows that a material can ignite and burn you.

The symbol of a skull and crossbones shows that a material is poisonous or is a danger to life.

The symbol of three circular wedges shows that the material emits radioactive energy and can injure human tissue or organs.



The symbol of a human figure in a cloud shows that vapors of a material present a danger to your life or health.

The symbol of a lightning bolt shows that you may contact voltage and current that may present a danger to your life or health.

To avoid violent reactions that can cause personal injury, always pour acid into water, never water into acid.

The symbol of a head with the ear highlighted shows that the noise level may injure your hearing.

3.2 Hazardous Materials Description. The following hazardous materials are used in this manual. Each icon represents certain hazards as described above. Beneath the icons is the hazardous material name. Below the icons and material name is a description of the hazardous material. Only the icons and material name are used in the text of the manual. If a full description of the hazardous material is required while performing procedures in this manual, use the material name to locate the appropriate description below.

ACETONE

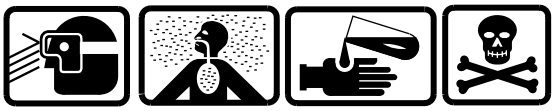
Acetone is flammable; do not use near open flames, near welding areas, or on hot surfaces. Do not smoke while using acetone, and do not use it where others are smoking. Prolonged inhalation of vapor can irritate eyes and mucous membranes and can cause dizziness and headache. If any liquid contacts skin, wash with soap and water. Immediately remove solvent-saturated clothing. If vapors cause drowsiness, go to fresh air. In all cases get immediate medical attention. When handling large quantities of liquid (more than a gallon), use at air-exhausted workbench. Wear approved gloves. Store solvent and dispose of liquid-soaked rags in approved metal safety container. Metal containers of solvent must be grounded to maintain electrical continuity.

ACRYLIC LACQUER

Acrylic lacquer is flammable. Keep away from open flames, sparks, and heat. Overexposure may cause coma, headache, narcotic effect, confusion, depression, irritation of skin, eyes, and respiratory system. Remove contaminated clothing. Wipe off with towel or cloth. Remove remainder with mineral spirits or lacquer remover and thoroughly wash skin area with soap and water. Immediately flush eyes with water for 15 minutes. If inhaled, move to fresh air. If breathing has stopped perform resuscitation. In all cases get immediate medical attention. When working with acrylic lacquer, wear approved protective gloves, goggles or safety glasses, protective clothing, and approved respirator. Use in a well-ventilated area.

ADHESION PROMOTER

Adhesion promoter is flammable; keep away from sparks, flames, and non-explosion proof devices. Inhalation may cause nose and throat irritation, headache, drowsiness, weakness, or exhaustion. Prolonged or repeated skin contact may cause irritation. Vapor and liquid may cause eye irritation. Ingestion may cause intoxication and gastrointestinal irritation. Prolonged overexposure to ethanol can have adverse effects on liver. If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen. Remove contaminated clothing and wash with soap and water. Flush eyes with plenty of water for 15 minutes while holding eyelids open. If ingested, dilute with one to two glasses of water or milk. Induce vomiting by sticking finger down throat. In all cases, get immediate medical attention. When working with adhesion promoter, wear approved respirator, goggles, and rubber gloves. Work in well-ventilated area.

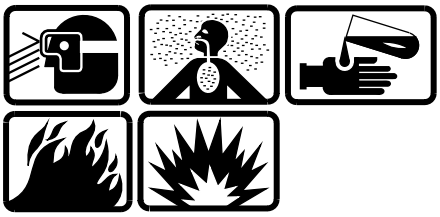


ADHESIVE, EA934NA

Adhesive can cause allergic reaction, skin sensitization, or gastrointestinal irritation. Contact with eyes can cause severe burns. Wash skin immediately with soap and water. Flush eyes with water for at least 15 minutes. Get immediate medical attention in event of eye contact with adhesive. Wash contaminated clothing before reuse. Wear approved respirator in closed area. Work in well-ventilated area using approved rubber gloves and safety glasses or goggles.

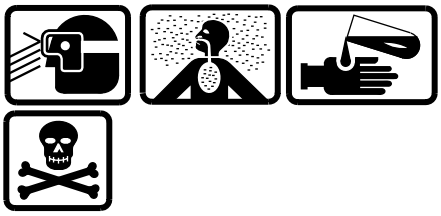
ADHESIVE, MMM-A-1617, TYPE I, II, OR III

Adhesive may cause irritation to skin, eyes, and respiratory system. Thoroughly wash skin area with soap and water and immediately flush eyes with water for 15 minutes. In all cases get immediate medical attention. When working with adhesive, wear approved protective gloves, goggles or faceshield, and respirator approved for organic solvents. Use in a well-ventilated area away from open flame, spark sources, and heat.



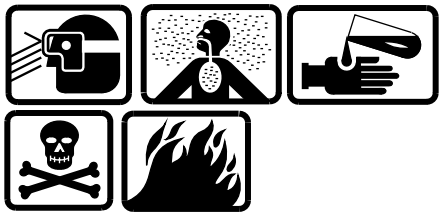
ADHESIVE PRIMER

Adhesive primer is flammable and its vapor is explosive. Keep away from heat, open flame or other sources of ignition. Inhalation will cause irritation to the respiratory tract. Symptoms are headache, nausea, dizziness, and drowsiness. Move to fresh air and administer oxygen. If skin or eyes are affected wash skin with soap and water and flush eyes with water for 15 minutes. In all cases get immediate medical attention. When working with adhesive primer, wear approved respirator, rubber gloves and splashproof goggles and faceshield. Work in well-ventilated area.



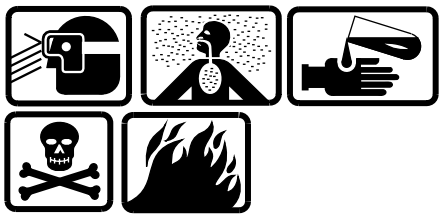
ADHESIVE VAPORS

Adhesive vapors may cause irritation of eyes, nose, and respiratory system. Eye and skin contact with material may cause irritation. If ingested, may cause gastric distress. Flush eyes with water for 15 minutes. Wash skin with soap and water. If inhaled, move to fresh air. In all cases get immediate medical attention. Work in a well-ventilated area. Wear approved gloves and safety glasses.



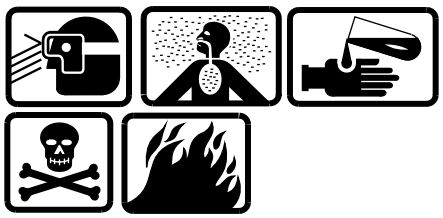
ANTI-ICING/DEICING FLUID

Anti-icing/Deicing fluid contains diluted alcohol. Alcohol is flammable; do not use near open flames, near welding areas, or on hot surfaces. Do not use while smoking or while others are smoking. Inhalation of vapors can cause drowsiness, dizziness, and headache. If vapors cause drowsiness, go to fresh air. Contact with skin may cause irritation. If liquid touches skin or eyes, flush thoroughly with water. Remove contaminated clothing.



ANTISEIZE COMPOUND

Antiseize compound is flammable; do not use near open flames, welding areas, or on hot surfaces. When decomposed by heating, toxic gases are released. Do not use while smoking or when others are smoking. Liquid can cause severe skin and eye irritation. Inhalation of vapor can cause drowsiness, headache and unconsciousness. Wash affected skin with soap and water. Flush eyes with water for at least 15 minutes. If drowsiness occurs, go to fresh air. Seek medical attention if overexposed. Use approved respirator, gloves, and goggles for prolonged use. Dispose of liquid soaked rags in an approved, grounded metal safety container.



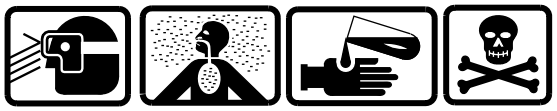
CHEMICAL CONVERSION MATERIALS

Chemical conversion materials are strongly oxidizing and are a fire hazard in contact with acid, reducing agents, and combustible and

readily oxidizing materials; separate storage is mandatory. Thoroughly rinse rags and containers contaminated with chemical conversion materials and dispose of in a fireproof container. Contact with skin and eyes can cause burns. Breathing of dust or vapors can cause ulceration of mucous membranes. Thoroughly wash skin area with soap and water and immediately flush eyes with water for 15 minutes. If ingested, drink milk of magnesia, aluminum hydroxide gel, or lime water followed by large amounts of water. In all cases get immediate medical attention. Wash contaminated clothing before wearing. When working with chemical conversion materials, wear approved respirator, rubber apron, gloves, and goggles or faceshield in a well-ventilated area away from heat, open flames or sparks. Follow approved toxic waste disposal procedures. Read manufacturers label for additional information.

CHROMIC ACID

Chromic acid is highly reactive; do not mix with organic or oxidizable materials such as paper or wood. When mixing solutions, add acid slowly to water, not water to acid. Any contact with skin, or inhalation of vapors and powder can irritate skin and can cause skin ulcers. Repeated or prolonged exposure can cause permanent injury. If any liquid or powder contacts skin, flush affected area with water, and immediately change contaminated clothing. If skin ulcers appear, get immediate medical attention. When handling dry material or solution at air-exhausted workbench, wear approved gloves, apron, and goggles. When handling dry material or solution at unexhausted workbench, wear approved respirator, gloves, apron, and long sleeves.

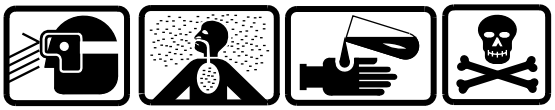


CLEANING COMPOUND

Aircraft cleaning compound is flammable and is toxic to the skin by absorption and to the liver and kidneys. It can cause irritation of the eyes and respiratory system, skin irritation and headache. Thoroughly wash skin area with water and immediately flush eyes with water for 15 minutes. If ingested, do not induce vomiting. In all cases get immediate medical attention. When working with cleaning compound, wear approved chemical cartridge respirator, rubber gloves, safety goggles, and protective clothing. Keep away from heat and open flames. Use in a well-ventilated area.

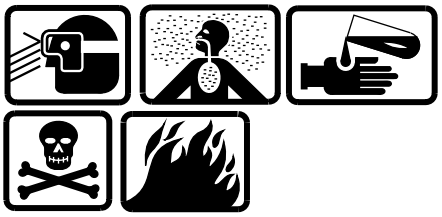
COMPRESSED AIR

When using compressed air for any cleaning or drying operation, do not exceed 30 psig at the nozzle. Eyes can be permanently damaged by contact with liquid or large particles propelled by compressed air. Inhalation of air-blown particles or solvent vapor can damage lungs. If injury occurs, get immediate medical attention. When using air for drying or cleaning at an air-exhausted workbench, wear approved goggles or faceshield. When using air for drying or cleaning at an unexhausted workbench, wear approved respirator and goggles.



CORROSION PREVENTIVE COMPOUND, MIL-C-11796

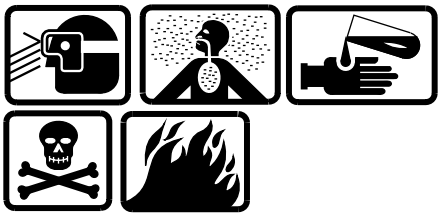
If solution of petrolatum corrosion preventive compound is decomposed by heat, toxic gases are released. Prolonged contact with solution or mist can cause skin irritation. If there is any prolonged contact with skin, wash contacted area with soap and water. If solution contacts eyes, flush eyes with water immediately. Remove saturated clothing. If solution is swallowed, do not try to vomit. In all cases get immediate medical attention. When handling solution, wear approved rubber gloves. If prolonged contact with mist is likely, wear approved respirator.



CORROSION PREVENTIVE COMPOUND, MIL-C-16173

Corrosion preventive compound is combustible; do not use near open flames, near welding areas, or on hot surfaces. Prolonged contact with skin

can cause skin irritation. Prolonged inhalation of vapor can cause dizziness, headache, and intoxication. If there is any prolonged contact with skin, wash affected area with soap and water. If liquid contacts eyes, flush eyes thoroughly with water. Remove contaminated clothing. If vapors cause light-headedness, go to fresh air. If liquid is swallowed, do not try to vomit. In all cases get immediate medical attention. When handling liquid or when applying it at air-exhausted workbench, wear approved gloves. When handling liquid or when applying it at unexhausted workbench, wear approved gloves and goggles. Dispose of liquid-soaked rags in approved metal container.



CORROSION PREVENTIVE COMPOUND, MIL-C-27725

Corrosion preventive compound is flammable. Keep away from ignition sources. Overexposure may cause headache, dizziness, nausea, skin drying, eye irritation, and respiratory irritation. Corrosion preventive compound may also cause narcotic effects, shortness of breath and could affect the central nervous system. Thoroughly wash with soap and water and apply emollient cream or lotion and immediately flush eyes with water for 15 minutes. If inhaled move to fresh air. In all cases get immediate medical attention. When working with corrosion preventive compound, wear approved protective gloves, goggles, and clothing. Use in a well-ventilated area. If adequate ventilation is not available, wear approved respirator.

CORROSION REMOVING AND METAL CONDITIONING COMPOUND

Corrosion removing and steel protecting compound causes skin irritation. Avoid contact with skin and eyes. If irritation occurs, get immediate medical attention. Wear approved gloves and goggles or faceshield when handling. Wash hands thoroughly after handling.

DENATURED ETHYL ALCOHOL

Denatured ethyl alcohol and its vapor are flammable and explosive — do not use it where others are smoking. POISON — do not ingest. Ingestion will cause vomiting, stupor, and collapse. Inhalation of vapor may cause headache and drowsiness. If vapors cause drowsiness, go to fresh air. Immediately remove wet clothing. When working with denatured ethyl alcohol, wear approved respirator, gloves, and goggles. If splashing could occur, wear an approved faceshield over the goggles. In case of contact with eyes, flush with water for at least 20 minutes and obtain medical attention. Dispose of liquid soaked rags in approved metal container. Metal containers must be grounded to maintain electrical continuity.

DRILLING OPERATIONS

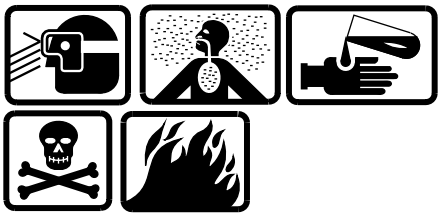
Metallic structures drilling operations produce airborne metallic dust particles that are harmful to respiratory tract and eyes. Avoid breathing dust and use eye protection when drilling. Avoid composite materials that are toxic to skin, eyes and respiratory tract. When drilling advanced composite materials, avoid inhalation of dust and wear protective gloves and eye protection.

DRY LUBRICANT

Overexposure can cause nausea, vomiting, and irritation of skin, eyes, and respiratory system. If symptoms occur, seek fresh air. Wash affected skin with soap and water. Flush eyes with water for 15 minutes. If ingested do not induce vomiting. In all cases, seek medical attention. Wear approved protective gloves, goggles, and respirator.

DRYCLEANING SOLVENT

Drycleaning solvent is combustible; do not use near open flames, near welding areas, or on hot surfaces. Prolonged contact of skin with liquid can cause skin irritation. Repeated inhalation of vapor can irritate nose and throat and can cause dizziness. If any liquid contacts skin or eyes, immediately flush affected area thoroughly with water. Remove solvent-saturated clothing. If vapors cause dizziness, go to fresh air. In all cases get immediate medical attention. When handling liquid or when applying it in an air-exhausted, partially covered tank, wear approved gloves. When handling liquid or when applying it at an unexhausted, uncovered tank or workbench, wear approved respirator and goggles.

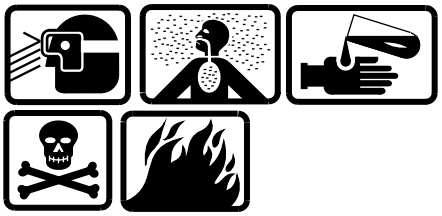


DYNASOLVE 165

Dynasolve 165 contains powerful organic solvents. It is harmful if inhaled or swallowed. Avoid breathing vapors or mist. Keep away from heat and flame. Avoid contact with eyes and skin. Wear gloves, safety goggles, and protective clothing when handling. Use with adequate ventilation. Contact of skin with liquid or inhalation of vapor can cause severe burns, and respiratory system irritation. If any solution, liquid, or vapor contacts skin or eyes, flush affected areas thoroughly with water. Immediately change any contaminated clothing. If vapors are inhaled, go to fresh air. In all cases get immediate medical attention.

ELECTRIC SHOCK

To prevent electric shock, ensure electrical power is off before working on helicopter. Remove watches, rings and other jewelry before working on electrical circuits. Voltage and/or current may be contacted that could present a threat to your health or life. If voltage/current is contacted and breathing ceases, CPR must be administered by qualified personnel. Seek medical aid. For electrical shock safety steps and procedures, refer to TM 1-1500-204-23 and TB 385-4.



EPOXY PRIMER COATING

Epoxy primer coating is flammable. It contains lead and may cause irritation of nose, throat, eyes, skin, respiratory system, and nervous system. Overexposure may result in headache, narcotic effect, nervousness, drying of skin, and possible death. Thoroughly wash skin area with soap and water and immediately flush eyes with water for 15 minutes. If ingested, do not induce vomiting. In all cases get immediate medical attention. When working with epoxy primer coating wear approved respirator, chemical splash goggles, solvent resistant gloves, apron, protective clothing, and barrier cream. Work in a well-ventilated area.

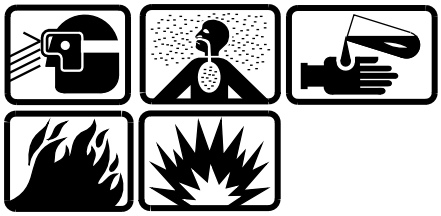
EPOXY RESIN

Filled epoxy resin may cause skin and eye irritation. Thoroughly wash skin area with soap and warm water and immediately flush eyes with water for 15 minutes. In all cases get immediate medical attention. When working with epoxy resin, wear approved protective gloves and goggles. Use in a well-ventilated area and avoid breathing vapors.

FINGERPRINT REMOVER

Fingerprint remover is flammable. Do not use near heat or flames. Overexposure may cause skin and eye irritation, dizziness, headache and nausea. Thoroughly wash skin area with soap and water and immediately flush eyes with water for 15 minutes. If inhaled, move to fresh air. In all cases get immediate medical attention. When working with fingerprint remover wear approved solvent

resistant gloves, goggles or faceshield, and respirator.

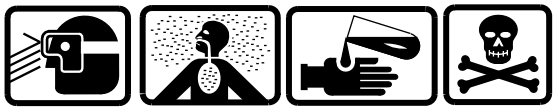


FLUORESCENT PENETRANT

Prolonged or repeated inhalation of powders and vapors of cleaning solvent, developers, and emulsifiers used in fluorescent penetrant inspection can irritate mucous membrane areas of the body. Continual exposure to penetrant inspection materials can irritate the skin. Direct exposure of eyes to light and prolonged exposure of skin to light can inflame and damage eyes and skin. Wear approved neoprene gloves when handling penetrant inspection materials. Keep insides of gloves clean. Store all pressurized spray cans containing penetrants, developers, and emulsifiers in a cool, dry area protected from direct sunlight, heat, and open flames. Temperatures higher than 120 °F (49 °C) may cause pressurized can to burst and cause injury. If direct eye contact with light causes eye problems, get immediate medical attention. When using black light for fluorescent inspections, wear approved safety glasses.

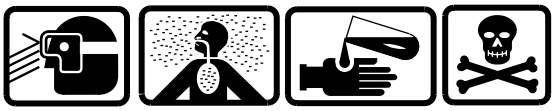
GREASE

Avoid any skin contact with grease. Wash hands thoroughly with soap and water after handling grease.



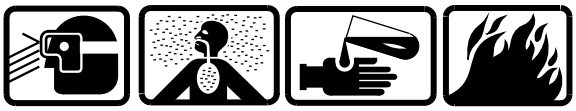
HYDRAULIC FLUID, MIL-H-5606

MIL-H-5606 hydraulic fluid is flammable. Flashpoint is 180 °F (82 °C). When hydraulic fluid is decomposed by heat, toxic gases are released. Prolonged contact with liquid or mist can cause skin irritation. If there is any prolonged contact with skin, wash contacted area with soap and water. If liquid contacts eyes, flush eyes with water immediately. Remove saturated clothing. If fluid is swallowed, do not try to vomit. In all cases get immediate medical attention. When handling liquid, wear approved rubber gloves. If prolonged contact with mist is likely, wear approved respirator.



HYDRAULIC FLUID, MIL-H-83282

MIL-H-83282 hydraulic fluid is flammable. Flashpoint is 400 °F (204 °C). When hydraulic fluid is decomposed by heat, toxic gases are released. Prolonged contact with liquid or mist can cause skin irritation. If there is any prolonged contact with skin, wash contacted area with soap and water. If liquid contacts eyes, flush eyes with water immediately. Remove saturated clothing. If fluid is swallowed, do not try to vomit. In all cases get immediate medical attention. When handling liquid, wear approved rubber gloves. If prolonged contact with mist is likely, wear approved respirator.



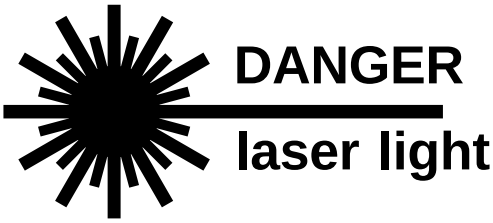
ISOPROPYL ALCOHOL

Isopropyl alcohol is flammable; do not use near open flames, near welding areas, or on hot surfaces. Do not use while smoking or while others are smoking. Inhalation of vapors can cause drowsiness, dizziness, and headache. Contact with skin may cause irritation. If liquid touches skin or eyes, flush thoroughly with water. Remove contaminated clothing. If vapors cause drowsiness, go to fresh air. When handling large quantities (greater than 1 gallon), work at air-exhausted workbench or covered tank. Store solvent and liquid-soaked clothes in an approved, grounded metal container.

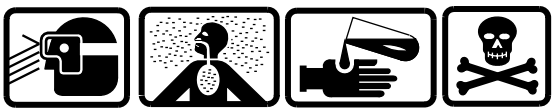
JET FUEL

Jet fuel is flammable; do not use near open flames, welding areas, or on hot surfaces. Do not

handle or store near strong oxidants, e.g., liquid oxygen or hypochlorite. Do not smoke when using jet fuel and do not use it where others are smoking. Contact of eyes with liquid can cause severe irritation and blurred vision. Inhalation of vapor may cause irritation, headache, nausea, and dizziness. If liquid contacts eyes, flush eyes thoroughly with water for a minimum of 15 minutes. Immediately remove fuel-saturated clothing. If vapors cause dizziness, go to fresh air. If liquid is swallowed, do not try to vomit. In all cases get immediate medical attention. When handling large quantities of liquid (more than 1 gallon) at an unexhausted workbench, wear approved respirator and goggles or faceshield. Dispose of liquid-soaked rags in approved metal container. Contaminated clothing shall be laundered prior to reuse. Metal containers of fuel must be closed and grounded to maintain electrical continuity.

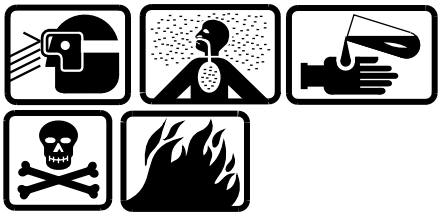


The laser rangefinder/designator (LRF/D) is very dangerous. Looking at the laser beam or its reflection from a shiny surface can cause permanent blindness. Under noncombat conditions, the laser shall be used only in controlled areas and at times specified by a range control officer.



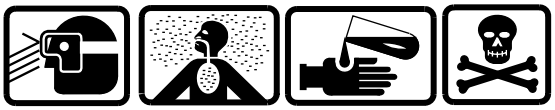
LHE CADMIUM SOLUTION

Cadmium brush plating solution is toxic and may cause damage to skin, eyes, and mucous membranes. Overexposure may cause skin sensitization and skin irritation. Thoroughly wash skin area with water and immediately flush eyes with water for 15 minutes. If vapor causes drowsiness, go to fresh air. In all cases get immediate medical attention. Wear approved rubber gloves, apron, boots, goggles or faceshield, and activated carbon respirator. Work in well-ventilated area. Wash hands thoroughly before eating or smoking.



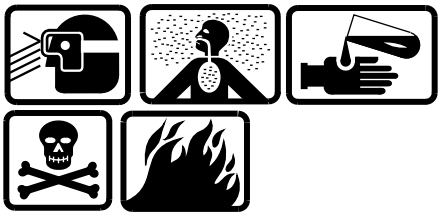
LUBRICANT, SOLID FILM

Solid film lubricant is flammable. Do not use near fire or open flame. Lubricant may cause irritation to skin and upper respiratory system. Inhalation may cause a narcotic effect and light headedness. Swallowing may be fatal. Thoroughly wash skin area with soap and water and immediately flush with water for 15 minutes. If ingested, do not induce vomiting. In all cases get immediate medical attention. When working with lubricant, wear approved rubber gloves, respirator, and safety glasses or goggles with unperforated side shields. Work in a well-ventilated area.



LUBRICATING OIL

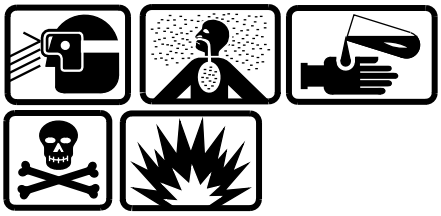
If lubricating oil is decomposed by heat, toxic gases are released. Prolonged contact with liquid or mist may cause skin irritation. If there is any prolonged contact with skin, wash area with soap and water. If oil contacts eyes, flush eyes with water immediately. Remove saturated clothing. If oil is swallowed, do not try to vomit. In all cases get immediate medical attention. When handling liquid, wear approved rubber gloves. If prolonged contact with mist is likely, wear approved respirator.



NAPHTHA/NAPTHALENE

Naphtha/Naphthalene is combustible; do not use it near welding areas, near flames, or on hot surfaces. Avoid prolonged or repeated contact with liquid. Contact of skin with liquid can cause irritation. Inhalation of vapors can cause irritation, giddiness, and drowsiness. If liquid contacts eyes, flush eyes thoroughly with water. If there is any prolonged skin contact, wash contacted area with

soap and water. If vapors cause drowsiness, go to fresh air. Remove solvent-saturated clothing. If liquid is swallowed, do not try to vomit. In all cases get immediate medical attention. When handling liquid in an air-exhausted, partially covered tank, wear approved gloves. When handling liquid in an open, unexhausted container, wear approved rubber gloves and goggles. If contact with vapor is likely, wear an approved respirator. Dispose of liquid-soaked rags in approved metal container. Metal containers of liquid must be grounded to maintain electrical continuity.



NITRIC ACID

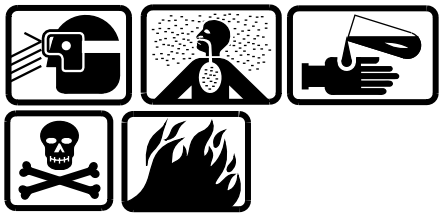
Nitric acid is highly reactive; do not mix with combustible organics or other oxidizable materials such as wood, paper, and cloth. When heated, toxic gases are released. When mixing solutions, add acid slowly to water, not water to acid. Contact of skin with liquid or inhalation of mist can cause severe burns, respiratory system irritation, and chronic bronchitis. If any solution, liquid, or mist contacts skin or eyes, flush affected area thoroughly with water for a minimum of 15 minutes. Immediately change any contaminated clothing. If mist is inhaled, go to fresh air. In all cases get immediate medical attention. If handling solution or concentrated liquid in air-exhausted covered tank, wear approved gloves and apron, and wear approved goggles or faceshield. When handling solution or concentrated liquid in open tank, wear approved respirator, full-body clothing, gloves, and goggles.

NOISE HAZARD

Personnel hearing can be PERMANENTLY DAMAGED if exposed to constant high noise levels of 85 dB (A) or greater. Wear approved hearing protection devices when working in high noise level areas. Hearing loss occurs gradually but becomes permanent over time. Hearing protection is required.

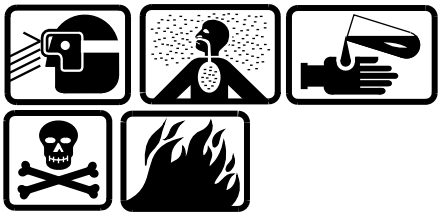
PAINT REMOVER

Paint remover can cause severe burns, narcotic effects, headache, dizziness, and nausea. In some cases it may cause elevated blood pressure, unconsciousness, shock, and death. Contact with eyes may cause blindness. Avoid contact with flammable liquids. Contact with alkali metals, powdered magnesium, and aluminum may cause a violent reaction. Thoroughly wash skin area with water and immediately flush eyes with water for 15 minutes. In all cases get immediate medical attention. When working with paint remover wear approved respirator (manufacturer recommends approved fresh air mask), approved faceshield or goggles, neoprene or Viton gloves, solvent resistant boots, and apron. Work in a well-ventilated area. Read manufacturers label for specific instruction due to variations of each product.



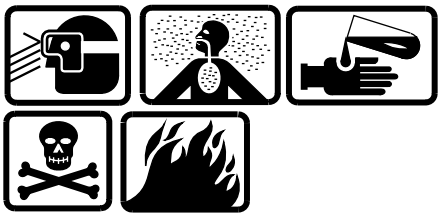
PLASTIC POLISH COMPOUND

Plastic polish compound is flammable. Keep away from heat, open flame or other sources of ignition. Plastic polish compound may be poisonous if inhaled or absorbed through the skin. Vapors may cause dizziness or suffocation and are an irritant to the skin and eyes. Move to fresh air and thoroughly wash skin with water and flush eyes with water for 15 minutes. In all cases, get immediate medical attention. Wear approved safety glasses or goggles and gloves. Use in a well-ventilated area.



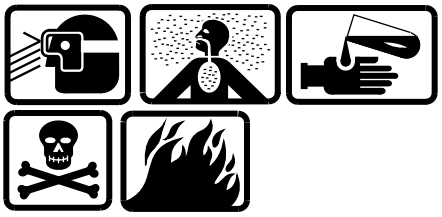
POLYURETHANE COATING

Polyurethane coating is flammable. Keep away from open flame, sparks, heat, and organic material. Exposure can cause skin, eye, nose, throat, and respiratory system irritation. Prolonged exposure may cause headache, allergic sensitivity, narcotic effect, nausea, and vomiting. Ingestion causes lead poisoning. Thoroughly wash skin area with soap and water and immediately flush eyes with water for 15 minutes. If inhaled, move to fresh air. In all cases get immediate medical attention. When working with polyurethane coating, wear approved chemical resistant rubber gloves, goggles, respirator, and protective clothing. Use in a well-ventilated area.



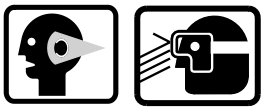
POLYURETHANE CONDUCTIVE COATING

Polyurethane conductive coating is flammable; do not use near open flames, near welding areas, or on hot surfaces. Contact with liquid or vapor can cause skin or eye irritation. Prolonged overexposure can result in kidney and liver damage, headache, nausea, vomiting, dizziness or loss of consciousness. Prolonged occupational overexposure can result also with permanent brain and nervous system damage. Deliberately concentrating and inhaling the contents may be harmful or fatal. After prolonged skin contact, wash contacted area with lukewarm water for 15 minutes. Remove contaminated clothing promptly. If vapors cause dizziness, go to fresh air, in all cases get immediate medical attention. Dispose of contents in approved metal container. Follow approved toxic waste disposal procedures.



RESINS AND HARDENERS

Resins and hardeners are flammable; do not use near open flames, welding areas, or on hot surfaces. When decomposed by heating, toxic fumes are released. Inhalation of vapor can cause irritation, drowsiness, and headache. Contact with eyes can cause severe burns. Flush eyes with water for at least 15 minutes. Wash skin immediately with soap and water. In all cases get immediate medical attention. When mixing or applying liquid in air-exhausted paint spray booth, wear approved gloves and goggles. When mixing or applying liquid in unexhausted work area, wear approved gloves, long sleeves, apron, goggles, and respirator. Metal containers of solution must be grounded to maintain electrical continuity.



RIVETING OPERATIONS

Bucking rivets produces high levels of noise. Hearing can be PERMANENTLY DAMAGED if exposed to constant high noise levels of 85 dB (A) or greater. Wear approved hearing protection devices when working in high noise level areas. Hearing loss occurs gradually but becomes permanent over time. Hearing protection is required. Wear goggles or faceshield when riveting to prevent damaging eyes.

SANDING OPERATIONS

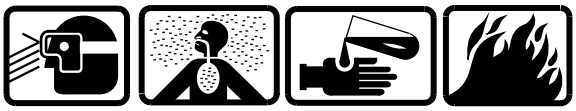
Avoid prolonged or repeated contact with sanding, power grinding, or drilling dust. Inhalation of dust may cause temporary coughing and wheezing, respiratory system irritation, and permanent lung problems. If dust contacts eyes, flush them thoroughly with water. If coughing or wheezing persists, get immediate medical attention. When using an air-exhausted grinding wheel, wear approved respirator and goggles or faceshield.

SEALING COMPOUND, MIL-S-22473

Anaerobic sealing compound is flammable; do not use near open flames or welding areas. Avoid prolonged exposure to light. Avoid materials such as peroxide or other strong oxidizing agents, iron rust or carbon monoxide/dioxide. Anaerobic sealing compound can cause dermatitis. It may also cause delayed eye and skin irritations and skin sensitivity. Thoroughly wash skin area with water and immediately flush eyes with water for at least 15 minutes. If ingested, do not induce vomiting. Keep individual calm. In all cases, get immediate medical attention. When working with anaerobic sealing compound, wear approved rubber apron, boots, gloves, and goggles or faceshield in well-ventilated area.

SEALING COMPOUND, MIL-S-8784, MIL-S-8802, MIL-S-83249

Sealing compound is flammable. Do not use near heat, open flames, or sparks. Overexposure can cause irritation of skin and eyes, headache, nausea, vomiting, and systemic problems. Thoroughly wash skin area with soap and water and immediately flush eyes with water for 15 minutes. In all cases get immediate medical attention. Wear approved protective gloves and goggles. Avoid breathing of vapors and prolonged or repeated skin contact.



SHELLAC

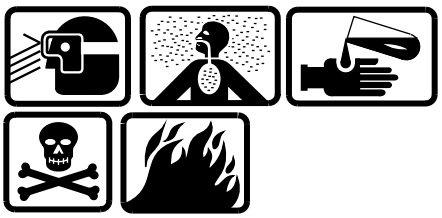
Shellac is flammable. Keep away from heat, sparks, and open flame. All electrical equipment must be explosion proof. Shellac may cause irritation of eyes, nose, and throat. Headache, intoxication, and drowsiness may occur. In case of skin contact, flush contact area thoroughly with water. For inhalation, remove to fresh air and give oxygen. In all cases, get immediate medical attention. Use shellac in well-ventilated area. When handling wear approved rubber gloves and safety goggles.

SILICONE

Conformal coating is flammable. Do not use near open flame or high temperatures. Repeated or prolonged contact or inhalation of vapors can cause skin and eye irritation, or damage to lungs, blood, liver, kidneys, and nervous system. Existing eye, skin, and respiratory disorders can be aggravated. Short-term inhalation of vapors can cause drowsiness and irritation of nose and throat. Use only in a well-ventilated area. If vapors are inhaled, go to fresh air. Short-term skin contact can cause irritation, redness, and swelling. Wipe off skin contact area and flush with fresh water. Flush eyes with with fresh water for 15 minutes. Get immediate medical attention if irritation develops or ill effects persist. If swallowed, do not induce vomiting. Vomiting can cause serious lung damage. If vomiting occurs, keep head below hips to prevent entry of liquid into lungs. When handling, wear approved protective gloves, goggles, and respirator with organic vapor cartridge. Metal storage containers must be grounded to eliminate static electricity fire hazard.

THINNER

Paint thinner is flammable; do not use near open flames, near welding areas, or on hot surfaces. Do not smoke when using paint thinner, and do not use it where others are smoking. Contact with liquid or vapor can cause skin, nose, throat, and eye irritation, drowsiness, headache, nausea, and vomiting. After any prolonged contact of liquid with skin, wash contacted area with soap and water. Remove solvent-saturated clothing. If vapors cause drowsiness, go to fresh air. In all cases get immediate medical attention. When handling liquid at air-exhausted workbench wear approved gloves, goggles, and long sleeves. When handling liquid or liquid-soaked cloth in open unexhausted area, wear approved respirator, gloves, and goggles. Dispose of liquid-soaked rags in approved metal container. Metal containers must be grounded to maintain electrical continuity.

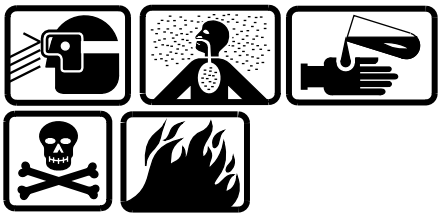


URETHANE ADHESIVE

Urethane Adhesive Components A and B are flammable. Keep away from heat, sparks, or any source of ignition.

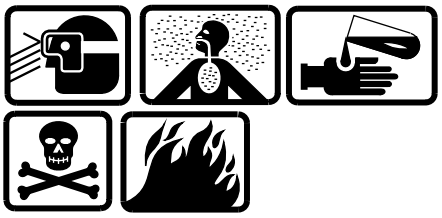
Overexposure to Component A may cause headache, nausea, and skin irritation and is an irritant to the upper respiratory system. In case of skin or eye contact, flush thoroughly with water. If inhaled remove to fresh air. If swallowed give large amounts of water. In all cases get immediate medical attention.

Overexposure to Component B, which is mildly toxic, may cause headache and mild irritation of nose, throat, and eyes. Contact with skin may cause irritation and dryness. Ingestion may cause vomiting and stomach cramps. In case of ingestion, get immediate medical attention. If inhaled remove to fresh air and give artificial respiration. In case of skin contact, remove contaminated clothing and wash with soap and water. Flush eyes immediately with large quantities of water. In all cases get immediate medical attention. Use in well-ventilated area and wear approved respirator, goggles, and rubber gloves.



ZINC CHROMATE PRIMER

Zinc chromate primer is flammable; do not use near open flames, near welding areas, or on hot surfaces. Do not smoke when using zinc chromate primer, and do not use it where others are smoking. Contact with liquid or vapor can cause skin or eye irritation, dizziness, and headache. Prolonged inhalation can result in kidney and liver damage. After prolonged skin contact, wash contacted area with soap and water. If vapors cause dizziness, go to fresh air. In all cases get immediate medical attention. When handling small quantities (less than 1 gallon), wear approved gloves. When handling large quantities of liquid (greater than 1 gallon), at unexhausted workbench, wear approved respirator, gloves, goggles, apron, and long sleeves. Do not eat, smoke, or carry smoking materials in areas where liquid is handled. Dispose of liquid-soaked rags in approved metal container. Zinc chromate primer contains chromates. Follow approved toxic waste disposal procedures.



ZINC CHROMATE PUTTY

Zinc chromate putty is flammable; do not use near open flames, near welding areas, or on hot surfaces. Do not smoke when using zinc chromate putty, and do not use it where others are smoking. Contact with liquid or vapor can cause skin or eye irritation, dizziness, and headache. Prolonged inhalation can result in kidney and liver damage. After prolonged skin contact, wash contacted area with soap and water. If vapors cause dizziness, go to fresh air. In all cases get immediate medical attention. When handling small quantities (less than 1 gallon), wear approved gloves. Do not eat, smoke, or carry smoking materials in areas where putty is handled. Dispose of putty in approved

metal container. Zinc chromate putty contains chromates. Follow approved toxic waste disposal procedures.

4. SAFETY PRECAUTIONS.

The following safety precautions shall be observed while performing procedures in this manual.

- Dangerous voltages are present at system connectors. Ensure power is OFF prior to connecting or disconnecting cables.
- Do not wear metal frame glasses, rings, watches, or other metal jewelry while working on electronic equipment.
- Some cleaning materials specified herein are flammable and/or toxic. Keep away from open flame or other ignition sources. Provide adequate ventilation and avoid skin/eye exposure.
- Cleaning with compressed air can create airborne particles that may enter eyes or penetrate skin. Pressure shall not exceed 30 psig. Wear goggles. Do not direct compressed air against skin.
- For electrical shock safety steps and procedures, refer to TM 1-1500-204-23 and TB 385-4.

APPENDIX A

REFERENCES

A-1. REFERENCES

The following references, of the issue in effect, are required for use by Organizational Maintenance Personnel in performance of their duties.

PUBLICATION NUMBER	TITLE
AR 25-50	Preparing and Managing Correspondence (Catalog of Abbreviations and Brevity Codes)
AR 75-1	Malfunctions Involving Ammunition and Explosives
AR 95-1	Aviation: General Provisions, Training, Standardization, and Resource Management
AR 385-40	Accident Reporting and Records
AR 700-52	Licensing and Control of Sources of Ionizing Radiation
AR 746-1	Packaging of Army Material for Shipment and Storage
AR 750-50	Aircraft Cannibalization
AR 755-15	Disposal of Unwanted Radioactive Material
CTA 50-970	Expendable Items (Except Medical, Class V, Repair Parts, and Heraldic Items)
DA PAM 738-751	Functional Users Manual for The Army Maintenance Management System - Aviation (TAMMS-A)
DOD 6050.5-L/-LR	DOD Hazardous Materials Information System
FM 1-500	Army Aircraft Control and Technical Inspection
FM 3-5	Nuclear Biological and Chemical (NBC) Decontamination
FM 10-67-1	Concepts and Equipment of Petroleum Operations
FM 21-11	First Aid for Soldiers
FM 1-513	Aerial Recovery of U.S. Army and Air Force Aircraft
MIL-M-3171C	Processes for Pretreatment and Prevention of Corrosion on Magnesium Alloy
MIL-S-6721	Steel, Corrosion and Heat Resistant, Plate, Sheet, and Strip.
MIL-STD-12	Abbreviations for Use on Drawings, and in Specifications, Standards, and Technical Documents
MIL-STD 865A	Selective Brush Plating Electrodeposition
MIL-STD-1247	Markings, Functions, and Hazard Designations of Hose, Pipe, and Tube Lines for Aircraft, Missile, and Space Systems

PUBLICATION NUMBER	TITLE
MIL-STD-1949	Magnetic Particle Inspection
MIL-STD-6866	Liquid Penetrant Inspection
MIL-W-8611A	Process for Welding Metal, Arc and Gas, Steels and Corrosion and Heat Resistant Alloys
NAVAIR 16-45-2453	Installation Operation and Maintenance with Parts List for Underwater Acoustic Beacons and Underwater Acoustic Locator System
TB 385-4	Safety Precautions for Maintenance of Electrical/Electronic Equipment
TB 5-4200-200-10	Hand Portable Fire Extinguishers Approved for Army Users
TB 43-0002-3	Maintenance Expenditure Limits for Army Aircraft
TB 43-0106	Aeronautical Equipment Army Oil Analysis Program (AOAP)
TB 43-0118	Field Instructions for Painting and Preserving Electronics Command Equipment including Camouflage Pattern Painting of Electrical Equipment Shelters
TB 55-1500-314-25	Handling, Storage, and Disposal of Army Aircraft Components Containing Radioactive Materials
TB 55-1500-334-25	Conversion of Aircraft to Fire Resistant Hydraulic Fluid
TB 55-9150-200-24	Engine and Transmission Oils, Fuels and Additives for Army Aircraft
TB 750-126	Use of Materiel Condition Tags and Labels on Army Aeronautical and Air Delivery Equipment
TM 1-1427-779-23	Aviation Unit and Intermediate Maintenance: Control Display Subsystem (CDS)
TM 1-1500-204-23	Aviation Unit Maintenance (AVUM) and Aviation Intermediate Maintenance (AVIM) Manual for General Aircraft Maintenance
TM 1-1500-328-23	Aeronautical Equipment Maintenance Management Policies and Procedures
TM 1-1500-344-23	Aircraft Weapons Systems Cleaning and Corrosion Control
TM 1-1520-248-CL	Operator and Crewmember Checklist Army OH-58D Helicopter
TM 1-1520-248-MTF	Maintenance Test Flight Manual for Army Model OH-58D Helicopter
TM 1-1520-248-PPM	Progressive Phase Maintenance Inspection Checklist for Army Model OH-58D Helicopter
TM 1-1520-248-S	Preparation for Shipment of Army Model OH-58D/OH-58D(R) Helicopter
TM 1-1520-248-T-1	Operational Checks and Maintenance Action Precise Symptoms (MAPS) Manual Volume I
TM 1-1520-248-T-2	Operational Checks and Maintenance Action Precise Symptoms (MAPS) Manual Volume II
TM 1-1520-248-T-3	Operational Checks and Maintenance Action Precise Symptoms (MAPS) Manual Volume III
TM 1-1520-248-10	Operator's Manual for Army Model OH-58D Helicopter

PUBLICATION NUMBER	TITLE
TM 1-1520-248-23P	Aviation Unit and Intermediate Maintenance Repair Parts and Special Tools List (Including Depot Maintenance Repair Parts and Special Tools)
TM 1-1520-266-23	Aviation Maintenance (AVUM) and Aviation Intermediate Maintenance (AVIM) Manual Nondestructive Inspection Procedures for OH-58D Helicopter
TM 1-1730-232-13&P	Operators, Aviation Unit Maintenance (AVUM) and Aviation Intermediate Maintenance (AVIM) Manual (including Repair Parts and Special Tools List) For Truck, Helicopter Ground Handling
TM 1-2840-263-23	Operation and Maintenance Manual for Model 250-C30R/3 Engine
TM 1-6625-724-13&P	Operator's, Aviation Unit, and Intermediate Maintenance Manual including Repair Parts and Special Tools List for Test Set, Aviation Vibration Analyzer (AVA) PN 29313102 (NSN 6625-01-282-3746) with Version 6.01
TM 3-261	Handling and Disposal of Unwanted Radioactive Material
TM 9-1005-213-25	Organization, Direct Support, General Support, and Depot Maintenance Manual (Including Repair Parts and Special Tool Lists): Machine Gun, .50 Cal.
TM 9-1055-460-13&P	Operator's, Aviation Unit, and Intermediate Maintenance Manual Including Repair Parts and Special Tool Lists for HYDRA 70 Rocket Launchers
TM 9-1090-214-23&P	Aviation Unit and Intermediate Maintenance Manual for Armament Subsystems
TM 9-1240-778-23	Aviation Unit and Intermediate Maintenance: Mast Mounted Sight (MMS) Subsystem
TM 9-1425-475-20	Maintenance Instructions Aviation Unit Maintenance for Launcher, Guided Missile; Aircraft, M272, Part No. 13009444
TM 9-1440-431-23	Aviation Unit and Aviation Intermediate Maintenance Manual (for) Air-to-Air (ATAS) Weapon System (Including M292 & AN/ASQ-201)
TM 9-6920-475-13	Maintenance Instructions Aviation Unit and Intermediate Maintenance Aviation Unit and Intermediate Maintenance Training Equipment Dummy Guided Missile, M34 Guided Missile, Training, M36, Launch Shoe Alignment for Test Equipment
TM 11-1520-248-23	Aviation Unit and Intermediate Maintenance: Avionic Equipment Configuration Army Model OH-58D Helicopter
TM 11-5865-200-12	Operator and Aviation Unit Maintenance Manual for Countermeasures Sets AN/ ALQ-144(V)1 and AN/ALQ-144(V)3
TM 11-6140-203-23	Aviation Unit and Intermediate Maintenance Manual for Aircraft Nickel-Cadmium Batteries
TM 11-6605-202-12	Operator's and Organizational Maintenance Manual Aviation Unit Maintenance (AVUM) for Gyromagnetic Compass Sets, AN/ASN-43 and AN/ASN-43A Compass Set
TM 38-230	Packaging of Materiel: Preservation
TM 55-1500-322-24	Maintenance of Aeronautical Antifriction Bearings for Organization, Intermediate, and Depot Maintenance Levels
TM 55-1500-323-24	Organizational, DS, GS, and Depot Maintenance Manual: Installation Practices for Aircraft Electric and Electronic Wiring

PUBLICATION NUMBER	TITLE
TM 55-1500-326-23	Standards of Serviceability for Transfer of Aircraft
TM 55-1500-335-23	Nondestructive Inspection Methods
TM 55-1500-342-23	Army Aviation Maintenance Engineering Manual: Weight and Balance
TM 55-1500-345-23	Painting and Marking of Army Aircraft
TM 55-2620-200-24	Inspection, Maintenance Instructions, Storage, and Disposition of Aircraft Tires and Inner Tubes
TM 55-2840-256-23	Aviation Unit and Intermediate Maintenance Manual for Model T703-AD-700 Engine
TM 55-4920-201-14	Operator's, Organizational, Direct Support, and General Support Maintenance Manual (Including Repair Parts and Special Tools List): Balancing and Adapter Kits
TM 750-244-1-5	Procedure for the Destruction of Aircraft and Associated Equipment to Prevent Enemy Use

APPENDIX B

MAINTENANCE ALLOCATION CHART (MAC)

Section I. INTRODUCTION

Page

B-1. MAINTENANCE ALLOCATION CHART

This appendix contains information pertaining to the definition and use of the maintenance allocation chart. The appendix is divided into four sections.

B-2. DEFINITION OF THE MAINTENANCE ALLOCATION CHART

The Maintenance Allocation Chart (MAC) assigns maintenance functions in accordance with the Three Levels of Maintenance concept for Army aviation. These maintenance levels (categories) - Aviation Unit Maintenance (AVUM), Aviation Intermediate Maintenance (AVIM), and Depot Maintenance - are depicted on the MAC as:

1. AVUM, which corresponds to an O Code in the Repair Parts and Special Tools List (RPSTL).
2. AVIM, which corresponds to an F Code in the Repair Parts and Special Tools List (RPSTL).
3. DEPOT, which corresponds to a D Code in the Repair Parts and Special Tools List (RPSTL).

The maintenance to be performed below depot and in the field is described as follows:

1. Aviation Unit Maintenance (AVUM) activities will be staffed and equipped to perform high frequency "On Aircraft" maintenance tasks required to retain or return aircraft systems to a serviceable condition. The maintenance capability of the AVUM will be governed by the Maintenance Allocation Chart (MAC) and limited by the amount and complexity of ground support equipment (GSE), facilities required, authorized manning strength, and critical skills available. The range and quantity of authorized spare modules/components will be consistent with the mobility requirements dictated by the air mobility concept. (Assignments of maintenance tasks to divisional company size aviation units will consider the overall maintenance capability of the division, the requirement to conserve personnel and equipment resources, and air mobility requirements.)
    a. Company Size Aviation Units: Perform those tasks which consist primarily of preventive maintenance and maintenance repair and replacement functions associated with sustaining a high level of aircraft operational readiness. Perform maintenance inspections and servicing to include preflight, daily, intermediate, periodic (or phased), and special inspections as authorized by the MAC or higher headquarters. Identify the cause of equipment/system malfunctions using applicable technical manual troubleshooting instructions, built-in test equipment (BITE), installed aircraft instruments, or test, measurement, and diagnostic equipment (TMDE). Replace worn or damaged modules/components that do not require complex adjustments or system alignment and which can be removed/installed with available

skills, tools, and ground support equipment. Perform operational and continuity checks and make minor repairs to the electrical system. Inspect, service and make operational, capacity, and pressure checks to hydraulic systems. Perform servicing, functional adjustments, and minor repair/replacement to the flight control, propulsion, power train, and fuel systems. Accomplish airframe repair that does not require extensive disassembly, jigging, or alignment. The manufacture of airframe parts will be limited to those items which can be fabricated with tools and equipment found in current air mobile tool and shop sets. Evacuate unserviceable modules/components and end items beyond the repair capability of AVUM to the supporting AVIM.

b. Less than Company Size Aviation Units: Aviation elements organic to brigade, group, battalion headquarters, and detachment size units are normally small and have less than 10 aircraft assigned. Maintenance tasks performed by these units will be those which can be accomplished by the aircraft crew chief or assigned aircraft repairman and will normally be limited to preventive maintenance, inspections, servicing, spot painting, stop drilling, application of nonstress patches, minor adjustments, module/component fault diagnosis, and replacement of selected modules/components. Repair functions will normally be accomplished by the supporting AVIM unit.

2. Aviation Intermediate Maintenance (AVIM) provides mobile, responsive "One-Stop" maintenance support. (Maintenance functions which are not conducive to sustaining air mobility will be assigned to depot maintenance.) AVIM may perform all maintenance functions authorized to be done at AVUM. Repair of equipment for return to user will emphasize support or operational readiness requirements. Authorized maintenance includes replacement and repair of modules/components and end items which can be accomplished efficiently with available skills, tools, and equipment. AVIM establishes the Direct Exchange (DX) program for AVUM units by repairing selected items for return to stock when such repairs cannot be accomplished at the AVUM level. The AVIM level inspects, troubleshoots, performs diagnostic tests, repairs, adjust, calibrates, and aligns aircraft system modules/components. AVIM units will have capability to determine the serviceability of specified modules/components removed prior to the expiration of the Time Between Overhaul (TBO) or finite life. Module/component disassembly and repair will support the DX program and will normally be limited to tasks requiring cleaning and the replacement of seals, fittings, and items of common hardware. Airframe repair and fabrication of parts will be limited to those maintenance tasks which can be performed with available tools and test equipment. Unserviceable reparable modules/components and end items which are beyond the capability of AVIM to repair will be evacuated to Depot Maintenance. AVIM will perform aircraft weight and balance inspections and other special inspections which exceed AVUM capability. Provides quick response maintenance support, including aircraft recovery and air evacuation, on-the-job training, and technical assistance through the use of mobile maintenance contact teams. Maintains authorized operational readiness float aircraft. Provides collection and classification services for serviceable/unserviceable material. Operates a cannibalization activity in accordance with AR 750-50. (The aircraft maintenance company within the maintenance battalion of a division will perform AVIM functions consistent with air mobility requirements and conservation of personnel and equipment resources. Additional intermediate maintenance support will be provided by the supporting nondivisional AVIM unit.)

B-3. USE OF THE MAINTENANCE ALLOCATION CHART (SECTION II)

The Maintenance Allocation Chart assigns maintenance functions based on past experience and the following considerations:

1. Skills available.
2. Work time required.
3. Tools and test equipment required and/or available.

All levels of maintenance authorized to perform a maintenance function are indicated.

A maintenance function assigned to a maintenance category will automatically be authorized to be performed at any higher maintenance category.

A maintenance function that cannot be performed at the assigned category of maintenance for any reason may be evacuated to the next higher maintenance category. Higher maintenance categories will perform the maintenance functions of lower maintenance categories when required or directed by the commander that has the authority to direct such tasking.

The assignment of a maintenance function will not be construed as authorization to carry the related repair parts or spares in stock. Information to requisition or otherwise secure the necessary repair parts will be as specified in the associated Repair Parts and Special Tools List (RPSTL).

Normally there will be no deviation from the assigned level of maintenance. In cases of operation as necessity, maintenance functions assigned to a maintenance level may, on a one-time basis and at the request of the proper maintenance level, be specifically authorized by the maintenance officer of the level of maintenance to which the function is assigned. The special tools, equipment, etc., required by the lower level of maintenance to perform this function will be furnished by the maintenance level to which the function is assigned. This transfer of a maintenance function to a lower maintenance level does not relieve the higher maintenance level of the responsibility for the function. The higher level of maintenance will provide technical supervision and inspection of the function being performed at the lower level as required.

Changes to the Maintenance Allocation Chart will be based on continuing evaluation and analysis by responsible technical personnel and on reports received from field activities.

B-4. MAINTENANCE FUNCTIONS

Maintenance functions will be limited to and defined as follows:

1. Inspect. To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination (e.g., by sight, sound, or feel).
2. Test. To verify serviceability by measuring the mechanical, pneumatic, hydraulic, or electrical characteristics of an item and comparing those characteristics with prescribed standards.
3. Service. Operations required periodically to keep an item in proper operating condition, i.e., to clean (includes decontaminate, when required), to preserve, to drain, to paint, or to replenish fuel, lubricants, chemical fluids, or gases.
4. Adjust. To maintain or regulate, within prescribed limits, by bringing into proper or exact position, or by setting the operating characteristics to specified parameters.
5. Align. To adjust specified variable elements of an item to bring about optimum or desired performance.
6. Calibrate. To determine and cause corrections to be made or to be adjusted on instruments or test, measuring, and diagnostic equipment used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.
7. Remove/Install. To remove and install the same item when required to perform service or other maintenance functions. Install may be the act of emplacing, seating, or fixing into position a spare, repair part, or module (component or assembly) in a manner to allow the proper functioning of an equipment or system.
8. Replace. To remove an unserviceable item and install a serviceable counterpart in its place. **“**Replace**”** is authorized by the MAC and is shown as the third position code of the SMR code.

9. Repair. (Refer to substeps for clarification of underlined functions.) The application of maintenance services, including fault location/troubleshooting, removal/installation, and procedures, and maintenance actions to identify troubles and restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system.

    a. Services - inspect, test, service, adjust align, calibrate, and/or replace.

    b. Fault locate/troubleshoot - The process of investigating and detecting the cause of equipment malfunctioning; the act of isolating a fault within a system or unit under test (UUT).

    c. Disassemble/assemble - encompasses the step-by-step taking apart or breakdown of a spare functional group coded item to the level of its least componency identified as maintenance significant, i.e., assigned an SMR code) for the category of maintenance under consideration.

    d. Actions - welding, grinding, riveting, straightening, facing, remachining, and/or resurfacing.

10. Overhaul. That maintenance effort (service/action) prescribed to restore an item to a completely serviceable/operational condition as required by maintenance standards in appropriate technical publications i.e., OMWR). Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.

11. Rebuild. Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of material maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (hours/miles, etc.) considered in classifying Army equipment/components.

Section II. MAINTENANCE ALLOCATION CHART

B-5. FUNCTIONAL GROUPINGS

The functional groupings shown in Table B-1 are used, as applicable, throughout this MAC. Maintenance manuals and RPSTLs reflect these standard groupings as individual chapters with sections in each chapter relative to the individual complete systems, subsystems, modules, components, assemblies, or specific parts noted.

Group numbers consist of pairs of numbers that identify major assemblies, subassemblies, and sub-subassemblies. Group numbers also provide information that locates these items within the maintenance portion of this manual. Thus, in the group number 02010701, which identifies the Engine Cowl Assembly Exhaust Duct (Cowl Duct), reading left to right, the 02 denotes Airframe, 0201 denotes Fuselage (covered in Chapter 2, Section I), 020107 denotes Engine Cowl Assembly, and 02010701 identifies the Cowl Duct as a distinct component of the Engine Cowl Assembly. The third and fourth pairs of numbers do not provide order of appearance of the coverage but rather merely distinguish the Engine Cowl Assembly from other Fuselage assemblies and the Cowl Duct from other components of the Engine Cowl Assembly.

B-6. SYSTEM GROUP NUMBER AND DESCRIPTION (COLUMNS 1 AND 2)

Column 1 (Table B-2) lists the group number of the aircraft system and column 2 lists the description of the system.

B-7. MAINTENANCE FUNCTION (COLUMN 3)

Column 3 lists the functions to be performed on the items listed in column 2.

B-8. MAINTENANCE LEVEL AND WORK TIMES (COLUMN 4)

The maintenance Level (levels) AVUM, AVIM, and DEPOT are listed on the Maintenance Allocation Chart with individual columns that include the work times for maintenance functions at each maintenance level. Work time presentations such as **"**0.4**"** indicate the average time it requires a maintenance level to perform a specified maintenance function. If a work time has not been established, the column presentation shall indicate **"**—.—**"**. Maintenance levels higher than the level of maintenance indicated are authorized to perform the indicated function.

B-9. TOOLS AND TEST EQUIPMENT (COLUMN 5 AND SECTION III)

Common tool sets (not individual tools), special tools, and test and support equipment required to perform maintenance functions are listed alphabetically in Section III with a reference number to permit crossreferencing to column 5 in the MAC. In addition, the lowest maintenance category authorized to use the device is listed along with the item National stock number (NSN) and, if applicable, the tool number to aid in identifying the tool/device.

B-10. REMARKS (COLUMN 6 AND SECTION IV)

Remarks (identified by an alphabetic code in column 6) and other notes (identified by a number in parentheses in the applicable column) are listed in Section IV to provide a ready reference to the definition of the remark/note.

Table B-1. Airframe Items

GROUP NUMBER	DESCRIPTION	GROUP NUMBER	DESCRIPTION
00	Aircraft System	10	Fuel System: Cell, filters, pumps, valves, and refueling system
01	Aircraft General: Servicing, handling, inspection requirements, lubrication requirements, cleaning, mooring, towing, jacking, hoisting, preservation requirements, weight and balance requirements, spot painting and subassembly painting requirements	11	Flight Controls: Control sticks, pedals, push-pull rods, torque tubes, quadrants, force gradients, control surfaces, bellcranks, and trim actuators (mechanical)
02	Airframe: Fuselage, tailboom, pylons, transmission mounts, armor, and seats		
03	Alighting Gear: Landing gear, skids, crosstubes	12	Environmental Control Systems: Heaters, defrosters, heater mixing valve, and ducts
04	Power Plant: Removal, installation, cooling systems, air induction, exhaust, oil systems, components, ignition systems, power control, harnesses, fuel controls, pumps (engine-driven), filters/particle separators		
05	Rotors: Rotors (main and tail), hubs, blades, dampeners, and swashplate		
06	Drive Train System: Transmission, gearboxes, shafting, oil systems, bearings, hangers, oil tank, and freewheeling assembly	13	Mission Equipment: Cargo hook, MMS hoist and platform assembly, and rescue ladder
07	Hydraulic System: Pumps, filters, reservoirs, cylinders, valves and servos	14	Emergency Equipment: Portable fire extinguisher and first aid kit
08	Instrument Systems: Flight instruments digital and analog rotor transmission and engine instruments, miscellaneous instruments (i.e., clocks), sending units, panels, and pitot-static instruments		
09	Electrical Systems: Motors, actuators, regulators, generators, starters, batteries, lighting, caution and warning lights, inverters, fault isolation systems, and avionics provisions		

Table B-2. Maintenance Allocation Chart

NOMENCLATURE OF END ITEMS OH-58D Helicopter							
(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVELS			(5) TOOLS AND EQPT	(6) REMARKS
			AVUM	AVIM	DEPOT		
00	Aircraft System						
01	Helicopter Assembly	Inspect Align	— . — — . —				
0101	Service		— . —			32, 73, 74	
0102	Clean		— . —				
0103	Fold Blades		— . —			82, 93, 94, 112	
0104	Tow		— . —			208, 213	
0105	Jack		— . —			75, 76	
0106	Moor		— . —			77	
0107	Cover		— . —			45	
0108	Hoist		— . —			104, 149	
0109	Sling Load			— . —		137, 149, 150, 178	
0110	Preservation		— . —				
0111	Weight and Balance		— . —	— . —			A
0112	Complete Painting				— . —	210	
0113	Sub Assembly Painting			— . —		210	
0114	Spot Painting		— . —			210	
0115	Treat for Surface Corrosion		— . —				
02	Airframe						
0201	Fuselage	Inspect Replace Repair	— . — — . —	 — . —	 — . —	130 176, 178 176, 178 143	
0201 01	Access Door	Inspect Replace Repair	— . — — . — — . —			130 176, 178	

Table B-2. Maintenance Allocation Chart (Cont)

NOMENCLATURE OF END ITEMS
OH-58D Helicopter

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVELS			(5) TOOLS AND EQPT	(6) REMARKS
			AVUM	AVIM	DEPOT		
0201	Crew Door	Inspect	— . —				
02		Replace	— . —			130	
		Repair	— . —			176, 178	
		Service	— . —				
0201	Seat Restraint	Clean	— . —				
03		Inspect	— . —				
		Replace	— . —			130	
0201	Back Cushion	Clean	— . —				
04		Inspect	— . —				
		Replace	— . —				
		Repair	— . —			130	
0201	Crew Seat	Inspect	— . —				
05		Replace	— . —			130	
0201	Forward Fairing Assy	Inspect	— . —				
06		Replace	— . —			130	
		Repair	— . —			176, 178	
0201	Engine Cowl Assy	Inspect	— . —				
07		Replace	— . —			130	
		Repair	— . —			176, 178	
0201	Cowl Duct	Inspect	— . —				
0701		Replace	— . —			130, 178	
		Repair		— . —		176	
0201	Aft Fairing Assy	Inspect	— . —				
08		Replace	— . —			130	
		Repair	— . —			176, 178	
0201	Wire Cutter	Inspect	— . —				
09		Replace	— . —			178	
		Repair	— . —			176, 178	
0201	Center Post Duct and	Inspect	— . —				
10	Doors	Replace	— . —			176, 178	
		Repair	— . —			176, 178	
0201	Windshield Assy	Inspect	— . —				
11		Replace	— . —			176, 178	
		Repair	— . —			176, 178	
		Service	— . —				
		Remove	— . —				

Table B-2. Maintenance Allocation Chart (Cont)

NOMENCLATURE OF END ITEMS
OH-58D Helicopter

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVELS			(5) TOOLS AND EQPT	(6) REMARKS
			AVUM	AVIM	DEPOT		
0201 12	Cabin Roof Skylight	Inspect	— . —				
		Replace	— . —			176, 178	
		Repair	— . —			176, 178	
		Service	— . —				
0201 13	Lower Window	Inspect	— . —			176, 178	
		Replace	— . —			176, 178	
		Repair	— . —				
		Service	— . —				
0201 14	Honeycomb Panels (Typical)	Inspect	— . —			167	
		Repair	— . —			176, 178	
0201 15	Avionics Support	Inspect	— . —				
		Repair	— . —			176, 178	
0201 16	UWP Mount Fitting	Inspect	— . —				
		Replace	— . —			176, 178	
		Repair	— . —				
		Overhaul			— . —		
0201 17	Cabin Beam Structure	Inspect	— . —				
0201 1701	Supports	Inspect	— . —				
0201 1702	Support Straps	Inspect	— . —				
		Replace			— . —		
0201 18	Glareshield	Inspect	— . —				
		Replace	— . —			178	
		Repair	— . —			176	
0202	Tailboom Assy	Inspect	— . —				
		Replace	— . —			178	
		Repair	— . —			176, 178	
		Overhaul			— . —		
0202 01	Tailboom Aft Fuselage Attach Fittings	Inspect	— . —				
		Repair	— . —			143, 176	
0202 02	Tail Rotor Gearbox Support Assy	Inspect	— . —			143, 176	
		Repair	— . —				
0202 03	Tailboom Bearing Hanger Supports	Inspect	— . —				
		Replace	— . —			176, 178	
		Repair				176, 178	

Table B-2. Maintenance Allocation Chart (Cont)

NOMENCLATURE OF END ITEMS
OH-58D Helicopter

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVELS			(5) TOOLS AND EQPT	(6) REMARKS
			AVUM	AVIM	DEPOT		
0202	Tail Rotor Driveshaft Cover	Inspect	— . —				
04		Replace	— . —			130	
		Repair	— . —			176, 178	
0202	Countermeasures Set AN/	Inspect	— . —			176, 178	
08	ALQ-144 IR Jammer Mount	Replace	— . —				
		Repair	— . —				
0202	Fin Assy	Inspect	— . —				
05		Replace	— . —			176, 178	
		Repair	— . —			167, 143	
		Overhaul			— . —		
0202	Horizontal Stabilizer	Inspect	— . —				
06		Replace	— . —			130	
		Repair	— . —			176, 178	
0202	Taillight Support	Inspect	— . —				
07		Replace	— . —			130	
		Repair	— . —			176, 178	
0203	Pylon	Inspect	— . —				
0203	Pylon Corner Mounts	Inspect	— . —				
01		Replace	— . —			178	
		Repair	— . —				
0203	Beam Assy, Left/Right	Inspect	— . —				
02	(Typical)	Replace	— . —			178	
		Repair	— . —				
0203	Forward Transverse Beam	Inspect	— . —				
03		Replace	— . —			199	
		Repair	— . —			178	
0203	Aft Transverse Beam	Inspect	— . —				
04		Replace	— . —			199	
		Repair	— . —			178	
03	Alighting Gear	Inspect	— . —				
0301	Landing Gear Assy	Inspect	— . —				
		Replace	— . —			178	
		Repair	— . —			176, 178	
0301	Crosstubes	Inspect	— . —				
01		Replace	— . —			178	
		Repair	— . —			176	

Table B-2. Maintenance Allocation Chart (Cont)

NOMENCLATURE OF END ITEMS
OH-58D Helicopter

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVELS			(5) TOOLS AND EQPT	(6) REMARKS
			AVUM	AVIM	DEPOT		
0301	Skid Tube Assy	Inspect	— . —				
02		Replace	— . —			178	
		Repair	— . —			176	
0301	Crosstube Support Beam	Inspect	— . —				
03	Assy	Replace	— . —			176, 178	
		Repair	— . —			176, 178	
				— . —		143	
04	Power Plant	Inspect	— . —				
		Repair	— . —			176, 178	
		Align	— . —			10, 59, 69, 125, 178, 179, 190	
0401	Engine (Buildup Assy)	Inspect	— . —				
		Replace	— . —			10, 69, 161	
		Repair	— . —			178, 180	
				— . —		130, 145	
		Overhaul			— . —		
		Service	— . —			178	
		Test	— . —			130	
0401	Oil Pressure Transmitter	Inspect	— . —				
01		Replace	— . —			29, 178	
0402	Air Induction	Inspect	— . —				
		Repair	— . —			176, 178	
0402	Air Induction Cowl	Inspect	— . —				
01		Replace	— . —			178	
		Repair	— . —			176	
		Service	— . —				
0402	Access Door	Inspect	— . —				
0101		Replace	— . —			178	
		Repair	— . —			176	
0402	Particle Separator	Clean	— . —				
0102		Inspect	— . —				
		Replace	— . —			178	
		Repair	— . —			176	
0402	Fan and Duct	Inspect	— . —				
0103		Replace	— . —			62, 178	
		Repair		— . —		37, 177, 178, 196	
0404	Engine Oil System	Repair	— . —			178	

Table B-2. Maintenance Allocation Chart (Cont)

NOMENCLATURE OF END ITEMS
OH-58D Helicopter

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVELS			(5) TOOLS AND EQPT	(6) REMARKS
			AVUM	AVIM	DEPOT		
0404	Oil Tank Assy	Inspect	— . —				
01		Replace	— . —			178	
		Repair		— . —		80, 178	
0404	Oil Cooler Bypass Valve	Inspect	— . —				
02		Replace	— . —			178	
		Repair		— . —		139, 178	
0404	Oil Tank/Cooler Support	Inspect	— . —				
03		Replace	— . —			178	
		Repair	— . —			176, 178	
0406	Power Plant Controls	Inspect	— . —			178	
0406	NG Engine Control Cable	Adjust	— . —			178, 180	
01		Replace	— . —			178	
		Repair	— . —			178, 180	
0406	Fuel Control Lever/Clevis	Adjust	— . —			180	
0102		Replace	— . —			178	
		Repair	— . —			180	
0407	Engine Mounts	Inspect	— . —				
		Replace	— . —			125, 178	
		Repair	— . —			178	
0407	Engine Mount Trunnion	Inspect	— . —				
01		Replace	— . —			178	
		Repair	— . —				
0408	Forward Firewall	Inspect	— . —				
		Replace	— . —			178	
		Repair	— . —			143, 176	
0409	Aft Firewall	Inspect	— . —				
		Replace	— . —			178	
		Repair	— . —			143, 176	
05	Rotor Systems	Inspect	— . —				
0501	Main Rotor Hub and Blade Assy	Inspect	— . —				
		Replace	— . —			151, 166, 178	
		Align	— . —			45, 207	
0501	Plate Assy, Mast	Inspect	— . —				
01		Replace	— . —			151, 178	
		Repair		— . —		142, 144	

Table B-2. Maintenance Allocation Chart (Cont)

NOMENCLATURE OF END ITEMS
OH-58D Helicopter

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVELS			(5) TOOLS AND EQPT	(6) REMARKS
			AVUM	AVIM	DEPOT		
0501 02	Expandable Blade Bolt	Inspect	— . —				
		Replace	— . —			151, 178	
		Repair	— . —			178	
0501 03	Blade Bolt	Inspect	— . —				
		Replace	— . —			151, 178	
0501 04	Main Rotor Hub Assy	Inspect	— . —				
		Replace	— . —			151, 178	
		Repair	— . —			3, 45, 151, 166, 232	
				— . —		3, 142, 166	
		Overhaul			— . —		
0501 0401	Hub Upper Plate Assy	Inspect	— . —				
		Replace	— . —			178	
		Repair		— . —		142	
0501 0402	Pitch Horn Assy	Inspect	— . —				
		Replace		— . —		178	
		Repair		— . —		46, 142	
0501 0403	Yoke Assy	Inspect	— . —				
		Replace	— . —			178	
		Repair		— . —		142, 144	
0501 0404	Grip Assy	Inspect	— . —				
		Replace	— . —			178	
		Repair		— . —		46, 142	
0501 0405	Adapter Assy	Inspect	— . —				
		Replace	— . —			178	
		Repair		— . —		142	
0501 0406	Hub Lower Plate Assy	Inspect	— . —				
		Replace	— . —			178	
		Repair		— . —		142	
0501 05	M/R Blade Assy	Inspect	— . —				
		Replace	— . —			151, 166, 178	
		Repair	— . —	— . —		78, 142, 232	
		Overhaul			— . —		
0502	Main Rotor Rotating Controls	Inspect	— . —				
		Replace	— . —			166, 178	
		Repair		— . —		45, 142	

Table B-2. Maintenance Allocation Chart (Cont)

NOMENCLATURE OF END ITEMS
OH-58D Helicopter

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVELS			(5) TOOLS AND EQPT	(6) REMARKS
			AVUM	AVIM	DEPOT		
0502	Pitch Links	Inspect	— . —				
01		Replace	— . —			178	
		Repair	— . —			178	
0502	Link Assy, Drive	Inspect	— . —				
02		Replace	— . —			178	
		Repair		— . —		142	
0502	Lever Assy, Drive	Inspect	— . —				
03		Replace	— . —			178	
		Repair		— . —		46, 142	
0502	Drive Hub Set	Inspect	— . —				
04		Replace	— . —			178	
		Repair		— . —			
0502	Gimbal Ring Assy	Inspect	— . —				
05		Replace	— . —			178	
		Repair		— . —		46, 142	
0502	Swashplate and Support	Inspect	— . —				
06	Assy	Replace	— . —			151, 166	
		Repair	— . —	— . —		45, 178	
		Overhaul			— . —	46, 142	
0502	Cap Assy, Outer	Inspect	— . —				
0601		Replace	— . —			178	
		Repair		— . —		142	
0502	Antidrive Lever	Inspect	— . —				
0602		Replace	— . —			178	
		Repair		— . —		46, 142	
0502	Antidrive Link	Inspect	— . —				
0603		Replace	— . —			178	
		Repair		— . —		141, 203	
0502	Collective Lever	Inspect	— . —				
0604		Replace	— . —			178	
		Repair		— . —		46, 142	
0502	Collective Link	Inspect	— . —				
0605		Replace	— . —			178	
		Repair		— . —		142	
0502	Outer Ring Assy	Inspect	— . —				
0606		Replace	— . —			178	
		Repair		— . —		142	

Table B-2. Maintenance Allocation Chart (Cont)

NOMENCLATURE OF END ITEMS
OH-58D Helicopter

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVELS			(5) TOOLS AND EQPT	(6) REMARKS
			AVUM	AVIM	DEPOT		
0502	Inner Ring Assy	Inspect		— . —			
0607		Replace		— . —		178	
		Repair		— . —		142	
0502	Sleeve Assy	Inspect		— . —			
0608		Replace		— . —		178	
		Repair		— . —		142	
0502	Support Assy	Inspect		— . —			
0609		Replace		— . —		151, 178	
		Repair		— . —		46, 142	
0504	Tail Rotor Hub and Blade Assy	Inspect	— . —				
		Replace	— . —			132, 178	
		Align	— . —			89, 209	
0504	Pitch Horn Assy	Inspect	— . —				
01		Replace	— . —			178	
		Repair	— . —	— . —		142, 178	
0504	Blade Assy	Inspect	— . —				
02		Replace	— . —			178	
		Repair		— . —		46, 142	
		Overhaul			— . —	79	
0504	Hub Assy	Inspect	— . —				
03		Replace	— . —			178	
		Repair	— . —			179	
				— . —		179, 191, 202	
0505	Tail Rotor Pitch Change Mechanism	Inspect	— . —				
		Replace	— . —			178	
0505	Pitch Change Rod Assy	Inspect	— . —				
01		Replace	— . —			178	
		Repair	— . —			178, 179	
		Adjust	— . —			178	
0505	Pitch Change Idler	Inspect	— . —				
02		Replace	— . —			178	
		Repair	— . —	— . —		142, 178	
0505	Pitch Change Lever	Inspect	— . —				
03		Replace	— . —			178	
		Repair	— . —			142, 178	

Table B-2. Maintenance Allocation Chart (Cont)

NOMENCLATURE OF END ITEMS
OH-58D Helicopter

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVELS			(5) TOOLS AND EQPT	(6) REMARKS
			AVUM	AVIM	DEPOT		
0505	Pitch Change Trunnion	Inspect	— . —				
04	Cap	Replace	— . —			178	
		Repair	— . —			178, 179	
0505	Pitch Change Trunnion	Inspect	— . —				
05	Assy	Replace	— . —			178	
		Repair	— . —			178, 179	
0505	Pitch Change Housing	Inspect	— . —				
06		Replace	— . —			178	
		Repair	— . —			178, 179	
0505	Pitch Change Control Tube	Inspect	— . —				
07		Replace	— . —			178	
		Repair	— . —			178	
06	Drive Train System	Inspect	— . —				
0601	Drive Train Components						
0601	Main Transmission and	Inspect	— . —				B
01	Mast Assy						
0601	Freewheeling Unit	Inspect	— . —				B
02		Replace	— . —				
0601	Tail Rotor Gearbox	Inspect	— . —				B
03							
0602	Engine-to-Transmission	Inspect	— . —			178, 190	
	Driveshaft Assy	Replace	— . —				
		Repair			— . —		
0603	Transmission	Inspect	— . —				
		Replace	— . —			6, 20, 72,	
						133, 178	
		Repair	— . —	— . —		179	
				— . —		141	
		Overhaul			— . —		
0603	Input Adapter	Inspect		— . —			
01		Replace		— . —		178	
		Repair		— . —		141, 179	
0603	Input Pinion Housing Assy	Inspect		— . —			
02		Replace		— . —			
		Repair		— . —		129	

Table B-2. Maintenance Allocation Chart (Cont)

NOMENCLATURE OF END ITEMS
OH-58D Helicopter

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVELS			(5) TOOLS AND EQPT	(6) REMARKS
			AVUM	AVIM	DEPOT		
0603	Input Pinion Magnetic Seal	Inspect		— . —			
0201		Replace		— . —		129, 133, 179	
0603	Lower Mast Bearing	Inspect			— . —		
03	Support	Replace			— . —		
		Repair			— . —		
0603	Case Assy Main	Inspect			— . —		
04		Replace			— . —		
		Repair			— . —		
0604	Standpipe Electrical, Torquemeter, and Mast Assy	Inspect	— . —				
0604	Standpipe Electrical Assy	Inspect	— . —				
01		Replace	— . —			129, 198	
		Repair	— . —			80, 177	
0604	Standpipe Cable Assy	Inspect	— . —				
0101		Replace	— . —			177	
		Repair	— . —			80, 177	
0604	Torquemeter System	Inspect	— . —			72, 232	
02		Replace	— . —			198	
		Repair	— . —			177	
		Calibrate	— . —			128, 177	
0604	Antibacklash Adapter Assy	Inspect	— . —				
0201		Replace	— . —			178	
		Repair	— . —			177, 178	
0604	Support and Bearing Assy	Inspect		— . —			
0202		Replace		— . —		178	
		Repair		— . —		141, 179	
0604	Mast Assy	Inspect	— . —				
03		Replace	— . —			20, 178	
		Repair		— . —		103, 223	
		Overhaul			— . —	107, 178	
0605	Freewheeling Unit	Inspect	— . —				
		Replace	— . —			72, 129	
		Repair			— . —	215, 230	
		Overhaul			— . —	42	

Table B-2. Maintenance Allocation Chart (Cont)

NOMENCLATURE OF END ITEMS
OH-58D Helicopter

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVELS			(5) TOOLS AND EQPT	(6) REMARKS
			AVUM	AVIM	DEPOT		
0605 01	Tail Rotor Drive Output Adapter	Inspect		— . —			
		Replace		— . —		178	
		Repair		— . —		141, 179, 200	
0605 02	Tail Rotor Output Shaft Support	Inspect		— . —			
		Replace		— . —		178	
		Repair		— . —		141, 179	
0605 03	Shaft Assy, Freewheeling	Inspect		— . —			
		Replace		— . —		178, 183	
		Repair		— . —		141, 179	
		Overhaul			— . —		
0605 04	Cap Assy, Freewheeling	Inspect			— . —		
		Replace			— . —		
		Repair			— . —		
0605 05	Housing Assy, Freewheeling	Inspect		— . —			
		Replace		— . —		178	
		Repair		— . —		141, 179	
0606	Tail Rotor Driveshafts System	Inspect	— . —			179	
		Repair	— . —				
0606 01	Shaft Assy Fan	Inspect	— . —				
		Replace	— . —			231	
		Repair	— . —			178	
0606 0101	Blower Assy	Inspect	— . —				
		Replace	— . —			178	
		Repair	— . —			178	
0606 02	Shaft and Bearing Assy	Inspect	— . —				
		Replace	— . —			178	
		Repair	— . —			179	
		Align	— . —			21, 102, 188	
0606 0201	Shaft Assy, Segmented	Inspect	— . —				
		Replace	— . —			178	
		Repair	— . —				
0606 03	Fore and Aft Shaft	Inspect	— . —				
		Replace	— . —				
		Repair	— . —				

Table B-2. Maintenance Allocation Chart (Cont)

NOMENCLATURE OF END ITEMS
OH-58D Helicopter

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVELS			(5) TOOLS AND EQPT	(6) REMARKS
			AVUM	AVIM	DEPOT		
0607	Tail Rotor Gearbox Assy	Inspect	— . —				
		Replace	— . —			4, 129, 232	
		Repair	— . —			44, 204	
		Overhaul			— . —		
0607 01	Input Seal	Inspect	— . —				
0607 02	Output Cap Assy	Inspect		— . —			
		Replace			— . —		
		Repair		— . —			
0608	Oil System	Inspect	— . —				
		Repair	— . —			67, 110	
07	Hydraulic System	Inspect	— . —				
0701	Actuators	Inspect	— . —				
0701 01	Collective Actuator	Inspect	— . —				
		Replace	— . —			178	
		Overhaul			— . —		
0701 02	Cyclic Actuators	Inspect	— . —				
		Replace	— . —			178	
		Overhaul			— . —		
0701 03	Tail Rotor Actuator	Inspect	— . —				
		Replace	— . —			178	
		Repair	— . —			178	
		Overhaul					
0703	Hydraulic Filter Assy	Inspect	— . —				
		Replace	— . —			178	
		Repair	— . —			139, 178	
0705	Pressure Switch, Manifolds, and Relief Valve						
0705 01	Pressure Switch	Inspect	— . —				
		Replace	— . —			162, 178	
0705 02	Manifolds	Replace	— . —			162, 178	
0705 03	Relief Valve	Replace	— . —			162,178	

Table B-2. Maintenance Allocation Chart (Cont)

NOMENCLATURE OF END ITEMS
OH-58D Helicopter

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVELS			(5) TOOLS AND EQPT	(6) REMARKS
			AVUM	AVIM	DEPOT		
0706	Hydraulic Solenoid Valve	Inspect	— . —				
		Replace	— . —			178	
		Repair	— . —			178	
0707	Hydraulic Reservoir	Inspect	— . —				
		Replace	— . —			178	
		Repair	— . —			178	
0708	Hydraulic Pump	Inspect	— . —				
		Replace	— . —			178	
		Overhaul			— . —		
08	Instrument Systems	Inspect	— .—				
0801	Engine, Rotor, and Transmission	Inspect	— . —				
0801	Multiparameter Display	Inspect	— . —				C
01	(MPD)	Replace	— . —			177	
		Repair				138	
		Overhaul					
0801	TGT/TRQ Indicator	Inspect	— . —				C
02		Replace	— . —			177	
		Repair			— . —	177	
		Overhaul			— . —		
0801	Dual Tachometer	Inspect	— . —				C
03		Replace	— . —			177	
		Repair			— . —	177	
		Overhaul			— . —		
0802	Flight Instruments	Inspect	— . —				
		Replace	— . —				
0802	Airspeed Indicator	Inspect	— . —				
01		Replace	— . —			177	
		Overhaul			— . —		
0802	Attitude Indicator	Inspect	— . —				
02		Replace	— . —			177	
		Overhaul			— . —		
0802	Altimeter Indicator	Inspect	— . —				
03	(Standby)	Replace	— . —			177	
		Overhaul			— . —		

Table B-2. Maintenance Allocation Chart (Cont)

NOMENCLATURE OF END ITEMS
OH-58D Helicopter

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVELS			(5) TOOLS AND EQPT	(6) REMARKS
			AVUM	AVIM	DEPOT		
0803	Pitot-Static Instruments and Air Data Systems	Inspect	— . —				
		Repair	— . —			177	
		Test	— . —			173	
0804	Navigation Systems	Inspect	— . —				
		Replace	— . —				
0805	Miscellaneous Instruments						
0805 01	Magnetic Compass (Standby)	Inspect	— . —			177	
		Replace	— . —			177	
		Repair			— . —		C
0805 02	Clock	Inspect	— . —			177	
		Replace	— . —			177	
		Repair			— . —		C
0805 03	FAT/OAT Gage	Inspect	— . —			177	
		Replace	— . —			177	
09	Electrical Systems	Inspect	— . —				
0901	Avionics Cooling	Repair	— . —			130, 178	
0901 01	Blower Assy	Inspect	— . —				
		Replace	— . —			178	
		Repair	— . —			144	
0903	Direct Current Power and Distribution System	Inspect	— . —				
		Repair	— . —			80, 177	
01	Transformer Rectifier Unit (TRU)	Inspect	— . —			177	
		Replace	— . —			177	
		Repair			— . —		
02	Starter-Generator	Inspect	— . —			178,162,237	
		Replace	— . —			178,162,237	
0201	Starter-Generator Brushes	Inspect	— . —			178	
		Replace	— . —			178	
0202	Starter Generator Driveshaft	Inspect	— . —			177	
03	Charger Monitor	Inspect	— . —			177	
		Replace	— . —			177	
		Repair			— . —		

Table B-2. Maintenance Allocation Chart (Cont)

NOMENCLATURE OF END ITEMS
OH-58D Helicopter

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVELS			(5) TOOLS AND EQPT	(6) REMARKS
			AVUM	AVIM	DEPOT		
04	DC External Power Receptacle	Inspect	— . —			177	
		Replace	— . —			177	
		Repair	— . —			177	
05	Overloading Sensing Control	Inspect	— . —			177	
		Replace	— . —			177	
		Repair			— . —		
06	Voltage Regulator	Inspect	— . —			177	
		Replace	— . —			177	
		Repair			— . —		
07	Voltage Sensor	Inspect	— . —			177	
		Replace	— . —			177	
		Repair			— . —		
0904	Alternating Current Power and Distribution System	Inspect	— . —				
		Repair	— . —			80, 177	
01	AC Generator	Inspect	— . —			178	
		Replace	— . —			178	
		Repair			— . —		
02	Generator Control Unit	Inspect	— . —			177	
		Replace	— . —			177	
		Repair			— . —		
03	Auto Transformer 26V	Inspect	— . —			177	
		Replace	— . —			177	
		Repair			— . —		
04	Power Monitor	Inspect	— . —			177	
		Replace	— . —			177	
		Repair			— . —		
0905	Lighting System	Inspect	— . —				
		Repair	— . —			80, 177	
01	Anticollision Light	Inspect	— . —			177	
		Replace	— . —			177	
		Repair	— . —			177	
0101	Anticollision Light Flasher	Replace	— . —			177	
02	Flood Light	Inspect	— . —			177	
		Replace	— . —			177	
		Repair	— . —			177	

Table B-2. Maintenance Allocation Chart (Cont)

NOMENCLATURE OF END ITEMS OH-58D Helicopter							
(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVELS			(5) TOOLS AND EQPT	(6) REMARKS
			AVUM	AVIM	DEPOT		
03	Side Position Light	Inspect Replace Repair	— . — — . — — . —			177 177 177	
04	Tail Position Light	Inspect Replace Repair	— . — — . — — . —			177 177 177	
0401	Position Light Dimming Resistor	Repair	— . —			177	
05	NVG Formation Lights	Inspect Replace Repair	— . — — . — — . —			177 177 177	
0501	NVG Formation Lights Switch	Replace	— . —			177	
0502	Night Vision Power Converter	Inspect Replace Repair	— . — — . — — . —			177 177 177	
06	Utility Light	Inspect Replace Repair	— . — — . — — . —			177 177 177	
0906	Miscellaneous Equipment	Inspect Repair	— . — — . —			 43, 59, 80, 197	
01	Remote Control Circuit Breakers	Replace	— . —			177	
02	Diodes	Replace	— . —			177	
03	Dimming Controls	Replace	— . —			177	
04	Relays	Replace	— . —			177	
05	Shunts	Replace	— . —			177	
06	Terminal Boards	Replace	— . —			177	
07	Terminal Junction Blocks	Replace	— . —			177	
08	Junction Blocks	Replace	— . —			177	
09	Ground Modules	Replace	— . —			177	

Table B-2. Maintenance Allocation Chart (Cont)

NOMENCLATURE OF END ITEMS
OH-58D Helicopter

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVELS			(5) TOOLS AND EQPT	(6) REMARKS
			AVUM	AVIM	DEPOT		
10	Rate Sensors	Inspect	— . —			177	
		Replace	— . —			177	
		Repair	— . —			177	
11	Data Bus Couplers or Terminators	Inspect	— . —			177	
		Replace	— . —			177	
		Repair	— . —			177	
0907	Power Plant and Transmission Electrical Equipment	Inspect	— . —				
		Repair	— . —			34, 80, 177	
01	Electrical Supervisory Control	Inspect	— . —			177	
		Replace	— . —			177	
		Repair	— . —			177	
02	Electronic Control Unit	Inspect	— . —			177	
		Replace	— . —			177	
		Repair	— . —			177	
03	Signal Conditioning Unit (Mast Torque)	Inspect	— . —			177	
		Replace	— . —			177	
		Repair	— . —			177	
04	Signal Conditioning Unit (TAMS)	Inspect	— . —			177	
		Replace	— . —			177	
		Repair	— . —			177	
05	TAMS Linear Variable Differential Transformer (LVDT)	Inspect	— . —			177	
		Replace	— . —			177	
		Repair	— . —			177	
06	Signal Conditioning Unit (Mast Torque)	Inspect	— . —			177	
		Replace	— . —			177	
		Repair	— . —			177	
07	Static Calibration (TAMS)	Calibration	— . —				
0908	Armament Electrical Equipment	Inspect	— . —				
		Repair	— . —			80, 177	
01	Armament Control panel	Replace	— . —			186	
0101	Integrally Lit Panel	Replace	— . —			186	
02	Armament Electronics Unit	Inspect	— . —			186	
		Replace	— . —			186	
		Repair	— . —			186	
						186	

Table B-2. Maintenance Allocation Chart (Cont)

NOMENCLATURE OF END ITEMS
OH-58D Helicopter

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVELS			(5) TOOLS AND EQPT	(6) REMARKS
			AVUM	AVIM	DEPOT		
03	Interface Electronics Assembly	Inspect	— . —			186	
		Replace	— . —			186	
		Repair	— . —			186	
04	Missile Sight Subsystem Electronics Unit	Inspect	— . —			186	
		Replace	— . —			186	
		Repair	— . —			186	
05	Remote Hellfire Electronics	Inspect	— . —			186	
		Replace	— . —			186	
		Repair	— . —			186	
06	Rocket Remote Assembly	Inspect	— . —			186	
		Replace	— . —			186	
		Repair	— . —			186	
10	Fuel System						

Table B-2. Maintenance Allocation Chart (Cont)

NOMENCLATURE OF END ITEMS
OH-58D Helicopter

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVELS			(5) TOOLS AND EQPT	(6) REMARKS
			AVUM	AVIM	DEPOT		
1001	Fuel System Components	Inspect	— . —				
		Repair	— . —			170, 178	
1001	Receiver Assy	Inspect	— . —				
01		Replace	— . —			178	
		Repair	— . —		— . —	178	
1001	Fuel Quantity Probe	Inspect	— . —				
02		Replace	— . —			178	
		Test	— . —			170	
1001	Fuel Boost Pump	Inspect	— . —				
03		Replace	— . —			178	
		Repair	— . —	— . —		177, 178	
1001	Low Fuel Pressure	Replace	— . —				
0301	Warning Switch						
1001	Fuel Valve	Inspect	— . —				
04		Replace	— . —			178	
		Repair	— . —			178	
1001	Fuel Shutoff System	Inspect	— . —				
05		Replace	— . —				
		Repair	— . —			178	
		Adjust	— . —				
1002	Fuel Cell	Inspect	— . —				
		Replace	— . —			156, 220	
		Repair			— . —	178	
11	Flight Controls						
1102	Collective Controls	Repair	— . —			80, 178	
				— . —		178, 189	
1102	Mixing Lever Support	Inspect	— . —				
01		Replace	— . —				
		Repair	— . —			178	
				— . —		142	
1102	Trunnion Bearing Assy	Inspect	— . —				
02		Replace	— . —			178	
		Repair	— . —			178	
1102	Copilot Stick Assy	Inspect	— . —				
03		Replace	— . —			178	
		Repair	— . —			178	

Table B-2. Maintenance Allocation Chart (Cont)

NOMENCLATURE OF END ITEMS
OH-58D Helicopter

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVELS			(5) TOOLS AND EQPT	(6) REMARKS
			AVUM	AVIM	DEPOT		
1102 04	Jack Shaft Assy	Inspect	— . —				
		Replace	— . —			178	
		Repair	— . —			178	
1102 05	Pilot Stick Assy	Inspect	— . —				
		Replace	— . —			177, 178	
		Repair	— . —			177, 178	
1102 0501	Panel Assy	Inspect	— . —				
		Replace	— . —			177, 178	
		Repair	— . —			177, 178	
1102 06	Tube Assy	Inspect	— . —				
		Replace	— . —			178	
		Repair	— . —			178	
1103	Cyclic Control System	Repair	— . —			80, 108, 178, 181, 182, 189, 202	
				— . —		108, 178, 181, 182, 189, 202	
1103 01	Mixing Lever Assy	Inspect	— . —				
		Replace	— . —			178	
		Repair	— . —			178	
1103 02	Force Gradient	Inspect	— . —				
		Replace	— . —			178	
		Repair	— . —			178, 222	
				— . —		107, 108, 189, 222	
1103 03	Magnetic Brake	Inspect	— . —				
		Replace	— . —			178	
		Overhaul			— . —		
1103 04	Cyclic Stick Assy, Copilot	Inspect	— . —				
		Replace	— . —			178	
		Repair	— . —			177, 178	
				— . —		108, 177, 178, 189, 202	
1103 05	Cyclic Stick Assy, Pilot	Inspect	— . —	— . —			
		Replace	— . —			178	
		Repair	— . —			177, 178	
				— . —		108, 177, 178, 189, 202	

Table B-2. Maintenance Allocation Chart (Cont)

NOMENCLATURE OF END ITEMS
OH-58D Helicopter

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVELS			(5) TOOLS AND EQPT	(6) REMARKS
			AVUM	AVIM	DEPOT		
1104	Directional Controls	Repair	— . —			46, 107, 108, 178, 189, 222	
				— . —		107, 108, 189	
1104 01	Pedal Assy	Inspect	— . —				
		Replace	— . —			178	
		Repair	— . —			178	
				— . —		108, 189	
1104 02	Support Assy (Typical)	Inspect	— . —				
		Replace	— . —			178	
		Repair		— . —		46, 108	
1104 03	Force Gradient	Inspect	— . —				
		Replace	— . —			178	
		Repair	— . —			178, 222	
				— . —		107, 108, 189, 222	
1104 04	Rotary Actuator	Inspect	— . —				
		Replace	— . —			178	
		Overhaul			— . —		
1105	Control Components	Repair	— . —			178	
1105 01	Bellcranks, Walking Beams, Idlers	Inspect	— . —				
		Replace	— . —			178	
		Repair	— . —			178	
				— . —		107, 108, 189, 222	
1105 02	Tube Assy	Inspect	— . —			178	
		Replace	— . —			178	
		Repair	— . —				
12	Environmental Control System	Inspect	— . —				A
1201	Heating System						
1201 01	Heat Mixing Valve	Inspect	— . —				
		Replace	— . —			62	
		Repair	— . —			178	
1201 02	Duct Assy	Inspect	— . —				
		Replace	— . —			178	
		Repair	— . —			178	

Table B-2. Maintenance Allocation Chart (Cont)

NOMENCLATURE OF END ITEMS
OH-58D Helicopter

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVELS			(5) TOOLS AND EQPT	(6) REMARKS
			AVUM	AVIM	DEPOT		
1202	Ventilating System	Repair	— . —			178	
1202	Plenum Assy	Inspect	— . —				
01		Replace	— . —			178	
		Repair	— . —			178	
13	Mission Equipment						
1301	Cargo Hook	Inspect	— . —				
		Replace	— . —			59, 178	
		Repair	— . —			178	
1302	MMS Hoist and Platform Assy						
1302	MMS Hoist	Inspect	— . —				
01		Replace	— . —			178	
		Repair	— . —			176, 178	
1302	MMS Platform	Inspect	— . —				
02		Replace	— . —			178	
		Repair	— . —			176, 178	
14	Emergency Equipment	Inspect	— . —				
		Replace	— . —			35	
		Repair	— . —			35	
1401	Miscellaneous Emergency Equipment						
1401	Fire Extinguisher	Inspect	— . —				
01		Replace	— . —			178	
1401	First Aid Kit	Inspect	— . —				
02		Replace	— . —			178	

(TABLE I.D. 922122)

Section III. TOOL AND TEST EQUIPMENT REQUIREMENTS

B-11. TOOL AND TEST EQUIPMENT REQUIREMENTS

Table B-3 lists the tools and test equipment, both special tools and common tool sets, required for each maintenance function as referenced in the Maintenance Allocation Chart.

Table B-3. Tool and Test Equipment Requirements

TOOL OR TEST EQUIPMENT REFERENCE CODE	MAINT. LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
1	AVUM	Adapter, 1/2 Inch Drive × 3/4 Inch Male	5120-01-335-2022	73-1524
2	AVUM	Adapter, Arm, Engine	4920-00-062-9531	SWE13852-1210
3	AVIM	Adapter, Hub, Main Rotor	4920-01-043-9807	SWE13852-750
4	AVUM	Adapter, Spanner Input	4920-01-195-0695	T103216-101
5	AVUM	Adapter, Torque Wrench, 1/2 Inch Box End	5120-01-278-7266	AS954 or FRDH161
6	AVUM	Adapter, Transmission Trailer	1730-01-206-6544	SWE13845
7	AVUM	Apron, Utility	8415-00-082-6108	A-A-55063
8	AVUM	Bolt, Shear	5306-01-014-2213	NAS1305-25N
9	AVUM	Borescope	6650-01-141-5999	IF8D3-15
10	AVUM	Bracket, Angle, Engine Lifting	5340-01-200-9684	6889888
11	AVUM	Bucket (5 Gallon)	7920-01-343-1695	A-A-1737
12	AVUM	Caliper Set, Outside Micrometer	5210-00-554-7134	GGG-C-105
13	AVUM	Caliper, Inside Micrometer	5210-00-221-1921	GGG-C-105
14	AVUM	Caliper, Vernier, 0-24 Inch	5210-00-234-8017	GGG-C-111
15	AVUM	Caps, Vise Jaw	5120-00-221-1506	GGG-C-137
16	AVUM	Clamp, “C ”, 6 Inch	5120-00-180-0909	GGG-C-406
17	AVUM	Cleaner Vacuum, Pneumatic	7910-00-807-3704	A1625
18	AVUM	Cleaner, Ultrasonic	4940-01-027-7021	8845-20
19	AVUM	Clevis, Lifting Eye	1680-00-543-7292	T101897

Table B-3. Tool and Test Equipment Requirements (Cont)

TOOL OR TEST EQUIPMENT REFERENCE CODE	MAINT. LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
20	AVUM	Clevis, Mast Lifting	4920-01-236-9841	T103353-101
21	AVUM	Clinometer	6675-00-707-8695	TB101
22	AVUM	Combination Square	5210-00-078-8949	GGG-S-656
23	AVUM	Crowfoot, 3/8 Inch	5120-00-541-4072	AN8508-6
24	AVUM	Crowfoot, 9/16 Inch	5120-00-541-4074	AN8508-9
25	AVUM	Crowfoot, 5/8 Inch	5120-01-348-9464	AN8508-10
26	AVUM	Crowfoot, 11/16 Inch	5120-00-236-2261	GGG-C-1507
27	AVUM	Crowfoot, 7/8 Inch	5120-00-187-6759	A16150-015
28	AVUM	Crowfoot, 3/4 Inch	5120-01-335-1155	FC024
29	AVUM	Crowfoot, 1 Inch	5120-00-595-8213	FC32
30	AVUM	Crowfoot, 1-1/4 Inch	5120-01-348-9450	AN8508-20A
31	AVUM	Crowfoot, 1-3/8 Inch	5120-00-184-8410	FC44
32	AVUM	Crowfoot, 1-3/4 Inch	4120-00-184-8416	AN8506-22
33	AVUM	Crowfoot, 1-7/8 Inch	5120-00-184-8418	FC80
34	AVUM	Device, Boresight	4920-01-227-1771	T101662-101
35	AVUM	Device, Boresight (PDU, BRB, and ATAS)	1560-01-256-8919	T101844-105
36	AVUM	Device, Boresight (UWP, .50 CAL, and RKTS)	4920-01-395-9996	406-271-001-101
37	AVUM	Dial Indicator	5210-00-203-9354	Starrett 196B
38	AVUM	Driftpin, Taper 1/2 Inch	5120-00-239-0036	MS51800-2
39	AVUM	Driftpin, Taper 3/4 Inch	5120-00-239-0037	TCGX2TY1
40	AVUM	Drill, Pneumatic, Reversible	5310-00-288-7750	OO-D-691
41	AVUM	Extension, 1/2 Inch Drive, 5 Inch Long	5210-01-335-8174	4405

Table B-3. Tool and Test Equipment Requirements (Cont)

TOOL OR TEST EQUIPMENT REFERENCE CODE	MAINT. LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
△1				
△1				
42	AVUM	Fixture, Assembly Cap	4920-01-195-0699	T103308-101
43	AVUM	Fixture, Heat Gun	4940-01-032-4242	AD-1480
44	AVIM	Fixture, Maintenance	4920-01-194-2683	T103220-101
45	AVUM	Fixture, Turret Hoist	4920-01-231-8508	1D49625-1
46	AVIM	Freezer, 1.5 Cu. Ft.	4110-01-057-0052	ULT390
47	AVUM	Gage Set, Telescoping	5210-00-473-9350	GGG-G-17
48	AVUM	Gage, Depth Micrometer	5210-00-826-5368	GGG-C-105
49	AVUM	Gage, Depth, Dial Indicating	5210-00-710-4359	643J
50	AVUM	Gage, Pressure	6685-00-846-9720	GGG 76
51	AVUM	Gage, Trim Tab Bending	4920-01-192-4922	T103316-101
52	AVIM	Gage, Vacuum	6685-00-389-7935	248A
53	AVUM	Gloves, Cloth, Asbestos	8415-00-261-7015	HH-G-450
54	AVUM	Gloves, Heat Protective	8415-00-024-9505	MIL-G-82248
55	AVUM	Goggles, Industrial	4240-00-052-3776	GG-G-531
56	AVUM	Gun, Air Blow	4940-00-333-5541	GGG-G-770
57	AVUM	Gun, Flame Spray	1440-01-130-5702	TYPE11E
58	AVUM	Gun, Hand Lubrication	4930-00-253-2478	MIL-G-3859
59	AVUM	Gun, Heat	4940-00-314-9789	CV-5700 MINIGUN 3
60	AVUM	Gun, Heat	4940-01-286-7079	M83521/5-01
61	AVUM	Gun, Paint Spray	4940-00-261-8413	MIL-S-12877
62	AVUM	Gun, Panduit, Tie	5120-00-781-7891	GS2B
63	AVUM	Gun, Pneumatic Cleaning	4940-00-910-2687	3DGD520
64	AVUM	Hammer, 2 Pound	5120-00-061-8546	A-A-1305

△1 Indicates sequential insertion point for item that has been entered out of alphabetical order. See end of list.

Table B-3. Tool and Test Equipment Requirements (Cont)

TOOL OR TEST EQUIPMENT REFERENCE CODE	MAINT. LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
65	AVUM	Hammer, 4 Oz.	5120-00-061-8540	GGG-H-86
66	AVUM	Hammer, Pneumatic	5130-00-889-8985	OO-R-421
67	AVUM	Hammer, Slide	5120-00-150-7763	1156
68	AVUM	Handle, Hinge, 1/2 Inch Drive, 18 Inch Long	5120-01-335-8122	4435
69	AVUM	Hoist, (Suitable for job)		
70	AVUM	Hook, Static Discharge	Locally Manufactured Item	Refer to TB 385-4
71	AVUM	Hose, Air	4720-00-356-8577	V2130D
72	AVUM	Hose, Drain	4720-01-195-0688	H4713
73	AVUM	Hose, Drain	4720-01-195-0689	H4749
74	AVUM	Hose, Drain, Transmission	1615-01-237-8085	D771A-24
75	AVUM	Jack, Hydraulic	1730-00-734-9382	MILJ58094
76	AVUM	Jack, Pad		
77	AVUM	Kit, Aircraft Mooring	1730-00-089-7806	AA1730-1301
78	AVIM	Kit, Balancing Stand	4920-00-572-0987	7A050
79	AVIM	Kit, Blade Repair	4920-01-195-0693	T101835-101
80	AVUM	Kit, Electrical Connector	5935-01-161-5883	DMC664A
81	AVUM	Kit, Flourescent Inspection	6635-00-566-5198	FMI
82	AVUM	Kit, Main Rotor Blade Folding	1730-01-227-1750	T101840-105
83	AVUM	Kit, MMS Jib Hoist	1730-01-265-1825	ES-C-38609
84	AVUM	Kit, Puller	5180-00-423-1596	GGG-P-781
85	AVUM	Kit, Rotary Tool	5130-01-014-6856	381
86	AVUM	Kit, Seal Installation	5120-01-412-7470	ATAH-1-2
87	AVUM	Kit, Seal Removal	5120-01-413-9298	ATAH-1-1
88	AVUM	Key Set, Socket Head Screw	5120-00-935-4641	GGG-K-275

Table B-3. Tool and Test Equipment Requirements (Cont)

TOOL OR TEST EQUIPMENT REFERENCE CODE	MAINT. LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
89	AVUM	Kit, Static Balance	4940-01-186-6906	T101280-111
90	AVUM	Knife, Putty	5120-00-221-1536	GGG-K-481
91	AVUM	Lamp, Heat	6240-00-578-1567	77390
92	AVUM	Light, Extension	6230-00-042-5677	MIL-L-83762
93	AVUM	Link, Pitch	3040-01-346-1979	T101270-109
94	AVUM	Lock, Pitch, Gust	1730-01-185-9016	T101270-111
95	AVUM	Magnifier, 5 × - 12 × Power, 20MM Lens	6650-00-133-7743	11728227
96	AVUM	Mallet, Rawhide	5120-00-293-3397	GGG-H-33
97	AVUM	Mallet, Rubber	5120-00-293-3399	GGG-H-33
98	AVUM	Multimeter, Digital	6625-01-139-2512	T00377
99	AVUM	Ohmmeter	6625-01-125-3471	247000
100	AVUM	Oscilloscope	6625-00-228-2201	AN/USM-281A
101	AVUM	Pail, Plastic 12 Qt.	7420-00-246-1097	MIL-P-43520
102	AVUM	Plate Set Assembly	4920-01-236-9835	T102146-101
103	AVIM	Plate, Remove and Install Bearing	5120-01-195-0703	T103318-101
104	AVIM	Plate, Transmission Cover Lift	4920-01-185-9023	T103314-101
105	AVUM	Pliers, Retaining Ring	5120-00-293-0186	GGG-P-480
106	AVUM	Plumb Bob, Brass	5210-00-238-3298	GGG-P-501
107	AVUM	Press, Arbor Hand	3444-01-076-0226	Y-330-CA
108	AVIM	Press, Drill Upright	3413-00-964-9379	1203260
109	AVUM	Protractor	5220-01-251-2120	02500-01
110	AVUM	Puller, Flange	5120-00-177-9364	518
111	AVIM	Pump, Vacuum	4310-00-055-0665	1398M

Table B-3. Tool and Test Equipment Requirements (Cont)

TOOL OR TEST EQUIPMENT REFERENCE CODE	MAINT. LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
112	AVUM	Rack Assembly, Main Rotor Folding	1730-01-345-2023	T101828-105
113	AVUM	Ratchet Handle, 1/2 Inch Drive	5120-01-377-0235	4490
114	AVUM	Reamer Set	3455-00-449-7213	SC3455-95CLA05
115	AVUM	Reamer, Hand Taper Pin, No. 3	5110-00-253-3169	GGG-R-180
116	AVUM	Respirator, Half Mask, Air Filtering	4240-01-035-9250	GGG-M-125
117	AVUM	Riveter, Hand Blind	5120-00-357-6065	GGG-R-00395
118	AVUM	Rope (Suitable for job)		
119	AVIM	Sander, Orbital	5130-01-237-6997	4800
120	AVUM	Scale, Spring, 0 to 10 Pounds	6670-00-939-2540	719-10
121	AVUM	Scale, Spring, 0 to 50 Pounds	6670-00-254-4634	AAA-S-133
122	AVUM	Scale, Spring, 0 to 100 Pounds	6635-00-578-5285	PPT100
123	AVUM	Scraper, Plastic	7920-01-323-0793	A-A-3070
124	AVUM	Screwdriver, Phillips No. 3	5120-01-335-2506	77406
125	AVUM	Set, Alignment, Transmission-to-Engine	4920-01-186-6907	T103315-101
126	AVUM	Set, Drill 7/64 to 3/8 Inch Dia.	5133-00-980-3422	NAS907
127	AVUM	Set, Hand File, Swiss Pattern	5110-00-204-2685	GGG-F-331
128	AVUM	Set, Hole Saw	3455-00-684-3918	A-A-51135
129	AVIM	Set, Jackscrew	4920-00-710-7946	T101308
130	AVUM	Set, No. 2, Aviation Unit Maintenance, Airmobile	4920-00-567-0476	SC 4920-99-A92
131	AVUM	Set, Punch, Drive Pin	5120-00-883-3003	GGG-P-831
132	AVUM	Set, Spanner Attachment	5120-00-596-8652	AN8514
133	AVUM	Set, Spanner, Input	4920-01-195-0698	T103306-101

Table B-3. Tool and Test Equipment Requirements (Cont)

TOOL OR TEST EQUIPMENT REFERENCE CODE	MAINT. LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
134	AVUM	Set, Spatula	5120-00-056-3237	226244
135	AVUM	Set, Step Plate	5120-00-724-9883	GGG-P-781
136	AVUM	Set, Tap and Die	5136-00-357-7504	GGG-T-330
137	AVUM	Shackle Assembly	4030-01-048-4044	38850-00004-046
138	AVIM	Shop Set, Electrical Instrument	4920-00-165-1453	SC 4920-99-CL-A80
139	AVIM	Shop Set, Hydraulic, Airmobile	4920-00-165-1454	SC 4920-99-CL-A81
140	AVIM	Shop Set, Machine Shop, Airmobile	4920-00-405-9279	SC 4920-99-CL-A82
141	AVIM	Shop Set, Power Train, Airmobile	4920-00-001-4132	SC 4920-99-CL-A83
142	AVIM	Shop Set, Rotor, Airmobile	4920-00-405-9270	SC 4920-99-CL-A84
143	AVIM	Shop Set, Sheet Metal, Airmobile	4920-00-166-5505	SC 4920-99-CL-A85
144	AVIM	Shop Set, Tool Crib, Airmobile	4920-00-472-4183	SC 4920-99-CL-A86
145	AVIM	Shop Set, Turbine Engine	4920-00-224-3684	SC 4920-99-CL-A87
146	AVIM	Shop Set, Welding	4920-00-163-5093	SC 4920-99-CL-A88
147	AVUM	Simulator, Laser Source	5860-01-373-5386 or Equivalent	V706-50020-001
148	AVUM	Sleeve, Dial Test Indicator	4910-00-362-0476	196K
149	AVUM	Sling, Assembly, Helicopter Hoisting	4920-01-236-9827	T101284-107 or T101284-101
150	AVUM	Sling, Cargo	1670-01-027-2900	38850-00001-044
151	AVUM	Sling, Main Rotor Hub And Blade	1730-01-048-5538	T101626
152	AVUM	Socket, 25/32 Inch (20MM)	5120-01-349-1073	41-20MM

Table B-3. Tool and Test Equipment Requirements (Cont)

TOOL OR TEST EQUIPMENT REFERENCE CODE	MAINT. LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
153	AVUM	Socket, 1 Inch	5120-01-335-9073	4632
154	AVUM	Socket, 1-1/8 Inch	5120-00-935-7454	34236-02
155	AVUM	Socket, 1-1/4 Inch	5120-01-335-9049	4140
156	AVUM	Socket, 1-3/8 Inch	5120-00-261-2819	13-344
157	AVUM	Socket, Hex Head Driver 9/64 Inch	5120-00-044-1718	VA1718
158	AVUM	Socket, Hex Head Driver 7/32 Inch	5120-00-596-0939	AM-607
159	AVUM	Soldering Iron, Electric, 25 Watt	3439-00-895-2956	6202
160	AVUM	Soldering Iron, Electric, 55 Watt	3439-00-853-8760	1366
161	AVUM	Stand, Engine	4920-00-269-0329	4920EG008
162	AVUM	Stand, Maintenance (Suitable for job)		
163	AVUM	Stone, India Fine	5345-00-584-4529	A251F0
164	AVIM	Strap, Polypropylene	5340-01-431-3677	8854T999
165	AVUM	Strap, Support, Aft Crosstube	1670-00-725-1437	SP4212-1
166	AVUM	Support, Main Rotor Hub	4920-01-186-6905	T101277-101
167	AVUM	Syringe, Hypodermic	6515-00-494-8117	GG-S-945
168	AVIM	Test Support System	4920-01-199-4038	1D-50963-1
169	AVUM	Tester, Chip Detector Fuzz Burner	1560-01-258-1281	T103389-101
170	AVUM	Tester, Fuel System, Digital	4920-01-208-3635	102-00805
171	AVUM	Tester, Gas Turbine Temp, Barfield	4920-01-279-0652	TT-1000A
172	AVIM	Tester, Insulation Resistance, DC Portable	6625-01-286-8084	860PL
173	AVUM	Tester, Pitot Static	4920-01-388-6790	TS-4463/P

Table B-3. Tool and Test Equipment Requirements (Cont)

TOOL OR TEST EQUIPMENT REFERENCE CODE	MAINT. LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
174	AVIM	Tester, Pressure	6685-01-281-6851	2311F
175	AVUM	Thermometer, Self-Indication (minus 20 °C to plus 110 °C)	6685-00-851-4577	14-985B
176	AVUM	Tool Kit, Aircraft Maintenance, Airframe Repairer's	5180-01-376-0436	SC 5180-99-B02
177	AVUM	Tool Kit, Aircraft Maintenance, Electrical Repairer's	5180-01-375-6926	SC 5180-99-B06
178	AVUM	Tool Kit, Aircraft Maintenance, General Mechanic's	5180-01-375-6925	SC 5180-99-B01
179	AVUM	Tool Kit, Aircraft Maintenance, Powerplant	5180-01-375-6927	SC 5180-99-B07
180	AVUM	Tool Kit, Aircraft Maintenance, Powertrain	5180-01-375-6928	SC 5180-99-B13
△1				
181	AVUM	Tool Kit, Screw Thread Insert	5180-00-935-0737	4132-5-1
182	AVUM	Tool Kit, Screw Thread Insert	5180-00-935-0730	4131-2-1
△1				
183	AVIM	Tool Set, Mast Nut	4920-01-187-1552	T103313-101
184	AVIM	Tool Set, Installation Tool, Wear	5120-01-195-0702	T103311-101
185	AVUM	Tool Set, Aircraft Armament Repairer's Basic	5180-00-987-9816	SC 5180-95-CL-B09
186	AVUM	Tool Set, Aircraft Armament Repairer's, Supplemental	5180-00-994-9242	SC 5180-95-CL-B10
187	AVUM	Tool Set, Aircraft Maintenance, Aviation Foot Locker	4920-01-377-5412	SC 4920-99-B90
188	AVUM	Tool Set, Alignment	4920-01-231-1761	T103388-101
189	AVIM	Tool Set, Bearing Staking	5180-01-040-8879	T102095
190	AVUM	Tool Set, Driveshaft		SKSP1404-1

△1 Indicates sequential insertion point for item that has been entered out of alphabetical order. See end of list.

Table B-3. Tool and Test Equipment Requirements (Cont)

TOOL OR TEST EQUIPMENT REFERENCE CODE	MAINT. LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
191	AVIM	Tool Set, Tail Rotor Bearing	5120-01-195-0690	T101750-101
192	AVUM	Tool, A/C Generator Removal/ Installation		222LM96
193	AVUM	Tool, Band-it	5120-01-357-6878	A40199
194	AVUM	Tool, Card Extractor	4920-01-231-8510	1D54208-1
195	AVUM	Tool, Centering, Tail Rotor	1730-01-228-1640	T101752-101
196	AVIM	Tool, End Frame	4920-01-233-1813	T11108
197	AVUM	Tool, Insert — Extract	5120-00-018-0575	MS27534-22D
198	AVUM	Tool, Preload	5120-01-195-0709	T103350-101
199	AVIM	Tool, Pylon Beam, Transverse	5180-01-386-7814	T101299-101
200	AVUM	Tool, Removal Seal	5120-01-195-0697	T103307-101
201	AVUM	Tool, Rigging, Tail Rotor	4920-01-195-0692	T101751-101
202	AVIM	Tool, Roll Stake, Bearing	3419-00-177-9402	T101530-3
203	AVIM	Tool, Roll Stake	4920-01-236-9843	RST2162
204	AVIM	Tool, Seal, Input	5120-01-195-0696	T103219-101
205	AVIM	Tool, Stake, Bearing	5120-01-292-3895	RST2120
206	AVUM	Tool, Swashplate Rigging	5120-01-415-8406	T101291-103
207	AVUM	Tool, Trim Tab Bending	4920-01-195-7772	T103317-101
208	AVUM	Tow Bar	1730-00-967-9556	AA1730-1251
209	AVUM	Vibrex System, Basic	4920-01-040-7816	B4591
210	AVUM	Viscosimeter, Zahn No.2	6630-00-112-2180	VG7360
211	AVUM	Vise, Machine Table	3460-00-277-3504	A-A-51123
212	AVUM	Welder, Soldering and Brazing	3439-00-460-7198	W-TCP-K
213	AVUM	Wheels, Ground Handling	1730-00-980-9552	204-050-200-5

△1

△1 Indicates sequential insertion point for item that has been entered out of alphabetical order. See end of list.

Table B-3. Tool and Test Equipment Requirements (Cont)

TOOL OR TEST EQUIPMENT REFERENCE CODE	MAINT. LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
214	AVUM	Wrench, Ejector Rack Release	5120-01-068-8831	209-071-239
215	AVUM	Wrench, Nut, Seal	5120-01-195-0694	T101960
216	AVUM	Wrench, Open End, 1 Inch × 1-1/8 Inch	5120-00-187-7133	1735
217	AVUM	Wrench, Open End, 1-1/16 Inch × 1-1/4 Inch	5120-00-187-7134	A-A-1356
218	AVUM	Wrench, Open End, 1-3/16 Inch × 1-1/4 Inch	5120-00-555-9367	A-A-1351
219	AVUM	Wrench, Open End, 1-1/4 Inch × 1-5/16 Inch	5120-00-228-9518	A-A-1358
220	AVUM	Wrench, Open End, 1-3/8 Inch	5120-01-335-1221	VO4446
221	AVUM	Wrench, Open End, 1-1/2 Inch × 1-5/8 Inch	5120-00-184-8439	A-A-1356
222	AVUM	Wrench, Open End 1-3/4 Inch	5120-00-203-4801	1256
223	AVIM	Wrench, Power	5130-00-465-8537	T100965
224	AVIM	Wrench, Socket	5120-00-967-7699	T101449
225	AVUM	Wrench, Socket, 1/4 Inch Drive × 1/8 Inch	5120-00-596-0934	GGG-W-641
226	AVUM	Wrench, Socket, 1/4 Inch Drive × 5/32 Inch	5120-00-596-0940	GGG-W-641
227	AVUM	Wrench, Spanner	5120-00-513-1754	AN8515-1
228	AVUM	Wrench, Spanner	5120-00-113-4921	AN8515-7
229	AVUM	Wrench, Spanner	5120-00-967-7699	T101449
230	AVUM	Wrench, Spline	5120-01-006-4885	T101977
231	AVUM	Wrench, Spline	5120-00-177-9412	T101511
232	AVUM	Wrench, Torque, 30 to 200 Foot-Pounds	5120-01-125-5190	QJR3200B

Table B-3. Tool and Test Equipment Requirements (Cont)

TOOL OR TEST EQUIPMENT REFERENCE CODE	MAINT. LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
233	AVUM	Wrench, Torque, 60 to 300 Foot-Pounds	5120-01-292-4424	GGG-W-686
234	AVUM	Wrench, Torque, 0 to 600 Foot-Pounds	5120-00-482-2085	A-A-2411
235	AVUM	Wrench, Torque, 0 to 30 Inch-Pounds	5120-00-117-4832	A-A-2411
236	AVUM	Wrench, Torque, 10 to 50 Inch-Pounds	5120-01-292-4437	GGG-W-686
237	AVUM	Wrench, Torque, 0 to 150 Inch-Pounds	5120-01-355-1813	TE12FUA
238	AVUM	Wrench, Torque, 30 to 150 Inch-Pounds	5120-00-542-4489	GGG-W-686
239	AVUM	Wrench, Torque, 40 to 200 Inch-Pounds	5120-01-292-4410	GGG-W-686
240	AVUM	Wrench, Torque, 0 to 300 Inch-Pounds	5120-01-339-0370	TE25FUA
241	AVUM	Wrench, Torque, 150-750 Inch-Pounds	5120-01-292-4411	GGG-W-686
242	AVUM	Wrench, Torque, 0 to 1200 Inch-Pounds	5120-00-965-5937	A-A-1274
243	AVUM	Wrench, Torque, 700 to 1600 Inch-Pounds	5120-00-270-3121	GGG-W-686
△1 244	AVUM	Tool Kit, Electronic Equipment	5180-00-610-8177	SC 5180-91-CL-R07
△1 245	AVUM	Winch (Come-Along), Hand Operated		
△1 246	AVUM	Extractor, Ruptured Cartridge Case	4933-00-716-0041	7160041
△1 247	AVUM	Extractor, CTS Module	5120-01-377-4599	108T8234
△1 248	AVUM	Tool Rigging, Swashplate		406-201-002-101

Section IV. REMARKS

B-12. MAINTENANCE ALLOCATION CHART REMARKS

Table B-4 lists the remarks for each maintenance function as referenced in the Maintenance Allocation Chart.

Table B-4. Remarks

Reference Code	Remarks/Notes
A	Refer to applicable maintenance manual.
B	Includes serviceability check.
C	Limited repair at AVUM.

APPENDIX C

HELICOPTER INVENTORY MASTER GUIDE

C-1. HELICOPTER INVENTORY MASTER GUIDE

Appendix C lists those items of installed or loose equipment required by, and authorized for, using organizations to accomplish their primary or alternate mission. This list will serve to standardize the present inventory master guide to determine the inventoriable items of installed and loose equipment. Insofar as possible, items of equipment are listed in the sequence of their physical location within the helicopter area. Helicopter inventory is subject to change as a result of authorized changes (MWO's) and additions or deletions of property for special mission requirements; therefore, the selection of items of inventory from the inventory master guide may or may not provide a complete inventory list. When it is known that the master guide does not provide a complete inventory list, it will be necessary to research authorized changes (MWO's) and local command directives in order to compile an accurate and exact inventory list. Refer to DA PAM 738-751 for applicable forms and records.

C-2. SECURITY

It is desired that helicopter inventory records be unclassified. However, when equipment bearing a security classification is installed, or the installation of unclassified equipment is of a confidential or secret nature, accomplishment of the classification will be in accordance with the existing security regulation.

C-3. INVENTORIABLE ITEMS

NOTE

The selection of inventoriable items is without regard to the agency (governmental or contractual) furnishing the items.

Items listed are:

1. Items essential to the execution of the designated mission of the helicopter, such as electronic, photographic, armament, special mission instruments, and safety and comfort equipment.
2. Loose equipment delivered with the helicopter and items subject to pilferage or ready conversion to personal use.
3. Modification kits which are issued or distributed to owning organizations for installation and which are not immediately placed in work will be recorded on the affected helicopter DA Form 2408-17, Aircraft Inventory Record, and identified as loose equipment until modification is completed.
4. Equipment required for operation in special environments.

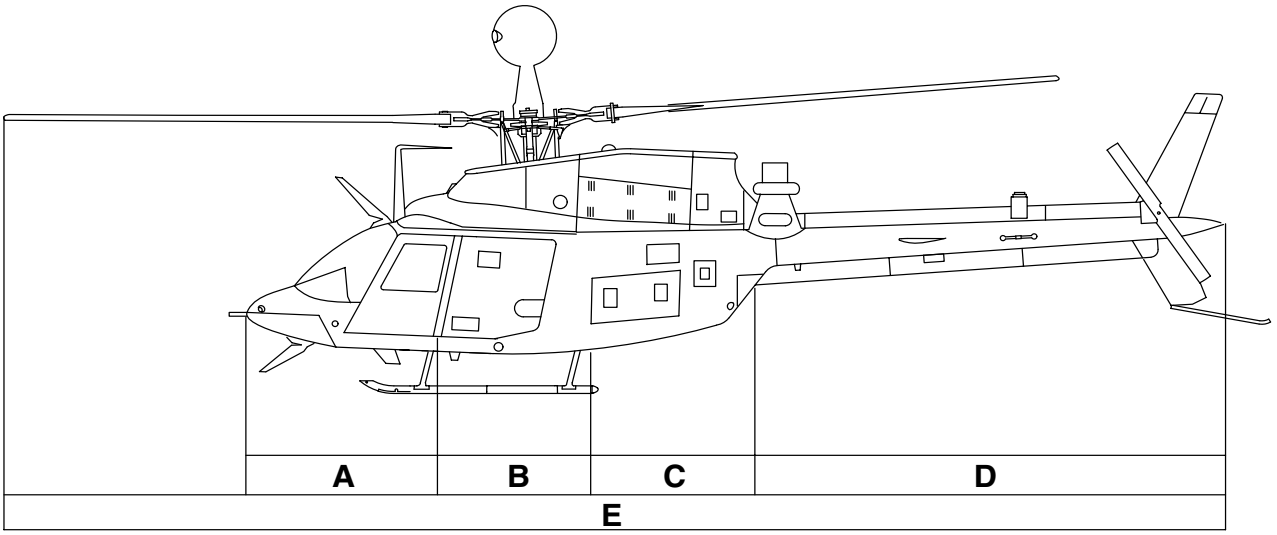
Items excluded are:

1. Nonaccountable items coded as expendable in the applicable stock lists.
2. Personal issue or furnished on unit allowance or other authority.
3. Items or components considered basic or integral parts of the airframe or basic helicopter such as engines, propellers, wheels, and standard instruments.
4. Equipment publications, checklists, and helicopter forms.

C-4. PERIODS OF INVENTORY

Inventoriable items shall be checked against the Aircraft Inventory Record, DA Form 2408-17 at the following periods:

1. Upon receipt of the helicopter.
2. Prior to transfer of the helicopter to another organization.
3. Upon placing helicopter in storage and upon removal from storage. Helicopter need not be inventoried while in storage.
4. Twelve months elapsed time since last inventory.
5. Loose equipment shipped under separate cover is inventoried upon transfer by the sending activity and immediately upon receipt by the receiving activity.



A. Nose and Crew Area Sta.0.0 to Sta. 73.0 Cockpit Layout
B. Cabin Area Sta. 73.0 to Sta. 127.5
C. Aft Fuselage Area Sta. 127.5 to Sta. 205.75
D. Tailboom Area Sta. 205.75 to Sta. 355.0
E. Exterior View
F. Loose Equipment

406961-1403-1
J2468

Figure C-1. Inventory Areas

Table C-1. Section A Inventory Guide

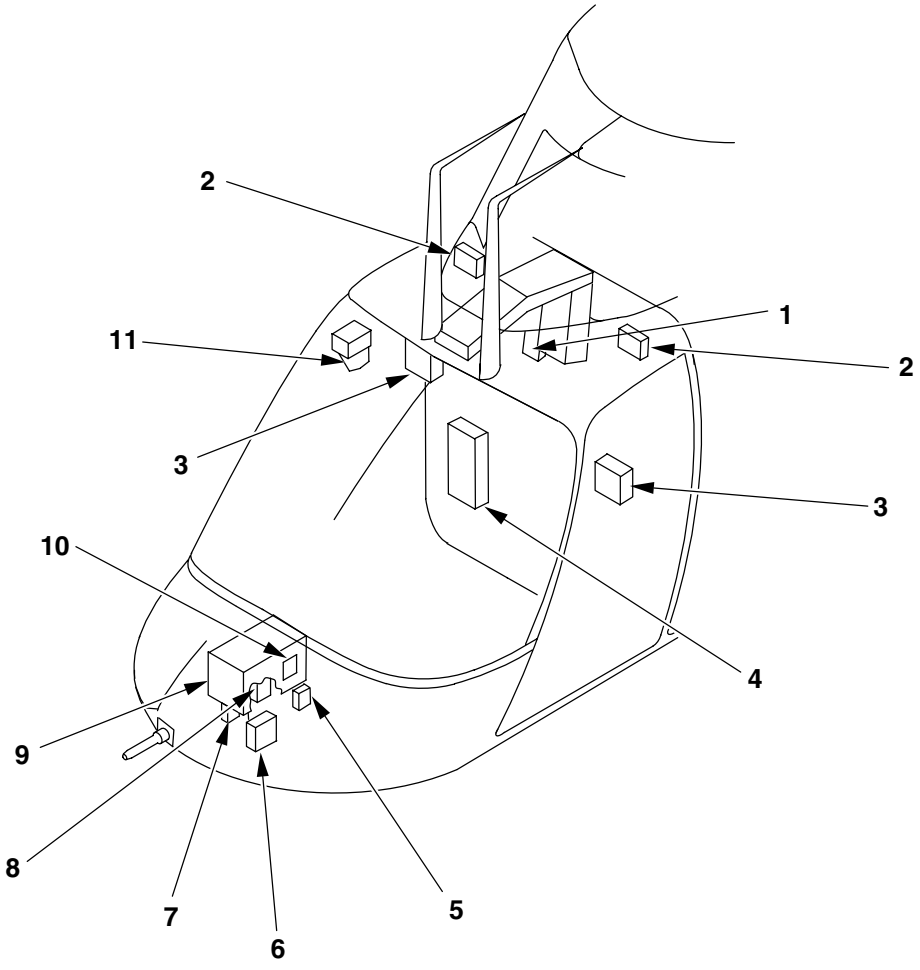
Item Location	Nomenclature	Model Number/ Part Number	OH-58D	OH-58D(R)
	Nose and Crew Area			
01	First Aid Kit	RR102	1	1
02	Power Converter, NVG	402-100-002	2	2
03	Mask Blower Support, L/H	406-070-003-103	1	1
	Mask Blower Support, R/H	406-070-003-105	1	1
	Support Installation, NBC (Mount Brackets)	406-070-003-101	2	2
04	Case, Map Data	406-070-052-101	1	1
05	DC External Power Relay	406-075-846-101	1	1
06	Radar Detecting Receiver	R-2218/APR-39A(V)1	1	1
07	Air Data Power Supply	406-074-015-101	1	1
08	Air Data Transducer	406-077-802-101	1	1
09	Battery, NiCad #1 Forward	406-075-806-101	1	1
10	Data Plate, Bell Helicopter (Manufacturer)	N/A	1	1
11	PDU Sight	206-371-001-103	1	1
	PDU Sight Mount	206-071-280-107	1	1
12	Fire Extinguisher	109-16537	1	1
13	CPG Side Armor Panel	206-070-646-117	1	1
14	Pilot and CPG Shoulder Harness	570667	2	2
	Pilot and CPG Shoulder Harness (Energy Attenuating Seat)	970030-1 and 970040-1	2	2
15	Pilot and CPG Seat Back Cushion	206-070-803-15	2	2
	Pilot and CPG Seat Back Cushion (Energy Attenuating Seat)	H57-23000-03	2	2
16	Pilot and CPG Seat Belts	206-070-030-3	2	2
	Pilot and CPG Seat Belts (Energy Attenuating Seat)	970030-1 and 970040-1	2	2
17	Pilot and CPG Crotch Belt (Energy Attenuating Seat)	970030-1 and 970040-1	2	2
18	Pilot and CPG Seat Cover	406-961-009-109	2	2
19	Pilot and CPG Seat Cushion (Energy Attenuating Seat)	H57-23000-01	2	2

Table C-2. Section A Inventory Guide (Cont)

Item Location	Nomenclature	Model Number/ Part Number	OH-58D	OH-58D(R)
20	CPG Back Armor Panel	206-070-646-118	1	1
	Pilot Back Armor Panel	206-070-643-117	1	1
21	CPG Seat Armor Panel	206-070-645-115	1	1
	Pilot Seat Armor Panel	206-070-644-115	1	1
	CPG Seat Armor panel (Energy Attenuating Seat)	406-370-801-101	1	1
	Pilot Seat Armor Panel (Energy Attenuating Seat)	406-807-800-101	1	1
22	Pilot Side Armor Panel	206-070-646-115	1	1

Table C-3. Section A Inventory Guide (Cont)

Item Location	Nomenclature	Model Number/ Part Number	OH-58D	OH-58D(R)
	Cockpit Layout			
23	MMS Control Panel	406-075-832-103	1	1
24	Multifunction Display, CPG/Pilot	8001671-902	2	2
25	Airspeed Indicator	206-075-806-103	1	1
26	Display, Remote Frequency	85000233-902	1	1
27	Attitude Indicator	406-375-220-101	1	1
28	RPM VSI	406-375-232-101	1	1
		406-375-232-103	1	1
29	TGT/TRQ Dual Indicator	406-375-231-105	1	1
		406-375_231-107		
30	Altimeter, Standby	406-075-824-101	1	1
31	Clock, Elapsed Time (Analog)	406-075-827-101	1	1
	Clock Elapsed Time (Digital)	1009	1	1
32	Indicator, Radar Warning	IP-1150A/APR-39(V)1	1	1
33	Magnetic Compass, Pilot Standby	406-075-828-101	1	1
34	Pilot MFD Auxiliary Control Pilot	406-075-833-105	1	1
35	Multiparameter Display	406-375-230-101	1	1
36	SCAS Control Panel	406-074-010-101	1	1
37	Fuel Control Panel	406-075-139-103	1	
38	Communication Control	C-10414(V)ARC or	2	2
		C-11746(V)3/ARC	2	2
39	Armament Control Panel	406-075-186-101	1	1
40	Multifunction Keyboard	8500132-903	1	1
41	CPG MFD Auxiliary Control Panel	406-375-200-103	1	1
		406-375-200-105	1	1



406961-1403-2
J2468

Figure C-2. Nose and Crew Area (Sheet 1 of 3)

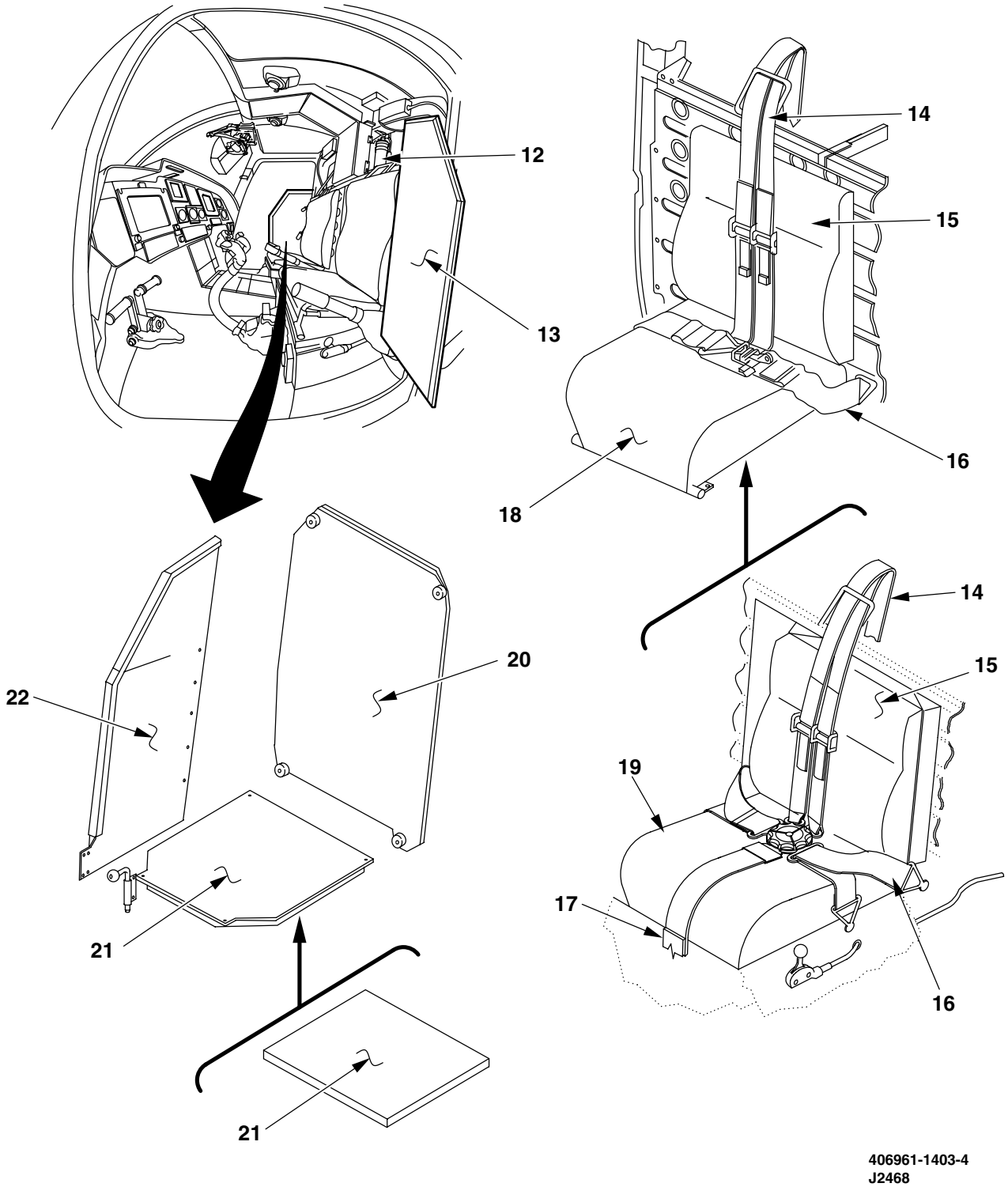


Figure C-2. Nose and Crew Area (Sheet 2 of 3)

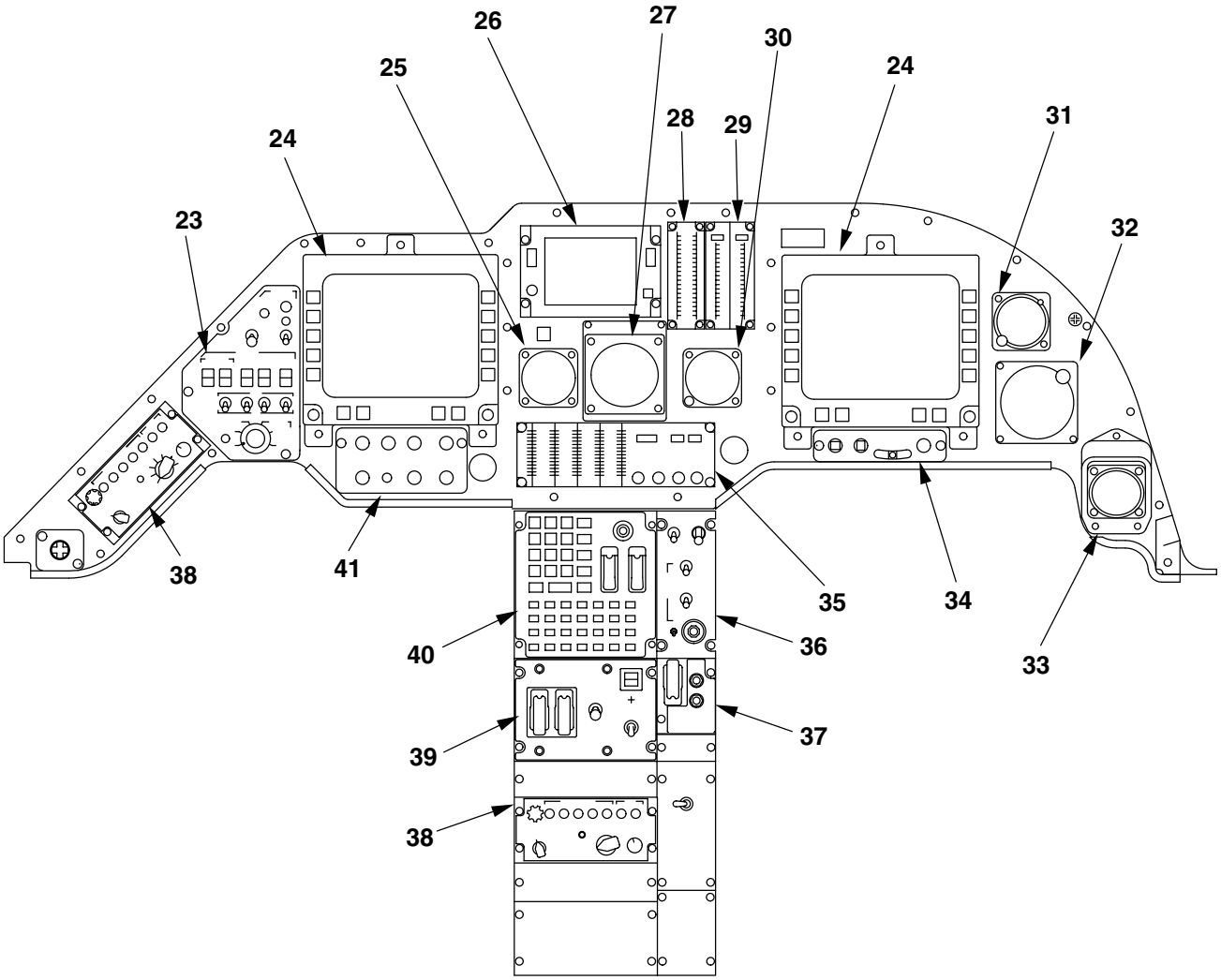


Figure C-2. Nose and Crew Area (Sheet 3 of 3)

Table C-2. Section B Inventory Guide

Item Location	Nomenclature	Model Number/ Part Number	OH-58D	OH-58D(R)
	Cabin Area			
42	Comparator, FM Homing Signal	CM-492/ARC-186(V)	1	0
43	Coupler, FM Antenna	406-077-805-101	1	1
44	TAMS Signal Conditioner	406-074-020-103	1	1
45	Data Loader Transfer Unit	622-9309-001	1	0
	Data Receiver Unit	172672-01-02	0	1
	Data Transfer Module	172265-11-01	0	1
46	Airborne Target Handover System (ATHS)	CP-1516A/ASQ	1	0
	Improved Data Modem	DM001-303	0	1
47	Remote HELLFIRE Electronics Unit	622-5646-004	1	1
48	IFF Transponder	RT-1471/APX-100(V)	1	1
49	Integrated System Processor	8515231-903	1	0
	Missile Sight System Electronics Unit	206-371-002-103	0	1
50	Audio Distribution Unit	406-077-801-107	1	1
51	Radar Altimeter Receiver/ Transmitter	RT-1115C/APN-209 or RT-1411/APN-209A(V)	1	1
52	Master Controller Processor Unit	8500088-906	2	0
	Improved Master Controller Processor Unit	8500088-921/940	0	2
53	Receiver/Transmitter, UHF/AM	RT-1614/ARC-164(V)	1	1
54	EGI Receiver Unit	34200650-3104	1	1
55	Receiver, APR-44, Lower	R-2097/APR-44(V)3	1	1
56	UHF High Pass Filter	205-075-381-1	1	1
57	Receiver/Transmitter, HF	RT-1432/U (ARC-199)	1	1
58	HF COMSEC Speech Processor Security Unit	TSEC/KY-75	1	1
59	VHF AM Band Pass Filter	406-075-382-1	1	1
60	Receiver/Transmitter, VHF/AM	RT-1300B/ARC-186(V)	1	1
61	Fuel Quantity Signal Control	406-060-603	1	1
62	ATAS Interface Electronics Unit (IEU)	481-200056	1	1
63	Mast Torque Signal Conditioner	406-075-823-109	1	0
64	Mast Torque Signal Conditioner	406-075-823-109	0	1

Table C-2. Section B Inventory Guide (Cont)

Item Location	Nomenclature	Model Number/ Part Number	OH-58D	OH-58D(R)
65	Receiver, APR-44, Upper SAM Receiver w/F-1503/APR-44(V)F	R-2098/APR-44(V)3	1	1
66	MMS Turret	ID49400-505	1	1
67	Rocket Remote Assembly	406-375-233-101	1	0
68	Armament Electrical Unit	406-075-184-101	1	1
69	MMS Processor	ID49402-509	1	1
70	Missile Sight System Electronics Unit	206-371-002-103	1	0
71	MMS Power Supply	ID49401-509	1	1

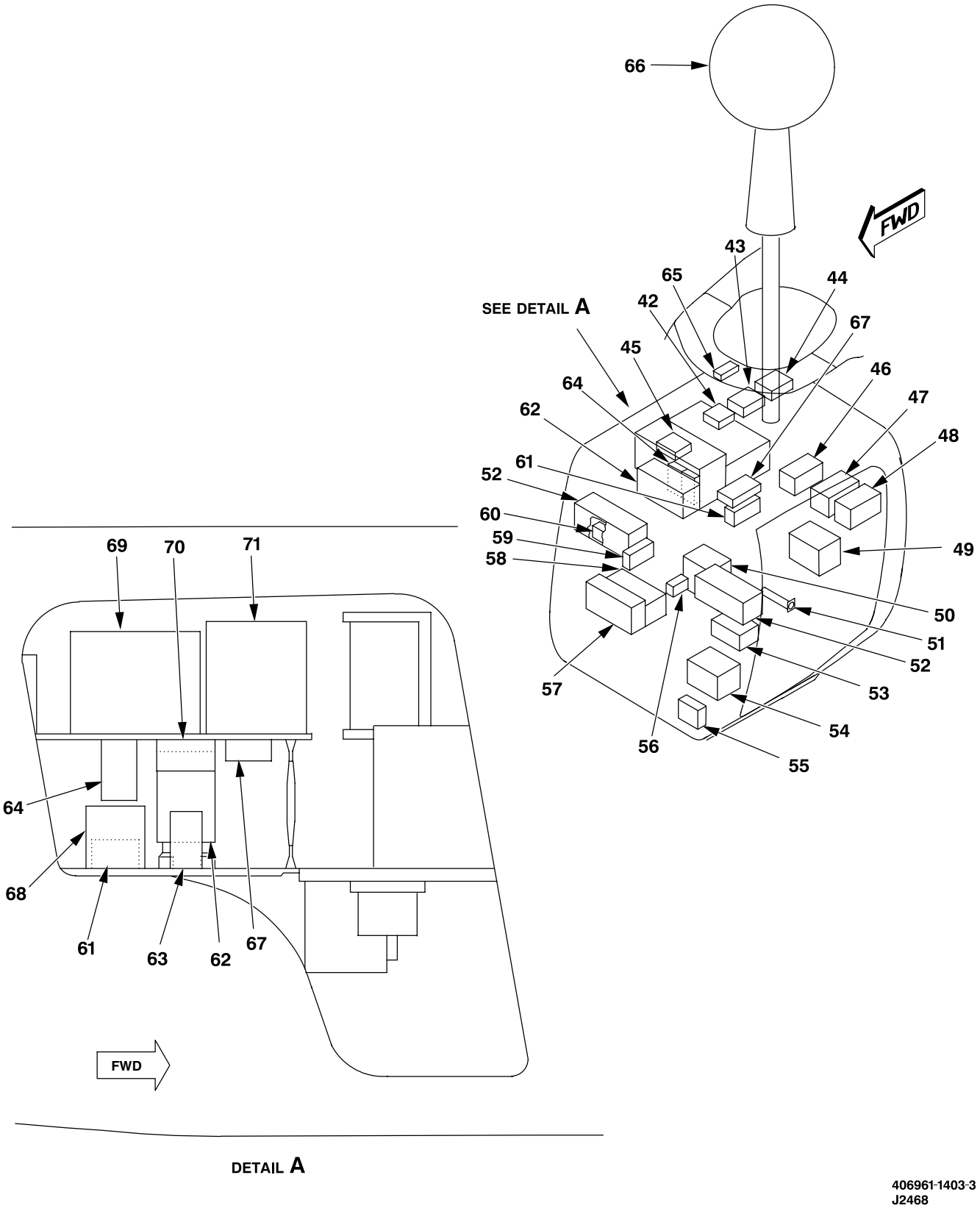
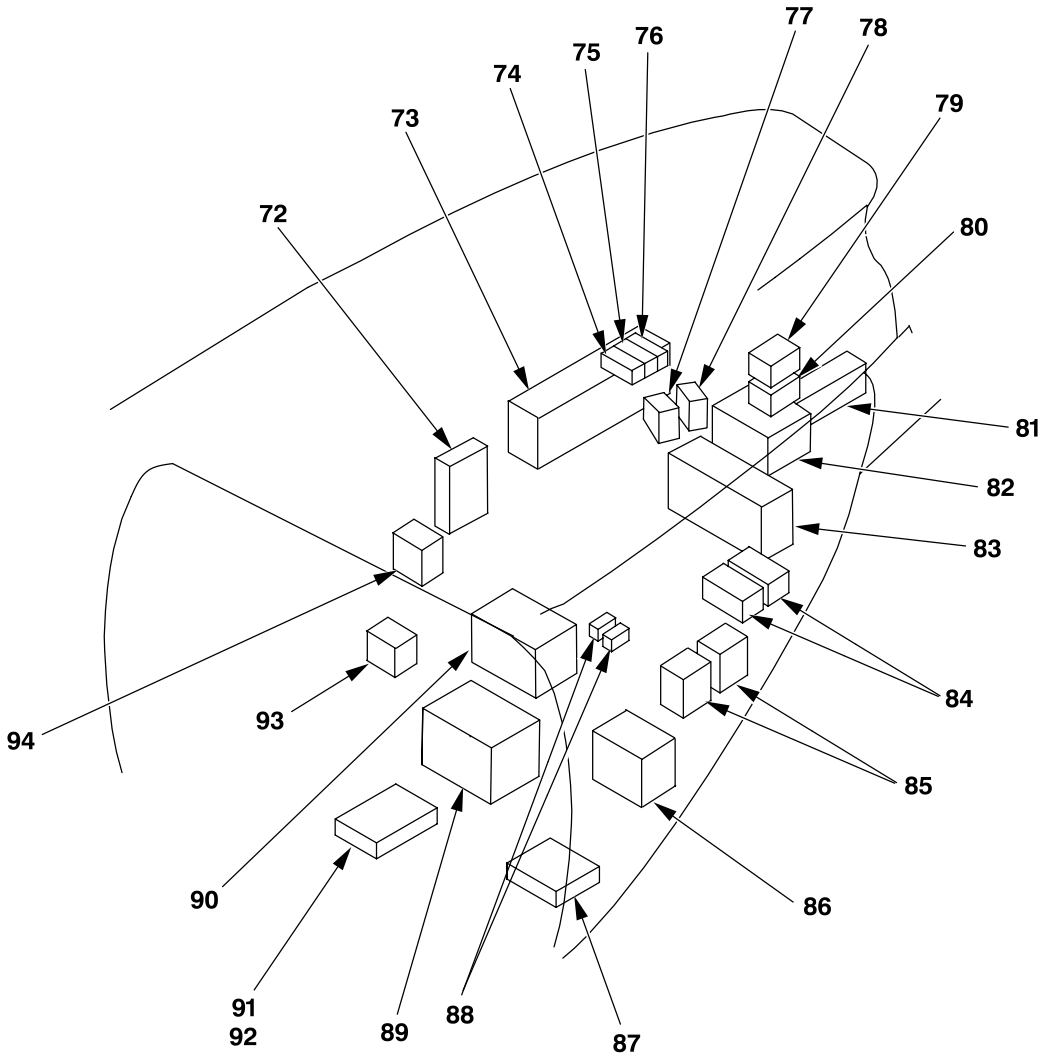


Figure C-3. Cabin Area

Table C-3. Section C Inventory Guide

Item Location	Nomenclature	Model Number/ Part Number	OH-58D	OH-58D(R)
	Aft Fuselage Area			
72	Static Inverter Assembly	406-075-802-103	1	1
73	Amplifier, Improved FM	AM-7189A/ARC	1	1
74	VHF FM #1 Filter	406-077-822-101	1	0
75	VHF FM #2 Filter	406-077-822-101	1	0
76	Antenna Transfer Switch	310C00200	1	1
77	APR-39 Receiver	R-2218/APR-39A(V)1	1	1
80	Comparator, APR-39 Receiver	CP-1597/APR-39A(V)1	1	1
81	Data Rate Adapter FM1	CV-3885/ARC-201	1	0
82	Data Rate Adapter FM2	CV-3885/ARC-201	1	0
83	HF Antenna Coupler	CU-2305/ARC-199	1	1
84	Interface Comparator	CM-493/AVR-2	1	1
85	IFF Computer	KIT1C/TSEC	1	1
86	ARC 201 Radio (FM-1 & FM-2)	RT-1478/ARC-201(V) or	2	2
	SINCGARS Radio Unit	RT-1478D/ARC-201 or RT-1300(B)/ARC-186(V)	0	2
	ARC 186 Radio (FM-1 & FM-2)	RT-1300(B)/ARC-186(V)	2	2
85	KY-58	TSEC/KY-58	2	2
86	Airborne Video Tape Recorder	406-377-003-101/103	1	1
87	Regulator, Voltage DC Power	22-375-060-111	1	1
88	KY-58 Transformer	406-077-140-103	2	2
89	Battery, NiCad #2, Aft	406-075-806-101	1	1
90	Transformer Rectifier Unit	209-075-999-103	1	1
91	Electronic Supervisory Control	23030755	1	0
92	Electronic Control Unit		0	1
93	AC Generator Control Unit	406-075-805-101	1	1
94	AC Power Monitor	M24021-2	1	1



406961-1403-5
J2468

Figure C-4. Aft Fuselage Area

Table C-4. Section D Inventory Guide

Item Location	Nomenclature	Model Number/ Part Number	OH-58D	OH-58D(R)
	Tailboom Area			
95	Countermeasure Transmitter	T-1360A(V)ALQ-144A(V)1	1	1
96	Antenna, EGI	20-27A-27-OH58	1	1
97	Antenna, VHF AM/FM	206-075-518-001	1	1
98	Antenna, HF	406-077-001-105	1	1
99	Countermeasure Transmitter Mount	406-830-127-101	1	1

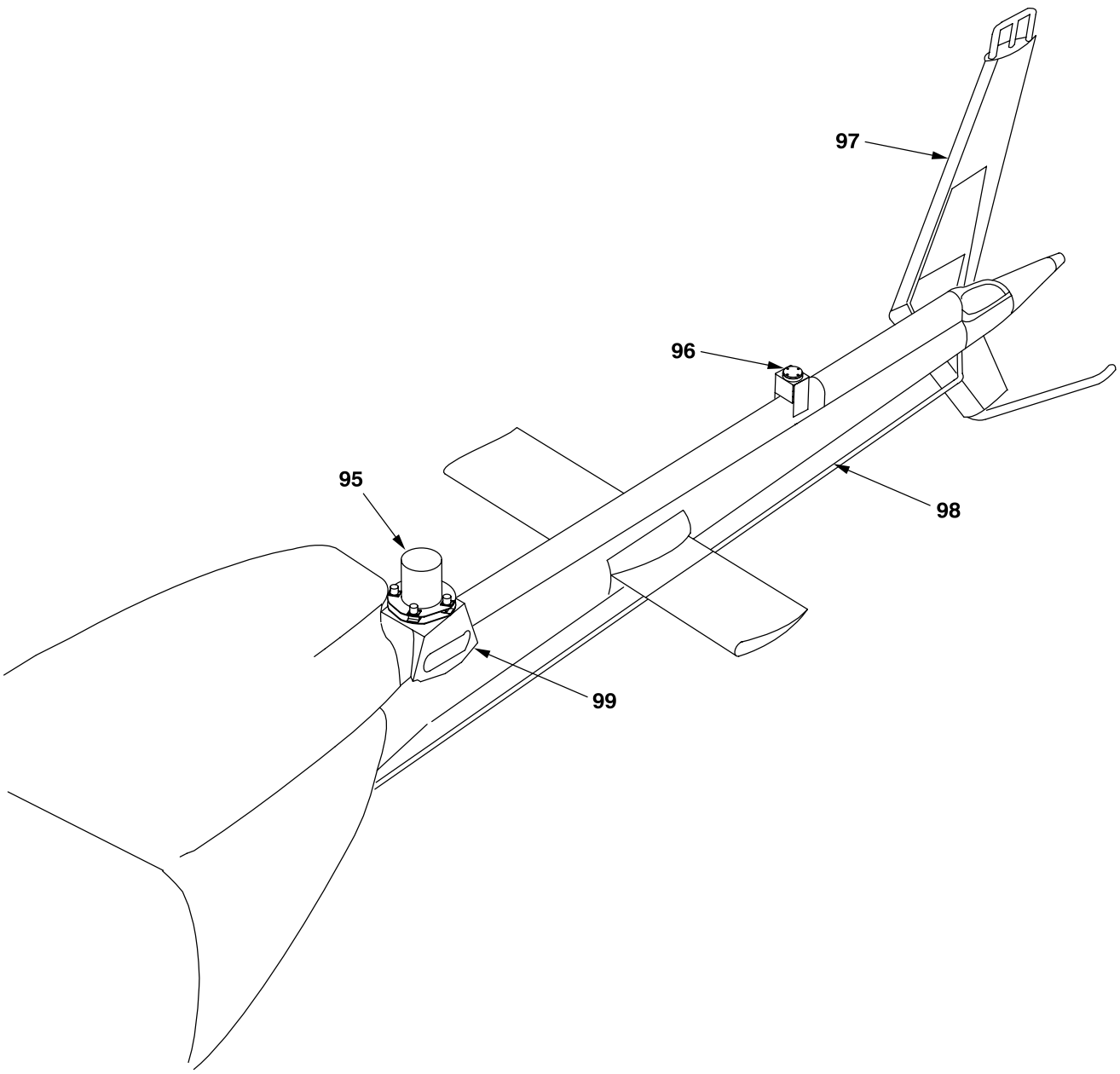


Figure C-5. Tailboom Area

Table C-5. Section E Inventory Guide

Item Location	Nomenclature	Model Number/ Part Number	OH-58D	OH-58D(R)
	Exterior View			
100	Antenna-Detector Left Aft/Right Fwd (Right Fwd Not Shown)	AS-3549/APR-39A(V)1	2	2
101	Antenna-Detector Right Aft/Left Fwd (Right Aft Not Shown)	AS-3548/APR-39A(V)1	2	2
102	APR-44 Antenna	AS-3266/APR-44(V)3	4	4
103	AS-2487 UHF Antenna	206-075-551-001	1	1
104	Cargo Hook	406-070-013-101	1	1
105	Ejector Rack	209-071-243-103	2	2
106	Ejector Rack Cable L/H	406-071-105-109/-117	1	1
107	Ejector Rack Cable R/H	406-071-105-111/-119	1	1
108	FM Homing Antenna	206-071-280-101	2	2
109	IFF Antenna	AT-741B/A	2	2
110	Intercommunication System Cable (L/H, R/H)	406-075-192-113	2	2
111	Laser Detector Sensor Unit	SU-130A/AVR-2A	4	4
112	Radar Altimeter Antenna	AS-3586/APN-209A(V)	2	2
113	Radar Detecting Blade Antenna	AS-2890/APR-39A(V)1	1	1
114	Universal Weapons Pylon (L/H)	406-071-105-117	1	1
115	Universal Weapons Pylon (R/H)	406-071-105-119	1	1
116	Jack Fitting	206-032-127-3	2	2
117	Jack Fitting	206-032-126-001	1	1

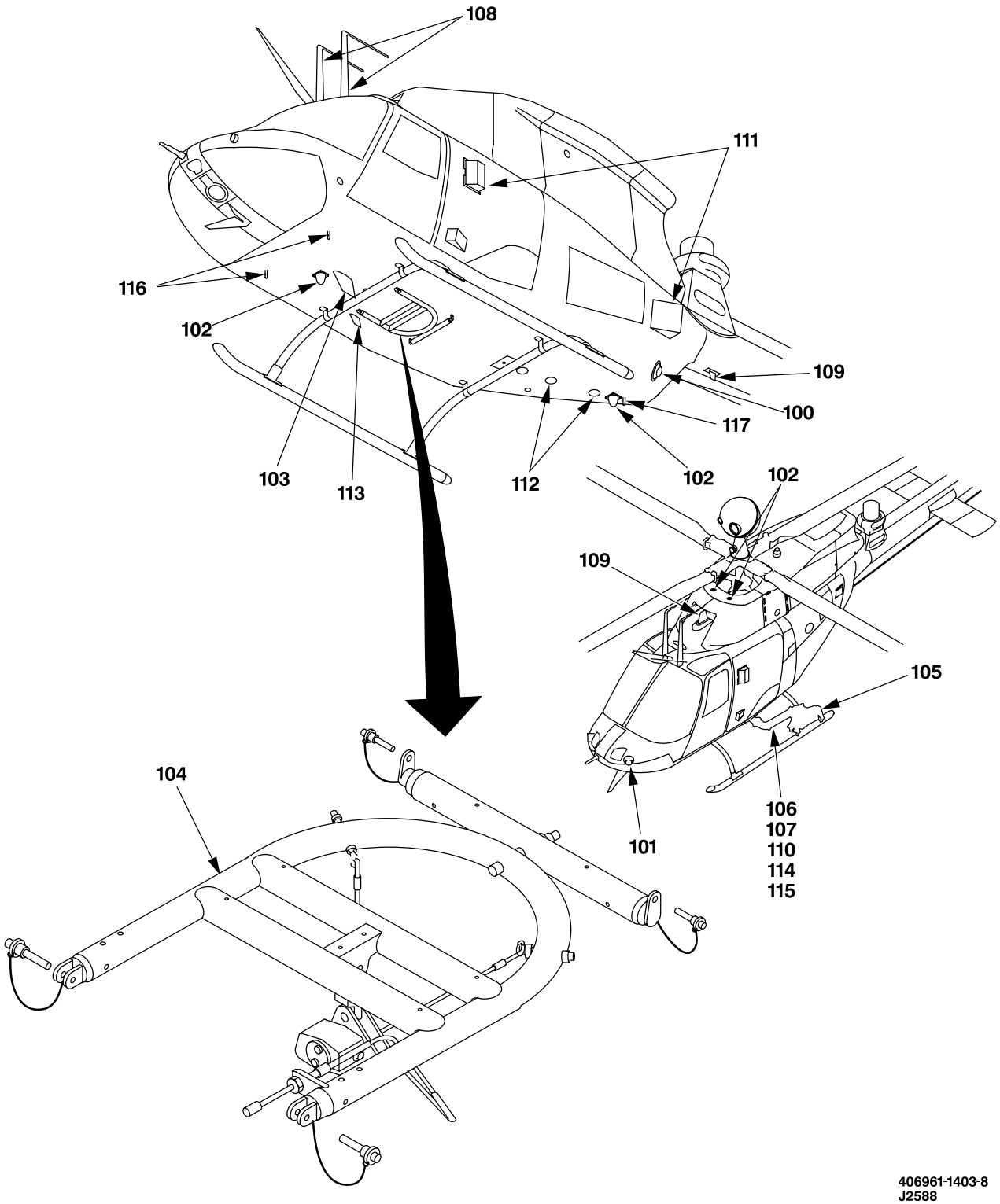


Figure C-6. (Section E) Exterior View

Table C-6. Section F Inventory Guide

Item Location	Nomenclature	Model Number/ Part Number	OH-58D	OH-58D(R)
	Loose Equipment			
	Binder Log Book	3052216-3	3	3
	(Log Book/Historical Record/ PPM)			
	Cover, ALQ-144A(V)1	SM-C-883910	1	1
	Cover, UWP Fitting L/H	406-030-187-103/104	1	1
	Cover, UWP Fitting R/H	406-030-187-119/120	1	1
	Engine Exhaust Cover	406-070-401-103	1	1
	Ignition Keys	N/A	2	2
	Main Rotor Tiedown Rig	406-070-300-107	1	1
	Main Rotor Tool Set	T101840-105	1	1
	Blade Fold Kit	406-570-003-101	1	1
	Pitch Lock Set	T101270-111	1	1
	Strap Assy, M/R (for Wand Assy)	T101831-101	1	1
	Wand Assembly, Tiedown	406-070-301-101	1	1
	Mast Mounted Sight Cover	4920-01-231-8508	1	1
*	(MMS) Cable Assy	406-075-628-121	1	1
	Optical Display Assembly (ODA)	07187/8506584-903	2	2
	Padlock w/Keys	N/A	1	1
	Pitot and Engine Air Inlet Cover	406-070-400-101	1	1
*	Sight Support Cover (Chinese Cap)	406-040-735-103	1	1
*	Sight Support Cover (Frisbee)	406-040-735-101	1	1
	Towing Eye, Aircraft	206-052-104-3	2/4	2/4
	Transit Case (ALQ-144)	CY-7611/ALQ-144A(V)1	1	1

NOTE: *Required for transportation of helicopter when MTA is removed

APPENDIX D

EXPENDABLE AND DURABLE ITEMS LIST

D-1. SCOPE

This appendix lists expendable supplies and materials you will need to operate and maintain the OH-58D Helicopter (Table D-1). These items are authorized to you by CTA 50-970, Expendable Items (Except Medical, Class V, Repair Parts, and Heraldic Items).

D-2. EXPLANATION OF COLUMNS

a. Column 1 — Item number. This number is assigned to the entry in the listing and is referenced in the narrative instructions to identify the material (e.g. "Use Drycleaning Solvent D199").

b. Column 2 — Maintenance Level. This column identifies the lowest level of maintenance that requires the listed item (enter as applicable):
AVUM — Aviation Unit Maintenance
AVIM — Aviation Intermediate Maintenance

c. Column 3 — National Stock Number. This is the National stock number assigned to the item; use it to request or requisition the item.

d. Column 4 — Description. Indicates the Federal item name and, if required, a description to identify the item. The last line for each item indicates the Commercial and Government Entity (CAGE) code in parentheses followed by the part number.

e. Column 5 — Unit of Measure (U/M). Indicates the measure used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in, pr). If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.

Table D-1.

ITEM NO.	MAINT. LEVEL	NATIONAL STOCK NUMBER	DESCRIPTION	U/M
1	AVUM	5350-00-967-5092	Abrasive Mats, Nonwoven, Nonmetallic, MIL-A-9962, Type I, Class 1 (CAGE 81349)	SH
2	AVUM	6810-00-184-4796	Acetone, Technical O-A-51 (CAGE 81348)	GL
3	AVUM	6830-00-264-6755	Acetylene, Technical, BB-A-106 (CAGE 81348)	CF
▌△1				
4	AVUM	8040-01-354-2884 8040-01-354-4355	Adhesive, 299-947-099 AV1258/ HV1258 (CAGE 02684)	PT
5	AVUM	8040-00-145-0019	Adhesive, 2216BA Scotchweld (CAGE 04963)	KT
6	AVIM	8040-00-515-2250	Adhesive, A1231B, 299-927-107, Type II, Class 4 (CAGE 97499)	PT
7	AVUM	8040-01-160-9489	Adhesive, CHO-BOND No. 1030 (CAGE 18565)	KT
8	AVUM		Adhesive, Dapcotac 3013, 299-947-066 (CAGE 58093) or EC3549 (Tan) (CAGE 6A670)	TU
9	AVUM	8040-00-097-6524	Adhesive, Dapcotac 3300 (CAGE 58093)	KT
10	AVUM	8040-00-142-9823	Adhesive, DC 732 RTV (CAGE 7 1984)	KT
11	AVUM	8040-01-043-5423	Adhesive, EA9320NA (CAGE 33564)	KT
12	AVUM	8040-00-152-0017	Adhesive, EA934NA (CAGE 04347)	KT
13	AVUM	8040-00-826-3535	Adhesive, Eastman 910 (CAGE 74364)	BT
14	AVUM	8040-00-932-1945	Adhesive, Epibond 1543, Part A and B, MMM-A-132 (CAGE 81348)	PT
15	AVUM	8040-01-088-7186	Adhesive, Epoxy, A-4, Metalset (CAGE 90414)	KT

△1 Indicates sequential insertion point for item that has been entered out of alphabetical order. See end of list.

Table D-1. (Cont)

ITEM NO.	MAINT. LEVEL	NATIONAL STOCK NUMBER	DESCRIPTION	U/M
16	AVIM	8040-00-116-1437	Adhesive, Film Form, Heat Resistant MMM-A-132, Type I, Class 2, (CAGE 80244)	SH
17	Deleted			
18	AVUM	8040-01-332-8876	Adhesive, Film, MIL-A-25463 (CAGE 81349)	RO
19	AVUM	8040-00-016-8662	Adhesive, Heat Resistant Airframe Structural Bonding, EA934 (CAGE 33564)	KT
20	AVIM	8040-00-463-7042	Adhesive, EA956 (CAGE 33564)	QT
21	AVUM	Local Purchase	Adhesive, Insulation No. 34 (CAGE 04963)	PT Spray Can
22	AVUM	8030-01-069-3046	Adhesive, Loctite 222, MIL-A-46050 (CAGE 05972)	PT
23	AVUM	8040-01-319-6226	Adhesive, Magnabond 6398 MMM-A-132 (CAGE 22121)	KT
24	AVUM	8040-00-944-7292	Adhesive, Metalset A-4NA, 6 Oz TUKT (CAGE 90414) RP 1258 (CAGE 02684) EA 9340 (CAGE 33564) Episeal 10-10 (CAGE 19012) MMM-A-1754 (CAGE 81384)	KT
25	AVUM	8040-00-083-8403	Adhesive, MIL-A-46106 Silicone General/ Purpose (CAGE 81349)	PT
26	AVIM	8040-00-664-4318	Adhesive, MMM-A-1617 (CAGE 81348)	KT
27	AVUM	8040-01-032-4051	Adhesive, Primer EC3960 (CAGE 04963)	KT
28	AVIM	8040-01-280-1462	Adhesive, Primer, EC 3924B (CAGE 04963)	QT
29	AVUM	8040-01-205-6819	Adhesive, Primer, METALBOND 6726 (CAGE 04622)	GL

Table D-1. (Cont)

ITEM NO.	MAINT. LEVEL	NATIONAL STOCK NUMBER	DESCRIPTION	U/M
30	AVUM	8040-00-845-4304	Adhesive, Primer, RTV 1200 (CAGE 71984)	PT
31	AVUM	8040-00-251-2312	Adhesive, RTV730 (CAGE 01139)	TU
32	AVUM	8040-00-181-7784	Adhesive, Rubber Base, General Purpose, M24, Two Part (CAGE 5B981)	KT
33	AVUM	8040-00-597-9723	Adhesive, Rubber, EC776 (CAGE 04963)	PT
34	AVUM	8040-00-839-4919	Adhesive, Scotch Grip Vinyl, Type EC1099 (CAGE 04963)	PT
35	AVUM	8040-00-181-7254	Adhesive, Silicone, MIL-A-25457, Type I, Class 1, (CAGE 81349)	KT
36	AVIM	8040-00-117-8510	Adhesive, Silicone, DC3145 — Clear, (CAGE 71984)	TU
37	AVUM	6850-00-270-5551	Alcoholic Phosphoric Acid Solution, Turco No. 1, MIL-C-10578 (CAGE 81349)	GL
38	AVUM	6810-00-205-6786	Alcohol, Denatured, O-E-760 (CAGE 81348)	QT
39	AVUM	6810-00-855-6160	Alcohol, Isopropyl, Technical TT-I-735, Type I (CAGE 81348)	GL
40	AVUM	9535-01-341-8288	Aluminum Alloy Sheet, 2024-T3, QQ-A-250/5, 0.025 Inch Thick (CAGE 81348)	SH
41	AVUM	9535-01-341-8289	Aluminum Alloy Sheet, 2024-T3, QQ-A-250/5, 0.032 Inch Thick (CAGE 81348)	SH
42	AVUM	9535-01-341-8291	Aluminum Alloy Sheet, 2024-T3, QQ-A-250/5, 0.040 Inch Thick (CAGE 81348)	SH
43	AVUM	9535-00-232-0569	Aluminum Alloy Sheet, 2024-T3, QQ-A-250/5, 0.050 Inch Thick (CAGE 14153)	SH

Table D-1. (Cont)

ITEM NO.	MAINT. LEVEL	NATIONAL STOCK NUMBER	DESCRIPTION	U/M
44	AVUM	5350-00-187-6268	Aluminum Oxide Abrasive Cloth, A-A-1048, 240 Grit (CAGE 58536)	RO
45	AVUM	8030-00-597-5367	Antiseize Compound, MIL-A-907 (CAGE 81349)	LB
46	AVUM	9150-00-159-5012	Assembly Fluid No. 1 (CAGE 56385)	PT
47	AVIM	9905-01-343-2095	Band, Marker, A10099 (CAGE 70847)	EA
48	AVUM	8135-00-282-0565	Barrier Material, Waterproof, MIL-B-131, Class 1 (CAGE 81349)	RO
49	AVUM	8135-00-224-8885	Barrier Material, Greaseproof, Grade A, Class 1, MIL-B-121, Type I (CAGE 81349)	RO
50	AVUM	5350-01-272-8757	Bead, Glass MIL-G-9954 (CAGE 39428)	QT
51	AVUM	7200-00-514-2417	Brush, Acid Swabbing, H-B-643 (CAGE 81348)	BX
52	AVIM	7920-00-227-1888	Brush, Adhesive, H-B-292 (CAGE 81348)	EA
53	AVUM		Brush, Bonding, Stainless Steel (CAGE 76652)	EA
54	AVUM	8020-00-263-3873	Brush, Paint, H-B-491, Type I, Class 2, Size 6 (CAGE 80244)	EA
55	AVUM	8135-00-061-5819	Cellophane, L-C-110 (CAGE 81348)	PK
56	AVUM	8305-00-267-3015	Cheesecloth, CCC-C-440 (CAGE 81348)	YD
57	AVUM	8030-00-057-2354	Chemical Conversion Coating (Alodine 1201) (Brush-on) MIL-C-81706, Class 1A, Form III (CAGE 81349)	JR
58	AVUM	8030-01-018-2838	Chemical Conversion Coating, Iridite 14-2, MIL-C-81706, Class 3, Form 2 (CAGE 80244)	LB

Table D-1. (Cont)

ITEM NO.	MAINT. LEVEL	NATIONAL STOCK NUMBER	DESCRIPTION	U/M
59	AVUM	8030-00-764-6176	Chromate Conversion Coating (Dow 19), Type VI (CAGE 96717)	JR
60	AVIM	8030-00-764-6176	Chrome Pickle-Brush Solution, DOW 17 Type VI (CAGE 96717)	PT
61	AVIM	6810-00-174-1818	Chromic Acid 5% Solution, OC303 (CAGE 81348)	PT
62	AVUM	6850-01-392-8430	Cleaner Alkaline, Brulin 815 GD (CAGE 94058)	GL
63	AVUM	6850-01-364-8328	Cleaner Alkaline, Daraclean 282 (CAGE 4L319)	GL
64	AVUM	4940-01-048-5912	Cleaner, Ultrasonic, S-7055-D1 (CAGE 25683)	GL
65	AVUM	6850-00-181-7594	Cleaner, Water Soluble, B and B 3100 (CAGE 21361)	CN
66	AVUM	6850-00-392-9751	Cleaning Compound, Optical Lens, MIL-C-43454 (CAGE 81349)	BT
67	AVUM	7920-00-044-9281 7920-00-165-7195	Cloth, Cleaning, Low-Lint MIL-C-85043, Type II (CAGE 81349) Type I (CAGE 80244)	YD
68	AVUM	8305-00-656-1259	Cloth, Flannel, CCC-C-458 (CAGE 81348)	YD
69	AVUM	8010-01-316-2221	Coating, Polyurethane, Chemical Agent Resistant, Aircraft Green, Color No. 34031 per FED-STD-595, MIL-C-46168 (CAGE 80244)	QT
70	AVIM	8030-00-111-6404	Compound, Sealing, MIL-R-46082, Type 1 (CAGE 80244)	BT
71	AVIM	8010-01-275-7966	Conductive Coating, Copper Filled Polyurethane, 599-A8574-1 (CAGE 87354)	KT
72	AVUM	5970-00-181-0190 5970-00-998-2800	Conformal Coating, MIL-I-46058 (CAGE 81349)	KT

Table D-1. (Cont)

ITEM NO.	MAINT. LEVEL	NATIONAL STOCK NUMBER	DESCRIPTION	U/M
73	AVUM	5999-01-063-1868 5999-01-068-5196	Contact, Deutsch Part No. CTS-S-20/20 Military Equivalent MS39029/22-20-20 MIL-C-39029/22 (CAGE 81349)	EA
74	AVUM	4020-00-246-0688	Cord, Fibrous, Nylon, MIL-C-5040 (CAGE 81349)	RO
△1				
75	AVUM	4020-00-116-4130	Cord, Fibrous, Nylon, Solid Braid, General Purpose, 3/32 Inch Diameter, MIL-C-43307 (CAGE 81349)	FT
76	AVUM	1615-01-333-9244	Core Patch Material, 1.25 Inches Thick, 299-015-008-117 (CAGE 97499)	SH
77	AVUM	1615-01-333-9244	Core Patch Material, 2 Inches Thick, 299-015-008-117 (CAGE 97499)	SH
78	AVUM	1615-01-333-9241	Core Patch Material, 0.25 Inch Thick, 299-015-008-111 (CAGE 97499)	SH
79	AVUM	1615-01-333-9242	Core Patch Material, 0.5 Inch Thick, 299-015-008-113 (CAGE 97499)	SH
80	AVUM	5330-01-226-8702	Cork Sheet, Armstrong, Type DK154 (CAGE 03938)	SH
81	AVUM	8030-00-231-2353	Corrosion Preventive Compound, MIL-C-11796, Class 3 (CAGE 81349)	CN
82	AVUM	8030-00-231-2345	Corrosion Preventive Compound, MIL-C-16173, Grade 1 (CAGE 81349)	GL
83	AVUM	8030-00-244-1297	Corrosion Preventive Compound, MIL-C-16173, Grade 2 (CAGE 80244)	GL

△1 Indicates sequential insertion point for item that has been entered out of alphabetical order. See end of list.

Table D-1. (Cont)

ITEM NO.	MAINT. LEVEL	NATIONAL STOCK NUMBER	DESCRIPTION	U/M
△1				
84	AVUM	8030-00-546-8637	Corrosion Preventive Compound, MIL-C-81309, Type III, Class 2 (CAGE 80244)	CN
85	AVUM	8030-00-938-1947	Corrosion Preventive Compound, MIL-C-81309, Type II, Class 2 (CAGE 80244)	CN
86	AVUM	8030-00-838-7789	Corrosion Preventive Oil, MIL-C-23411 (CAGE 66724)	CN
87	AVUM	6850-00-272-8532 6850-00-274-4169	Corrosion Preventive Oil, MIL-C-5545 (CAGE 81349)	CT
88	AVUM	8110-00-066-9430	Corrosion Protective Coating, MIL-L-81352 (CAGE 81349)	PT
89	AVUM	8030-00-065-0957	Corrosion Resistant Coating MIL-C-5541, Class 1A (CAGE 80244)	QT
90	AVUM	5350-00-221-0872	Crocus Cloth, P-C-458 (CAGE 81348)	PK
91	AVUM	8135-00-664-6958	Cushioning Material, Cellulosic, PPP-C-843, Type II, Class B (CAGE 80244)	RO
△1				
92	AVUM	6850-00-264-6573	Desiccant, Activated, MIL-D-3464 (CAGE 81349)	CN
93	AVUM	7930-00-880-4454	Dishwashing Compound, Hand (CAGE 83421)	GL
94	AVUM	6810-00-286-3783	Distilled Water, Battery, O-B-41 (CAGE 81348)	GL
95	AVUM	6850-01-127-8875	Dynasolve 165 (CAGE 27908)	GL

△1 Indicates sequential insertion point for item that has been entered out of alphabetical order. See end of list.

Table D-1. (Cont)

ITEM NO.	MAINT. LEVEL	NATIONAL STOCK NUMBER	DESCRIPTION	U/M
96	AVUM	5970-00-118-8838	Electrical Insulation Sheet, MIL-P-15037 (CAGE 81349)	SH
97	AVUM	8010-00-527-2884	Enamel, Lusterless Black, Color No. 37038, FED-STD-595, MIL-L-19538 (CAGE 81349)	GL
98	AVUM	8010-00-082-2450	Epoxy Primer Coating, MIL-P-23377, Type I or Type II (Low IR) (CAGE 81349)	KT
99	AVUM		Epoxy/Zinc Coating, MB1542B, 3 Part Component Comp. I 056-801V, Comp. II 054-801V, Comp. III 055-801V (CAGE 97499)	QT
100	AVIM		ESTANE 2A504 (CAGE 25472)	SH
101	AVIM	8305-00-530-0109	Fabric, Glass Cloth (Fiberglass) (120 Weave), MIL-C-9084 (CAGE 81349)	SH
102	AVIM		Fabric, Peel Ply, 52006 FIN065 (CAGE 0NMM3)	FT
103	AVIM	9330-00-555-9703	Film, Vacuum Bag, High and Intermediate Temperature (54 inch-wide or 10 inch-wide Tube Style), PVA4-6 (CAGE 33283)	RO
104	AVUM	8030-00-664-4017	Fingerprint Remover, Corrosion Preventive, MIL-C-15074 (CAGE 81349)	QT
105	AVUM	6850-00-901-0591 Type I, 5 Gallon 6850-00-558-1248 Type I, 55 Gallon 6850-01-039-3842 Type II, 5 Gallon 6850-01-039-3841 Type II, 55 Gallon 6850-01-163-8829 Type II, 55 Gallon	Fluid, De-icing, MIL-A-8243, Type I and Type II (CAGE 81349)	GL
106	AVUM	9150-00-149-7431	Fluid, Hydraulic, MIL-H-83282 (CAGE 81349)	QT
107	AVUM	9150-00-082-7524	Fluid, Hydraulic, MIL-H-5606 (CAGE 81349)	QT

Table D-1. (Cont)

ITEM NO.	MAINT. LEVEL	NATIONAL STOCK NUMBER	DESCRIPTION	U/M
108	AVUM	9150-00-903-6431	Fluoro-Glide, Type FB (CAGE 18632)	CN
109	AVUM	3439-01-236-9572	Flux, A-A-51145, Type I (CAGE 58536)	OZ
110	AVUM	9130-01-305-5597 9130-00-256-8613 9130-00-273-2379	Fuel, Jet, JP-8 MIL-T-83133 (CAGE 81349) Fuel, Jet, JP-4 MIL-T-5624 (CAGE 81349) Fuel, Jet, JP-5 MIL-T-5624 (CAGE 81349)	GL
111	AVUM	8415-01-147-6263 8415-01-012-9294 8415-01-013-7382 8415-01-013-7384	Gloves, Rubber, Chemical and Oil Protective (CAGE 81349)	PR
112	AVUM	8415-00-268-8353	Gloves, White Cotton, MIL-G-3866 (CAGE 81349)	PR
113	AVUM	9150-00-944-8953	Grease, Aircraft, General Purpose, Wide Temperature Range, MIL-G-81322 (CAGE 81349)	LB
114	AVUM	9150-01-219-1629	Grease, Amsoil GHD (Moly Fortitied) Synthetic, MIL-G-21164, (CAGE 81349)	TU
115	AVIM	9150-01-109-8726	Grease, Lubriplate, 630 AA (CAGE 73219)	CN
116	AVUM	9150-00-616-9020	Grease, MIL-G-25537 (CAGE 81349)	LB
117	AVUM	9150-00-823-8048	Grease, MIL-G-25013 (CAGE 81349)	BT
118	AVUM	9150-00-935-9807	Hydraulic Fluid, Preservative, MIL-H-6083 (CAGE 81349)	QT
119	AVUM	6810-00-222-9641	Hydrochloric Acid, Technical, O-H-765 (CAGE 81348)	PT
120	AVUM	7510-00-148-9817	Ink, Color Black, A-A-208 Gasoline Protection, Light Protection and Moisture Proof, Type I (CAGE 80244)	CN

Table D-1. (Cont)

ITEM NO.	MAINT. LEVEL	NATIONAL STOCK NUMBER	DESCRIPTION	U/M
121	AVUM	7510-01-422-2488	Ink, Color Blue or Black MIL-I-15883 (CAGE 00046)	PT
122	AVIM	7510-00-224-6732	Ink, Marking Stencil (White), TT-I-1795, Type I (CAGE 80244)	PT
123	AVUM	7510-00-144-9672	Ink, Marking, MIL-I-6903, Type II and Type III (CAGE 81349)	PT
124	AVUM	8010-00-935-7077	Lacquer, Acrylic Black, Color No. 17038, FED-STD-595, MIL-L-81352 (CAGE 81349)	GL
125	AVUM	8010-00-935-6608	Lacquer, Acrylic White, Color No. 17875 per FED-STD-595, MIL-L-81352 (CAGE 81349)	GL
126	AVUM	9150-00-935-7060	Lacquer, Acrylic, Gloss Gull Grey No. 36440, P-95, MIL-L-81352 (CAGE 81349)	GL
127	AVUM	8010-01-042-4196	Lacquer, Acrylic, Low Reflective, Type I, Black, MIL-L-46159A (CAGE 81349)	CN
128	AVUM	6640-00-559-1384	Lens Paper, M42215AJ (CAGE 97942)	PG
129	AVUM	6850-00-306-9596	LHE Cadmium Solution, MIL-STD-865, (Brush On) SPS 5070 (CAGE 13929) or 2023-P (CAGE 11924)	KT
130	AVUM	9525-01-047-6455	Lockwire, Copper, 0.020 MS2099CY20 (CAGE 96906)	EA
131	AVUM	9505-00-596-5101	Lockwire, Steel, Corrosion Resistant, 0.020 Inch Diameter, MS20995C20 (CAGE 81348)	LB
132	AVUM	9505-00-293-4208	Lockwire, Steel, Corrosion Resistant, 0.032 Inch Diameter, MS20995C32 (CAGE 96906)	LB
133	AVUM	9505-00-804-3814	Lockwire, Steel, Corrosion Resistant, 0.041 Inch Diameter, MS20995C41 (CAGE 81346)	LB

Table D-1. (Cont)

ITEM NO.	MAINT. LEVEL	NATIONAL STOCK NUMBER	DESCRIPTION	U/M
134	AVUM	9150-00-273-2388	Lube Oil (Jet Engine) MIL-L-6081 Grade 1010 (CAGE 81349)	QT
135	AVIM	6810-00-264-6715	Lubricant, Dry, MIL-M-7866 (CAGE 81349)	LB
136	AVUM	9150-00-003-8590	Lubricant, Solid Film, Air Drying, 804477 (CAGE 33525)	CN
137	AVUM		Lubricant, Solid Film, Type II, MIL-L-23398, Tiolube 21	TU
138	AVUM	9150-00-111-3199	Lubricating Oil, MIL-L-21260 (CAGE 81349)	GL
139	AVUM	9150-01-209-2684	Lubricating Oil, Synthetic Base, DOD-L-85734 (CAGE 81349)	QT
140	AVUM	9150-00-782-2627	Lubricating Oil, Synthetic, 2627 Base, (Aircraft Turbine Engine) MIL-L-7808 (CAGE 81349)	QT
△1				
141	AVUM	6810-00-238-8119	Naphtha, Aliphatic, Type II, TT-N-95 (CAGE 81348)	GL
142	AVUM	6810-00-223-9067	Naphtha, Aromatic, Type I, Class A, TT-N-97 (Not to be used on plastics or composites) (CAGE 81348)	GL
143	AVUM	6810-00-222-9679	Nitrate, Ammonium (CAGE 96906)	OZ
144	AVUM	6810-00-237-2918	Nitric Acid, Technical, O-N-350 (CAGE 81348)	PT
145	AVUM	9330-01-006-5310	NOPCOFOAM G-506, Molding Plastic (CAGE 87570)	KT

△1 Indicates sequential insertion point for item that has been entered out of alphabetical order. See end of list.

Table D-1. (Cont)

ITEM NO.	MAINT. LEVEL	NATIONAL STOCK NUMBER	DESCRIPTION	U/M
146	AVUM	6830-00-765-7561	Oxygen, Technical, BB-O-925 (CAGE 81348)	CF
147	AVUM	7920-00-727-6258	Pads, Scouring, (Scotchbrite) 74 (CAGE 76381)	EA
148	AVUM	8010-00-926-1488	Paint Remover, Alkaline Type, MIL-R-81294 (CAGE 81349)	GL
149	AVUM	8010-01-127-0962	Paint, Color Designation Gull Grey, Polane Grey (CAGE 54630)	CN
150	AVUM	8010-01-146-2650	Paint, Top Coating, Aliphatic Polyurethane, Chemical Agent Resistant, Olive Drab, Color No. X34087 per FED-STD-595, MIL-C-46168 (CAGE 80244)	QT
151	AVUM		Paint, Top Coating, Silver, Sermetel 1122 (CAGE 92290)	QT
152	AVUM	9150-00-250-0926	Petrolatum, Technical (Vaseline), VV-P-236 (CAGE 81348)	LB
153	AVUM	8105-01-116-7582	Plastic Bag, 8 x 6.50 Inch, Polyethylene, C-8 (CAGE 86142)	RO
154	AVUM	7930-00-935-3794	Polishing Compound, Transparent Plastic, P-P-560 (CAGE 81348)	CN
155	AVUM		Polycarbonate, BHT Spec. 299-947-044 (CAGE 97499)	SH
156	AVIM	8010-01-397-3980	Polyurethane Coating, Black, Color No. 37038 per FED-STD-595A, MIL-PRF-85285, (CAGE 80244)	KT
157	AVUM	8040-01-188-5038	Primer, Adhesive CHO-BOND 1086 (CAGE 18565)	GL
158	AVUM	8040-00-152-0075	Primer, Adhesive, A934 BX (CAGE 03481)	QT

Table D-1. (Cont)

ITEM NO.	MAINT. LEVEL	NATIONAL STOCK NUMBER	DESCRIPTION	U/M
159	AVUM	8040-01-081-0360	Primer, Adhesive, A934 BY (CAGE 03481)	QT
160	AVIM	8030-00-083-3442	Primer, Sealing Compound, MIL-S-22473 GRTFMR (CAGE 80244)	CN
161	AVUM	8030-00-297-0593	Primer, Zinc Chromate, Low Moisture Sensitivity, T-T-P-1757 (CAGE 81348)	PT
162	AVUM	8030-00-664-4968	Putty, Zinc Chromate, General Purpose, MIL-P-8116-10 (CAGE 81349)	LB CN
163	AVIM	8030-00-935-5816	Quick Primer, MIL-S-22473, Grade N (CAGE 80244)	PT
164	AVUM	7920-00-205-1711	Rag, Wiping, Cotton and Cotton Synthetic, A-A-531, Grade B (CAGE 58536)	LB
165	AVIM	6850-01-406-9206	Release Agent, Liquid, Frekote 44NC (CAGE 12405)	GL
166	AVIM		Release Agent, Liquid, Mono-Coat E150 N-ODS (CAGE 2W738)	GL
167	AVUM		Material, Penetrant Inspection AMS 2644 (CAGE 81349)	GL
168	AVIM	8030-00-086-1506	Resin, Epoxy, Epon 828 (CAGE 18598)	PT
169	AVUM	8030-00-181-7603	Retaining Compound, MIL-R-46082, Type III (CAGE 80244)	CN
170	AVIM	8030-00-058-5398	Retaining Compound, Sealing Anaerobic, MIL-S-22473, Grade B, CV-4-10 (CAGE 80244)	PT
171	AVUM	5350-00-619-9166	Sandpaper, 100 Grit, P-P-101 (CAGE 81348)	PK
172	AVUM	5350-00-721-8117	Sandpaper, 180 Grit, P-P-101 (CAGE 81348)	PK

Table D-1. (Cont)

ITEM NO.	MAINT. LEVEL	NATIONAL STOCK NUMBER	DESCRIPTION	U/M
173	AVUM	5350-00-224-7207	Sandpaper, 240 Grit, P-P-101 (CAGE 81348)	PK
174	AVUM	5350-00-224-7203	Sandpaper, 320 Grit, P-P-101 (CAGE 81348)	PK
175	AVUM	5350-00-224-7201	Sandpaper, 400 Grit, P-P-101 (CAGE 81348)	PK
176	AVUM	5350-00-619-9167	Sandpaper, 80 Grit, P-P-101 (CAGE 81348)	PK
177	AVIM	8010-01-413-1941	Scotchkote K-1001 Powder Resin Coating	QT
178	AVUM	8030-00-024-9634	Sealant, MIL-S-7124 (CAGE 81349)	PT
179	AVUM	8030-00-008-7196	Sealant, MIL-S-81733 (CAGE 81349)	TU
180	AVUM	8030-00-616-9191	Sealant, Proseal 706, Class B2, MIL-S-8784 (CAGE 83527)	KT
181	AVUM	8040-00-165-8614	Sealing Compound, EC1300L (CAGE 04633)	EA
182	AVUM	8030-01-066-8156	Sealing Compound, F900 Torque Seal (CAGE 01195)	TU
△1				
183	AVUM	8030-00-148-7362	Sealing Compound, MIL-S-8516, Type I, Class 2 (CAGE 80244)	TU
184	AVUM	8030-00-723-2746	Sealing Compound, MIL-S-8802, Proseal 890 (CAGE 83527) Proseal 890B2 (CAGE 83527) EC1675-B2 (CAGE 04963) PR 1440 (CAGE 83574)	KT
185	AVIM	8030-01-304-6635	Sealing Compound, RTV 738 (CAGE 71984)	TU
186	AVIM	8030-00-823-7917	Sealing/Locking Compound, MIL-S-22473, Grade C (CAGE 05972)	CC
187	AVUM	8010-00-835-0881	Shellac, Cut, TT-S-300 (CAGE 81348)	QT

△1 Indicates sequential insertion point for item that has been entered out of alphabetical order. See end of list.

Table D-1. (Cont)

ITEM NO.	MAINT. LEVEL	NATIONAL STOCK NUMBER	DESCRIPTION	U/M
188	AVUM	9320-00-574-5745	Silicone Foam Rubber, Grade Soft, Lohrlastic R-10470 (CAGE 71643)	SH
189	AVIM	9320-00-004-4558	Silicone Rubber, ZZ-R-765 (CAGE 81348)	SH
190	AVUM	1615-01-333-9240	Skin Patch Material, 299-015-008-101 (CAGE 97499)	SH
191	AVIM	5970-00-195-9548	Sleeve, Electrical Insulator, 130-005-6-4 (CAGE 97499)	EA
192	AVUM	6850-01-184-7453	Soap, Cleaning Compound, MIL-C-87936A (CAGE 81349)	GL
193	AVUM	8520-00-531-6484	Soap, Toilet, Cake and Powdered, P-S-620 (CAGE 81348)	HD
194	AVUM	6810-00-227-0437	Sodium Chloride, Technical, O-S-1926 (CAGE 81348)	LB
195	AVUM	3439-00-006-7764	Solder, QQ-S-571, Tin and Lead Alloy (CAGE 81348)	LB
196	AVIM	3439-00-224-3567	Solder, Tin Alloy, QQ-S-571 (CAGE 81348)	LB
197	AVUM		Solvent Emulsion Degreaser, Neugenic 4177 (CAGE 0A5E1)	
198	AVUM	7930-01-367-0994	Solvent Wipe, Low Vapor Pressure, DS-108 (CAGE 81755)	
199	AVUM	6850-00-274-5421	Solvent, Drycleaning, P-D-680, Type II (CAGE 81348)	GL
200	AVUM	5940-00-271-7741	Splice Kit, M81824/1-2 (CAGE 81349)	EA
201	AVUM	5940-01-243-6750	Splice Set, M81714/11-20D (CAGE 81349)	EA

Table D-1. (Cont)

ITEM NO.	MAINT. LEVEL	NATIONAL STOCK NUMBER	DESCRIPTION	U/M
202	AVUM	5940-00-069-2414	Splice, Conductor, Hot Air Shrinkable, Insulated, NAS 1745-7 (CAGE 80205)	EA
203	AVUM	5940-01-079-1647	Splice, Electrical, Permanent Crimp Style, Copper Insulated, Type II Class 1, MS25181-1(CAGE 96906)	EA
204	AVUM	7920-00-633-9911	Sponge, Synthetic L-S-00626 (CAGE 81348)	EA
205	AVUM	5350-00-240-2920	Steel Wool, FF-W-1825 (CAGE 81348)	LB
206	AVUM	5974-00-111-3208	Strap, Tiedown, MS3367-5-9 (CAGE 96906)	EA
207	AVUM	6515-00-303-8100	Swab, Cotton Tipped, A-A-30016, Type II (CAGE 58536)	PG
208	AVUM	9320-00-074-3105	Synthetic Rubber, MIL-R-6855, Class 2, Type A, Grade 60 (CAGE 81349)	SH
209	AVUM	7920-00-165-7154	Tack Rag, G-99 S-17 (CAGE 52652)	BX
210	AVIM		Tape, Vacuum Bag Sealing, GS100B (CAGE 52004)	FT
211	AVUM	8510-00-817-0295	Talcum Powder, U-T-30 (CAGE 81348)	CN
212	AVUM	7510-00-663-3732	Tape, Adhesive Pressure, Type II, PPP-T-60 (CAGE 81348)	RO
213	AVUM	7510-00-472-4021	Tape, Dissimilar Metal Separation, MIL-T-23142 (CAGE 81349)	RO
214	AVUM	5920-00-959-0012	Tape, Electrical, MIL-I-15126 (CAGE 81349)	RO
215	AVIM	5970-00-955-9976	Tape, Insulation, Electrical MIL-I-46852 (CAGE 81349)	RO

Table D-1. (Cont)

ITEM NO.	MAINT. LEVEL	NATIONAL STOCK NUMBER	DESCRIPTION	U/M
216	AVUM	7510-01-310-0496	Tape, Masking (CAGE 19203)	RO
217	AVUM	7510-00-180-6288	Tape, Pressure Sensitive Adhesive, No. 7455 (2 Inch) (CAGE 88301)	RO
218	AVUM	7510-00-266-5016	Tape, Pressure Sensitive, Type IV, Class 1, PPP-T-60 (CAGE 80244)	RO
219	AVUM	9330-01-211-7158	Tedlar, Transparent Film Bonding Material, 200SG40TR (CAGE 18873)	SH
220	AVUM	7510-00-923-0591	Teflon Tape, 3M6590, (CAGE 76381)	RO
221	AVUM	6640-00-928-8584	Test Tube (Glass Disposable), NNN-T-001476, Type II, Size 9 (CAGE 80244)	EA
222	AVUM	8010-00-181-8080	Thinner, Aliphatic, Polyurethane Coating, MIL-T-81772 (CAGE 81349)	GL
223	AVUM	8010-00-165-5540	Thinner, Dope and Lacquer, TT-T-266 (CAGE 81348)	QT
224	AVUM		Thread, Glass, 4 Mil	RO
225	AVUM		Tube, Welding (DT600HM) 0.125 Inch Hard Facing (CAGE 26195)	FT
226	AVUM	5610-00-641-0427	Walkway Coating, Black, Brushable Consistency, Containing Grit, MIL-W-5044 Type II (CAGE 80244)	GL
227	AVUM	7930-00-267-5588	Wax, Solvent, Waterproof, Aircraft, MIL-W-18723 (CAGE 81349)	GL
228	AVUM	3439-01-156-6556	Wire, Metallizing, Type II, Aluminum 0.0900 Inch Diameter, MIL-W-6712 (CAGE 81349)	LB
229	AVUM	6850-00-543-7050	Zinc Phosphate, MIL-P-50002, Type Z (CAGE 81349)	GL

Table D-1. (Cont)

ITEM NO.	MAINT. LEVEL	NATIONAL STOCK NUMBER	DESCRIPTION	U/M
△1 230	AVUM	4020-00-993-3583	Cord, Fibrous, Nylon, 1/8 Inch Diameter, MIL-C-43307 (CAGE 81439)	RO
△1 231	AVUM	8030-00-0620-5866	Corrosion Preventive Compound, MIL-C-16173, Grade 4 (CAGE 81349)	GL
△1 232	AVUM	6810-01-075-0618	De-ionized Water, 6170-19-5 (CAGE 53390)	BT
△1 233	AVUM	9150-00-180-6266	Lubricating Oil, Synthetic Base, Aircraft Turbine Engine, MIL-L-23699 (CAGE 81349)	QT
△1 234	AVUM	6810-00-264-6535	Acid, Boric (81348) O-C-265	BT
△1 235	AVUM		Sealing Compound, Firewall, Pro-seal 700, Type 1, MIL-S-38249 (CAGE 83574)	KT

APPENDIX E

STORAGE OF HELICOPTER

Section I. GENERAL INFORMATION

E-1. COMPONENTS INVOLVED IN AN ACCIDENT

Any component removed for reason of accident shall not be preserved, but shall be shipped in the same condition as it was in after the accident. Every effort shall be made to prevent the remaining component fluid from leaking out.

E-2. REQUIREMENTS

The existing environmental conditions and available facilities must be taken into account when a helicopter is to be placed in storage. The storage category decision will be based on such on-site conditions as availability of personnel, materials, and equipment necessary to perform ground runups, motoring of engines, defueling and purging of fuel tanks, and other elements of the various procedures. Wet weather conditions create corrosion, rot, mildew, and mold. To prevent these deteriorating effects, inspect regularly and take proper preventive maintenance action. The following practices should be used as a guide during exceptionally wet weather conditions:

1. Prevent rot, mildew and mold from forming on nonmetallic materials by keeping them clean and as dry as possible. Keep fabric material in the helicopter clean (Chapter 1).

2. Treat for visible corrosion (TM 1-1500-344-23).

3. Open all drain holes to facilitate draining when water accumulates.

4. Keep fuel cell full to prevent condensation.

5. Store helicopters in a hangar or shed if space permits.

E-3. CATEGORIES OF STORAGE

NOTE

Inactive helicopters will be immediately placed into storage.

The length of time the helicopter will be inactive and the facilities and personnel available will determine which of the following categories of storage will be used:

1. **Flyable Storage** (No time limit). Flyable storage is the procedure prescribed to maintain a stored helicopter in an operable condition. Next to daily use, this keeps the helicopter in the best possible condition. It does, however, require attention periodically.

2. **Short Term Storage** (From 1 to 45 days). This type of storage is used to store a helicopter up to 45 days with very little attention during the storage period.

3. **Intermediate Storage** (From 46 to 180 days). A helicopter that will be inactive for more than 45 days, but not exceeding 180 days, shall be prepared and maintained in intermediate storage.

4. **Aircraft Undergoing Maintenance.** Aircraft in this category are relieved of 14 day ground runup requirement until maintenance is complete. Aircraft that are in extended maintenance over 45 days shall be entered into intermediate storage.

E-4. PROCEDURES COMMON TO ALL CATEGORIES OF STORAGE

The following procedures are to be used whenever a helicopter is placed in flyable, short term, or intermediate storage:

1. **Preservation.** Preservation should be accomplished in an uninterrupted series of operation. When periods of interruption are necessary, temporary protection shall be provided for partially processed items as required to avoid contamination. Ensure that all removed components are preserved and stowed appropriately, and a record of all disconnected or removed parts is entered in the aircraft logbook. Apply a light coat of CPC (D83) to all hardware removed during disassembly.

NOTE

Ventilation of helicopter in dusty and desert areas could have adverse effect on components inside helicopter.

2. **Ventilation.** The prevention of corrosion depends to a large extent on the control of moisture. One very satisfactory method of doing so is by means of ventilation. On days when the relative humidity is 55 percent or below and 10 MPH winds or less, the doors and other openings can be opened to allow a circulation of the dry air through the helicopter. Fans or blowers, when available, are very helpful.

3. **Drainage.** Ensure that water drain holes are free from obstruction and are kept open for the duration of the storage period.

4. **Towing.** Tow the helicopter in accordance with standard procedures (Task 1-6-1).

5. **Parking.** Park the helicopter (Task 1-6-1).

6. **Mooring.** Moor the helicopter (Task 1-7-1 or 1-7-2).

7. **Lubrication.** Lubricate the helicopter prior to placing in storage (Chapter 1, Section V).

8. **Avionics.** Defined as any electronic equipment installed in the aircraft, including the mast mounted sight.

E-5. INSPECTION OF STORED HELICOPTERS

The local maintenance officer is responsible for administering the inspection program and frequency of inspection. The program includes the following for all types of storage:

1. When the helicopter protective covers are not available, the areas concerned will be protected with barrier material (D48) and the wrap secured with tape (D212). This barrier material should be installed in such a manner as to prevent the accumulation of water on the surface of the cover.

2. Determine peak interior helicopter temperatures during hot weather conditions with outside temperatures of 90 °F (32 °C) or higher. Obtain temperature information from standard thermometers

temporarily installed in the helicopter. Record interior temperatures at intervals during the hottest part of the day. Ventilate the helicopter if interior temperatures exceed 135 °F (57 °C). Provide forced ventilation if normal ventilation procedures are not adequate to prevent condensation and possible mildew and corrosion.

3. Inspect monthly and treat the helicopter against corrosion. Inspection for corrosion includes close observation of areas where moisture does not evaporate rapidly. Evidence of corrosion will not be as prevalent on painted surfaces as it is on unpainted surfaces. Corrosion can attack metal through paint and will be evidenced by blisters or scaly appearance.

4. Inspect static ground wires, rotor blade tiedown straps and mooring devices (ropes, cables, rods or eyes) at monthly intervals. Inspect tiedown devices immediately after the helicopter has been subjected to winds exceeding 40 mph. Replace ground wires, mooring devices, or tiedown straps which are deformed or deteriorated.

5. Inspect communication equipment monthly for fungus or corrosion. Remove, clean, repair, package, and identify communication equipment which is deteriorating. Stow the packaged equipment in the helicopter from which it was removed. Do not remove or package antennas.

6. If possible, the helicopter will be stored in a hangar or under a shed roof; otherwise, it will be parked (Task 1-6-1) and moored (Task 1-7-1 or 1-7-2).

7. Enter the type of storage, the date helicopter was placed in storage, and date of inspection in the helicopter log book. Data entered in log book will be initialed by person performing task.

Section II. FLYABLE STORAGE

E-6. DESCRIPTION

Flyable storage for a helicopter denotes helicopter may be activated at any time without performance of time consuming depreservation procedures. A helicopter in flyable storage (no time limit) will be maintained in a serviceable condition. The general requirements in Section I form a part of the following procedures.

E-7. ENGINE

CAUTION

To prevent contamination of engine and accessories, keep the air intake duct, plenum chamber, and compressor inlet screens clean and free of any foreign materials.

Drycleaning Solvent

1. Clean engine air intake duct, plenum chamber, and compressor inlet screens, as required, using drycleaning solvent (D199).

2. Start engine (TM 1-1520-248-10) using external auxiliary power unit (APU), if available.

3. Accelerate engine to 100 percent Np, collective full down, and operate until oil temperature reaches 191 °F (88 °C) or for no more than 5 minutes.

4. Shut down engine (TM 1-1520-248-10).

Lubricating Oil

5. Service engine oil system (Task 1-4-6).

6. Record the date engine was placed in flyable storage in the helicopter log book and other appropriate entries as applicable.

E-8. FUEL SYSTEM

NOTE

If the fuel tank is filled to normal capacity it reduces fuel contamination by condensation. Therefore, the fuel cell should be maintained at the full level for the duration of the storage period.

Jet Fuel

1. Drain water from fuel cell before adding fuel.
2. Service fuel cell (Task 1-4-1 or 1-4-2).

E-9. HYDRAULIC SYSTEM

Hydraulic Fluid

1. Check hydraulic system for leaks and repair as necessary.
2. Service hydraulic reservoir (Task 1-4-10).

E-10. AVIONICS EQUIPMENT

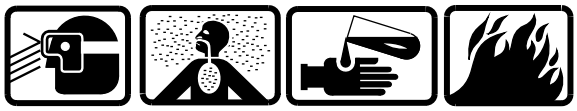
No removal or preservation required.

E-11. DRIVE TRAIN SYSTEM

Lubricating Oil

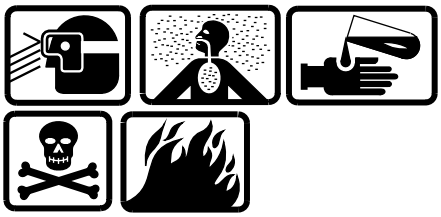
1. Service transmission (Task 1-4-8).
2. Service tail rotor gearbox (Task 1-4-9).

Fingerprint Remover



Drycleaning Solvent

3. Apply fingerprint remover (D104) to all unpainted metal surfaces. Remove any film residue of fingerprint remover with drycleaning solvent (D199).



Corrosion Preventive Compound

4. Wipe all parts dry with a clean low-lint cleaning cloth (D67) and apply corrosion preventive compound (D82) on all unpainted metal surfaces not in contact with bearings.

E-12. ROTOR SYSTEM

1. Clean main rotor blades (Task 1-4-11).

2. It is not necessary to remove or fold main rotor blades for flyable storage. Secure main rotor blades in extended position. If storage space is limited, fold and secure main rotor blades (Task 1-7-5 or 1-7-6).

E-13. ELECTRICAL SYSTEM

CAUTION

To prevent damage to equipment, ensure battery switch(es) is in the OFF position.

1. Disconnect battery(ies) (TM 11-1520-248-23).

E-14. AIRFRAME

1. Tow/park and moor helicopter (Task 1-6-1 and Task 1-7-1 or 1-7-2).

2. Remove any objects from vicinity of helicopter that are likely to strike helicopter during high wind conditions.

3. Close all doors and windows.

4. Close and secure all cowlings and inspection panels.

5. Ground helicopter with a static ground wire.

E-15. MAINTENANCE OF PRESERVATION

1. Helicopters in flyable storage will be inspected in accordance with local directives and those minimum requirements outlined in paragraphs E-4 and E-5.

2. Perform 14-day Preventive Maintenance Service (TM 1-1520-248-PPM).

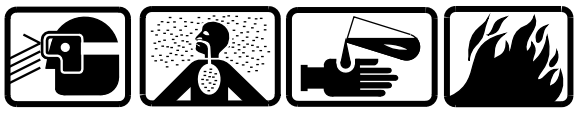
3. Operate the engine at least once every 14 days in accordance with paragraph E-7.

4. Ensure compliance with paragraphs above after each engine preservation run.

E-16. DEPRESERVATION

1. Airframe

   a. Remove protective covers and stow them in designated location in helicopter.



Drycleaning Solvent

   b. Remove all barrier material and tape; remove tape residue with drycleaning solvent (D199).

   c. Open all doors and ventilate helicopter.

   d. Remove tiedown restraints, if applicable, and static ground wire.

2. Miscellaneous

   a. Clean helicopter as necessary (Task 1-4-11).

   b. Perform 14-day Preventive Maintenance Service (TM 1-1520-248-PPM).

   c. Record the date the helicopter was prepared for service in the helicopter log book.

Section III. SHORT TERM STORAGE

E-17. DESCRIPTION

Short term storage for a helicopter denotes any period of time between 1 and 45 days. The general requirements outlined in Section I of this appendix apply and form a part of short term storage procedures.

E-18. ENGINE

CAUTION

To prevent damage to equipment, do not use contact preservatives of any kind, either internally or externally, on the compressor section.

NOTE

If the engine cannot be motored, no effort will be made to preserve the engine fuel system; however, comply with the provision of subparagraphs 1, 5, and 15.

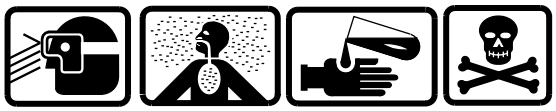
Drycleaning Solvent

1. Exercise every precaution to keep the engine and its accessories clean. Keep the air intake ducts, plenum chambers, and compressor inlet screens clean and free of any foreign materials. When external cleaning is required, use drycleaning solvent (D199).

2. Start engine (TM 1-1520-248-10) using external auxiliary power unit (APU), if available.

3. Accelerate engine to 100 percent Np, collective full down, and operate until oil temperature reaches 191 °F (88 °C) or for no more than 5 minutes.

4. Shut down engine (TM 1-1520-248-10).



Lubricating Oil

5. Service engine oil system (Task 1-4-6).

WARNING

To prevent injury to personnel, ensure ignition system has been off for at least 5 minutes before removing igniter lead. To dissipate all energy stored in the condenser, ground igniter lead to engine using an insulated screwdriver.

6. Disconnect cable to ignition exciter.

7. Allow engine to cool sufficiently to prevent auto ignition.

Jet Fuel

8. Close the fuel shutoff valve. Disconnect the fuel line at the inlet port of the engine fuel pump. Cap disconnected fuel line.

Lubricating Oil

9. Connect a source of lubricating oil (D134) to the inlet port of the engine fuel pump.

CAUTION

To prevent damage to starter, observe starter time restriction of 35 seconds when ambient temperature is 90 °F (32 °C).

10. Move the twist grip to **IDLE DETENT**. Motor engine with the starter (use APU if available).

11. Continue motoring until fuel-free oil flows from fuel overboard drain line.

12. Disconnect source of lubricating oil from the engine fuel pump and connect/torque the disconnected fuel line.

13. Connect ignition exciter lead (TM 55-2840-256-23 or TM 1-2840-263-23).

14. Tag engine and cyclic stick with the following information: **ENGINE FUEL SYSTEM HAS BEEN PRESERVED WITH LUBRICATING OIL (D134). NO FLUSHING REQUIRED PRIOR TO OPERATION. Bleed engine fuel system before next start (TM 55-2840-256-23 or TM 1-2840-263-23).**

15. Record date and extent of engine preservation in the engine historical records. If applicable, state that corrosion preventive concentrate has been added to the engine in accordance with TB 55-9150-200-24. Flushing of the engine is not required during depreservation and activation of the helicopter.

E-19. FUEL SYSTEM

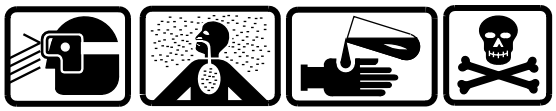
NOTE

If the fuel tank is filled to normal capacity, it reduces fuel contamination by condensation. Therefore, the fuel cell should be maintained at the full level for the duration of the storage period.

Jet Fuel

1. Drain water from the fuel cell prior to adding fuel.
2. Service fuel cell (Task 1-4-1 or 1-4-2).
3. Refer to paragraph E-34 for damaged fuel cell procedure.

E-20. HYDRAULIC SYSTEM



Hydraulic Fluid

1. Check the hydraulic system for leaks and repair as necessary.
2. Service hydraulic reservoir (Task 1-4-10).
3. Coat the exposed portions of the hydraulic actuator rods with a light coat of hydraulic preservative fluid (D118).

E-21. AVIONICS EQUIPMENT

1. Remove classified avionics equipment installed on helicopter.
2. Service and bleed ECU-cooled LRUs (TM 9-1240-778-23).

E-22. DRIVE TRAIN SYSTEM

NOTE

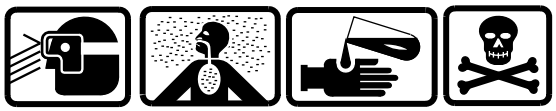
The ground runup when preparing the engine will complete the necessary internal preservation of the transmission and tail rotor gearbox.

1. If the engine cannot be motored, preserve the transmission and tail rotor gearbox as follows:

Lubricating Oil

a. Drain approximately one gallon of lubricating oil from transmission (Task 1-4-7).

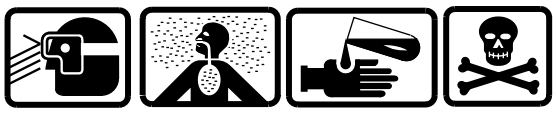
b. Remove the mast mounted sight turret assembly, main rotor hub and blade assembly, and mast assembly.



Lubricating Oil

c. Spray inside of transmission, through top opening, with approximately one gallon of lubricating oil (D139 or D140). While spraying, manually rotate gears and bearing with the input drive quill. This rotation will coat the interior gears of the tail rotor gearbox with lubricating oil.

d. Reinstall mast assembly, main rotor hub and blade assembly, and mast mounted sight turret assembly.



Lubricating Oil

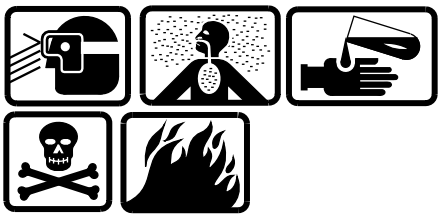
2. Service transmission (Task 1-4-8).

3. Service tail rotor gearbox (Task 1-4-9).

Fingerprint Remover

Drycleaning Solvent

4. Apply fingerprint remover (D104) to all unpainted metal surfaces. Remove any film residue of fingerprint remover with drycleaning solvent (D199).



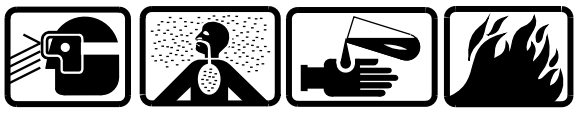
Corrosion Preventive Compound

5. Wipe all parts dry with a clean, low-lint cleaning cloth (D67) and apply corrosion preventive compound (D82) to all unpainted metal surfaces not in contact with bearings.

6. Cover vent/breather holes in the transmission and tail rotor gearbox with barrier material (D48) and secure with tape (D212).

E-23. ROTOR SYSTEM

Fingerprint Remover



Drycleaning Solvent

1. Apply fingerprint remover (D104) to all unpainted metal surfaces. Remove any film residue of fingerprint remover with drycleaning solvent (D199).

Corrosion Preventive Compound

2. Wipe all parts dry with a clean, low-lint cleaning cloth (D67) and apply corrosion preventive compound (D82) on all unpainted metal surfaces not in contact with bearings.

3. Clean main rotor blades (Task 1-4-11).

4. If storage space is limited, fold and secure main rotor blades (Task 1-7-5 or 1-7-6).

E-24. ELECTRICAL SYSTEM

CAUTION

To prevent damage to equipment, ensure battery switch(es) is in the OFF position.

1. Disconnect battery(ies) (TM 11-1520-248-23).
2. Wrap battery quick-disconnect plug(s) with barrier material (D48) and secure with tape (D212).
3. Secure quick-disconnect plug(s) to airframe with tape (D212).

E-25. INSTRUMENTS

1. Cover both static ports with barrier material (D48) and secure with tape (D212).

E-26. EMERGENCY EQUIPMENT

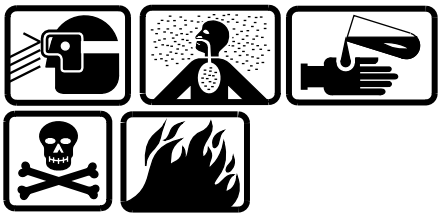
Remove Aviation Life Support Equipment from aircrew stations in helicopter.

E-27. AIRFRAME

1. Tow/Park and moor helicopter (Task 1-6-1 and Task 1-7-1 or 1-7-2).
2. Remove any publications from aircrew stations in helicopter.
3. Close all doors and windows.
4. Close and secure all cowlings, and inspection panels.
5. Ground the helicopter with a static ground wire.
6. Close all openings not already covered with barrier material (D48) and secure material with tape (D212).

E-28. LANDING GEAR

1. Place blocks or shoring under skid tubes to provide free air passage.
2. Clean crosstubes and skid tubes and treat for corrosion (TM 1-1500-344-23).



Corrosion Preventive Compound

3. Repaint any exposed metal surfaces. If the paint system cannot be touched up, coat the bare metal surfaces with corrosion preventive compound (D82).

E-29. MAINTENANCE OF PRESERVATION

1. Helicopters in short term storage will be inspected in accordance with local directives and those minimum requirements outlined in paragraphs E-4 and E-5.

2. Applicable portions of TM 1-1520-248-PPM inspections will be performed at least once every 14 days.

3. If conditions change so that a helicopter prepared for short term storage must remain in storage for a longer period of time, represerve the helicopter for intermediate storage in accordance with Section IV. **DO NOT RENEW SHORT TERM STORAGE.**

E-30. DEPRESERVATION

1. **Landing Gear.** Remove blocks from under skid gear.

2. **Airframe.**

   a. Remove protective covers and stow them in designated location in the helicopter.

Drycleaning Solvent

   b. Remove all barrier material and tape; remove tape residue with drycleaning solvent (D199).

   c. Open all doors and ventilate helicopter.

   d. Remove tiedown restraints, if applicable, and static ground wire.

3. **Emergency Equipment.** Install Aviation Life Support Equipment removed for preservation.

4. **Instruments.** Ensure static ports are open in accordance with step 2b. above.

5. **Electrical System.**

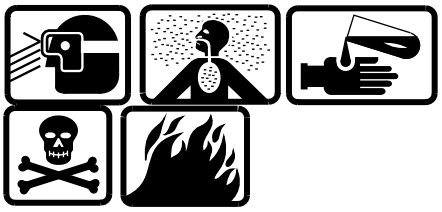
   a. Remove barrier material and tape from battery quick-disconnect plug(s).

CAUTION

To prevent damage to equipment, ensure battery switch(es) is in OFF position.

b. Connect battery(ies).

6. **Rotor System.**

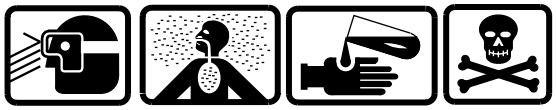


Naphtha/Naphthalene, TT-N-97

a. Clean main and tail rotor assemblies with naphtha (D141). Wipe dry with a clean, low-lint cleaning cloth (D67).

b. Lubricate rotor and controls (Chapter 1, Section V).

7. **Drive Train System.**



Lubricating Oil

a. Service transmission (Task 1-4-8).

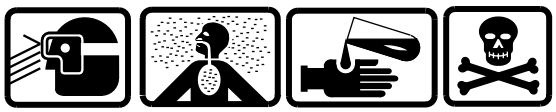
b. Service tail rotor gearbox (Task 1-4-9).

Drycleaning Solvent

c. Clean driveshafts, as necessary, with wiping rags and drycleaning solvent (D199).

8. **Avionics Equipment.** Perform functional tests and service as required.

9. **Hydraulic System.**



Hydraulic Fluid

a. Service hydraulic reservoir (Task 1-4-10).

b. Clean exposed portion of hydraulic actuator rods with a clean, low-lint cleaning cloth (D67) dampened with hydraulic fluid (D106 or D107).

c. Coat hydraulic rods with a light coat of hydraulic fluid (D106 or D107).

10. **Fuel System.**

Jet Fuel

a. Take fuel sample and drain as necessary. Service fuel cells (Task 1-4-1 or 1-4-2).

b. Place fuel shutoff valve in OPEN position.

11. **Engine.**

NOTE

Flushing of the engine fuel system is not required.

a. To prevent engine failure or hot start, bleed engine fuel system (TM 55-2840-256-23 or TM 1-2840-263-23).

12. **Miscellaneous.**

a. Clean helicopter as necessary (Task 1-4-11).

b. Check that all removed components have been reinstalled on the helicopter. Check the helicopter logbook for a record of components that have been removed or disconnected. Check for subsequent installation or connection.

c. Check that related systems have been properly depreserved and serviced before any system or component operational check is performed.

d. Perform 14 day Preventive Maintenance Service and all other necessary inspections required (Chapter 1 and TM 1-1520-248-PPM).

e. Record the date the helicopter was prepared for service in the helicopter logbook.

Section IV. INTERMEDIATE STORAGE

E-31. DESCRIPTION

Intermediate storage for a helicopter denotes any period of time between 46 and 180 days. The general requirements of Section I of this appendix apply and form a part of intermediate storage procedures.

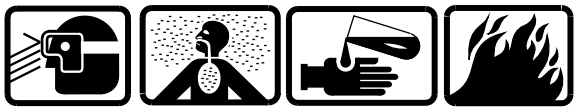
E-32. ENGINE

CAUTION

To prevent damage to engine, do not use contact preservatives of any kind either internally or externally on the compressor section.

NOTE

If the engine cannot be motored, no effort will be made to preserve the engine fuel system; however, comply with the provisions of subparagraphs 1 and 5 and E-33, 1. i.



Drycleaning Solvent

1. Exercise every precaution to keep the engine and its accessories clean. Keep the air intake ducts, plenum chambers, and compressor inlet screens clean and free of any foreign materials. When external cleaning is required, use drycleaning solvent (D199).

2. Start engine using external auxiliary power unit (APU), if available (TM 1-1520-248-10).

3. Accelerate engine to 100 percent Np, collective full down, and operate until oil temperature reaches 191 °F (88 °C) or for no more than 5 minutes.

4. Shut down engine (TM 1-1520-248-10).

Lubricating Oil

5. Service engine oil system (Task 1-4-6).

WARNING

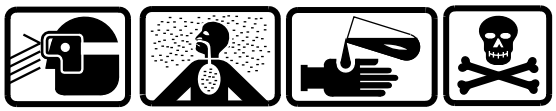
To prevent injury to personnel, ensure ignition system has been off for at least 5 minutes before removing igniter lead. To dissipate all energy stored in the condenser, ground igniter lead to engine using an insulated screwdriver.

6. Disconnect cable to ignition exciter.

E-33. FUEL SYSTEM

WARNING

- To prevent injury of personnel, the following precautions must be observed while preparing helicopter fuel cell for storage:
- The helicopter and all equipment used in performing the operation must be properly grounded. This includes defueling equipment, work stands, purging equipment, and any powered or pneumatic devices. Work stands shall be equipped with a personnel static discharge plate of copper or zinc, which shall be affixed in such a position that personnel will contact the plate before coming in contact with the helicopter.
- Fuel cell should not be drained near the end of the working day and then allowed to stand empty overnight; residual fuel drains down the sides of the cell and forms puddles. Overnight, fuel from these puddles evaporates into the air in the cell, and should a critical fuel-air ratio develop, an explosion could be set off by a spark. A lapse of time between draining and purging shall be avoided.



Lubricating Oil

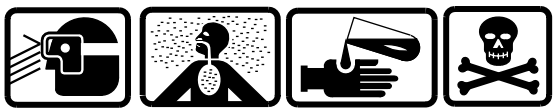
The fuel system may be preserved by one of two methods. The method used will be determined by the number of helicopters to be placed in storage, the availability of lubricating oil (D134), fueling and defueling equipment, and CO_2 or other inert gases.

NOTE

Combat damaged fuel cell will be preserved in accordance with paragraph E-34. If conservation of lubricating oil is desired, the primary method of preserving fuel cell can be ignored. Use the alternate method described in paragraph E-33, subparagraph 2.

1. **Primary Method.** If a sufficient number of helicopters are to be placed in storage to warrant the purchase of necessary lubricating oil, and if adequate fueling and defueling equipment is available, preserve the fuel system as follows:

a. Defuel fuel cell (Task 1-4-3 or 1-4-4).



Lubricating Oil

b. When the cell is completely drained, close the drain valve and fill cell with lubricating oil (D134). Oil must be allowed to remain in fuel cell for at least 8 hours or overnight.

CAUTION

To prevent damage to starter, observe starter time restriction (35 seconds) when ambient temperature is at or above 90 °F (32 °C).

c. Move the twist grip to IDLE DETENT. Motor engine with the starter (use APU if available).

d. Continue motoring until fuel-free oil flows from fuel overboard line.

e. Connect ignition exciter leads (TM 55-2840-256-23 or TM 1-2840-263-23).

f. Remove oil from fuel cell and save to flush other cells.

Lubricating Oil

Jet Fuel

g. After 2 or 3 hours test the fuel cell with a vapor tester, or equivalent, for the presence of fuel vapors. If an unsafe condition exists, discard the drained lubricating oil and repeat the procedure with fresh oil until a safe reading is obtained.

h. Tag engine, fuel filler cap, and cyclic stick with following information: **FUEL SYSTEM HAS BEEN PRESERVED WITH LUBRICATING OIL (D134). NO FLUSHING REQUIRED PRIOR TO OPERATION. Service fuel cell and bleed engine fuel system before next start (TM 1-1520-248-23 and TM 55-2840-256-23 or TM 1-2840-263-23).**

i. Record date and extent of engine preservation in the engine historical records. If applicable, state that corrosion preventive concentrate has been added to the engine in accordance with TB 55-9150-200-24. Flushing of the engine is not required during depreservation and activation of the helicopter.

2. **Alternate Method.** If the proper equipment is not available, or the lubricating oil supply (D134) is limited, or the fuel cell cannot be filled, use the following procedure to preserve the fuel system:

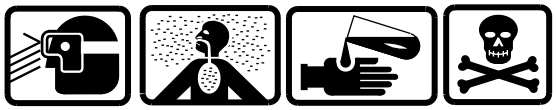
Jet Fuel

a. Defuel fuel cell (Task 1-4-3 or 1-4-4).

Lubricating Oil

b. Close drain valve and pour approximately 5 gallons of lubricating oil (D134) into the fuel cell.

c. Preserve the fuel control system in accordance with subparagraphs 1.c., d., and e. above.



Lubricating Oil

Jet Fuel

d. Drain oil from fuel cell (Task 1-4-3 or 1-4-4).

WARNING

To prevent injury to personnel, when using a fire extinguisher bottle as a source of CO_2 for purging fuel cell, regardless of the size of the bottle used, the fiber horn shall be removed, not only because it is too large for insertion into the cell filler neck, but also to avoid generating static electrical charges which can build up by gas moving rapidly through the horn. The nozzle as well as the bottle itself must be grounded to the aircraft. The CO_2 must be discharged into fuel cell slowly at a rate of one pound per minute. CO_2 must be released slowly because the rapid passage of a gas through a hose can generate static electricity. In addition, a very rapid rate of discharge allows rapid expansion of the CO_2 when it flows into a fuel cell. The expanding gas can lower the temperature to the point that will cause damage to the cell. It is permissible to use nitrogen or another inert gas in place of the CO_2 gas called out in any of the purging procedures. The same precautionary measures stated above will be observed.

Nitrogen

e. Purge fuel cell with CO_2 or nitrogen as follows:

CAUTION

To prevent engine failure, use moisture-free air.

NOTE

Size of the CO_2 bottle to be used can be varied to meet existing conditions. The 15-pound size is handy to use. The total amount recommended is based on the quantity usually needed to purge a cell of the size under discussion; however, more may be needed to obtain a safe reading on the vapor tester.

Jet Fuel

Compressed Air

(1) Open fuel cell drains and open filler cap; make sure fuel vents are open. Introduce into the filler neck a reduced pressure air hose supplying air through a **0.25 inch** orifice at approximately 50 psi. Purge fuel cell with fresh air for 30 minutes. Close fuel drains.

Nitrogen

(2) Introduce CO_2 or nitrogen into the fuel cell filler neck from a tank set to discharge at a rate of not more than one pound of purging gas per minute.

(3) Use no less than 3 pounds of CO_2 or 5 pounds of nitrogen to purge fuel cell.

Jet Fuel

(4) After purging of the fuel cell has been completed, wait approximately 2 to 3 hours and then test fuel cell for the presence of dangerous fuel vapors with a vapor tester. If an unsafe condition exists, use additional purging gas until a satisfactory test is made.

Lubricating Oil

f. Fog cell with a suitable spray gun and 1/2 pint of lubricating oil (D134). Replace filler cap.

g. Tag engine, fuel filler cap, and cyclic stick with the following information: **FUEL SYSTEM HAS BEEN PRESERVED WITH LUBRICATING OIL (D134). NO FLUSHING REQUIRED PRIOR TO OPERATION. Service fuel cell and bleed engine fuel system before next start (TM 1-1520-248-23 and TM 55-2840-256-23 or TM 1-2840-263-23).**

h. Record date and extent of engine preservation in the engine historical records. If applicable, state that corrosion preventive concentrate has been added to the engine in accordance with TB 55-9150-200-24. Flushing of the engine is not required during depreservation and activation of the helicopter.

E-34. COMBAT DAMAGED FUEL CELL

1. Fuel cells that cannot be filled with lubricating oil because of leaks or holes will be purged as follows:

Jet Fuel

a. Open the fuel cell and ventilate fuel cell with rapidly moving dry air until fumes are below the danger area as shown on a vapor tester.

Lubricating Oil

b. Preserve the cell by fogging with lubricating oil (D134) through the access openings. Coat the entire interior surface of the fuel cell.

E-35. HYDRAULIC SYSTEM

Hydraulic Fluid

1. Check hydraulic system for leaks and repair as necessary.

2. Service hydraulic reservoir (Task 1-4-10).

3. Coat the exposed portions of the hydraulic actuator rods with a light coat of hydraulic preservative fluid (D118).

E-36. AVIONIC EQUIPMENT

1. Remove classified avionics equipment installed on helicopter.

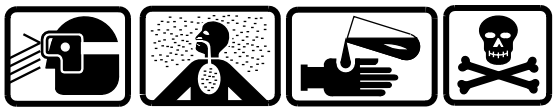
2. Service and bleed ECU-cooled LRUs (TM 9-1240-778-23).

E-37. DRIVE TRAIN SYSTEM

NOTE

The ground runup when preparing the engine will complete the necessary preservation of the transmission and tail rotor gearbox.

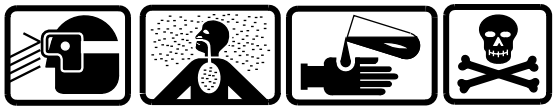
1. If the engine cannot be motored, preserve the transmission and tail rotor gearbox as follows:



Lubricating Oil

a. Drain approximately one gallon of lubricating oil from transmission (Task 1-4-8).

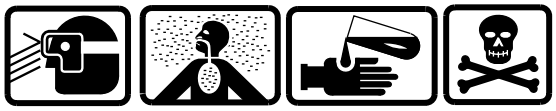
b. Remove mast mounted sight turret assembly, main rotor hub and blade assembly, and mast assembly.



Lubricating Oil

c. Spray inside of transmission, through opening, with approximately one gallon of lubricating oil (D139 or D140). While spraying, manually rotate gears and bearings with the input drive quill. This rotation will also coat the internal gears of the tail rotor gearbox.

d. Install mast, main rotor hub and blade assembly, and mast mounted sight turret assembly.

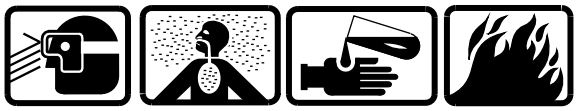


Lubricating Oil

2. Service transmission (Task 1-4-8).

3. Service tail rotor gearbox (Task 1-4-9).

Fingerprint Remover



Drycleaning Solvent

4. Apply fingerprint remover (D104) to all exposed metal surfaces to include splines and threads. Remove any film residue of fingerprint remover with drycleaning solvent (D199).

Corrosion Preventive Compound

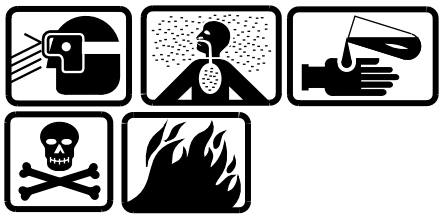
5. Wipe all parts dry with a clean, low-lint cleaning cloth (D67) and apply corrosion preventive compound (D82) to all unpainted surfaces not in contact with bearings.

6. Cover vent/breather holes in the transmission and tail rotor gearbox with barrier material (D48) and secure with tape (D212).

E-38. ROTOR SYSTEM

1. Remove the main rotor blades (Task 5-1-5).

2. Clean main rotor blades (Task 1-4-11).

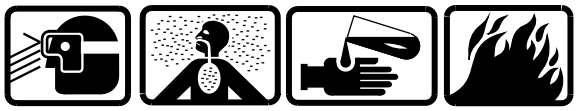


Corrosion Preventive Compound

3. Apply corrosion preventive compound (D83) sparingly to the bolt hole in the root end of the blade and all exposed metal surfaces. Wrap the root end of the blade and that portion of blade that fits in the cradles of the blade container with barrier material (D48). Secure wrap with tape (D212).

4. Secure main rotor blades in a metal shipping or storage container, if available, or a plywood shipping container.

Fingerprint Remover



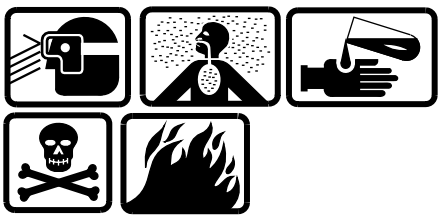
Drycleaning Solvent

5. Apply fingerprint remover (D104) to all exposed metal surfaces to include splines and threads. Remove any residue of fingerprint remover with a clean, low-lint cleaning cloth (D67) dampened with drycleaning solvent (D199)

Corrosion Preventive Compound

6. Coat main rotor blade bolts, washers, and nuts sparingly with corrosion preventive compound (D81) and reinstall in the hub grip. Apply the same preservative to all other exposed metal surfaces, to include splines and threads not in contact with bearings.

7. Wrap the entire mast mounted sight, main rotor hub, and mast assembly, to include swashplate assembly with barrier material (D48). Secure barrier joints together and secure entire wrap to the top of the fuselage with tape (D212) in such a manner that entire assembly is sealed against the entry of water. Lash cover snugly to the hub and mast assembly with **0.125 inch** nylon rope and tape (D212).



Corrosion Preventive Compound

8. Coat the exposed metal surfaces of the tail rotor assembly and tail rotor gearbox, not protected with a dry lubricant, with corrosion preventive compound (D83). Wrap the entire tail rotor hub, blade assembly, and tail rotor gearbox with barrier material (D48) and secure wrap with tape (D212).

9. Make two cushions to fit between the tail rotor blades and the tailboom. Cellulosic cushioning material (D91) can be rolled into a cylinder approximately **8 inches** in diameter and **8 inches** long. Secure blades and cushioning material to tailboom with tape (D212).

E-39. ELECTRICAL SYSTEM

CAUTION

To prevent damage to equipment, ensure battery switch(es) is in OFF position.

1. Remove battery(ies) and turn into battery shop for storage.

2. Clean the battery compartment and accessories as necessary (Task 1-4-11).

3. Wrap the battery quick-disconnect plug(s) with grade A barrier material (D48) and secure wrap with tape (D212).

4. Secure quick-disconnect plug(s) to airframe with tape (D212).

E-40. INSTRUMENTS

1. Cover both static ports with barrier material (D48) and secure with tape (D212).

2. Remove clock, apply condition tag and turn in to supply.

E-41. EMERGENCY EQUIPMENT

1. Remove fire extinguishers, apply condition tag, and return to local supply.

2. Remove, apply condition tag, and return to supply such items as first aid kits and other equipment subject to mildew and deterioration.

E-42. AIRFRAME

1. Tow/Park and moor helicopter (Task 1-6-1 and Task 1-7-1 or 1-7-2).

2. Remove any publications from aircrew stations in helicopter.

3. Close all doors and windows.

4. Close and secure all cowlings and inspection panels.

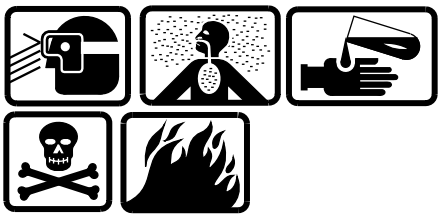
5. Ground the helicopter with a static ground wire.

6. Close all openings not already covered with barrier material (D48) and secure material with tape (D212).

E-43. LANDING GEAR

1. Place blocks or shoring under skid tubes to provide free air passage.

2. Clean crosstubes and skid tubes and treat for corrosion (TM 1-1500-344-23).



Corrosion Preventive Compound

3. Repaint any exposed metal surfaces. If paint cannot be touched up, coat the bare metal surfaces with corrosion preventive compound (D82).

E-44. MAINTENANCE OF PRESERVATION

1. Helicopters in intermediate storage will be inspected in accordance with local directives and those minimum requirements outlined in paragraphs E-4 and E-5.

2. Applicable portions of TM 1-1520-248-PPM inspection will be performed at least once every 14 days.

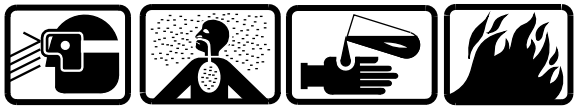
3. If conditions change so that a helicopter that was prepared for intermediate storage must remain in storage for a longer period of time, the helicopter shall be returned to operational status and then represerved in accordance with this section.

E-45. DEPRESERVATION

1. **Landing Gear.** Remove blocks from under skid gear.

2. **Airframe.**

   a. Remove protective covers and stow them in designated location in the helicopter.



Drycleaning Solvent

   b. Remove all barrier material and tape; remove tape residue with drycleaning solvent (D199).

   c. Open all doors and ventilate helicopter.

   d. Remove tiedown restraints, if applicable, and static ground wire.

3. **Emergency Equipment.** Obtain fire extinguisher, first aid kit, and other equipment from supply facilities and install.

4. **Instruments.**

   a. Ensure both static ports are open in accordance with paragraph 2b. above.

   b. Obtain clock from supply facilities and install.

5. **Electrical System.**

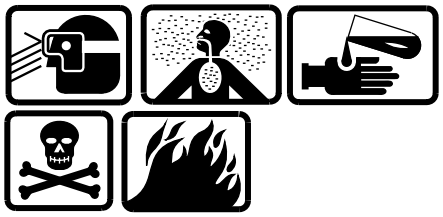
a. Remove barrier material and tape from battery quick-disconnect plug(s).

CAUTION

To prevent damage to equipment, ensure battery switch(es) is in the OFF position.

b. Obtain battery(ies) from battery shop. Install and connect battery(ies).

6. **Rotor System.**



Naphtha/Naphthalene, TT-N-97

a. Clean main and tail rotor assemblies with naphtha (D141). Wipe dry with a clean, low-lint cleaning cloth (D67).

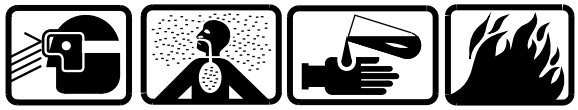
b. Install main rotor blades (Task 5-1-5).

c. Lubricate rotor and controls (Chapter 1, Section V).

7. **Drive Train System.**

a. Service transmission (Task 1-4-8).

b. Service tail rotor gearbox (Task 1-4-9).



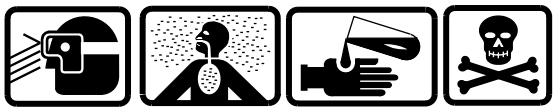
Drycleaning Solvent

c. Clean driveshafts as necessary with wiping rags (D164) dampened with drycleaning solvent (D199).

8. **Avionics.** Perform functional test and service as required.

9. **Hydraulic System.**

a. Service hydraulic resevoir (Task 1-4-10).



Hydraulic Fluid

b. Clean exposed portion of hydraulic actuator rods with a clean, low-lint cleaning cloth (D67) dampened with hydraulic fluid (D106 or D107).

Hydraulic Fluid

c. Coat hydraulic rods with a light coat of hydraulic fluid (D106 or D107).

10. **Fuel System.**

a. Service fuel cell (Task 1-4-1 or 1-4-2).

b. Place fuel shutoff valve in OPEN position.

NOTE

Flushing of the engine fuel system is required.

11. **Engine.** To prevent engine failure or hot start, bleed engine fuel system (TM 55-2840-256-23 or TM 1-2840-263-23).

12. **Miscellaneous.**

a. Clean helicopter (Task 1-4-11).

b. Check that all removed components have been reinstalled on the helicopter. Check the helicopter logbook for a record of components that have been removed or disconnected. Check for subsequent installation or connection.

c. Check that related systems have been properly depreserved and serviced before any system or component operational check is performed.

d. Perform 14 day Preventive Maintenance Service and all other necessary inspections required (Chapter 1 and TM 1-1520-248-PPM).

e. Record the date the helicopter was prepared for service in the helicopter logbook.

APPENDIX F

WIRING DATA

F-1. WIRING DATA

This appendix contains wiring data and essential wiring information for all electrical systems and circuits.

NOTE

1. WIRE NUMBER SUFFIX ( ) DENOTES THE FOLLOWING ELECTROMAGNETIC INTERFERENCE (EMI) CATEGORIES THAT ARE SHOWN ON WIRING DIAGRAMS:

a. AC power wiring (1)

- 115 volts ac
- 26 volts ac
- 32 volts ac
- 115 volts electroluminescent lighting

b. DC power wiring (2)

- 28 volts dc
- Relay and solenoid control wiring

c. Control wiring (3)

- Discretes
- High level analog wiring

d. Digital wiring (4)

- Wiring carrying digital signals
- Wiring that can produce pulse energy

e. Red audio (5)

- Requires minimum **1-inch** physical separation

f. Susceptible wiring (6)

- Audio wiring (not in Category 5)
- Sensor signal wiring
- Low level analog wiring

g. Antenna Coaxes (7)

h. System wiring (8)

- Wiring within one subsystem, routing between two or more boxes of that subsystem, e.g., CDS wiring between keyboard and the RFD or wiring between keyboard and the MPD.

2. UNDERLINED CONNECTOR CONTACT LETTERS DENOTE LOWERCASE.

3. EMI SHIELDS ARE SOLDER CONNECTED UNLESS INDICATED BY A TERMINAL, SPLICE, OR END CAP.

4. MODULE TERMINAL JUNCTION POSITION IDENTIFICATION:

FIRST LETTER	=	MODULE	LETTER	=	CONTACT
SECOND LETTER	=	CONTACT	NUMBER	=	MODULE

5. RECTANGULAR BOX PICTURED AT CONNECTOR REPRESENTATION INDICATES AN RFI TYPE ADAPTER WITH SOLDER SLEEVE PIGTAILS SECURED BETWEEN THE RFI RINGS.

F-2. WIRE IDENTIFICATIONS

All wires on diagrams are identified by coded wire numbers exactly as they are marked in the helicopter. The coded wire numbers indicate circuit function, wire number, wire segment letter, and wire size (gauge). (See figure F-1.)

F-3. ABBREVIATIONS

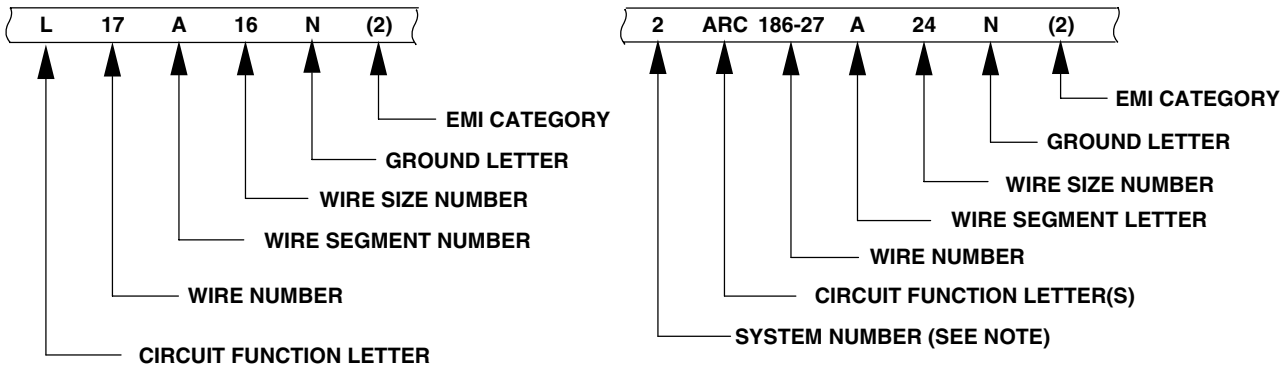
Abbreviations are in accordance with MIL-STD-12 and AR 310-50, except when the abbreviations depict a marking or decal contained in or on the helicopter.

F-4. SYMBOLS

Wiring diagram component symbols are drawn in accordance with ANSI Y14.15. The symbols chart (figure F-2) illustrates electrical symbols used in the wiring diagrams.

F-5. TYPICAL ELECTRICAL CONNECTOR PIN ARRANGEMENT

Figure F-3 shows some typical electrical connector pin arrangements. Illustrations of this type are provided in TM 1-1520-248-T series manuals. Their purpose is to aid the technician in quickly and accurately identifying required pin numbers. An electrical connector may have the identifying numbers rubbed off of the environmental seals, and on those occasions, these illustrations will aid in locating the correct pin(s).



CIRCUIT FUNCTIONS

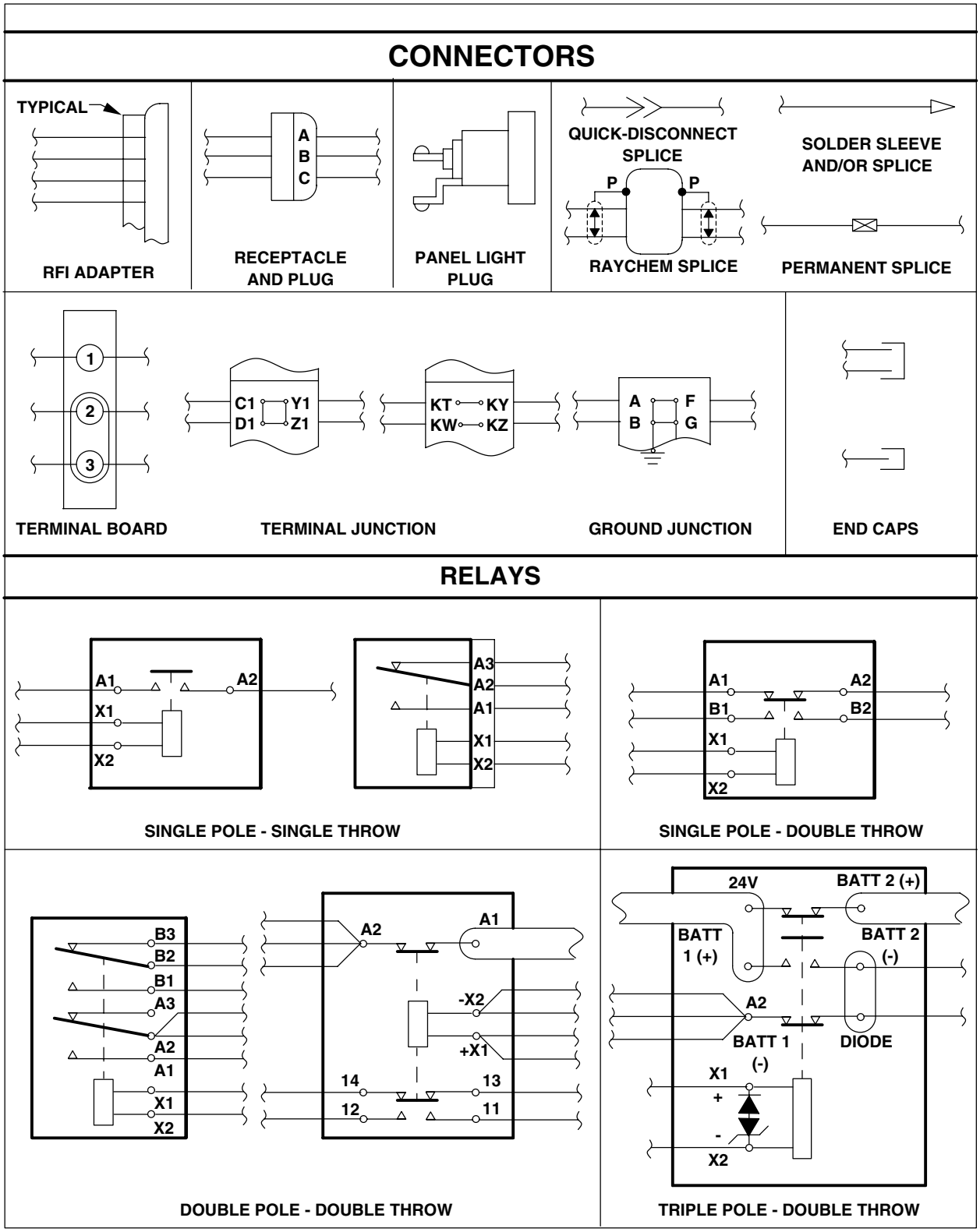
CODE	NOMENCLATURE
A	ARMAMENT
ALQ144	IR JAMMER
APN209	RADAR ALTIMETER
APR39	RADAR DETECTING
APR44	RADAR WARNING
APX100	IFF COMMUNICATION
ARC164	UHF COMMUNICATION
ARC186	VHF-AM COMMUNICATION
ARC199	HF COMMUNICATION
ARC201	VHF-FM COMMUNICATION
AVR2	LASER DETECTING
C	SCAS, HYDRAULIC AND STANDBY ATTITUDE INDICATOR
C10414	INTERCOMMUNICATION
C11746	INTERCOMMUNICATION
D	INSTRUMENTS (OTHER THAN FLIGHT OR ENGINE)
E	ENGINE INSTRUMENTS
EGI	EMBEDDED GLOBAL POSITIONING SYSTEM/INERTIAL NAVIGATION SYSTEM
F	FLIGHT INSTRUMENTS
H	HEATING, VENTILATION AND DEICING
IDM	IMPROVED DATA MODEM
L	LIGHTING
J	IGNITION
K	ENGINE CONTROL
KY	COMSEC
P	DC POWER
Q	FUEL AND OIL
M	MISCELLANEOUS ELECTRIC
R	AIRBORNE TARGET HANDOVER SYSTEM
T	MAST MOUNTED SIGHT
U	MISCELLANEOUS ELECTRONIC
V	DC POWER AND DC CONTROL CABLES FOR AC
W	WARNING AND EMERGENCY
X	AC POWER

NOTE: Number preceding circuit function indicates more than one unit, facility or system.

Example: 3ARC186-27A24N(2)

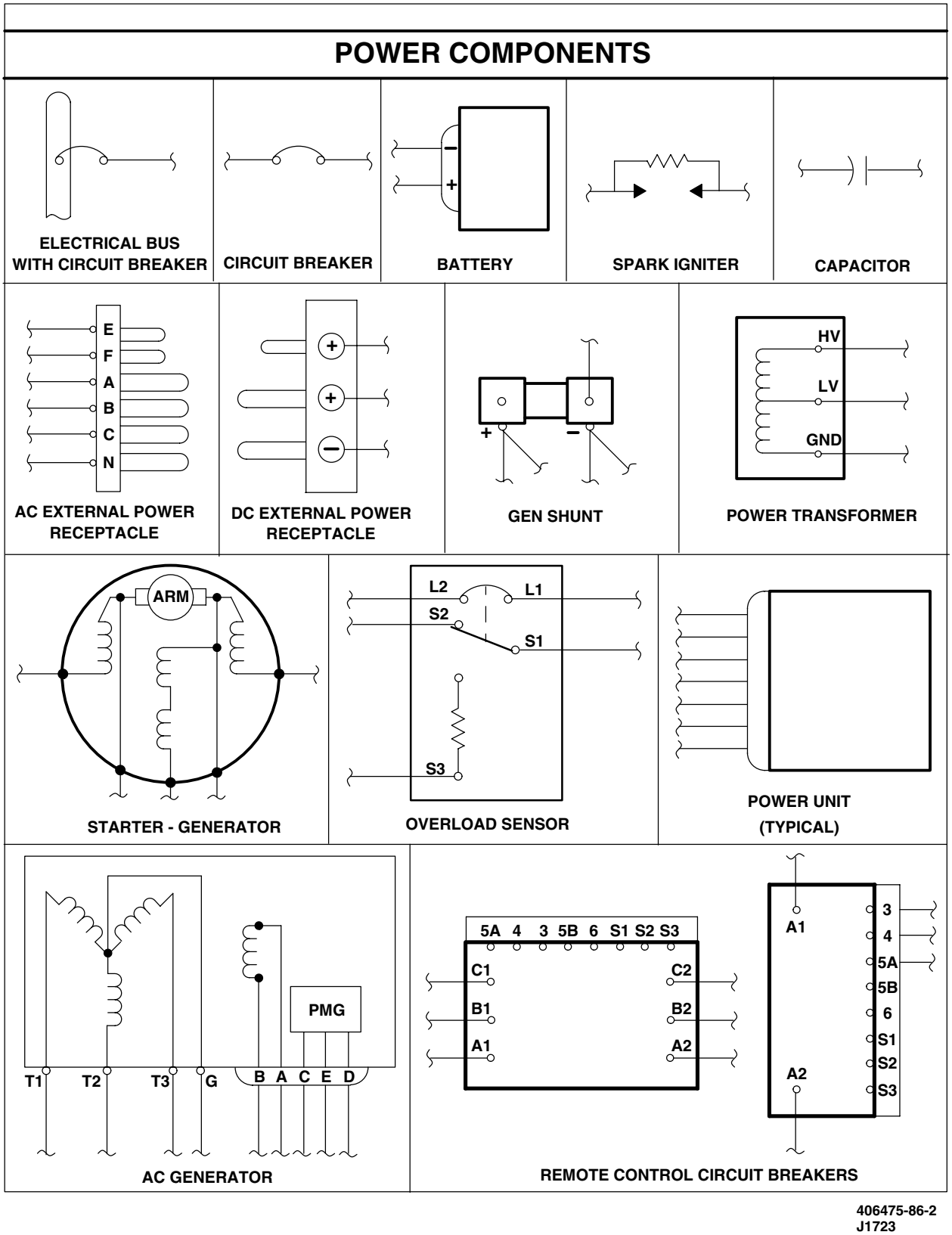
406075-1537-1
J1723

Figure F-1. Wire Identifications



406075-1537-2
J1723

Figure F-2. Symbols Chart (Sheet 1 of 3)



406475-86-2
J1723

Figure F-2. Symbols Chart (Sheet 2 of 3)

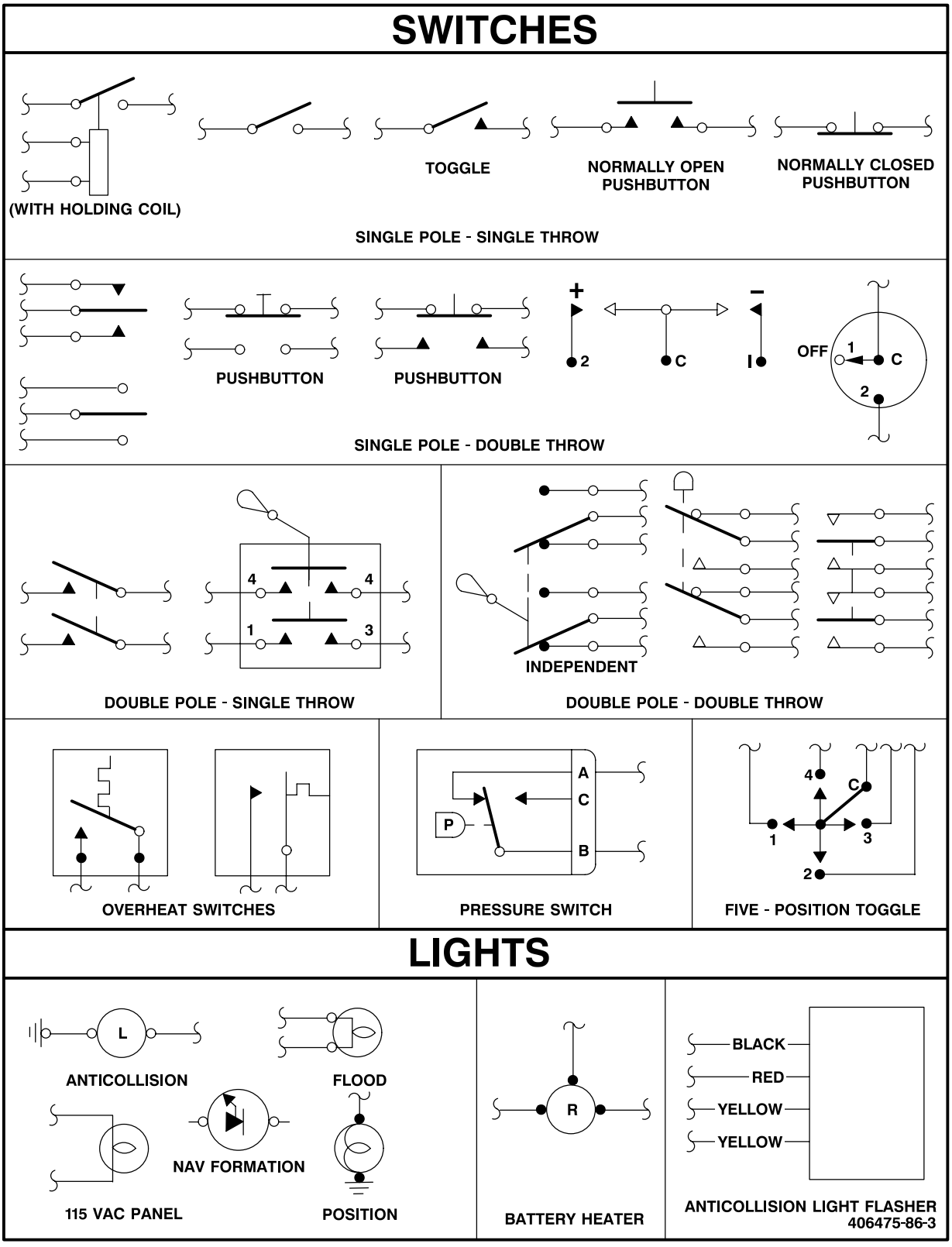


Figure F-2. Symbols Chart (Sheet 3 of 3)

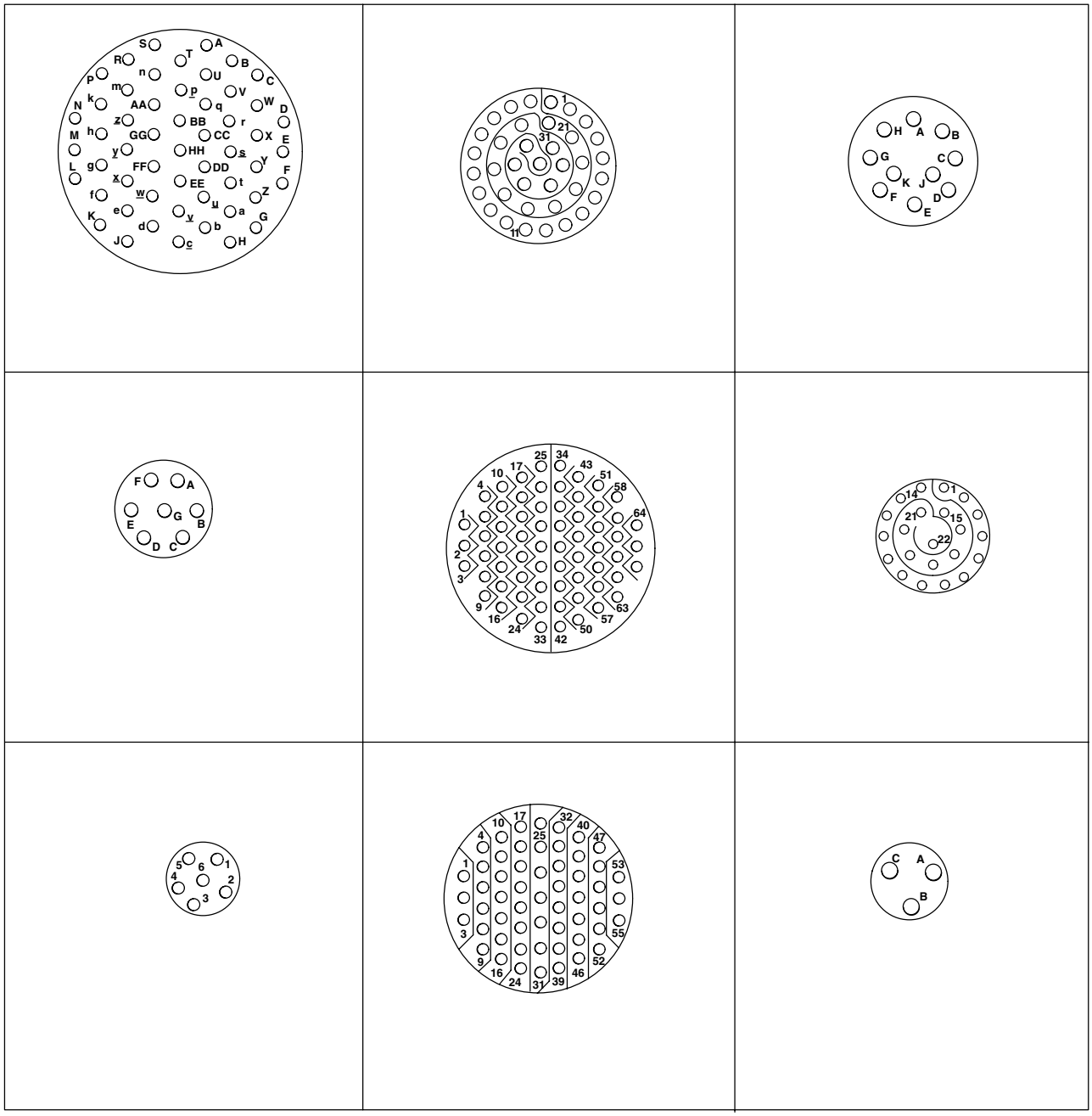


Figure F-3. Typical Electrical Connector Pin Arrangement

F-6. EQUIPMENT LIST

F-7. DESCRIPTION - EQUIPMENT LIST

Table F-1 lists each item of equipment shown on the electrical system wiring diagrams.

Each item of equipment is identified by the reference designator and nomenclature. Each reference designator consists of system number, unit number and item number as follows: for sample reference designator - 1M1P3, the "1" indicates system number, "M1" indicates unit number, and "P3" indicates item number. For reference designators not listed in this manual, refer to TM 11-1520-248-23. In the following tabular listing, system number and system description are given.

SYSTEM NO.	SYSTEM DESCRIPTION
1	Propulsion
2	DC Power
3	AC Power
4	Pilot Instruments and Panels
5	CPG Instruments and Panels
8	Lighting
9	SCAS, Hydraulic and Standby Attitude Indicator
10	Environmental Control
18	Air Data
21	Armament
22	Miscellaneous Avionics and Armament
23	Communication
24	Armament
34	Navigation

Each item of avionics equipment is identified by four numbers and one or two letters followed by one or more numbers: Example 2304CB2, the 23 is for communication, 04 is for VHF-FM, CB is for circuit breaker, and 2 is for the second unit. In the following tabular listing, system numbers (the two numbers that follow either 23 (communication) or 34 (navigation)) and letters are used to indicate system descriptions:

SYSTEM NO.	SYSTEM DESCRIPTION
Communication	
2300	Miscellaneous
2301	Intercommunication (ICS)
2302	UHF
2303	VHF-AM
2304	VHF-FM
2309	HF
2345	IDM
Navigation	
3408	Radar Altimeter
3431	CDS
3443	EGI
Other	
3410	IFF
3422	RWR

To locate an item shown in a wiring diagram, first find the reference designator. The nomenclature will indicate what the item is. If the item is identified in the helicopter with a decal or placard, the nomenclature will be printed in capital letters exactly as it appears in the helicopter. The item location will be determined within a general area of the helicopter, and the mode of access is also provided to aid the technician.

Table F-1. Equipment List (Electrical)

Reference Designation	Nomenclature	Location	Access
P7	Connector, Speed Sensor, NG Dual Coil	Connected to NG Dual Coil Speed Sensor	Engine Right Cowling
S1	Switch, FORCE TRIM	Pedestal	Left or Right Crew Door
S2	Switch, HYD SYS	Pedestal	Left or Right Crew Door
S3	Switch, PWR	Pedestal	Left or Right Crew Door
S4	Switch, TEST	Pedestal	Left or Right Crew Door
S5	Switch, PITCH/ROLL	Pedestal	Left or Right Crew Door
S6	Switch, YAW	Pedestal	Left or Right Crew Door
TD6	Light, Tail Formation	Vertical Fin	Vertical Fin
TLS1	Control, On/Off/Brightness, Formation Light	Overhead Console	Left or Right Crew Door
1A1	Panel, Digital Fuel Control	Pedestal	Left or Right Crew Door
1A1J1	Connector, Digital Fuel Control Panel	Connected to 1A1	Left or Right Crew Door
1A1J2	Connector, Integral Lighting	Connected to 1A1	Left or Right Crew Door
1A1P1	Connector, Fuel Quantity Control Panel	Connected to 1A1J1	Left or Right Crew Door
1A2	Unit, Fuel Quantity Control	Avionics Compartment, on Top of Fuel Cell	Right Access Door
1A2P1	Connector, Fuel Quantity Control Unit	Connected to 1A2	Right Access Door
1A3	Control, Electronic Supervisory	Aft Electrical Compartment, On Overhead	Aft Electrical Compartment Door
1A3P1	Connector, Electronic Supervisory Control	Connected to 1A3	Aft Electrical Compartment Door
1A4	Signal Conditioning Unit, Mast Torque	Avionics Compartment Right, On Top of Fuel Cell	Right Access Door
1A4P1	Connector, Signal Conditioning Unit, Mast Torque	Connected to 1A4	Right Access Door
1A5	Accelerometer, Chadwick	Transmission Lower Left	Transmission Left Access Panel
1A5P1	Connector, Accelerometer	Connected to 1A5	Transmission Left Access Panel
1A6	FADEC	Aft Electrical Compartment	Aft Electrical Compartment Access Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
1A6P1	Connector, FADEC	Aft Electrical Compartment	Aft Electrical Compartment Access Door
1A6P2	Connector, FADEC	Aft Electrical Compartment	Aft Electrical Compartment Access Door
1B1	Blower, Particle Separator	Transmission Compartment, Right Outboard, Aft of Mast	Transmission Right Access Panel
1B1P1	Connector, Particle Separator Blower	Connected to 1B1	Transmission Right Access Panel
1B2	Valve, Engine Oil Bypass	Oil System Aft Compartment	Aft Right Fairing
1B2J1	Connector, Bypass Valve, Engine Oil	Connected to 1B2	Aft Right Fairing
1B2P1	Connector, Engine Oil Pressure	Connected to 1B2	Aft Right Fairing
1B3	Fuel Pump	Bottom of Center Fuel Cell	Cell Door Beneath Fuselage
1B3TB1	Terminal Board	Internal to Fuel Pump	None
1CB1	Circuit Breaker, Start	Forward Overhead Console 4A4	Left or Right Crew Door
1CB2	Circuit Breaker, IGN	Forward Overhead Console 4A4	Left or Right Crew Door
1CB3	Circuit Breaker, FUEL CONTR DIGT	Forward Overhead Console 4A4 (will be replaced with 1CB18 FADEC CB upon upgrade to R3 engine)	Left or Right Crew Door
1CB4	Circuit Breaker, FUEL CONTR ANALOG	Forward Overhead Console 4A4 (will be replaced with 1CB18 FADEC CB upon upgrade to R3 engine)	Left or Right Crew Door
1CB5	Circuit Breaker, FUEL BOOST	Forward Overhead Console 4A4	Left or Right Crew Door
1CB6	Circuit Breaker, ENG OIL BYPASS	Aft Overhead Console 4A5	Left or Right Crew Door
1CB7	Circuit Breaker, ENG ANTI ICE	Center Post Circuit Breaker Panel 4A6	Left or Right Crew Door
1CB8	Circuit Breaker, PART SEP BLWR	Center Post Circuit Breaker Panel 4A6	Left or Right Crew Door
1CB9	Circuit Breaker, FUEL QTY	Aft Overhead Console 4A5	Left or Right Crew Door
1CB10	Circuit Breaker, XMSN XDCR	Aft Overhead Console 4A5	Left or Right Crew Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
1CB11	Circuit Breaker, ROTOR XDCR	Aft Overhead Console 4A5	Left or Right Crew Door
1CB12	Circuit Breaker, MAST TRQ	Aft Overhead Console 4A5	Left or Right Crew Door
1CB13	Circuit Breaker, ENG XDCR	Aft Overhead Console 4A5	Left or Right Crew Door
1CB14	Circuit Breaker, INST VS	Aft Overhead Console 4A5	Left or Right Crew Door
1CB15	Circuit Breaker, Fuel Control (OH-58D)	Forward Battery Compartment	Forward Battery Compartment Door
1CB15	Circuit Breaker, VOLTAGE MONITOR (OH-58D(R))	Forward Battery Compartment	Forward Battery Compartment Door
1CB16	Circuit Breaker, XMSN FUZZ BNR	Center Post Circuit Breaker Panel 4A6	Left or Right Crew Door
1CB17	Circuit Breaker, START VOLTAGE	DC Equipment Electrical Assembly 2A1	Aft Electrical Compartment Door
1CB18	Circuit Breaker, FADEC	Forward Overhead Console 4A4 (upon upgrade to R3 engine)	Left or Right Crew Door
1CR1	Diode, Battery Relay	DC Equipment Electrical Assembly 1A2, On 1K2	Aft Electrical Compartment Door
1CR2	Diode, Battery Relay	DC Equipment Electrical Assembly 1A2, on 1K2	Aft Electrical Compartment Door
1CR3	Diode, Start Relay	DC Equipment Electrical Assembly 1A2, on 1K1	Aft Electrical Compartment Door
1CR5	Diode, Start Relay	DC Equipment Electrical Assembly 1A2, on 1K1	Aft Electrical Compartment Door
1CR6	Diode, Chip Detector Relay	Avionics Compartment Lower Forward Bulkhead Connected to 22TB1	Right Access Door
1CR7	Diode, Chip Detector Relay	Avionics Compartment, Lower Forward Bulkhead Connected to 22TB1	Right Access Door
1C1	Capacitor — Fuzz Burner	Avionics Compartment Lower Forward Bulkhead Connected to 22TB1	Right Access Door
1C2	Capacitor — Fuzz Burner	Avionics Compartment Lower Forward Bulkhead Connected to 22TB1	Right Access Door
1C3	Capacitor — Fuzz Burner	Avionics Compartment Lower Forward Bulkhead Connected to 22TB1	Right Access Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
1C4	Capacitor — Fuzz Burner	Avionics Compartment, Lower Forward Bulkhead Connected to 22TB1	Right Access Door
1E1	Chip Detector, Transmission Sump	Transmission Compartment, Lower Left Side of Transmission	Transmission Left Cowling
1E1P1	Connector, Transmission Sump Chip Detector	Connected to 1E1	Transmission Left Cowling
1E2	Chip Detector, Mast Bearing	Transmission Compartment, Left Side of Transmission	Transmission Left Cowling
1E2P1	Connector, Mast Bearing Chip Detector	Connected to 1E2	Transmission Left Cowling
1E3	Tail Rotor Gearbox Chip Detector	Tailboom, Aft	Direct
1E3P1	Connector, Tail Rotor Gearbox Chip Detector	Connected to 1E3	Direct
1E4	Chip Detector, Freewheeling Assembly	Engine Compartment, Lower Forward Left Side of Engine	Left Engine Cowling Door
1E4P1	Connector, Freewheeling Assembly Chip Detector	Connected to 1E4	Left Engine Cowling Door
1G1	Magnetic Pickup, Chadwick	Mast Ring Assembly	Transmission Upper Left
1G1J1	Connector, Magnetic Pickup	Connected to 1G1	Transmission Upper Left
1G1P1	Connector, Magnetic Pickup	Connected to 1G1	Transmission Upper Left
1J1	Connector, Engine Disconnect	Engine Compartment, Lower Part of Engine	Engine Right Cowling
1J2	Connector, Engine Pan	Engine Compartment	Engine Upper Cowl
1J3	Connector, Transmission Roof	Avionics Compartment Overhead	Left Access Door
1J4	Connector, Oil Cooler Compressor	Aft Electrical Compartment Overhead	Aft Electrical Compartment Door
1J5	Connector, Upper Mast Torque	Avionics Compartment Overhead	Right Access Door
1J6	Connector, Oil Temperature	Transmission Compartment, Lower Left and Outboard of Mast, Connected to 1P6	Transmission Left Cowling
1J7	Connector, Transmission Mast Sensors and Chip Detector	Transmission Compartment, Right and Outboard of Mast	Transmission Right Access Panel

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
1J8	Connector, Accelerometer	Forward Side Below CPG Seat	Left Crew Door
1J9	Connector, Magnetic Pickup	Forward Side Below CPG Seat	Left Crew Door
1J11	Disconnect, Left Engine Deck	Forward Left Side of Engine Compartment, Lower Deck Sidewall	Engine Left Cowling Door
1K1	Relay, Start	Left Side of Aft Electrical Compartment, DC Equipment Electrical Assembly 2A1	Aft Electrical Compartment Door
1K2	Relay, Battery	Left Side of Aft Electrical Compartment, DC Equipment Electrical Assembly 2A1	Aft Electrical Compartment Door
1K3	Relay, Series Start Control	Right Side of Aft Electrical Compartment, DC Equipment Electrical Assembly 2A1	Aft Electrical Compartment Door
1K4	Relay, Engine Oil Bypass	Oil System Compartment	Aft Fairing
1K5	Relay, Fuel Boost Pump	Right Side of Aft Electrical Compartment, DC Equipment Electrical Assembly 2A1	Aft Electrical Compartment Door
1K6	Relay, Chip Detector (Right Burnoff)	Avionics Compartment, Lower Forward Bulkhead	Right Access Door
1K7	Relay, Chip Detector (Left Burnoff)	Avionics Compartment, Lower Forward Bulkhead	Right Access Door
1K8	Relay, Ignition	Right Forward Console Access Panel	Right Forward Console Access Panel
1K9	Relay, ECU Start	Right Forward Console Access Panel	Right Forward Console Access Panel
1K10	Relay, Manual Mode	Right Forward Console Access Panel	Right Forward Console Access Panel
1K11	Relay, FADEC Fail	Right Forward Console Access Panel	Right Forward Console Access Panel
1MT1	Transducer, Lower Mast Torque	Transmission Compartment	Transmission Left Access Panel
1MT1P1	Connector, Lower Mast Torque Transducer	Connected to 1MT1	Transmission Left Access Panel
1MT2	Transducer, Lower Mast Torque	Transmission Compartment	Transmission Right Access Panel

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
1MT2P1	Connector, Lower Mast Torque Transducer	Connector 1MT2	Transmission Right Access Panel
1MT3	Transducer, Transmission Oil Pressure	Transmission Compartment	Transmission Left Access Panel
1MT3P1	Connector, Transmission Oil Pressure Transducer	Connected to 1MT3	Transmission Left Access Panel
1MT4	Transducer, Transmission Oil Temperature	Transmission Lower Left	Transmission Left Access Panel
1MT5	Transducer, Engine Oil Temperature	Oil System Compartment	Aft Fairing
1MT6	Transducer, Engine Oil Pressure	Transmission Compartment, Right	Transmission Right Access Panel
1MT6P1	Connector, Engine Oil Pressure	Connected to 1MT6	Transmission Right Access Panel
1MT7	Transducer, Engine Torque	Transmission Compartment, Left	Transmission Left Access Panel
1MT7P1	Connector, Engine Torque Transducer	Connected to 1MT7	Transmission Left Access Panel
1MT8	Transducer, Upper Mast Torque	MMS Turret Assembly 3429A1 Base	MMS Turret Assembly 3429A1 Removed
1MT8P1A	Connector, Upper Mast Torque	Connected to 1MT8	MMS Turret Assembly 3429A1 Removed
1MT9	Transducer, Rotor Position	MMS Turret Assembly 3429A1 Base	MMS Turret Assembly 3429A1 Removed
1MT10	Transducer, Collective Pitch	Under CPG Seat	Left Crew Door
1MT10J1	Connector, Collective Pitch Transducer	Under CPG Seat	Left Crew Door
1MT10P1	Connector, Collective Pitch Transducer	Under CPG Seat	Left Crew Door
1M1	Display, Multiparameter	Pedestal	Left or Right Crew Door
1M1P1	Connector, Multiparameter Display	Connected to 1M1	Left or Right Crew Door
1M1P2	Connector, Multiparameter Display	Connected to 1M1	Left or Right Crew Door
1M1P3	Connector, Multiparameter Display	Connected to 1M1	Left or Right Crew Door
1M2	Indicator, Dual Tachometer	Instrument Panel	Left or Right Crew Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
1M2P1	Connector, Dual Tachometer	Connected to J1 on 1M2	Left or Right Crew Door
1M3	Indicator, TRQ and TGT	Instrument Panel	Left or Right Crew Door
1M3P1	Connector, Torque and Turbine Gas Temperature	Connected to 1M3	Left or Right Crew Door
1P1	Connector, Engine Disconnect	Engine Compartment, Lower Part of Engine	Engine Right Cowling
1P2	Connector, Engine Compartment Disconnect	Engine Compartment, Firewall	Engine Right Cowling
1P3	Connector, Transmission Roof Disconnect	Hydraulic Compartment, Left Side	Transmission Forward Cowling
1P4	Connector, Oil Cooler Compartment Disconnect	Oil System Compartment	Aft Fairing Access Door
1P5	Connector, Mast Torque Disconnect	Avionics Compartment Overhead	Left Access Door
1P6	Connector, Transmission Oil Temperature Transducer	Transmission Compartment Outboard from Mast	Transmission Left Cowling
1P7	Connector, Transmission Disconnect	Transmission Compartment Outboard from Mast	Transmission Right Access Panel
1P11	Disconnect, Left Engine Deck	Forward Left Side of Engine Compartment, Lower Deck Sidewall	Engine Left Cowling Door
1P12	Connector, Ignition Exciter	Connected to Exciter Unit on Engine	Engine Left Cowling Door
1RT1	Sensor, Mast Torque Temperature	Transmission, Lower Left	Transmission Left Access Panel
1RT1P1	Connector, Mast Torque Temperature Sensor	Connected to 1RT1	Transmission Left Access Panel
1R1	Resistor, Fuzz Burner	Avionics Compartment Lower Forward Bulkhead, Connected to 22TB1	Right Access Door
1S1	Switch, START	Pilot Collective Stick	Right Crew Door
1S2	Switch, Oil Level Float	Oil System Compartment	Aft Fairing
1S3	Switch, Fuel Filter Bypass	Engine Lower Left	Engine Left Cowling Door
1S3P1	Connector, Fuel Filter Bypass Switch	Connected to 1S3	Engine Left Cowling Door
1S4	Switch, Fuel Pressure	Above Fuel Filter Cap, Right Side	Access Panel Aft of Right Access Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
1S4J1	Connector, Fuel Pressure Switch	Connected to 1S4	Access Panel Aft of Right Access Door
1S4P1	Connector, Fuel Pressure Switch	Connected to 1S4	Access Panel Aft of Right Access Door
1S5	Switch, FUEL BOOST Pump	Forward Overhead Console 4A4	Left or Right Crew Door
1S6	Switch, ENG OIL BYPASS	Forward Overhead Console 4A4	Left or Right Crew Door
1S7	Switch, Gearbox Oil Temperature	Tailboom, Aft Right	Direct
1S8	Switch, FUEL CONTROL	Pedestal, On Digital Fuel Control Panel 1A1	Left or Right Crew Door
1S9	Switch, DIGITAL TEST	Pedestal, On Digital Fuel Control Panel 1A1	Left or Right Crew Door
1S10	Switch, ANALOG TEST	Pedestal, On Digital Fuel Control Panel 1A1	Left or Right Crew Door
1S11	Switch, Governor RPM	Pilot Collective Stick Panel	Right Crew Door
1S12	Switch, ENG ANTI ICE	Forward Overhead Console	Left or Right Crew Door
1S13	Switch, Transmission Oil Pressure	Transmission Compartment, Aft Left	Transmission Left Access Panel
1S14	Switch, Keylock	Pedestal	Left or Right Crew Door
1S14J1	Connector, Keylock Switch	Pedestal	Left or Right Crew Door
1S14J2	Connector, Keylock Switch	Pedestal	Left or Right Crew Door
1TB1	Terminal Board	Oil System Compartment	Aft Fairing
1TB2	Terminal Board, Engine Temperature	Avionics Compartment Left Side on Upper Equipment Shelf, Aft of Fuel Cell	Left Access Door, Avionics Compartment Aft Soundproofing
1XK3	Socket, Series Start Control Relay	Connected to 1K3	Aft Electrical Compartment Door
1XK4	Socket, Engine Oil Bypass Relay	Connected to 1K4	Aft Fairing
1XK5	Socket, Fuel Boost Pump Relay	Connected to 1K5	Aft Electrical Compartment Door
1XK6	Socket, Chip Detector (Right Burnoff) Relay	Connected to 1K6	Right Access Door
1XK7	Socket, Chip Detector (Left Burnoff) Relay	Connected to 1K7	Right Access Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
1XK8	Socket, Ignition Relay	Connected to 1K8	Right Forward Console Access Panel
1XK9	Socket, ECU Start Relay	Connected to 1K9	Right Forward Console Access Panel
1XK10	Socket, Manual Mode Relay	Connected to 1K10	Right Forward Console Access Panel
1XK11	Socket, FADEC Fail Relay	Connected to 1K11	Right Forward Console Access Panel
1Z1	Transmitter, Fuel Quantity	Avionics Compartment On Top of Fuel Cell	Left Access Door
2A1	Assembly, DC Equipment Electrical	Aft Electrical Compartment, Forward Bulkhead	Aft Electrical Compartment Door
2A1J1	Connector, DC Equipment Electrical Assembly	On 2A1	Aft Electrical Compartment Door
2A1J2	Connector, DC Equipment Electrical Assembly	On 2A1	Aft Electrical Compartment Door
2A1J3	Connector, DC Equipment Electrical Assembly	On 2A1	Aft Electrical Compartment Door
2A1P1	Connector, DC Equipment Electrical Assembly	Connected to 2A1J1	Aft Electrical Compartment Door
2A1P2	Connector, DC Equipment Electrical Assembly	Connected to 2A1J2	Aft Electrical Compartment Door
2A1P3	Connector, DC Equipment Electrical Assembly	Connected to 2A1J3	Aft Electrical Compartment Door
2BT1	Battery #1	Forward Battery Compartment	Forward Battery Compartment Door
2BT1P1	Connector, Battery #1	Connected to 2BT1	Forward Battery Compartment Door
2BT1P2	Connector, Battery #1	Connected to 2BT1	Forward Battery Compartment Door
2BT2	Battery #2 (Aft Battery)	Aft Electrical Compartment	Aft Electrical Compartment Door
2BT2P1	Connector, Battery #2	Connected to J1 on 2BT2	Aft Electrical Compartment Door
2BT2P2	Connector, Battery #2	Connected to J2 on 2BT2	Aft Electrical Compartment Door
2CB1	Circuit Breaker, Generator Field Remote Control	DC Equipment Electrical Assembly 2A1	Aft Electrical Compartment Door
2CB2	Circuit Breaker, DC GEN FIELD	Aft Overhead Console 4A5	Left or Right Crew Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
2CB3	Circuit Breaker, Rectifier Remote Control	DC Equipment Electrical Assembly 2A1	Aft Electrical Compartment Door
2CB4	Circuit Breaker, RECT	Aft Overhead Console 4A5	Left or Right Crew Door
2CB5	Circuit Breaker, DC GEN	Aft Overhead Console 4A5	Left or Right Crew Door Compartment Door
2CB6	Circuit Breaker, BUS INTCON	Aft Overhead Console 4A5	Left or Right Crew Door
2CB7	Circuit Breaker, Battery Charger	DC Equipment Electrical Assembly 2A1	Aft Electrical Compartment Door
2CB8	Circuit Breaker, BATT CHGR	Center Post Circuit Breaker Panel 4A6	Right Crew Door
2CB9	Circuit Breaker, 9TH CELL	Forward Battery Compartment	Forward Battery Compartment Door
2CB10	Circuit Breaker, Overload Sensor	Above DC Equipment Electrical Assembly 2A1	Aft Electrical Compartment Door
2CB11	Circuit Breaker, Rectifier Volts	DC Equipment Electrical Assembly 2A1	Aft Electrical Compartment Door
2CB12	Circuit Breaker, 28 VDC AUX RCPT	Above DC Equipment Electrical Assembly 2A1	Aft Electrical Compartment Door
2CR1	Diode, Battery Emergency Bus	Avionics Compartment Left Side of Roof	Left Access Door
2CR2	Diode, Battery Emergency Bus	Avionics Compartment Left Side of Roof	Left Access Door
2CR3	Diode, Battery Emergency Bus	Avionics Compartment Left Side of Roof	Left Access Door
2CR4	Diode, Battery Emergency Bus	Avionics Compartment Left Side of Roof	Left Access Door
2CR5	Diode, Power Assured Bus Relay	Connected to 22TB3	Left Crew Door, Pedestal
2CR6	Diode, Power Assured Bus Relay	Connected to 22TB3	Left Crew Door, Pedestal
2CR7	Diode, Inverter Enable Relay and Rectifier Relay	DC Equipment Electrical Assembly 2A1, on 2TB3	Aft Electrical Compartment Door
2CR8	Diode, Rectifier Relay	DC Equipment Electrical Assembly 2A1, on 2K6	Aft Electrical Compartment Door
2CR9	Diode, Bus Interconnect Relay	DC Equipment Electrical Assembly 2A1, on 2K5	Aft Electrical Compartment Door
2CR10	Diode, Line Relay	DC Equipment Electrical Assembly 2A1, on 2K1	Aft Electrical Compartment Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
2CR11	Diode, Battery #2 Relay	DC Equipment Electrical Assembly 2A1, on 2K4	Aft Electrical Compartment Door
2CR12	Diode, Battery #1 Relay	Forward Battery Compartment on 2K2	Forward Battery Compartment Door
2CR13	Diode, External Power Relay	Forward Battery Compartment on 2K3	Forward Battery Compartment Door
2DS1	Lamp, Battery #1 Preheat	On Floodlight, Above Pilot Seat	Right Crew Door
2DS2	Lamp, Battery #2 Preheat	On Floodlight, Above Pilot Seat	Right Crew Door
2J1	Connector, Generator Field	Engine Compartment	Engine Upper Cowl
2J2	Connector, DC External Power (APU)	Nose	Access Door, APU
2J3	Connector, 28 VDC AUX RCPT	Forward Side Below CPG Seat	Left Crew Door
2K1	Relay, Line	DC Equipment Electrical Assembly 2A1	Aft Electrical Compartment Door
2K2	Relay, Battery	Battery Compartment	Forward Battery Compartment Door
2K3	Relay, External Power	Battery Compartment	Forward Battery Compartment Door
2K4	Relay, Battery #2	DC Equipment Electrical Assembly 2A1	Aft Electrical Compartment Door
2K5	Relay, Bus Interconnect	DC Equipment Electrical Assembly 2A1	Aft Electrical Compartment Door
2K6	Relay, Rectifier	DC Equipment Electrical Assembly 2A1	Aft Electrical Compartment Door
2K7	Relay, Battery Low Temperature	DC Equipment Electrical Assembly 2A1	Aft Electrical Compartment Door
2K8	Relay, Power Assured Bus	Above CPG	Left Crew Door
2K9	Relay, Feeder Fault Inhibit	DC Equipment Electrical Assembly 2A1	Aft Electrical Compartment Door
2MG1	Starter-Generator	Lower Right Part of Engine	Engine Right Cowling
2PS1	TRU	Floor, Right Side	Aft Electrical Compartment Door
2PS1P1	Connector, XFMR RECT UNIT	Connected to 2PS1	Aft Electrical Compartment Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
2PS2	Charger-Monitor	Upper Equipment Shelf, Left of Aft Fuel Cell	Left Access Door, Avionics Compartment Aft Soundproofing Blanket
2PS2J2	Connector, Charger-Monitor	Upper Equipment Shelf Left of Aft Fuel Cell Connected to 2PS2P2 When 2PS2 is Not Installed.	Left Access Door, Avionics Compartment Aft Soundproofing Blanket
2PS2P1	Connector, Charger-Monitor	Connected to 2PS2	Left Access Door, Avionics Compartment Aft Soundproofing Blanket
2PS2P2	Connector, Charger-Monitor	Connected to 2PS2	Left Access Door, Avionics Compartment Aft Soundproofing Blanket
2P1	Connector, Starter-Generator	Lower Right Part of Engine	Engine Right Cowling
2R1	Shunt, Generator	Upper Equipment Shelf, Aft Right of Fuel Cell	Right Access Door, Avionics Compartment Aft Soundproofing Blanket
2R2	Shunt, Generator High	DC Equipment Electrical Assembly 2A1	Aft Electrical Compartment Door
2R3	Shunt, TRU	Floor, Right Side	Aft Electrical Compartment Door
2S1	Switch, PREHEAT BATT #1	Forward Overhead Console 4A4	Left or Right Crew Door
2S2	Switch, PREHEAT BATT #2	Forward Overhead Console 4A4	Left or Right Crew Door
2S3	Switch, ESNTL BUS	Forward Overhead Console 4A4	Left or Right Crew Door
2S4	Switch, DC GEN	Forward Overhead Console 4A4	Left or Right Crew Door
2S5	Switch, DC External Power Door	Nose	Access Door APU
2TB1	Junction Block, DC Power	Left Side of Roof	Left Access Door
2TB2	Junction Block, DC Power	Left Side of Roof	Left Access Door
2TB3	Terminal Board, DC Power	DC Equipment Electrical Assembly 2A1	Aft Electrical Compartment Door
2TB4	Terminal Board, Battery #1 Power	Forward Battery Compartment, Left Side	Forward Battery Compartment Door
2TB5	Junction Block, Battery #1 and External Power	Pedestal	Left or Right Crew Door, Pedestal

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
2VR1	Regulator, Voltage	Left Forward Bulkhead	Aft Electrical Compartment Door
2VR1P1	Connector, Voltage Regulator	Connected to 2VR1	Aft Electrical Compartment Door
2XK7	Socket, Battery Low Temperature Relay	DC Equipment Electrical Assembly 2A1, Connected to 2K7	Aft Electrical Compartment Door
2XK8	Socket, Power Assured Bus Relay	Above CPG Connected to 2K8	Left Crew Door
2XK9	Socket, Feeder Fault Inhibit Relay	DC Equipment Electrical Assembly 2A1, Connected to 2K9	Aft Electrical Compartment
2Z1	Sensor, DC Voltage	Nose Compartment Left	Left Crew Door
2Z1P1	Connector, DC Voltage Sensor	On 2Z1	Left Crew Door
3A1	Unit, External Power Control	Right Forward Bulkhead	Aft Electrical Compartment Door
3A1P1	Connector, EXT PWR	Connected to 3A1	Aft Electrical Compartment Door
3CB1	Circuit Breaker, RCCB INV	DC Equipment Electrical Assembly 2A1	Aft Electrical Compartment Door
3CB2	Circuit Breaker, INV	Aft Overhead Console 4A5	Left or Right Crew Door
3CB3	Circuit Breaker, 26 VAC PWR	Center Post Circuit Breaker Panel 4A6	Left or Right Crew Door
3CB4	Circuit Breaker, CDS INV VOLT	DC Equipment Electrical Assembly 2A1	Aft Electrical Compartment Door
3CR1	Diode, AC External Power Relay	DC Equipment Electrical Assembly 2A1 Connected to 3K2	Aft Electrical Compartment Door
3CR2	Diode, AC Generator Transfer Relay	DC Equipment Electrical Assembly 2A1 Connected to 3K3	Aft Electrical Compartment Door
3G1	Generator, AC	Lower Left Part of Engine	Engine Left Cowling
3G1P1	Connector, AC Generator	Connected to 3G1	Engine Left Cowling
3J1	Connector, AC Generator Firewall	Engine Left Firewall, Connected to 3P1	Engine Left Cowling
3J2	Connector, AC External Power	Fuselage, Aft or Right Crew Door	Aft Electrical Compartment Door
3K1	Relay, Inverter Enable	DC Equipment Electrical Assembly 2A1	Aft Electrical Compartment Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
3K2	Relay, AC External Power	DC Equipment Electrical Assembly 2A1	Aft Electrical Compartment Door
3K3	Relay, AC Generator Transfer	DC Equipment Electrical Assembly 2A1	Aft Electrical Compartment Door
3K4	Relay, Inverter	DC Equipment Electrical Assembly 2A1	Aft Electrical Compartment Door
3PS1	Inverter	Wall, Right Side, Aft Electrical Compartment	Aft Electrical Compartment Door
3PS1J1	Connector, Inverter	Connected to 3PS1	Aft Electrical Compartment Door
3PS1P1	Connector, Inverter	Connected to 3PS1	Aft Electrical Compartment Door
3P1	Connector, AC Generator Firewall	Engine Left Firewall	Engine Left Cowling
3S1	Switch, AC GEN	Forward Overhead Console 4A4	Left or Right Crew Door
3S2	Switch, EXT PWR RESET	Aft of Right Access Door	External Power Receptacle Door
3S3	Switch, AC External Power Door	Aft of Right Access Door	External Power Receptacle Door
3T1	Autotransformer, 26V	Left Side of Roof	Left Access Door
3VR1	Unit, Alternator Control	Right Forward Bulkhead	Aft Electrical Compartment Door
3VR1P1	Connector, AC Generator Control Unit	Connected to 3VR1	Aft Electrical Compartment Door
3XK1	Socket, Inverter Enable Relay	DC Equipment Electrical Assembly 2A1 Connected to 3K4	Aft Electrical Compartment Door
3XK4	Socket, Inverter Relay	DC Equipment Electrical Assembly 2A1 Connected to 3K4	Aft Electrical Compartment Door
4A1	Stick, Pilot Cyclic	Pilot Station	Right Crew Door
4A1J1	Connector, Pilot Cyclic Stick	Under Pilot Seat, Connected to 4A1P1	Right Crew Door, Armored Panel Under Pilot Seat
4A1P1	Connector, Pilot Cyclic Stick	Under Pilot Seat, Connected to 4A1	Right Crew Door, Armored Panel Under Pilot Seat
4A2	Panel, Pilot Collective Stick	Pilot Station	Right Crew Door
4A2J1	Connector, Pilot Collective Stick	Below At End of Pilot Collective Stick, Connected to 4A2P1	Right Crew Door, Armored Panel Under Pilot Seat

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
4A2J2	Connector, Panel Light	Pilot Collective Stick, Integral Lighting	Right Crew Door
4A2P1	Connector, Panel Collective Stick	Below Aft End of Pilot Collective Stick, Connected to 4A2J1	Right Crew Door, Armored Panel Under Pilot Seat
4A4	Panel, Forward Overhead Console	Crew Station Overhead	Left or Right Crew Door
4A4J1	Connector, Forward Overhead Console Panel	Connected to 4A4	Left or Right Crew Door
4A5	Panel, Aft Overhead Console	Crew Station Overhead	Left or Right Crew Door
4A5J1	Connector, Aft Overhead Console Panel	Connected to 4A5	Left or Right Crew Door
4A6	Panel, Center Post Circuit Breaker	Crew Station Post	Left or Right Crew Door
4A6J1	Connector, Center Post Circuit Breaker Panel	Connected to 4A6	Left or Right Crew Door
4A7	Panel, Integrally Lit MFD	Pilot Station MFD Auxiliary Switch Panel	Right Crew Door
4A7J1	Connector, Panel Light	MFD Auxiliary Switch Panel, Integral Lighting	Right Crew Door
4A8	Panel Assembly, Aux CB	Forward Cabin Roof, Right Side	Right Crew Door
4A8J1	Connector, Aux CB Panel Assembly	Part of Panel Assembly, Aux CB, Forward Cabin Roof	Right Crew Door
4J2A	Splice, Pilot MFD Auxiliary Switch Panel	MFD Auxiliary Switch Panel, Integral Lighting	Right Crew Door
4J2B	Splice, Pilot MFD Auxiliary Switch Panel	MFD Auxiliary Switch Panel, Integral Lighting	Right Crew Door
4M1	Indicator, Altimeter	Pilot Station, Instrument Panel	Right Crew Door
4M1P1	Connector, Altimeter Indicator	Connected to J1 on 4M1	Right Crew Door
4M2	Indicator, Airspeed	Instrument Panel	Left Crew Door
4M2P1	Connector, Airspeed Indicator	Connected to 4M2	Left Crew Door
4M3	Clock	Instrument Panel	Right Crew Door
4M3P1	Connector, Clock	Connected to 4M3	Right Crew Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
4M4	Compass, Standby	Pilot Station Instrument Panel	Right Crew Door
4M4P1	Connector, Standby Compass	Connected to 4M4	Right Crew Door
4P1	Connector, Pilot Night Vision Goggles	Above Pilot Station	Right Crew Door
5A1	Stick, CPG Cyclic	CPG Station	Left Crew Door
5A1J1	Connector, CPG Cyclic Stick	Under CPG Seat	Left Crew Door, Armored Panel Under CPG Seat
5A1P1	Connector, CPG Cyclic Stick	Connected to 5A1	Left Crew Door, Armored Panel Under CPG Seat
5A2	Panel Assembly, Instrument	Cockpit	Left or Right Crew Door
5A2J1	Connector, Integral Lighting Panel	CPG Station, Lower Left Side of Instrument Panel	Left Crew Door
5A2J2	Connector, Integral Lighting Panel	CPG Station, Below MFD Integral Lighting	Left Crew Door
5J2A	Splice, CPG MFD Auxiliary Switch Panel	Behind CPG Auxiliary Switch Panel	Left Crew Door
5J2B	Splice, CPG MFD Auxiliary Switch Panel	Behind CPG Auxiliary Switch Panel	Left Crew Door
5J3A	Splice, CPG Channel Select Panel	Behind CPG Channel Select Panel	Left Crew Door
5J3B	Splice, CPG Channel Select Panel	Behind CPG Channel Select Panel	Left Crew Door
5P1	Connector, CPG Night Vision Goggles	Above CPG Station	Left Crew Door
8CB1	Circuit Breaker, EL LT	Center Post Circuit Breaker Panel 4A6	Left or Right Crew Door
8CB2	Circuit Breaker, NVG PWR	Aft Overhead Console 4A5	Left or Right Crew Door
8CB3	Circuit Breaker, CKPT LT	Aft Overhead Console 4A5	Left or Right Crew Door
8CB4	Circuit Breaker, POS LT	Aft Overhead Console 4A5	Left or Right Crew Door
8CB5	Circuit Breaker, SRCH LT CONTR	Aft Overhead Console 4A5	Left or Right Crew Door
8CB6	Circuit Breaker, SRCH LT PWR	Aft Overhead Console 4A5	Left or Right Crew Door
8CB7	Circuit Breaker, ANTI COLL LT	Aft Overhead Console 4A5	Left or Right Crew Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
8DS1	Light, Upper Anticollision	On Top of Engine Fairing	Direct
8DS2	Light, Lower Anticollision	On Bottom of Aft Fuselage	Direct
8DS3	Light, Tail Position	Tail Fairing	Direct
8DS4	Light, Right Position	Right Horizontal Stabilizer	Direct
8DS5	Light, Left Position	Left Horizontal Stabilizer	Direct
8DS6	Searchlight	Nose Compartment	Direct
8DS6TB1	Terminal Board, Searchlight	Connected to 8DS6	Searchlight Lowered
8DS9	Floodlight, White	Above CPG	Left Crew Door
8DS10	Floodlight, Green	Above Pilot	Right Crew Door
8DS11	Light, Utility	Between Top of Crew Seats	Left or Right Crew Door
8J1	Connector, Anticollision Light	On Top of Engine Fairing, Connected to 8P1	Upper Anticollision Light Removed
8J2	Splice, Anticollision Light	Connected Near 8DS3	Tail Position Light Removed
8J3	Splice, Anticollision Light	Connected Near 8DS3	Tail Position Light Removed
8PS1	Power Supply, CPG Night Vision Goggle	Above CPG	Left Crew Door
8PS1J1A	Splice, CPG Night Vision Goggle Power Supply	Above CPG	Left Crew Door
8PS1J1B	Splice, CPG Night Vision Goggle Power Supply	Above CPG	Left Crew Door
8PS1TB1	Terminal Board, Power Supply, CPG Night Vision Goggles	Above CPG	Left Crew Door
8PS2	Power Supply, Pilot Night Vision Goggle	Above Pilot	Right Crew Door
8PS2J1A	Splice, Pilot Night Vision Goggle Power Supply	Above Pilot	Right Crew Door
8PS2J1B	Splice, Pilot Night Vision Goggle Power Supply	Above Pilot	Right Crew Door
8PS2TB1	Terminal Board, Power Supply, Pilot Night Vision Goggles	Above Pilot	Right Crew Door
8P1	Connector, Upper Anticollision Light	On Top of Engine Fairing, Connected to 8J1	Upper Anticollision Light Removed

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
8R1	Transformer, CONSOLE LT, Pedestal and Overhead Dimming	Forward Overhead Console 4A4	Left or Right Crew Door
8R2	Transformer, INST LT, Panel Dimming	Forward Overhead Console 4A4	Left or Right Crew Door
8R3	Resistor, FLOOD LT Dimming	Forward Overhead Console 4A4	Left or Right Crew Door
8R4	Resistor, Position Light Dimming	Above Aft Electrical Compartment, Left Side	Aft Electrical Compartment Door
8R5	Resistor, CONSOLE DIMMING	Pedestal, Aft End	Left or Right Crew Door
8R6	Resistor, INST DIMMING	Pedestal, Aft End	Left or Right Crew Door
8S1	Switch, ANTICOLL LIGHT OFF	Forward Overhead Console	Left or Right Crew Door
8S2	Switch, SRCH LT ON/NVG/ OFF	Pilot Collective Stick Panel 4A2	Right Crew Door
8S3	Switch, SRCH LT EXT/L/R/ RET	Pilot Collective Stick Panel 4A2	Right Crew Door
8S4	Switch, POS LIGHT OFF/ DIM/BRT	Forward Overhead Console 4A4	Left or Right Crew Door
8S5	Switch, FLOOD LT	Forward Overhead Console 4A4	Left or Right Crew Door
8TB1	Terminal Board, Lighting	Pedestal	Left or Right Crew Door
8TB2	Terminal Board, Lighting	Pedestal	Left or Right Crew Door Pedestal
8TB3	Terminal Board, Utility Light	Above CPG	Left Crew Door
8TB4	Terminal Board, Position Lights	Inside Tailboom Above Horizontal Stabilizer	Upper Support, Above Horizontal Stabilizer
8Z1	Flasher, Anticollision Light	Upper Equipment Shelf, Aft Right of Fuel Cell	Aft Electrical Compartment Door
9A1	Panel, SCAS Control	Pedestal	Left or Right Crew Door
9A1J1	Connector, SCAS Control Panel	Connected to 9A1	Left or Right Crew Door
9A1P1	Connector, SCAS Control Panel	Connected to 9A1	Left or Right Crew Door
9CB1	Circuit Breaker, SCAS 26VAC	Center Post, Circuit Breaker Panel 4A6	Left or Right Crew Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
9CB2	Circuit Breaker, HDG HOLD	Center Post, Circuit Breaker Panel 4A6	Left or Right Crew Door
9CB3	Circuit Breaker, SCAS DC	Aft Overhead Console 4A5	Left or Right Crew Door
9CB4	Circuit Breaker, HYD SYS	Aft Overhead Console 4A5	Left or Right Crew Door
9CB5	Circuit Breaker, FORCE TRIM	Aft Overhead Console 4A5	Left or Right Crew Door
9CB6	Circuit Breaker, STBY ATT	Aft Overhead Console 4A5	Left or Right Crew Door
9CR1	Diode, Trim Actuator Brake	Connected to 9TB3	Aft Electrical Compartment Door
9CR2	Diode, Trim Actuator Clutch	Connected to 9TB3	Aft Electrical Compartment Door
9CR3	Diode, Lateral Cyclic Magnetic Brake	Under Pilot Seat, Connected to 9TB2	Right Crew Door
9CR4	Diode, Fore/Aft Cyclic Magnetic Brake	Under Pilot Seat, Connected to 9TB2	Right Crew Door
9CR5	Diode, Pitch/Roll Engage	Avionics Compartment, Left Side of Equipment Rack Forward of Fuel Cell, Connected to 9TB1	Left Crew Door
9J1	Connector, Yaw Actuator Disconnect	Connected to 9L3	Aft Electrical Compartment Door
9K1	Relay, Trim Actuator Brake	Aft Electrical Compartment Right Side	Aft Electrical Compartment Door
9L1	Actuator, Right Cyclic	Transmission Compartment, Right Forward End	Transmission Right Access Panel
9L1J1	Connector, Actuator, Right Cyclic	Connected to P1 on 9L1	Transmission Right Access Panel
9L1J2	Connector, Actuator, Right Cyclic	Connected to P2 on 9L2	
9L1P1	Connector, Right Cyclic Actuator	Connected to J1 on 9L1	Transmission Right Access Panel
9L1P2	Connector, Right Cyclic Actuator	Connected to J2 on 9L2	Transmission Right
9L2	Actuator, Left Cyclic	Forward End of Transmission, Left	Transmission Left Access Panel
9L2J1	Connector, Left Cyclic Actuator	Connected to P1 on 9L2	Transmission Left Access Panel
9L2J2	Connector, Left Cyclic Actuator	Connected to P2 on 9L2	Transmission Left Access Panel

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
9L2P1	Connector, Left Cyclic Actuator	Connected to J1 on 9L2	Transmission Left Access Panel
9L2P2	Connector, Left Cyclic Actuator	Connected to J2 on 9L2	Transmission Left Access Panel
9L3	Actuator, Yaw	Aft Electrical Compartment, Right Side	Aft Electrical Compartment Door
9L3J1	Connector, Yaw Actuator	Connected to 9L3	Aft Electrical Compartment Door
9L3J2	Connector, Yaw Actuator	Connected to 9L3	Aft Electrical Compartment Door
9L3P1	Connector, Yaw Actuator	Connected to 9L3	Aft Electrical Compartment Door
9L3P2	Connector, Yaw Actuator	Connected to 9L3	Aft Electrical Compartment Door
9L4	Actuator, Magnetic Brake	Below CPG Seat	Left Crew Door
9L4P1	Connector, Magnetic Brake Actuator	Below CPG Seat	Left Crew Door
9L5	Actuator, Magnetic Brake	Below Pilot Seat	Right Crew Door
9L5P1	Connector, Magnetic Brake Actuator	Below Pilot Seat	Right Crew Door
9L6	Valve, Hydraulic Solenoid	Transmission Compartment	Transmission Cowling
9L6P1	Connector, Hydraulic Solenoid Valve	Connected to 9L6	Transmission Cowling
9L7	Actuator, Trim	Aft Electrical Compartment, Right Side	Aft Electrical Compartment Door
9L7J1	Connector, Trim Actuator	Connected to P1 on 9L7	Aft Electrical Compartment Door
9L7J2	Connector, Trim Actuator	Connected to P2 on 9L7	Aft Electrical Compartment Door
9L7P1	Connector, Trim Actuator	Connected to J1 on 9L7	Aft Electrical Compartment Door
9L7P2	Connector, Trim Actuator	Connected to J2 on 9L7	Aft Electrical Compartment Door
9MP1	Gyro, Rate, Pitch/Yaw	Avionics Compartment, Right of Fuel Cell	Right Access Door
9MP1J1	Connector, Rate Gyro, Pitch/Yaw	Connected to 9MP1P1	Right Access Door
9MP1J2	Connector, Rate Gyro, Pitch/Yaw	Connected to 9MP1P2	Right Access Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
9MP1P1	Connector, Rate Gyro, Pitch/Yaw	Connected to 9MP1J1	Right Access Door
9MP1P2	Connector, Rate Gyro, Pitch/Yaw	Connected to 9MP1J2	Right Access Door
9MP2	Sensor, Roll Rate	Avionics Compartment, Right of Fuel Cell	Right Access Door
9MP2J1	Connector, Roll Rate Sensor	Connected to 9MP2P1	Right Access Door
9MP2J2	Connector, Roll Rate Sensor	Connected to 9MP2P2	Right Access Door
9MP2P1	Connector, Roll Rate Sensor	Connected to 9MP2J1	Right Access Door
9MP2P2	Connector, Roll Rate Sensor	Connected to 9MP2J2	Right Access Door
9MT1	Transducer, F/A Cyclic Control Motion	Below CPG Seat	Left Crew Door
9MT1J1	Connector, F/A Cyclic CMT	Below CPG Seat	Left Crew Door
9MT1J2	Connector, F/A Cyclic CMT	Below CPG Seat	Left Crew Door
9MT1P1	Connector, F/A Cyclic CMT	Below CPG Seat	Left Crew Door
9MT1P2	Connector, F/A Cyclic CMT	Below CPG Seat	Left Crew Door
9MT2	Transducer, Lateral Cyclic, Control Motion	Below CPG Seat	Left Crew Door
9MT2J1	Connector, Lateral Cyclic CMT	Below CPG Seat	Left Crew Door
9MT2J2	Connector, Lateral Cyclic CMT	Below CPG Seat	Left Crew Door
9MT2P1	Connector, Lateral Cyclic CMT	Below CPG Seat	Left Crew Door
9MT2P2	Connector, Lateral Cyclic CMT	Below CPG Seat	Left Crew Door
9MT3	Transducer, Collective No. 1	Below CPG Seat	Left Crew Door
9MT3J1	Connector, Collective No. 1 CMT	Below CPG Seat Connected to 9MT3P1	Left Crew Door
9MT3J2	Connector, Collective No. 1 CMT	Below CPG Seat Connected to 9MT3P2	Left Crew Door
9MT3P1	Connector, Collective No. 1 CMT	Below CPG Seat	Left Crew Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
9MT3P2	Connector, Collective No. 1 CMT	Below CPG Seat	Left Crew Door
9MT4	Transducer, Collective No. 2 Control Motion	Below CPG Seat	Left Crew Door
9MT4J1	Connector, Collective No. 2 CMT	Below CPG Seat	Left Crew Door
9MT4J2	Connector, Collective No. 2 CMT	Below CPG Seat	Left Crew Door
9MT4P1	Connector, Collective No. 2 CMT	Below CPG Seat	Left Crew Door
9MT4P2	Connector, Collective No. 2 CMT	Below CPG Seat	Left Crew Door
9MT5	Transducer, Pedestal No. 1 Control Motion	Below CPG Seat	Left Crew Door
9MT5J1	Connector, Pedestal No. 1 CMT	Below CPG Seat	Left Crew Door
9MT5J2	Connector, Pedestal No. 1 CMT	Below CPG Seat	Left Crew Door
9MT5P1	Connector, Pedestal No. 1 CMT	Below CPG Seat	Left Crew Door
9MT5P2	Connector, Pedestal No. 1 CMT	Below CPG Seat	Left Crew Door
9MT6	Transducer, Pedestal No. 2 Control Motion	Below CPG Seat	Left Crew Door
9MT6J1	Connector, Pedestal No. 2 CMT	Below CPG Seat	Left Crew Door
9MT6J2	Connector, Pedestal No. 2 CMT	Below CPG Seat	Left Crew Door
9MT6P1	Connector, Pedestal No. 2 CMT	Below CPG Seat	Left Crew Door
9MT6P2	Connector, Pedestal No. 2 CMT	Below CPG Seat	Left Crew Door
9P1	Connector, Yaw Actuator Disconnect	Connected to 9L3	Aft Electrical Compartment Door
9S1	Switch, Hydraulic Pressure	Transmission Compartment, Right and Forward of Mast	Transmission Access Panel
9S1P1	Connector, Hydraulic Pressure Switch	Connected to 9S1	Transmission Access Panel
9S2	Switch, Yaw Spring	Aft Electrical Compartment, Right Side	Aft Electrical Compartment Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
9S2J1	Connector, Yaw Spring Switch	Connected to 9S2P1 On Bracket Near 9S2	Aft Electrical Compartment Door
9S2P1	Connector, Yaw Spring Switch	Aft Electrical Compartment On Bracket Near 9S2	Aft Electrical Compartment Door
9S3	Switch, SCAS ENGA/ DISENG	Pilot Collective Stick Panel 4A2	Right Crew Door
9S4	Switch, SCAS REL	Pilot Cyclic Stick Grip	Right Crew Door
9S5	Switch, SCAS REL	CPG Cyclic Grip	Left Crew Door
9S6	Switch, TRIM REL	Pilot Cyclic Stick Grip	Right Crew Door
9S7	Switch, TRIM REL	CPG Cyclic Grip	Left Crew Door
9TB1	Terminal Board, SCAS	Avionics Compartment, Left Side of Equipment Rack Forward of Fuel Cell	Left Access Door
9TB2	Terminal Board, SCAS	Under Pilot Seat	Right Crew Door
9TB3	Terminal Board, SCAS	Aft Electrical Compartment, Right Side	Aft Electrical Compartment Door
9WT1	Ground Module, SCAS	Avionics Compartment, Lower Left	Left Access Door
9WT2	Ground Module, SCAS	Avionics Compartment, Lower Right Forward Bulkhead	Right Access Door
9WT3	Ground Module	Upper Shelf Aft Avionics Compartment	Access Door, Right Side
9WT4	Ground Module	Upper Shelf Aft Avionics Compartment	Access Door, Right Side
9WT5	Ground Module	Transmission Deck	Transmission Pylon Fairing
9XK1	Socket, Trim Actuator Brake Relay	Connected to 9K1	Aft Electrical Compartment
10A1	Mask, CPG	Cockpit	Left Crew Door
10A1P1	Connector, CPG Mask	Aft CPG Seat	Left Crew Door
10A2	Mask, Pilot	Cockpit	Right Crew Door
10A2P1	Connector, Pilot Mask	Aft Pilot Seat	Right Crew Door
10B1	Blower, Avionics Compartment	Avionics Compartment, Equipment Rack Aft of Fuel Cell	Left or Right Access Door Aft
10B2	Blower, Right Defog	Nose Compartment	Nose Compartment
10B2FL1	Filter, Right Defog Blower	Nose Compartment	Nose Compartment

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
10B3	Blower, Left Defog	Nose Compartment	Nose Compartment
10B3FL1	Filter, Left Defog Blower	Nose Compartment	Nose Compartment
10CB1	Circuit Breaker, PITOT HTR	Aft Overhead Console 4A5	Left or Right Crew Door
10CB2	Circuit Breaker, DEFOG	Aft Overhead Console 4A5	Left or Right Crew Door
10CB3	Circuit Breaker, COMPT BLWR	Center Post Circuit Breaker	Left or Right Crew Door
10CB4	Circuit Breaker, CABIN HTR	Center Post Circuit Breaker Panel 4A6	Left or Right Crew Door
10CB5	Circuit Breaker, CPG MASK	Auxiliary Circuit Breaker Panel 4A8	Left or Right Crew Door
10CB6	Circuit Breaker, PLT MASK	Auxiliary Circuit Breaker Panel 4A8	Left or Right Crew Door
10CR1	Diode, Heater Solenoid	Avionics Compartment, Right Side of Upper Equipment Shelf Aft of Fuel Cell Connected to 10TB1	Right Access Door, Avionics Compartment, Aft Soundproofing Blanket
10HR1	Heater, Pitot	Inside Pitot Tube	Nose Compartment
10HR1P1	Connector, Pitot Heater	Connected to 10HR1	Nose Compartment
10K1	Relay, Heater Control	Avionics Compartment, Right Side of Upper Equipment Shelf Aft of Fuel Cell	Aft Electrical Compartment Door
10K2	Relay, Heater Blower	Avionics Compartment, Right Side of Upper Equipment Shelf Aft of Fuel Cell	Aft Electrical Compartment Door
10L1	Heater, Solenoid Valve	Avionics Compartment, Left Side of Upper Equipment Shelf Aft of Fuel Cell	Left Access Door, Avionics Compartment, Aft Soundproofing Blanket
10L1P1	Connector, Heater Solenoid Valve	Connected to 10L1	Left Access Door, Avionics Compartment, Aft Soundproofing Blanket
10S1	Switch, PITOT HTR	Forward Overhead Console 4A4	Left or Right Crew Door
10S2	Switch, HTR	Forward Overhead Console	Left or Right Crew Door
10S3	Switch, L DEFOG BLWR	Forward Overhead Console 4A4	Left or Right Crew Door
10S4	Switch, R DEFOG BLWR	Forward Overhead Console 4A4	Left or Right Crew Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
10S5	Switch, AUTO COMPT BLWR	Forward Overhead Console 4A4	Left or Right Crew Door
10S6	Switch, Heater Overheat	In Heater Located Above Aft Compartment, Left Side of Shelf	Aft Electrical Compartment Door
10S7	Switch, Forward Temperature	Avionics Compartment, Bottom of Bulkhead Adjacent to Fuel Cell, Near Center Line	Left Access Door Bottom of Lower Forward Left Bulkhead
10S8	Switch, Temperature Sensor, Aft of Compartment	Avionics Compartment, Left Side of Equipment Shelf Aft of Fuel Cell	Left Access Door, Avionics Compartment, Aft Soundproofing Blanket
10TB1	Terminal Board, Heater Solenoid Valve and Blower Relay	Avionics Compartment, Right Side of Upper Equipment Shelf Aft of Fuel Cell	Right Access Door, Avionics Compartment, Aft Soundproofing Blanket
10XK1	Socket, Heater Control Relay	Avionics Compartment, Right Side of Upper Equipment Shelf, Aft of Fuel Cell, Connected to 10K1	Right Access Door, Avionics Compartment, Aft Soundproofing Blanket
10XK2	Socket, Heater Blower Relay	Avionics Compartment, Right Side of Upper Equipment Shelf Aft of Fuel Cell	Aft Electrical Compartment Door
16A1	Unit, TAMS Signal Conditioning	Avionics Compartment, Right Side of Roof	Right Access Door
16A1P1	Connector, TAMS Signal Conditioning Unit	Connected to J1 on 16A1	Right Access Door
16CB1	Circuit Breaker, TAMS	Center Post Circuit Breaker Panel 4A6	Left or Right Crew Door
16J1	Disconnect, TAMS	Avionics Compartment, Right Side of Cabin Roof	Right Access Door
16MT1	Transformer, TAMS Linear Variable Differential Transformer No. 1	Transmission	Transmission Left Access Panel
16MT1J1	Connector, TAMS Linear Variable Differential Transformer No. 1	Connected to 16MT1P1	Transmission Left Access Panel
16MT1P1	Connector, TAMS Linear Variable Differential Transformer No. 1	Transmission	Transmission Left Access Panel
16MT2	Transformer, TAMS Linear Variable Differential Transformer No. 2	Transmission	Transmission Right Access Panel

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
16MT2J1	Connector, TAMS Linear Variable Differential Transformer No. 2	Connected to 16MT2P2	Transmission Right Access Panel
16MT2P1	Connector, TAMS Linear Variable Differential Transformer No. 2	Transmission	Transmission Right Access Panel
16MT3	Transformer, TAMS Linear Variable Differential Transformer No. 3	Transmission	Transmission Left Access Panel
16MT3J1	Connector, TAMS Linear Variable Differential Transformer No. 3	Connected to 16T3P1	Transmission Left Access Panel
16MT3P1	Connector, TAMS Linear Variable Differential Transformer No. 3	Transmission	Transmission Left Access Panel
16MT4	Transformer, TAMS Linear Variable Differential Transformer No. 4	Transmission Compartment, Aft End	Transmission Right Access Panel
16MT4J1	Connector, TAMS Linear Variable Differential Transformer No. 4	Connected to 16MT4P1	Transmission Right Compartment
16MT4P1	Connector, TAMS Linear Variable Differential Transformer No. 4	Transmission	Transmission Right Compartment
16P1	Connector, TAMS Roof Disconnect	Transmission Compartment, Right Outboard	Transmission Right Access Panel
18CB1	Circuit Breaker, AIR DATA	Aft Overhead Console 4A5	Left or Right Crew Door
18MT1	Transducer, Air Data	Nose Compartment, Right Side of Helicopter Centerline	Right Crew Door
18MT1P1	Connector, Air Data Transducer	Connected to 18MT1	Right Crew Door
18PS1	Air Data Power Supply	Nose Compartment, Right	Right Crew Door
18PS1P1	Connector, Air Data Power Supply	Connected to 18PS1	Right Crew Door
18RT1	Bulb, OAT	Under CPG Seat	Left Crew Door
18RT1J1	Connector, OAT Bulb	Connected to 18RT1	Under CPG Seat
18RT1P1	Connector, OAT Bulb	Connected to 18RT1	Under CPG Seat
21A1	Panel, Armament Control	Pedestal	Left or Right Crew Door
21A1CR1	Diode, Integral Lighting	On 21A1TB1	Left or Right Crew Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
21A1DS1	Indicator, ARMED/STBY	On 21A1	Left or Right Crew Door
21A1J1	Connector, Armament Control Panel	On 21A1	Left or Right Crew Door
21A1J2	Connector, Armament Control Panel	On 21A1	Left or Right Crew Door
21A1J3	Connector, Integral Lighting	On 21A1	Left or Right Crew Door
21A1K1	Relay, Gun Jettison Inhibit	On 21A1	Left or Right Crew Door
21A1P1	Connector, Armament Control Panel	Connected to 21A1J1	Left or Right Crew Door
21A1P2	Connector, Armament Control Panel	Connected to 21A1J2	Left or Right Crew Door
21A1S1	Switch, LEFT JETTISON	On 21A1	Left or Right Crew Door
21A1S2	Switch, RIGHT JETTISON	On 21A1	Left or Right Crew Door
21A1S3	Switch, GUN RECOCK	On 21A1	Left or Right Crew Door
21A1S4	Switch, MASTER ARMED	On 21A1	Left or Right Crew Door
21A1TB1	Terminal Board	On 21A1	Left or Right Crew Door
21A1XK1	Socket, Gun Jettison Inhibit Relay	On 21A1	Left or Right Crew Door
21A2	Electric Unit, Missile Sight System	Avionics Compartment On Bottom of Top Shelf	Right Access Door
21A2J1	Connector, Missile Sight System	Connected to 21A2	Right Access Door
21A2P1	Connector, Missile Sight System	Connected to 21A2	Right Access Door
21A2P2	Connector, Missile Sight System	Connected to 21A2	Right Access Door
21A3	Unit, Interface Electric	Avionics Compartment Right side, On Top of Fuel Cell	Right Access Door
21A3P1	Connector, Interface Electric Unit	On 21A3	Right Access Door
21A3P2	Connector, Interface Electric Unit	On 21A3	Right Access Door
21A3P3	Connector, Interface Electric Unit	On 21A3	Right Access Door
21A3P5	Connector, Interface Electric Unit	On 21A3	Right Access Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
21A3P6	Connector, Interface Electric Unit	On 21A3	Right Access Door
21A4	Unit, Pilot Display	Pilot Side Windshield	Right Crew Door
21A4J1	Connector, Pilot Display Unit	On 21A4	Right Crew Door
21A5	Launcher, Left Side ATAS	Left Side Ejector Rack	Direct
21A5/6P1	Connector, Left and Right ATAS Launcher	On 21A5/6	Direct
21A6	Launcher, Right Side ATAS	Right Side Ejector Rack	Direct
21A7	Gun, .50 Caliber	Left Side Ejector Rack	Direct
21A7J1	Connector, .50 Caliber Gun	On 21A7	Direct
21A7P1	Connector, .50 Caliber Gun	On 21A7	Direct
21A9	Launcher, Left Rocket	Left Side Ejector Rack	Direct
21A9/10P1	Connector, Left or Right Rocket Launcher Fuselage	On 21A9/A10	Direct
21A9/10P2	Connector, Left or Right Rocket Launcher Squib	On 21A9/A10	Direct
21A10	Launcher, Right Rocket	Right Side Ejector Rack	Direct
21A11	Assembly, Rocket Remote	Avionics Compartment On Bottom of Top Shelf	Right Access Door
21A11P1	Connector, Rocket Remote Assembly	On 21A11	Right Access Door
21A11P2	Connector, Rocket Remote Assembly	On 21A11	Right Access Door
21A11P3	Connector, Rocket Remote Assembly	On 21A11	Right Access Door
21A12	Electrical Unit, ARMT	Avionics Compartment, Top of Fuel Cell	Right Crew Door
21A12J1	Connector, AEU	Part of ARMT Electrical Unit	Right Crew Door
21A12J2	Connector, AEU	Part of ARMT Electrical Unit	Right Crew Door
21A12P1	Connector, AEU	Part of ARMT Electrical Unit	Right Crew Door
21A12P2	Connector, AEU	Part of ARMT Electrical Unit	Right Crew Door
21CB1	Circuit Breaker, ATAS PWR	Aft Center Post Circuit Breaker Panel	Left or Right Crew Door
21CB2	Circuit Breaker, JETT	Forward Overhead Circuit Breaker Panel	Left or Right Crew Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
21CB3	Circuit Breaker, SIGHT PWR	Aft Center Post Circuit Breaker panel	Left or Right Crew Door
21CB4	Circuit Breaker, ARMT CONTR	Aft Center Post Circuit Breaker Panel	Left or Right Crew Door
21CB5	Circuit Breaker, L GUN PWR	Aft Center Post Circuit Breaker Panel	Left or Right Crew Door
21CB6	Circuit Breaker, RKT PWR	Aft Center Post Circuit Breaker Panel	Left or Right Crew Door
21J1	Connector, Left Side Fuselage Disconnect	Left Side Lower Fuselage	Direct
21J2	Connector, Right Side Fuselage Disconnect	Right Side Lower Fuselage	Direct
21J3	Connector, Left Side Jettison	Left Side Lower Fuselage	Direct
21J4	Connector, Right Side Jettison	Right Side Lower Fuselage	Direct
21J5	Connector, Left Side Jettison	Left Side Ejector Rack	Direct
21J6	Connector, Right Side Jettison	Right Side Ejector Rack	Direct
21P1	Connector, Left Side Fuselage Disconnect	Connected to 21J1	Direct
21P1/2	Connector, Left Side Fuselage Disconnect	Connected to 21J1	Direct
21P2	Connector, Right Side Fuselage Disconnect	Connected to 21J2	Direct
21P3	Connector, Left Side Jettison	Connected to 21J3	Direct
21P4	Connector, Right Side Jettison	Connected to 21J4	Direct
21WT2	Ground Module	Aft, Right Side of Avionics Compartment Below Top Shelf	Right Access Door
22A1	Cargo Hook	Bottom of Aircraft(When Installed)	Direct
22A1P1	Connector, Cargo Hook Disconnect	Connected to 22A1(When Installed)	Direct
22CB1	Circuit Breaker, Cargo Hook	On Forward Overhead Console Panel 4A4	Left or Right Crew Door
22CR1	Diode	On 22TB3	Left Crew Door Pedestal

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
22J1	Connector, Engine Pan Miscellaneous	Engine Compartment Connected to 22P1	Engine Left Cowling Door
22J2	Connector, Tailboom to Fuselage	Tailboom Right Attachment Station	Tailboom Disconnect Right Access Door
22J3	Connector, Windshield Post	Bottom of Windshield Behind Instrument Panel	Left or Right Crew Door
22J4	Connector, Windshield Post	Bottom of Windshield Behind Instrument Panel	Left or Right Crew Door
22J5	Connector, Windshield Post	Bottom of Windshield Behind Instrument Panel	Left or Right Crew Door
22J6	Connector, FSE DSC-HL	Right Side Lower Fuselage	Direct
22J7	Connector, FSE DSC-HL	Left Side Lower Fuselage	Direct
22J8	Connector, Cargo Hook Disconnect	Bottom of Aircraft Near Cargo Hook	Direct
22J9	Connector, AIM-1 Laser	Left Side Lower Fuselage	Direct
22K1	Relay, Cargo Hook Armed	Under Pilot Seat	Right Crew Door
22P1	Connector, Engine Pan Disconnect	Engine Compartment	Engine Cowling Left Door
22P2	Connector, Tailboom to Fuselage	Tailboom Right Attachment Station	Tailboom Disconnect Right Access Door
22P3	Connector, Windshield Post	Bottom of Windshield Behind Instrument Panel	Left or Right Crew Door
22P4	Connector, Windshield Post	Bottom of Windshield Behind Instrument Panel	Left or Right Crew Door
22P5	Connector, Windshield Post	Bottom of Windshield Behind Instrument Panel	Left or Right Crew Door
22P6/7	Connector, FSE DSC-AT	Left Side Lower Fuselage	Direct
22P6/7	Connector, FSE DSC-HL	Left Side Lower Fuselage	Direct
22P6/7	Connector, FSE DSC-RK	Left Side Lower Fuselage	Direct
22P6/7CP1	Adapter, FSE DSC-RKT	Left Side Lower Fuselage	Direct
22P6/7CP1	Adapter, FSE DSC-ATAS	Left Side Lower Fuselage	Direct
22P6/7CP1	Adapter, FSE DSC-HLFR	Left Side Lower Fuselage	Direct
22P8	Connector, Cargo Hook Disconnect	Bottom of Aircraft Near Cargo Hook	Direct
22S1	Switch, Cargo Hook Release	On Pilot Cyclic Stick	Right Crew Door
22S2	Switch, AIM-1 Laser	Pilot Collective Stick	Left or Right Crew Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
22TB1	Terminal Board	Avionics Compartment, Right Side of Fuel Cell, Lower Forward Bulkhead	Right Access Door
22TB2	Terminal Board	Avionics Compartment, Left Side of Upper Equipment Shelf, Aft of Fuel Cell	Left Access Door, Avionics Compartment, Aft Soundproofing Blanket
22TB3	Terminal Board	Pedestal	Left Crew Door, Pedestal
22TB6	Terminal Board	Pedestal	Left Crew Door, Pedestal
22TB7	Terminal Board	Pedestal	Left Crew Door, Pedestal
22WT1	Ground Module	Pedestal	Left or Right Crew Door, Pedestal
22WT2	Ground Module	Pedestal	Left or Right Crew Door, Pedestal
22WT3	Ground Module	Pedestal	Left or Right Crew Door, Pedestal
22WT4	Ground Module	Pedestal	Left or Right Crew Door, Pedestal
22WT5	Ground Module	Fwd Fuel Cell Bulkhead, Avionics Compartment	Left or Right Crew Door
22WT6	Ground Module	Fwd Fuel Cell Bulkhead, Avionics Compartment	Left or Right Crew Door
22WT7	Ground Module	Pedestal	Left or Right Crew Door
22WT9	Ground Module	Pedestal	Left or Right Crew Door
22WT10	Ground Module	Transmission Deck	Transmission Pylon Fairing
22WT11	Ground Module	Fwd Fuel Cell Bulkhead, Avionics Compartment	Left or Right Crew Door
22WT12	Ground Module	Fwd Fuel Cell Bulkhead, Avionics Compartment	Left or Right Crew Door
22WT14	Ground Module	Aft Bulkhead, Avionics Compartment	Left or Right Access Door
22WT15	Ground Module	Roof in Aft Cabin	Left or Right Access Door
22XK1	Socket, Cargo Hook Armed Relay	Connected to 22K1	Right Crew Door
2300A1	Unit, Audio Distribution	Avionics Compartment	Left Access Door
2300A1P2	Connector, Audio Distribution Unit	Connected to 2300A1	Left Access Door
2300A1P4	Connector, Audio Distribution Unit	Connected to 2300A1	Left Access Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
2300A1P8	Connector, Audio Distribution Unit	Connected to 2300A1	Left Access Door
2300A1P9	Connector, Audio Distribution Unit	Connected to 2300A1	Left Access Door
2300A1P14	Connector, Audio Distribution Unit	Connected to 2300A1	Left Access Door
2300WT3	Ground Module	Avionics Compartment, Top of Fuel Cell	Left or Right Crew Door
2301A1	Panel, CPG ICS	Left Side of Instrument Panel	Left Crew Door
2301A1P1	Connector, CPG ICS Panel	Rear of CPG ICS Panel	Left Crew Door at Rear of CPG ICS Panel
2301A1P2	Connector, CPG ICS Panel	Rear of CPG ICS Panel	Left Crew Door at Rear of CPG ICS Panel
2301A2	Panel, Pilot ICS	Pedestal	Left or Right Crew Door
2301A2P1	Connector, Pilot ICS Panel	Pedestal at Rear of Pilot ICS Panel	Left of Rear Crew Door at Rear of Pilot ICS Panel
2301A2P2	Connector, Pilot ICS Panel	Pedestal at Rear of Pilot ICS Panel	Left of Rear Crew Door at Rear of Pilot ICS Panel
2301CB1	Circuit Breaker, ICS CPG	Aft Overhead Console 4A5	Left or Right Crew Door
2301CB2	Circuit Breaker, ICS PLT	Aft Overhead Console 4A5	Left or Right Crew Door
2301CB3	Circuit Breaker, ADU	Aft Overhead Console 4A5	Left or Right Crew Door
2301CB4	Circuit Breaker, SCTY VHF	Center Post Circuit Breaker Panel 4A6	Left or Right Crew Door
2302CB1	Circuit Breaker, UHF	Center Post Circuit Breaker Panel 4A6	Left or Right Crew Door
2302K1	Relay, UHF TOD	Avionics Compartment Lower Forward Bulkhead	Right Access Door
2302XK1	Socket, UHF TOD Relay	Connected to 2032K1	Right Access Door
2302TR1	Receiver/Transmitter, UHF-AM	Avionics Compartment, Left Side Mounted Under #1 MCPU	Left Access Door
2302TR1P1	Connector, UHF-AM R/T	Connected to 2302TR1	Left Access Door
2302TR1P4	Connector, UHF-AM R/T	Connected to 2302TR1	Left Access Door
2302TR1P6	Connector, UHF-AM R/T	Connected to 2302TR1	Left Access Door
2302TR1P7	Connector, UHF-AM R/T	Connected to 2302TR1	Left Access Door
2302TR1P8	Connector, UHF-AM R/T	Connected to 2302TR1	Left Access Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
2303CB1	Circuit Breaker, VHF	Center Post Circuit Breaker Panel 4A6	Left or Right Crew Door
2303TR1	Receiver/Transmitter, VHF-AM	Avionics Compartment, Right Side Mounted Under #2 MCPU	Right Access Door
2303TR1P5	Connector, VHF-AM R/T	Connected to 2303TR1	Right Access Door
2303TR1P6	Connector, VHF-AM R/T	Connected to 2303TR1	Right Access Door
2304AR1	Amplifier, IFM	Aft Electrical Compartment On Overhead Shelf	Aft Electrical Compartment Door
2304AR1P2	Connector, IFM Amplifier	Connected to IFM Amplifier	Aft Electrical Compartment Door
2304AR1P3	Connector, IFM Amplifier	Connected to IFM Amplifier	Aft Electrical Compartment Door
2304CB1	Circuit Breaker, FM #1	Aft Overhead Console 4A5	Left or Right Crew Door
2304CB2	Circuit Breaker, SCTY UHF	Center Post Circuit Breaker Panel 4A6	Left or Right Crew Door
2304CB3	Circuit Breaker, FM AMP	Center Post Circuit Breaker Panel 4A6	Left or Right Crew Door
2304CB4	Circuit Breaker, FM #2	Center Post Circuit Breaker Panel 4A6	Left or Right Crew Door
2304TR1	Receiver/Transmitter, #1 VHF-FM	Aft Electrical Compartment, Left Side	Aft Electrical Compartment Door
2304TR1P5/9	Connector, #1 VHF-FM R/T	Connected to 2304TR1 (When RT-1300B/ARC-186(V) is Installed)	Aft Electrical Compartment Door
2304TR1P6/8	Connector, #1 VHF-FM R/T	Connected to 2304TR1 (When RT-1300B/ARC-186(V) is Installed)	Aft Electrical Compartment Door
2304TR1P7A	Connector, #1 VHF-FM R/T	Connected to 2304TR1 (When RT-1478/E ARC-201(V) is Installed)	Aft Electrical Compartment Door
2304TR2	Receiver/Transmitter, #2 VHF-FM	Aft Electrical Compartment, Left Side	Aft Electrical Compartment Door
2304TR2P5/9	Connector, #2 VHF-FM R/T	Connected to 2304TR2 (When RT-1300B/ARC-186(V) is Installed)	Aft Electrical Compartment Door
2304TR2P6/8	Connector, #2 VHF-FM R/T	Connected to 2304TR2 (When RT-1300B/ARC-186(V) is Installed)	Aft Electrical Compartment Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
2304TR2P7A	Connector, #2 VHF-FM R/T	Connected to 2304TR2 (When RT-1478/E ARC-201(V) is Installed)	Aft Electrical Compartment Door
2309CB1	Circuit Breaker, HF	Center Post Circuit Breaker Panel 4A6	Left or Right Crew Door
2309CB2	Circuit Breaker, SCTY HF	Center Post Circuit Breaker Panel 4A6	Left or Right Crew Door
2309TR1	Unit, HF R/T	Aft Cabin, Left Door	Left Access Door
2309TR1P4	Connector, HF R/T Unit	Connected to HF/RT Unit	Left Access Door
2309TR1P5	Connector, HF R/T Unit	Connected to HF/RT Unit	Left Access Door
2309Z2	Unit, TSEC/KY-75 Speech Security	Avionics Compartment Right Side on Equipment Rack Forward of Fuel Cell	Right Access Door
2309Z2P3	Connector, TSEC/KY-75 Speech Security Unit	Connected to 2309Z2 (When Installed)	Right Access Door
2332CB1	Circuit Breaker, ATHS	Center Post Circuit Breaker Panel 4A6	Left or Right Crew Door
2332TR1	ATHS	Aft Cabin, Left Side	Left Access Door
2332TR1P1	Connector, ATHS	Connected to 2332TR1	Left Access Door
2345CB1	Circuit Breaker, IDM	Center Post Circuit Breaker Panel 4A6	Left or Right Crew Door
24A1	Electronics, Remote HLFR	Avionics Compartment, Top of Fuel Cell	Left or Right Crew Door
24A1P1	Connector, RHE	Part of Remote HLFR Electronics	Left or Right Crew Door
24A1P2	Connector, RHE	Part of Remote HLFR Electronics	Left or Right Crew Door
24A1P3	Connector, RHE	Part of Remote HLFR Electronics	Left or Right Crew Door
24A1P4	Connector, RHE	Part of Remote HLFR Electronics	Left or Right Crew Door
24A1P5	Connector, RHE	Part of Remote HLFR Electronics	Left or Right Crew Door
24A2	Launcher, HLFR Right Side	Universal Weapons Pylon	Right Side of Helicopter
24A2/3J1	Connector, HLFR Launcher	Universal Weapons Pylon	Right Side of Helicopter
24A2/3P1	Connector, HLFR Launcher	Universal Weapons Pylon	Right Side of Helicopter
24A3	Launcher, HLFR, Left Side	Universal Weapons Pylon	Left Side of Helicopter

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
24CB1	Circuit Breaker, HLFR Power	Center Post, Pilot Section Aft	Left or Right Crew Door
24CB2	Circuit Breaker, HLFR AC	Center Post, Pilot Section Aft	Left or Right Crew Door
24CB3	Circuit Breaker, HLFR ARM	Center Post, Pilot Section Aft	Left or Right Crew Door
24CB4	Circuit Breaker, HLFR CTRL	Center Post, Pilot Section Aft	Left or Right Crew Door
24CR1	Diode	On 24K1	Left Crew Door
24K1	Relay, HLFR PWR	Pilot Console Left Side	Left Access Door
24TB1	Terminal Board	Aft Bulkhead, Avionics Compartment	Left or Right Crew Door
24WT1	Ground Module	Fwd Fuel Cell Bulkhead, Avionics Compartment	Left or Right Crew Door
24WT2	Ground Module	Fwd Fuel Cell Bulkhead, Avionics Compartment	Right Crew Door
24WT3	Ground Module	Fwd Fuel Cell Bulkhead, Avionics Compartment	Left or Right Crew Door
24WT4	Ground Module	Fwd Fuel Cell Bulkhead Avionics Compartment	Right Crew Door
24WT5	Ground Module	Aft Bulkhead, Avionics Compartment	Left or Right Crew Door
24XK1	Socket, HLFR PWR Relay	Connected to 24K1	Left Access Door
3407A1P1	Connector, Directional Gyro Control Panel	Connected to Directional Gyro Control Panel	Directional Gyro Control 3407A1 Removed
3407CB1	Circuit Breaker, Directional Gyro	Center Post Circuit Breaker Panel 4A6	Left or Right Crew Door
3407CB2	Circuit Breaker , HDG 26 Vac	Center Post Circuit Breaker Panel 4A6	Left or Right Crew Door
3408CB1	Circuit Breaker, RADAR ALT	Center Post Circuit Breaker Panel 4A6	Left or Right Crew Door
3410CB1	Circuit Breaker, IFF	Center Post Circuit Breaker Panel 4A6	Left or Right Crew Door
3410CB2	Circuit Breaker, IFF CMPTR	Center Post Circuit Breaker Panel 4A6	Left or Right Crew Door
3410J3	Splice, Weight-on-Gear Switch	Center Post, Left Side, Rear Floor	Left Access Door
3410TR1	IFF Transponder	Aft Cabin, Left Side	Left Access Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
3410TR1P1	Connector, IFF Transponder	Connected to IFF Transponder	Left Access Door
3410WT1	Ground Module	Connected to IFF Transponder	Left Access Door
3416CB1	Circuit Breaker, TACAN	Aux Circuit Breaker Panel 4A8	Left or Right Crew Door
3422A1	Panel, RWR Control	Instrument Panel, Right Side	Right Crew Door
3422A1P1	Connector, RWR Control Panel	Rear of RWR Control Panel	RWR Control Panel 3422A1 Removed
3422CB1	Circuit Breaker, RADAR WRN	Center Post Circuit Breaker	Left or Right Crew Door
3424CB3	Circuit Breaker, STBY ATT	Aft Overhead Console 4A5	Left or Right Crew Door
3425DS1	Indicator, Attitude	Instrument Panel - Center	Left or Right Crew Door
3425DS1P1	Connector, Attitude Indicator	Connected to 3425DS1	Left or Right Crew Door
3426CB1	Circuit Breaker, IR Jammer Base	Aft Overhead Console Panel 4A5	Left or Right Crew Door
3429A1	Assembly, Turret (MMS)	Above Rotor	Direct
3429A1J1	Connector, Turret Assembly	MMS Standpipe, Connected to 3429A1P1	MMS Turret Assembly 3429A1 Removed
3429A1P1	Connector, Turret Assembly	MMS Standpipe, Connected to 3429A1J1	MMS Turret Assembly 3429A1 Removed
3429A1P1A	Connector, Turret Assembly	MMS Turret Assembly 3429A1 Base, Near 1MT8, Upper Mast Torque Transducer	MMS Turret Assembly 3429A1 Removed
▌3429A2	System Processor, MMS	Avionics Compartment Above Fuel Cell	Right Access Door
▌3429A2P1	Connector, MMS System Processor	Connected to 3429A2	Right Access Door
▌3429A2P2	Connector, MMS System Processor	Connected to 3429A2	Right Access Door
▌3429A2P3	Connector, MMS System Processor	Connected to 3429A2	Right Access Door
▌3429A2P4	Connector, MMS System Processor	Connected to J4 on 3429A2	Right Access Door
▌3429A2P5	Connector, MMS System Processor	Connected to J5 on 3429A2	Right Access Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
3429A2P6	Connector, MMS System Processor	Connected to J6 on 3429A2	Right Access Door
3429A2P9	Connector, MMS System Processor	Connected to J9 on 3429A2	Right Access Door
3429A2P10	Connector, MMS System Processor	Connected to J10 on 3429A2	Right Access Door
3429A2P11	Connector, MMS System Processor	Connected to J11 on 3429A2	Right Access Door
3429A2P12	Connector, MMS System Processor	Connected to J12 on 3429A2	Right Access Door
3429A2P13	Connector, MMS System Processor	Connected to J13 on 3429A2	Right Access Door
3429A2P16	Connector, MMS System Processor	Connected to J16 on 3429A2	Right Access Door
3429A2P17	Connector, MMS System Processor	Connected to J17 on 3429A2	Right Access Door
3429A3	Panel, MMS Control	Instrument Panel, Left Side	Left Crew Door
3429A3J1	Connector, MMS Control Panel	Connected to 3429A3	Left Crew Door
3429A3J2	Connector, MMS Control Panel	In Back of 3429A3	Left Crew Door
3429A3P1	Connector, MMS Control Panel	Connected to 3429A3J1	Left Crew Door
3429A3TB1	Terminal Board, MMS Control Panel	In Back of 3429A3	Left Crew Door
3429CB1	Circuit Breaker, MMS AC	Center Post Circuit Breaker Panel 4A6	Left or Right Crew Door
3429CB2	Circuit Breaker, MMS 26 VAC	Center Post Circuit Breaker Panel 4A6	Left or Right Crew Door
3429CB3	Circuit Breaker, MMS Remote Control	DC Equipment Electrical Assembly 2A1	Aft Electrical Compartment Door
3429CB4	Circuit Breaker, MMS DC	Center Post Circuit Breaker Panel 4A6	Left or Right Crew Door
3429CB5	Circuit Breaker, MMS DC	Center Post Circuit Breaker Panel 4A6	Left or Right Crew Door
3429PS1	Power Supply, MMS Central	Avionics Compartment, Right Side on Top of Fuel Cell	Right Access Door
3429PS1P1	Connector, MMS Central Power Supply	Connected to J1 on 3429PS1	Right Access Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
3429PS1P2	Connector, MMS Central Power Supply	Connected to J2 on 3429PS1	Right Access Door
3429PS1P3	Connector, MMS Central Power Supply	Connected to J3 on 3429PS1	Right Access Door
3429PS1P5	Connector, MMS Central Power Supply	Connected to J5 on 3429PS1	Right Access Door
3429PS1P6	Connector, MMS Central Power Supply	Connected to J6 on 3429PS1	Right Access Door
3429PS1P7	Connector, MMS Central Power Supply	Connected to J7 on 3429PS1	Right Access Door
3429PS1P8	Connector, MMS Central Power Supply	Connected to J8 on 3429PS1	Right Access Door
3429S1	Switch, LASER	CPG Cyclic Grip	Left Crew Door
3429S2	Switch, FOV SEL	CPG Cyclic Grip	Left Crew Door
3429S3	Switch, LOS CONT	CPG Cyclic Grip	Left Crew Door
3429S4	Switch, FR FRZ	CPG Cyclic Grip	Left Crew Door
3429S5	Switch, TV/TIS	CPG Cyclic Grip	Left Crew Door
3429S6	Switch, PNT TRK	CPG Cyclic Grip	Left Crew Door
3429S7	Switch, MNL/SLAVE	CPG Cyclic Grip	Left Crew Door
3429S8	Switch, AREA TRK	CPG Cyclic Grip	Left Crew Door
3429S9	Switch, OPR	Mast Mounted Sight Panel 3429A3	Left Crew Door
3429S10	Switch, LASER/ARM/ STBY/OFF	Mast Mounted Sight Panel 3429A3	Left Crew Door
3429S11	Switch, LASER CODE LIST	Mast Mounted Sight Panel 3429A3	Left Crew Door
3429S12	Switch, LASER FIRST LAST	Mast Mounted Sight Panel 3429A3	Left Crew Door
3429S13	Switch, VIDEO SYM INTEN MFD	Mast Mounted Sight Panel 3429A3	Left Crew Door
3429S14	Switch, VIDEO SYM INTEN MMS	Mast Mounted Sight Panel 3429A3	Left Crew Door
3429S15	Switch, VIDEO GAIN	Mast Mounted Sight Panel 3429A3	Left Crew Door
3429S16	Switch, VIDEO LEVEL	Mast Mounted Sight Panel 3429A3	Left Crew Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
3429S17	Switch, VIDEO FOC	Mast Mounted Sight Panel 3429A3	Left Crew Door
3429S18	Switch, AUTO MAN (Video Sym Inten MMS)	Mast Mounted Sight Panel 3429A3	Left Crew Door
3429S19	Switch, AUTO MAN (Video Gain)	Mast Mounted Sight Panel 3429A3	Left Crew Door
3429S20	Switch, AUTO MAN (Video Level)	Mast Mounted Sight Panel 3429A3	Left Crew Door
3429S21	Switch, AUTO MAN (Video FOC)	Mast Mounted Sight Panel 3429A3	Left Crew Door
3429S22	Switch, LOS CONT	CPG Cyclic Grip	Left Crew Door
3429S23	Switch, Hover BOB UP	Pilot Cyclic Grip	Right Crew Door
3431AT1 △1	Bus Coupler	Avionics Compartment, Left Side of Lower Forward Bulkhead	Left Access Door
3431AT1P2	Connector, Bus Coupler	Avionics Compartment, Left Side of Lower Forward Bulkhead	Left Access Door
3431AT1P3	Connector, Bus Coupler	Avionics Compartment, Left Side of Lower Forward Bulkhead	Left Access Door
3431AT2 △1	Bus Coupler	Avionics Compartment, Left Side of Lower Forward Bulkhead	Left Access Door
3431AT2P2	Connector, Bus Coupler	Avionics Compartment, Left Side of Lower Forward Bulkhead	Left Access Door
3431AT2P3	Connector, Bus Coupler	Avionics Compartment, Left Side of Lower Forward Bulkhead	Left Access Door
3431AT3 △1	Bus Coupler	Avionics Compartment, Left Side of Lower Forward Bulkhead	Left Access Door
3431AT3P1	Connector, Bus Coupler	Avionics Compartment, Left Side of Lower Forward Bulkhead	Left Access Door
3431AT3P2	Connector, Bus Coupler	Avionics Compartment, Left Side of Lower Forward Bulkhead	Left Access Door
3431AT3P3	Connector, Bus Coupler	Avionics Compartment, Left Side of Lower Forward Bulkhead	Left Access Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
3431AT4 ⚠1	Bus Coupler	Avionics Compartment, Left Side of Lower Forward Bulkhead	Left Access Door
3431AT4P1	Connector, Bus Coupler	Avionics Compartment, Left Side of Lower Forward Bulkhead	Left Access Door
3431AT4P2	Connector, Bus Coupler	Avionics Compartment, Left Side of Lower Forward Bulkhead	Left Access Door
3431AT4P3	Connector, Bus Coupler	Avionics, Compartment, Left Side of Lower Forward Bulkhead	Left Access Door
3431AT5 ⚠1	Bus Coupler	Avionics Compartment, Left Side of Lower Forward Bulkhead	Left Access Door
3431AT5P1	Connector, Bus Coupler	Avionics Compartment, Left Side of Lower Forward Bulkhead	Left Access Door
3431AT5P2	Connector, Bus Coupler	Avionics Compartment, Left Side of Lower Forward Bulkhead	Left Access Door
3431AT5P3	Connector, Bus Coupler	Avionics Compartment, Left Side of Lower Forward Bulkhead	Left Access Door
3431AT6 ⚠1	Bus Coupler	Avionics Compartment, Left Side of Lower Forward Bulkhead	Left Access Door
3431AT6P1	Connector, Bus Coupler	Avionics Compartment, Left Side of Lower Forward Bulkhead	Left Access Door
3431AT6P2	Connector, Bus Coupler	Avionics Compartment, Left Side of Lower Forward Bulkhead	Left Access Door
3431AT7 ⚠1	Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Lower Forward Bulkhead	Right Access Door
3431AT7P1	Connector, Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Lower Forward Bulkhead	Right Access Door
3431AT7P2	Connector, Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Lower Forward Bulkhead	Right Access Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
3431AT7P3	Connector, Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Lower Forward Bulkhead	Right Access Door
3431AT8 △1	Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Lower Forward Bulkhead	Right Access Door
3431AT8P1	Connector, Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Lower forward Bulkhead	Right Access Door
3431AT8P2	Connector, Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Lower Forward Bulkhead	Right Access Door
3431AT8P3	Connector, Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Lower Forward Bulkhead	Right Access Door
3431AT9 △1	Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Lower Forward Bulkhead	Right Access Door
3431AT9P1	Connector, Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Lower Forward Bulkhead	Right Access Door
3431AT9P2	Connector, Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Lower Forward Bulkhead	Right Access Door
3431AT9P3	Connector, Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Lower Forward Bulkhead	Right Access Door
3431AT10 △1	Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Lower Forward Bulkhead	Right Access Door
3431AT10P1	Connector, Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Lower Forward Bulkhead	Right Access Door
3431AT10P2	Connector, Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Lower Forward Bulkhead	Right Access Door
3431AT10P3	Connector, Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Lower Forward Bulkhead	Right Access Door
3431AT11 △1	Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Lower Forward Bulkhead	Right Access Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
3431AT11P1	Connector, Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Lower Bulkhead	Right Access Door
3431AT11P2	Connector, Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Lower Forward Bulkhead	Right Access Door
3431AT11P3	Connector, Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Lower Forward Bulkhead	Right Access Door
3431AT12 △1	Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Lower Forward Bulkhead	Right Access Door
3431AT12P1	Connector, Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Lower Forward Bulkhead	Right Access Door
3431AT12P2	Connector, Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Lower Forward Bulkhead	Right Access Door
3431AT12P3	Connector, Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Lower Forward Bulkhead	Right Access Door
3431AT13 △1	Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Lower Forward Bulkhead	Right Access Door
3431AT13P1	Connector, Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Lower Forward Bulkhead	Right Access Door
3431AT13P2	Connector, Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Lower Forward Bulkhead	Right Access Door
3431AT13P3	Connector, Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Lower Forward Bulkhead	Right Access Door
3431AT14 △1	Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Upper Forward Bulkhead	Right Access Door
3431AT14P1	Connector, Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Upper Forward Bulkhead	Right Access Door
3431AT14P2	Connector, Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Upper Forward Bulkhead	Right Access Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
3431AT14P3	Connector, Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Upper Forward Bulkhead	Right Access Door
3431AT15 △1	Bus Coupler	Aft Electrical Compartment Right Side on Overhead	Aft Electrical Compartment Door
3431AT15P1	Connector, Bus Coupler	Aft Electrical Compartment, Right Side on Overhead	Aft Electrical Compartment Door
3431AT15P3	Connector, Bus Coupler	Aft Electrical Compartment, Right Side on Overhead	Aft Electrical Compartment Door
3431AT16 △1	Bus Coupler	Aft Electrical Compartment, Right Side on Overhead	Aft Electrical Compartment Door
3431AT16P1	Connector, Bus Coupler	Aft Electrical Compartment, Right Side on Overhead	Aft Electrical Compartment Door
3431AT16P3	Connector, Bus Coupler	Aft Electrical Compartment, Right Side on Overhead	Aft Electrical Compartment Door
3431AT17 △1	Bus Terminator	Avionics Compartment, Left Side of Lower Forward Bulkhead	Left Access Door
3431AT18 △1	Bus Terminator	Avionics Compartment, Left Side of Lower Forward Bulkhead	Left Access Door
3431AT19 △1	Bus Terminator	Aft Electrical Compartment On Overhead	Aft Electrical Compartment Door
3431AT20 △1	Bus Terminator	Aft Electrical Compartment On Overhead	Aft Electrical Compartment Door
3431AT21	Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Lower Forward Bulkhead	Right Access Door
3431AT21P1	Connector, Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Lower Forward Bulkhead	Right Access Door
3431AT21P2	Connector, Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Lower Forward Bulkhead	Right Access Door
3431AT21P3	Connector, Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Lower Forward Bulkhead	Right Access Door
3431AT22	Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Lower Forward Bulkhead	Right Access Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
3431AT22P1	Connector, Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Lower Forward Bulkhead	Right Access Door
3431AT22P2	Connector, Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Lower Forward Bulkhead	Right Access Door
3431AT22P3	Connector, Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Lower Forward Bulkhead	Right Access Door
3431AT23	Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Upper Forward Bulkhead	Right Access Door
3431AT23P1	Connector, Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Upper Forward Bulkhead	Right Access Door
3431AT23P2	Connector, Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Upper Forward Bulkhead	Right Access Door
3431AT23P3	Connector, Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Upper Forward Bulkhead	Right Access Door
3431AT24	Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Upper Forward Bulkhead	Right Access Door
3431AT24P1	Connector, Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Upper Forward Bulkhead	Right Access Door
3431AT24P2	Connector, Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Upper Forward Bulkhead	Right Access Door
3431AT24P3	Connector, Bus Coupler	Avionics Compartment, Right Side of Fuel Cell, Upper Forward Bulkhead	Right Access Door
3431AT33	Bus Terminator	Avionics Compartment,	Right Access Door
3431AT33J1	Connector, Bus Terminator	Avionics Compartment,	Right Access Door
3431AT34	Bus Terminator	Avionics Compartment,	Right Access Door
3431AT34J1	Connector, Bus Terminator	Avionics Compartment,	Right Access Door
3431AT35	Bus Coupler	Avionics Compartment,	Right Access Door
3431AT36	Bus Coupler	Avionics Compartment,	Right Access Door
3431AT37	Bus Terminator	Avionics Compartment,	Right Access Door
3431AT37J1	Connector, Bus Terminator	Avionics Compartment,	Right Access Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
3431AT38	Bus Terminator	Avionics Compartment	Right Access Door
3431AT38J1	Connector, Bus Terminator	Avionics Compartment	Right Access Door
3431AT39	Bus Terminator	Avionics Compartment	Right Access Door
3431AT39J1	Connector, Bus Terminator	Avionics Compartment	Right Access Door
3431AT40	Bus Terminator	Avionics Compartment	Right Access Door
3431AT40J1	Connector, Bus Terminator	Avionics Compartment	Right Access Door
3431AT41	Bus Terminator	Avionics Compartment	Right Access Door
3431AT41J1	Connector, Bus Terminator	Avionics Compartment	Right Access Door
3431AT42	Bus Terminator	Avionics Compartment	Right Access Door
3431AT42J1	Connector, Bus Terminator	Avionics Compartment	Right Access Door
3431A1	MCPU, Left	Avionics Compartment, Equipment Rack, Forward Left Side of Fuel Cell	Left Access Door
3431A1P3	Connector, Left MCPU	Connected to 3431A1	Left Access Door
3431A1P4	Connector, Left MCPU	Connected to 3431A1	Left Access Door
3431A1P5	Connector, Left MCPU	Connected to 3431A1	Left Access Door
3431A1P6	Connector, Left MCPU	Connected to 3431A1	Left Access Door
3431A1P7	Connector, Left MCPU	Connected to J7 on 3431A1	Left Access Door
3431A1P8	Connector, Left MCPU	Connected to 3431A1	Left Access Door
3431A1P9	Connector, Left MCPU	Connected to J9 on 3431A1	Left Access Door
3431A1P10	Connector, Left MCPU	Connected to J10 on 3431A1	Left Access Door
3431A1P11	Connector, Left MCPU	Connected to J11 on 3431A1	Left Access Door
3431A1P12	Connector, Left MCPU	Connected to J12 on 3431A1	Left Access Door
3431A1P14	Connector, Left MCPU	Connected to J14 on 3431A1	Left Access Door
3431A2	MCPU, Right	Avionics Compartment, Equipment Rack, Forward Right Side of Fuel Cell	Right Access Door
3431A2P1	Connector, Right MCPU	Connected to 3431A2	Right Access Door
3431A2P3	Connector, Right MCPU	Connected to 3431A2	Right Access Door
3431A2P4	Connector, Right MCPU	Connected to 3431A2	Right Access Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
3431A2P5	Connector, Right MCPU	Connected to 3431A2	Right Access Door
3431A2P6	Connector, Right MCPU	Connected to 3431A2	Right Access Door
3431A2P7	Connector, Right MCPU	Connected to 3431A2	Right Access Door
3431A2P8	Connector, Right MCPU	Connected to 3431A2	Right Access Door
3431A2P9	Connector, Right MCPU	Connected to 3431A2	Right Access Door
3431A2P10	Connector, Right MCPU	Connected to 3431A2	Right Access Door
3431A2P11	Connector, Right MCPU	Connected to 3431A2	Right Access Door
3431A2P12	Connector, Right MCPU	Connected to 3431A2	Right Access Door
3431A2P20	Connector, Right MCPU	Connected to 3431A2	Right Access Door
3431A3	Keyboard	Pedestal	Left or Right Crew Door
3431A3P1	Connector, Keyboard	Connected to 3431A3	Left or Right Crew Door
3431A3P2	Connector, Keyboard	Connected to 3431A3	Left or Right Crew Door
3431A3P3	Connector, Keyboard	Connected to 3431A3	Left or Right Crew Door
3431A3P4	Connector, Keyboard	Connected to 3431A3	Left or Right Crew Door
3431A4	Integrated System Processor	Avionics Compartment, Left Side	Left Access Door
3431A4P1	Connector	Connected to 3431A4	Left Access Door
3431A4P2	Connector	Connected to 3431A4	Left Access Door
3431A4P3	Connector	Connected to 3431A4	Left Access Door
3431A4P4	Connector	Connected to 3431A4	Left Access Door
3431A4P5	Connector	Connected to 3431A4	Left Access Door
3431A5	Loader, Data	Roof in Aft Cabin	Left or Right Crew Door
3431A5P1	Connector, Data Loader	Connected to 3431A5	Left or Right Crew Door
3431CB1	Circuit Breaker, MFD CPG	Aft Overhead Console 4A5	Left or Right Crew Door
3431CB2	Circuit Breaker, MFD PLT	Aft Overhead Console 4A5	Left or Right Crew Door
3431CB3	Circuit Breaker, RFD	Aft Overhead Console 4A5	Left or Right Crew Door
3431CB4	Circuit Breaker, MCPU R	Aft Overhead Console 4A5	Left or Right Crew Door
3431CB5	Circuit Breaker, MCPU L	Forward Overhead Console 4A4	Left or Right Crew Door
3431CB6	Circuit Breaker, MCPU BLWR	Center Post Circuit Breaker Panel 4A6	Left or Right Crew Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
3431CB7	Circuit Breaker, ISP	Center Post Circuit Breaker Panel 4A6	Left or Right Crew Door
3431CB8	Circuit Breaker, DATA XFER	Aft Overhead Console 4A5	Left or Right Crew Door
3431CB9	Circuit Breaker, VIDEO RCDR	Auxillary Circuit Breaker Panel 4A8	Left or Right Crew Door
3431J1	Connector, Bus A Test	Aft Electrical Compartment Mounted Horizontally	Aft Electrical Compartment Door
3431J2	Connector, Bus B Test	Aft Electrical Compartment Mounted Horizontally	Aft Electrical Compartment Door
3431J3	Splice, Weight-On-Gear Switch	Center Post, Left Side Near Floor	Left Access Door
3431J4	Splice, Weight-On-Gear Switch	Center Post, Left Side Near Floor	Left Access Door
3431J5	Connector, Bus A Test	Aft Electrical Compartment Mounted Horizontally	Aft Electrical Compartment Door
3431M1	MFD, CPG	Instrument Panel	Left Crew Door
3431M1P1	Connector, CPG MFD	Connected to J1 on 3431M1	Left Crew Door
3431M1P2	Connector, CPG MFD	Connected to J2 on 3431M1	Left Crew Door
3431M1P4	Connector CPG MFD	Connected to J4 on 3431M1	Left Crew Door
3431M1P5	Connector, CPG MFD	Connected to J5 on 3431M1	Left Crew Door
3431M2	MFD, Pilot	Instrument Panel	Right Crew Door
3431M2P1	Connector, Pilot MFD	Instrument Panel, Connected to J1 on 3431M2	Right Crew Door
3431M2P2	Connector, Pilot MFD	Instrument Panel, Connected to J2 on 3431M2	Right Crew Door
3431M2P4	Connector, Pilot MFD	Instrument Panel, Connected to J4 on 3431M2	Right Crew Door
3431M2P5	Connector, Pilot MFD	Instrument Panel, Connected to J4 on 3431M2	Right Crew Door
3431M3	Display, Remote Frequency (RFD)	Instrument Panel	Left or Right Crew Door
3431M3P1	Connector, RFD	Instrument Panel, Connected to J1 on 3431M3	Left or Right Crew Door
3431M3P2	Connector, RFD	Instrument Panel, Connected to J2 on 3431M3	Left or Right Crew Door
3431S1	Switch, Pilot INIT	Instrument Panel, Connected to Panel 4A7	Right Crew Door

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
3431S2	Switch, PITCH	Instrument Panel, Connected to Panel 4A7	Right Crew Door
3431S3	Switch, ROLL	Instrument Panel, Connected to Panel 4A7	Right Crew Door
3431S4	Switch, IMAGE CAPTURE	Instrument Panel, Connected to Panel 5A2	Right Crew Door
3431S5	Switch, INIT/IDM Page	Instrument Panel, Connected to Panel 5A2	Left Crew Door
3431S6	Switch, TIS INTEG	Instrument Panel, Connected to Panel 5A2	Left Crew Door
3431S7	Switch, MMS FXD FWD	Pilot Cyclic Stick 4A1	Right Crew
3431S8	Switch, DSPL SEL	Pilot Cyclic Stick 4A1	Right Crew Door
3431S9	Switch, Weight-On-Gear	Forward Crosstube, Center	Underside Fuselage
3431S10	Switch, ALFGL	Instrument Panel, Connected to Panel 5A2	Left Crew Door
3431S11	Switch, DSC-ARE/DSC-ALE	Instrument Panel, Connected to Panel 5A2	Left Crew Door
3431S12	Switch, LMC	Instrument Panel, Connected to Panel 5A2	Left Crew Door
3431S13	Switch, WPN/ASE	Instrument Panel, On Panel 5A2	Left Crew Door
3443A1	Unit, EGI Receiver	Avionics Compartment, Center Floor	Left Access Door
3443A1P1	Connector, EGI Receiver	Connected to 3443A1	Left Access Door
3443A1P2	Connector, EGI Receiver	Connected to 3443A1	Left Access Door
3443A1P4	Connector, EGI Receiver	Connected to 3443A1	Left Access Door
3443A1P6	Connector, EGI Receiver	Connected to 3443A1	Left Access Door
3443CB1	Circuit Breaker, EGI	Aft Overhead Console Panel 4A5	Left or Right Crew Door
3443E1	Antenna, EGI	Top of Tailboom Near Aft End	Direct
3443E1P1	Connector, EGI Antenna	Connected to 3443E1	Direct

Table F-1. Equipment List (Electrical) (Cont)

Reference Designation	Nomenclature	Location	Access
3443J1	Tailboom Disconnect, EGI	Tailboom Right Attachment Station	Tailboom Disconnect Right Access Door
3443P1	Tailboom Disconnect, EGI	Tailboom Right Attachment Station	Tailboom Disconnect Right Access Door
3443K1	Relay, EGI	Pilot Console Left Side	Left Access Door
3443XK1	Socket, EGI Relay Connector	Connected to 3443K1	Left Access Door

⚠1 Hardwired data bus couplers do not have connectors.

F-8. WIRE REPAIR AND REPLACEMENT

1. The following data provides recommended wire replacement part numbers versus wire size requirements. Also, wire construction, wire marking, soldering, wire support, and wire stripping recommendations are presented.

a. Open harness airframe wiring:

Wire Size	Part Number
AWG 22	140-082-22-9
AWG 27 through 10	M81381/12–(+)N
AWG 24	M81381/13–(+)N

b. Open harness in high temperature areas (engine compartment):

Wire Size	Part Number
AWG 1 through 0	M22759/2–(+)–9
AWG 22 through 8	M81381/12–(+)N

c. Shielded twisted wire pair, high capacitance from the ADU to the ground crew ICS connector:

Wire Size	Part Number
AWG 22	140-013-1

d. Shielded and jacketed cable in all areas:

e. Unshielded and unjacketed cable in all areas:

Wire Size	Part Number
AWG 24 through 12	30–156–(+)N($)

f. Control panels, control sticks or assemblies not part of airframe wiring:

Wire Size	Part Number
Single Conductor 24 through 10	M22759/16–(+)–9
Multiconductor Shielded Jacketed 24 through 10	M27500–(+)/TG(*)T15
Multiconductor Jacketed 24 through 10	M27500–(+)TG($)U15

NOTE

\+ Insert AWG wire size

* Insert number of conductors 1 through 7

$ Insert number of conductors 2 through 7

2. **Wire Type Construction.**

a. 140-028-22-9 is constructed of nickel-coated copper of copper alloy with insulation of crosslinked, extruded, modified ethylene-tetrafluoroethylene copolymer. This wire is rated at 600 volts with a maximum continuous operating temperature of 392 °F (200 °C).

b. M81381/12 is constructed of nickel-plated soft annealed copper with two layers of counter helically-wound fluorocarbon/polyamide (KAPTON) tape and an overcoat of dark opaque yellow modified polyamide resin. This wire is rated at 600 volts with a maximum continuous operating temperature of 392 °F (200 °C).

c. M81381/13 is the same as M81381/12 except that the conductor is silver plated high strength copper alloy.

d. M22759/2 is constructed of nickel-plated soft annealed copper with two or more poly-tetrafluorocarbon (TFE), also referred to as TEFLON, tapes and TFE-coated glass tapes with an overbraid of glass fiber. This wire is rated at 600 volts with maximum continuous operating temperature of 500 °F (260 °C).

e. 140-013-1 is constructed of two stranded copper wire conductors. The insulation of one of the conductors is red, and the other is green. This wire is rated at 600 volts with a maximum continuous temperature of 500 °F (260 °C).

f. 30-155 is constructed using M81381/8 wire for SWG 22 through 12 and M81381/9 wire for AWG 24. These basic wires are similar to M81381/12 and /13 except that the KAPTON tapes used are thinner. The wire(s) have an overbraid of tin-coated soft annealed copper with an outer jacket of two KAPTON tapes. This cable is rated at 600 volts with a maximum continuous operating temperature of 392 °F (200 °C).

g. 30-156 is constructed of M81381/12 wire for AWG 12 through 12 and M81381/13 wire for AWG 24.

h. M22759/16 is constructed of tin-coated soft annealed copper wire with a single extrusion of ethylene-tetrafluoroethylene copolymer (ETFE), also referred to as TEFZEL. This wire is rated at 600 volts with a maximum continuous operating temperature of 302 °F (150 °C).

i. M27500(+)TG(*)T15 is constructed using basic wire M22758/18 with a tin-coated soft annealed copper conductor. The wire(s) have an overbraid of tin-coated soft annealed copper with an outer jacket of ETFE. M22759/18 is similar to M22759/16 except for thinner wall insulation.

j. M27500–(+)TG(*)U15 is the same as M27500–(+)TG(*)T15 except the copper braid is omitted.

3. **Wire Stripping.**

a. Before any wire can be assembled to connectors, terminals, splices, etc., the insulation must be stripped from the connecting ends to expose the bare conductor. While stripping wire insulation is the most common operation in electrical maintenance, it probably receives the least care. With insulations as thin as **0.006 inch (0.127 mm)**, ringing the wire with a pocket knife will invariably cut or nick strands.

b. BH 110 electrical connector kit contains two plier-type hand stripper frames, one for stripping KAPTON wire and one for stripping other types of wire. Plier-type hand strippers are the easiest and most reliable to use, but only if equipped with the proper blades. Blades designed for use with PVC, TEFLON or any heavy wall insulation will not perform satisfactorily with KAPTON. Stripper blades designed for KAPTON, however, will perform excellently on the thicker wall insulating materials.

c. For all insulating materials except KAPTON, make a cut around the wire at the desired strip length. Do not cut completely through the insulation. Make a second cut lengthwise along the stripping length, again do not cut completely through the insulation. Peel off the insulation following the lay of the strands. When stripping M22759/2 wire, the insulation will not easily peel off due to the counterwound tape construction. After the outer glass fiber braid is removed, the tapes can easily be unwrapped one layer at a time.

d. KAPTON insulations are best removed by nicking the insulation to about 1/2 its thickness and flexing at the nick (approximately ±45 degrees). The insulation will separate completely around the wire. This method is recommended for removing the outer jacket from 30 - 155 cable.

NOTE

Lengthwise scratches on the conductor strands are not considered cause for rejection or rework.

e. After the wire has been stripped, it should be inspected for nicked or broken strands. Maximum allowed number of damaged strands is given below.

AWG SIZE	TOTAL ALLOWABLE NICKED OR BROKEN STRANDS
24 through 14	NONE
12	1
10	2
8	4

CAUTION

Do not use sleeves to change identification of wire cable which has already been marked, except in case of spare wires in potted connectors.

4. **Wire Marking.**

Hot stamp marking machine imprinting is the most widely accepted method of identifying wire. Good marking is obtained only by the proper combination of temperature, pressure, dwell and foil type and is arrived at by trial. TEFLON insulated wires cannot be marked by the hot stamp process. These wires must be identified by imprinting the wire number on plastic sleeving and installing over the outer covering at each terminating end. When stamping any wire, always use minimum pressure and temperature. This is most important when imprinting KAPTON insulated wire. As stated before, regarding wire stripping, KAPTON is notch sensitive; any cut or nick in the insulation will break the insulation under flexing conditions. Cuts or nicks most frequently occur when imprinting numbers containing a dash (-) or Numeral No. 1. After determining the minimum temperature and pressure to obtain an imprint on the KAPTON insulated wire, a sample should be wrapped about a mandrel with the imprint to the outside and examined visually for any cracks in the insulation. Mandrel sizes should be as follows:

WIRE SIZE	MANDREL DIAMETER
24, 22, 20	0.125 in.
18, 16	0.250 in.
14, 12, 10	0.350 in.

a. Stamp wires and cables at intervals of not more than **15 inches** along their entire length.

b. Stamp wires within **3 inches** of each junction (except permanent splices) and at each terminating point.

c. Stamp wires which are **3 to 7 inches** long in the center.

d. Wires less than **3 inches** long need not be stamped.

5. **Soldering.**

a. Tin-coated and silver-plated conductors present no unusual problems where soldering is required. Common 60/40 resin solder will produce an acceptable solder joint. With nickel-plated conductors, an active flux solder or the addition of an active flux will help in producing a reliable solder joint.

b. Care should be used in soldering to prevent excessive wicking of solder under the insulation. Excessive wicking can be determined by visually examining the solder connection. If the contour of the individual strands of the conductor is not visible below the termination of the insulation, excessive wicking has occurred.

6. **Wire Support.** Conductor breakage can be virtually eliminated with care and attention to the area of wire termination.

a. Wire must be routed and clamped such that under vibration or maintenance conditions, any flexing of the wire will not occur at the termination of the insulation.

b. Crimp contact connectors should have either a strain relief or a rubber sealing grommet on the rear of the connector.

c. When installing crimp terminals, always be sure that the wire is installed far enough in the terminal that after crimping the insulation grip of the terminal has contacted the wire insulation.

CAUTION

To prevent excessive wicking of solder under the wire insulation, and resultant wire breakage, care and good soldering techniques must be used where a solder termination is required on any device mounted in the airframe.

d. Before making the solder connection, place a suitable piece of heat shrinkable sleeving over the wire. After soldering, slide the sleeving over the soldered joint as far as practical and shrink it to its minimum recovery diameter.

7. **Wire Routing and Grouping.**

a. Interconnecting KAPTON wiring can provide conditions creating EMI (electromagnetic interference) due to sensitive circuits being routed in close proximity to each other. Wiring for these sensitive circuits has been grouped into eight categories, and clamping arrangements are designed to eliminate or minimize EMI.

b. When maintaining or repairing wires, it is necessary to maintain the original wire clamping and routing design in order not to induce EMI into the sensitive avionic system circuits. Route and clamp replacement wires by category (e.g., category (2) with other category (2) wires) through original clamps. Category number (1) through (8) appears at the end of each wire number.

c. Refer to figures F-4 through F-12 for location of the clamping and categories for OH-58D helicopters. Refer to figures F-13 through F-21 for location of the clamping and categories for OH-58D(R) helicopters. The location is listed by area in the helicopter requiring electrical clamping and routing:

OH-58D

Transmission Compartment	Figure F-4
Cabin Overhead	Figure F-5
Nose Section	Figure F-6
Crew Compartment	Figure F-7
Avionics Compartment	Figure F-8
Aft Electrical Compartment	Figure F-9
Aft Fuselage	Figure F-10

Engine Compartment	Figure F-11
Tailboom	Figure F-12

OH-58D(R)

Transmission Compartment	Figure F-13
Cabin Overhead	Figure F-14
Nose Section	Figure F-15
Crew Compartment	Figure F-16
Avionics Compartment	Figure F-17
Aft Electrical Compartment	Figure F-18
Aft Fuselage	Figure F-19
Engine Compartment	Figure F-20
Tailboom	Figure F-21

Categories are shown in circles, and clamp types are shown in the following symbols:

□	Number in square indicates size of MS21919DG clamp and size of MS21919WDG clamp.
☆	Number in star indicates size of MS21919WCH clamp.
◇◇	Number in double diamond indicates A and B dimensions of NAS1712 clamp respectively.
Δ	Number in triangle indicates size of M23190/1 clamp.
⬯	Number in ellipse indicates size of AN742D clamp.
⬡	Number in hexagon indicates size of MS25281 clamp.
▢	Number in circle square indicates size of MS21919H clamp.
⛋	Number in diamond square indicates size of 30-185 clamp.
◎	Number in circle hexagon indicates size of AN737TW clamp.

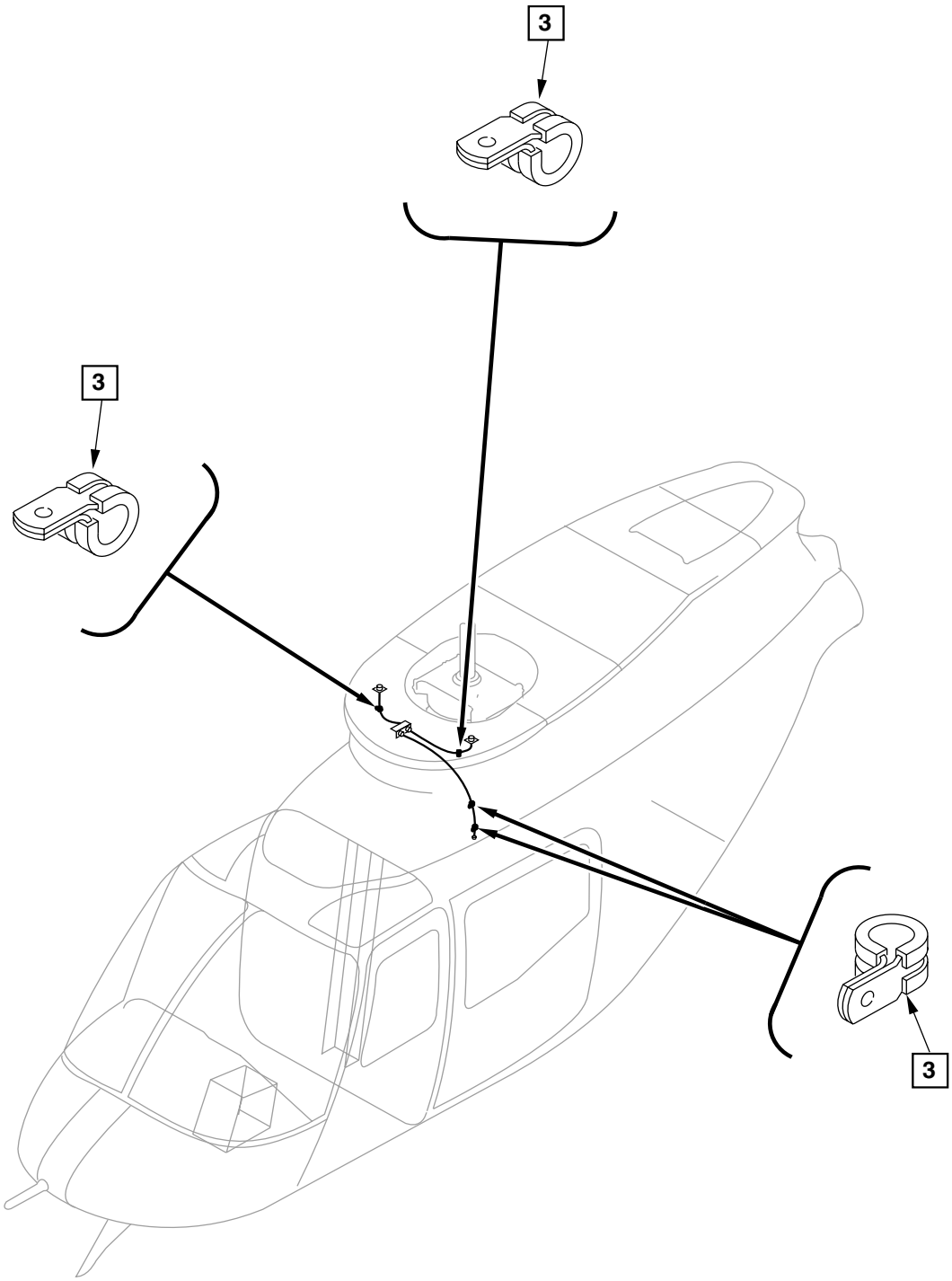


Figure F-4. Transmission Compartment Electrical Clamping and Routing (Sheet 1 of 6)

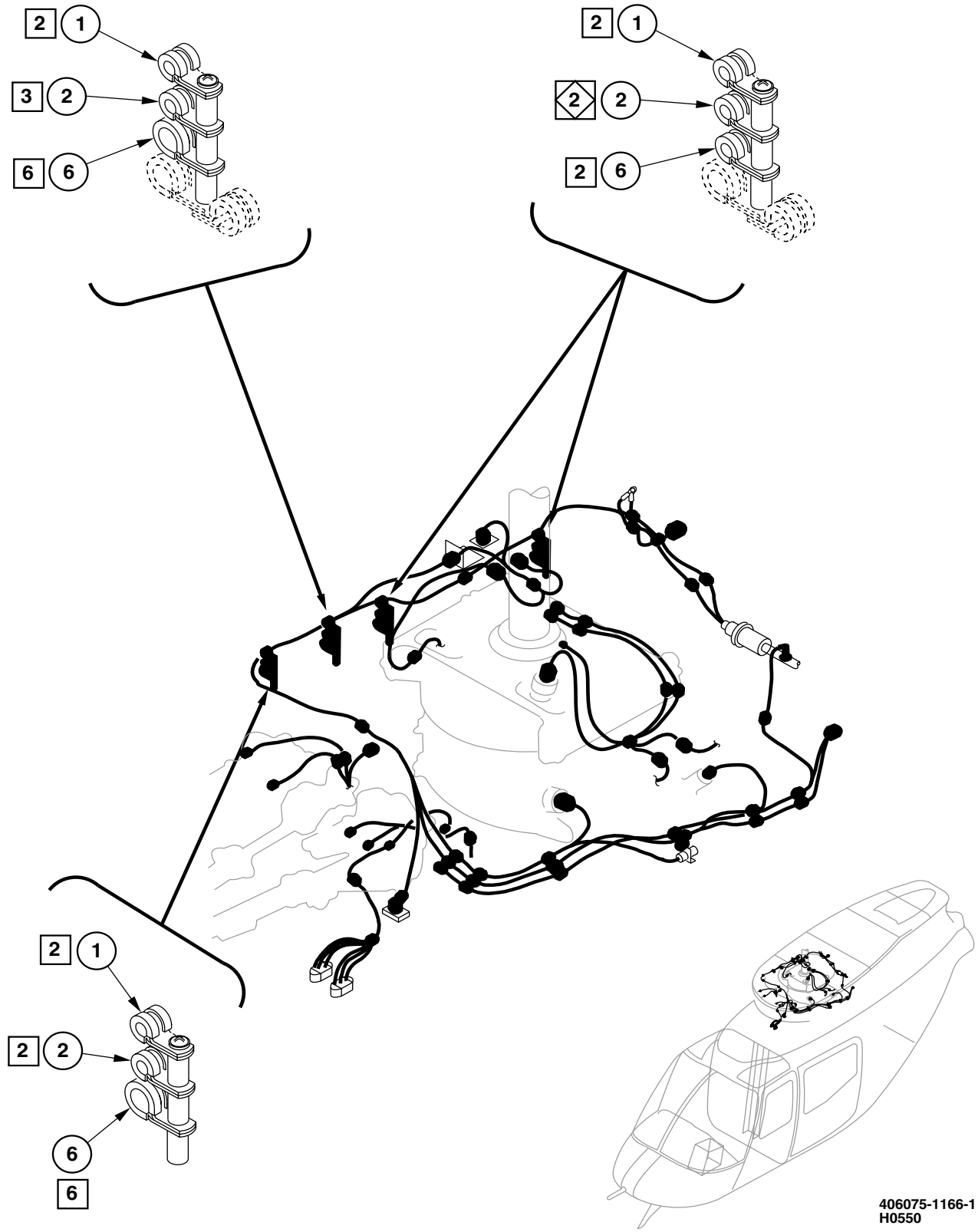


Figure F-4. Transmission Compartment Electrical Clamping and Routing (Sheet 2 of 6)

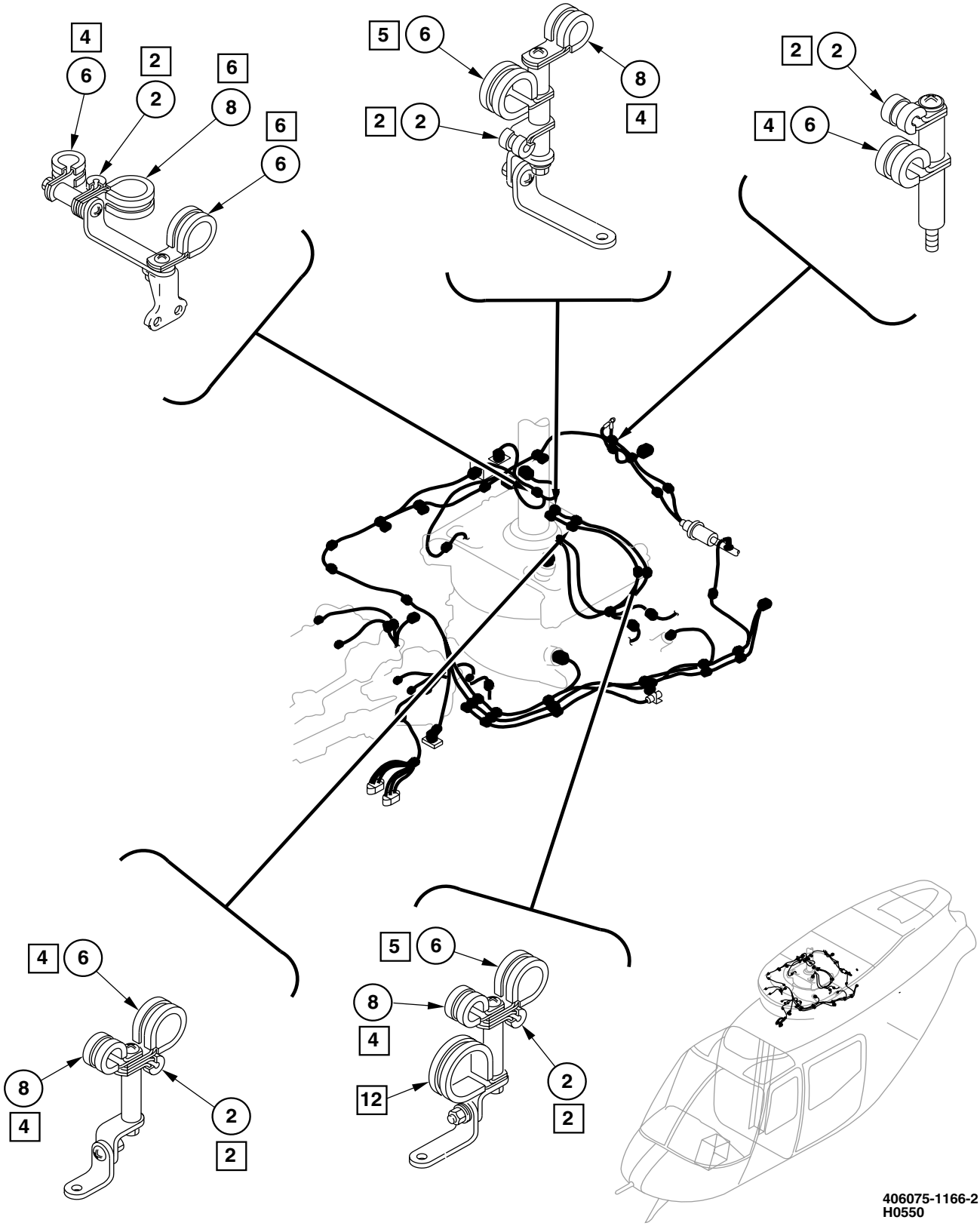


Figure F-4. Transmission Compartment Electrical Clamping and Routing (Sheet 3 of 6)

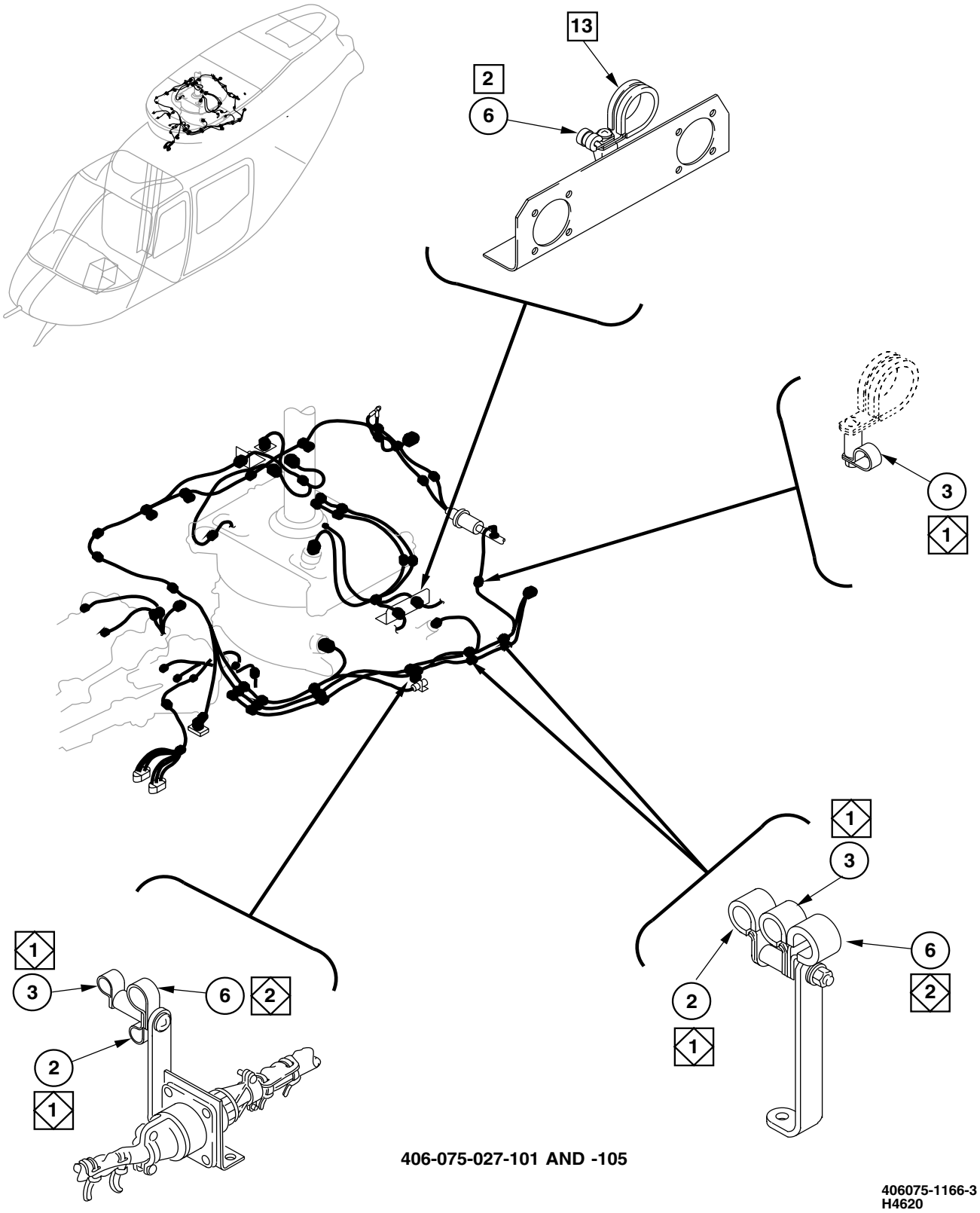


Figure F-4. Transmission Compartment Electrical Clamping and Routing (Sheet 4 of 6)

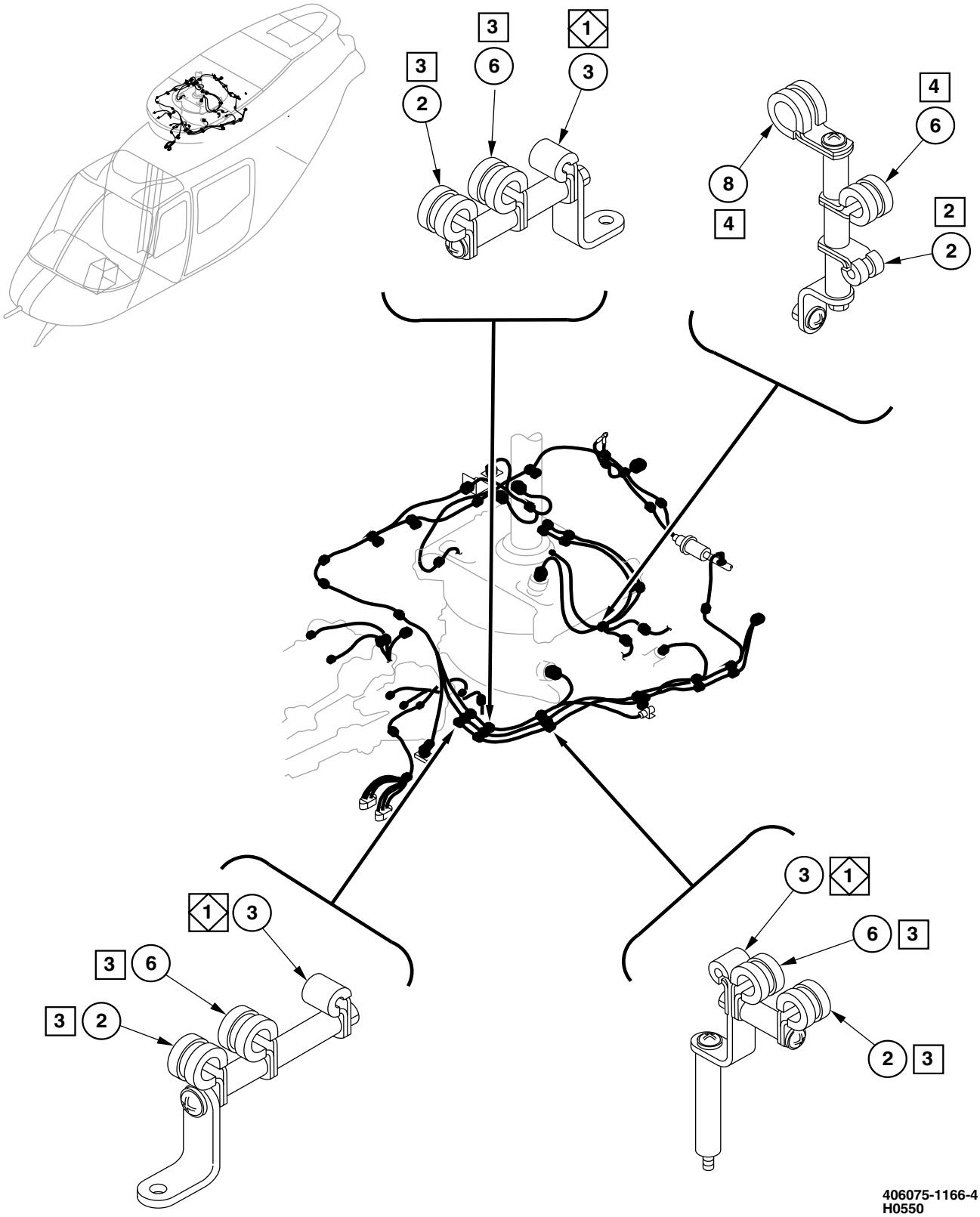


Figure F-4. Transmission Compartment Electrical Clamping and Routing (Sheet 5 of 6)

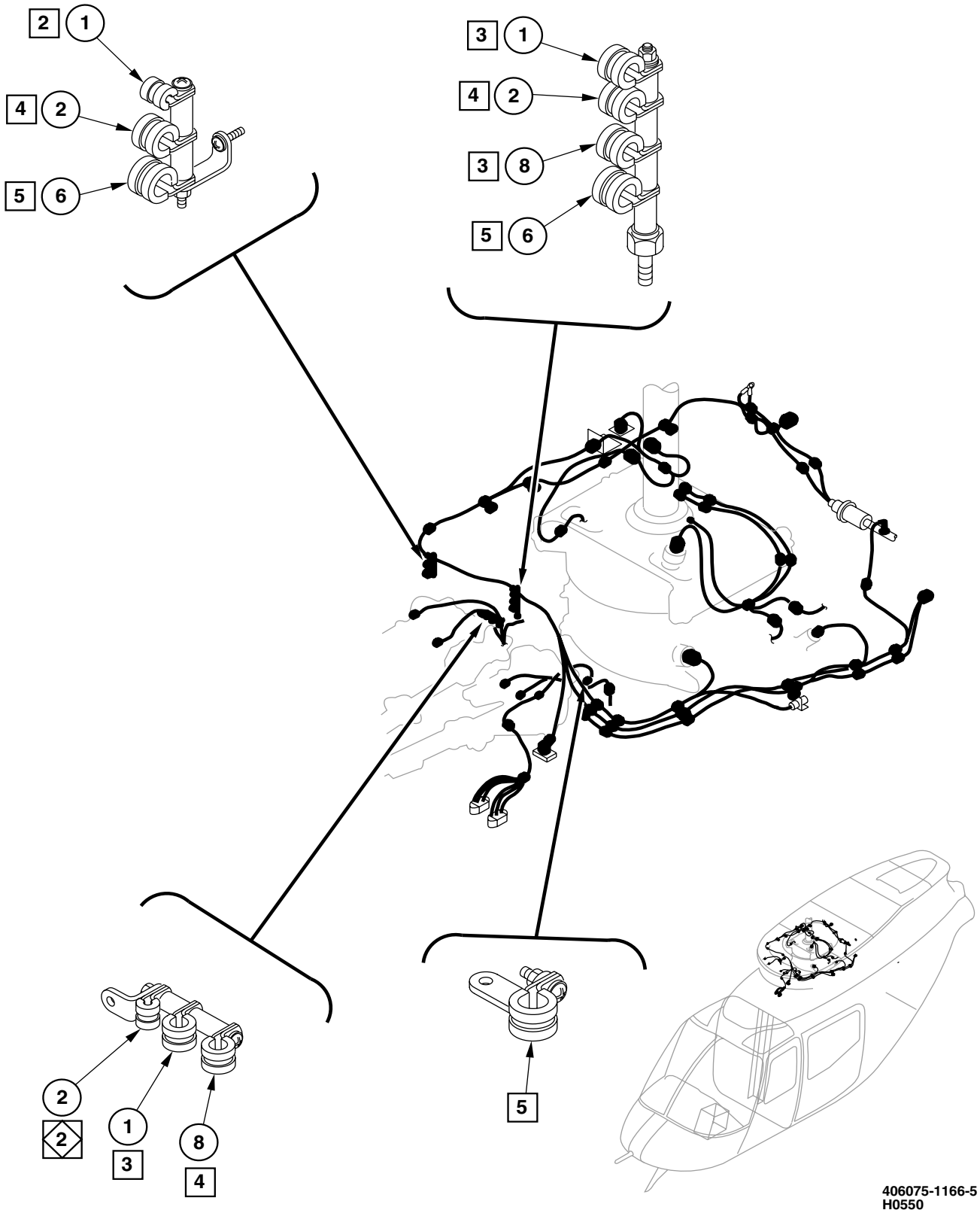


Figure F-4. Transmission Compartment Electrical Clamping and Routing (Sheet 6 of 6)

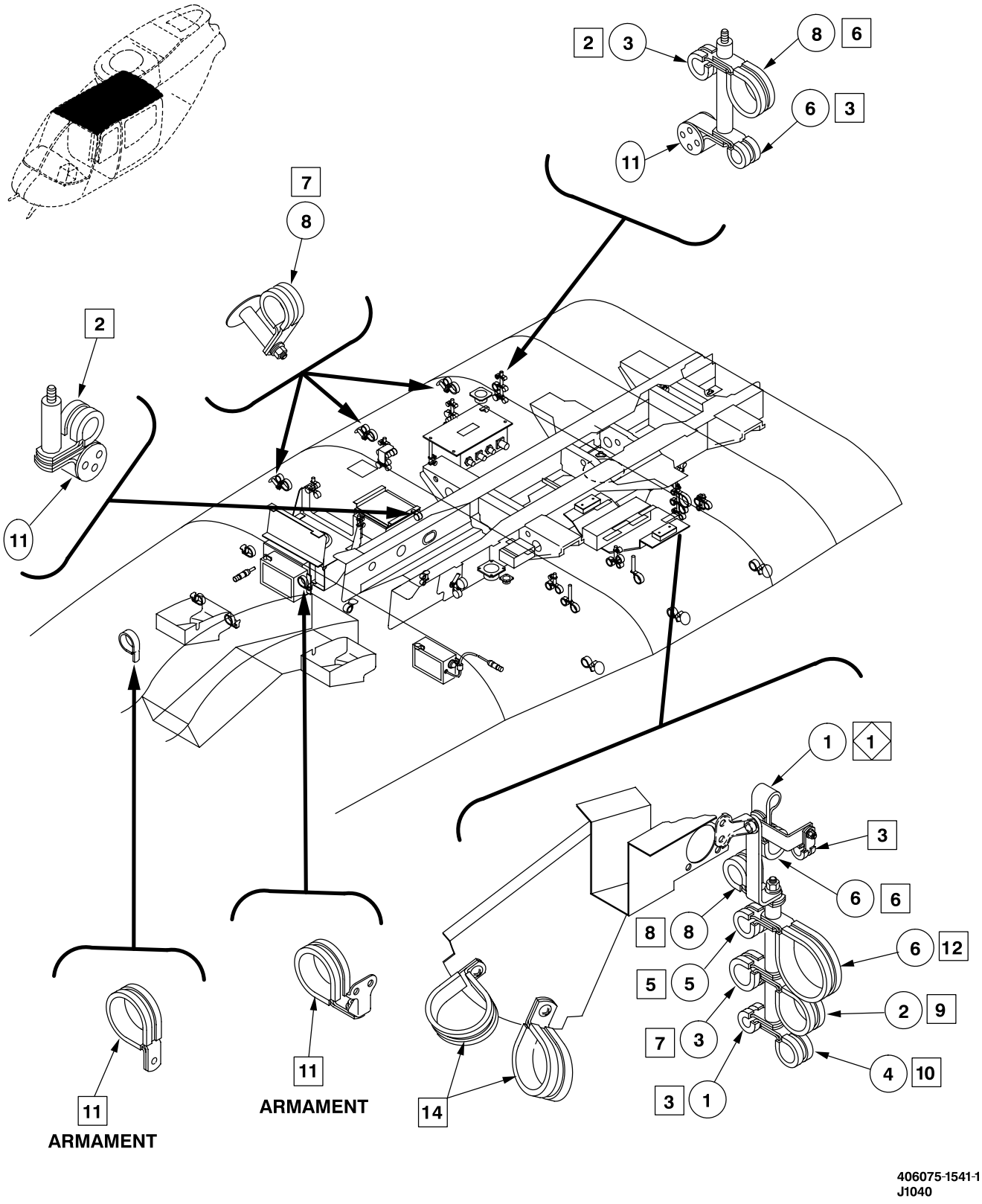


Figure F-5. Cabin Overhead Electrical Clamping and Routing (Sheet 1 of 4)

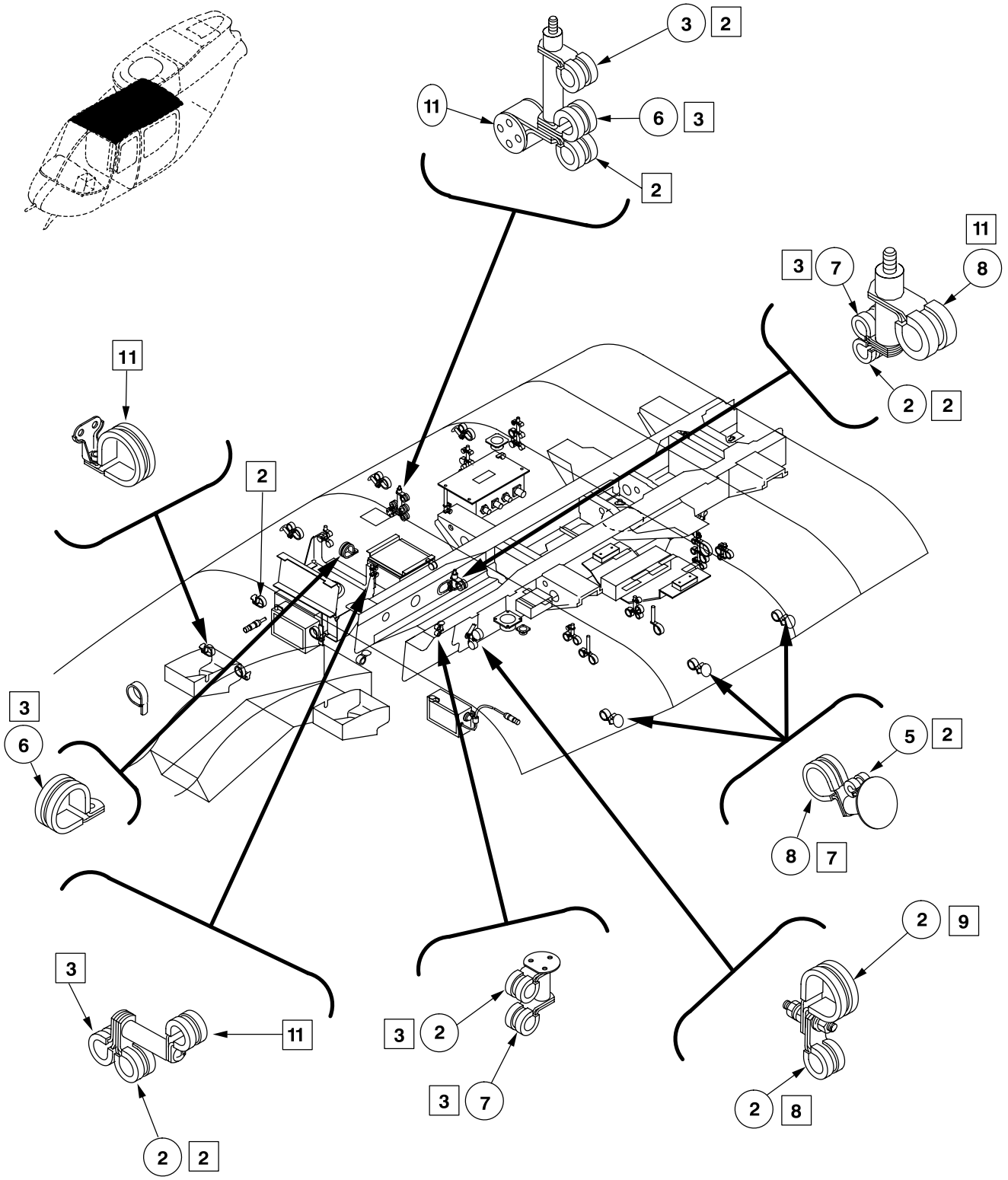


Figure F-5. Cabin Overhead Electrical Clamping and Routing (Sheet 2 of 4)

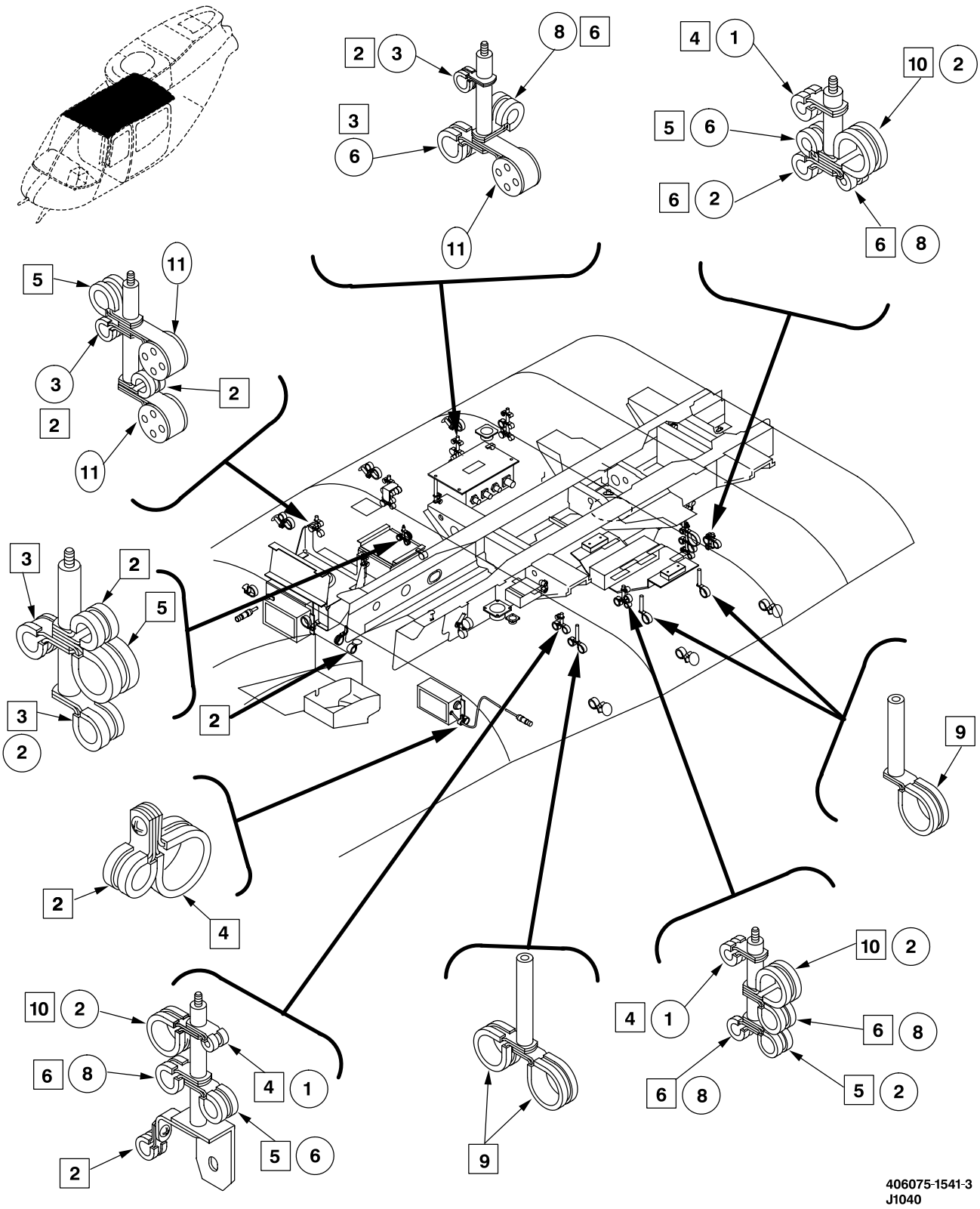


Figure F-5. Cabin Overhead Electrical Clamping and Routing (Sheet 3 of 4)

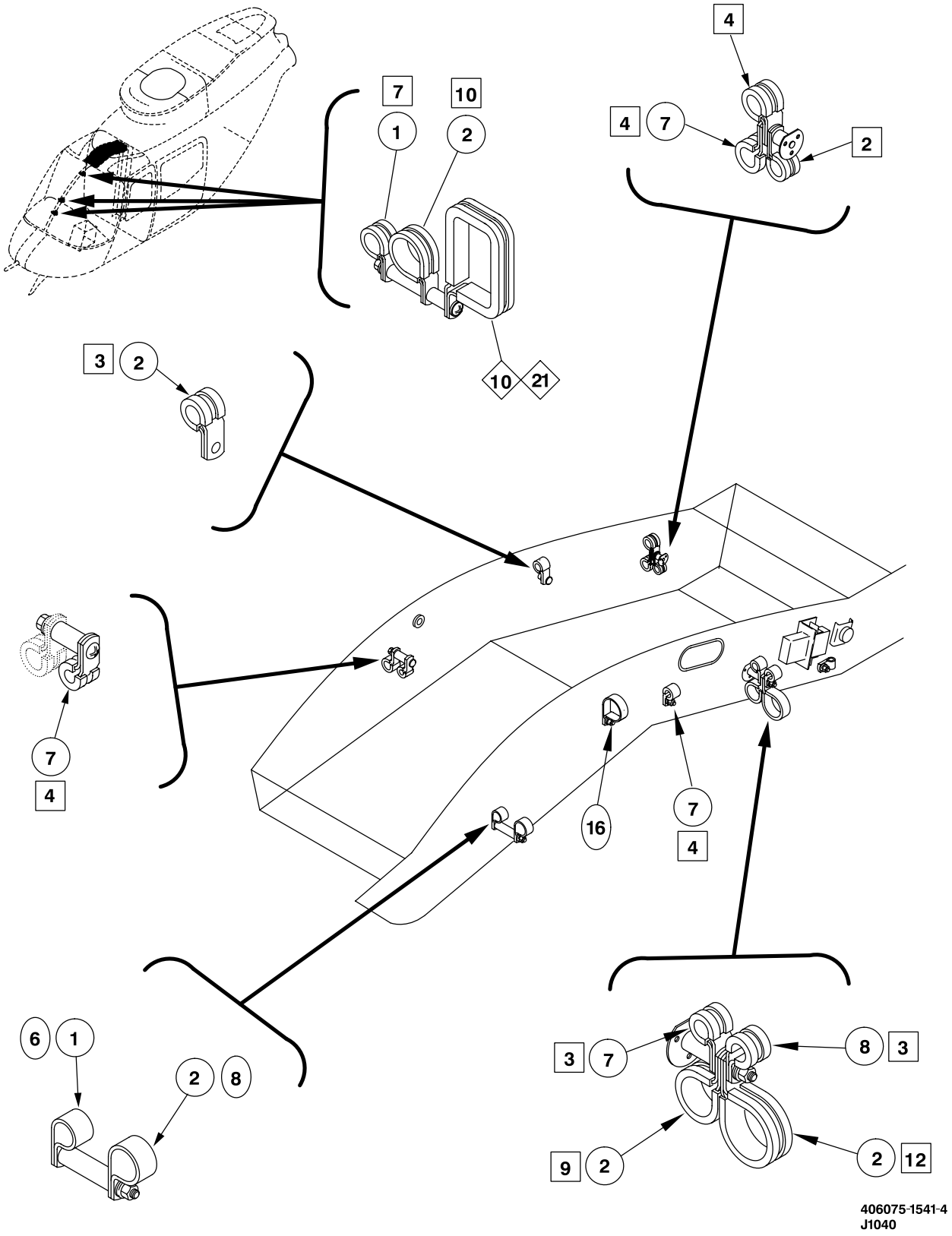


Figure F-5. Cabin Overhead Electrical Clamping and Routing (Sheet 4 of 4)

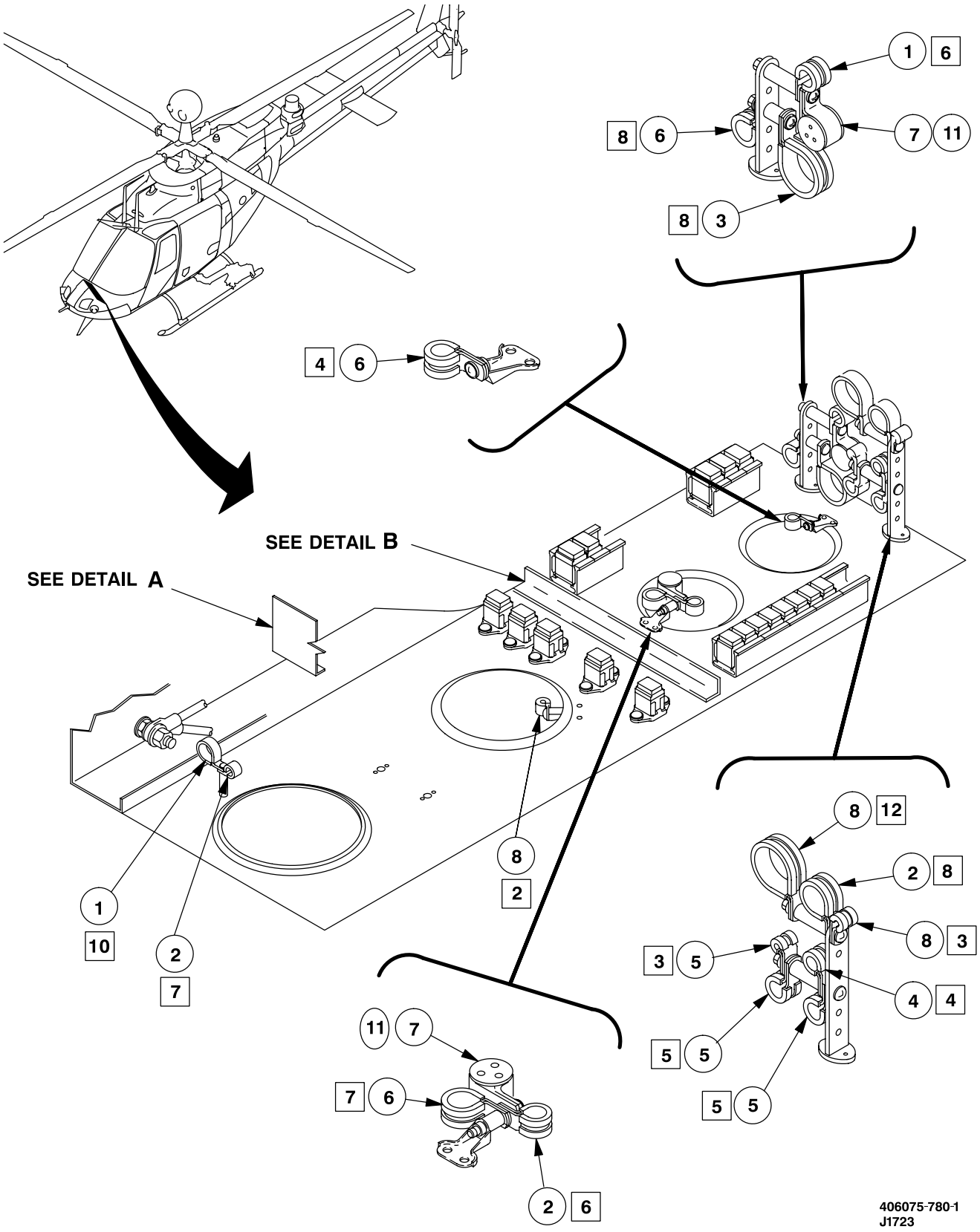
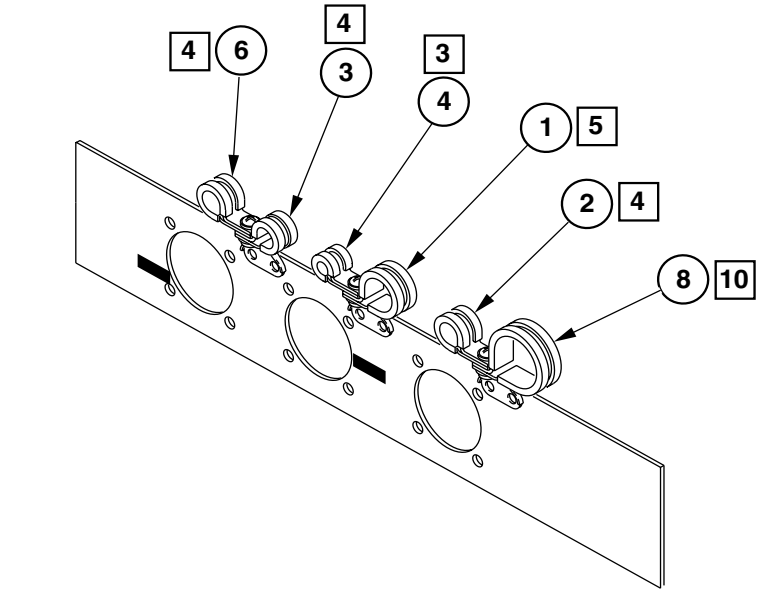
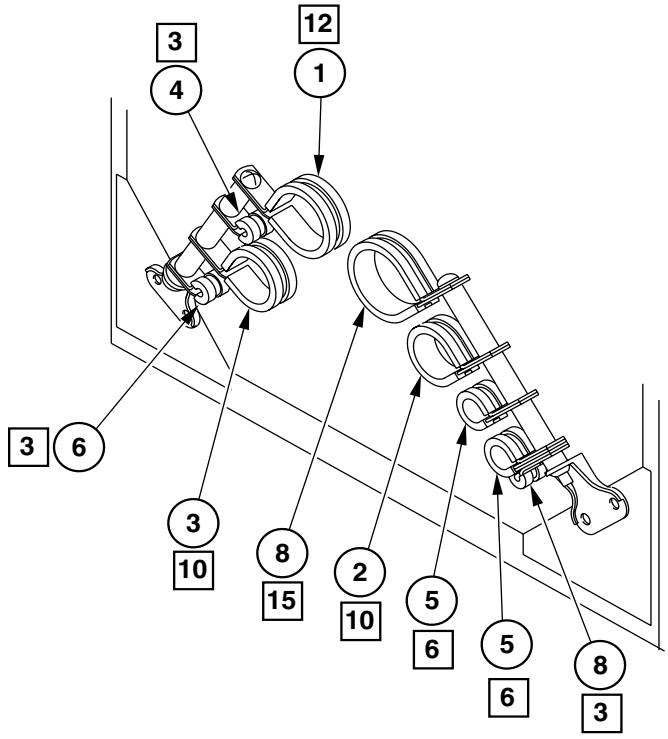


Figure F-6. Nose Section Electrical Clamping and Routing (Sheet 1 of 9)



DETAIL A



DETAIL B

406075-780-2
H0219

Figure F-6. Nose Section Electrical Clamping and Routing (Sheet 2 of 9)

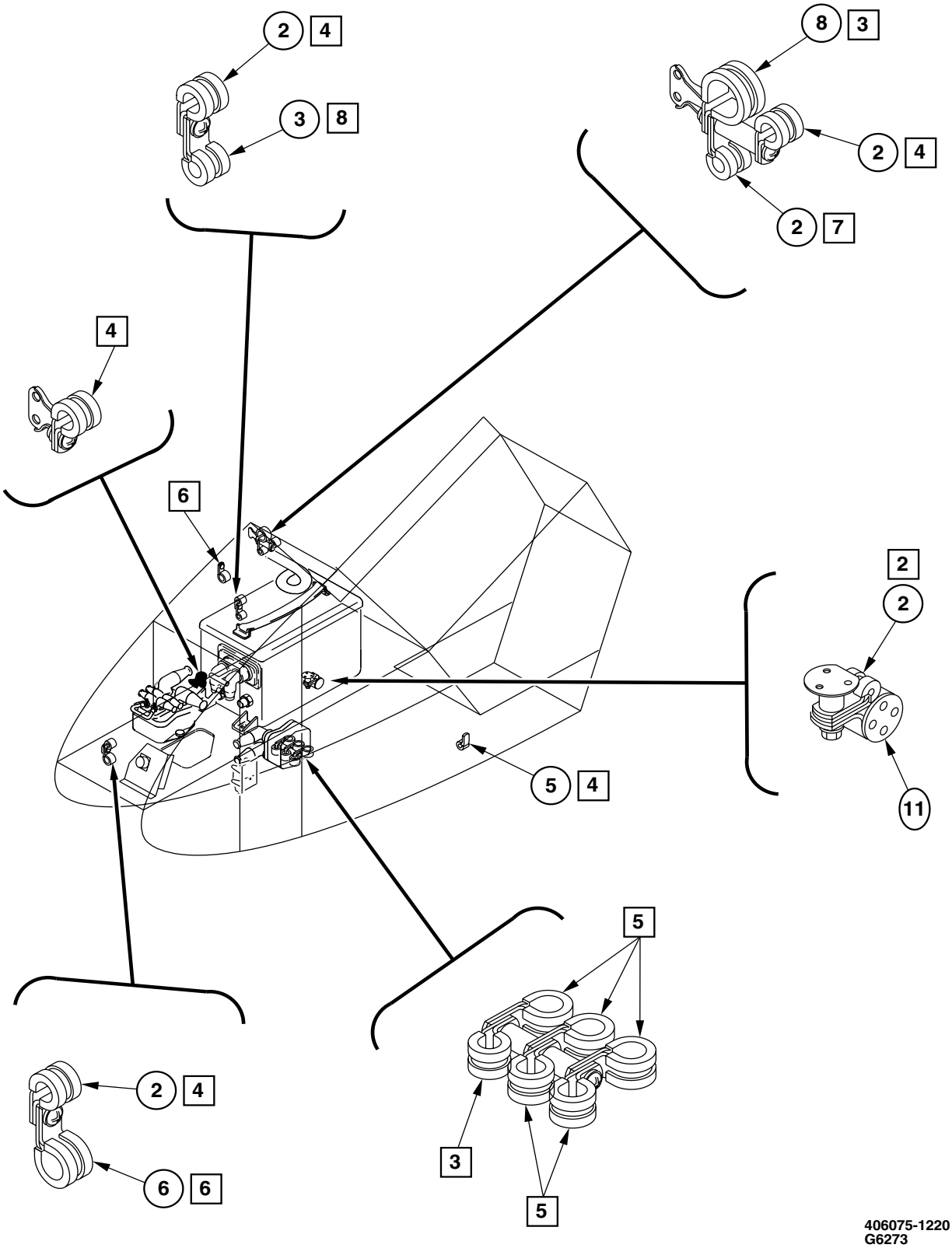


Figure F-6. Nose Section Electrical Clamping and Routing (Sheet 3 of 9)

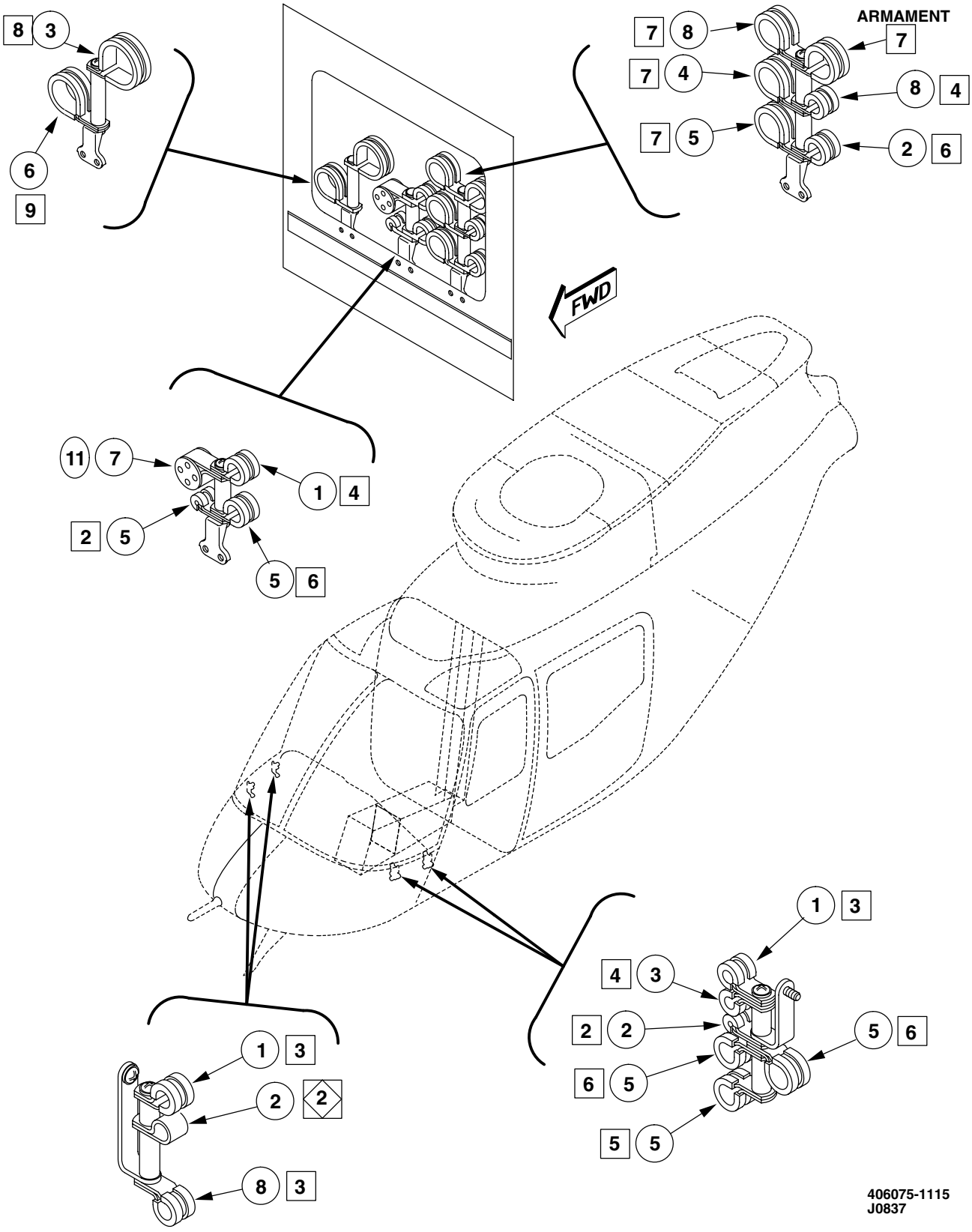


Figure F-6. Nose Section Electrical Clamping and Routing (Sheet 4 of 9)

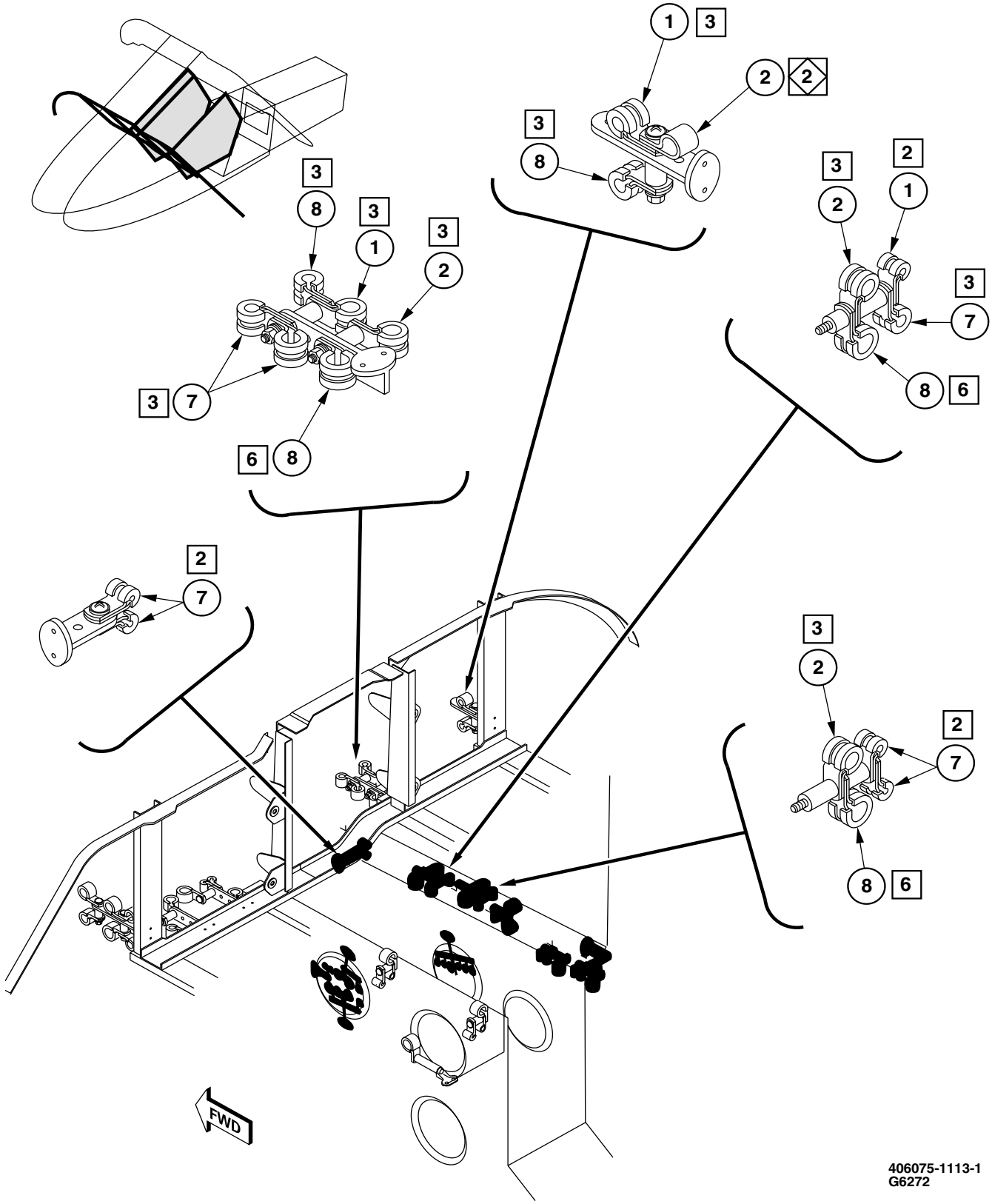


Figure F-6. Nose Section Electrical Clamping and Routing (Sheet 5 of 9)

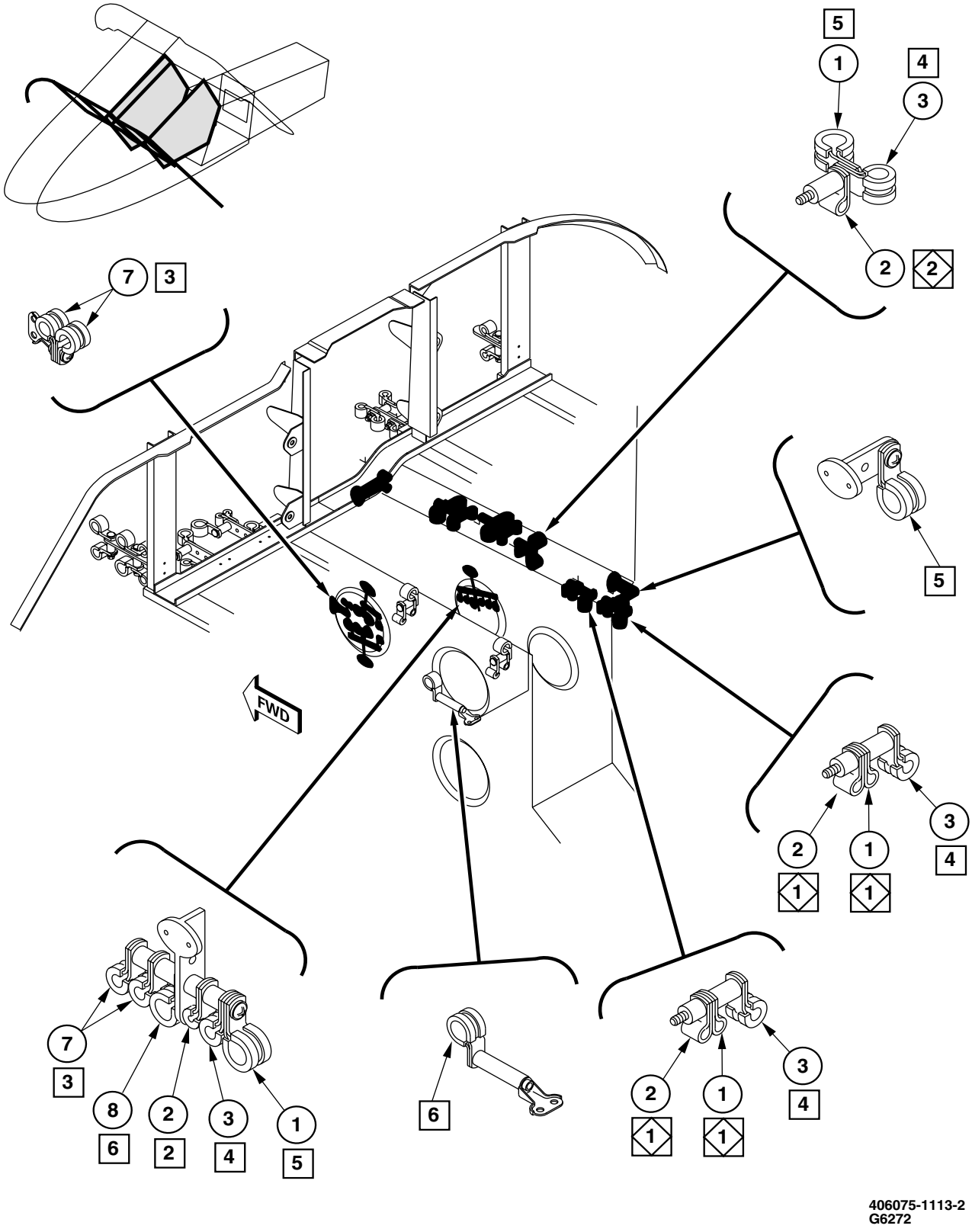


Figure F-6. Nose Section Electrical Clamping and Routing (Sheet 6 of 9)

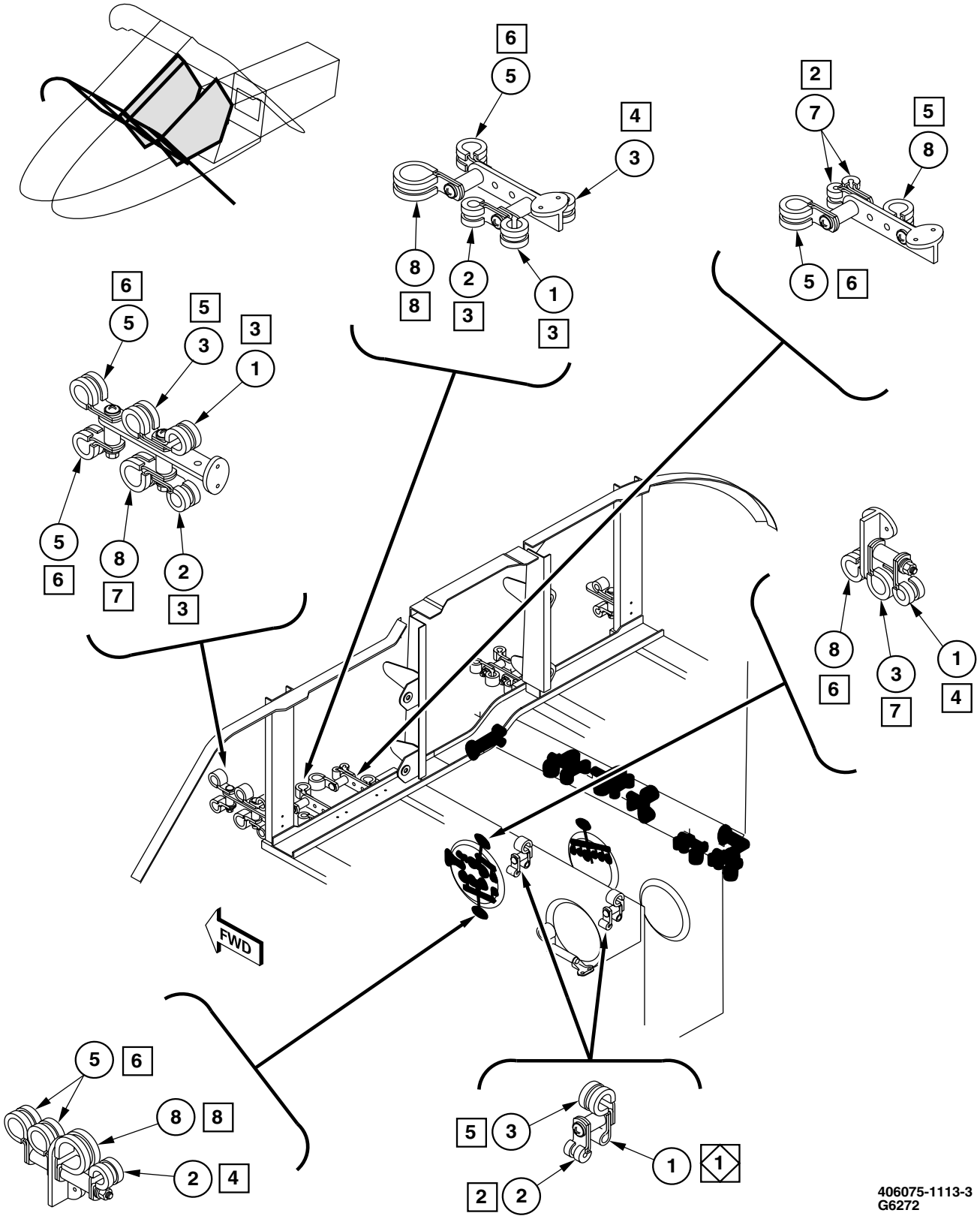


Figure F-6. Nose Section Electrical Clamping and Routing (Sheet 7 of 9)

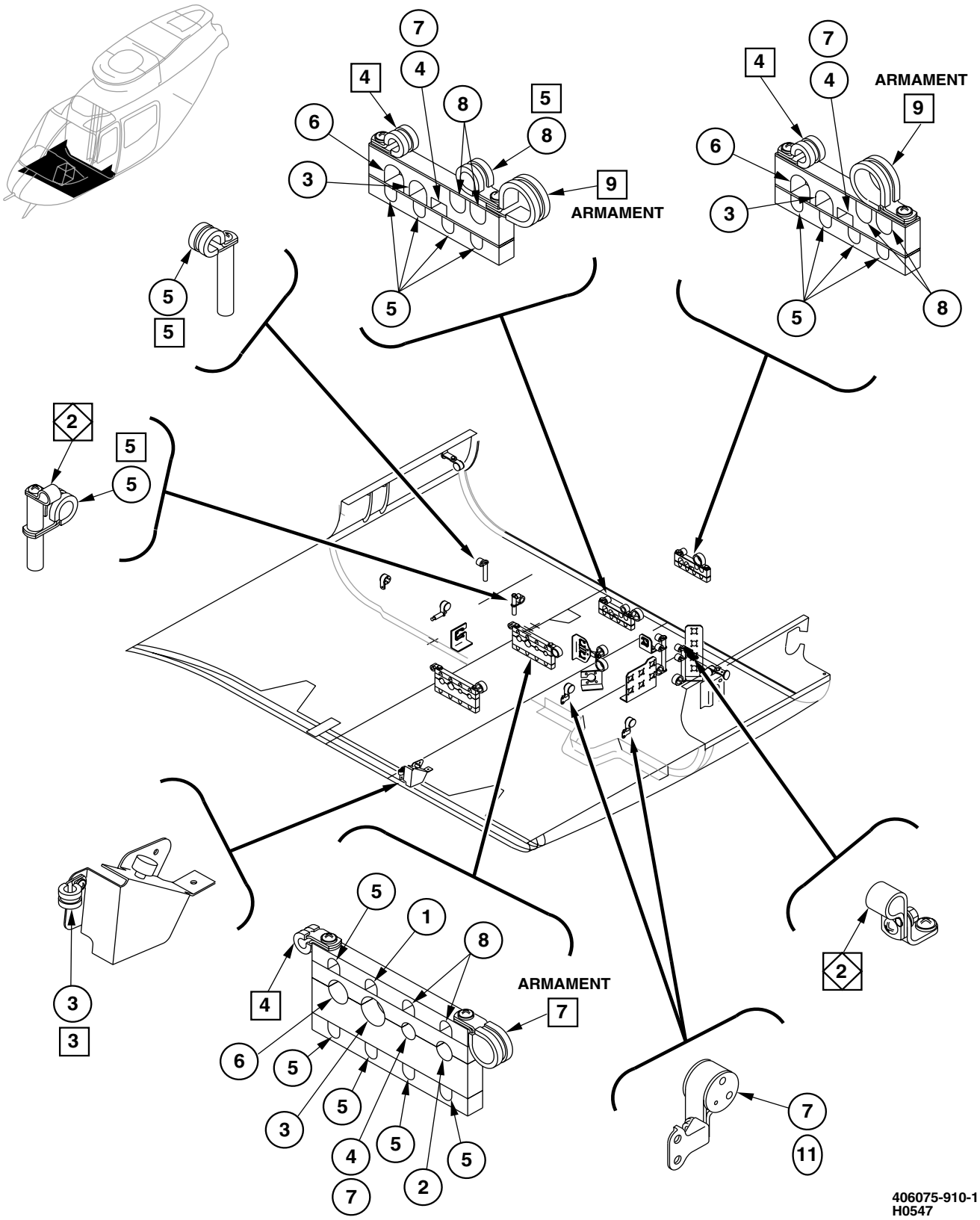


Figure F-6. Nose Section Electrical Clamping and Routing (Sheet 8 of 9)

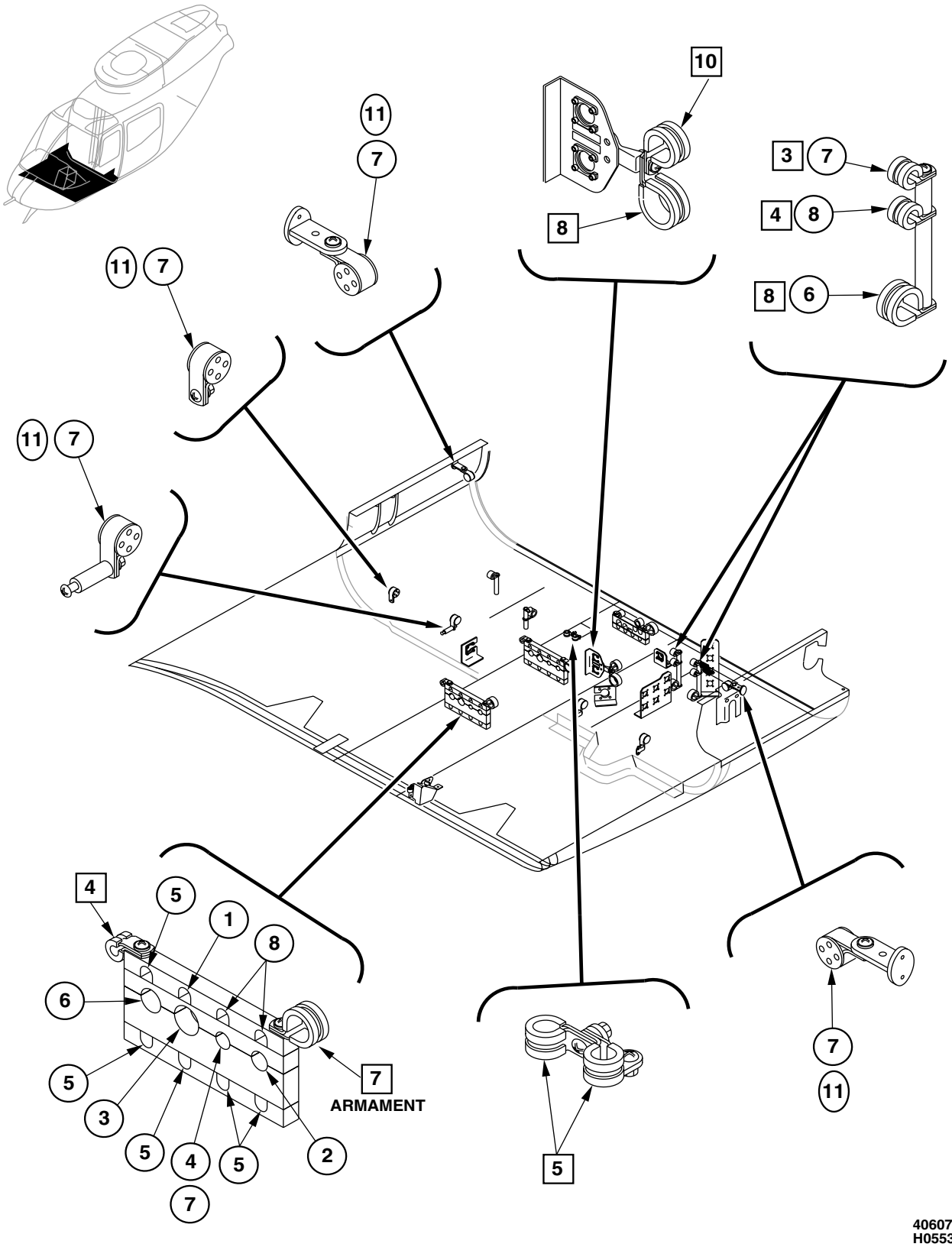


Figure F-6. Nose Section Electrical Clamping and Routing (Sheet 9 of 9)

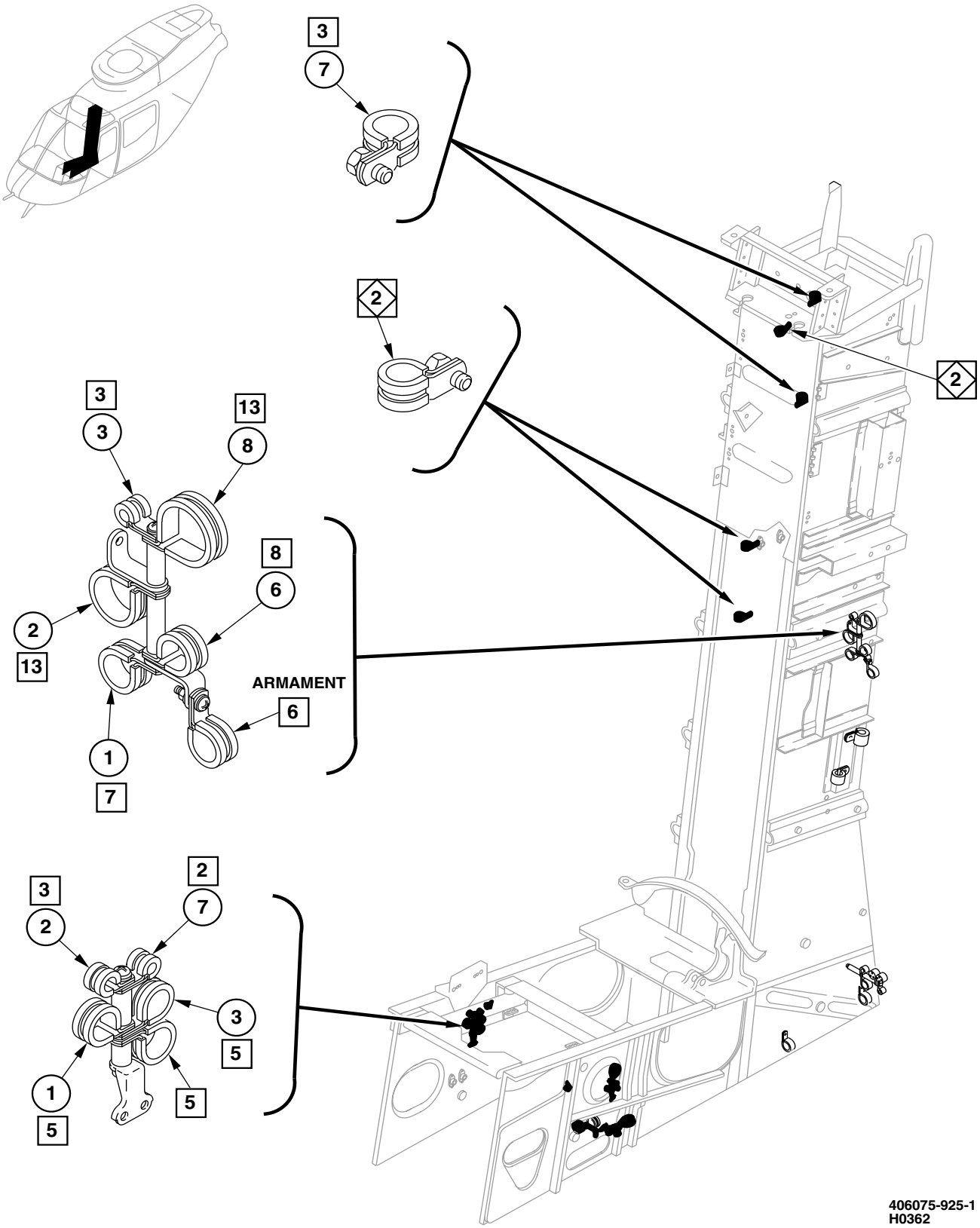


Figure F-7. Crew Compartment Electrical Clamping and Routing (Sheet 1 of 6)

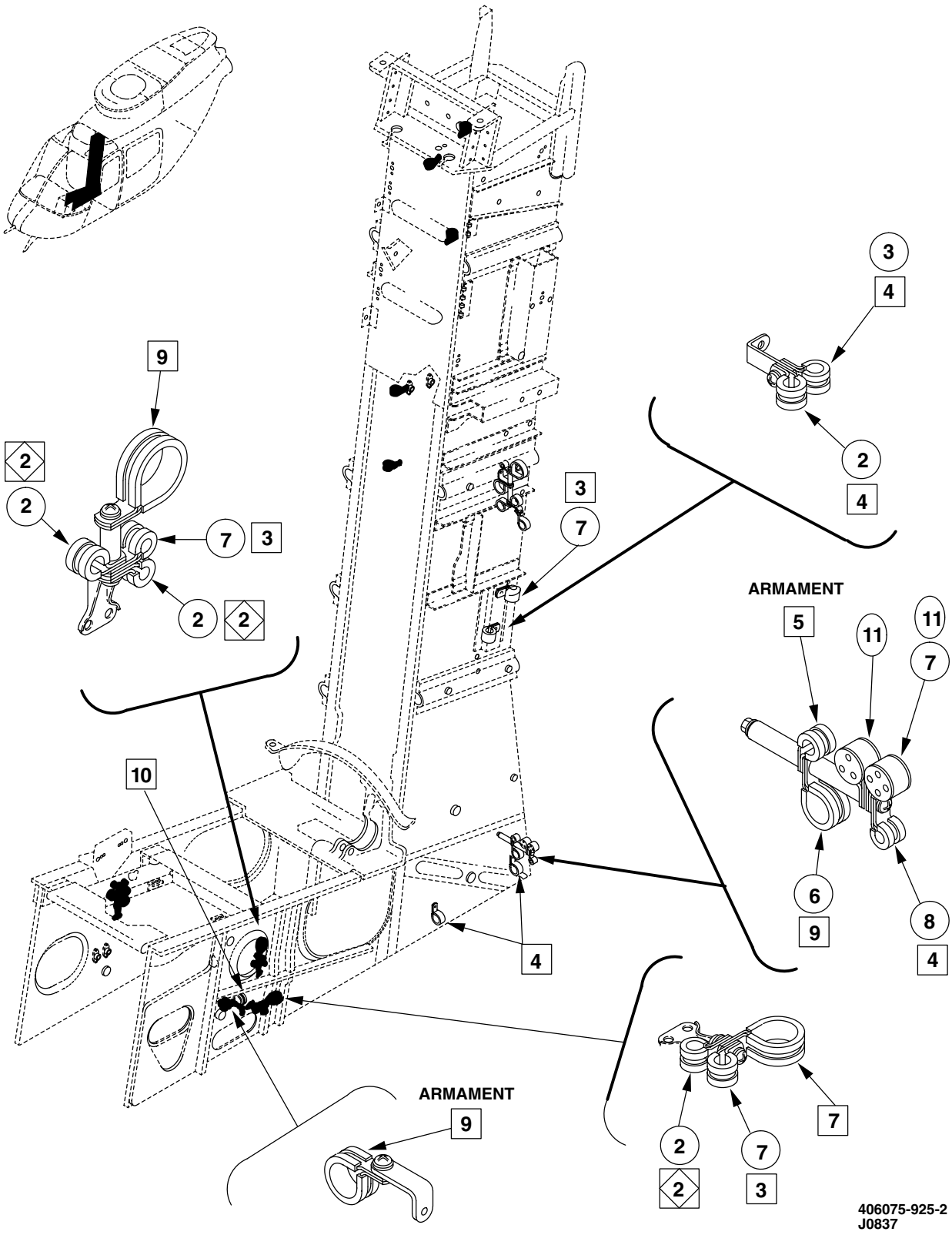


Figure F-7. Crew Compartment Electrical Clamping and Routing (Sheet 2 of 6)

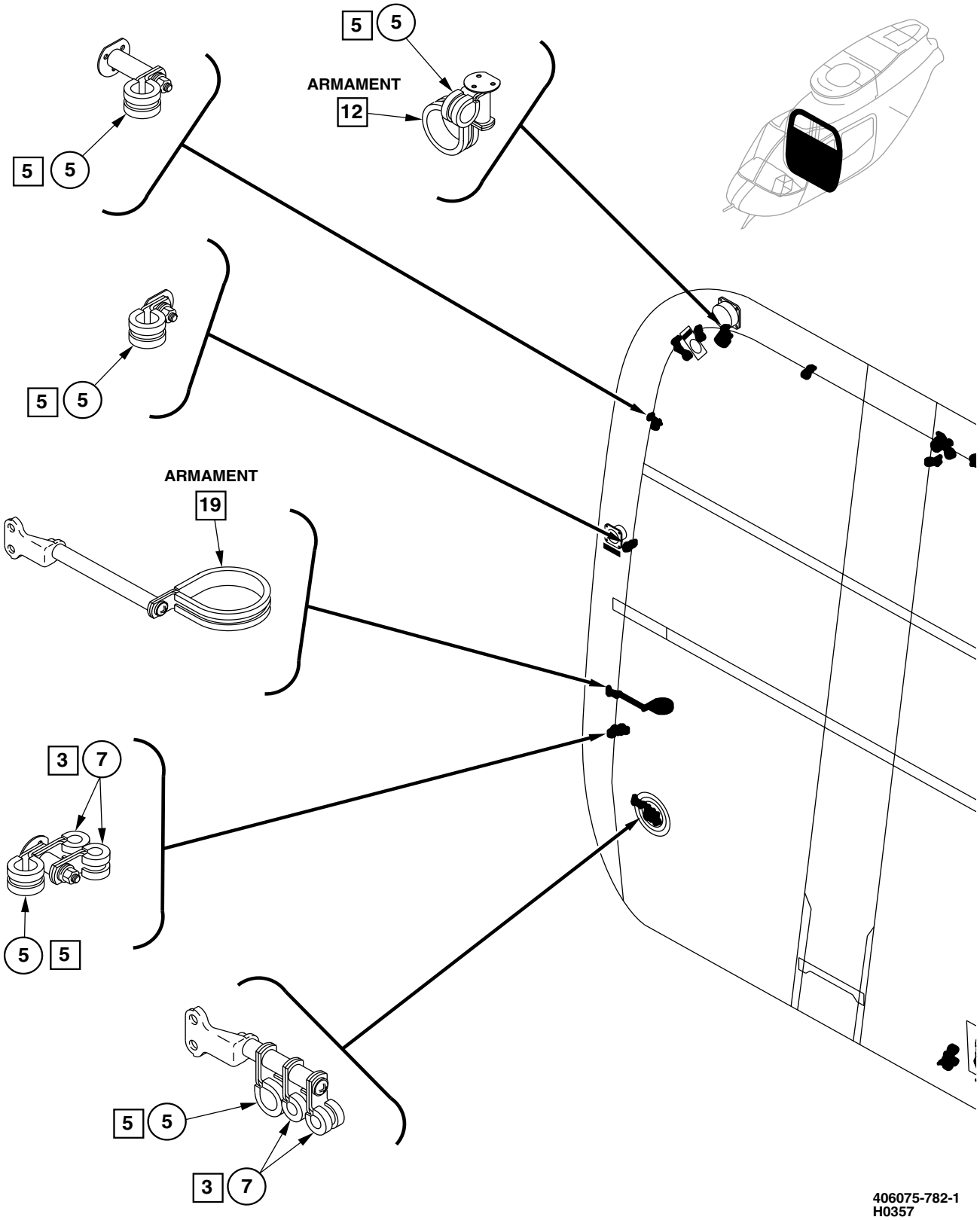


Figure F-7. Crew Compartment Electrical Clamping and Routing (Sheet 3 of 6)

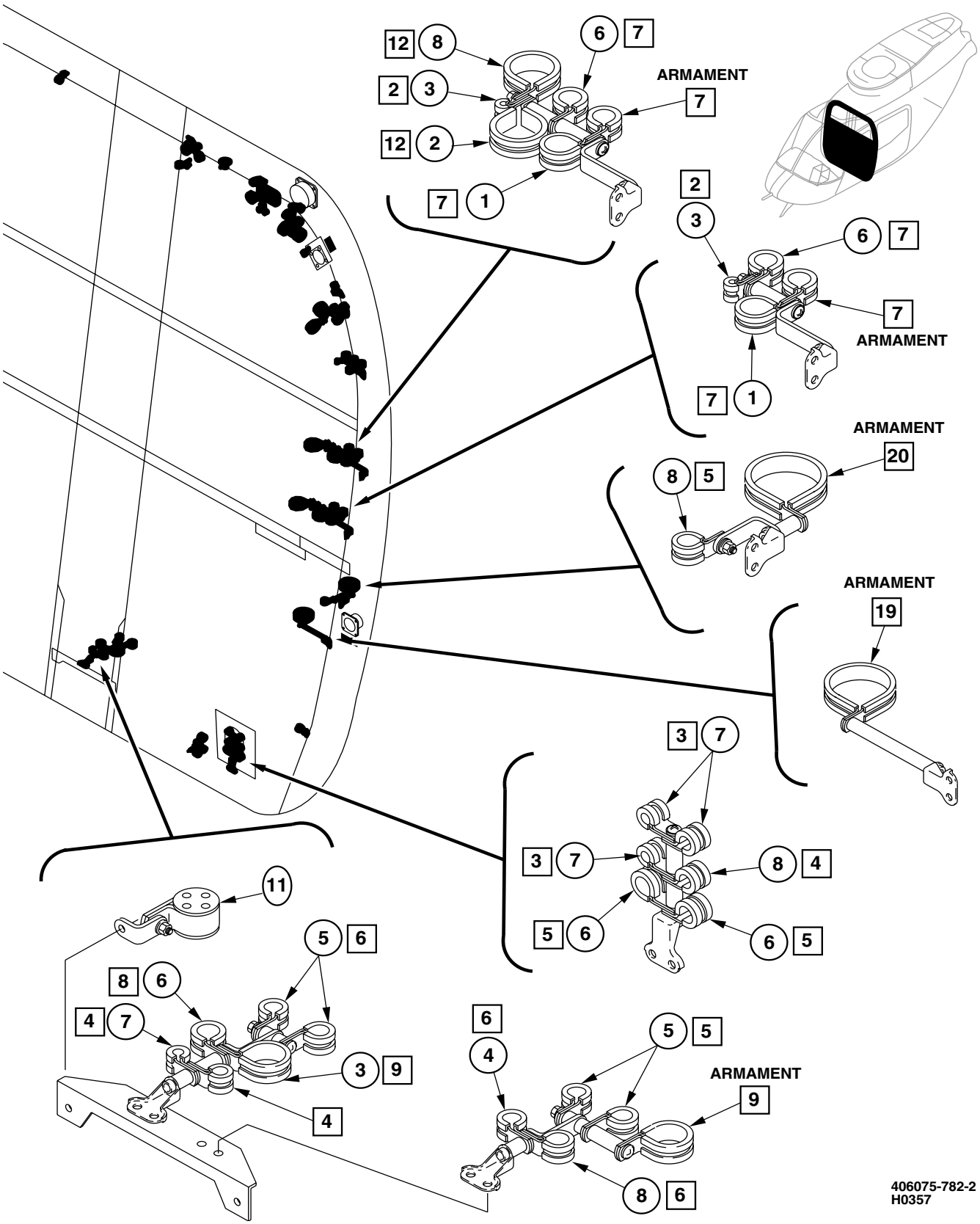


Figure F-7. Crew Compartment Electrical Clamping and Routing (Sheet 4 of 6)

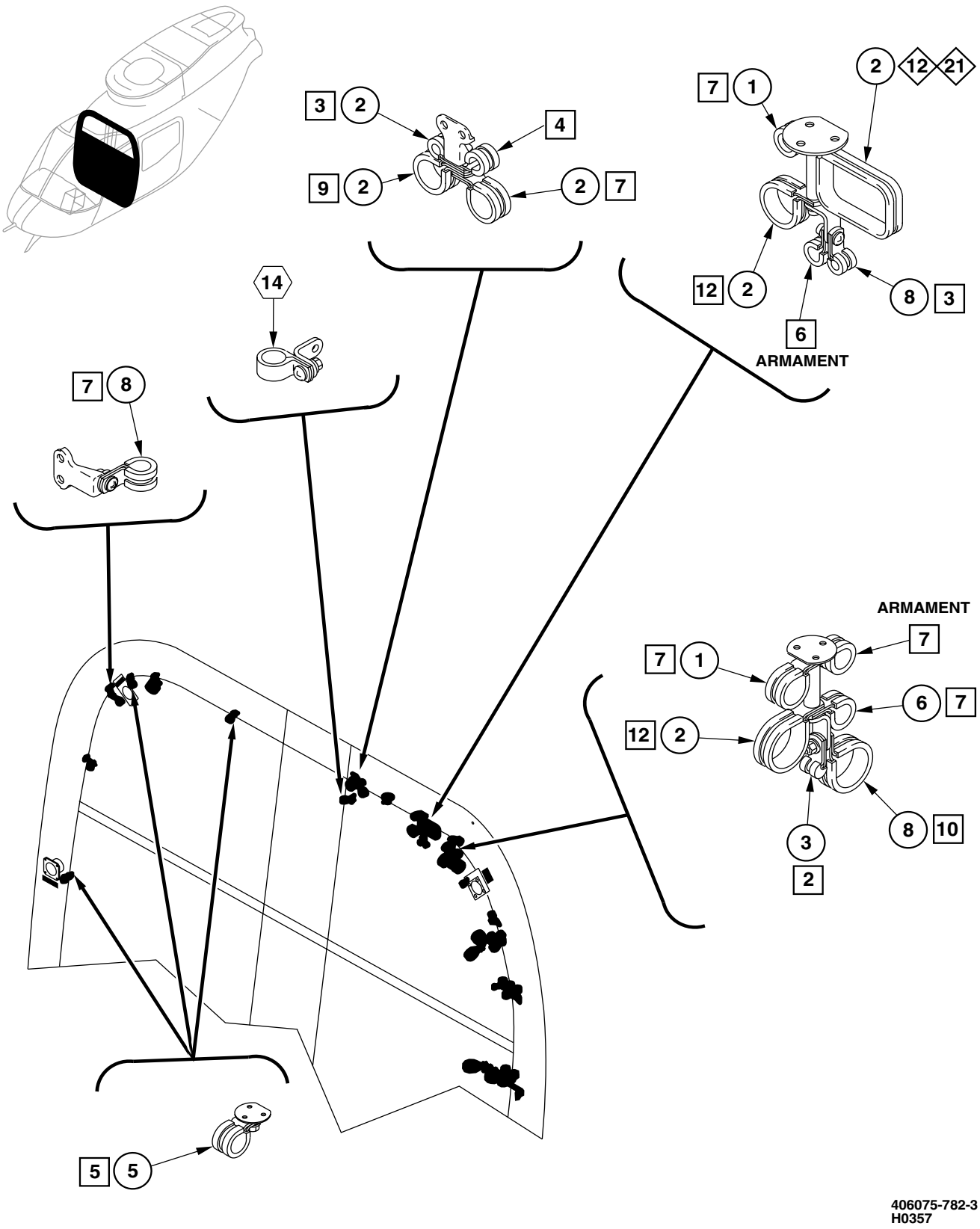


Figure F-7. Crew Compartment Electrical Clamping and Routing (Sheet 5 of 6)

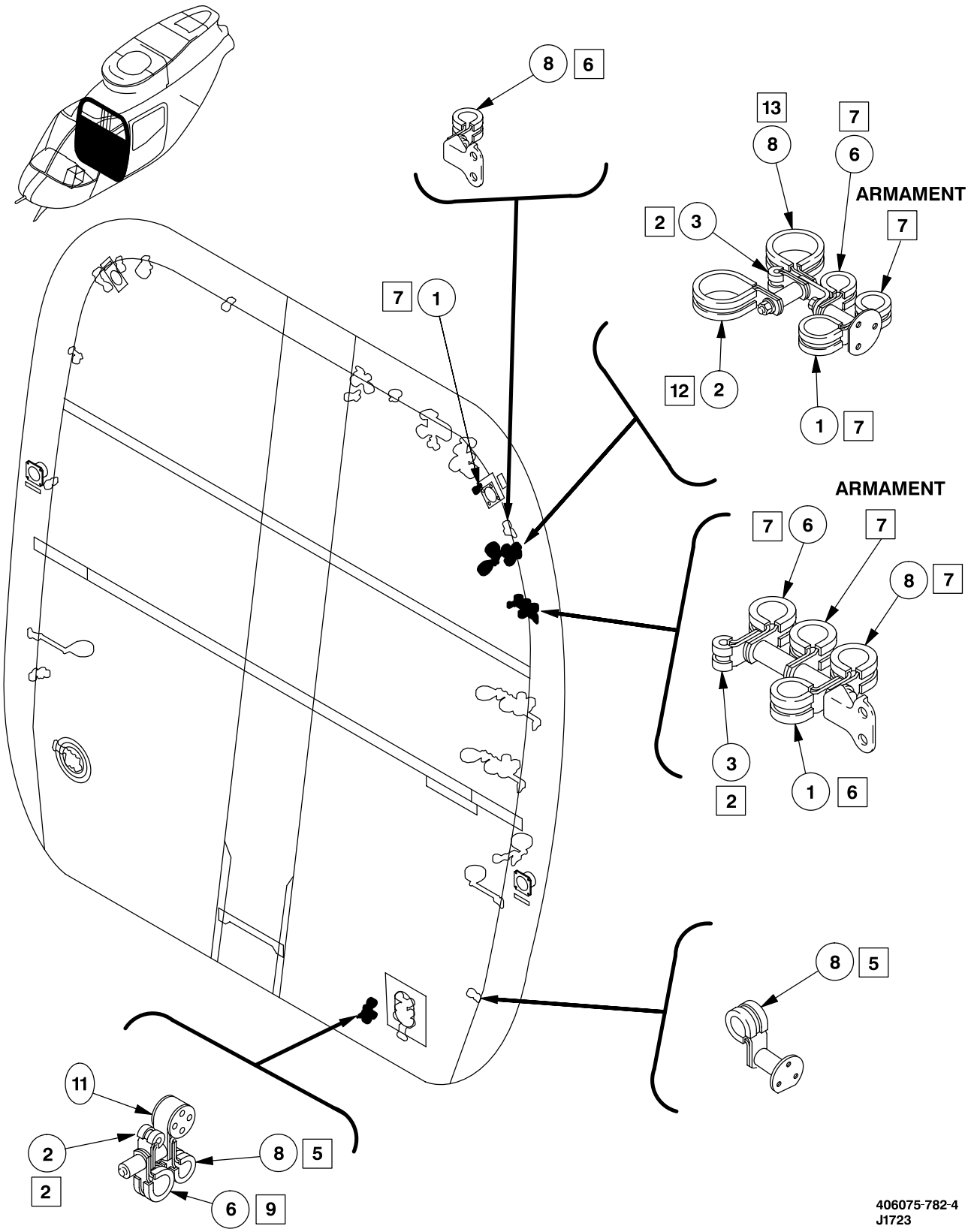


Figure F-7. Crew Compartment Electrical Clamping and Routing (Sheet 6 of 6)

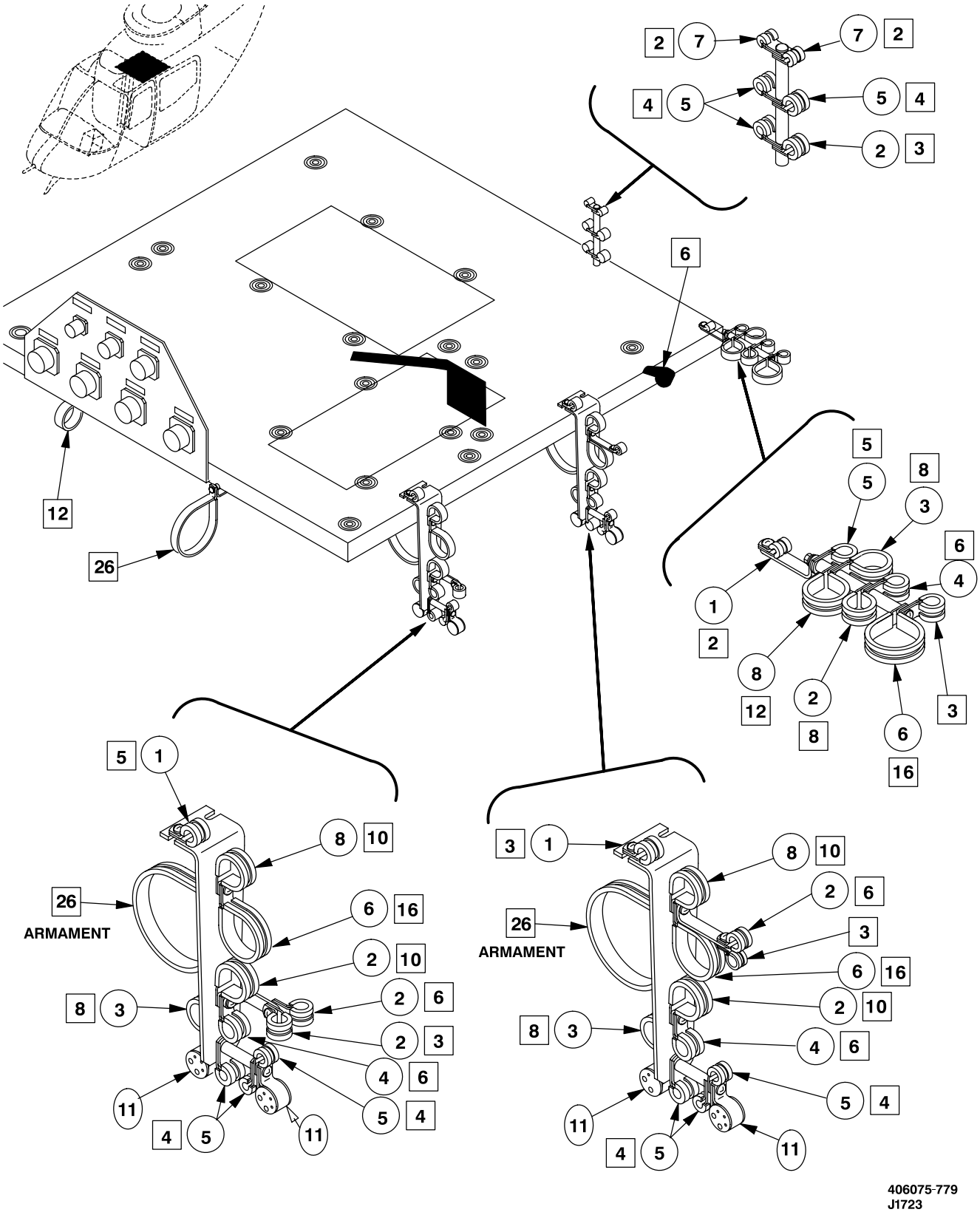


Figure F-8. Avionics Compartment Electrical Clamping and Routing (Sheet 1 of 12)

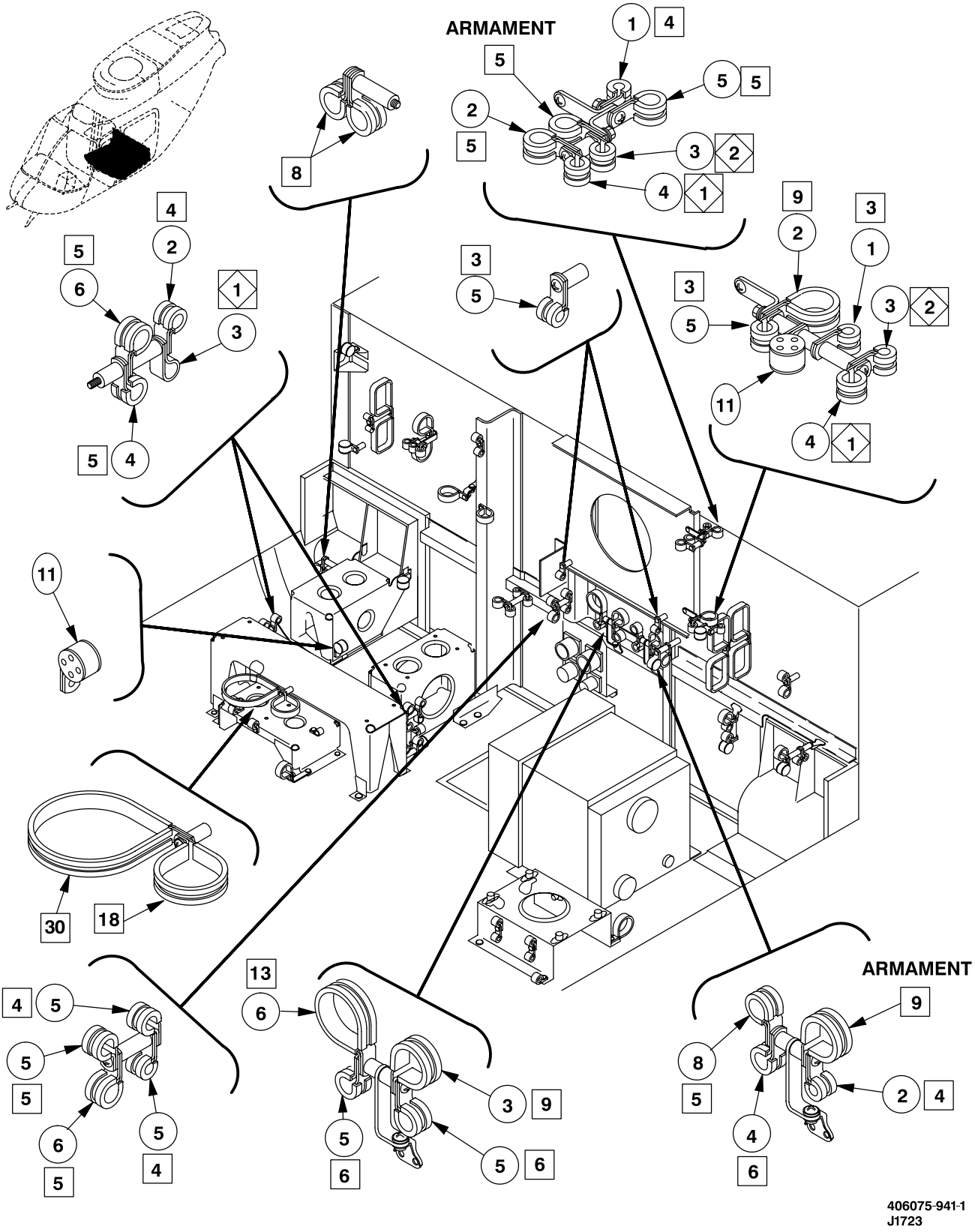


Figure F-8. Avionics Compartment Electrical Clamping and Routing (Sheet 2 of 12)

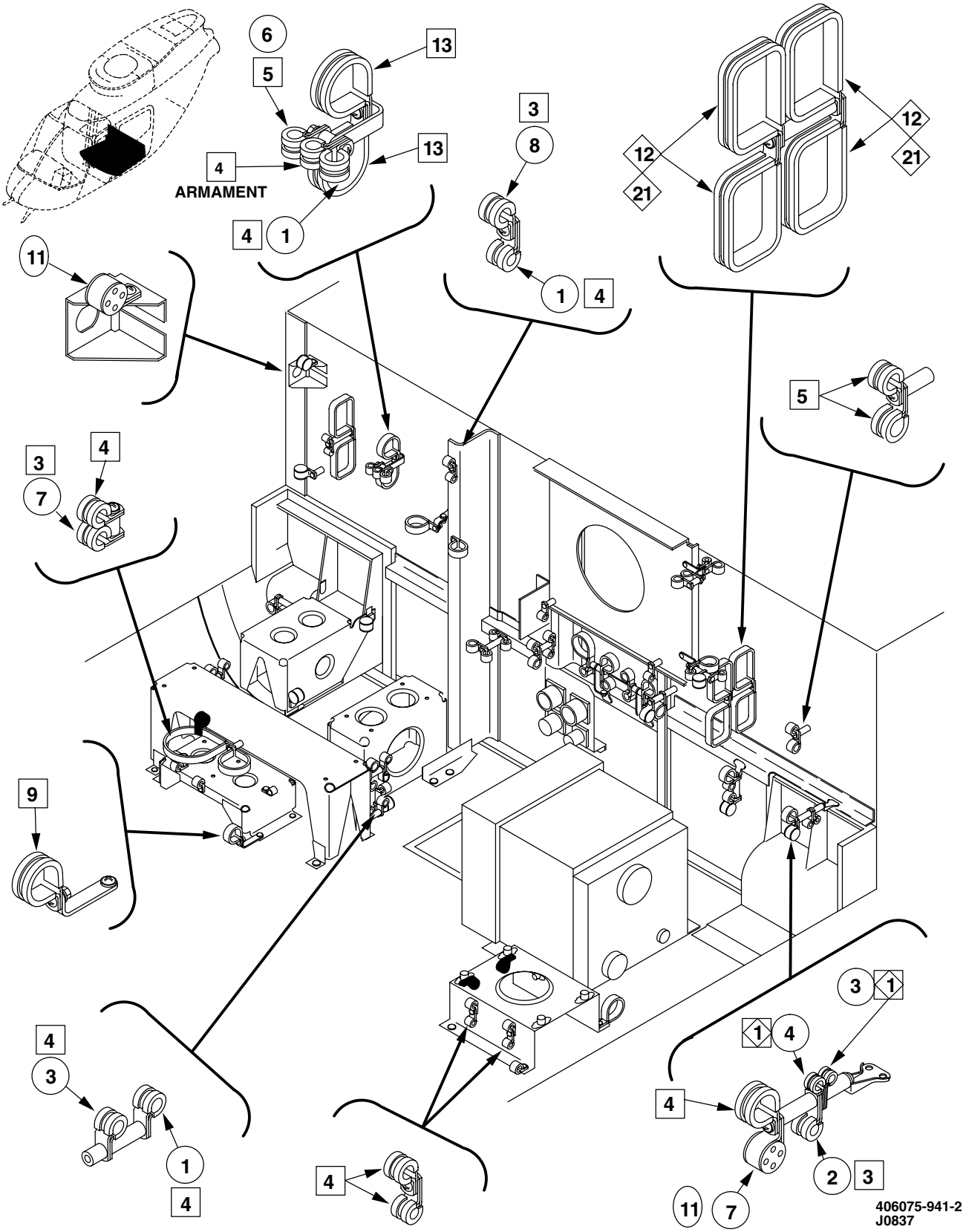


Figure F-8. Avionics Compartment Electrical Clamping and Routing (Sheet 3 of 12)

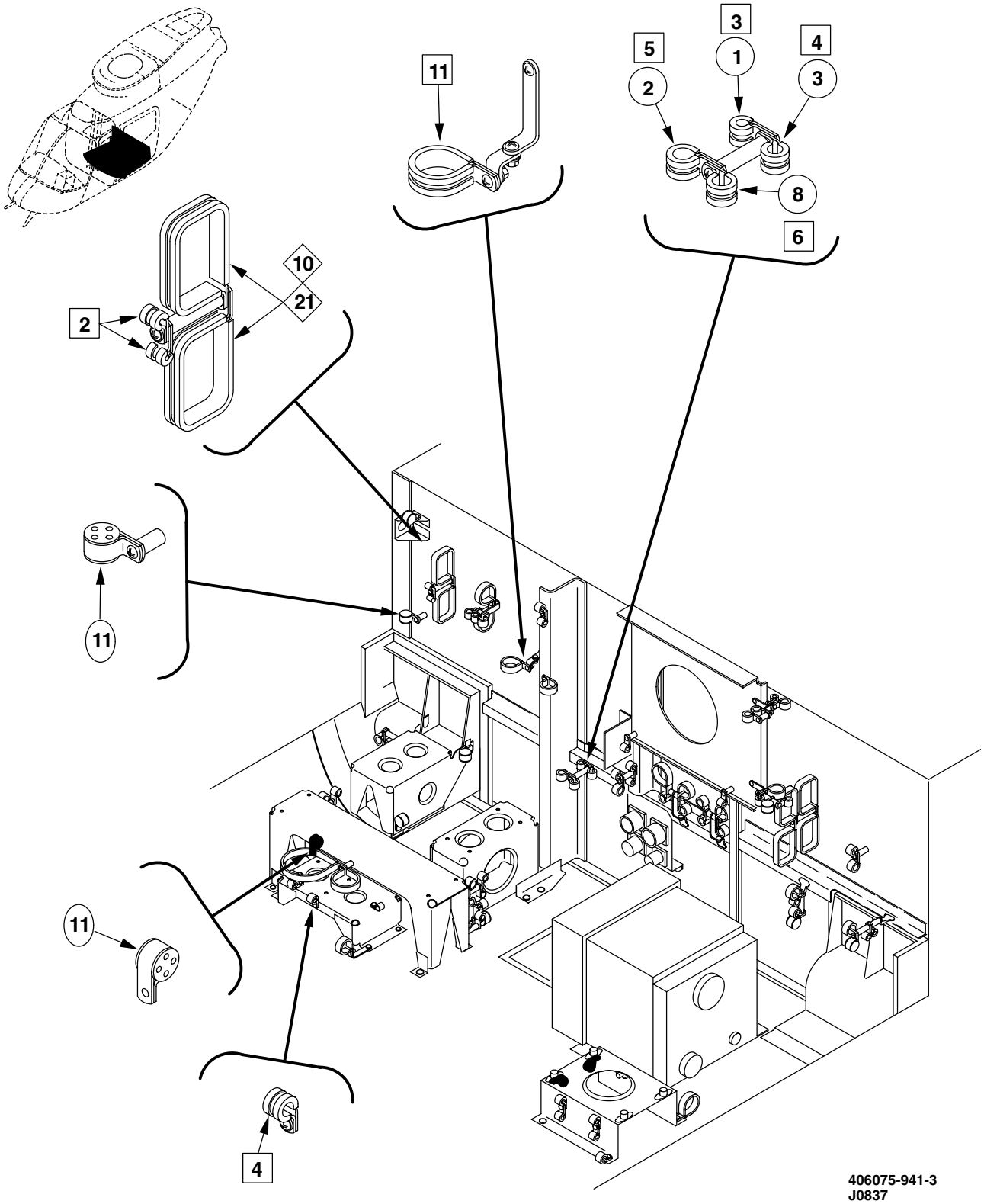


Figure F-8. Avionics Compartment Electrical Clamping and Routing (Sheet 4 of 12)

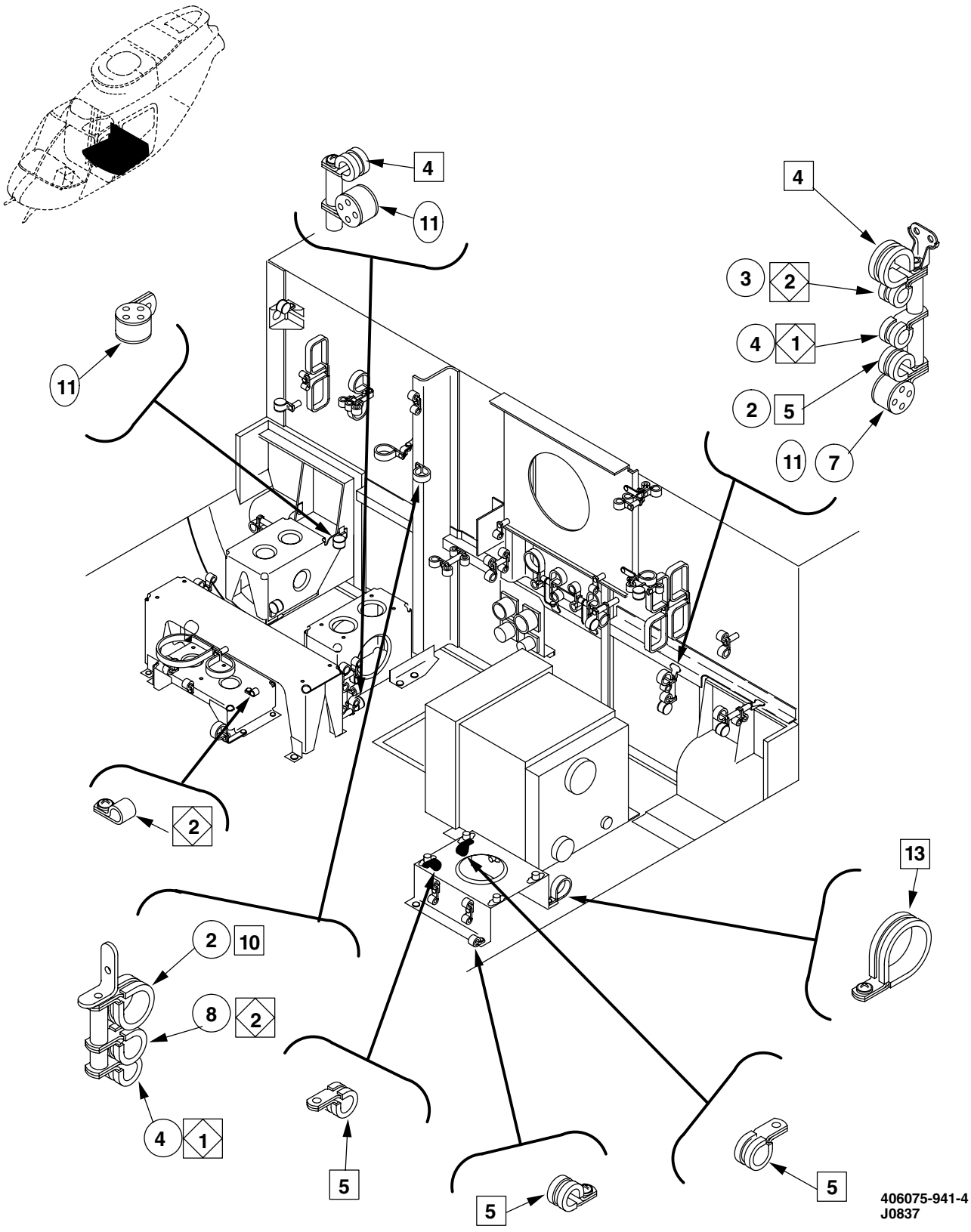


Figure F-8. Avionics Compartment Electrical Clamping and Routing (Sheet 5 of 12)

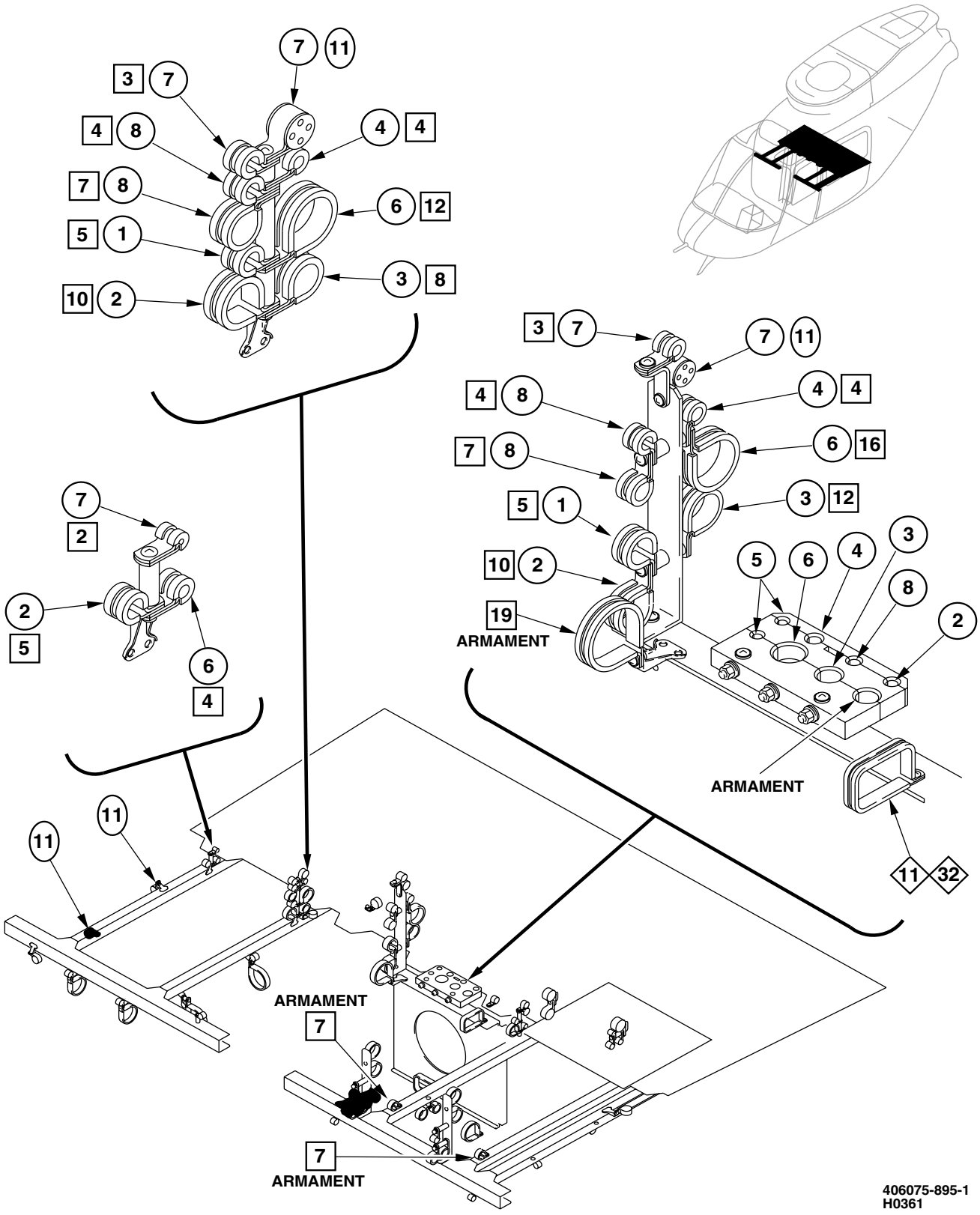


Figure F-8. Avionics Compartment Electrical Clamping and Routing (Sheet 6 of 12)

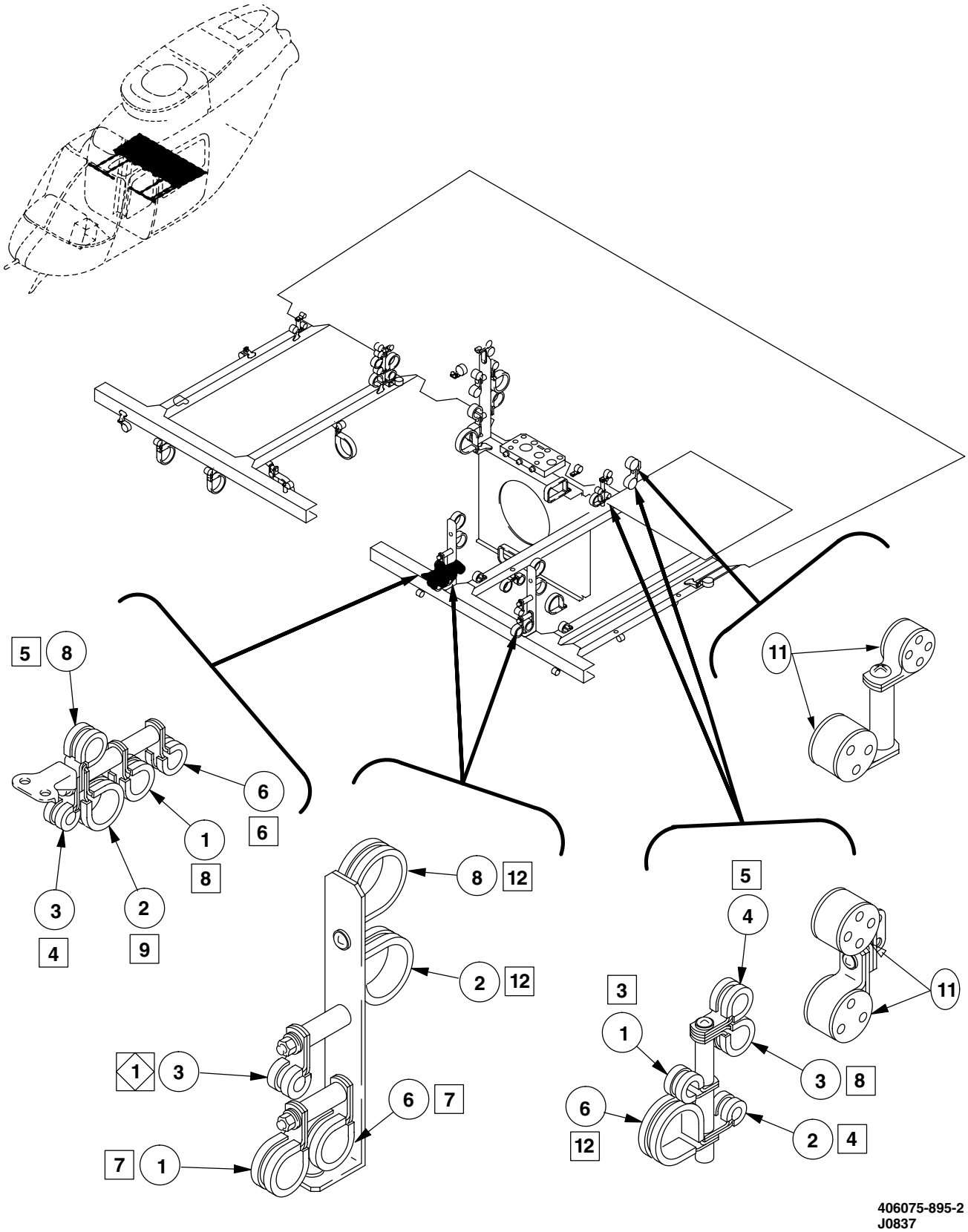


Figure F-8. Avionics Compartment Electrical Clamping and Routing (Sheet 7 of 12)

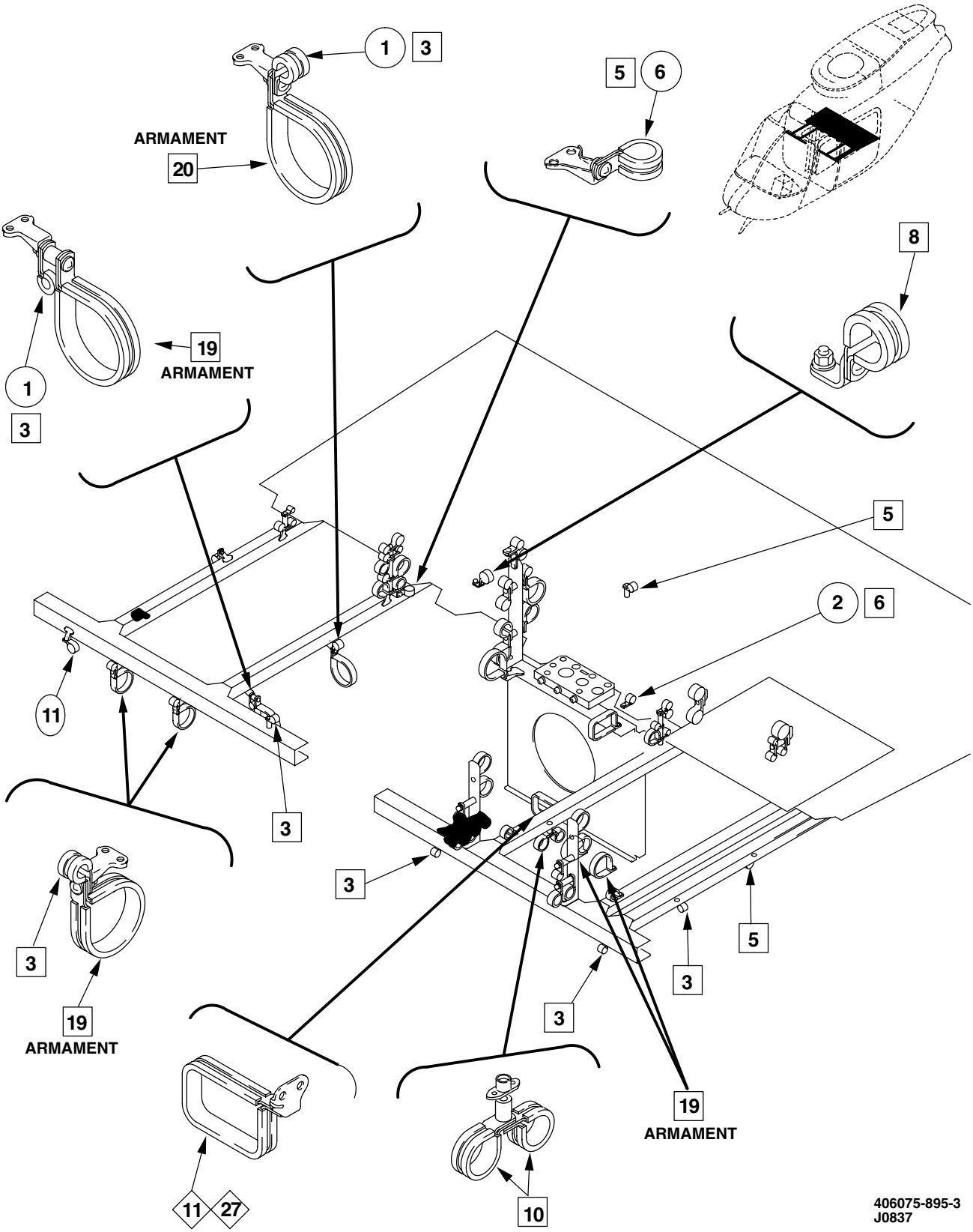


Figure F-8. Avionics Compartment Electrical Clamping and Routing (Sheet 8 of 12)

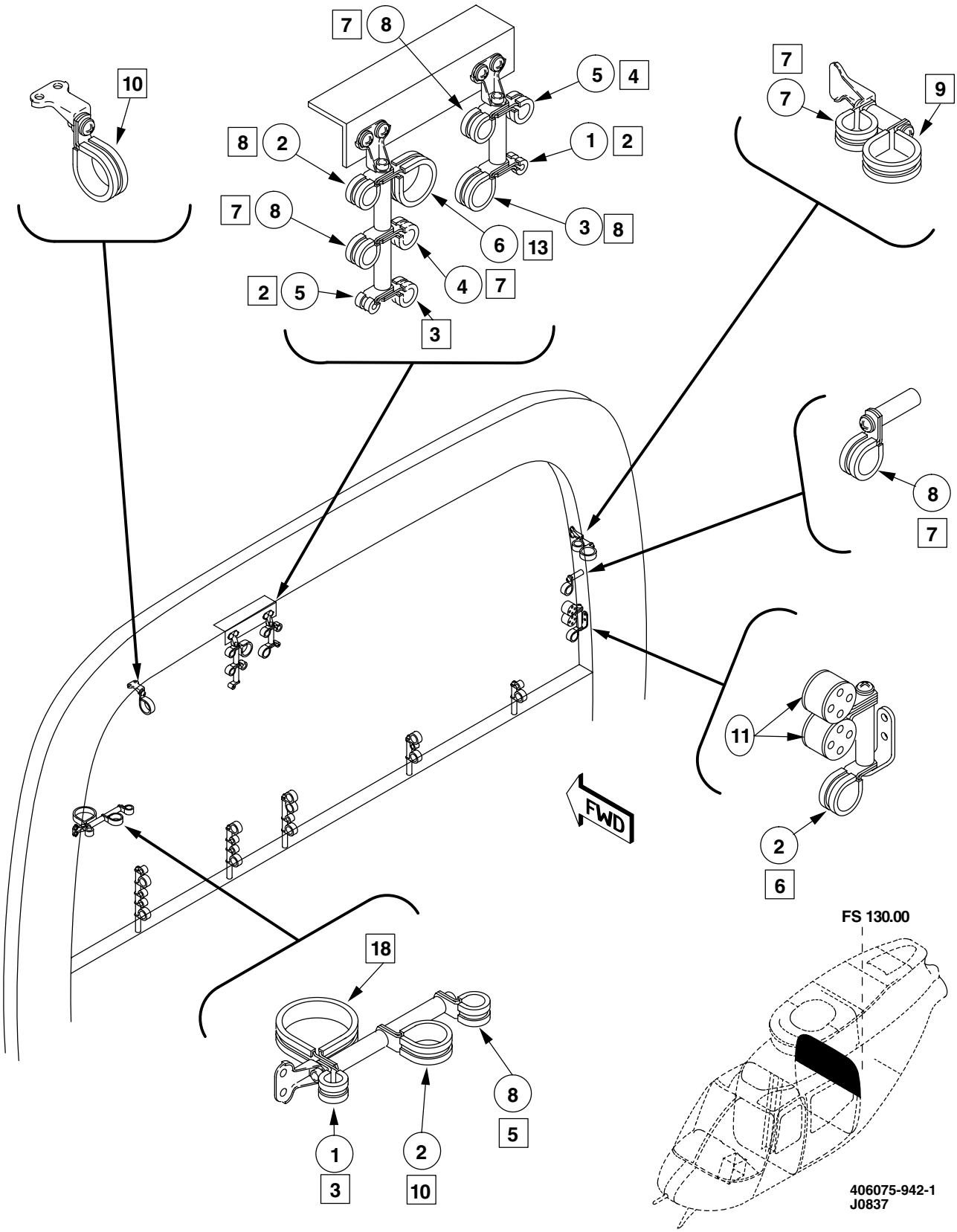


Figure F-8. Avionics Compartment Electrical Clamping and Routing (Sheet 9 of 12)

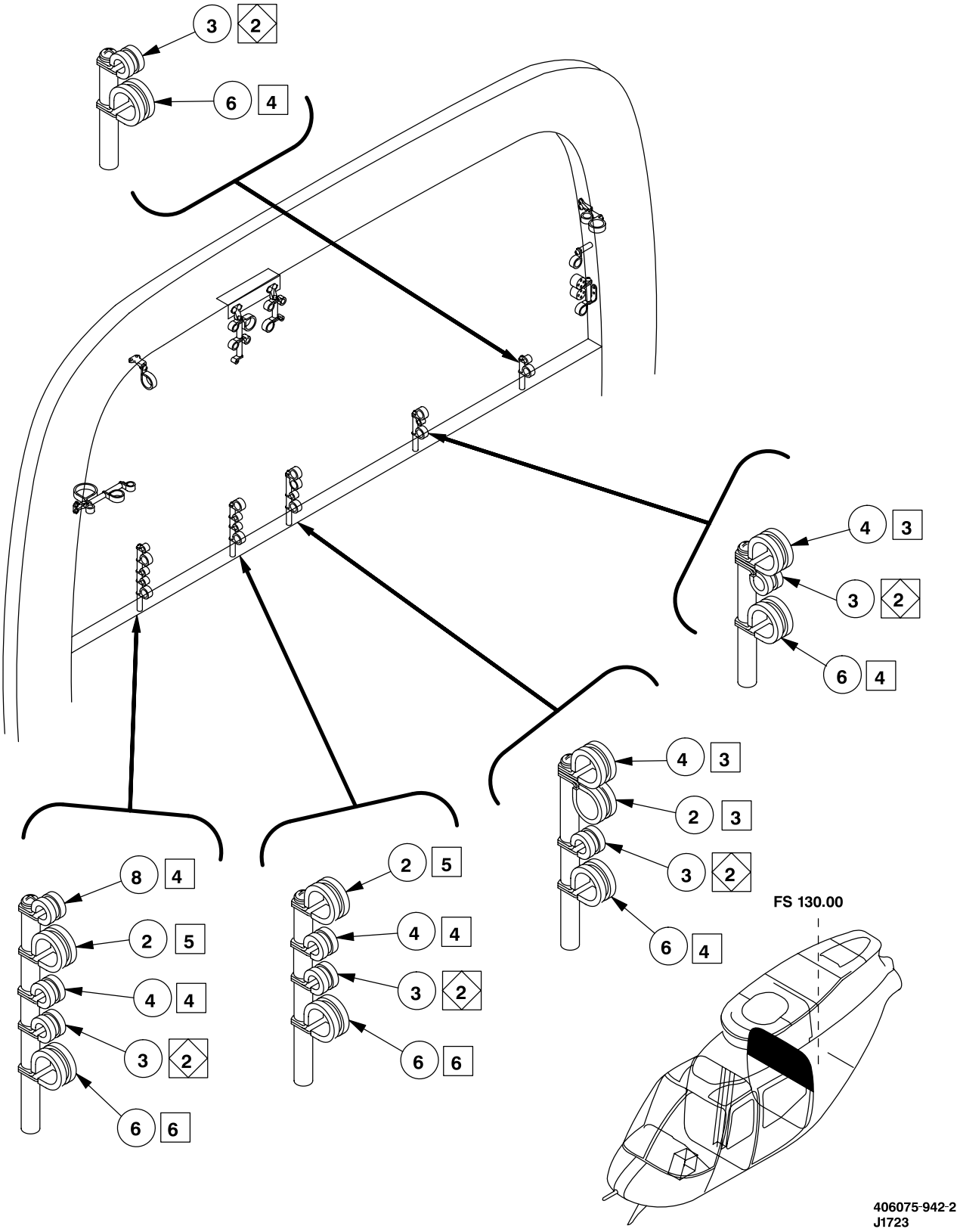


Figure F-8. Avionics Compartment Electrical Clamping and Routing (Sheet 10 of 12)

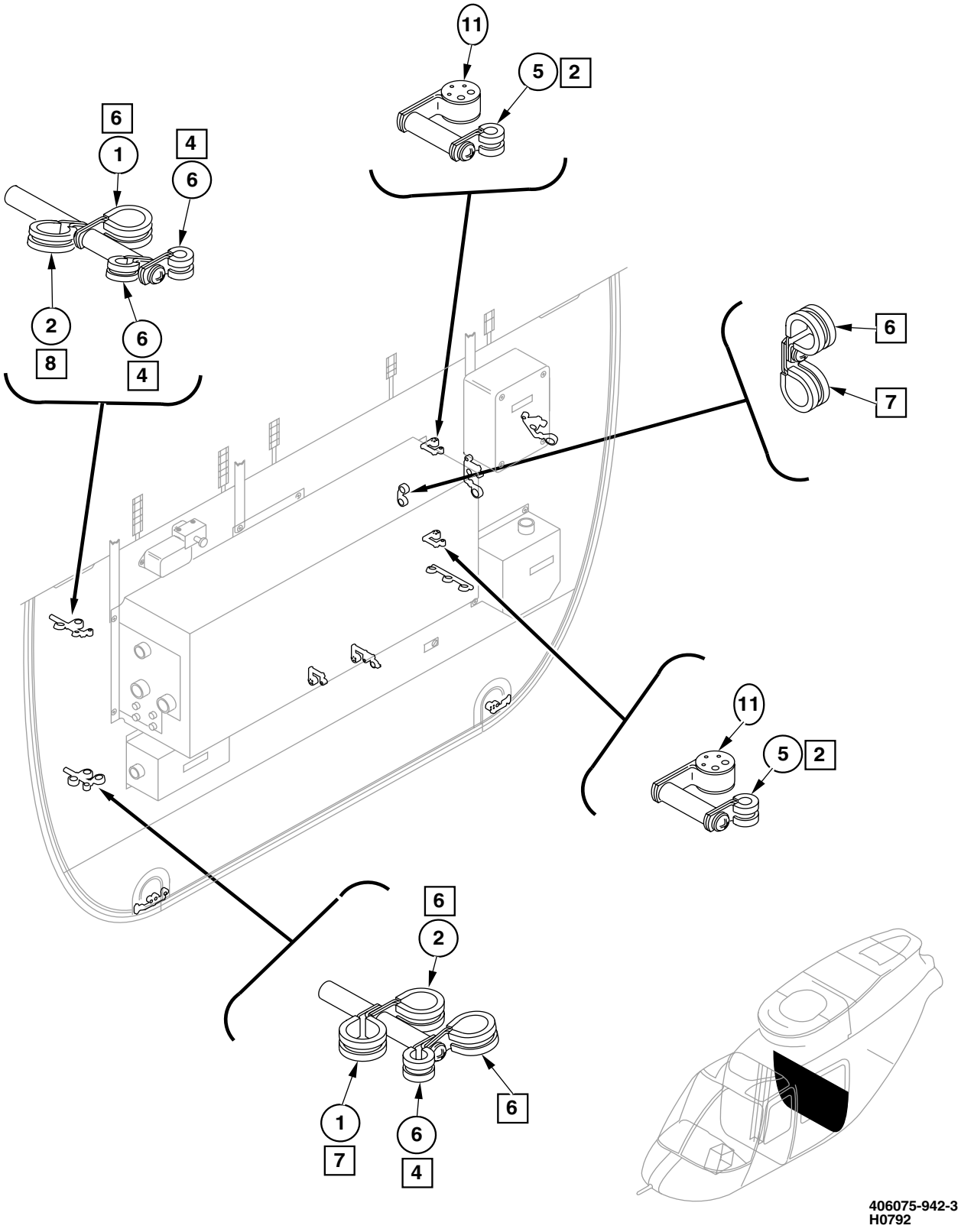


Figure F-8. Avionics Compartment Electrical Clamping and Routing (Sheet 11 of 12)

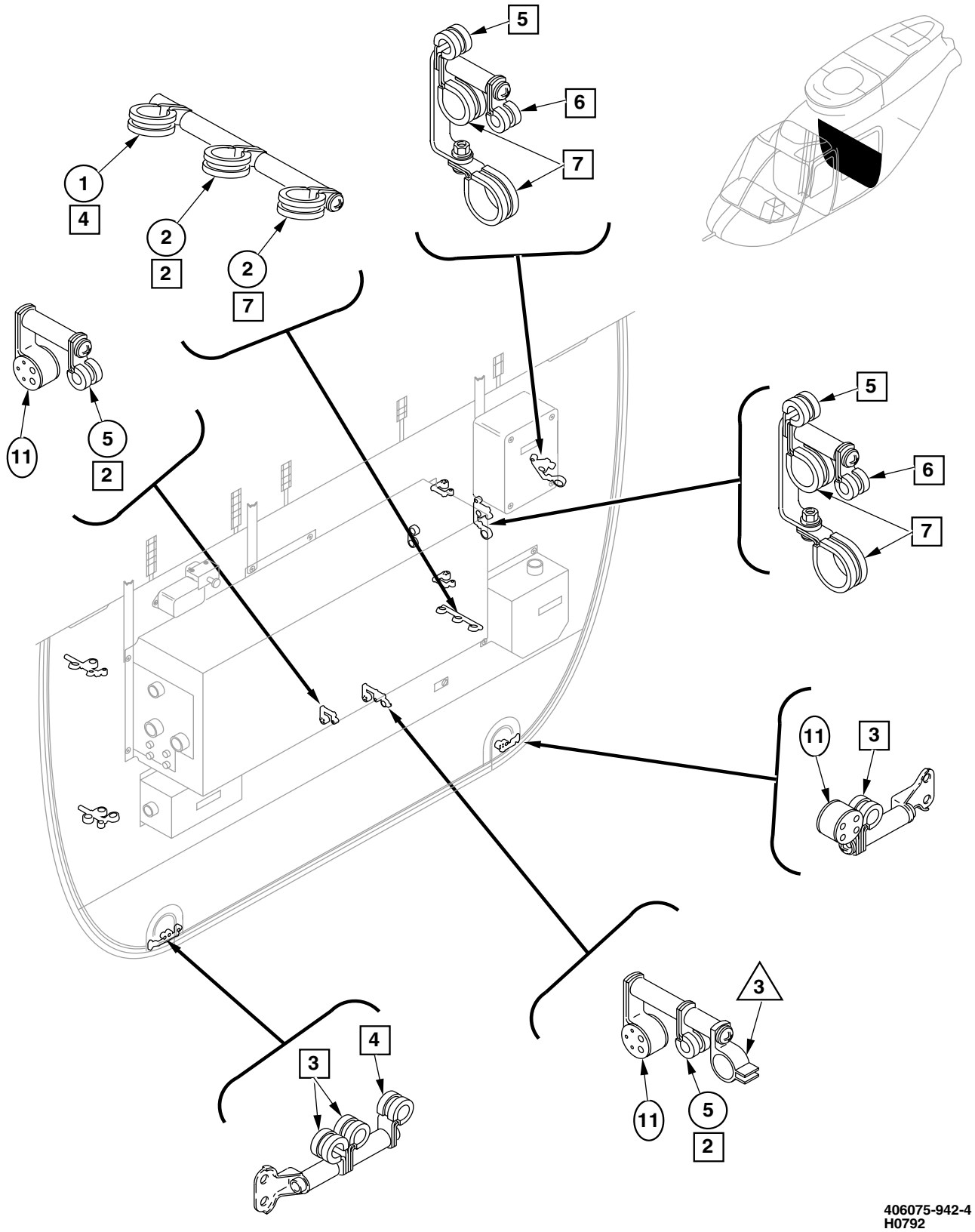


Figure F-8. Avionics Compartment Electrical Clamping and Routing (Sheet 12 of 12)

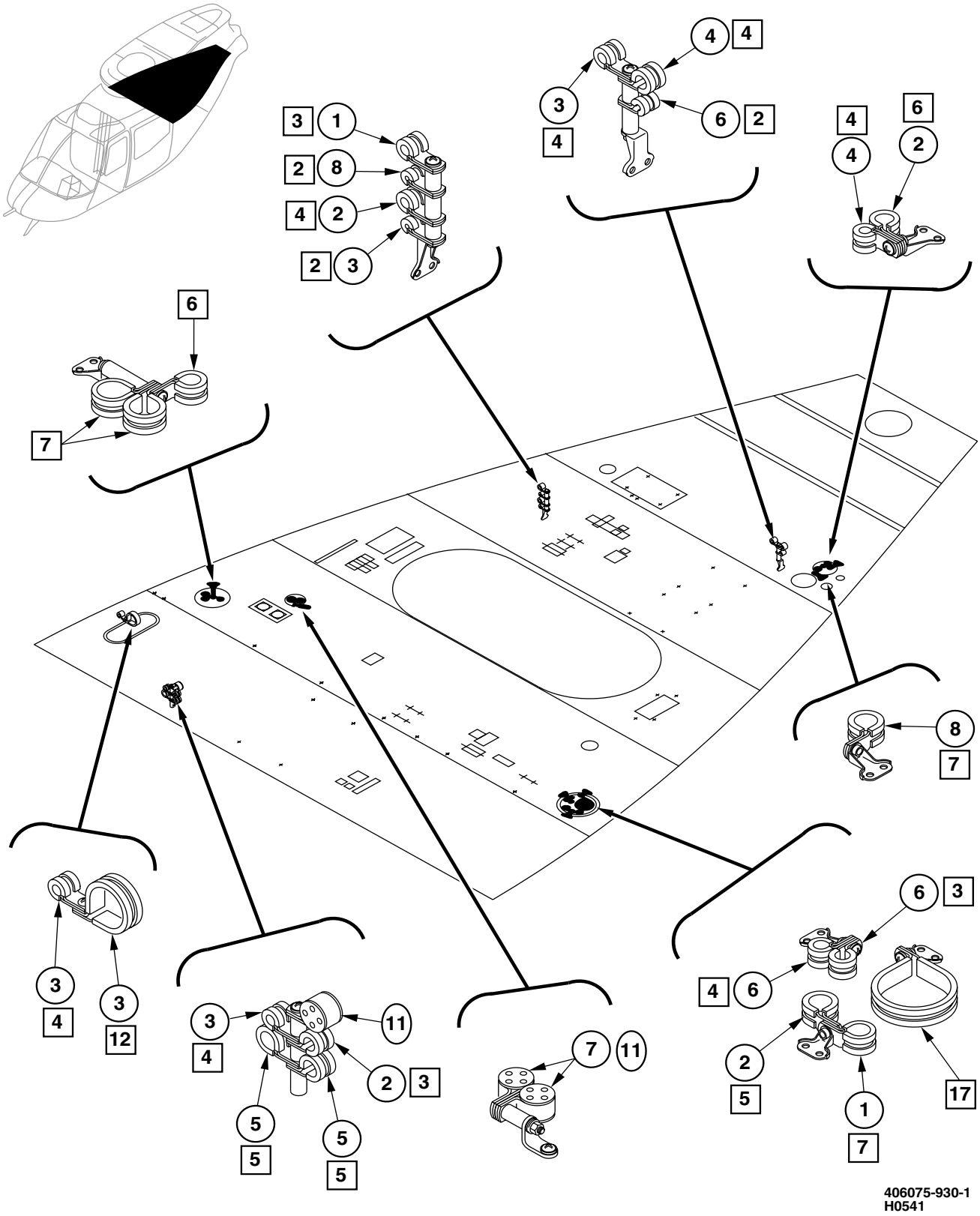


Figure F-9. Aft Electrical Compartment Electrical Clamping and Routing (Sheet 1 of 14)

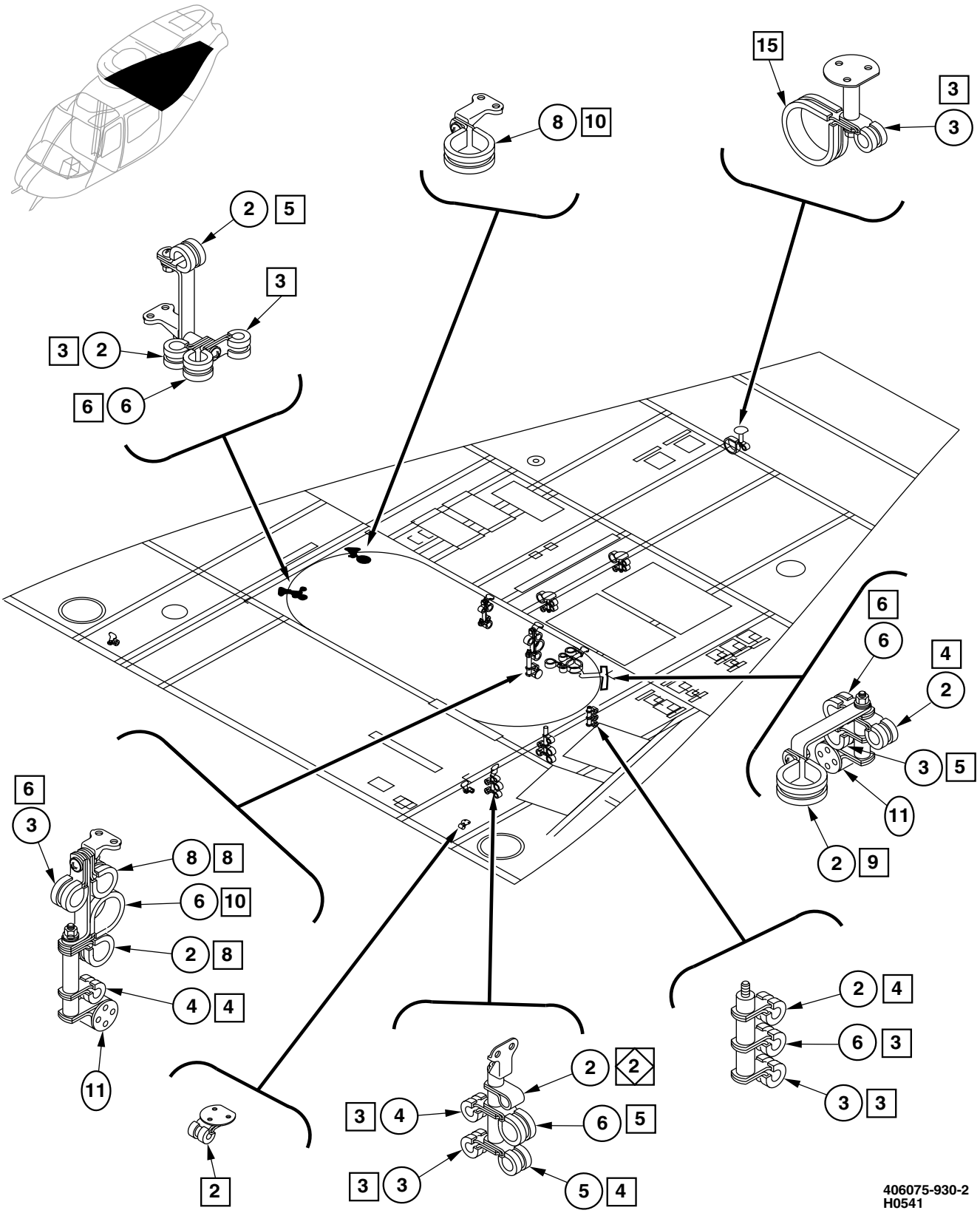


Figure F-9. Aft Electrical Compartment Electrical Clamping and Routing (Sheet 2 of 14)

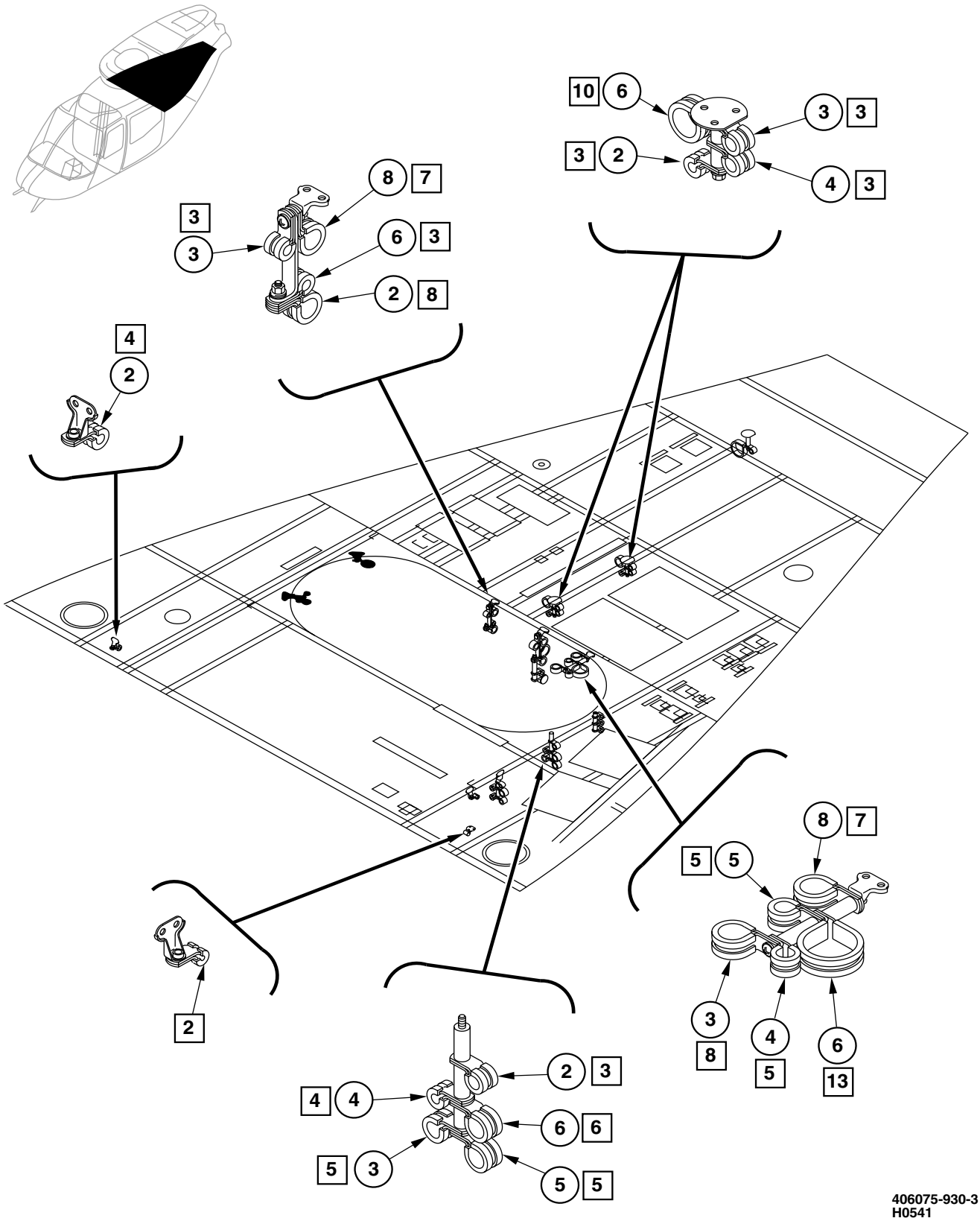


Figure F-9. Aft Electrical Compartment Electrical Clamping and Routing (Sheet 3 of 14)

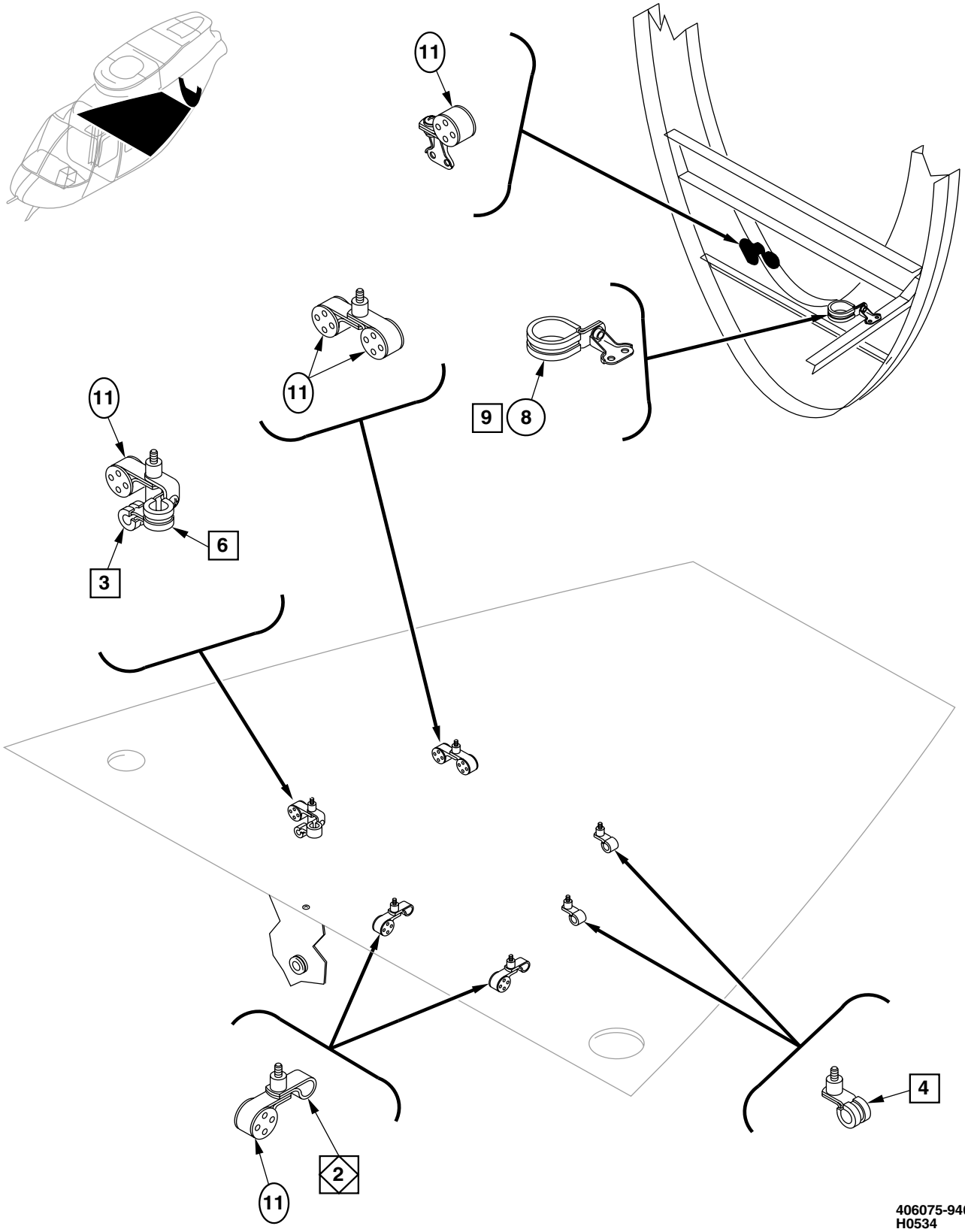


Figure F-9. Aft Electrical Compartment Electrical Clamping and Routing (Sheet 4 of 14)

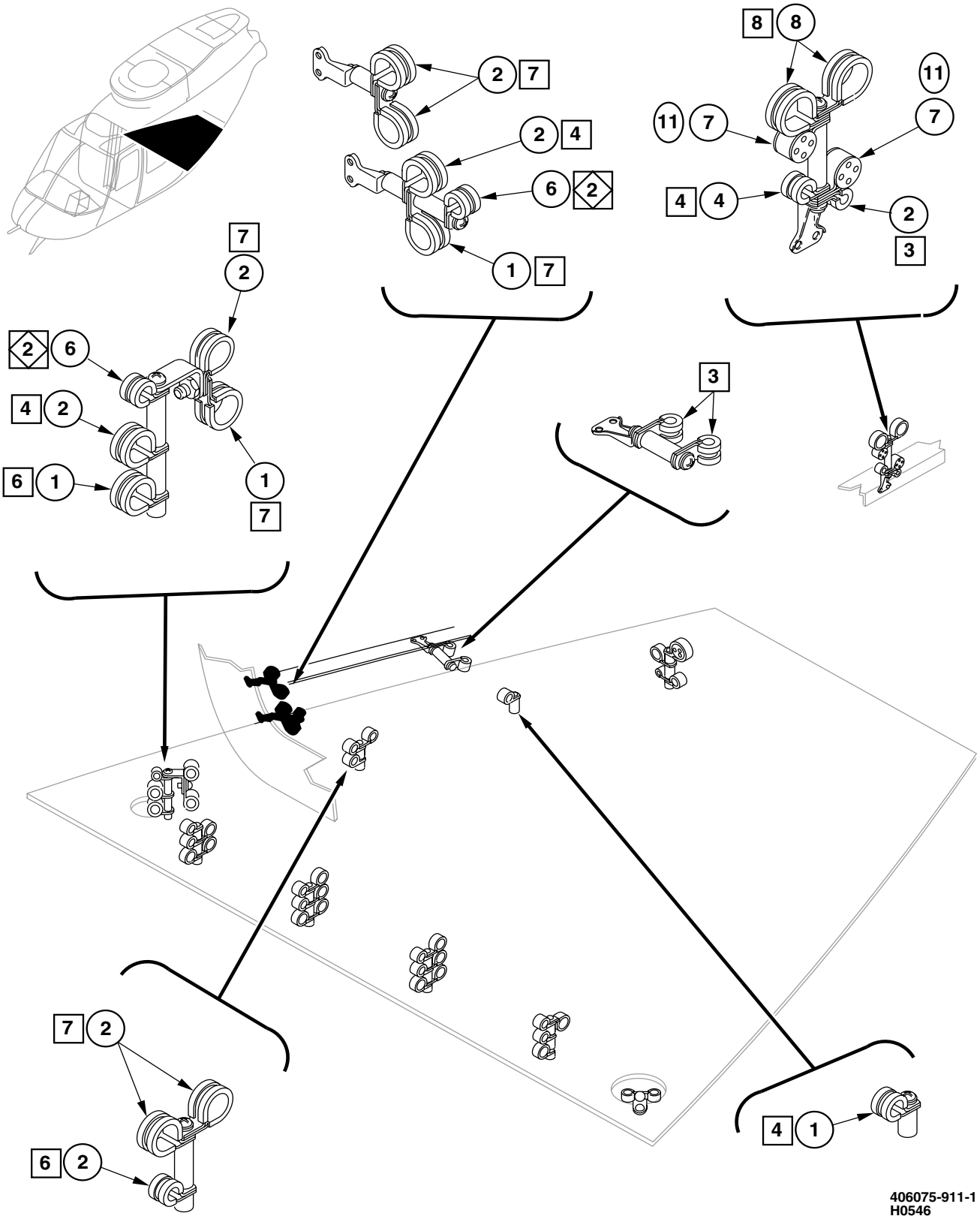


Figure F-9. Aft Electrical Compartment Electrical Clamping and Routing (Sheet 5 of 14)

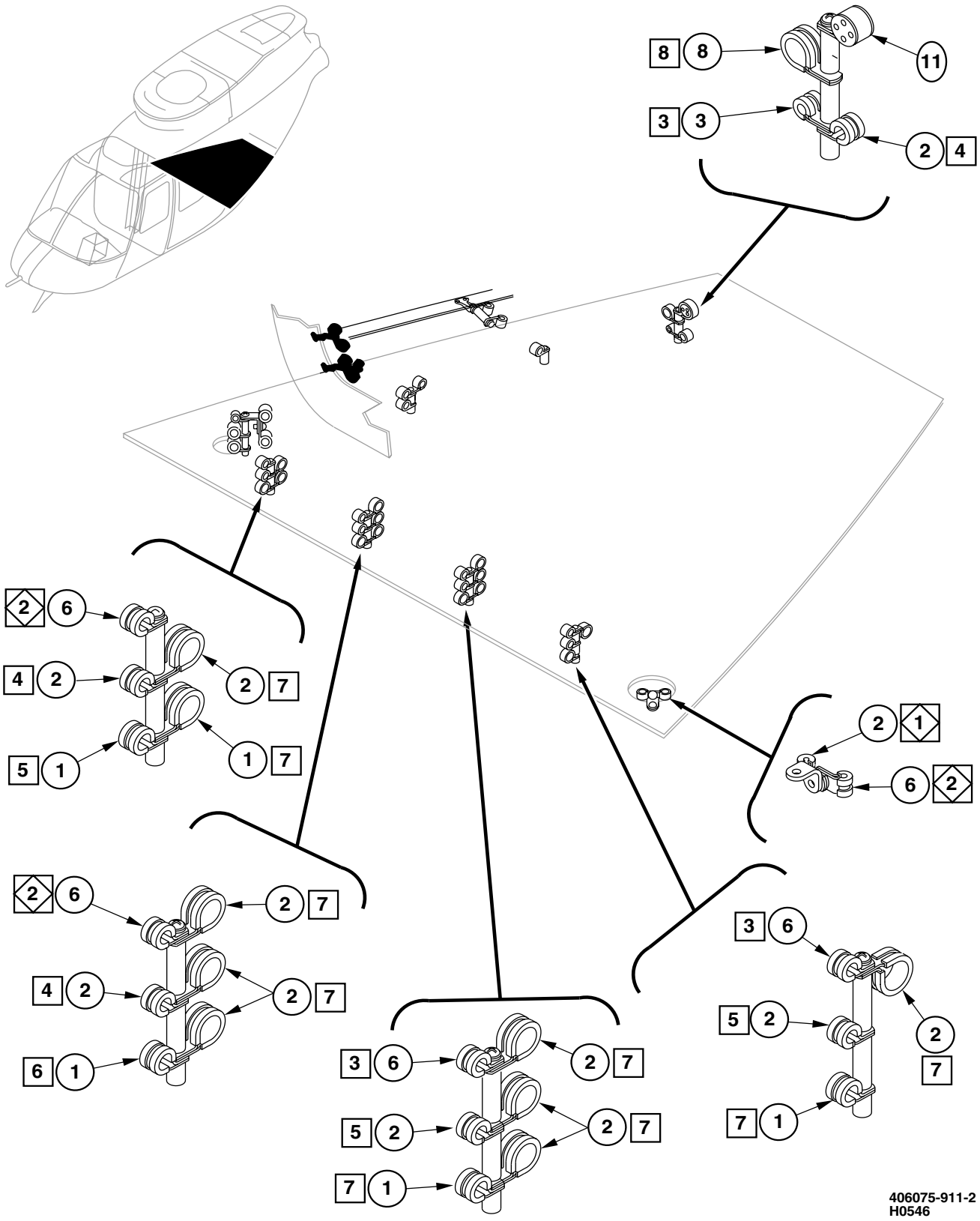


Figure F-9. Aft Electrical Compartment Electrical Clamping and Routing (Sheet 6 of 14)

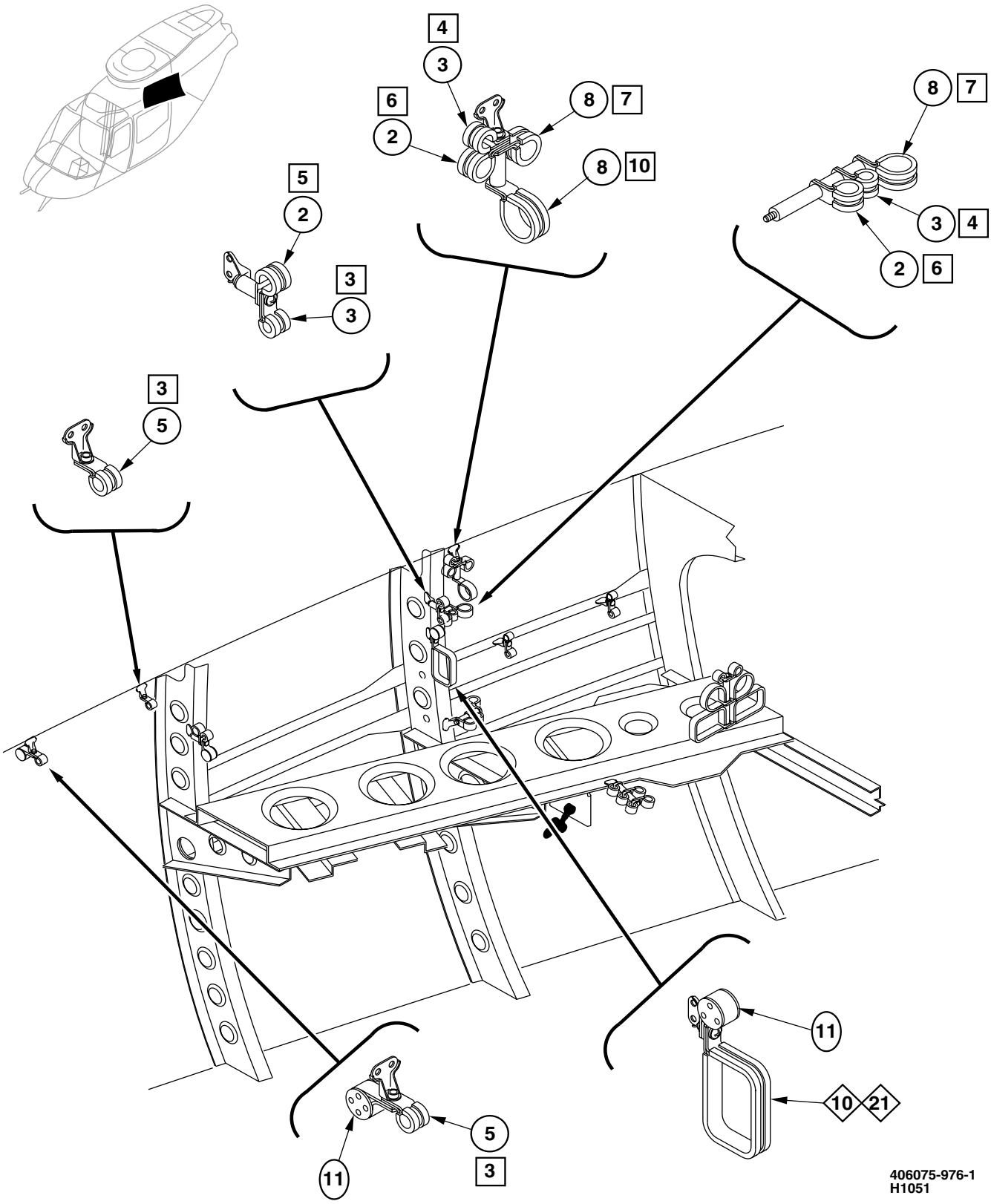


Figure F-9. Aft Electrical Compartment Electrical Clamping and Routing (Sheet 7 of 14)

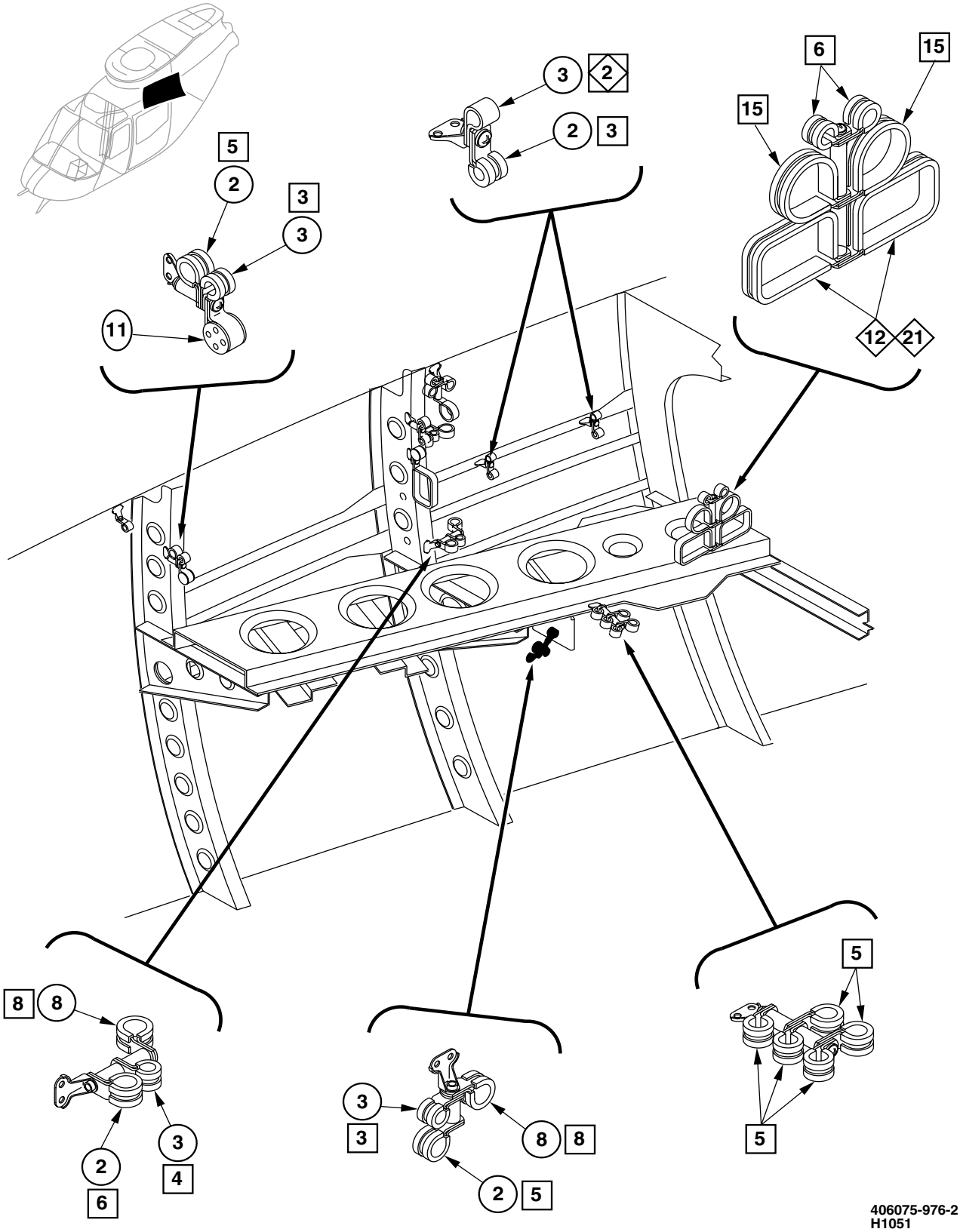


Figure F-9. Aft Electrical Compartment Electrical Clamping and Routing (Sheet 8 of 14)

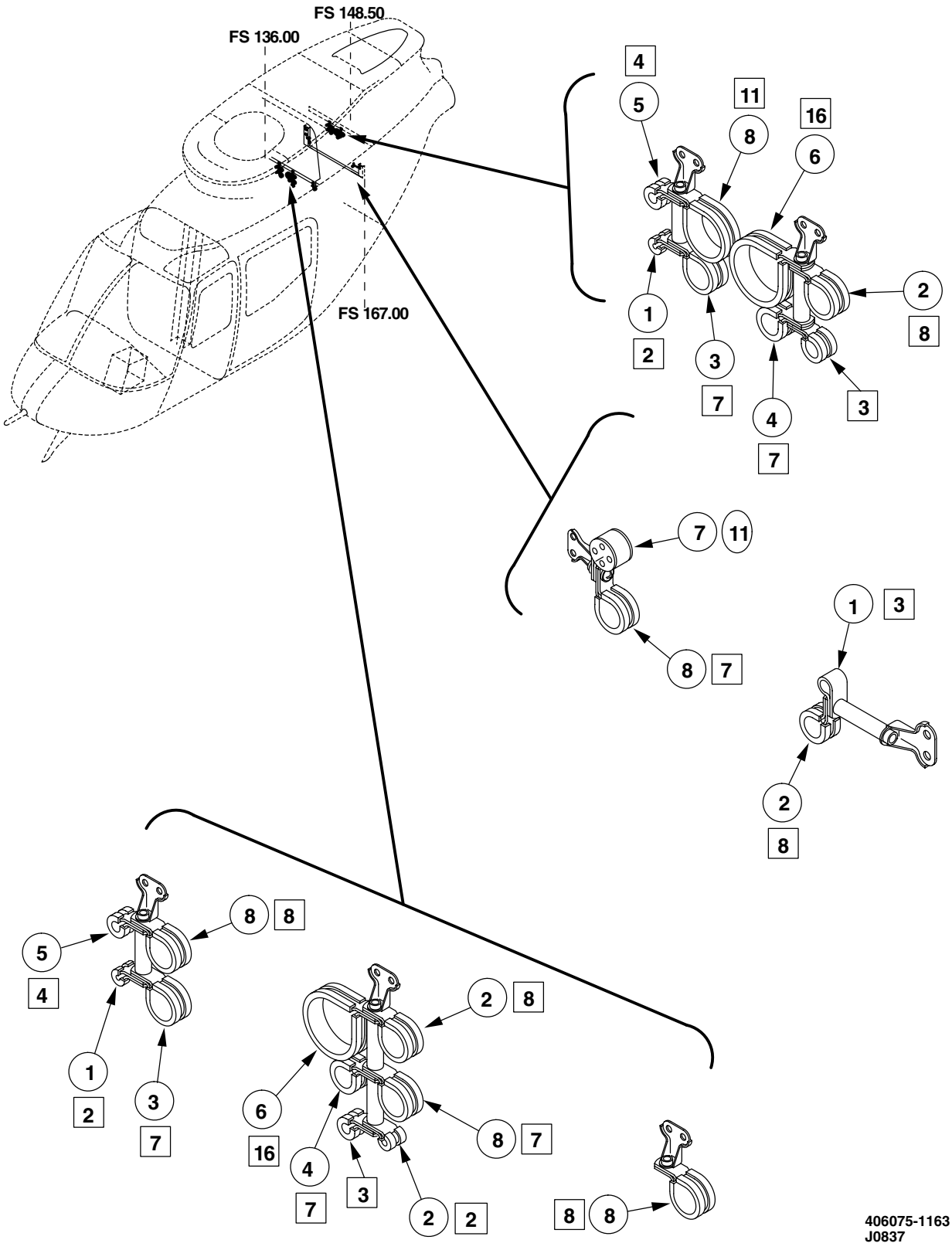


Figure F-9. Aft Electrical Compartment Electrical Clamping and Routing (Sheet 9 of 14)

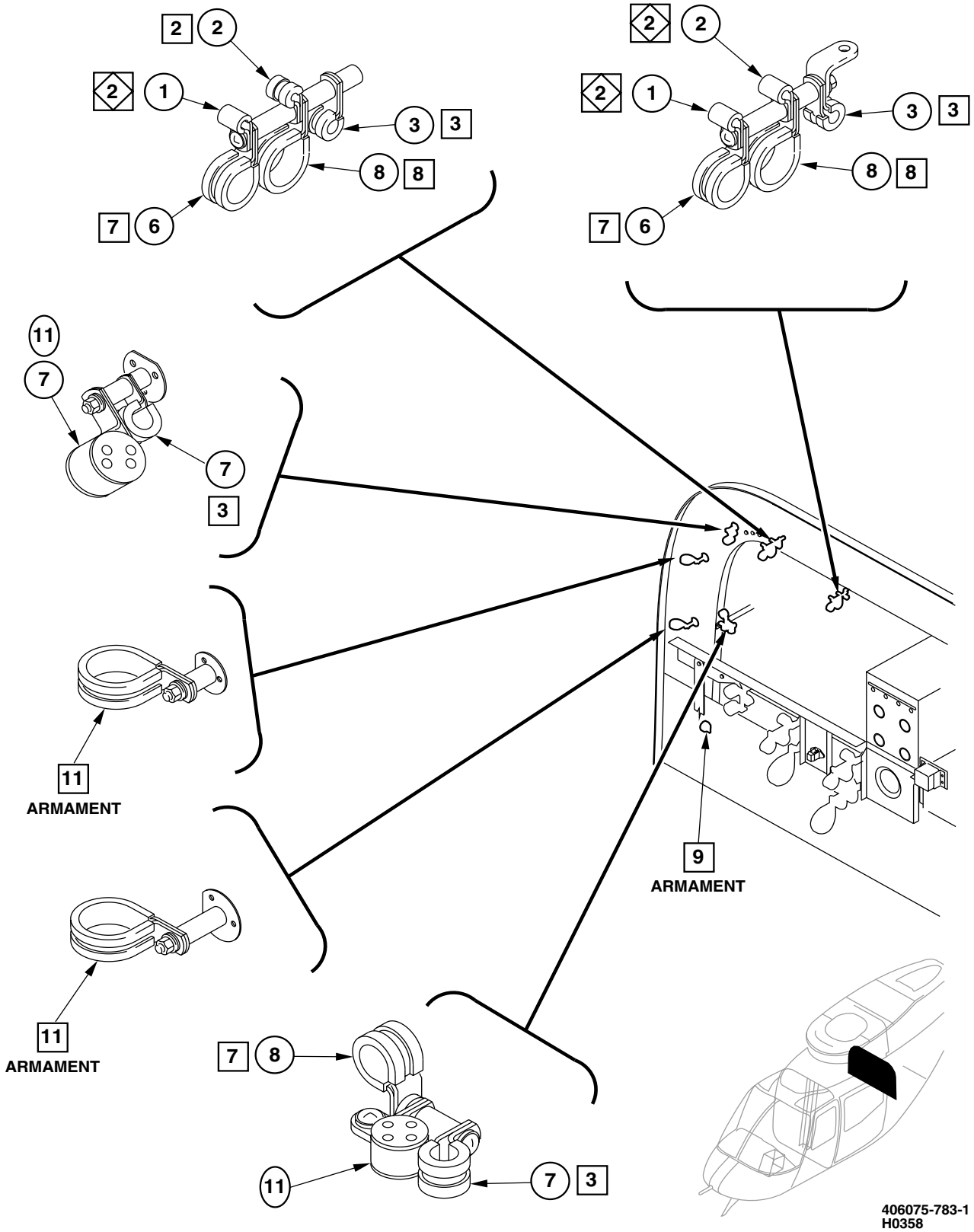


Figure F-9. Aft Electrical Compartment Electrical Clamping and Routing (Sheet 10 of 14)

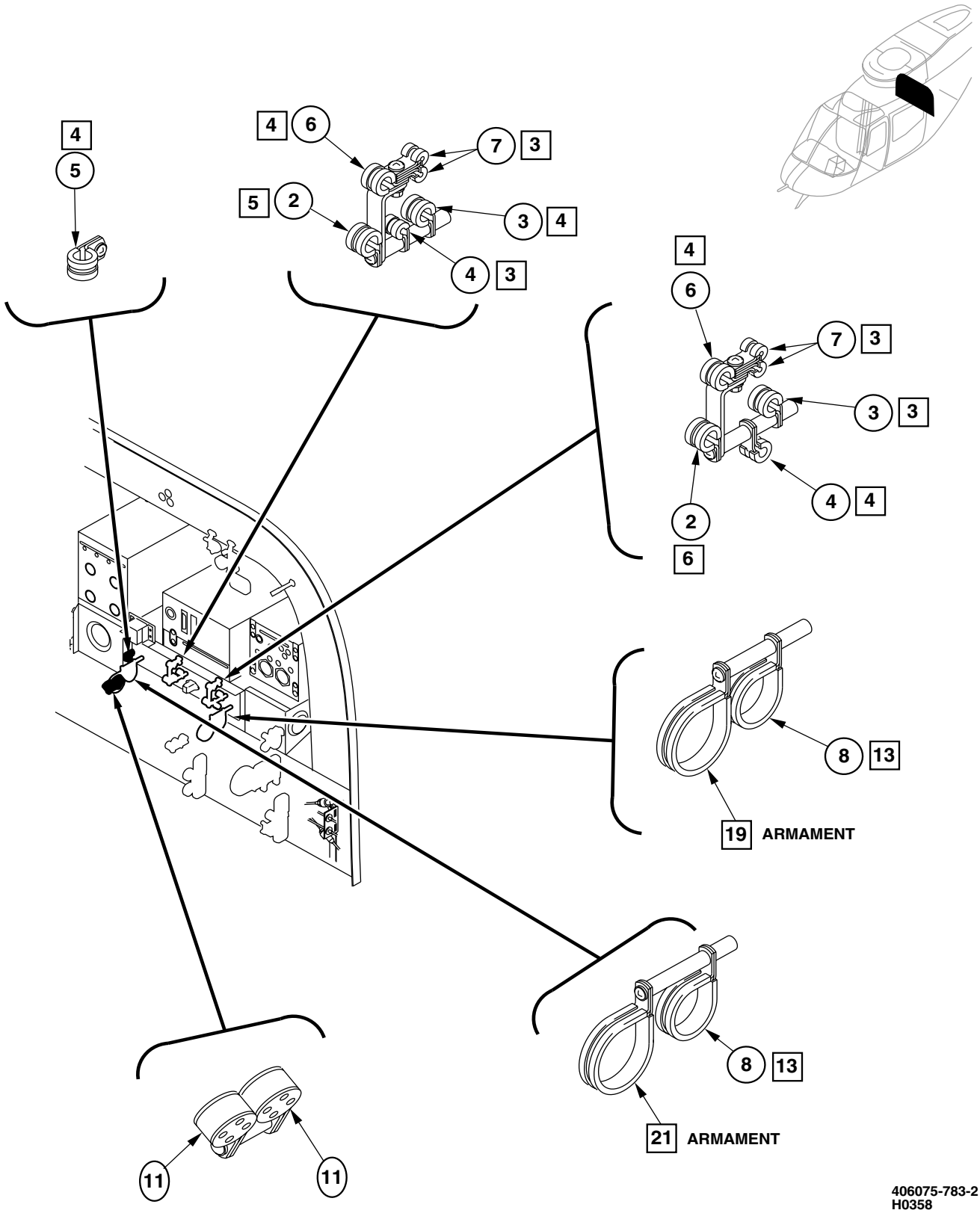


Figure F-9. Aft Electrical Compartment Electrical Clamping and Routing (Sheet 11 of 14)

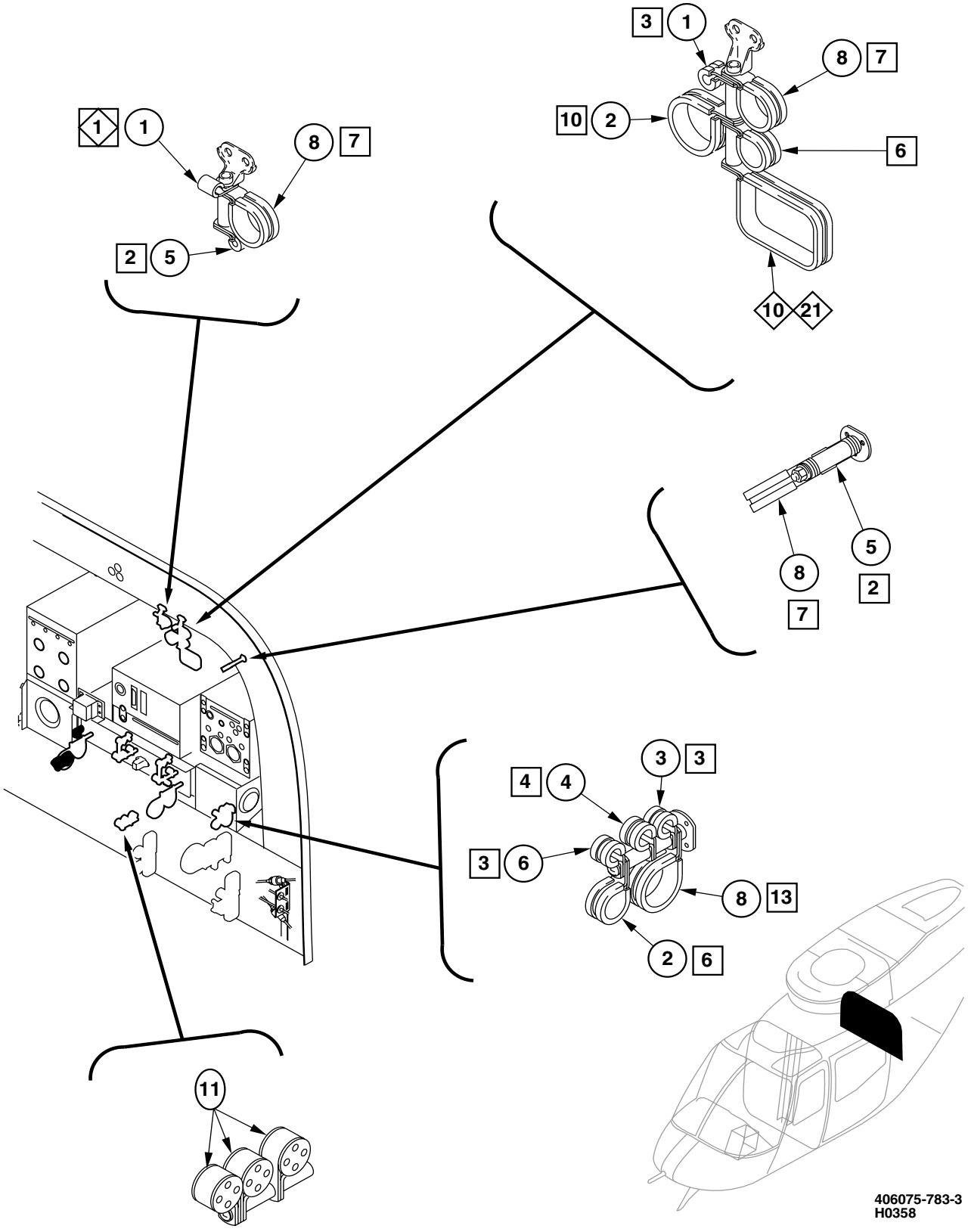


Figure F-9. Aft Electrical Compartment Electrical Clamping and Routing (Sheet 12 of 14)

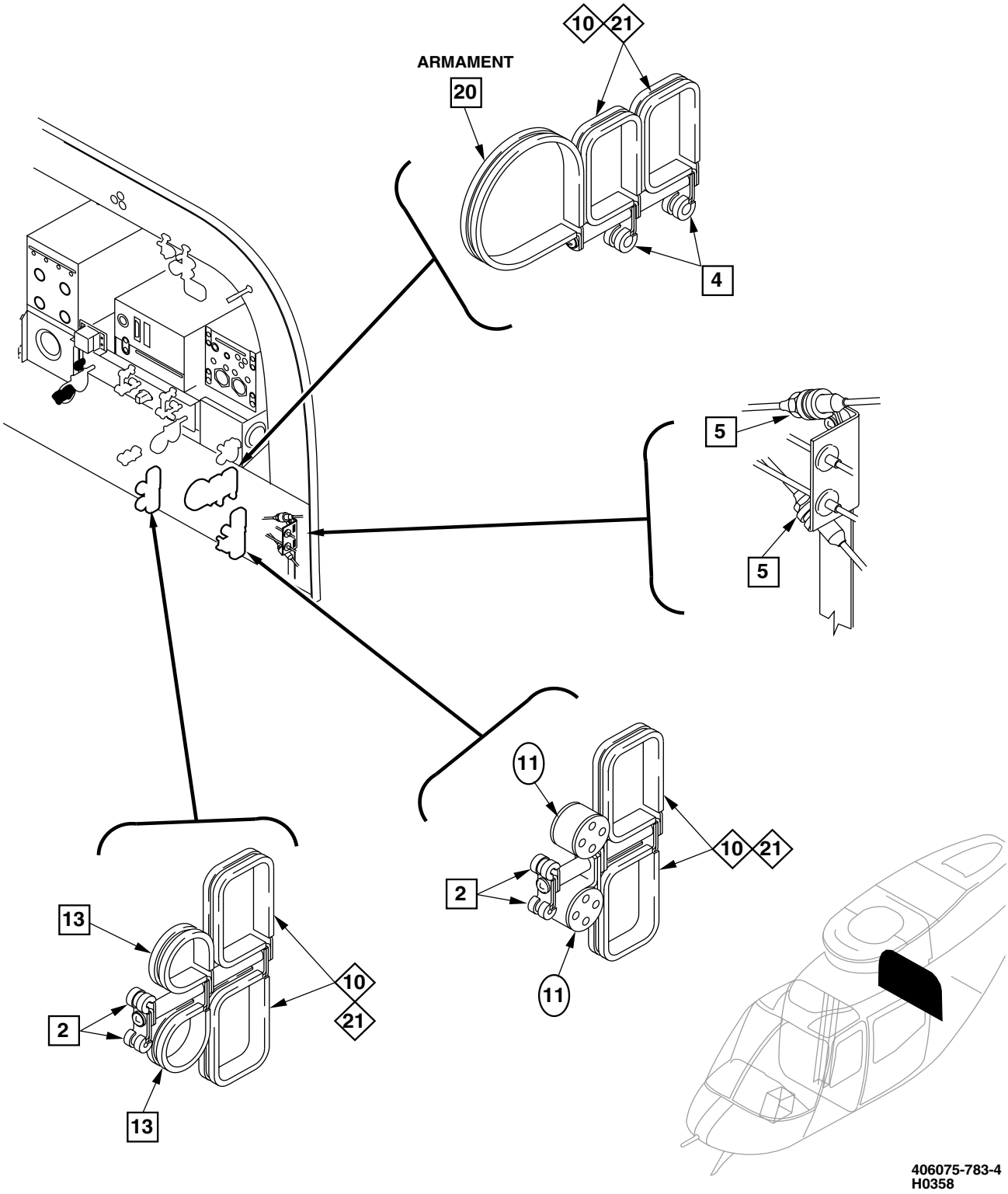


Figure F-9. Aft Electrical Compartment Electrical Clamping and Routing (Sheet 13 of 14)

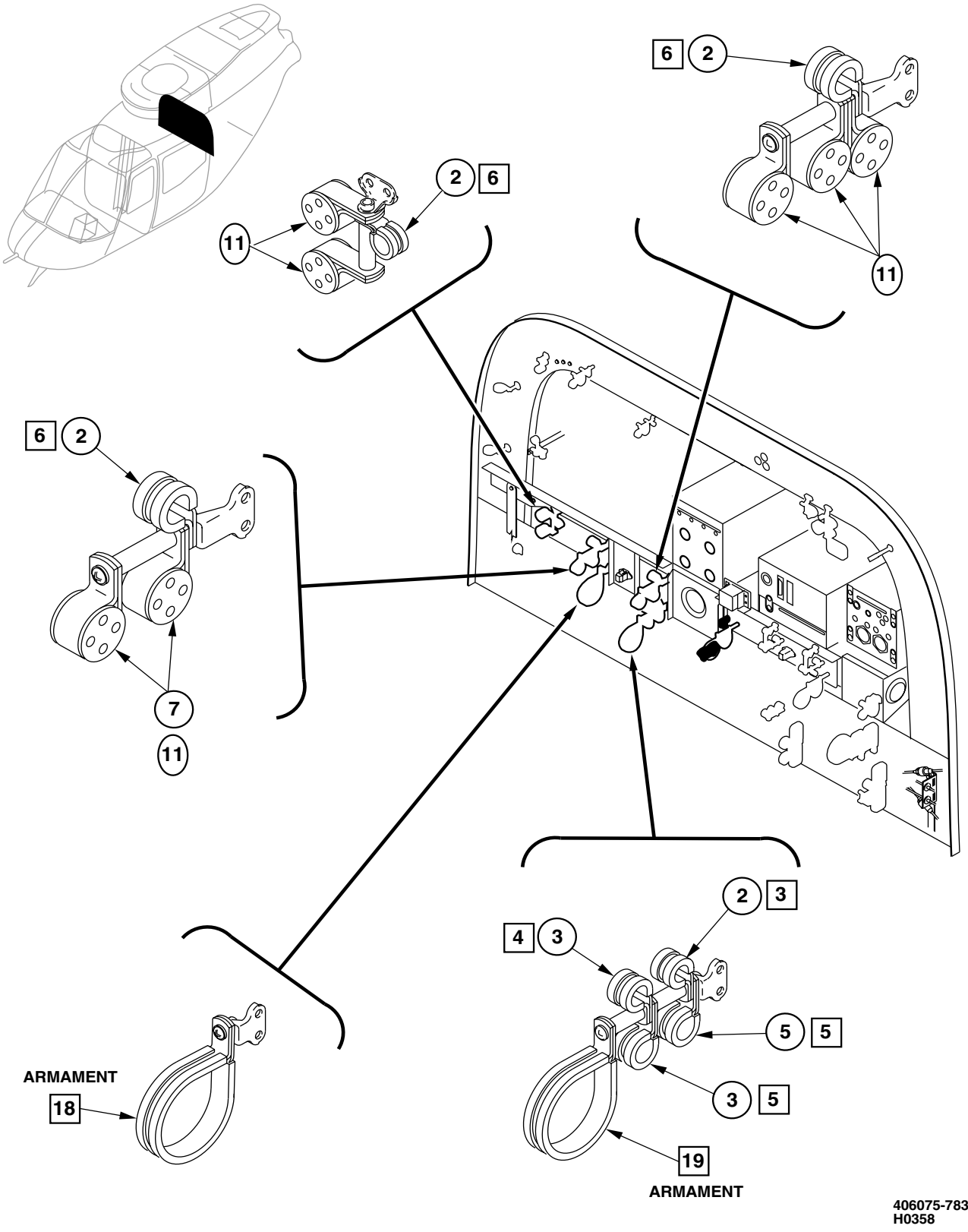


Figure F-9. Aft Electrical Compartment Electrical Clamping and Routing (Sheet 14 of 14)

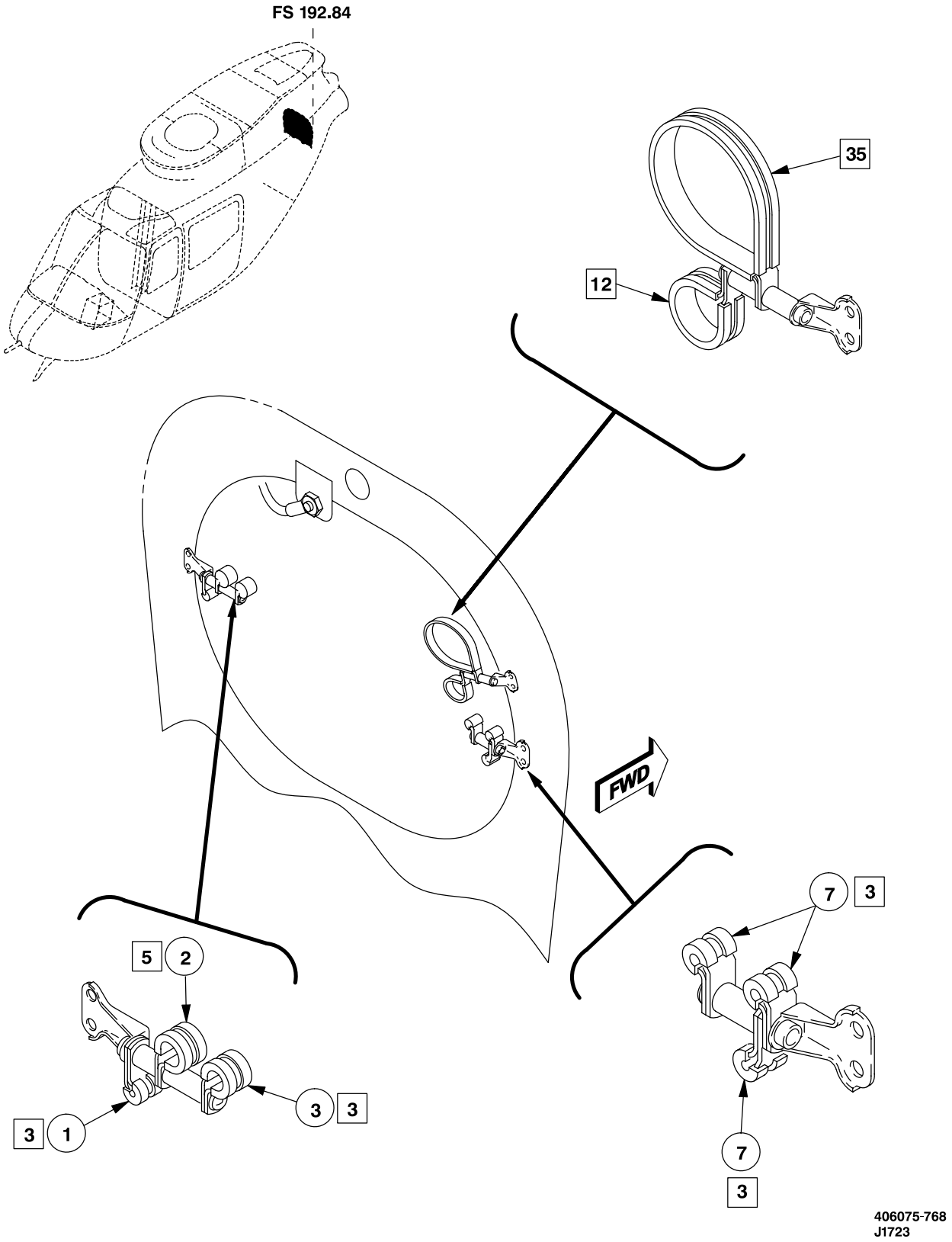


Figure F-10. Aft Fuselage Electrical Clamping and Routing (Sheet 1 of 7)

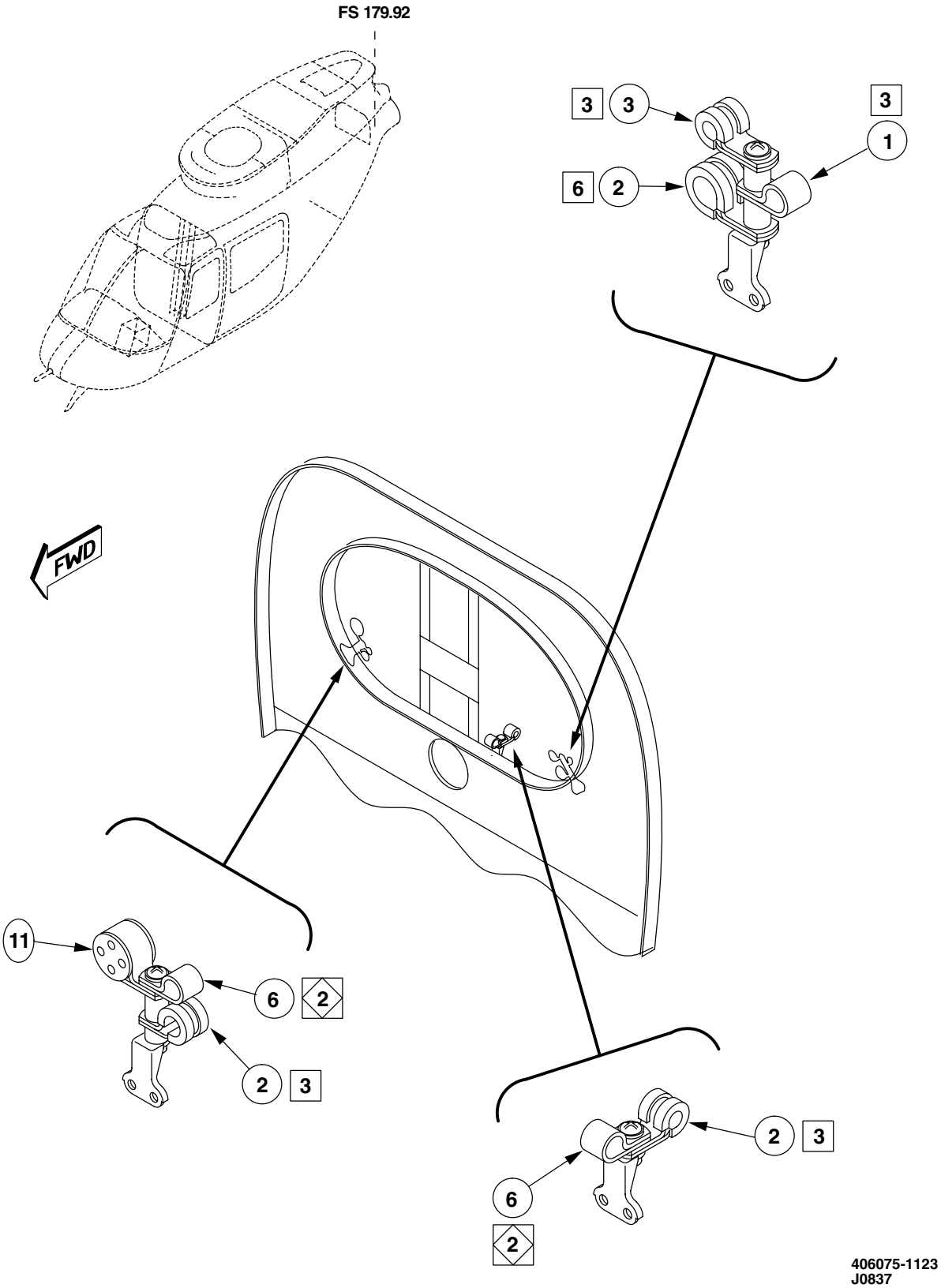


Figure F-10. Aft Fuselage Electrical Clamping and Routing (Sheet 2 of 7)

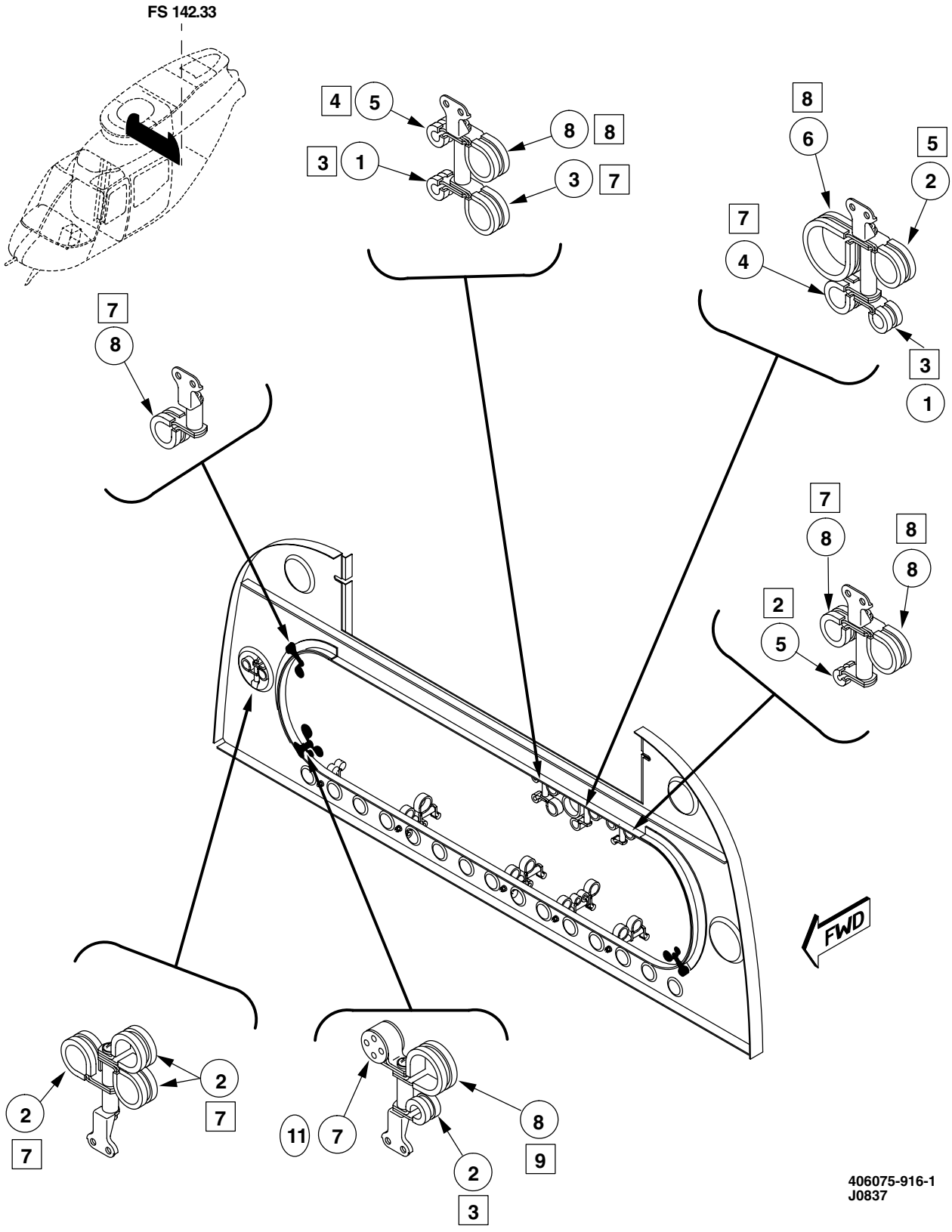


Figure F-10. Aft Fuselage Electrical Clamping and Routing (Sheet 3 of 7)

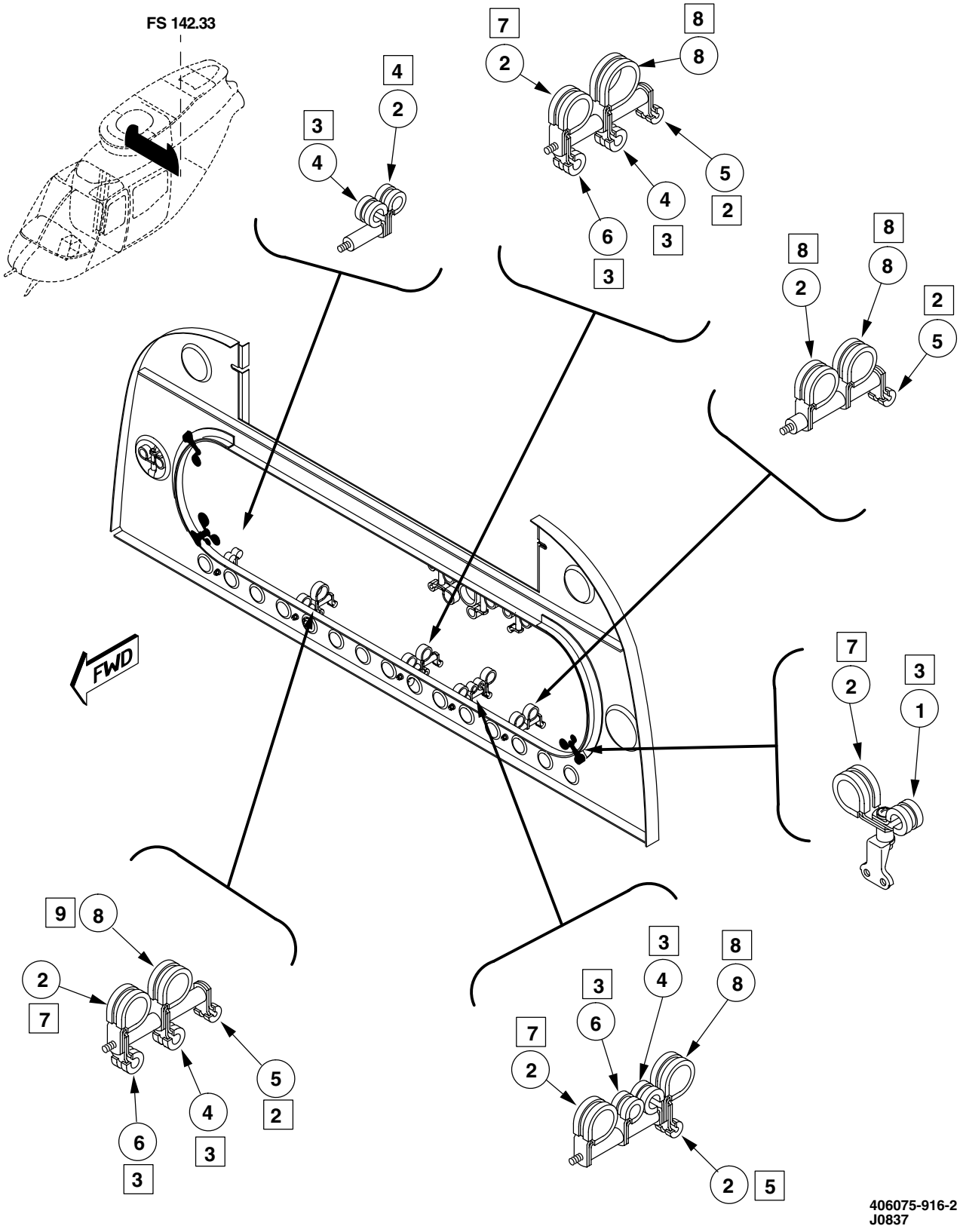


Figure F-10. Aft Fuselage Electrical Clamping and Routing (Sheet 4 of 7)

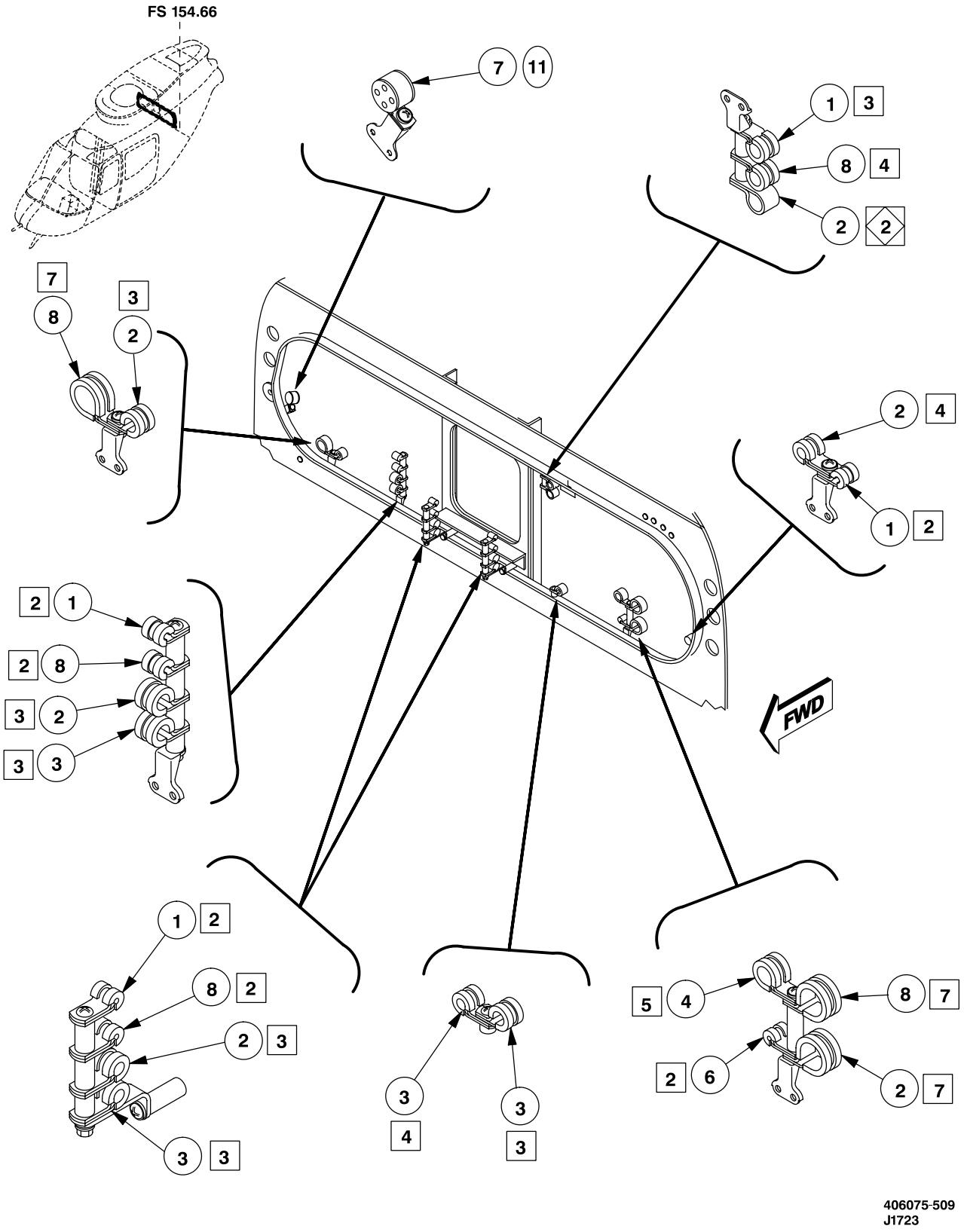


Figure F-10. Aft Fuselage Electrical Clamping and Routing (Sheet 5 of 7)

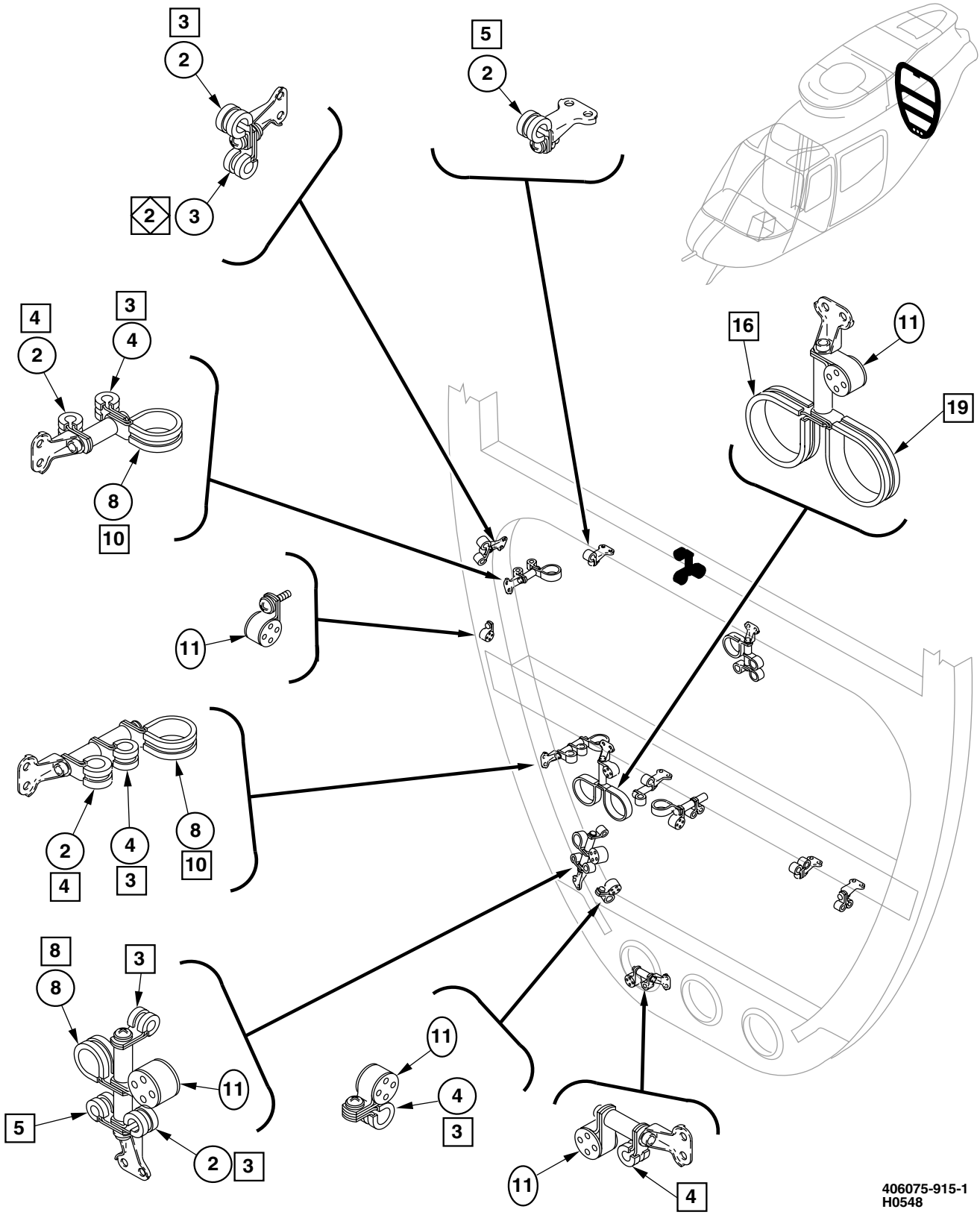


Figure F-10. Aft Fuselage Electrical Clamping and Routing (Sheet 6 of 7)

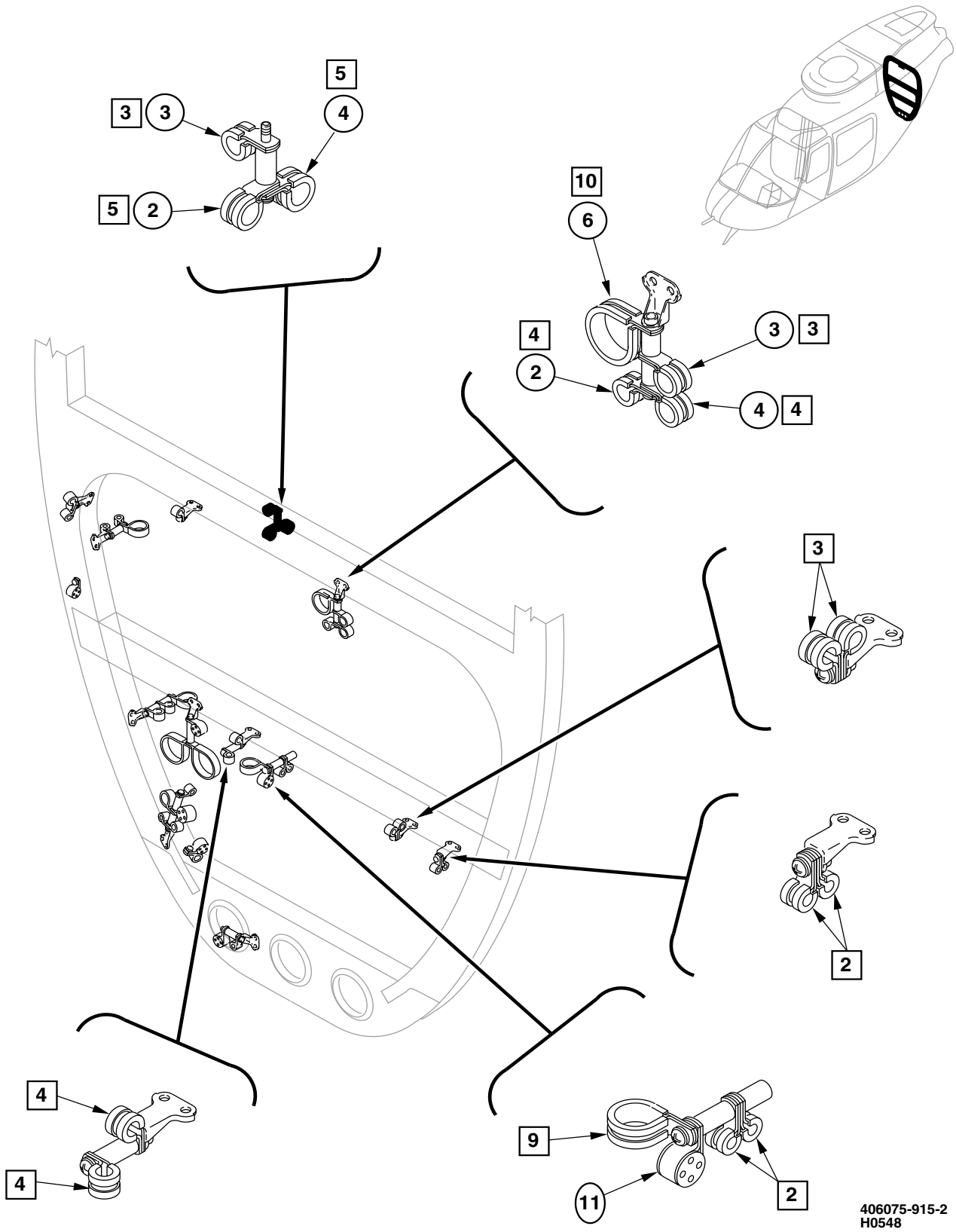
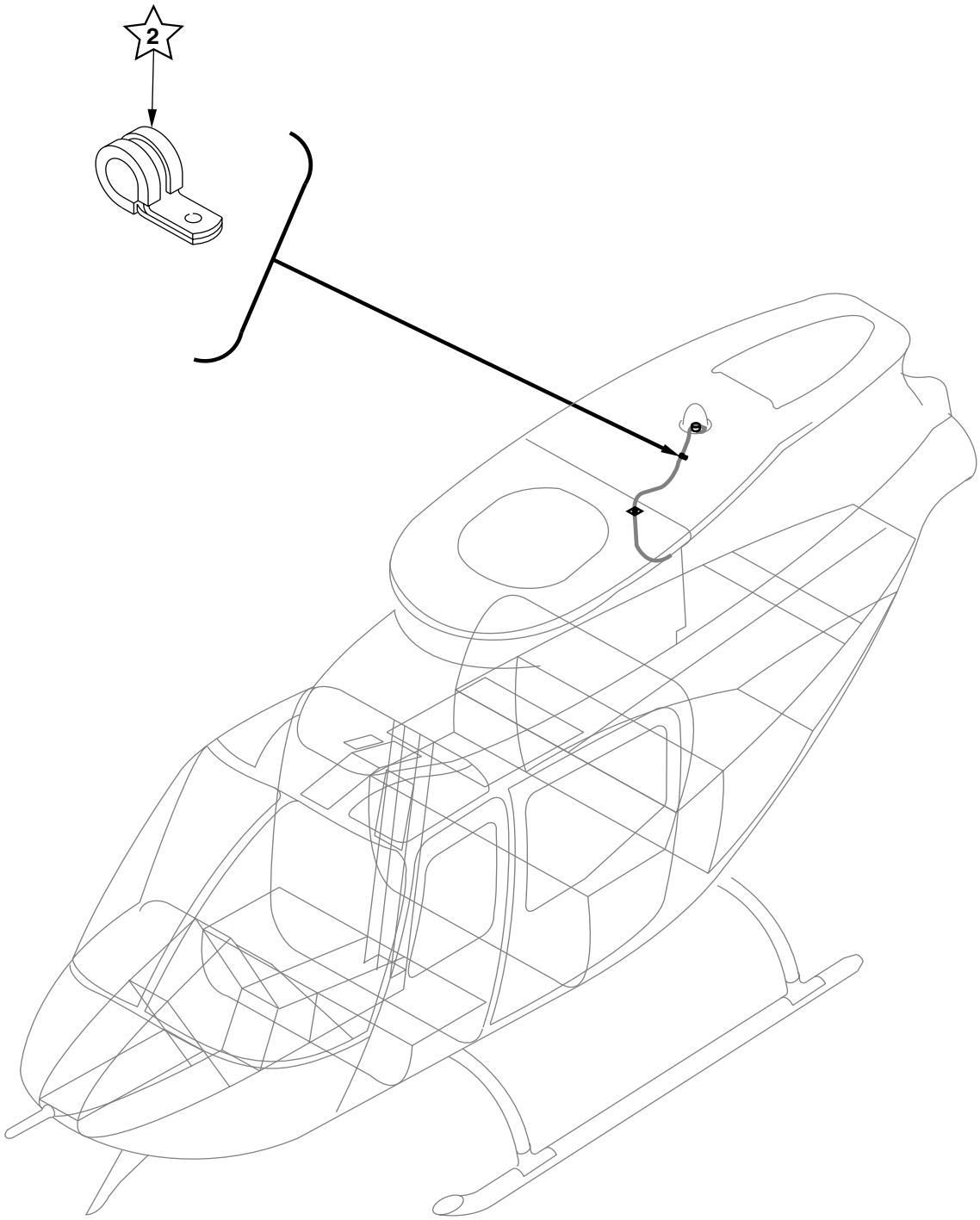


Figure F-10. Aft Fuselage Electrical Clamping and Routing (Sheet 7 of 7)



406075-1180-1
H0551

Figure F-11. Engine Compartment Electrical Clamping and Routing (Sheet 1 of 4)

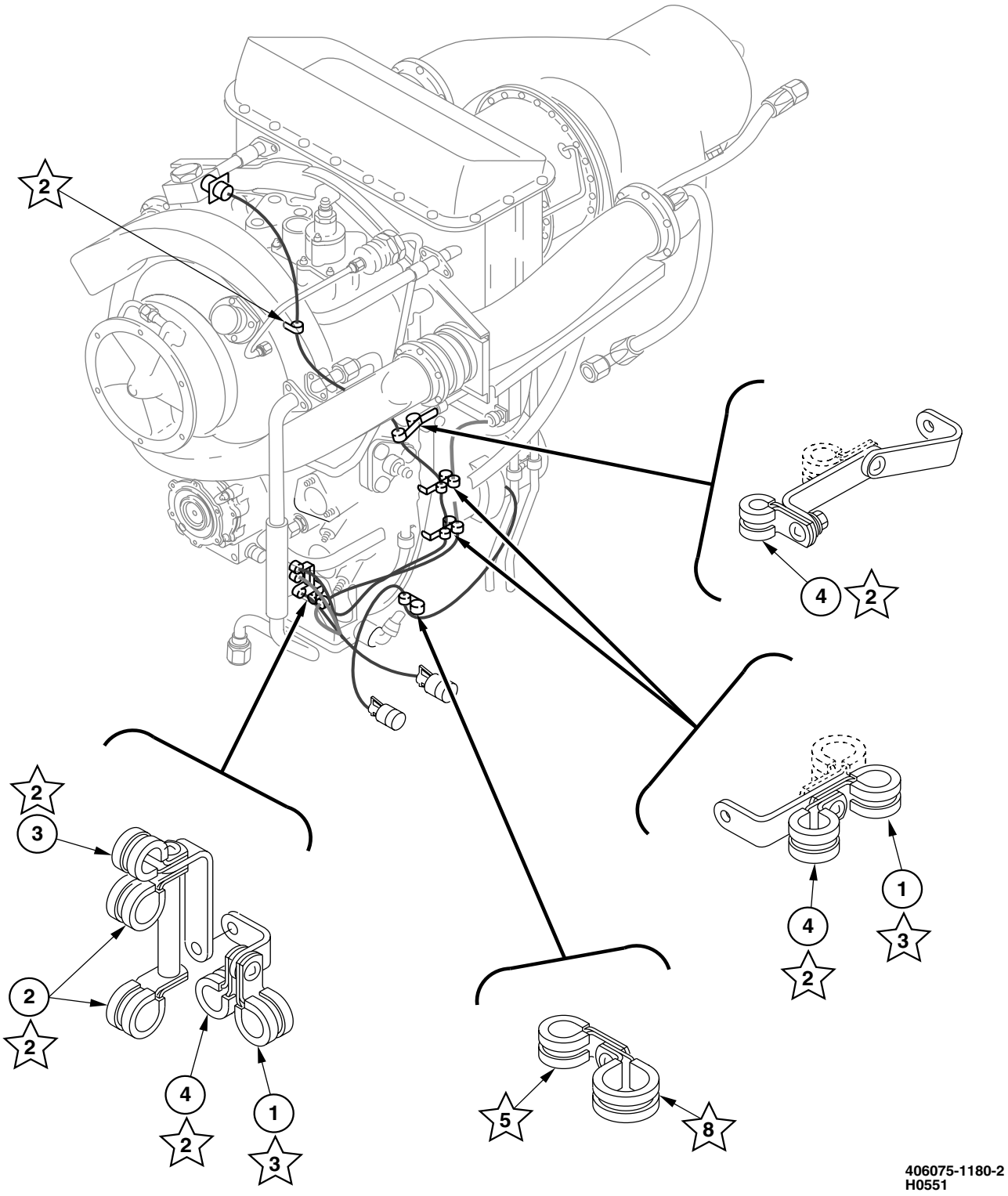
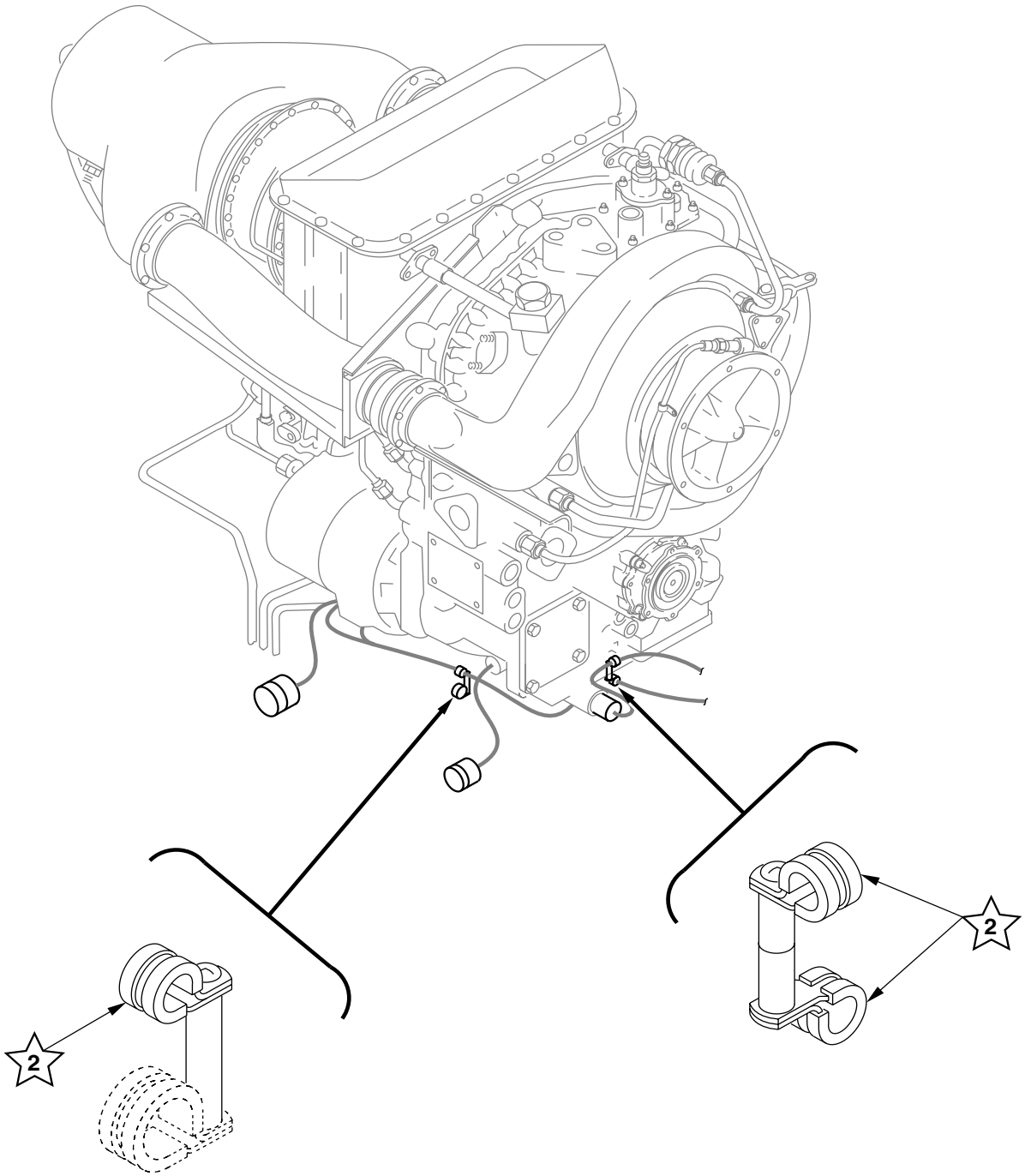


Figure F-11. Engine Compartment Electrical Clamping and Routing (Sheet 2 of 4)



406075-1180-3
H0551

Figure F-11. Engine Compartment Electrical Clamping and Routing (Sheet 3 of 4)

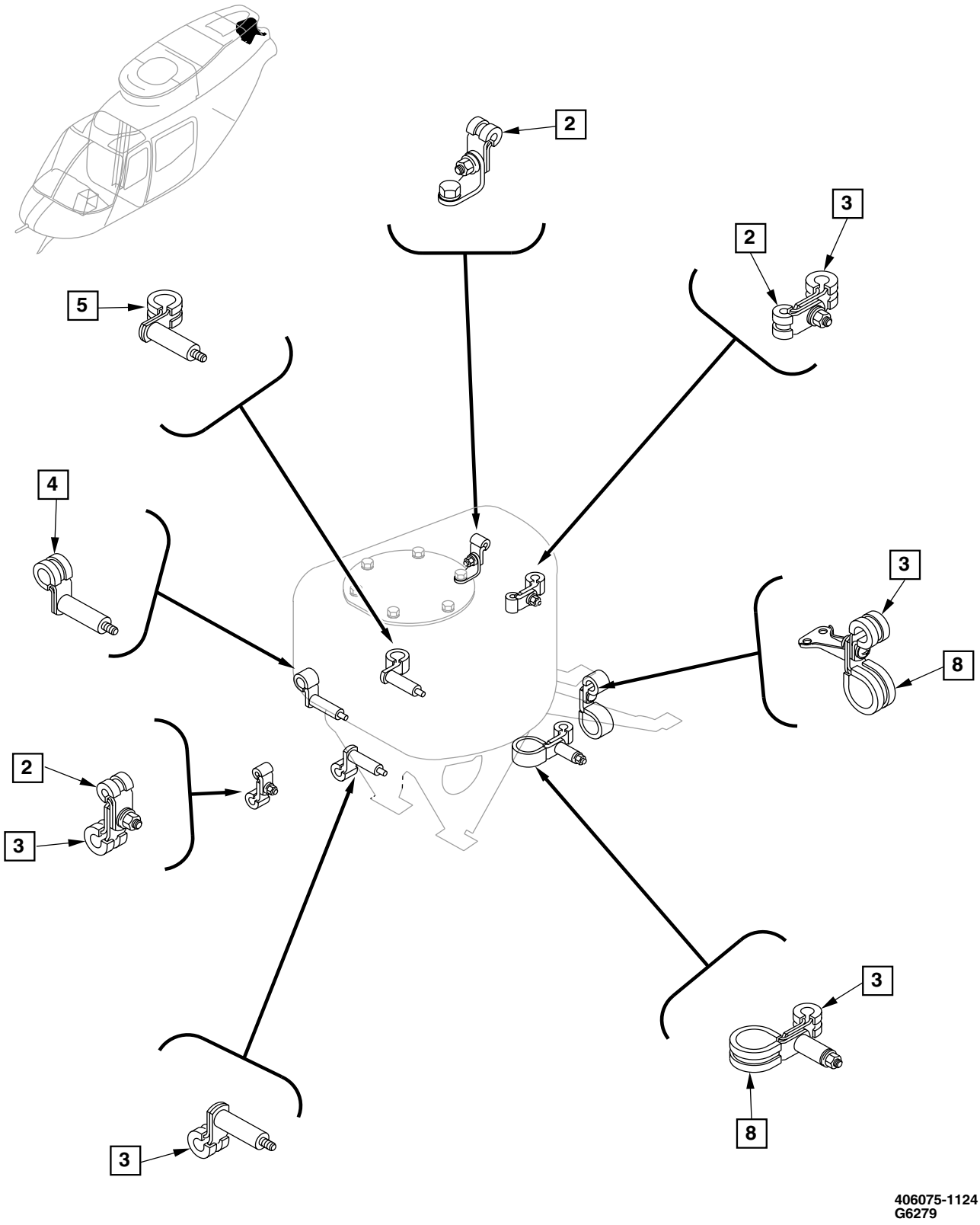


Figure F-11. Engine Compartment Electrical Clamping and Routing (Sheet 4 of 4)

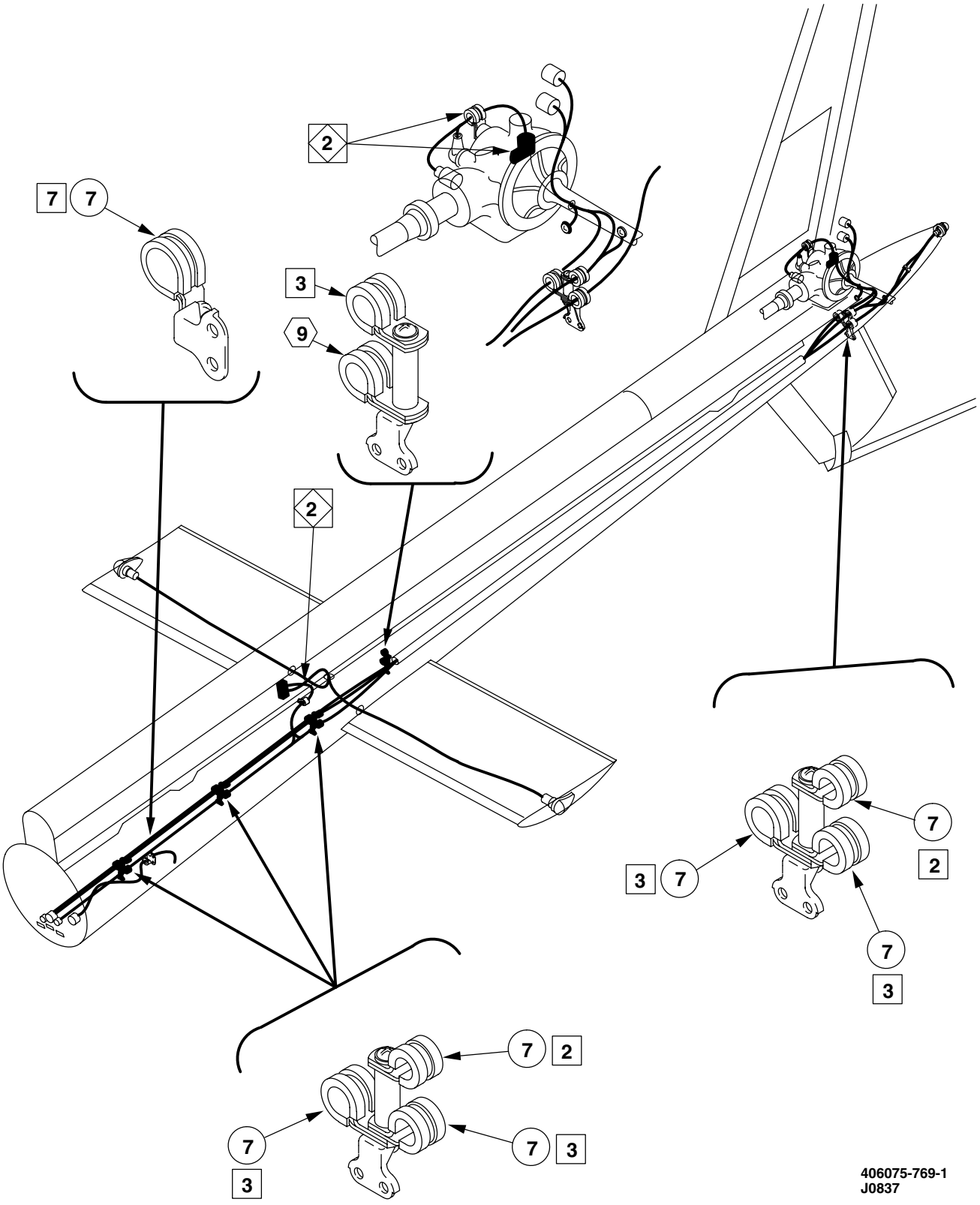


Figure F-12. Tailboom Electrical Clamping and Routing (Sheet 1 of 2)

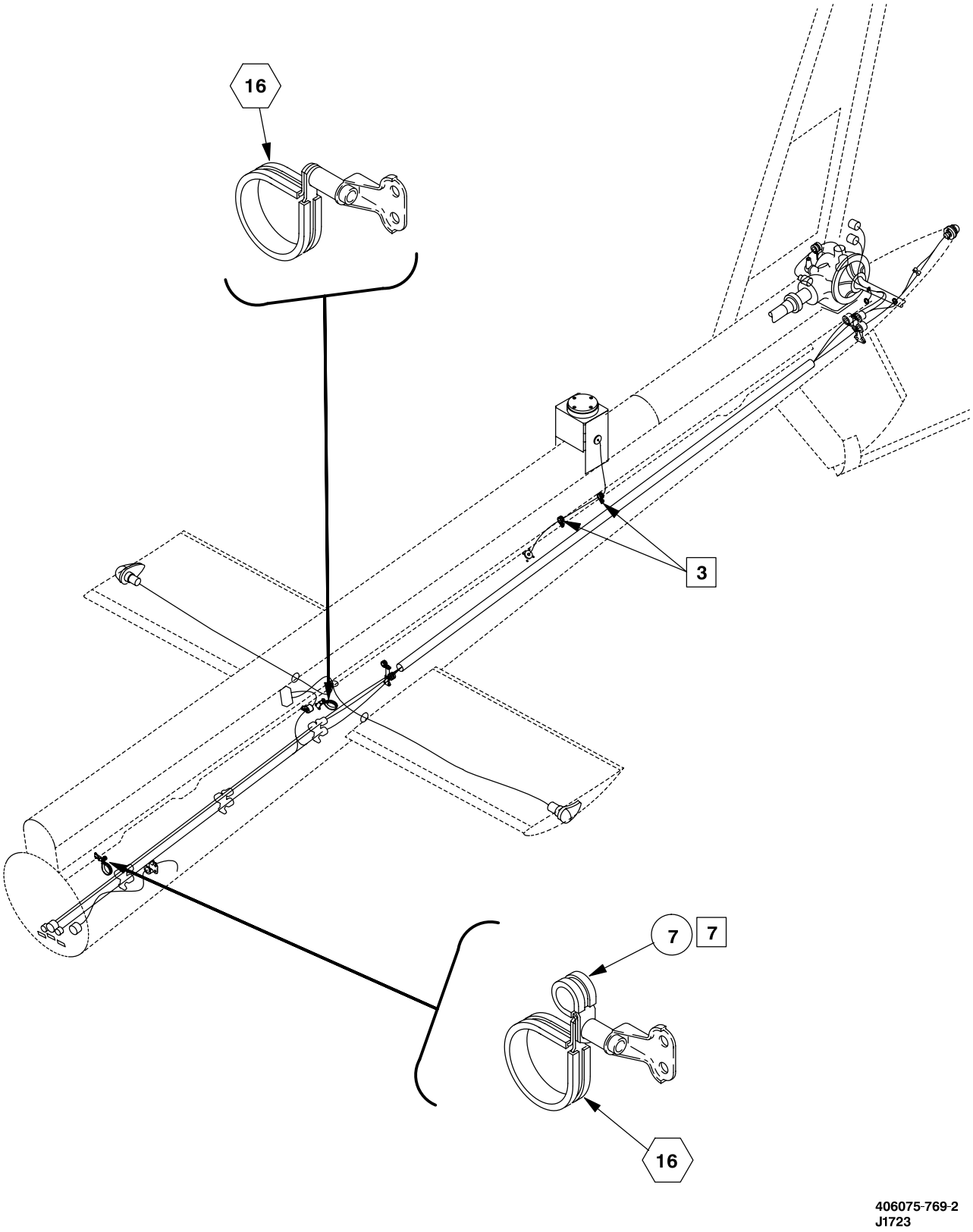


Figure F-12. Tailboom Electrical Clamping and Routing (Sheet 2 of 2)

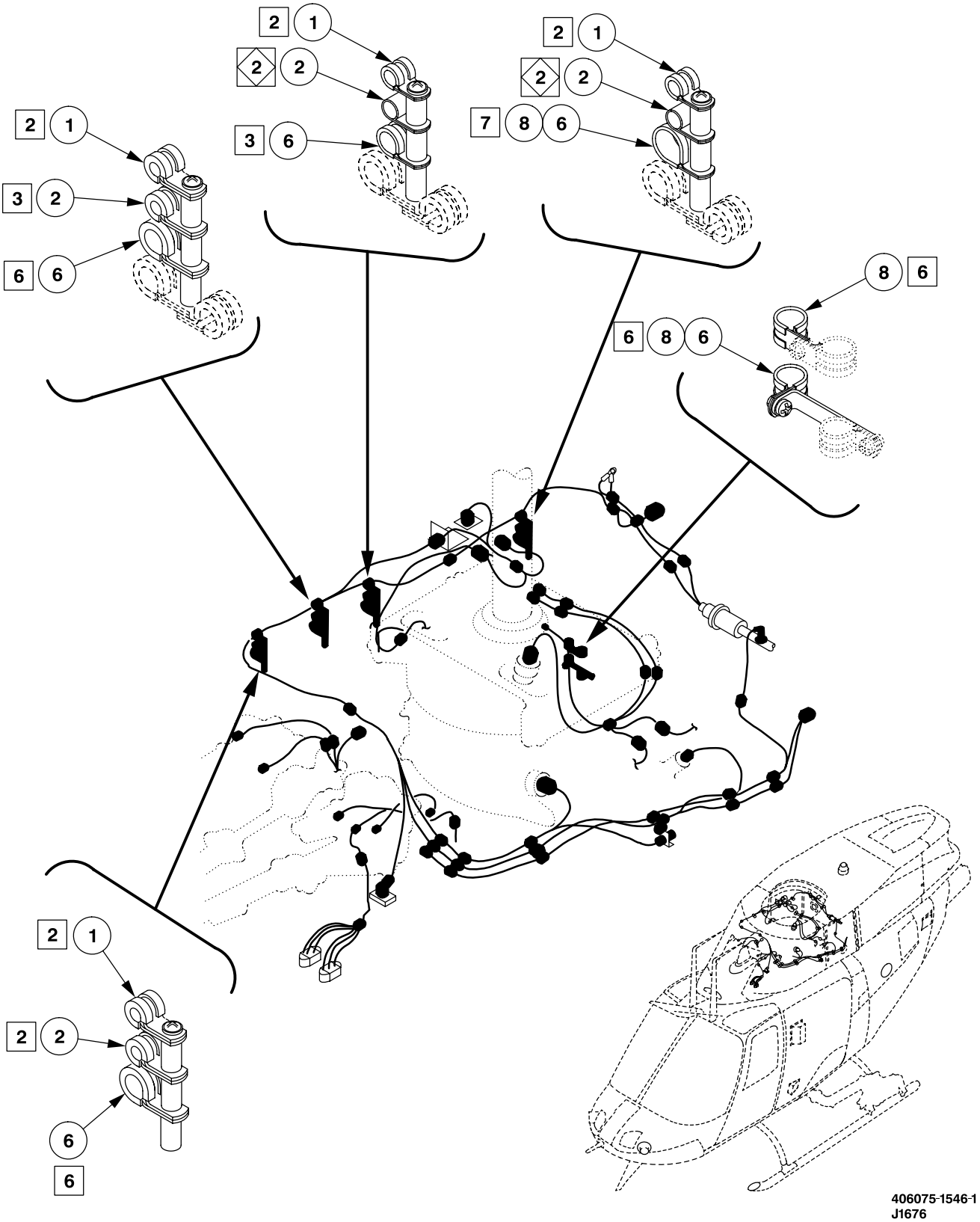


Figure F-13. Transmission Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 1 of 5)

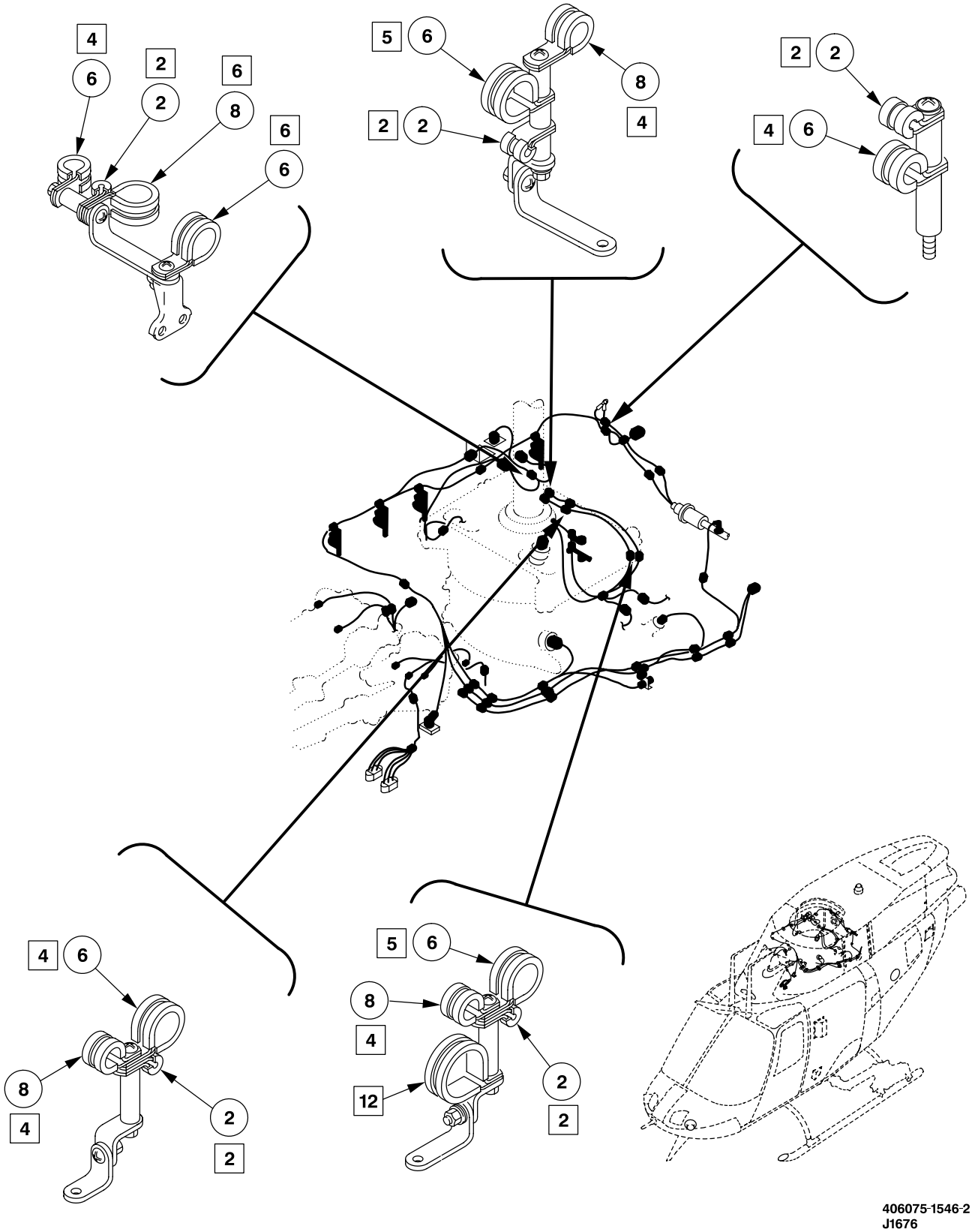


Figure F-13. Transmission Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 2 of 5)

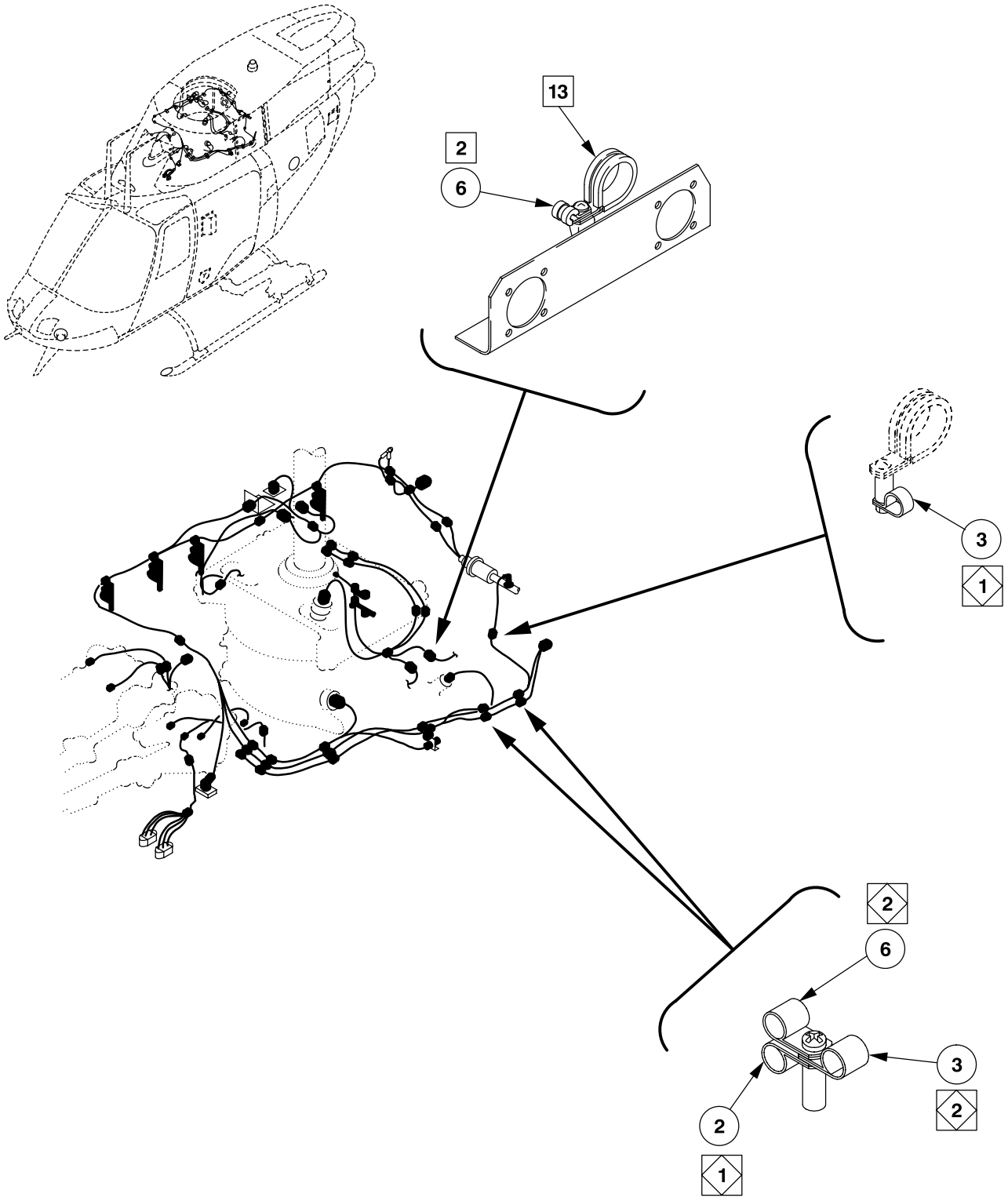


Figure F-13. Transmission Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 3 of 5)

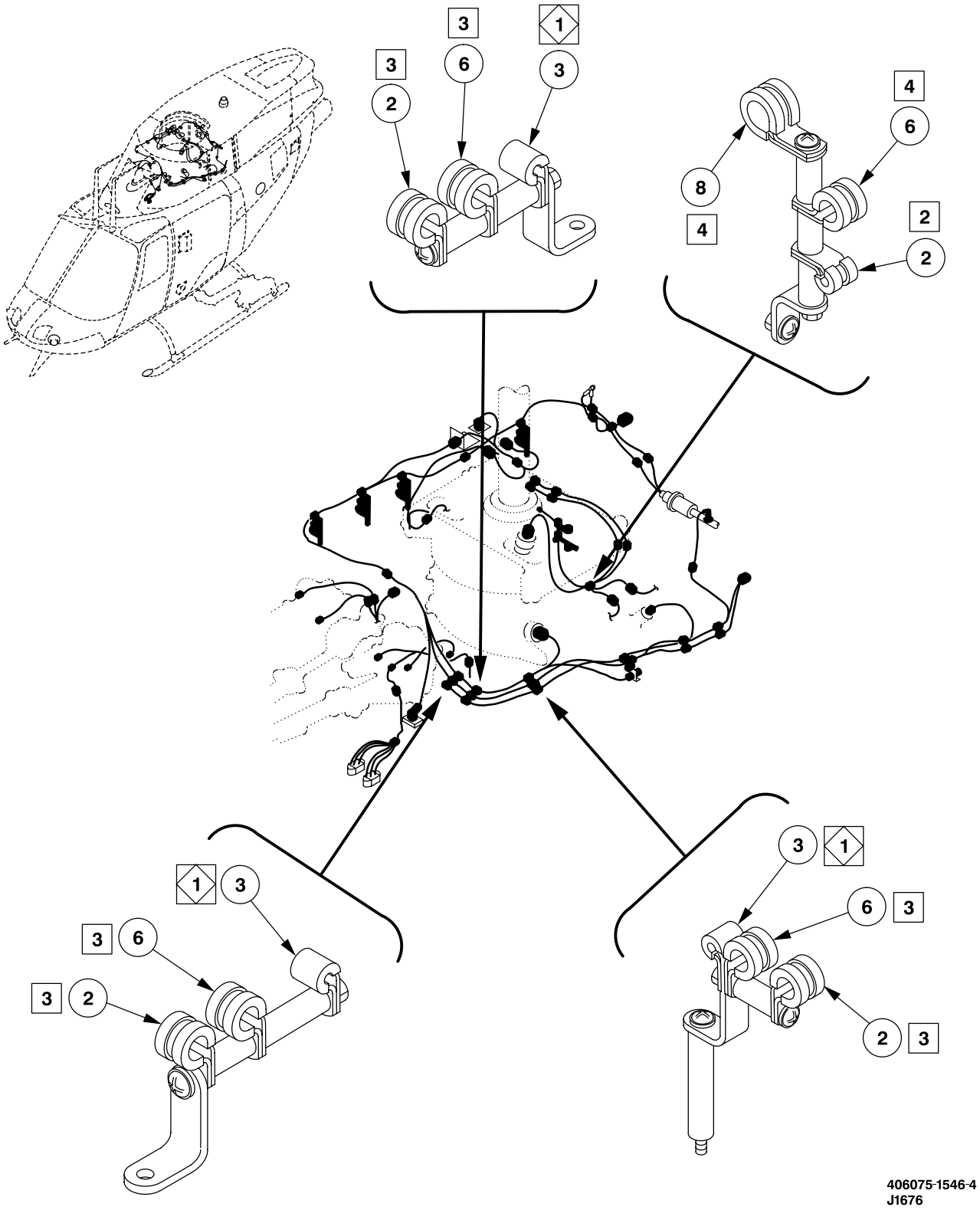


Figure F-13. Transmission Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 4 of 5)

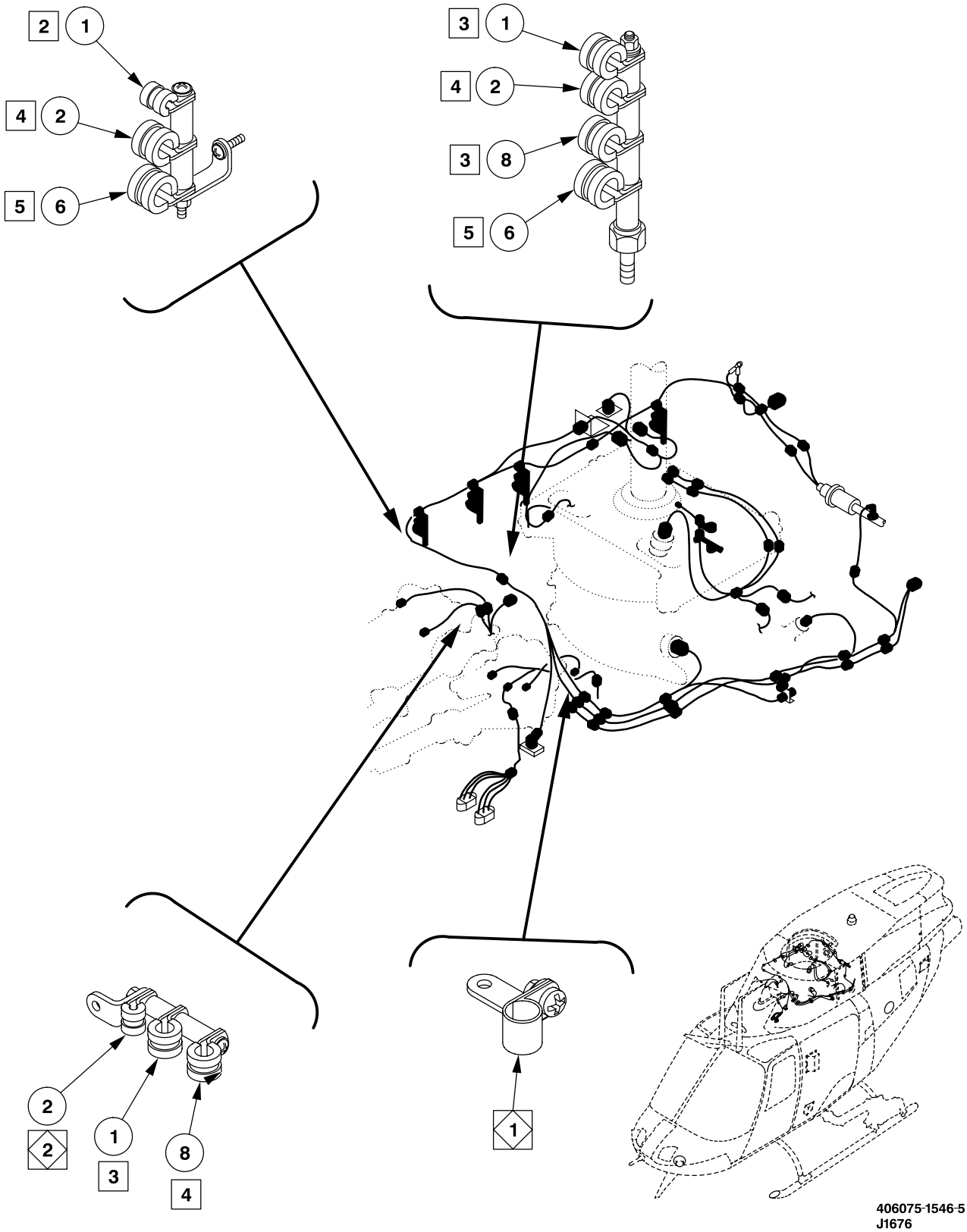


Figure F-13. Transmission Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 5 of 5)

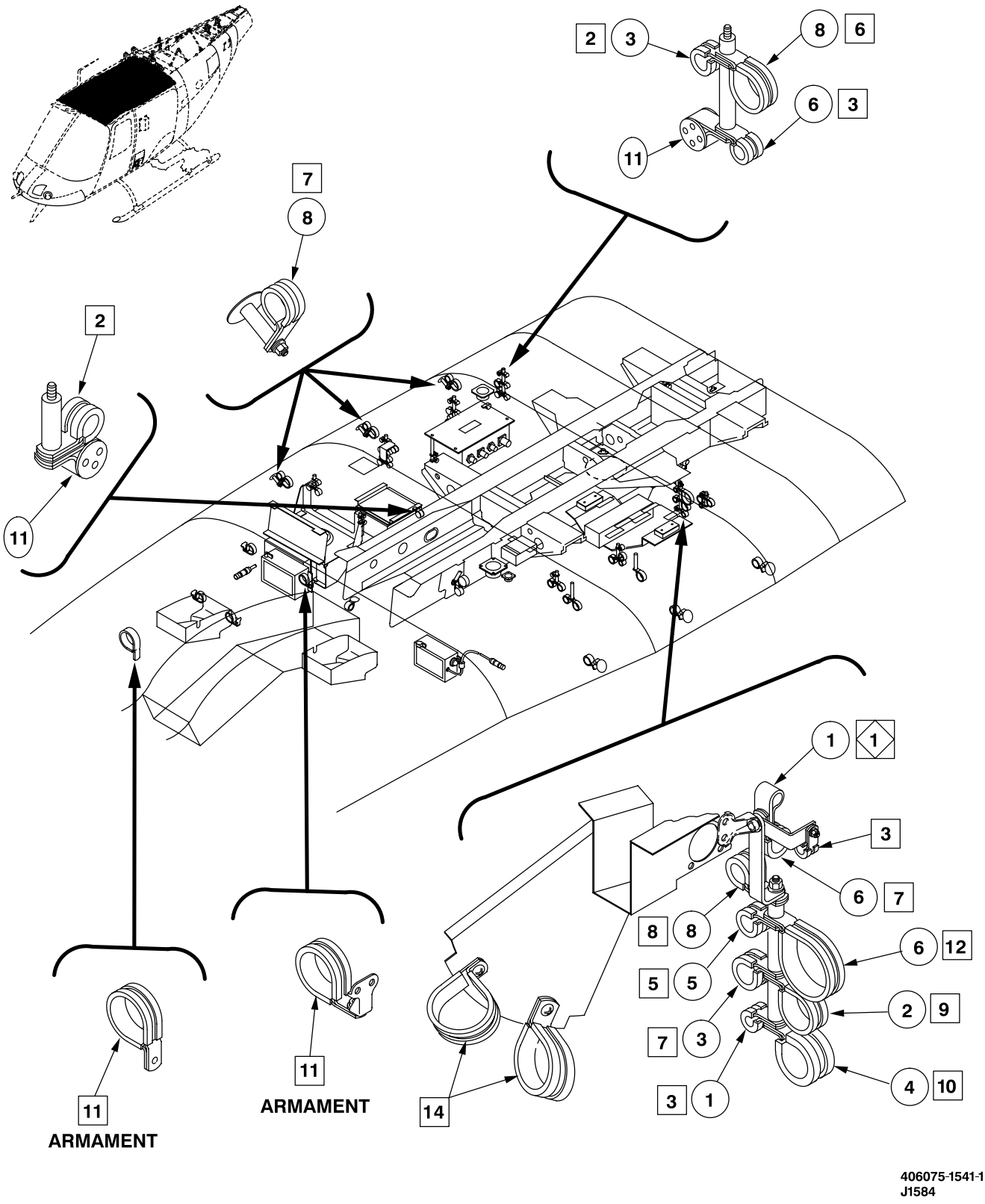


Figure F-14. Cabin Overhead Electrical Clamping and Routing (OH-58D(R)) (Sheet 1 of 4)

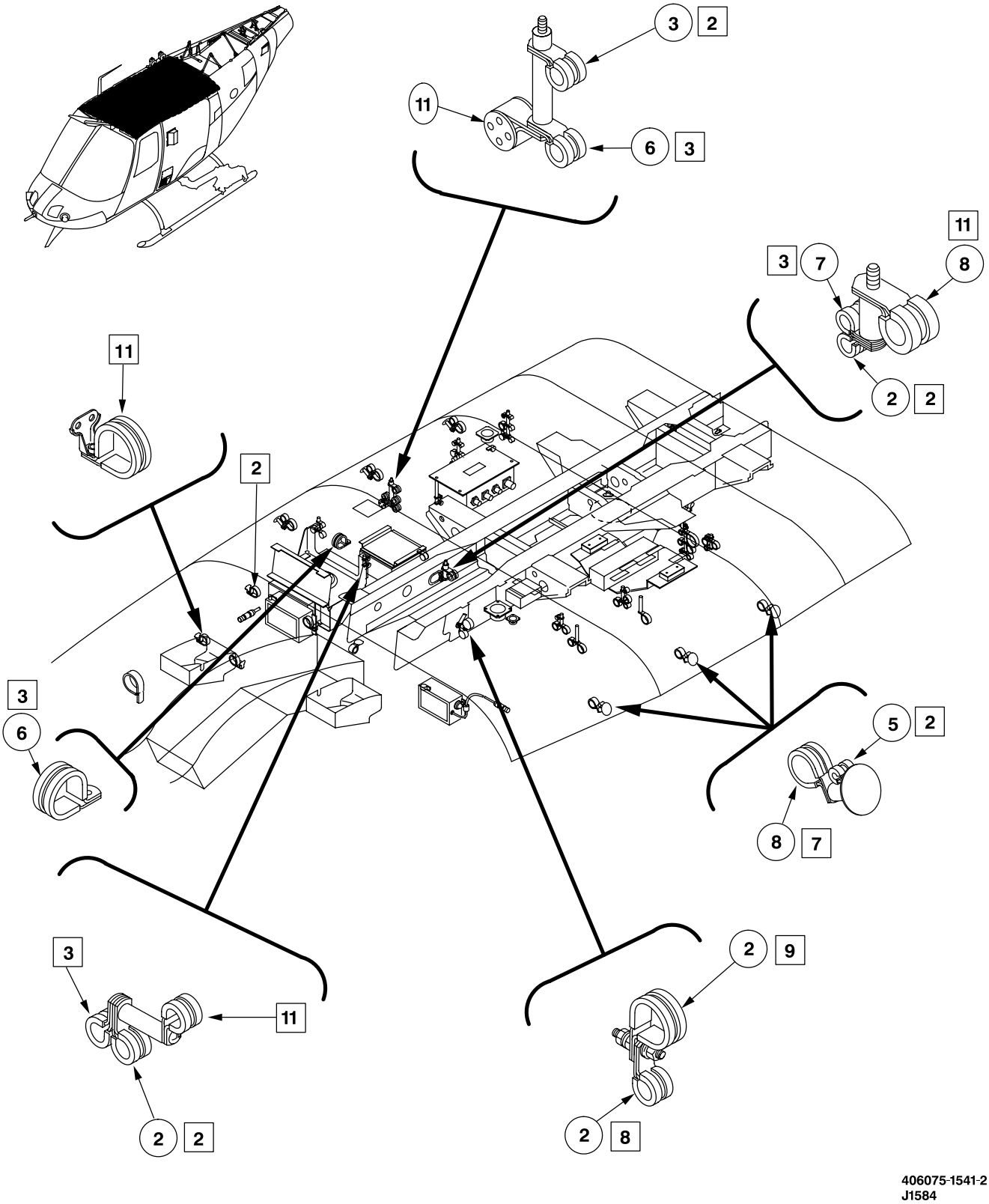


Figure F-14. Cabin Overhead Electrical Clamping and Routing (OH-58D(R)) (Sheet 2 of 4)

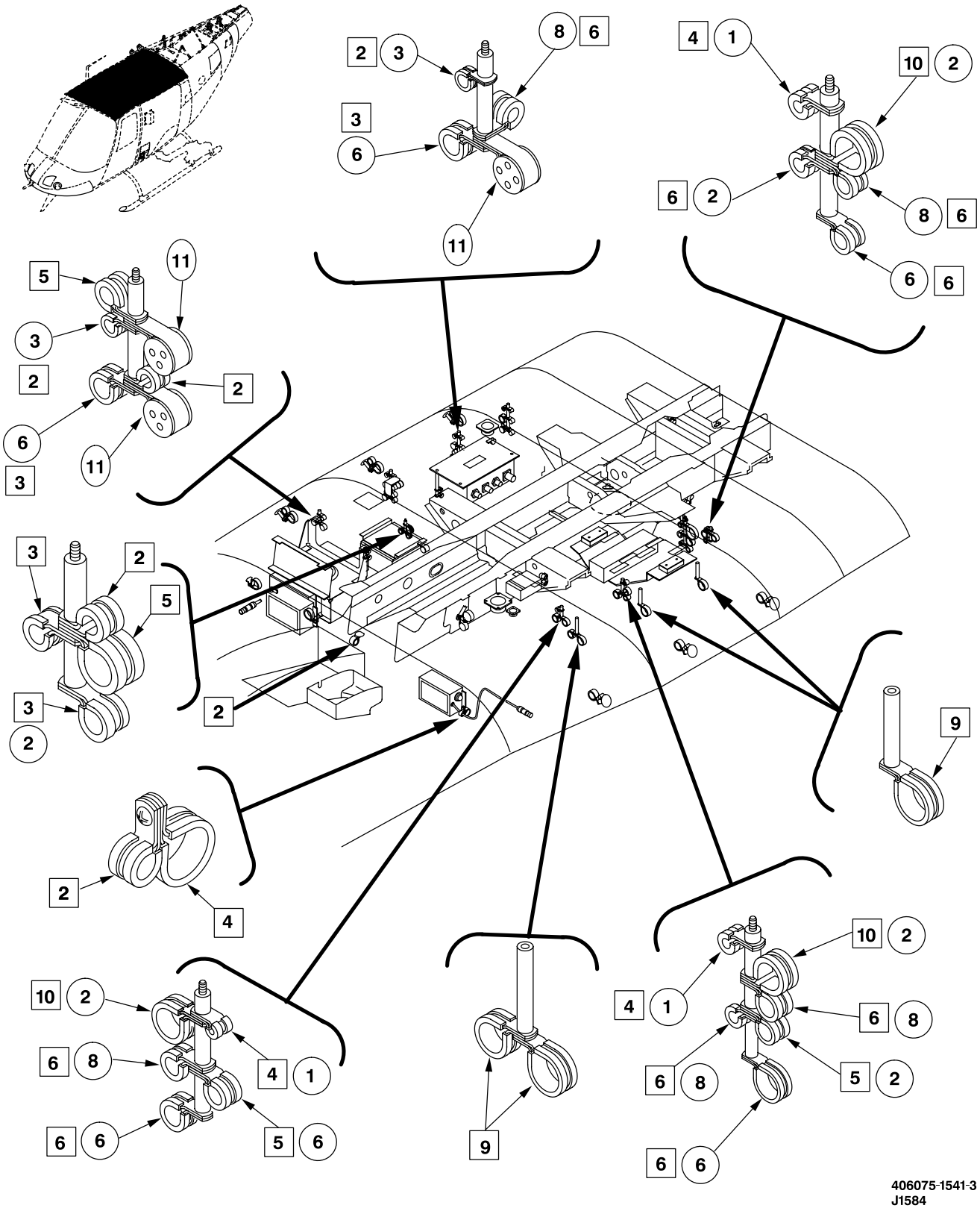


Figure F-14. Cabin Overhead Electrical Clamping and Routing (OH-58D(R)) (Sheet 3 of 4)

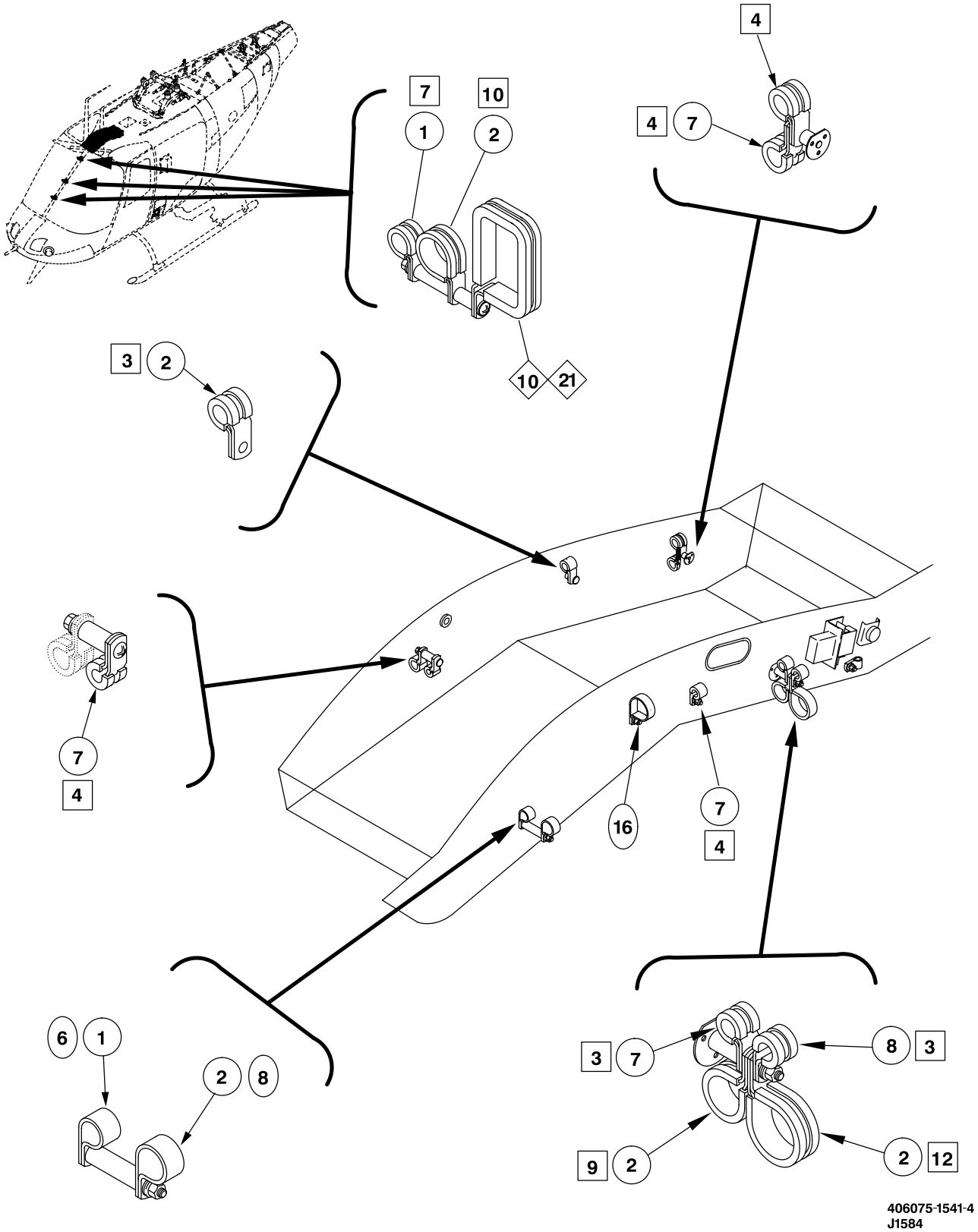


Figure F-14. Cabin Overhead Electrical Clamping and Routing (OH-58D(R)) (Sheet 4 of 4)

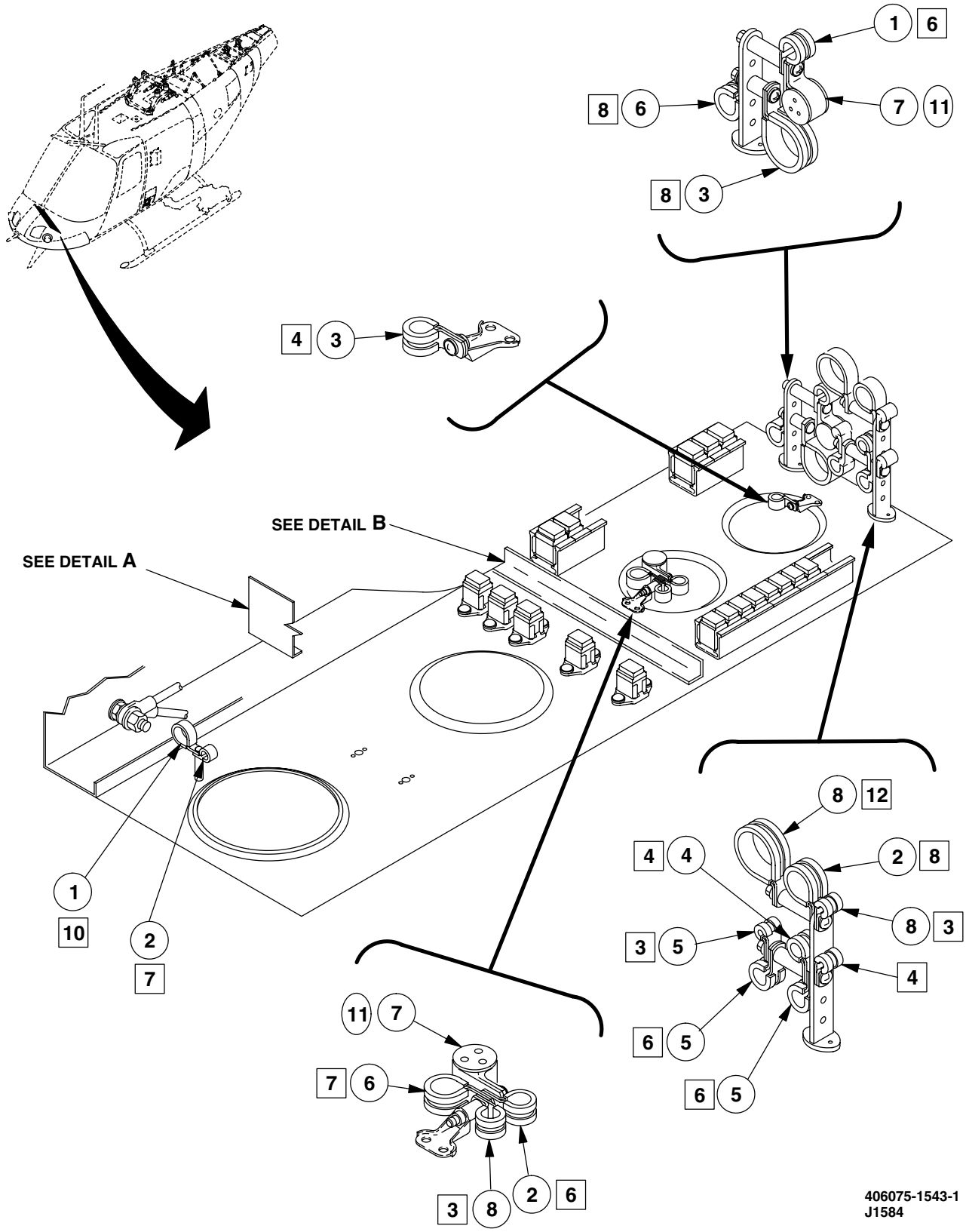
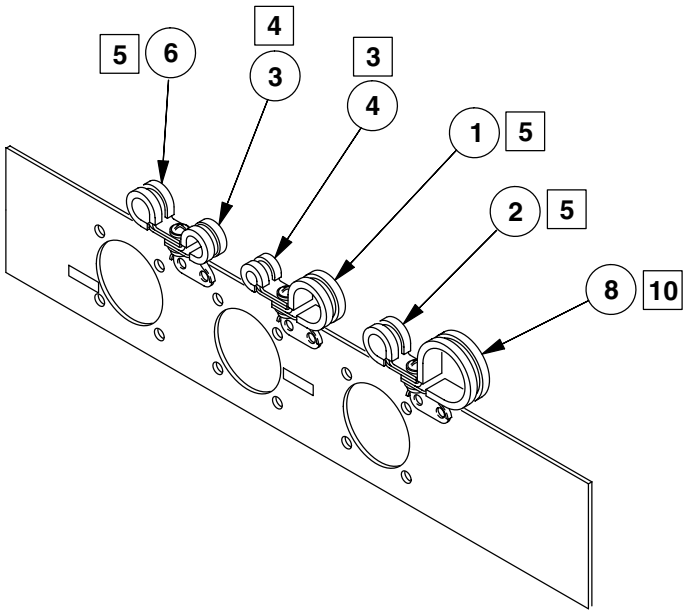
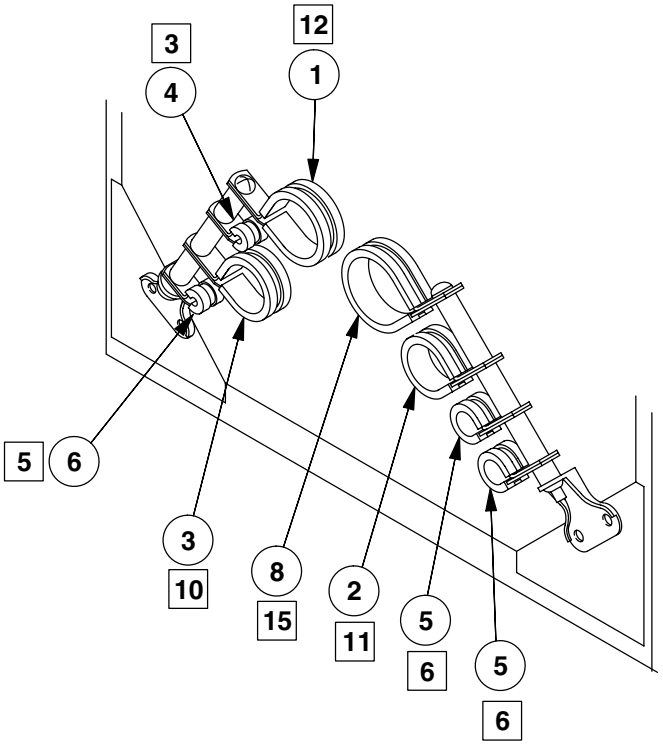


Figure F-15. Nose Section Electrical Clamping and Routing (OH-58D(R)) (Sheet 1 of 9)



DETAIL A



DETAIL B

406075-1543-2
J1584

Figure F-15. Nose Section Electrical Clamping and Routing (OH-58D(R)) (Sheet 2 of 9)

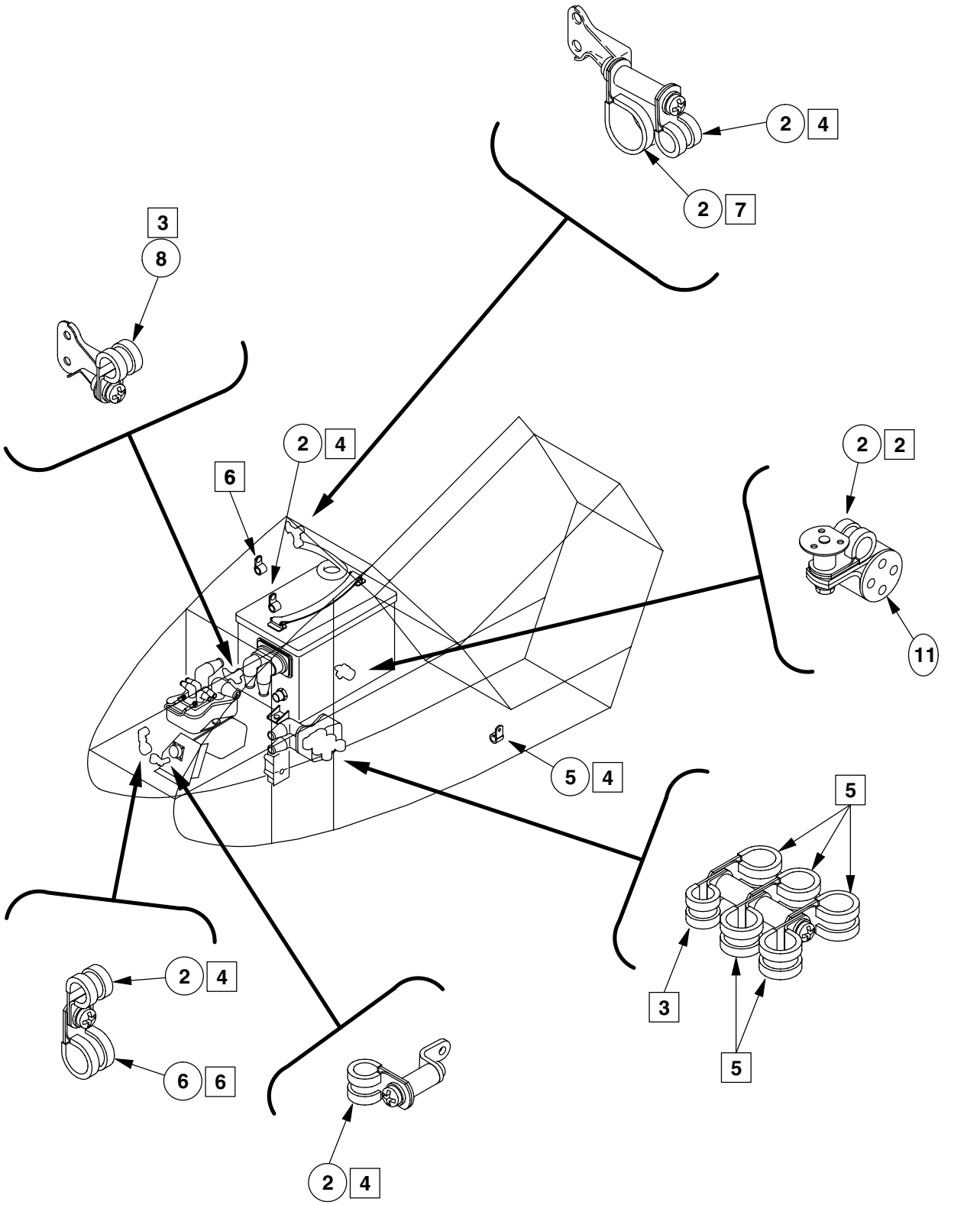


Figure F-15. Nose Section Electrical Clamping and Routing (OH-58D(R)) (Sheet 3 of 9)

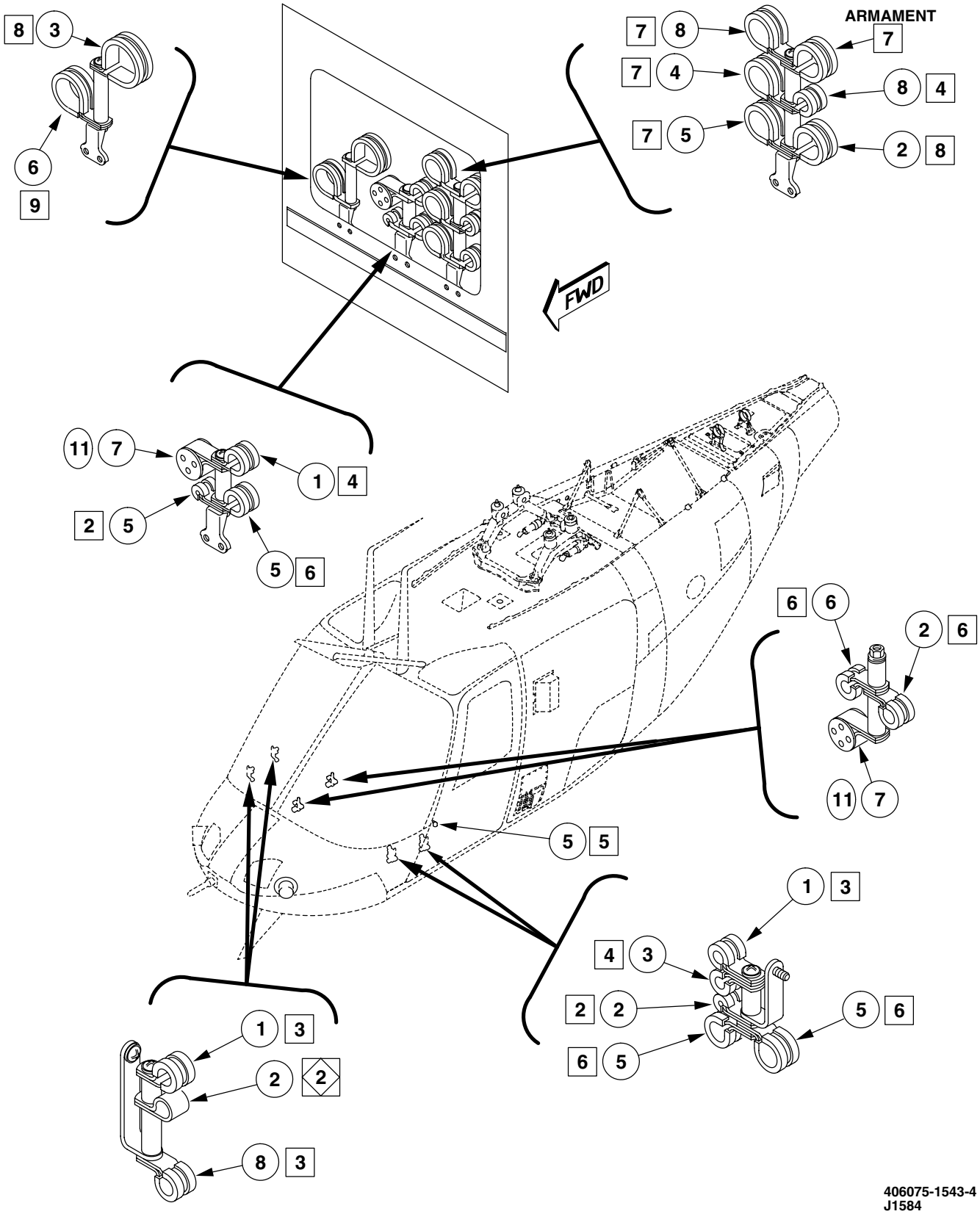


Figure F-15. Nose Section Electrical Clamping and Routing (OH-58D(R)) (Sheet 4 of 9)

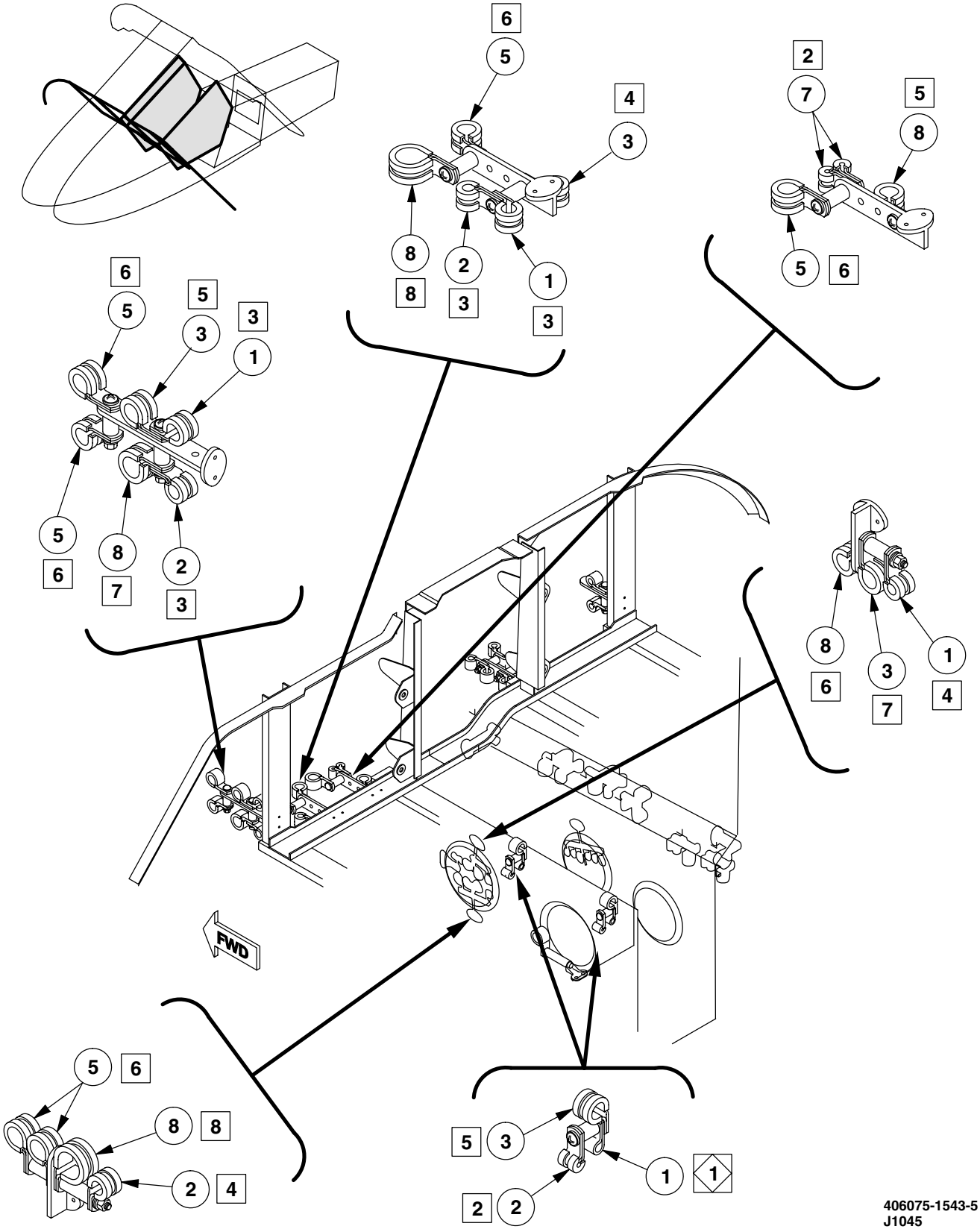


Figure F-15. Nose Section Electrical Clamping and Routing (OH-58D(R)) (Sheet 5 of 9)

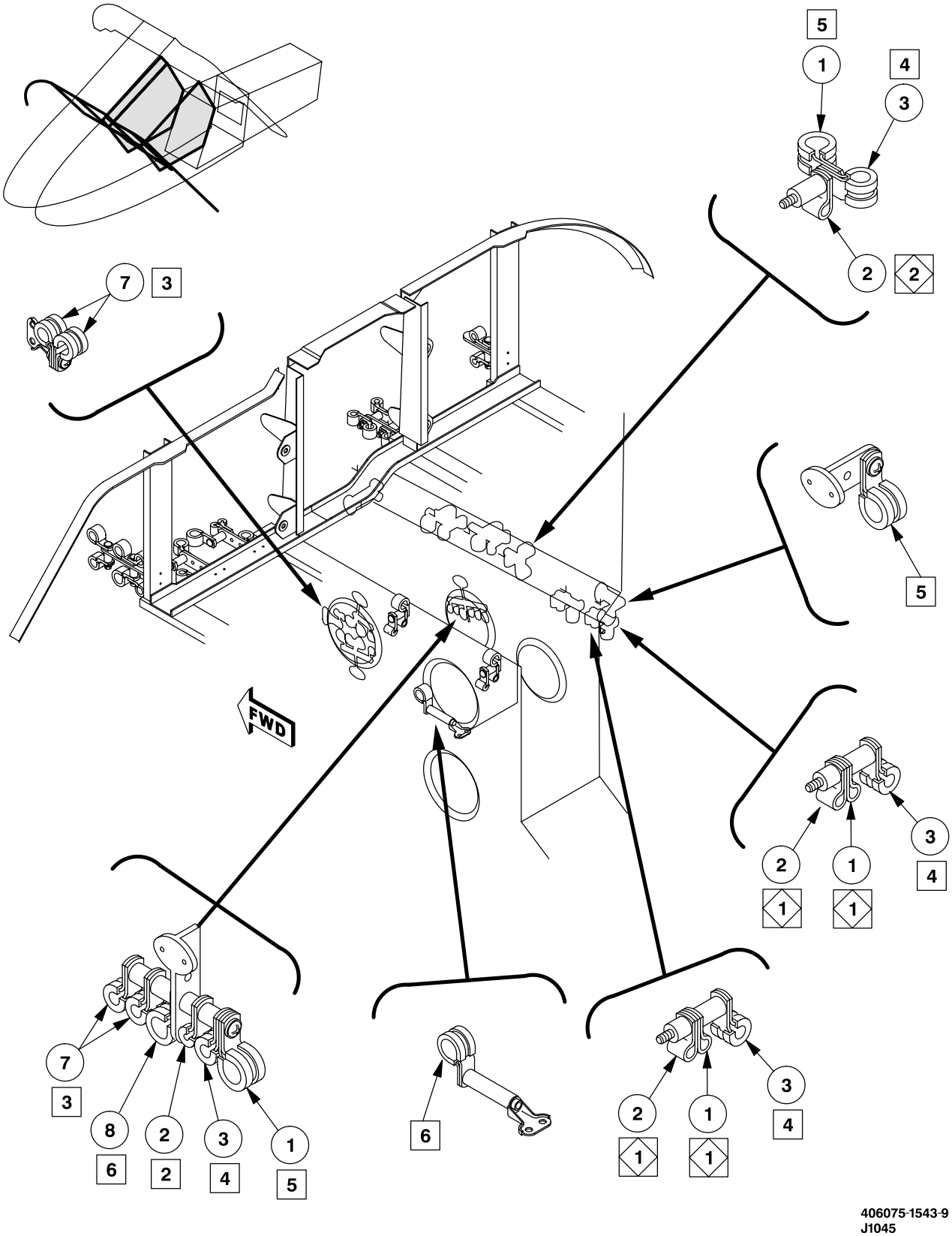


Figure F-15. Nose Section Electrical Clamping and Routing (OH-58D(R)) (Sheet 6 of 9)

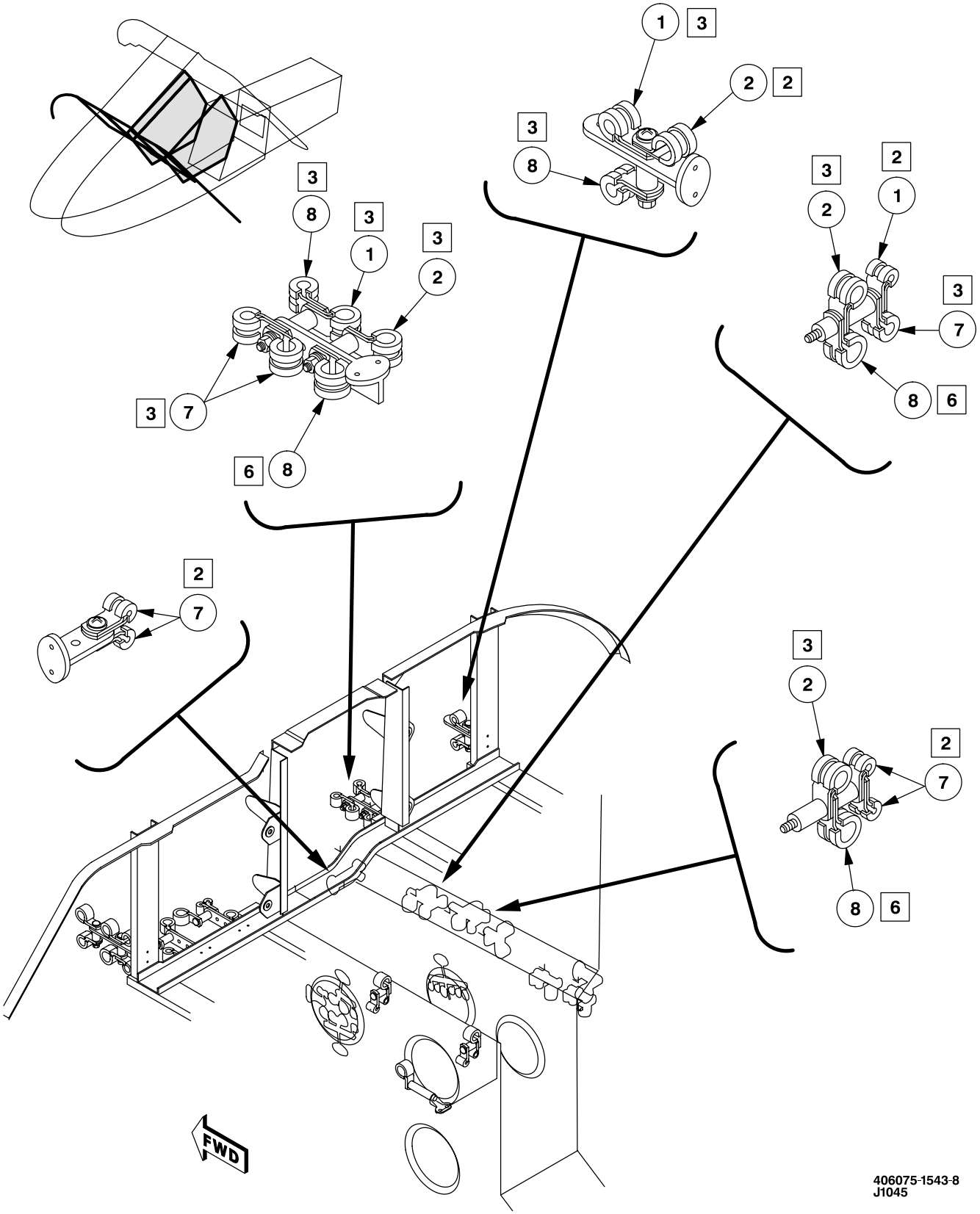


Figure F-15. Nose Section Electrical Clamping and Routing (OH-58D(R)) (Sheet 7 of 9)

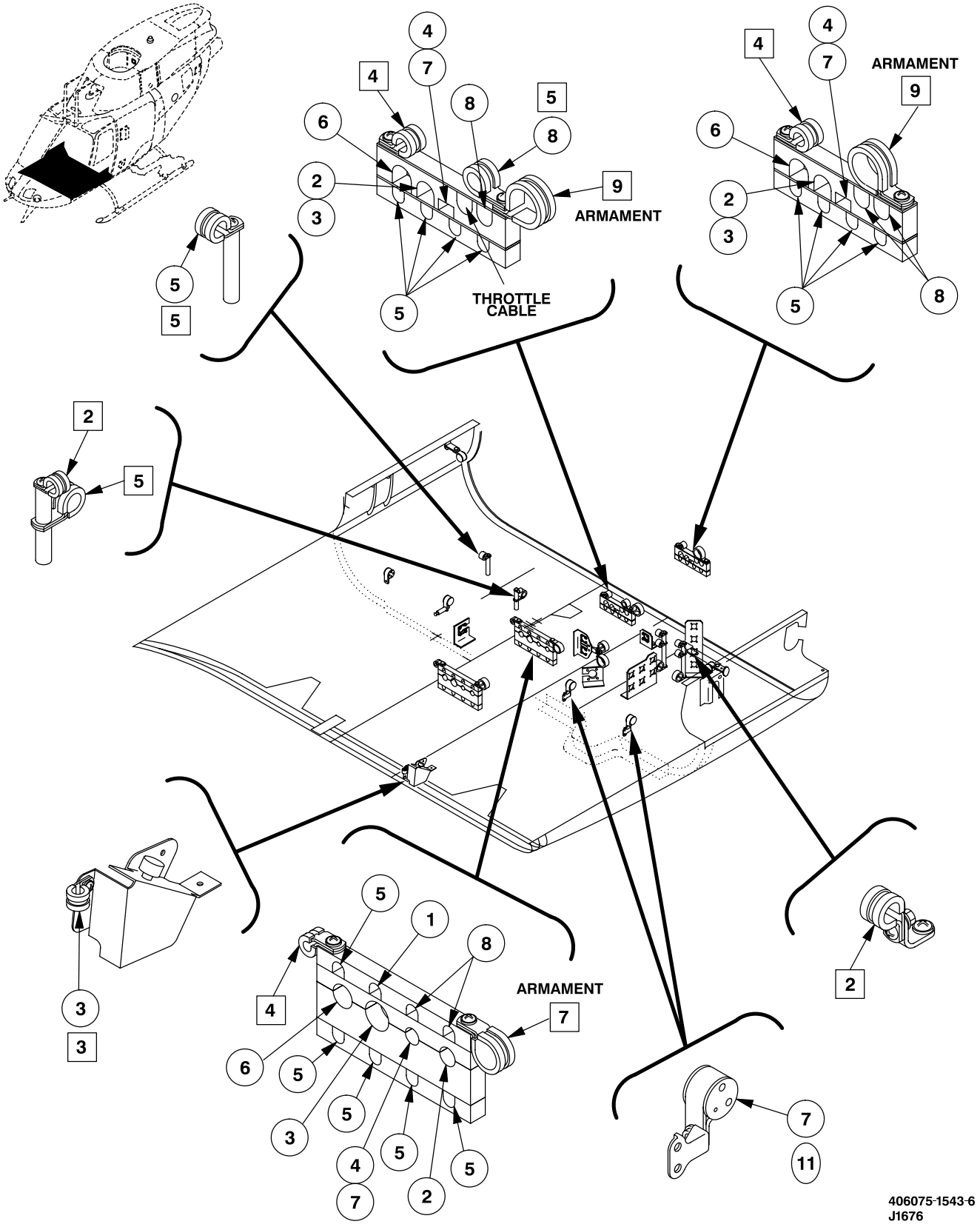


Figure F-15. Nose Section Electrical Clamping and Routing (OH-58D(R)) (Sheet 8 of 9)

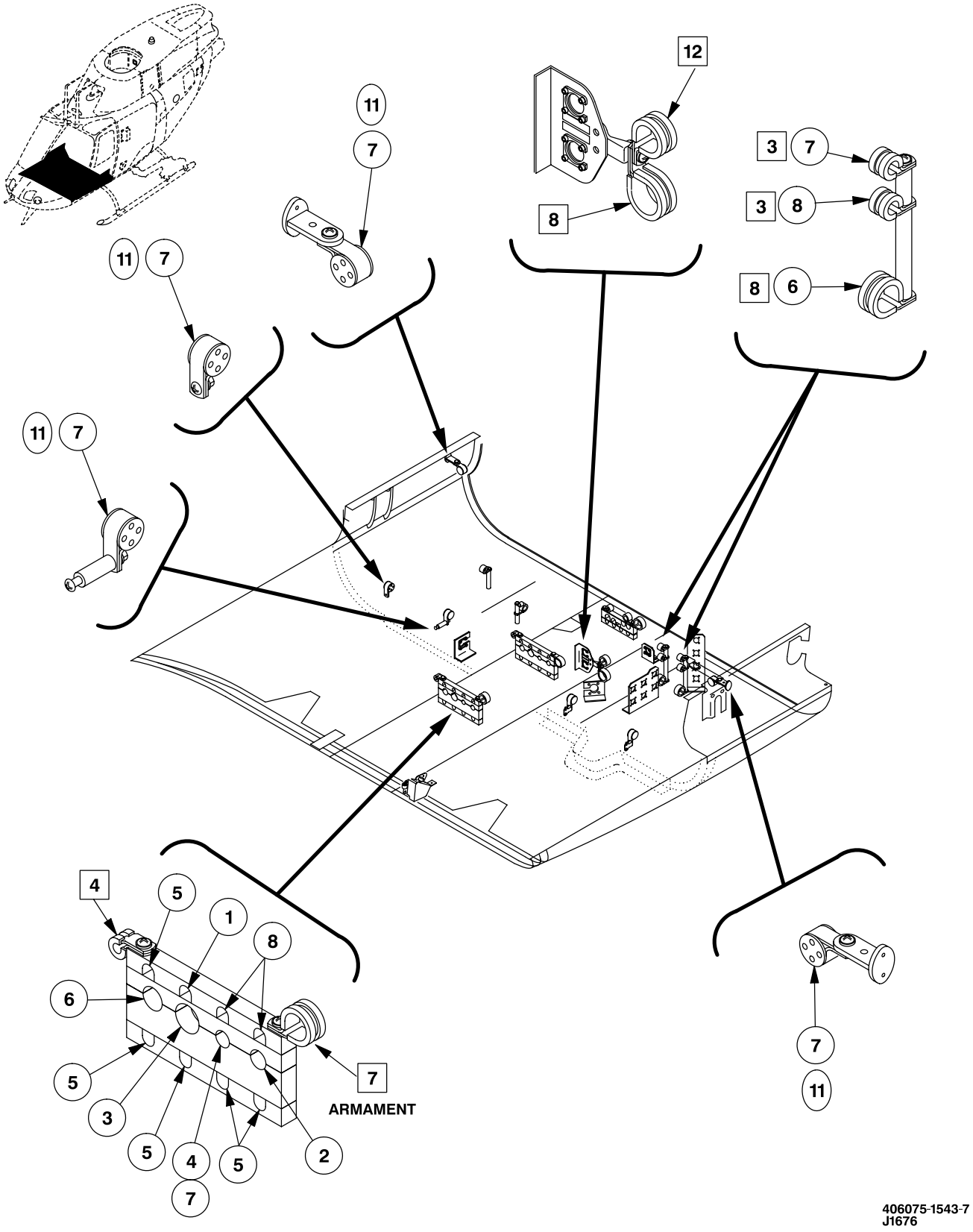


Figure F-15. Nose Section Electrical Clamping and Routing (OH-58D(R)) (Sheet 9 of 9)

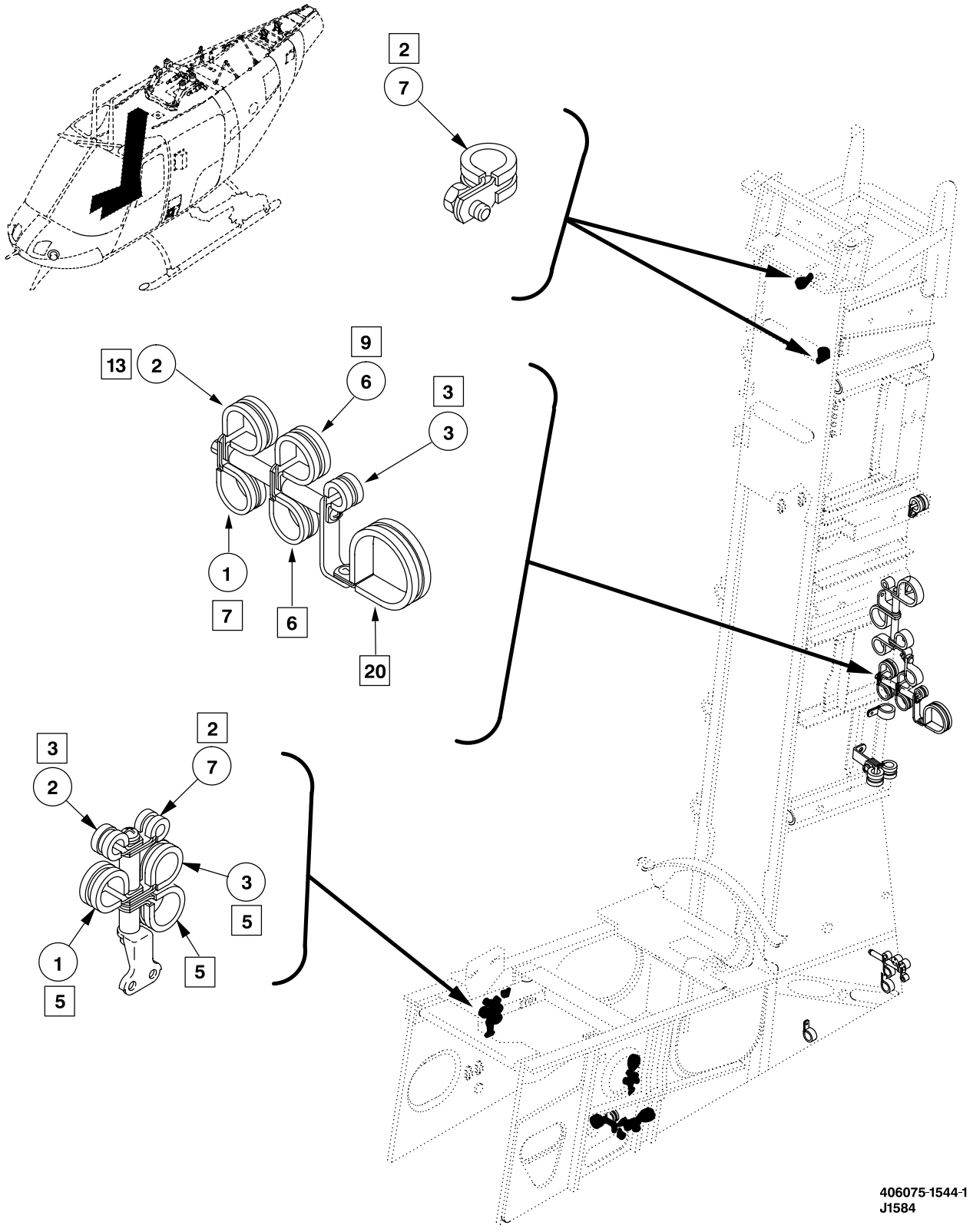


Figure F-16. Crew Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 1 of 6)

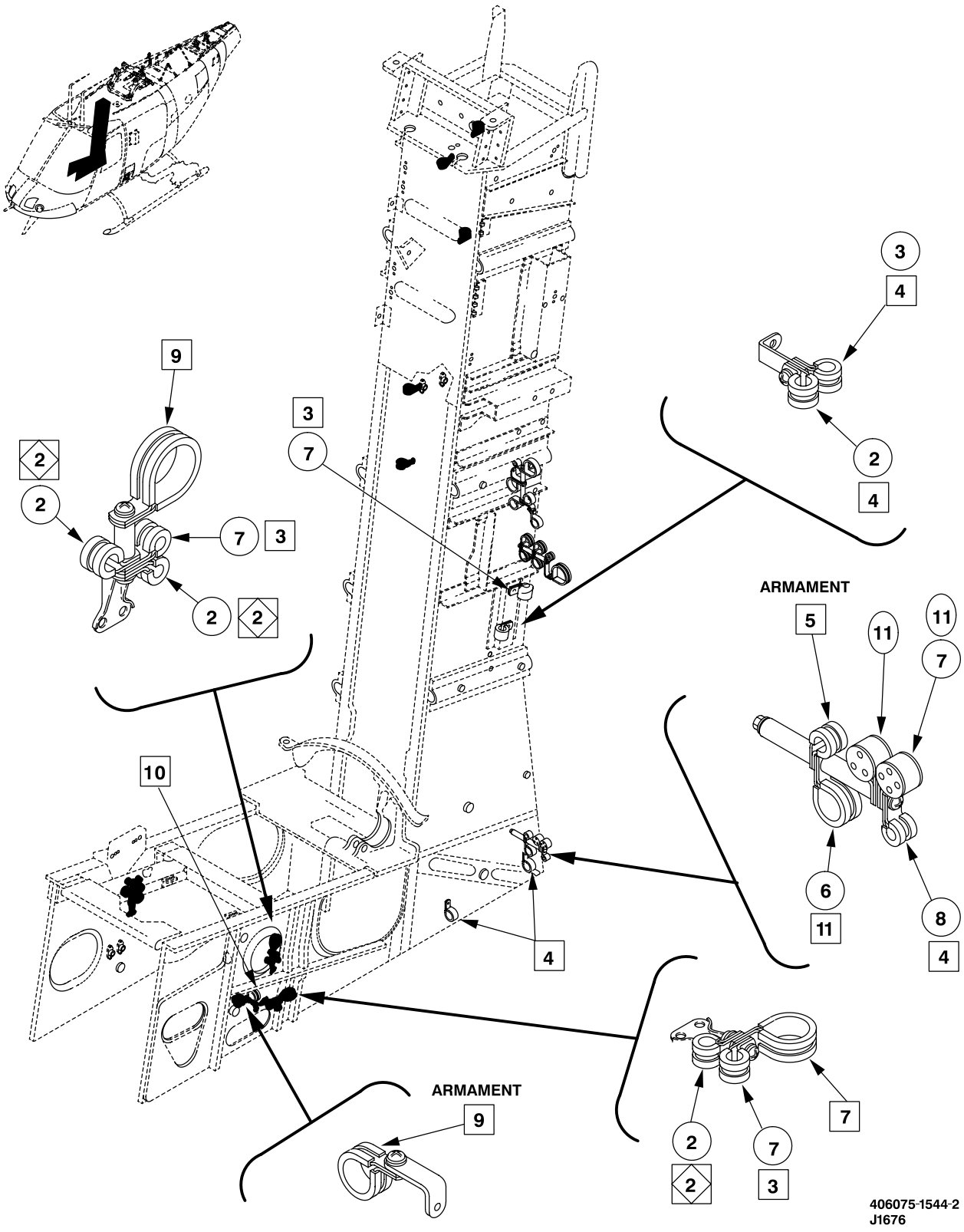


Figure F-16. Crew Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 2 of 6)

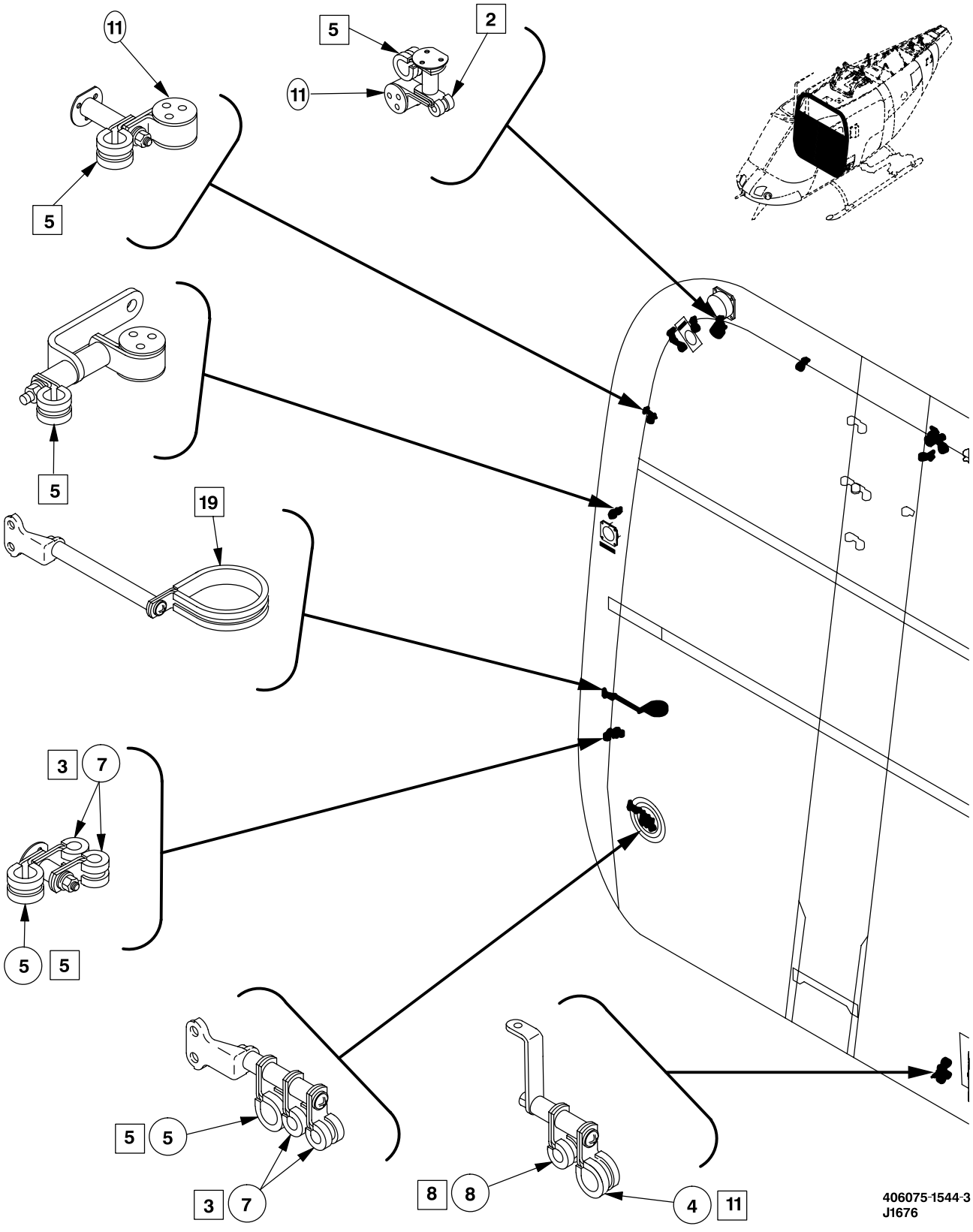


Figure F-16. Crew Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 3 of 6)

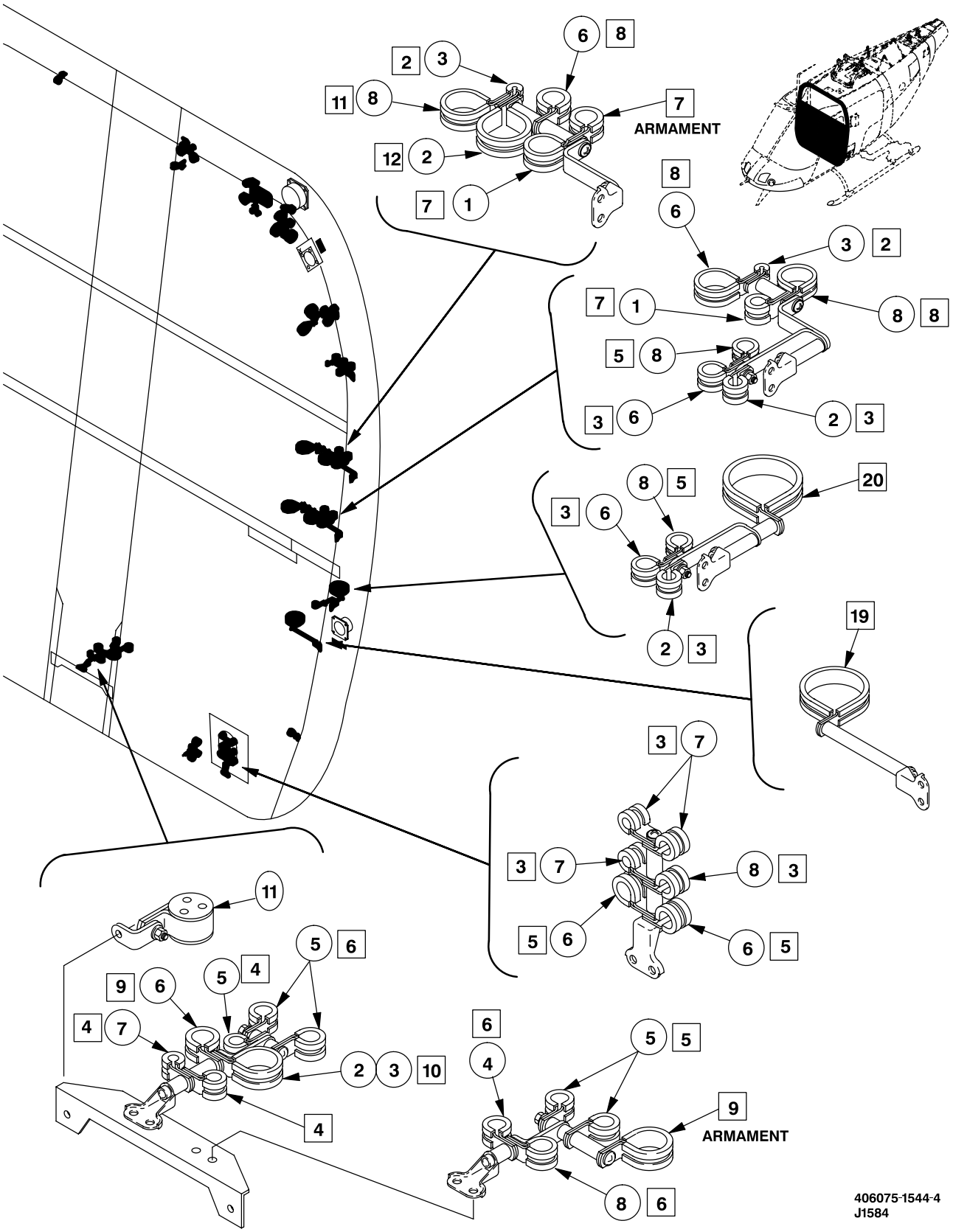


Figure F-16. Crew Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 4 of 6)

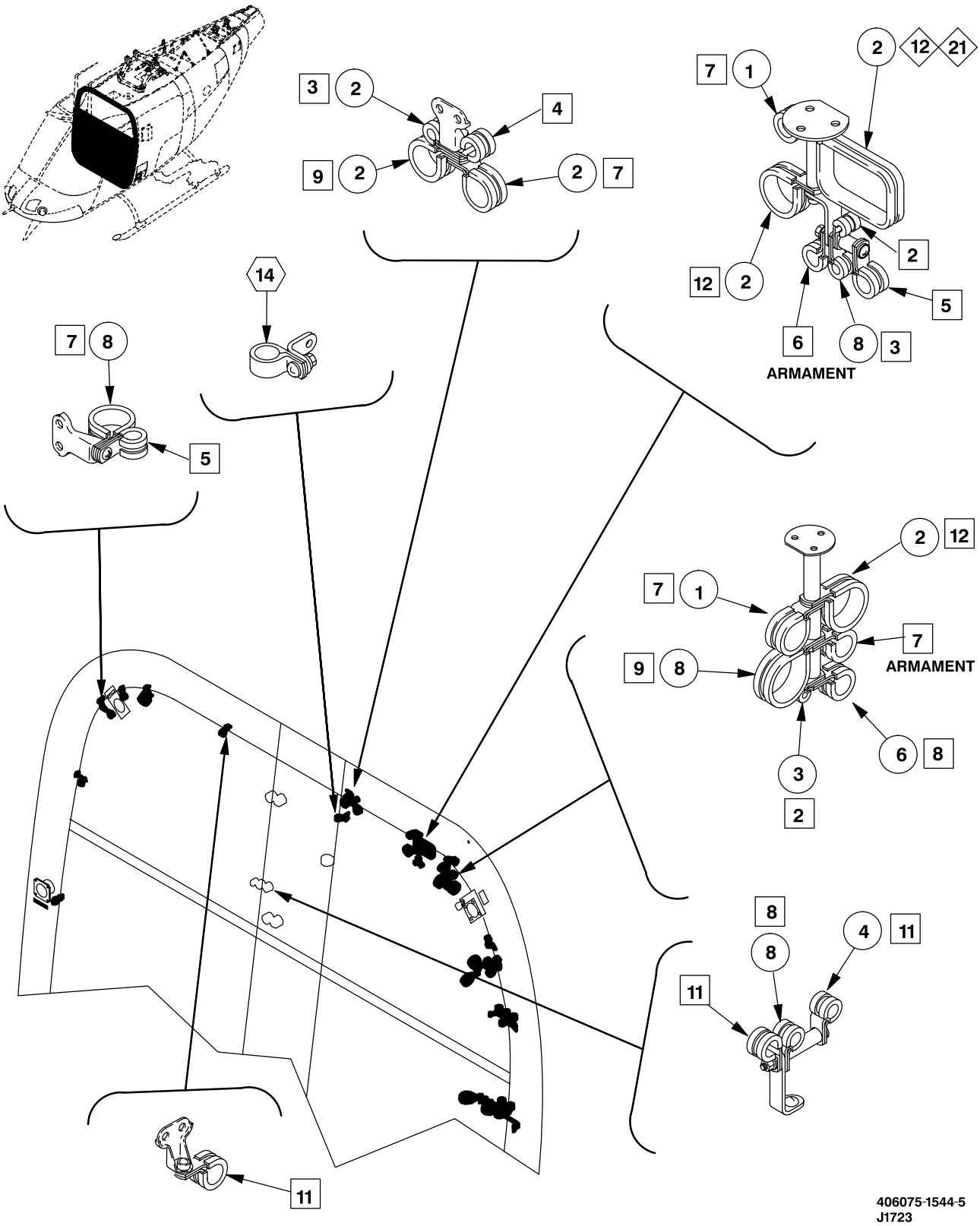


Figure F-16. Crew Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 5 of 6)

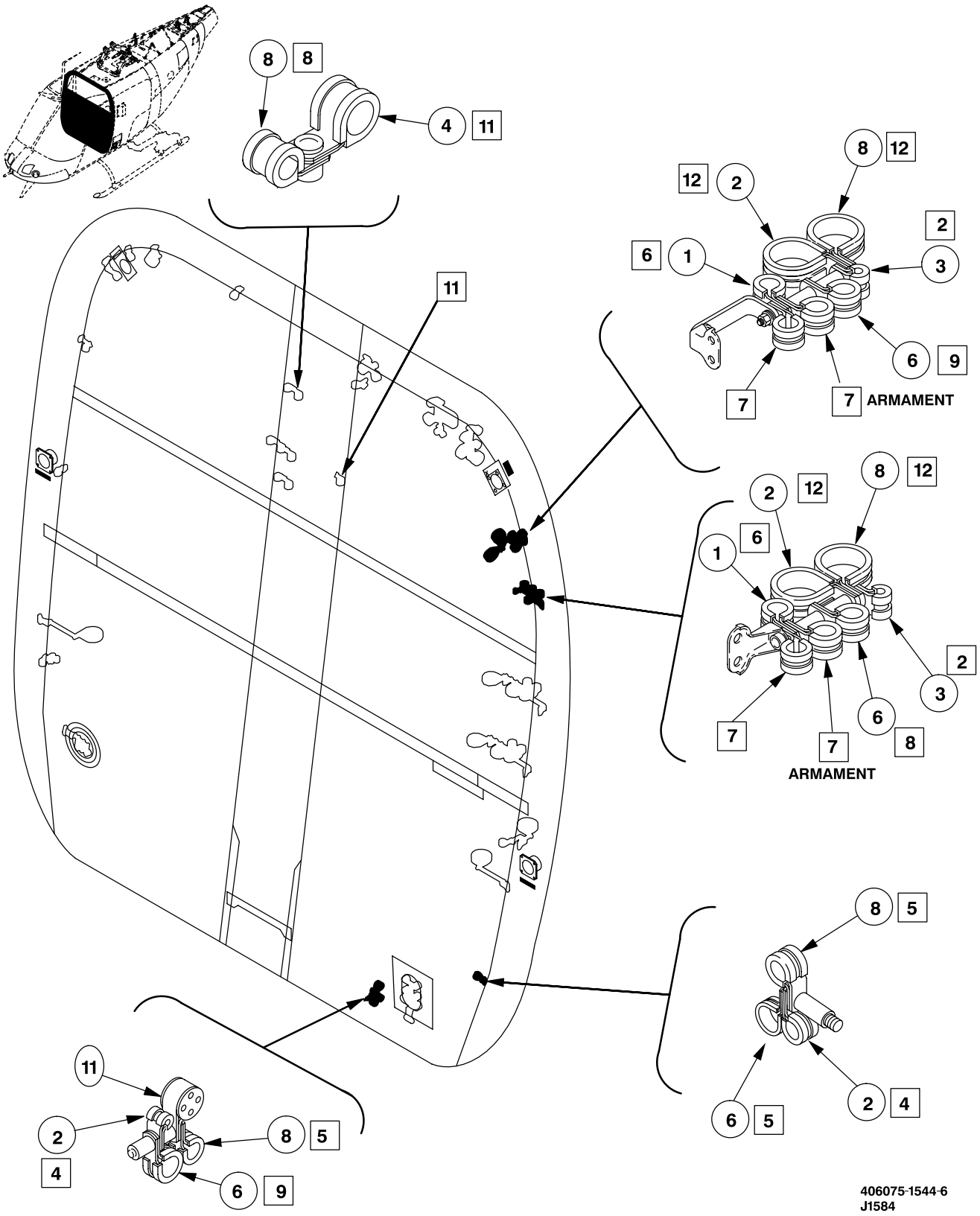


Figure F-16. Crew Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 6 of 6)

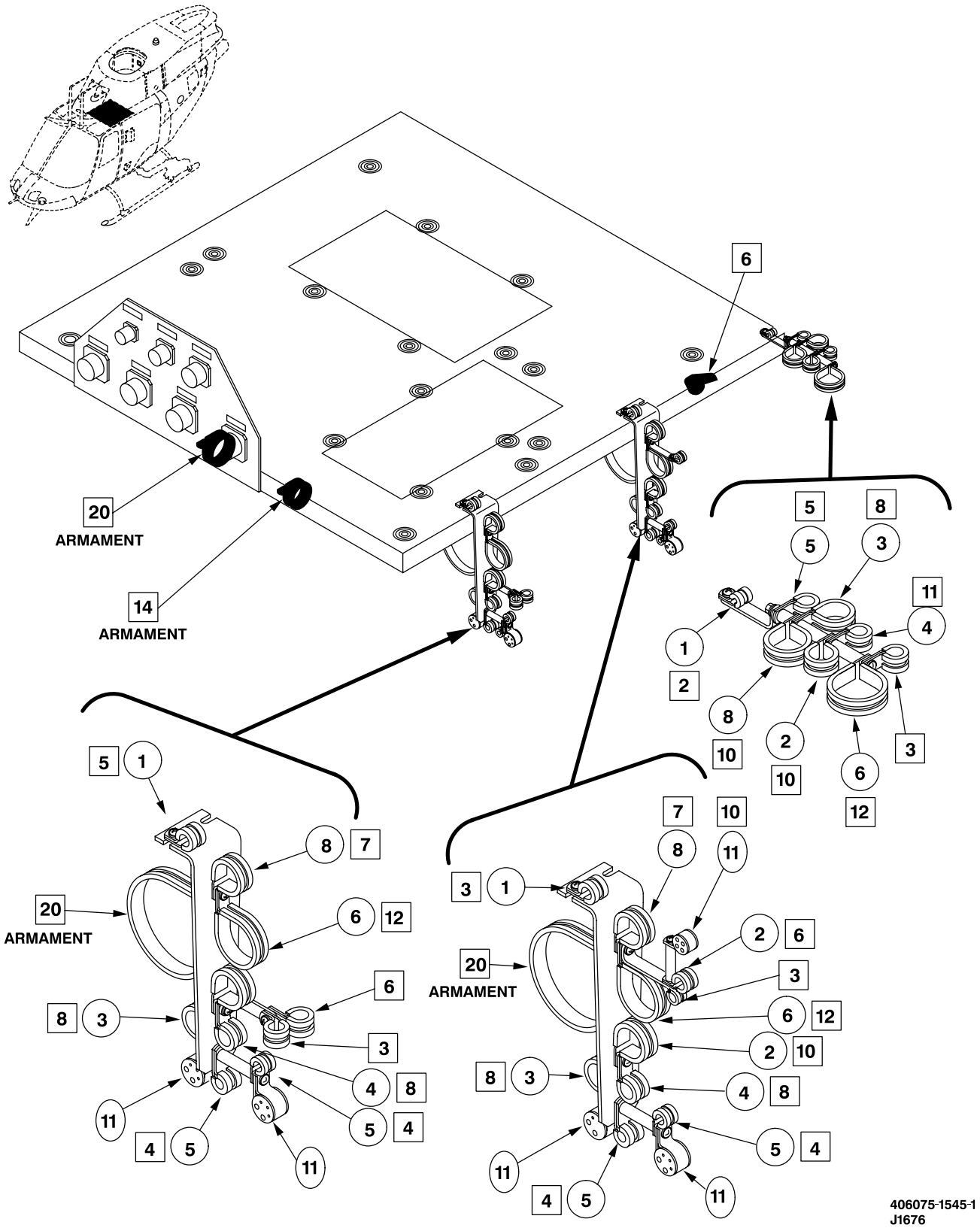


Figure F-17. Avionics Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 1 of 12)

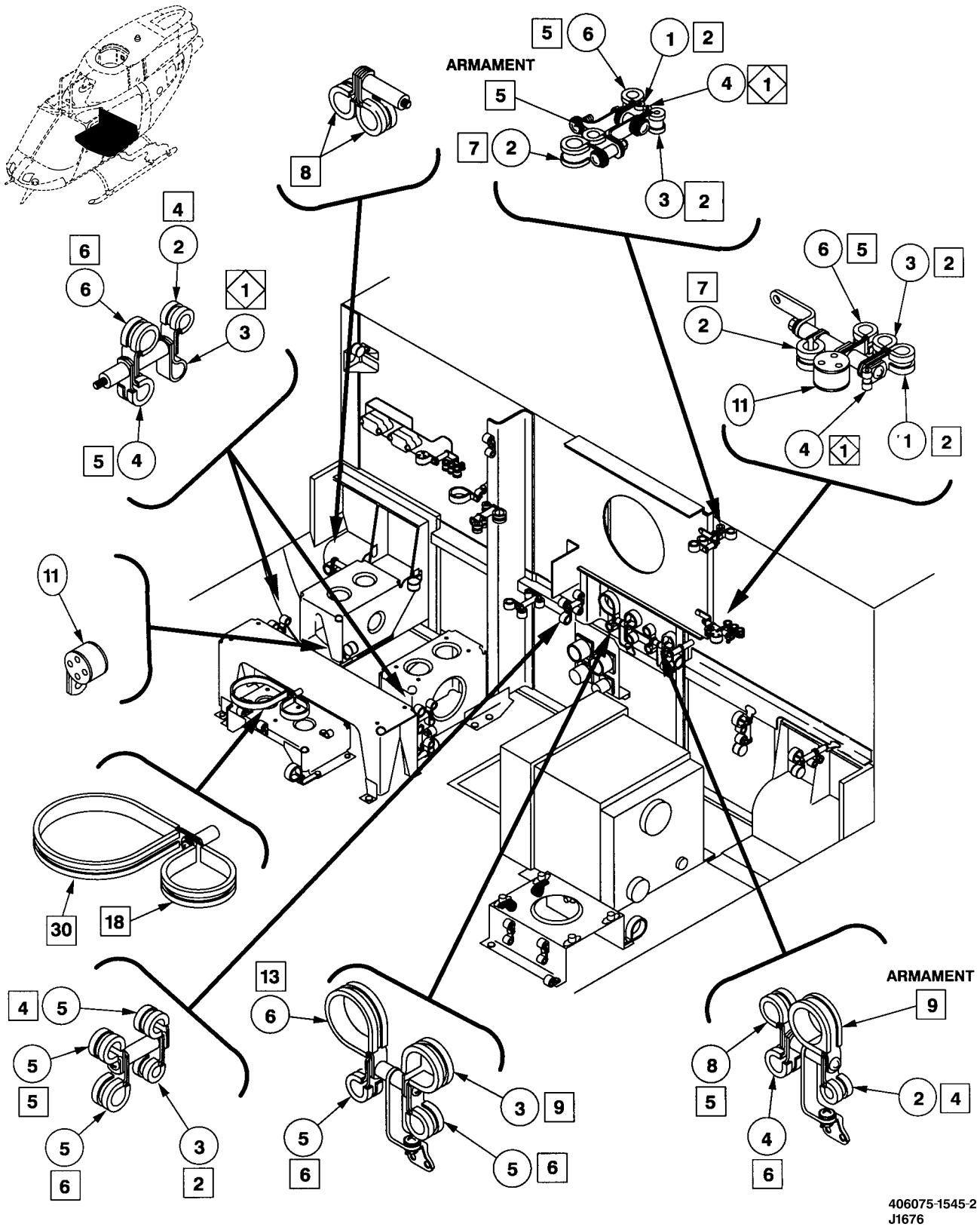


Figure F-17. Avionics Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 2 of 12)

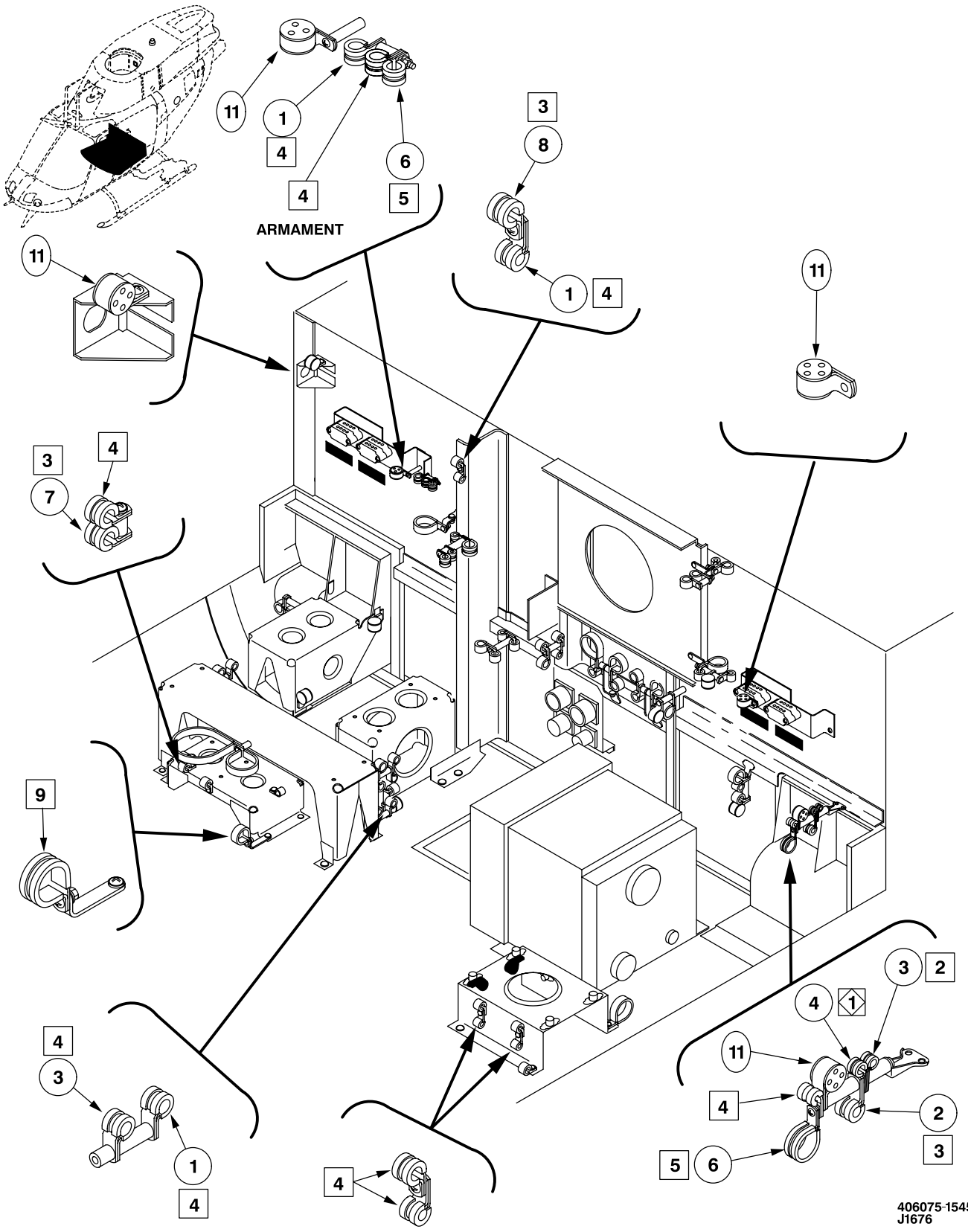


Figure F-17. Avionics Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 3 of 12)

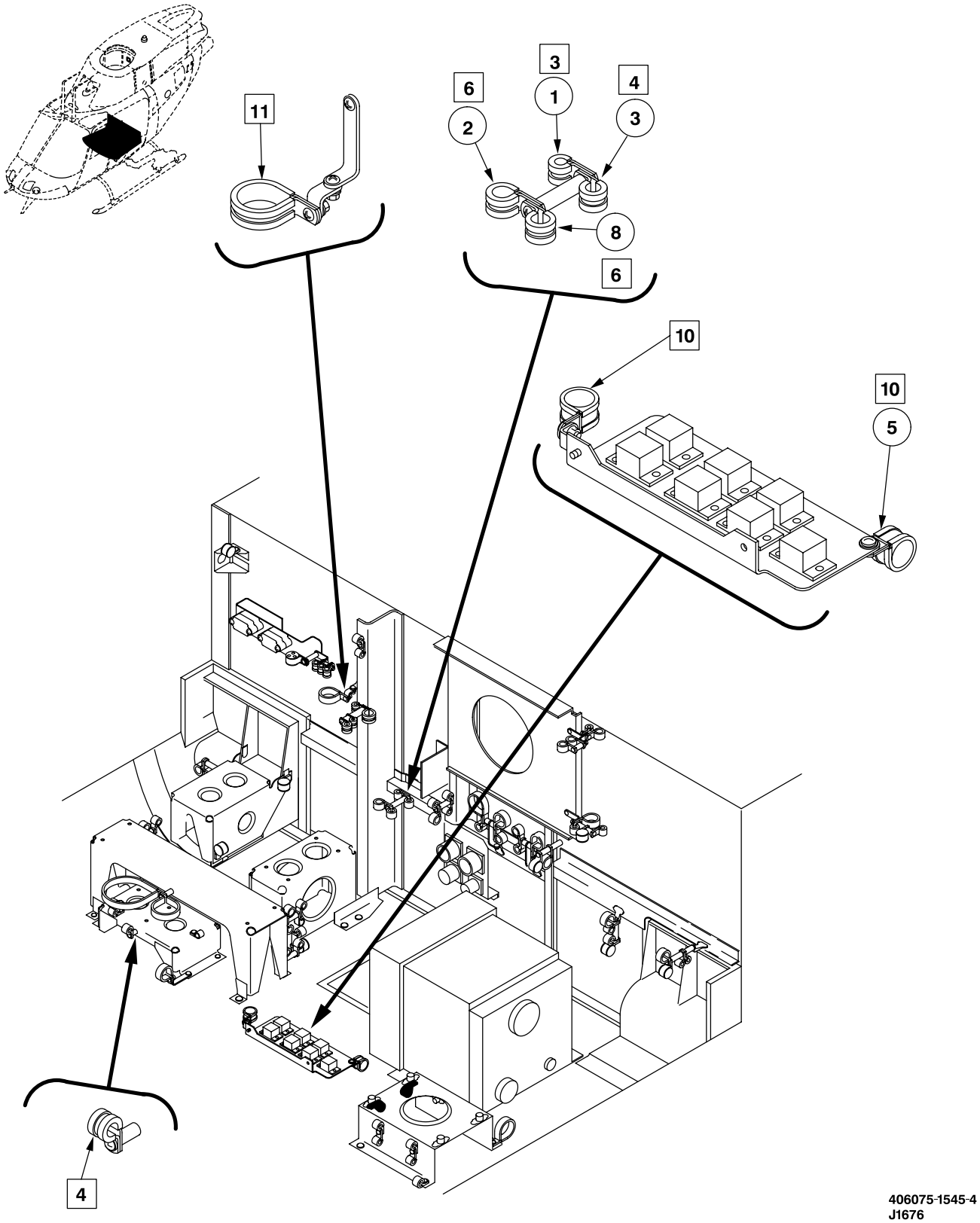


Figure F-17. Avionics Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 4 of 12)

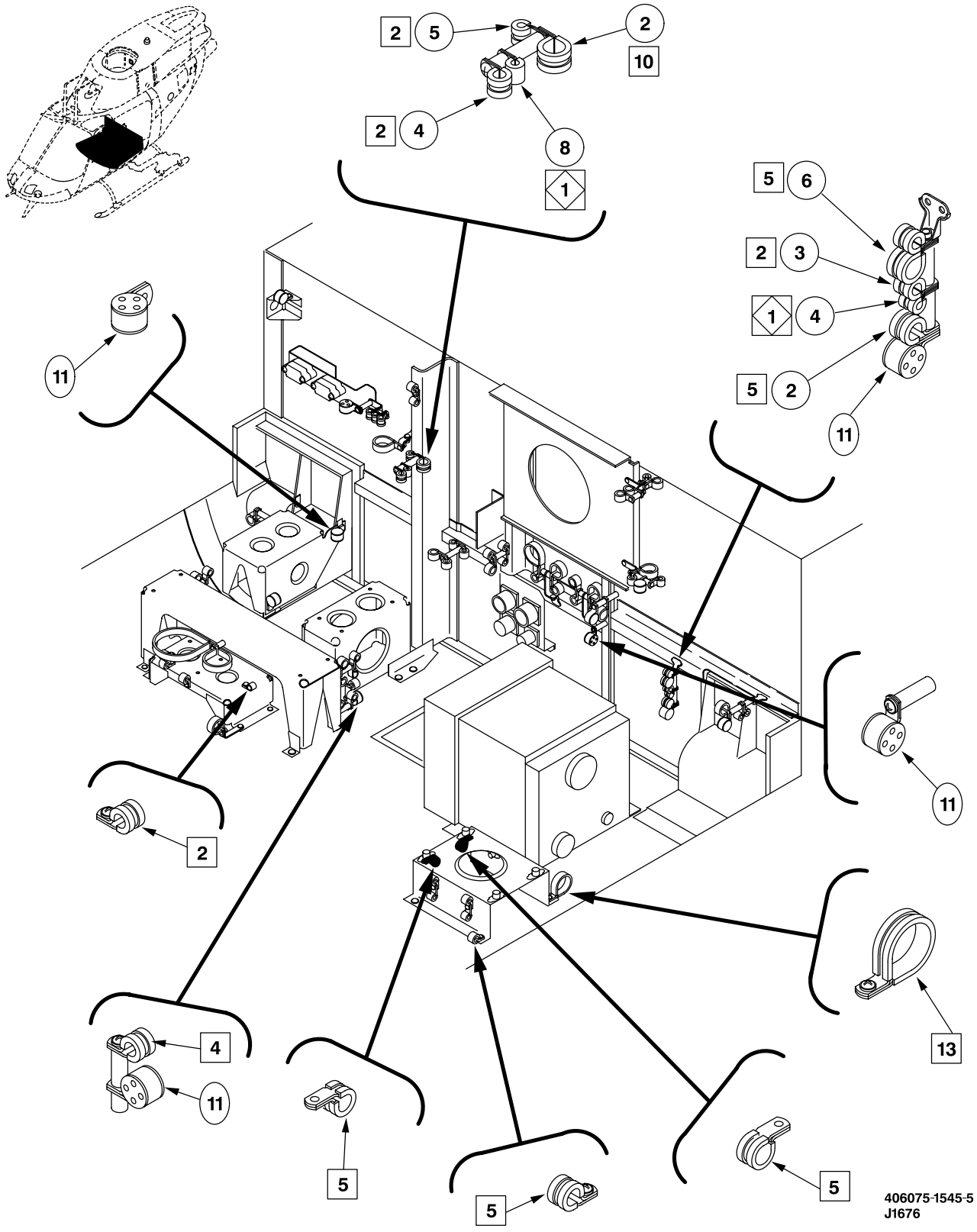


Figure F-17. Avionics Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 5 of 12)

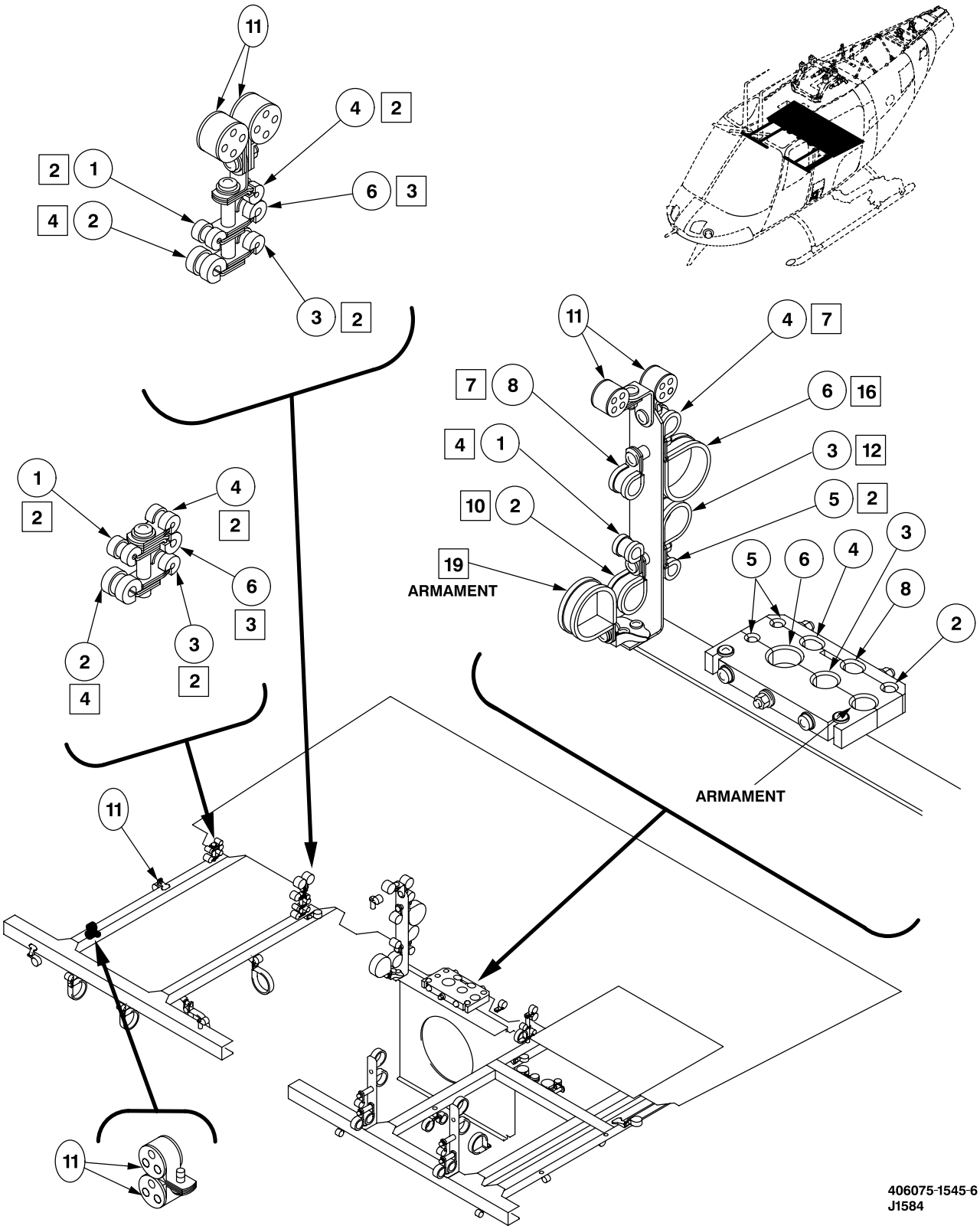


Figure F-17. Avionics Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 6 of 12)

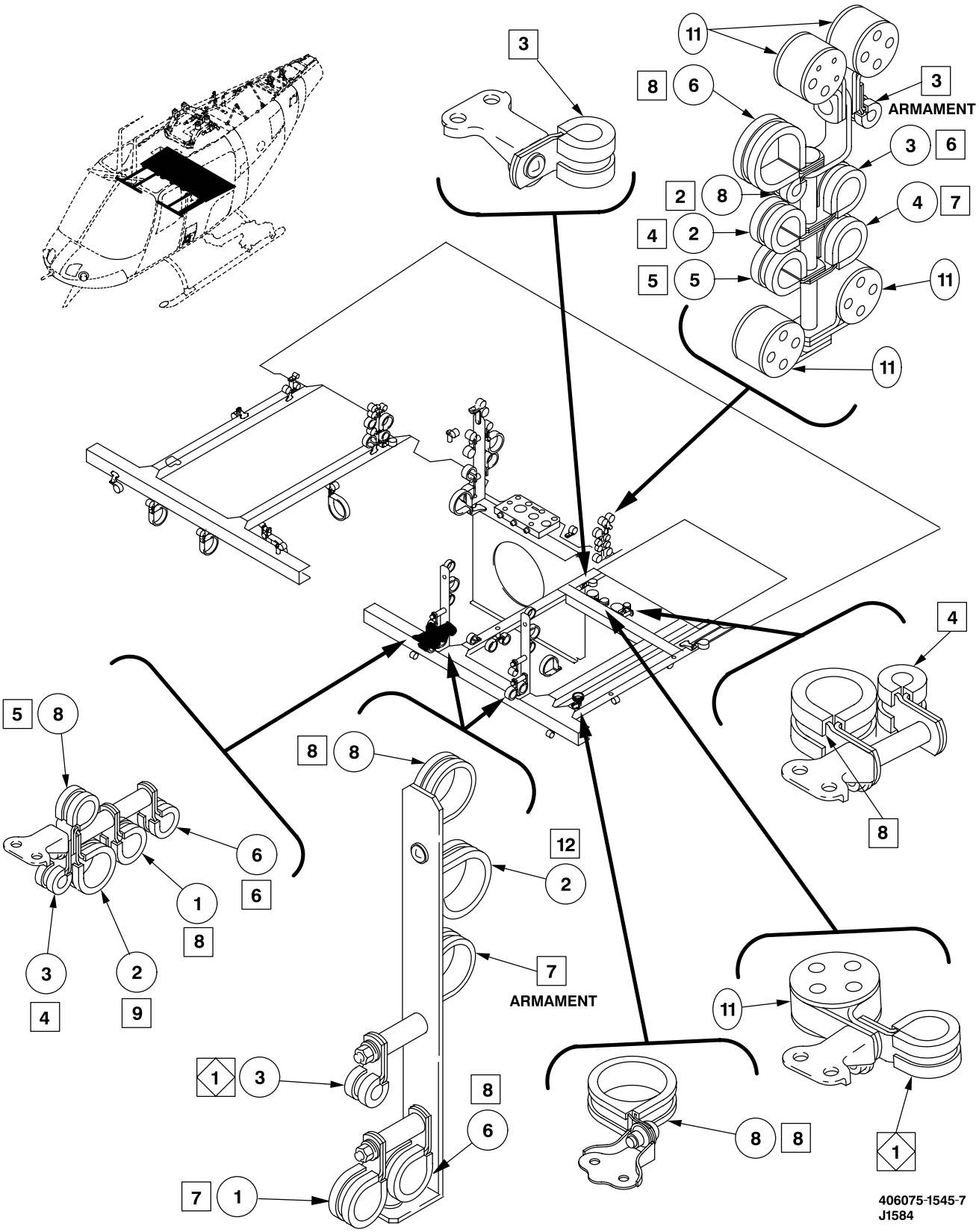


Figure F-17. Avionics Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 7 of 12)

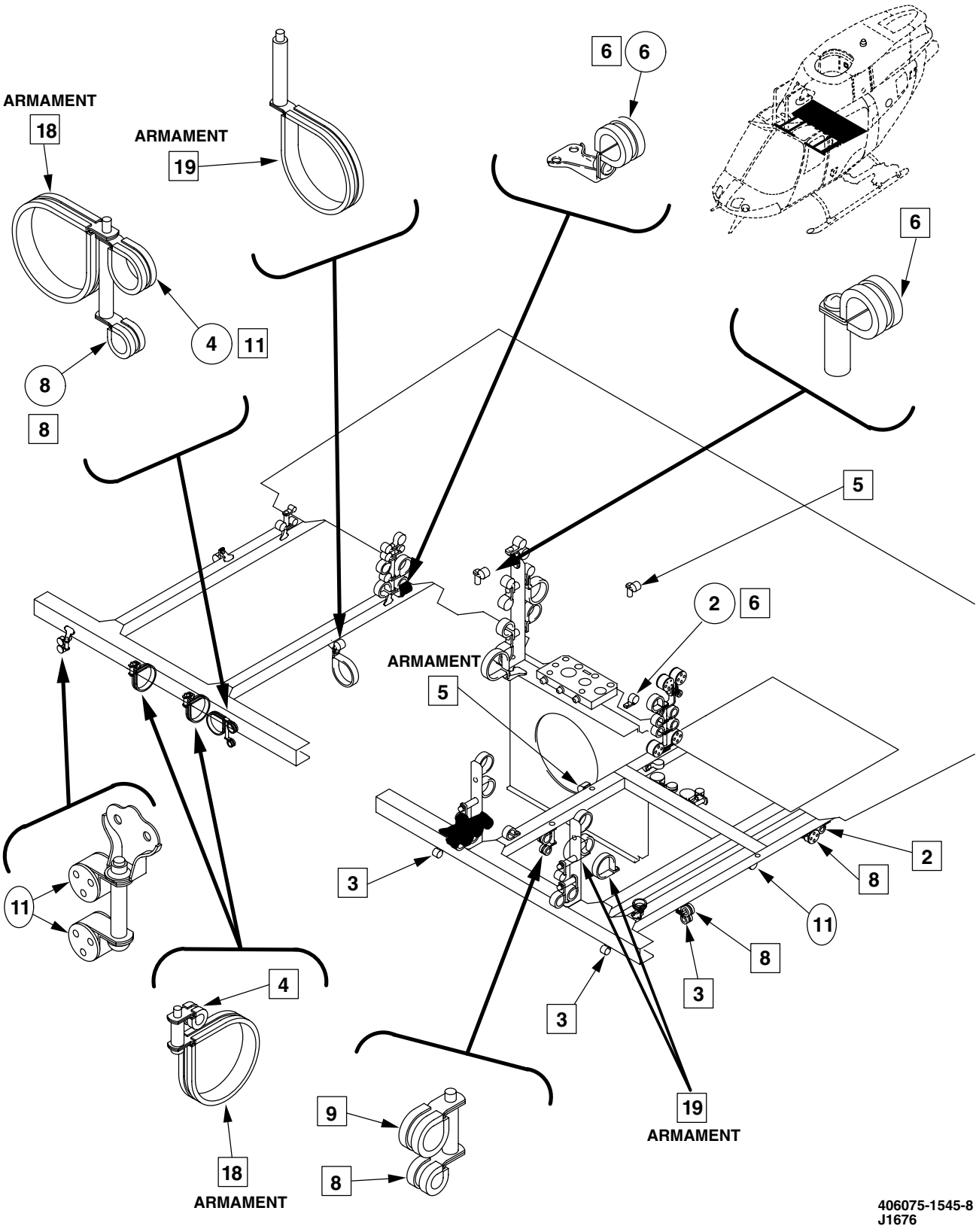


Figure F-17. Avionics Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 8 of 12)

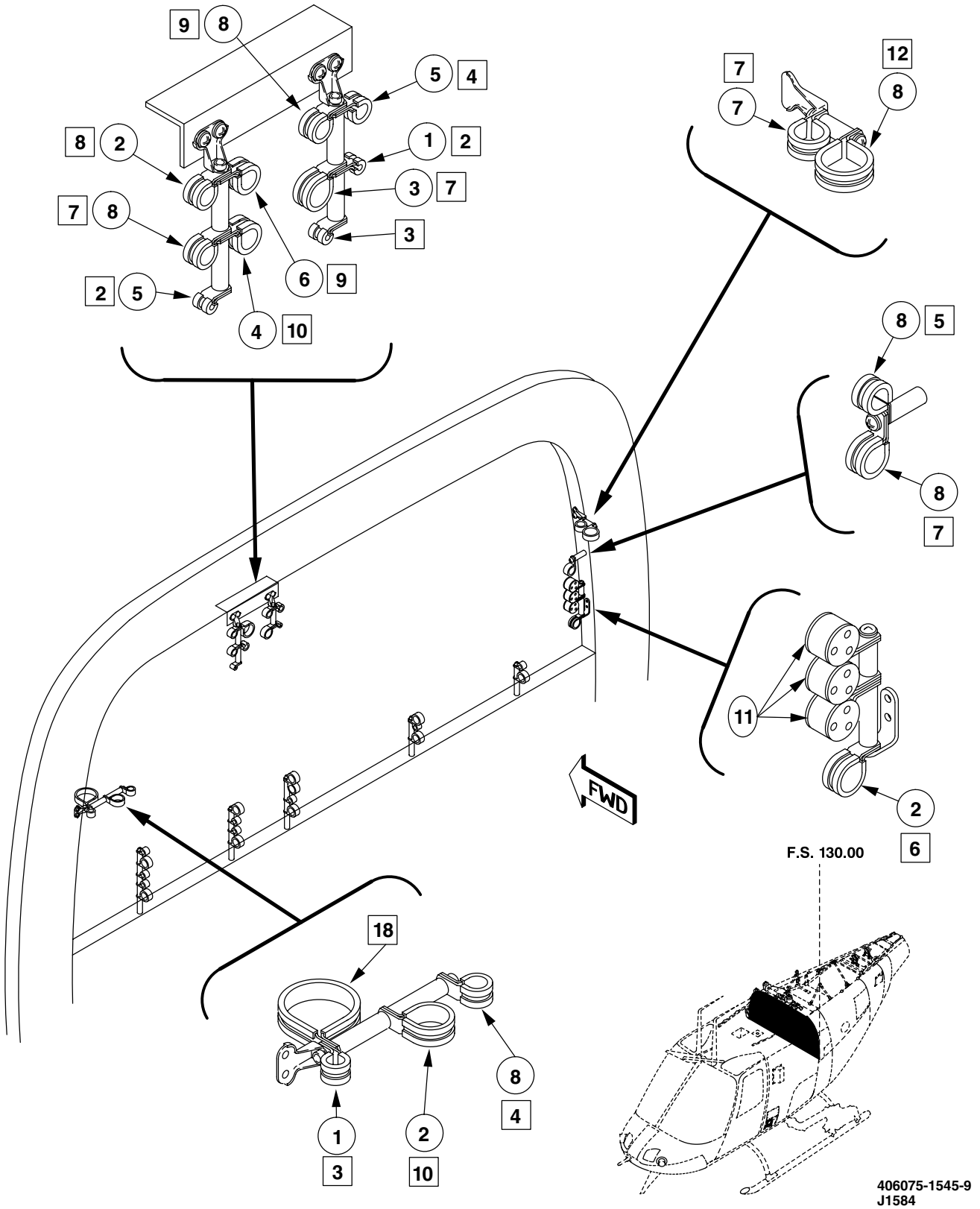


Figure F-17. Avionics Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 9 of 12)

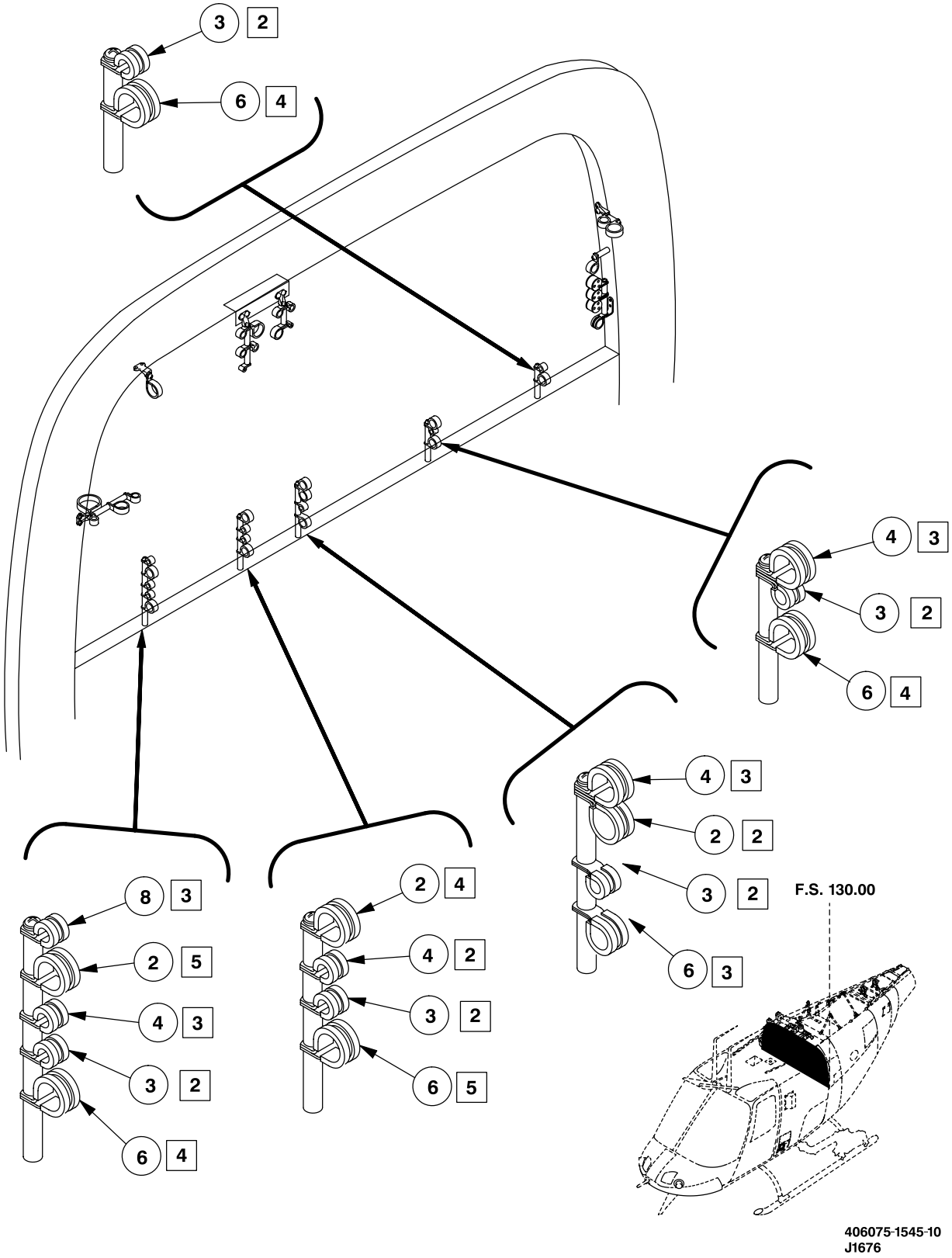


Figure F-17. Avionics Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 10 of 12)

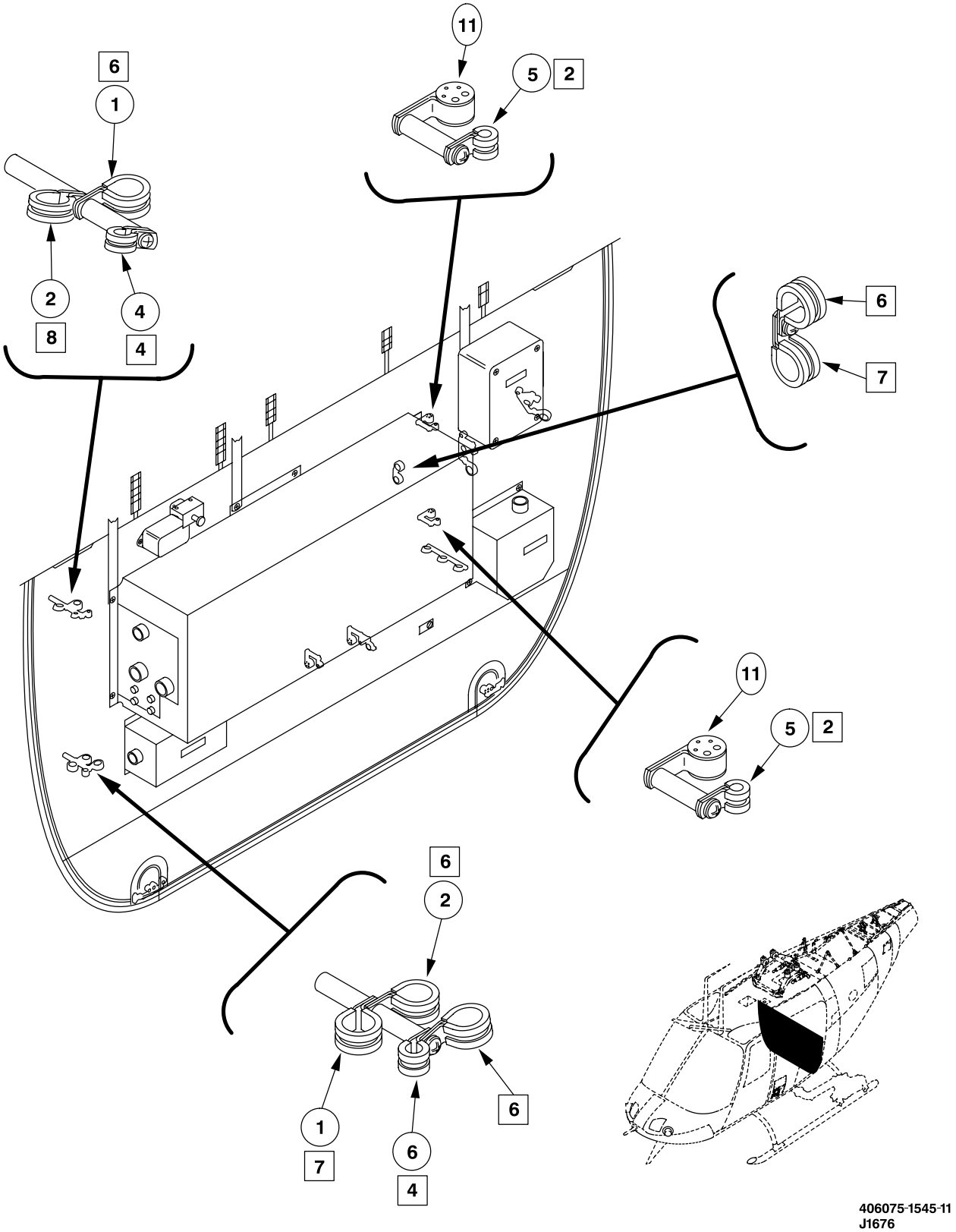


Figure F-17. Avionics Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 11 of 12)

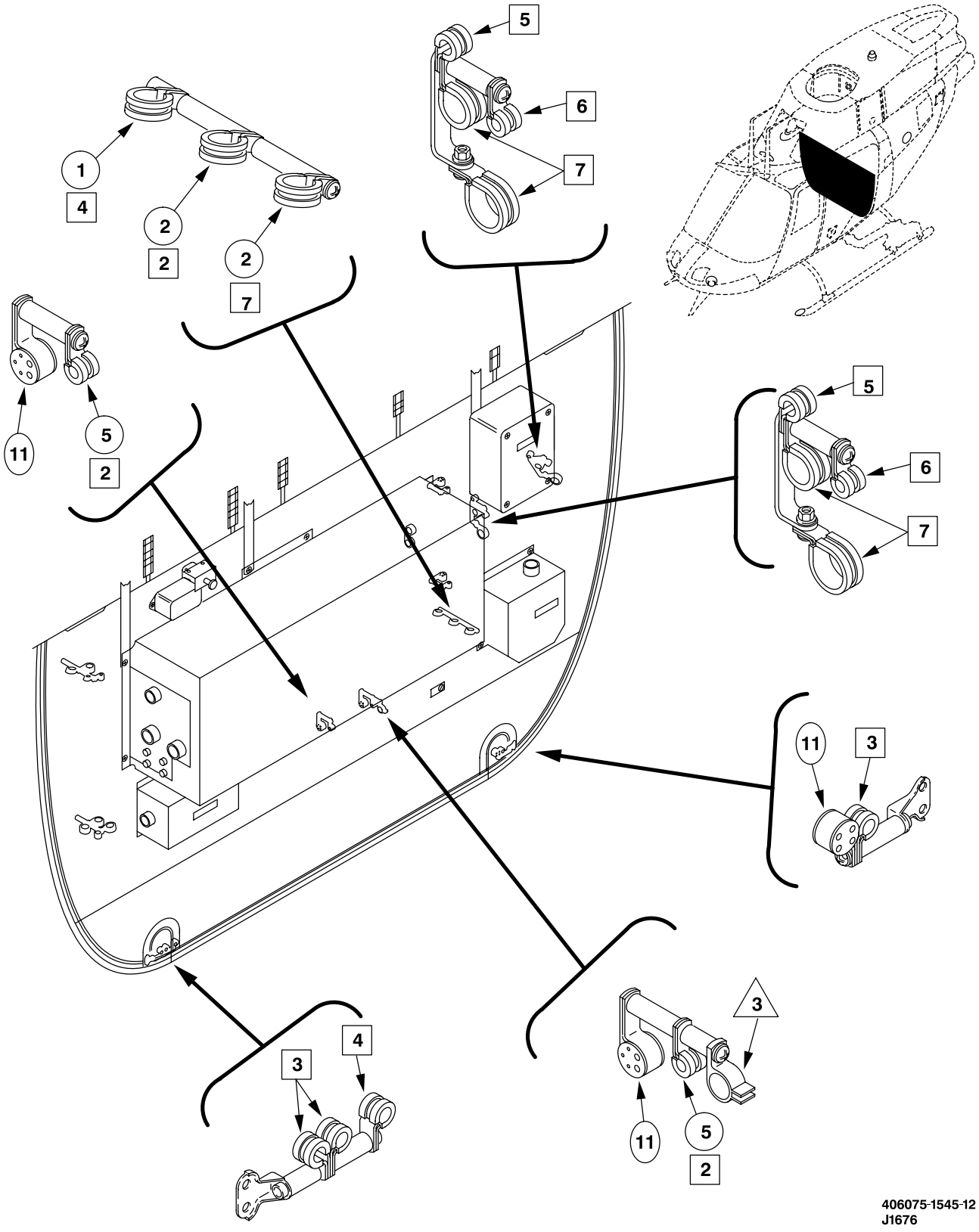


Figure F-17. Avionics Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 12 of 12)

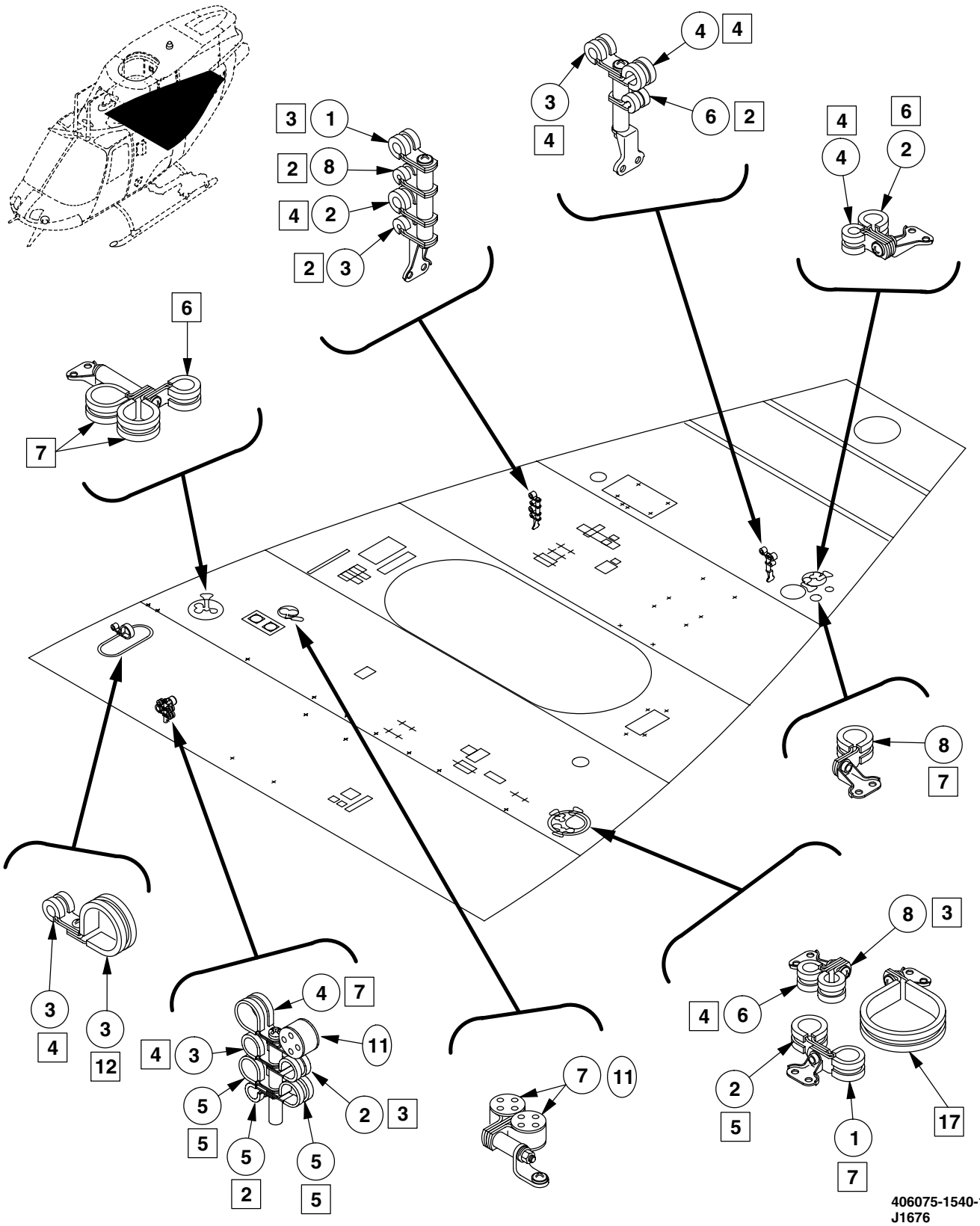


Figure F-18. Aft Electrical Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 1 of 14)

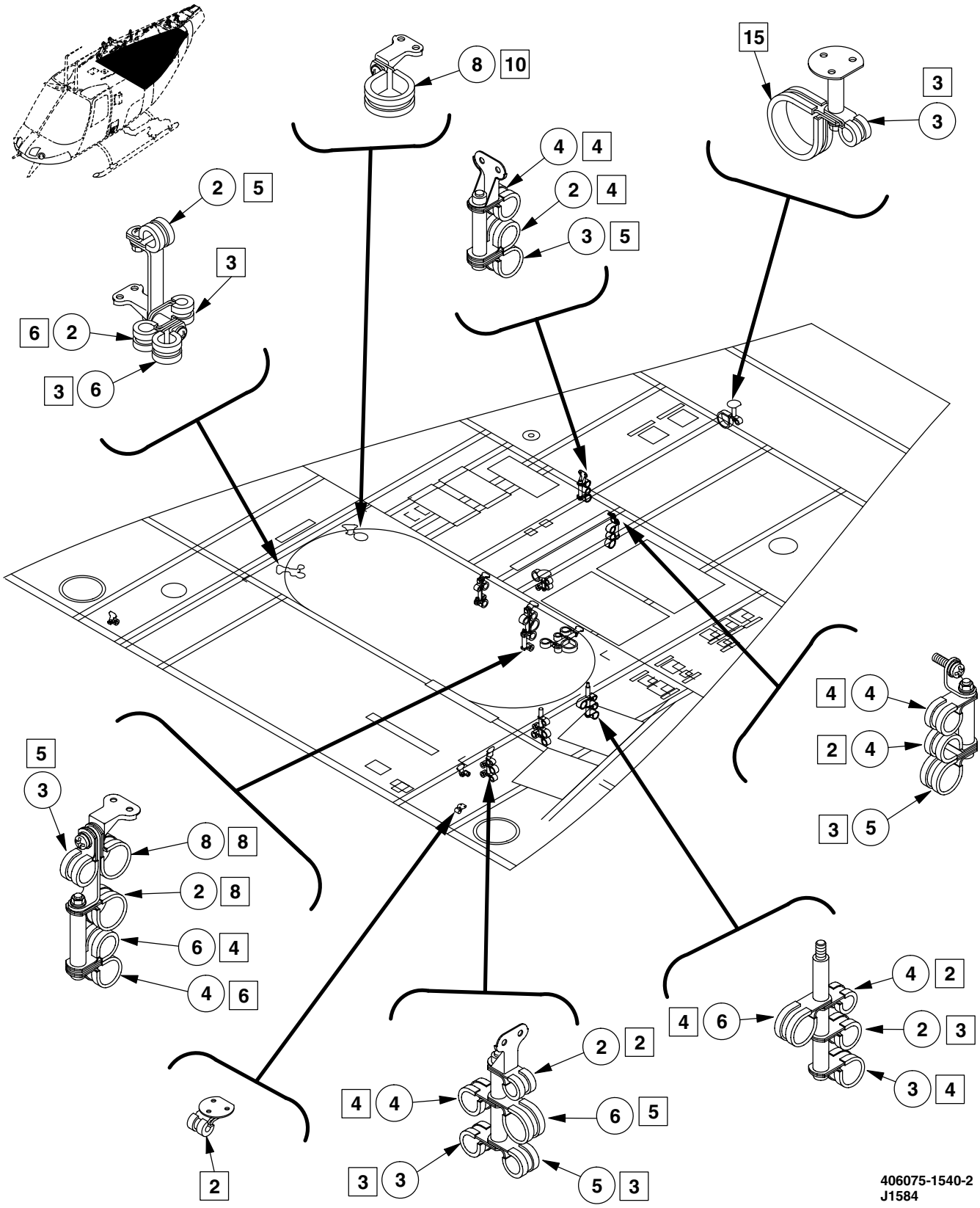


Figure F-18. Aft Electrical Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 2 of 14)

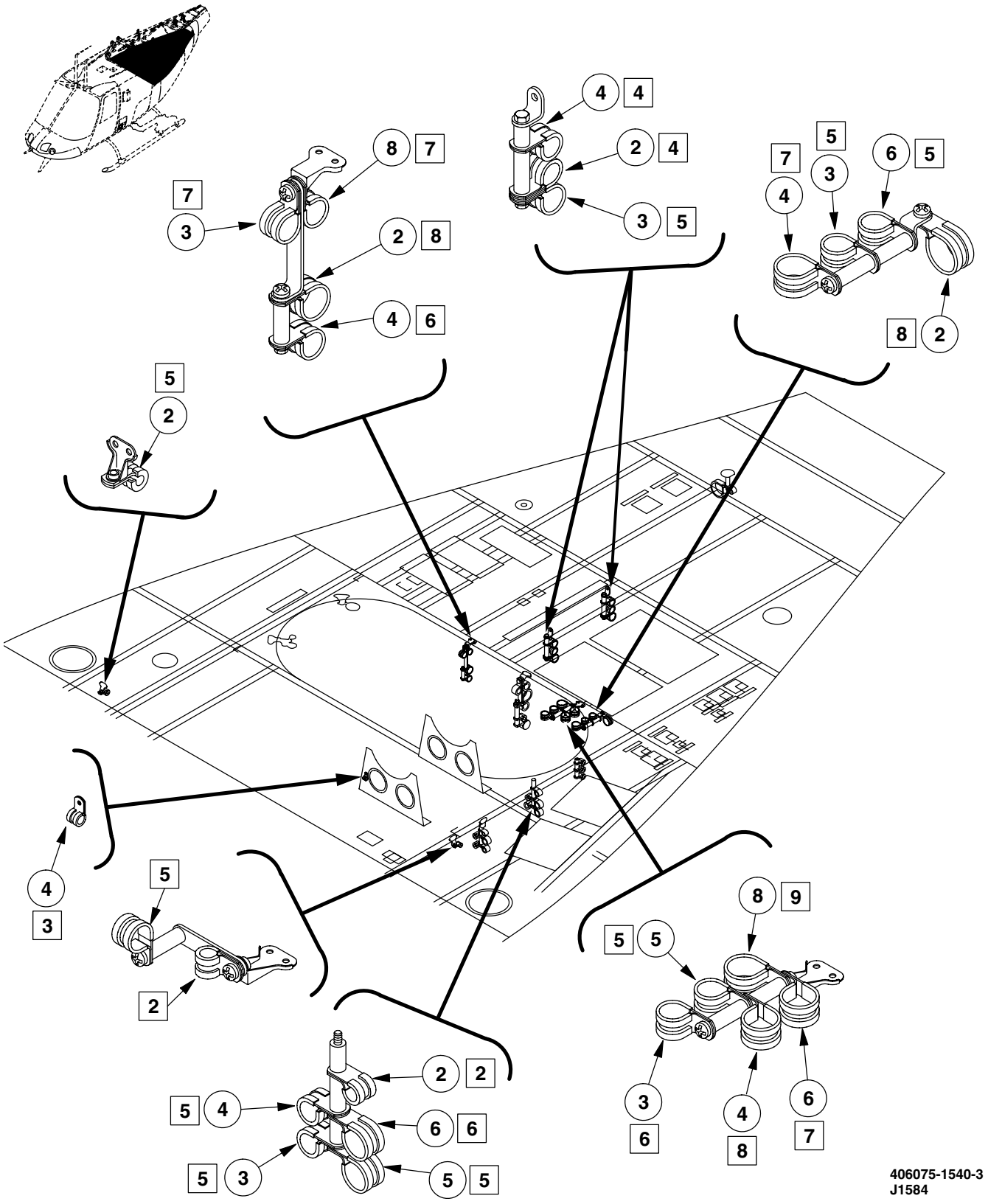


Figure F-18. Aft Electrical Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 3 of 14)

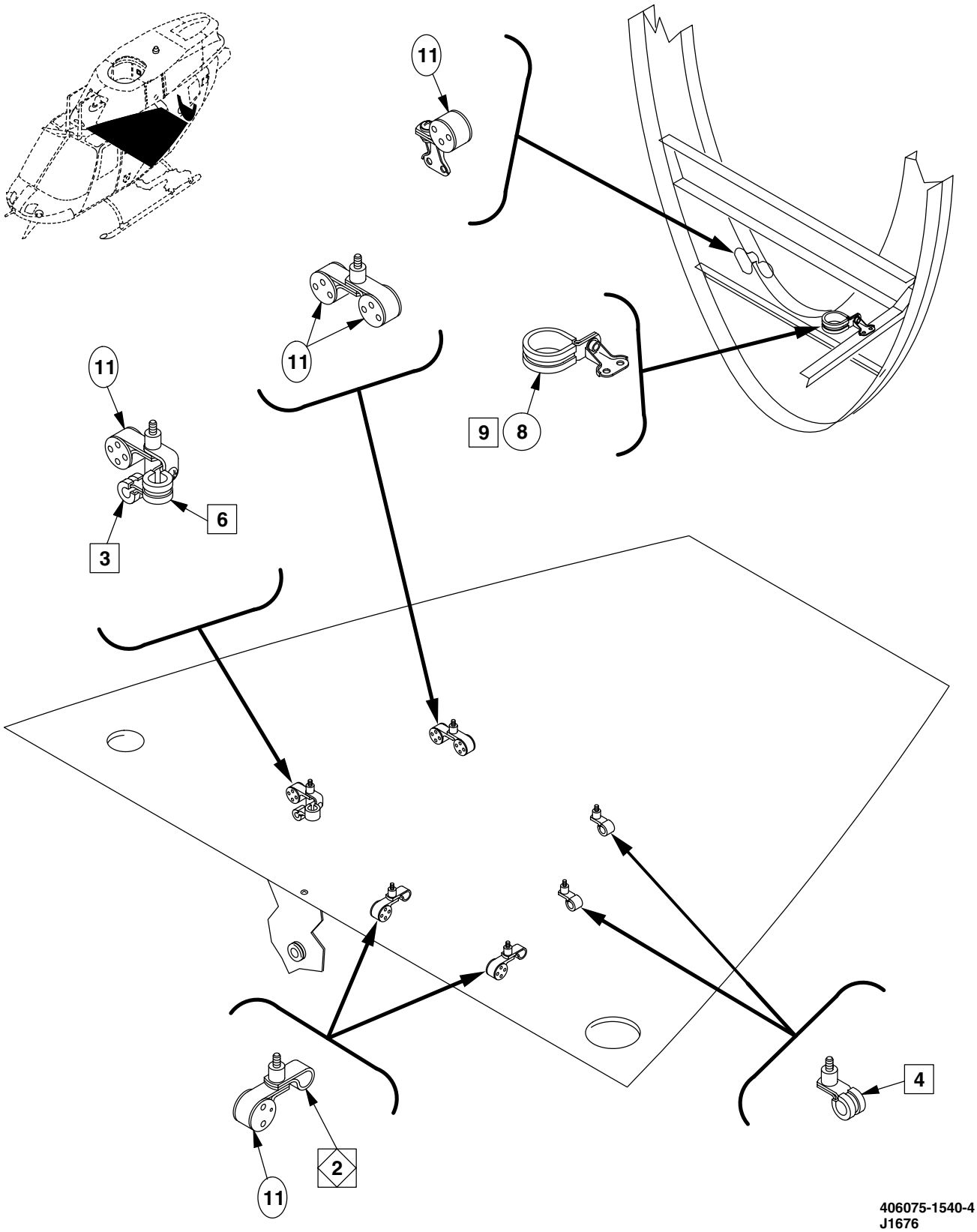


Figure F-18. Aft Electrical Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 4 of 14)

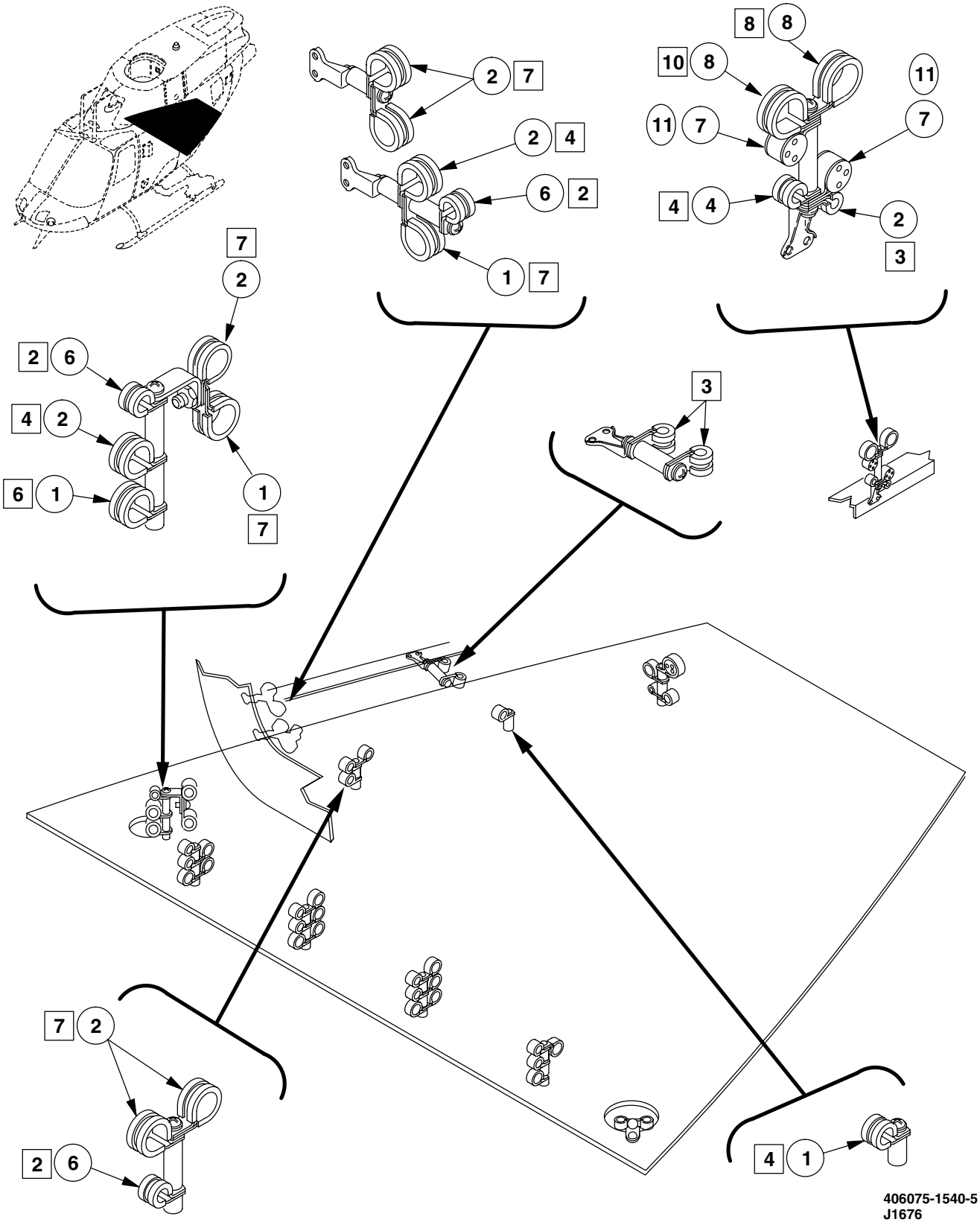


Figure F-18. Aft Electrical Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 5 of 14)

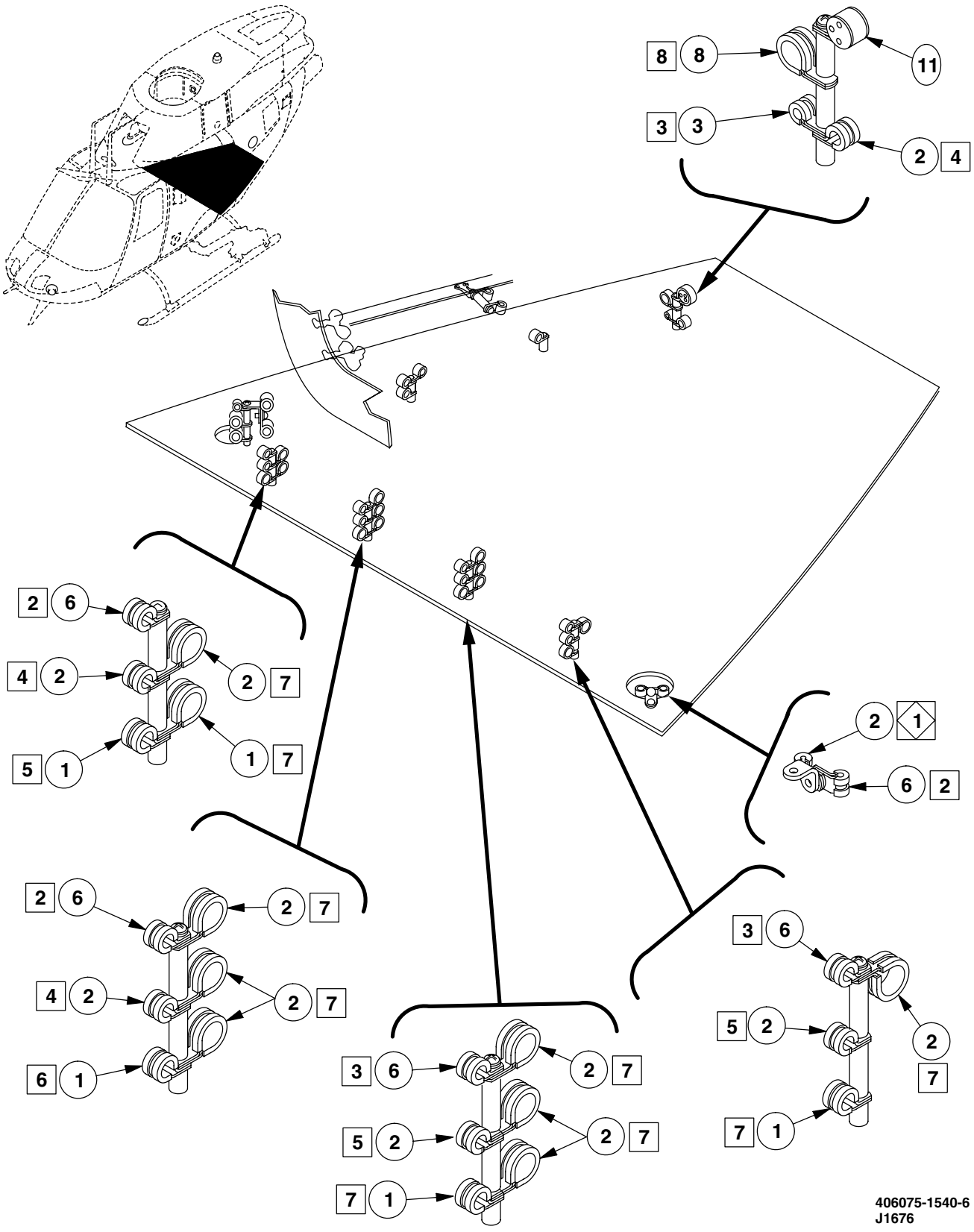


Figure F-18. Aft Electrical Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 6 of 14)

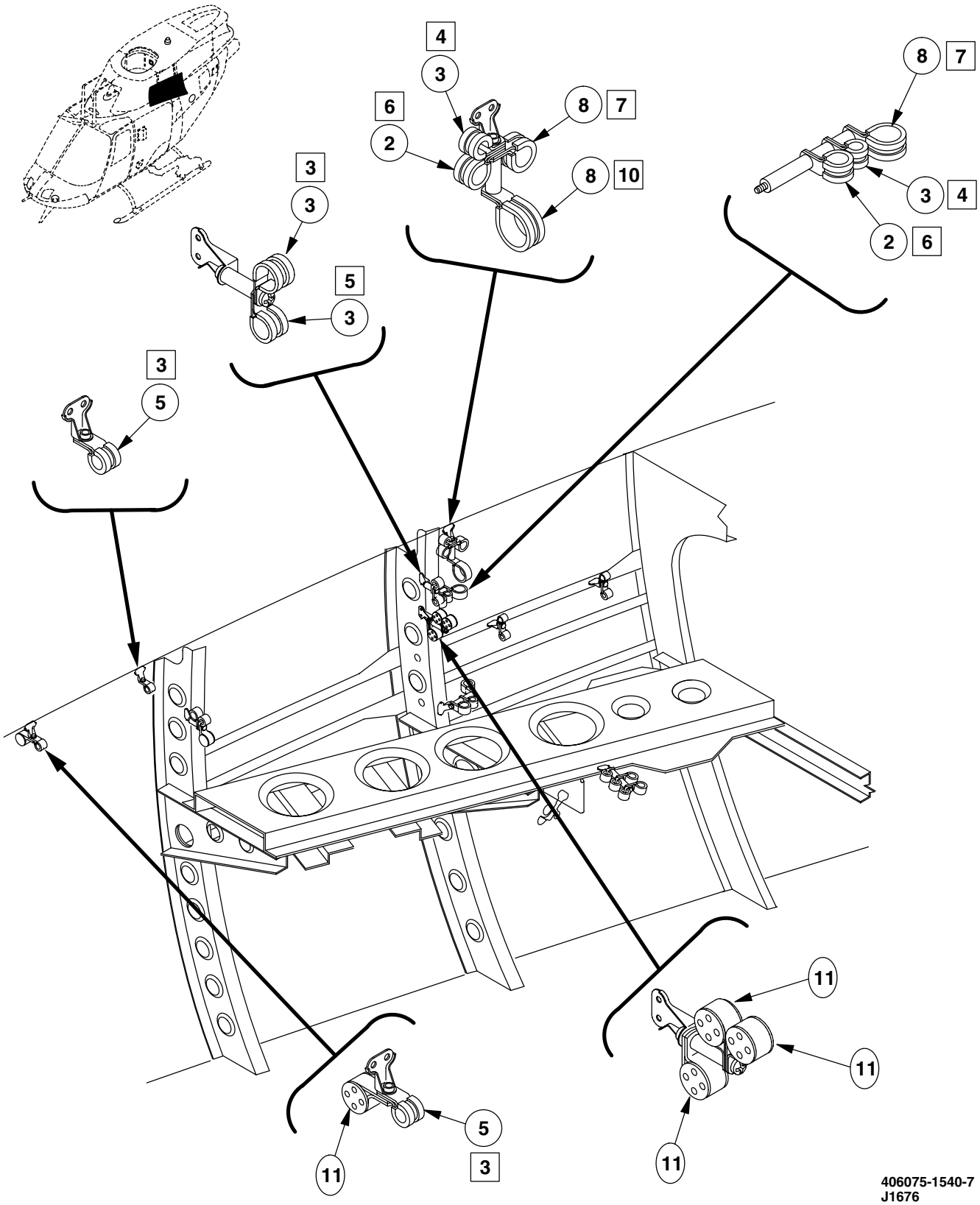


Figure F-18. Aft Electrical Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 7 of 14)

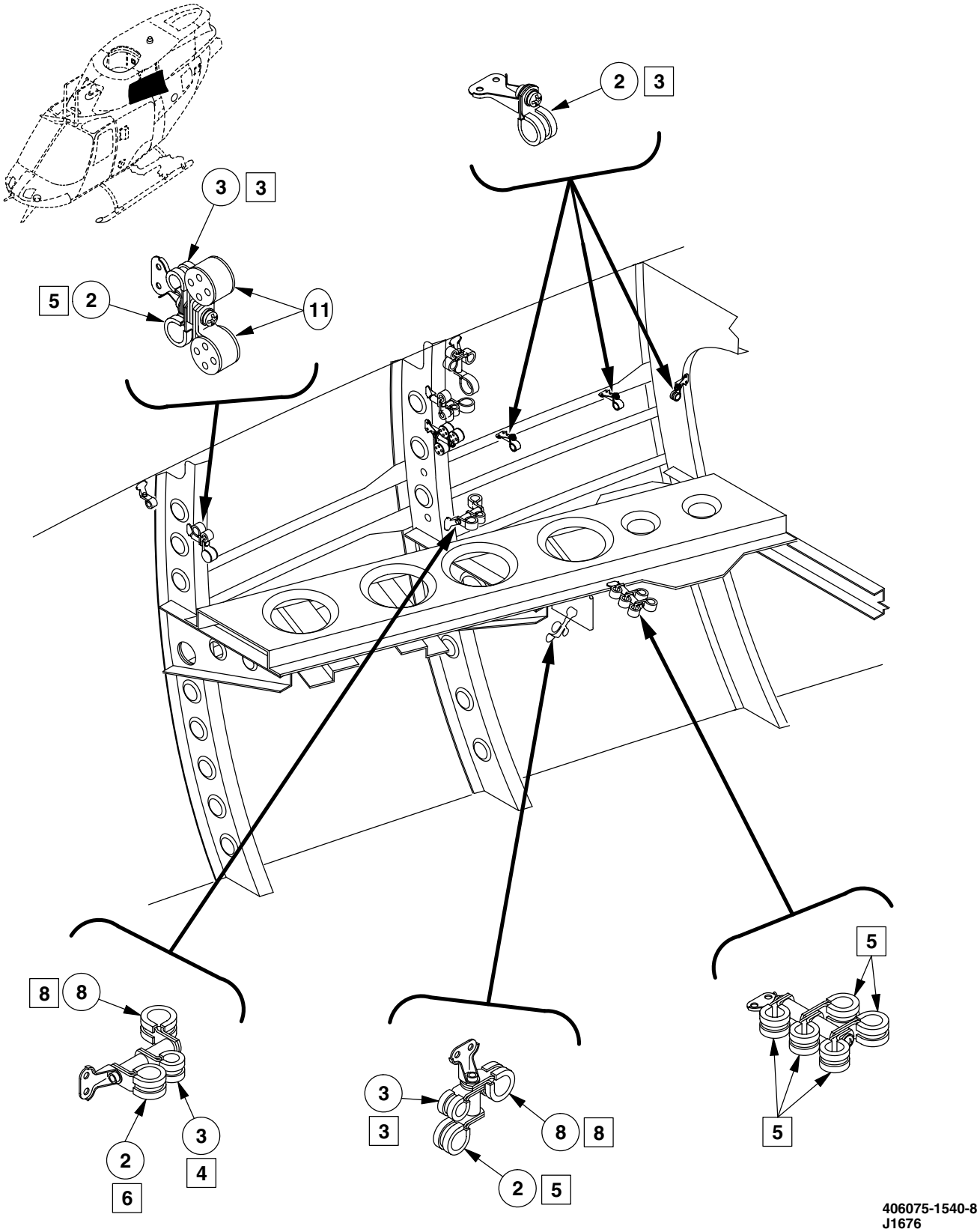


Figure F-18. Aft Electrical Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 8 of 14)

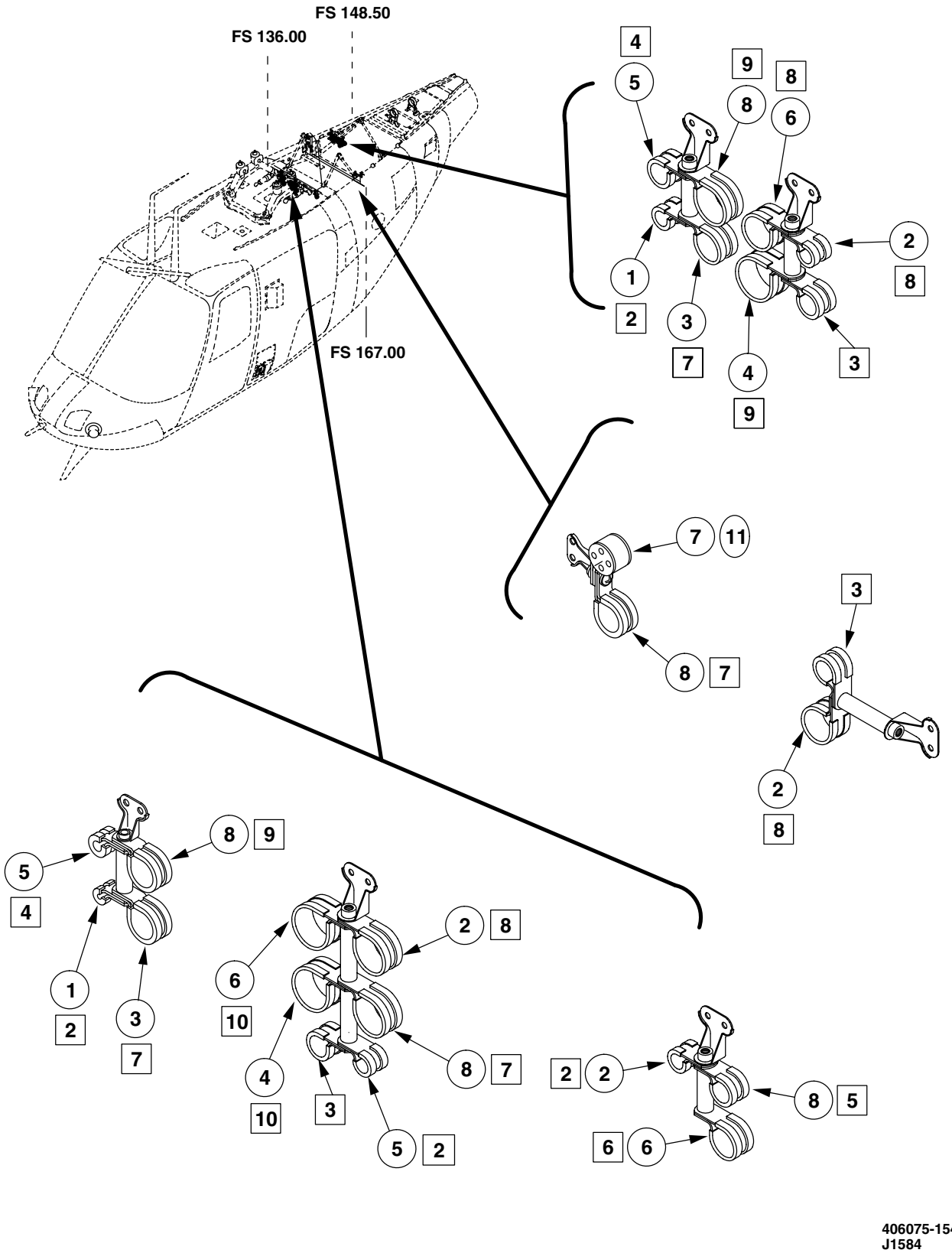


Figure F-18. Aft Electrical Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 9 of 14)

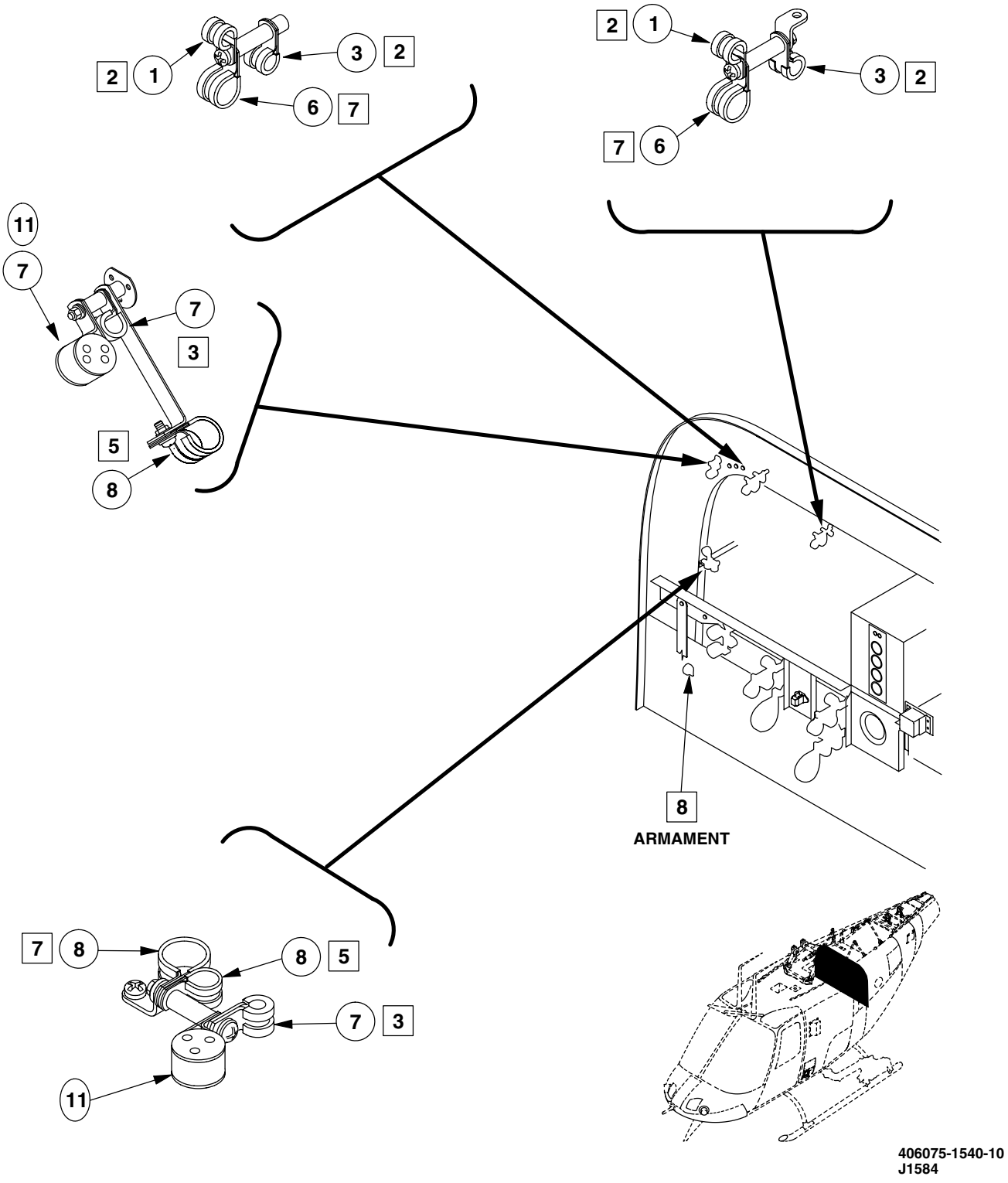


Figure F-18. Aft Electrical Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 10 of 14)

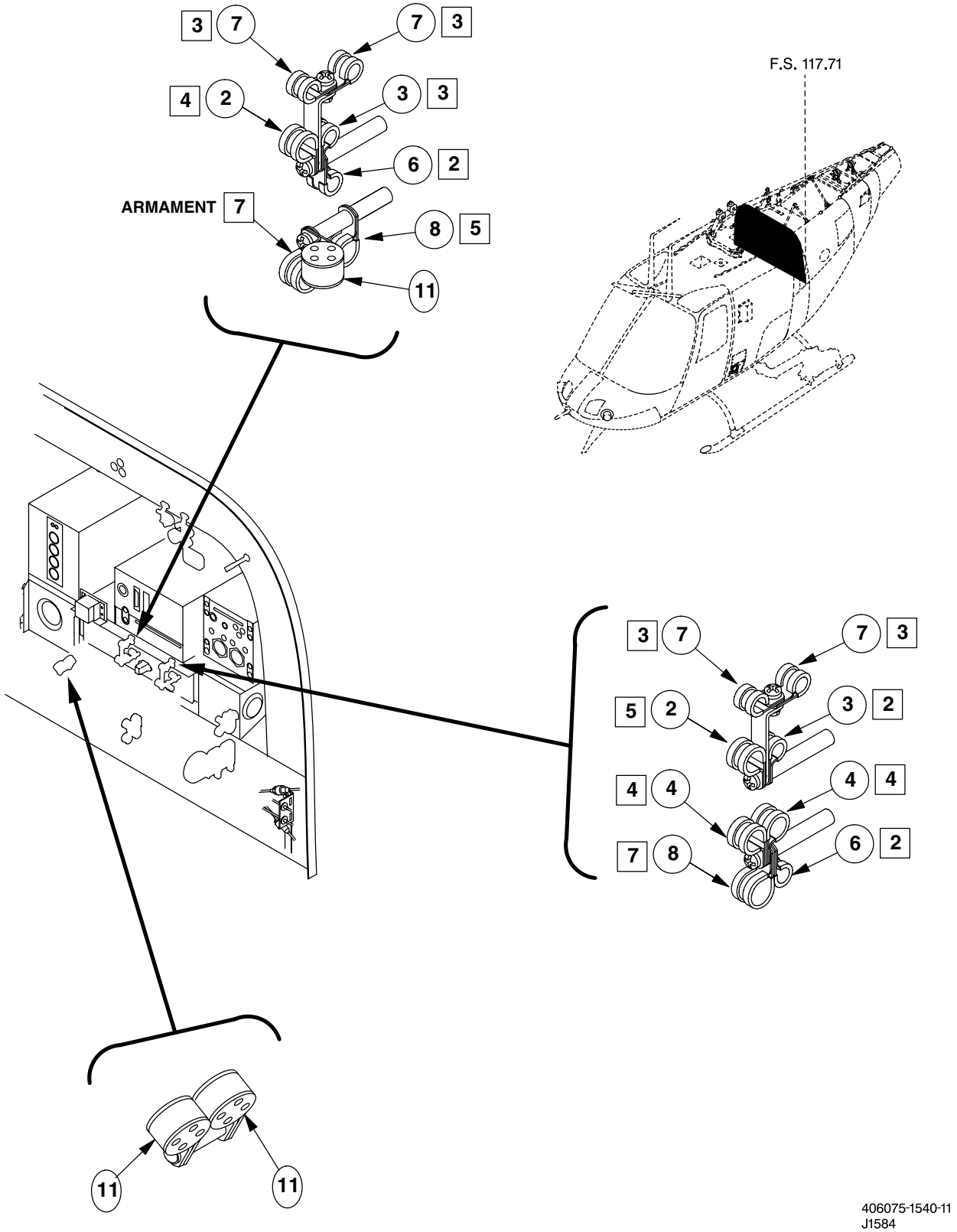


Figure F-18. Aft Electrical Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 11 of 14)

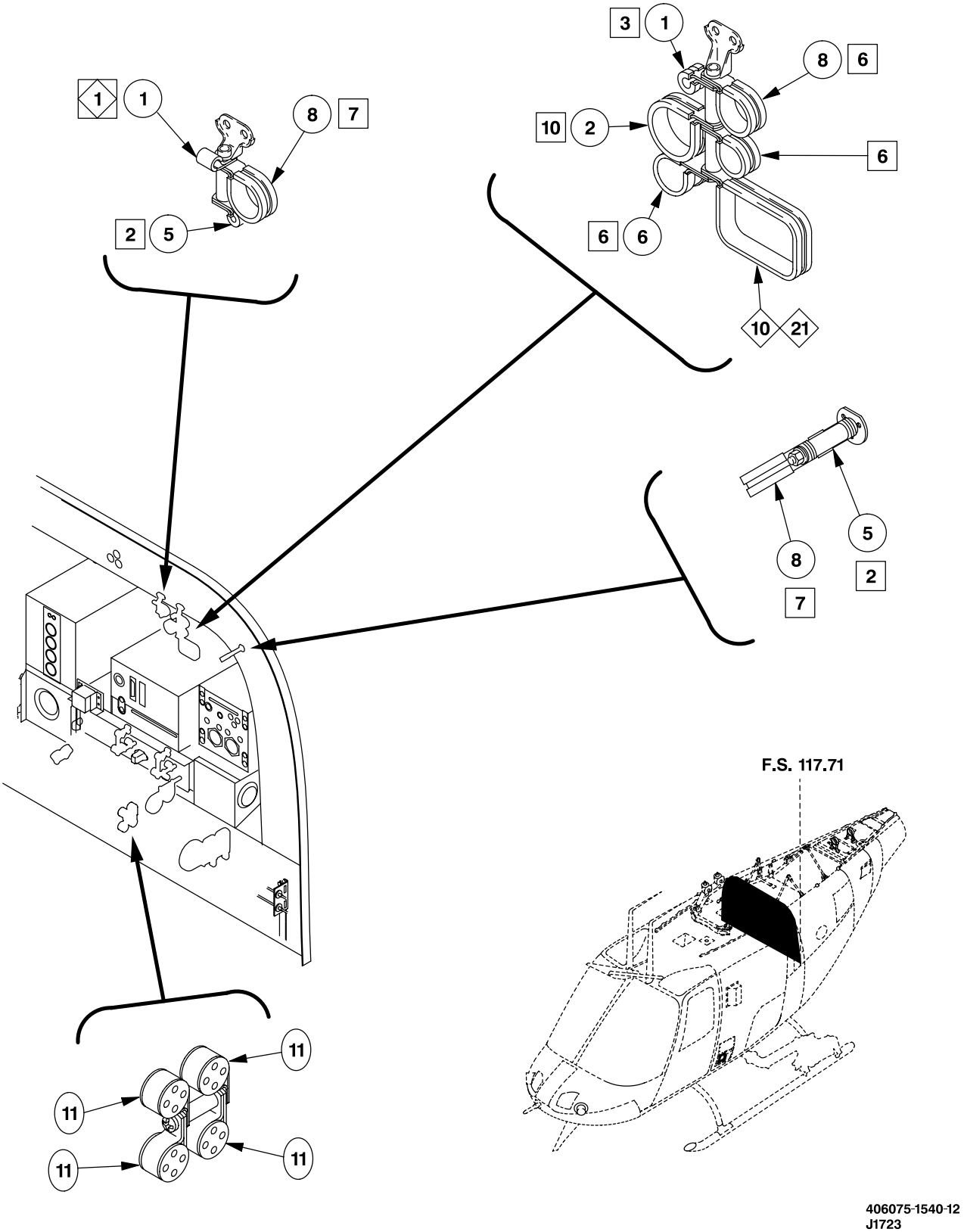


Figure F-18. Aft Electrical Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 12 of 14)

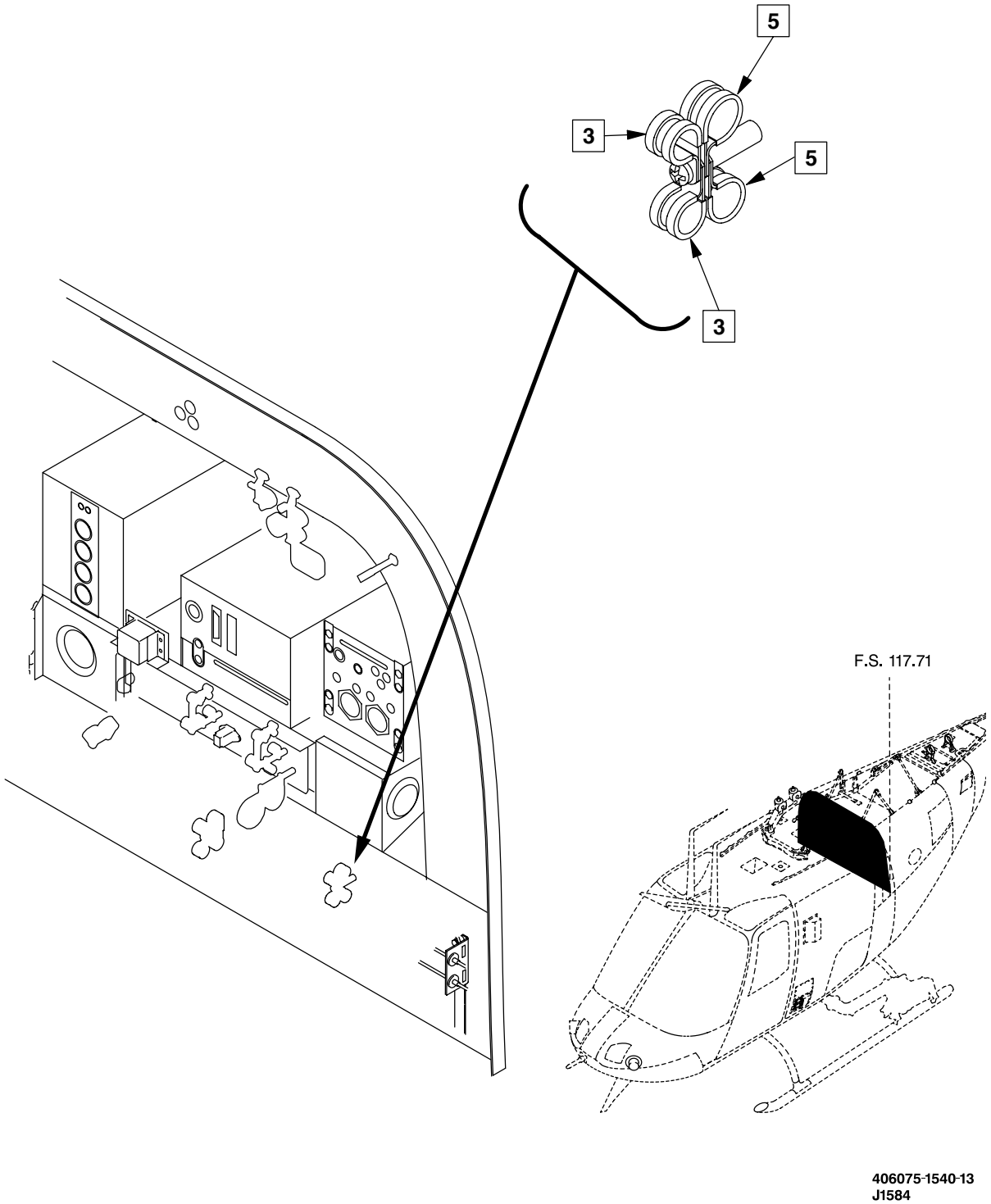


Figure F-18. Aft Electrical Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 13 of 14)

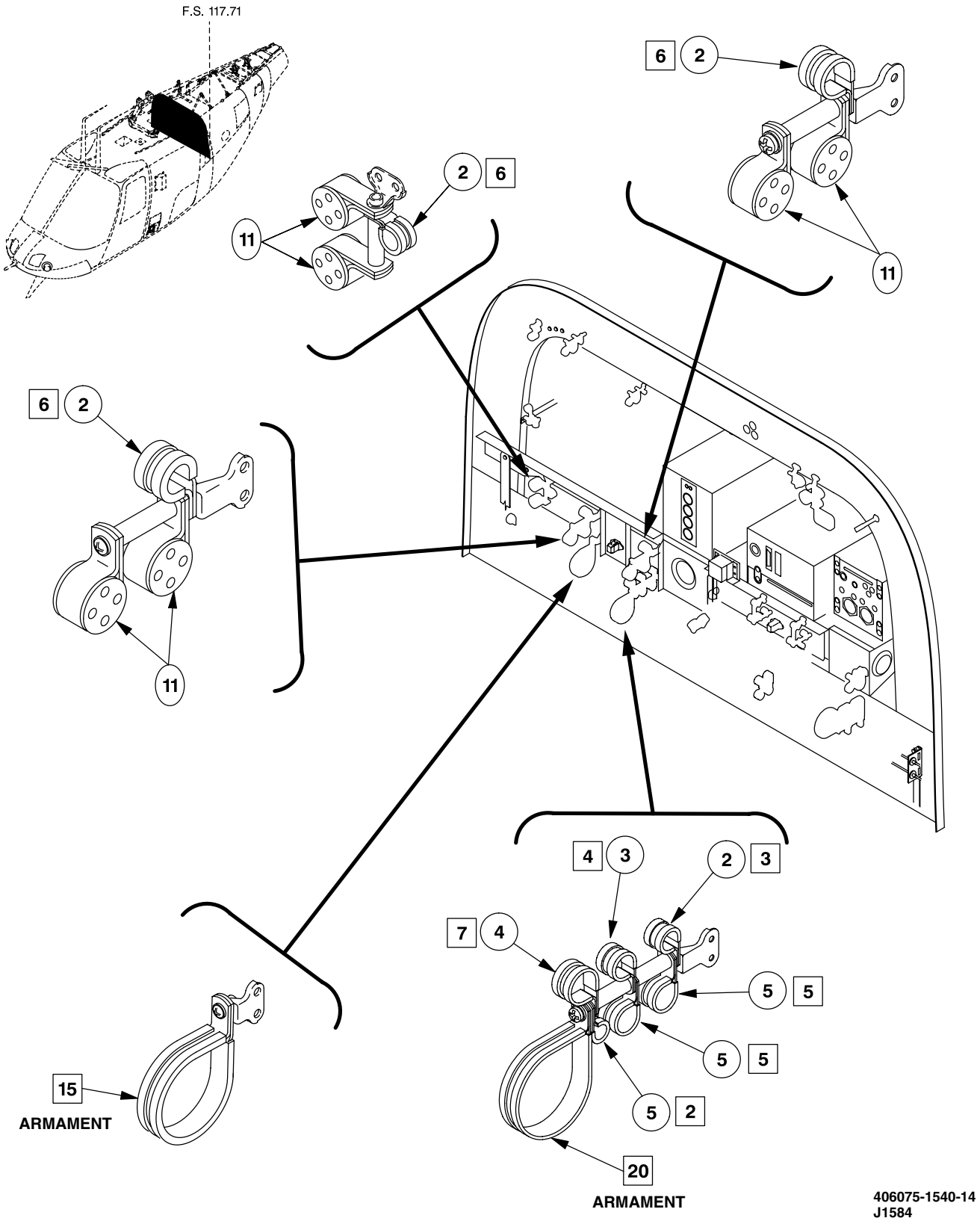


Figure F-18. Aft Electrical Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 14 of 14)

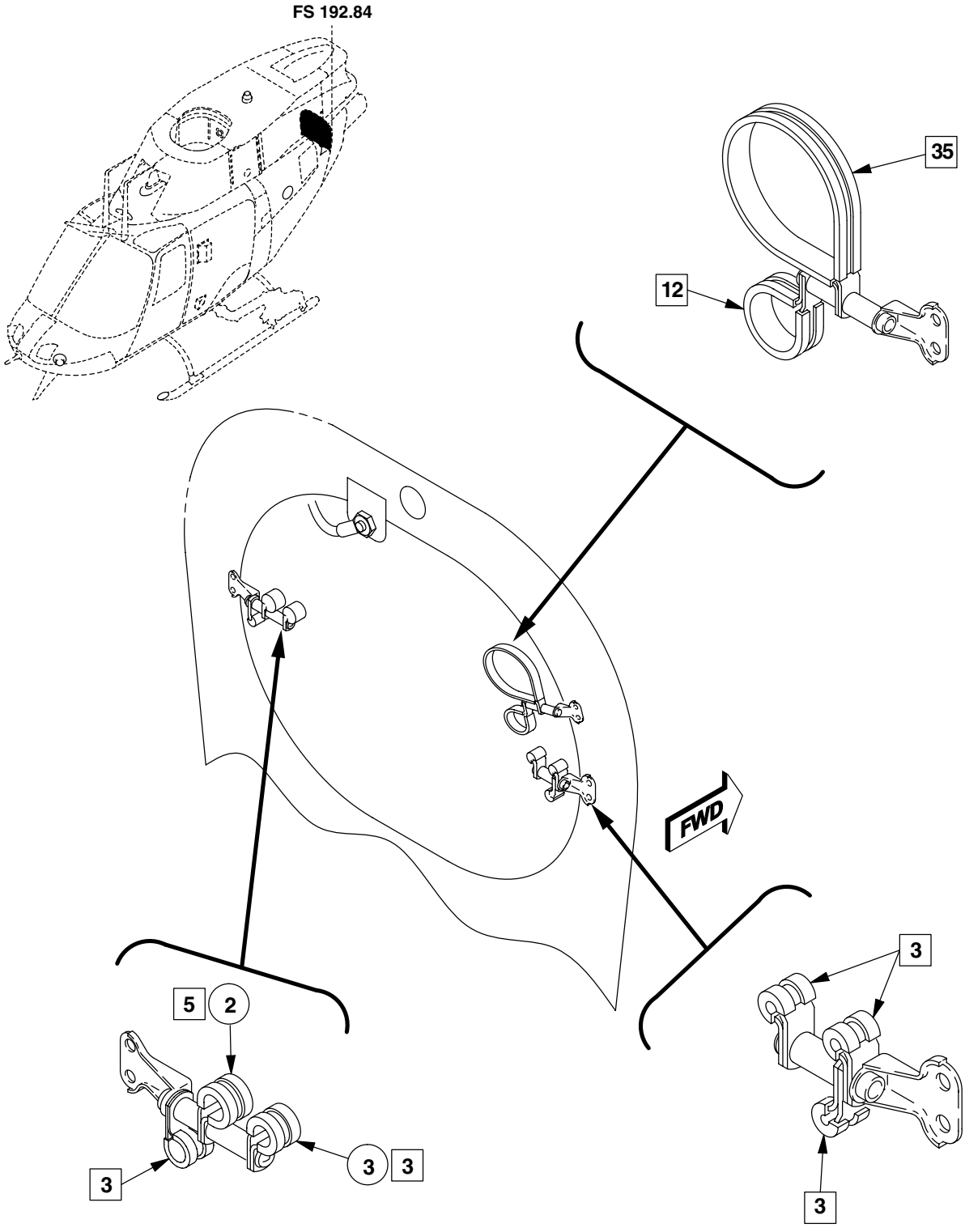


Figure F-19. Aft Fuselage Electrical Clamping and Routing (OH-58D(R)) (Sheet 1 of 7)

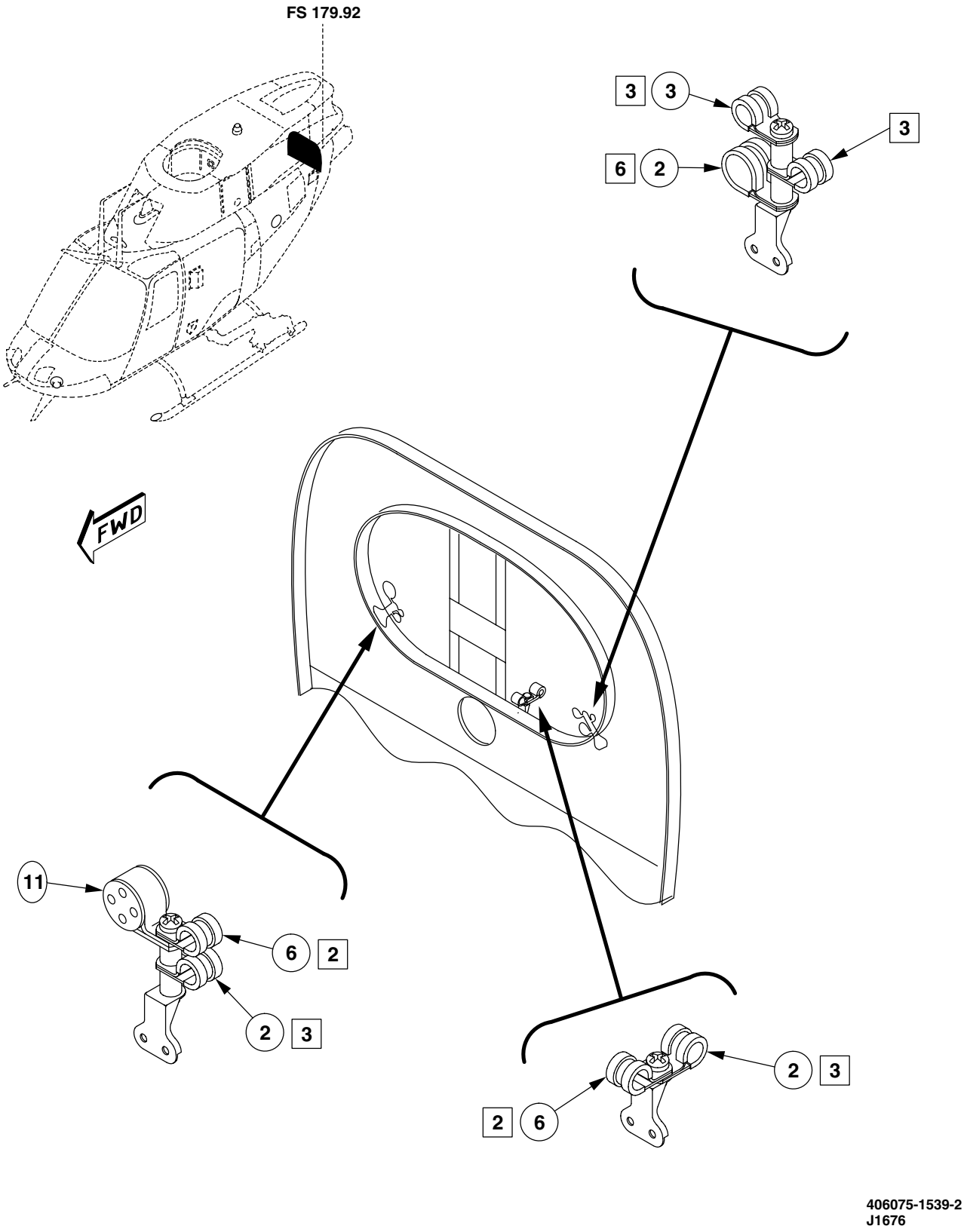


Figure F-19. Aft Fuselage Electrical Clamping and Routing (OH-58D(R)) (Sheet 2 of 7)

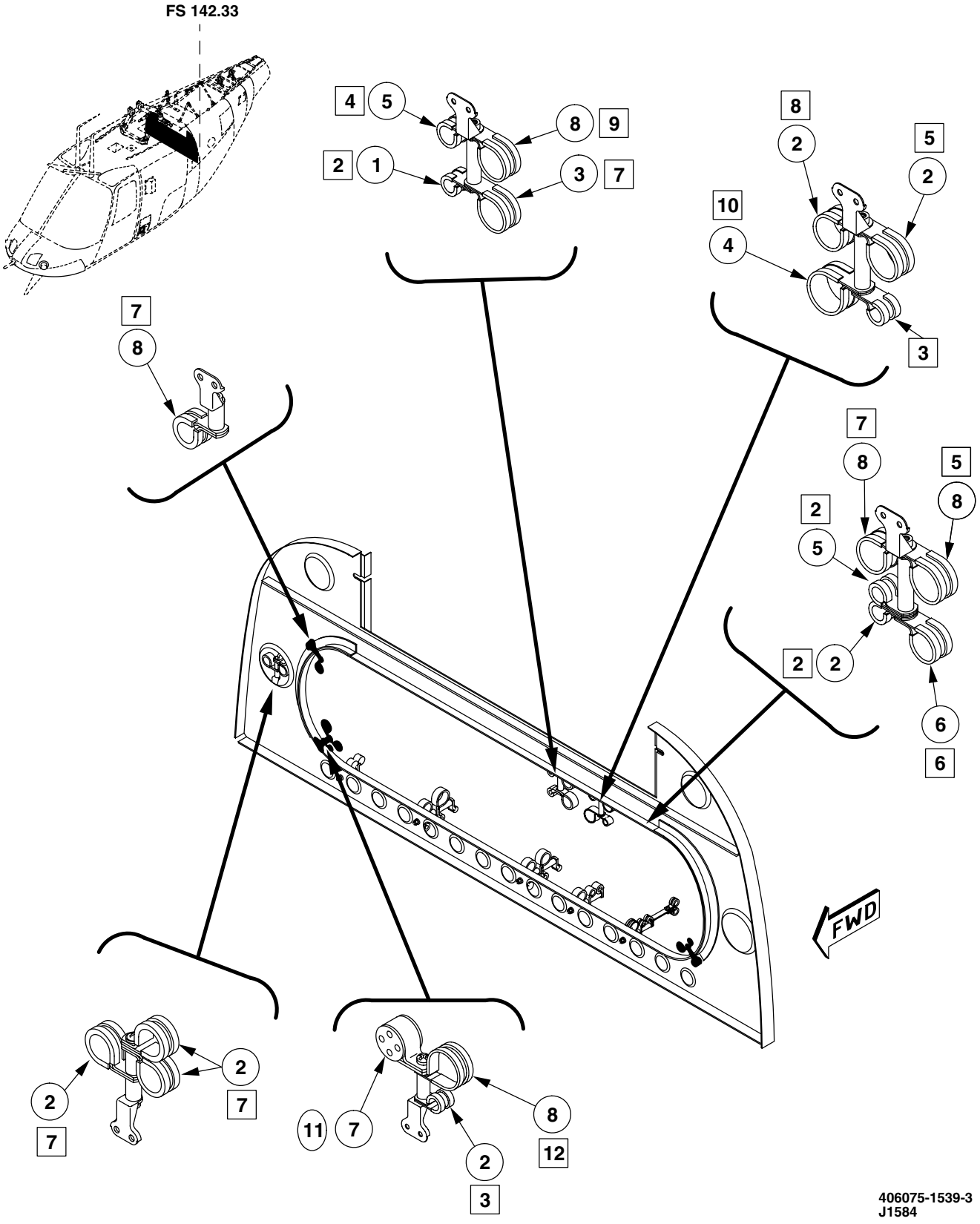


Figure F-19. Aft Fuselage Electrical Clamping and Routing (OH-58D(R)) (Sheet 3 of 7)

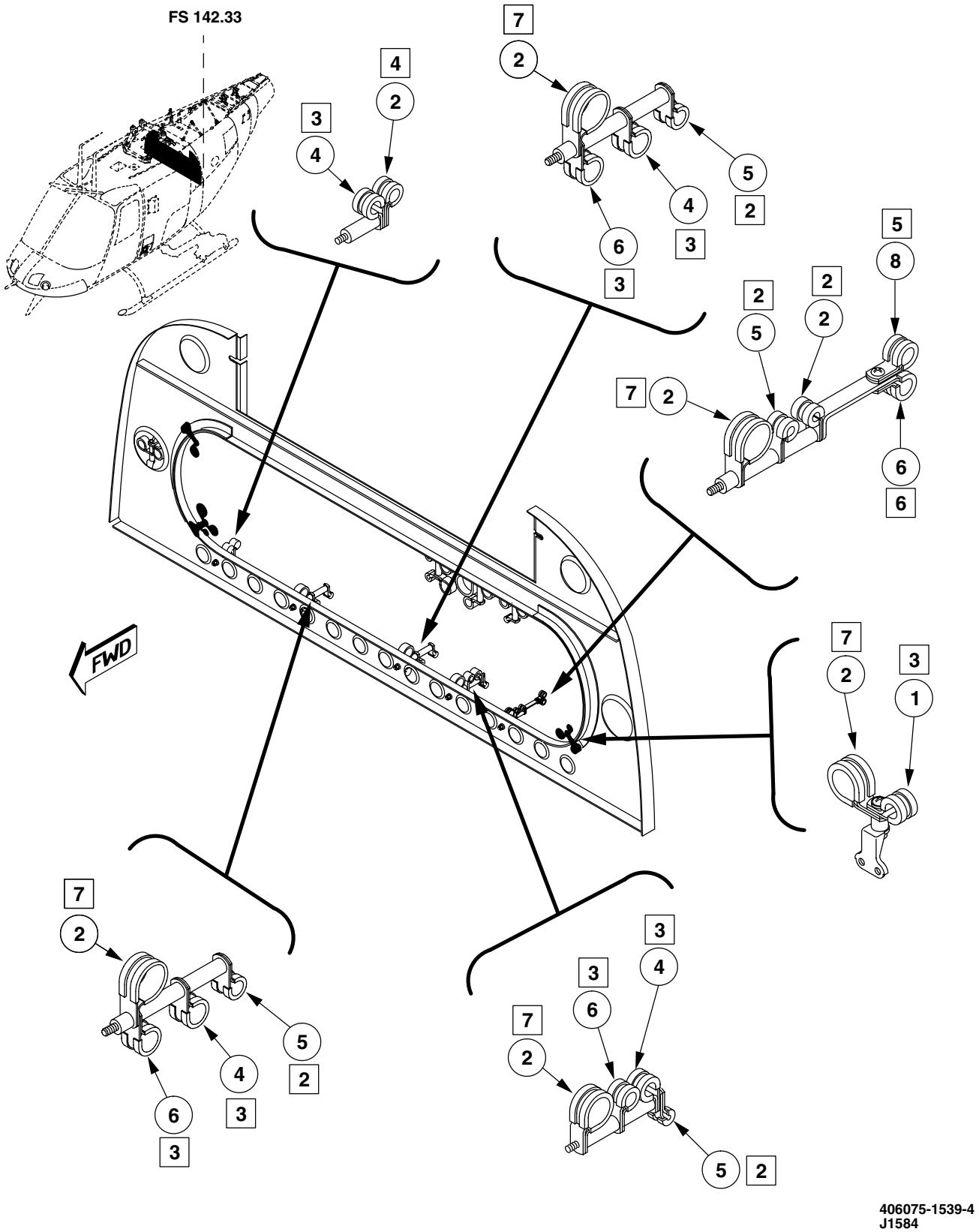


Figure F-19. Aft Fuselage Electrical Clamping and Routing (OH-58D(R)) (Sheet 4 of 7)

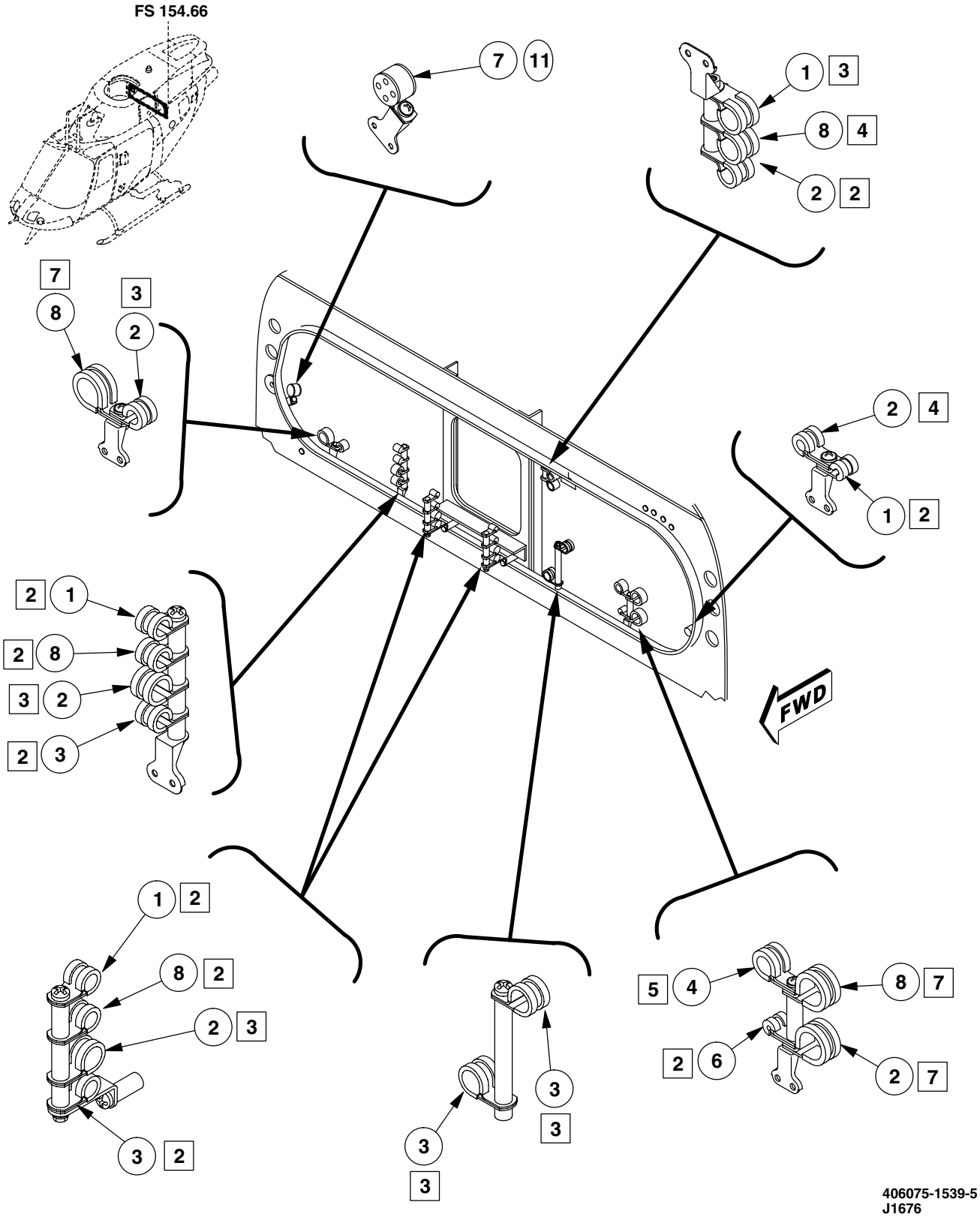


Figure F-19. Aft Fuselage Electrical Clamping and Routing (OH-58D(R)) (Sheet 5 of 7)

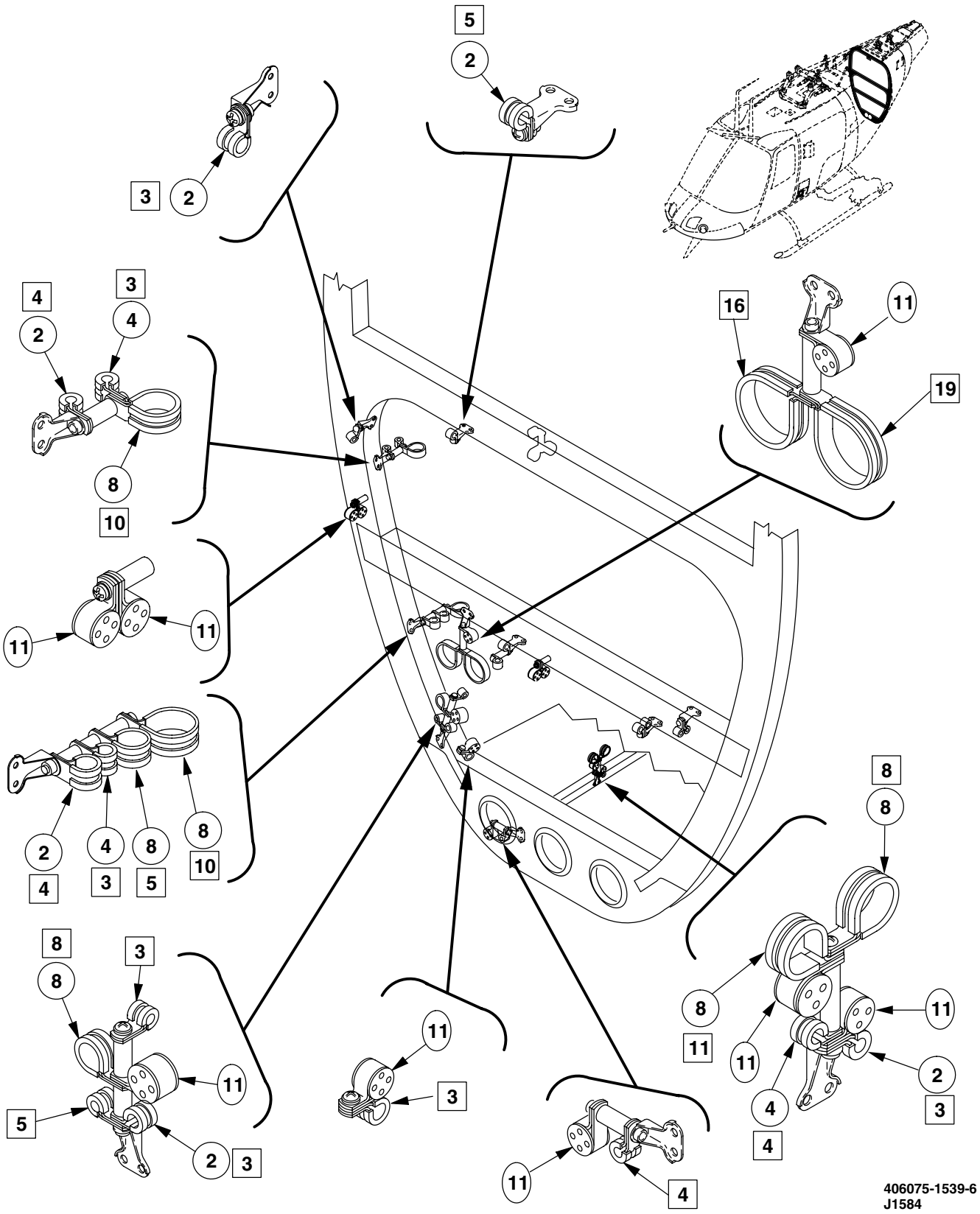


Figure F-19. Aft Fuselage Electrical Clamping and Routing (OH-58D(R)) (Sheet 6 of 7)

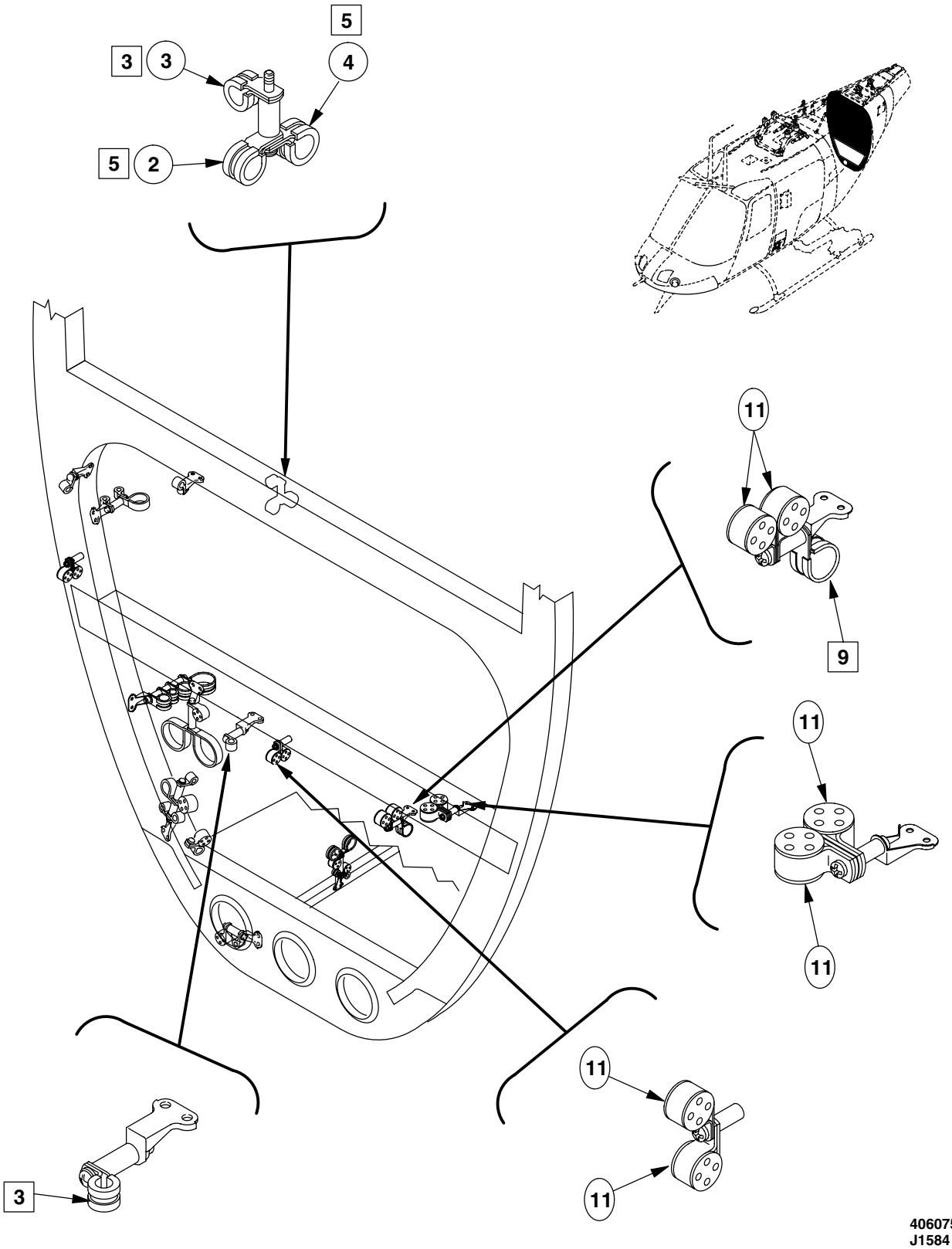
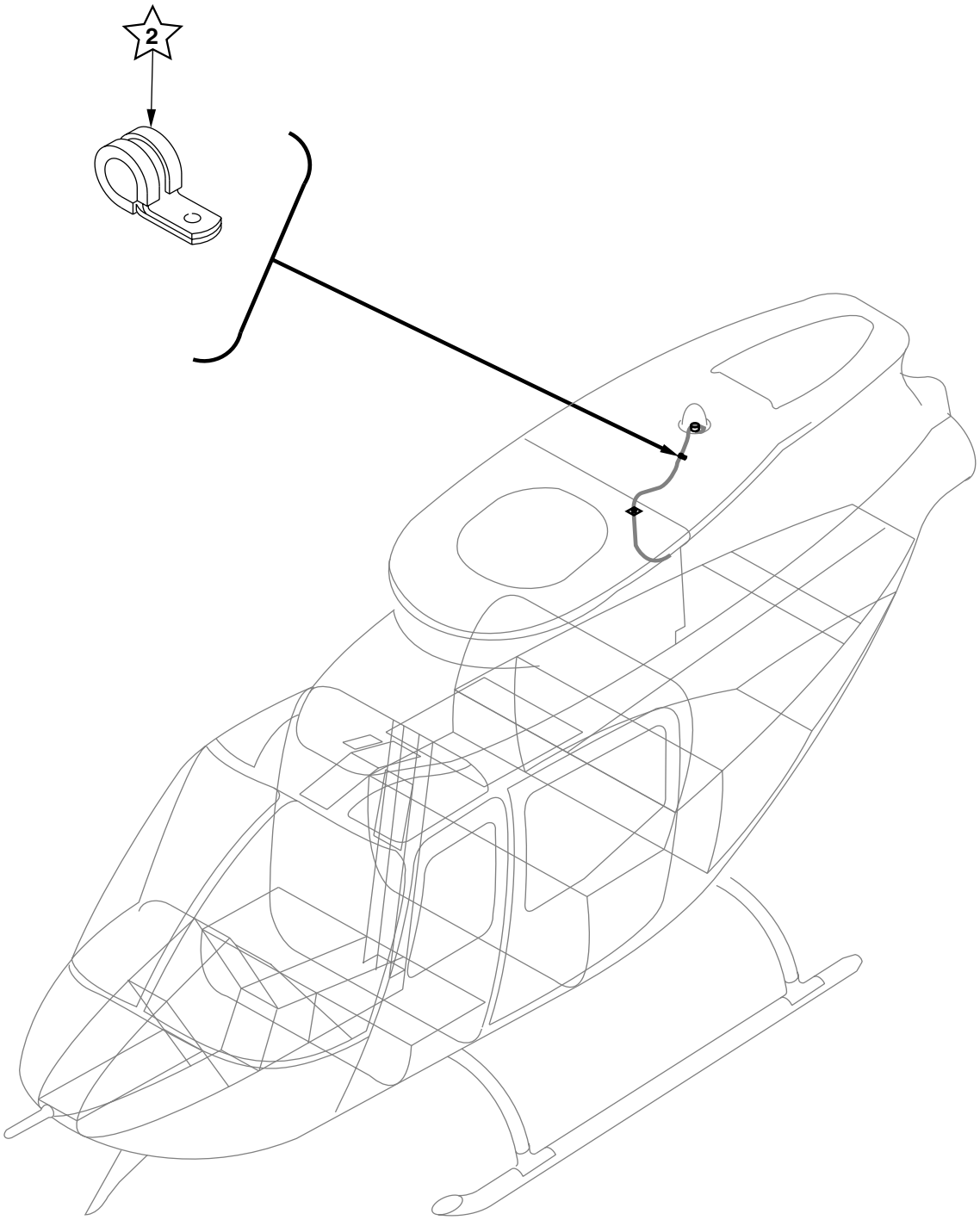


Figure F-19. Aft Fuselage Electrical Clamping and Routing (OH-58D(R)) (Sheet 7 of 7)



406075-1180-1
H0551

Figure F-20. Engine Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 1 of 4)

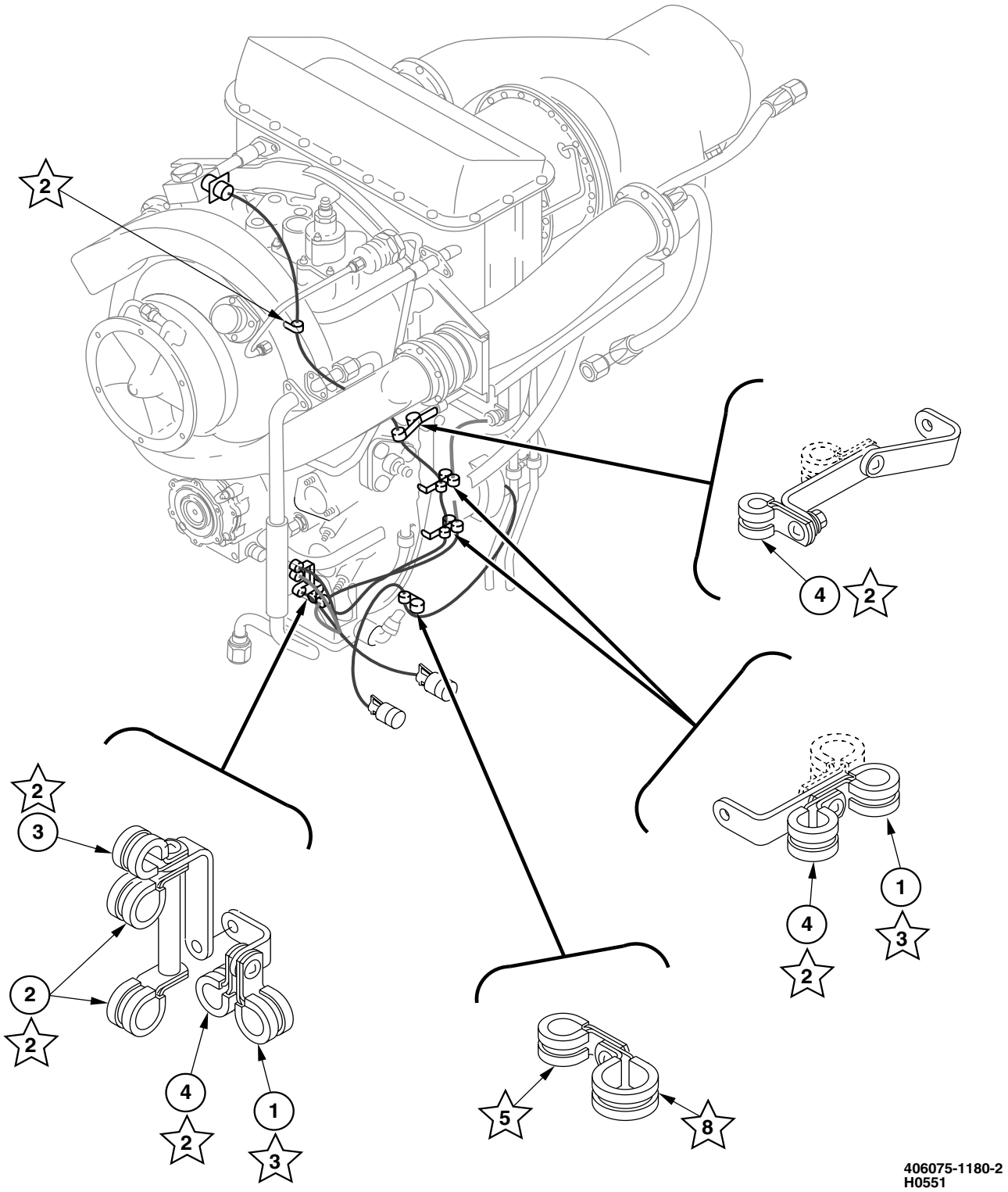
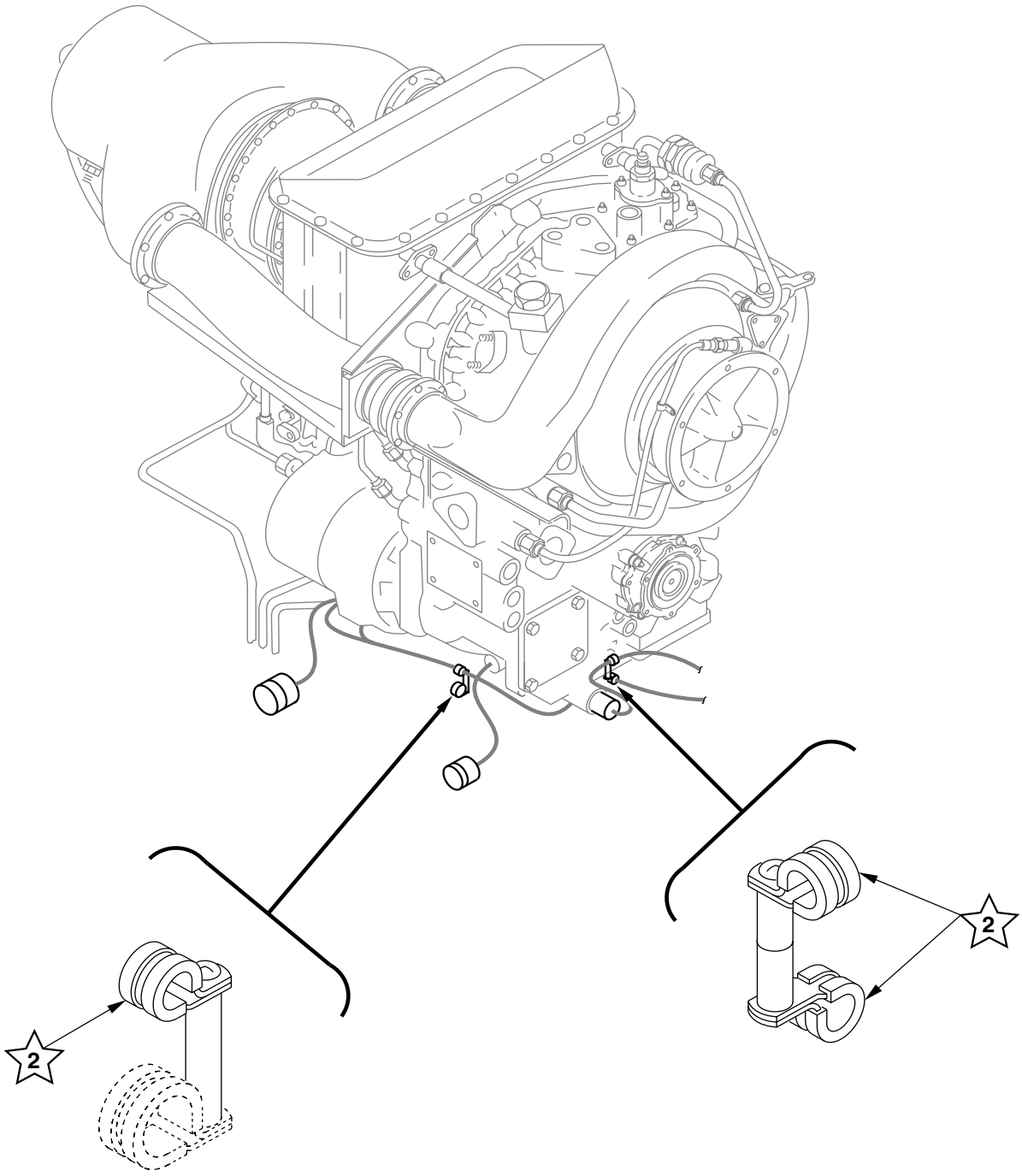


Figure F-20. Engine Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 2 of 4)



406075-1180-3
H0551

Figure F-20. Engine Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 3 of 4)

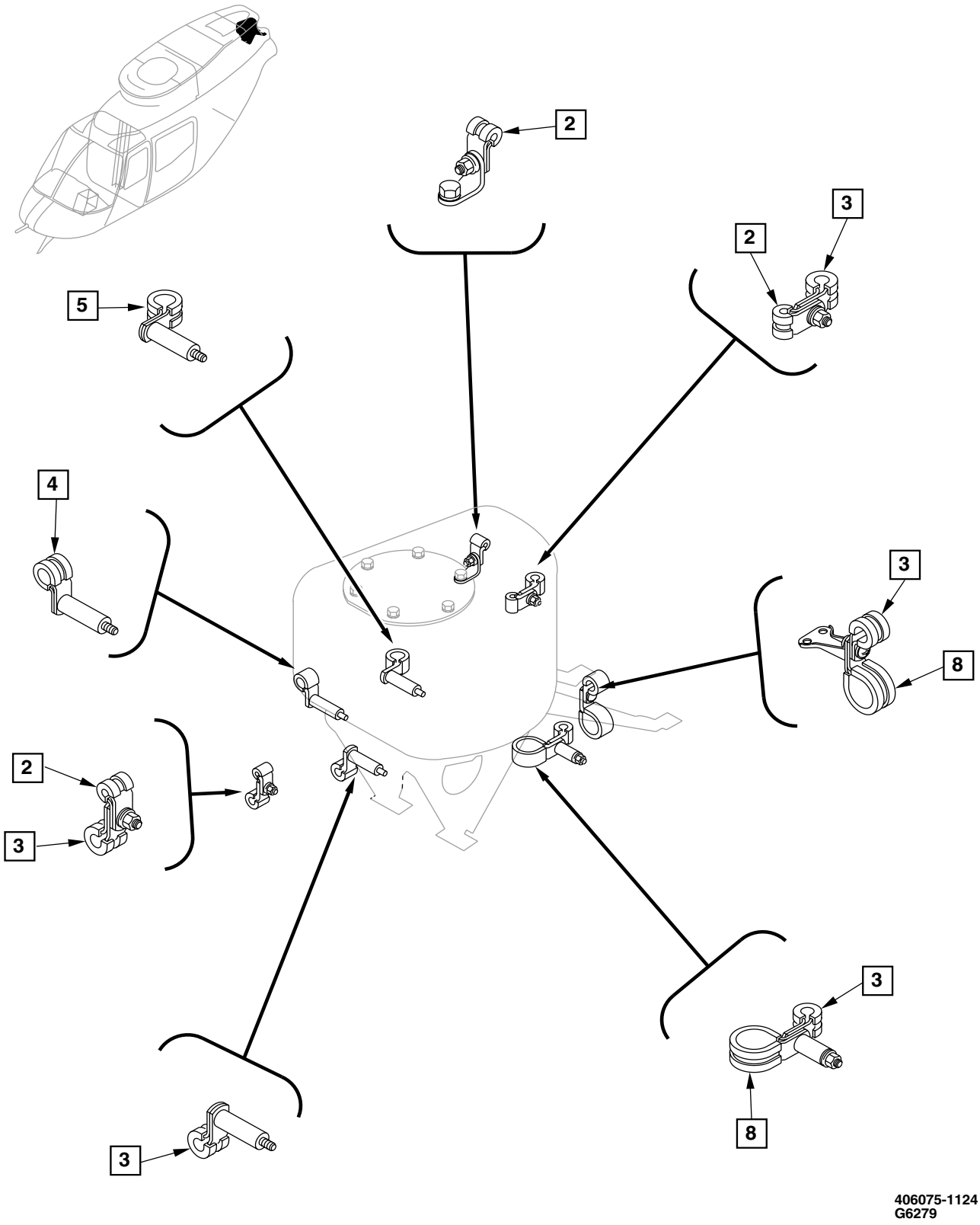


Figure F-20. Engine Compartment Electrical Clamping and Routing (OH-58D(R)) (Sheet 4 of 4)

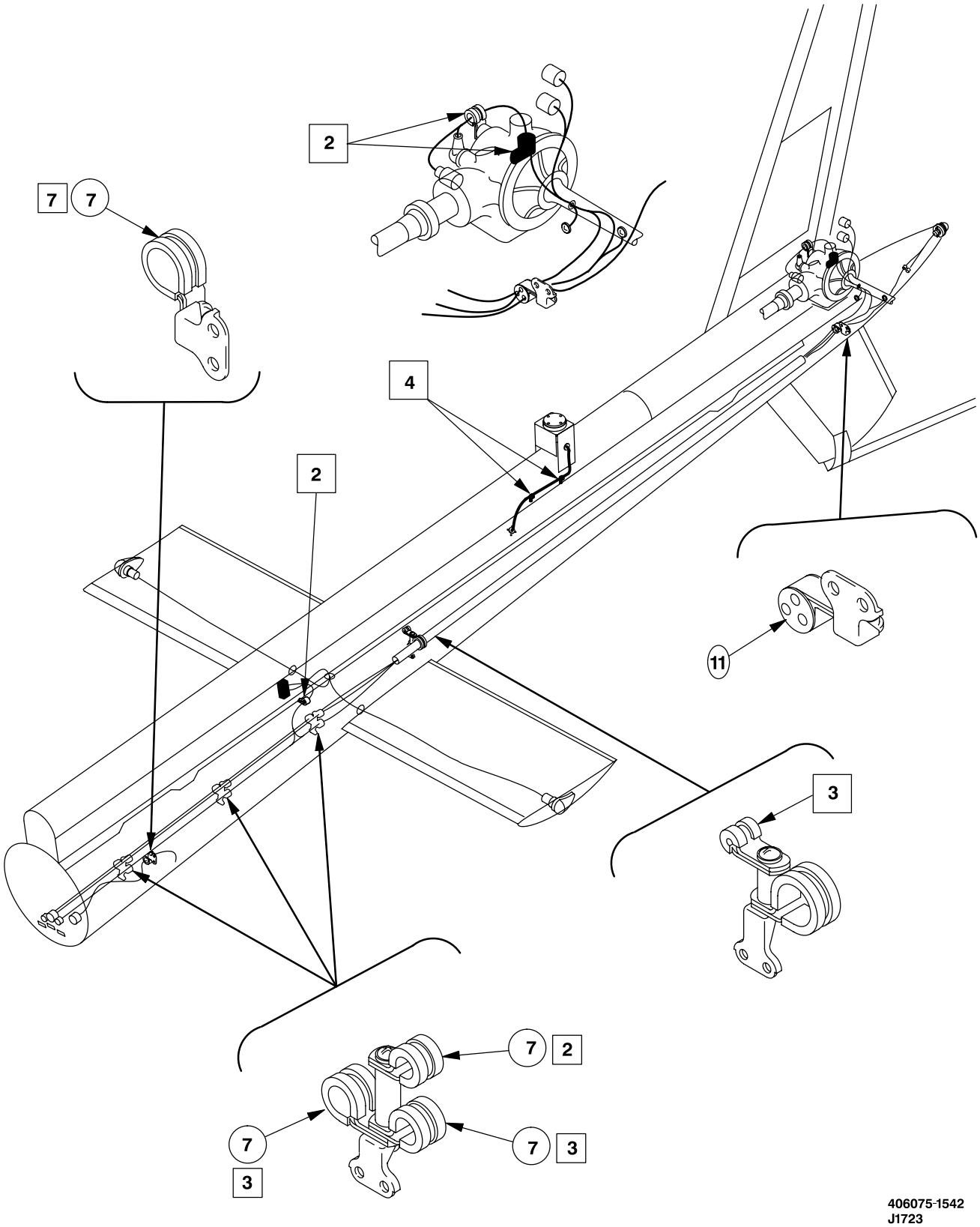


Figure F-21. Tailboom Electrical Clamping and Routing (OH-58D(R))

APPENDIX G

WEIGHT AND BALANCE

Section I. GENERAL INFORMATION

G-1. SCOPE

This appendix contains procedures required for intermediate maintenance personnel to perform their phase of the weight and balance control. The procedures are specifically applicable to the OH-58D helicopter and include the use of certain forms in the DD 365 series. For general weight and balance information, refer to TM 55-1500-342-23 and AR 95-1.

G-2. WEIGHT AND BALANCE DATA

The weight and balance data provides the service activities with a standard system of intermediate maintenance weight and balance control. It contains brief instructive information to be used with the forms and charts which provide for continuous control of weight and balance of the helicopter. The data to be inserted on the charts and forms are applicable only to the individual helicopter, the serial number of which appears on the various forms and charts. These data are to remain with the helicopter in accordance with existing directives. The charts and forms referred to herein may differ in nomenclature and arrangement from those shown in previously published copies, since these charts are revised from time to time; however, the general principle of use will not change.

G-3. RESPONSIBILITY

The helicopter manufacturer inserts all helicopter identifying data on the various charts, including one sample weight and balance clearance DD Form 365-4, if applicable, at time of delivery. This record constitutes the basic weight and balance data of the helicopter at delivery. It is the maintenance officer's responsibility to maintain the weight and balance data records. These data shall be maintained in a permanent binder for each helicopter. The binder shall reflect the model designation and the helicopter serial number. All DD 365-series forms, charts, and any other pertinent weight and balance data shall be maintained therein. All subsequent changes in weight and balance are compiled by the weight and balance technician in accordance with instructions contained herein.

G-4. WEIGHT DEFINITION

Tare is the weight of equipment necessary for weighing the helicopter (i.e., chocks, blocks, slings, jacks, scale corrections) which is included in the scale reading (or reactions) but is not a part of the helicopter weight. Refer to TM 55-1500-342-23 for weight and balance definitions.

Section II. INSTRUCTIONS FOR USE OF FORMS AND CHARTS

G-5. WEIGHT/BALANCE AND LOAD DATA

There are two parts to a weight and balance problem. First, one must have correct information as to the basic weight and moment. Second, gross weight and balance must be maintained within weight and center-of-gravity (CG) limits with the addition of load. The first part is controlled by DD Form 365-1, CHART A - BASIC WEIGHT CHECK LIST RECORD; DD Form 365-2 Form B - Aircraft Weighing Record; and DD Form 365-3, CHART C - BASIC WEIGHT AND BALANCE RECORD after the basic weight and balance have been determined by weighing the helicopter. The second part is carried out on DD Form 365-4, WEIGHT AND BALANCE CLEARANCE FORM F - TRANSPORT/TACTICAL, with the aid of loading data charts, diagrams and/or tables. Refer to TM 1-1520-248-10, Chapter 6.

G-6. FORMS

NOTE

The DD 365-series forms shall have no security classification until filled in. The forms, when filled in, shall take on the security classification of the helicopter for which they are used.

The standard system of intermediate maintenance weight and balance control requires the use of several different forms and shall be presented as samples in this appendix. They are listed in order of appearance and identified as follows:

1. DD Form 365 — RECORD OF WEIGHT AND BALANCE PERSONNEL
2. DD Form 365-1 — CHART A - BASIC WEIGHT CHECK LIST RECORD
3. DD Form 365-2 — FORM B - AIRCRAFT WEIGHING RECORD
4. DD Form 365-3 — CHART C - BASIC WEIGHT AND BALANCE RECORD
5. DD Form 365-4 — WEIGHT AND BALANCE CLEARANCE FORM F - TRANSPORT/TACTICAL
6. CHART E, which consists of:

   a. - FUEL LOADING TABLE (OH-58D and OH-58D(R))
   b. - TABLE OF MOMENT FOR PERSONNEL (OH-58D)
   c. - TABLE OF MISSION EQUIPMENT (OH-58D)
   d. - ARMAMENT TABLE (OH-58D)
   e. - CREW MOMENT TABLE (OH-58D(R))
   f. - EXTERNAL PERSONNEL MOMENT TABLE (OH-58D(R))
   g. - MISSION EQUIPMENT MOMENT TABLE (OH-58D(R))
   h. - TYPICAL SERVICE LOADING TABLE (OH-58D)
   i. - DIMENSIONAL DATA TABLE (OH-58D)
   j. - TYPICAL SERVICE LOADING TABLE (OH-58D(R))
   k. - DIMENSIONAL DATA TABLE (OH-58D(R))
   l. - ARMAMENT USEFUL LOAD TABLE (OH-58D(R))
   m. - LONGITUDINAL/LATERAL CENTER-OF-GRAVITY LIMITS FIGURE (OH-58D)
   n. - LONGITUDINAL CENTER-OF-GRAVITY LIMITS FIGURE (OH-58D(R))
   o. - LATERAL CENTER-OF-GRAVITY LIMITS FIGURE (OH-58D(R))
   p. - CENTER-OF-GRAVITY TABLE (OH-58D and OH-58D(R))

G-7. DD FORM 365 — RECORD OF WEIGHT AND BALANCE PERSONNEL

Listed at the top of DD Form 365 (figure G-1) is the helicopter model designation and serial number. The form provides a continuous record of the name and grade (civilian or military) of weight and balance personnel responsible for the records, the station, the date assigned, and the date relieved. All entries shall be complete and legible.

G-8. DD FORM 365-1 — BASIC WEIGHT CHECKLIST

DD Form 365-1 (figure G-2) is a tabulation of all operating equipment that is or may be installed and for which provision for fixed stowage has been made in a definite location in the helicopter. As changes are made in this equipment, it provides the weight, arm, and moment/constant of the individual items for use in correcting the basic weight and moment on DD Form 365-3. When check marks (X) and zeroes (0) are entered in the IN AIRCRAFT column, it serves as the inventory of equipment included in the basic weight and moment/constant. The key to successful aircraft weighing is an accurate inventory: knowing if there are any aircraft part shortages at the time of weighing that will need to be added to column II on sheet 2 of DD Form 365-2 FORM B - AIRCRAFT WEIGHING RECORD or if there is any installed ground support equipment at the time of weighing that will need to be removed on column I on sheet 2 of DD Form 365-2 FORM B - AIRCRAFT WEIGHING RECORD. DD Form 365-1 does not list every part on the aircraft and there can be times when parts not on DD Form 365-1 can be missing during time of aircraft weighing due to shortages or repairs. Therefore, thorough knowledge of the aircraft aided with DD Form 365-1 can result in an accurate inventory and a successful weighing.

1. Inventories shall be made periodically, and when:

   a. The helicopter undergoes modification, major overhaul, or repair.

   b. The helicopter is received at a new base.

   c. Changes in equipment are made for a different type of operation or mission.

   d. The aircraft is reweighed.

   e. The pilot reports unsatisfactory flight characteristics (tail or nose heaviness).

2. The helicopter manufacturer places check marks in the IN AIRCRAFT column to identify the items of equipment in the helicopter for the delivery condition. This delivery inventory shows equipment included in the initial basic weight entry on DD Form 365-3.

3. Subsequent checklist inventories shall be carried as follows:

NOTE

Under certain conditions, a check mark (X) may not be entered on DD Form 365-1 IN AIRCRAFT column. (Refer to paragraph G-10, step 3.,b.).

a. Inspect helicopter for equipment actually installed, placing check marks (X) and zeros (0) in next unused IN AIRCRAFT column. A check (X) in the column headed IN AIRCRAFT indicates the presence of the item in the helicopter on the date at the head of the column, while a zero (0) indicates its absence. Items should not be checked unless they are installed, and items marked zero are not to be included in the basic weight and balance tabulated on DD Form 365-3 for the corresponding date. During this inventory, (DD Form 365-1), note whether any new items of equipment have been installed. If so, enter item number and name or description, together with other data required through MOMENT/100 CONSTANT column, including date as shown under RECORD OF CHECKING heading.

b. Compare the current inventory with previous inventory checked under RECORD OF CHECKING heading, noting any changes in items of equipment installed in helicopter. If there is a check mark (X) for

RECORD OF WEIGHT AND BALANCE PERSONNEL			FOR USE IN T.O. 1-1B-40, NAVAIR 01-1B-40 AND TM 55-1500-342-23	Form Approved OMB No. 0704-0188	
MODEL DESIGN OH-58D			SERIAL NUMBER XXXXXXX		
NAME (Last, First, Middle I.)	GRADE, RATE, OR RANK	WHERE AND WHEN QUALIFIED	STATION	DATE ASSIGNED (YYMMDD)	DATE RELIEVED (YYMMDD)
SMITH, TOM B.	Civ.	N/A	BHTI, Fort Worth, Texas	(New) 970721	970721
DOE, JOHN A.	SPC	N/A	FORT X	970722	

DD Form 365, MAR 88 *Previous editions are obsolete*

406961-1327-2
J1041

Figure G-1. DD Form 365

an item in the IN AIRCRAFT column for a previous inventory and the current inventory has a zero (0) for that same item in the IN AIRCRAFT column, then a check mark (X) is required in the CHART C ENTRY column, next to the IN AIRCRAFT column, for the current inventory. Additionally, that item along with all of its weight and balance data must be recorded as removed on that date for the current inventory on DD Form 365-3 (paragraph G-10). If there is a zero (0) for an item in the IN AIRCRAFT column for a previous inventory and the current inventory has a check mark (X) for that same item in the IN AIRCRAFT column, then a check mark (X) is required in the CHART C ENTRY column, next to the IN AIRCRAFT column, for the current inventory. Also, that item along with all of its weight and balance data must be recorded as added on that date for the current inventory on DD Form 365-3.

c. Check marks in CHART C ENTRY column of DD Form 365-1 are made only at the time of a complete inventory or weighing. Never change check marks or add new check marks in a previously used column. Use next blank, unused CHART C ENTRY column. When an inventory is included as part of a weighing, the procedure outlined in the preceding paragraph should not be omitted, since this correction makes possible the comparison of calculated and actual weight figures. Check marks in CHART C ENTRY column indicate only a calculated change in the basic figures of DD Form 365-3.

d. Ensure the same date is entered over CHART C ENTRY column on DD Form 365-1 and under DATE column on DD Form 365-3 for corresponding corrected weight and moment/constant data.

FOR USE IN T.O. 1-1B-40, NAVAIR 01-1B-40, AND TM 55-1500-342-23

CHART A - BASIC WEIGHT CHECK LIST RECORD

Page 9 of 25 Pages

MODEL/DESIGN/SERIES: OH-58D

SERIAL NUMBER: XXXXXXX

RECORD OF CHECKING *(ENTER DATE) (YYMMDD)*

COMPARTMENT AND ITEM NUMBER	ITEMS AND LOCATIONS *(GROUPED BY COMPARTMENT)*	WEIGHT	ARM	MOMENT/100 ENTER CONSTANT	Delivery Date 921205																	
					1		2		3		4		5		6		7		8		9	
					IN AIRCRAFT	CHART C ENTRY	IN AIRCRAFT	CHART C ENTRY	IN AIRCRAFT	CHART C ENTRY	IN AIRCRAFT	CHART C ENTRY	IN AIRCRAFT	CHART C ENTRY	IN AIRCRAFT	CHART C ENTRY	IN AIRCRAFT	CHART C ENTRY	IN AIRCRAFT	CHART C ENTRY	IN AIRCRAFT	CHART C ENTRY
B	EQUIPMENT COMPARTMENT																					
	(STA. 81 - STA. 206)																					
B-1	FIRE EXTINGUISHER NSN4210-00-55-8837	8	84	6.7	X																	
B-2	HF RECEIVER TRANSMITTER RT-1432/U	10	84	8.4	O																	
B-3	PROCESSOR - MASTER CONTROL L.H. 8500088-906	24	85	20.6	X																	
B-4	PROCESSOR - MASTER CONTROL R.H. 8500088-906	24	86	20.7	X																	
B-5	DATA LOADER R.H. (W/1.2 LB CARTRIDGE)																					
	622-9309-001/622-8276-001	4	86	3.7	X																	
B-6	ATTITUDE HDG & REF. SYS. 406-077-804-109	18	88	15.9	X																	
B-7	RECEIVER-TRANSMITTER RT-1614/ARC-164(V)	9	89	8.2	X																	
B-8	TRANSCEIVER-R.H. RT-1300B/ARC-186(V)	7	89	6.5	X																	
B-9	RCVR/XMTR/ANT. RT-1193/ASN-128	10	90	9.3	X																	
B-10	COMSEC UNIT TSEC/KY-75	25	91	23.2	O																	
B-11	AUDIO DISTRIBUTION UNIT 406-077-801-107	11	92	9.7	X																	
B-12	RECEIVER TRANSMITTER RT-1411/APN-209A	3	95	2.9	X																	
B-13	CONVERTER, SIGNAL DATA CV-3669/ASN-137	15	99	14.9	X																	
B-14	MMS POWER SUPPLY ID49401-509	46	100	45.9	X																	
B-15	ROCKET REMOTE ASSEMBLY R.H. 406-375-233-101	6	103	5.6	X																	
B-16	MSSEU R.H. 206-371-002-105	5	109	5.4	X																	
B-17	MMS PROCESSOR ID49402-509	46	110	50.1	X																	

DD FORM 365-1, JAN 82

REPLACES DD FORM 365A, WHICH WILL BE USED

406961-1412-35
J1160

Figure G-2. DD Form 365-1 (Sheet 1 of 5)

FOR USE IN T.O. 1-1B-40, NAVAIR 01-1B-40, AND TM 55-1500-342-23

CHART A - BASIC WEIGHT CHECK LIST RECORD

Page 25 of 25 Pages

MODEL/DESIGN/SERIES: OH-58D

SERIAL NUMBER: XXXXXXX

RECORD OF CHECKING *(ENTER DATE) (YYMMDD)*

Delivery Date 921205

COMPARTMENT AND ITEM NUMBER	ITEMS AND LOCATIONS *(GROUPED BY COMPARTMENT)*		WEIGHT	ARM	MOMENT/100 ENTER CONSTANT	1 IN AIRCRAFT	1 CHART C ENTRY	2 IN AIRCRAFT	2 CHART C ENTRY	3 IN AIRCRAFT	3 CHART C ENTRY	4 IN AIRCRAFT	4 CHART C ENTRY	5 IN AIRCRAFT	5 CHART C ENTRY	6 IN AIRCRAFT	6 CHART C ENTRY	7 IN AIRCRAFT	7 CHART C ENTRY	8 IN AIRCRAFT	8 CHART C ENTRY	9 IN AIRCRAFT	9 CHART C ENTRY
F	FLUIDS																						
F-1	HYDRAULIC FLUID, 1.65 QTS	(1)	2	102	2.3																		
F-2	TRAPPED FUEL, 0.2 GAL (ALT TO F-3)	(2)*	1	129	1.7																		
F-3	TRAPPED FUEL, 0.2 GAL (ALT TO F-2)	(3)*	1	129	1.8																		
F-4	UNUSABLE FUEL 1.8 GAL (ALT TO F-5)	(2)*	12	109	12.7																		
F-5	UNUSABLE FUEL, 1.8 GAL (ALT TO F-4)	(3)*	12	109	13.3																		
F-6	MAIN G/B OIL, 6.4 QTS (ALT TO F-7)	(4)	11	118	13.0																		
F-7	MAIN G/B OIL, 6.4 QTS (ALT TO F-6)	(5)	12	118	14.1																		
F-8	TRAPPED ENG OIL, 2.29 QTS (ALT TO F-9)	(4)	4	163	7.2																		
F-9	TRAPPED ENG OIL, 2.29 QTS (ALT TO F-8)	(5)	5	163	7.8																		
F-10	ENGINE OIL, 6 QTS (ALT TO F-11)	(4)	12	189	21.8																		
F-11	ENGINE OIL, 6 QTS (ALT TO F-10)	(5)	13	189	23.8																		

(1) MIL-H-83282 @ 1.76 LBS/QT.
(2) JP-4 @ 6.5 LBS/GAL.
(3) JP-5 @ 6.8 LBS/GAL.
(4) MIL-L-7808 @ 1.925 LBS/QT.
(5) MIL-L-23699 @ 2.1 LBS/QT.

*ADD APPLICABLE UNUSABLE FUEL F-4 OR F-5 IF HELICOPTER CONTAINS TRAPPED FUEL. ADD F-2 AND F-4 OR F-3 AND F-5 IF FUEL SYSTEM IS DRY.

DD FORM 365-1, JAN 82

REPLACES DD FORM 365A, WHICH WILL BE USED

406961-1412-36
J1160

Figure G-2. DD Form 365-1 (Sheet 2 of 5)

FOR USE IN T.O. 1-1B-40, NAVAIR 01-1B-40, AND TM 55-1500-342-23

CHART A - BASIC WEIGHT CHECK LIST RECORD

Page 9 of 27 Pages

MODEL/DESIGN/SERIES: OH-58D (R)

SERIAL NUMBER: XXXXXXX

RECORD OF CHECKING *(ENTER DATE) (YYMMDD)*

	Delivery Date 970707	970721																
	1		2		3		4		5		6		7		8		9	
COMPARTMENT AND ITEM NUMBER	ITEMS AND LOCATIONS *(GROUPED BY COMPARTMENT)*	WEIGHT	ARM	MOMENT/100 ENTER CONSTANT	IN AIRCRAFT	CHART C ENTRY	IN AIRCRAFT	CHART C ENTRY	IN AIRCRAFT	CHART C ENTRY	IN AIRCRAFT	CHART C ENTRY	IN AIRCRAFT	CHART C ENTRY	IN AIRCRAFT	CHART C ENTRY	IN AIRCRAFT	CHART C ENTRY	IN AIRCRAFT	CHART C ENTRY
B	EQUIPMENT COMPARTMENT																			
	(STA. 81 - STA. 206)																			
B-1	FIRE EXTINGUISHER NSN4210-00-55-8837	8	84	6.7	X		X													
B-2	HF RECEIVER TRANSMITTER RT-1432/U	10	84	8.4	O		O													
B-3	PROCESSOR- IMPROVED MASTER CONTROL R.H. 8500088-940	33	84	27.8	X		X													
B-4	DATA TRANSFER UNIT R.H. (W/.8 LB																			
	MODULE) 8521459-901/8521458-901	5	86	4.5	X		X													
B-5	PROCESSOR-IMPROVED MASTER CONTROL L.H. 8500088-921	33	88	28.5	X		X													
B-6	EGI UNIT 34200650-3104	18	88	16.2	X		X													
B-7	RECEIVER TRANSMITTER RT-1614/ARC-164(V)	9	89	8.2	X		X													
B-8	TRANSCEIVER R.H. RT-1300B/ARC-186(V)	7	91	6.5	X		X													
B-9	COMSEC UNIT TSEC/KY-75	25	92	23.2	O		O													
B-10	AUDIO DISTRIBUTION UNIT 406-077-801-107	11	95	9.7	X		X													
B-11	RECEIVER TRANSMITTER RT-1411/APN-209A	3	100	2.9	X		X													
B-12	MMS POWER SUPPLY ID49401-509	46	103	45.9	X		X													
B-13	ROCKET REMOTE ASSEMBLY R.H. 406-375-233-101	6	110	5.6	X		X													
B-14	MMS PROCESSOR ID49402-509	46	110	50.1	X		X													
B-15	IMPROVED MMS PROCESSOR ID85001-505	42	110	46.1	O		O	X												
B-16	MAST TORQUE SIGNAL CONDITIONER 406-075-823-109	4	113	4.6	X		X	X												

DD FORM 365-1, MAR 88

Previous editions are obsolete

406961-1412-1
J1160

Figure G-2. DD Form 365-1 (Sheet 3 of 5)

FOR USE IN T.O. 1-1B-40, NAVAIR 01-1B-40, AND TM 55-1500-342-23

CHART A - BASIC WEIGHT CHECK LIST RECORD

Page 17 of 27 Pages	MODEL/DESIGN/SERIES OH-58D (R)	SERIAL NUMBER XXXXXXX

RECORD OF CHECKING *(ENTER DATE) (YYMMDD)*

COMPARTMENT AND ITEM NUMBER	ITEMS AND LOCATIONS *(GROUPED BY COMPARTMENT)*		WEIGHT	ARM	MOMENT/100 ENTER CONSTANT	Delivery Date 970707		970721															
						1		2		3		4		5		6		7		8		9	
						IN AIRCRAFT	CHART C ENTRY	IN AIRCRAFT	CHART C ENTRY	IN AIRCRAFT	CHART C ENTRY	IN AIRCRAFT	CHART C ENTRY	IN AIRCRAFT	CHART C ENTRY	IN AIRCRAFT	CHART C ENTRY	IN AIRCRAFT	CHART C ENTRY	IN AIRCRAFT	CHART C ENTRY	IN AIRCRAFT	CHART C ENTRY
B	EQUIPMENT COMPARTMENT																						
	(STA. 81 - STA. 206)																						
B-26	ECU, FADEC	23064692	9	136	11.6	X		X															
B-27	INVERTER, 28.5 VA	406-075-802-103	9	138	12.8	X		X															
B-28	BATTERY NO. 2 (17 AMP/HR)	406-075-806-101	39	139	53.4	O		O															
B-29	VCR RECORDER/PROCESSOR	406-377-003-101/103	6	140	8.4	X		X															
B-30	VCR MOUNT	3511-318-50291	2	140	3.1	X		X															
B-31	COMSEC UNIT	TSEC/KY-58 UNIT #1	5	141	6.9	O		O															
B-32	BATTERY CHARGER	406-075-807-103 ALT(B-33)	7	139	9.0	O		O															
B-33	BATTERY CHARGER	406-075-807-101 ALT(B-32)	4	139	6.1	O		O															
B-34	COMSEC UNIT	TSEC/KY-58 UNIT #2	5	148	7.2	O		O															
B-35	TRANSFORMER RECTIFIER	209-075-999-103	17	148	25.1	X		X															
B-36	AMPLIFIER IFM	AM-7189/ARC	10	156	15.9	X		X															
B-37	TRANSCEIVER #1	RT-1478/ARC-201(V)	10	158	15.8	O		O															
B-38	MARK XII COMPUTER	KIT-1A/TSEC	11	163	17.4	O		O															
B-39	COMPARATOR	CM-440/APR-39(V)ALT(B-40)	2	163	3.1	O		O															
B-40	DIGITAL PROCESSOR	CP-1597/APR-39A ALT(B-39)	6	163	9.6	O		O															
B-41	TRANSCEIVER #2	RT-1478/ARC-201(V)	10	163	16.3	O		O															
B-42	1.5V "C" BATTERY w/BOX	CY-8515	2	166	3.3	X		X															
B-43	COMPARATOR	CM-493/AVR-2	3	172	5.9	O		O															
B-44	HF AMPLIFIER COUPLER	AM-7201/U	15	176	27.2	O		O															

DD FORM 365-1, MAR 88

Previous editions are obsolete

406961-1412-2
J1160

Figure G-2. DD Form 365-1 (Sheet 4 of 5)

FOR USE IN T.O. 1-1B-40, NAVAIR 01-1B-40, AND TM 55-1500-342-23

CHART A - BASIC WEIGHT CHECK LIST RECORD

Page 21 of 27 Pages

MODEL/DESIGN/SERIES: OH-58D (R)

SERIAL NUMBER: XXXXXXX

RECORD OF CHECKING *(ENTER DATE) (YYMMDD)*

	Delivery Date 970707	970721																
	1		2		3		4		5		6		7		8		9	
COMPARTMENT AND ITEM NUMBER	ITEMS AND LOCATIONS *(GROUPED BY COMPARTMENT)*	WEIGHT	ARM	MOMENT/100 ENTER CONSTANT	IN AIRCRAFT	CHART C ENTRY	IN AIRCRAFT	CHART C ENTRY	IN AIRCRAFT	CHART C ENTRY	IN AIRCRAFT	CHART C ENTRY	IN AIRCRAFT	CHART C ENTRY	IN AIRCRAFT	CHART C ENTRY	IN AIRCRAFT	CHART C ENTRY	IN AIRCRAFT	CHART C ENTRY
D	ENGINE AREA-ABOVE ENGINE DECK																			
D-1	PARTICLE SEPARATOR 406-060-201	9	120	11.2	X		X													
D-2	BLOWER-PARTICLE SEPARATOR 406-360-205	3	123	4.1	X		X													
D-3	250-C30R/3 ENGINE w/RESIDUAL FLUIDS 23065550	268	143	384.4	X		X													
D-4	GENERATOR-10KVA 406-075-803	21	145	30.3	X		X													
D-5	STARTER GENERATOR 206-062-200	21	145	30.1	X		X													
D-6	ARMOR-FUEL CONTROL L.H. 406-060-807	2	149	3.0	X		X													
D-7	ARMOR-FUEL CONTROL R.H. 406-060-807	2	149	3.0	X		X													
D-8	ARMOR-COMBUSTOR L.H. 406-060-806	4	163	6.5	X		X													
D-9	ARMOR-COMBUSTOR R.H. 406-060-806	4	163	6.5	X		X													

DD FORM 365-1, MAR 88

Previous editions are obsolete

406961-1412-3
J1160

Figure G-2. DD Form 365-1 (Sheet 5 of 5)

G-9. DD FORM 365-2 — AIRCRAFT WEIGHING RECORD

Enter data on DD Form 365-2 (figure G-3) as follows:

1. Fill in identifying data and enter actual numbers of scale readings under SCALE READING column.

2. Add and subtract numbers, if any, in TARE column from numbers in SCALE READING column and enter these numbers under NET WEIGHT column. TARE is the extra weight of supports, such as jacks or chocks, that may be placed on a platform scale to raise or secure the aircraft for weighing. This term ordinarily pertains to the use of mechanical scales. The TARE column shall be used to record SCALE CORRECTION if electronic scales are used. The scale correction may be an add or subtract depending if the scale was reading light or heavy at the time of the weighing.

NOTE

Reaction points should remain constant. For checking purposes only, dimensions are normally listed on DD Form 365-1, Chart E and loading data of TM 1-1520-248-10, Chapter 6.

3. Determine dimensions **"E"** (the distance from the datum line to the center of the main reaction point) and **"F"** (the distance from the reference datum line to the center of the aft reaction point) and record them in their appropriate ARM column of DD Form 365-2. These dimensions can normally be found in the Chart E data as the location of the forward and aft jack points. If the reference datum line is known, dimensions **"E"** and **"F"** can also be physically measured at the time of the weighing.

4. Multiply SUB-TOTAL number entered in NET WEIGHT column by number in ARM **"E"** column. Enter whole number results in MOMENT column.

5. Multiply NOSE or TAIL number entered in NET WEIGHT column by number in ARM **"F"** column. Enter whole number results in MOMENT column.

6. Add NET WEIGHT column and enter results in TOTAL NET WEIGHT column. Add MOMENT column and enter whole number results in TOTAL MOMENT column.

7. Divide TOTAL MOMENT by TOTAL NET WEIGHT to obtain as weighed CG position in inches from reference datum shown (Fuselage Station **"0"**).

8. Transfer TOTAL NET WEIGHT, ARM, and MOMENT to reverse side of DD Form 365-2.

9. Do not subtract oil weight. Oil now stays in Basic Weight.

NOTE

Items listed in COLUMN I should not be checked under IN AIRCRAFT column on DD Form 365-1.

10. Enter TOTAL value of WEIGHT column from COLUMN I in NET WEIGHT column of TOTAL OF ITEMS WEIGHED BUT NOT PART OF BASIC WEIGHT.

NOTE

- Items in COLUMN II must be checked under IN AIRCRAFT column on DD Form 365-1 to indicate their inclusion in the Basic Weight.
- If helicopter is weighed after overhaul with a completely dry fuel or oil system, include trapped fuel or oil in COLUMN II.

11. Enter TOTAL value of WEIGHT column from COLUMN II in NET WEIGHT column of TOTAL OF BASIC WEIGHT ITEMS NOT IN AIRCRAFT WHEN WEIGHED.

12. Add/subtract items entered in above steps 10 and 11 from TOTAL (as weighed from front side) value in NET WEIGHT column and enter in NET WEIGHT column of BASIC AIRCRAFT (Post to Chart C).

13. Enter TOTAL value of MOMENT column from COLUMN I in MOMENT column of TOTAL OF ITEMS WEIGHED BUT NOT PART OF BASIC WEIGHT.

NOTE

- Items in COLUMN II must be checked under IN AIRCRAFT column on DD Form 365-1 to indicate their inclusion in the Basic Weight.
- If helicopter is weighed after overhaul with a completely dry fuel or oil system, include trapped fuel or oil in COLUMN II.

14. Enter TOTAL value of MOMENT column from COLUMN II in MOMENT column of TOTAL OF BASIC WEIGHT ITEMS NOT IN AIRCRAFT WHEN WEIGHED.

15. Add/subtract items entered in above steps 13 and 14 from TOTAL (as weighed from front side) value in MOMENT column, and enter value in MOMENT column of BASIC AIRCRAFT (Post to Chart C).

16. Take MOMENT value of BASIC AIRCRAFT (Post to Chart C)and divide by NET WEIGHT value of BASIC AIRCRAFT (Post to Chart C) and enter value in ARM column of BASIC AIRCRAFT (Post to Chart C).

17. Using formula: INDEX or MOM/100, divide value in MOMENT column of BASIC AIRCRAFT (Post to Chart C) by 100, enter value in INDEX or MOM/100 column of BASIC AIRCRAFT (Post to Chart C).

18. Enter data under REACTIONS USED block.

19. Enter data required under TYPE SCALE, SERIAL NUMBER, CALIBRATION DATE, and CALIBRATED ACCURACY blocks.

20. Under REMARKS block include information pertaining to attitude of helicopter when weighed and method of support.

21. Transfer data from DD Form 365-2 to DD Form 365-3 (paragraph G-10, step 1).

FORM B - AIRCRAFT WEIGHING RECORD				FOR USE IN T.O. 1-1B-40, NAVAIR 01-1B-40 AND TM 55-1500-342-23	
DATE WEIGHED (YYMMDD) 970707		MODEL/DESIGN/SERIES OH-58D		SERIAL NUMBER XXXXXXX	
PLACE WEIGHED BHTI, FORT WORTH, TEXAS		WEIGHT AND BALANCE TECHNICIAN (Last, first, M.I.) SMITH, TOM B.			DUTY PHONE NUMBER (XXX)XXX-XXXX
REACTION (Wheels, jackpoints, etc.)	SCALE READING	CORRECTIONS	NET WEIGHT	ARM	MOMENT
LEFT MAIN	866.1	0.0	866.1		
RIGHT MAIN	910.8	0.0	910.8		
SUB-TOTAL (Both main)			1776.9	E 55.16	98014
NOSE OR TAIL	1684.1	0.6	1683.5	F 180.60	304040
TOTAL (as weighed) Not to be posted on Chart C.			3460.4	116.19	402054

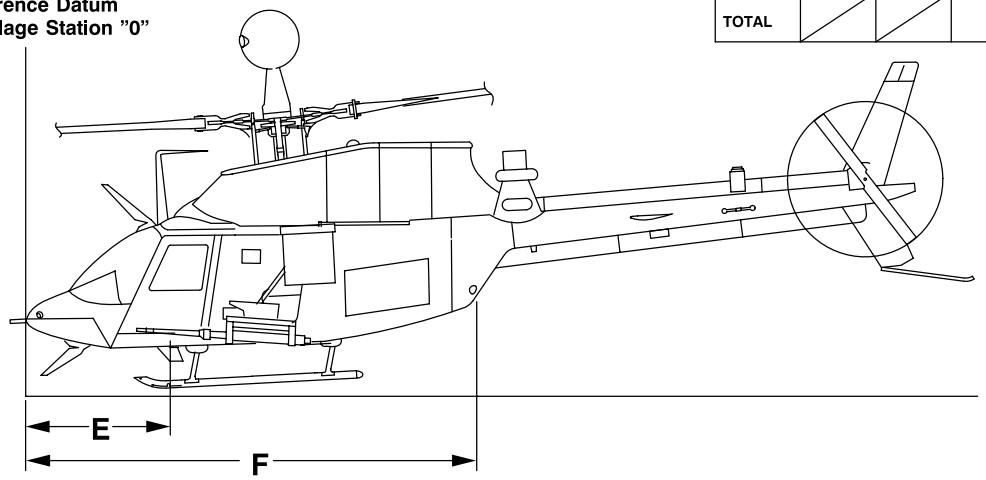
MEASUREMENTS

E = 55.16 /1 THE DISTANCE FROM THE REFERENCE DATUM TO THE CENTER LINE OF THE MAIN REACTIONS.

F = 180.60 /1 THE DISTANCE FROM THE REFERENCE DATUM TO THE CENTER LINE OF THE AFT REACTION.

CORRECTIONS	LEFT MAIN	RIGHT MAIN	NOSE OR TAIL
CALB CORR			
SCALE CORR			
TEMP ——— 2			
EQUIP			
OTHER			
TOTAL			

Reference Datum
Fuselage Station "0"



/1 *Check dimensions E and F against approximate dimensions listed on Chart E.*

DD Form 365-2, FEB 90 *PREVIOUS EDITIONS ARE OBSOLETE*

406961-1412-37
J2522

Figure G-3. DD Form 365-2 (Sheet 1 of 4)

DESCRIPTION	NET WEIGHT	ARM	MOMENT	[1] INDEX OR MOM/100
TOTAL *(As weighed) (From front side)*	3460.4	116.19	402054	
OIL IN AIRPLANE	– OIL STAYS IN BASIC WEIGHT. DO NOT SUBTRACT OUT.			
TOTAL OF ITEMS WEIGHED BUT NOT PART OF BASIC WEIGHT *(From Column I below)*	– 0.2		12	
TOTAL OF BASIC WEIGHT ITEMS NOT IN AIRCRAFT WHEN WEIGHED *(From Column II below)*	+ 12.1		1316	
BASIC AIRCRAFT *(Post to Chart C)*	3472.3	116.17	403382	4033.8

COLUMN I				COLUMN II			
ITEMS WEIGHED BUT NOT PART OF BASIC WEIGHT	WEIGHT	ARM	MOMENT	BASIC WEIGHT ITEMS NOT IN AIRCRAFT WHEN WEIGHED	WEIGHT	ARM	MOMENT
PLUMB BOB	0.2	59.4	12	Unusable Fuel	12.0	109.0	1308
				Utility Light			
				Mounting			
				Basics (2)	0.1	80.5	8
TOTAL	0.2		12	TOTAL	12.1		1316

REACTIONS USED	TYPE SCALE ELECTRONIC
JACK PADS	SERIAL NUMBER 6195A
	CALIBRATION DATE *(YYMMDD)* 930427
	CALIBRATED ACCURACY ± 0.1% OF READING

REMARKS

WEIGHED AT LEVEL ATTITUDE WITH TRAPPED FUEL

[1] *Enter constant needed*

DD Form 365-2, Reverse, FEB 90

406961-1327-8-2
J2522

Figure G-3. DD Form 365-2 (Sheet 2 of 4)

FORM B - AIRCRAFT WEIGHING RECORD				FOR USE IN T.O. 1-1B-40, NAVAIR 01-1B-40 AND TM 55-1500-342-23
DATE WEIGHED (YYMMDD) 970707	MODEL/DESIGN/SERIES OH-58D (R)		SERIAL NUMBER XXXXXXX	
PLACE WEIGHED BHTI, FORT WORTH, TEXAS	WEIGHT AND BALANCE TECHNICIAN (Last, first, M.I.) SMITH, TOM B.			DUTY PHONE NUMBER (XXX)XXX-XXXX

REACTION (Wheels, jackpoints, etc.)	SCALE READING	CORRECTIONS	NET WEIGHT	ARM	MOMENT
LEFT MAIN	777.0	0.0	777.0		
RIGHT MAIN	839.2	0.0	839.2		
SUB-TOTAL (Both main)			1616.2	E 55.16	89150
NOSE OR TAIL	1575.9	0.0	1575.9	F 180.60	284608
TOTAL (as weighed) Not to be posted on Chart C.			3192.1	117.09	373758

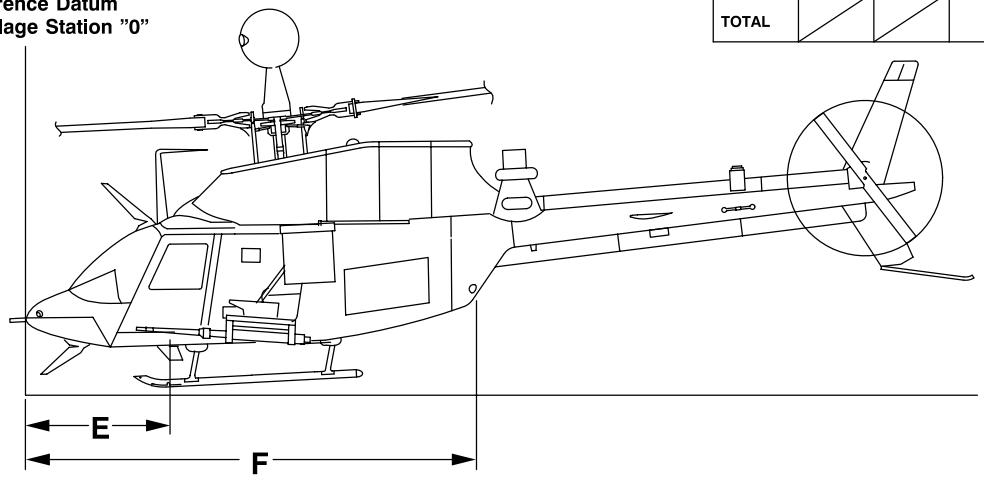
MEASUREMENTS

E = 55.16 /1 THE DISTANCE FROM THE REFERENCE DATUM TO THE CENTER LINE OF THE MAIN REACTIONS.

F = 180.60 /1 THE DISTANCE FROM THE REFERENCE DATUM TO THE CENTER LINE OF THE AFT REACTION.

CORRECTIONS	LEFT MAIN	RIGHT MAIN	NOSE OR TAIL
CALB CORR			
SCALE CORR			
TEMP ____ 2			
EQUIP			
OTHER			
TOTAL			

Reference Datum
Fuselage Station "0"



/1 *Check dimensions E and F against approximate dimensions listed on Chart E.*

DD Form 365-2, FEB 90 *Previous editions are obsolete*

406961-1327-7
J2522

Figure G-3. DD Form 365-2 (Sheet 3 of 4)

DESCRIPTION	NET WEIGHT	ARM	MOMENT	[1] INDEX OR MOM/100
TOTAL *(As weighed) (From front side)*	3192.1	117.09	373758	
OIL IN AIRPLANE	– OIL STAYS IN BASIC WEIGHT. DO NOT SUBTRACT OUT.			
TOTAL OF ITEMS WEIGHED BUT NOT PART OF BASIC WEIGHT *(From Column I below)*	– 0.2		12	
TOTAL OF BASIC WEIGHT ITEMS NOT IN AIRCRAFT WHEN WEIGHED *(From Column II below)*	+ 242.2		26009	
BASIC AIRCRAFT *(Post to Chart C)*	3434.1	116.4	399779	3997.3

COLUMN I				COLUMN II			
ITEMS WEIGHED BUT NOT PART OF BASIC WEIGHT	WEIGHT	ARM	MOMENT	BASIC WEIGHT ITEMS NOT IN AIRCRAFT WHEN WEIGHED	WEIGHT	ARM	MOMENT
PLUMB BOB	0.2	59.4	12	Unusable Fuel	12.0	109.0	1308
				M/R Blades	219.0	107.3	23499
				Blade Bolts &			
				Accessories	11.2	107.3	1202
TOTAL	0.2		12	TOTAL	242.2		26009

REACTIONS USED	TYPE SCALE ELECTRONIC
JACK PADS	SERIAL NUMBER 5087A
	CALIBRATION DATE *(YYMMDD)* 970804
	CALIBRATED ACCURACY ± 0.1% OF READING

REMARKS

WEIGHED AT LEVEL ATTITUDE WITH TRAPPED FUEL

[1] *Enter constant needed*

DD Form 365-2, Reverse, FEB 90

406961-1327-8-1
J2522

Figure G-3. DD Form 365-2 (Sheet 4 of 4)

G-10. DD FORM 365-3 — BASIC WEIGHT AND BALANCE RECORD

DD Form 365-3 (figure G-4) is a continuous history of the basic weight, moment, and CG resulting from structural and equipment changes in service. At all times the last WEIGHT, MOMENT/100, and CG column entries are considered the current weight and balance status of the basic helicopter.

1. Transfer new values as follows:

a. From DD Form 365-2 BASIC AIRCRAFT (Post to Chart C) column NET WEIGHT value to DD Form 365-3 WEIGHT column under CURRENT TOTAL BASIC AIRCRAFT heading.

b. From DD Form 365-2 BASIC AIRCRAFT (Post to Chart C) column ARM value to DD Form 365-3 INDEX (CG) column under CURRENT TOTAL BASIC AIRCRAFT heading.

c. From DD Form 365-2 BASIC AIRCRAFT (Post to Chart C) column INDEX OR MOM/100 value to DD Form 365-3 MOMENT/100 column under CURRENT TOTAL BASIC AIRCRAFT heading.

NOTE

All subsequent helicopter loadings will be based on the latest figures entered on DD Form 365-3.

2. At time of delivery of a new helicopter, the manufacturer entered the data under the WEIGHT, MOMENT/100, and INDEX (CG) columns of the CURRENT TOTAL BASIC AIRCRAFT heading of DD Form 365-3. The equipment listed under DESCRIPTION OF ARTICLE OR MODIFICATION heading on DD Form 365-3 is compared against items listed and check marked under IN AIRCRAFT column of DD Form 365-1.

3. Make additions to or subtractions from the WEIGHT, MOMENT/100, and INDEX (CG) columns of the CURRENT TOTAL BASIC AIRCRAFT heading of DD Form 365-3 when:

a. Equipment is added to, or removed from, the helicopter.

(1) If item is listed on DD Form 365-1, enter identical information in ITEM NUMBER and DESCRIPTION OF ARTICLE OR MODIFICATION columns, and applicable WEIGHT, ARM and MOMENT/100 data under ADDED or REMOVED columns of WEIGHT CHANGE heading of DD Form 365-3.

(2) If item is not listed on DD Form 365-1, determine its actual weight, arm and moment/100 (paragraph G-9), and record this information on both DD Form 365-1 and DD Form 365-3.

(3) Using data entered in preceding steps a. (1) and (2), calculate and enter new figures in WEIGHT, MOMENT/100, and INDEX (CG) column under CURRENT TOTAL BASIC AIRCRAFT column heading (DD Form 365-3).

NOTE

Check marks should not be entered on DD Form 365-1 IN AIRCRAFT check column until a complete inventory is accomplished.

b. A complete inventory reveals equipment changes not previously recorded.

(1) Post equipment changes as instructed above (step 3., a.).

NOTE

The date entered under DATE column on DD Form 365-3 must be consistent with the delivery date or the date entered on the IN AIRCRAFT check column on DD Form 365-1, and with the DATE WEIGHED date on DD Form 365-1, if used.

(2) Upon completion of preceding step 3., substeps (1) through (3), date newly calculated data. The DATE column (for item added or removed) on DD Form 365-3 must correspond with date entered directly above CHART C ENTRY check column (for corresponding item) on DD Form 365-1. It is also helpful to record the CHART C ENTRY check column number from DD Form 365-1 on DD Form 365-3. This substantiates the new figures and provides a cross-reference.

c. If structural changes made in the helicopter are provisions for equipment, list them separately from equipment to be installed thereon.

d. The helicopter is reweighed. Before weighing, make a complete inventory and bring calculated DD Form 365-3 figures up to date. Transfer newly calculated weight and moment data from DD Form 365-2 to DD Form 365-3 (Paragraph G-9).

4. Any changes or modifications which are caused by a specific order should carry a reference to the order number and date which authorizes the change.

CHART C – BASIC WEIGHT AND BALANCE RECORD

(CONTINUOUS HISTORY OF CHANGES IN STRUCTURE OR EQUIPMENT AFFECTING WEIGHT AND BALANCE)

FOR USE IN T.O. 1-1B-40, NAVAIR 01-1B-40, AND TM 55-1500-342-23

MODEL/DESIGN/SERIES	SERIAL NUMBER	PAGE NUMBER
OH-58D	XXXXXXX	1

DATE *(YYMMDD)*	ITEM NUMBER		DESCRIPTION OF ARTICLE OR MODIFICATION	WEIGHT CHANGE						CURRENT TOTAL BASIC AIRCRAFT		
				ADDED (+)			REMOVED (-)					
	IN	OUT		WEIGHT	ARM	MOMENT[1] / 100	WEIGHT	ARM	MOMENT[1] / 100	WEIGHT	MOMENT[1] / 100	INDEX[2] CG
921205			BASIC WEIGHT AS DELIVERED							3472.3	4033.8	116.2

1 Enter constant used below line. 2 Load adjuster index.

DD Form 366-3, JAN 82

REPLACES DD FORM 365C, SEP 54, WHICH WILL BE USED

406961-1412-38
J1160

Figure G-4. DD Form 365-3 (Sheet 1 of 2)

CHART C - BASIC WEIGHT AND BALANCE RECORD

(CONTINUOUS HISTORY OF CHANGES IN STRUCTURE OR EQUIPMENT AFFECTING WEIGHT AND BALANCE)

FOR USE IN T.O. 1-1B-40, NAVAIR 01-1B-40, AND TM 55-1500-342-23

MODEL/DESIGN/SERIES	SERIAL NUMBER	PAGE NUMBER
OH-58D (R)	XXXXXXX	1

DATE (YYMMDD)	ITEM NUMBER		DESCRIPTION OF ARTICLE OR MODIFICATION	WEIGHT CHANGE						CURRENT TOTAL BASIC AIRCRAFT		
				ADDED (+)			REMOVED (-)					
	IN	OUT		WEIGHT (lbs)	ARM (In)	MOMENT[1] 100	WEIGHT (lbs)	ARM (In)	MOMENT 100	WEIGHT (lbs)	MOMENT 100	INDEX[2] (CG)
970707		B-14	Basic Delivery Configuration Based on Actual Weighing.							3434.1	3997.7	116.4
970721			Remove MMS processor				-46.0	110.0	-50.1			
	B-15		Add Improved MMS Processor	42.0	110.0	46.1						
970721			Revised Basic Weight & Moment as Calculated							3430.1	3993.7	116.4

1 Enter constant used below line. 2 Load adjuster Index.

DD Form 366-3, MAR 88

Previous editions are obsolete

406961-1412-4
J1160

Figure G-4. DD Form 365-3 (Sheet 2 of 2)

G-11. LOADING DATA

The loading data provides information necessary to work a loading problem for the helicopter. Refer to TM 1-1520-248-10, Chapter 6. From the loading charts, diagrams, and/or tables, weight and moment constant are obtained for all variable load items and are added arithmetically to the current basic weight and moment/constant (from DD Form 365-3) to obtain the gross weight and moment. The CG of the loaded helicopter is represented by the intersection of the gross weight and moment lines on the CG chart in TM 1-1520-248-10, Chapter 6. If the helicopter is loaded within the forward and aft CG limits, the intersection will fall between the limiting CG lines on the CG chart. The effect of the CG on the expenditures in flight of such items as fuel and expendable stores may be checked by subtracting the weights and moments of such items from the takeoff gross weight and moment and replotting on the CG chart. This check should be made to determine whether or not the CG will remain within limits during the entire flight. Another means of obtaining loading data is the Chart E, which is provided by the manufacturer.

G-12. DD FORM 365-4 — WEIGHT AND BALANCE CLEARANCE FORM F

DD Form 365-4 (figures G-5 and G-6) is the summary of the actual disposition of load in the helicopter. They record the balance status of the helicopter step by step. They serve as a work sheet on which the weight and balance technical records and calculations, and any corrections, must be made to ensure that the helicopter will be within weight and CG limits. It is necessary to accomplish DD Form 365-4 prior to flight whenever a helicopter is loaded in a manner for which no previous valid DD Form 365-4 is available. DD Form 365-4 is furnished in expendable pads, or as separate sheets, which can be replaced when exhausted. An original and a carbon copy are prepared for each loading. The original sheets, bearing the authorized signature in the WEIGHT AND BALANCE AUTHORITY SIGNATURE column, can be removed to serve as certificates of proper weight and balance as required by existing clearance directives. The carbon copy must remain in the helicopter for the duration of the flight. On a cross-country flight, DD Form 365-4 aids the weight and balance technician at refueling bases and stopover stations. There are two versions of these forms: TRANSPORT and TACTICAL. They were designed to provide for the respective loading arrangements of these two types of helicopters. The choice of which version to use is the responsibility of the weight and balance technicians at the takeoff base.

WEIGHT AND BALANCE CLEARANCE FORM F - TRANSPORT
(USE REVERSE FOR TACTICAL MISSIONS)

FOR USE IN T.O. 1-1B-40, NAVAIR 01-1B-40, AND TM 55-1500-342-23

Form Approved OMB No. 0704-0188

DATE *(YYMMDD)*	AIRCRAFT TYPE	FROM	HOME STATION
MISSION	SERIAL NO.	TO	PILOT

REMARKS

BALANCE COMPUTER INDEX

REF	ITEM	WEIGHT	INDEX or MOM/
1	BASIC AIRCRAFT *(From Chart C)*		
2			
3	CREW *(NO.)*		
4	CREW'S BAGGAGE		
5	STEWARD'S EQUIPMENT		
6	EMERGENCY EQUIPMENT		
7	EXTRA EQUIPMENT		
8			
9	OPERATING WEIGHT		
10	TAKEOFF FUEL (Gal.)		
11	WATER INJ.		
12	TOTAL AIRCRAFT WEIGHT		

CORRECTIONS/MOST FWD / MOST AFT

13 DISTRIBUTION OF ALLOWABLE LOAD (PAYLOAD)

ZERO FUEL WT

COMPT OR ARM	ITEM	CHANGES (+ or -) WEIGHT	CHANGES (+ or -) INDEX or MOM	PASSENGERS NO	PASSENGERS WEIGHT	COMPT OR ARM	CARGO	CARGO	COMPT OR ARM	ZERO FUEL WT INDEX or MOM / ZERO FUEL % MAC
TOTAL WT REMOVED										
TOTAL WT ADDED										
NET DIFFERENCE										

LIMITATIONS			
CONDITION	TAKEOFF	LANDING	FUEL
ALLOWABLE GROSS WEIGHT			
TOTAL AIRCRAFT WEIGHT *(Ref. 12)*			
(Ref. 9) + (Ref. 23)			
OPERATING WEIGHT *(Ref. 9)*			
ALLOWABLE LOAD *(Ref. 13) (use smallest figure)*			

[1] *Zero Fuel or Limiting Wing Fuel.*

PERMISSIBLE C.G. TAKEOFF	FORWARD	AFT
PERMISSIBLE C.G. LANDING	FORWARD	AFT
PERMISSIBLE C.G. ZERO FUEL WT.	FORWARD	AFT

COMPUTED BY SIGNATURE

WEIGHT AND BALANCE AUTHORITY SIGNATURE

PILOT SIGNATURE

14		
15		
16	TAKEOFF CONDITION *(uncorrected)*	
17	TAKEOFF C.G. IN % M.A.C. OR IN	
18	CORRECTIONS *(if required)*	
19	TAKEOFF CONDITION *(corrected)*	
20	TAKEOFF C.G. IN % M.A.C. OR IN	
21	ZERO FUEL WT	
22	LESS AIR DROP LOAD	
23	ESTIMATED LANDING FUEL	
24	ESTIMATED LANDING CONDITION	
25	ESTIMATED LANDING C.G. IN % M.A.C. OR IN	

DD Form 365-4, MAR 88

Previous editions are obsolete

406961-1412-6
J1160

Figure G-4. DD Form 365-4 (OH-58D) (Sheet 1 of 2)

WEIGHT AND BALANCE CLEARANCE FORM F - TACTICAL
(Use reverse for transport missions)

FOR USE IN T.O. 1-1B-40, NAVAIR 01-1B-40, AND TM 55-1500-342-23

DATE(YYMMDD) 930116	AIRCRAFT TYPE OH-58D		FROM A		HOME STATION A
MISSION SAMPLE	SERIAL NO. XXXXXXX		TO Z		PILOT J. DOE

MOST FWD, MOST AFT, CORRECTIONS (Ref. 11)				REF	ITEM				WEIGHT	INDEX or MOM/ 100
COMPT	ITEM	WEIGHT	CHANGES (+ or -) INDEX OR MOM/ 100	1	BASIC AIRCRAFT *(From Chart C)*				3472	4034
				2	*OIL (* *Gal.)*					
				3		CREW				
					COMP	NO.	WEIGHT	CARGO/ MISC.		
					A	2	175		350	228
TOTAL WEIGHT ADDED		+	+	4	OPERATING WEIGHT				3822	4262
TOTAL WEIGHT REMOVED		–	–	7	110.0 Gallons JP-5				748	848
NET DIFFERENCE *(REF, 11)*				8	MISC. VARIABLES					
REMARKS				9	TAKEOFF CONDITION *(UNCORRECTED)*				4570	5110
				10	TAKEOFF C.G. IN % M.A.C. OR IN.					111.8"
				11	CORRECTIONS *(IF REQUIRED)*				———	———
				12	TAKEOFF CONDITIONS *(CORRECTED)*				4570	5110
				13	TAKEOFF C.G. IN % M.A.C. OR IN.					111.8"
				14	TAKEOFF FUEL 110 GAL				—— 748	——— 848
				15	ESTIMATED LANDING FUEL 20 GAL				136	152
				16	ESTIMATED LANDING CONDITION				3958	4414
				17	ESTIMATED LANDING C.G. IN % M.A.C. OR IN.					111.5"

LIMITATIONS		
GROSS WT. TAKEOFF *(lb.)* 5500	GROSS WT. LANDING *(lb.)* 5500	
PERMISSIBLE C.G. TAKEOFF (% M.A.C. OR IN.)	FORWARD 106.5	AFT 113.0
PERMISSIBLE C.G. LANDING (% M.A.C. OR IN.)	FORWARD 106.5	AFT 113.0

COMPUTED BY: SIGNATURE R.M. JONES

WEIGHT AND BALANCE AUTHORITY: SIGNATURE T.B. SMITH

PILOT:SIGNATURE J. DOE

DD Form 365-4 MAR 88

406961-1412-39
J1160

Figure G-5. DD Form 365-4 (OH-58D) (Sheet 2 of 2)

WEIGHT AND BALANCE CLEARANCE FORM F - TRANSPORT (USE REVERSE FOR TACTICAL MISSIONS)		FOR USE IN T.O. 1-1B-40, NAVAIR 01-1B-40, AND TM 55-1500-342-23	Form Approved OMB No. 0704-0188
DATE (YYMMDD)	AIRCRAFT TYPE	FROM	HOME STATION
MISSION	SERIAL NO.	TO	PILOT

REMARKS	REF	ITEM	WEIGHT	INDEX or MOM/
	1	BASIC AIRCRAFT *(From Chart C)*		
	2			
	3	CREW *(NO.)*		
	4	CREW'S BAGGAGE		
	5	STEWARD'S EQUIPMENT		
	6	EMERGENCY EQUIPMENT		
	7	EXTRA EQUIPMENT		
	8			
	9	OPERATING WEIGHT		
	10	TAKEOFF FUEL (Gal.)		
	11	WATER INJ.		
BALANCE COMPUTER INDEX	12	TOTAL AIRCRAFT WEIGHT		

CORRECTIONS/MOST FWD / MOST AFT				13 DISTRIBUTION OF ALLOWABLE LOAD (PAYLOAD)						ZERO FUEL WT
COMPT OR ARM	ITEM	CHANGES (+ or -) WEIGHT	INDEX or MOM	PASSENGERS NO	WEIGHT	COMPT OR ARM	CARGO	CARGO	COMPT OR ARM	ZERO FUEL WT INDEX or MOM / ZERO FUEL % MAC
TOTAL WT REMOVED										
TOTAL WT ADDED										
NET DIFFERENCE										

LIMITATIONS				REF	ITEM	WEIGHT	INDEX or MOM
				14			
CONDITION	TAKEOFF	LANDING	FUEL	15			
ALLOWABLE GROSS WEIGHT				16	TAKEOFF CONDITION *(uncorrected)*		
TOTAL AIRCRAFT WEIGHT *(Ref. 12)*				17	TAKEOFF C.G. IN % M.A.C. OR IN		
(Ref. 9) + (Ref. 23)				18	CORRECTIONS *(if required)*		
OPERATING WEIGHT *(Ref. 9)*				19	TAKEOFF CONDITION *(corrected)*		
ALLOWABLE LOAD *(Ref. 13) (use smallest figure)*				20	TAKEOFF C.G. IN % M.A.C. OR IN		
1 *Zero Fuel or Limiting Wing Fuel.*				21	ZERO FUEL WT		
PERMISSIBLE C.G. TAKEOFF	FORWARD	AFT		22	LESS AIR DROP LOAD		
PERMISSIBLE C.G. LANDING	FORWARD	AFT					
PERMISSIBLE C.G. ZERO FUEL WT.	FORWARD	AFT					
COMPUTED BY SIGNATURE							
WEIGHT AND BALANCE AUTHORITY SIGNATURE				23	ESTIMATED LANDING FUEL		
				24	ESTIMATED LANDING CONDITION		
PILOT SIGNATURE				25	ESTIMATED LANDING C.G. IN % M.A.C. OR IN		

DD Form 365-4, MAR 88 *Previous editions are obsolete*

406961-1412-6
J1160

Figure G-5. DD Form 365-4 (OH-58D(R)) (Sheet 1 of 2)

WEIGHT AND BALANCE CLEARANCE FORM F - TACTICAL
(Use reverse for transport missions)

FOR USE IN T.O. 1-1B-40, NAVAIR 01-1B-40, AND TM 55-1500-342-23

DATE(YYMMDD)	970721	AIRCRAFT TYPE OH-58D (R)		FROM	BHTI, F.W. Texas	HOME STATION	TTBA
MISSION	TBA	SERIAL NO.	XXXXXXX	TO	TBA	PILOT	As Assigned

MOST FWD, MOST AFT, CORRECTIONS (Ref. 11)				REF	ITEM				WEIGHT	INDEX or MOM/ 100
COMPT	ITEM	WEIGHT	CHANGES (+ or -) INDEX OR MOM/ 100	1	BASIC AIRCRAFT *(From Chart C)*				3430	3994
				2	*(IN BASIC WEIGHT Gal.)*					
				3	DISTRIBUTION OF LOAD	COMP	CREW NO.	CREW WEIGHT	CARGO/ MISC.	
						A	2	175 EA	Crew	350 / 228
				4	OPERATING WEIGHT				3780	4222
				5	AMMO					
				6	BOMBS, MISSILES ETC.					
TOTAL WEIGHT ADDED										
TOTAL WEIGHT REMOVED		0	0							
NET DIFFERENCE *(REF, 11)*		0	0	7	FUEL	110.0 Gallons Internal (JP-5)			748	848
				8	MISC. VARIABLES					
				9	TAKEOFF CONDITION *(UNCORRECTED)*				4528	5070
				10	TAKEOFF C.G. IN % M.A.C. OR IN.					112.0"
				11	CORRECTIONS *(IF REQUIRED)*				0	0
				12	TAKEOFF CONDITIONS *(CORRECTED)*				4528	5070
				13	TAKEOFF C.G. IN % M.A.C. OR IN.					112.0"
				14	TAKEOFF FUEL				-748	-848
					EXPENDABLE					
				15	ESTIMATED LANDING FUEL				136	152
				16	ESTIMATED LANDING CONDITION				3916	4374
				17	ESTIMATED LANDING C.G. IN % M.A.C. OR IN.					111.7"

REMARKS

EXAMPLE WITH TWO (2) PILOTS, TWO (2) WEAPONS PYLONS, AND FULL FUEL (JP-5).

LIMITATIONS		
GROSS WT. TAKEOFF *(lb.)* 5200	GROSS WT. LANDING *(lb.)* 5200	
PERMISSIBLE C.G. TAKEOFF (% M.A.C. OR IN.)	FORWARD 106.5 "	AFT 113.0 "
PERMISSIBLE C.G. LANDING (% M.A.C. OR IN.)	FORWARD 106.5 "	AFT 113.0 "

COMPUTED BY: SIGNATURE

WEIGHT AND BALANCE AUTHORITY: SIGNATURE

PILOT: SIGNATURE

DD Form 365-4 Reverse, MAR 88

U.S. GPO 1989: 605/213

406961-1412-5
J1160

Figure G-6. DD Form 365-4 (OH-58D(R)) (Sheet 2 of 2)

Section III. WEIGHING INSTRUCTIONS

G-13. HELICOPTER WEIGHING

Weighing must be accomplished as follows:

1. Periodically as required by pertinent directives. (Refer to AR 95-1.)

2. When major modifications or repairs are made.

3. When the pilot reports unsatisfactory flight characteristics (nose or tail heaviness).

4. When the basic weight data is suspected to be in error. The basic weight and CG location obtained from a weighing can only be as accurate as the scales equipment employed. Scales must be calibrated as required by existing directives.

G-14. PRELIMINARY WEIGHING INSTRUCTIONS

Preliminary weighing instructions are as follows:

1. Assemble necessary equipment, including scales, hoisting equipment, jacks, cribbing, leveling bars and level, measuring tape, plumb bob, and string.

2. Remove dirt, grease, moisture, etc., from helicopter.

3. If impracticable to drain tanks (due to fire hazard or local regulations), fill all fuel tanks to operating capacity with helicopter in its normal attitude on ground. Since weight of fuel varies with temperature, determine actual weight per gallon by use of a hydrometer. Multiply by gallons capacity, obtained from loading data sheets, for total fuel weight.

4. Drain oil from oil tanks, using tank drains, or fill to operating capacity.

5. Fill hydraulic reservoir to normal level.

NOTE

A basic weight without the equivalent inventory is of no value to the activity receiving the aircraft.

6. Using DD Form 365-1, conduct an inventory of equipment installed on helicopter, noting shortages of items that will be installed on aircraft after weighing and items such as ground support equipment, etc., that will be removed after weighing. DD Form 365-1 does not list every part on the aircraft and there can be times when parts, not on DD Form 365-1, can be missing during time of aircraft weighing due to shortages or repairs. During the aircraft inventory create a list of all items, not on DD Form 365-1, along with their weight, arm and moment that will be added back on the helicopter before flight and all items that will be removed prior to flight. These items must be entered in their appropriate columns of DD Form 365-2. Always remember that a successful weighing starts with an accurate inventory.

7. Jacking and leveling the aircraft shall be accomplished in accordance with requirements of Chapter 1.

G-15. WEIGHING EQUIPMENT

NOTE

The aircraft must be weighed in a closed hangar or facility.

Weighing the helicopter with accurately calibrated scales is the only sure method of obtaining an accurate basic weight and CG location. Reference is made to TM 55-1500-342-23 for use of the electronic weighing kit.

Additional instruction for aircraft weighing that is not contained in TM 55-1500-342-23 for the individual aircraft shall be covered in this appendix and TM 1-1520-248-10, Chapter 6.

G-16. WEIGHING INSTRUCTIONS

1. Configuration.

The configuration for weighing the helicopter should be as nearly in flight basic weight condition as practical. The doors should be closed.

2. Fluids.

a. The fuel tanks should be drained in accordance with the procedure detailed in Chapter 1. The fuel remaining will be unusable fuel. The center of gravity for the applicable number of gallons would be obtained from DD Form 365-1, Chart E, FUEL LOADING TABLE. The Basic Weight would be determined by removing this metered fuel and its moment on the DD Form 365-2. Unusable fuel would remain.

b. Engine Oil and Trapped Engine Oil are included in basic weight and should not be removed on DD Form 365-2.

c. The hydraulic system and the transmission gearboxes should be serviced. These fluids are included in Basic Weight.

3. Weighing.

a. Provisions for leveling (figure G-7) are located in the crew compartment.

b. Install the jacking fittings per instructions shown (figure G-7).

c. Weigh the helicopter using a normal weighing procedure. Refer to Chapter 1 for jacking and leveling instructions.

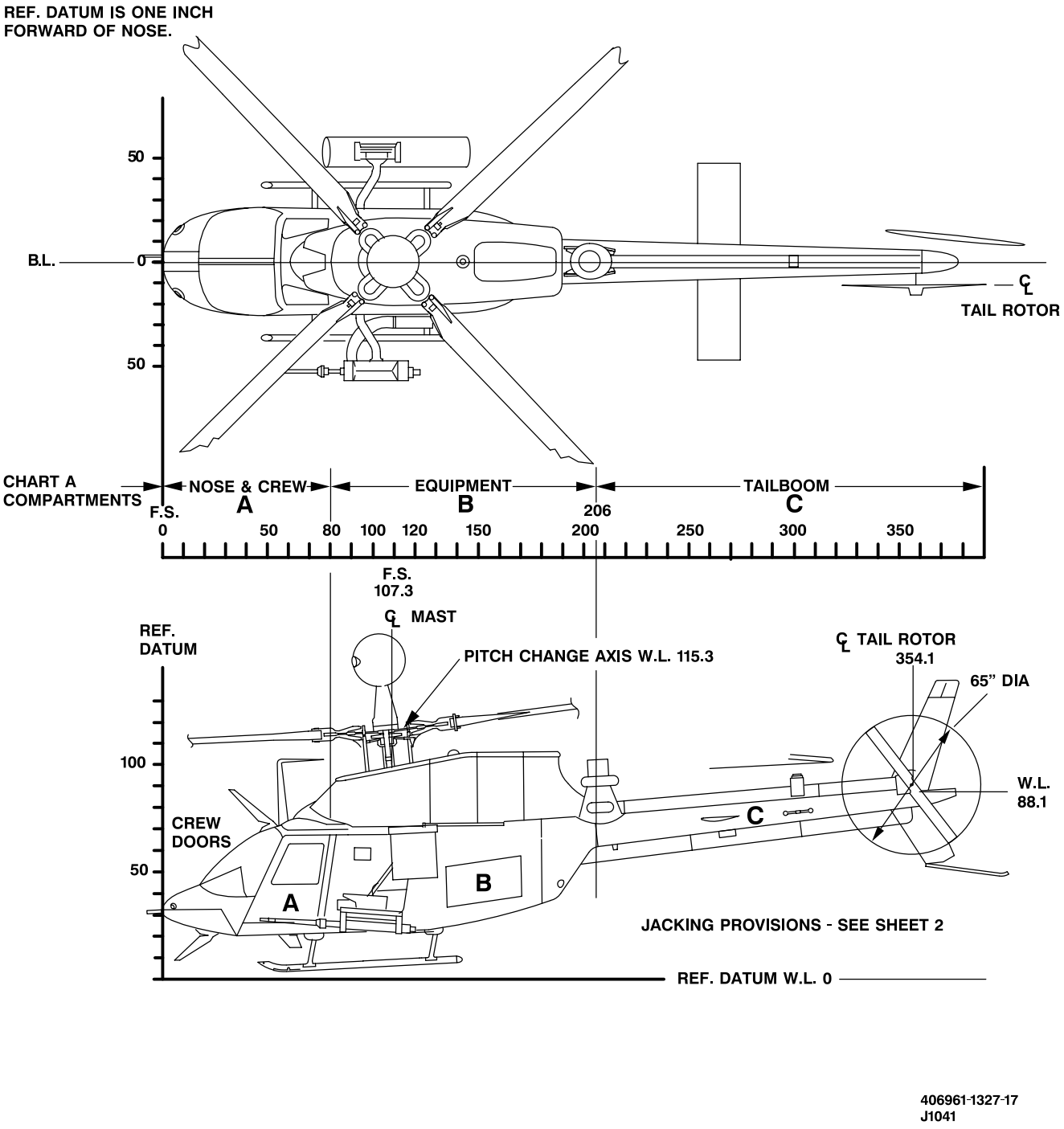
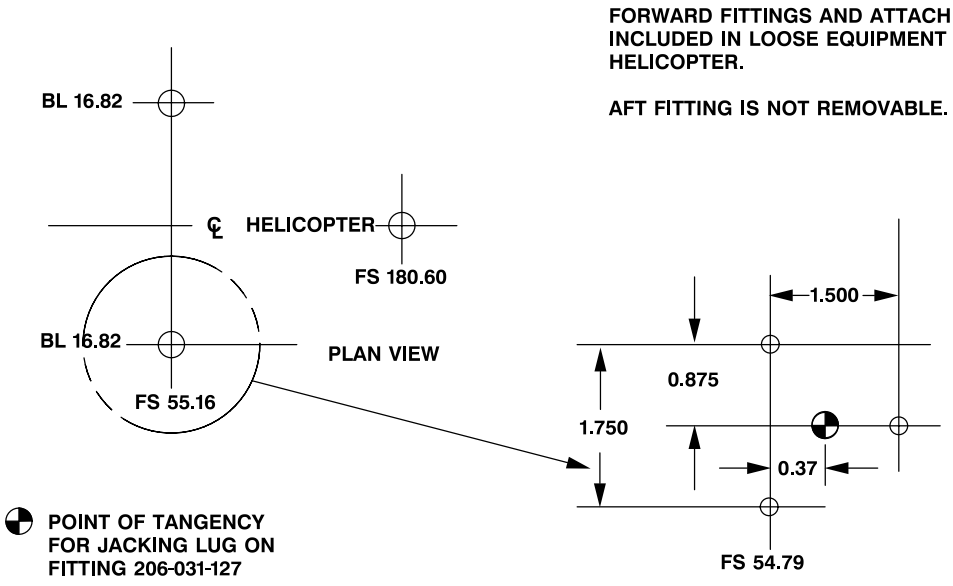
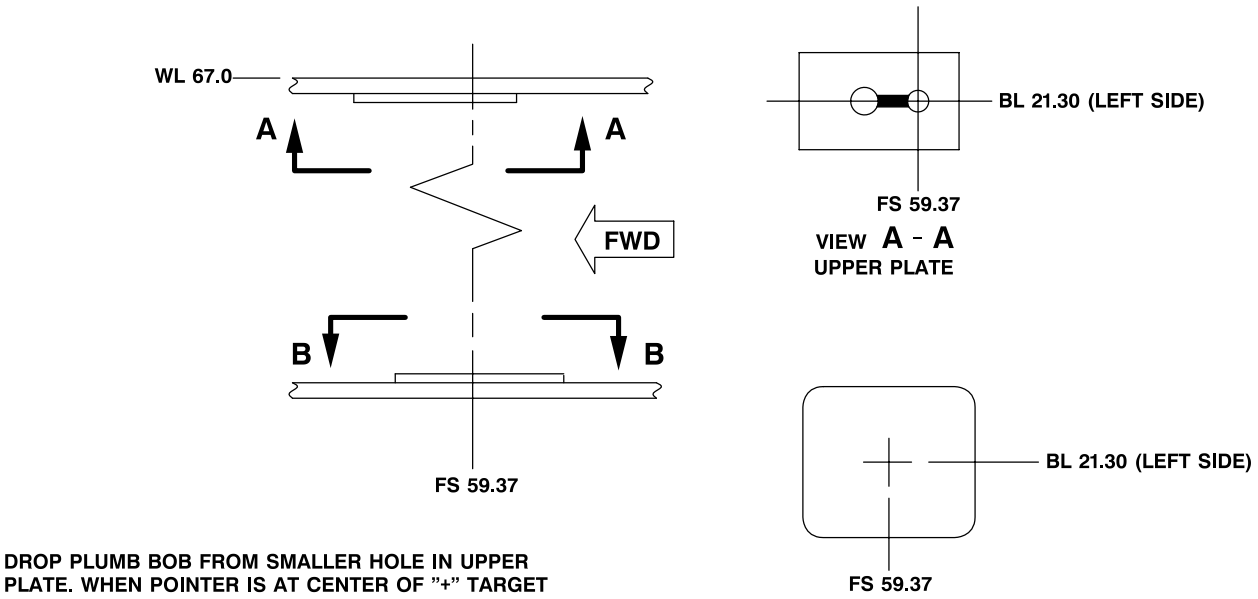


Figure G-7. Helicopter Diagram (Sheet 1 of 2)



LEVELING PLATE LOCATION DATA



DROP PLUMB BOB FROM SMALLER HOLE IN UPPER PLATE. WHEN POINTER IS AT CENTER OF "+" TARGET ON LOWER PLATE, THE HELICOPTER IS LEVEL.

NOTE: ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

406961-1327-16
J1041

Figure G-7. Helicopter Diagram (Sheet 2 of 2)

OH-58D AND OH-58D(R)

CHART E - FUEL LOADING TABLE

MOMENT/100

GAL	JP-4 @ 6.5 LBS/GAL			JP-5 @ 6.8 LBS/GAL			GAL	JP-8 @ 6.7 LBS/GAL		
	WEIGHT (LBS)	ARM (IN)	MOMENT/100 (IN-LBS)	WEIGHT (LBS)	ARM (IN)	MOMENT/100 (IN-LBS)		WEIGHT (LBS)	ARM (IN)	MOMENT/100 (IN-LBS)
10	65	111.2	72	68	111.2	76	10	67	111.2	75
20	130	112.1	146	136	112.1	152	20	134	112.1	150
30	195	112.4	219	204	112.4	229	30	201	112.4	226
40	260	112.6	293	272	112.6	306	40	268	112.6	302
50	325	112.8	367	340	112.8	384	50	335	112.8	378
60	390	113.0	441	408	113.0	461	60	402	113.0	454
70	455	113.1	515	476	113.1	538	70	469	113.1	530
80	520	113.2	589	544	113.2	616	80	536	113.2	607
90	585	113.2	662	612	113.2	693	90	603	113.2	683
100	650	113.3	736	680	113.3	770	100	670	113.3	759
110	715	113.4	811	748	113.4	848	110	737	113.4	836

UNUSABLE FUEL IS INCLUDED IN BASIC WEIGHT AND SHOWN ON CHART A

406961-1412-7
J2468

OH-58D
CHART E - TABLE OF MOMENT FOR PERSONNEL

AIRCREW STATION

WEIGHT (LBS)	MOMENT/100 F.S. 65.0	WEIGHT (LBS)	MOMENT/100 F.S. 65.0	WEIGHT (LBS)	MOMENT/100 F.S. 65.0	WEIGHT (LBS)	MOMENT/100 F.S. 65.0
150	98	230	150	310	202	390	254
160	104	240	156	320	208	400	260
170	111	250	163	330	215	410	267
180	117	260	169	340	221	420	273
190	124	270	176	350	228	430	280
200	130	280	182	360	234	440	286
210	137	290	189	370	241	450	293
220	143	300	195	380	247	460	299
						470	306

OH-58D
CHART E - TABLE OF MISSION EQUIPMENT

	WEIGHT (LBS)	FUSELAGE STATION	MOMENT/100
NIGHT VISION GOGGLES (2)	4.0	65.0	2.6
OPTICAL DISPLAY ASSY (2) 8506584-901	.8	65.0	0.5
M-43 NBC MASKS (2) WITH BLOWER SUPPORT	26.7	82.4	22.0
MAXIMUM LOAD ON CARGO HOOK	2000.0	110.0	2200.0
RAPID DEPLOYMENT LANDING GEAR	△1 61.4	98.5	60.5
NOSE SUB-BATTERY BALLAST	20.0±1	15.0	3.0

NOTE:

△1 Adjustment to basic landing gear.

406961-1412-43
J2740

OH-58D — MASS PROPERTIES
ARMAMENT USEFUL LOAD ITEMS
Table G-1. Weapon Systems Longitudinal Loading

WPNS SYS/USEFUL LOAD ITEM	WT (LB)	LONGITUDINAL CG (IN)	MOMENT/100 (IN-LB)
.50 CALIBER MACHINE GUN (LEFT ONLY)			
MACHINE GUN	142.8	102.1	146
AMMO CAN	20.4	120.3	25
CHUTE	6.5	105.5	7
HARNESS	1.8	101.0	2
.50 CAL AMMO — 24 RDS (CHUTE CAPAC)	8.0	105.5	8
⚠1 .50 CAL AMMO — 100 RDS	33.4	115.5	39
⚠1 .50 CAL AMMO — 200 RDS	66.8	118.5	79
⚠1 .50 CAL AMMO — 300 RDS	100.2	119.5	120
⚠1 .50 CAL AMMO — 400 RDS	133.6	119.8	160
⚠1 .50 CAL AMMO — 500 RDS	167.0	120.2	201
AIR-TO-AIR STINGER (ATAS)			
MISSILE SIGHT SUBSYSTEM			
ATAS PDU (1)	6.4	54.5	3
ATAS PDU MOUNT (1)	4.3	54.4	2
MSS ELECTRONICS UNIT (1)	5.0	109.4	5
(LEFT OR RIGHT):			
LAUNCHER (1) (W/O TUBES)	36.2	95.8	35
LAUNCHER TUBE (1) (INBOARD)	5.2	90.1	5
LAUNCHER TUBE (1) (OUTBOARD)	5.2	90.1	5
LAUNCHER TUBES (2)	10.4	90.1	9
LAUNCHER ADAPTER (1)	15.3	104.6	16
HARNESS (1)	4.7	94.2	4
MISSILE (1) (INBOARD)	22.4	95.2	21
MISSILE (1) (OUTBOARD)	22.4	95.2	21
MISSILE (2)	44.8	95.2	43
ELEC COMP AND MOUNT (1)	11.6	100.8	12
(LEFT AND RIGHT):			
LAUNCHER (2) (W/O TUBES)	72.4	95.8	69
LAUNCHER TUBE (1) (INBOARD)	5.2	90.1	5
LAUNCHER TUBE (1) (OUTBOARD)	5.2	90.1	5
LAUNCHER TUBE (2) (IN- OR OUTBD)	10.4	90.1	9
LAUNCHER TUBE (3) (2 IN-, 1 OUTBD)	15.7	90.1	14
LAUNCHER TUBE (3) (1 IN-, 2 OUTBD)	15.7	90.1	14
LAUNCHER TUBE (4)	20.9	90.1	19
LAUNCHER ADAPTER (2)	30.6	104.6	32
HARNESS (2)	9.4	94.2	9
MISSILE (1) (INBOARD)	22.4	95.2	21

Table G-1. Weapon Systems Longitudinal Loading (Cont)

WPNS SYS/USEFUL LOAD ITEM	WT (LB)	LONGITUDINAL CG (IN)	MOMENT/100 (IN-LB)
MISSILE (1) (OUTBOARD)	22.4	95.2	21
MISSILE (2) (IN- OR OUTBD)	44.8	95.2	43
MISSILE (3) (2 IN-, 1 OUTBD)	67.3	95.2	64
MISSILE (3) (1 IN-, 2 OUTBD)	67.3	95.2	64
MISSILE (4)	89.7	95.2	85
ELEC COMP AND MOUNT (1)	11.6	100.8	12
HELLFIRE			
(LEFT OR RIGHT):			
LAUNCHER (1)	93.0	97.8	91
HARNESS (1)	4.5	93.6	4
MISSILE (1) (INBOARD)	99.6	98.6	98
MISSILE (1) (OUTBOARD)	99.6	98.6	98
MISSILE (2)	199.2	98.6	196
REMOTE HF ELECT UNIT (1)	10.0	123.2	12
(LEFT AND RIGHT):			
LAUNCHER (2)	186.0	97.8	182
HARNESS (2)	9.0	93.6	8
MISSILE (1) (INBOARD)	99.6	98.6	98
MISSILE (1) (OUTBOARD)	99.6	98.6	98
MISSILE (2) IN- OR OUTBOARD)	199.2	98.6	196
MISSILE (3) (2 IN-, 1 OUTBD)	298.8	98.6	295
MISSILE (3) (1 IN-, 2 OUTBD)	298.8	98.6	295
MISSILE (4) (IN- OR OUTBD)	398.4	98.6	393
REMOTE HF ELECT UNIT (1)	10.0	123.2	12
HYDRA 70 2.75 INCH ROCKET SYSTEM			
(LEFT OR RIGHT):			
M260 LAUNCHER (1)	34.3	104.9	36
HARNESS (1)	2.1	94.3	2
ROCKET REMOTE UNIT (1)	5.5	102.7	6
(LEFT AND RIGHT)			
M260 LAUNCHER (2)	68.6	104.9	72
HARNESS (2)	4.2	94.3	4
ROCKET REMOTE UNIT (1)	5.5	102.7	6
ROCKETS (WARHEAD/FUZE/MOTOR): MULTIPURPOSE/ RC:			
(LEFT OR RIGHT):			
M261/M439/MK66 (1)	27.1	97.7	26
M261/M439/MK66 (2)	54.2	97.7	53

Table G-1. Weapon Systems Longitudinal Loading (Cont)

WPNS SYS/USEFUL LOAD ITEM	WT (LB)	LONGITUDINAL CG (IN)	MOMENT/100 (IN-LB)
M261/M439/MK66 (3)	81.3	97.7	79
M261/M439/MK66 (4)	108.4	97.7	106
M261/M439/MK66 (5)	135.5	97.7	132
M261/M439/MK66 (6)	162.6	97.7	159
M261/M439/MK66 (7)	189.7	97.7	185
(LEFT AND RIGHT):			
M261/M439/MK66 (1)	27.1	97.7	26
M261/M439/MK66 (2)	54.2	97.7	53
M261/M439/MK66 (3)	81.3	97.7	79
M261/M439/MK66 (4)	108.4	97.7	106
M261/M439/MK66 (5)	135.5	97.7	132
M261/M439/MK66 (6)	162.6	97.7	159
M261/M439/MK66 (7)	189.7	97.7	185
M261/M439/MK66 (8)	216.8	97.7	212
M261/M439/MK66 (9)	243.9	97.7	238
M261/M439/MK66 (10)	271.0	97.7	265
M261/M439/MK66 (11)	298.1	97.7	291
M261/M439/MK66 (12)	325.2	97.7	318
M261/M439/MK66 (13)	352.3	97.7	344
M261/M439/MK66 (14)	379.4	97.7	371
HE-17 LB/PT DET:			
(LEFT OR RIGHT):			
M229/M423/MK66 (1)	30.4	96.0	29
M229/M423/MK66 (2)	60.7	96.0	58
M229/M423/MK66 (3)	91.1	96.0	87
M229/M423/MK66 (4)	121.4	96.0	117
M229/M423/MK66 (5)	151.8	96.0	146
M229/M423/MK66 (6)	182.1	96.0	175
M229/M423/MK66 (7)	212.5	96.0	204
(LEFT AND RIGHT):			
M229/M423/MK66 (1)	30.4	96.0	29
M229/M423/MK66 (2)	60.7	96.0	58
M229/M423/MK66 (3)	91.1	96.0	87
M229/M423/MK66 (4)	121.4	96.0	117
M229/M423/MK66 (5)	151.8	96.0	146
M229/M423/MK66 (6)	182.1	96.0	175
M229/M423/MK66 (7)	212.5	96.0	204
M229/M423/MK66 (8)	242.8	96.0	233
M229/M423/MK66 (9)	273.2	96.0	262

Table G-1. Weapon Systems Longitudinal Loading (Cont)

WPNS SYS/USEFUL LOAD ITEM	WT (LB)	LONGITUDINAL CG (IN)	MOMENT/100 (IN-LB)
M229/M423/MK66 (10)	303.5	96.0	291
M229/M423/MK66 (11	333.9	96.0	321
M229/M423/MK66 (12)	364.2	96.0	350
M229/M423/MK66 (13)	394.6	96.0	379
M229/M423/MK66 (14)	424.9	96.0	408
FLECHETTE — 10/LB/RC:			
(LEFT OR RIGHT):			
⚠2 WDU 4A/A/MK66 (1)	22.7	103.4	23
⚠2 WDU 4A/A/MK66 (2)	45.3	103.4	47
⚠2 WDU 4A/A/MK66 (3)	68.0	103.4	70
⚠2 WDU 4A/A/MK66 (4)	90.6	103.4	94
⚠2 WDU 4A/A/MK66 (5)	113.3	103.4	117
⚠2 WDU 4A/A/MK66 (6)	135.9	103.4	141
⚠2 WDU 4A/A/MK66 (7)	158.6	103.4	164
(LEFT AND RIGHT):			
⚠2 WDU 4A/A/MK66 (1)	22.7	103.4	23
⚠2 WDU 4A/A/MK66 (2)	45.3	103.4	47
⚠2 WDU 4A/A/MK66 (3)	68.0	103.4	70
⚠2 WDU 4A/A/MK66 (4)	90.6	103.4	94
⚠2 WDU 4A/A/MK66 (5)	113.3	103.4	117
⚠2 WDU 4A/A/MK66 (6)	135.9	103.4	141
⚠2 WDU 4A/A/MK66 (7)	158.6	103.4	164
⚠2 WDU 4A/A/MK66 (8)	181.2	103.4	187
⚠2 WDU 4A/A/MK66 (9)	203.9	103.4	211
⚠2 WDU 4A/A/MK66 (10)	226.5	103.4	234
⚠2 WDU 4A/A/MK66 (11)	249.2	103.4	258
⚠2 WDU 4A/A/MK66 (12)	271.8	103.4	281
⚠2 WDU 4A/A/MK66 (13)	294.5	103.4	305
⚠2 WDU 4A/A/MK66 (14)	317.1	103.4	328
ILLUMINATION/RC:			
(LEFT OR RIGHT):			
M257/M442/MK66 (1)	24.2	99.0	24
M257/M442/MK66 (2)	48.4	99.0	48
M257/M442/MK66 (3)	72.7	99.0	72
M257/M442/MK66 (4)	96.9	99.0	96
M257/M442/MK66 (5)	121.1	99.0	120
M257/M442/MK66 (6)	145.3	99.0	144
M257/M442/MK66 (7)	169.5	99.0	168

Table G-1. Weapon Systems Longitudinal Loading (Cont)

WPNS SYS/USEFUL LOAD ITEM	WT (LB)	LONGITUDINAL CG (IN)	MOMENT/100 (IN-LB)
(LEFT AND RIGHT):			
M257/M442/MK66 (1)	24.2	99.0	24
M257/M442/MK66 (2)	48.4	99.0	48
M257/M442/MK66 (3)	72.7	99.0	72
M257/M442/MK66 (4)	96.9	99.0	96
M257/M442/MK66 (5)	121.1	99.0	120
M257/M442/MK66 (6)	145.3	99.0	144
M257/M442/MK66 (7)	169.5	99.0	168
M257/M442/MK66 (8)	193.8	99.0	192
M257/M442/MK66 (9)	218.0	99.0	216
M257/M442/MK66 (10)	242.2	99.0	240
M257/M442/MK66 (11)	266.4	99.0	264
M257/M442/MK66 (12)	290.6	99.0	288
M257/M442/MK66 (13)	314.9	99.0	312
M257/M442/MK66 (14)	339.1	99.0	336
WHITE PHOSPHOROUS — 10 LB/PT DET:			
(LEFT OR RIGHT):			
M156/M423/MK66 (1)	23.0	103.7	24
M156/M423/MK66 (2)	45.9	103.7	48
M156/M423/MK66 (3)	68.9	103.7	71
M156/M423/MK66 (4)	91.8	103.7	95
M156/M423/MK66 (5)	114.8	103.7	119
M156/M423/MK66 (6)	137.7	103.7	143
M156/M423/MK66 (7)	160.7	103.7	167
(LEFT AND RIGHT):			
M156/M423/MK66 (1)	23.0	103.7	24
M156/M423/MK66 (2)	45.9	103.7	48
M156/M423/MK66 (3)	68.9	103.7	71
M156/M423/MK66 (4)	91.8	103.7	95
M156/M423/MK66 (5)	114.8	103.7	119
M156/M423/MK66 (6)	137.7	103.7	143
M156/M423/MK66 (7)	160.7	103.7	167
M156/M423/MK66 (8)	183.6	103.7	190
M156/M423/MK66 (9)	206.6	103.7	214
M156/M423/MK66 (10)	229.5	103.7	238
M156/M423/MK66 (11)	252.5	103.7	262
M156/M423/MK66 (12)	275.4	103.7	286
M156/M423/MK66 (13)	298.4	103.7	310
M156/M423/MK66 (14)	321.3	103.7	333

Table G-1. Weapon Systems Longitudinal Loading (Cont)

WPNS SYS/USEFUL LOAD ITEM	WT (LB)	LONGITUDINAL CG (IN)	MOMENT/100 (IN-LB)
HE — 10 LB/PT DET:			
(LEFT OR RIGHT):			
M151/M423/MK66 (1)	23.0	103.7	24
M151/M423/MK66 (2)	45.9	103.7	48
M151/M423/MK66 (3)	68.9	103.7	71
M151/M423/MK66 (4)	91.8	103.7	95
M151/M423/MK66 (5)	114.8	103.7	119
M151/M423/MK66 (6)	137.7	103.7	143
M151/M423/MK66 (7)	160.7	103.7	167
(LEFT AND RIGHT):			
M151/M423/MK66 (1)	23.0	103.7	24
M151/M423/MK66 (2)	45.9	103.7	48
M151/M423/MK66 (3)	68.9	103.7	71
M151/M423/MK66 (4)	91.8	103.7	95
M151/M423/MK66 (5)	114.8	103.7	119
M151/M423/MK66 (6)	137.7	103.7	143
M151/M423/MK66 (7)	160.7	103.7	167
M151/M423/MK66 (8)	183.6	103.7	190
M151/M423/MK66 (9)	206.6	103.7	214
M151/M423/MK66 (10)	229.5	103.7	238
M151/M423/MK66 (11)	252.5	103.7	262
M151/M423/MK66 (12)	275.4	103.7	286
M151/M423/MK66 (13)	298.4	103.7	310
M151/M423/MK66 (14)	321.3	103.7	333
HE — 10 LB/PT DET HI-PERFORM:			
(LEFT OR RIGHT):			
M151/M427/MK66 (1)	23.0	103.7	24
M151/M427/MK66 (2)	45.9	103.7	48
M151/M427/MK66 (3)	68.9	103.7	71
M151/M427/MK66 (4)	91.8	103.7	95
M151/M427/MK66 (5)	114.8	103.7	119
M151/M427/MK66 (6)	137.7	103.7	143
M151/M427/MK66 (7)	160.7	103.7	167
(LEFT AND RIGHT):			
M151/M427/MK66 (1)	23.0	103.7	24
M151/M427/MK66 (2)	45.9	103.7	48
M151/M427/MK66 (3)	68.9	103.7	71
M151/M427/MK66 (4)	91.8	103.7	95
M151/M427/MK66 (5)	114.8	103.7	119

Table G-1. Weapon Systems Longitudinal Loading (Cont)

WPNS SYS/USEFUL LOAD ITEM	WT (LB)	LONGITUDINAL CG (IN)	MOMENT/100 (IN-LB)
M151/M427/MK66 (6)	137.7	103.7	143
M151/M427/MK66 (7)	160.7	103.7	167
M151/M427/MK66 (8)	183.6	103.7	190
M151/M427/MK66 (9)	206.6	103.7	214
M151/M427/MK66 (10)	229.5	103.7	238
M151/M427/MK66 (11)	252.5	103.7	262
M151/M427/MK66 (12)	275.4	103.7	286
M151/M427/MK66 (13)	298.4	103.7	310
M151/M427/MK66 (14)	321.3	103.7	333

NOTES:

△1 Includes 24 rounds chute ammunition.

△2 Fuze integral with warhead. No separate designator assigned.

△3 Launcher front lug is at FS 93.0, 22.3 inches aft of launcher front edge, at FS 70.7. Aft lug is at FS 107.0.

OH-58D — MASS PROPERTIES
ARMAMENT USEFUL LOAD ITEMS
Table G-2. Weapon Systems Lateral Loading

WPNS SYS/USEFUL LOAD ITEM	WT (LB)	LATERAL CG (IN)	MOMENT/100 (IN-LB)
.50 CALIBER MACHINE GUN (LEFT ONLY)			
MACHINE GUN	142.8	-51.3	-73
AMMO CAN	20.4	-31.7	-6
CHUTE	6.5	-36.2	-2
HARNESS	1.8	-36.9	-1
.50 CAL AMMO — 24 RDS (CHUTE CAPAC)	8.0	-36.2	-3
△1 .50 CAL AMMO — 100 RDS	33.4	-32.8	-11
△1 .50 CAL AMMO — 200 RDS	66.8	-32.2	-22
△1 .50 CAL AMMO — 300 RDS	100.2	-32.1	-32
△1 .50 CAL AMMO — 400 RDS	133.6	-32.0	-43
△1 .50 CAL AMMO — 500 RDS	167.0	-31.9	-53
AIR-TO-AIR STINGER (ATAS)			
MISSILE SIGHT SUBSYSTEM			
ATAS PDU (1)	6.4	14.0	1
ATAS PDU MOUNT (1)	4.3	14.0	1
MSS ELECTRONICS UNIT (1)	5.0	12.8	1
(LEFT OR RIGHT)(LATERAL C.G. ±):			
LAUNCHER (1) (W/O TUBES)	36.2	51.6	19
LAUNCHER (1)(INBOARD)	5.2	47.6	2
LAUNCHER (1)(OUTBOARD)	5.2	55.6	3
LAUNCHER TUBES (2)	10.4	51.6	5

Table G-2. Weapon Systems Lateral Loading (Cont)

WPNS SYS/USEFUL LOAD ITEM	WT (LB)	LATERAL CG (IN)	MOMENT/100 (IN-LB)
LAUNCHER ADAPTER (1)	15.3	51.6	8
HARNESS (1)	4.7	36.9	2
MISSILE (1)(INBOARD)	22.4	47.6	11
MISSILE (1)(OUTBOARD)	22.4	55.6	12
MISSILE (2)	44.8	51.6	23
ELEC COMP AND MOUNT (1)(ONLY LOC)	11.6	13.4	2
(LEFT AND RIGHT):			
LAUNCHER (2) (W/O TUBES)	72.4	0.0	0
LAUNCHER TUBE (1) (INBOARD ±)	5.2	47.6	2
LAUNCHER TUBE (1) (OUTBOARD ±)	5.2	55.6	3
LAUNCHER TUBE (2) (IN- OR OUTBD)	10.4	0.0	0
LAUNCHER TUBE (3) (2 IN-, 1 OUTBD ±)	15.7	18.5	3
LAUNCHER TUBE (3) (1 IN-, 2 OUTBD ±)	15.7	15.9	2
LAUNCHER TUBE (4)	20.9	0.0	0
LAUNCHER ADAPTER (2)	30.6	0.0	0
HARNESS (2)	9.4	0.0	0
MISSILE (1) (INBOARD ±)	22.4	47.6	11
MISSILE (1) (OUTBOARD ±)	22.4	55.6	12
MISSILE (2) (IN- OR OUTBD)	44.8	0.0	0
MISSILE (3) (2 IN-, 1 OUTBD ±)	67.3	18.5	12
MISSILE (3) (1 IN-, 2 OUTBD ±)	67.3	15.9	11
MISSILE (4)	89.7	0.0	0
ELEC COMP AND MOUNT (1)(ONLY LOC)	11.6	13.4	2
HELLFIRE			
(LEFT OR RIGHT)(LATERAL C.G. ±):			
LAUNCHER (1)	93.0	51.6	48
HARNESS (1)	4.5	36.9	2
MISSILE (1) (INBOARD)	99.6	45.2	45
MISSILE (1) (OUTBOARD)	99.6	58.1	58
MISSILE (2)	199.2	51.6	103
REMOTE HF ELECT UNIT (1)(ONLY LOC)	10.0	-6.6	-1
(LEFT AND RIGHT):			
LAUNCHER (2)	186.0	0.0	0
HARNESS (2)	9.0	0.0	0
MISSILE (1) (INBOARD ±)	99.6	45.2	45
MISSILE (1) (OUTBOARD ±)	99.6	58.1	58
MISSILE (2) IN- OR OUTBOARD)	199.2	0.0	0
MISSILE (3) (2 IN-, 1 OUTBD ±)	298.8	19.4	58
MISSILE (3) (1 IN-, 2 OUTBD ±)	298.8	15.1	45
MISSILE (4) (IN- OR OUTBD)	398.4	0.0	0

Table G-2. Weapon Systems Lateral Loading (Cont)

WPNS SYS/USEFUL LOAD ITEM	WT (LB)	LATERAL CG (IN)	MOMENT/100 (IN-LB)
REMOTE HF ELECT UNIT (1)(ONLY LOC)	10.0	-6.6	-1
HYDRA 70 2.75 INCH ROCKET SYSTEM			
(LEFT OR RIGHT)(LATERAL C.G. ±):			
M260 LAUNCHER (1)	34.3	51.6	18
HARNESS (1)	2.1	36.9	1
ROCKET REMOTE UNIT (1)(ONLY LOC)	5.5	4.4	0
(LEFT AND RIGHT):			
M260 LAUNCHER (2)	68.6	0.0	0
HARNESS (2)	4.2	0.0	0
ROCKET REMOTE UNIT (1)(ONLY LOC)	5.5	4.4	0
ROCKETS (WARHEAD/FUZE/MOTOR): MULTIPURPOSE/ RC:			
(LEFT OR RIGHT)(LATERAL C.G. ±):			
M261/M439/MK66 (1)	27.1	51.6	14
M261/M439/MK66 (2)	54.2	51.6	28
M261/M439/MK66 (3)	81.3	51.6	42
M261/M439/MK66 (4)	108.4	51.6	56
M261/M439/MK66 (5)	135.5	51.6	70
M261/M439/MK66 (6)	162.6	51.6	84
M261/M439/MK66 (7)	189.7	51.6	98
(LEFT AND RIGHT):			
M261/M439/MK66 (1) (±)	27.1	51.6	14
M261/M439/MK66 (2)	54.2	0.0	0
M261/M439/MK66 (3) (±)	81.3	17.2	14
M261/M439/MK66 (4)	108.4	0.0	0
M261/M439/MK66 (5) (±)	135.5	10.3	14
M261/M439/MK66 (6)	162.6	0.0	0
M261/M439/MK66 (7) (±)	189.7	7.4	14
M261/M439/MK66 (8)	216.8	0.0	0
M261/M439/MK66 (9) (±)	243.9	5.7	14
M261/M439/MK66 (10)	271.0	0.0	0
M261/M439/MK66 (11) (±)	298.1	4.7	14
M261/M439/MK66 (12)	325.2	0.0	0
M261/M439/MK66 (13) (±)	352.3	4.0	14
M261/M439/MK66 (14)	379.4	0.0	0
HE-17 LB/PT DET:			
(LEFT OR RIGHT)(LATERAL C.G. ±):			
M229/M423/MK66 (1)	30.4	51.6	16

Table G-2. Weapon Systems Lateral Loading (Cont)

WPNS SYS/USEFUL LOAD ITEM	WT (LB)	LATERAL CG (IN)	MOMENT/100 (IN-LB)
M229/M423/MK66 (2)	60.7	51.6	31
M229/M423/MK66 (3)	91.1	51.6	47
M229/M423/MK66 (4)	121.4	51.6	63
M229/M423/MK66 (5)	151.8	51.6	78
M229/M423/MK66 (6)	182.1	51.6	94
M229/M423/MK66 (7)	212.5	51.6	110
(LEFT AND RIGHT):			
M229/M423/MK66 (1)(±)	30.4	51.6	16
M229/M423/MK66 (2)	60.7	0.0	0
M229/M423/MK66 (3) (±)	91.1	17.2	16
M229/M423/MK66 (4)	121.4	0.0	0
M229/M423/MK66 (5) (±)	151.8	10.3	16
M229/M423/MK66 (6)	182.1	0.0	0
M229/M423/MK66 (7) (±)	212.5	7.4	16
M229/M423/MK66 (8)	242.8	0.0	0
M229/M423/MK66 (9) (±)	273.2	5.7	16
M229/M423/MK66 (10)	303.5	0.0	0
M229/M423/MK66 (11) (±)	333.9	4.7	16
M229/M423/MK66 (12)	364.2	0.0	0
M229/M423/MK66 (13) (±)	394.6	4.0	16
M229/M423/MK66 (14)	424.9	0.0	0
FLECHETTE — 10/LB/RC:			
(LEFT OR RIGHT)(LATERAL C.G. ±):			
⚠2 WDU 4A/A/MK66 (1)	22.7	51.6	12
⚠2 WDU 4A/A/MK66 (2)	45.3	51.6	23
⚠2 WDU 4A/A/MK66 (3)	68.0	51.6	35
⚠2 WDU 4A/A/MK66 (4)	90.6	51.6	47
⚠2 WDU 4A/A/MK66 (5)	113.3	51.6	58
⚠2 WDU 4A/A/MK66 (6)	135.9	51.6	70
⚠2 WDU 4A/A/MK66 (7)	158.6	51.6	82
(LEFT AND RIGHT):			
⚠2 WDU 4A/A/MK66 (1) (±)	22.7	51.6	12
⚠2 WDU 4A/A/MK66 (2)	45.3	0.0	0
⚠2 WDU 4A/A/MK66 (3) (±)	68.0	17.2	12
⚠2 WDU 4A/A/MK66 (4)	90.6	0.0	0
⚠2 WDU 4A/A/MK66 (5) (±)	113.3	10.3	12
⚠2 WDU 4A/A/MK66 (6)	135.9	0.0	0
⚠2 WDU 4A/A/MK66 (7) (±)	158.6	7.4	12
⚠2 WDU 4A/A/MK66 (8)	181.2	0.0	0
⚠2 WDU 4A/A/MK66 (9) (±)	203.9	5.7	12

Table G-2. Weapon Systems Lateral Loading (Cont)

WPNS SYS/USEFUL LOAD ITEM	WT (LB)	LATERAL CG (IN)	MOMENT/100 (IN-LB)
⚠2 WDU 4A/A/MK66 (10)	226.5	0.0	0
⚠2 WDU 4A/A/MK66 (11) (±)	249.2	4.7	12
⚠2 WDU 4A/A/MK66 (12)	271.8	0.0	0
⚠2 WDU 4A/A/MK66 (13) (±)	294.5	4.0	12
⚠2 WDU 4A/A/MK66 (14)	317.1	0.0	0
ILLUMINATION/RC:			
(LEFT OR RIGHT)(LATERAL C.G. ±):			
M257/M442/MK66 (1)	24.2	51.6	12
M257/M442/MK66 (2)	48.4	51.6	25
M257/M442/MK66 (3)	72.7	51.6	37
M257/M442/MK66 (4)	96.9	51.6	50
M257/M442/MK66 (5)	121.1	51.6	62
M257/M442/MK66 (6)	145.3	51.6	75
M257/M442/MK66 (7)	169.5	51.6	87
(LEFT AND RIGHT):			
M257/M442/MK66 (1) (±)	24.2	51.6	12
M257/M442/MK66 (2)	48.4	0.0	0
M257/M442/MK66 (3) (±)	72.7	17.2	12
M257/M442/MK66 (4)	96.9	0.0	0
M257/M442/MK66 (5) (±)	121.1	10.3	12
M257/M442/MK66 (6)	145.3	0.0	0
M257/M442/MK66 (7) (±)	169.5	7.4	12
M257/M442/MK66 (8)	193.8	0.0	0
M257/M442/MK66 (9) (±)	218.0	5.7	12
M257/M442/MK66 (10)	242.2	0.0	0
M257/M442/MK66 (11) (±)	266.4	4.7	12
M257/M442/MK66 (12)	290.6	0.0	0
M257/M442/MK66 (13) (±)	314.9	4.0	12
M257/M442/MK66 (14)	339.1	0.0	0
WHITE PHOSPHOROUS — 10 LB/PT DET:			
(LEFT OR RIGHT)(LATERAL C.G. ±):			
M156/M423/MK66 (1)	23.0	51.6	12
M156/M423/MK66 (2)	45.9	51.6	24
M156/M423/MK66 (3)	68.9	51.6	36
M156/M423/MK66 (4)	91.8	51.6	47
M156/M423/MK66 (5)	114.8	51.6	59
M156/M423/MK66 (6)	137.7	51.6	71
M156/M423/MK66 (7)	160.7	51.6	83
(LEFT AND RIGHT):			

Table G-2. Weapon Systems Lateral Loading (Cont)

WPNS SYS/USEFUL LOAD ITEM	WT (LB)	LATERAL CG (IN)	MOMENT/100 (IN-LB)
M156/M423/MK66 (1) (±)	23.0	51.6	12
M156/M423/MK66 (2)	45.9	0.0	0
M156/M423/MK66 (3) (±)	68.9	17.2	12
M156/M423/MK662 (4)	91.8	0.0	0
M156/M423/MK66 (5) (±)	114.8	10.3	12
M156/M423/MK66 (6)	137.7	0.0	0
M156/M423/MK66 (7) (±)	160.7	7.4	12
M156/M423/MK66 (8)	183.6	0.0	0
M156/M423/MK66 (9) (±)	206.6	5.7	12
M156/M423/MK66 (10)	229.5	0.0	0
M156/M423/MK66 (11) (±)	252.5	4.7	12
M156/M423/MK66 (12)	275.4	0.0	0
M156/M423/MK66 (13) (±)	298.4	4.0	12
M156/M423/MK66 (14)	321.3	0.0	0
HE — 10 LB/PT DET:			
(LEFT OR RIGHT)(LATERAL C.G. ±):			
M151/M423/MK66 (1)	23.0	51.6	12
M151/M423/MK66 (2)	45.9	51.6	24
M151/M423/MK66 (3)	68.9	51.6	36
M151/M423/MK66 (4)	91.8	51.6	47
M151/M423/MK66 (5)	114.8	51.6	59
M151/M423/MK66 (6)	137.7	51.6	71
M151/M423/MK66 (7)	160.7	51.6	83
(LEFT AND RIGHT):			
M151/M423/MK66 (1) (±)	23.0	51.6	12
M151/M423/MK66 (2)	45.9	0.0	0
M151/M423/MK66 (3) (±)	68.9	17.2	12
M151/M423/MK66 (4)	91.8	0.0	0
M151/M423/MK66 (5) (±)	114.8	10.3	12
M151/M423/MK66 (6)	137.7	0.0	0
M151/M423/MK66 (7) (±)	160.7	7.4	12
M151/M423/MK66 (8)	183.6	0.0	0
M151/M423/MK66 (9) (±)	206.6	5.7	12
M151/M423/MK66 (10)	229.5	0.0	0
M151/M423/MK66 (11) (±)	252.5	4.7	12
M151/M423/MK66 (12)	275.4	0.0	0
M151/M423/MK66 (13) (±)	298.4	4.0	12
M151/M423/MK66 (14)	321.3	0.0	0
HE — 10 LB/PT DET HI-PERFORM:			
(LEFT OR RIGHT)(LATERAL C.G. ±):			

Table G-2. Weapon Systems Lateral Loading (Cont)

WPNS SYS/USEFUL LOAD ITEM	WT (LB)	LATERAL CG (IN)	MOMENT/100 (IN-LB)
M151/M427/MK66 (1)	23.0	51.6	12
M151/M427/MK66 (2)	45.9	51.6	24
M151/M427/MK66 (3)	68.9	51.6	36
M151/M427/MK66 (4)	91.8	51.6	47
M151/M427/MK66 (5)	114.8	51.6	59
M151/M427/MK66 (6)	137.7	51.6	71
M151/M427/MK66 (7)	160.7	51.6	83
(LEFT AND RIGHT):			
M151/M427/MK66 (1) (±)	23.0	51.6	12
M151/M427/MK66 (2)	45.9	0.0	0
M151/M427/MK66 (3) (±)	68.9	17.2	12
M151/M427/MK66 (4)	91.8	0.0	0
M151/M427/MK66 (5) (±)	114.8	10.3	12
M151/M427/MK66 (6)	137.7	0.0	0
M151/M427/MK66 (7) (±)	160.7	7.4	12
M151/M427/MK66 (8)	183.6	0.0	0
M151/M427/MK66 (9) (±)	206.6	5.7	12
M151/M427/MK66 (10)	229.5	0.0	0
M151/M427/MK66 (11) (±)	252.5	4.7	12
M151/M427/MK66 (12)	275.4	0.0	0
M151/M427/MK66 (13) (±)	298.4	4.0	12
M151/M427/MK66 (14)	321.3	0.0	0

NOTES:

△1 Includes 24 rounds chute ammunition.

△2 Fuze integral with warhead. No separate designator assigned.

△3 Launcher front lug is at FS 93.0, 22.3 inches aft of launcher front edge, at FS 70.7. Aft lug is at FS 107.0.

OH-58D(R)
CHART E - CREW MOMENT TABLE
MOMENT/100

PILOT			COPILOT		
WEIGHT (LBS)	LONGITUDINAL MOMENT/100 F.S. 65.0	LATERAL MOMENT/100 B.L. 14.0	WEIGHT (LBS)	LONGITUDINAL MOMENT/100 F.S. 65.0	LATERAL MOMENT/100 B.L.-11.3
150	98	21	150	98	-17
160	104	22	160	104	-18
170	111	24	170	111	-19
180	117	25	180	117	-20
190	124	27	190	124	-21
200	130	28	200	130	-23
210	137	29	210	137	-24
220	143	31	220	143	-25
230	150	32	230	150	-26
240	156	34	240	156	-27

406961-1412-11-1
J2740

OH-58D(R)
CHART E
MISSION EQUIPMENT MOMENT TABLE
MOMENT/100

CREW MISSION EQUIPMENT

ITEM	WEIGHT (LBS)	LONG. ARM (IN)	LONG. MOMENT/100 (IN-LBS)	LATL. ARM (IN)	LATL. MOMENT/100 (IN-LBS)
Night Vision Goggles - Left	2.0	65.0	1.3	-11.3	-0.2
Night Vision Goggles - Right	2.0	65.0	1.3	14.0	0.3
Optical Display Assembly - Left	0.4	65.0	0.3	-11.3	0.0
Optical Display Assembly - Right	0.4	65.0	0.3	14.0	0.1
NBC Mask & Blower Support - Left	13.3	82.4	11.0	-13.9	-1.8
NBC Mask & Blower Support - Right	13.3	82.4	11.0	13.9	1.8
Maximum Load on Cargo Hook	2000.0	110.0	2200.0	0.0	0.0
Rapid Deployment Landing Gear △1	61.4	98.5	60.5	1.0	0.2
Nose Sub-Battery Ballast	20.0±1	15.0	3.0	1.0	0.2

NOTE:

△1 Adjustment to basic landing gear.

406961-1412-11-2
J2740

OH-58D
CHART E
TYPICAL SERVICE LOAD CONDITIONS TABLE

The items listed below are typical for the mission indicated. These load items are added to the Basic Weight to determine Operating Weight for the particular mission.

ITEM	PRIMARY MISSION	
	WEIGHT	MOMENT/100
Crew (2)	470.0	306
Fuel, Internal - JP-4	715.0	811
Night Vision Goggles (2)	4.0	3
Optical Display Assembly (2)	0.8	1
Rocket Launcher	34.3	36
M261/M439/MK66 Rockets (7)	189.7	185
Rocket Armament Cable	2.2	2
.50 Cal. Gun	142.8	146
.50 Cal. Ammo Container w/Fairing	20.4	25
Ammo Chute	6.5	7
.50 Cal. Gun Cable	2.0	2
Ammo .50 Cal. (500 Rnds)	167.0	201
TOTAL	1754.7	1725

Note: This is an example only; for accurate weight and balance, complete Form F using current Basic Weight from Chart C and add only those items applicable for the intended mission.

OH-58D
CHART E - DIMENSIONAL DATA TABLE

CONDITION	DIMENSION (INCHES)
Overall Length - Blades Extended and Rotating	488.0
Length - Blades Removed	391.1
Maximum Height	153.4
Span - Blades Rotating	420.0
Tread	77.9

406961-1412-34
J1160

OH-58D(R)

CHART E

TYPICAL SERVICE LOADING TABLE

The items listed below are typical for the mission indicated. These load items are added to the Basic Weight to determine Operating Weight for the particular mission.

ITEM	PRIMARY MISSION	
	WEIGHT	MOMENT/100
Crew (2)	470.0	306
Fuel, Internal - JP-5	748.0	848
Night Vision Goggles (2)	4.0	3
Optical Display Assembly (2)	0.8	1
Rocket Launcher (1)	34.3	36
M261/M439/MK66 Rockets (7)	189.7	185
External Rocket Harness (1)	2.1	2
.50 Cal. Gun (1)	142.8	146
.50 Cal. Ammo Container w/Fairing	20.4	25
Ammo Chute	6.5	7
External .50 Cal. Gun Harness	1.8	2
.50 Cal. Ammo - 500 Rnds	167.0	201
TOTAL	1787.4	1762

Note: This is an example only; for accurate weight and balance, complete Form F using current Basic Weight from Chart C and add only those items applicable for the intended mission.

OH-58D(R)

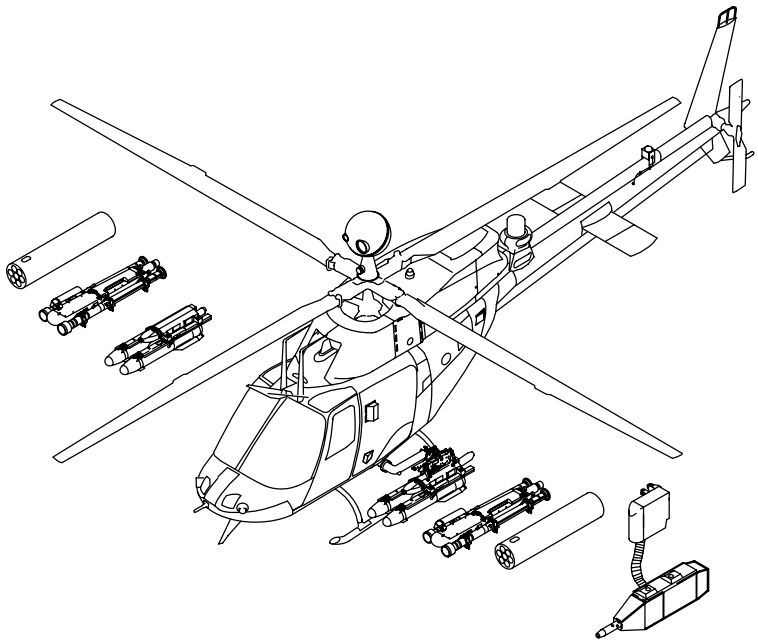
CHART E - DIMENSIONAL DATA TABLE

CONDITION	DIMENSION (INCHES)
Overall Length - Blades Extended and Rotating	488.0
Length - Blades Removed	391.1
Maximum Height	153.4
Span - Blades Rotating	420.0
Tread	77.9

406961-1412-13
J1160

OH-58D(R)

CHART E - ARMAMENT USEFUL LOAD TABLE



Weapons Stores	Weight (Lbs)	Long. Arm (In)	Long. Moment/100 (In-Lbs)	Latl. Arm (In)	Latl. Moment/100 (In-Lbs)
.50 CALIBER MACHINE GUN (Left side only)					
Machine Gun	142.8	102.1	146	-51.3	-73
Ammo Can	20.4	120.3	25	-31.7	-6
Ammo Chute	6.5	105.5	7	-36.2	-2
External Harness	1.8	101.0	2	-36.9	-1
.50 Cal Ammo-24 Rnds(Chute)	8.0	105.5	8	-36.2	-3
.50 Cal Ammo-100 Rnds*	33.4	115.5	39	-32.8	-11
.50 Cal Ammo-200 Rnds*	66.8	118.5	79	-32.2	-22
.50 Cal Ammo-300 Rnds*	100.2	119.5	120	-32.1	-32
.50 Cal Ammo-400 Rnds*	133.6	119.8	160	-32.0	-43
.50 Cal Ammo-500 Rnds*	167.0	120.2	201	-31.9	-53
*Includes 24 Rnds Chute Ammo					

406961-1412-14
J2468

OH-58D(R)

CHART E - ARMAMENT USEFUL LOAD TABLE

(CONTINUED)

Weapons Stores	Weight (Lbs)	Long. Arm (In)	Long. Moment/100 (In-Lbs)	Latl. Arm (In)	Latl. Moment/100 (In-Lbs)
AIR-TO-AIR STINGER (ATAS)					
Left (-) or Right (+)					
Launcher w/o Tubes (1)	36.2	95.8	35	± 51.6	± 19
Launcher Adapter (1)	15.3	104.6	16	± 51.6	± 8
Harness (1)	4.7	94.2	4	± 36.9	± 2
Inboard Launcher Tube (1)	5.2	90.1	5	± 47.6	± 2
Outboard Launcher Tube (1)	5.2	90.1	5	± 55.6	± 3
I/B & O/B Launcher Tubes (2)	10.4	90.1	9	± 51.6	± 5
Inboard Missile (1)	22.4	95.2	21	± 47.6	± 11
Outboard Missile (1)	22.4	95.2	21	± 55.6	± 12
I/B & O/B Missiles (2)	44.8	95.2	43	± 51.6	± 23
Left (-) and Right (+)					
Launchers w/o Tubes (2)	72.4	95.8	69	± 0.0	± 0
Launcher Adapters (2)	30.6	104.6	32	± 0.0	± 0
Harness (2)	9.4	94.2	9	± 0.0	± 0
Inboard Launcher Tube (1)	5.2	90.1	5	± 47.6	± 2
Outboard Launcher Tube (1)	5.2	90.1	5	± 55.6	± 3
I/B(2) or O/B(2) Lnchr. Tubes (2)	10.4	90.1	9	± 0.0	± 0
I/B(2) & O/B(1) Lnchr. Tubes (3)	15.7	90.1	14	± 18.5	± 3
I/B(1) & O/B(2) Lnchr. Tubes (3)	15.7	90.1	14	± 15.9	± 2
I/B & O/B Launcher Tubes (4)	20.9	90.1	19	± 0.0	± 0
Inboard Missile (1)	22.4	95.2	21	± 47.6	± 11
Outboard Missile (1)	22.4	95.2	21	± 55.6	± 12
I/B(2) or O/B(2) Missiles (2)	44.8	95.2	43	± 0	± 0
I/B(2) & O/B(1) Missiles (3)	67.3	95.2	64	± 18.5	± 12
I/B(1) & O/B(2) Missiles (3)	67.3	95.2	64	± 15.9	± 11
I/B(2) & O/B(2) Missiles (4)	89.7	95.2	85	± 0.0	± 0

406961-1412-15
J1160

OH-58D(R)

CHART E - ARMAMENT USEFUL LOAD TABLE

(CONTINUED)

Weapons Stores	Welght (Lbs)	Long. Arm (In)	Long. Moment/100 (In-Lbs)	Latl. Arm (In)	Latl. Moment/100 (In-Lbs)
HELLFIRE					
Left (-) or Right (+)					
Launcher (1)	93.0	97.8	91	± 51.6	± 48
Harness (1)	4.5	93.6	4	± 36.9	± 2
Inboard Missile (1)	99.6	98.6	98	± 45.2	± 45
Outboard Missile (1)	99.6	98.6	98	± 58.1	± 58
I/B & O/B Missiles (2)	199.2	98.6	196	± 51.6	± 103
Left (-) and Right (+)					
Launchers (2)	186.0	97.8	182	± 0.0	± 0
Harnesses (2)	9.0	93.6	8	± 0.0	± 0
Inboard Missile (1)	99.6	98.6	98	± 45.2	± 45
Outboard Missile (1)	99.6	98.6	98	± 58.1	± 58
I/B(2) or O/B(2) Missiles (2)	199.2	98.6	196	± 0.0	± 0
I/B(2) & O/B(1) Missiles (3)	298.8	98.6	295	± 19.4	± 58
I/B(1) & O/B(2) Missiles (3)	298.8	98.6	295	± 15.1	± 45
I/B(2) & O/B(2) Missiles (4)	398.4	98.6	393	± 0.0	± 0
HYDRA 70 2.75" ROCKET SYSTEM					
Left (-) or Right (+)					
M260 Launcher (1)	34.3	104.0	36	± 51.6	± 18
Harness (1)	2.1	94.3	2	± 36.9	± 1
Left (-) and Right (+)					
M260 Launchers (2)	68.6	104.9	72	± 0.0	± 0
Harnesses (2)	4.2	94.3	4	± 0.0	± 0
2.75" ROCKETS					
(Warhead/Fuze/Motor)					
MULTI-PURPOSE/RC:					
Left (-) or Right (+)					
- -M261/M439/MK66 (1)	27.1	97.7	26	± 51.6	± 14
- -M261/M439/MK66 (7)	189.7	97.7	185	± 51.6	± 98

406961-1412-16
J1160

OH-58D(R)
CHART E - ARMAMENT USEFUL LOAD TABLE
(CONTINUED)

Weapons Stores	Weight (Lbs)	Long. Arm (In)	Long. Moment/100 (In-Lbs)	Latl. Arm (In)	Latl. Moment/100 (In-Lbs)
HYDRA 70 2.75" ROCKET SYSTEM (CONTINUED)					
MULTI-PURPOSE/RC:					
Left (-) or Right (+)					
- -M261/M439/MK66 (1)	27.1	97.7	26	± 51.6	± 14
- -M261/M439/MK66 (14)	379.4	97.7	371	± 0.0	± 0
HE-17 LB/PT DET:					
Left (-) or Right (+)					
- -M229/M423/MK66 (1)	30.4	96.0	29	± 51.6	± 16
- -M229/M423/MK66 (7)	212.5	96.0	204	± 51.6	± 110
Left (-) and RIght (+)					
- -M229/M423/MK66 (1)	30.4	96.0	29	± 51.6	± 16
- -M229/M423/MK66 (14)	424.9	96.0	408	± 0.0	± 0
FLECHETTE-10 LB/RC:					
Left (-) or Right (+)					
- -WDU 4A/A/MK66 (1) #	22.7	103.4	23	± 51.6	± 12
- -WDU 4A/A/MK66 (7) #	158.6	103.4	164	± 51.6	± 82
Left (-) and Right (+)					
- -WDU 4A/A/MK66 (1) #	22.7	103.4	23	± 51.6	± 12
- -WDU 4A/A/MK66 (14) #	317.1	103.4	328	± 0.0	± 0
#Fuze Integral with Warhead					
ILLUMINATION/RC:					
Left (-) or Right (+)					
- -M257/M442/MK66 (1)	24.2	99.0	24	± 51.6	± 12
- -M257/M442/MK66 (7)	169.5	99.0	168	± 51.6	± 87
Left (-) and Right (+)					
- -M257/M442/MK66 (1)	24.2	99.0	24	± 51.6	± 12
- -M257/M442/MK66 (14)	339.1	99.0	336	± 0.0	± 0
WHITE PHOSPHORUS - 10LB/PT DET:					
Left (-) or Right (+)					
- -M156/M423/MK66 (1)	23.0	103.7	24	± 51.6	± 12
- -M156/M423/MK66 (7)	160.7	103.7	167	± 51.6	± 83

406961-1412-17
J1160

OH-58D(R)

CHART E - ARMAMENT USEFUL LOAD TABLE

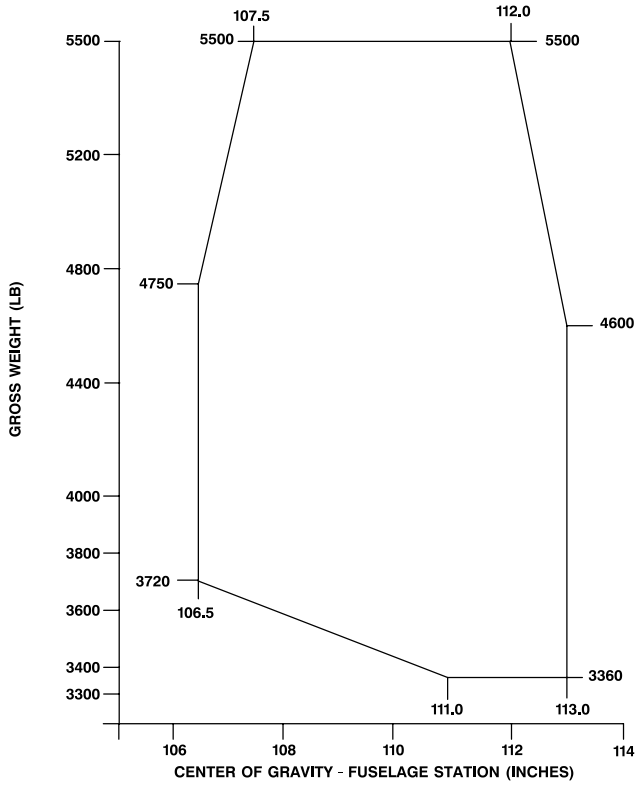
(CONTINUED)

Weapons Stores	Weight (Lbs)	Long Arm (In)	Long. Moment/100 (In-Lbs)	Latl. Arm (In)	Latl. Moment/100 (In-Lbs)
HYDRA 70 2.75" ROCKET SYSTEM (CONTINUED)					
WHITE PHOSPHORUS - 10LB/PT DET:					
Left (-) and Right (+)					
- -M156/M423/MK66 (1)	23.0	103.7	24	± 51.6	± 12
- -M156/M423/MK66 (14)	321.3	103.7	333	± 0.0	± 0
HE - 10 LB/PT DET:					
Left (-) or Right (+)					
- -M151/M423/MK66 (1)	23.0	103.7	24	± 51.6	± 12
- -M151/M423/MK66 (7)	160.7	103.7	167	± 51.6	± 83
Left (-) and Right (+)					
- -M151/M423/MK66 (1)	23.0	103.7	24	± 51.6	± 12
- -M151/M423/MK66 (14)	321.3	103.7	333	± 0.0	± 0
HE - 10LB/PT DET HI-PERFORMANCE:					
Left (-) or Right (+)					
- -M151/M427/MK66 (1)	23.0	103.7	24	± 51.6	± 12
- -M151/M427/MK66 (7)	160.7	103.7	167	± 51.6	± 83
Left (-) and Right (+)					
- -M151/M427/MK66 (1)	23.0	103.7	24	± 51.6	± 12
- -M151/M427/MK66 (14)	321.3	103.7	333	± 0.0	± 0

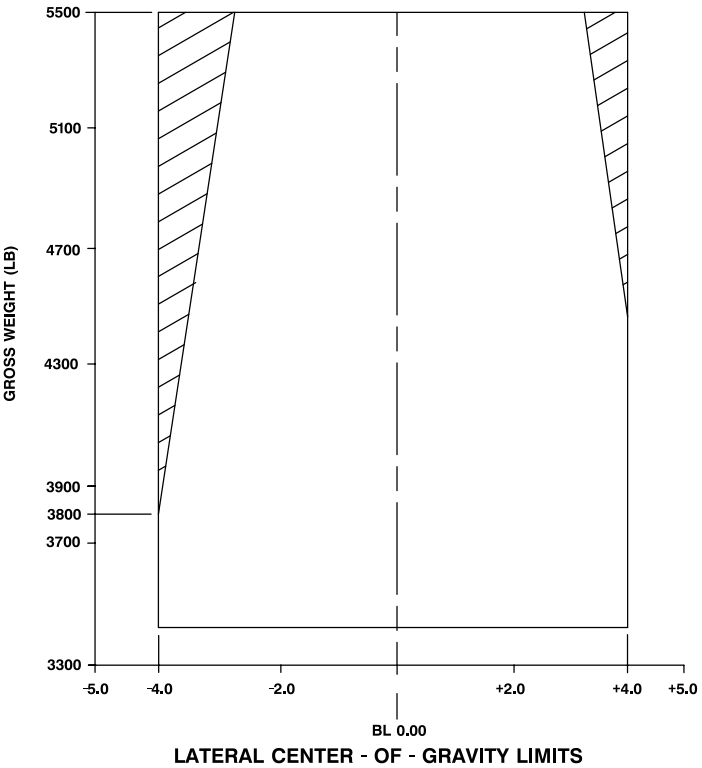
Note: Launcher front lug is at fuselage station 93.0, 22.3 inches aft of launcher front edge, which is at fuselage station 70.7. Aft lug is at fuselage station 107.0.

406961-1412-18
J1160

CHART E - LONGITUDINAL/LATERAL CENTER - OF - GRAVITY LIMITS (OH-58D)



LONGITUDINAL CENTER - OF - GRAVITY LIMITS



LATERAL CENTER - OF - GRAVITY LIMITS

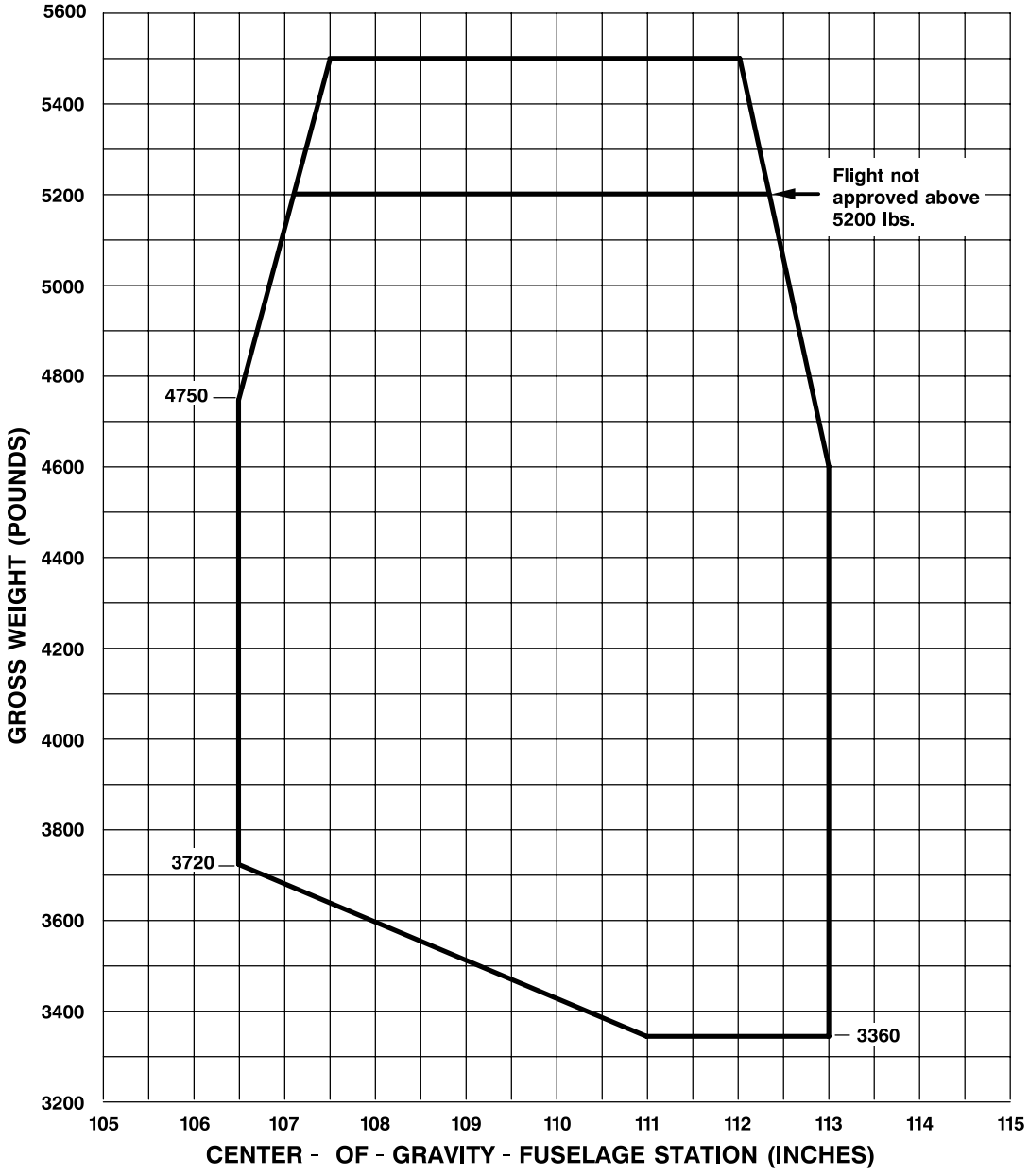
RESTRICTED FLIGHT ENVELOPE

NOT TO EXCEED:
20 KNOTS SIDEWARD FLIGHT
OR 5 DEGREE SLOPE LANDING

406961-1327-36
J1160

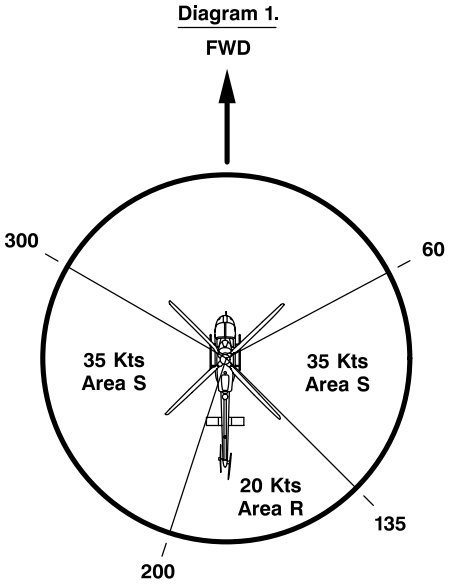
Figure G-8. Longitudinal/Lateral Center-of-Gravity Limits (OH-58D)

CHART E - LONGITUDINAL CENTER - OF - GRAVITY LIMITS (OH-58D(R))



406961-1412-19
J1160

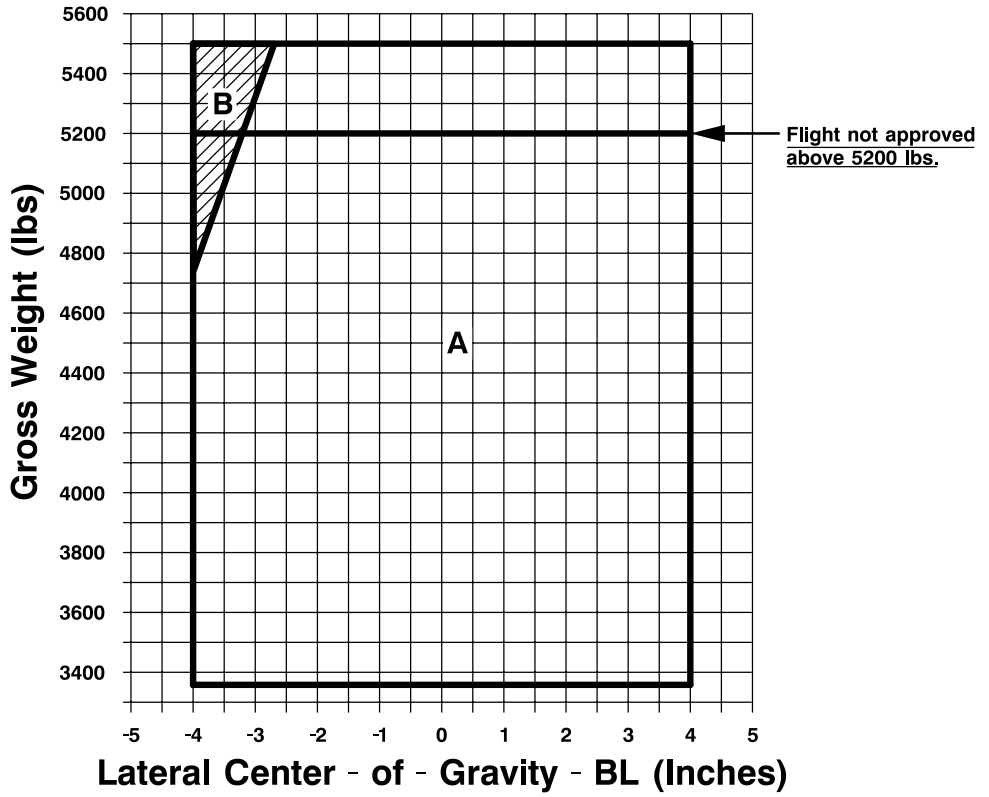
Figure G-9. Longitudinal Center-of-Gravity Limits (OH-58D(R))



Area A:	35 Knots sIdeward & rearward (Azlmuth 60 to 300 degrees) 10 degrees slope takeoff & landings
Area B:	35 Knots sideward (See Diagram 1 Area S) 20 Knots rearward (See Diagram 1 Area R) 5 degrees slope takeoff & landings
NOTE:	All rearward flights without scoops are limited to 20 Knots.

CHART E - LATERAL CENTER - OF - GRAVITY LIMITS (OH-58D(R))

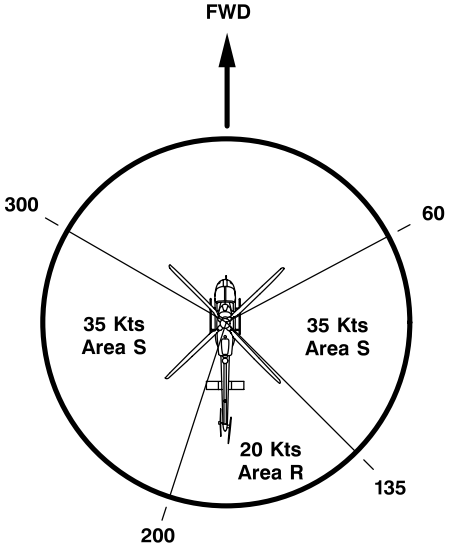
BELOW 2000 FT WITH SCOOPS



406961-1412-21
J1160

Figure G-10. Lateral Center-of-Gravity Limits (OH-58D(R))(Sheet 1 of 2)

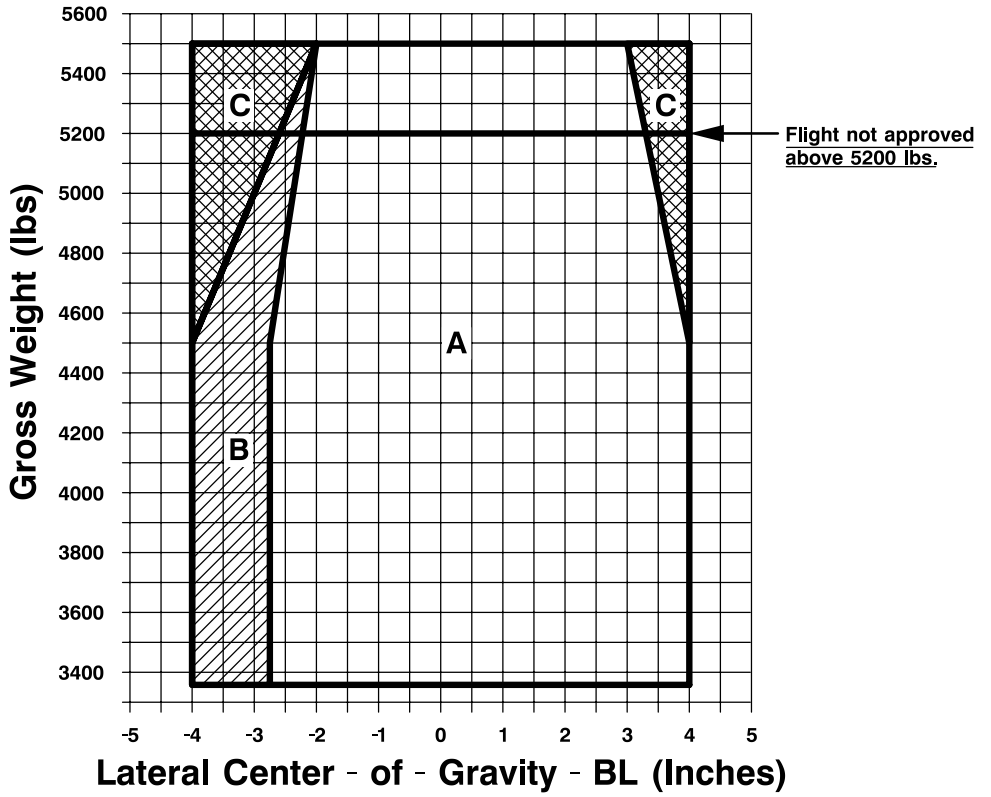
Diagram 1.



Area A:	35 Knots sideward & rearward (Azimuth 60 to 300 degrees) 10 degrees slope takeoff & landings
Area B:	35 Knots sideward (See Diagram 1 Area S) 20 Knots rearward (See Diagram 1 Area R) 5 degrees slope takeoff & landings
Area C:	20 Knots sideward & rearward (Azimuth 60 to 300 degrees) 5 degrees slope takeoff & landings
NOTE:	All rearward flights without scoops are limited to 20 Knots.

CHART E - LATERAL CENTER - OF - GRAVITY LIMITS (OH-58D(R))

ABOVE 2000 FT WITH SCOOPS



406961-1412-23
J1160

Figure G-10. Lateral Center-of-Gravity Limits (OH-58D(R))(Sheet 2 of 2)

OH-58D AND OH-58D(R)

CHART E - CENTER - OF - GRAVITY TABLE

MOMENT/100

Approximate flight limits are shown by heavy vertical and horizontal lines. Numbers outside the heavy lines are actual limits for indicated weights but not for Fuselage Stations shown in column head.

GROSS WEIGHT (POUNDS)	FUSELAGE STATIONS ← FWD LIMIT					AFT LIMIT →		
	106.0	107.0	108.0	109.0	110.0	111.0	112.0	113.0
3360						3730	3763	3797
3370					3736	3741	3774	3808
3380					3743	3752	3786	3819
3390					3750	3763	3797	3831
3400					3757	3774	3808	3842
3410					3764	3785	3819	3853
3420					3771	3796	3830	3865
3430					3777	3807	3842	3876
3440					3784	3818	3853	3887
3450				3791	3795	3830	3864	3899
3460				3797	3806	3841	3875	3910
3470				3804	3817	3852	3886	3921
3480				3811	3828	3863	3898	3932
3490				3817	3839	3874	3909	3944
3500				3824	3850	3885	3920	3955
3510				3830	3861	3896	3931	3966
3520				3837	3872	3907	3942	3978
3530			3843	3848	3883	3918	3954	3989
3540			3850	3859	3894	3929	3965	4000
3550			3856	3870	3905	3941	3976	4012
3560			3863	3880	3916	3952	3987	4023
3570			3869	3891	3927	3963	3998	4034
3580			3875	3902	3938	3974	4010	4045
3590			3882	3913	3949	3985	4021	4057

406961-1412-25
J1160

OH-58D AND OH-58D(R)

CHART E - CENTER - OF - GRAVITY TABLE

MOMENT/100

(CONTINUED)

Approximate flight limits are shown by heavy vertical and horizontal lines. Numbers outside the heavy lines are actual limits for indicated weights but not for Fuselage Stations shown in column head.

GROSS WEIGHT (POUNDS)	FUSELAGE STATIONS ← FWD LIMIT						AFT LIMIT →	
	106.0	107.0	108.0	109.0	110.0	111.0	112.0	113.0
3600			3888	3924	3960	3996	4032	4068
3610		3894	3899	3935	3971	4007	4043	4079
3620		3901	3910	3946	3982	4018	4054	4091
3630		3907	3920	3957	3993	4029	4066	4102
3640		3913	3931	3968	4004	4040	4077	4113
3650		3919	3942	3979	4015	4052	4088	4125
3660		3925	3953	3989	4026	4063	4099	4136
3670		3931	3964	4000	4037	4074	4110	4147
3680		3938	3974	4011	4048	4085	4122	4158
3690	3944	3948	3985	4022	4059	4096	4133	4170
3700	3950	3959	3996	4033	4070	4107	4144	4181
3710	3956	3970	4007	4044	4081	4118	4155	4192
3720	3962	3980	4018	4055	4092	4129	4166	4204
3730	3972	3991	4028	4066	4103	4140	4178	4215
3740	3983	4002	4039	4077	4114	4151	4189	4226
3750	3994	4013	4050	4088	4125	4163	4200	4238
3760	4004	4023	4061	4098	4136	4174	4211	4249
3770	4015	4034	4072	4109	4147	4185	4222	4260
3780	4026	4045	4082	4120	4158	4196	4234	4271
3790	4036	4055	4093	4131	4169	4207	4245	4283
3800	4047	4066	4104	4142	4180	4218	4256	4294
3810	4058	4077	4115	4153	4191	4229	4267	4305
3820	4068	4087	4126	4164	4202	4240	4278	4317
3830	4079	4098	4136	4175	4213	4251	4290	4328

406961-1412-26
J1160

OH-58D AND OH-58D(R)
CHART E - CENTER - OF - GRAVITY TABLE
MOMENT/100
(CONTINUED)

Approximate flight limits are shown by heavy vertical and horizontal lines.
Numbers outside the heavy lines are actual limits for indicated weights but not for Fuselage Stations shown in column head.

GROSS WEIGHT (POUNDS)	FUSELAGE STATIONS ← FWD LIMIT						AFT LIMIT →	
	106.0	107.0	108.0	109.0	110.0	111.0	112.0	113.0
3840	4090	4109	4147	4186	4224	4262	4301	4339
3850	4100	4120	4158	4197	4235	4274	4312	4351
3860	4111	4130	4169	4207	4246	4285	4323	4362
3870	4122	4141	4180	4218	4257	4296	4334	4373
3880	4132	4152	4190	4229	4268	4307	4346	4384
3890	4143	4162	4201	4240	4279	4318	4357	4396
3900	4154	4173	4212	4251	4290	4329	4368	4407
3910	4164	4184	4223	4262	4301	4340	4379	4418
3920	4175	4194	4234	4273	4312	4351	4390	4430
3930	4185	4205	4244	4284	4323	4362	4402	4441
3940	4196	4216	4255	4295	4334	4373	4413	4452
3950	4207	4227	4266	4306	4345	4385	4424	4464
3960	4217	4237	4277	4316	4356	4396	4435	4475
3970	4228	4248	4288	4327	4367	4407	4446	4486
3980	4239	4259	4298	4338	4378	4418	4458	4497
3990	4249	4269	4309	4349	4389	4429	4469	4509
4000	4260	4280	4320	4360	4400	4440	4480	4520
4010	4271	4291	4331	4371	4411	4451	4491	4531
4020	4281	4301	4342	4382	4422	4462	4502	4543
4030	4292	4312	4352	4393	4433	4473	4514	4554
4040	4303	4323	4363	4404	4444	4484	4525	4565
4050	4313	4334	4374	4415	4455	4496	4536	4577
4060	4324	4344	4385	4425	4466	4507	4547	4588
4070	4335	4355	4396	4436	4477	4518	4558	4599

406961-1412-27
J1160

OH-58D AND OH-58D(R)

CHART E - CENTER - OF - GRAVITY TABLE

MOMENT/100

(CONTINUED)

Approximate flight limits are shown by heavy vertical and horizontal lines. Numbers outside the heavy lines are actual limits for indicated weights but not for Fuselage Stations shown in column head.

GROSS WEIGHT (POUNDS)	FUSELAGE STATIONS ← FWD LIMIT						AFT LIMIT →	
	106.0	107.0	108.0	109.0	110.0	111.0	112.0	113.0
4080	4345	4366	4406	4447	4488	4529	4570	4610
4090	4356	4376	4417	4458	4499	4540	4581	4622
4100	4367	4387	4428	4469	4510	4551	4592	4633
4110	4377	4398	4439	4480	4521	4562	4603	4644
4120	4388	4408	4450	4491	4532	4573	4614	4656
4130	4398	4419	4460	4502	4543	4584	4626	4667
4140	4409	4430	4471	4513	4554	4595	4637	4678
4150	4420	4441	4482	4524	4565	4607	4648	4690
4160	4430	4451	4493	4534	4576	4618	4659	4701
4170	4441	4462	4504	4545	4587	4629	4670	4712
4180	4452	4473	4514	4556	4598	4640	4682	4723
4190	4462	4483	4525	4567	4609	4651	4693	4735
4200	4473	4494	4536	4578	4620	4662	4704	4746
4210	4484	4505	4547	4589	4631	4673	4715	4757
4220	4494	4515	4558	4600	4642	4684	4726	4769
4230	4505	4526	4568	4611	4653	4695	4738	4780
4240	4516	4537	4579	4622	4664	4706	4749	4791
4250	4526	4548	4590	4633	4675	4718	4760	4803
4260	4537	4558	4601	4643	4686	4729	4771	4814
4270	4548	4569	4612	4654	4697	4740	4782	4825
4280	4558	4580	4622	4665	4708	4751	4794	4836
4290	4569	4590	4633	4676	4719	4762	4805	4848
4300	4580	4601	4644	4687	4730	4773	4816	4859

406961-1412-28
J1160

MOMENT/100

Approximate flight limits are shown by heavy vertical and horizontal lines.
Numbers outside the heavy lines are actual limits for indicated weights but
not for Fuselage Stations shown in column head.

GROSS WEIGHT (POUNDS)	FUSELAGE STATIONS ← FWD LIMIT						AFT LIMIT →	
	106.0	107.0	108.0	109.0	110.0	111.0	112.0	113.0
4310					4224			
4320					4235			
4330					4246			
4340					4257			
4350					4268			
4360					4279			
4370					4290			
4380					4301			
4390					4312			
4400					4323			
4410					4334			
4420					4345			
4430					4356			
4440					4367			
4450					4378			
4460					4389			
44					4400			
					4411			
					4422			
					4433			
					4444			
					4455			
					4466			
					4477			

OH-58D AND OH-58D(R)
CHART E - CENTER - OF - GRAVITY TABLE
MOMENT/100
(CONTINUED)

Approximate flight limits are shown by heavy vertical and horizontal lines.
Numbers outside the heavy lines are actual limits for indicated weights but not for Fuselage Stations shown in column head.

GROSS WEIGHT (POUNDS)	FUSELAGE STATIONS ← FWD LIMIT						AFT LIMIT →	
	106.0	107.0	108.0	109.0	110.0	111.0	112.0	113.0
4550	4846	4869	4914	4960	5005	5051	5096	5142
4560	4856	4879	4925	4970	5016	5062	5107	5153
4570	4867	4890	4936	4981	5027	5073	5118	5164
4580	4878	4901	4946	4992	5038	5084	5130	5175
4590	4888	4911	4957	5003	5049	5095	5141	5187
4600	4899	4922	4968	5014	5060	5106	5152	5198
4610	4910	4933	4979	5025	5071	5117	5163	5209
4620	4920	4943	4990	5036	5082	5128	5174	5220
4630	4931	4954	5000	5047	5093	5139	5186	5230
4640	4942	4965	5011	5058	5104	5150	5197	5241
4650	4952	4976	5022	5069	5115	5162	5208	5252
4660	4963	4986	5033	5079	5126	5173	5219	5263
4670	4974	4997	5044	5090	5137	5184	5230	5273
4680	4984	5008	5054	5101	5148	5195	5242	5284
4690	4995	5018	5065	5112	5159	5206	5253	5295
4700	5006	5029	5076	5123	5170	5217	5264	5306
4710	5016	5040	5087	5134	5181	5228	5275	5317
4720	5027	5050	5098	5145	5192	5239	5286	5327
4730	5037	5061	5108	5156	5203	5250	5298	5338
4740	5048	5072	5119	5167	5214	5261	5309	5349
4750	5059	5083	5130	5178	5225	5273	5320	5360
4760	5070	5093	5141	5188	5236	5284	5331	5370
4770	5081	5104	5152	5199	5247	5295	5342	5381
4780	5093	5115	5162	5210	5258	5306	5354	5392

406961-1412-30
J1160

OH-58D AND OH-58D(R)
CHART E - CENTER - OF - GRAVITY TABLE
MOMENT/100
(CONTINUED)

Approximate flight limits are shown by heavy vertical and horizontal lines. Numbers outside the heavy lines are actual limits for indicated weights but not for Fuselage Stations shown in column head.

GROSS WEIGHT (POUNDS)	FUSELAGE STATIONS ← FWD LIMIT						AFT LIMIT →	
	106.0	107.0	108.0	109.0	110.0	111.0	112.0	113.0
4790	5104	5125	5173	5221	5269	5317	5365	5403
4800	5115	5136	5184	5232	5280	5328	5376	5413
4810	5126	5147	5195	5243	5291	5339	5387	5424
4820	5138	5157	5206	5254	5302	5350	5398	5435
4830	5149	5168	5216	5265	5313	5361	5410	5446
4840	5160	5179	5227	5276	5324	5372	5421	5456
4850	5172	5190	5238	5287	5335	5384	5432	5467
4860	5183	5200	5249	5297	5346	5395	5443	5478
4870	5194	5211	5260	5308	5357	5406	5454	5488
4880	5206	5222	5270	5319	5368	5417	5466	5499
4890	5217	5232	5281	5330	5379	5428	5477	5510
4900	5228	5243	5292	5341	5390	5439	5488	5521
4910	5240	5254	5303	5352	5401	5450	5499	5531
4920	5251	5264	5314	5363	5412	5461	5510	5542
4930	5262	5275	5324	5374	5423	5472	5522	5553
4940	5274	5286	5335	5385	5434	5483	5533	5564
4950	5285	5297	5346	5396	5445	5495	5544	5574
4960	5296	5307	5357	5406	5456	5506	5555	5585
4970	5308	5318	5368	5417	5467	5517	5566	5596
4980	5319	5329	5378	5428	5478	5528	5578	5606
4990	5330	5339	5389	5439	5489	5539	5589	5617
5000	5342	5350	5400	5450	5500	5550	5600	5628
5010	5353	5361	5411	5461	5511	5561	5611	5638

406961-1412-31
J1160

OH-58D AND OH-58D(R)
CHART E - CENTER - OF - GRAVITY TABLE
MOMENT/100
(CONTINUED)

Approximate flight limits are shown by heavy vertical and horizontal lines.
Numbers outside the heavy lines are actual limits for indicated weights but not for Fuselage Stations shown in column head.

GROSS WEIGHT (POUNDS)	FUSELAGE STATIONS ← FWD LIMIT						AFT LIMIT →	
	106.0	107.0	108.0	109.0	110.0	111.0	112.0	113.0
5020	5364	5371	5422	5472	5522	5572	5622	5649
5030	5376	5382	5432	5483	5533	5583	5634	5660
5040	5387	5393	5443	5494	5544	5594	5645	5671
5050	5398	5404	5454	5505	5555	5606	5656	5681
5060	5410	5414	5465	5515	5566	5617	5667	5692
5070	5421	5425	5476	5526	5577	5628	5678	5703
5080	5433	5436	5486	5537	5588	5639	5690	5713
5090	5444	5446	5497	5548	5599	5650	5701	5724
5100	5455	5457	5508	5559	5610	5661	5712	5735
5110	5467	5468	5519	5570	5621	5672	5723	5745
5120		5478	5530	5581	5632	5683	5734	5756
5130		5489	5540	5592	5643	5694	5746	5767
5140		5501	5551	5603	5654	5705	5757	5777
5150		5512	5562	5614	5665	5717	5768	5788
5160		5524	5573	5624	5676	5728	5779	5799
5170		5535	5584	5635	5687	5739	5790	5809
5180		5546	5594	5646	5698	5750	5802	5820
5190		5558	5605	5657	5709	5761	5813	5831
5200		5569	5616	5668	5720	5772	5824	5841
* 5210		5581	5627	5679	5731	5783	5835	5852 *
5220		5592	5638	5690	5742	5794	5846	5863
5230		5603	5648	5701	5753	5805	5858	5873
5240		5615	5659	5712	5764	5816	5869	5884
5250		5626	5670	5723	5775	5828	5880	5895

*FLIGHT NOT APPROVED ABOVE 5200 LBS (OH-58D(R) ONLY)

406961-1412-32
J1160

OH-58D AND OH-58D(R)
CHART E - CENTER - OF - GRAVITY TABLE
MOMENT/100
(CONTINUED)

Approximate flight limits are shown by heavy vertical and horizontal lines.
Numbers outside the heavy lines are actual limits for indicated weights but not for Fuselage Stations shown in column head.

GROSS WEIGHT (POUNDS)	FUSELAGE STATIONS ← FWD LIMIT					AFT LIMIT →		
	106.0	107.0	108.0	109.0	110.0	111.0	112.0	113.0
5260		5638	5681	5733	5786	5839	5891	5905
5270		5649	5692	5744	5797	5850	5902	5916
5280		5661	5702	5755	5808	5861	5914	5926
5290		5672	5713	5766	5819	5872	5925	5937
5300		5683	5724	5777	5830	5883	5936	5948
5310		5695	5735	5788	5841	5894	5947	5958
5320		5706	5746	5799	5852	5905	5958	5969
5330		5718	5756	5810	5863	5916	5970	5980
5340		5729	5767	5821	5874	5927	5981	5990
5350		5741	5778	5832	5885	5939	5992	6001
5360		5752	5789	5842	5896	5950	6003	6012
5370		5763	5800	5853	5907	5961	6014	6022
5380		5775	5810	5864	5918	5972	6026	6033
5390		5786	5821	5875	5929	5983	6037	6043
5400		5798	5832	5886	5940	5994	6048	6054
5410		5809	5843	5897	5951	6005	6059	6065
5420		5821	5854	5908	5962	6016	6070	6075
5430		5832	5864	5919	5973	6027	6082	6086
5440		5844	5875	5930	5984	6038	6093	6096
5450		5855	5886	5941	5995	6050	6104	6107
5460		5867	5897	5951	6006	6061	6115	6118
5470		5878	5908	5962	6017	6072	6126	6128
5480		5890	5918	5973	6028	6083	6138	6139
5490		5901	5929	5984	6039	6094	6149	6149
5500		5913	5940	5995	6050	6105	6160	

406961-1412-33
J1160

APPENDIX H

ILLUSTRATED LIST OF MANUFACTURED ITEMS (AVUM, AVIM)

This appendix includes complete instruction for making items authorized to be manufactured or fabricated at aviation unit maintenance (AVUM), aviation intermediate maintenance (AVIM), and repair parts and special tools list (RPSTL). These items shall bear MO and MF source codes.

A part number index, in alpha numeric order, is provided for cross-referencing the part number of an item to be manufactured or fabricated to the figure which covers the fabrication criteria for that item. All bulk materials needed for manufacture or fabrication of an item are listed by part number, specification, and/or national stock number (NSN) in a tabular list on the illustration.

PART NUMBER INDEX

△1 Indicates sequential insertion point for item that has been entered out of alphabetical order. See end of list.

PART NUMBER/DESCRIPTION	FIGURE NUMBER
Workaid, Pitot-Static Tube Extension	H-28
⚠1	
Workaid, Swashplate Friction Adjustment Stud	H-29
Workaid, Switch Remover	H-30
Workaid, Tail Rotor Gearbox Installation	H-31
Workaid, Template, WSPS Channel Installation	H-32
Workaid, Tubing, Flexible, PVC Fuel and Oil Resistant	H-33
⚠1	
100-089-2	H-34
110-004-2-0306	H-35
110-004-3-0110	H-35
110-004-3-0173	H-35
110-004-3-0286	H-35
110-004-3-0438	H-35
110-004-3-1062	H-35
110-004-3-1154	H-35
110-045-11	H-36
110-045-22	H-36
110-070-5-0063	H-37
110-070-7-0055	H-37
110-070-7-0059	H-37
110-070-7-0061	H-37
110-070-31-0153	H-37
110-070-31-0233	H-37
110-070-39-0350	H-37
110-070-39-0390	H-37
110-076-1-04-1	H-38
110-076-1-05-1	H-38
110-076-1-06-1	H-38
110-076-2-15	H-38
110-076-4-08-5	H-39
110-107-23ES075	H-40
110-107-23ES118	H-40
120-055-1-6	H-41
120-055-1-9	H-41
120-055-2-12	H-41
120-055-2-17	H-41
120-067A14	H-42
120-067B14	H-42
120-067B30	H-42
120-098-05D89	H-43
120-098-05D93	H-43
120-098-06A11	H-43
120-098-06D11	H-43
120-098-06A29	H-43
120-098-07B23	H-43
120-110-7C36W	H-44
130-005-2-1	H-45
130-005-4K1	H-45
130-005-6-2	H-45
130-005-8-64	H-45
130-005-9-48	H-45
130-005-9C2	H-45
20-032-1	H-46
20-032-2	H-46
20-032-2C	H-46
20-032-3	H-46
20-081-5	H-47
206-030-333-1	H-48
206-031-159-5	H-49
206-031-159-9	H-50
206-031-533-1	H-51
206-032-106-95	H-52
206-032-106-97	H-53
206-032-137-1	H-54
206-032-200-39	H-55
206-032-312-23	H-56
206-032-333-29	H-57
206-032-335-29	H-58
206-032-335-31	H-59
206-032-341-27	H-60
206-032-500-21	H-56
206-032-500-23	H-61
206-032-500-121	H-56
206-032-501-25	H-56
206-032-501-27	H-56
206-032-501-29	H-56
206-032-501-109	H-62

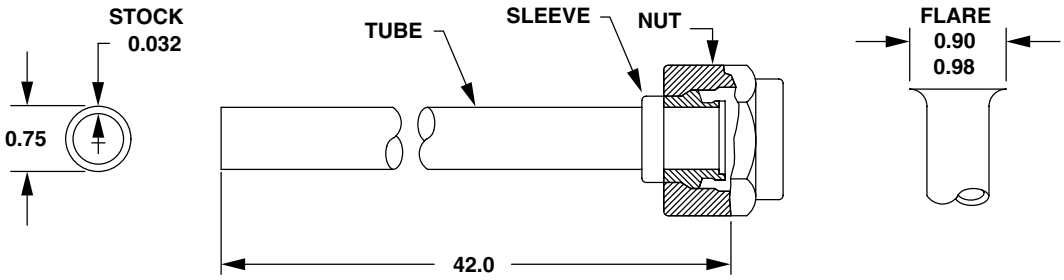
⚠1 Indicates sequential insertion point for item that has been entered out of alphabetical order. See end of list.

PART NUMBER/DESCRIPTION	FIGURE NUMBER
206-033-177-117	H-63
206-003-177-119	H-64
206-060-738-101	H-65
206-061-654-1	H-66
206-062-663-1	H-67
206-070-324-1	H-68
206-070-362-13	H-69
206-070-362-7	H-70
206-070-474-1	H-71
206-070-474-3	H-72
206-070-489-1	H-73
206-070-588-1	H-74
206-070-887-11	H-75
206-075-310-1	H-76
206-075-314-17	H-77
206-075-314-25	H-78
206-075-314-45	H-79
206-075-445-101	H-80
206-075-445-7	H-81
209-001-138-11	H-82
209-070-119-1	H-83
209-075-622-1	H-84
214-175-183-103	H-85
222-061-803-31	H-86
222-061-803-33	H-87
222-075-152-109	H-88
30-006-3-26	H-89
30-006-6-26	H-89
30-033-10-8	H-90
30-033-10-10C	H-90
30-033-3-6	H-91
30-033-3-8	H-91
30-033-15-8	H-91
30-033-15-11	H-91
30-033-1-6	H-92
30-033-19-4C	H-93
30-033-5-7C	H-94
30-033-7-4C	H-95
400-015-009-105	H-96
406-001-356-101	H-97
406-001-357-101	H-98
406-020-100-119	H-99
406-030-159-113	H-100
406-030-159-114	H-100
406-030-169-101	H-101
406-030-170-117	H-102
406-030-170-125	H-103
406-030-185-159	H-104
406-030-187-117	H-105
406-030-202-115	H-106
406-030-202-119	H-106
406-030-202-121	H-106
406-040-077-101	H-107
406-040-450-101	H-108
406-052-001-131	H-109
406-052-001-132	H-109
406-052-001-135	H-110
406-052-009-105	H-111
406-052-101-105	H-112
406-060-006-103	H-113
406-060-015-103	H-114
406-060-016-103	H-115
406-060-017-103	H-116
406-060-018-103	H-117
406-060-019-103	H-118
406-060-020-103	H-119
406-060-022-103	H-120
406-060-023-103	H-121
406-060-027-101	H-122
406-060-027-107	H-123
406-060-207-137	H-124
406-060-208-101	H-125
406-060-212-103	H-126
406-060-501-115	H-127
406-060-501-117	H-127
406-060-508-103	H-128
406-060-509-103	H-129
406-060-524-103	H-130
406-060-525-103	H-131
406-060-526-103	H-132
406-060-527-103	H-133
406-060-804-111	H-134
406-060-804-119	H-135
406-060-804-121	H-136

PART NUMBER/DESCRIPTION	FIGURE NUMBER
406-060-804-145	H-44
406-060-804-147	H-137
406-060-804-148	H-137
406-060-805-121	H-138
406-060-805-145	H-139
406-060-805-146	H-139
406-060-814-117	H-140
406-060-814-118	H-140
406-060-818-125	H-141
406-060-818-127	H-141
406-060-818-128	H-141
406-060-900-129	H-142
406-060-900-139	H-143
406-060-900-141	H-144
406-060-900-143	H-145
406-060-900-157	H-146
406-060-900-159	H-147
406-060-900-161	H-148
406-060-900-181	H-149
406-060-901-145	H-150
406-070-002-101	H-151
406-070-044-125	H-152
406-070-044-129	H-153
406-070-044-131	H-154
406-070-045-127	H-155
406-070-045-133	H-156
406-070-045-141	H-157
406-070-045-147	H-158
406-070-045-149	H-159
406-070-045-151	H-160
406-070-045-153	H-161
406-070-048-135	H-162
406-070-048-137	H-163
406-070-048-139	H-164
406-070-048-143	H-165
406-070-048-144	H-165
406-070-048-145	H-166
406-070-048-146	H-166
406-070-048-151	H-167
406-070-048-153	H-167
406-070-048-155	H-167
406-070-048-167	H-168
406-070-301-109	H-169
406-073-715-105	H-170
406-073-715-106	H-170
406-073-715-107	H-171
406-073-715-111	H-172
406-075-015-105	H-173
406-075-030-121	H-174
406-075-100-105	H-175
406-075-100-107	H-175
406-075-110-101	H-176
406-075-115-107	H-177
406-075-116-101	H-178
406-075-116-103	H-179
406-075-117-101	H-180
406-075-117-103	H-181
406-075-118-101	H-182
406-075-118-103	H-183
406-075-121-107	H-184
406-075-129-101	H-176
406-075-132-103	H-185
406-075-144-101	H-186
406-075-151-101	H-177
406-075-158-107	H-187
406-075-166-101	H-188
406-075-191-103	H-189
406-075-191-105	H-190
406-075-205-101	H-191
406-075-709-103	H-192
406-076-200-103	H-193
406-076-202-103	H-194
406-076-205-103	H-195
406-076-206-103	H-196
406-076-207-103	H-197
406-076-208-103	H-198
406-076-209-103	H-199
406-076-210-103	H-200
406-076-211-103	H-201
406-076-212-103	H-202
406-076-213-103	H-203
406-076-214-103	H-204
406-076-215-103	H-205
406-076-220-103	H-206

PART NUMBER/DESCRIPTION	FIGURE NUMBER
406-076-229-103	H-207
406-076-230-103	H-208
406-077-113-101	H-209
406-092-103-103	H-210
406-530-201-115	H-211
406-630-102-101	H-212
406-961-014-147	H-213
406-961-014-149	H-213
406-961-014-199	H-213
406-961-014-203	H-213
406-961-016-118	H-214
406-961-017-157	H-215
406-961-017-223	H-216
406-961-017-245	H-217
406-961-017-247	H-218
406-961-021-127	H-219
406-961-021-133	H-219
406-961-022-131	H-220
406-961-023-169	H-221
406-961-027-137	H-222
406-961-031-159	H-223
406-961-031-169	H-223
406-961-037-117	H-224
406-961-037-118	H-224
50-029-10B010	H-225
50-029-3B010	H-225
50-029-3B014	H-225
50-029-4B010	H-225
50-029-4B014P	H-225
50-029-7B024P	H-225
50-029-8B030	H-225
50-029-9B010	H-225

PART NUMBER/DESCRIPTION	FIGURE NUMBER
60-003-1N10	H-226
60-003-1N11	H-226
60-003-1N14	H-226
60-003-1N17	H-226
60-003-1N18	H-226
60-003-1N20	H-226
60-003-1N21	H-226
60-003-1N22	H-226
60-003-1N25	H-226
60-003-1N28	H-226
60-003-1N29	H-226
60-003-1N32	H-226
60-003-1N37	H-226
60-003-1N4	H-226
60-003-1N42	H-226
60-003-1N44	H-226
60-003-1N7	H-226
60-003-1N9	H-226
60-003-2N10	H-226
60-003-2N16	H-226
60-003-2N17	H-226
60-003-2N32	H-226
60-003-3N7	H-226
60-003-4N27	H-226
60-003-6N50	H-226
Workaid, Collective Controls Rigging Tool	H-227
Nose Sub-battery Ballast	H-228
Workaid, Forming Tool, Exhaust Duct Extension/Stiffener	H-229
Workaid, Cyclic Servoactuator Rigging Check Tool	H-230



PART NUMBER	ITEM NAME	FABRICATE FROM
L-P-410	TUBE, NONMETALLIC	NSN 9330-00-484-4013
MS20819-12D	SLEEVE	NSN 4730-00-287-0067
AN818-12D	NUT	NSN 4730-00-287-0285

NOTES

1. Dimensions are in inches.
2. Apply heat as required to attain flare.

406961-1401-42
J0248

Figure H-1. Tube, Nonmetallic

PART NUMBER	ITEM NAME	FABRICATE FROM
M22759/16-16-0	WIRE, ELECTRICAL	NSN 6145-01-044-8798
M22759/16-16-2	WIRE, ELECTRICAL	NSN 6145-01-250-5176
M22759/16-18-2	WIRE, ELECTRICAL	NSN 6145-01-057-9416
M22759/16-18-9	WIRE, ELECTRICAL	NSN 6145-01-060-7863
M22759/16-22-0	WIRE, ELECTRICAL	NSN 6145-01-057-9418
M22759/16-22-2	WIRE, ELECTRICAL	NSN 6145-01-060-7865
M22759/16-22-9	WIRE, ELECTRICAL	NSN 6145-01-042-4622
M22759/41-16-9	WIRE, ELECTRICAL	NSN 6145-01-322-5000
M22759/41-22-9	WIRE, ELECTRICAL	NSN 6145-01-157-0937

NOTES

1. Last digit in part number equals color.

   -0 = Black
   -2 = Red
   -9 = White

2. Procurement - Bulk

3. Cut to length.

406961-1401-328
J1274

Figure H-2. Wire, Electrical

PART NUMBER	ITEM NAME	FABRICATE FROM
M23053/1-202-0	INSULATION SLEEVING	NSN 5970-01-088-0413

NOTES

1. Procurement - Bulk.
2. Cut to length.

406961-1401-329
J1274

Figure H-3. Insulation Sleeving

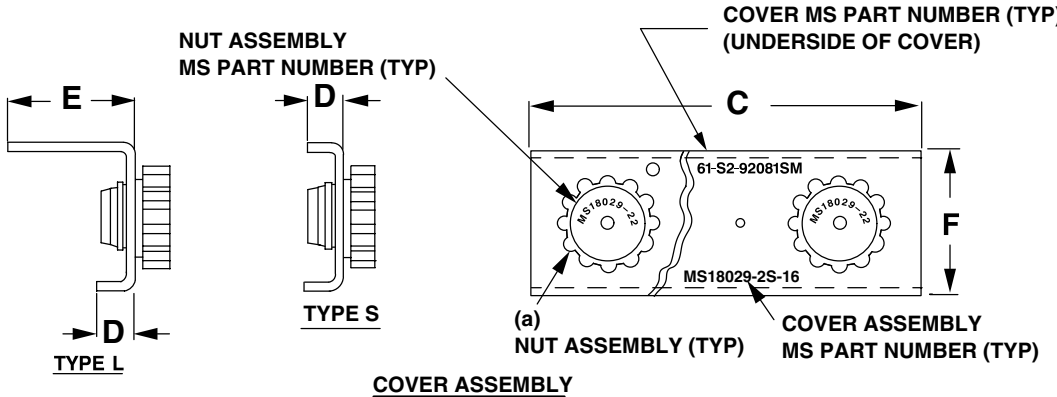
PART NUMBER	ITEM NAME	FABRICATE FROM
MIL-W-83420	WIRE, ROPE	NSN As Required

NOTES

1. Procurement - Bulk.
2. Cut to length.

406961-1401-330
J1274

Figure H-4. Wire, Rope



COVER ASSEMBLY

ASSEMBLY NO.	COVER DASH NO.		STUDS		NUT ASSEMBLY DASH NO.	C (REF)	D (REF)	E (REF)	F (REF)
	TYPE L	TYPE S	(N) MAX.	SIZE					
MS18029-1(*)-(N)	-11L-(N)	-11S-(N)	20	0.138-32	-21	12.334	0.234	0.734	0.813
MS18029-2(*)-(N)	-12L-(N)	-12S-(N)	16	0.190-32	-22	12.454		0.906	1.063
MS18029-3(*)-(N)	-13L-(N)	-13S-(N)	8	0.250-28	-23	12.641	0.375	1.312	1.500
MS18029-4(*)-(N)				0.312-24	-24				
MS18029-5(*)-(N)				0.375-24	-25				
MS18029-6(*)-(N)	-14L-(N)	-14S-(N)	16	0.164-32	-26	12.454	0.234	0.734	0.813

(a) COVER ASSEMBLIES MS18029-1L-2 OR MS18029-1S-2 USE NUT ASSEMBLY MS18029-21 (QTY 1). ALL OTHERS REQUIRE TWO NUT ASSEMBLIES.

PART NUMBER	ITEM NAME	FABRICATE FROM
MS18029-1S-1	COVER, TERMINAL BOARD	NSN 5940-00-411-7732
MS18029-1S-2	COVER, TERMINAL BOARD	NSN 5940-00-082-4642
MS18029-1S-5	COVER, TERMINAL BOARD	NSN 5940-00-082-4642

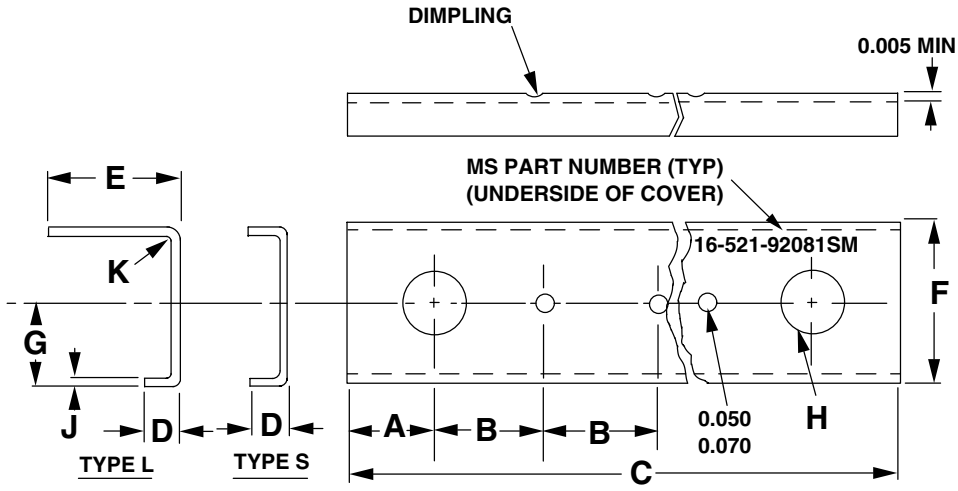
NOTES

1. Dimensions are in inches.
2. (*) Use letter L or S to indicate type cover desired.
3. (N) Indicates the number of studs in a MS27212 terminal board assembly to be covered. Example of part number:

   MS18029-2S-16 indicates a cover assembly for a MS27212 terminal board assembly having 16 studs, 0.190-32 UNF.
   This cover assembly will consist of the following:
   1 MS18029-12S-16 type S cover
   2 MS18029-22 nut assemblies
   Cover assembly MS part number shall be marked on top of cover in ink (D120).
4. The government services shall procure and stock only covers MS18029-11L-20, -11S-20, -12L-16, -12S-16, -13L-8, 13S-8, 14L-16, 14S-16, and nut assemblies MS18029-21 through -26.
5. The installing activity shall fabricate cover assemblies from parts to be stocked. (N) code is for industry use only, for the procurement of cover assemblies of various lengths.
6. Cover assemblies are not to be used in installations where the temperature exceeds 475 °F.
7. A minimum of three threads must be exposed after terminal stacking on the end studs for cover installation.

406961-1401-3-1
J0248

Figure H-5. Cover, Terminal Board (Sheet 1 of 4)



COVER

MS DASH NO.		STUD SIZE (REF)	MAX NO. OF STUDS (REF)	A	B ±.016	C MAX (REF)	D ±.030	E ±.030 TYPE L	F	G	H DIA ±.002	J ±.010	K RAD
TYPE L	TYPE S												
-11L-(N)	-11S-(N)	0.138-32	20	0.515	0.594	12.334	0.234	0.734	0.813	0.406	0.430	0.034	0.062
-12L-(N)	-12S-(N)	0.190-32	16	0.593	0.750	12.454		0.906	1.063	0.531			
-13L-(N)	-13S-(N)	0.250-28	8	1.062	1.500	12.641	0.375	1.312	1.500	0.750	0.664	0.050	0.125
		0.312-24											
		0.375-24											
-14L-(N)	-14S-(N)	0.164-32	16	0.593	0.750	12.454	0.234	0.734	0.813	0.406	0.430	0.034	0.062

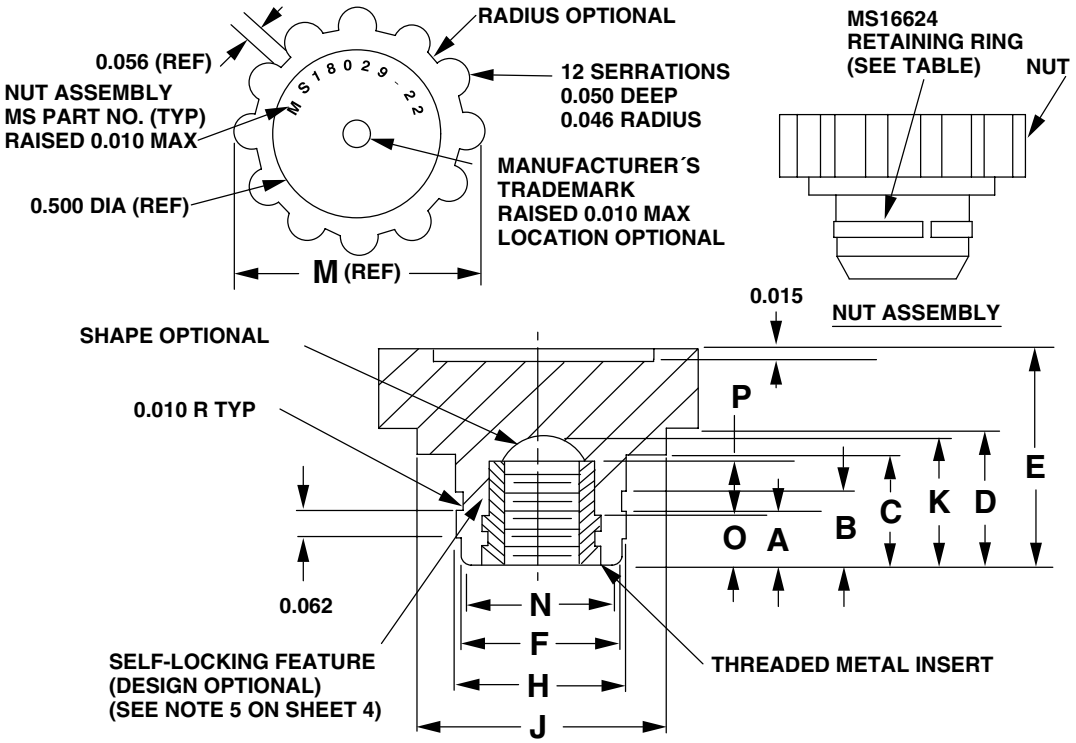
PART NUMBER	ITEM NAME	FABRICATE FROM
MS18029-1S-1	COVER, TERMINAL BOARD	NSN 5940-00-411-7732
MS18029-1S-2	COVER, TERMINAL BOARD	NSN 5940-00-082-4642
MS18029-1S-5	COVER, TERMINAL BOARD	NSN 5940-00-082-4642

NOTES

1. Dimensions are in inches.
2. Tolerance between any two **B** dimensions shall be within 0.010 inch.
3. Dimpling is to ensure correct positioning of hole for the nut assembly when cover is used on terminal board assembly having less studs than the maximum number specified in above table.
4. Example of callout for shorter lengths: MS18029-13L-5 is a cover of the type L with two 0.664 diameter holes spaced 6.00 inches from center-to-center. This cover when assembled with two MS18029-23 nut assemblies becomes cover assembly MS18029-3L-5 and is used to cover terminal board assembly MS27212-3-5.
5. Cover MS part number shall be marked on underside of cover using ink (D120).

406961-1401-3-2
J0248

Figure H-5. Cover, Terminal Board (Sheet 2 of 4)



MS DASH NO.	THREAD T INSERT	RETAINING RING	A	B	C	D REF	E REF	F DIA ±0.005	H DIA
-21	0.138-32 UNC-2B	MS16624-1040	0.129	0.176	0.250	0.313	0.500	0.373	0.397
-22	0.190-32 UNF-2B								
-23	0.250-28 UNF-2B	MS16624-1062	0.212	0.277	0.367	0.430	0.625	0.550	0.625
-24	0.312-24 UNF-2B								
-25	0.375-24 UNF-2B								
-26	0.164-32 UNF-2B	MS16624-1040	0.129	0.176	0.250	0.313	0.500	0.373	0.397

MS DASH NO.	THREAD T INSERT	RETAINING RING	J DIA REF	K REF	M DIA REF	N DIA ±0.008	O	P ± 0.0312 REF
-21	0.138-32 UNC-2B	MS16624-1040	0.562	0.310	0.750	0.365	0.125	0.1250
-22	0.190-32 UNF-2B							
-23	0.250-28 UNF-2B	MS16624-1062	0.750	0.437	0.875	0.570	0.187	0.1875
-24	0.312-24 UNF-2B							
-25	0.375-24 UNF-2B							
-26	0.164-32 UNF-2B	MS16624-1040	0.562	0.310	0.750	0.365	0.125	0.1250

406961-1401-3-3
J0248

Figure H-5. Cover, Terminal Board (Sheet 3 of 4)

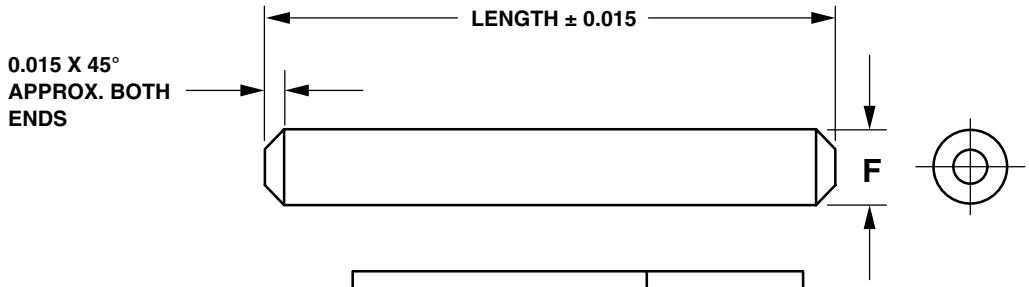
PART NUMBER	ITEM NAME	FABRICATE FROM
MS18029-22	NUT ASSEMBLY	NSN 5940-00-907-5938
MS18029-25	NUT, PLAIN, KNURLED	NSN 5910-00-420-5238

NOTES

1. Dimensions are in inches.
2. Retaining ring and nut are not to be assembled until nut is installed on applicable cover.
3. Nut assembly MS part number shall be marked on top of nut in ink (D120).
4. 0.015R or 0.015 x 45° chamfer permissible on all sharp edges.
5. Imperfect threads will not be permitted.

406961-1401-3-4
J0248

Figure H-5. Cover, Terminal Board (Sheet 4 of 4)



DASH NUMBER CADMIUM PLATED	F +0.001 DIA
P1	0.062
P2	0.089
P3	0.117
P4	0.179

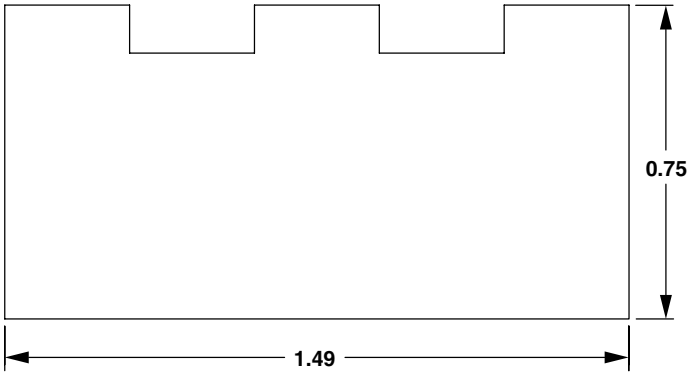
PART NUMBER	ITEM NAME	FABRICATE FROM
MS20253P2-170	PIN, STRAIGHT, HEADLESS	NSN 5340-00-043-3723
MS20253P2-300	PIN, STRAIGHT, HEADLESS	NSN 5340-00-043-3723
MS20253P2-450	PIN, STRAIGHT, HEADLESS	NSN 5340-00-043-3723
MS20253P2-650	PIN, STRAIGHT, HEADLESS	NSN 5340-00-043-3723
MS20253P3-225	PIN, STRAIGHT, HEADLESS	NSN 5315-00-914-5745

NOTES

1. Dimensions are in inches.
2. Last dash number indicates length in inches, expressed in hundredths.
3. Remove all burrs and sharp edges.
4. For use with MS20257 hinges. Cadmium plated pins with aluminum alloy half hinge.

406961-1401-1
J0248

Figure H-6. Pin, Straight, Headless



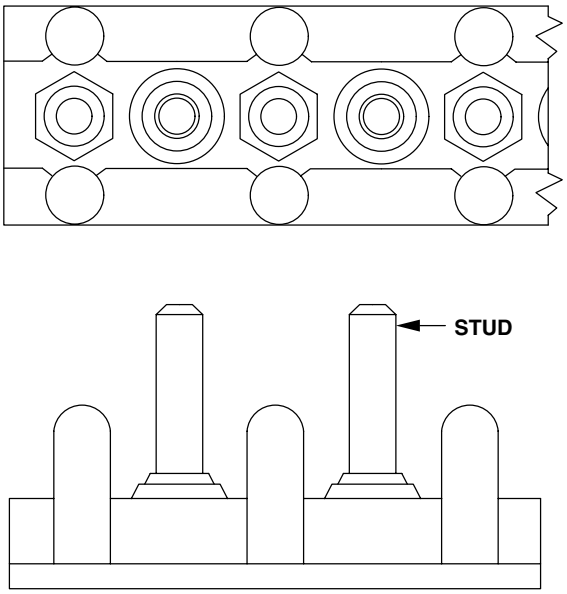
PART NUMBER	ITEM NAME	FABRICATE FROM
MS20257YP1-149	HINGE	0.032 THK, AL. ALY., ANODIZED, MIL-A-8625, TYPE II

NOTE

Dimensions are in inches.

406961-1401-285
J0412

Figure H-7. Hinge



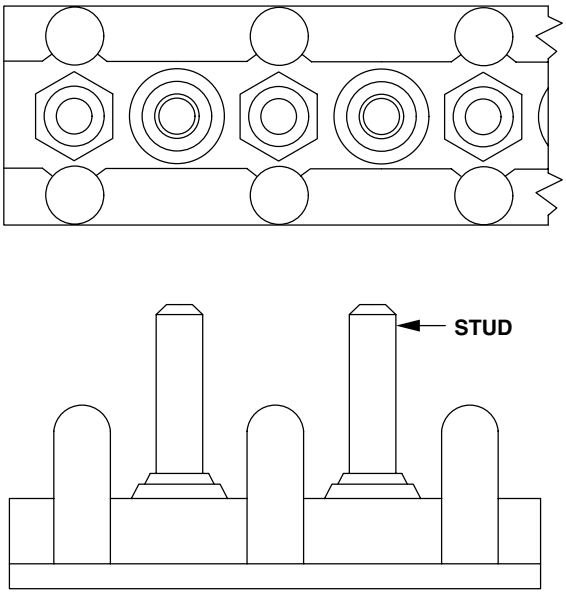
PART NUMBER	ITEM NAME	FABRICATE FROM
MS27212-1-1	TERMINAL BOARD	NSN 5940-00-950-1610
MS27212-1-2	TERMINAL BOARD	NSN 5940-00-950-1610
MS27212-1-5	TERMINAL BOARD	NSN 5940-00-950-1610

NOTES

1. Installing authority shall furnish security and terminal attaching hardware.
2. Last dash number indicates number of terminals.
3. Government will procure and stock full length boards (20 number 6-32 studs). Cut boards to small lengths. Allowance must be made for loss of one stud for each cut.

406961-1401-217-1
J1274

Figure H-8. Terminal Board



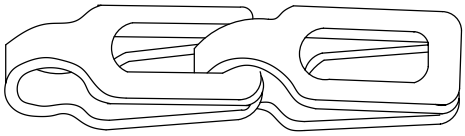
PART NUMBER	ITEM NAME	FABRICATE FROM
MS27212-5-1	TERMINAL BOARD	NSN 5940-00-950-7781

NOTES

1. Installing authority shall furnish security and terminal attaching hardware.
2. Last dash number indicates number of terminals.
3. Government will procure and stock full length boards (8 number 5-16 studs). Cut boards to small lengths. Allowance must be made for loss of one stud for each cut.

406961-1401-217-2
J1274

Figure H-9. Terminal Board



PART NUMBER	ITEM NAME	FABRICATE FROM
NAS1455B30-10	CHAIN	NSN 4010-00-228-9932

NOTES

1. B in part number indicates brass or bronze. Number after letter indicates size.
2. Last dash number indicates length in inches.

406961-1401-4
J0248

Figure H-10. Chain

PART NUMBER	ITEM NAME	FABRICATE FROM
QQB575R36T0125	BRAID, WIRE	NSN 6145-00-194-9830

NOTES

1. Procurement: bulk stock.
2. Cut to length.

406961-1401-331-1
J1274

Figure H-11. Braid, Wire

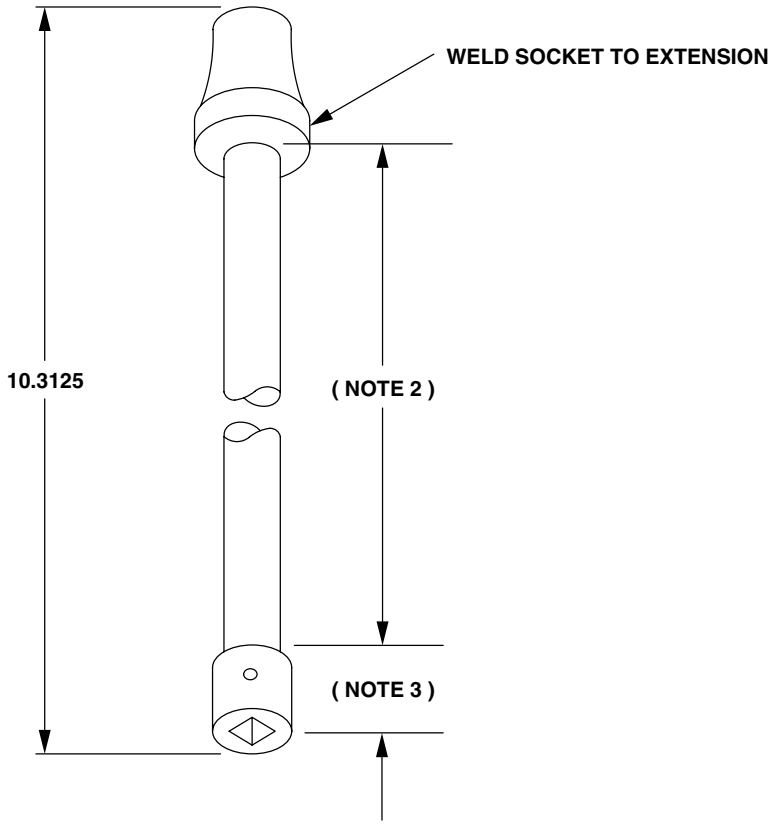
PART NUMBER	ITEM NAME	FABRICATE FROM
TU-305	TUBING	NSN 4720-01-317-1920

NOTES

1. Procurement: bulk stock.
2. Cut to length.

406961-1401-331-2
J1274

Figure H-12. Tubing



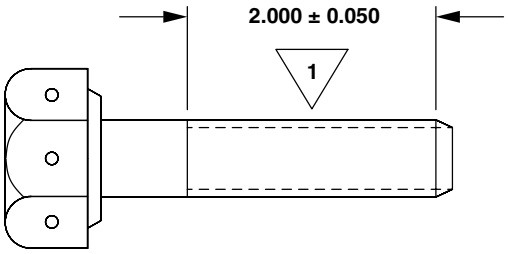
PART NUMBER	ITEM NAME	FABRICATE FROM
WORKAID	BATTERY REMOVAL/ INSTALLATION TOOL	3/8 SQUARE DRIVE 9 INCH EXTENSION NSN 5120-00-243-1693 3/8 SQUARE DRIVE 7/16 SOCKET NSN 5120-00-935-7411

NOTES

1. Dimensions are in inches.
2. Shank is double insulated with heat shrink tubing.

406961-1401-139
J0403

Figure H-13. Workaid, Battery Removal — Installation Tool



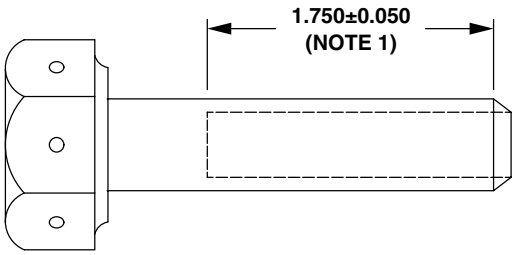
PART NUMBER	ITEM NAME	FABRICATE FROM
WORKAID	BOLT, SPECIAL	NSN 5306-01-035-6144

NOTES

1. Make from NAS6204-44 bolt, 0.2500-28 UNJF-3A.
2. Thread per MIL-S-8879.
3. Dimensions are in inches.

406961-1401-58
J0248

Figure H-14. Workaid, Bolt, Special



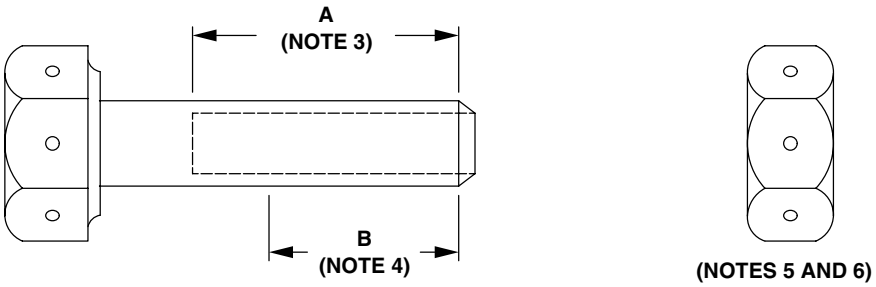
PART NUMBER	ITEM NAME	FABRICATE FROM
WORKAID	BOLT, SPECIAL, BREAKOUT FRICTION TORQUE	N/A

NOTES

1. Make from MS20073-04-20 bolt, 0.250-28 UNF-3A.
2. Thread per MIL-S-7742.
3. Dimensions shown in inches.

406961-1401-133
J0403

Figure H-15. Workaid, Bolt, Special, Breakout Friction Torque



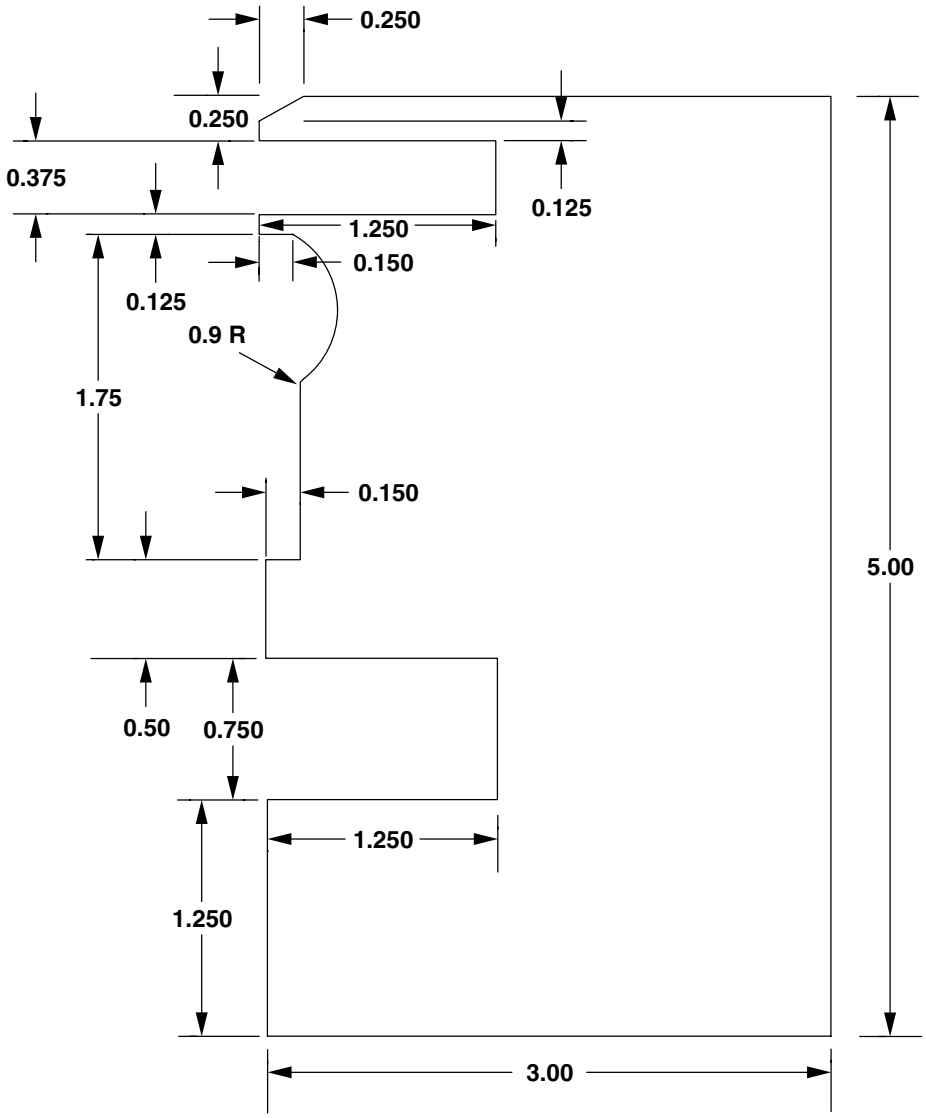
PART NUMBER	ITEM NAME	FABRICATE FROM
WORKAID	BOLT, SPECIAL BREAKOUT FRICTION TORQUE	N/A
WORKAID	NUT	N/A

NOTES

1. Make from MS20073-05-32 bolt.
2. Thread per MIL-S-7742.
3. Dimension A: 3.000 ± 0.050 inches, 5/16-24 UNF-3A.
4. Dimension B: 2.390 ± 0.050 inches, 5/16-24 UNF-3A.
5. Make from MS21083N5 nut.
6. Two required.

406961-1401-134
J0403

Figure H-16. Workaid, Bolt, Special, Breakout Friction Torque



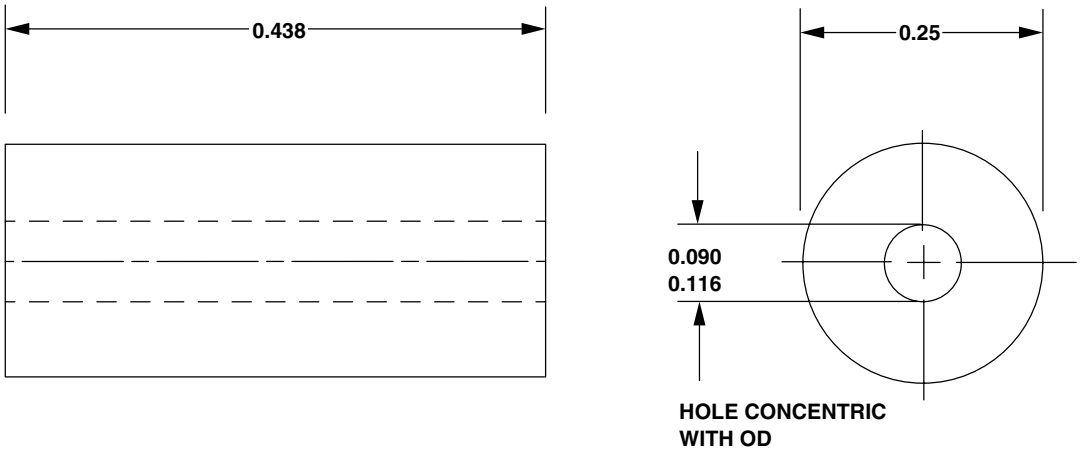
PART NUMBER	ITEM NAME	FABRICATE FROM
WORKAID	DIRECTIONAL CONTROLS RIGGING TOOL	0.080 GAGE ALUMINUM STOCK

NOTE

Dimensions are in inches.

406961-1401-138
J0403

Figure H-17. Workaid, Directional Controls Rigging Tool



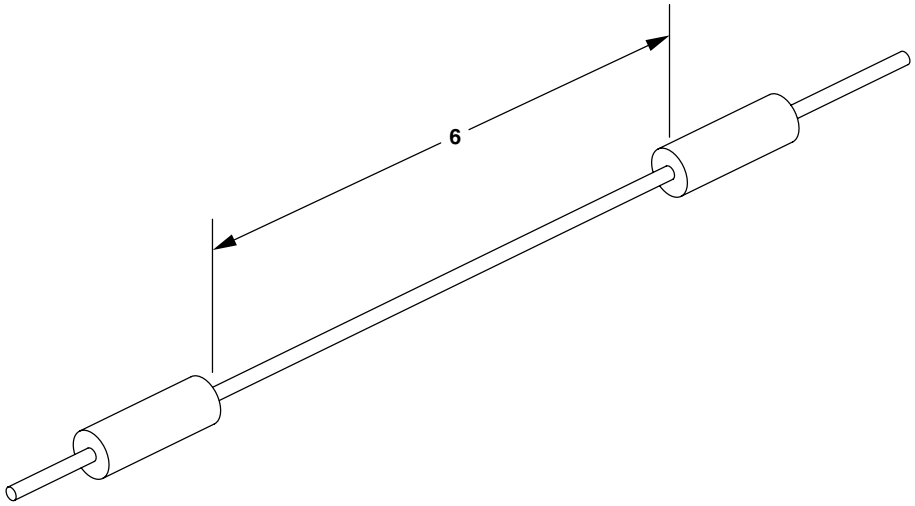
PART NUMBER	ITEM NAME	FABRICATE FROM
WORKAID	EXTENSION PIECE FOR CHERRY LOCK TOOL MODEL G55 WSPS CHANNEL INSTALLATION	1/4 INCH MILD STEEL ROD

NOTE

Dimensions are in inches.

406961-1401-142
J0403

Figure H-18. Workaid, Extension Piece for Cherry Lock Tool



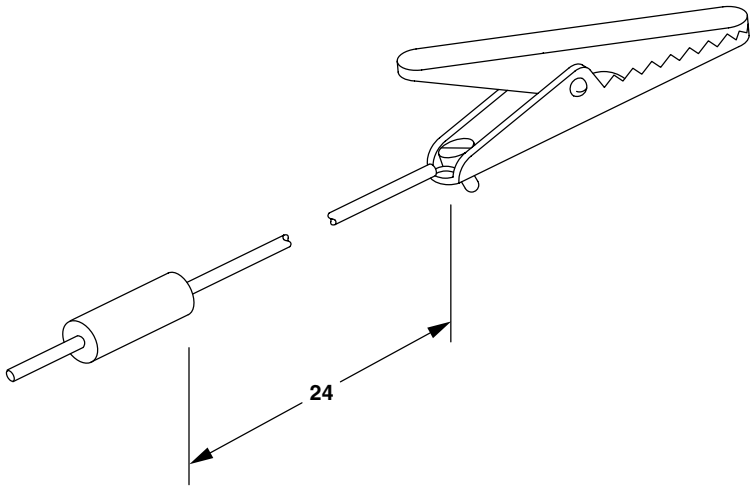
PART NUMBER	ITEM NAME	FABRICATE FROM
WORKAID	JUMPER WIRE, BATTERY (QTY 2)	
M81381/12-22-N OR 140-028-22-9	WIRE	NSN 6145-01-101-6168 NSN 6145-01-157-0937
MS39029/4-110 OR M39029/4-20-20	PIN, ELECTRIC CONTACT (QTY 2)	NSN 5999-00-146-8592

NOTE

Dimensions are in inches.

406961-1401-124
J0403

Figure H-19. Workaid, Jumper Wire, Battery



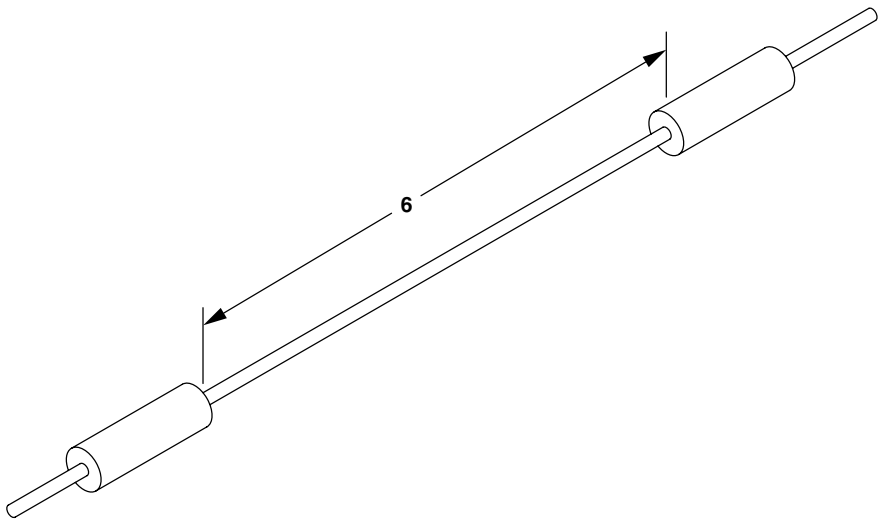
PART NUMBER	ITEM NAME	FABRICATE FROM
WORKAID	JUMPER WIRE, CHARGER MONITOR	
M81381/12-22-N OR 140-028-22-9	WIRE	NSN 6145-01-101-6168 NSN 6145-01-157-0937
MS39029/58-363 OR MS27493-20	PIN, ELECTRIC CONTACT	NSN 5999-00-243-6500
TC OR TCM, SPEC. W-C-440B	CLIP, ELECTRICAL	NSN 5999-00-501-8365

NOTE

Dimensions are in inches.

406961-1401-123
J0403

Figure H-20. Workaid, Jumper Wire, Charger Monitor



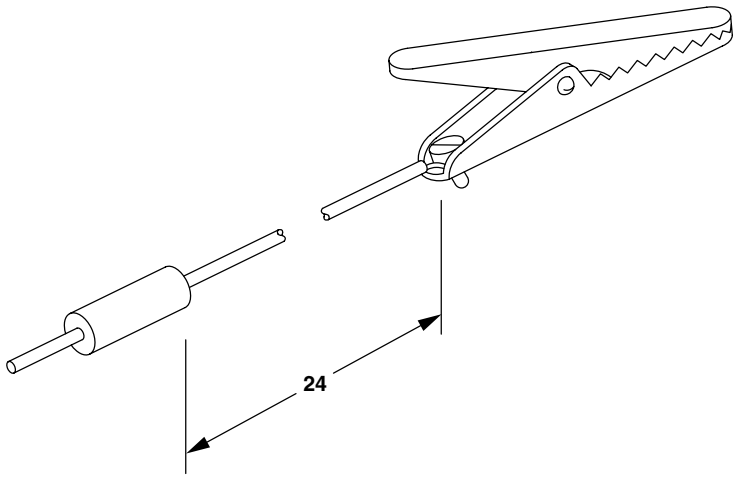
PART NUMBER	ITEM NAME	FABRICATE FROM
WORKAID	JUMPER WIRE, ENGINE BYPASS SOLENOID VALVE AND FUEL PRESSURE SWITCH (QTY 2)	
M81381/12-22-N OR 140-028-22-9	WIRE	NSN 6145-01-101-6168 NSN 6145-01-157-0937
M39029/29-16-16 OR M39029/22-212	PIN, ELECTRIC CONTACT (QTY 2)	NSN 5999-01-068-2590

NOTE

Dimensions are in inches.

406961-1401-126
J0403

Figure H-21. Workaid, Jumper Wire, Engine Bypass Solenoid Valve and Fuel Pressure Switch



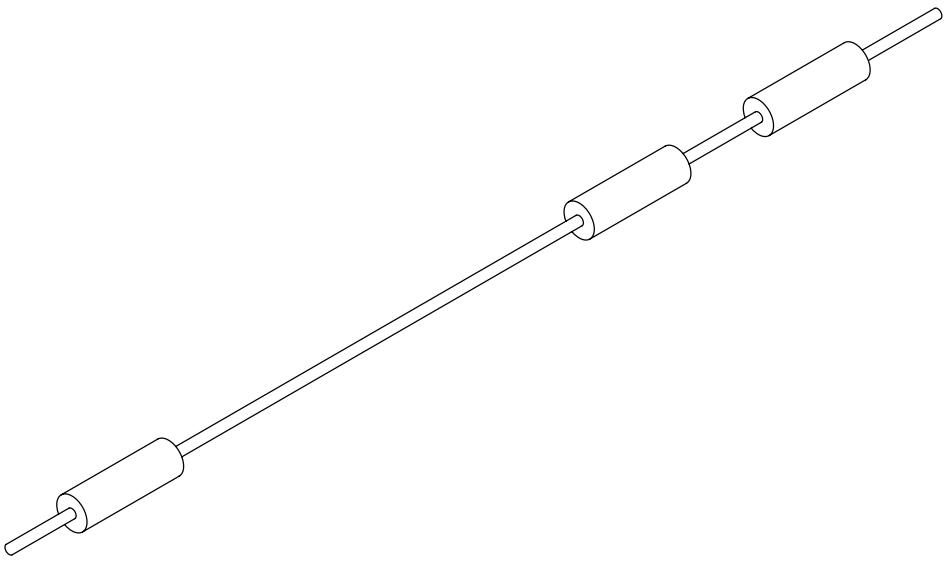
PART NUMBER	ITEM NAME	FABRICATE FROM
WORKAID	JUMPER WIRE, MCPU TO GND	
M81381/12-22-N OR	WIRE	NSN 6145-01-101-6168
140-028-22-9		NSN 6145-01-157-0937
MS27493-22D OR	PIN, ELECTRIC CONTACT	NSN 5999-00-473-3551
M39029/58-360		
TC OR TCM, SPEC.	CLIP, ELECTRICAL	NSN 5999-00-501-8365
W-C-440B		

NOTE

Dimensions are in inches.

406961-1401-122
J0403

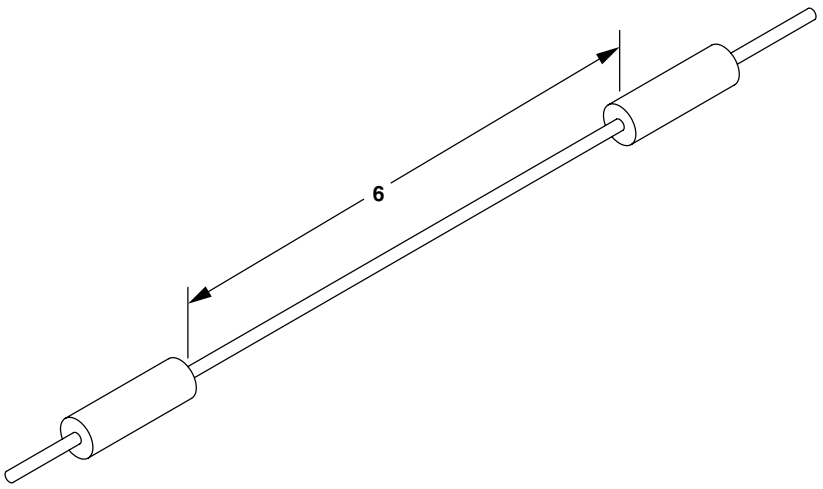
Figure H-22. Workaid, Jumper Wire, MCPU — GROUND



PART NUMBER	ITEM NAME	FABRICATE FROM
WORKAID	JUMPER WIRE, MCPU-MCPU (QTY 2)	
MS27493-22D OR M39029/58-360	PIN, ELECTRIC CONTACT (QTY 2)	NSN 5999-00-473-3551
RCR20G302JS	RESISTOR, 3K 1/4W 5%	

406961-1401-121
J0403

Figure H-23. Workaid, Jumper Wire, MCPU — MCPU



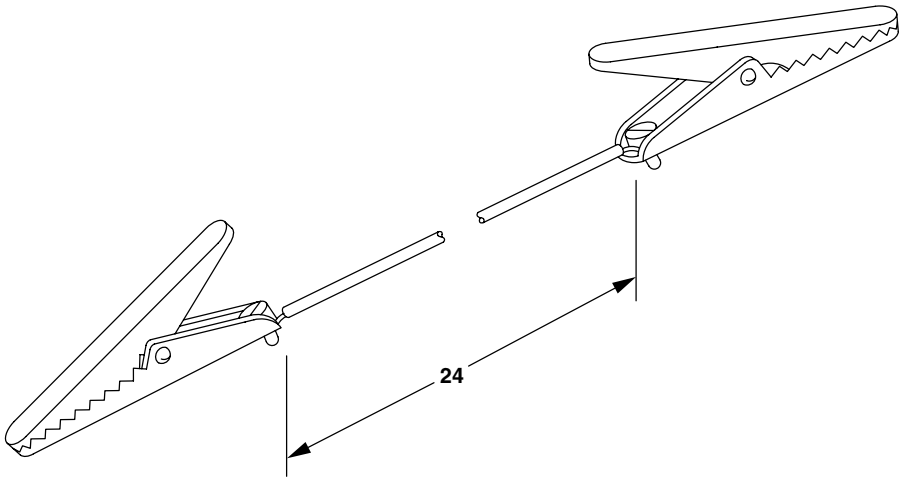
PART NUMBER	ITEM NAME	FABRICATE FROM
WORKAID	JUMPER WIRE, NVG	
M81381/12-22-N OR	WIRE	NSN 6145-01-101-6168
140-028-22-9	--	NSN 6145-01-157-0937
MS90461A23-22	PIN, ELECTRIC CONTACT	NSN 5999-00-484-5391
M39029/56-348 OR	PIN, ELECTRIC CONTACT	NSN 5999-01-106-7076
MS27490-22D		NSN 5999-00-473-3551

NOTE

Dimensions are in inches.

406961-1401-120
J0403

Figure H-24. Workaid, Jumper Wire, NVG

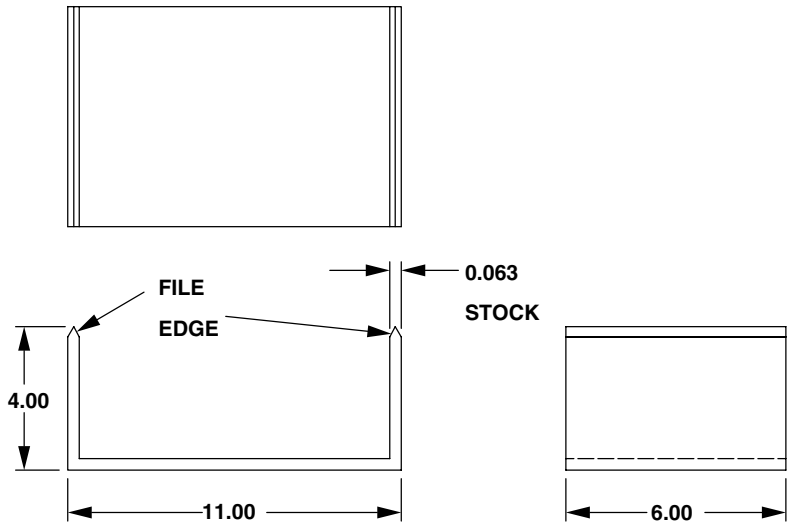


PART NUMBER	ITEM NAME	FABRICATE FROM
WORKAID	JUMPER WIRE, TEMPERATURE SWITCH TO AIRFRAME OR 1TB1-1 TO AIRFRAME	
TC OR TCM, SPEC. W-C-440B	CLIP, ELECTRICAL (QTY 2)	NSN 5999-00-501-8365
M81381/12-22-N OR 140-028-22-9	WIRE	NSN 6145-01-101-6168 NSN 6145-01-157-0937

NOTE
Dimensions are in inches.

406961-1401-125
J0403

Figure H-25. Workaid, Jumper Wire, Temperature Switch to Airframe or 1TB1-1 to Airframe



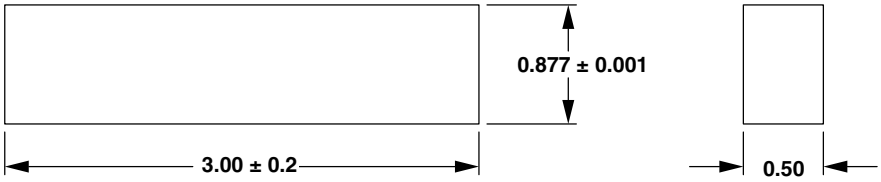
PART NUMBER	ITEM NAME	FABRICATE FROM
WORKAID	KNIFE EDGE BALANCER	NSN 9535-00-554-1417

NOTES

1. Dimensions are indicated in inches.
2. Make from 0.063 GAGE, ALUMINUM STOCK.
3. File two upper edges to form knife edge as shown.
4. Level spanwise and chordwise using bubble level.

406961-1401-131
J0403

Figure H-26. Workaid, Knife Edge Balancer



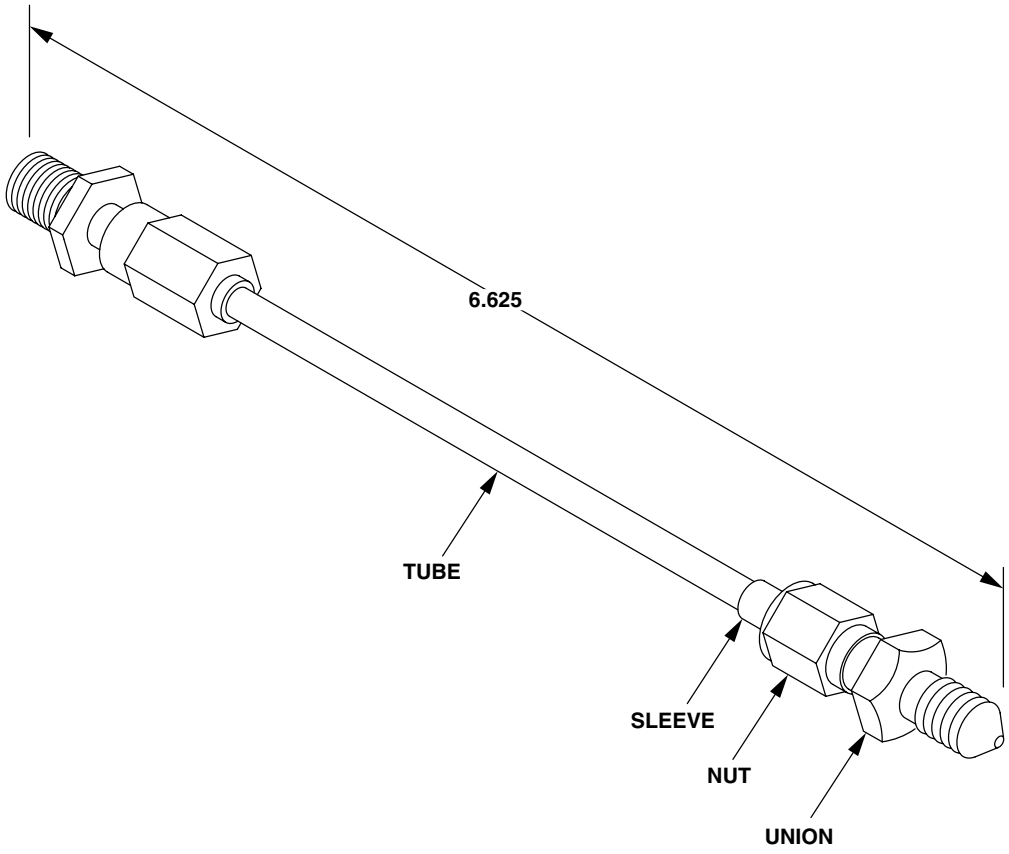
PART NUMBER	ITEM NAME
WORKAID	LOCATOR TOOL

NOTES

1. Make from AL. ALY., 6061-T42, QQ-A-250/11F.
2. Mill surface to 0.877 ± 0.001 inch.
3. Remove all sharp edges and burrs.
4. All dimensions are in inches.

406961-1401-130
J0403

Figure H-27. Workaid, Locator Tool



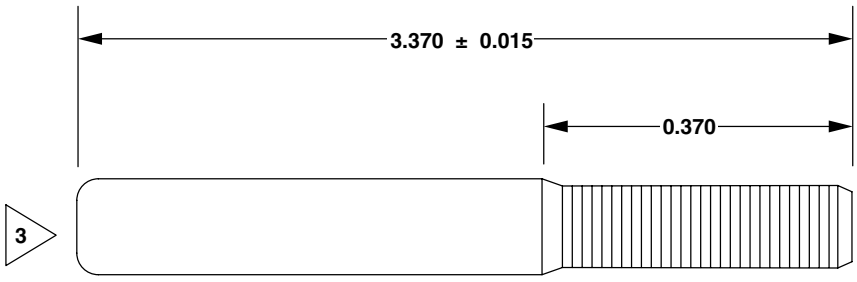
PART NUMBER	ITEM NAME	FABRICATE FROM
WORKAID	PITOT-STATIC TUBE EXTENSION	
MS21921-4	NUT	NSN 4730-00-554-8015
AN818-43	NUT	NSN 4730-00-287-0289
AN832-4	UNION	NSN 4730-00-277-6458
MS21924-4	UNION	NSN 4730-00-541-1750
MS21922-4	SLEEVE (QTY 2)	NSN 4730-00-580-7471
MIL-T-6845	TUBE	NSN 4710-00-825-5894

NOTE

Dimensions are in inches.

406961-1401-140
J0403

Figure H-28. Workaid, Pitot-Static Tube Extension



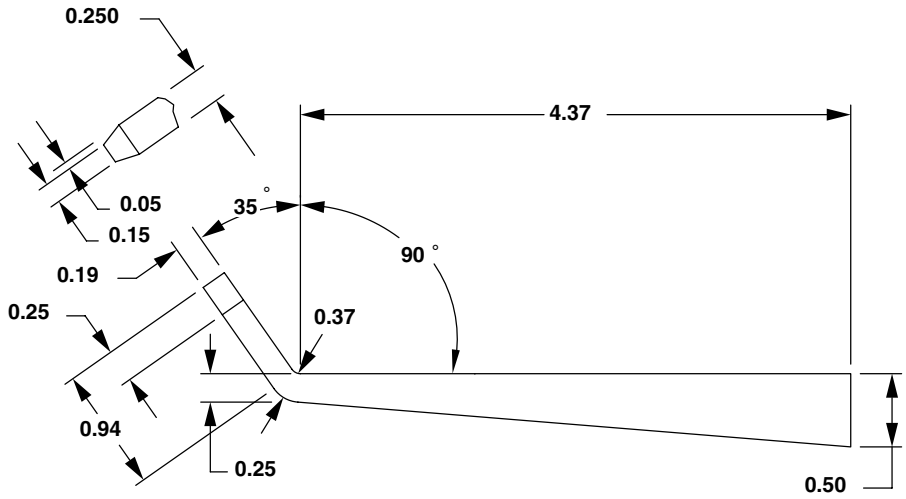
PART NUMBER	ITEM NAME	FABRICATE FROM
WORKAID	SWASHPLATE FRICTION ADJUSTMENT STUD	NSN 5306-01-069-5233

NOTES

1. Make from NAS6204-48 bolt, 0.25-28 UNJF-3A.
2. Thread per MIL-S-8879.
3. After removal of head, break all sharp edges.
4. Dimensions are in inches.

406961-1401-145
J0403

Figure H-29. Workaid, Swashplate Friction Adjustment Stud



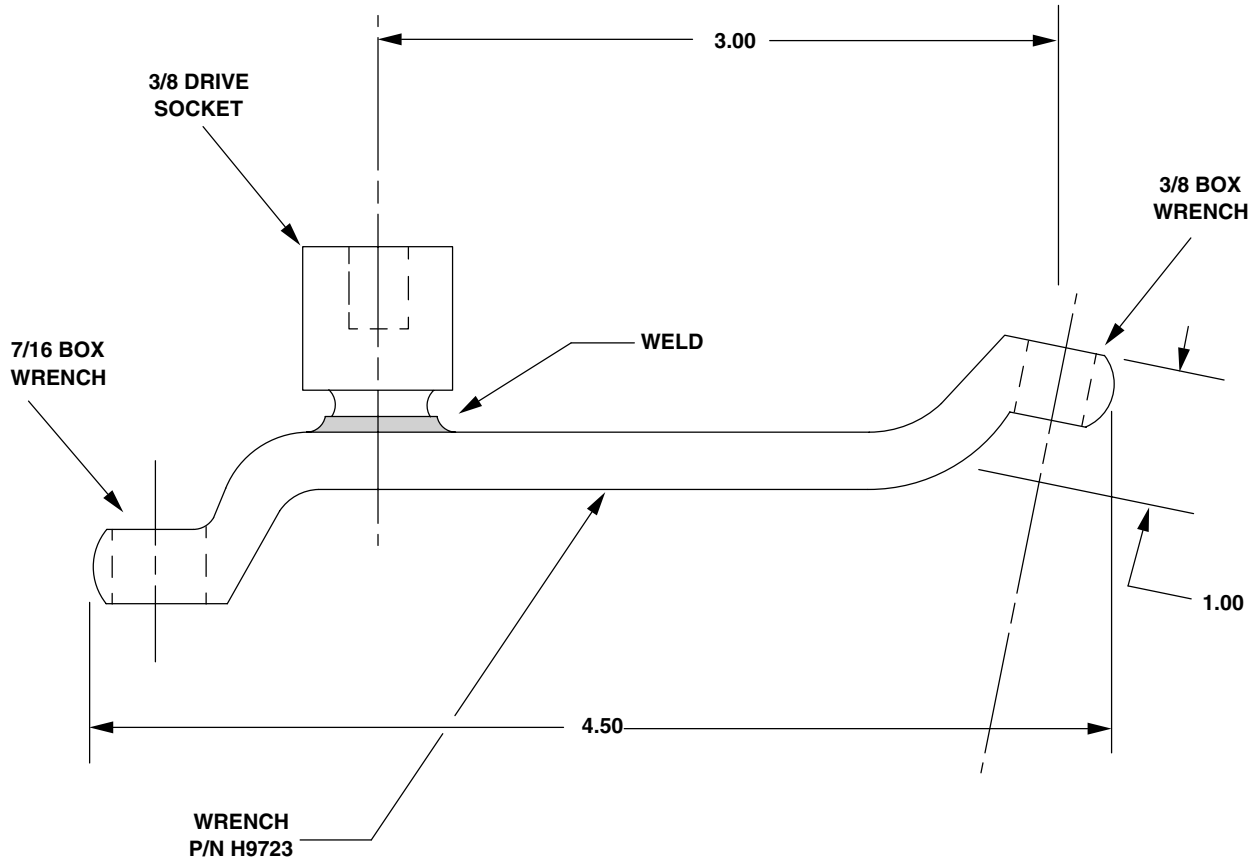
PART NUMBER	ITEM NAME	FABRICATE FROM
WORKAID	SWITCH REMOVER	NOTE 1

NOTES

1. Make from plastic (phenolic) or other nonmetallic substance.
2. Cut and trim to dimensions shown.
3. Dimensions are in inches.

406961-1401-135
J0403

Figure H-30. Workaid, Switch Remover



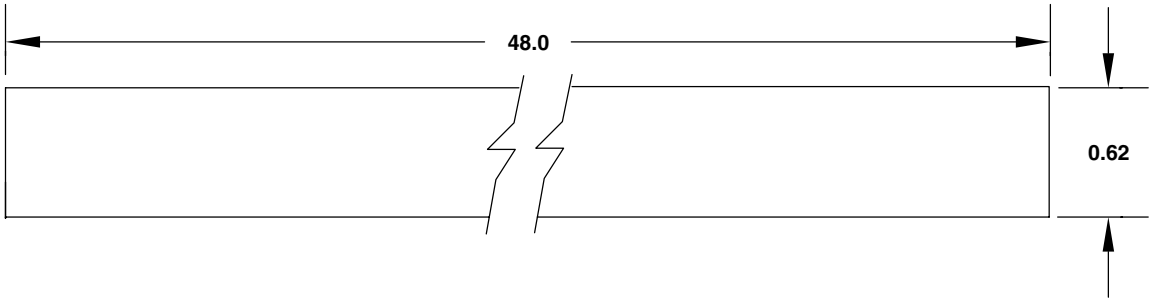
PART NUMBER	ITEM NAME	FABRICATE FROM
WORKAID	TAIL ROTOR GEARBOX INSTALLATION	7/16 X 3/8 BOX END WRENCH P/N/ H9723 3/8 SQUARE DRIVE SOCKET

NOTE

Dimensions are in inches.

406961-1401-141
J0403

Figure H-31. Workaid, Tail Rotor Gearbox Installation



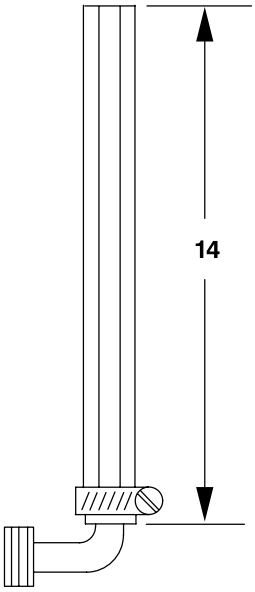
PART NUMBER	ITEM NAME	FABRICATE FROM
WORKAID	TEMPLATE, WSPS CHANNEL INSTALLATION, 365-83041-1	NSN 9535-00-167-2278

NOTE

Dimensions are in inches.

406961-1401-143
J0403

Figure H-32. Workaid, Template, WSPS Channel Installation



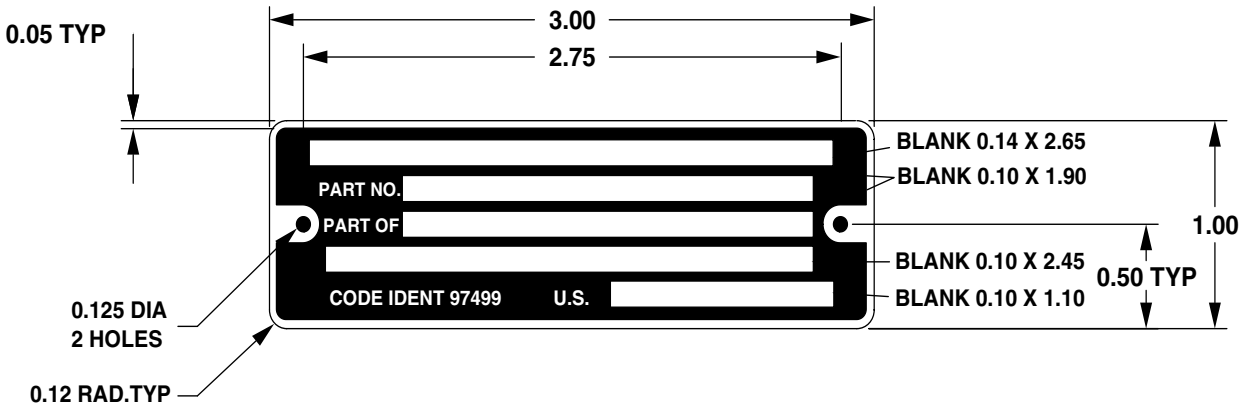
PART NUMBER	ITEM NAME	FABRICATE FROM
130-038-26-28	TUBING, FLEXIBLE, PVC FUEL AND OIL RESISTANT	NSN 4720-01-173-1212
AN833-10	ELBOW, FLARED TUBE	NSN 4730-00-203-3477
AN737-30	CLAMP, HOSE, AIRCRAFT	NSN 4730-00-278-0649

NOTES

1. Dimensions in inches.
2. No leaks allowed.

406961-1401-337
J1274

Figure H-33. Workaid, Tubing, Flexible, PVC Fuel and Oil Resistant



PART NUMBER	ITEM NAME	FABRICATE FROM
100-089-2	PLATE, IDENTIFICATION	0.020 THK, PHOTOSENSITIVE, ANODIZE ALUMINUM, PER GG-P-455, TYPE I, GRADE A, CLASS 1

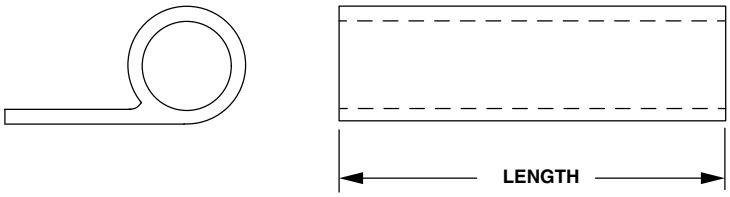
NOTES

1. Letters shall be gothic capitals and the number shall be Arabic; height shall be 1/16 inch.
2. Background shall be black, color No. 17038 per FED-STD-595 with metal border, lettering and blanks as shown.
3. Blanks, logo and characters shall be located and proportioned approximately as shown.
4. Dimensions are in inches.
5. Remove all burrs and sharp edges.
6. Stamp part number on identification plate with ink (D120).
7. In the blank lines stamp the following using 3/32 high characters:

   Line 1. BLOCK ASSY-B´SITE
   Line 2. 406-782-111-101
   Line 3. T101662
   Line 4. BORESIGHT TOOL.

406961-1401-303
J0821

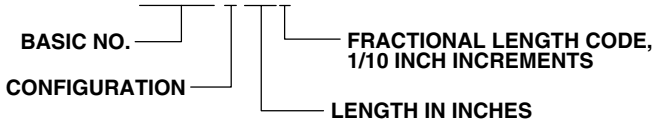
Figure H-34. Plate, Identification



PART NUMBER	ITEM NAME	FABRICATE FROM
110-004-2-0306	EXTRUSION	NSN 9320-00-342-8808
110-004-3-0110	EXTRUSION	NSN 9390-00-133-6472
110-004-3-0173	EXTRUSION	NSN 9390-00-133-6472
110-004-3-0286	EXTRUSION	NSN 9390-00-133-6472
110-004-3-0438	EXTRUSION	NSN 9390-00-133-6472
110-004-3-1062	EXTRUSION	NSN 9390-00-133-6472
110-004-3-1154	EXTRUSION	NSN 9390-00-133-6472

NOTES

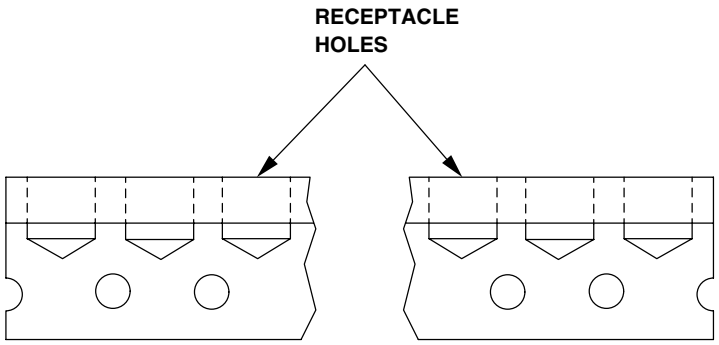
1. Dimensions are in inches.
2. Part number code: 110-004-3-0485



3. Cut to required length.

406961-1401-12
J0248

Figure H-35. Extrusion



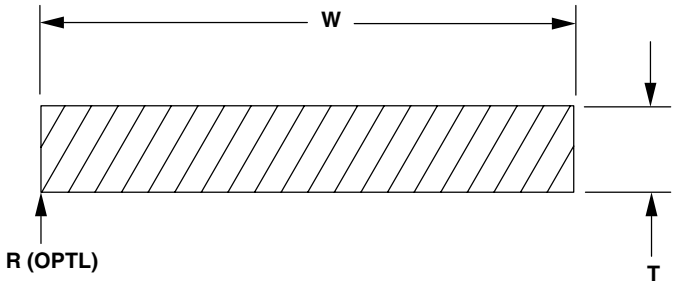
PART NUMBER	ITEM NAME	FABRICATE FROM
110-045-11	FASTENER, RECEPTACLE	NSN 5325-00-036-9305
110-045-22	RECEPTACLE, TURNLOCK	NSN 5325-00-036-9305

NOTE

Last dash number indicates number of receptacle holes.

406961-1401-169
J0403

Figure H-36. Fastener or Turnlock Receptacle

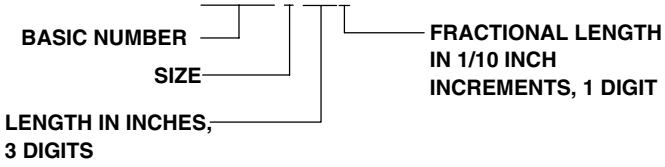


PART NUMBER	COLOR CODE	T	W	R (MAX)
110-070-5-( )	G	0.125	0.94	0.03R
110-070-7-( )	G	0.125	0.70	0.03R
110-070-31-( )	G	0.062	0.75	0.03R
110-070-39-( )	G	0.032	0.75	0.03R

PART NUMBER	ITEM NAME	FABRICATE FROM
110-070-5-0063	RUBBER EXTRUSION	NSN 9320-00-815-2798
110-070-7-0055	SEAL	NSN 9320-00-815-2798
110-070-7-0059	SEAL	NSN 9320-00-815-2798
110-070-7-0061	SEAL	NSN 9320-00-815-2798
110-070-31-0153	SEAL	NSN 9320-00-878-6507
110-070-31-0233	SEAL	NSN 9320-00-878 6507
110-070-39-0350	SEAL	NSN 9320-01-349-5513
110-070-39-0390	SEAL	NSN 9320-01-349-5513

NOTES

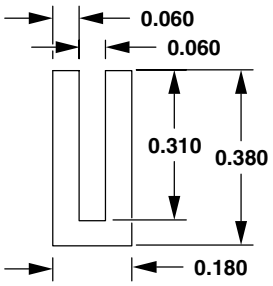
1. Dimensions are in inches.
2. Color code: G - GRAY
3. Part number code: 100-070-1-0485



4. Cut to required length.

406961-1401-178
J0403

Figure H-37. Rubber Extrusion or Seal



PART NUMBER	ITEM NAME	FABRICATE FROM
110-076-1-04-1	EDGING, RUBBER	9390-01-090-0489
110-076-1-05-1	EDGING, RUBBER	9390-01-090-0489
110-076-1-06-1	EDGING, RUBBER	9390-01-090-0489
110-076-2-15	EDGING, RUBBER	9390-01-088-7000

NOTES

1. Dimensions are in inches.
2. Part number code: 110-076-( )-( )-( )

   BASIC NUMBER

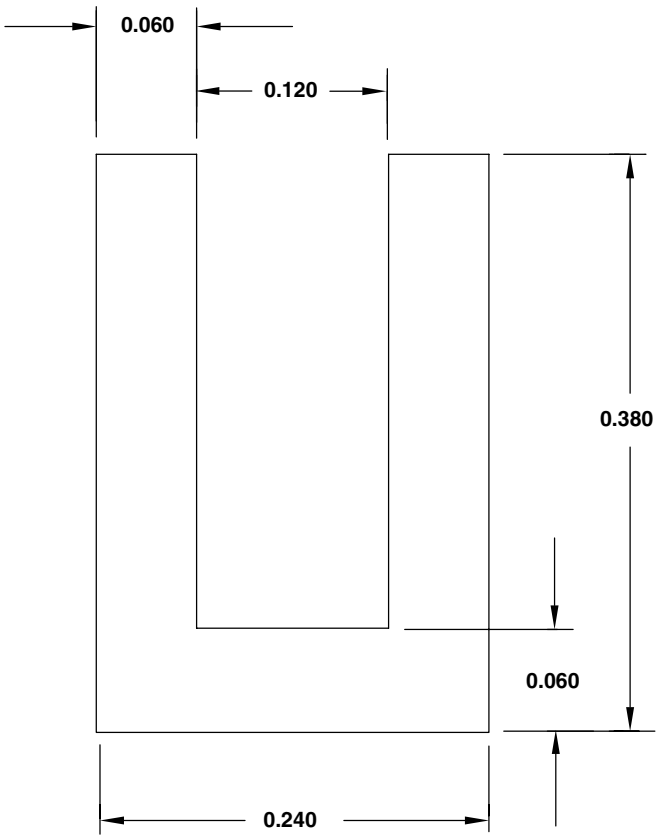
   MATERIAL: EXTRUDED SYNTHETIC RUBBER
   COLOR: BLACK

   LENGTH IN INCHES, 2 DIGITS

   FRACTIONAL LENGTH IN 1/8 INCH INCREMENTS
3. Cut to required length.

406961-1401-13
J0248

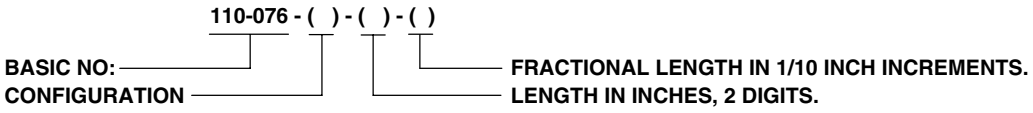
Figure H-38. Edging, Rubber



PART NUMBER	ITEM NAME	FABRICATE FROM
110-076-4-08-5	EXTRUSION	MIL-R-6855, CLASS 2, GRADE 60

NOTES

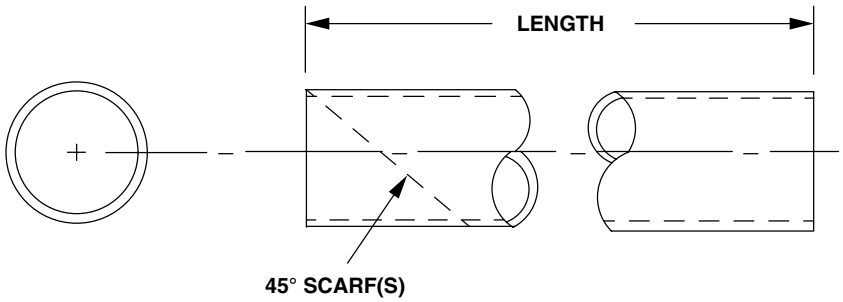
1. Dimensions are in inches.
2. Part number code:



3. Procurement: Use basic number and configuration dash number for bulk part number.
4. Cut to required length.

406961-1401-160
J0403

Figure H-39. Extrusion



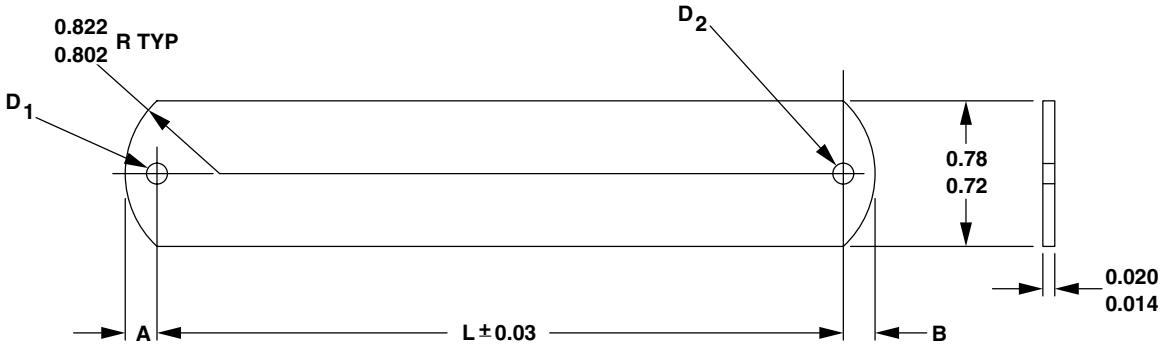
PART NUMBER	ITEM NAME	FABRICATE FROM
110-107-23ES075	TUBE	MIL-R-6853 CL2A GR60 TUBING, AIRCRAFT
110-107-23ES118	TUBE	MIL-R-6853 CL2A GR60 TUBING, AIRCRAFT

NOTES

1. Dimensions are in inches.
2. Part number code: 110-107 - 01 A - 08 5
   - 110-107: BASIC NUMBER / TUBE DIMENSIONS
   - 01: TUBE DIMENSIONS
   - A: MATERIAL: SYNTHETIC RUBBER
   - 08: LENGTH IN INCHES (2 DIGITS)
   - 5: LENGTH IN TENTHS (1/10 INCHES) INCREMENTS
   - S INDICATES 45° SCARF ON ONE END
3. Procurement: bulk stock

406961-1401-14
J0248

Figure H-40. Tube



PART NUMBER	ITEM NAME	FABRICATE FROM
120-055-1-6	BUS, CONDUCTOR	NSN 6150-00-177-4297
120-055-1-9	BUS, CONDUCTOR	
120-055-2-12	BUS, CONDUCTOR	NSN 6150-00-578-1244
120-055-2-17	BUS, CONDUCTOR	

PART NO.	D1 * DIA	D2 * DIA	A ±0.010	B ±0.010
120-055-1-( )	0.193	0.193	0.200	0.200
120-055-2-( )	0.193	0.253	0.200	0.200
120-055-3-( )	0.253	0.253	0.200	0.200
120-055-4-( )	0.193	0.380	0.200	0.330

*TOLERANCE ± 0.003

NOTES

1. Dimensions are in inches.
2. Part No. code:

120-055 - 1 - L

BASIC NO.

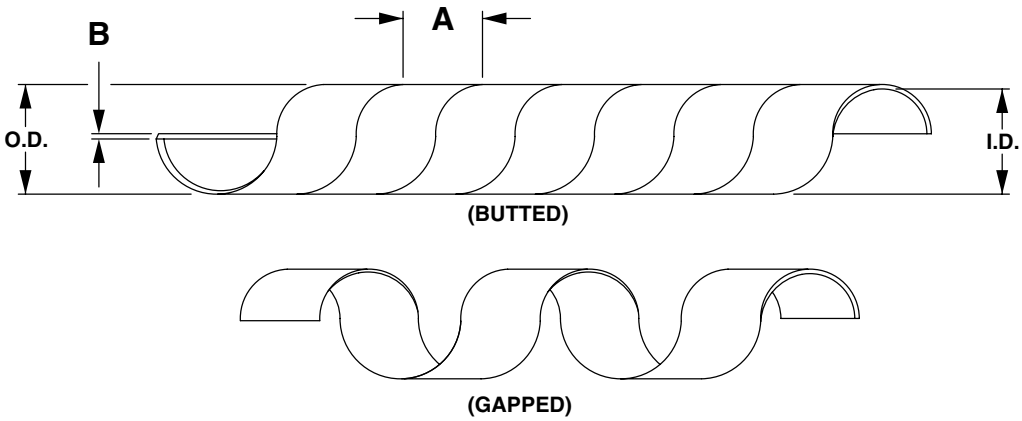
INDICATES LENGTH BETWEEN HOLES IN 0.500 INCREMENTS. (1.500 INCHES MIN LENGTH - 12.000 INCHES MAX LENGTH)

CONFIGURATION

3. Cut to required length.

406961-1401-132
J0403

Figure H-41. Bus, Conductor



	PART NUMBER	I.D.	O.D.	A	B
1	120-067A( )	0.204	0.250 ±0.015	0.375 ±0.015	0.023 ±0.006
2	120-067B( )	0.436	0.500 ±0.020	0.500 ±0.010	0.032 ±0.010

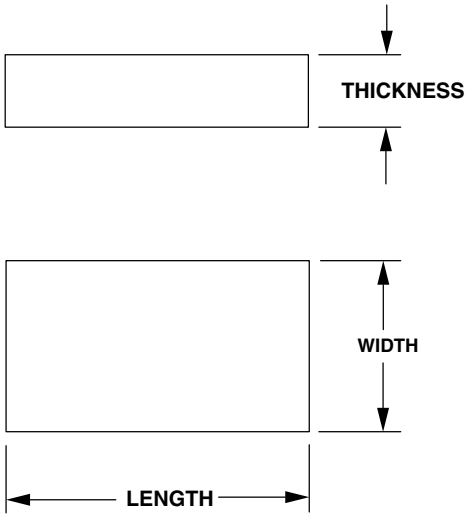
PART NUMBER	ITEM NAME	FABRICATE FROM
120-067A14	SLEEVE	NSN 5975-00-728-9641
120-067B14	SLEEVE	NSN 9330-01-029-8031
120-067B30	SLEEVE	NSN 9330-01-029-8031

NOTES

1. This sleeve for hose with 0.562 O.D. or smaller.
2. This sleeve for hose with O.D. larger than 0.562.
3. Dimensions are in inches.
4. Part Number code: 120-067 ( ) ( )
   - BASIC NO.
   - SIZE
   - INDICATES LENGTH IN INCHES.
5. Cut to required length.
6. Procurement in 100 ft. or longer roll.

406961-1401-127
J1274

Figure H-42. Sleeve



CODE	THICKNESS	TOLERANCE
A	0.021	+ 0.002 - 0.001
B	0.033	+ 0.003 - 0.002
C	0.048	+ 0.005 - 0.002
D	0.063	+ 0.006 - 0.002
G	0.125	+ 0.012 - 0.003
H	0.190	+ 0.018 - 0.005

PART NUMBER	ITEM NAME	FABRICATE FROM
120-098-05D89	SHIM	MIL-S-22499 COMP 1, TYPE I, CL2
120-098-05D93	SHIM	MIL-S-22499 COMP 1, TYPE I, CL2
120-098-06A11	SHIM	MIL-S-22499 COMP 1, TYPE I, CL2
120-098-06D11	SHIM	MIL-S-22499 COMP 1, TYPE I, CL2
120-098-06A29	SHIM	MIL-S-22499 COMP 1, TYPE I, CL2
120-098-07B23	SHIM	MIL-S-22499 COMP 1, TYPE I, CL2

EXAMPLE OF PART NUMBER:

120-098 A 07 G 150 = SHIM, SURFACE BONDED, 1/2 LAMINATED, 1/2 SOLID, 0.7 INCH WIDE, 0.125 INCH THICK, 15.0 INCHES LONG

- 150 — LENGTH CODE IN 0.10 INCH INCREMENTS. FOR 0.1 TO 9.9 USE 2 DIGITS. FOR 10.0 TO 48.0 USE 3 DIGITS (48.0 INCHES MAX)
- G — THICKNESS CODE, SEE TABLE
- 07 — WIDTH CODE IN 0.10 INCH INCREMENTS. FOR 0.1 TO 9.9 USE 2 DIGITS. FOR 10.0 TO 24.0 USE 3 DIGITS (24.0 INCHES MAX)
- A — LAMINATION CODE
  - NO CODE = ALL LAMINATED (2)
  - A = 1/2 LAMINATED, 1/2 SOLID (3)
- 120-098 — BASIC NUMBER

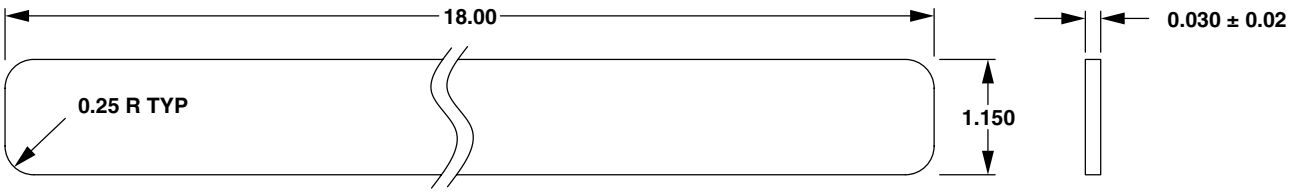
120-098-16B25 = SHIM, SURFACE BONDED, ALL LAMINATED, 1.6 INCHES WIDE, 0.033 INCH THICK, 2.5 INCHES LONG.

NOTES

1. Dimensions are in inches.
2. Applicable to thicknesses A, B, C and D.
3. Applicable to thicknesses G and H.

406961-1401-149
J1274

Figure H-43. Shim



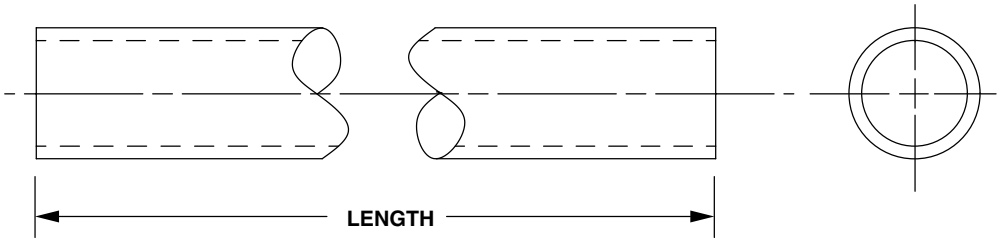
PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-804-145	TAB	NSN 9330-01-102-4214
120-110-7C36W	STRIP	NYLATRON GS PLASTIC SHEET
		CAGE 83616

NOTES

1. Dimensions are in inches.
2. Blast one side of strip with slurry of 30 to 50 percent abrasive 3/0 inspected quartz in water.
3. Blast strip uniformly at 30 to 80 psi. Maintain slurry at 30 to 50 percent abrasive. Do not allow slurry to dry on strip. Spray or flush rinse immediately following the blasting.
4. Final rinse - use clean water rinse or immersion at room temperature to 160 °F.
5. One side shall have a matte surface. Variation in blasting intensity will not be cause for rejection provided the entire surface area of the strip is blasted.

406961-1401-203
J0412

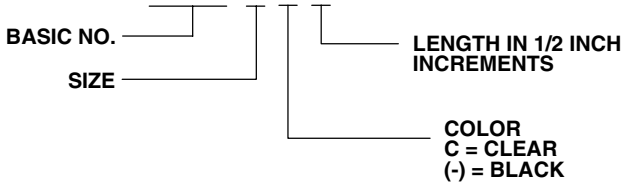
Figure H-44. Tab or Strip



PART NUMBER	ITEM NAME	FABRICATE FROM
130-005-2-1	INSULATION SLEEVING	MS23053/5-102-0
130-005-4K1	INSULATION SLEEVING	MS23053/5-104-0
130-005-6-2	INSULATION SLEEVING	MS23053/5-106-0
130-005-8-64	TUBING, INSULATION	MS23053/5-108-0
130-005-9-48	INSULATION SLEEVING	MS23053/5-109-0
130-005-9C2	INSULATION SLEEVING	MS23053/5-109-0

NOTES

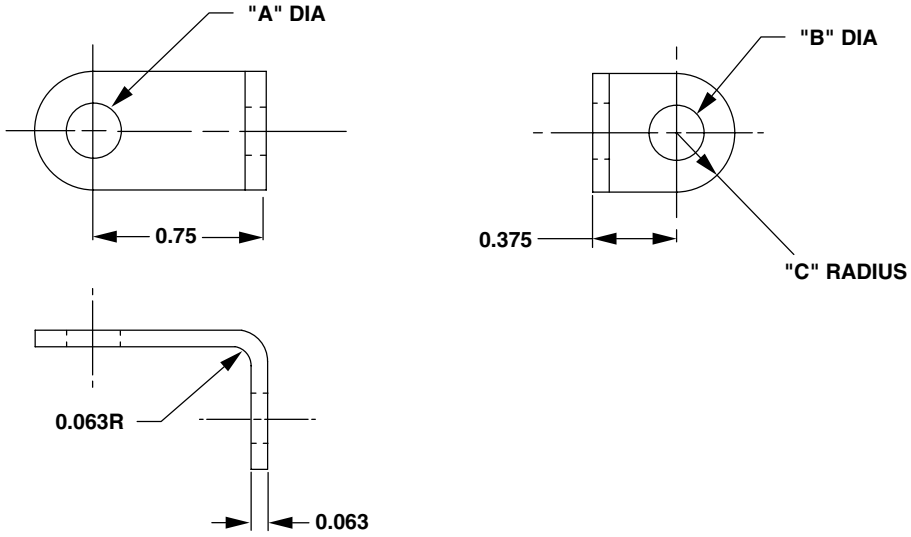
1. Dimensions are in inches.
2. Part No. code: 130-005 - ( ) ( ) ( )



3. Procurement: bulk in spools or coils.
4. Cut to required length.

406961-1401-11
J1274

Figure H-45. Insulation, Sleeving



DASH NO.	DIA "A"	DIA "B"	"C" RADIUS
-1	0.204	0.204	0.250
-2	0.204	0.264	0.250
-3	0.264	0.204	0.250

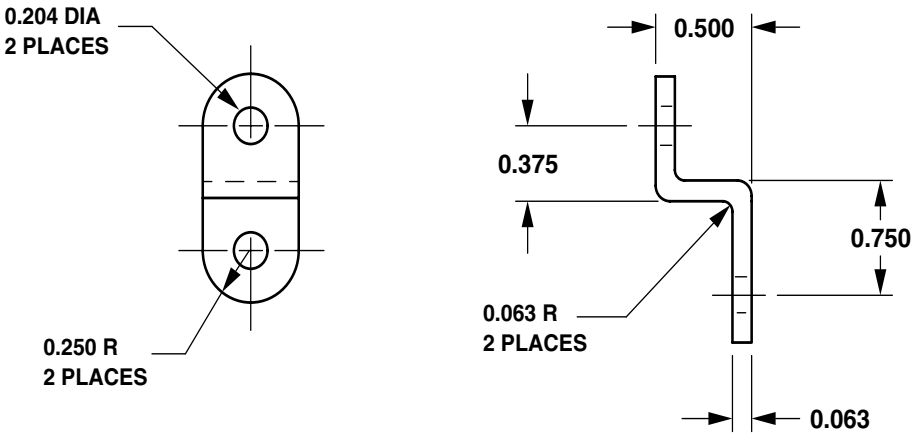
PART NUMBER	ITEM NAME	FABRICATE FROM
20-032-1	BRACKET, ANGLE	NSN 9535-00-232-0398
20-032-2	BRACKET, ANGLE	
20-032-2C	BRACKET	
20-032-3	BRACKET, AIRCRAFT	

NOTES

1. Dimensions are in inches.
2. Remove all burrs and sharp edges.
3. Apply chemical conversion coating (D57).
4. Apply epoxy primer coating (D98).

406961-1401-146
J0403

Figure H-46. Aircraft or Angle Bracket



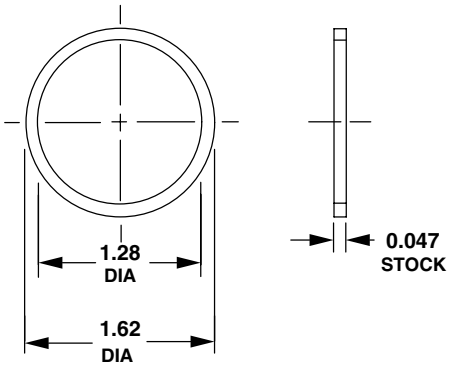
PART NUMBER	ITEM NAME	FABRICATE FROM
20-081-5	BRACKET	ALUMINUM ALLOY 2024T4, QQ-A-250/5

NOTES

1. Dimensions are in inches.
2. Remove all burrs and sharp edges.
3. Anodize per MIL-A-8625 or chemical film per MIL-C-5541.

406961-1401-304
J0821

Figure H-47. Bracket



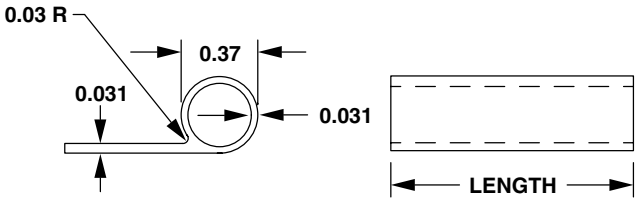
PART NUMBER	ITEM NAME	FABRICATE FROM
206-030-333-1	GASKET	NSN 5330-00-938-1719

NOTE

Dimensions are in inches.

406961-1401-19
J0248

Figure H-48. Gasket



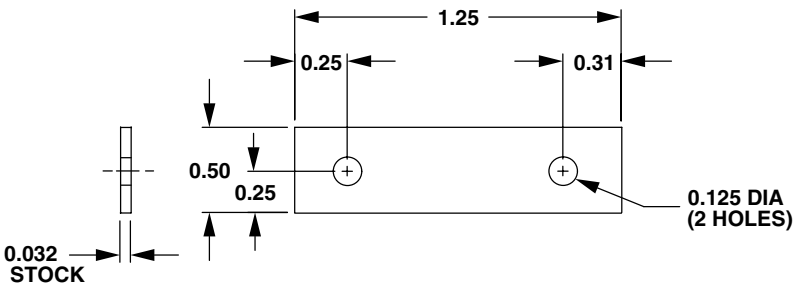
PART NUMBER	ITEM NAME	FABRICATE FROM
206-031-159-5	EXTRUSION	NSN 9390-00-133-6472

NOTES

1. Dimensions are in inches.
2. Make from 110-004-3-0018.
3. Cut to required length.

406961-1401-23
J0248

Figure H-49. Extrusion



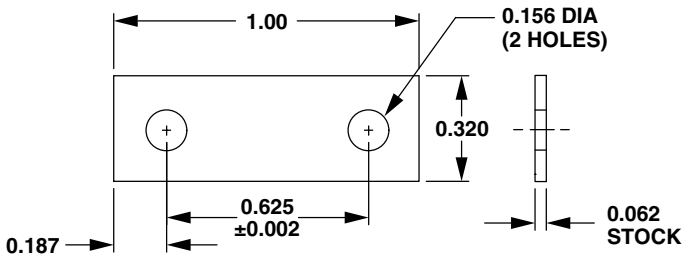
PART NUMBER	ITEM NAME	FABRICATE FROM
206-031-159-9	RETAINER	NSN 9535-00-085-4157

NOTES

1. Dimensions are in inches.
2. Remove all burrs and sharp edges.
3. Apply chemical conversion coating (D57).
4. Apply epoxy primer coating (D98).

406961-1401-24
J0248

Figure H-50. Retainer



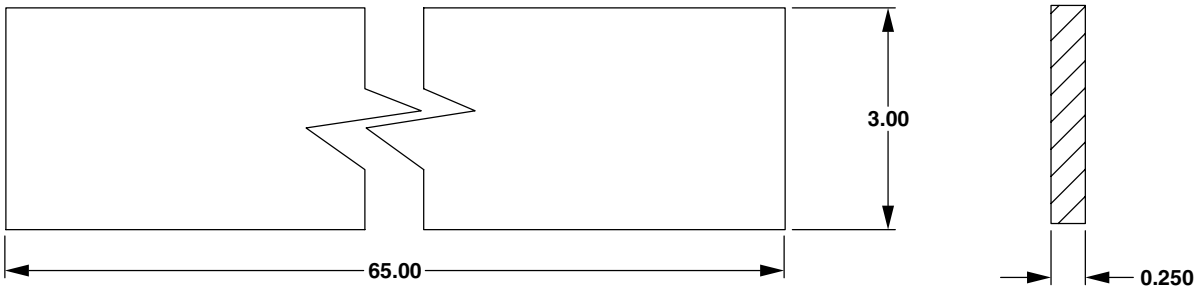
PART NUMBER	ITEM NAME	FABRICATE FROM
206-031-533-1	SHIM	NSN 9535-00-400-3622

NOTES

1. Dimensions are in inches.
2. Remove all burrs and sharp edges.

406961-1401-25
J0248

Figure H-51. Shim



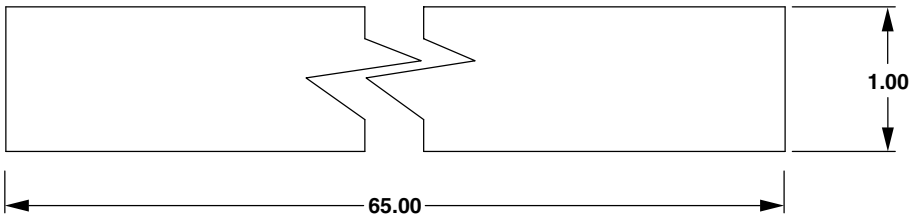
PART NUMBER	ITEM NAME	FABRICATE FROM
206-032-106-95	INSULATION	NSN 9330-00-837-5191

NOTES

1. Dimensions are in inches.
2. Procurement in bulk roll.
3. Cut to required length.

406961-1401-206
J0412

Figure H-52. Insulation



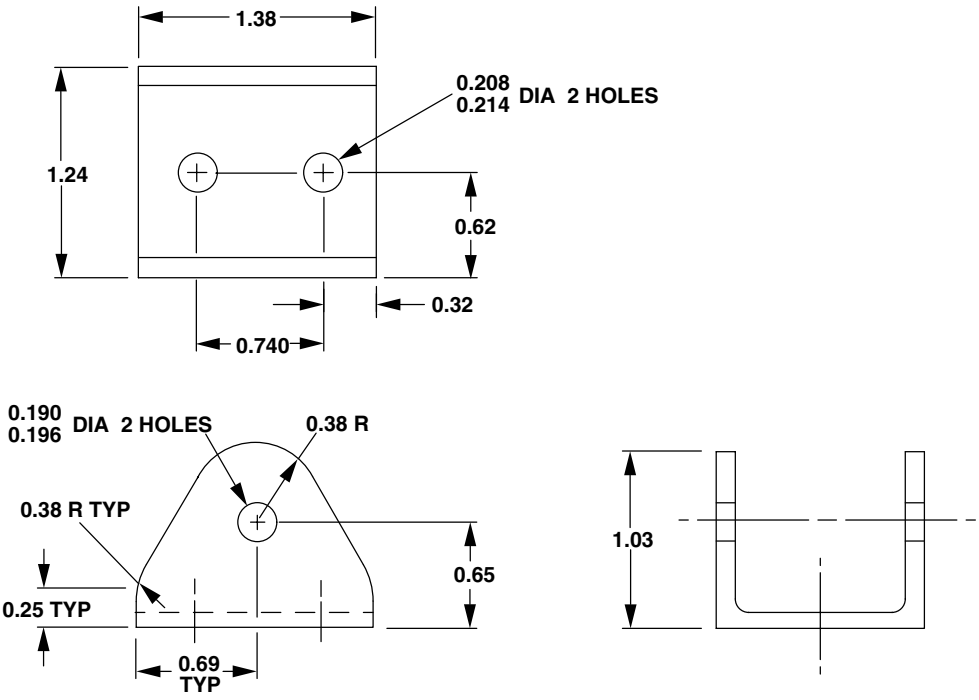
PART NUMBER	ITEM NAME	FABRICATE FROM
206-032-106-97	TAPE	NSN 7510-00-720-7516

NOTES

1. Dimensions are in inches.
2. Procurement in bulk roll.
3. Cut to required length.

406961-1401-207
J0412

Figure H-53. Tape



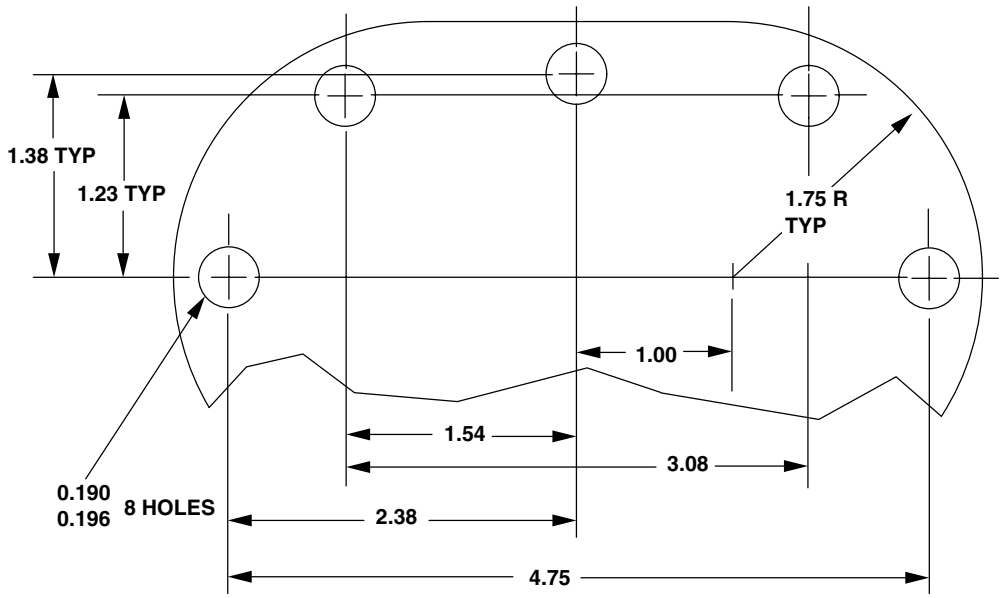
PART NUMBER	ITEM NAME	FABRICATE FROM
206-032-137-1	FITTING, COLLECTIVE	NSN 9540-00-400-3633

NOTES

1. Dimensions are in inches.
2. Cut to required length.
3. Remove all burrs and sharp edges.
4. Apply chemical conversion coating (D57).
5. Apply epoxy primer coating (D98).

406961-1401-28
J0248

Figure H-54. Fitting, Collective



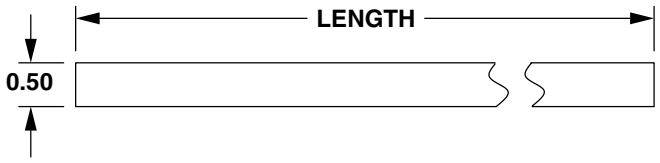
PART NUMBER	ITEM NAME	FABRICATE FROM
206-032-200-39	COVER, ACCESS	0.250 ALUMINUM ALLOY TYPE 7075T6 QQ-A-250/13

NOTES

1. Dimensions are in inches.
2. Remove all burrs and sharp edges.
3. Apply chemical conversion coating (D57).
4. Apply epoxy primer coating (D98).

406961-1401-186
J0403

Figure H-55. Cover, Access



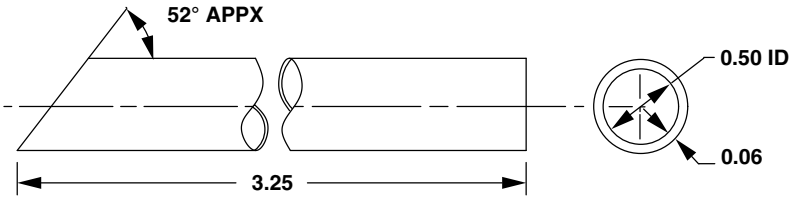
PART NUMBER	ITEM NAME	FABRICATE FROM
206-032-312-23	CHAFING STRIP	NSN 7510-00-105-3092
206-032-500-21	CHAFING STRIP	NSN 7510-00-117-8358
206-032-500-121	CHAFING STRIP	NSN 7510-00-117-8358
206-032-501-25	CHAFING STRIP	NSN 7510-00-117-8358
206-032-501-27	CHAFING STRIP	NSN 7510-00-117-8358
206-032-501-29	CHAFING STRIP	NSN 7510-00-117-8358

NOTES

1. Dimensions are in inches.
2. Cut to required length.

406961-1401-29
J0248

Figure H-56. Chafing Strip



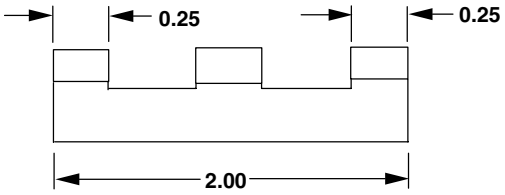
PART NUMBER	ITEM NAME	FABRICATE FROM
206-032-333-29	TUBING, NONMETALLIC	NSN 4720-00-246-4354

NOTES

1. Dimensions are in inches.
2. Cut to required length.

406961-1401-34
J0248

Figure H-57. Tubing, Nonmetallic



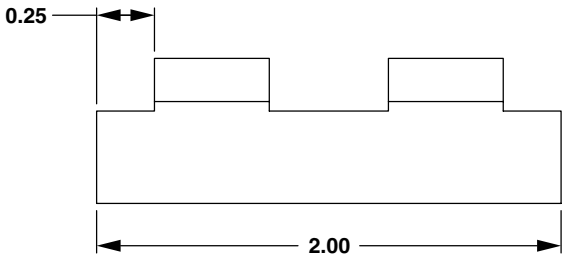
PART NUMBER	ITEM NAME	FABRICATE FROM
206-032-335-29	LEAF, BUTT HINGE	NSN 5340-01-010-7344

NOTES

1. Dimensions are in inches.
2. Cut to required length.
3. Remove all burrs and sharp edges.

406961-1401-35
J0248

Figure H-58. Leaf, Butt Hinge



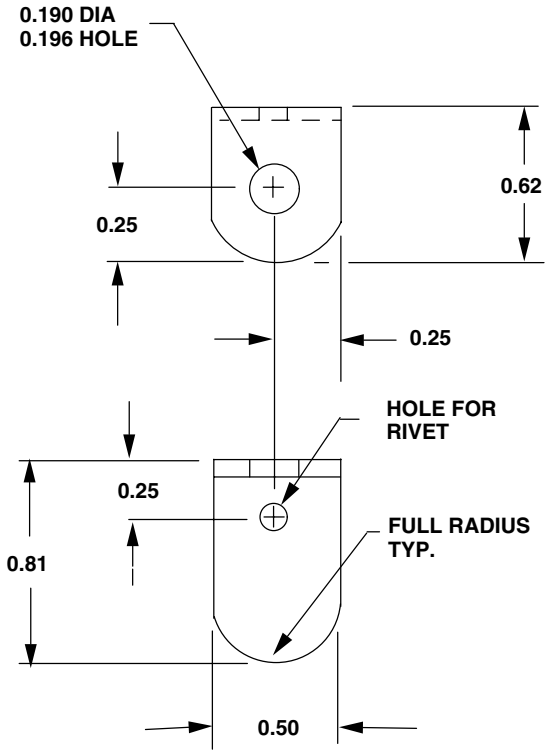
PART NUMBER	ITEM NAME	FABRICATE FROM
206-032-335-31	LEAF, BUTT HINGE	NSN 5340-01-344-3380

NOTES

1. Dimensions are in inches.
2. Cut to required dimensions shown.
3. Remove all burrs and sharp edges.

406961-1401-214
J0412

Figure H-59. Leaf, Butt Hinge



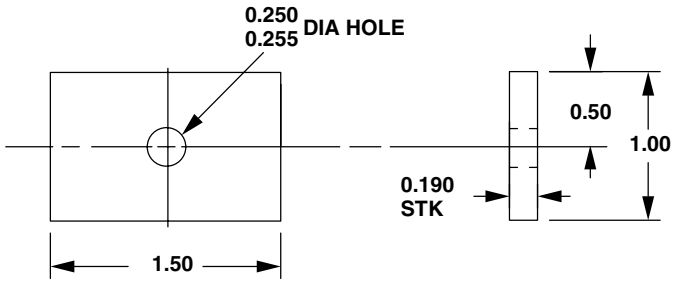
PART NUMBER	ITEM NAME	FABRICATE FROM
206-032-341-27	BRACKET, ANGLE	NSN 9535-00-167-2278

NOTES

1. Dimensions are in inches.
2. Remove all burrs and sharp edges.
3. Apply chemical conversion coating (D57).
4. Apply epoxy primer coating (D98).

406961-1401-37
J0248

Figure H-60. Bracket, Angle



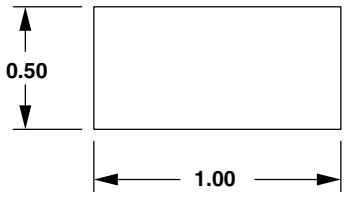
PART NUMBER	ITEM NAME	FABRICATE FROM
206-032-500-23	PLATE	NSN 9535-01-341-8307

NOTES

1. Dimensions are in inches.
2. Remove all burrs and sharp edges.
3. Apply chemical conversion coating (D57).
4. Apply epoxy primer coating (D98).

406961-1401-31
J0248

Figure H-61. Plate



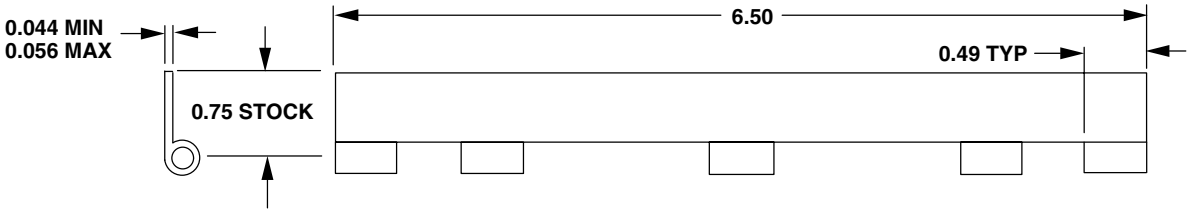
PART NUMBER	ITEM NAME	FABRICATE FROM
206-032-501-109	DOUBLER	NSN 9535-01-341-8289

NOTES

1. Dimensions are in inches.
2. Remove all burrs and sharp edges.
3. Apply chemical conversion coating (D57).
4. Apply epoxy primer coating (D98).

406961-1401-32
J0248

Figure H-62. Doubler



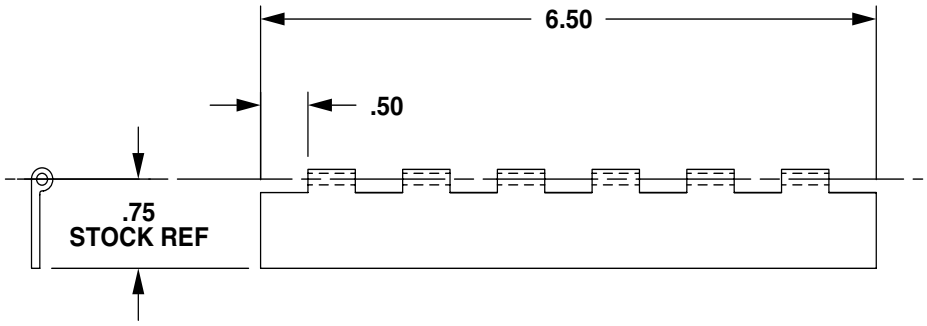
PART NUMBER	ITEM NAME	FABRICATE FROM
206-033-177-117	HINGE HALF	NSN 5340-00-984-5569

NOTES

1. Dimensions are in inches.
2. Cut to required length.
3. Remove all burrs and sharp edges.
4. Apply chemical conversion coating (D57).
5. Apply epoxy primer coating (D98).

406961-1401-38
J0248

Figure H-63. Hinge Half



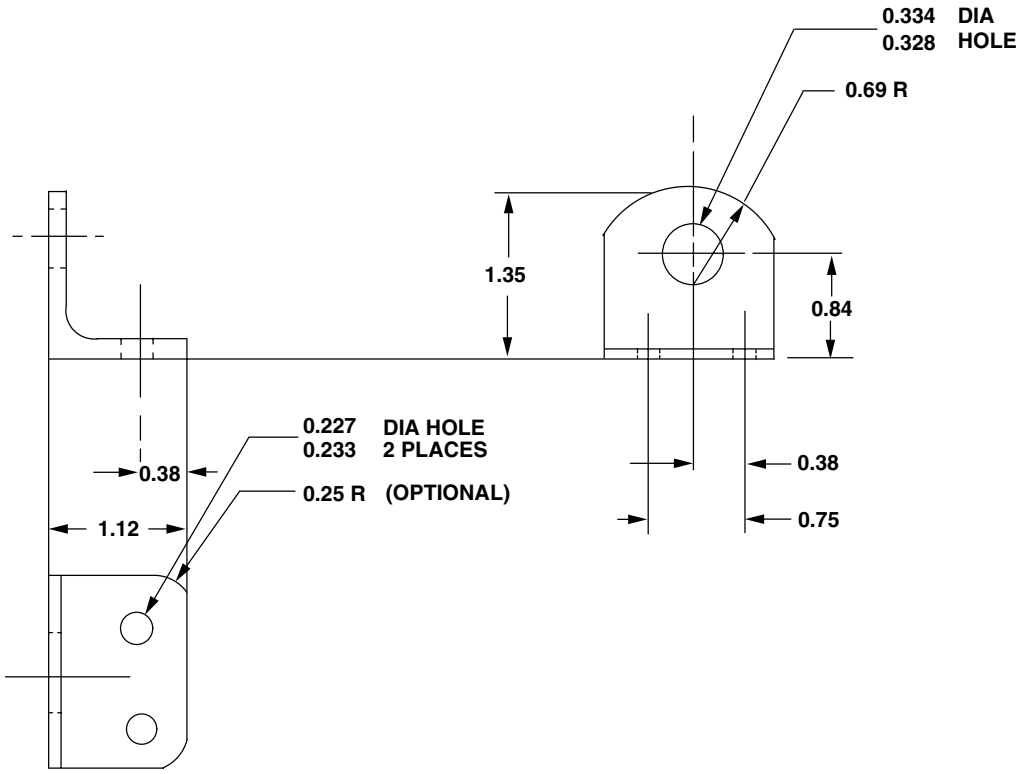
PART NUMBER	ITEM NAME	FABRICATE FROM
206-033-177-119	HINGE HALF	MS 20001PX4-650

NOTES

1. Dimensions are in inches.
2. Cut to required length.
3. Remove all burrs and sharp edges.
4. Apply chemical conversion coating (D57).
5. Apply epoxy primer coating (D98).

406961-1401-306
J0821

Figure H-64. Hinge Half



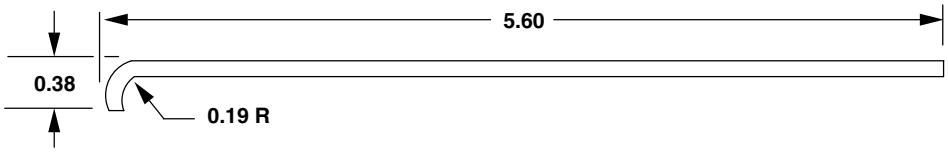
PART NUMBER	ITEM NAME	FABRICATE FROM
206-060-738-101	BRACKET	AND 10134-1406X1.6 ALUMINUM ALLOY 2024T4 QQ-A-200/3

NOTES

1. Dimensions are in inches.
2. Dash number is die number and indicates each shape and size of section. Example: In AND 10134-1406, "10134" Indicates "ANGLE-UNEQUAL LEG"; "14"indicates 1-4/8 (1.500) for long leg and "06" is serial number only.
3. Apply chemical conversion coating (D57).
4. Apply epoxy primer coating (D98).

406961-1401-176
J0403

Figure H-65. Bracket



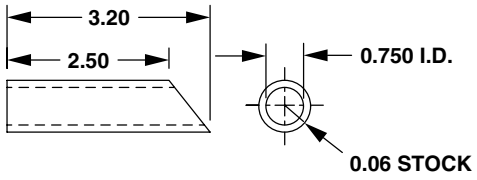
PART NUMBER	ITEM NAME	FABRICATE FROM
206-061-654-1	HINGE PIN	NSN 5340-00-043-3723

NOTES

1. Dimensions are in inches.
2. Make from MS20253-P2-600.
3. Remove all burrs and sharp edges.

406961-1401-39
J0248

Figure H-66. Hinge Pin



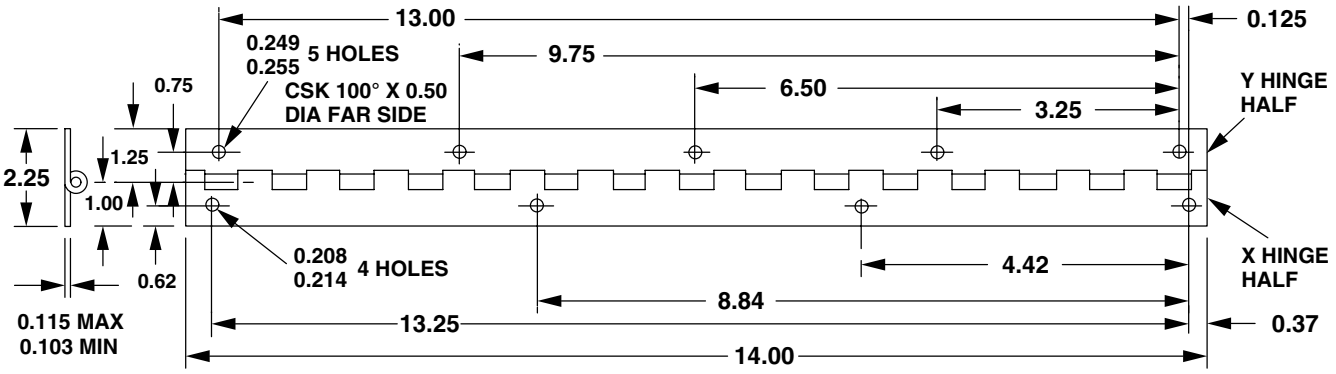
PART NUMBER	ITEM NAME	FABRICATE FROM
206-062-663-1	HOSE	NSN 4720-00-233-0075

NOTE

Dimensions are in inches.

406961-1401-44
J0248

Figure H-67. Hose



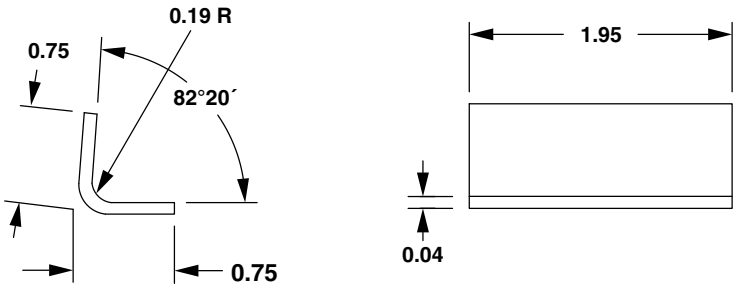
PART NUMBER	ITEM NAME	FABRICATE FROM
206-070-324-1	HINGE	NSN 5340-00-664-8138

NOTES

1. Dimensions are in inches.
2. Cut to required length.
3. Cut hinge pin 0.12 inch shorter than hinge. Crimp ends of hinge for pin retention.
4. Remove all burrs and sharp edges.
5. Apply chemical conversion coating (D57).
6. Apply epoxy primer coating (D98).

406961-1401-45
J0248

Figure H-68. Hinge



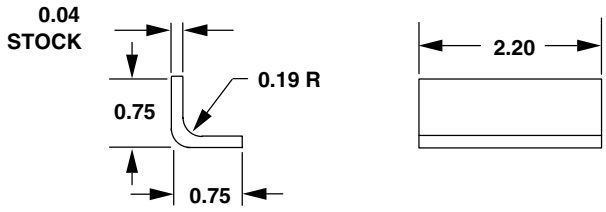
PART NUMBER	ITEM NAME	FABRICATE FROM
206-070-362-13	BRACKET	NSN 9535-00-554-1416

NOTES

1. Dimensions are in inches.
2. Apply chemical conversion coating (D57).
3. Apply epoxy primer coating (D98).

406961-1401-47
J0248

Figure H-69. Bracket



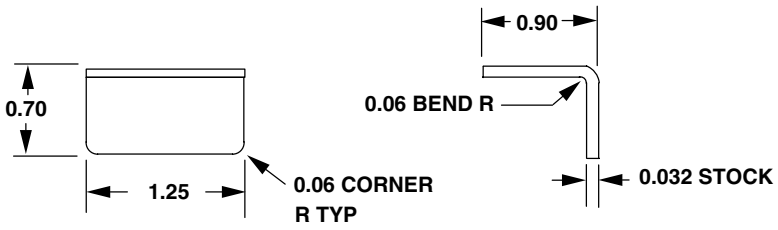
PART NUMBER	ITEM NAME	FABRICATE FROM
206-070-362-7	BRACKET	NSN 9535-00-554-1416

NOTES

1. Dimensions are in inches.
2. Apply chemical conversion coating (D57).
3. Apply epoxy primer coating (D98).

406961-1401-46
J0248

Figure H-70. Bracket



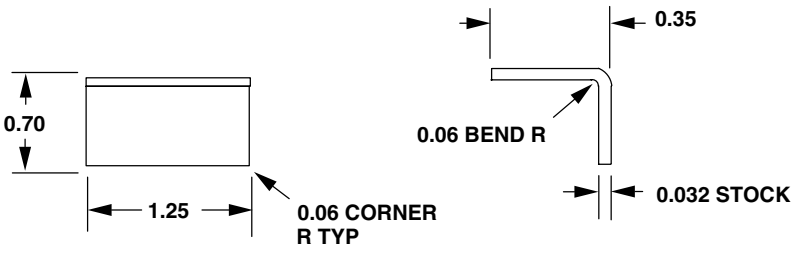
PART NUMBER	ITEM NAME	FABRICATE FROM
206-070-474-1	BAFFLE	NSN 9515-00-580-5509

NOTE

Dimensions are in inches.

406961-1401-49
J0248

Figure H-71. Baffle



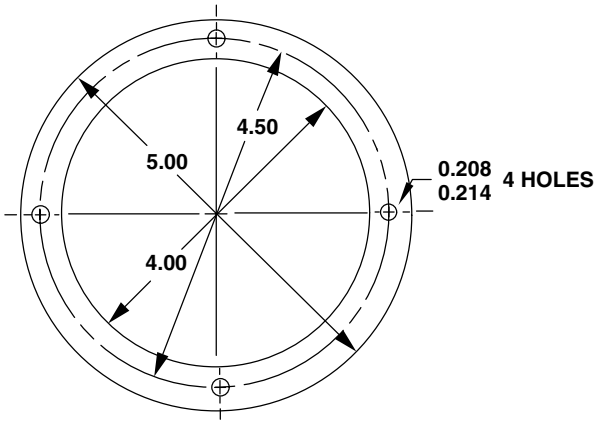
PART NUMBER	ITEM NAME	FABRICATE FROM
206-070-474-3	BAFFLE, STATIC PORT	NSN 9515-00-580-5509

NOTE

Dimensions are in inches.

406961-1401-50
J0248

Figure H-72. Baffle, Static Port



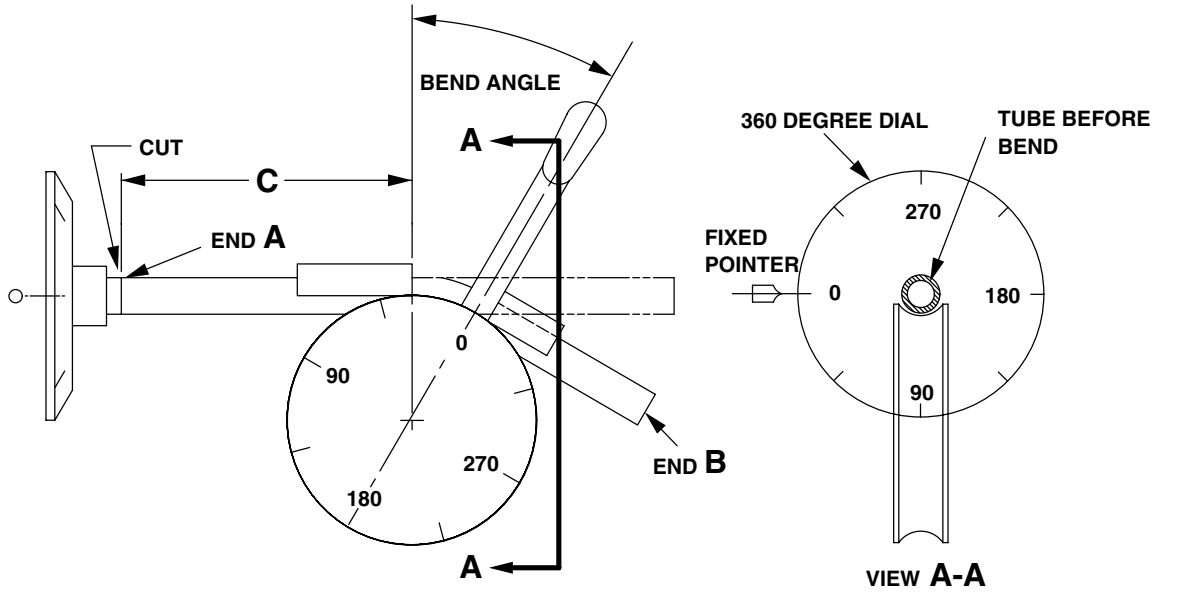
PART NUMBER	ITEM NAME	FABRICATE FROM
206-070-489-1	RETAINER, HEATER	NSN 9535-00-640-2311

NOTES

1. Dimensions are in inches.
2. Apply chemical conversion coating (D57).
3. Apply epoxy primer coating (D98).

406961-1401-51
J0248

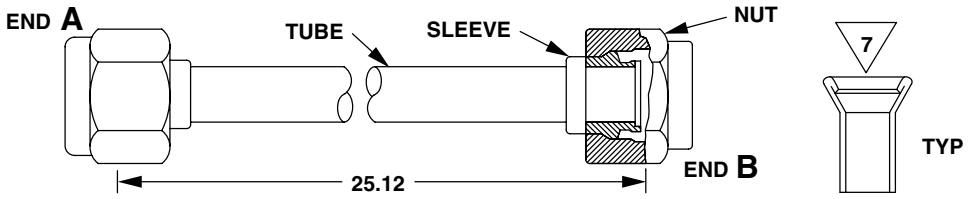
Figure H-73. Retainer, Heater



NOTE

VIEW **A-A** IS SHOWN WITH BENDING TOOL PARTIALLY REMOVED FROM VIEW.

BEND NO.	BEND FROM END A (DIM. C)	BEND RADIUS	▽9	BEND ANGLE°
1	24.0	0.56	0	123°
2	18.38	0.56	163	34°
3	8.38	0.56	311	90°
4	2.38	0.56	311	90°



406961-1401-234-1
J0412

Figure H-74. Tube Assembly (Sheet 1 of 2)

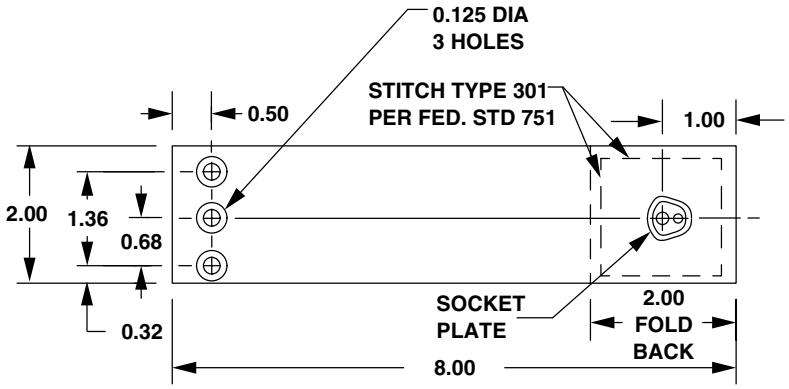
PART NUMBER	ITEM NAME	FABRICATE FROM
206-070-588-1	TUBE ASSEMBLY	AL. ALY., 5052-T0 WW-T-700/4 TYPE I NSN 4710-00-541-4932
MS20819-4D	SLEEVE (QTY 2)	NSN 4730-00-302-8641
AN818-4D	NUT (QTY 2)	NSN 4730-00-287-2089
30-032-54	TAPE, AIRCRAFT PIPING (QTY 2)	
30-033-9	TAPE, AIRCRAFT PIPING (QTY 2)	

NOTES

1. Dimensions are in inches.
2. **C** Dimension is start of bend.
3. Bend tube to dimensions in table. Conform to MS33611.
4. Cut END **A** after bending tube.
5. Trim and deburr ENDS **A** and **B**.
6. Install nuts and sleeves per MS33566 and TM 1-1500-204-23-2, Chapter 4.
7. Double flare ENDS **A** and **B** per MS33583 and TM 1-1500-204-23-2, Chapter 4.
8. Apply aircraft piping tape to tube assembly per MIL-STD-1247.
9. Rotate tube (from plane of first bend) ccw as viewed from Bend From End.

406961-1401-234-2
J0412

Figure H-74. Tube Assembly (Sheet 2 of 2)



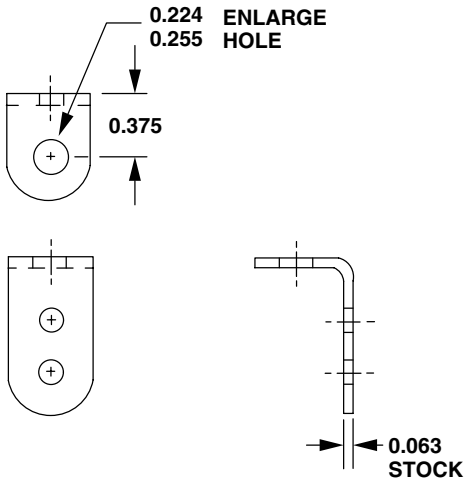
PART NUMBER	ITEM NAME	FABRICATE FROM
206-070-887-11	STRAP	
MIL-W-4088 TYPE XV	STRAP, NYLON	NSN 8305-00-082-2142
V-T-295 TYPE I	THREAD, NYLON, LUSTERLESS GRAY	NSN 8310-00-227-1244
CLASS 1 - SIZE F	COLOR NO. 36231 per FED-STD-595	
MS27977-1B	SOCKET, PRONG	NSN 5325-00-281-4356
MS27977-3B	PLATE, CLINCH	NSN 5325-00-276-4283

NOTES

1. Dimensions are in inches.
2. Cut hole in folded strap larger than hole in clinch plate.
3. Mount socket on smooth side of strap.

406961-1401-52
J0248

Figure H-75. Strap



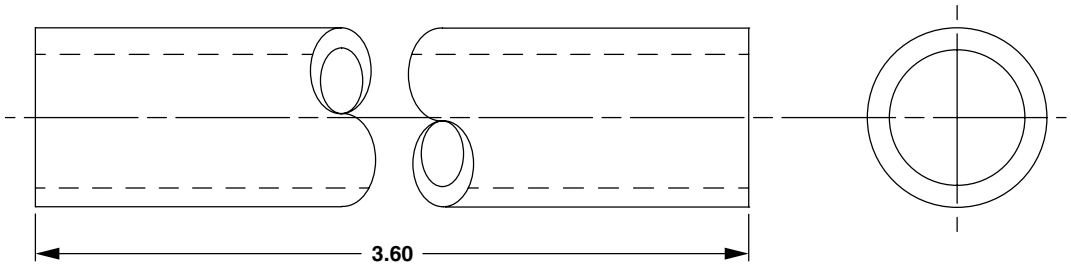
PART NUMBER	ITEM NAME	FABRICATE FROM
206-075-310-1	BRACKET, ANGLE	NSN 5340-00-721-8182

NOTE

Dimensions are in inches.

406961-1401-53
J0248

Figure H-76. Bracket, Angle



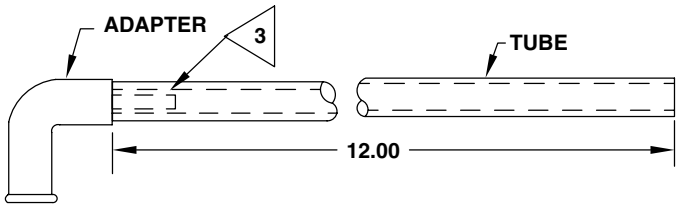
PART NUMBER	ITEM NAME	FABRICATE FROM
206-075-314-17	TUBE	NSN 4720-00-540-3644

NOTES

1. Dimensions are in inches.
2. Procurement: bulk stock.
3. Cut to required length.

406961-1401-227
J0412

Figure H-77. Tube



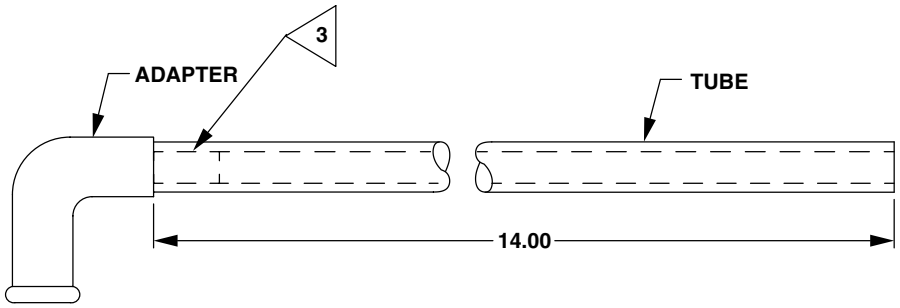
PART NUMBER	ITEM NAME	FABRICATE FROM
206-075-314-25	TUBE	NSN 4720-00-540-3644
10-004-1	ADAPTER	NSN 6140-01-186-4432

NOTES

1. Dimensions are in inches.
2. Clean surfaces to be bonded with acetone (D2) or aliphatic naphtha (D141).
3. Bond with Eastman 910 adhesive (D13).

406961-1401-54
J0248

Figure H-78. Tube



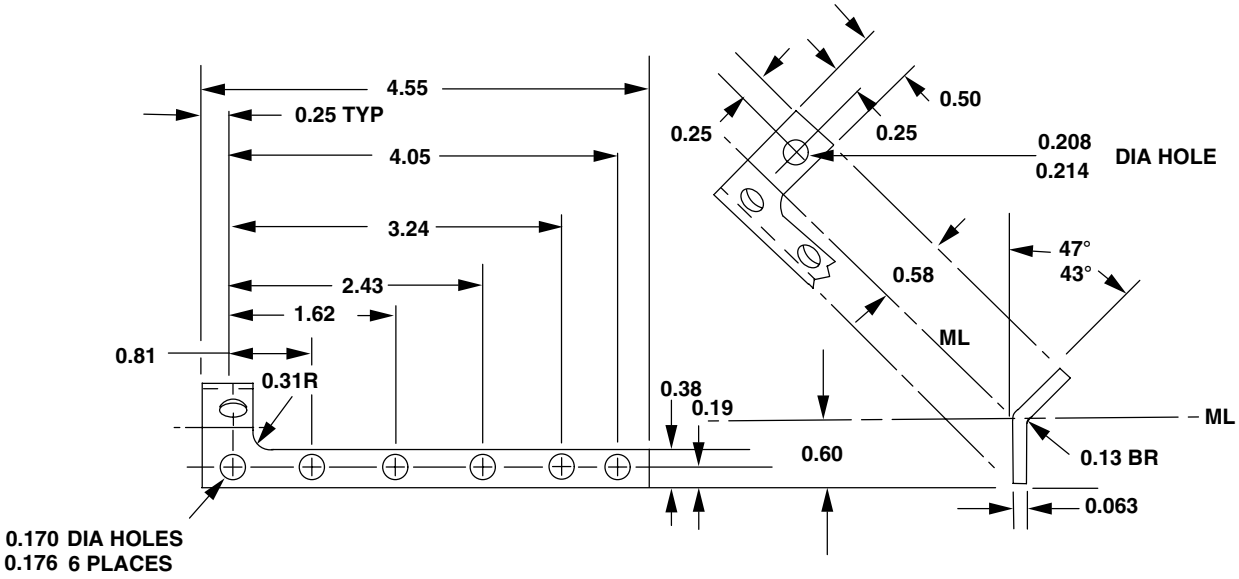
PART NUMBER	ITEM NAME	FABRICATE FROM
206-075-314-45	TUBE	NSN 4720-00-540-3644
10-002-1	ADAPTER	NSN 1560-00-072-5317

NOTES

1. Dimensions are in inches.
2. Clean surfaces to be bonded with acetone (D2).
3. Bond with Eastman 910 adhesive (D13).

406961-1401-229
J0412

Figure H-79. Tube



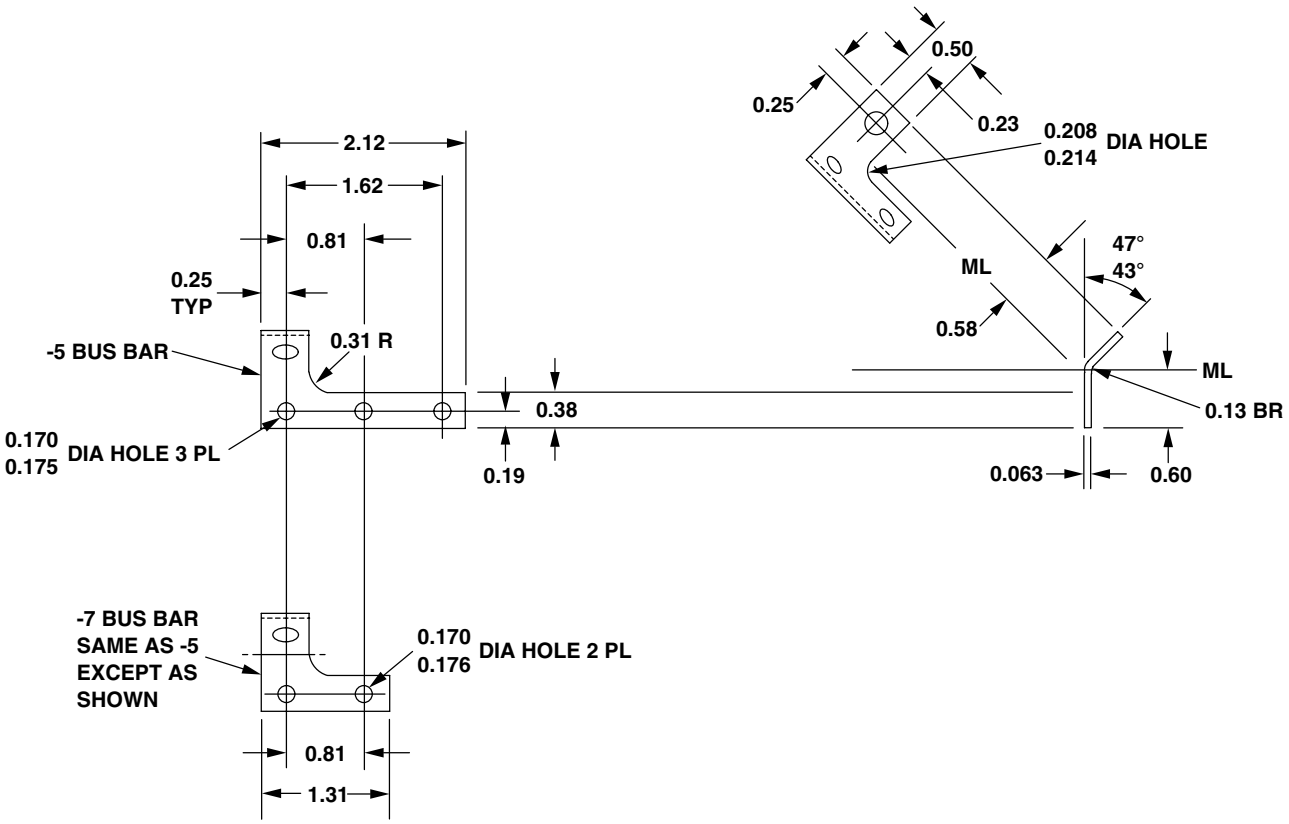
PART NUMBER	ITEM NAME	FABRICATE FROM
206-075-445-101	BUS BAR	NSN 9535-00-585-2049

NOTES

1. Dimensions are in inches.
2. Bend radius 0.13 except as noted.
3. Remove all burrs and sharp edges.
4. Apply chemical conversion coating (D57).

406961-1401-55
J0248

Figure H-80. Bus Bar



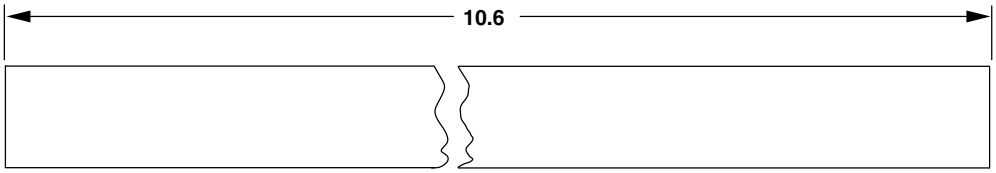
PART NUMBER	ITEM NAME	FABRICATE FROM
206-075-445-7	BUS BAR	NSN 9535-00-585-2949

NOTES

1. Dimensions are in inches.
2. Bend radius 0.13 except as noted.
3. Remove all burrs and sharp edges.
4. Apply chemical conversion coating (D57).

406961-1401-301
J1274

Figure H-81. Bus Bar



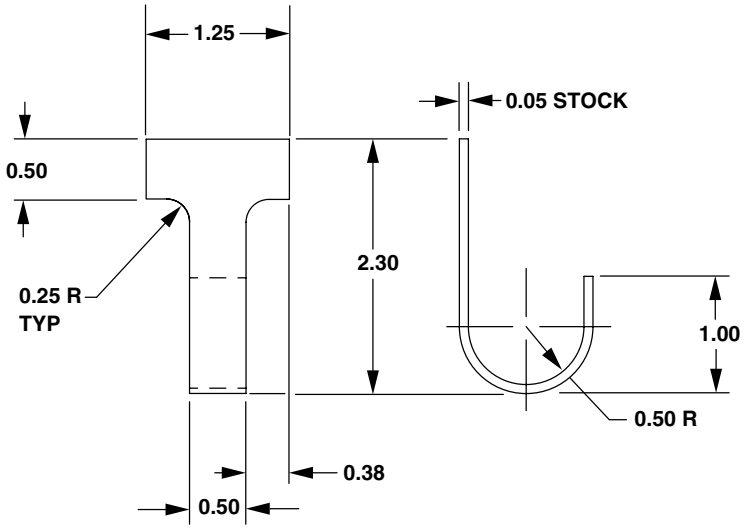
PART NUMBER	ITEM NAME	FABRICATE FROM
209-001-138-11	STRAP	NSN 8305-00-811-1617

NOTES

1. Dimensions are in inches.
2. Gloss Orange, Color No. 13538 per FED-STD-595.
3. Heat sear ends of strap.

406961-1401-87
J0248

Figure H-82. Strap



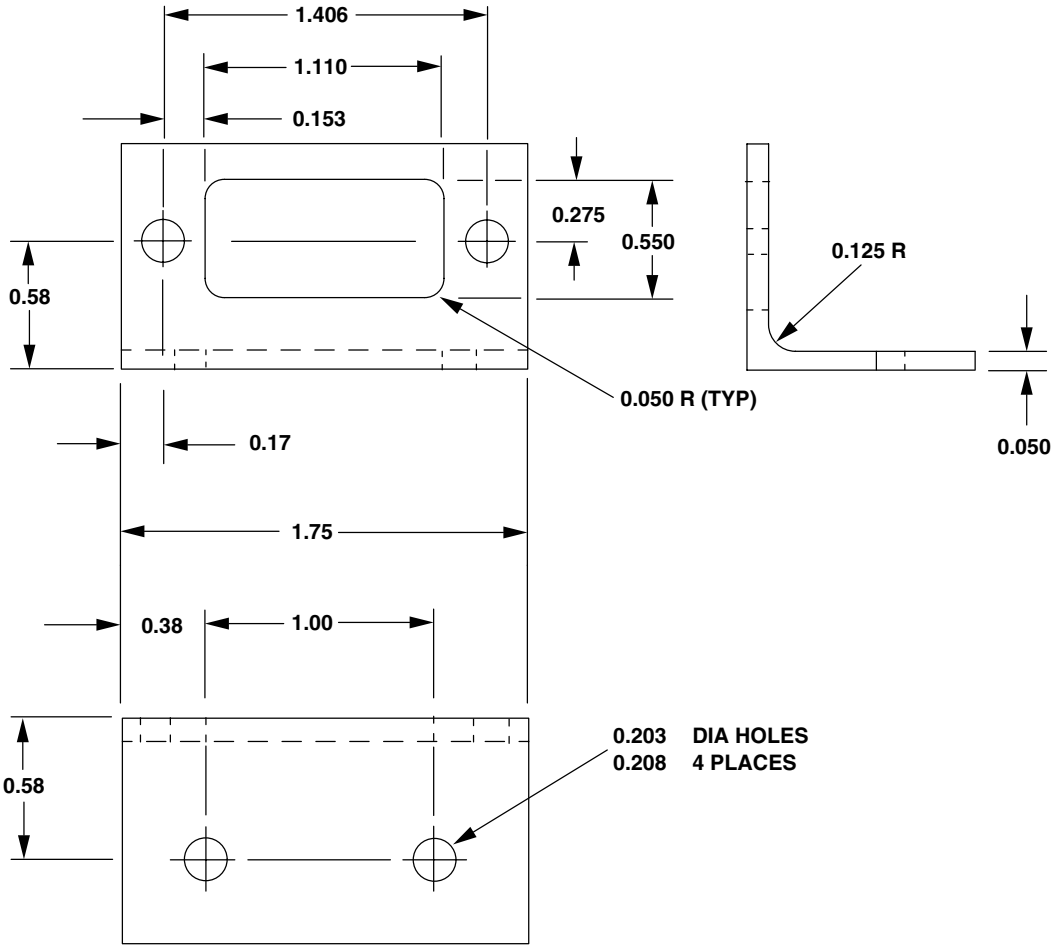
PART NUMBER	ITEM NAME	FABRICATE FROM
209-070-119-1	HOOK, HELMET	NSN 9515-00-580-5475

NOTES

1. Dimensions are in inches.
2. Remove all burrs and sharp edges.
3. Apply epoxy primer coating (D98).

406961-1401-148
J0403

Figure H-83. Hook, Helmet



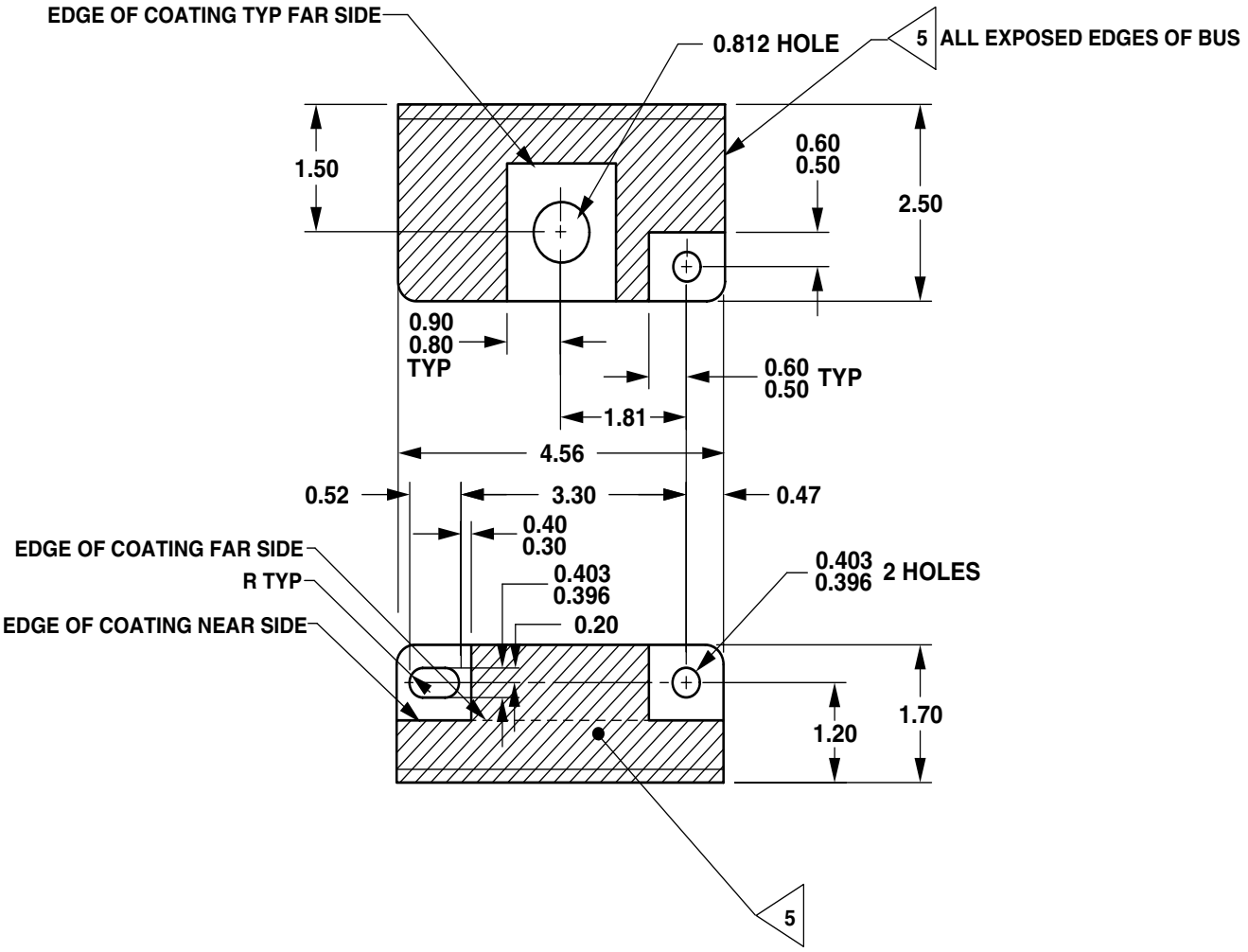
PART NUMBER	ITEM NAME	FABRICATE FROM
209-075-622-1	BRACKET, RELAY	NSN 9540-00-989-1551

NOTES

1. Dimensions are in inches.
2. Remove all burrs and sharp edges.
3. Apply chemical conversion coating (D57).
4. Apply epoxy primer coating (D98).

406961-1401-184
J0403

Figure H-84. Bracket, Relay



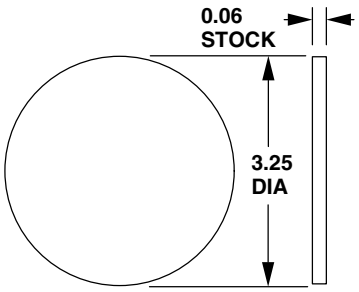
PART NUMBER	ITEM NAME	FABRICATE FROM
214-175-183-103	BUS, CONNECTOR	COPPER, QQ-C-576, ANNEALED

NOTES

1. Dimensions are in inches.
2. Use material 0.188 X 4.70 X 5.00 copper.
3. Bend and corner radii 0.25.
4. Remove all burrs and sharp edges.
5. Apply powder resin coating (D177) to crosshatched area. Thickness 0.008-0.012.
6. Cadmium plate, Class 2, Type II (electrodeposited areas not receiving powder resin coating).

406961-1401-307
J0821

Figure H-85. Bus, Conductor



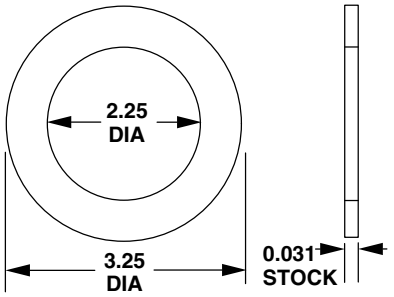
PART NUMBER	ITEM NAME	FABRICATE FROM
222-061-803-31	WINDOW	NSN 9330-00-143-8646

NOTES

1. Dimensions are in inches.
2. Make from 0.060 x 3.80 x 3.80 acrylic plastic (clear); CAGE 81349 per MIL-P-25690.
3. Cut to dimensions.
4. Remove all burrs and sharp edges.

406961-1401-56
J0248

Figure H-86. Window



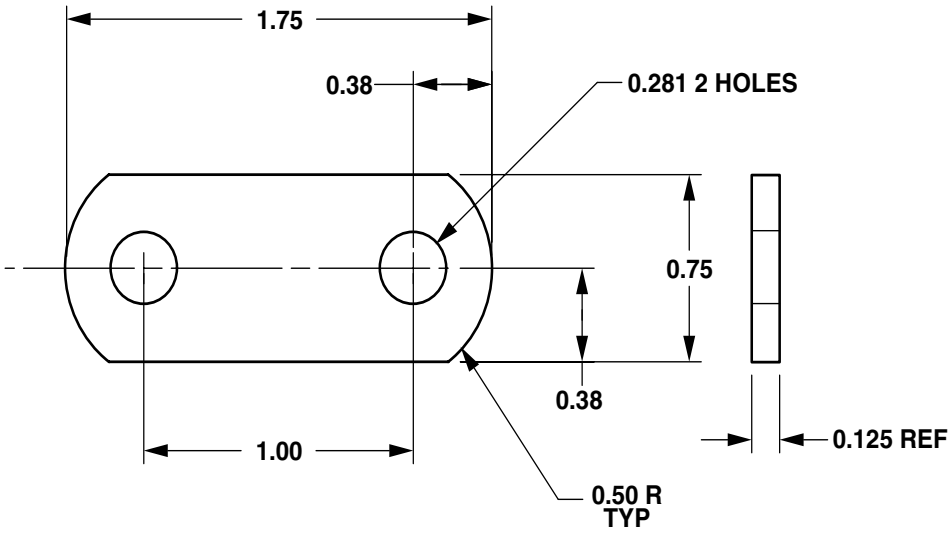
PART NUMBER	ITEM NAME	FABRICATE FROM
222-061-803-33	GASKET	NSN 9320-00-241-9739

NOTES

1. Dimensions are in inches.
2. Make from 0.031 x 3.80 x 3.80 synthetic rubber solid sheet MIL-R-6855, Class 1, Grade 40 stock, CAGE 19200 (8635996).
3. Cut to dimensions.

406961-1401-57
J0248

Figure H-87. Gasket



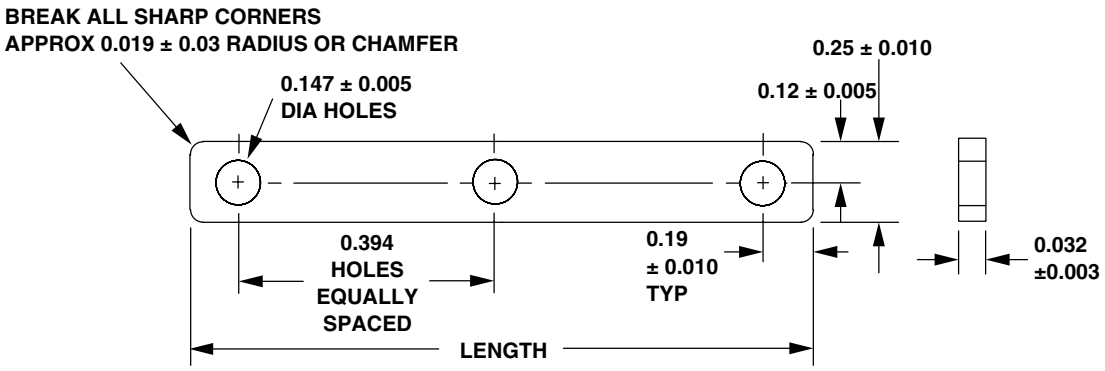
PART NUMBER	ITEM NAME	FABRICATE FROM
222-075-152-109	BUS, CONNECTOR	COPPER, QQ-C-576

NOTES

1. Dimensions are in inches.
2. Remove all burrs and sharp edges.

406961-1401-308
J0821

Figure H-88. Bus, Conductor



PART NUMBER	ITEM NAME	FABRICATE FROM
30-006-3-26	BUS, CONNECTOR	MAKE FROM ASTM-B152 PER MS25226
30-006-6-26	BUS, CONNECTOR	MAKE FROM ASTM-B152 PER MS25226

NOTES

1. Dimensions are in inches.
2. Part number code: 30-006-( )-( ) ( ) ( )

BASIC NUMBER
MATERIAL:
COPPER 1/2 HARD

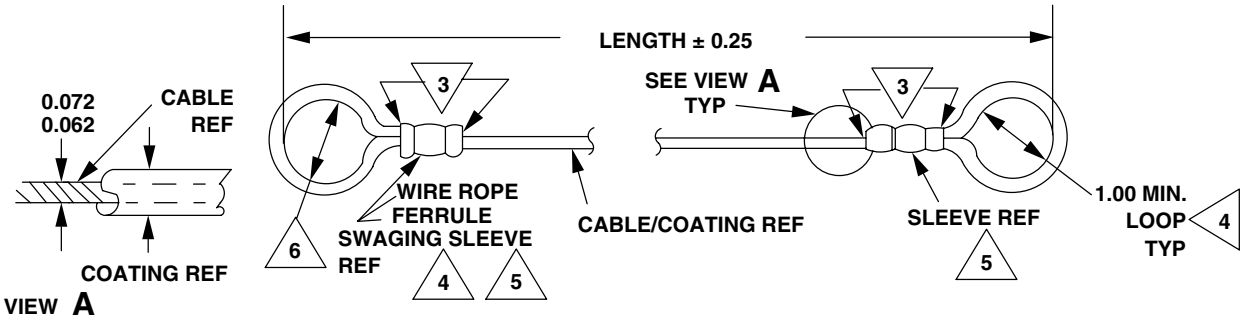
NUMBER OF HOLES

LENGTH BETWEEN HOLES
IN 1/32 INCREMENTS

FINISH: CADMIUM PLATE, QQ-P-416
CLASS 3, TYPE II

406961-1401-6
J0248

Figure H-89. Bus, Conductor



PART NUMBER	ITEM NAME	FABRICATE FROM
30-033-10-10C 30-033-10-8	CABLE LANYARD	MAKE FROM CORROSION RESISTANT STEEL, 7 X 7 PER MIL-W-83420, TYPE I, COMP. B, OR PROCURE ASSEMBLY NSN 9535-00-232-2293
MS51844-62 28-1-C	SLEEVE SWAGING SLEEVE, FERRULE, WIRE ROPE	NSN 4030-01-088-2952 CAGE 76691 NSN 4030-00-431-5536 ALTERNATE: MS51844-62 NSN 4030-01-088-2952

EXAMPLE OF PART NUMBER: 30 - 033 - 10 - 10 C

- 30 - BASIC NO.
- 033 - CONFIGURATION DASH NUMBER
- 10 - LENGTH IN INCHES (2-INCH INCREMENTS ONLY, 2 DIGITS MAX)
- 10 C - C = COATED CABLE; NO CODE = BARE CABLE

NOTES

1. Dimensions are in inches.
2. Perform tension load check of 30 pounds minimum after assembly to lock assembly and ball-lock pin per MIL-C-5688.

3 Coating shall not extend under wire rope ferrule or sleeve.

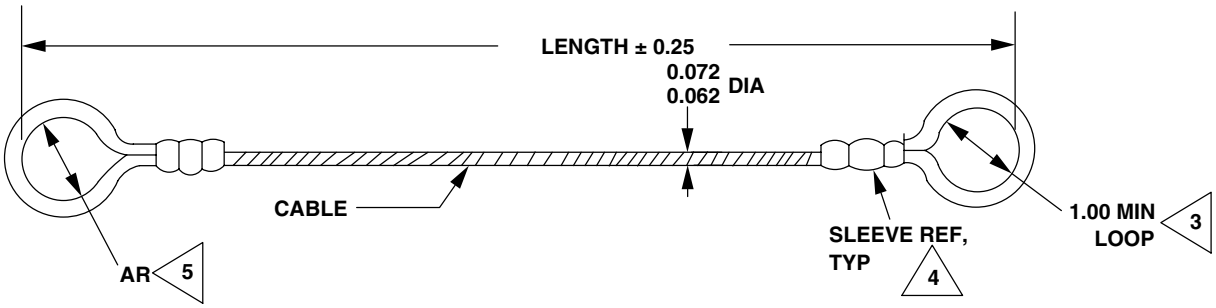
4 1.00 inch diameter drill rod shall freely pass through ends without binding.

5 Swage wire rope ferrule per MIL-T-6117 after assembly to lock assembly and ball-lock pin.

6 Form loop as required on installation and swage per above NOTE 5.

406961-1401-254
J0412

Figure H-90. Cable or Lanyard



PART NUMBER	ITEM NAME	FABRICATE FROM
30-033-15-8	WIRE ROPE ASSEMBLY	
30-033-15-11	WIRE ROPE ASSEMBLY	
30-033-3-6	WIRE ROPE ASSEMBLY	
30-033-3-8	WIRE ROPE ASSEMBLY	
MS51844-62	SLEEVE (QTY 2)	NSN 4030-00-88-2952
	CABLE	MAKE FROM 0.062-0.072 DIA CORROSION RESISTANT STEEL, 7 X 7 PER MIL-W-83420, TYPE I, COMP. B

EXAMPLE OF PART NUMBER: 30 - 033 - 15 - 8 - C

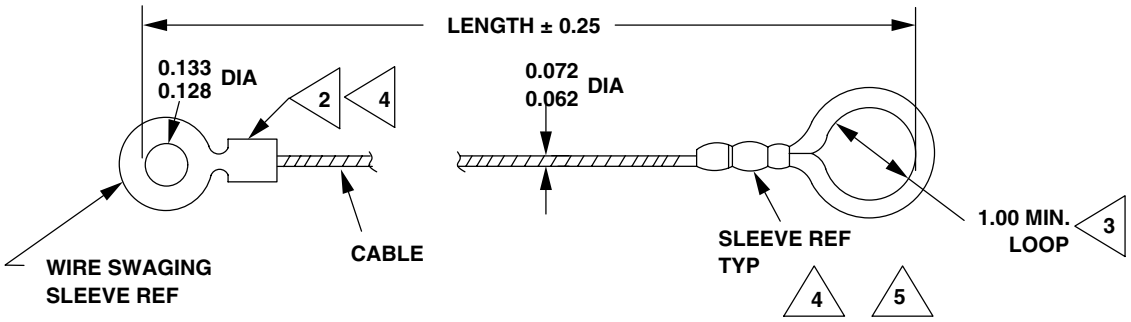
- BASIC NO.
- CONFIGURATION DASH NUMBER
- C = COATED CABLE; NO CODE = BARE CABLE
- LENGTH IN INCHES (2-INCH INCREMENTS ONLY, 2 DIGITS MAX)

NOTES

1. Dimensions are in inches.
2. Perform tension load check of 30 pounds minimum.
3. 1.00 inch diameter drill rod shall freely pass through loop end without binding.
4. Swage sleeve per MIL-T-6117.
5. Form loop as required on installation and swage per above Note 4.

406961-1401-256
J0412

Figure H-91. Wire Rope Assembly



PART NUMBER	ITEM NAME	FABRICATE FROM
30-033-1-6	CABLE ASSEMBLY	MAKE FROM 0.062 TO 0.072 DIA CORROSION RESISTANT STEEL, 7 X 7 PER MIL-W-83420, TYPE I, COMP. B
CL-2-F	SWAGING SLEEVE, WIRE	NSN 4030-00-878-8693 CAGE 99862
MS51844-62	SLEEVE	NSN 4030-00-88-2952

EXAMPLE OF PART NUMBER: 30 - 033 - 1 - 6 ( )

BASIC NO.

CONFIGURATION
DASH NUMBER

C = COATED CABLE
NO CODE = BARE CABLE

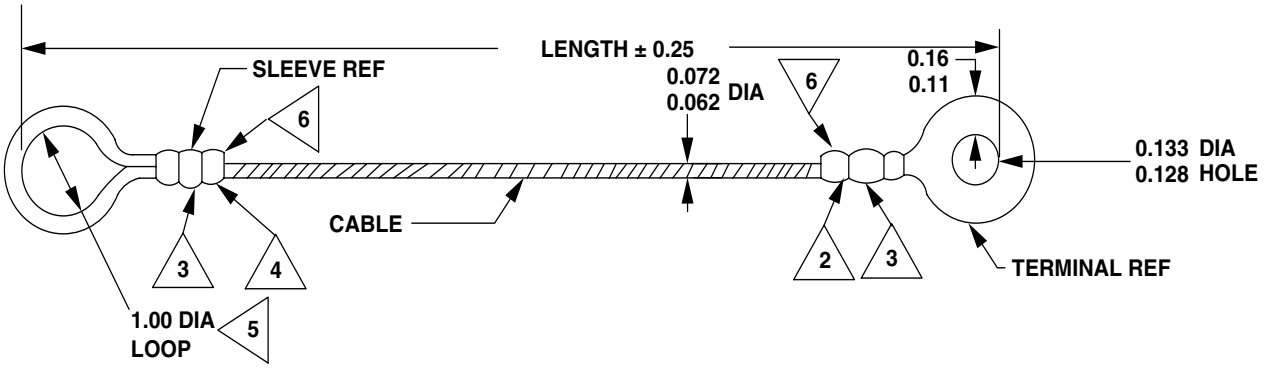
LENGTH IN INCHES (2-INCH INCREMENTS ONLY, 2 DIGITS MAX)

NOTES

1. Dimensions are in inches.
2. Perform tension load check of 200 pounds minimum.
3. 1.00 inch diameter drill rod shall freely pass through loop end without binding.
4. Swage wire swaging sleeve and wire rope ferrule per MIL-T-6117.
5. Perform tension load check of 30 pounds minimum.

406961-1401-255
J0412

Figure H-92. Cable Assembly



PART NUMBER	ITEM NAME	FABRICATE FROM
30-033-19-4C	LANYARD	MAKE FROM 0.062-0.072 DIA, CORROSION RESISTANT STEEL 7 X 7 PER MIL-W-83420, TYPE I, COMP. B
	TERMINAL	CORROSION RESISTANT STEEL, 0.034 TO 0.038 THICK, TYPE 302 PER MIL-S-5059
MS51844-62	SLEEVE	NSN 4030-00-88-2952

EXAMPLE OF PART NUMBER: 30 - 033 - 19 - 4 - C

BASIC NO.

CONFIGURATION DASH NUMBER

C = COATED CABLE
NO CODE = BARE CABLE

LENGTH IN INCHES (2-INCH INCREMENTS ONLY, 2 DIGITS MAX)

NOTES

1. Dimensions are in inches.

2. Perform tension load check of 200 pounds minimum.

3. Swage sleeve and terminal per MIL-T-6117.

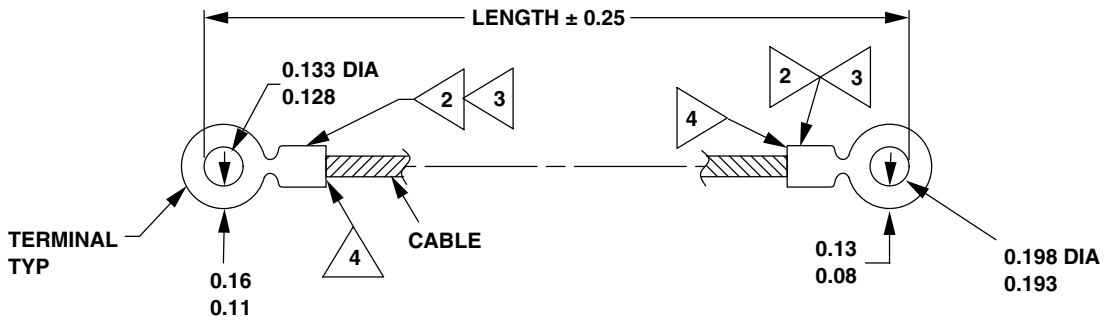
4. Perform tension load check of 30 pounds minimum.

5. 1.00 inch diameter drill rod shall freely pass through end without binding.

6. Coating shall not extend under sleeve or terminal.

406961-1401-305
J0821

Figure H-93. Lanyard



PART NUMBER	ITEM NAME	FABRICATE FROM
30-033-5-7C	CABLE ASSEMBLY, DOOR	MAKE FROM 0.062 TO 0.072 DIA CORROSION RESISTANT STEEL, 7X7 PER MIL-W-83420, TYPE I, COMP. B
	TERMINAL (QTY 2)	CORROSION RESISTANT STEEL 0.034 TO 0.038 THICK, TYPE 302 PER MIL-S-5059

EXAMPLE OF PART NUMBER: 30-033 - 5 - 7 C

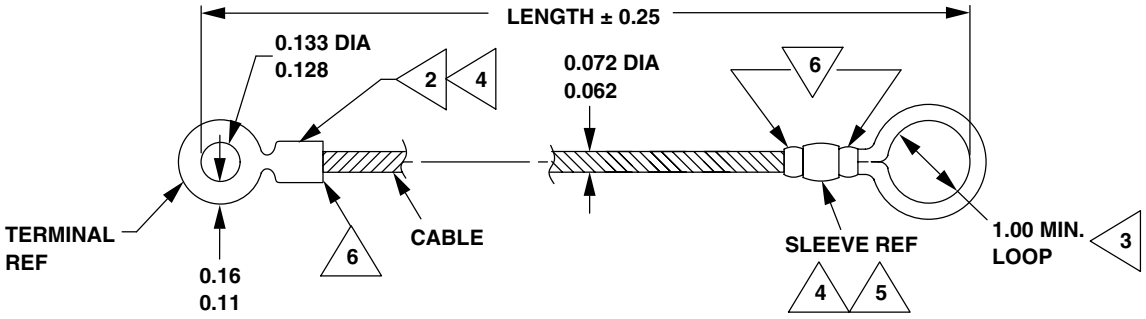
- 30-033 — BASIC NO.
- 5 — CONFIGURATION DASH NUMBER
- 7 — LENGTH IN INCHES (2-INCH INCREMENTS ONLY, 2 DIGITS MAX)
- C — C= COATED CABLE; NO CODE = BARE CABLE

NOTES

1. Dimensions are in inches.
2. Perform tension load check of 200 pounds minimum.
3. Swage terminal per MIL-T-6117.
4. Coating shall not extend under terminal.

406961-1401-260
J0412

Figure H-94. Cable Assembly, Door



PART NUMBER	ITEM NAME	FABRICATE FROM
30-033-7-4C	LANYARD	MAKE FROM 0.062 TO 0.072 DIA. CORROSION RESISTANT STEEL, 7X7 PER MIL-W-83420, TYPE I, COMP. B
	TERMINAL	CORROSION RESISTANT STEEL 0.034 TO 0.038 THICK, TYPE 302 PER MIL-S-5059
MS51844-62	SLEEVE	NSN 4030-00-088-2952

EXAMPLE OF PART NUMBER: 30-033 - 7 - 4 C

BASIC NO.

CONFIGURATION DASH NUMBER

C= COATED CABLE
NO CODE = BARE CABLE

LENGTH IN INCHES (2-INCH INCREMENTS ONLY, 2 DIGITS MAX)

NOTES

1. Dimensions are in inches.
2. Perform tension load check of 200 pounds minimum.
3. 1.00 inch diameter drill rod shall freely pass through loop end without binding.
4. Swage sleeve and terminal per MIL-T-6117.
5. Perform tension load check of 30 pounds minimum.
6. Coating shall not extend under terminal or sleeve.

406961-1401-262
J0412

Figure H-95. Lanyard

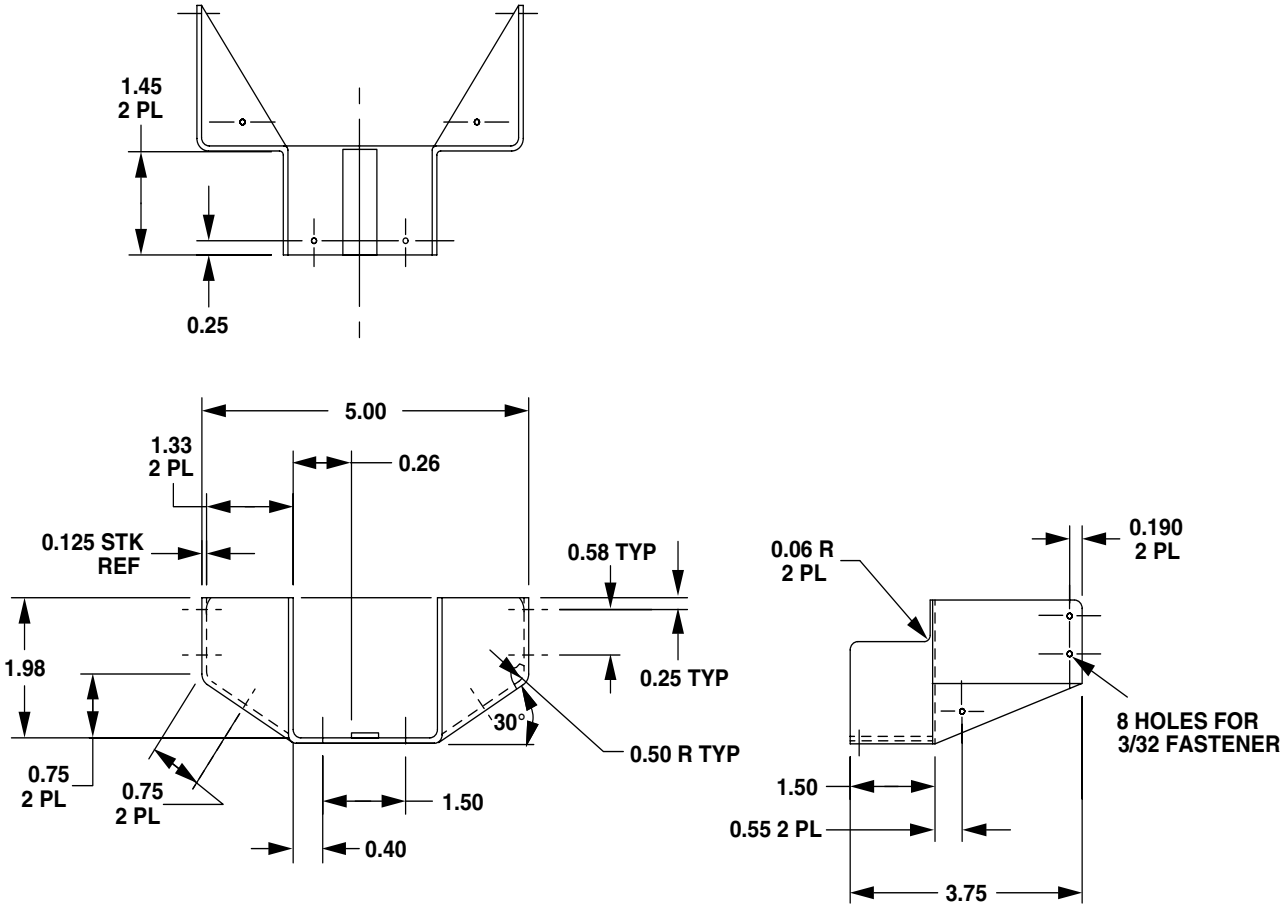
PART NUMBER	ITEM NAME	FABRICATE FROM
400-015-009-105	EROSION STRIP	3M 8545 POLYURETHANE FILM 0.040 INCH THICK X 6.00 WIDE X 114.00 LENGTH CAGE 52152

NOTES

1. Dimensions are in inches.
2. Bond to blade using adhesive (D20).

406961-1401-264
J0412

Figure H-96. Erosion Strip



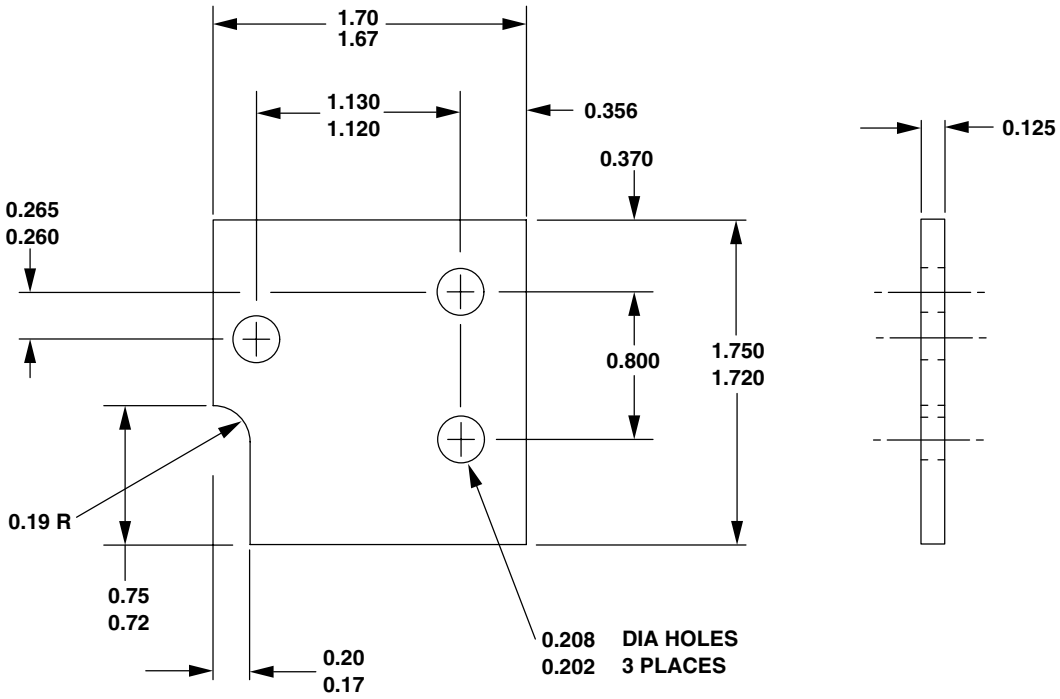
PART NUMBER	ITEM NAME	FABRICATE FROM
406-001-356-101	SHIELD ASSEMBLY	PLASTIC, 299-947-508 TYPE I
50-029-3B014	HOOK	

NOTES

1. Dimensions are in inches.
2. Stock material size 0.1250 X 8.500 X 5.0.
3. Remove all burrs and sharp edges.
4. Bond hook to shield assembly using adhesive (D11).

406961-1401-309
J0821

Figure H-97. Shield Assembly



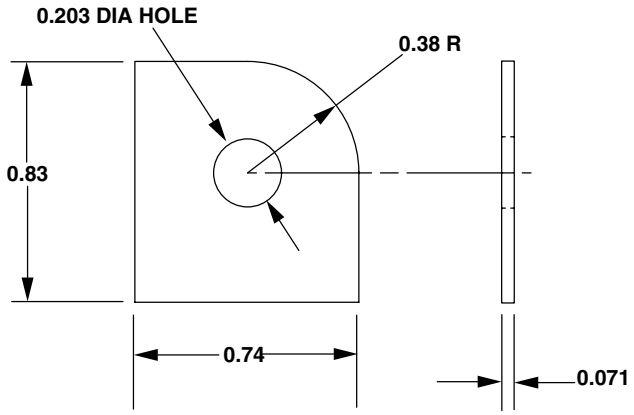
PART NUMBER	ITEM NAME	FABRICATE FROM
406-001-357-101	SHIM	NSN 5310-01-219-2869

NOTES

1. Dimensions are in inches.
2. Laminations are 0.003 thick.

406961-1401-185
J0403

Figure H-98. Shim



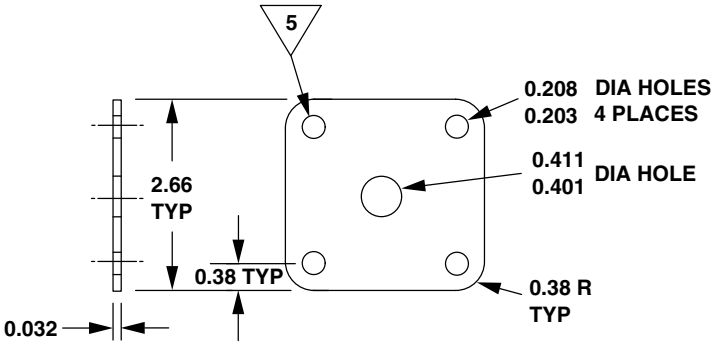
PART NUMBER	ITEM NAME	FABRICATE FROM
406-020-100-119	FILLER, HORIZONTAL	NSN 9535-00-085-4409

NOTES

1. Dimensions are in inches.
2. Remove all burrs and sharp edges.
3. Apply chemical conversion coating (D57).
4. Apply epoxy primer coating (D98).

406961-1401-183
J0403

Figure H-99. Filler, Horizontal



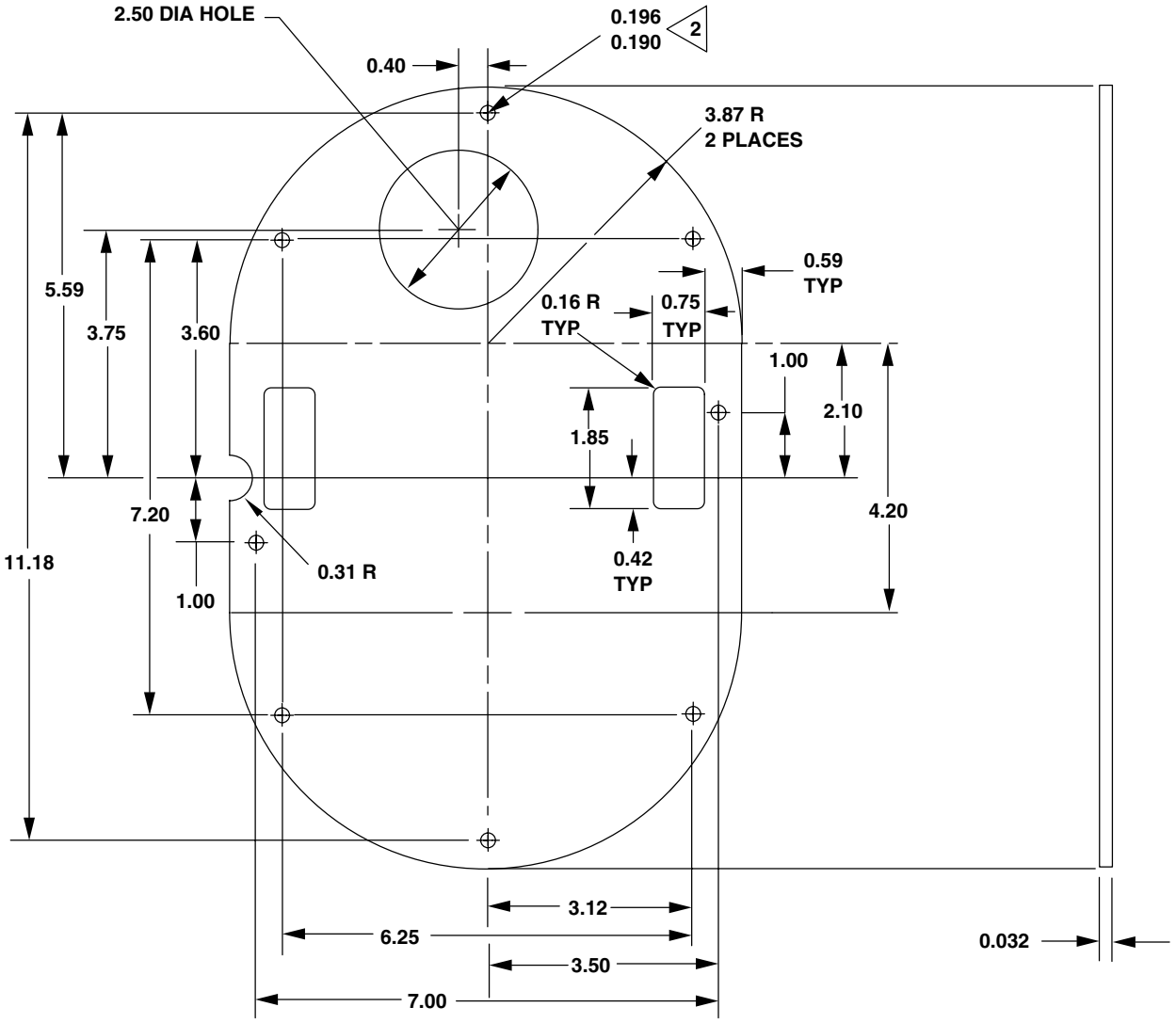
PART NUMBER	ITEM NAME	FABRICATE FROM
406-030-159-113	COVER	NSN 9535-01-341-8289
406-030-159-114	COVER	NSN 9535-01-341-8289

NOTES

1. Dimensions are in inches.
2. Remove all burrs and sharp edges.
3. Apply chemical conversion coating (D57).
4. Apply epoxy primer coating (D98).
5. Match holes with 206-032-003-81 support.

406961-1401-33
J0248

Figure H-100. Cover



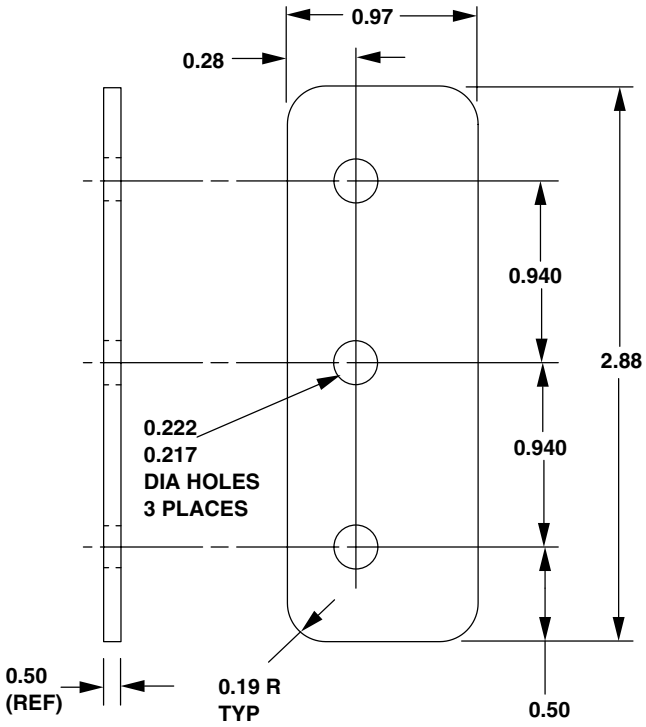
PART NUMBER	ITEM NAME	FABRICATE FROM
406-030-169-101	DOOR	NSN 9535-01-341-8289

NOTES

1. Dimensions are in inches.
2. Match eight holes with 206-032-100.
3. Remove all burrs and sharp edges.
4. Apply chemical conversion coating (D57).
5. Apply epoxy primer coating (D98).

406961-1401-187
J0403

Figure H-101. Door



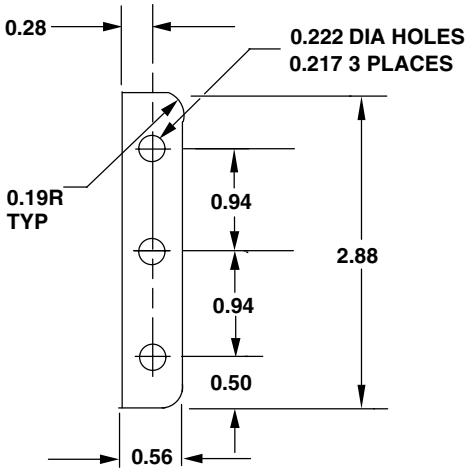
PART NUMBER	ITEM NAME	FABRICATE FROM
406-030-170-117	PLATE	NSN 9535-00-232-0569

NOTES

1. Dimensions are in inches.
2. Apply chemical conversion coating (D57).
3. Apply epoxy primer coating (D98).

406961-1401-171
J0403

Figure H-102. Plate



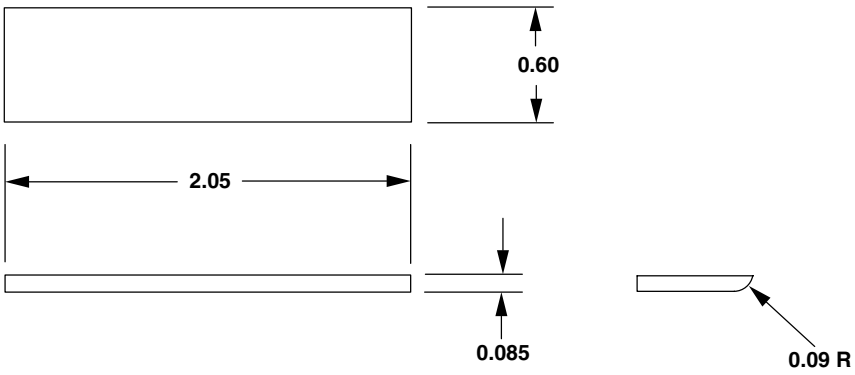
PART NUMBER	ITEM NAME	FABRICATE FROM
406-030-170-125	SHIM	BELL STANDARD 120-098-06A29 (CAGE 97499) OR MIL-S-22499, COMP. 1, TYPE I, CLASS 2

NOTES

1. Dimensions are in inches.
2. Smooth edges and deburr holes.

406961-1401-174
J0403

Figure H-103. Shim



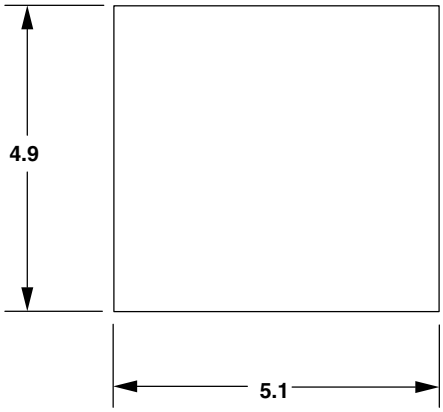
PART NUMBER	ITEM NAME	FABRICATE FROM
406-030-185-159	SHIM	0.085 X 0.003 LAMINANTS AL. ALY. 0.600 X 2.100 PER AMS 4013

NOTES

1. Dimensions are in inches.
2. Remove all burrs and sharp edges.
3. Apply chemical conversion coating (D57).
4. Apply epoxy primer coating (D98).

406961-1401-153
J0403

Figure H-104. Shim



PART NUMBER	ITEM NAME	FABRICATE FROM
406-030-187-117	SEAL	MIL-R-6855, CLASS 2, TYPE A, GRADE 40

NOTE

Dimensions are in inches.

406961-1401-188
J0403

Figure H-105. Seal

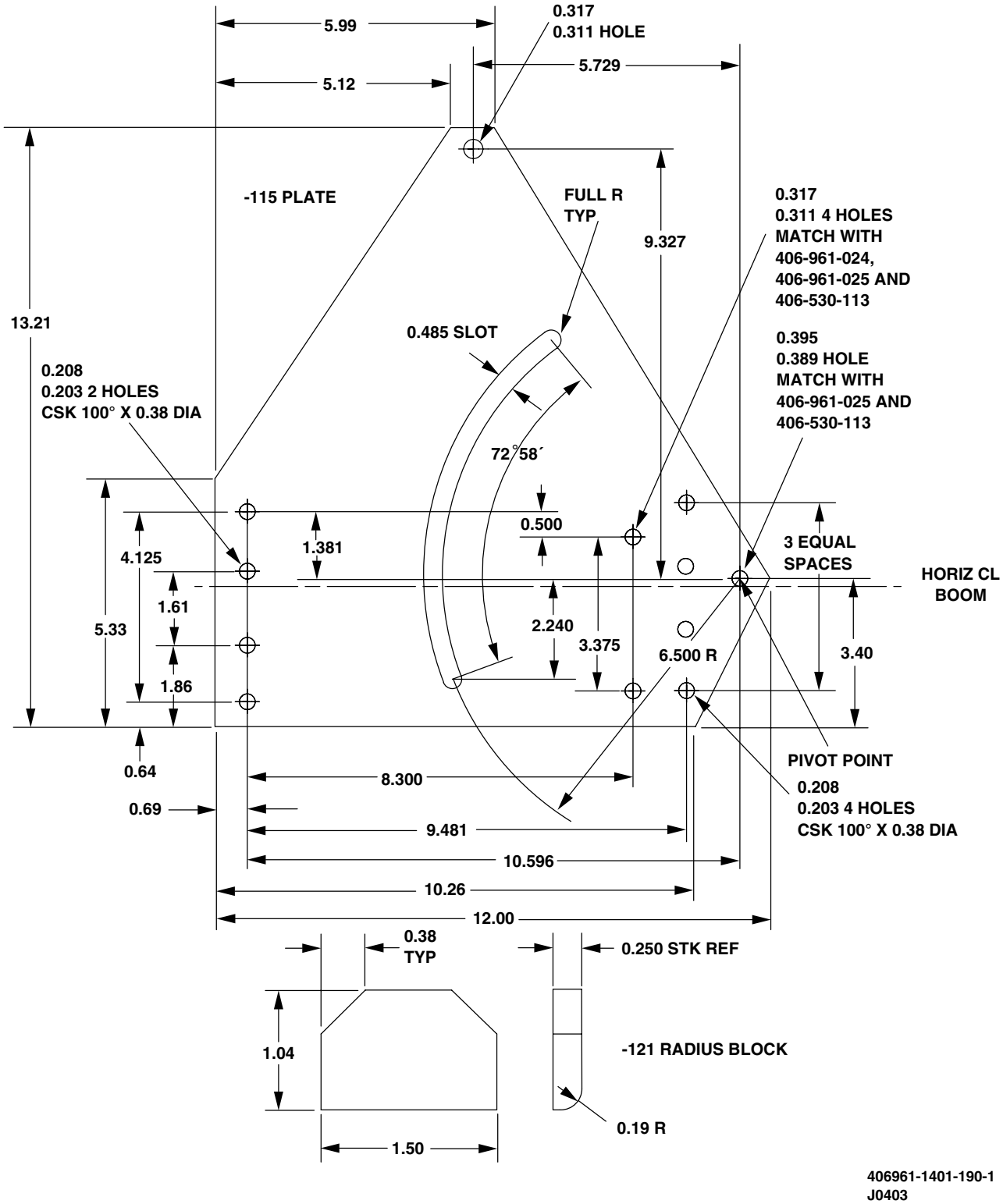
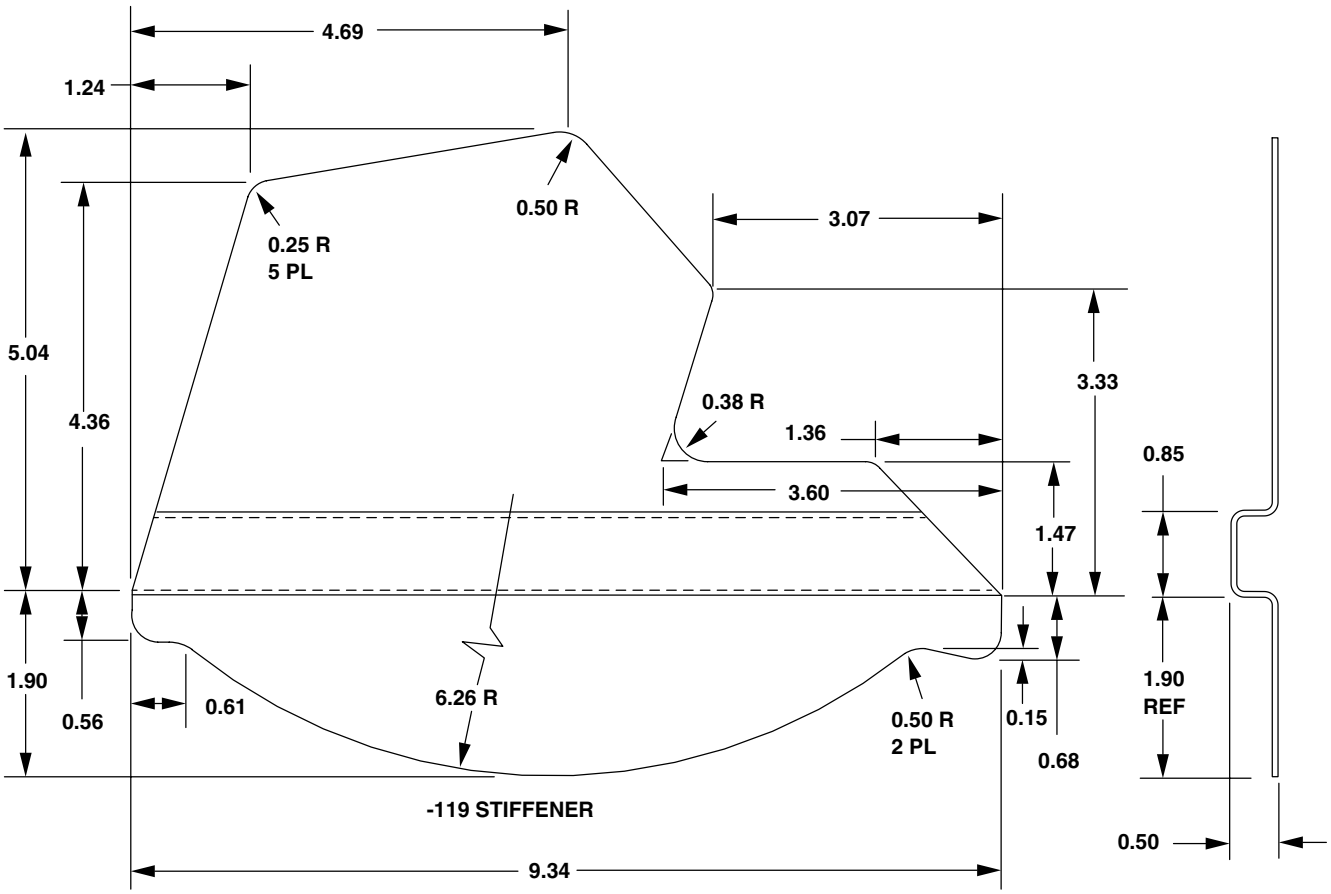


Figure H-190 (Sheet 1 of 2)

Figure H-106. Plate or Stiffener or Radius Block (Sheet 1 of 2)



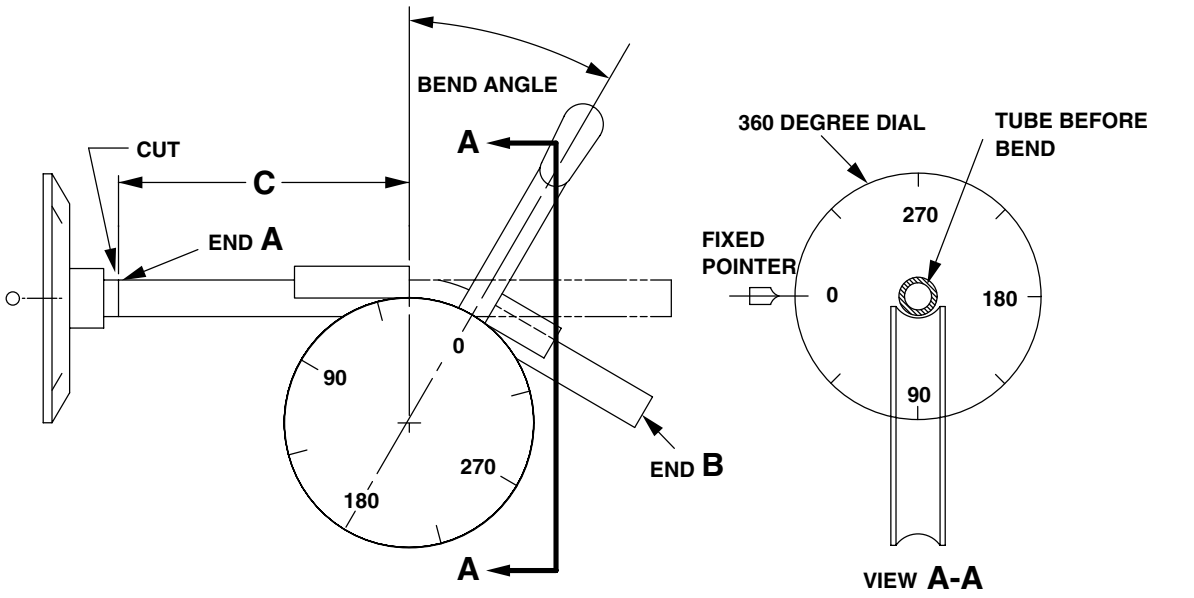
PART NUMBER	ITEM NAME	FABRICATE FROM
406-030-202-115	PLATE	NSN 9535-00-232-0569
406-030-202-119	STIFFENER	0.040 AL. ALY., 2024T42 QQ-A-250/5
406-030-202-121	RADIUS BLOCK	0.025 AL. ALY., 2024T3 QQ-A-250/4

NOTES

1. Dimensions are in inches.
2. Remove all burrs and sharp edges.
3. Heat treat to T42 per MIL-H-6088 and TM1-1500-204-23-10, Chapter 5.
4. Apply chemical conversion coating (D57).
5. Apply epoxy primer coating (D98).

406961-1401-190-2
J0403

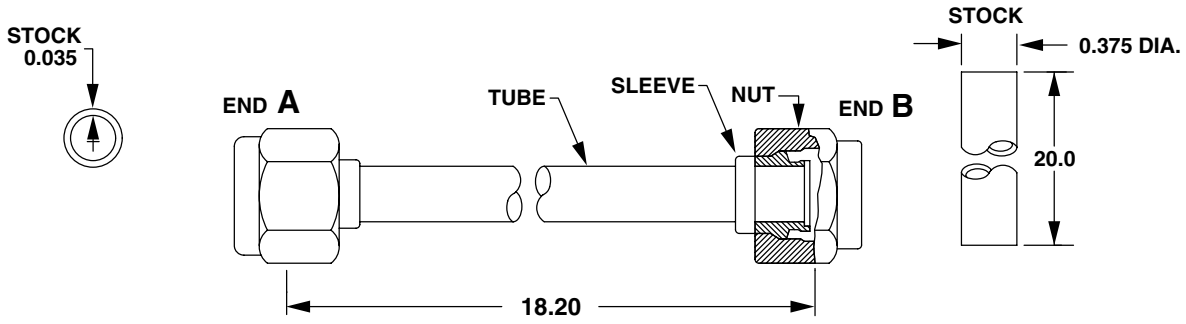
Figure H-106. Plate or Stiffener or Radius Block (Sheet 2 of 2)



NOTE

VIEW **A-A** IS SHOWN WITH BENDING TOOL PARTIALLY REMOVED FROM VIEW.

BEND NO.	BEND FROM END A (DIM. C)	BEND RADIUS	8	BEND ANGLE°
1	16.89	1.0	0	123.1
2	11.19	1.0	29.7	46.9



406961-1401-64-1
J0248

Figure H-107. Tube Assembly (Sheet 1 of 2)

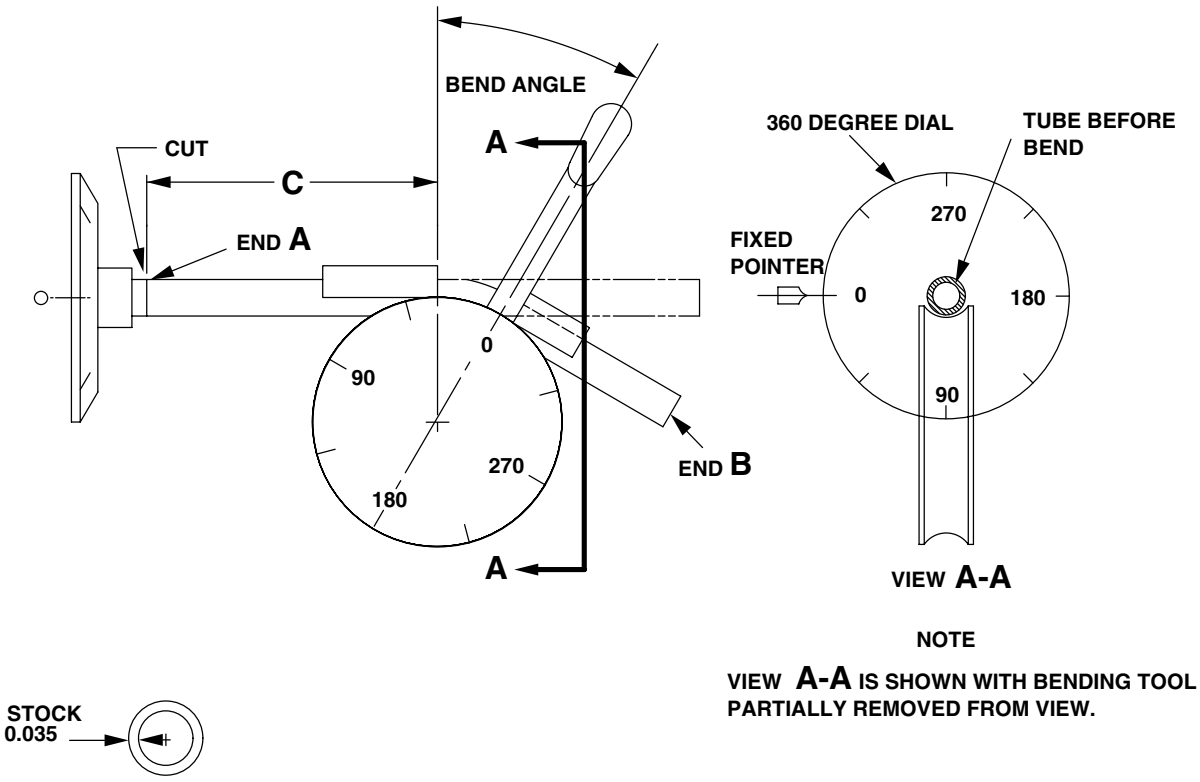
PART NUMBER	ITEM NAME	FABRICATE FROM
406-040-077-101	TUBE ASSEMBLY	NSN 4710-00-278-8726
AN818-6D	NUT (QTY 2)	NSN 4730-00-142-2167
MS20819-6	SLEEVE (QTY 2)	NSN 4730-01-189-6775
31-032-29A	TAPE, AIRCRAFT PIPING (QTY 2)	
31-033-3	TAPE, AIRCRAFT PIPING (QTY 2)	

NOTES

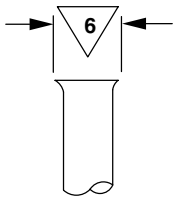
1. Dimensions are in inches.
2. **C** dimension is start of bend.
3. Bend tube to dimension in table. Conform to MS33611.
4. Cut END **A** after bending tube.
5. Trim and deburr ENDS **A** and **B**.
6. Install nuts AN818-6D and sleeves MS20819-6 per MS33566 and TM 1-1500-204-23-2, Chapter 4.
7. Apply aircraft piping tape 31-032-29A and 31-033-3 to tube assembly per MIL-STD-2147. Flow END **B** to **A**.
8. Rotate tube (from plane of first bend) ccw as viewed from Bend From End.

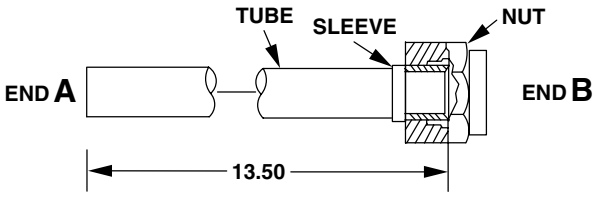
406961-1401-64-2
J0248

Figure H-107. Tube Assembly (Sheet 2 of 2)



BEND NO.	BEND FROM END A (DIM C)	BEND RADIUS	9	BEND ANGLE°
1	12.13	1.0	0	134.6
2	7.90	1.0	138.3	35.8
3	5.58	1.0	320.6	33.3
4	2.36	1.0	82.7	69.5





406961-1401-191-1
J0403

Figure H-108. Tube Assembly (Sheet 1 of 2)

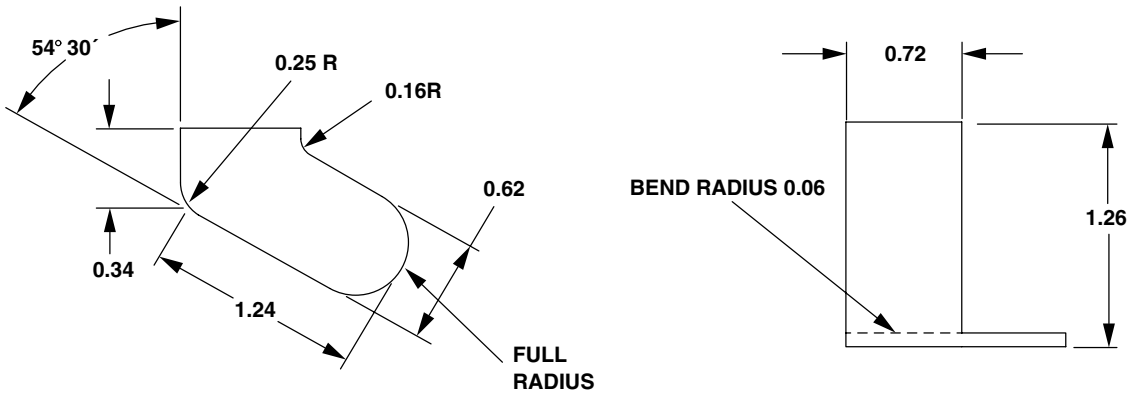
PART NUMBER	ITEM NAME	FABRICATE FROM
406-040-450-101	TUBE ASSEMBLY	NSN 4710-00-278-8726
AN818-6D	NUT	NSN 4730-00-142-2167
MS20819-6D	SLEEVE	NSN 4730-01-189-6775
31-033-3	TAPE, AIRCRAFT PIPING (QTY 2)	

NOTES

1. Dimensions are in inches.
2. **C** Dimension is start of bend.
3. Bend tube to dimensions in table. Conform to MS33611.
4. Cut END **A** after bending tube.
5. Trim and deburr ENDS **A** and **B**.
6. Double flare END **B** of tube per MS33583 and TM 1-1500-204-23-2, Chapter 4.
7. Install nut and sleeve per MS33566 and TM 1-1500-204-23-2, Chapter 4.
8. Apply aircraft piping tape 31-033-3 to tube assembly per MIL-STD 1247. Flow END **B** to **A**.
9. Rotate tube (from plane of first bend) ccw as viewed from Bend From End.

406961-1401-191-2
J0403

Figure H-108. Tube Assembly (Sheet 2 of 2)



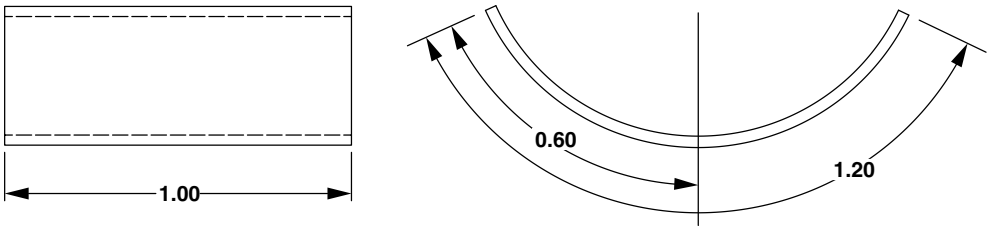
PART NUMBER	ITEM NAME	FABRICATE FROM
406-052-001-131	CLIP, SKID TUBE	NSN 9535-01-341-8289
406-052-001-132	CLIP, SKID TUBE	NSN 9535-01-341-8289

NOTES

1. Dimensions are in inches.
2. Remove all burrs and sharp edges.
3. Apply chemical conversion coating (D57).
4. Apply epoxy primer coating (D98).

406961-1401-189
J0403

Figure H-109. Clip, Skid Tube



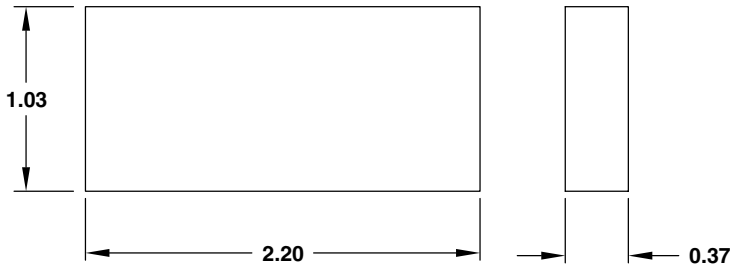
PART NUMBER	ITEM NAME	FABRICATE FROM
406-052-001-135	RUB STRIP	MIL-S-5059 TYPE 301 CORROSION RESISTANT STEEL NSN 9515-00-074-4674

NOTES

1. Dimensions are in inches.
2. Remove all burrs and sharp edges.
3. Apply chemical conversion coating (D57).
4. Apply epoxy primer coating (D98).

406961-1401-136
J0403

Figure H-110. Rub Strip



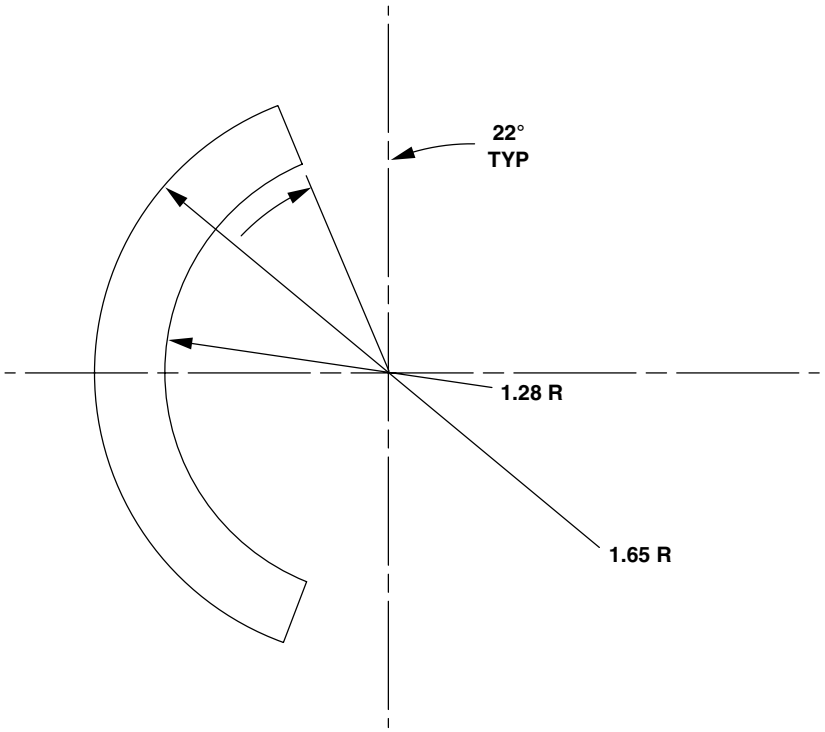
PART NUMBER	ITEM NAME	FABRICATE FROM
406-052-009-105	CUSHION	NSN 9320-00-241-9763

NOTE

Dimensions are in inches.

406961-1401-63
J0248

Figure H-111. Cushion



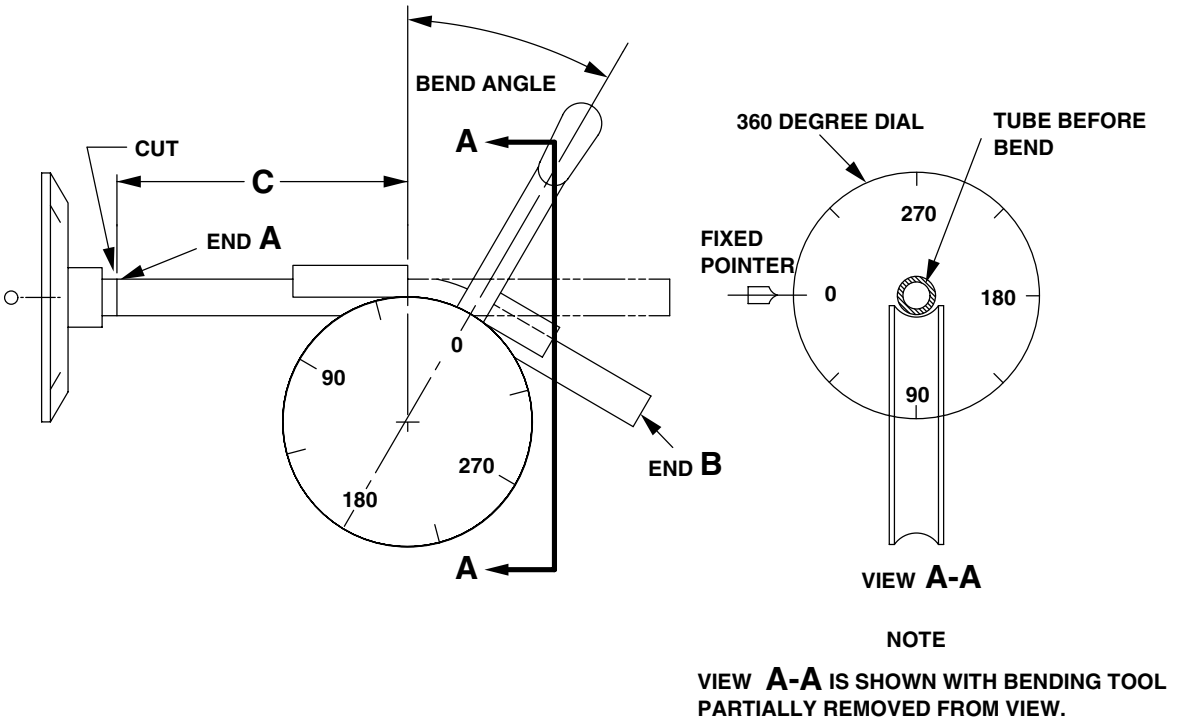
PART NUMBER	ITEM NAME	FABRICATE FROM
406-052-101-105	CUSHION	0.370 T X 1.75W MIL-R-6855, TYPE A, CLASS 2

NOTE

Dimensions are in inches.

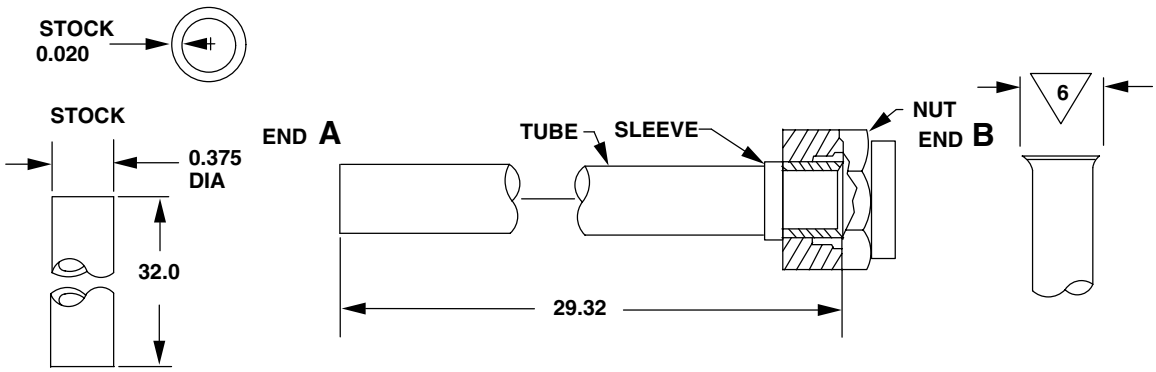
406961-1401-101
J0248

Figure H-112. Cushion



NOTE

VIEW **A-A** IS SHOWN WITH BENDING TOOL PARTIALLY REMOVED FROM VIEW.



BEND NO.	BEND FROM END A (DIM C)	BEND RADIUS	9	BEND ANGLE°
1	27.57	1.25	0	90
2	22.11	1.25	180	88
3	8.68	1.25	90	45
4	3.75	1.25	225	45

406961-1401-192-1
J0403

Figure H-113. Tube (Sheet 1 of 2)

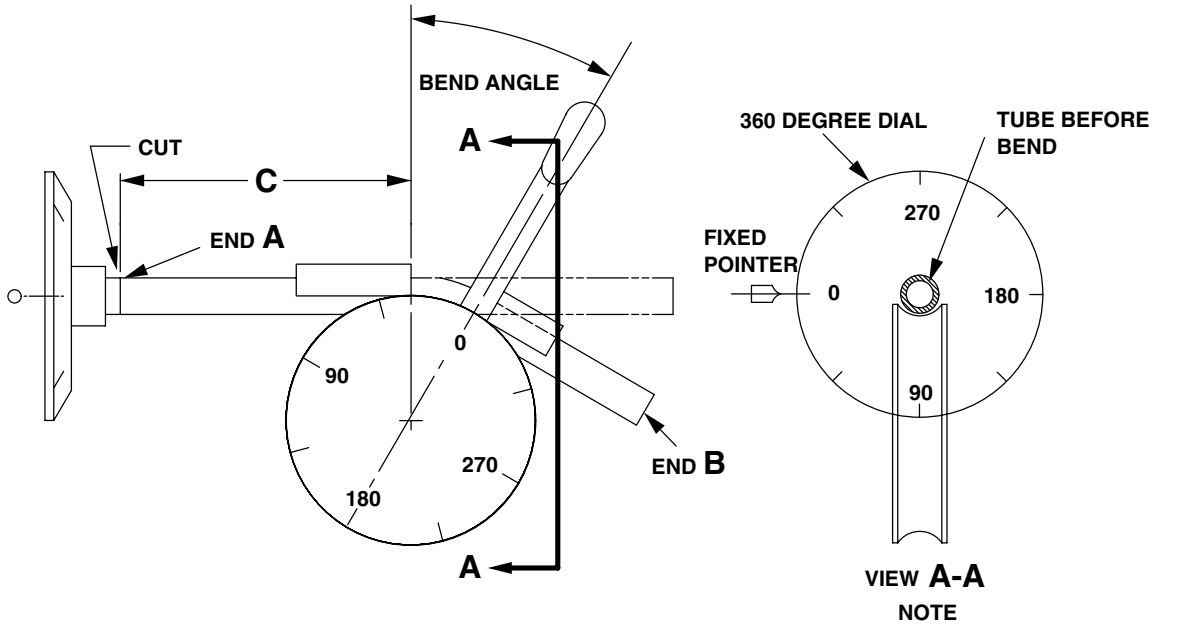
PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-006-103	TUBE	NSN 4710-00-203-3141
AN818-6J	NUT	NSN 4730-00-203-2661
MS20819J	SLEEVE	NSN 4730-00-595-3108
31-032-30	TAPE, AIRCRAFT PIPING (QTY 2)	

NOTES

1. Dimensions are in inches.
2. **C** Dimension is start of bend.
3. Bend tube to dimensions in table. Conform to MS33611.
4. Cut END **A** after bending tube.
5. Trim and deburr ENDS **A** and **B**.
6. Flare END **B** of tube per MS33584 and TM 1-1500-204-23-2, Chapter 4.
7. Install nut and sleeve per MS33566 and TM 1-1500-204-23-2, Chapter 4.
8. Apply aircraft piping tape 31-032-30 to tube assembly per MIL-STD-1247. Flow END **B** to **A**.
9. Rotate tube (from plane of first bend) ccw as viewed from Bend From End.

406961-1401-192-2
J0403

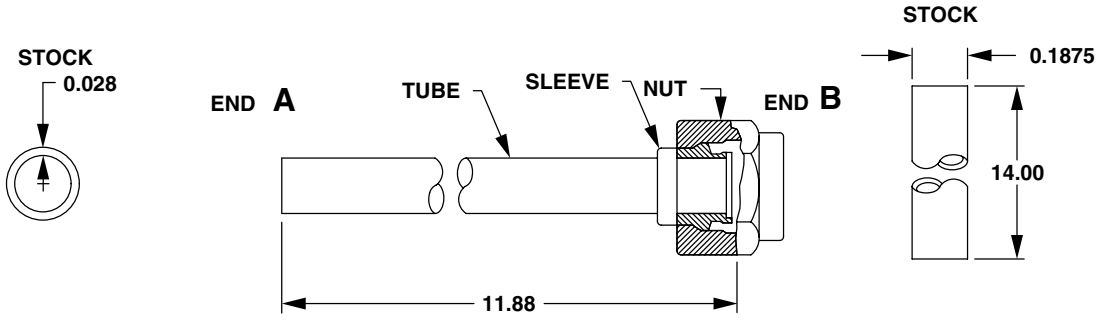
Figure H-113. Tube (Sheet 2 of 2)



NOTE

VIEW **A-A** IS SHOWN WITH BENDING TOOL PARTIALLY REMOVED FROM VIEW.

BEND NO.	BEND FROM END **A** (DIM. **C**)	BEND RADIUS	△7	BEND ANGLE°
1	11.16	0.50	0	77
2	6.56	0.50	88	15
3	2.50	0.50	184	76



406961-1401-310-1
J0821

Figure H-114. Tube (Sheet 1 of 2)

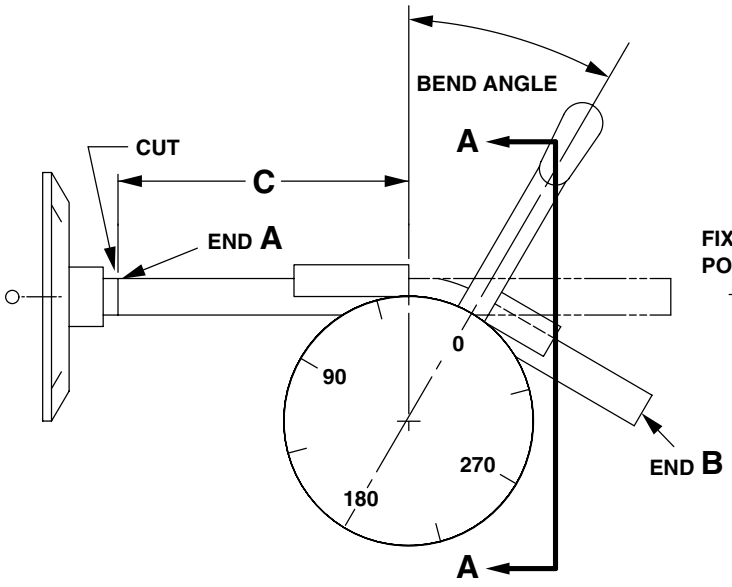
PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-015-103	TUBE	NSN 4710-00-278-6394
MS20819-3J	SLEEVE	NSN 4730-00-540-0454
AN818-3D	NUT	NSN 4730-00-497-4458
31-032-30	TAPE, AIRCRAFT PIPING (QTY 2)	
31-033-3	TAPE, AIRCRAFT PIPING (QTY 2)	

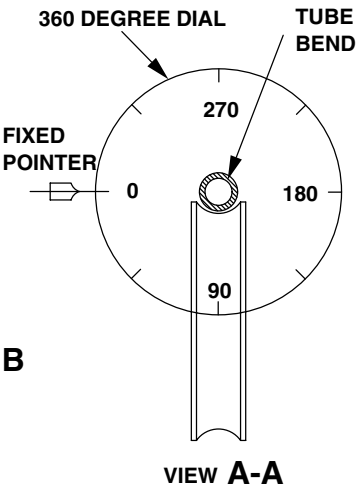
NOTES

1. Dimensions are in inches.
2. Trim and deburr END **A** and END **B**.
3. Install sleeve MS20819-3J and nut AN818-3D.
4. Bend tube to dimensions in table. Conform to MS33611.
5. **C** dimension is start of bend.
6. Apply aircraft piping tape 31-032-30 and 31-033-3 to tube assembly per MIL-STD-1247. Flow END **B** TO **A**.
7. Rotate tube (from plane of first bend) ccw as viewed from Bend From End.

406961-1401-310-2
J0821

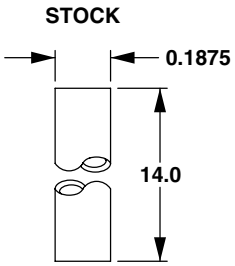
Figure H-114. Tube (Sheet 2 of 2)



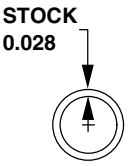


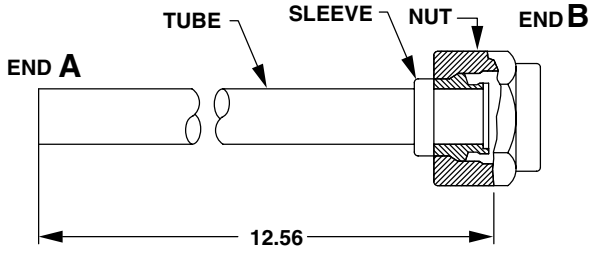
NOTE

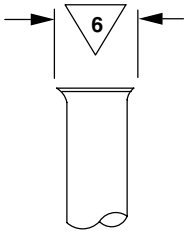
VIEW **A-A** IS SHOWN WITH BENDING TOOL PARTIALLY REMOVED FROM VIEW.



BEND NO.	BEND FROM END A (DIM. C)	BEND RADIUS	10	BEND ANGLE°
1	11.72	0.50	0	72
2	8.06	0.50	265	49
3	2.66	0.50	162	76







406961-1401-194-1
J0403

Figure H-115. Tube (Sheet 1 of 2)

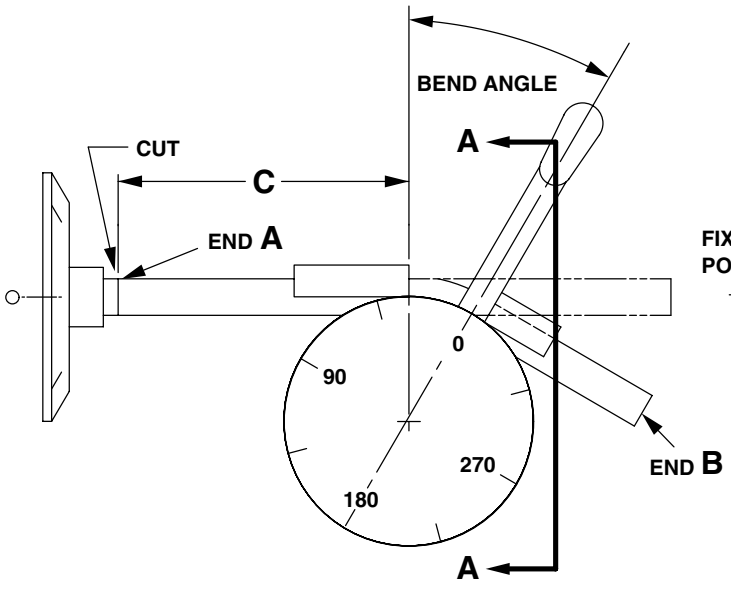
PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-016-103	TUBE	AL. ALY., 5052T0, WW-T-700/4 TYPE I
AN818-3D	NUT	NSN 4730-00-497-4458
MS20819-3J	SLEEVE	NSN 4730-00-540-0454
31-032-30	TAPE, AIRCRAFT PIPING (QTY 2)	
31-033-3	TAPE, AIRCRAFT PIPING (QTY 2)	

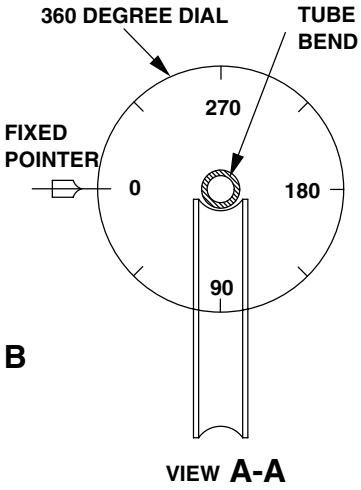
NOTES

1. Dimensions are in inches.
2. **C** Dimension is start of bend.
3. Bend tube to dimensions in table. Conform to MS33611.
4. Cut END **A** after bending tube.
5. Trim and deburr ENDS **A** and **B**.
6. Double flare END **B** of tube per MS33583 and TM 1-1500-204-23-2, Chapter 4.
7. Apply chemical conversion coating (D57).
8. Install nut and sleeve per MS33566 and TM 1-1500-204-23-2, Chapter 4.
9. Apply aircraft piping tape 31-032-30 and 31-033-3 per MIL-STD-1247. Flow END **B** to **A**.
10. Rotate tube (from plane of first bend) ccw as viewed from Bend From End.

406961-1401-194-2
J0403

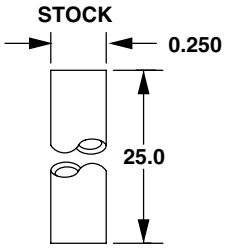
Figure H-115. Tube (Sheet 2 of 2)



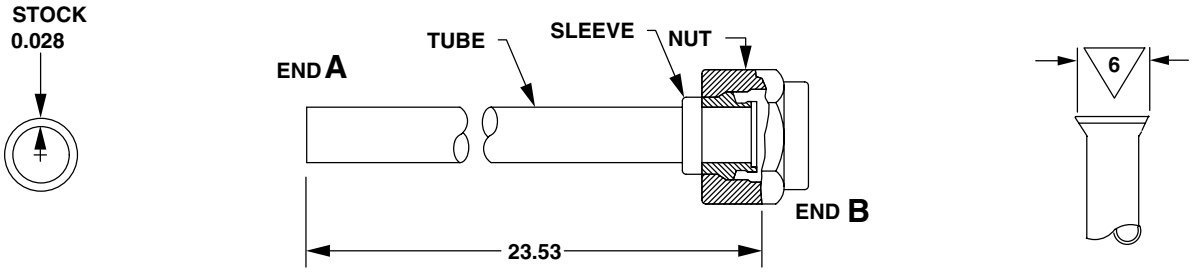


NOTE

VIEW **A-A** IS SHOWN WITH BENDING TOOL PARTIALLY REMOVED FROM VIEW.



BEND NO.	BEND FROM END A (DIM. C)	BEND RADIUS	10	BEND ANGLE°
1	22.47	0.75	0	105
2	17.78	0.75	206	60
3	13.12	0.75	194	72
4	3.00	0.75	12	82



406961-1401-195-1
J0403

Figure H-116. Tube (Sheet 1 of 2)

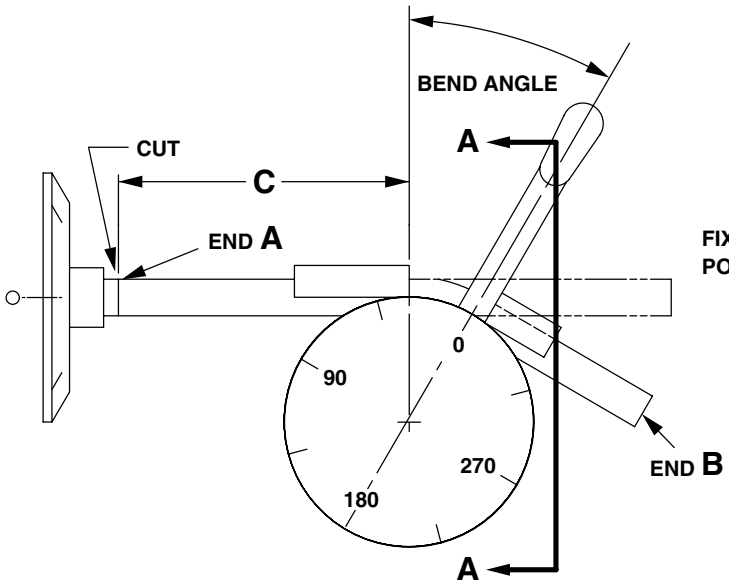
PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-017-103	TUBE	AL. ALY., 5052T0, WW-T-700/4 TYPE I
AN818-4D	NUT	NSN 4730-00-287-0289
MS20819-4J	SLEEVE	NSN 4730-00-580-7471
31-032-30	TAPE, AIRCRAFT PIPING (QTY 2)	
31-033-1	TAPE, AIRCRAFT PIPING (QTY 2)	

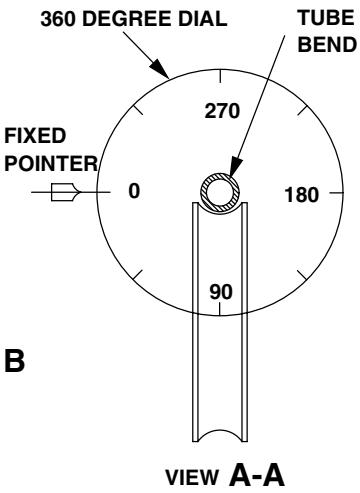
NOTES

1. Dimensions are in inches.
2. **C** Dimension is from start of bend.
3. Bend tube to dimensions in table. Conform to MS33611.
4. Cut END **A** after bending tube.
5. Trim and deburr ENDS **A** and **B**.
6. Double flare END **B** of tube per MS33583 and TM 1-1500-204-23-2, Chapter 4.
7. Apply chemical conversion coating (D57).
8. Install nut and sleeve per MS33566 and TM 1-1500-204-23-2, Chapter 4.
9. Apply aircraft piping tape 31-032-30 and 31-033-1 to tube assembly per MIL-STD-1247. Flow END **B** to **A**.
10. Rotate tube (from plane of first bend) ccw as viewed from Bend From End.

406961-1401-195-2
J0403

Figure H-116. Tube (Sheet 2 of 2)

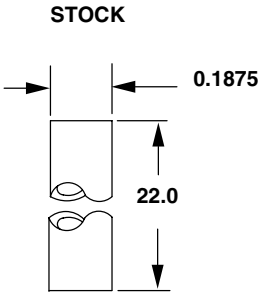




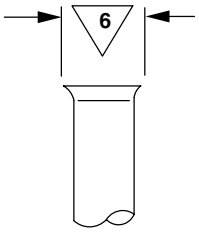
VIEW **A-A**

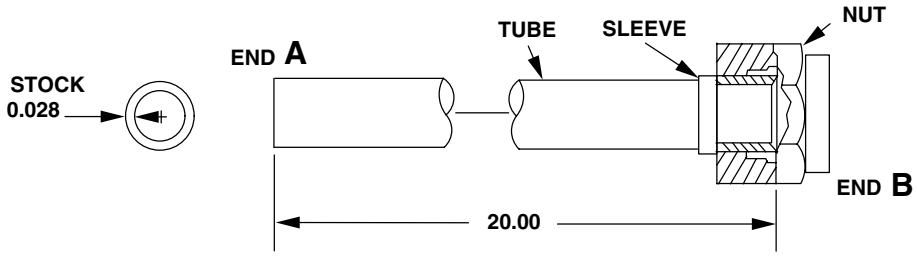
NOTE

VIEW **A-A** IS SHOWN WITH BENDING TOOL PARTIALLY REMOVED FROM VIEW.



BEND NO.	BEND FROM END A (DIM C)	BEND RADIUS	10	BEND ANGLE°
1	17.28	0.50	0	57
2	11.56	0.50	343	72
3	3.59	0.50	273	18
4	2.56	0.50	176	75





406961-1401-196-1
J0403

Figure H-117. Tube (Sheet 1 of 2)

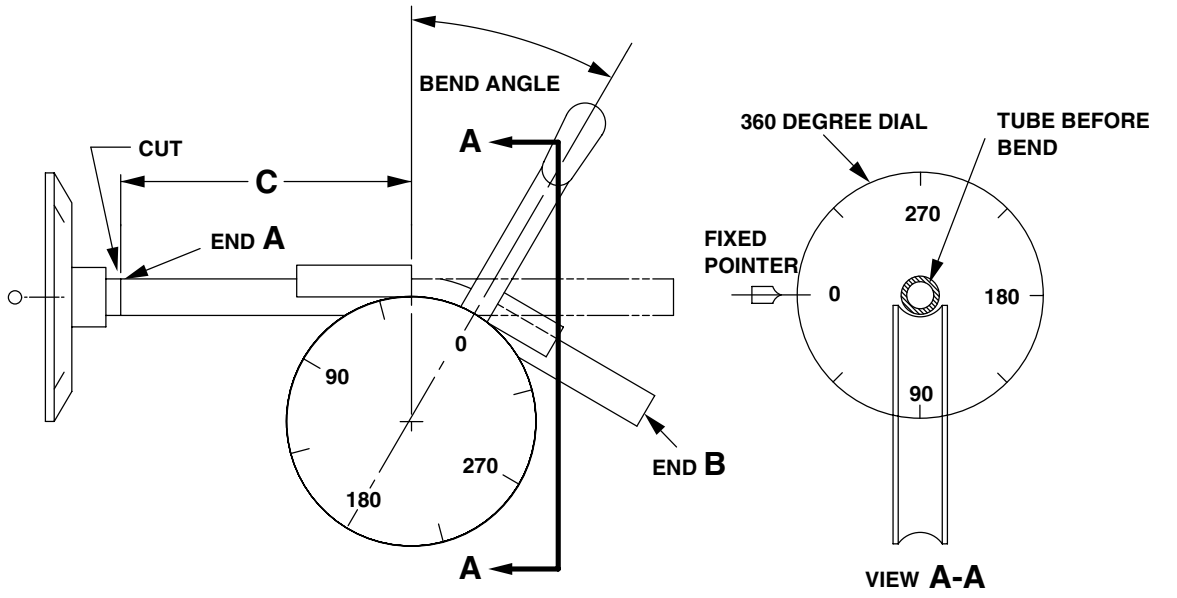
PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-018-103	TUBE	AL. ALY., 5052T0, WW-T-700/4 TYPE I
AN818-3D	NUT	NSN 4730-00-497-4458
MS20819-3J	SLEEVE	NSN 4730-00-540-0454
31-032-30	TAPE, AIRCRAFT PIPING (QTY 2)	
31-033-1	TAPE, AIRCRAFT PIPING (QTY 2)	

NOTES

1. Dimensions are in inches.
2. **C** Dimension is start of bend.
3. Bend tube to dimensions in table. Conform to MS33611.
4. Cut END **A** after bending tube.
5. Trim and deburr ENDS **A** and **B** .
6. Double flare END **B** of tube per MS33583 and TM 1-1500-204-23-2, Chapter 4.
7. Apply chemical conversion coating (D57).
8. Install nut and sleeve per MS33566 and TM 1-1500-204-23-2, Chapter 4.
9. Apply aircraft piping tape 31-032-30 and 31-033-1 to tube assembly per MIL-STD-1247 and TM 1-1500-204-23-2, Chapter 4. Flow END **B** to **A** .
10. Rotate tube (from plane of first bend) ccw as viewed from Bend From End.

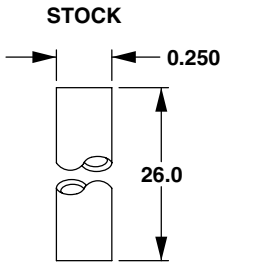
406961-1401-196-2
J0403

Figure H-117. Tube (Sheet 2 of 2)

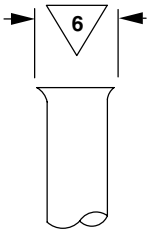


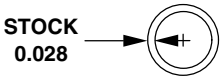
NOTE

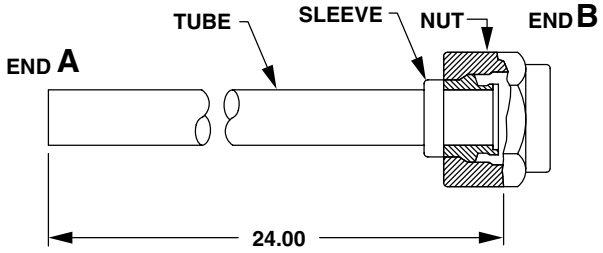
VIEW **A-A** IS SHOWN WITH BENDING TOOL PARTIALLY REMOVED FROM VIEW.



BEND NO.	BEND FROM END A (DIM. C)	BEND RADIUS	9	BEND ANGLE°
1	22.88	0.75	0	96
2	20.40	0.75	125	37
3	13.38	0.75	296	78
4	3.22	0.75	109	81







406961-1401-197-1
J0403

Figure H-118. Tube (Sheet 1 of 2)

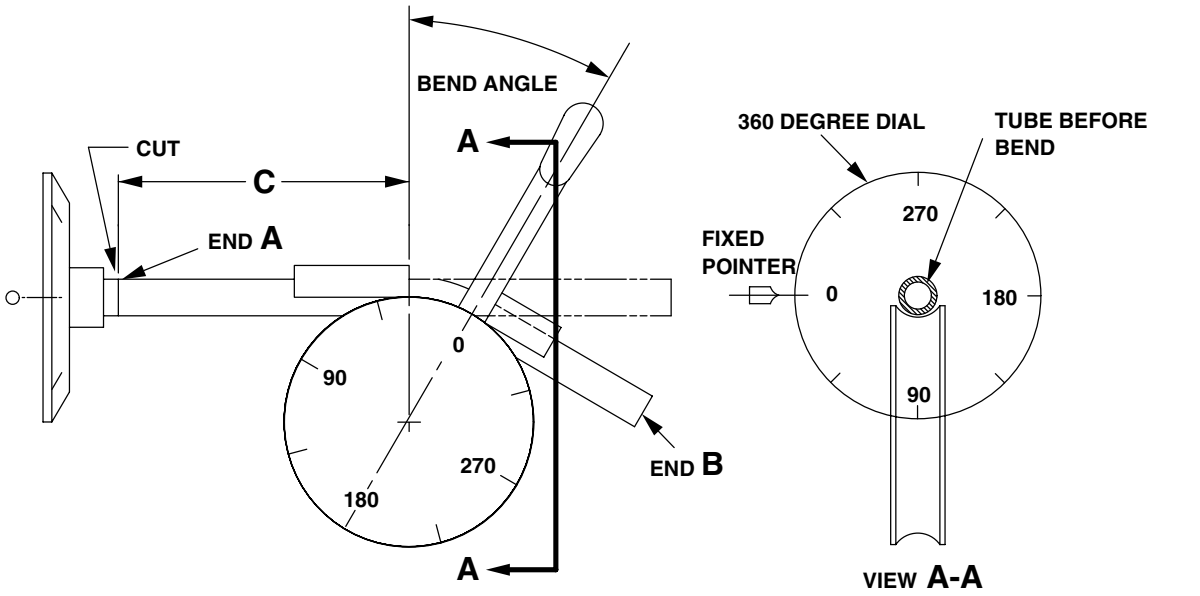
PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-019-103	TUBE	ANL, 75 MIN, CRES 321, MIL-T-8808 TYPE I
AN818-4J	NUT	NSN 4730-00-203-2658
MS20819-4J	SLEEVE	NSN 4730-00-580-7471
31-032-30H	TAPE, AIRCRAFT PIPING (QTY 2)	
31-033-3	TAPE, AIRCRAFT PIPING (QTY 2)	

NOTES

1. Dimensions are in inches.
2. **C** Dimension is start of bend.
3. Bend tube to dimensions in table. Conform to MS33611.
4. Cut END **A** after bending tube.
5. Trim and deburr ENDS **A** and **B**.
6. Flare END of **B** of tube per MS33584 and TM 1-1500-204-23-2, Chapter 4.
7. Install nut and sleeve per MS33566 and TM 1-1500-204-23-2, Chapter 4.
8. Apply aircraft piping tape 31-032-30H and 31-033-3 to tube assembly per MIL-STD-1247. Flow END **B** to **A** .
9. Rotate tube (from plane of first bend) ccw as viewed from Bend From End.

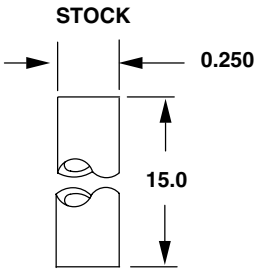
406961-1401-197-2
J0403

Figure H-118. Tube (Sheet 2 of 2)

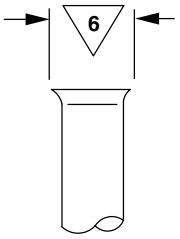


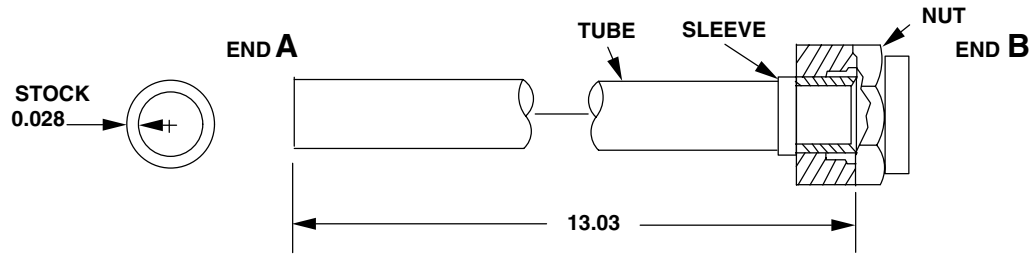
NOTE

VIEW **A-A** IS SHOWN WITH BENDING TOOL PARTIALLY REMOVED FROM VIEW.



BEND NO.	BEND FROM END A (DIM C)	BEND RADIUS	9	BEND ANGLE°
1	5.06	0.75	0	15
2	2.66	0.75	112	84





406961-1401-198-1
J0403

Figure H-119. Tube (Sheet 1 of 2)

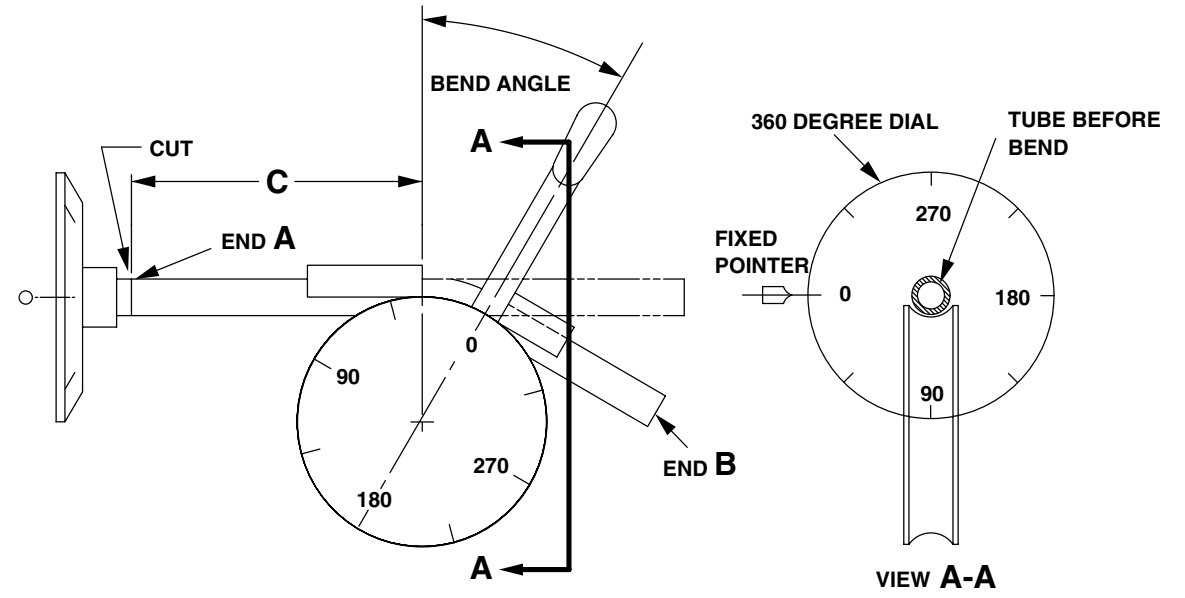
PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-020-103	TUBE	ANL, 75 MIN, CRES 321, MIL-T-8808 TYPE I
AN818-4J	NUT	NSN 4730-00-203-2658
MS20819-4J	SLEEVE	NSN 4730-00-580-7471
31-032-30H	TAPE, AIRCRAFT PIPING (QTY 2)	
31-033-1	TAPE, AIRCRAFT PIPING (QTY 2)	

NOTES

1. Dimensions are in inches.
2. **C** Dimension is start of bend.
3. Bend tube to dimensions in table. Conform to MS33611.
4. Cut END **A** after bending tube.
5. Trim and beburr ENDS **A** and **B**.
6. Flare END **B** of tube per MS33584 and TM 1-1500-204-23-2, Chapter 4.
7. Install nut and sleeve per MS33566 and TM 1-1500-204-23-2, Chapter 4.
8. Apply aircraft piping tape 31-032-30H and 31-033-1-1 to tube per MIL-STD-1247. Flow END **B** to **A**.
9. Rotate tube (from plane of first bend) ccw as viewed from Bend From End.

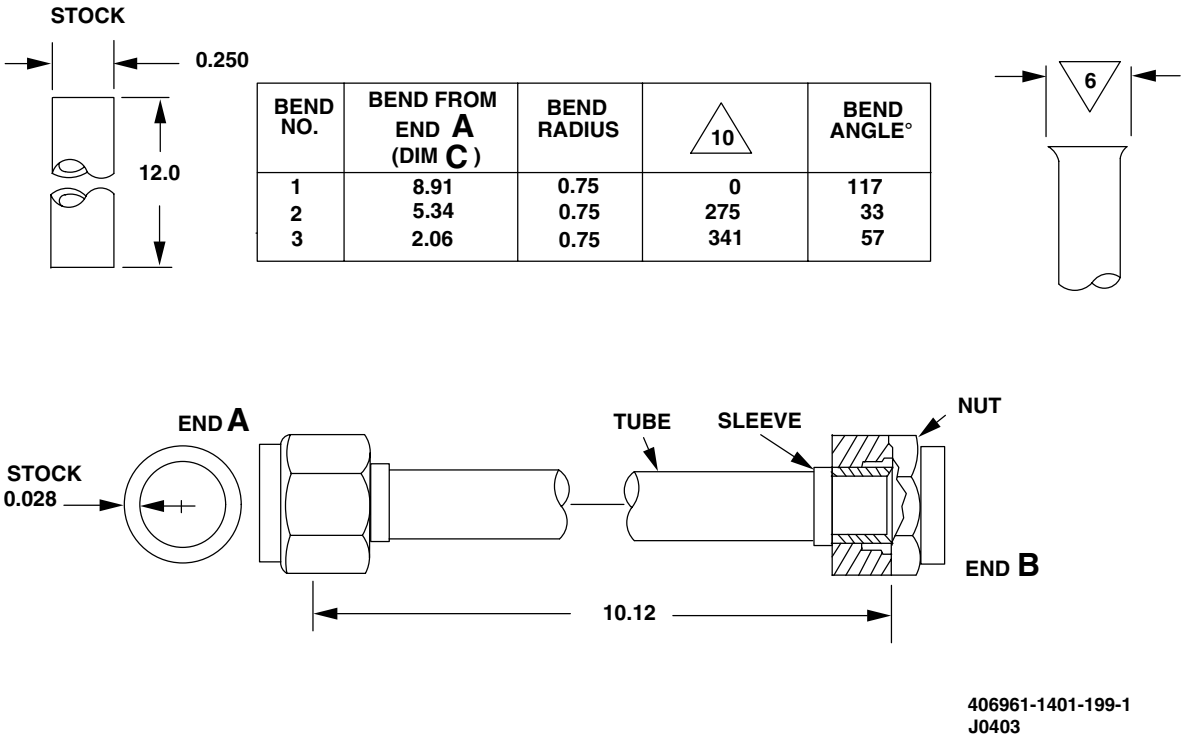
406961-1401-198-2
J0403

Figure H-119. Tube (Sheet 2 of 2)



NOTE

VIEW **A-A** IS SHOWN WITH BENDING TOOL PARTIALLY REMOVED FROM VIEW.



BEND NO.	BEND FROM END A (DIM C)	BEND RADIUS	10	BEND ANGLE°
1	8.91	0.75	0	117
2	5.34	0.75	275	33
3	2.06	0.75	341	57

406961-1401-199-1
J0403

Figure H-120. Tube (Sheet 1 of 2)

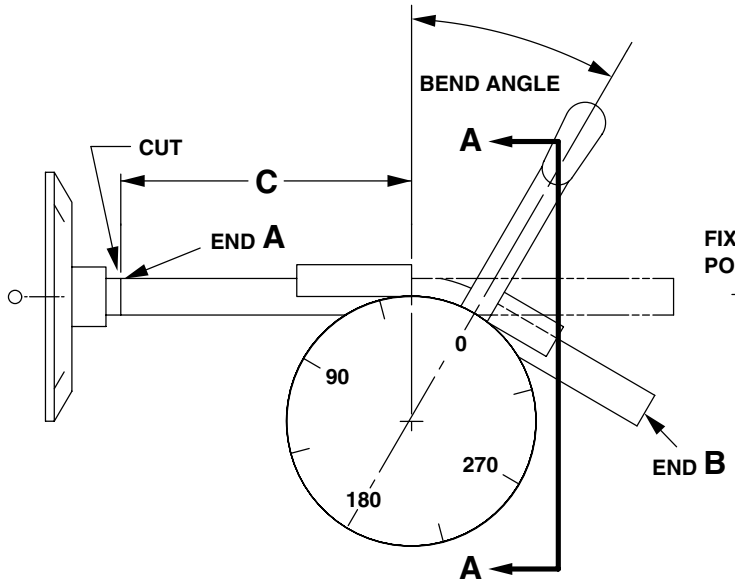
PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-022-103	TUBE	AL. ALY., 5052T0, WW-T-700/4 TYPE I
AN818-4D	NUT (QTY 2)	NSN 4730-00-287-0289
MS20819-4J	SLEEVE (QTY 2)	NSN 4730-00-580-7471
31-032-28	TAPE, AIRCRAFT PIPING (QTY 2)	
31-033-1	TAPE, AIRCRAFT PIPING (QTY 2)	

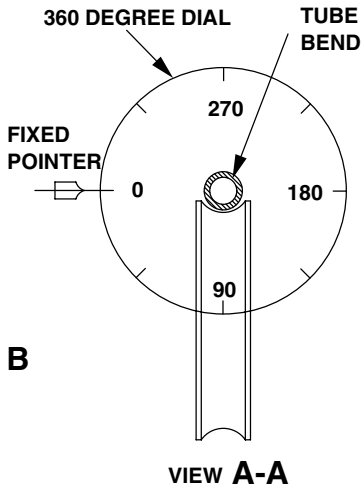
NOTES

1. Dimensions are in inches.
2. **C** Dimension is start of bend.
3. Bend tube to dimensions in table. Conform to MS33611.
4. Cut END **A** after bending tube.
5. Trim and deburr ENDS **A** and **B**.
6. Double flare ENDS **A** and **B** of tube per MS33583 and TM 1-1500-204-23-2, Chapter 4.
7. Install nuts and sleeves per MS33566 and TM 1-1500-204-23-2, Chapter 4.
8. Pressure test tube assembly to 50 psi per TM 1-1500-204-23-2, Chapter 4.
9. Apply aircraft piping tape 31-032-28 and 31-033-1 to tube assembly per MIL-STD-1247. Flow END **A** to **B**.
10. Rotate tube (from plane of first bend) ccw as viewed from Bend From End.

406961-1401-199-2
J0403

Figure H-120. Tube (Sheet 2 of 2)

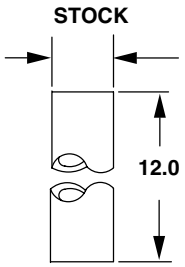




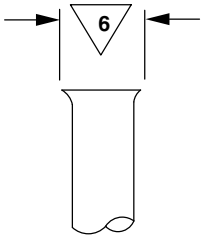
VIEW **A-A**

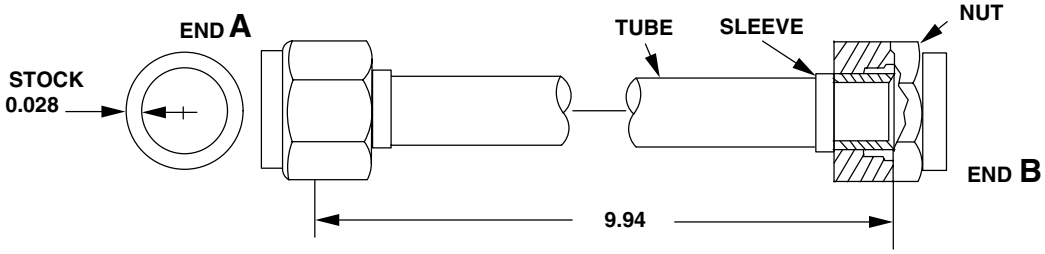
NOTE

VIEW A-A IS SHOWN WITH BENDING TOOL PARTIALLY REMOVED FROM VIEW.



BEND NO.	BEND FROM END A (DIM C)	BEND RADIUS	10	BEND ANGLE°
1	8.62	0.75	0	102
2	2.31	0.75	25	75





406961-1401-200-1
J0403

Figure H-121. Tube (Sheet 1 of 2)

PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-023-103	TUBE	AL. ALY., 5052T0, WW-T-700/4 TYPE I
AN818-4D	NUT (QTY 2)	NSN 4730-00-287-0289
MS20819-4J	SLEEVE (QTY 2)	NSN 4730-00-580-7471
31-032-28	TAPE, AIRCRAFT PIPING (QTY 2)	
31-033-1	TAPE, AIRCRAFT PIPING (QTY 2)	

NOTES

1. Dimensions are in inches.
2. **C** Dimension is from start of bend.
3. Bend tube to dimensions in table. Conform to MS33611.
4. Cut END **A** after bending tube.
5. Trim and deburr ENDS **A** and **B**.
6. Double flare ENDS **A** and **B** of tube per MS33588 and TM 1-1500-204-23-2, Chapter 4.
7. Install nuts and sleeves per MS33566 and TM 1-1500-204-23-2, Chapter 4.
8. Pressure test tube assembly to 50 psi per TM 1-1500-204-23-2, Chapter 4.
9. Apply aircraft piping tape 31-032-28 and 31-033-1 to tube assembly per MIL-STD-1247. Flow END **A** to **B**.
10. Rotate tube (from plane of first bend) ccw as viewed from Bend From End.

406961-1401-200-2
J0403

Figure H-121. Tube (Sheet 2 of 2)

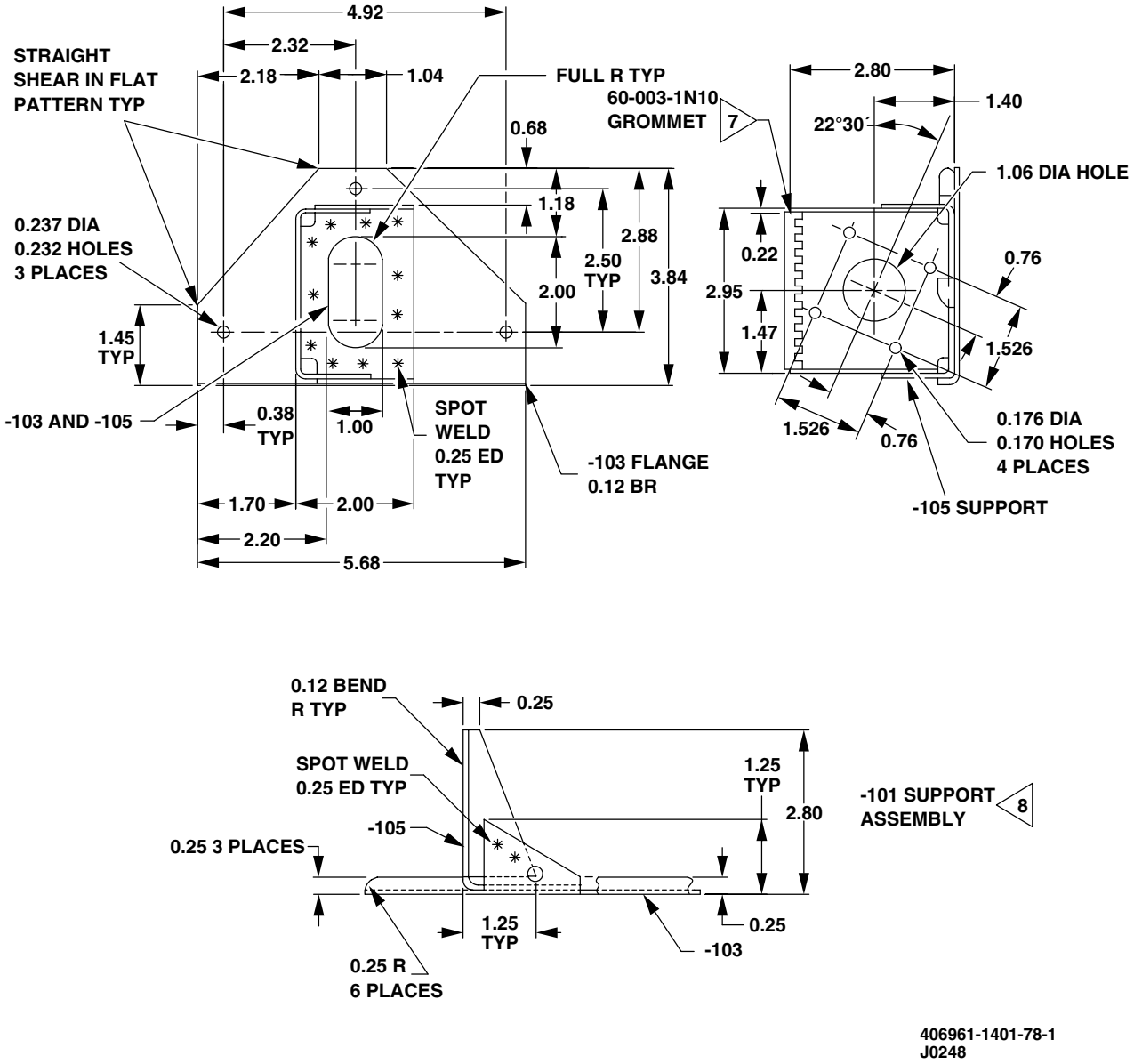


Figure H-122. Support Assembly (Sheet 1 of 2)

PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-027-101	SUPPORT ASSEMBLY	0.025 ALUMINUM ALLOY 2024T3, QQ-A-250/5
60-003-1N10	GROMMET 7	NSN 5325-00-960-2410

NOTES

1. Dimensions are in inches.
2. Bend relief radii 0.16 unless otherwise noted.
3. Remove all burrs and sharp edges.
4. Spot weld per MIL-W-6858, Class B. Edge distance 0.25 inch minimum.
5. Apply chemical conversion coating (D57).
6. Apply epoxy primer coating (D98).
7. Install grommet 60-003-1N10 using adhesive (D11).
8. Helicopter BUNO 83-24129 through 92-0606.

406961-1401-78-2
J0248

Figure H-122. Support Assembly (Sheet 2 of 2)

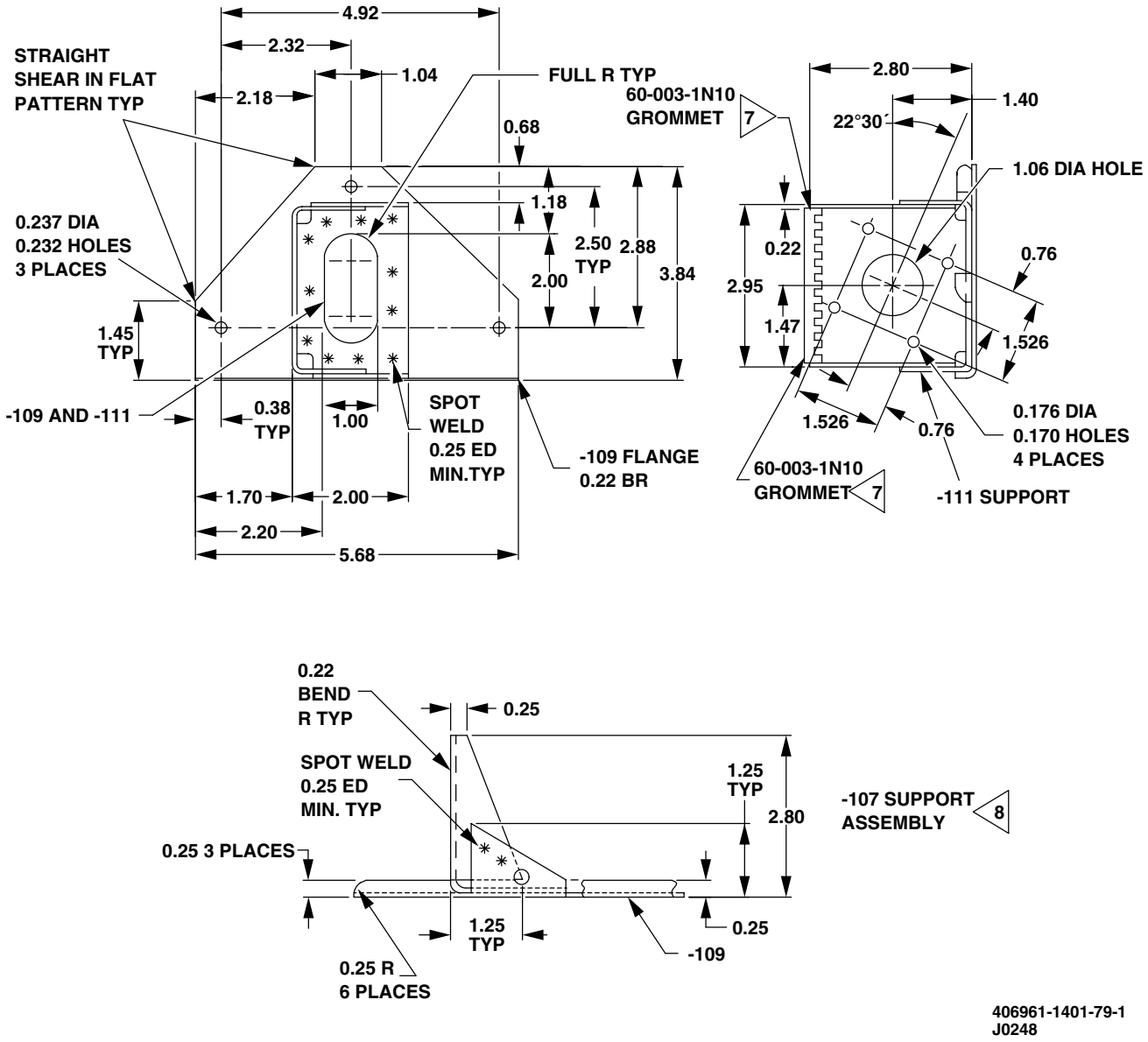


Figure H-123. Support Assembly (Sheet 1 of 2)

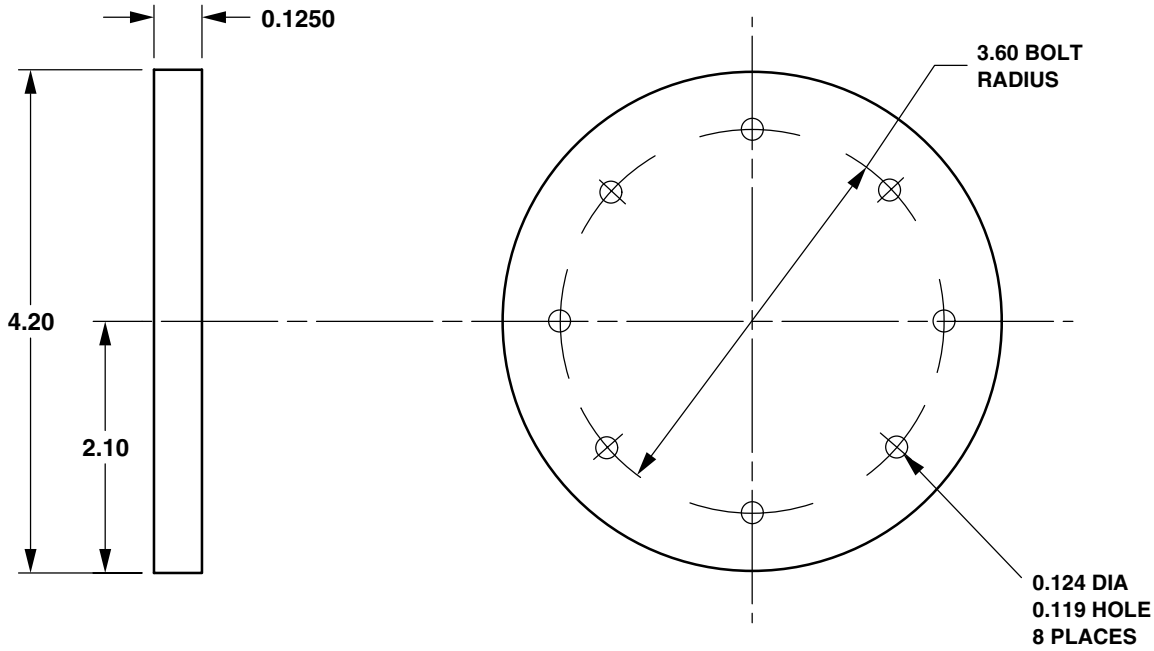
PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-027-107 60-003-1N10	SUPPORT ASSEMBLY GROMMET 7	0.050 ALUMINUM ALLOY 2024T3, QQ-A-250/5 NSN 5325-00-960-2410

NOTES

1. Dimensions are in inches.
2. Bend relief radii 0.16 unless otherwise noted.
3. Remove all burrs and sharp edges.
4. Spot weld per MIL-W-6858, Class B. Edge distance 0.25 inch minimum.
5. Apply chemical conversion coating (D57).
6. Apply epoxy primer coating (D98).
7. Install grommet 60-003-1N10 using adhesive (D11).
8. Helicopter BUNO 93-0935 and subsequent.

406961-1401-79-2
J0248

Figure H-123. Support Assembly (Sheet 2 of 2)



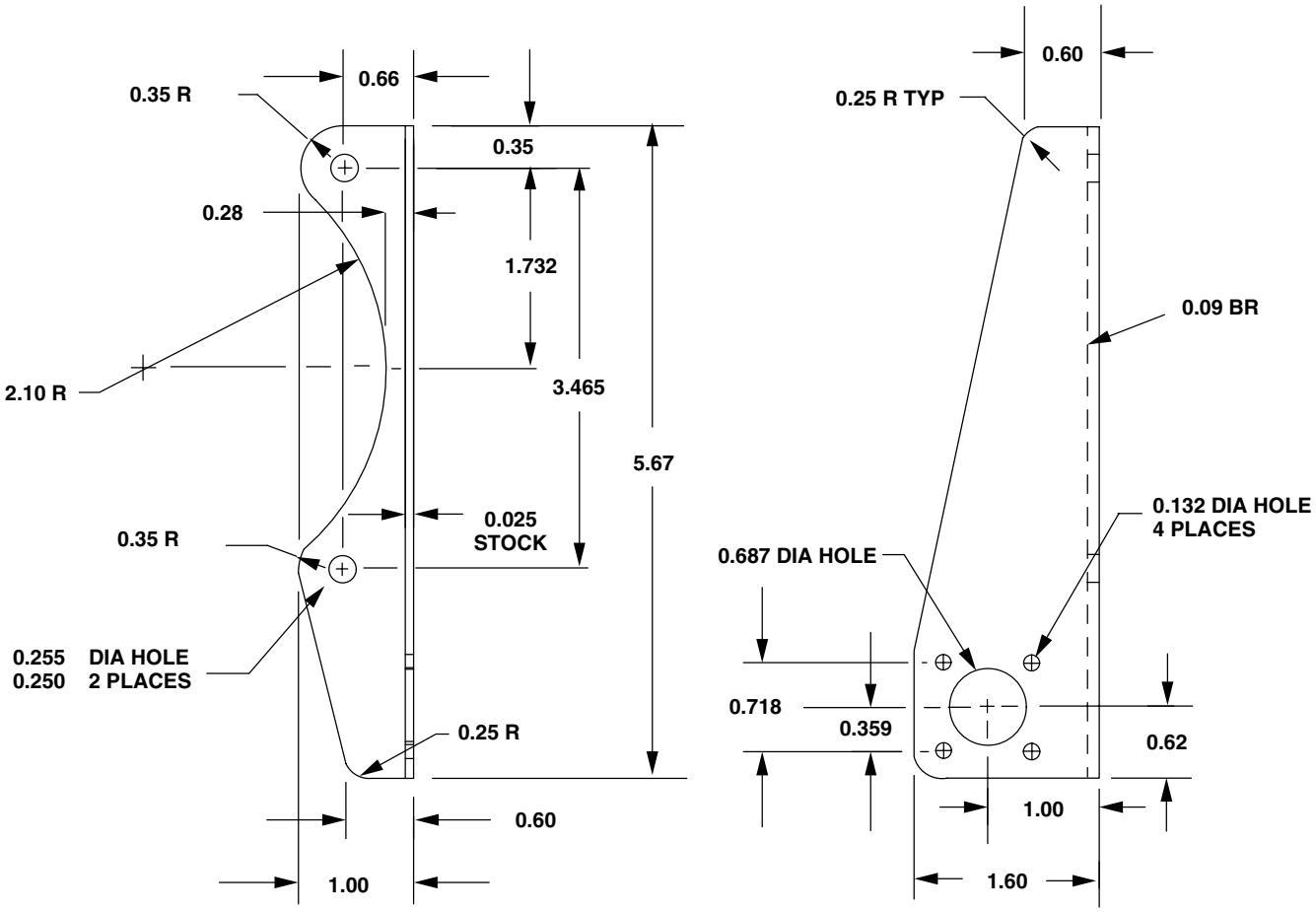
PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-207-137	WINDOW, PLASTIC	NSN 9330-00-143-8646

NOTES

1. Dimensions are in inches.
2. Make from 0.125 X 4.2 X 4.2 acrylic plastic (clear), Type III, CL1, GR2, CLR A, per BPS 299-947-090.
3. Remove all burrs and sharp edges.

406961-1401-311
J0821

Figure H-124. Window, Plastic



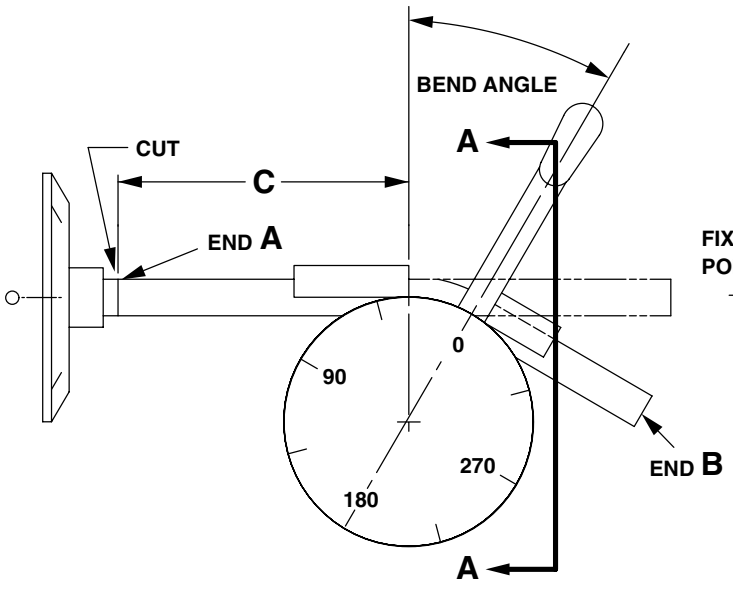
PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-208-101	BRACKET	ALUMINUM ALLOY TYPE 2024T3, QQ-A-250/5

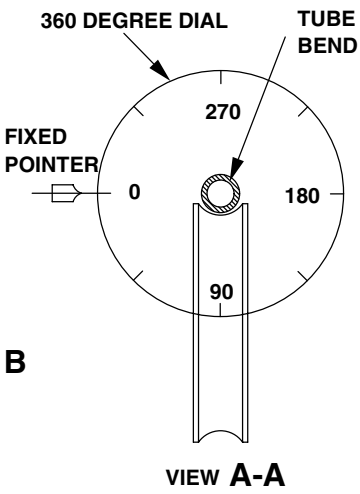
NOTES

1. Dimensions are in inches.
2. Remove all burrs and sharp edges.
3. Apply chemical conversion coating (D57).
4. Apply epoxy primer coating (D98).

406961-1401-70
J0248

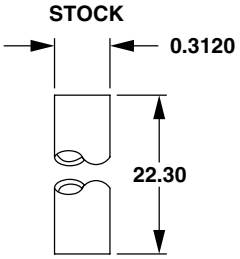
Figure H-125. Bracket



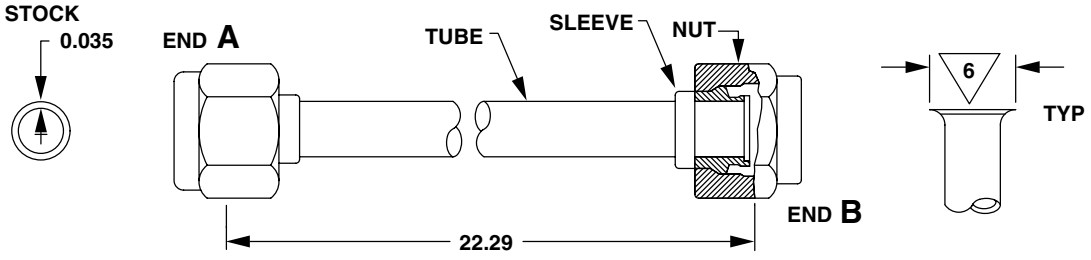


NOTE

VIEW **A-A** IS SHOWN WITH BENDING TOOL PARTIALLY REMOVED FROM VIEW.



BEND NO.	BEND FROM END A (DIM. C)	BEND RADIUS	9	BEND ANGLE°
1	19.12	0.69	0	90
2	14.89	0.69	90	22
3	10.87	0.69	90	45
4	6.39	0.69	90	35
5	3.68	0.69	270	42
6	1.89	0.69	225	52



406961-1401-201-1
J0412

Figure H-126. Tube (Sheet 1 of 2)

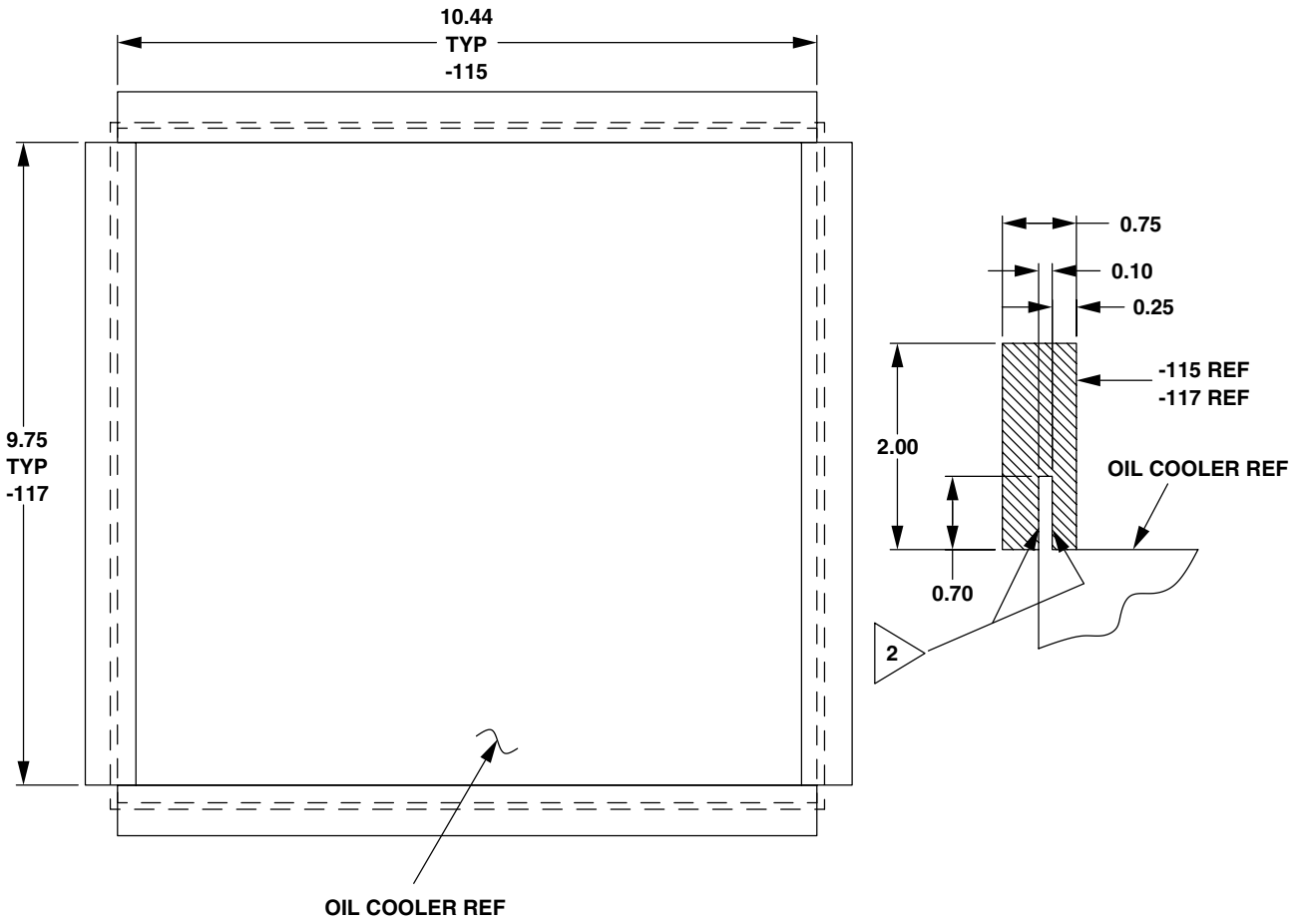
PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-212-103	TUBE	NSN 4710-00-278-8727
AN818-5D	NUT (QTY 2)	NSN 4730-00-287-0292
MS20819-5	SLEEVE (QTY 2)	NSN 4730-00-433-3375
31-032-52	TAPE, AIRCRAFT PIPING (QTY 2)	

NOTES

1. Dimensions are in inches.
2. **C** dimension is start of bend.
3. Bend tube to dimensions in table. Conform to MS33611.
4. Cut END **A** after bending tube.
5. Trim and deburr ENDS **A** and **B** .
6. Flare END **A** and **B** per MS33584 and TM 1-1500-204-23-2, Chapter 4.
7. Install nuts and sleeves per MS33566 and TM 1-1500-204-23-2, Chapter 4.
8. Apply aircraft piping tape 31-032-52 to tube assembly per MIL-STD-1247. Flow END **A** to **B**.
9. Rotate tube (from plane of first bend) ccw as viewed from Bend From End.

406961-1401-201-2
J0412

Figure H-126. Tube (Sheet 2 of 2)



PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-501-115	SEAL	RUBBER MIL-R-6130 TYPE II GRADE A SOFT
406-060-501-117	SEAL	RUBBER MIL-R-6130 TYPE II GRADE A SOFT

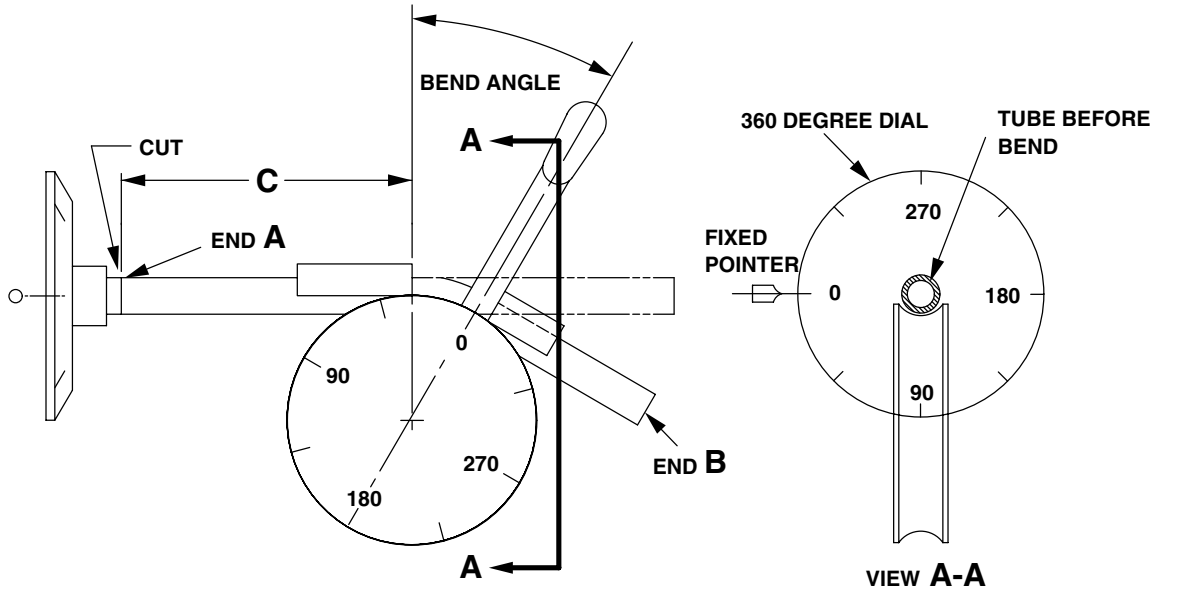
NOTES

1. Dimensions are in inches.

2 Bond using adhesive (D6) following manufacturers instructions.

406961-1401-202
J0412

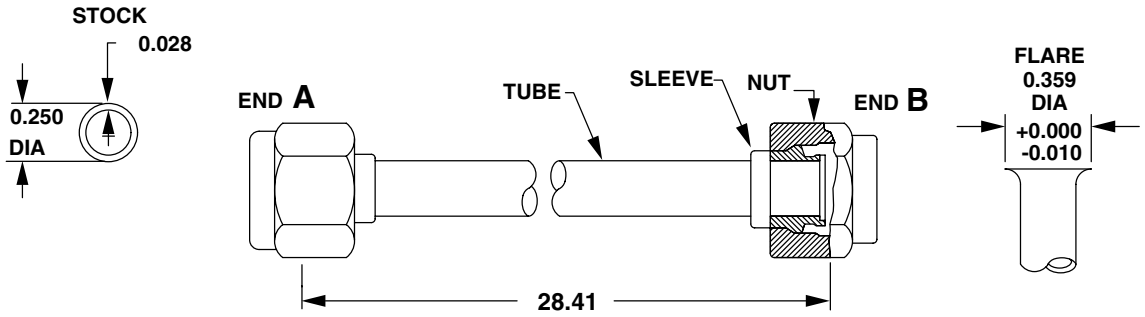
Figure H-127. Seal



NOTE

VIEW **A-A** IS SHOWN WITH BENDING TOOL PARTIALLY REMOVED FROM VIEW.

BEND NO.	BEND FROM END A (DIM. C)	BEND RADIUS	△8	BEND ANGLE°
1	27.69	0.75	0	85
2	15.88	0.75	92	56
3	9.31	0.75	186	83
4	3.53	0.75	118	31
5	2.06	0.75	291	27



406961-1401-86-1
J0248

Figure H-128. Tube (Sheet 1 of 2)

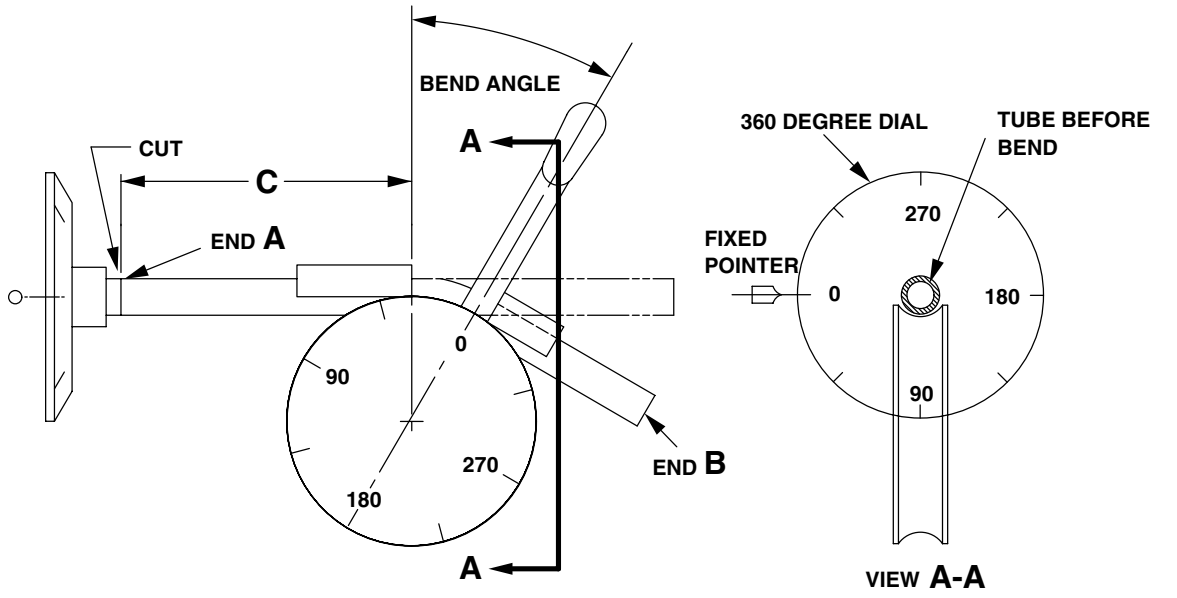
PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-508-103	TUBE	ALUMINUM ALLOY TYPE 5052T0, WW-T-700/4 TYPE I (CAGE 81349)
MS20819-4	SLEEVE (QTY 2)	NSN 4730-00-278-0678
AN818-4D	NUT (QTY 2)	NSN 4730-00-287-0289
31-032-30	TAPE, AIRCRAFT PIPING (QTY 2)	
31-033-3	TAPE, AIRCRAFT PIPING (QTY 2)	NSN 7690-01-175-2050

NOTES

1. Dimensions are in inches.
2. Trim and deburr ENDS **A** and **B**.
3. Install 2 sleeves MS20819-4 and 2 nuts AN818-4D.
4. Flare ENDS **A** and **B** per MS33584 and TM 1-1500-204-23-2, Chapter 4.
5. Bend tube to dimensions in table. Conform to MS33611.
6. **C** dimension is start of bend.
7. Apply aircraft piping tape 31-032-30 and 31-033-3 to tube assembly per MIL-STD-1247. Flow END **B** to **A**.
8. Rotate tube (from plane of first bend) ccw as viewed from Bend From End.

406961-1401-86-2
J0248

Figure H-128. Tube (Sheet 2 of 2)



NOTE

VIEW **A-A** IS SHOWN WITH BENDING TOOL PARTIALLY REMOVED FROM VIEW.

BEND NO.	BEND FROM END A (DIM. C)	BEND RADIUS	△6	BEND ANGLE°
1	31.16	0.75	0	58
2	29.44	0.75	173	54
3	25.31	0.75	100	11
4	22.25	0.75	79	22
5	20.72	0.75	267	41
6	19.16	0.75	79	22
7	15.94	0.75	82	13
8	11.06	0.75	86	11
9	6.44	0.75	85	38
10	2.75	0.75	258	82

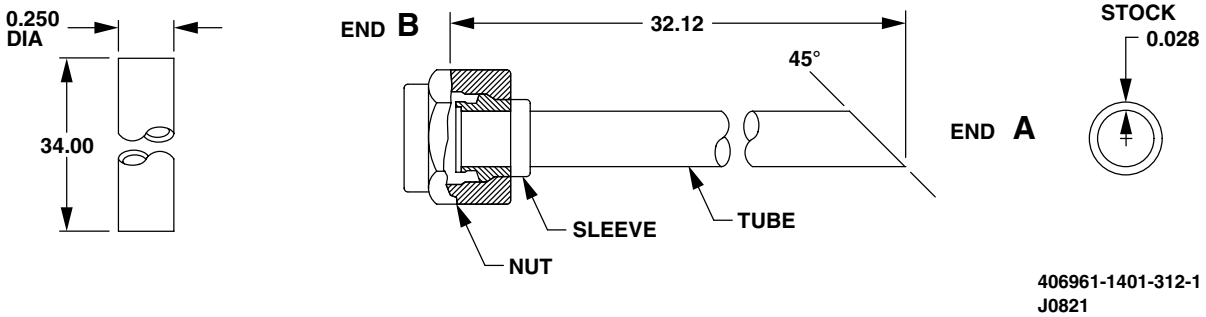


Figure H-129. Tube (Sheet 1 of 2)

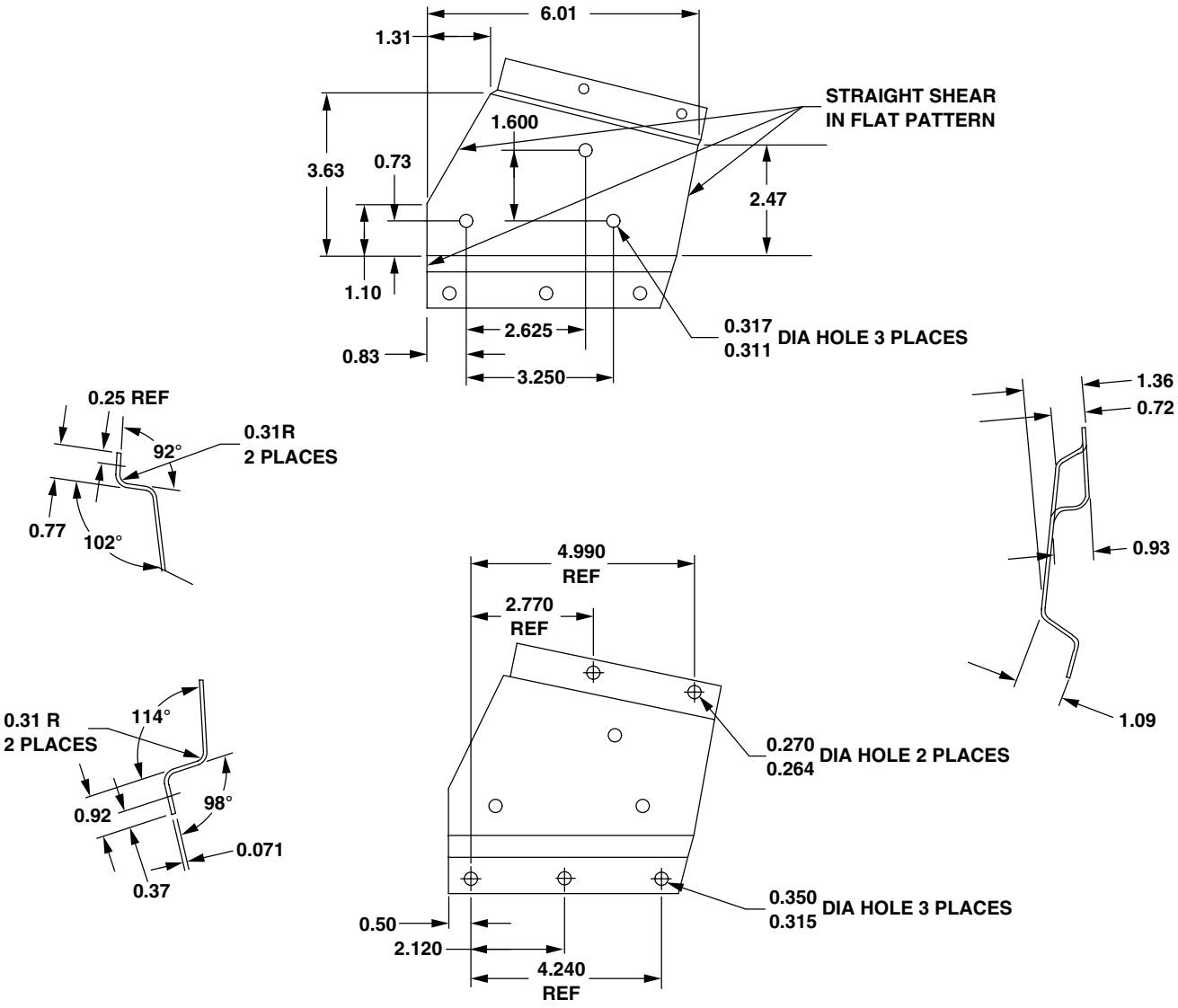
PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-509-103	TUBE	NSN 4710-00-541-4932
MS20819-4	SLEEVE	NSN 4730-00-278-0678
AN818-4D	NUT	NSN 4730-00-278-0289
31-032-30	TAPE, AIRCRAFT PIPING	
31-033-3	TAPE, AIRCRAFT PIPING	NSN 7690-01-175-2050

NOTES

1. Dimensions are in inches.
2. Trim and deburr ENDS **A** and **B**.
3. Scarf END **A** to 45° angle.
4. Apply chemical conversion coating (D57).
5. Apply aircraft piping tape 31-032-30 and 31-033-3 to tube assembly per MIL-STD-1247. Flow END **B** to **A**.
6. Rotate tube (from plane of first bend) ccw as viewed from Bend From End.

406961-1401-312-2
J0821

Figure H-129. Tube (Sheet 2 of 2)



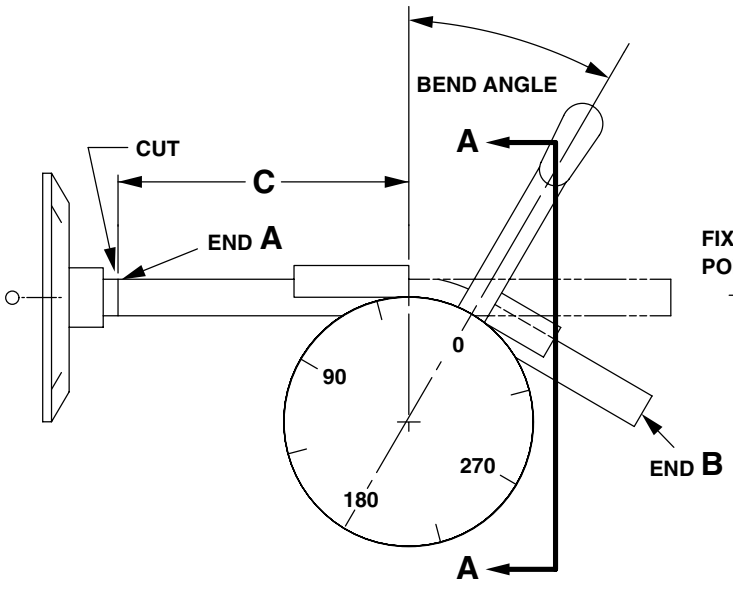
PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-524-103	BRACKET	NSN 9535-01-341-8294

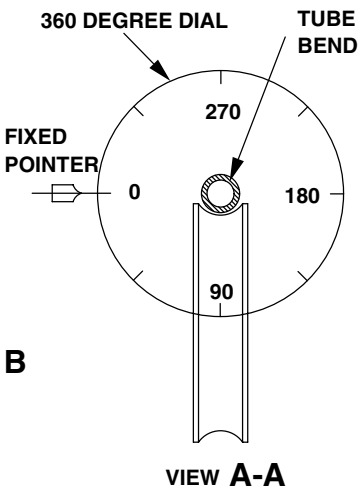
NOTES

1. Dimensions are In Inches.
2. Deburr holes and scarf all edges.
3. Heat treat T42 per MIL-H-6088 and TM 1-1500-204-23-10, Chapter 5.
4. Apply chemical conversion coating (D57).

406961-1401-297
J0571

Figure H-130. Bracket

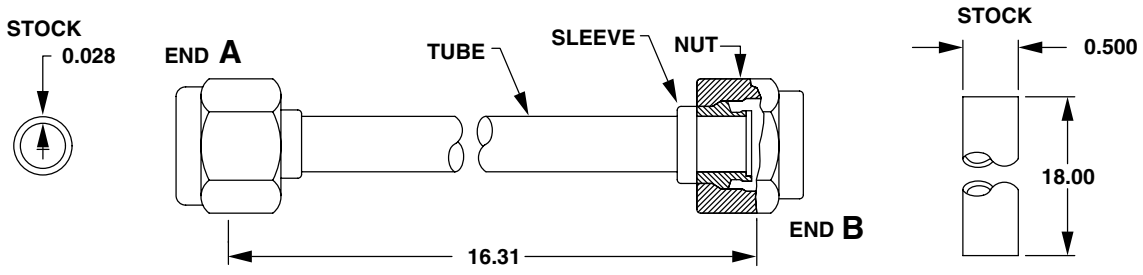




NOTE

VIEW **A-A** IS SHOWN WITH BENDING TOOL PARTIALLY REMOVED FROM VIEW.

BEND NO.	BEND FROM END A (DIM. C)	BEND RADIUS	9	BEND ANGLE°
1	13.70	1.5	0	53
2	9.86	1.5	123	50
3	5.45	1.5	227	25
4	2.70	1.5	58	21



406961-1401-332-1
J1274

Figure H-131. Tubing (Sheet 1 of 2)

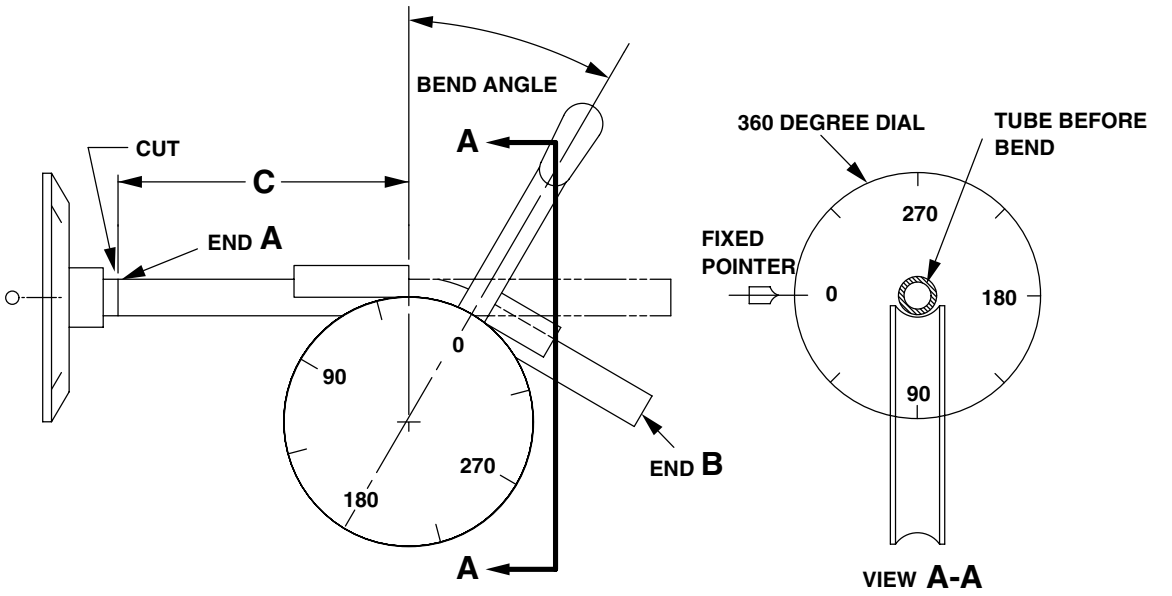
PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-525-103	TUBE	AL. ALY., 5052T0, WW-T-700/4 TYPE I
MS20819-2	SLEEVE (QTY 2)	
AN818-8D	NUT (QTY 2)	
31-032-29	TAPE, AIRCRAFT PIPING (QTY 2)	
31-033-3	TAPE, AIRCRAFT PIPING (QTY 2)	

NOTES

1. Dimensions are in inches.
2. **C** Dimension is start of bend.
3. Bend tube to dimensions shown in table. Conform to MS33611.
4. Cut END **A** after bending tube.
5. Trim and deburr ENDS **A** and **B**.
6. Install nuts and sleeves per MS33566 and TM 1-1500-204-23-2, Chapter 4.
7. Pressure test tube assembly to 50 psi per TM 1-1500-204-23-2, Chapter 4.
8. Apply aircraft piping tape 31-032-29 and 31-033-3 to tube assembly per MIL-STD-1247. Flow END **B** to **A**.
9. Rotate tube (from plane of flrst bend) ccw as vlewed from Bend From End.

406961-1401-332-2
J1274

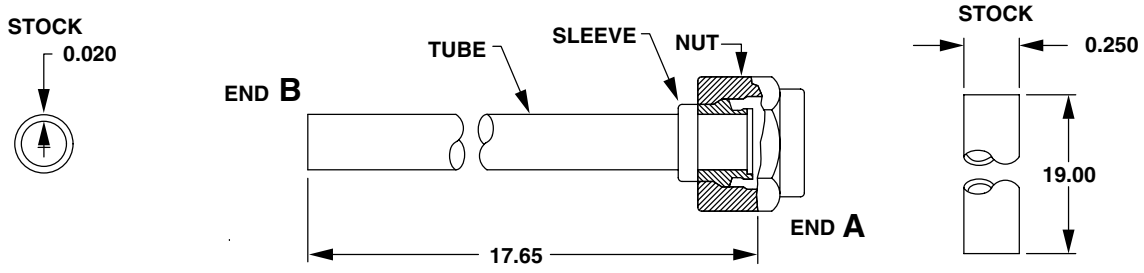
Figure H-131. Tubing (Sheet 2 of 2)



NOTE

VIEW **A-A** IS SHOWN WITH BENDING TOOL PARTIALLY REMOVED FROM VIEW.

BEND NO.	BEND FROM END A (DIM. C)	BEND RADIUS	△8	BEND ANGLE°
1	16.45	0.75	0	91
2	8.70	0.75	89	86
3	2.90	0.75	190	87



406961-1401-333-1
J1274

Figure H-132. Tubing (Sheet 1 of 2)

PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-526-103	TUBE	AL. ALY., 5052T0, WW-T-700/4 TYPE I
MS20819-4	NUT	
AN818-4D	SLEEVE	
31-032-30	TAPE, AIRCRAFT PIPING (QTY 2)	
31-033-3	TAPE, AIRCRAFT PIPING (QTY 2)	

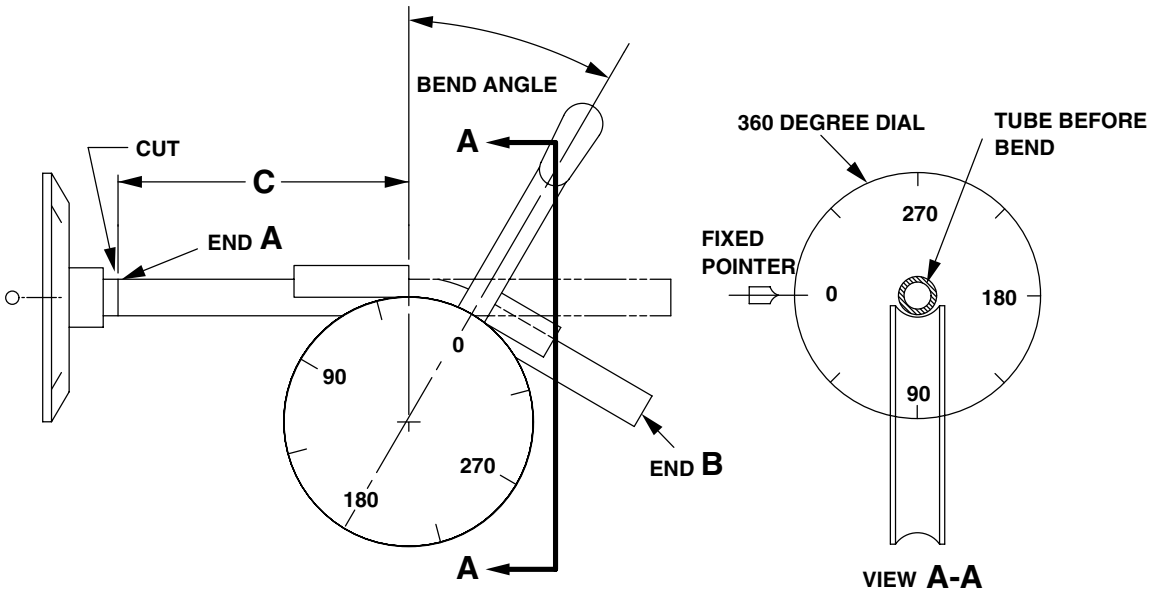
NOTES

1. Dimensions are in inches.
2. **C** Dimension is start of bend.
3. Bend tube to dimensions shown in table. Conform to MS33661.
4. Cut END **A** after bending tube.
5. Trim and deburr ENDS **A** and **B**.
6. Install nut and sleeve per MS33566 and TM 1-1500-204-23-2, Chapter 4.
7. Apply aircraft piping tape 31-032-30 and 31-033-3 to tube assembly per MIL-STD-1247. Flow END **B** to **A**.

8 Rotate tube (from plane of first bend) ccw as viewed from Bend From End.

406961-1401-333-2
J1274

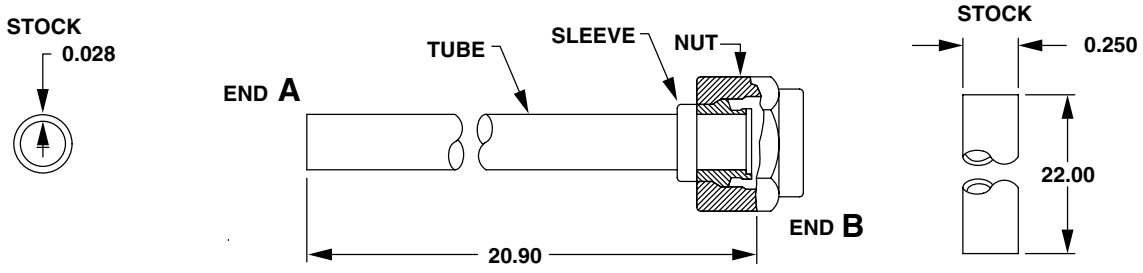
Figure H-132. Tubing (Sheet 2 of 2)



NOTE

VIEW **A-A** IS SHOWN WITH BENDING TOOL PARTIALLY REMOVED FROM VIEW.

BEND NO.	BEND FROM END **A** (DIM. **C**)	BEND RADIUS	△8	BEND ANGLE°
1	19.93	0.75	0	71
2	14.57	0.75	359	52
3	11.77	0.75	75	37
4	8.33	0.75	257	24
5	3.55	0.75	186	79



406961-1401-334-1
J1274

Figure H-133. Tubing (Sheet 1 of 2)

PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-527-103	TUBE	AL. ALY., 5052T0, WW-T-700/4 TYPE I
MS20819-4	SLEEVE	
AN818-4D	NUT	
31-032-30	TAPE, AIRCRAFT PIPING (QTY 2)	
31-033-3	TAPE, AIRCRAFT PIPING (QTY 2)	

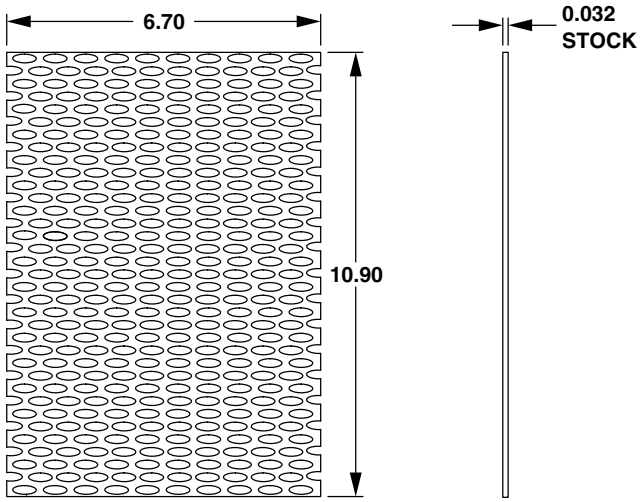
NOTES

1. Dimensions are in inches.
2. **C** Dimension is start of bend.
3. Bend tube to dimensions shown in table. Conform to MS33661.
4. Cut END **A** after bending tube.
5. Trim and deburr ENDS **A** and **B**.
6. Install nut and sleeve per MS33566 and TM 1-1500-204-23-2, Chapter 4.
7. Apply aircraft piping tape 31-032-30 and 31-033-3 to tube assembly per MIL-STD-1247. Flow END **B** to **A**.

8 Rotate tube (from plane of first bend) ccw as viewed from Bend From End.

406961-1401-334-2
J1274

Figure H-133. Tubing (Sheet 2 of 2)



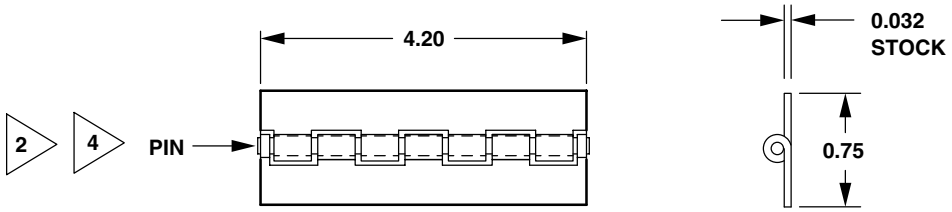
PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-804-111	SCREEN	NSN 9535-00-500-4732

NOTES

1. Dimensions are in inches.
2. Cut from stock No. 3927 - Harrington and King Perforating Co. (CAGE 73988).
3. Screen must be cut to contour of 406-060-804-113 Doubler at installation.
4. Break sharp edges 0.015 x 45° or 0.015 R.

406961-1401-73
J0248

Figure H-134. Screen



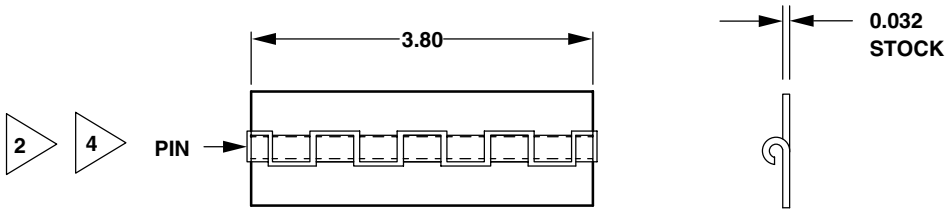
PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-804-119	HINGE	NSN 5340-00-057-2625

NOTES

1. Dimensions are in inches.
2. Make from MS20257P1-420.
3. Remove all burrs and sharp edges.
4. Applicable hinge pin - MS20253P1-420.
5. Crimp both ends of hinge after installation of pin.

406961-1401-74
J0248

Figure H-135. Hinge



PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-804-121	HINGE	NSN 5340-00-057-2625

NOTES

1. Dimensions are in inches.
2. Make from MS20257P1-380.
3. Remove all burrs and sharp edges.
4. Applicable hinge pin - MS20253P1-380.
5. Crimp both ends of hinge after installation of pin.

406961-1401-75
J0248

Figure H-136. Hinge

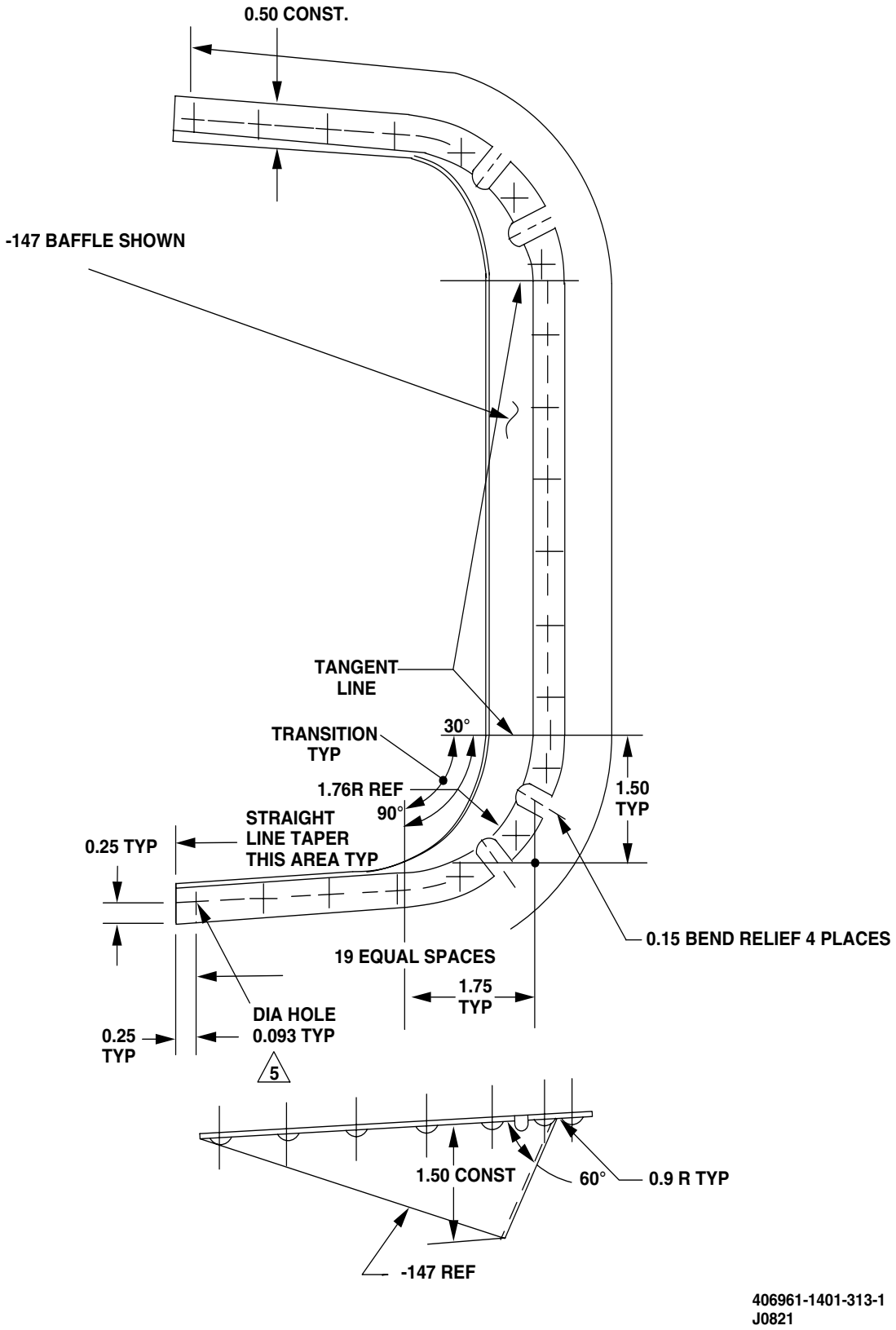


Figure H-137. Baffle (Sheet 1 of 2)

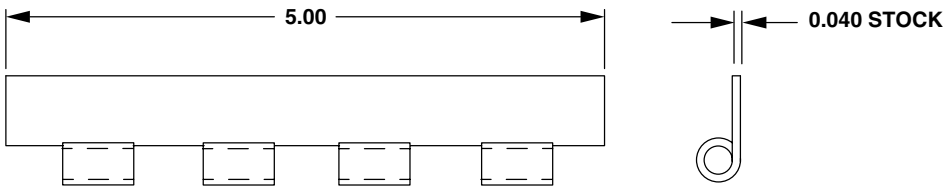
PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-804-147	BAFFLE	ALUMINUM ALLOY TYPE 2024T3, PER QQ-A-250/5
406-060-804-148	BAFFLE (OPPOSITE)	ALUMINUM ALLOY TYPE 2024T3, PER QQ-A-250/5
	RIVETS	MS20470B

NOTES

1. Dimensions are in inches.
2. Make from 0.0400 X 6.000 X 9.80 material.
3. Remove all burrs and sharp edges.
4. Heat treat to T42 per MIL-H-6088 and TM 1-1500-204-23-10, Chapter 5.
5. Squeeze rivets to prevent possible cracking of glass.
6. Apply chemical conversion coating (D57).
7. Apply epoxy primer coating (D98).

406961-1401-313-2
J0821

Figure H-137. Baffle (Sheet 2 of 2)



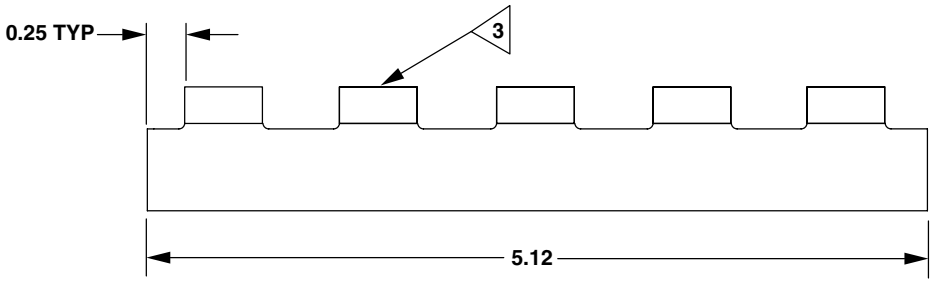
PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-805-121	HINGE, HALF	NSN 5340-01-332-7539

NOTES

1. Dimensions are in inches.
2. Cut to required length.
3. Remove all burrs and sharp edges.
4. Make from MS20257X3-500.

406961-1401-76
J0248

Figure H-138. Hinge Half



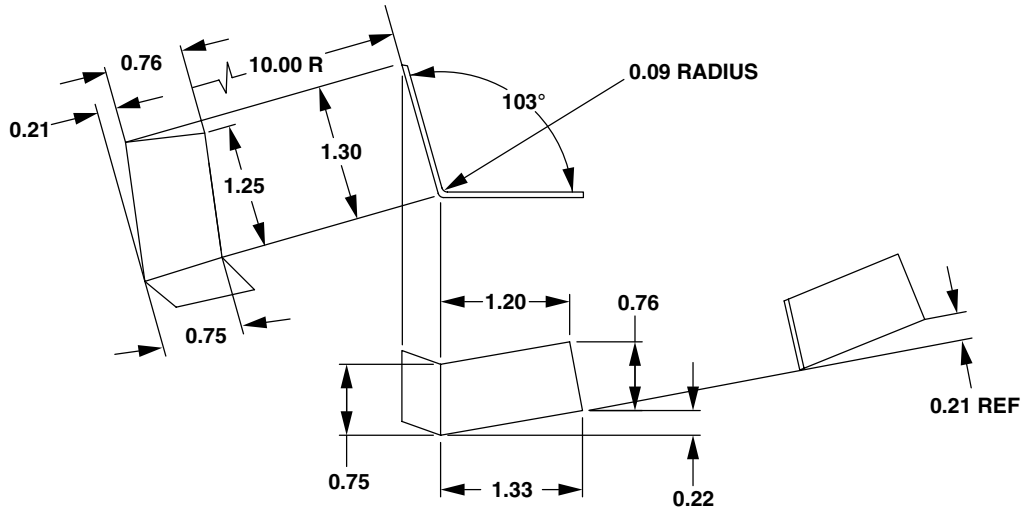
PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-805-145	HINGE HALF, LH	NSN 5340-01-332-5563
406-060-805-146	HINGE HALF, RH	NSN 5340-01-332-5563

NOTES

1. Dimensions are in inches.
2. Cut to required length.
3. Remove protective finish locally to ensure electrical bonding ground.
4. Remove all burrs and sharp edges.

406961-1401-182
J0403

Figure H-139. Hinge Half, LH or RH



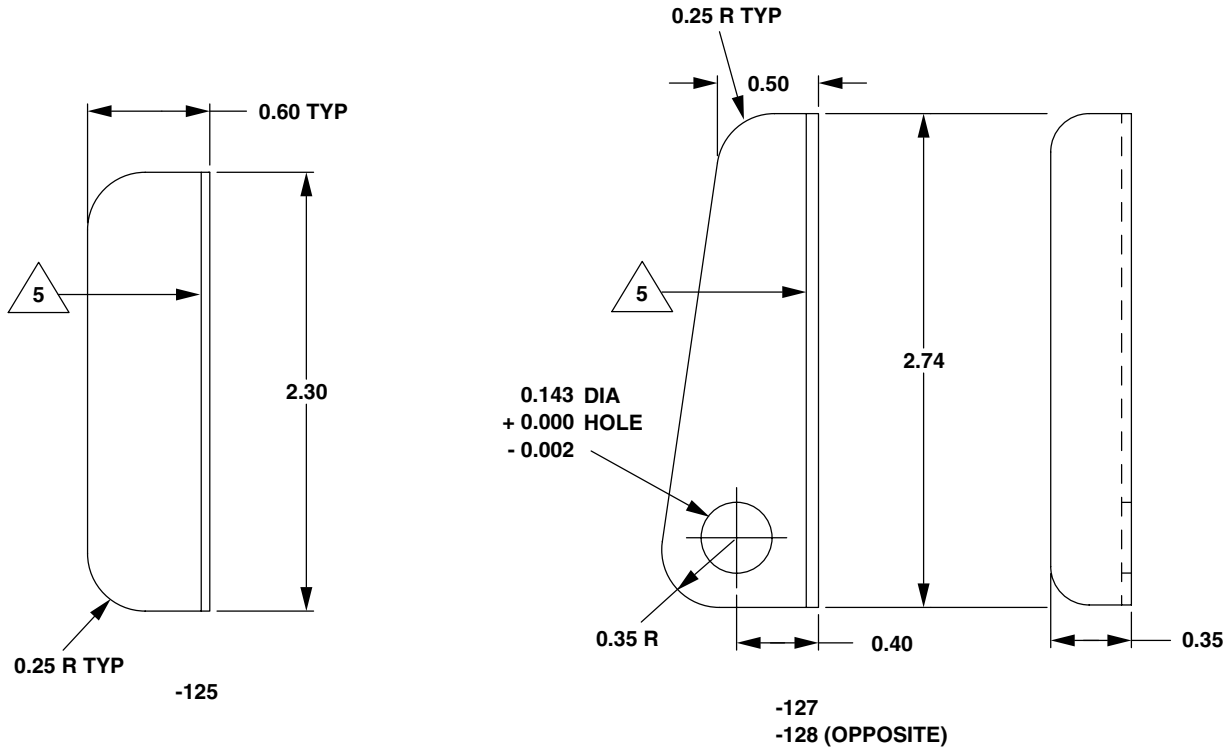
PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-814-117	CLIP (SHOWN)	NSN 9535-01-341-8288
406-060-814-118	CLIP (OPPOSITE)	NSN 9535-01-341-8288

NOTES

1. Dimensions are in inches.
2. Remove all burrs and sharp edges.
3. Apply chemical conversion coating (D57).
4. Apply epoxy primer coating (D98).

406961-1401-204
J0412

Figure H-140. Clip



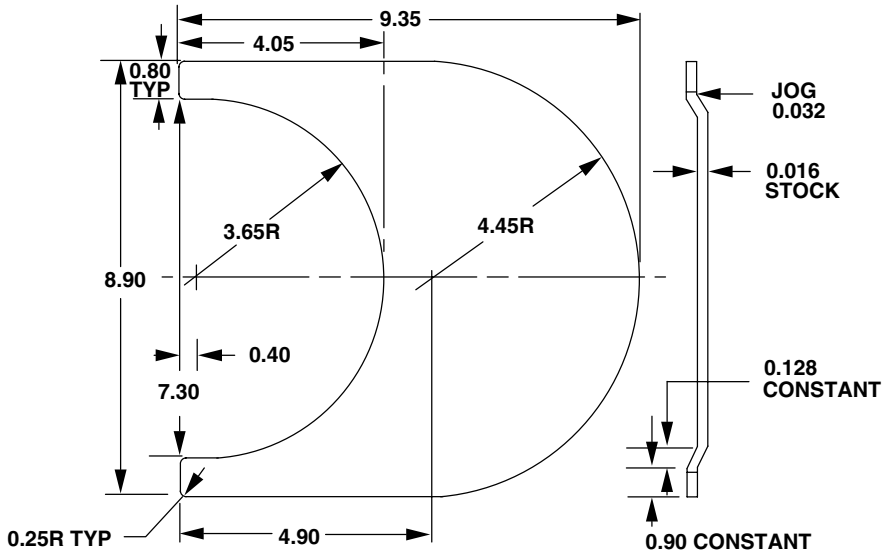
PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-818-125	ANGLE	NSN 9535-01-341-8289
406-060-818-127	STIFFENER (LH)	NSN 9535-01-341-8289
406-060-818-128	STIFFENER (RH)	NSN 9535-01-341-8289

NOTES

1. Dimensions are in inches.
2. Remove all burrs and sharp edges.
3. Apply chemical conversion coating (D57).
4. Apply epoxy primer coating (D98).
5. BR are 0.12.

406961-1401-205
J0412

Figure H-141. Angle or Stiffener, LH or RH



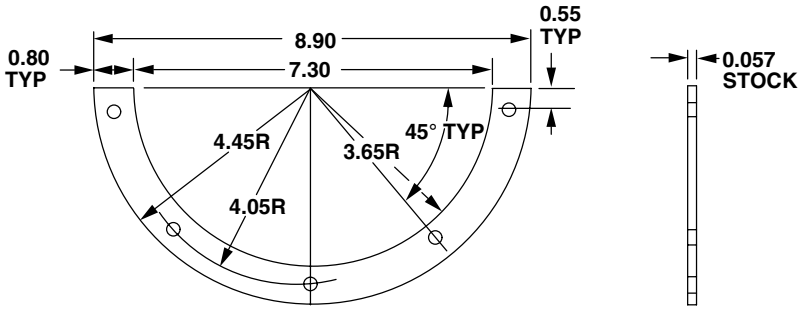
PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-900-129	COVERPLATE	NSN 9535-00-505-6885

NOTES

1. Dimensions are in inches.
2. Make from 0.016 x 8.90 x 9.40 Titanium, MIL-T-9046, Type I, Composition C, Stock CAGE 81349.
3. Use old part as a pattern if possible.

406961-1401-83
J0248

Figure H-142. Coverplate



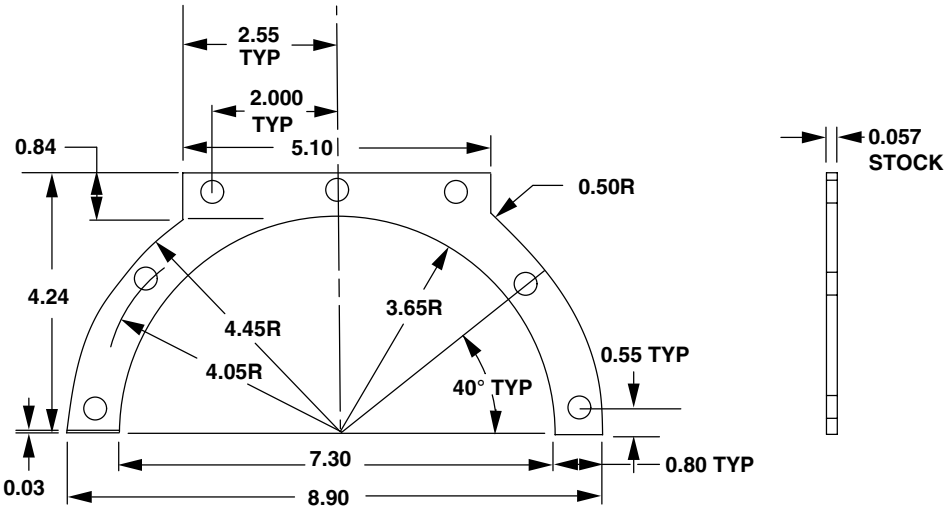
PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-900-139	GASKET, LOWER	NSN 1560-01-387-5677

NOTES

1. Dimensions are in inches.
2. Make from 0.0457 x 4.50 x 8.9 151-008E fireproof, neoprene coated glass fabric, stainless steel wire mesh reinforced sheet. CAGE 48482-Style G-89 (Stock).
3. Use old part as a pattern if possible.

406961-1401-80
J0248

Figure H-143. Gasket, Lower



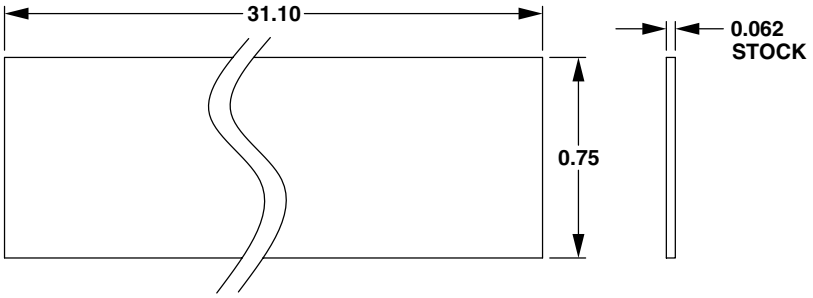
PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-900-141	GASKET, UPPER	NSN 1560-01-387-5677

NOTES

1. Dimensions are in inches.
2. Make from 0.057 x 4.30 x 8.90 151-008E fireproof, neoprene coated glass fabric, stainless steel wire mesh reinforced sheet. CAGE 48482-Style G-89 (Stock).
3. Use old part as a pattern if possible.

406961-1401-81
J0248

Figure H-144. Gasket, Upper



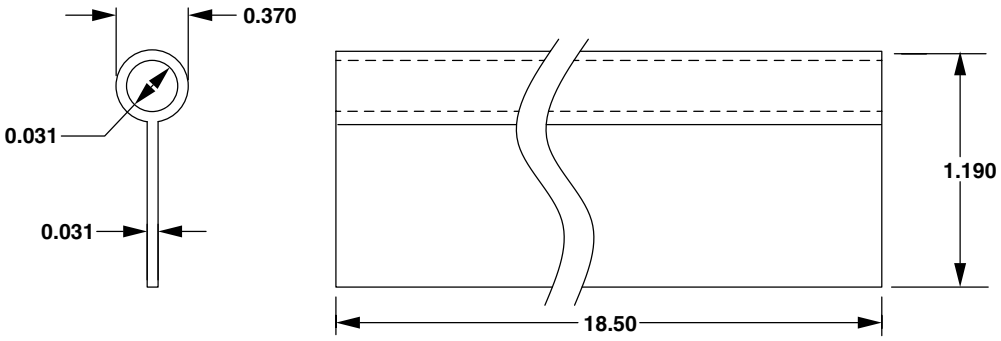
PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-900-143	SEAL	NSN 9320-00-007-8543

NOTES

1. Dimensions are in inches.
2. Cut to required length.
3. Make from 110-070-31G Extrusion-Rubber, CAGE 81343, AMS 3195.

406961-1401-84
J0248

Figure H-145. Seal



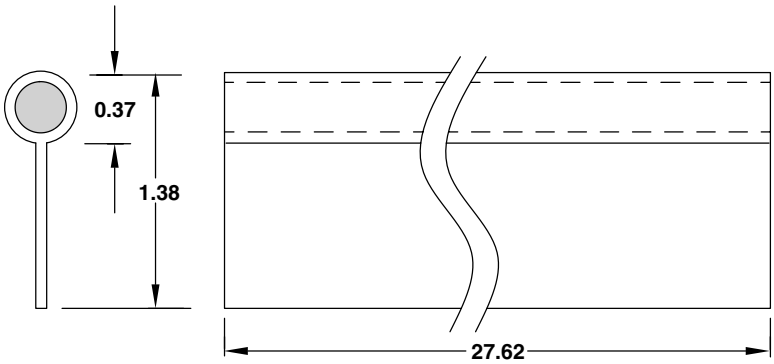
PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-900-157	SEAL	NSN 5330-01-197-9557

NOTES

1. Dimensions are in inches.
2. Cut to required length.
3. Make from 110-059-2 stock, color charcoal grey or black, MIL-R-7362, Type II.

406961-1401-77
J0248

Figure H-146. Seal



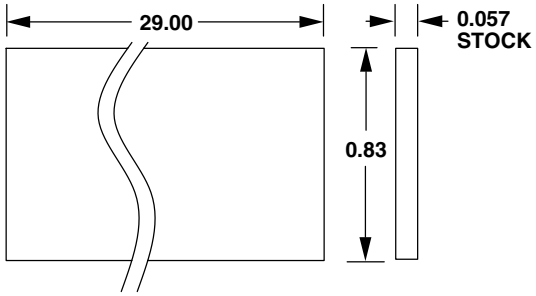
PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-900-159	SEAL	NSN 5330-00-851-9178

NOTES

1. Dimensions are in inches.
2. Cut to required length.

406961-1401-175
J0403

Figure H-147. Seal



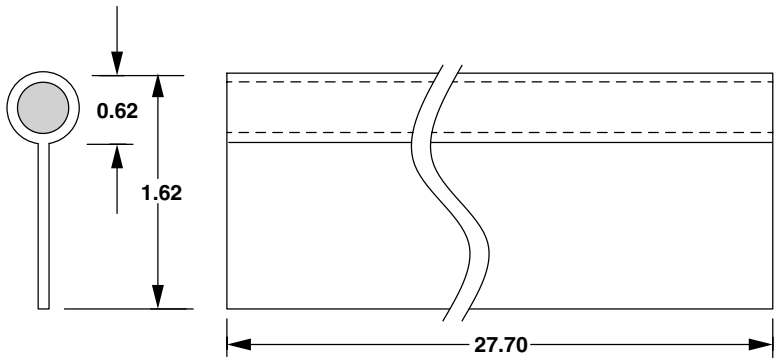
PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-900-161	GASKET	NSN 1560-01-387-5677

NOTES

1. Dimensions are in inches.
2. Cut to required width and length.
3. Make from 0.057 x 0.900 x 29.00 151-008E fireproof, neoprene coated glass fabric, stainless steel wire mesh reinforced sheet. CAGE 48482 - Style G-89 (Stock).

406961-1401-82
J0248

Figure H-148. Gasket



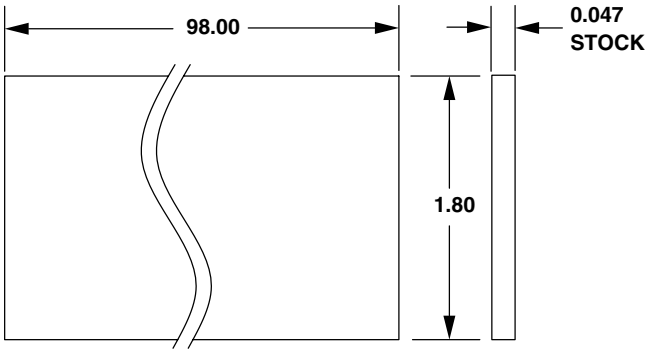
PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-900-181	SEAL	120-104-9

NOTES

1. Dimensions are in inches.
2. Cut to required length.

406961-1401-314
J0821

Figure H-149. Seal



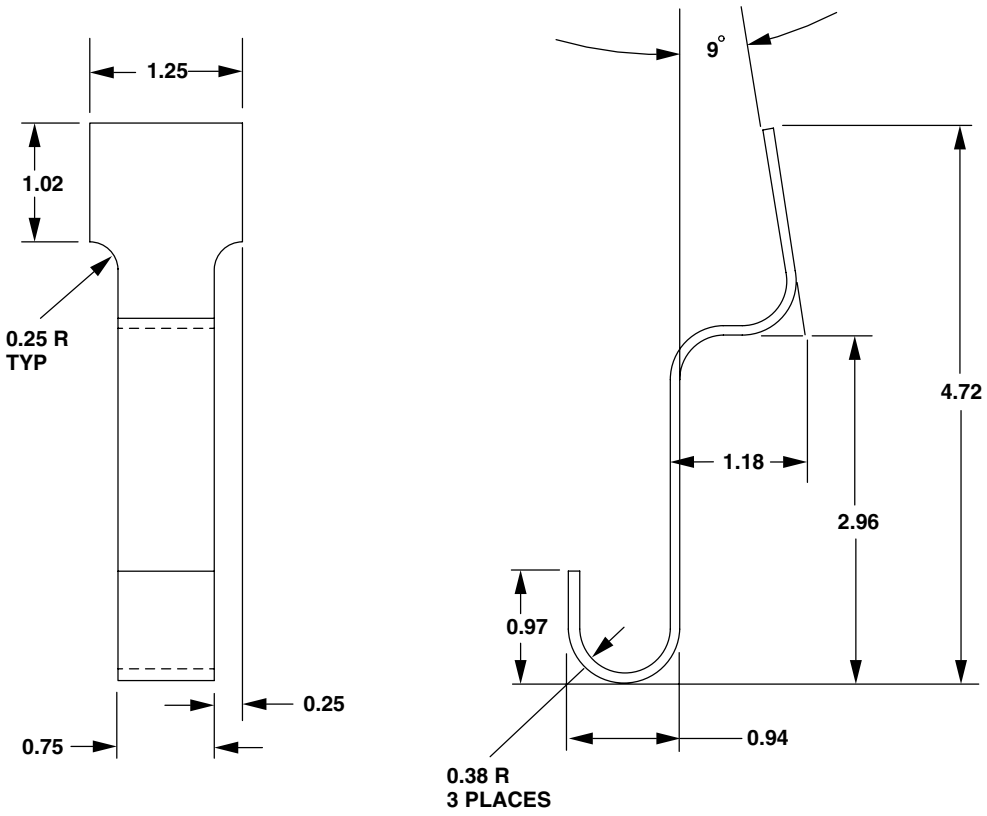
PART NUMBER	ITEM NAME	FABRICATE FROM
406-060-901-145	GASKET	NSN 5330-01-197-7871

NOTES

1. Dimensions are in inches.
2. Cut to required width and length.
3. Make from 151-008E fireproof sheet, Style G-89 (Stock) CAGE 48482.

406961-1401-147
J0403

Figure H-150. Gasket



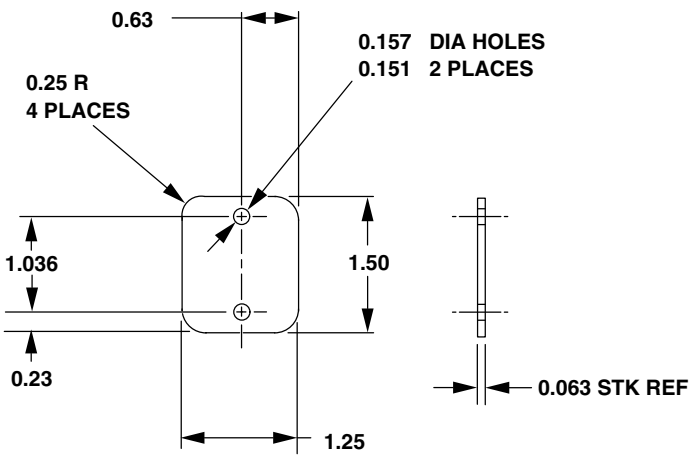
PART NUMBER	ITEM NAME	FABRICATE FROM
406-070-002-101	HOOK	ALUMINUM ALLOY TYPE 2024T3 QQ-A-250/5

NOTES

1. Dimensions are in inches.
2. Make from 0.090 x 1.300 x 7.300 material.
3. Remove all burrs and sharp edges.
4. Apply chemical conversion coating (D57).
5. Apply epoxy primer coating (D98).

406961-1401-157
J0403

Figure H-151. Hook



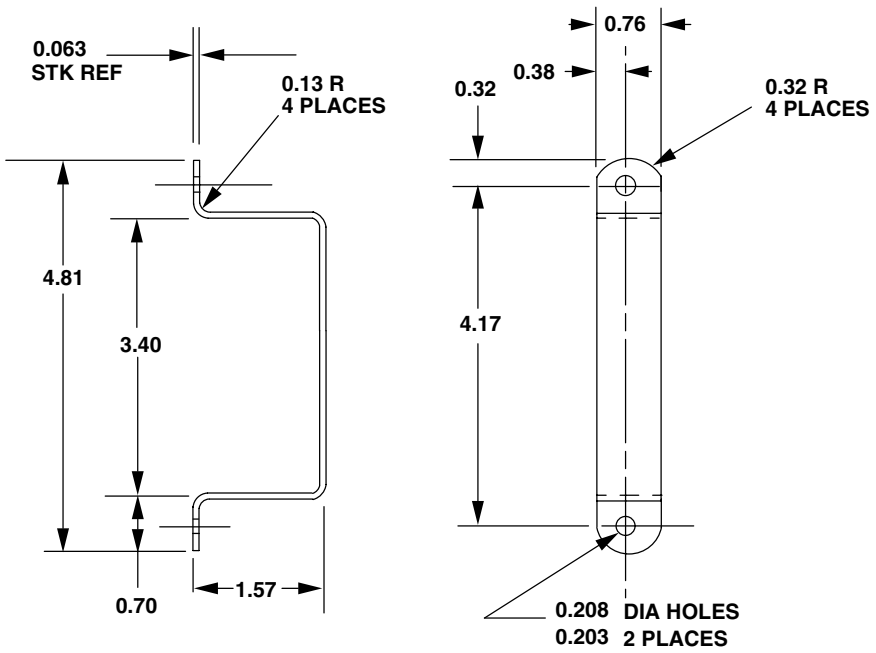
PART NUMBER	ITEM NAME	FABRICATE FROM
406-070-044-125	CAP	NSN 9535-01-344-7719

NOTES

1. Dimensions are in inches.
2. Trim part per dimensions shown.
3. Deburr holes and scarf all edges.
4. Apply chemical conversion coating (D57).
5. Apply one spray coat of epoxy primer coating (D98).
6. Apply two spray coats of aliphatic polyurethane (D69), MIL-C-46168, Green Color No. 34031 per FED-STD-595.

406961-1401-268
J0412

Figure H-152. Cap



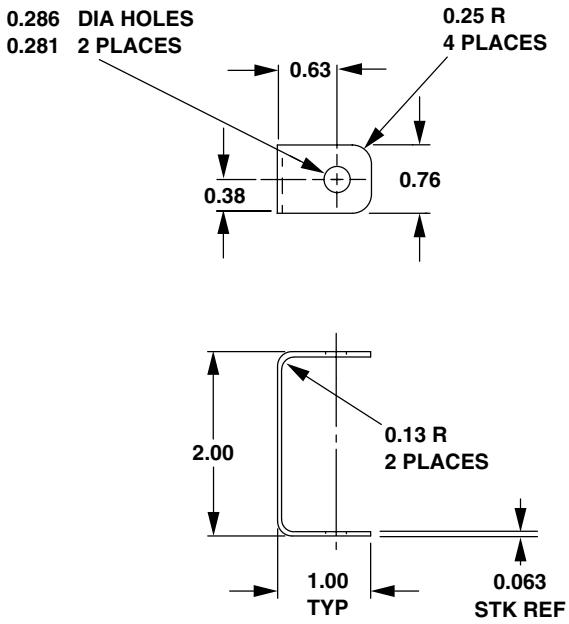
PART NUMBER	ITEM NAME	FABRICATE FROM
406-070-044-129	BRACKET	0.63, 0.80 X 4.00, AL. ALY., 6013-T6, AMS4216 ALTERNATE: AL. ALY., 6013-T4, AMS4347. 5

NOTES

1. Dimensions are in inches.
2. Trim bracket per dimensions shown.
3. Deburr holes and scarf all edges.
4. Fluorescent penetrant inspect per TM 1-1500-204-23-7, Chapter 3.
5. Heat treat alternate material to T6 per MIL-H-6088 and TM 1-1500-204-23-10, Chapter 5.
6. Apply chemical conversion coating (D57).
7. Apply one spray coat of epoxy primer coating (D98).
8. Apply two spray coats of aliphatic polyurethane (D69), MIL-C-46168, Green, Color No. 34031 per FED-STD-595.

406961-1401-267
J0412

Figure H-153. Bracket



PART NUMBER	ITEM NAME	FABRICATE FROM
406-070-044-131	BRACKET	0.63, 0.80 X 4.00, AL. ALY., 6013-T6, AMS4216 ALTERNATE: AL. ALY., 6013-T4, AMS4347 ◁5

NOTES

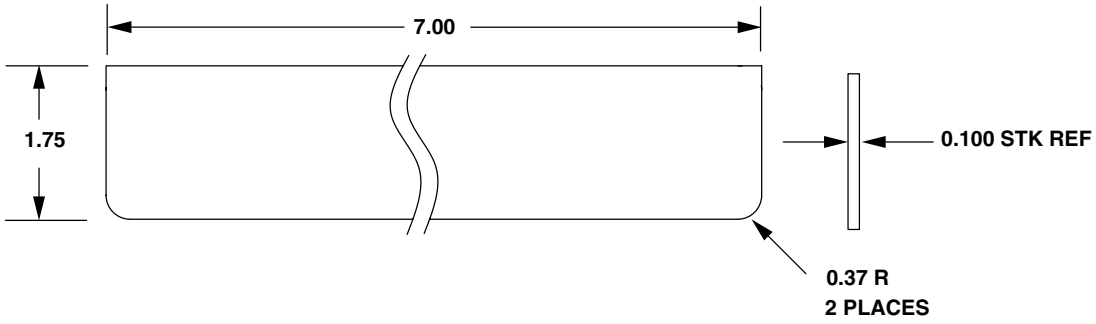
1. Dimensions are in inches.
2. Trim bracket per dimensions shown.
3. Deburr holes and scarf all edges.
4. Fluorescent penetrant inspect per TM 1-1500-204-23-7, Chapter 3.

5▷ Heat treat alternate material to T6 per MIL-H-6088 and TM 1-1500-204-23-10, Chapter 5.

6. Apply chemical conversion coating (D57).
7. Apply one spray coat of epoxy primer coating (D98).
8. Apply two spray coats of aliphatic polyurethane (D68), MIL-C-46168, Green, Color No. 34031 per FED-STD-595.

406961-1401-270
J0412

Figure H-154. Bracket



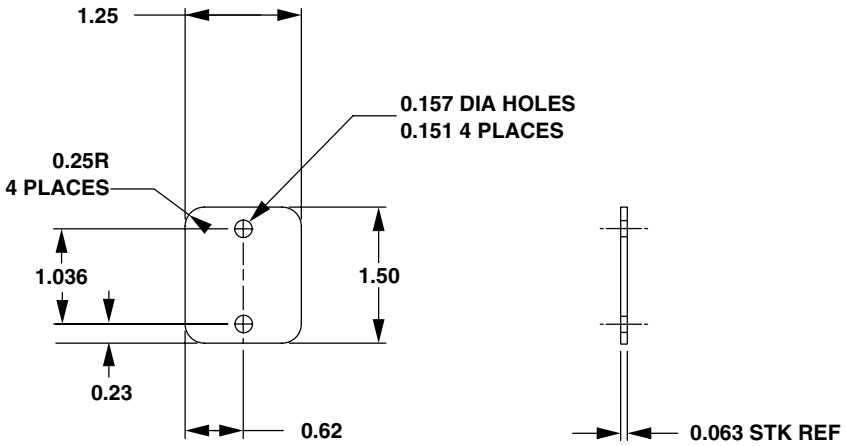
PART NUMBER	ITEM NAME	FABRICATE FROM
406-070-045-127	STOP	NSN 9535-01-342-6428

NOTES

1. Dimensions are in inches.
2. Trim part per dimensions shown.
3. Scarf all edges.
4. Apply chemical conversion coating (D57).
5. Apply one spray coat of epoxy primer coating (D98).
6. Apply two spray coats of aliphatic polyurethane (D69), MIL-C-46168, Green, Color No. 34031 per FED-STD-595.

406961-1401-269
J0412

Figure H-155. Stop



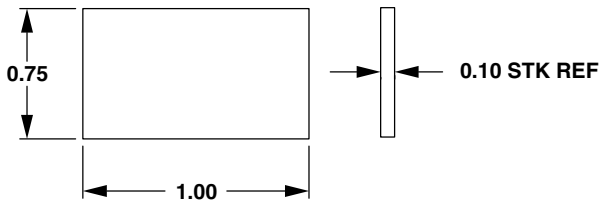
PART NUMBER	ITEM NAME	FABRICATE FROM
406-070-045-133	CAP	NSN 9535-01-344-7719

NOTES

1. Dimensions are in inches.
2. Trim part per dimensions shown.
3. Deburr holes and scarf all edges.
4. Apply chemical conversion coating (D57).
5. Apply one spray coat of epoxy primer coating (D98).
6. Apply two spray coats of aliphatic polyurethane (D69), MIL-C-46168, Green, Color No. 34031 per FED-STD-595.

406961-1401-271
J0412

Figure H-156. Cap



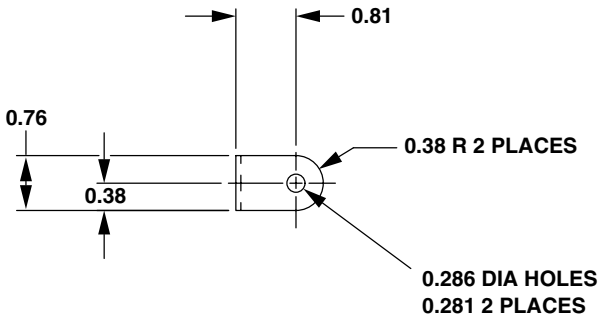
PART NUMBER	ITEM NAME	FABRICATE FROM
406-070-045-141	RETAINER	0.100, 0.80 X 1.10 AL.ALY., 6013-T6, AMS4216 ALTERNATE: AL. ALY., 6013-T4, AMS4347

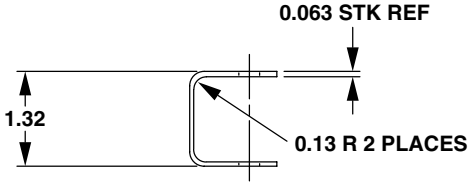
NOTES

1. Dimensions are in inches.
2. Trim retainer per dimensions shown.
3. Scarf all edges.
4. Apply chemical conversion coating (D57).
5. Apply one spray coat of epoxy primer coating (D98).

406961-1401-272
J0412

Figure H-157. Retainer





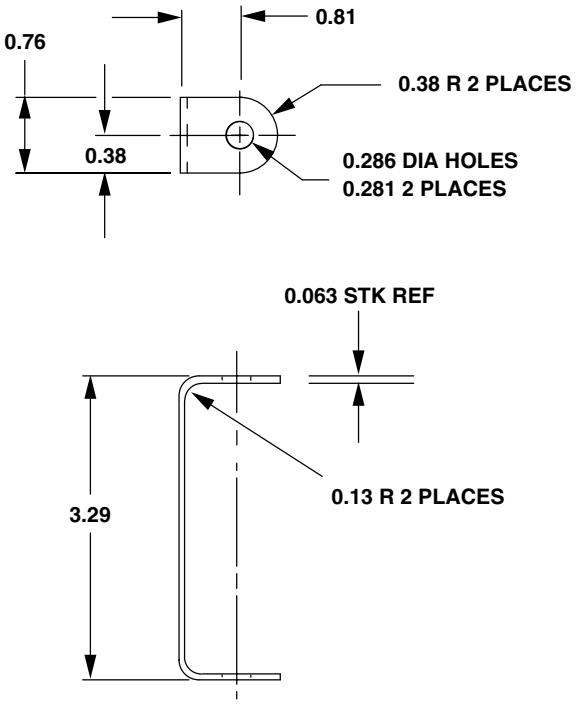
PART NUMBER	ITEM NAME	FABRICATE FROM
406-070-045-147	BRACKET	0.063, 0.80 X 3.80, AL.ALY., 6013-T6, AMS4216 ALTERNATE: AL.ALY., 6013-T4, AMS4347. 5

NOTES

1. Dimensions are in inches.
2. Trim bracket per dimensions shown.
3. Deburr holes and scarf all edges.
4. Fluorescent penetrant inspect per TM 1-1500-204-23-7, Chapter 3.
5. Heat treat bracket to T6 per MIL-H-6088 and TM 1-1500-204-23-10, Chapter 5.
6. Apply chemical conversion coating (D57).
7. Apply one spray coat of epoxy primer coating (D98).
8. Apply two spray coats of aliphatic polyurethane (D69), MIL-C-46168, Green, Color No. 34031 per FED-STD-595.

406961-1401-273
J0412

Figure H-158. Bracket



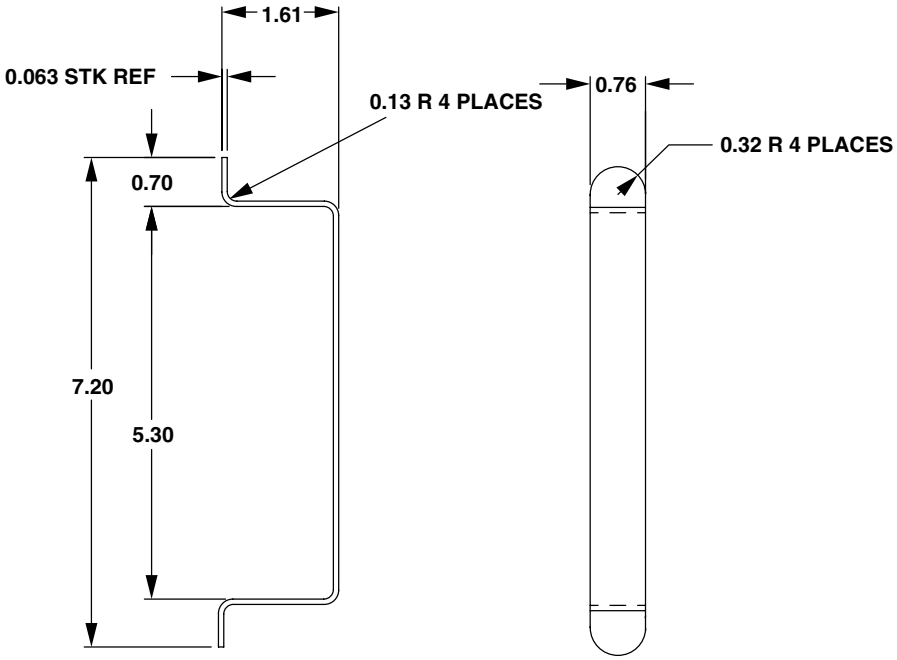
PART NUMBER	ITEM NAME	FABRICATE FROM
406-070-045-149	BRACKET	0.063, 0.80 X 5.70, AL.ALY., 6013-T6, AMS4216 ALTERNATE: AL.ALY., 6013-T4, AMS4347 △5

NOTES

1. Dimensions are in inches.
2. Trim bracket per dimensions shown.
3. Deburr holes and scarf all edges.
4. Fluorescent penetrant inspect per TM 1-1500-204-23-7, Chapter 3.
5. △5 Heat treat bracket to T6 per MIL-H-6088 and TM 1-1500-204-23-10, Chapter 5.
6. Apply chemical conversion coating (D57).
7. Apply one spray coat of epoxy primer coating (D98).
8. Apply two spray coats of aliphatic polyurethane (D69), MIL-C-46168, Green, Color No. 34031 per FED-STD-595.

406961-1401-274
J0412

Figure H-159. Bracket



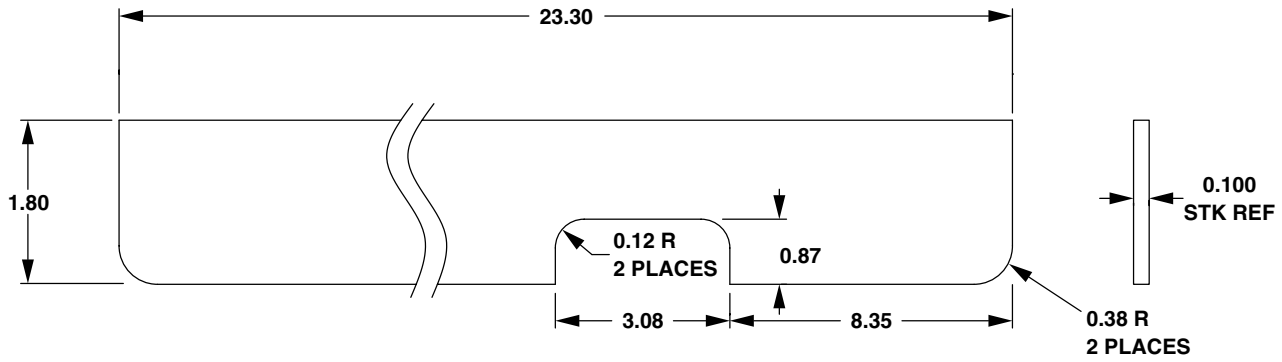
PART NUMBER	ITEM NAME	FABRICATE FROM
406-070-045-151	BRACKET	0.063, 0.80 X 10.50, AL.ALY., 6013-T6, AMS4216 ALTERNATE: AL.ALY., 6013-T4, AMS4347 (5)

NOTES

1. Dimensions are in inches.
2. Trim bracket per dimensions shown.
3. Deburr holes and scarf all edges.
4. Fluorescent penetrant inspect per TM 1-1500-204-23-7, Chapter 3.
5. Heat treat bracket to T6 per MIL-H-6088 and TM 1-1500-204-23-10, Chapter 5.
6. Apply chemical conversion coating (D57).
7. Apply one spray coat of epoxy primer coating (D98).
8. Apply two spray coats of aliphatic polyurethane (D69), MIL-C-46168, Green, Color No. 34031 per FED-STD-595.

406961-1401-275
J0412

Figure H-160. Bracket



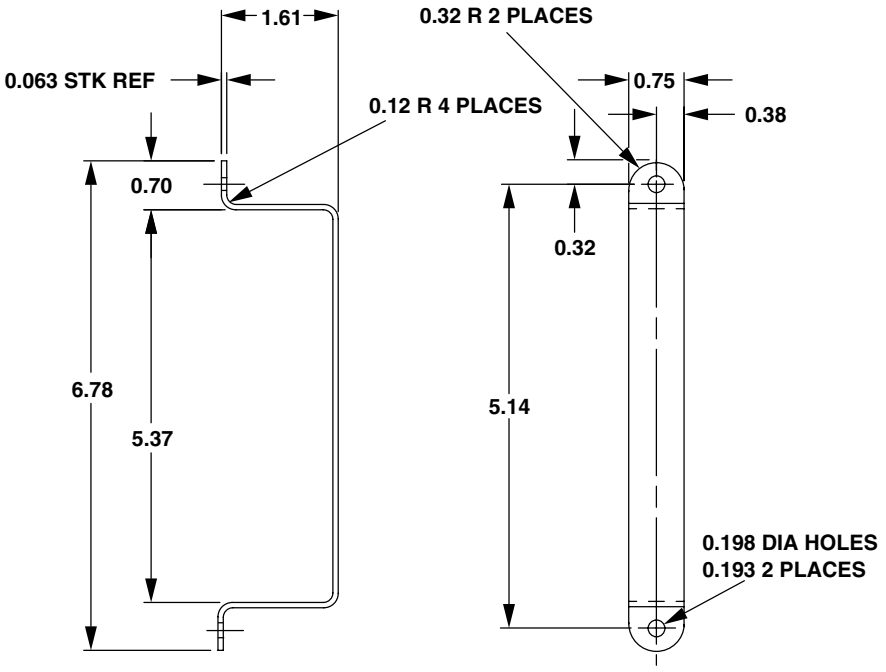
PART NUMBER	ITEM NAME	FABRICATE FROM
406-070-045-153	STOP	NSN 9535-01-342-6428

NOTES

1. Dimensions are in inches.
2. Trim stop per dimensions shown.
3. Scarf all edges.
4. Apply chemical conversion coating (D57).
5. Apply one spray coat of epoxy coating (D98).
6. Apply two spray coats of aliphatic polyurethane (D69), MIL-C-46168, Green, Color No. 34031 per FED-STD-595.

406961-1401-278
J0412

Figure H-161. Stop



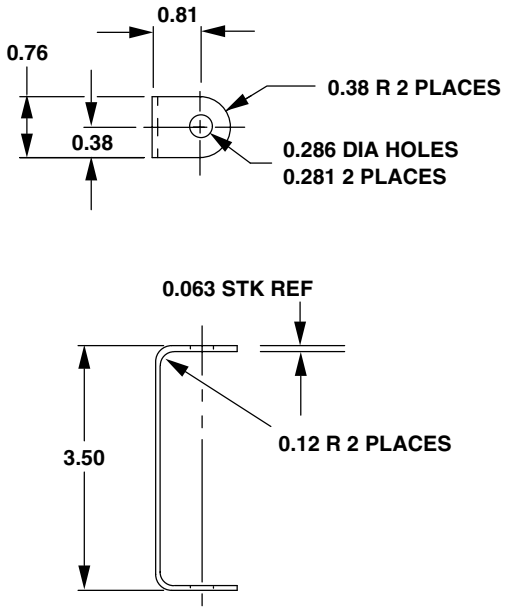
PART NUMBER	ITEM NAME	FABRICATE FROM
406-070-048-135	BRACKET	0.063 0.80 X 10.10, AL. ALY., 6013-T4, AMS4347 △5

NOTES

1. Dimensions are in inches.
2. Trim bracket per dimensions shown.
3. Deburr holes and scarf all edges.
4. Fluorescent penetrant inspect per TM 1-1500-204-23-7, Chapter 3.
5. Heat treat bracket to T6 per MIL-H-6088 and TM 1-1500-204-23-10, Chapter 5.
6. Apply chemical conversion coating (D57).
7. Apply one spray coat of epoxy primer coating (D98).
8. Apply two spray coats of aliphatic polyurethane paint (D69), MIL-C-46168, Green, Color No. 34031 per MIL-STD-595.

406961-1401-276
J0412

Figure H-162. Bracket



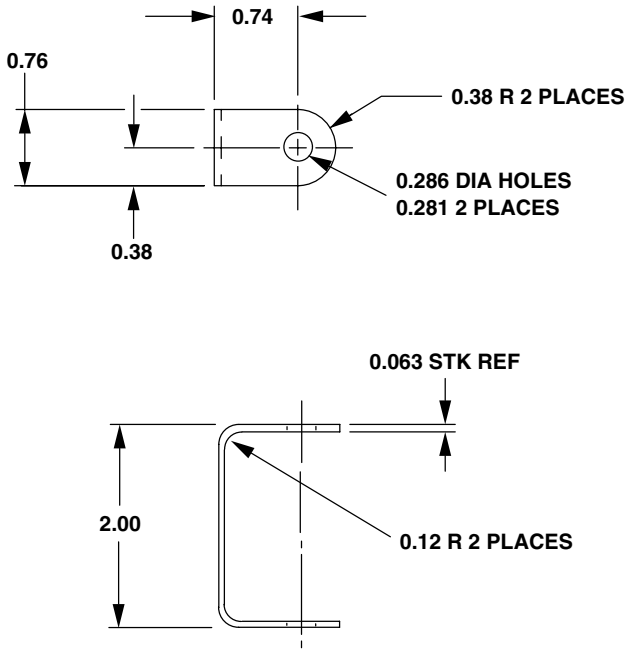
PART NUMBER	ITEM NAME	FABRICATE FROM
406-070-048-137	BRACKET	0.063 0.80 X 5.90, AL.ALY., 6013-T4, AMS4347 △5

NOTES

1. Dimensions are in inches.
2. Trim bracket per dimensions shown.
3. Deburr holes and scarf all edges.
4. Fluorescent penetrant inspect per TM 1-1500-204-23-7, Chapter 3.
5. Heat treat bracket to T6 per MIL-H-6088 and TM 1-1500-204-23-10, Chapter 5.
6. Apply chemical conversion coating (D57).
7. Apply one spray coat of epoxy primer coating (D98).
8. Apply two spray coats of aliphatic polyurethane paint (D69). MIL-C-46168, Green, Color No. 34031 per MIL-STD-595.

406961-1401-277
J0412

Figure H-163. Bracket



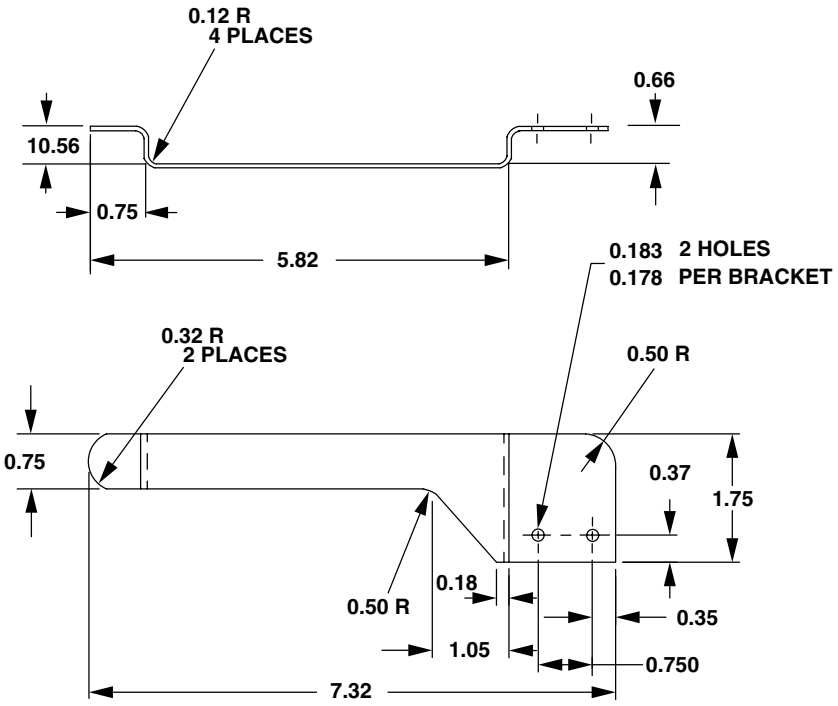
PART NUMBER	ITEM NAME	FABRICATE FROM
406-070-048-139	BRACKET	0.063 0.80 X 4.30 AL.ALY., 6013-T4, AMS4347 △5

NOTES

1. Dimensions are in inches.
2. Trim bracket per dimensions shown.
3. Deburr holes and scarf all edges.
4. Fluorescent penetrant inspect per TM 1-1500-204-23-7, Chapter 3.
5. Heat treat bracket to T6 per MIL-H-6088 and TM 1-1500-204-23-10, Chapter 5.
6. Apply chemical conversion coating (D57).
7. Apply one spray coat of epoxy primer coating (D98).
8. Apply two spray coats of aliphatic polyurethane paint (D69), MIL-C-46168, Green, Color No. 34031 per MIL-STD-595.

406961-1401-279
J0412

Figure H-164. Bracket



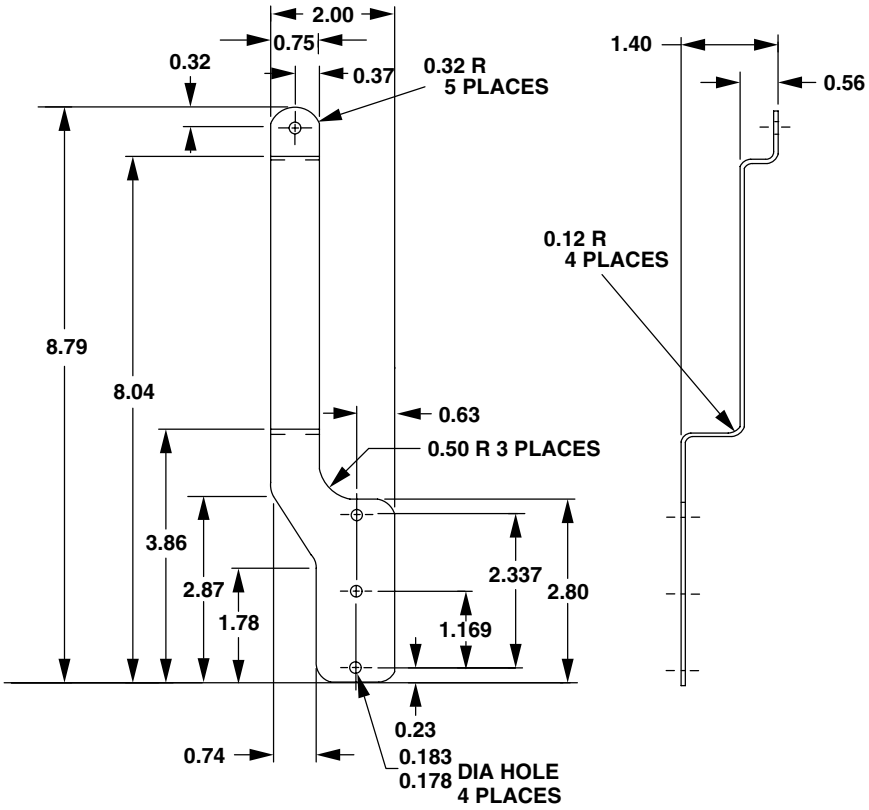
PART NUMBER	ITEM NAME	FABRICATE FROM
406-070-048-143	BRACKET	0.063 1.80 X 8.50 AL.ALY., 6013-T4, AMS4347 △5
406-070-048-144	BRACKET (OPPOSITE)	

NOTES

1. Dimensions are in inches.
2. Trim bracket per dimensions shown.
3. Deburr holes and scarf all edges.
4. Fluorescent penetrant inspect per TM 1-1500-204-23-7, Chapter 3.
5. △5 Heat treat bracket to T6 per MIL-H-6088 and TM 1-1500-204-23-10, Chapter 5.
6. Apply chemical conversion coating (D57).
7. Apply one spray coat of epoxy primer coating (D98).
8. Apply two spray coats of aliphatic polyurethane paint (D69), MIL-C-46168, Green, Color No. 34031 per MIL-STD-595.

406961-1401-280
J0412

Figure H-165. Bracket



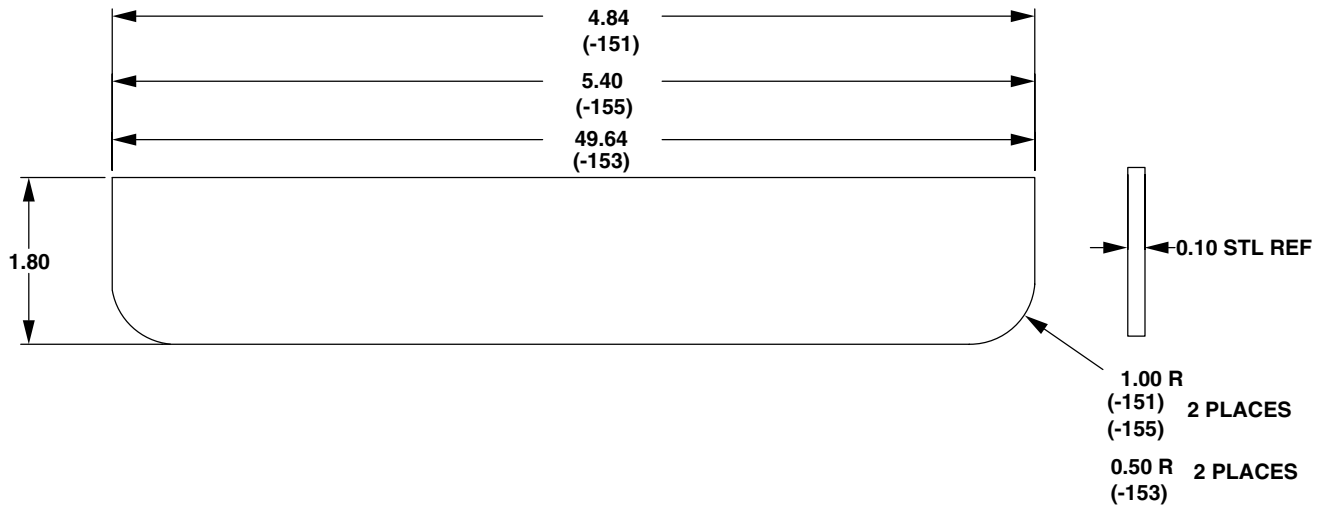
PART NUMBER	ITEM NAME	FABRICATE FROM
406-070-048-145	BRACKET	0.063 2.00 X 10.20 AL.ALY., 6013-T4, AMS4347 △5
406-070-048-146	BRACKET (OPPOSITE)	

NOTES

1. Dimensions are in inches.
2. Trim bracket per dimensions shown.
3. Deburr holes and scarf all edges.
4. Fluorescent penetrant inspect per TM 1-1500-204-23-7, Chapter 3.
5. Heat treat bracket to T6 per MIL-H-6088 and TM 1-1500-204-23-10, Chapter 5.
6. Apply chemical conversion coating (D57).
7. Apply one spray coat of epoxy primer coating (D98).
8. Apply two spray coats of aliphatic polyurethane paint (D69), MIL-C-46168, Green, Color No. 34031 per MIL-STD-595.

406961-1401-281
J0412

Figure H-166. Bracket



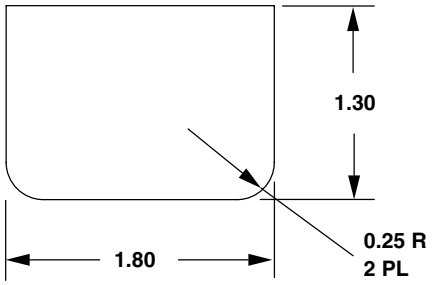
PART NUMBER	ITEM NAME	FABRICATE FROM
406-070-048-151	GUARD	NSN 9535-01-342-6428
406-070-048-153	GUARD	NSN 9535-01-342-6428
406-070-048-155	GUARD	NSN 9535-01-342-6428

NOTES

1. Dimensions are in inches.
2. Trim guard per dimensions shown.
3. Scarf all edges.
4. Apply chemical conversion coating (D57).
5. Apply one spray coat of epoxy primer coating (D98).
6. Apply two spray coats of aliphatic polyurethane (D69), MIL-C-46168, Green, Color No. 34031 per FED-STD-595.

406961-1401-282
J0412

Figure H-167. Guard



CODE	THICKNESS	TOLERANCE
A	0.021	+ 0.002 - 0.001
B	0.033	+ 0.003 - 0.002
C	0.048	+ 0.005 - 0.002
D	0.063	+ 0.006 - 0.002
E	0.125	+ 0.012 - 0.003
F	0.190	+ 0.018 - 0.005

PART NUMBER	ITEM NAME	FABRICATE FROM
406-070-048-167	SHIM	MIL-S-22499, COMP 1, TYPE I OR TYPE II, CLASS 2

EXAMPLE OF PART NUMBER:

120-098 A 07 G 150 = SHIM, SURFACE BONDED, 1/2 LAMINATED, 1/2 SOLID, 0.7 INCH WIDE, 0.125 INCH THICK, 15.0 INCHES LONG

- 150 — LENGTH CODE IN 0.10 INCH INCREMENTS; FOR 0.1 TO 9.9, USE 2 DIGITS; FOR 10.0 TO 48.0, USE 3 DIGITS (48.0 INCHES MAX)
- G — THICKNESS CODE, SEE TABLE
- 07 — WIDTH CODE IN 0.10 INCH INCREMENTS; FOR 0.1 TO 9.9, USE 2 DIGITS; FOR 10.0 TO 24.0, USE 3 DIGITS (24.0 INCHES MAX)
- A — LAMINATION CODE
  - NO CODE = ALL LAMINATED (3)
  - A = 1/2 LAMINATED, 1/2 SOLID (4)
- 120-098 — BASIC NUMBER

120-098-16B25 = SHIM, SURFACE BONDED, ALL LAMINATED, 1.6 INCHES WIDE, 0.033 INCH THICK, 2.5 INCHES LONG.

NOTES

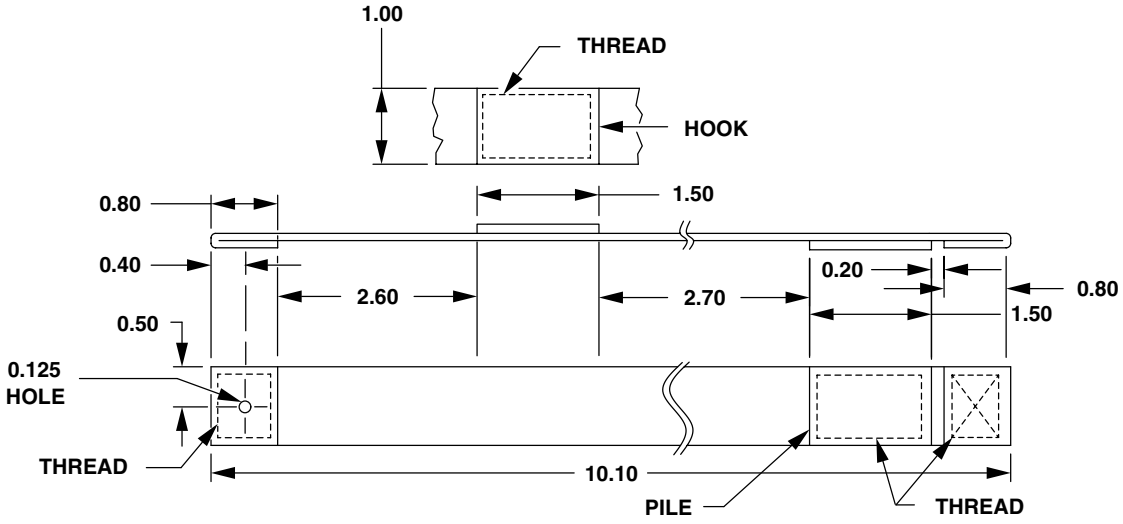
1. Dimensions are in inches.
2. Manufacture shim to Part Number specification 120-098-23C18.

(3) Applicable to thicknesses A, B, C and D.

(4) Applicable to thicknesses E and F.

406961-1401-335
J1274

Figure H-168. Shim



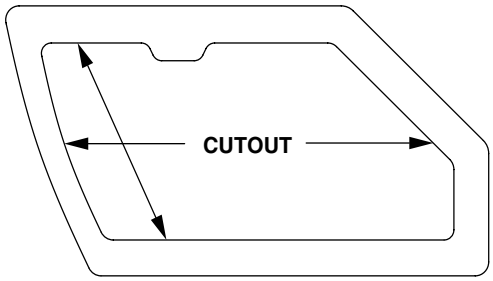
PART NUMBER	ITEM NAME	FABRICATE FROM
406-070-301-109	STRAP ASSEMBLY	RED NYLON, MIL-W-4088, TYPE XVII
50-029-7B014	HOOK	
50-029-8B014	PILE	
S69-757	THREAD	

NOTES

1. Dimensions are in inches.
2. Cut strap to 11.70 inches in length. Fold ends to dimensions shown and stitch.
3. Cut hook and pile to dimensions shown and stitch to strap as shown.
4. Hook, CAGE 97499
5. Pile, CAGE 97499.
6. Thread S69-757, CAGE 88682.

406961-1401-85
J0248

Figure H-169. Strap Assembly



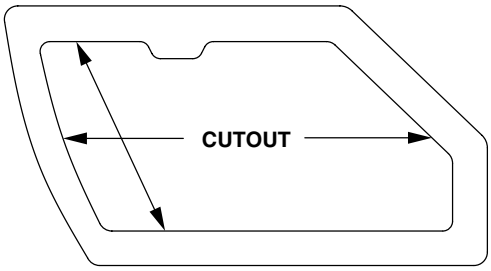
PART NUMBER	ITEM NAME	FABRICATE FROM
406-073-715-105	STIFFENER	ALUMINUM ALLOY TYPE 2024-T3, QQ-A-250/4
406-073-715-106	STIFFENER	ALUMINUM ALLOY TYPE 2024-T3, QQ-A-250/4

NOTES

1. Make from 0.032 x 5.50 x 10.00 inches 2024-T3 AL.ALY., QQ-A-250/4 stock.
2. Use old part as a pattern.
3. Remove all burrs and sharp edges.
4. Apply brush chemical conversion coating (D57) to all edges of stiffener.
5. Apply epoxy primer coating (D98) to all edges of stiffener.

406961-1401-90
J0248

Figure H-170. Stiffener



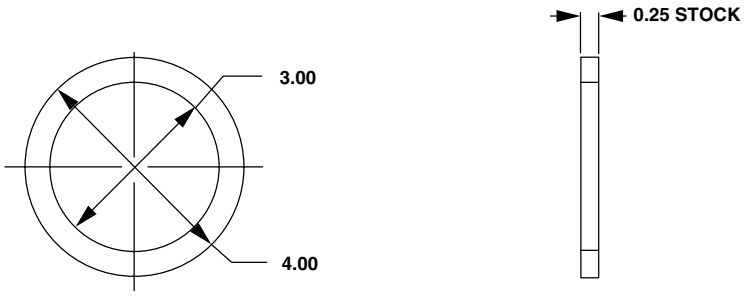
PART NUMBER	ITEM NAME	FABRICATE FROM
406-073-715-107	GASKET	NSN 9320-00-004-4558

NOTES

1. Make from 0.062 x 5.50 x 10.00 inches silicone rubber sheet stock ZZR-765 CAGE 81348.
2. Use old part as a pattern.

406961-1401-91
J0248

Figure H-171. Gasket



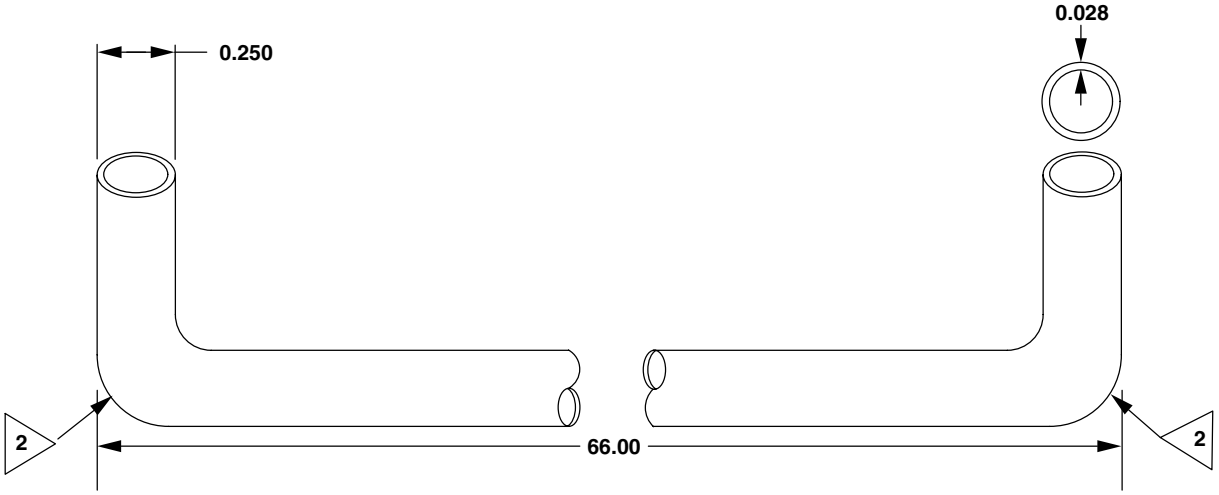
PART NUMBER	ITEM NAME	FABRICATE FROM
406-073-715-111	SEAL	NSN 9535-01-116-8650

NOTES

1. Dimensions are in inches.
2. Make from Lohrlastic R-10480 silicone sponge rubber (D188) grade soft, CAGE 71643.

406961-1401-92
J0248

Figure H-172. Seal



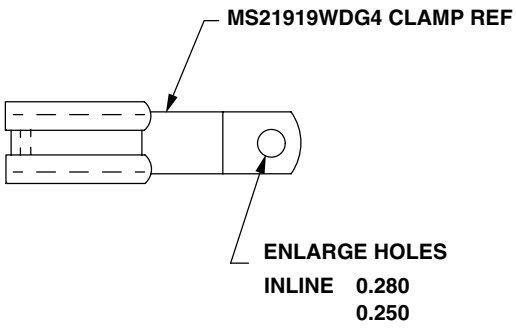
PART NUMBER	ITEM NAME	FABRICATE FROM
406-075-015-105	STIFFENER	ALUMINUM ALLOY 5052T0 WW-T-700/4 TYPE I

NOTES

1. Dimensions are in inches.
2. Form to contour of glareshield assembly.
3. Apply adhesive (D8) on installation.

406961-1401-213
J0412

Figure H-173. Stiffener



PART NUMBER	ITEM NAME	FABRICATE FROM
406-075-030-121	CLAMP	MAKE FROM MS21919WDG4

NOTES

1. Dimensions are in inches.
2. Deburr holes.

406961-1401-100
J0248

Figure H-174. Clamp

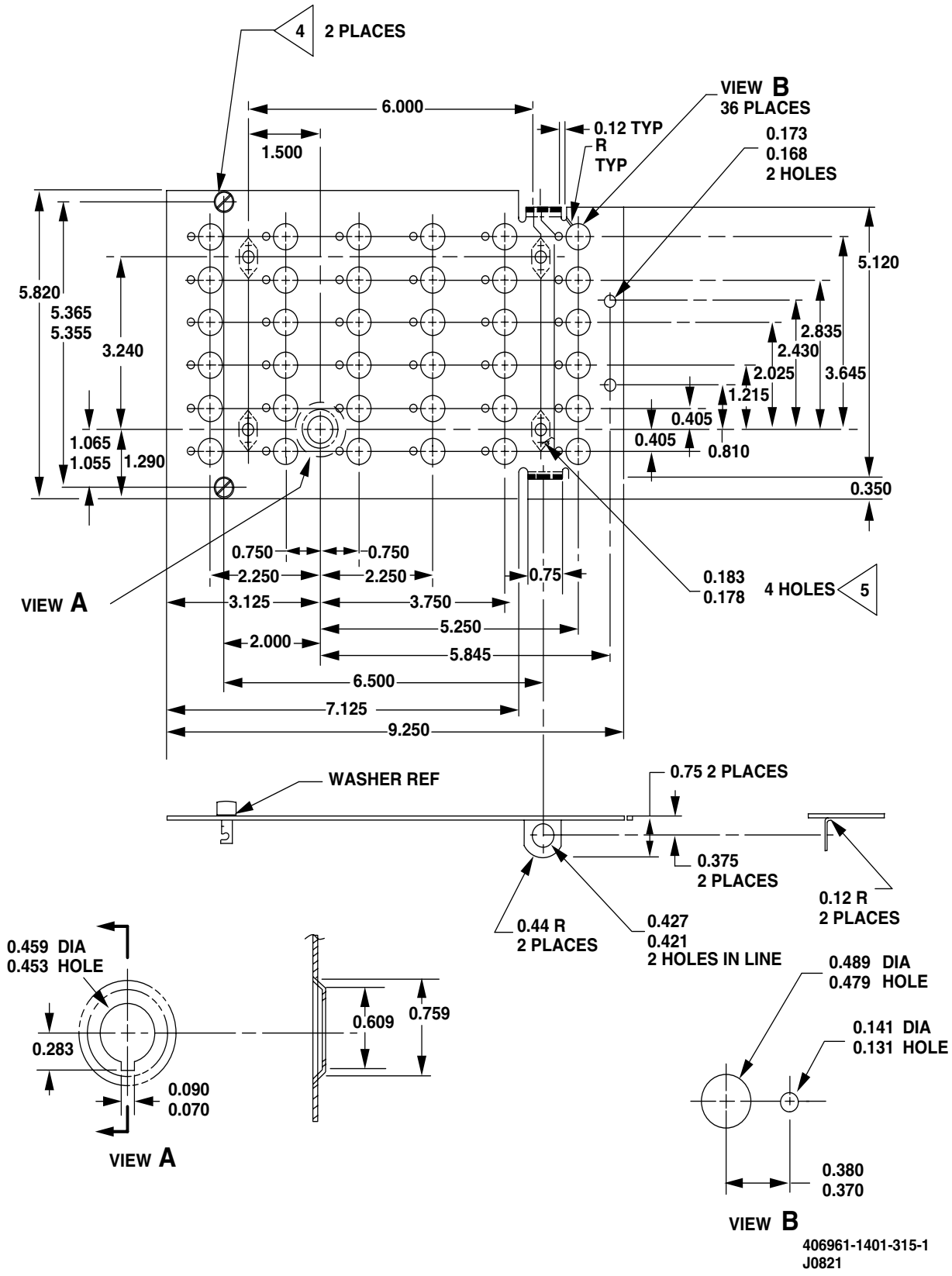


Figure H-175. Plate or Support, Structural (Sheet 1 of 2)

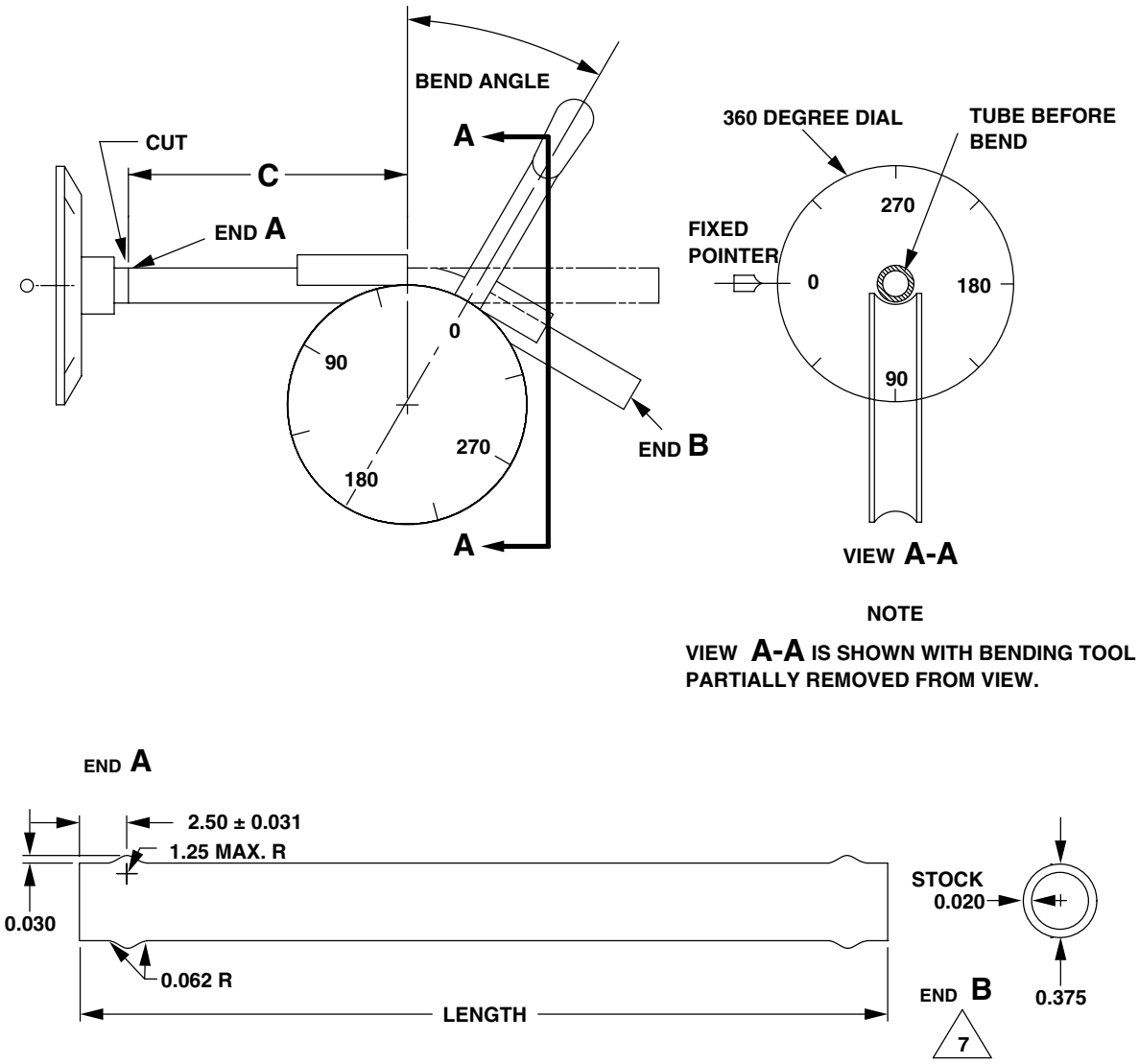
PART NUMBER	ITEM NAME	FABRICATE FROM
406-075-100-107	PLATE	ALUMINUM ALLOY
406-075-100-105	SUPPORT, STRUCTURAL	2024T3, QQ-A-250/5
MS21075L06	NUT PLATE (QTY 4)	
PC35RB	CUP (QTY 2)	
PF35-48RB	STUD (QTY 2)	
PS35	SPRING (QTY 2)	
140-009A17T24	WASHER (QTY 2)	
NAS1097AD3	RIVET (AR)	

NOTES

1. Dimensions are in inches.
2. Remove all burrs, break all sharp edges 0.015 X 45 degrees or 0.15R.
3. Make from 0.0320 X 6.70 X 9.30 AL. ALY., 2024T3, QQ-A-250/5.
4. Make 0.257 dia hole two places; install washer, cup, spring and stud two places.
5. Install nut plate four places; eight rivets required flush near side.
6. Apply two coats (D127) black lacquer to edges and front surfaces per MIL-L-46159.

406961-1401-315-2
J0821

Figure H-175. Plate or Support, Structural (Sheet 2 of 2)



PART NUMBER	BEND NO.	BEND FROM END A (DIM. C)	BEND RADIUS	8	BEND ANGLE°	LENGTH (STOCK)	LENGTH END A TO END B
406-075-110-101	1	12.70	1.12	0	19	16.00	14.35
	2	5.80	1.12	0	132		
406-075-129-101	1	1.50	0.75	0	90	5.00	3.370
406-075-151-101	1	4.75	1.12	0	69	8.00	7.00

406961-1401-18-1
J0248

Figure H-176. Tube, Battery Vent (Sheet 1 of 2)

PART NUMBER	ITEM NAME	FABRICATE FROM
406-075-110-101	TUBE, BATTERY VENT	CORROSION RESISTANT STEEL ANL, 75 MIN, TYPE 321, MIL-T-8808 TYPE I
406-075-129-101 <7>	TUBE, BATTERY VENT	CORROSION RESISTANT STEEL ANL, 75 MIN, TYPE 321, MIL-T-8808 TYPE I
406-075-151-101	TUBE, BATTERY VENT	CORROSION RESISTANT STEEL ANL, 75 MIN, TYPE 321, MIL-T-8808 TYPE I
31-032-29	TAPE, AIRCRAFT PIPING (QTY 2)	

NOTES

1. Dimensions are in inches.
2. Break all sharp edges 0.015 x 45° or 0.015 radius.
3. **C** Dimension is start of bend.
4. Bend tubing to dimension in table. Conform to MS33611.
5. Apply bend to END **A** and END **B** of tube per MS33660 and TM 1-1500-204-23-2, Chapter 4.
6. Apply aircraft piping tape 31-032-29 to tube per MIL-STD-1247. Flow END **B** to END **A**.

<7> Apply one aircraft piping tape 0.90 inch from END **B**.

<8> Rotate tube (from plane of first bend) ccw as viewed from Bend From End.

406961-1401-18-2
J0248

Figure H-176. Tube, Battery Vent (Sheet 2 of 2)

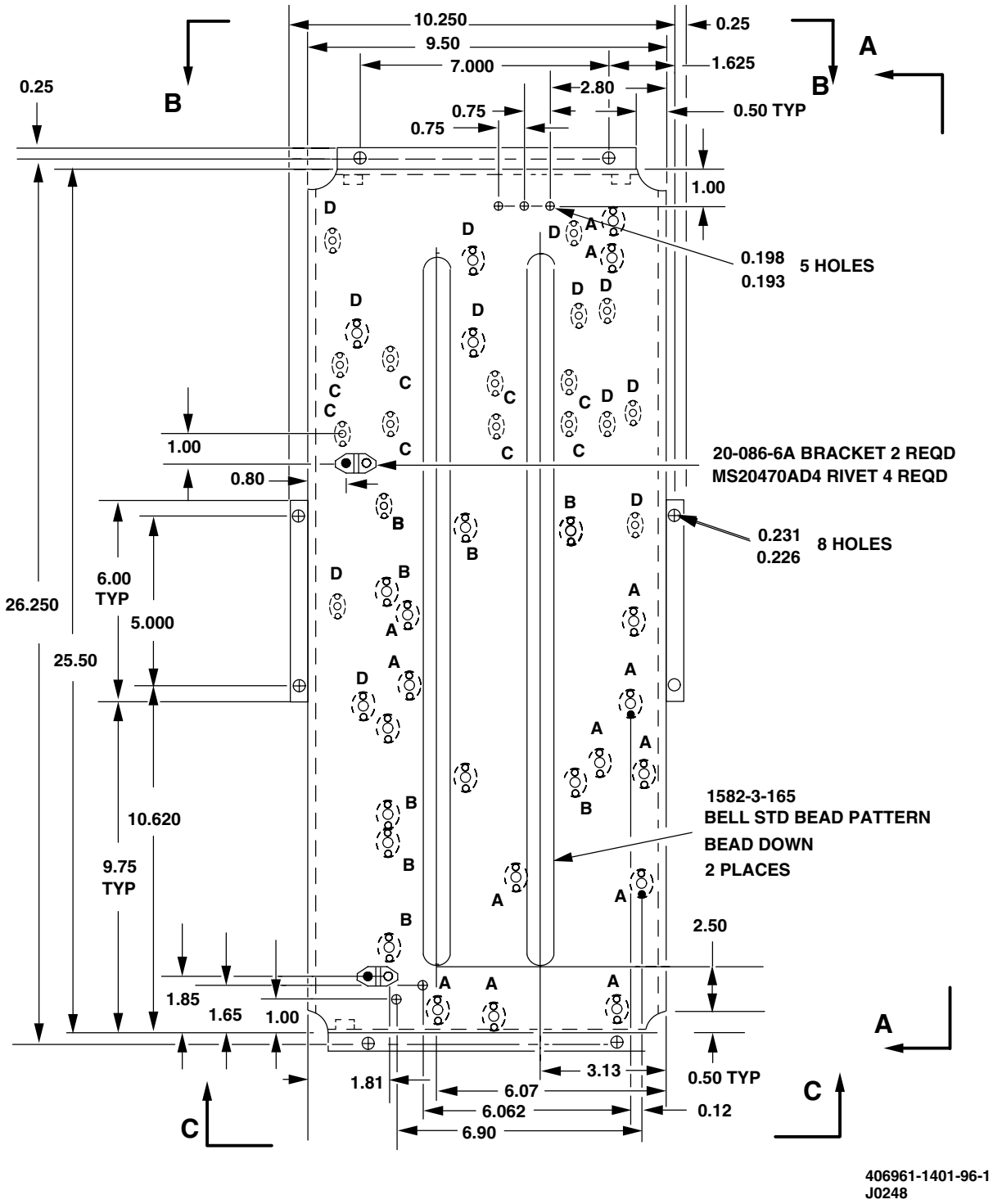


Figure H-177. Bracket, Mounting (Sheet 1 of 4)

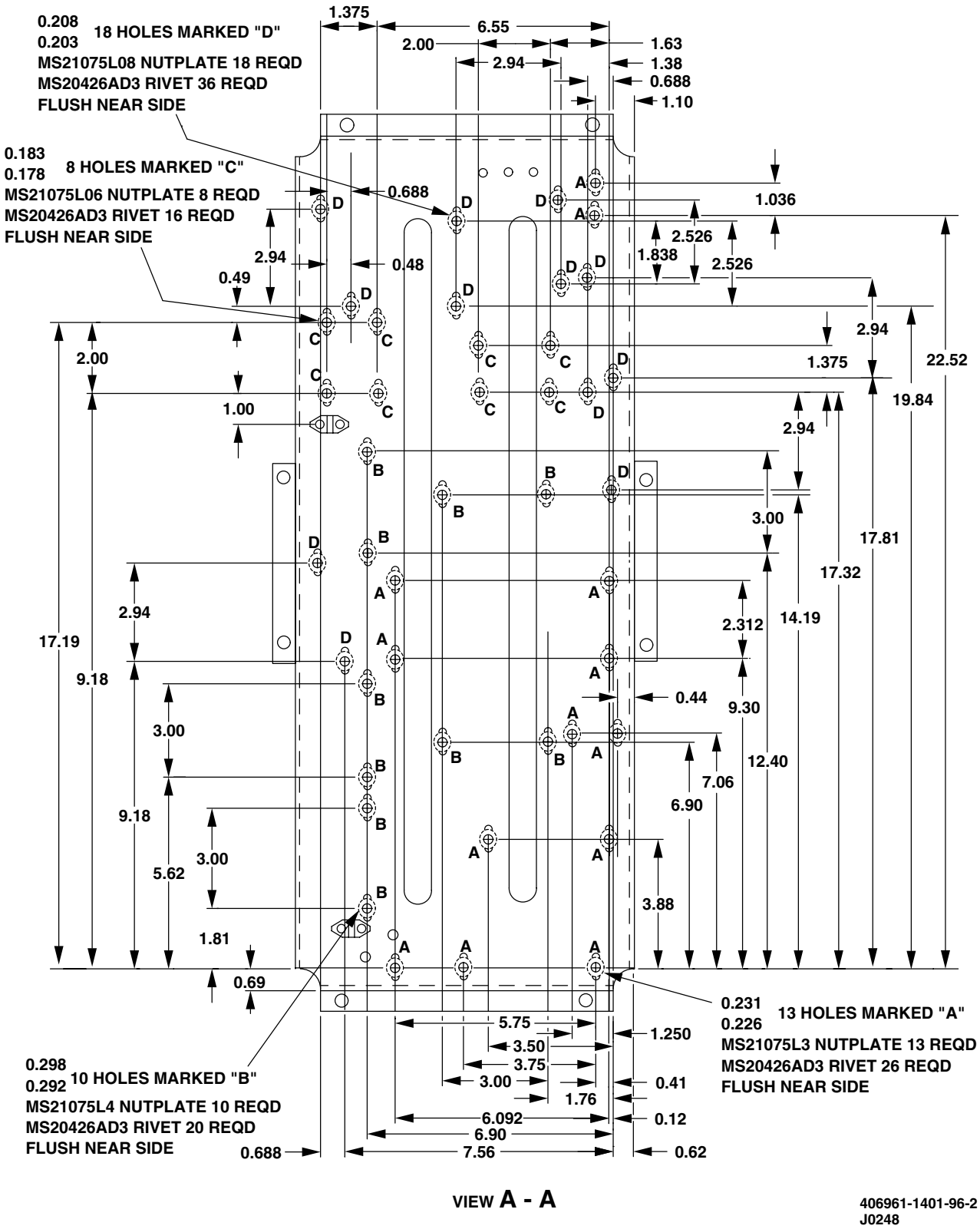


Figure H-177. Bracket, Mounting (Sheet 2 of 4)

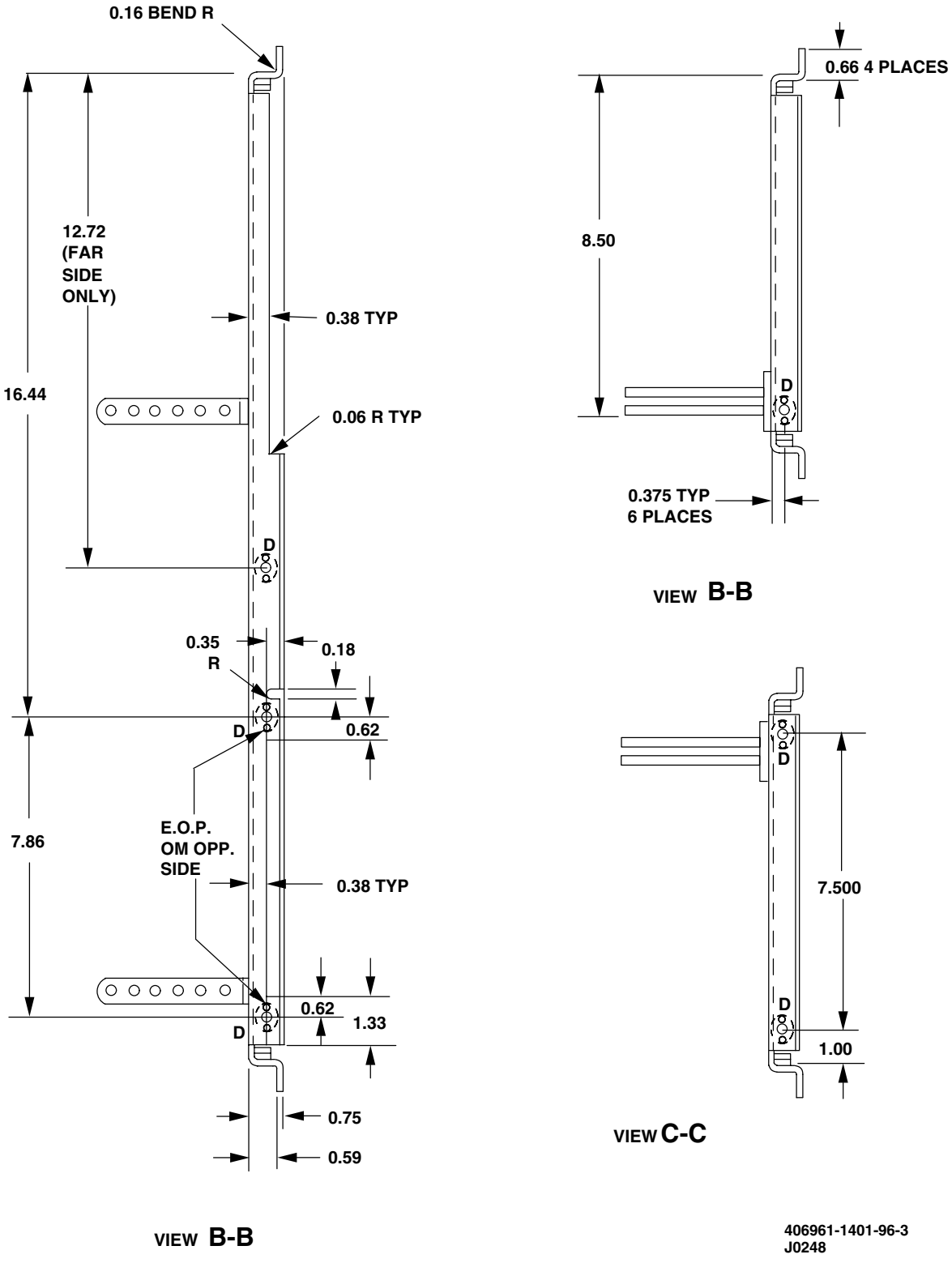


Figure H-177. Bracket, Mounting (Sheet 3 of 4)

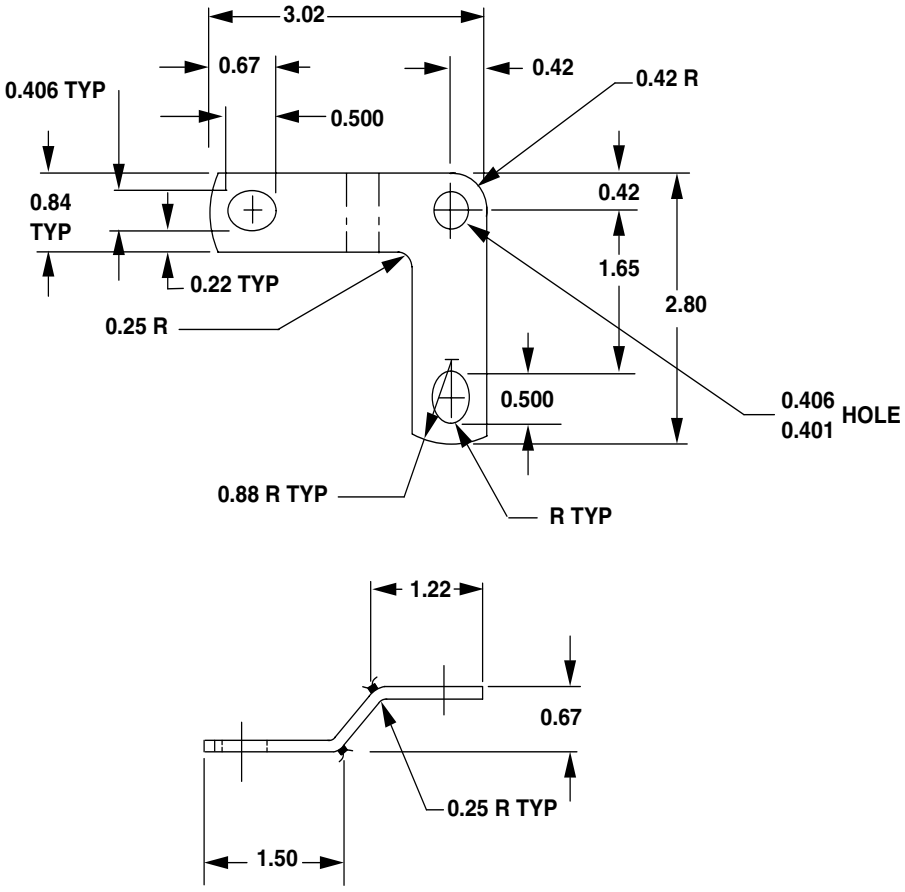
PART NUMBER	ITEM NAME	FABRICATE FROM
406-075-115-107	BRACKET, MOUNTING	NSN 9535-01-341-8291
20-086-6A	BRACKET (QTY 2)	NSN 5970-01-219-1038
MS21075L06	NUTPLATE (QTY 10)	NSN 5310-00-781-9493
MS21075L08	NUTPLATE (QTY 8)	NSN 5310-00-772-3721
MS21075L3	NUTPLATE (QTY 3)	NSN 5310-00-772-3720
MS21075L4	NUTPLATE (QTY 10)	NSN 5310-00-784-8145
MS20426AD3	RIVET (QTY AR)	NSN 5320-01-205-0847
MS20470AD4	RIVET (QTY AR)	NSN 5320-01-205-0848

NOTES

1. Dimensions are in inches.
2. Break all sharp edges 0.015 x 45° or 0.015 R.
3. Apply chemical conversion coating (D57) to bracket.
4. Apply epoxy primer coating (D98) to bracket.

406961-1401-96-4
J0248

Figure H-177. Bracket, Mounting (Sheet 4 of 4)



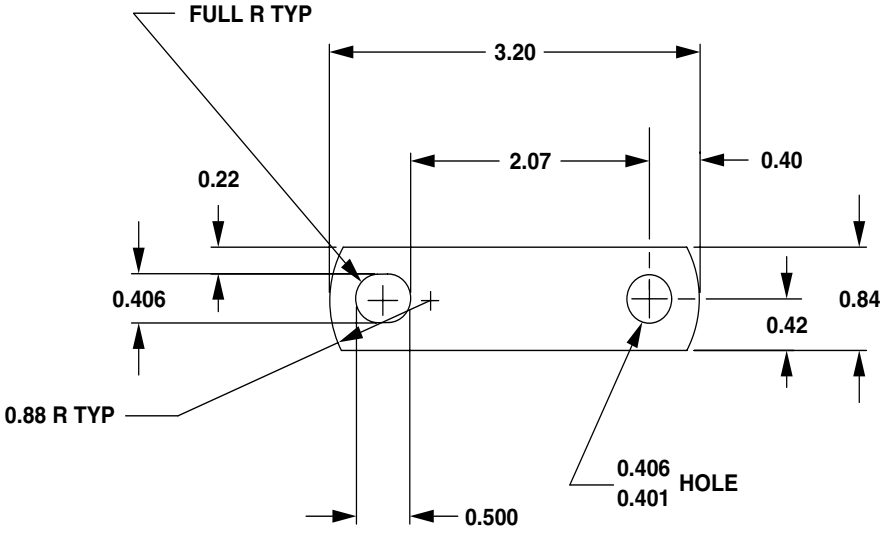
PART NUMBER	ITEM NAME	FABRICATE FROM
406-075-116-101	BUS BAR	ALUMINUM ALLOY 1100H14, QQ-A-250/1

NOTES

1. Dimensions are in inches.
2. Break all sharp edges 0.015 X 45 degrees or 0.015 radius.
3. Use material 0.1250 X 2.80 X 3.40 AL. ALY.
4. Tin plate to prevent corrosion IAW MIL-T-10727, Type I, tin coating to be 0.0003 thick minimum.
5. Alternate material 1060 AL. ALY., AMS4000, Cond 0, Final 0.

406961-1401-316
J0821

Figure H-178. Bus Bar



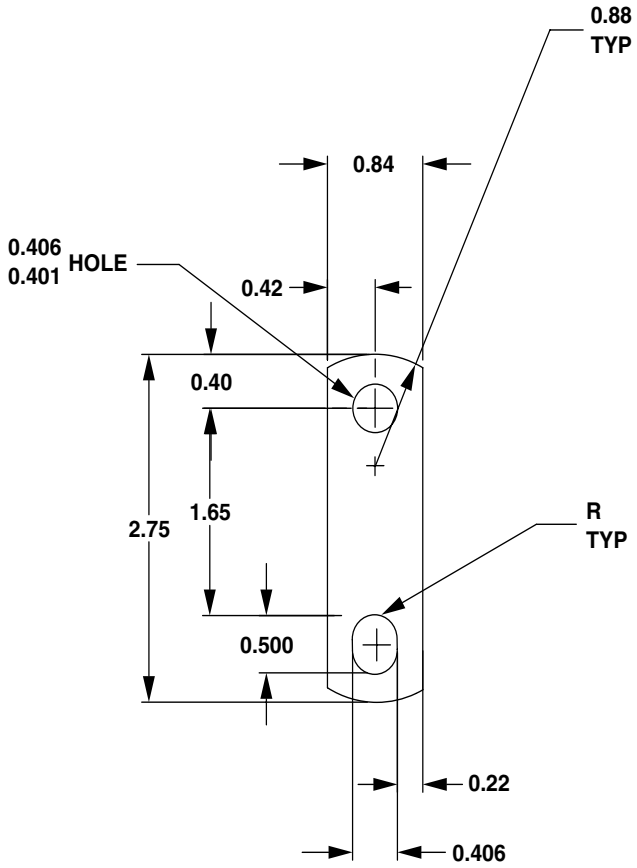
PART NUMBER	ITEM NAME	FABRICATE FROM
406-075-116-103	BUS BAR	ALUMINUM ALLOY 1100H14, QQ-A-250/1

NOTES

1. Dimensions are in inches.
2. Break all sharp edges 0.015 x 45 degrees or 0.015 radius.
3. Use material 0.1250 x 0.900 x 3.20 AL. ALY.
4. Tin plate to prevent corrosion IAW MIL-T-10727, Type I, tin coating to be 0.0003 thick minimum.
5. Alternate material 1060 AL. ALY., AMS4000, Cond 0, Final 0.

406961-1401-317
J0821

Figure H-179. Bus Bar



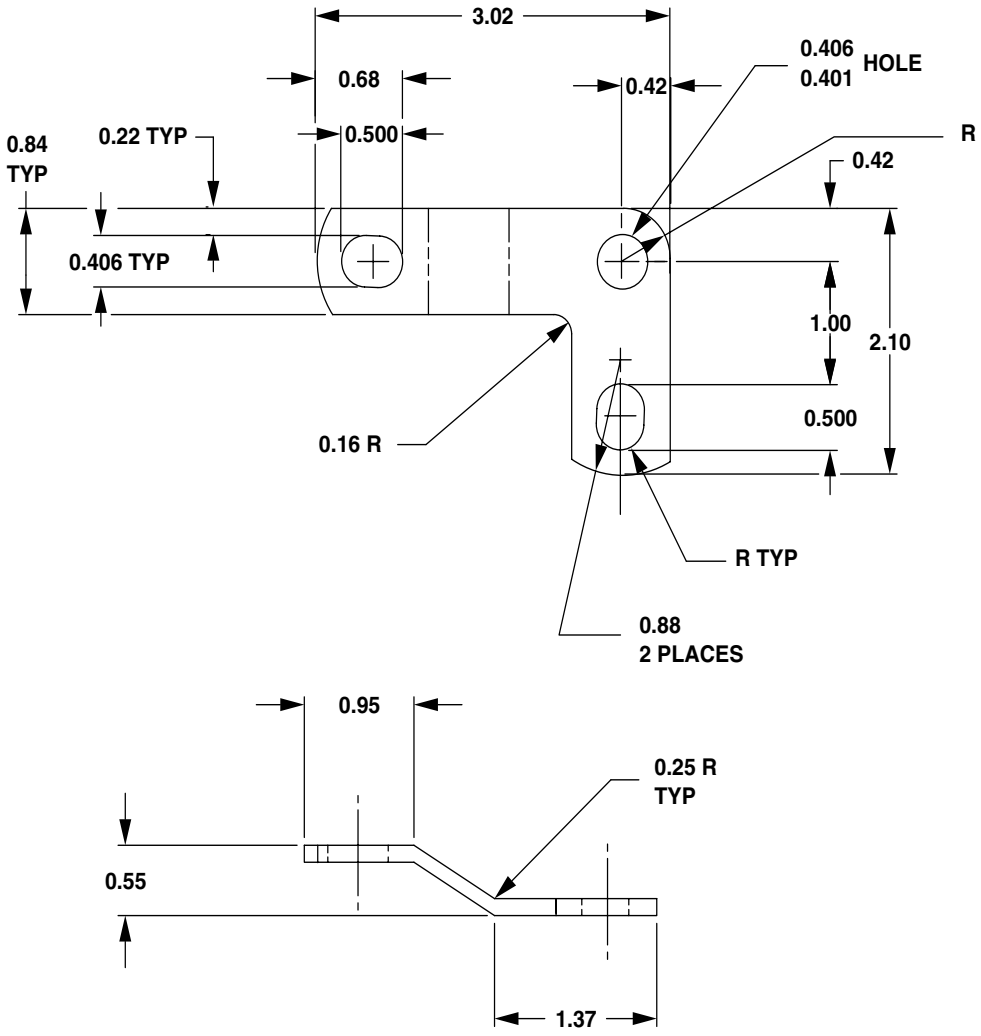
PART NUMBER	ITEM NAME	FABRICATE FROM
406-075-117-101	BUS BAR	ALUMINUM ALLOY 1100H14, QQ-A-250/1

NOTES

1. Dimensions are in inches.
2. Break all sharp edges 0.0015 x 45 degrees or 0.015 radius.
3. Use material 0.1250 x 0.900 x 2.80 AL. ALY.
4. Tin plate to prevent corrosion IAW MIL-T-10727, Type I, tin coating to be 0.0003 thick minimum.
5. Alternate material 1060 AL. ALY., AMS4000, Cond 0, Final 0.

406961-1401-318
J0821

Figure H-180. Bus Bar



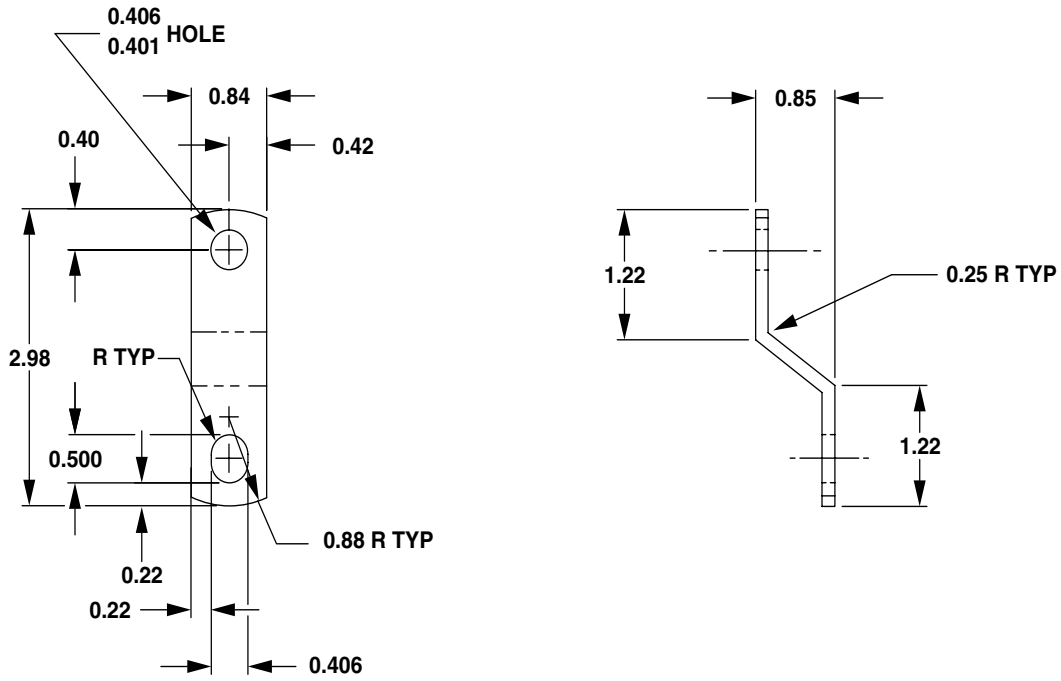
PART NUMBER	ITEM NAME	FABRICATE FROM
406-075-117-103	BUS BAR	ALUMINUM ALLOY 1100H14, QQ-A-250/1

NOTES

1. Dimensions are in inches.
2. Break all sharp edges 0.015 X 45 degrees or 0.015 radius.
3. Use material 0.1250 X 2.100 X 3.40 AL. ALY.
4. Tin plate to prevent corrosion IAW MIL-T-10727, Type I, tin coating to be 0.0003 thick minimum.
5. Alternate material 1060 AL. ALY., AMS4000, Cond 0, Final 0.

406961-1401-319
J0821

Figure H-181. Bus Bar



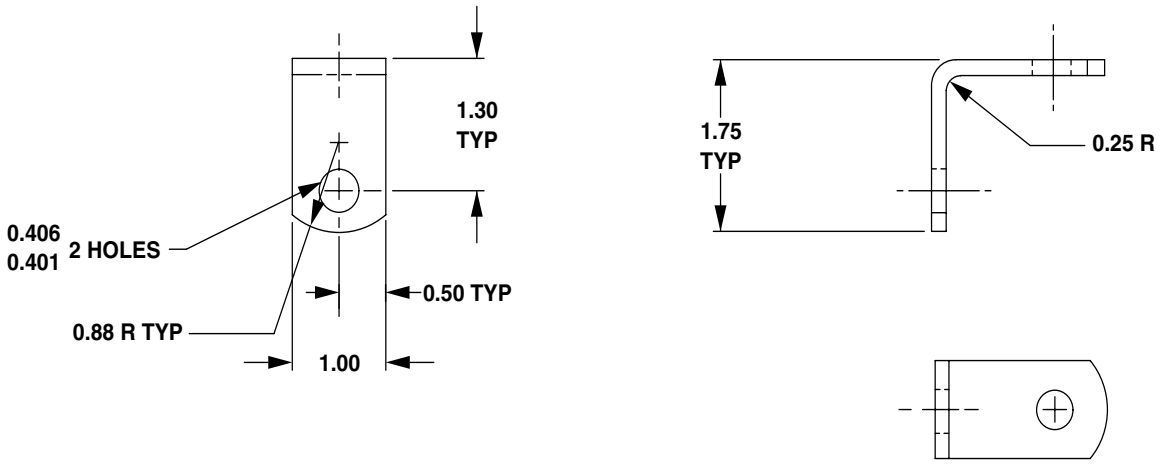
PART NUMBER	ITEM NAME	FABRICATE FROM
406-075-118-101	BUS BAR	ALUMINUM ALLOY 1100H14, QQ-A-250/1

NOTES

1. Dimensions are in inches.
2. Break all sharp edges 0.015 X 45 degrees or 0.015 radius.
3. Use material 0.1250 X 0.800 X 3.60 AL. ALY.
4. Tin plate to prevent corrosion IAW MIL-T-10727, Type I, tin coating to be 0.0003 thick minimum.
5. Alternate material 1060 AL. ALY., AMS4000, Cond 0, Final 0.

406961-1401-320
J0821

Figure H-182. Bus Bar



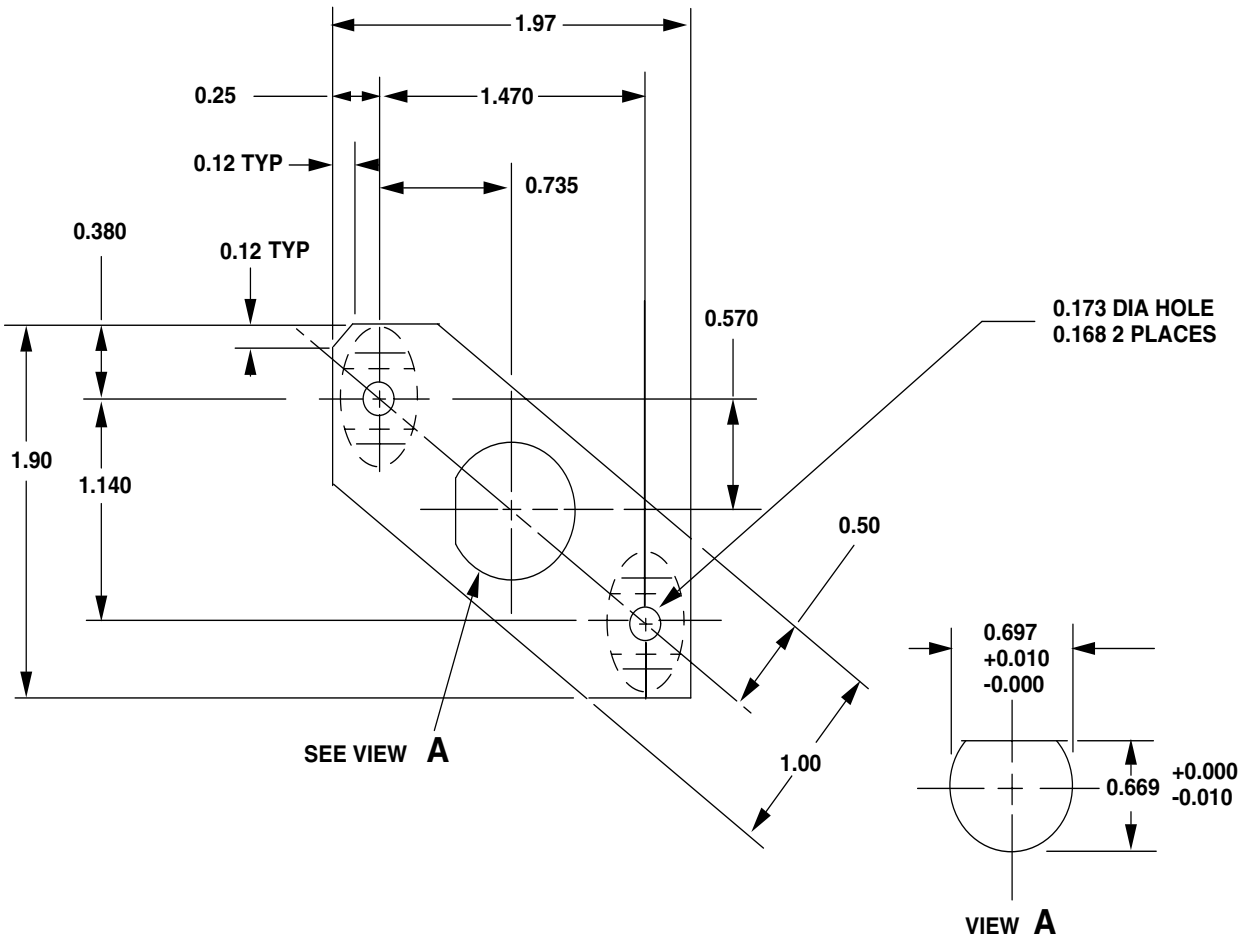
PART NUMBER	ITEM NAME	FABRICATE FROM
406-075-118-103	BUS BAR	ALUMINUM ALLOY 1100H14, QQ-A-250/1

NOTES

1. Dimensions are in inches.
2. Break all sharp edges 0.015 X 45 degrees or 0.015 radius.
3. Use material 0.1250 X 1.00 X 3.50 AL. ALY..
4. Tin plate to prevent corrosion IAW MIL-T-10727, type I, tin coating to be 0.0003 thick minimum.
5. Alternate material 1060 AL. ALY., AMS4000, Cond 0, Final 0.

406961-1401-321
J0821

Figure H-183. Bus Bar



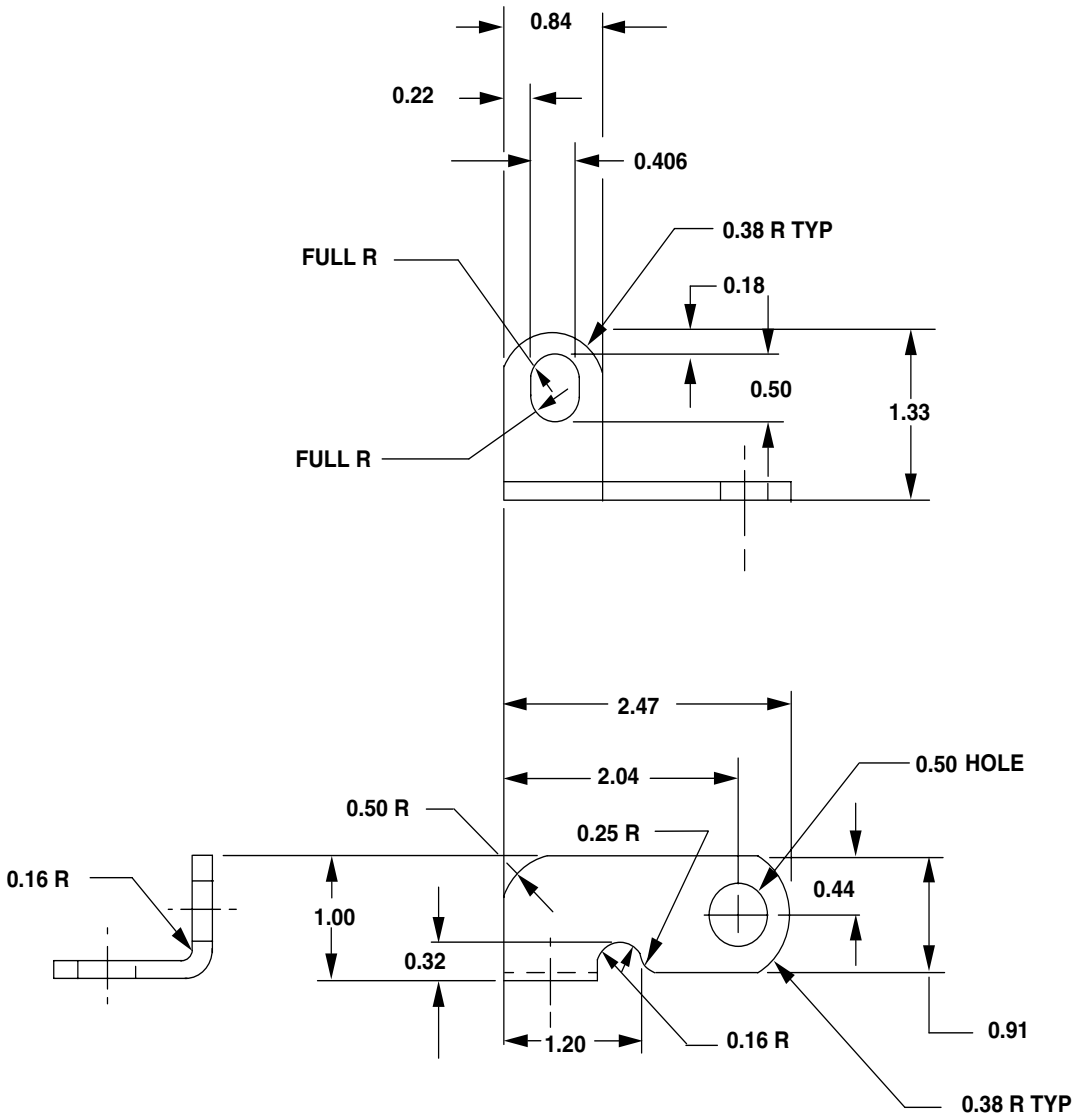
PART NUMBER	ITEM NAME	FABRICATE FROM
406-075-121-107	PLATE	ALUMINUM ALLOY 2024T4,QQ-A-250/5
MS21075L06 MS20426AD3	NUT PLATE (QTY 2) RIVET (QTY 4)	

NOTES

1. Dimensions are in inches.
2. Break all sharp edges 0.015 X 45 degrees or 0.015 radius.
3. Use material 0.040 X 1.90 X 2.00 AL. ALY.
4. Rivets (qty four) flush near side.
5. Apply two coats black lacquer (D127) to front surfaces per MIL-L-46159.

406961-1401-322
J0821

Figure H-184. Plate



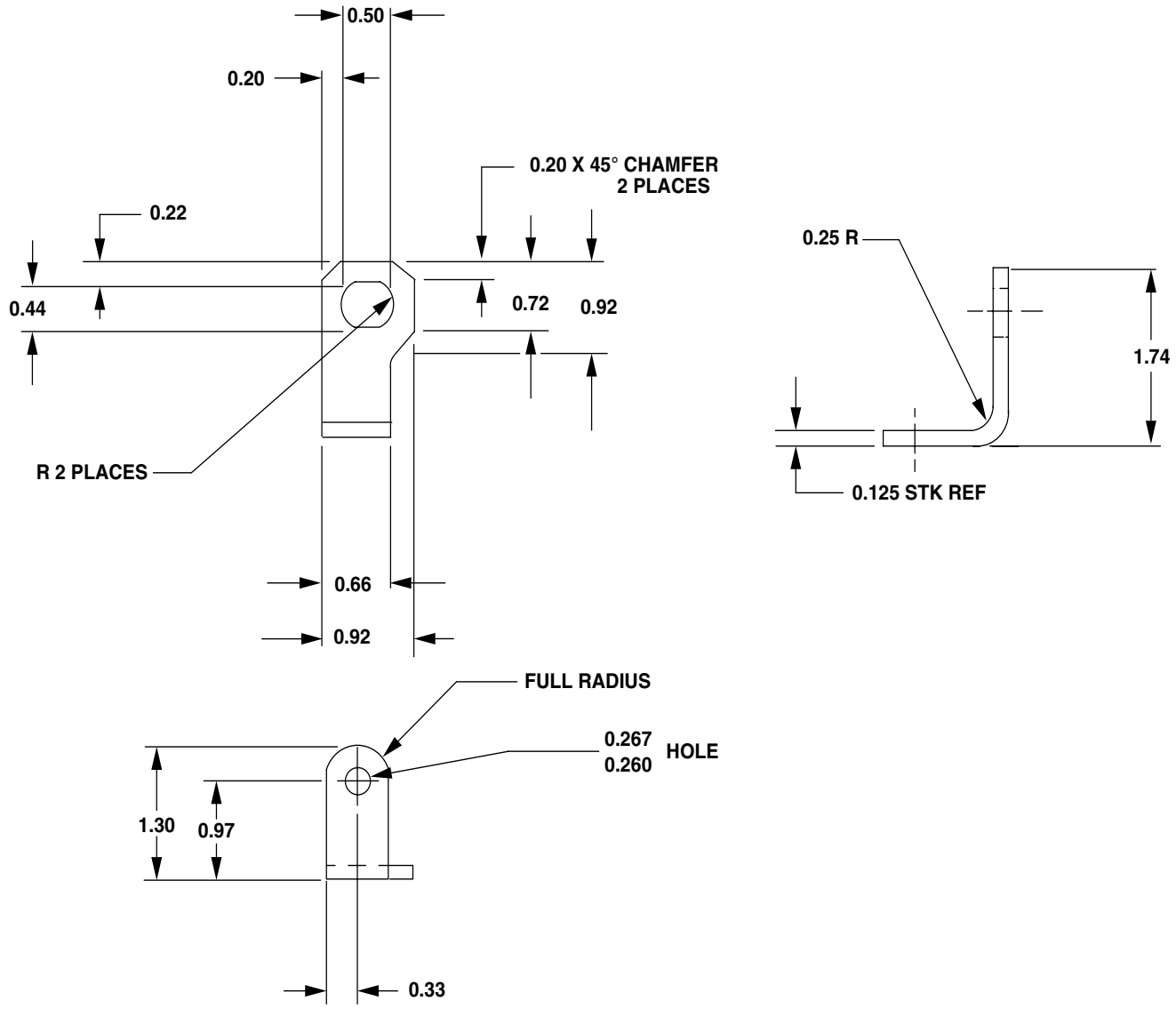
PART NUMBER	ITEM NAME	FABRICATE FROM
406-075-132-103	BUS BAR	ALUMINUM ALLOY 1100H14, QQ-A-250/1

NOTES

1. Dimensions are in inches.
2. Break all sharp edges 0.015 X 45 degrees or 0.015 radius.
3. Use material 0.1250 X 2.50 X 2.50 AL. ALY.
4. Tin plate to prevent corrosion IAW MIL-T-10727, Type I, tin coating to be 0.0003 thick minimum.
5. Alternate material 1060 AL. ALY., AMS4000, Cond 0, Final 0.

406961-1401-323
J0821

Figure H-185. Bus Bar



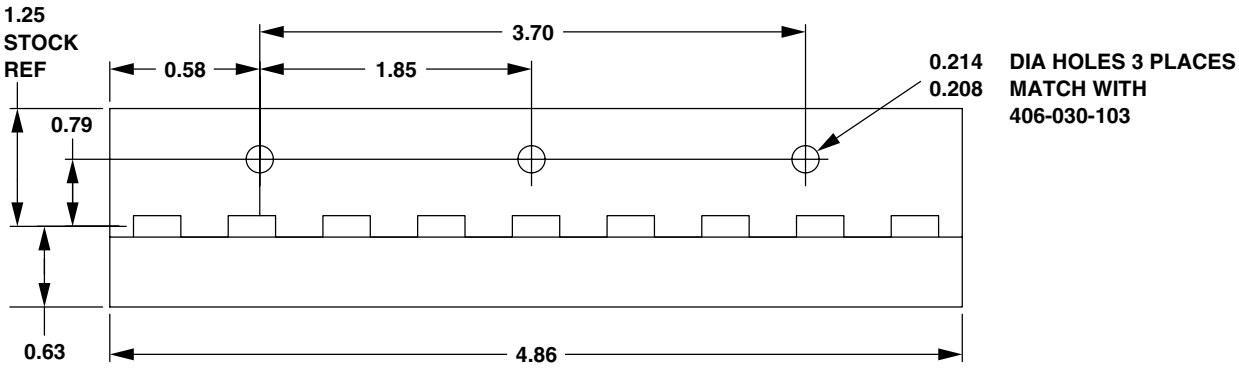
PART NUMBER	ITEM NAME	FABRICATE FROM
406-075-144-101	BUS BAR	ALUMINUM ALLOY 1100H14, QQ-A-250/1

NOTES

1. Dimensions are in inches.
2. Break all sharp edges 0.015 X 45 degrees or 0.015 radius.
3. Use material 0.1250 X 1.00 X 3.10 AL. ALY.
4. Tin plate to prevent corrosion IAW MIL-T-10727, Type I, tin coating to be 0.0003 thick minimum.
5. Alternate material 1060 AL. ALY., AMS4000, Cond 0, Final 0.

406961-1401-324
J0821

Figure H-186. Bus Bar



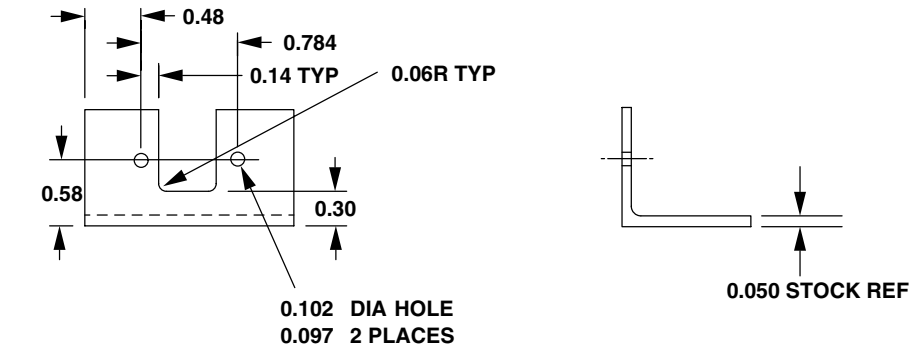
PART NUMBER	ITEM NAME	FABRICATE FROM
406-075-158-107	HINGE	NSN 5340-00-634-7884

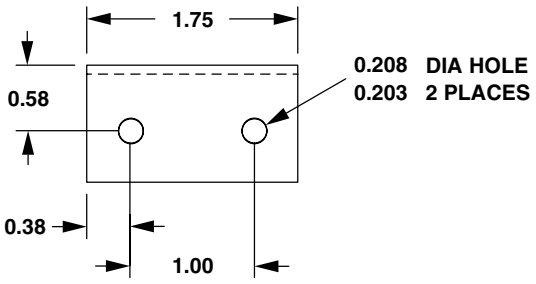
NOTES

1. Dimensions are in inches.
2. Cut to dimensions shown.
3. Remove all burrs and sharp edges.

406961-1401-212
J0412

Figure H-187. Hinge





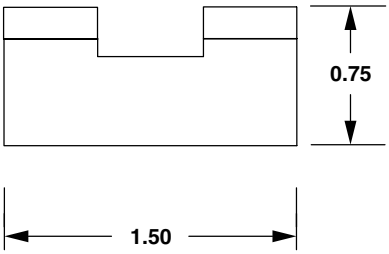
PART NUMBER	ITEM NAME	FABRICATE FROM
406-075-166-101	BRACKET	BELL STANDARD 40-011-27 (CAGE 97499)

NOTES

1. Dimensions are in inches.
2. Remove all burrs and sharp edges.
3. Apply chemical conversion coating (D57).
4. Apply epoxy primer coating (D98).

406961-1401-17
J0248

Figure H-188. Bracket



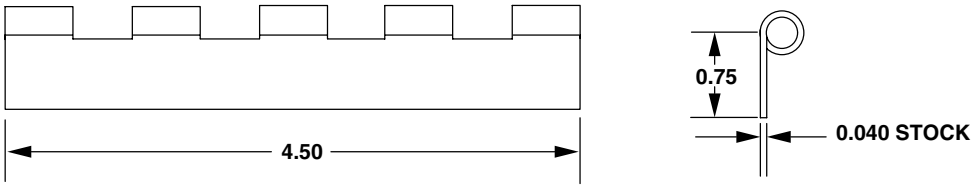
PART NUMBER	ITEM NAME	FABRICATE FROM
406-075-191-103	HINGE HALF	NSN 5340-00-838-2787

NOTES

1. Dimensions are in inches.
2. Cut to required length.
3. Remove all burrs and sharp edges.
4. Apply epoxy primer coating (D98).

406961-1401-66
J0248

Figure H-189. Hinge Half



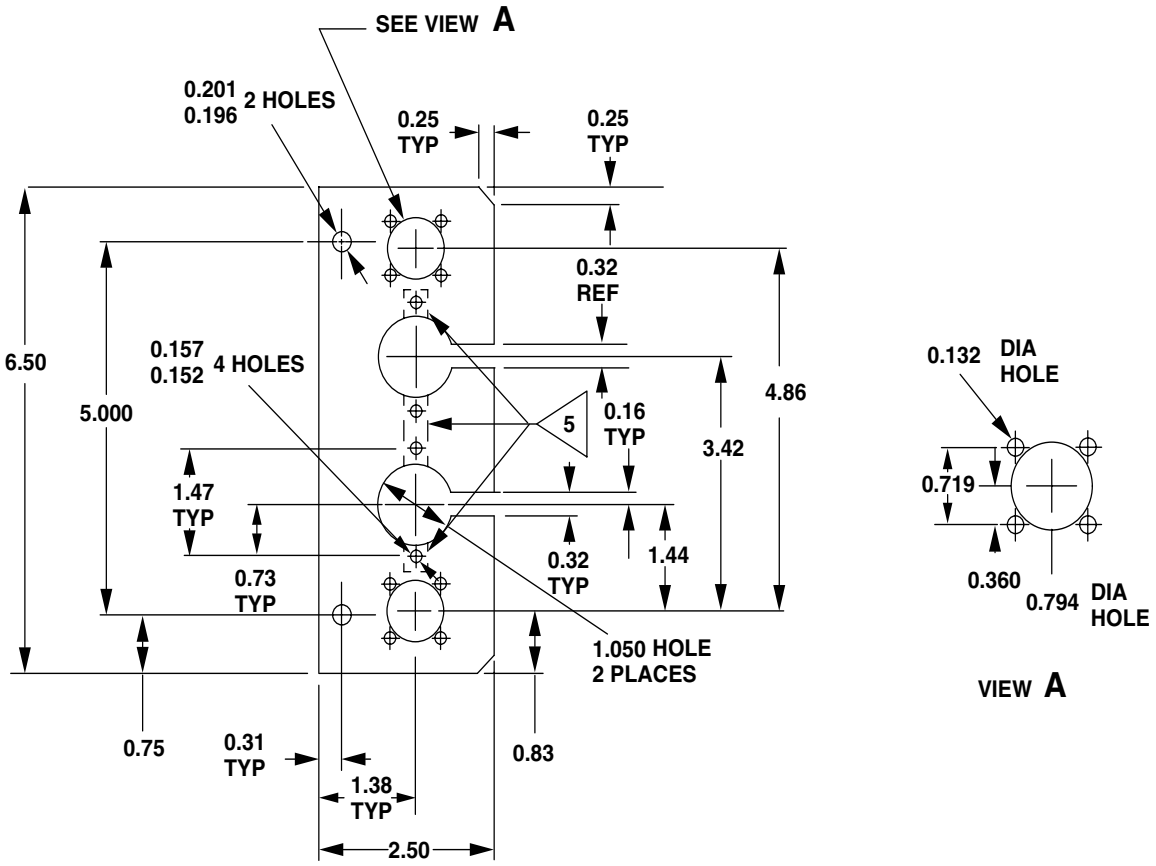
PART NUMBER	ITEM NAME	FABRICATE FROM
406-075-191-105	HINGE HALF	NSN 5340-00-838-2787

NOTES

1. Dimensions are in inches.
2. Make from MS20257HP4-500, CAGE 96906.
3. Remove all burrs and sharp edges.
4. Apply epoxy primer coating (D98).

406961-1401-325
J0821

Figure H-190. Hinge Half



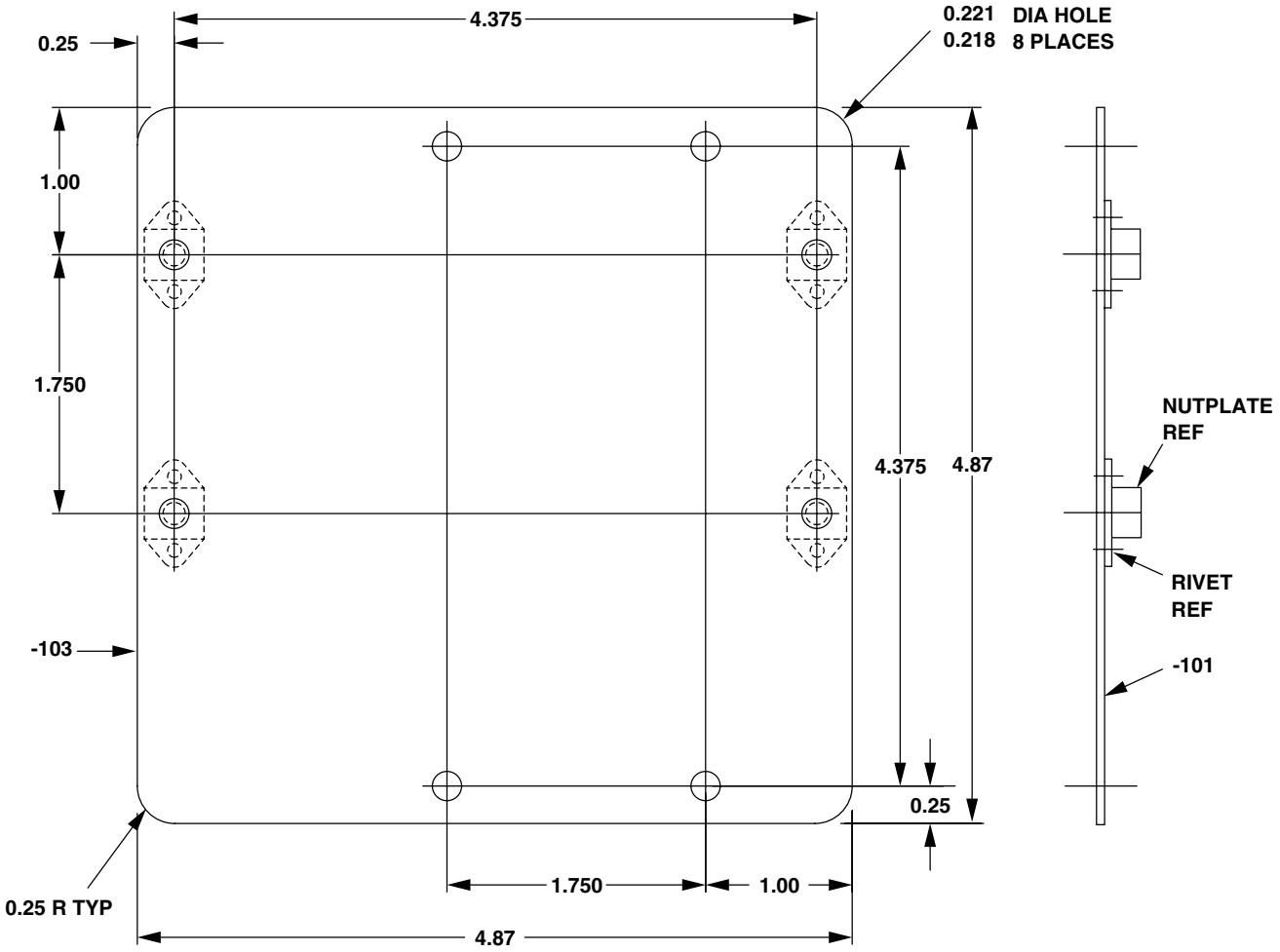
PART NUMBER	ITEM NAME	FABRICATE FROM
406-075-205-101	BRACKET	ALUMINUM ALLOY 2024T3, QQ-A-250/5

NOTES

1. Dimensions are in inches.
2. Remove all burrs and sharp edges.
3. Apply chemical conversion coating (D57).
4. Apply epoxy primer coating (D98).
5. Electrically bond per MIL-B-5087.

406961-1401-326
J0821

Figure H-191. Bracket



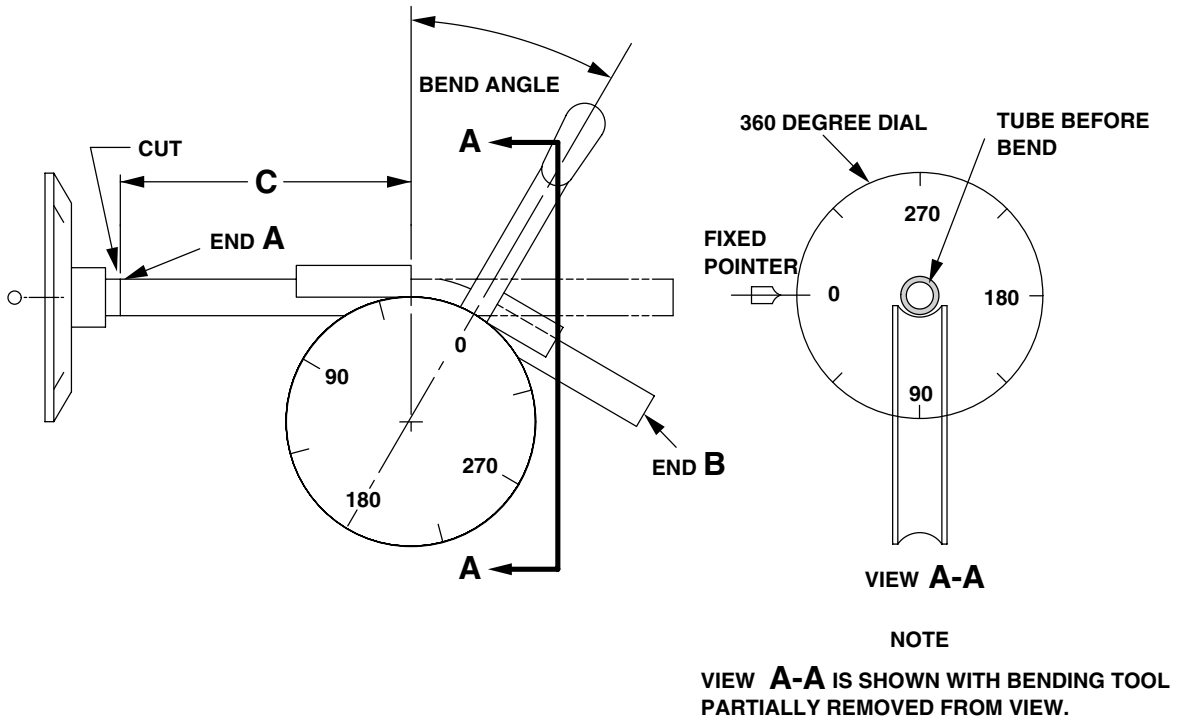
PART NUMBER	ITEM NAME	FABRICATE FROM
406-075-709-103	SUPPORT	NSN 9535-01-341-8291
4 MS20426AD3-3	RIVET (QTY 8)	NSN 5320-00-117-6937
MS21075L3	NUTPLATE (QTY 4)	NSN 5310-00-772-3720

NOTES

1. Dimensions are in inches.
2. Trim support per dimensions shown.
3. Scarf all edges and deburr holes.
4. Countersink 100° all rivet holes and install rivets per TM 1-1500-204-23-10, Chapter 7.
5. Apply chemical conversion coating (D57).
6. Apply epoxy primer coating (D98).

406961-1401-235
J0412

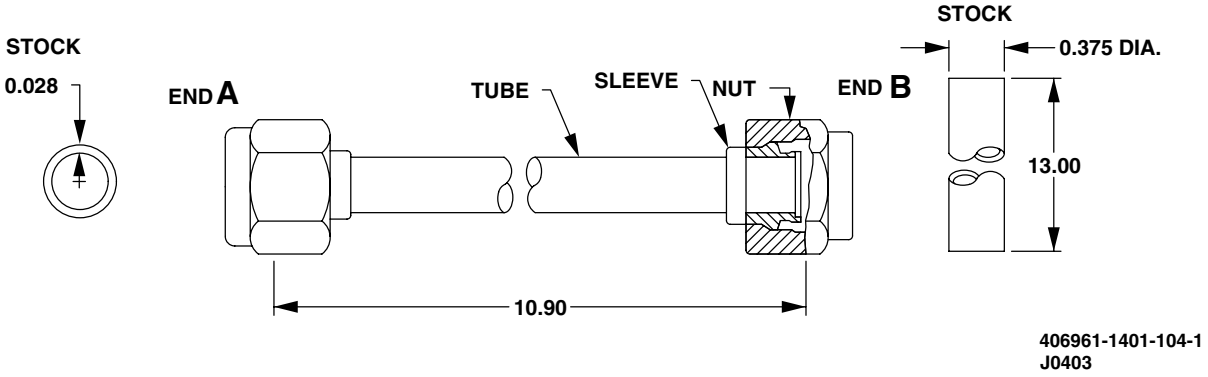
Figure H-192. Support



NOTE

VIEW A-A IS SHOWN WITH BENDING TOOL PARTIALLY REMOVED FROM VIEW.

BEND NO.	BEND FROM END A (DIM. C)	BEND RADIUS	9	BEND ANGLE°
1	9.94	1.12	0	92
2	4.44	1.12	270	23



406961-1401-104-1
J0403

Figure H-193. Tube (Sheet 1 of 2)

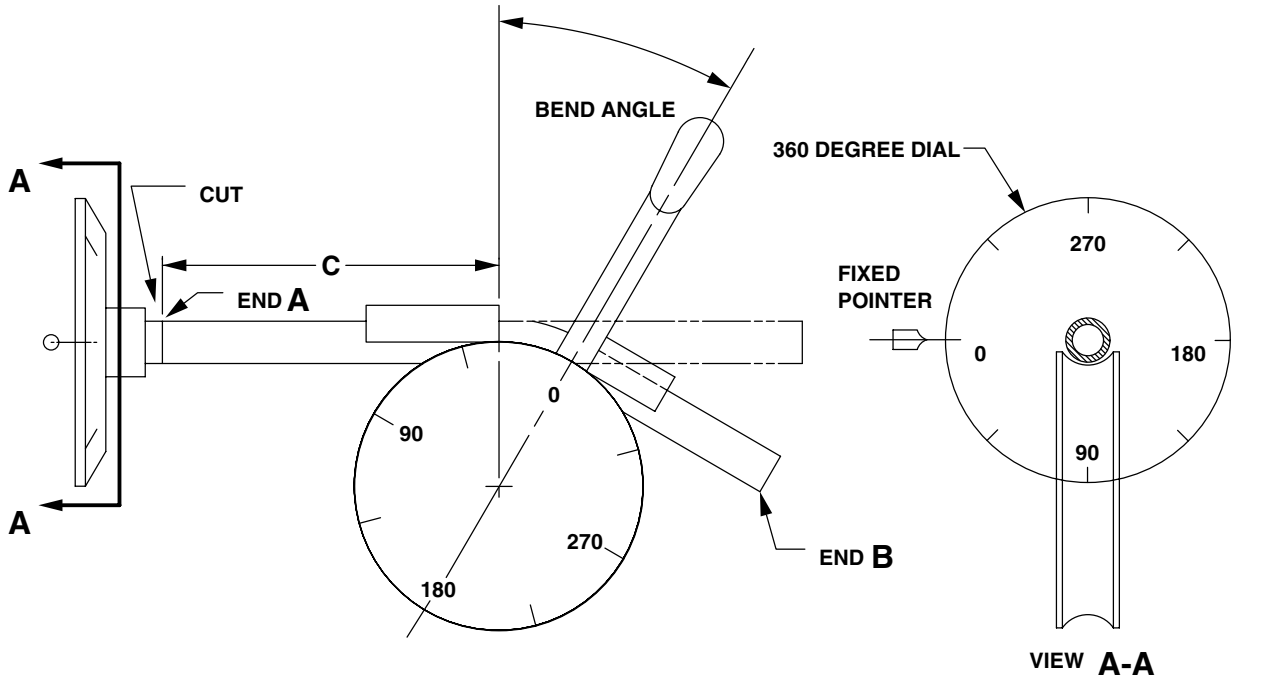
PART NUMBER	ITEM NAME	FABRICATE FROM
406-076-200-103	TUBE	NSN 4710-00-289-2781
MS21922-6	SLEEVE (QTY 2)	NSN 4730-00-554-7398
MS21921-6D	NUT (QTY 2)	NSN 4730-00-554-7397
31-032-12	TAPE, AIRCRAFT PIPING (QTY 2)	
31-033-4	TAPE, AIRCRAFT PIPING (QTY 2)	

NOTES

1. Dimensions are in inches.
2. **C** Dimension is start of bend.
3. Bend tube to dimensions shown in table. Conform to MS33611.
4. Cut END **A** after bending tube.
5. Trim and deburr ENDS **A** and **B**.
6. Install nuts and sleeves per MS33566 and TM 1-1500-204-23-2, Chapter 4.
7. Pressure test to 3000 PSI per TM 1-1500-204-23-2, Chapter 4.
8. Apply aircraft piping tape 31-032-12 and 31-033-4 to tube assembly per MIL-STD-1247. Flow END **A** to **B**.
9. Rotate tube (from plane of first bend) ccw as viewed from Bend From End.

406961-1401-104-2
J0403

Figure H-193. Tube (Sheet 2 of 2)



BEND NO.	BEND FROM END A (DIM. C)	BEND RADIUS	10	BEND ANGLE°
1	4.05	1.0	0	90

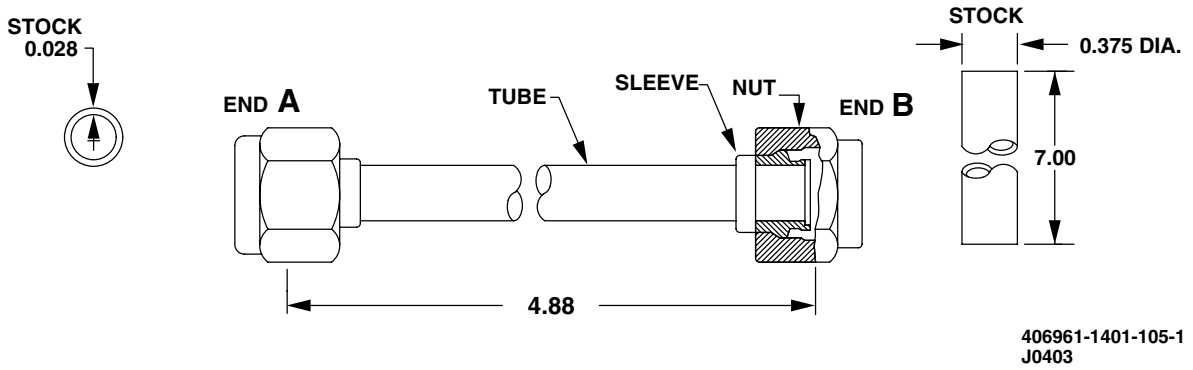


Figure H-105 (Sheet 1 of 2)

Figure H-194. Tube (Sheet 1 of 2)

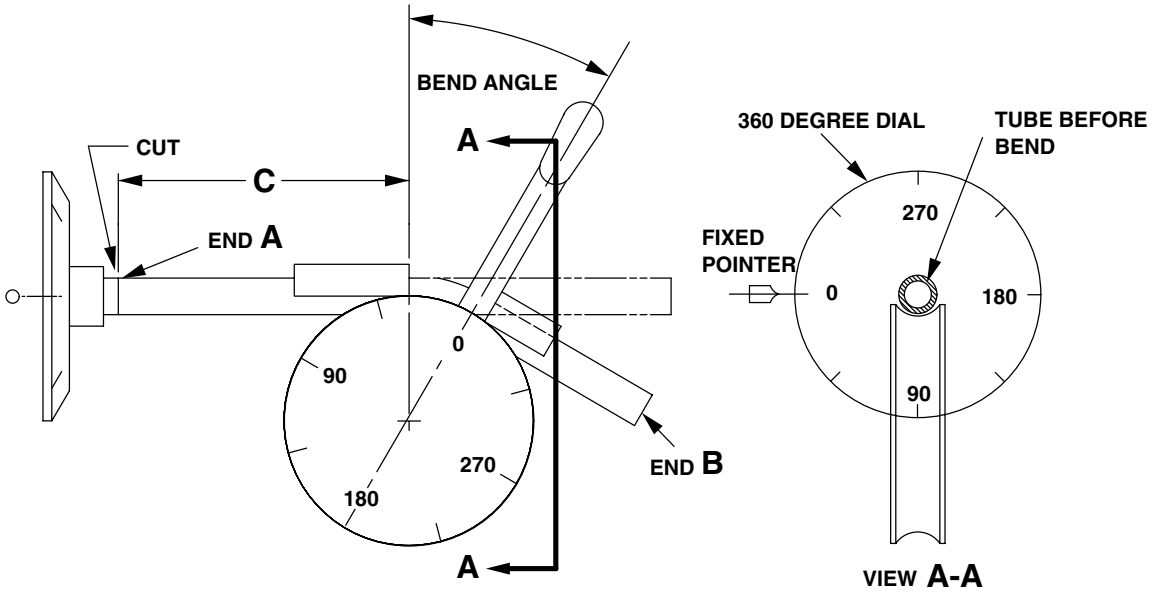
PART NUMBER	ITEM NAME	FABRICATE FROM
406-076-202-103	TUBE	NSN 4710-00-289-2781
MS21922-6	SLEEVE (QTY 2)	NSN 4730-00-554-7398
MS21921-6D	NUT (QTY 2)	NSN 4730-00-554-7397
31-032-12	TAPE, AIRCRAFT PIPING (QTY 2)	
31-033-4	TAPE, AIRCRAFT PIPING (QTY 2)	

NOTES

1. Dimensions are in inches.
2. **C** Dimension is start of bend.
3. Bend tube to dimensions shown in table. Conform to MS33611.
4. Cut END **A** after bending tube.
5. Trim and deburr ENDS **A** and **B**.
6. Install nuts and sleeves per MS33566 and TM 1-1500-204-23-2, Chapter 4.
7. Pressure test to 3000 PSI per TM 1-1500-204-23-2, Chapter 4.
8. Apply aircraft piping tape 31-032-12 and 31-033-4 to tube assembly per MIL-STD-1247. Flow END **A** to **B**.
9. Rotate tube (from plane of first end) ccw as viewed from Bend From End.

406961-1401-105-2
J0403

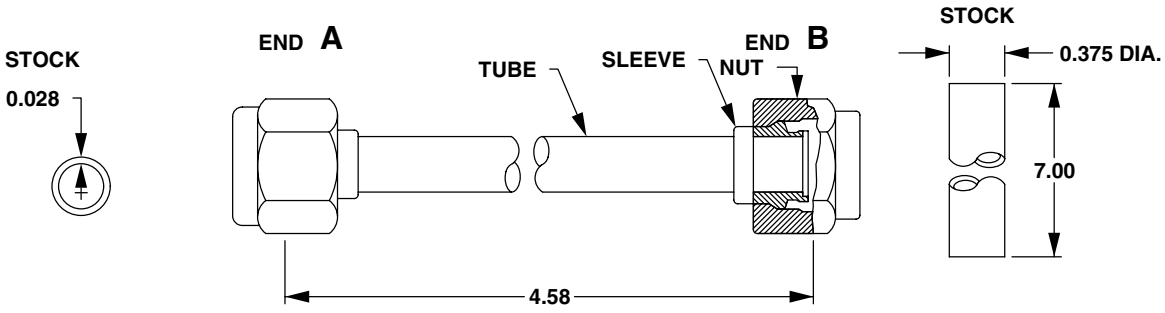
Figure H-194. Tube (Sheet 2 of 2)



NOTE

VIEW **A-A** IS SHOWN WITH BENDING TOOL PARTIALLY REMOVED FROM VIEW.

BEND NO.	BEND FROM END A (DIM. C)	BEND RADIUS	9	BEND ANGLE°
1	3.75	1.0	0	89



406961-1401-108-1
J0403

Figure H-195. Tube (Sheet 1 of 2)

PART NUMBER	ITEM NAME	FABRICATE FROM
406-076-205-103	TUBE	NSN 4710-00-289-2781
MS21922-6	SLEEVE (QTY 2)	NSN 4730-00-554-7398
MS21921-6D	NUT (QTY 2)	NSN 4730-00-554-7397
31-032-13	TAPE, AIRCRAFT PIPING (QTY 2)	
31-033-4	TAPE, AIRCRAFT PIPING (QTY 2)	

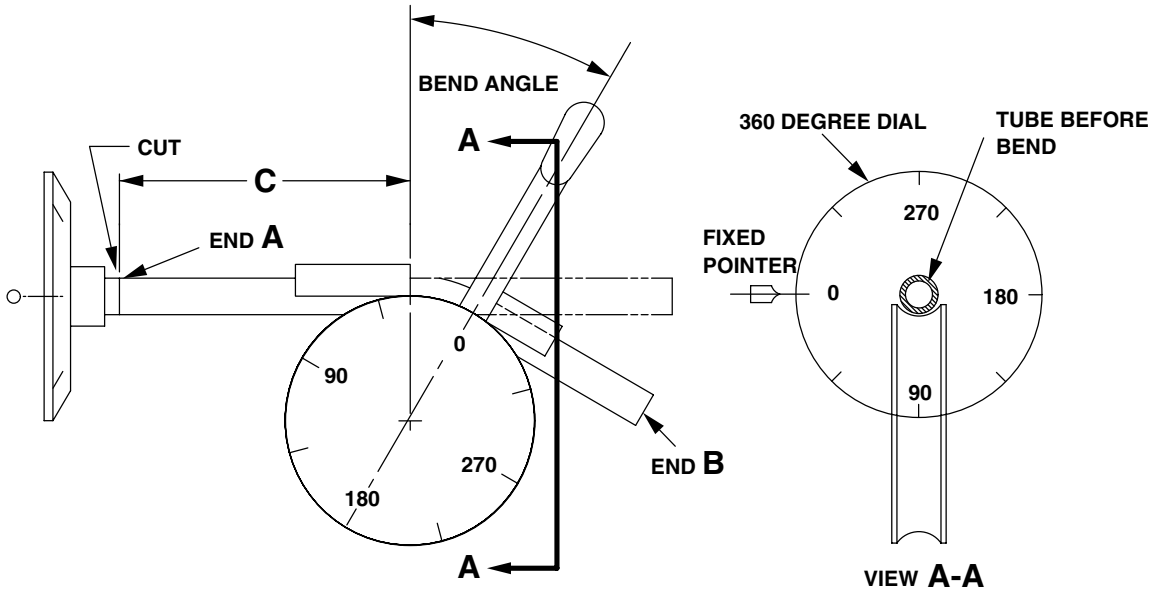
NOTES

1. Dimensions are in inches.
2. **C** Dimension is start of bend.
3. Bend tube to dimensions shown in table. Conform to MS33611.
4. Cut END **A** after bending tube.
5. Trim and deburr ENDS **A** and **B** .
6. Install nuts and sleeves per MS33566 and TM 1-1500-204-23-2, Chapter 4.
7. Pressure test to 3000 PSI per TM 1-1500-204-23-2, Chapter 4.
8. Apply aircraft piping tape 31-032-13 and 31-033-4 to tube assembly per MIL-STD-1247. Flow END **A** to **B** .

9 Rotate tube (from plane of first bend) ccw as viewed from Bend From End.

406961-1401-108-2
J0403

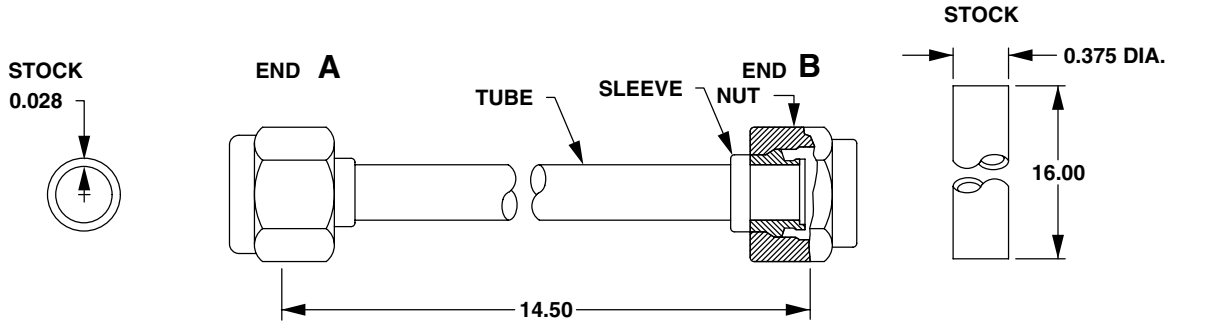
Figure H-195. Tube (Sheet 2 of 2)



NOTE

VIEW **A-A** IS SHOWN WITH BENDING TOOL PARTIALLY REMOVED FROM VIEW.

BEND NO.	BEND FROM END **A** (DIM. **C**)	BEND RADIUS	9	BEND ANGLE°
1	13.73	1.12	0	75
2	10.78	1.12	183	76
3	6.25	1.12	102	8
4	3.17	1.12	5	91



406961-1401-109-1
J0403

Figure H-196. Tube (Sheet 1 of 2)

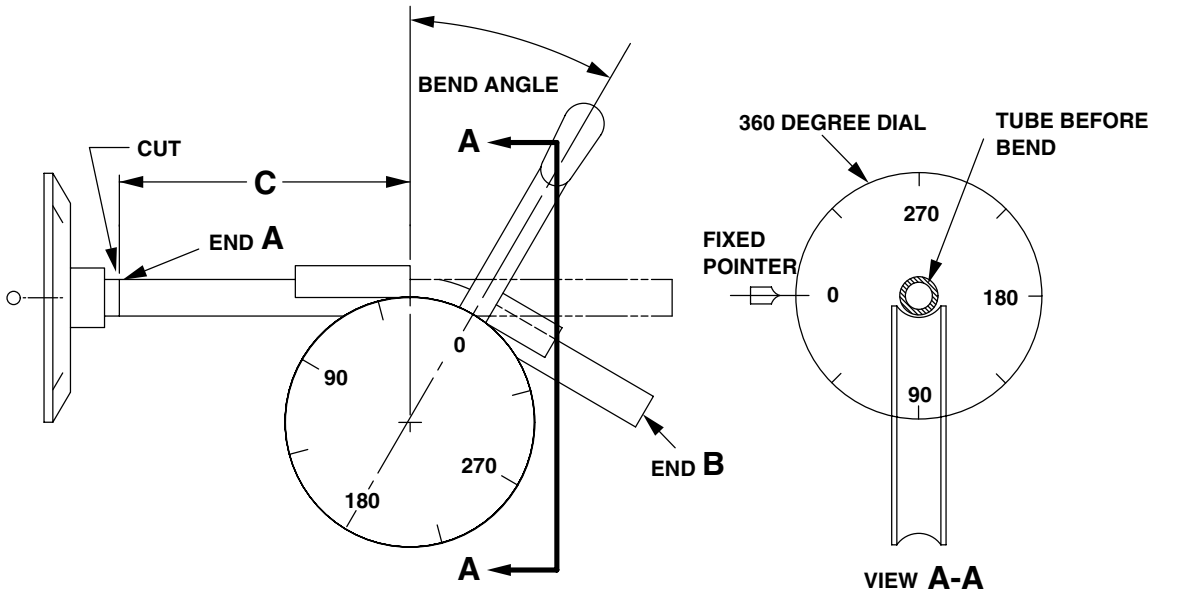
PART NUMBER	ITEM NAME	FABRICATE FROM
406-076-206-103	TUBE	NSN 4710-00-289-2781
MS21922-6	SLEEVE (QTY 2)	NSN 4730-00-554-7398
MS21921-6D	NUT (QTY 2)	NSN 4730-00-554-7397
31-032-13	TAPE, AIRCRAFT PIPING (QTY 2)	
31-033-4	TAPE, AIRCRAFT PIPING (QTY 2)	

NOTES

1. Dimensions are in inches.
2. **C** Dimension is start of bend.
3. Bend tube to dimensions shown in table. Conform to MS33611.
4. Cut END **A** after bending tube.
5. Trim and deburr ENDS **A** and **B**.
6. Install nuts and sleeves per MS33566 and TM 1-1500-204-23-2, Chapter 4.
7. Pressure test to 3000 PSI per TM 1-1500-204-23-2, Chapter 4.
8. Apply aircraft piping tape 31-032-13 and 31-033-4 to tube assembly per MIL-STD-1247, Flow END **A** to **B**.
9. Rotate tube (from plane of first bend) ccw as viewed from Bend From End.

406961-1401-109-2
J0403

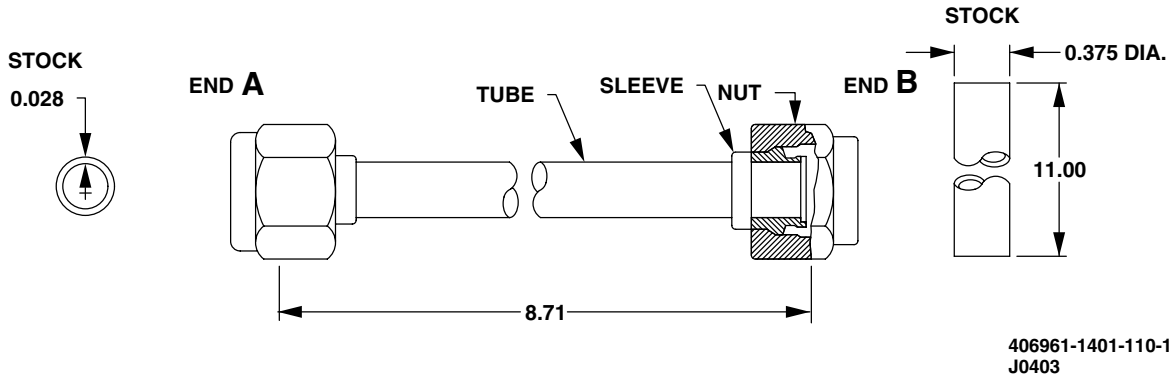
Figure H-196. Tube (Sheet 2 of 2)



NOTE

VIEW **A-A** IS SHOWN WITH BENDING TOOL PARTIALLY REMOVED FROM VIEW.

BEND NO.	BEND FROM END **A** (DIM. **C**)	BEND RADIUS	△9	BEND ANGLE°
1	6.94	1.12	0	92
2	3.88	1.12	0	88



406961-1401-110-1
J0403

Figure H-197. Tube (Sheet 1 of 2)

PART NUMBER	ITEM NAME	FABRICATE FROM
406-076-207-103	TUBE	NSN 4710-00-289-2781
MS21922-6	SLEEVE (QTY 2)	NSN 4730-00-554-7398
MS21921-6D	NUT (QTY 2)	NSN 4730-00-554-7397
31-032-13	TAPE, AIRCRAFT PIPING (QTY 2)	
31-033-4	TAPE, AIRCRAFT PIPING (QTY 2)	

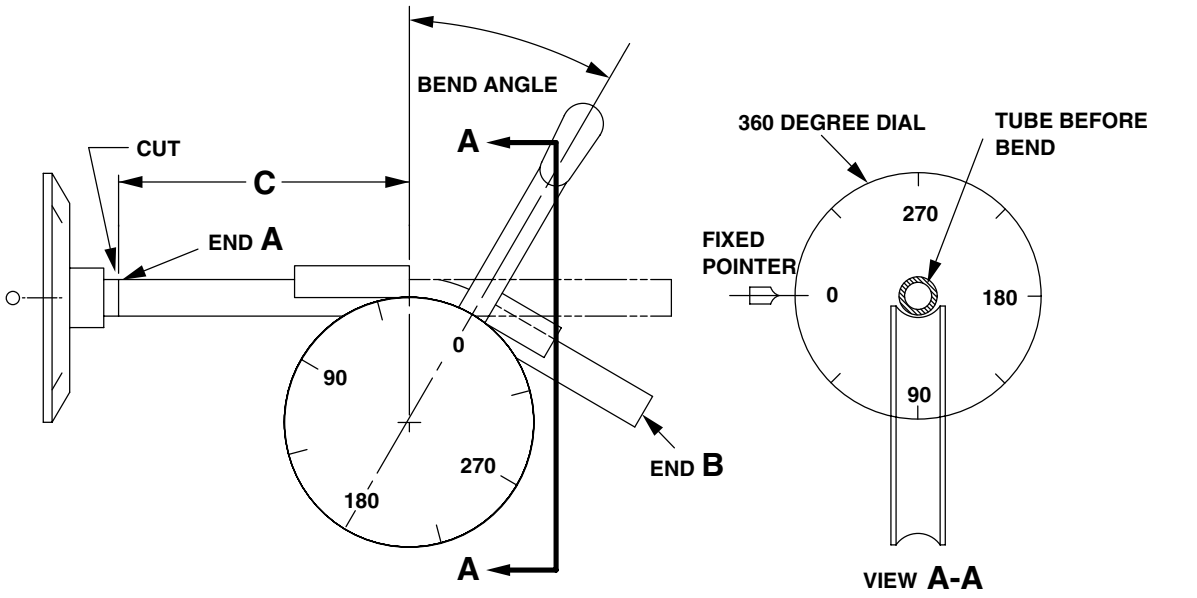
NOTES

1. Dimensions are in inches.
2. **C** Dimension is start of bend.
3. Bend tube to dimensions shown in table. Conform to MS33611.
4. Cut END **A** after bending tube.
5. Trim and deburr ENDS **A** and **B** .
6. Install nuts and sleeves per MS33566 and TM 1-1500-204-23-2, Chapter 4.
7. Pressure test to 3000 PSI per TM 1-1500-204-23-2, Chapter 4.
8. Apply aircraft piping tape 31-032-13 and 31-033-4 to tube assembly per MIL-STD-1247. Flow END **B** to **A** .

9 Rotate tube (from plane of first bend) ccw as viewed from Bend From End.

406961-1401-110-2
J0403

Figure H-197. Tube (Sheet 2 of 2)



NOTE

VIEW **A-A** IS SHOWN WITH BENDING TOOL PARTIALLY REMOVED FROM VIEW.

BEND NO.	BEND FROM END A (DIM. C)	BEND RADIUS	9	BEND ANGLE°
1	14.38	1.12	0	66
2	5.56	1.12	14	24

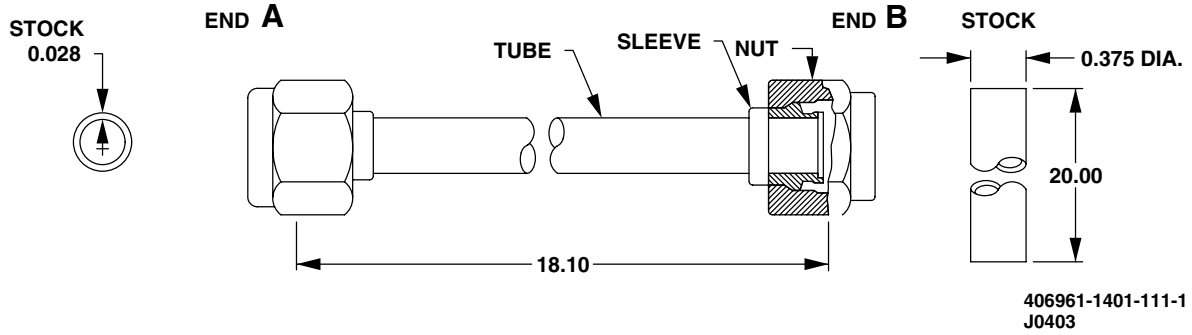


Figure H-198. Tube (Sheet 1 of 2)

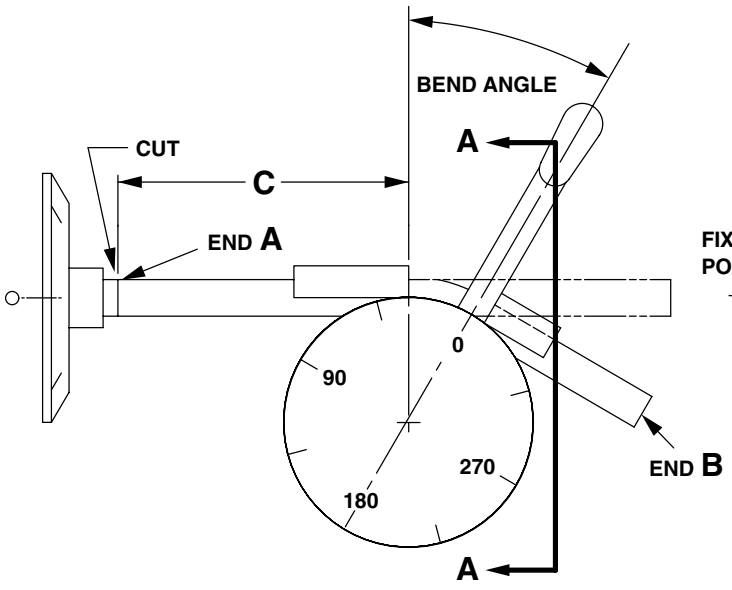
PART NUMBER	ITEM NAME	FABRICATE FROM
406-076-208-103	TUBE	NSN 4710-00-289-2781
MS21922-6	SLEEVE (QTY 2)	NSN 4730-00-554-7398
MS21921-6D	NUT (QTY 2)	NSN 4730-00-554-7397
31-032-30	TAPE, AIRCRAFT PIPING (QTY 2)	
31-033-4	TAPE, AIRCRAFT PIPING (QTY 2)	

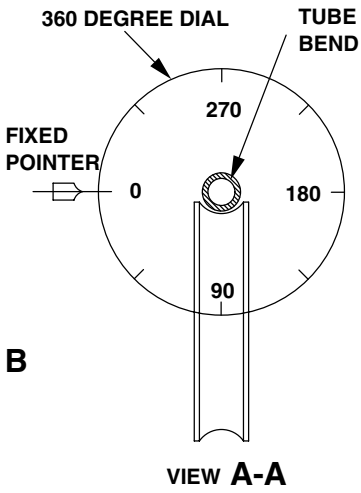
NOTES

1. Dimensions are in inches.
2. **C** Dimension is start of bend.
3. Bend tube to dimensions shown in table. Conform to MS33611.
4. Cut END **A** after bending tube.
5. Trim and deburr ENDS **A** and **B** .
6. Install nuts and sleeves per MS33566 and TM 1-1500-204-23-2, Chapter 4.
7. Pressure test to 3000 PSI per TM 1-1500-204-23-2, Chapter 4.
8. Apply aircraft piping tape 31-032-30 and 31-033-4 to tube assembly per MIL-STD-1247. Flow END **A** to **B** .
9. Rotate tube (from plane of first bend) ccw as viewed from Bend From End.

406961-1401-111-2
J0403

Figure H-198. Tube (Sheet 2 of 2)





VIEW **A-A**

NOTE

VIEW **A-A** IS SHOWN WITH BENDING TOOL PARTIALLY REMOVED FROM VIEW.

BEND NO.	BEND FROM END A (DIM. C)	BEND RADIUS	9	BEND ANGLE°
1	25.56	1.12	0	23
2	22.56	1.12	181	21
3	6.00	1.12	83	20
4	2.90	1.12	262	21

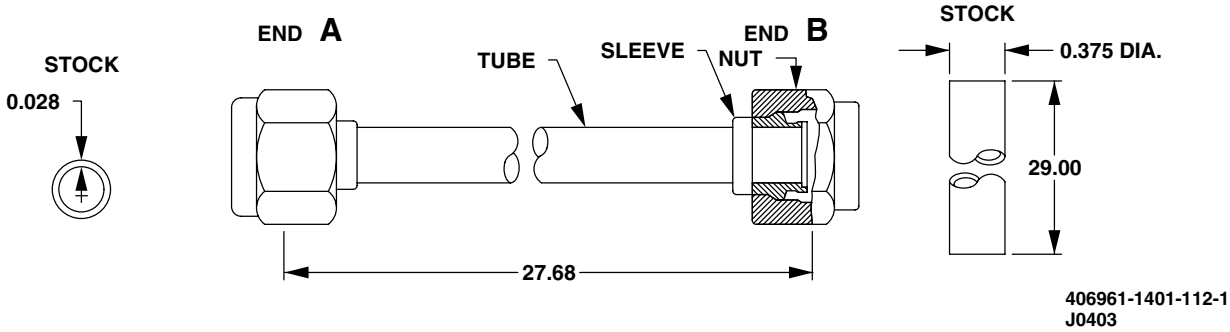


Figure H-199. Tube (Sheet 1 of 2)

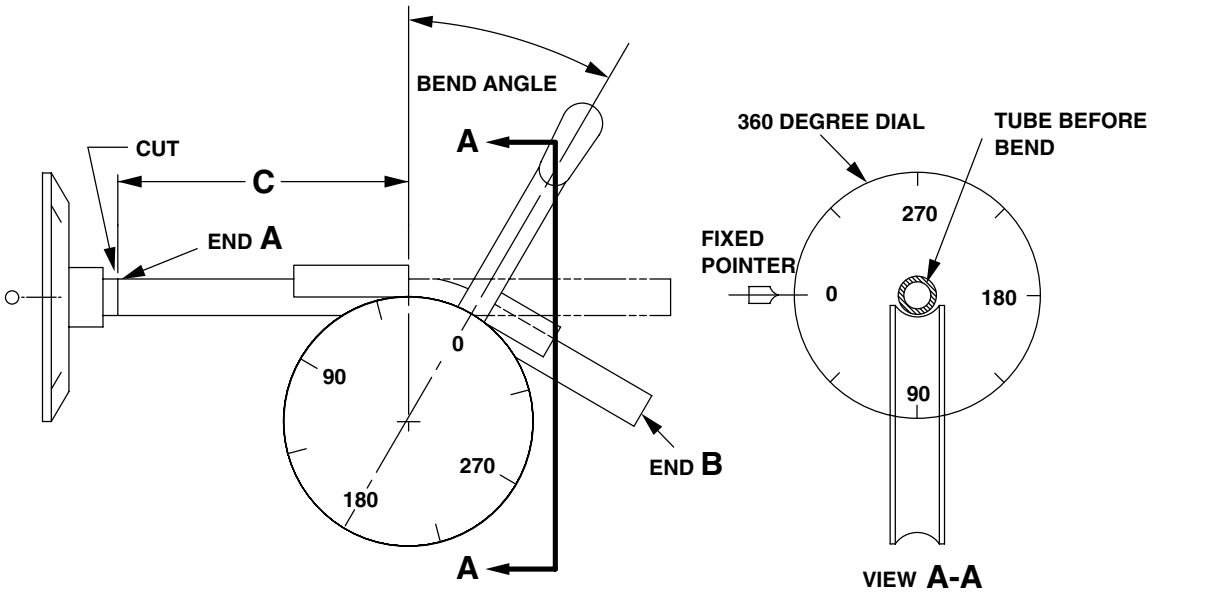
PART NUMBER	ITEM NAME	FABRICATE FROM
406-076-209-103	TUBE	NSN 4710-00-289-2781
MS21922-6	SLEEVE (QTY 2)	NSN 4730-00-554-7398
MS21921-6D	NUT (QTY 2)	NSN 4730-00-554-7397
31-032-30	TAPE, AIRCRAFT PIPING (QTY 2)	
31-033-4	TAPE, AIRCRAFT PIPING (QTY 2)	

NOTES

1. Dimensions are in inches.
2. **C** Dimension is start of bend.
3. Bend tube to dimensions shown in table. Conform to MS33611.
4. Cut END **A** after bending tube.
5. Trim and deburr ENDS **A** and **B**.
6. Install nuts and sleeves per MS33566 and TM 1-1500-204-23-2, Chapter 4.
7. Pressure test to 3000 PSI per TM 1-1500-204-23-2, Chapter 4.
8. Apply aircraft piping tape 31-032-30 and 31-033-4 to tube assembly per MIL-STD-1247. Flow END **A** to **B**.
9. Rotate tube (from plane of first bend) ccw as viewed from Bend From End.

406961-1401-112-2
J0403

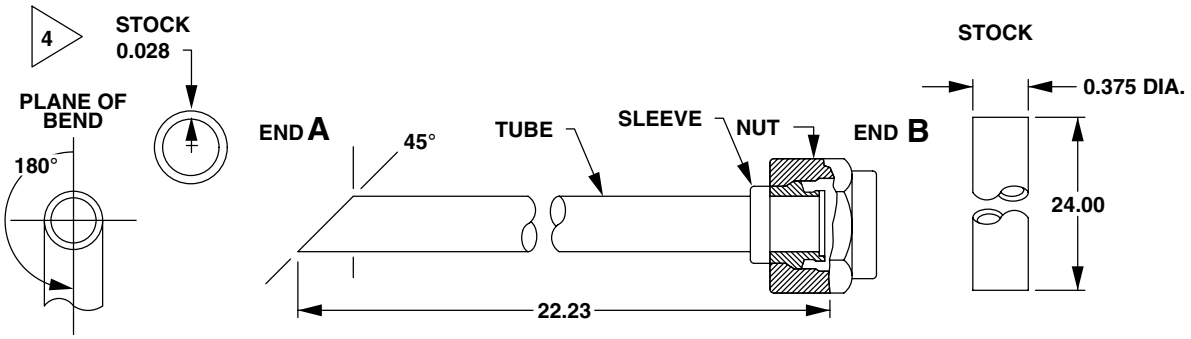
Figure H-199. Tube (Sheet 2 of 2)



NOTE

VIEW **A-A** IS SHOWN WITH BENDING TOOL PARTIALLY REMOVED FROM VIEW.

BEND NO.	BEND FROM END A (DIM. C)	BEND RADIUS	9	BEND ANGLE°
1	20.88	1.12	0	78
2	15.80	1.12	174	74



406961-1401-113-1
J0403

Figure H-200. Tube (Sheet 1 of 2)

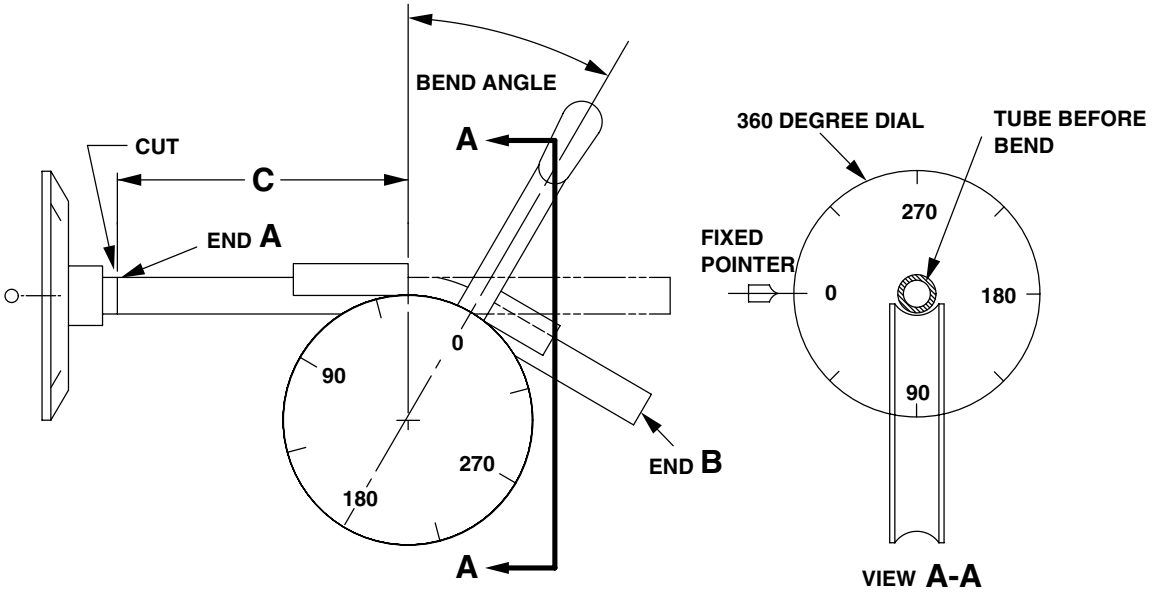
PART NUMBER	ITEM NAME	FABRICATE FROM
406-076-210-103	TUBE	NSN 4710-00-595-2785
MS21922-6	SLEEVE	NSN 4730-00-554-7398
MS21921-6	NUT	NSN 4730-00-554-7397
31-032-30	TAPE, AIRCRAFT PIPING (QTY 2)	
31-033-4	TAPE, AIRCRAFT PIPING (QTY 2)	

NOTES

1. Dimensions are in inches.
2. **C** Dimension is start of bend.
3. Bend tube to dimensions in table. Conform to MS33611.
4. Scarf END **A** to 45° angle after bending tube 180° counterclockwise from plane of bend.
5. Trim and deburr ENDS **A** and **B**.
6. Install nuts and sleeves per MS33566 and TM 1-1500-204-23-2, Chapter 4.
7. Pressure test to 3000 PSI per TM 1-1500-204-23-2, Chapter 4.
8. Apply aircraft piping tape 31-032-30 and 31-033-4 to tube assembly per MIL-STD-1247. Flow END **B** to **A**.
9. Rotate tube (from plane of first bend) ccw as viewed from Bend From End.

406961-1401-113-2
J0403

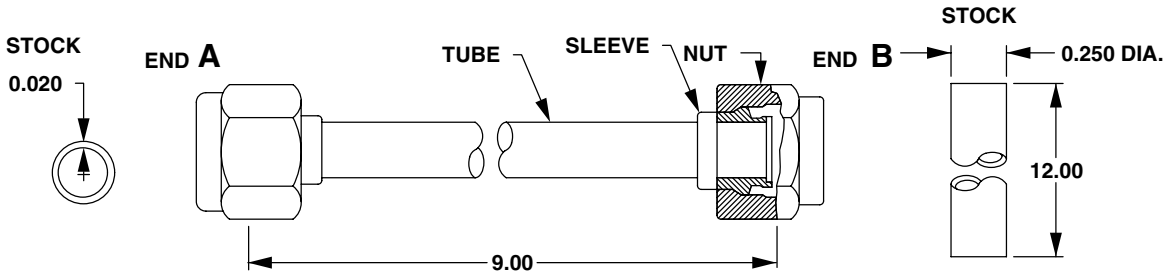
Figure H-200. Tube (Sheet 2 of 2)



NOTE

VIEW **A-A** IS SHOWN WITH BENDING TOOL PARTIALLY REMOVED FROM VIEW.

BEND NO.	BEND FROM END **A** (DIM. **C**)	BEND RADIUS	△9	BEND ANGLE°
1	6.56	0.75	0	95
2	3.37	0.75	277	55



406961-1401-114-1
J0403

Figure H-201. Tube (Sheet 1 of 2)

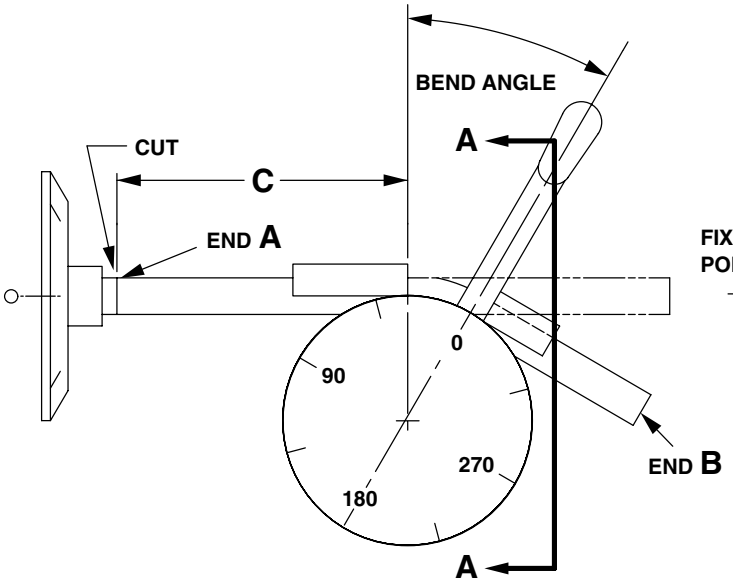
PART NUMBER	ITEM NAME	FABRICATE FROM
406-076-211-103	TUBE	NSN 4710-00-595-2785
MS21922-4	SLEEVE (QTY 2)	NSN 4730-00-289-8619
MS21921-4	NUT (QTY 2)	NSN 4730-00-555-8203
31-032-12	TAPE, AIRCRAFT PIPING (QTY 2)	
31-033-4	TAPE, AIRCRAFT PIPING (QTY 2)	

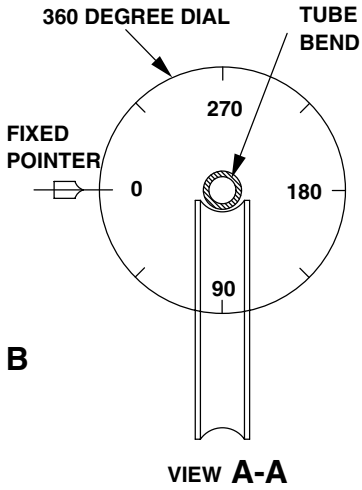
NOTES

1. Dimensions are in inches.
2. **C** Dimension is start of bend.
3. Bend tube to dimensions in table. Conform to MS33611.
4. Cut END **A** after bending tube.
5. Trim and deburr ENDS **A** and **B**.
6. Install nuts and sleeves per MS33566 and TM 1-1500-204-23-2, Chapter 4.
7. Pressure test to 3000 PSI per TM 1-1500-204-23-2, Chapter 4.
8. Apply aircraft piping tape 31-032-12 and 31-033-4 to tube assembly per MIL-STD-1247. Flow END **B** to **A**.
9. Rotate tube (from plane of first bend) ccw as viewed from Bend From End.

406961-1401-114-2
J0403

Figure H-201. Tube (Sheet 2 of 2)



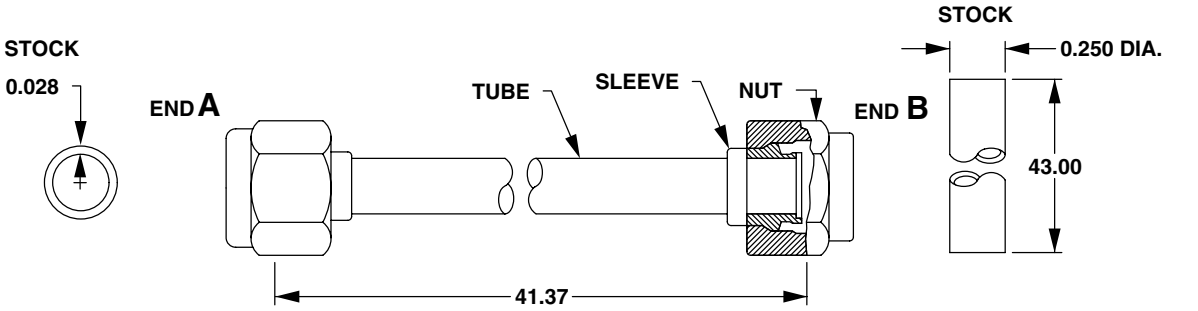


VIEW **A-A**

NOTE

VIEW **A-A** IS SHOWN WITH BENDING TOOL PARTIALLY REMOVED FROM VIEW.

BEND NO.	BEND FROM END A (DIM. C)	BEND RADIUS	9	BEND ANGLE°
1	38.81	0.75	0	101
2	24.69	0.75	75	29
3	17.18	0.75	265	26
4	11.37	0.75	63	40
5	2.00	0.75	241	46



406961-1401-115-1
J0403

Figure H-202. Tube (Sheet 1 of 2)

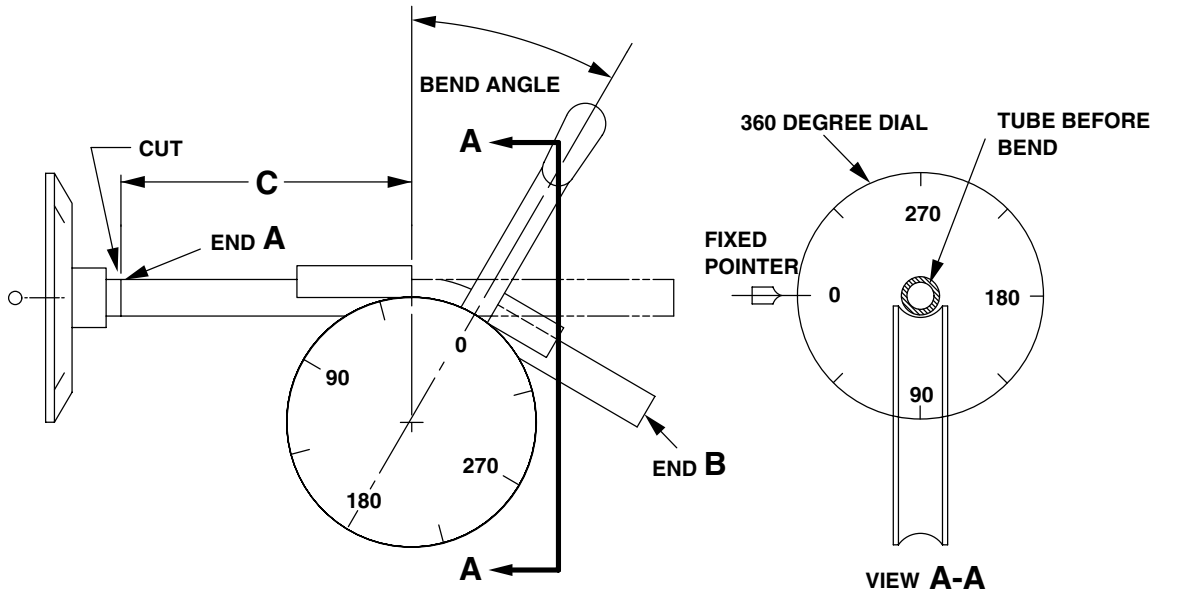
PART NUMBER	ITEM NAME	FABRICATE FROM
406-076-212-103	TUBE	NSN 4710-00-289-2781
MS21922-4	SLEEVE (QTY 2)	NSN 4730-00-289-8619
MS21921-4D	NUT (QTY 2)	NSN 4730-00-555-8203
31-032-12	TAPE, AIRCRAFT PIPING (QTY 2)	
31-033-4	TAPE, AIRCRAFT PIPING (QTY 2)	

NOTES

1. Dimensions are in inches.
2. **C** Dimension is start of bend.
3. Bend tube to dimensions in table. Conform to MS33611.
4. Cut END **A** after bending tube.
5. Trim and deburr ENDS **A** and **B**.
6. Install nuts and sleeves per MS33566 and TM 1-1500-204-23-2, Chapter 4.
7. Pressure test to 3000 PSI per TM 1-1500-204-23-2, Chapter 4.
8. Apply aircraft piping tape 31-032-12 and 31-033-4 to tube assembly per MIL-STD-1247. Flow END **B** to **A**.
9. Rotate tube (from plane of first bend) ccw as viewed from Bend From End.

406961-1401-115-2
J0403

Figure H-202. Tube (Sheet 2 of 2)



NOTE

VIEW **A-A** IS SHOWN WITH BENDING TOOL PARTIALLY REMOVED FROM VIEW.

BEND NO.	BEND FROM END A (DIM. C)	BEND RADIUS	△9	BEND ANGLE°
1	12.18	0.75	0	180
2	3.43	0.75	0	180

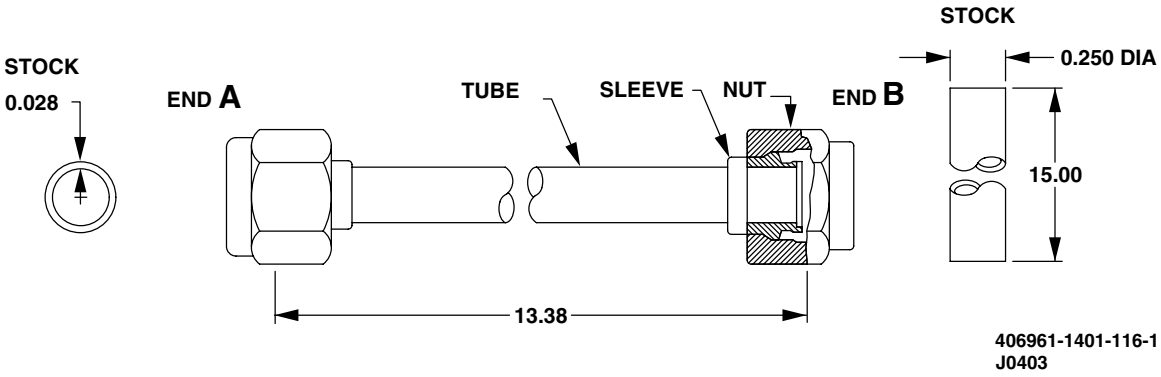


Figure H-203. Tube (Sheet 1 of 2)

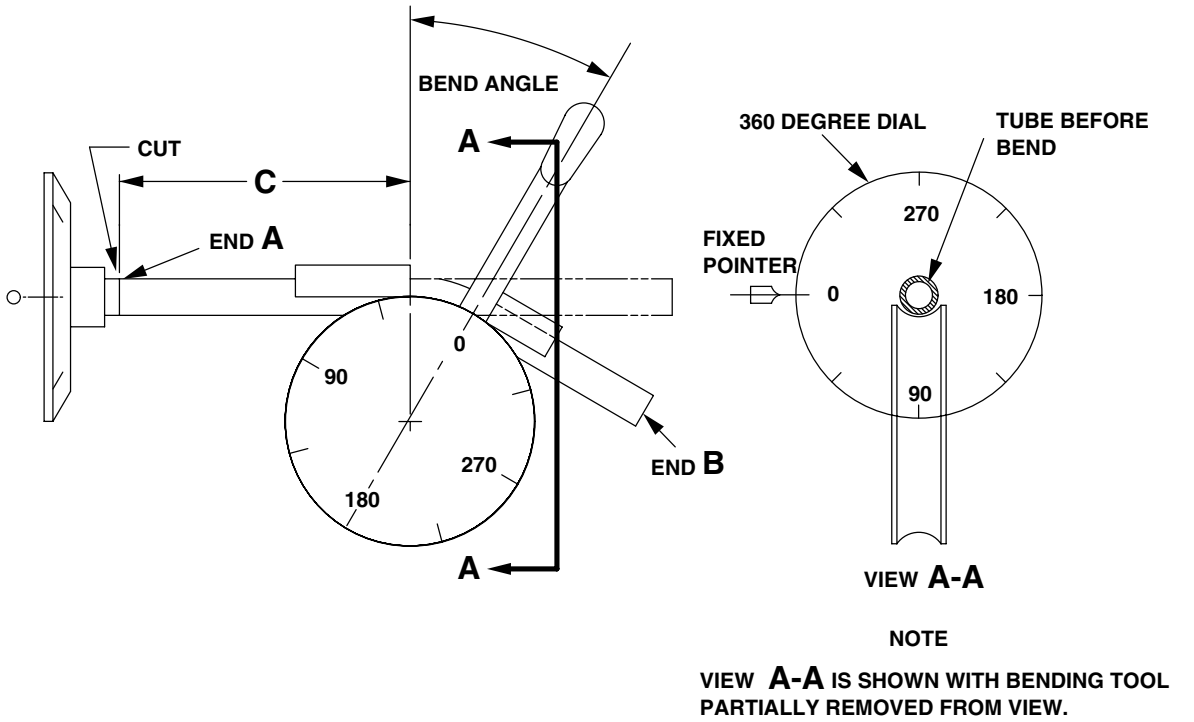
PART NUMBER	ITEM NAME	FABRICATE FROM
406-076-213-103	TUBE	NSN 4710-00-289-2781
MS21922-4	SLEEVE (QTY 2)	NSN 4730-00-289-8619
MS21921-4D	NUT (QTY 2)	NSN 4730-00-555-8203
31-032-13	TAPE, AIRCRAFT PIPING (QTY 2)	
31-033-4	TAPE, AIRCRAFT PIPING (QTY 2)	

NOTES

1. Dimensions are in inches.
2. **C** Dimension is start of bend.
3. Bend tube to dimensions in table. Conform to MS33611.
4. Cut END **A** after bending tube.
5. Trim and deburr ENDS **A** and **B**.
6. Install nuts and sleeves per MS33566 and TM 1-1500-204-23-2, Chapter 4.
7. Pressure test to 3000 PSI per TM 1-1500-204-23-2, Chapter 4.
8. Apply aircraft piping tape 31-032-13 and 31-033-4 to tube assembly per MIL-STD-1247. Flow END **A** to **B**.
9. Rotate tube (from plane of first bend) ccw as viewed from Bend From End.

406961-1401-116-2
J0403

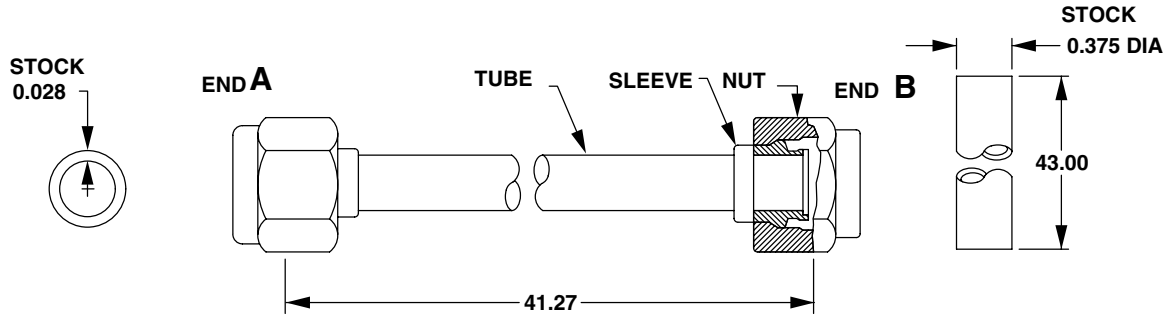
Figure H-203. Tube (Sheet 2 of 2)



NOTE

VIEW **A-A** IS SHOWN WITH BENDING TOOL PARTIALLY REMOVED FROM VIEW.

BEND NO.	BEND FROM END A (DIM. C)	BEND RADIUS	△9	BEND ANGLE°
1	39.06	1.12	0	97
2	25.00	1.12	80	28
3	17.37	1.12	270	28
4	11.37	1.12	64	43
5	2.75	1.12	236	46



406961-1401-117-1
J0403

Figure H-204. Tube (Sheet 1 of 2)

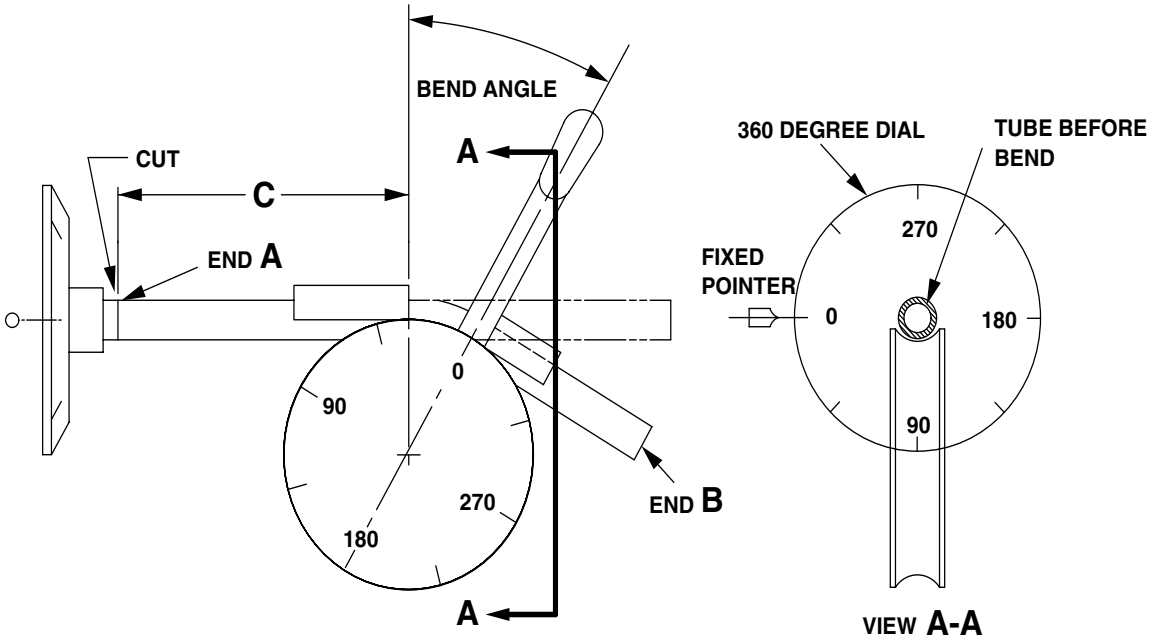
PART NUMBER	ITEM NAME	FABRICATE FROM
406-076-214-103	TUBE	NSN 4710-00-289-2781
MS21922-6	SLEEVE (QTY 2)	NSN 4730-00-554-7398
MS21921-6D	NUT (QTY 2)	NSN 4730-00-554-7397
31-032-13	TAPE, AIRCRAFT PIPING (QTY 2)	
31-033-4	TAPE, AIRCRAFT PIPING (QTY 2)	

NOTES

1. Dimensions are in inches.
2. **C** Dimension is start of bend.
3. Bend tube to dimensions in table. Conform to MS33611.
4. Cut END **A** after bending tube.
5. Trim and deburr ENDS **A** and **B**.
6. Install nuts and sleeves per MS33566 and TM 1-1500-204-23-2, Chapter 4.
7. Pressure test to 3000 PSI per TM 1-1500-204-23-2, Chapter 4.
8. Apply aircraft piping tape 31-032-13 and 31-033-4 to tube assembly per MIL-STD-1247. Flow END **A** to **B**.
9. Rotate tube (from plane of first bend) ccw as viewed from Bend From End.

406961-1401-117-2
J0403

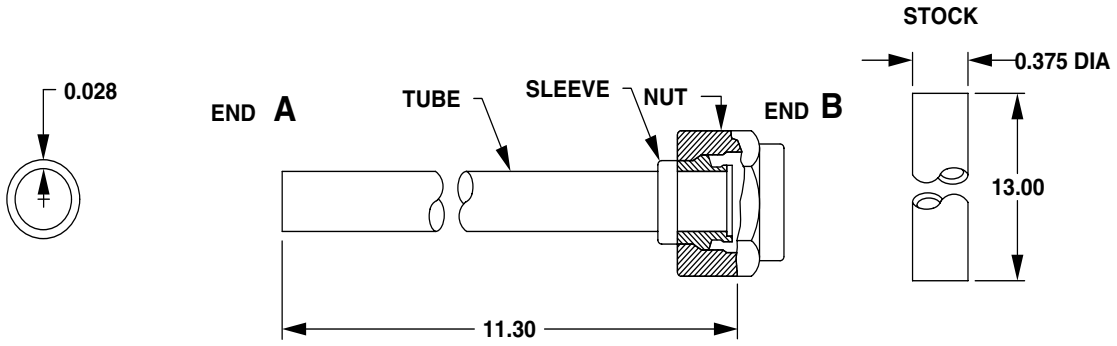
Figure H-204. Tube (Sheet 2 of 2)



NOTE

VIEW **A-A** IS SHOWN WITH BENDING TOOL PARTIALLY REMOVED FROM VIEW.

BEND NO.	BEND FROM END A (DIM. C)	BEND RADIUS	9	BEND ANGLE°
1	8.78	1.12	0	104
2	4.37	1.12	269	61



406961-1401-327-1
J0821

Figure H-205. Tube (Sheet 1 of 2)

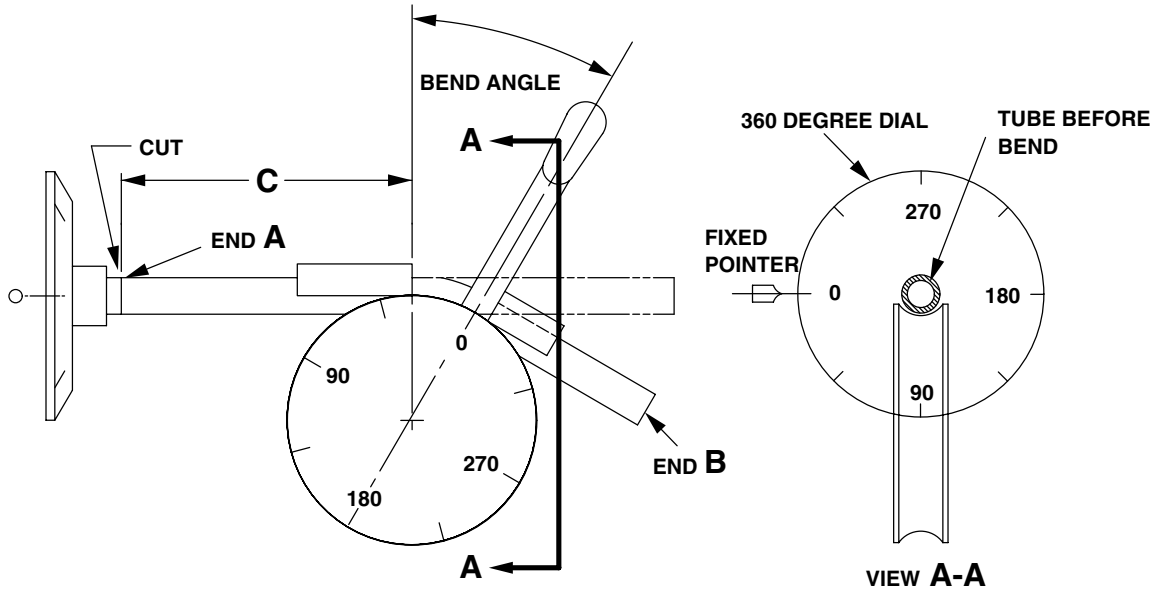
PART NUMBER	ITEM NAME	FABRICATE FROM
406-076-215-103	TUBE	NSN 4710-00-289-2781
MS21922-6	SLEEVE (QTY 2)	NSN 4730-00-554-7398
MS21921-6	NUT (QTY 2)	NSN 4730-00-554-7397
31-032-13	TAPE, AIRCRAFT PIPING (QTY 2)	
31-033-4	TAPE, AIRCRAFT PIPING (QTY 2)	

NOTES

1. Dimensions are in inches.
2. **C** Dimension is start of bend.
3. Bend tube to dimensions shown in table. Conform to MS33611.
4. Cut END **A** after bending tube.
5. Trim and deburr ENDS **A** and **B**.
6. Install nuts and sleeves per MS33566 and TM 1-1500-204-23-2, Chapter 4.
7. Pressure test to 3000 PSI per TM 1-1500-204-23-2, Chapter 4.
8. Apply aircraft piping tape 31-032-13 and 31-033-4 to tube assembly per MIL-STD-1247. Flow END **A** to **B**.
9. Rotate tube (from plane of first bend) ccw as viewed from Bend From End.

406961-1401-327-2
J0821

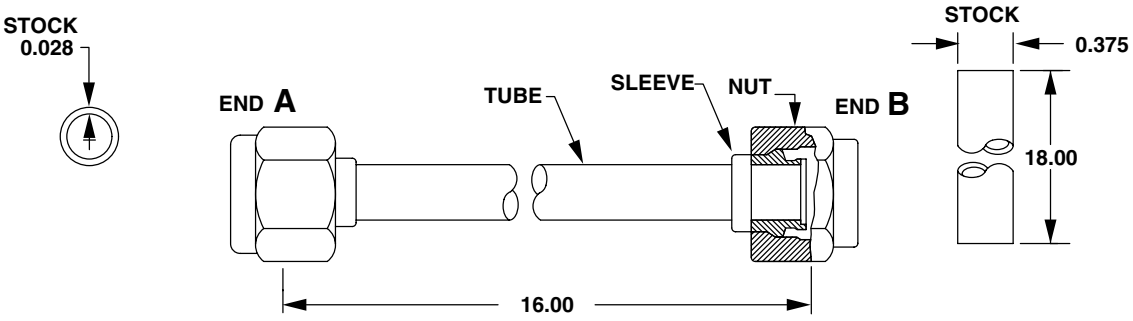
Figure H-205. Tube (Sheet 2 of 2)



NOTE

VIEW **A-A** IS SHOWN WITH BENDING TOOL PARTIALLY REMOVED FROM VIEW.

BEND NO.	BEND FROM END A (DIM. C)	BEND RADIUS	△9	BEND ANGLE°
1	14.88	1.12	0	47
2	13.17	1.12	182	76
3	11.00	1.12	87	90
4	2.94	1.12	267	89



406961-1401-238-1
J0412

Figure H-206. Tube (Sheet 1 of 2)

PART NUMBER	ITEM NAME	FABRICATE FROM
406-076-220-103	TUBE	ALUMINUM ALLOY 6061T6, MIL-T-7081
MS21992-6	SLEEVE (QTY 2)	NSN 4730-00-554-7398
MS21921-6D	NUT (QTY 2)	NSN 4730-00-554-7397
31-032-12	TAPE, AIRCRAFT PIPING (QTY 2)	
31-033-4	TAPE, AIRCRAFT PIPING (QTY 2)	

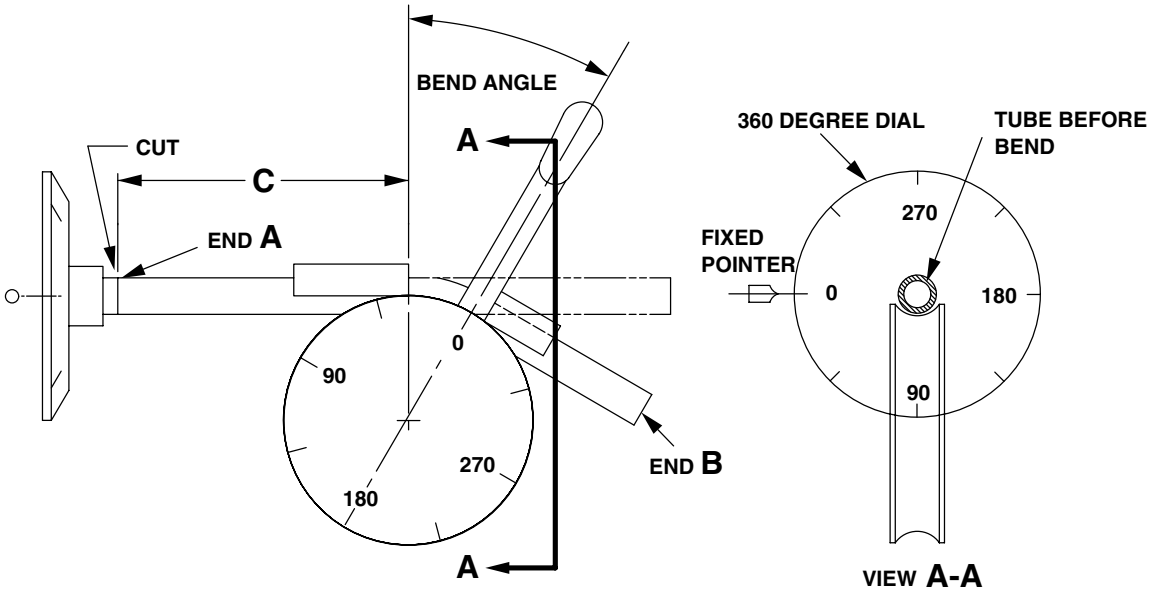
NOTES

1. Dimensions are in inches.
2. **C** Dimension is start of bend.
3. Bend tube to dimensions in table. Conform to MS33611.
4. Cut END **A** after bending tube.
5. Trim and deburr ENDS **A** and **B** .
6. Install nuts and sleeves per MS33566 and TM 1-1500-204-23-2, Chapter 4.
7. Pressure test to 3000 psi per TM 1-1500-204-23-2, Chapter 4.
8. Apply aircraft piping tape 31-032-12 and 31-033-4 to tube assembly per MIL-STD-1247. Flow END **A** to **B** .

9 Rotate tube (from plane of first bend) ccw as viewed from Bend From End.

406961-1401-238-2
J0412

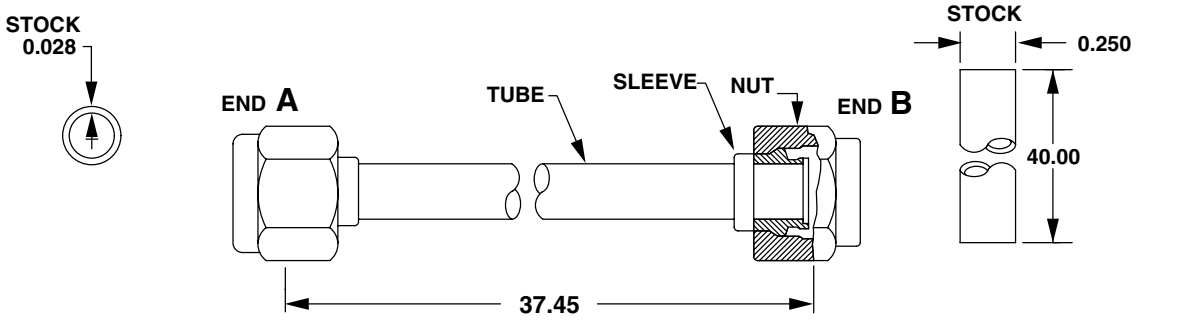
Figure H-206. Tube (Sheet 2 of 2)



NOTE

VIEW **A-A** IS SHOWN WITH BENDING TOOL PARTIALLY REMOVED FROM VIEW.

BEND NO.	BEND FROM END A (DIM. C)	BEND RADIUS	9	BEND ANGLE°
1	36.64	0.75	0	12
2	35.17	0.75	284	79
3	26.19	0.75	294	44
4	22.32	0.75	113	34
5	5.56	0.75	275	67
6	2.09	0.75	98	66



406961-1401-239-1
J0412

Figure H-207. Tube (Sheet 1 of 2)

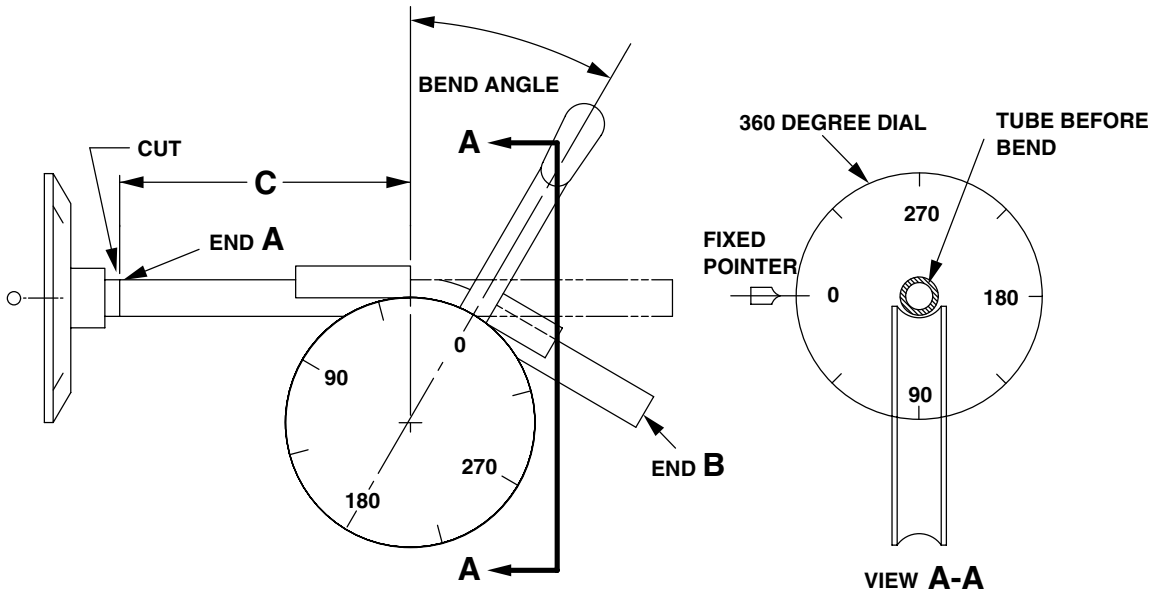
PART NUMBER	ITEM NAME	FABRICATE FROM
406-076-229-103	TUBE	ALUMINUM ALLOY TYPE 6061T6, MIL-T-7081
MS21922-4	SLEEVE (QTY 2)	NSN 4730-00-289-8619
MS21921-4D	NUT (QTY 2)	NSN 4730-00-555-8203
31-032-12	TAPE, AIRCRAFT PIPING (QTY 2)	
31-033-4	TAPE, AIRCRAFT PIPING (QTY 2)	

NOTES

1. Dimensions are in inches.
2. **C** Dimension is start of bend.
3. Bend tube to dimensions in table. Conform to MS33611.
4. Cut END **A** after bending tube.
5. Trim and deburr ENDS **A** and **B**.
6. Intall nuts and sleeves per MS33566 and TM 1-1500-204-23-2, Chapter 4.
7. Pressure test to 3000 psi per TM 1-1500-204-23-2, Chapter 4.
8. Apply aircraft piping tape 31-032-12 and 31-033-4 to tube assembly per MIL-STD-1247. Flow END **B** to **A**.
9. Rotate tube (from plane of first bend) ccw as viewed from Bend From End.

406961-1401-239-2
J0412

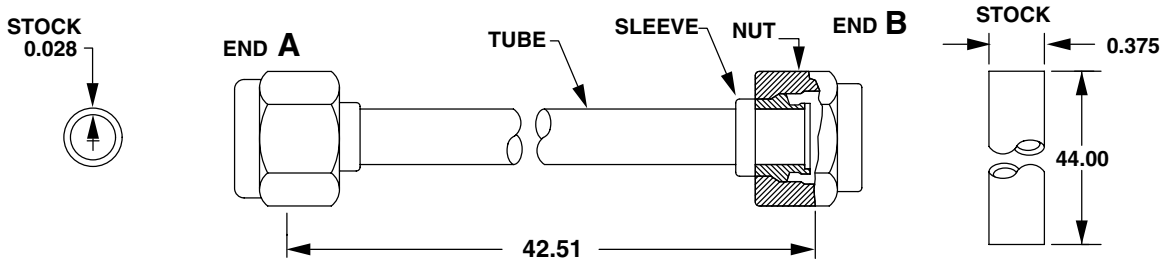
Figure H-207. Tube (Sheet 2 of 2)



NOTE

VIEW **A-A** IS SHOWN WITH BENDING TOOL PARTIALLY REMOVED FROM VIEW.

BEND NO.	BEND FROM END A (DIM. C)	BEND RADIUS	9	BEND ANGLE°
1	36.16	0.75	0	12
2	34.72	0.75	284	88
3	25.23	0.75	294	45
4	21.28	0.75	113	43
5	5.10	0.75	275	60
6	1.91	0.75	98	58



406961-1401-97-1
J0248

Figure H-208. Tube (Sheet 1 of 2)

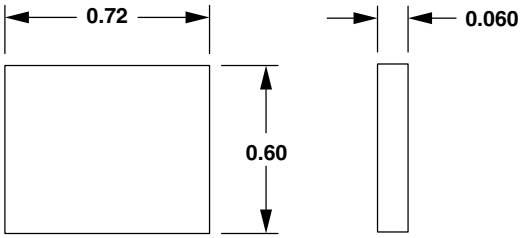
PART NUMBER	ITEM NAME	FABRICATE FROM
406-076-230-103	TUBE	ALUMINUM ALLOY TYPE 6061T6, MIL-T-7081
MS21922-6	SLEEVE (QTY 2)	NSN 4730-00-554-7398
MS21921-6D	NUT (QTY 2)	NSN 4730-00-554-7397
31-032-13	TAPE, AIRCRAFT PIPING (QTY 2)	
31-033-4	TAPE, AIRCRAFT PIPING (QTY 2)	

NOTES

1. Dimensions are in inches.
2. **C** Dimension is start of bend.
3. Bend tube to dimensions in table. Conform to MS33611.
4. Cut END **A** after bending tube.
5. Trim and deburr ENDS **A** and **B**.
6. Install nuts and sleeves per MS33566 and TM 1-1500-204-23-2, Chapter 4.
7. Pressure test to 3000 PSI per TM 1-1500-204-23-2, Chapter 4.
8. Apply aircraft piping tape 31-032-13 and 31-033-4 to tube assembly per MIL-STD-1247. Flow END **B** to **A**.
9. Rotate tube (from plane of first bend) ccw as viewed from Bend From End.

406961-1401-97-2
J0248

Figure H-208. Tube (Sheet 2 of 2)



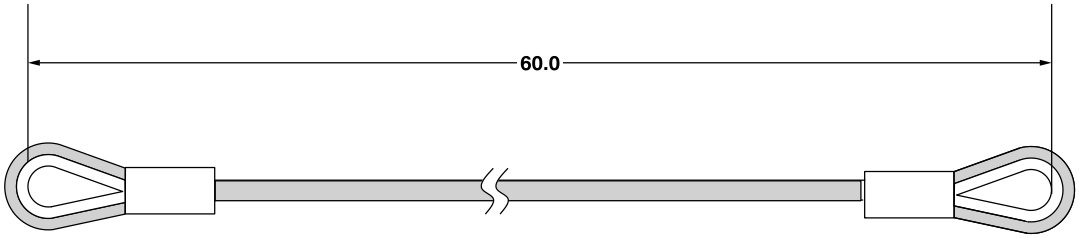
PART NUMBER	ITEM NAME	FABRICATE FROM
406-077-113-101	CUSHION	MIL-R-7362 TYPE II

NOTE

Dimensions are in inches.

406961-1401-30
J0248

Figure H-209. Cushion



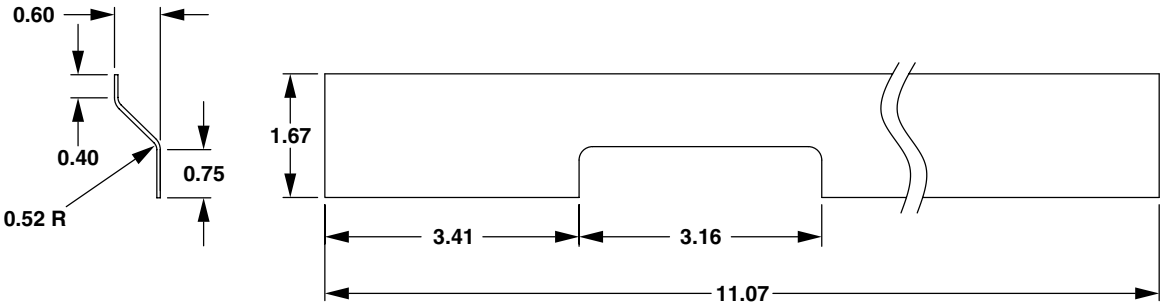
PART NUMBER	ITEM NAME	FABRICATE FROM
406-092-103-103	WIRE ROPE	NSN 4010-00-222-4481
G-414-5/16	THIMBLE	
S505 (5/16)	SLEEVE	

NOTES

1. Dimensions are in inches.
2. Make from 0.312 diameter thickness, 7x19 Shape Wire Rope, meeting CRES, MIL-M-83420, Type I, Comp. B specification.
3. Cut wire rope 66.0 inches in length.
4. Load check to a maximum normal working load of 2000 pounds per cable.

406961-1401-336
J1274

Figure H-210. Wire Rope



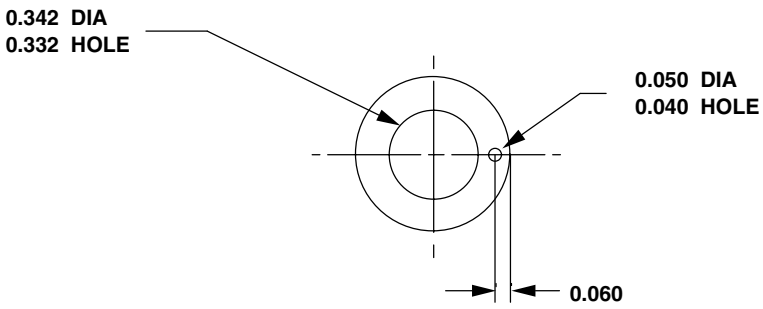
PART NUMBER	ITEM NAME	FABRICATE FROM
406-530-201-115	DOUBLER	ALUMINUM ALLOY 2024T0 QQ-A-250/5 ◁2

NOTES

1. Dimensions are in inches.
2. ▷2 Make from 0.032, 2024T0. Heat treat to T42 per MIL-H-6088 and TM 1-1500-204-23-10, Chapter 5.
3. Apply chemical conversion coating (D57).
4. Apply epoxy primer coating (D98).
5. Bond using adhesive (D23).

406961-1401-209
J0412

Figure H-211. Doubler



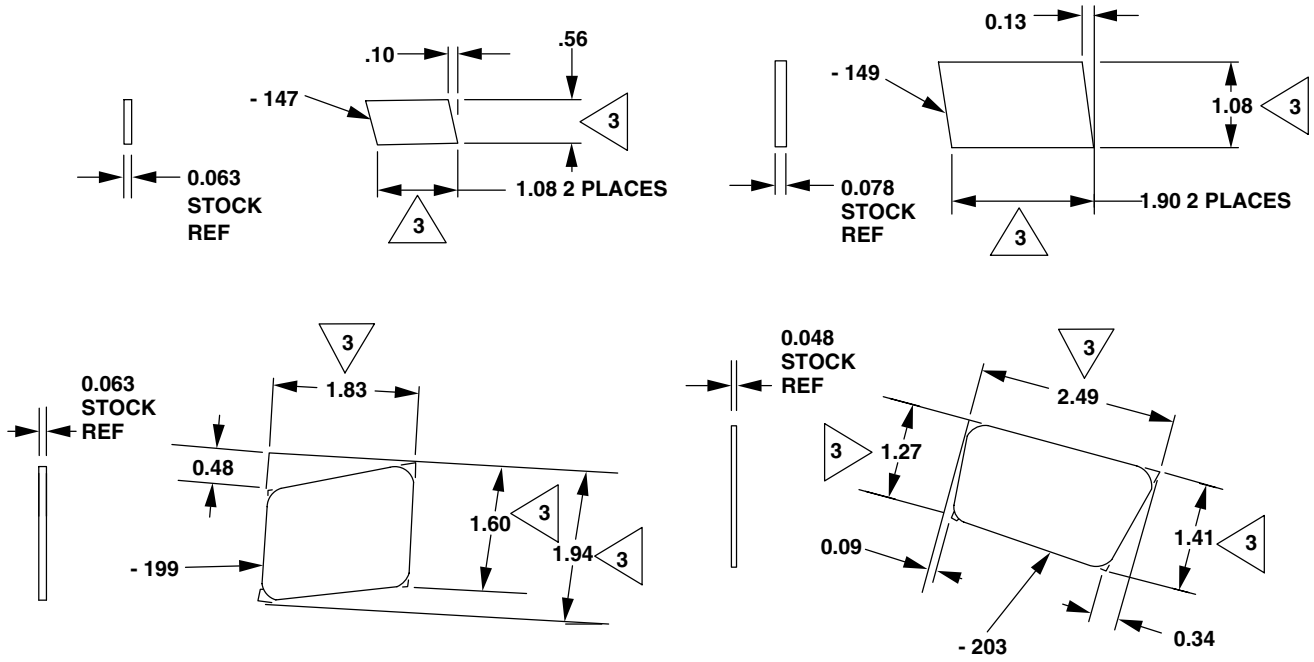
PART NUMBER	ITEM NAME	FABRICATE FROM
406-630-102-101	WASHER, SAFETY	MAKE FROM AN960C516

NOTE

Dimensions are in inches.

406961-1401-102
J0248

Figure H-212. Washer, Safety



PART NUMBER	ITEM NAME	FABRICATE FROM
406-961-014-147	SHIM (LAMINATED)	ALUMINUM ALLOY FOIL, 1100-H19 PER QQ-A-250/01, 5052-H19, OR H39 PER QQ-A-250/8, OR 1145-H19 PER AMS 4013, 0.003 THK LAMINATIONS (BELL STANDARD 120-098-06D12 (97499))
406-961-014-149	SHIM (LAMINATED)	ALUMINUM ALLOY FOIL, 1100-H19 PER QQ-A-250/01, 5052-H19, OR H39 PER QQ-A-250/8, OR 1145-H19 PER AMS 4013, 0.003 THK LAMINATIONS (BELL STANDARD 120-098-11E21 (97499))
406-961-014-199	SHIM (LAMINATED)	ALUMINUM ALLOY FOIL, 1100-H19 PER QQ-A-250/01, 5052-H19, OR H39 PER QQ-A-250/8, OR 1145-H19 PER AMS 4013, 0.003 THK LAMINATIONS (BELL STANDARD 120-098-19D20 (97499))
406-961-014-203	SHIM (LAMINATED)	ALUMINUM ALLOY FOIL, 1100-H19 PER QQ-A-250/01, 5052-H19, OR H39 PER QQ-A-250/8, OR 1145-H19 PER AMS 4013, 0.003 THK LAMINATIONS (BELL STANDARD 120-098-15C25 (97499))

EXAMPLE OF PART NUMBER

120-098 07 C 150 = SHIM, SURFACE BONDED, 1/2 LAMINATED 1/2 SOLID, 0.70 INCH WIDE, 0.125 INCH THICK, 15.00 INCHES LONG

- 150 — LENGTH CODE IN 0.10 INCH INCREMENTS, FOR 0.10 TO 9.90 USE 2 DIGITS, FOR 10.00 TO 48.00 TO USE 3 DIGITS (48.00 INCHES MAX)
- C — THICKNESS CODE: SEE TABLE
- 07 — WIDTH CODE IN 0.10 INCH INCREMENTS, FOR 0.10 TO 9.90 USE 2 DIGITS (4)
- 120-098 — BASIC NUMBER

120-098-16C25 = SHIM, SURFACE BONDED, ALL LAMINATED, 1.60 INCHES WIDE, 0.048 INCH THK, 2.50 INCHES LONG

406961-1401-241-1
J0412

Figure H-213. Shim (Sheet 1 of 2)

TABLE

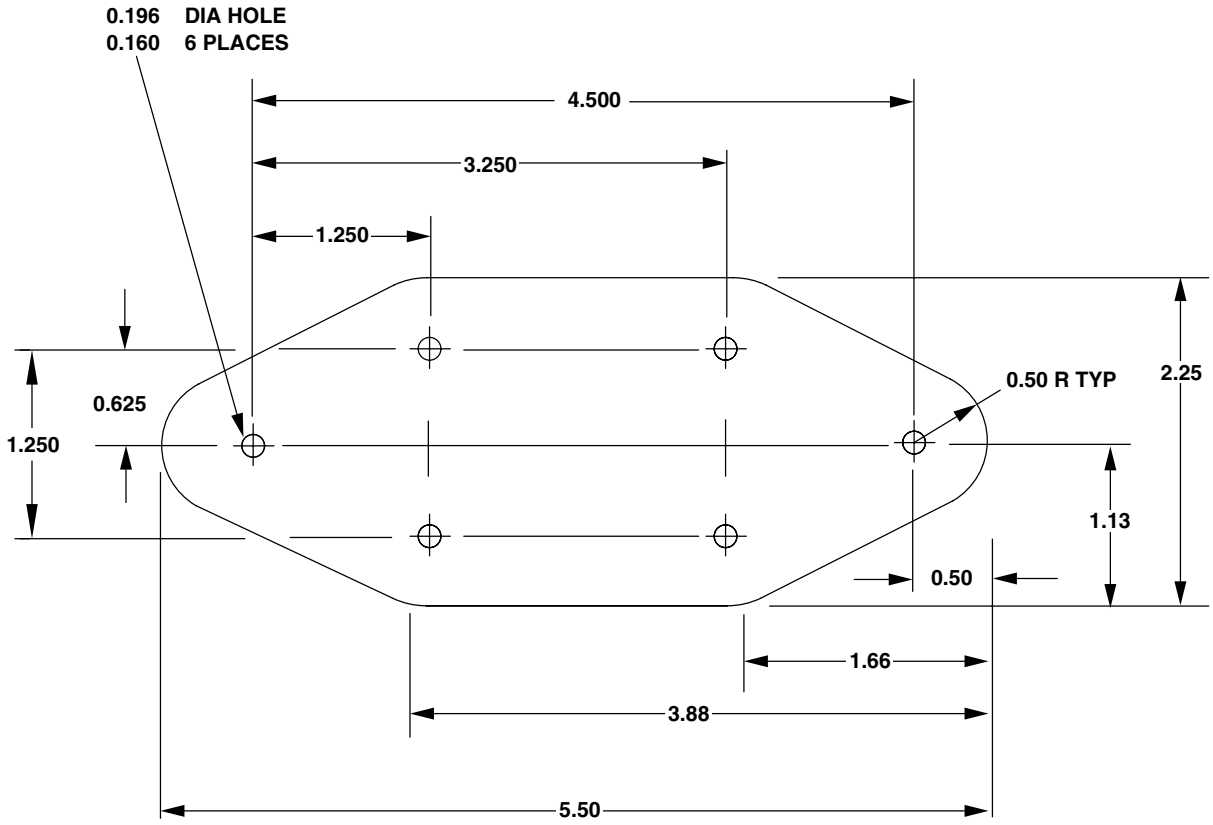
CODE	THICKNESS	TOLERANCE
C	0.048	+.005 -.002
D	0.063	+.006 -.002
E	0.078	+.007 -.002

NOTES

1. Dimensions are in inches.
2. Optional corner radii ± 0.10 to 12.00 inches ± 0.030 inch.
3. Tolerances for 0.10 to 12.00 inches ± 0.30 inch.
4. Coded dimensions may equal but not exceed coded length dimensions.

406961-1401-241-2
J0412

Figure H-213. Shim (Sheet 2 of 2)



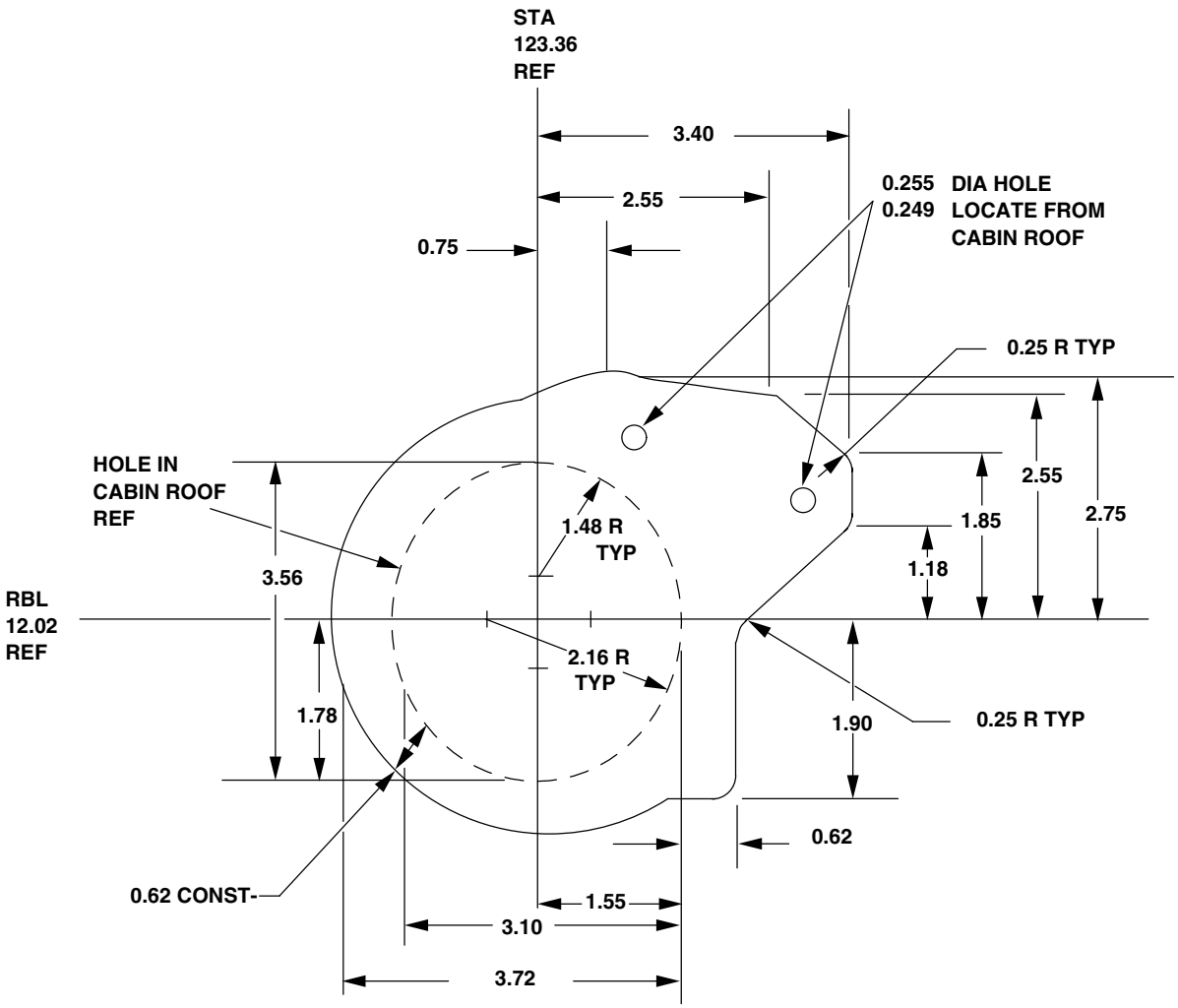
PART NUMBER	ITEM NAME	FABRICATE FROM
406-961-016-118	COVER	NSN 9535-01-341-8291

NOTES

1. Dimensions are in inches.
2. Remove all burrs and sharp edges.
3. Apply chemical conversion coating (D57).
4. Apply epoxy primer coating (D98).

406961-1401-179
J0403

Figure H-214. Cover



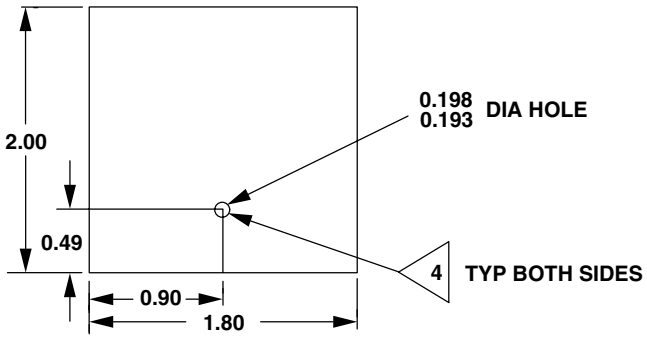
PART NUMBER	ITEM NAME	FABRICATE FROM
406-961-017-157	COVER	NSN 9535-01-341-8289

NOTES

1. Dimensions are in inches.
2. Trim cover per dimensions shown.
3. Scarf all edges and deburr holes.
4. Apply chemical conversion coating (D57).
5. Apply epoxy primer coating (D98).

406961-1401-242
J0412

Figure H-215. Cover



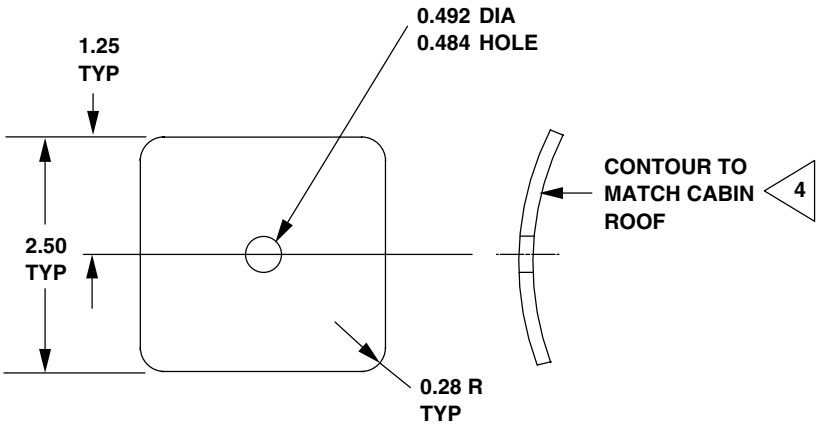
PART NUMBER	ITEM NAME	FABRICATE FROM
406-961-017-223	BRACKET	0.063 ALUMINUM ALLOY 2024T3 QQ-A-250-5

NOTES

1. Dimensions are in inches.
2. Remove all burrs and sharp edges.
3. Apply chemical conversion coating (D57).
4. Remove protective finish from around hole diameter to ensure good electrical bond.
5. Apply epoxy primer coating (D98).

406961-1401-67
J0248

Figure H-216. Bracket



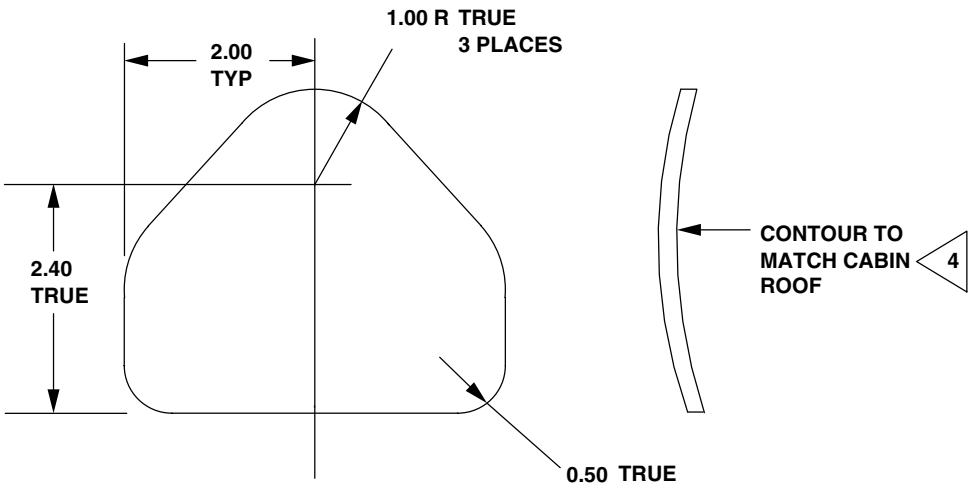
PART NUMBER	ITEM NAME	FABRICATE FROM
406-961-017-245	DOUBLER	NSN 9535-00-167-2278

NOTES

1. Dimensions are in inches.
2. Trim doubler per dimensions shown.
3. Scarf all edges and deburr hole.
4. Bond doubler using adhesive film (D18), adhesive primer (D28) and adhesive (D23).

406961-1401-243
J0412

Figure H-217. Doubler



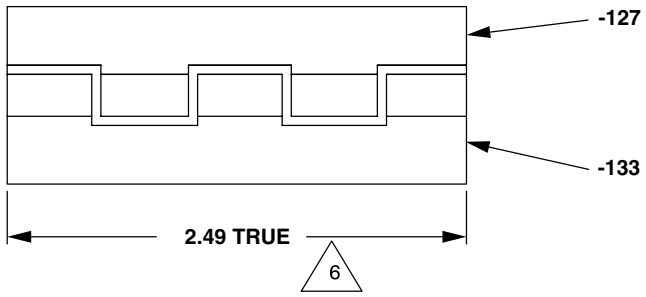
PART NUMBER	ITEM NAME	FABRICATE FROM
406-961-017-247	DOUBLER	NSN 9535-00-167-2278

NOTES

1. Dimensions are in inches.
2. Trim doubler per dimensions shown.
3. Scarf all edges.
4. Bond doubler using adhesive film (D18), adhesive primer (D28) and adhesive (D23).

406961-1401-244
J0412

Figure H-218. Doubler



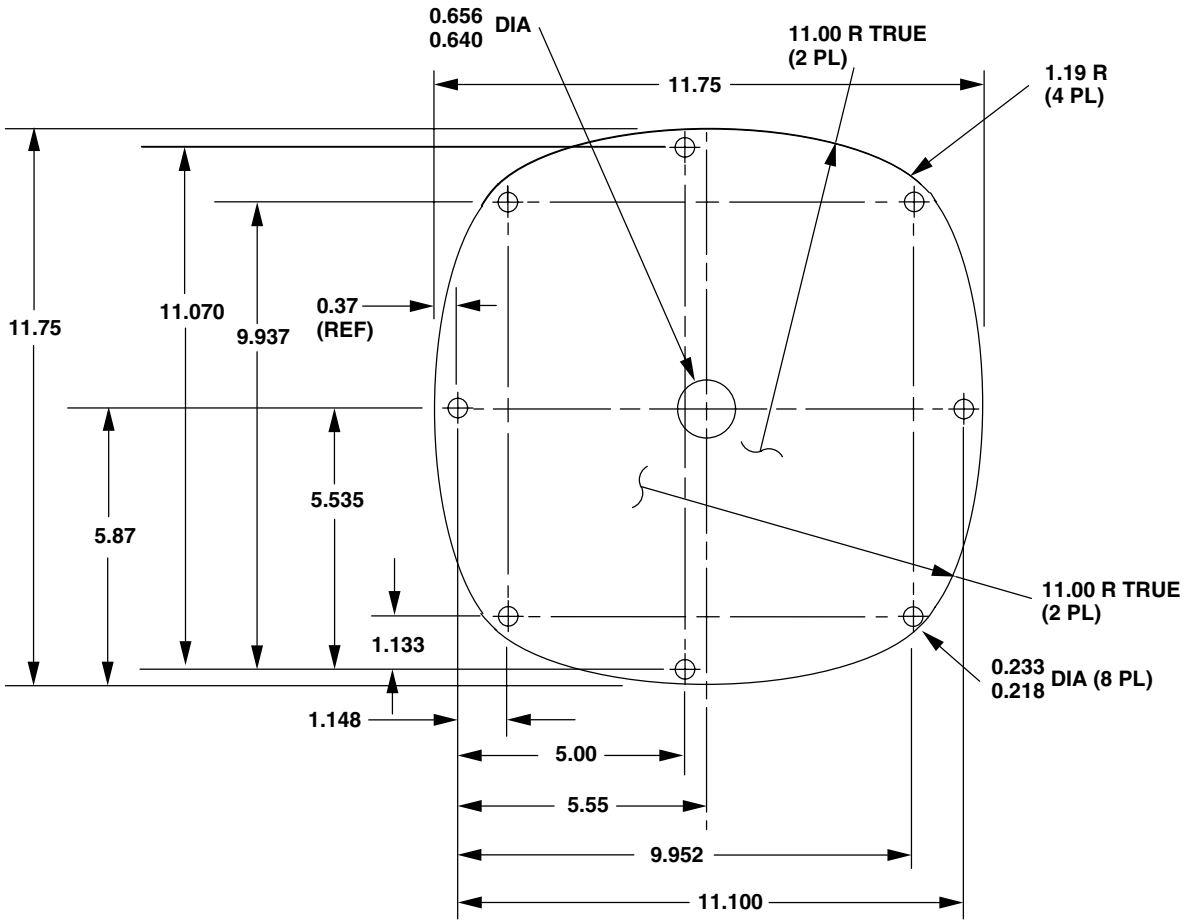
PART NUMBER	ITEM NAME	FABRICATE FROM
406-961-021-127	HINGE HALF	NSN 5340-01-025-5967
406-961-021-133	HINGE HALF	NSN 5340-01-266-8426

NOTES

1. Dimensions are in inches.
2. Cut to required length.
3. Remove all burrs and sharp edges.
4. Use hinge pin 20253P2-243.
5. Crimp hinge ends after pin installation to retain pin.
6. May be trimmed to clear existing rivets.

406961-1401-118
J0403

Figure H-219. Hinge Half



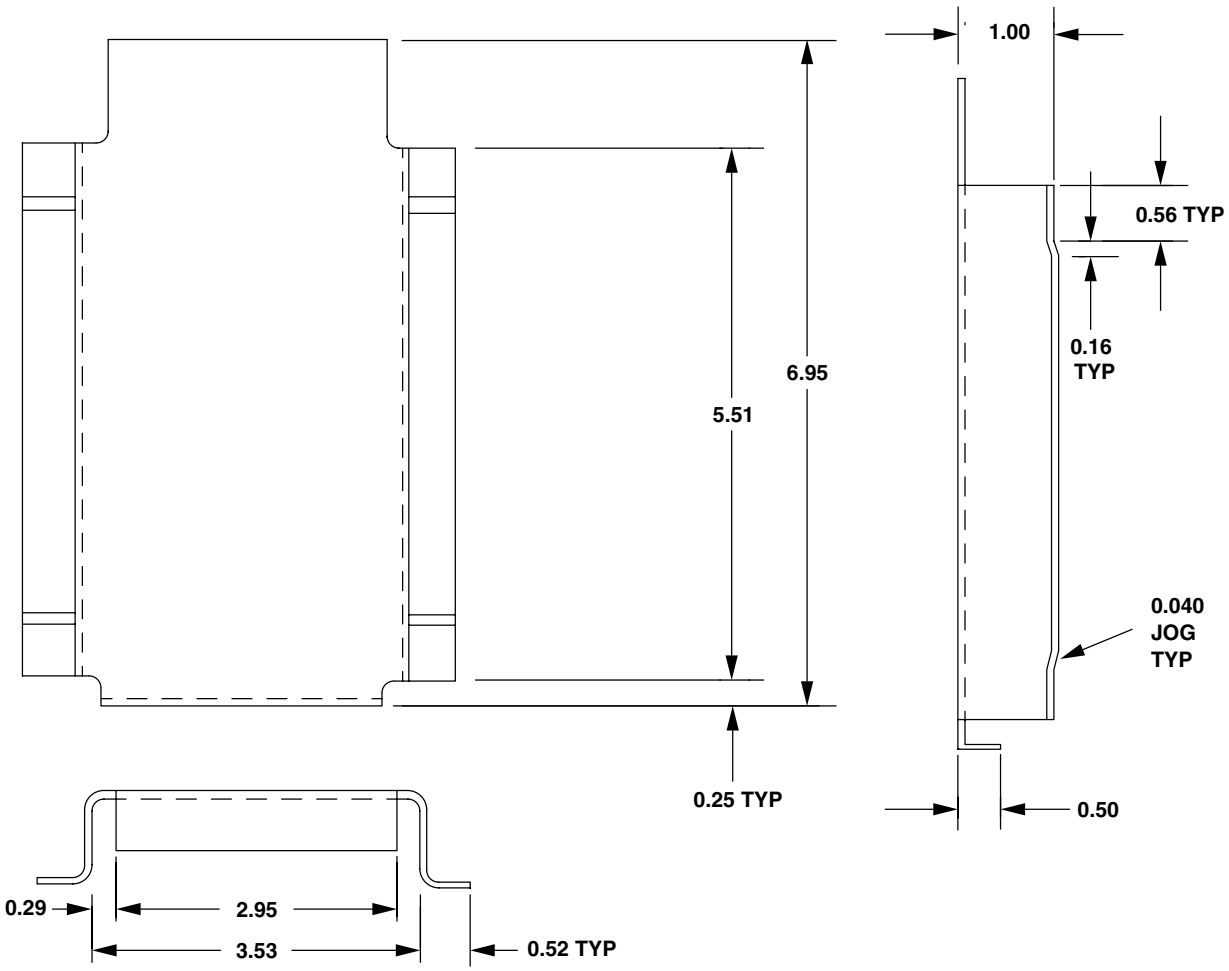
PART NUMBER	ITEM NAME	FABRICATE FROM
406-961-022-131	COVER	NSN 9535-01-341-8289

NOTES

1. Dimensions are in inches.
2. Make from 0.032 x 11.75 x 11.75 material.
3. Remove all burrs and sharp edges.
4. Apply chemical conversion coating (D57).
5. Apply epoxy primer coating (D98).

406961-1401-154
J0403

Figure H-220. Cover



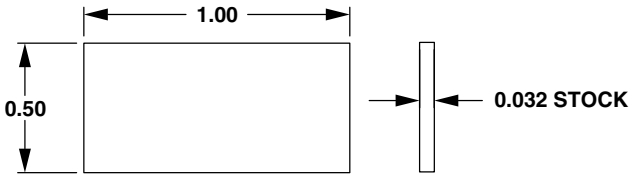
PART NUMBER	ITEM NAME	FABRICATE FROM
406-961-023-169	PLATE, MOUNTING	0.040 ALUMINUM ALLOY TYPE 2024T0 PER QQ-A-250/5

NOTES

1. Dimensions are in inches.
2. Remove all burrs and sharp edges.
3. Heat treat to T42 per MIL-H-6088 and TM 1-1500-204-23-10, Chapter 5.
4. Apply chemical conversion coating (D57).
5. Apply epoxy primer coating (D98).
6. Bend relief radius 0.16.
7. Corner radius of 0.25 optional.

406961-1401-167
J0403

Figure H-221. Plate, Mounting



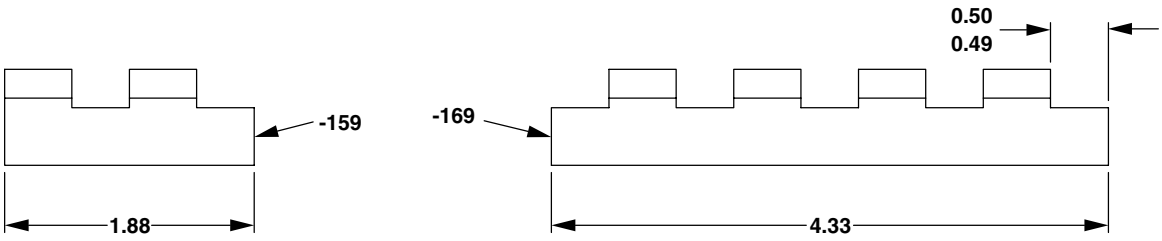
PART NUMBER	ITEM NAME	FABRICATE FROM
406-961-027-137	DOUBLER	NSN 9535-01-341-8289

NOTES

1. Dimensions are in inches.
2. Trim doubler per dimensions shown.
3. Scarf all edges.

406961-1401-245
J0412

Figure H-222. Doubler



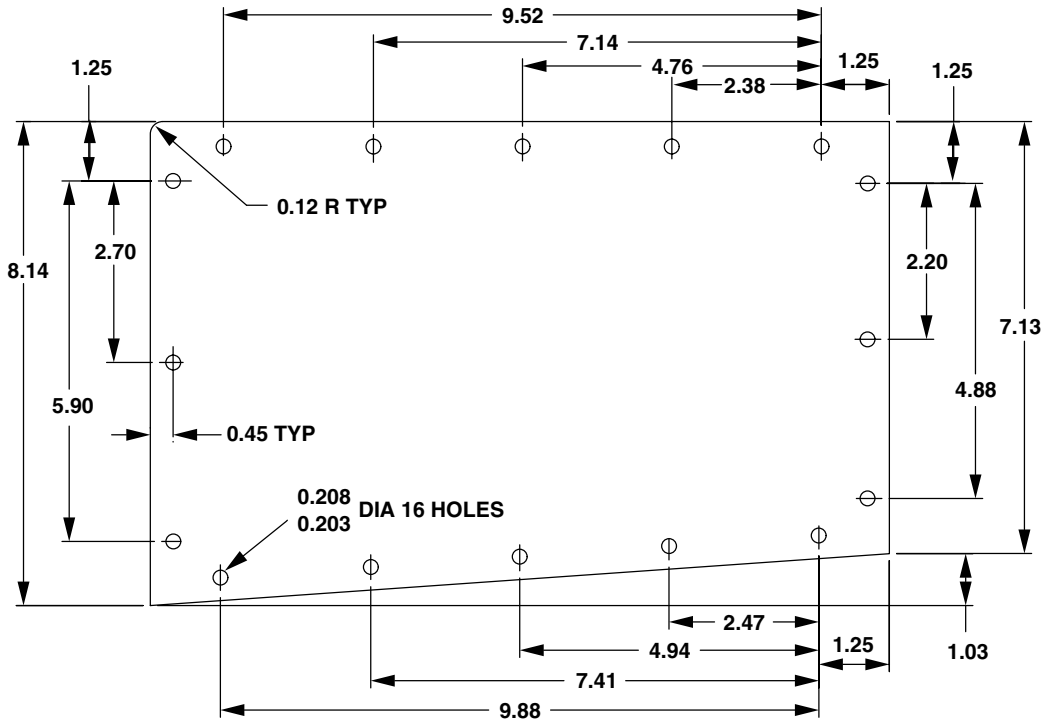
PART NUMBER	ITEM NAME	FABRICATE FROM
406-961-031-159	HINGE HALF	NSN 5340-00-838-2787
406-961-031-169	HINGE HALF	NSN 5340-00-051-9133

NOTES

1. Dimensions are in inches.
2. Cut to required length.
3. Remove all burrs and sharp edges.

406961-1401-119
J0403

Figure H-223. Hinge Half



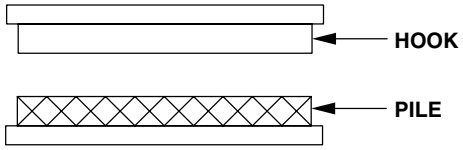
PART NUMBER	ITEM NAME	FABRICATE FROM
406-961-037-117	DOOR	0.040 ALUMINUM ALLOY
406-961-037-118	DOOR (OPPOSITE)	TYPE 2024T3 PER QQ-A-250/5

NOTES

1. Dimensions are in inches.
2. Remove all burrs and sharp edges.
3. Apply chemical conversion coating (D57).
4. Apply epoxy primer coating (D98).

406961-1401-68
J0248

Figure H-224. Door



PART NUMBER	TYPE	WIDTH = 0.0625
50-029 ( ) 3 ( )	HOOK	0.625
50-029 ( ) 4 ( )	PILE	
50-029 ( ) 7 ( )	HOOK	1.000
50-029 ( ) 8 ( )	PILE	
50-029 ( ) 9 ( )	HOOK	1.50
50-029 ( ) 10 ( )	PILE	
50-029 ( ) 11 ( )	HOOK	2.00
50-029 ( ) 12 ( )	PILE	

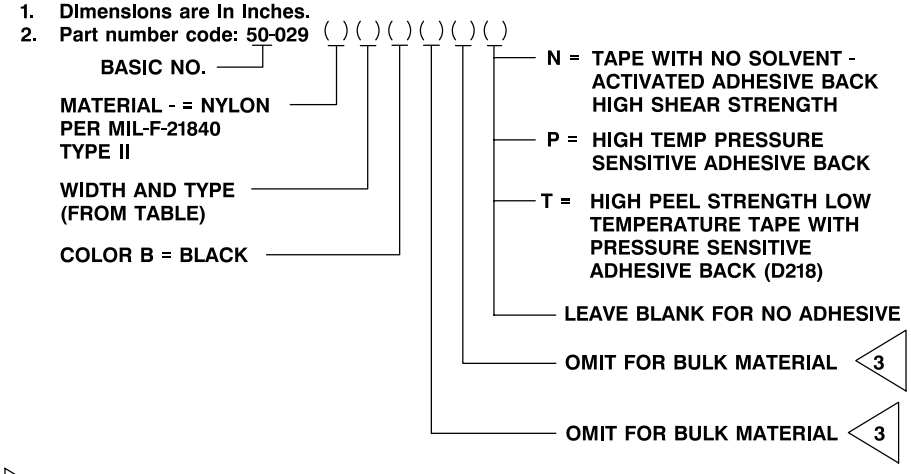
406961-1401-7-1
J0248

Figure H-225. Hook or Pile (Sheet 1 of 2)

PART NUMBER	3	ITEM NAME
50-029-10B010		PILE
50-029-3B010		HOOK
50-029-3B014		HOOK
50-029-4B010		PILE
50-029-4B014P		PILE
50-029-7B024P		HOOK
50-029-8B030		PILE
50-029-9B010		HOOK

NOTES

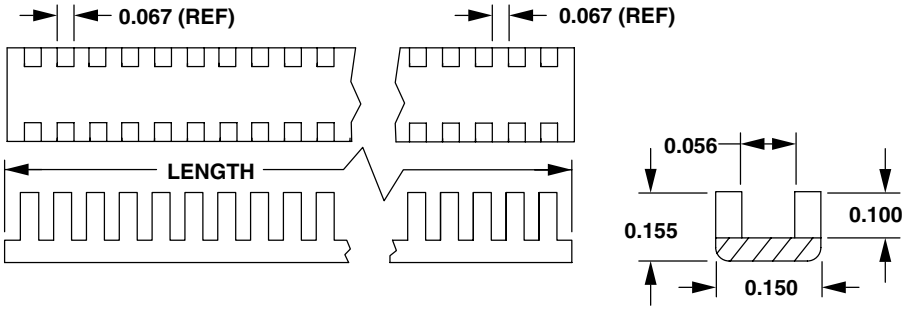
1. Dimensions are in inches.
2. Part number code: 50-029 ( )( )( )( )( )( )( )



3 Cut to required length in inches. If less than 10 inches, first digit is "0". Third digit length in 0.125 inch increments. "AR" cut to length using old part as a guide.

406961-1401-7-2
J1274

Figure H-225. Hook or Pile (Sheet 2 of 2)



PART NUMBER	ITEM NAME	FABRICATE FROM
60-003-1N10	GROMMET, NONMETALLIC	NSN 5325-00-960-2410
60-003-1N11	GROMMET	NSN 5325-00-960-2410
60-003-1N14	GROMMET	NSN 5325-00-960-2410
60-003-1N17	GROMMET	NSN 5325-00-960-2410
60-003-1N18	GROMMET	NSN 5325-00-960-2410
60-003-1N20	GROMMET	NSN 5325-00-960-2410
60-003-1N21	GROMMET, SPECIAL	NSN 5325-00-960-2410
60-003-1N22	GROMMET	NSN 5325-00-960-2410
60-003-1N25	GROMMET	NSN 5325-00-960-2410
60-003-1N28	GROMMET, SPECIAL	NSN 5325-00-960-2410
60-003-1N29	GROMMET, SPECIAL	NSN 5325-00-960-2410
60-003-1N32	GROMMET	NSN 5325-00-960-2410
60-003-1N37	GROMMET	NSN 5325-00-960-2410
60-003-1N4	GROMMET	NSN 5325-00-960-2410
60-003-1N42	GROMMET	NSN 5325-00-960-2410
60-003-1N44	GROMMET	NSN 5325-00-960-2410
60-003-1N7	GROMMET	NSN 5325-00-960-2410
60-003-1N9	GROMMET	NSN 5325-00-960-2410
60-003-2N10	GROMMET	NSN 5325-00-960-2410
60-003-2N16	GROMMET	NSN 5325-00-960-2410
60-003-2N17	GROMMET	NSN 5325-00-960-2410
60-003-2N32	GROMMET, NONMETALLIC	NSN 5325-00-960-2410
60-003-3N7	GROMMET	NSN 5325-00-960-2410
60-003-4N27	GROMMET	NSN 5325-00-960-2410
60-003-6N50	GROMMET	NSN 5325-00-960-2410

NOTES

1. Dimensions are in inches.
2. Part number code: 60-003 - 1N40
   - BASIC NO.
   - SIZE
   - LENGTH EXPRESSED IN 1/4 INCH INCREMENTS
3. Procurement: MS21266 stock.
4. Cut to required length.

406961-1401-8
J1274

Figure H-226. Grommet, Nonmetallic or Special

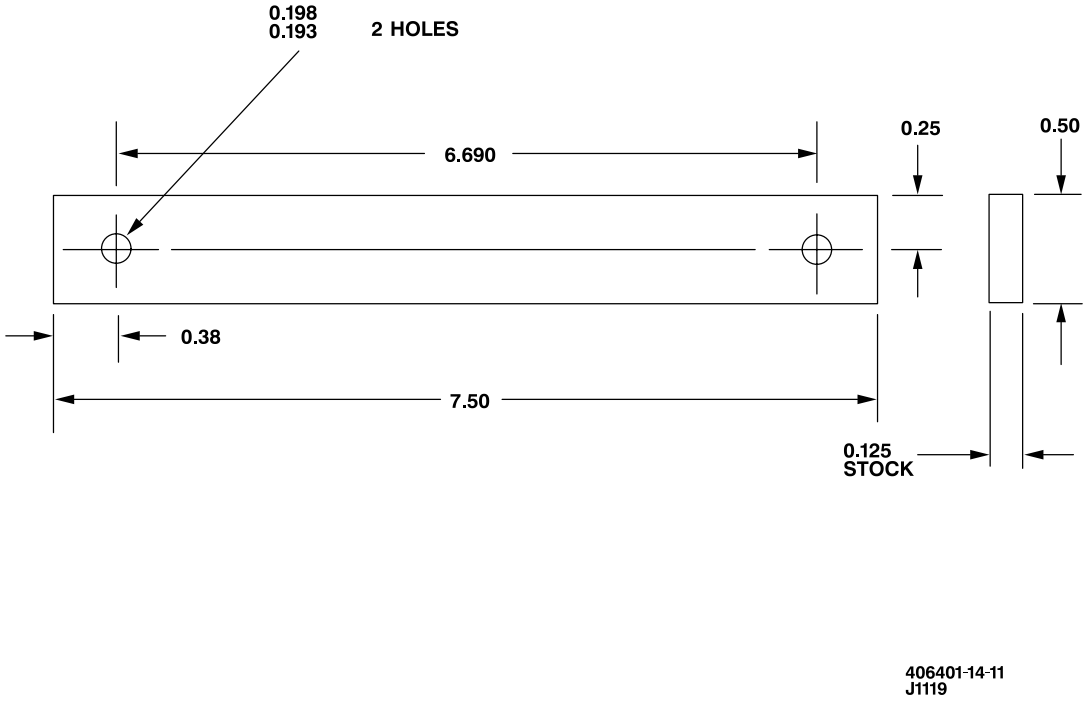


Figure H-227. Workaid, Collective Controls Rigging Tool

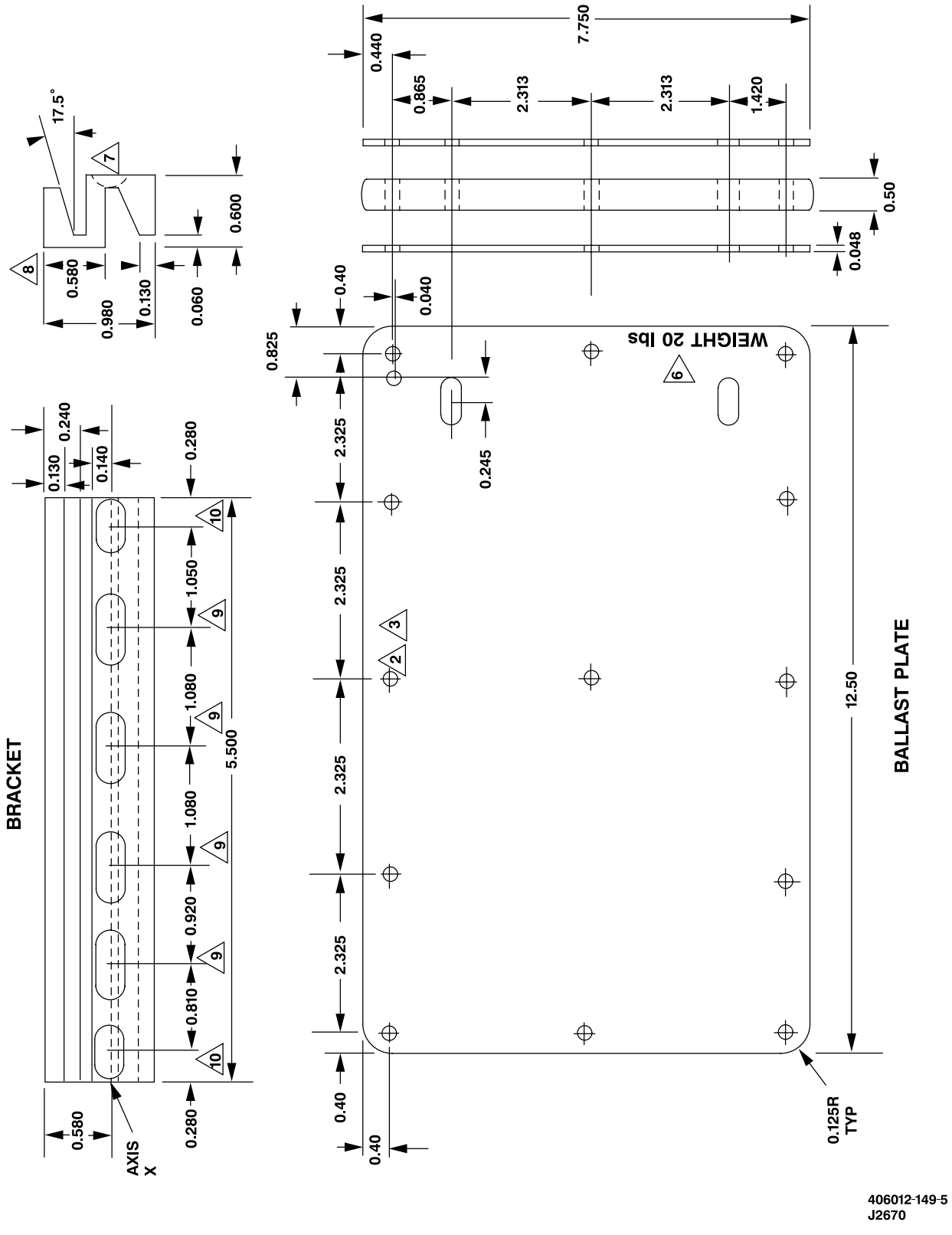


Figure H-228. Nose Sub-battery Ballast (Sheet 1 of 2)

PART NUMBER	ITEM NAME
TBD	BALLAST WEIGHT
TBD	BRACKET

PARTS REQUIRED:

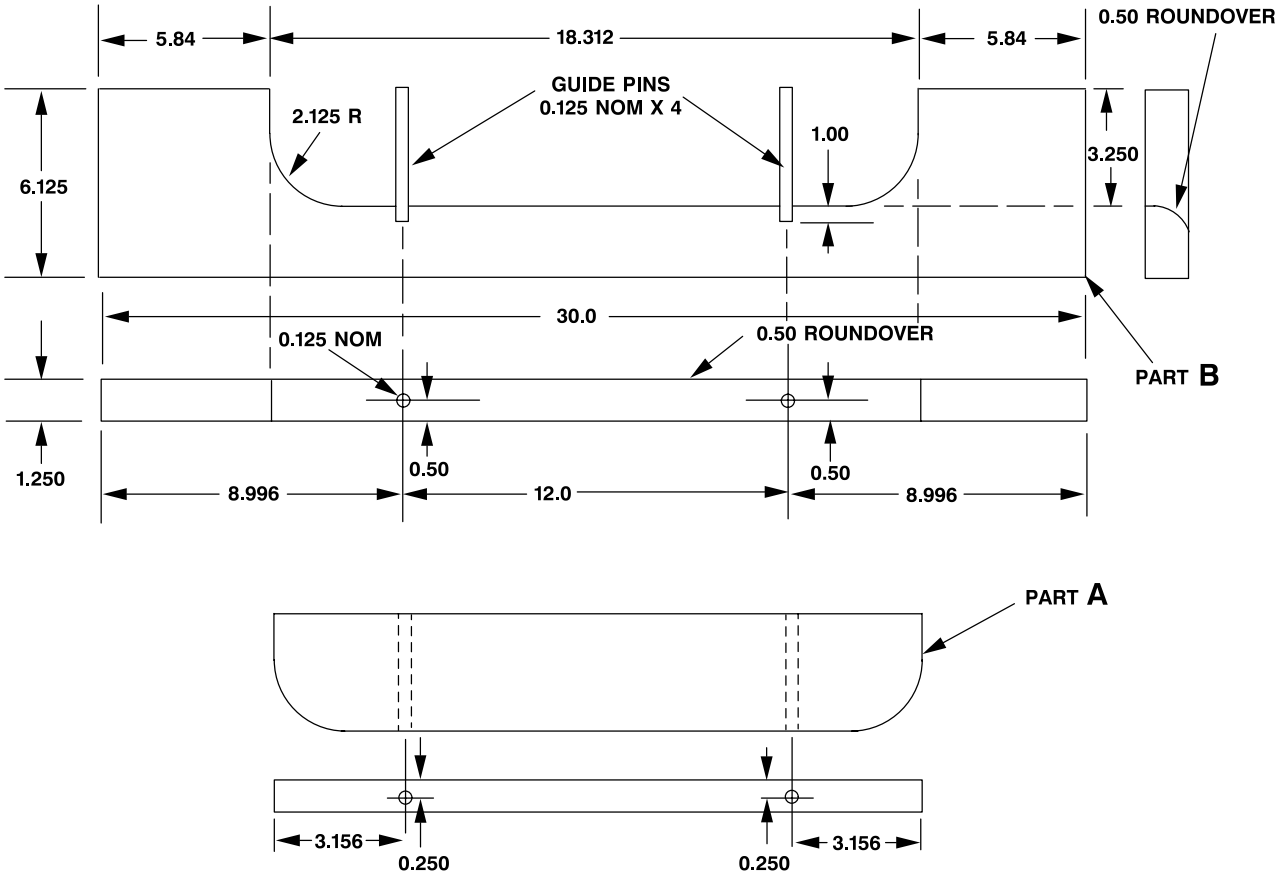
PART NUMBER	NOMENCLATURE	QTY
TBD	LEAD, CHEMICAL GRADE	1
TBD	STAINLESS STEEL H304	2
NASM20426A4-12	RIVET, SOLID, COUNTERSUNK 100°	13
TBD	STEEL, 4130	

NOTE:

1. Dimensions are in inches.
2. Drill 13 0.250 holes.
3. Countersink upper and lower surfaces.
4. Remove all burrs and sharp edges.
5. Assemble ballast weight with NASM20426 rivets.
6. After assembly, weigh ballast and etch weight on the upper surface on forward edge of ballast weight.
7. Notch on one side only.
8. Measurements similar on opposite side.
9. Four places 5/16 inch Ø ball radius, 0.065 inch deep, elongated 0.215 inch both sides of centerline on AXIS X.
10. Two places 5/16 inch Ø ball radius, 0.065 inch deep, elongated 0.125 inch both sides of centerline on AXIS X.

406012-149-6
J2670

Figure H-228. Nose Sub-battery Ballast (Sheet 2 of 2)



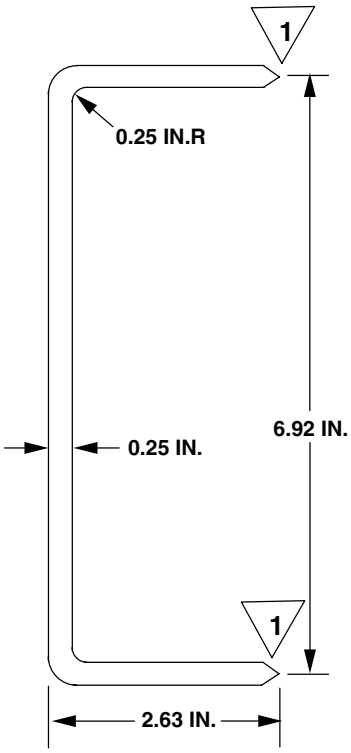
PART NUMBER	ITEM NAME	FABRICATE FROM
WORKAID	FORMING TOOL EXHAUST DUCT EXTENSION/STIFFENER	1.25 X 36.0 X 36.0 PHENOLIC SHEET NSN 9330-00-290-1668
WORKAID	GUIDE PINS	2 STEEL ROD 0.125 X 4 (2)

NOTES

1. Dimensions are in inches.
2. Welding rod cut to length may be used.

406961-1401-340-1
J2743

Figure H-229. Workaid, Forming Tool, Exhaust Duct Extension/Stiffener



PART NUMBER	ITEM NAME	FABRICATE FROM
WORK AID	CYCLIC SERVO ACTUATOR RIGGING CHECK TOOL	ROUND BAR STEEL, COLD ROLLED 12.00 IN. X 0.25 IN.

NOTE

1. Taper ends to a point.

406961-1401-341
J2923

Figure H-230. Workaid, Cyclic Servoactuator Rigging Check Tool

APPENDIX J

RESERVED FOR FUTURE USE

APPENDIX K

RESERVED FOR FUTURE USE

APPENDIX L

RESERVED FOR FUTURE USE

APPENDIX M

ELECTRICAL BONDING PROCEDURES

Page

Section I. INTRODUCTION

M-1. INTENDED USE OF BONDING

Electrical bonding and grounding of aircraft structures is used for ensuring:

1. Aircraft structures, equipment, and personnel are protected from the hazards of lightning discharges.

2. Homogeneous and stable paths for all electrical currents are established.

3. Radio frequency potentials on enclosures, antennas, and other aircraft structures are minimized.

4. Personnel are protected from shock hazards that may develop from accidental power ground.

5. Static charge accumulation on aircraft structures is prevented.

M-2. DEFINITIONS

1. A bond is an electrically conductive joint. Bonds are assembled either directly, using fasteners and/or clamps, or indirectly, using bonding straps or bonding wires.

2. Bond surfaces are small areas on aircraft structures or electrical bonding hardware that provide a path for the dissipation of electrical energy.

3. A bonding strap, also called a bonding jumper, is any conductor that is used for providing low-resistance electrical bond.

4. Grounding is the construction of a low resistance direct wire connection to a ground plane.

5. Impedance is the total opposition presented by an electrical circuit to an alternating current.

6. Resistance is the opposition presented by an electronic device or material to the flow of direct current.

M-3. ELECTRICAL BONDING CLASSES

Electrical bonds are divided into classes:

1. Class A-1 electrical bonding permits the effective operation of antenna installations on military aircraft.

2. Class C electrical bonding provides a satisfactory current path return between the aircraft structure and equipment. Class C electrical bond also is applied in hazardous areas where a possibility of explosive fumes exists, such as engine compartment, transmission or fuel systems.

3. Class H electrical bonding prevents shock hazards that can develop because of accidental power grounds.

4. Class L electrical bonding provides lightning protection to aircraft structures.

5. Class R-1 electrical bonding is applied to military aircraft structures to minimize interference that is caused by radio frequency potentials.

6. Class S electrical bonding provides protection against the accumulation of static charges.

Section II. EQUIPMENT REQUIREMENTS

M-4. TOOLS

On aluminum only, use stainless steel abrasive brushes (D53) which will fit into a power drill. Abrasive brush (D53) or abrasive pads (D147) may be used on magnesium. Ohmmeters and probes must be capable of measuring resistance in the range of 0.1 milliohm to 1 ohm.

Section III. RESISTANCE REQUIREMENTS

M-5. RESISTANCE OF ELECTRICAL BONDS

The resistance requirements of each class of bond shall be in accordance with the following:

1. Class A-1 less than 2.5 milliohms resistance.

2. Class H less than 100 milliohms resistance.

3. Class R-1 less than 2.5 milliohms resistance.

4. Class S less than 1 ohm resistance.

5. Class C and Class L limits shall be specified within this manual whenever there is a requirement for a Class C or Class L bond.

Section IV. PROCEDURES

M-6. SURFACE PREPARATION

Surfaces shall be prepared for electrical bonding or grounding connections in accordance with the following procedures. Whenever possible, the prepared bond surface area shall be 1-1/2 to 2-1/2 times larger than the area required for the bonding or grounding connection.

1. Aluminum surfaces shall be prepared as follows:

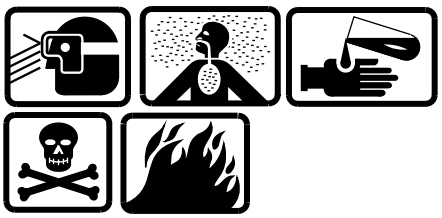
CAUTION

To prevent damage to helicopter components, use extreme care during cleaning. Excessive metal may be removed or bare metal bond surface may be damaged.

NOTE

When preparing chemical-filmed aluminum washers for bonding, the bond surface must be cleaned by hand abrading and/or solvent wiping prior to assembly. See paragraph M-7.

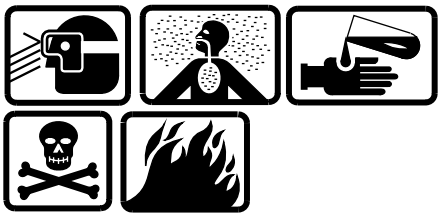
a. Remove all organic finishes, and anodic or chemical film by inserting an abrasive brush into a power drill, or hand sand with either abrasive pad (D147) or sandpaper (D176). Stop the power drill or hand sanding as soon as the metallic surface is exposed.



Naphtha/Naphthalene, TT-N-97

Isopropyl Alcohol

b. Wipe the exposed bond surface with clean dry cheesecloth (D56), or cheesecloth (D56) wetted with isopropyl alcohol (D39) or aliphatic naphtha (D141).



Chemical Conversion Materials

NOTE

Liberally applied chemical conversion coating (D57) which has an iridescent gold to dark-brown color, is not acceptable for electrical bonding and/or grounding purposes.

c. Apply a coating of chemical conversion coating (D57) to the bond surface either by using nonmetallic brush or dipping. Allow coating to remain on the bond surface for 5 seconds maximum. This will produce a light iridescent yellow finish on the bond surface.

CAUTION

To prevent damage to helicopter components, do not allow chemical conversion coating (D57) or rinse water to run into cracks, crevices, seams, or joints.

d. Remove excess chemical conversion coating (D57) from bond surface by blotting with clean dry cheesecloth (D56) or wetted with de-ionized water (D232) or distilled water (D94). Allow the bond surface to air dry or gently wipe the bond surface with cheesecloth (D56).

e. Within two hours after applying the chemical conversion coating (D57), electrical bonding or grounding shall be accomplished. See paragraph M-7.

2. Titanium, copper, and corrosion-resistant steel (CRES) surfaces shall be prepared by:

a. Remove all organic finishes by inserting an abrasive brush (D53) into a power drill, and remove the finishes from the bond surface. Stop the power drill as soon as the metallic surface is exposed.

b. Wipe the exposed bond surface with clean dry cheesecloth (D56), or cheesecloth (D56) wetted with isopropyl alcohol (D39) or aliphatic naphtha (D141).

c. Within 2 hours after abrading, electrical bonding or grounding shall be accomplished. See paragraph M-7.

3. Magnesium surfaces shall be prepared as follows:

CAUTION

To prevent damage to helicopter components, do not use abrasives other than those that are indicated below. Certain abrasives, such as emery and crocus cloth, can cause corrosion of the bond surface.

a. Remove all organic finishes including anodic or chromate conversion coating (D59) as follows:

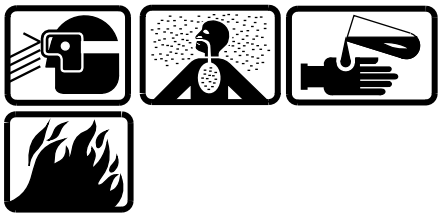
Sanding Operations

(1) Remove the topcoat using 100 grit or finer sandpaper (D171) or abrasive pads (D147).

(2) Remove primer using 180 grit or finer sandpaper (D172) or abrasive pads (D147).

(3) Remove chromate conversion coating (D59) using abrasive pads (D147) until the bare metal is exposed.

b. Thoroughly remove abrading residue from the bond surface by wiping with clean dry cheesecloth (D56), or wetted with isopropyl alcohol (D39) or aliphatic naphtha (D141).



Cadmium Chromate Conversion Materials

c. Apply a coating of chromate conversion coating (D59), mixed per MIL-M-3171, to the bond surface area. Allow to remain on bond surface for one minute.

CAUTION

To prevent damage to helicopter components, do not allow the chromate conversion coating (D59) or rinse water to run into cracks, crevices, seams or joints.

d. Remove excess chromate conversion coating (D59) from the bond surface by blotting with clean dry cheesecloth (D56), or wetted with de-ionized water (D232) or distilled water (D94). Allow the surface to air dry or gently wipe the surface using clean cheesecloth (D56).

e. Within two hours after applying chromate conversion coating (D59), electrical bonding or grounding shall be accomplished. See paragraph M-7.

4. Painted or primed cadmium plated surfaces shall be prepared by:

CAUTION

To prevent damage to helicopter components, do not remove the electroplated cadmium from the bond surface. Do not use abrasives other than those that are indicated below, because certain abrasive, such as emery and crocus cloths, can cause corrosion of bond surface.

a. Remove all organic finishes by hand abrading with abrasive pads (D147) or 100 grit sandpaper (D171) to remove only the top coat.

b. Using 180 grit sandpaper (D172) or abrasive pads (D147), thoroughly remove the primer to expose the metallic bond surface.

c. Remove abrading residue from the bond surface by wiping with clean dry cheesecloth (D56), or wetted with either isopropyl alcohol (D39) or aliphatic naphtha (D141).

d. Within two hours after abrading, electrical bonding or grounding shall be accomplished. See paragraph M-7.

5. Nonmetallic and/or composite surfaces that have been finished with either copper-filled polyurethane paint, flame-sprayed aluminum, or ion-vapor-deposited aluminum (IVD) shall be prepared by:

CAUTION

To prevent damage to helicopter components, do not remove the conductive finish from the bond surface. Do not use abrasives other than those that are indicated below. Certain abrasives, such as emery and crocus cloths, can cause corrosion of the bond surface.

a. Remove finishes or contaminants from conductive bond surfaces by hand abrading, using abrasive pads (D147) or 180 grit or finer sandpaper (D172).

b. Remove abrading residue from the conductive finish by wiping with clean dry cheesecloth (D56), or wetted with either isopropyl alcohol (D39) or aliphatic naphtha (D141).

c. If the conductive finish is not covered with primer, remove contaminants from the bond surface by wiping with clean dry cheesecloth (D56), or wetted with either isopropyl alcohol (D39) or aliphatic naphtha (D141).

d. If the conductive finish is either flame sprayed or ion-vapor-deposited (IVD) aluminum, apply chemical conversion coating (D57). M-6, para 1.

e. Within two hours after preparing conductive finished bond surfaces, electrical bonding or grounding shall be accomplished. See paragraph M-7.

f. For arrangement or stackup of bonding and grounding, see appendix F. Illustrations of surface cleaning and preparation methods are shown in figures M-1 through M-3.

M-7. ELECTRICAL BONDING METHODS

Electrical bonding and grounding of aircraft structures shall be accomplished in accordance with the following methods:

1. Method 1 is accomplished with a bonding strap and threaded fasteners and shall be accomplished as follows:

a. Assemble the cleaned bond surfaces in accordance with figures M-4 through M-10.

b. Install the bonding strap, threaded fasteners, and any additional bonding hardware in accordance with figures M-4 through M-10.

c. Check the assembly visually for completeness, proper fit, and alignment of mating parts.

2. Method 2 is the bonding of structures to tubular components such as conduits, fluid lines, or similar structures, in accordance with figures M-11 and M-12. When installing bonding clamps, do not apply force which would crimp or damage the conduit.

a. Assemble the cleaned bond surface in accordance with figures M-11 and M-12.

b. Install bonding clamps and/or other bonding hardware on tubular conduits, fluid lines, or similar structures, in accordance with figures M-11 and M-12. When installing bonding clamps, do not apply force which would crimp or damage the conduit.

c. Check the assembly visually for completeness, proper fit, and alignment of mating parts.

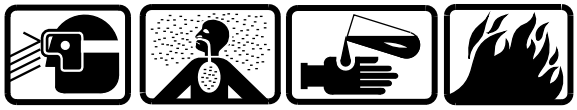
3. Method 3 is bonding of structures by direct contact/assembly using fasteners. Method 3 bonding shall be accomplished as follows:

a. Assemble the prepared bond surfaces in accordance with figures M-13 through M-19.

b. Check the assembly visually for completeness, proper fit, and alignment of mating parts.

M-8. SEALING

When sealants are required to seal bonded parts, the sealant should be applied within seven days of assembly as follows:



Isopropyl Alcohol

Naphtha/Naphthalene, TT-N-97

CAUTION

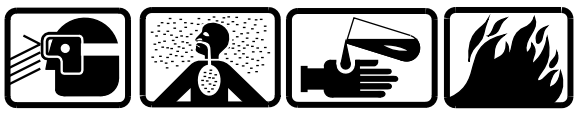
To prevent damage to helicopter components, ensure that cleaning solvent does not get trapped inside the assembled bond.

NOTE

Sealants shall not be applied to the mating surfaces of bonded areas.

1. Thoroughly remove contaminants from the assembled bond by wiping with clean dry cheesecloth (D56), or cheesecloth (D56) wetted with either isopropyl alcohol (D39) or aliphatic naphtha (D141).

2. Thoroughly dry the assembled bond.



Sealing Compound

3. Apply a fillet seal over the entire periphery of the assembled bond, using sealing compound (D184).

M-9. REFINISHING

Bonded structures shall be refinished within seven days of assembly by applying primer and topcoats, if required, in accordance with TM 55-1500-345-23 and this maintenance manual. Refinishing of bonded structures shall also be in accordance with the following requirements:

1. Refinishing shall not be delayed for more than seven days after removal of the original finish from structures that do not consist of magnesium.

2. Magnesium structures shall be refinished within 24 hours after removal of the original finish.

3. Whenever electrically bonded surfaces will be exposed to temperatures exceeding 600 °F (316 °C), refinishing is not required.

4. Refinish bonding strap assemblies that were secured with threaded fasteners in accordance with Appendix F.

Section V. TEST

M-10. BOND RESISTANCE

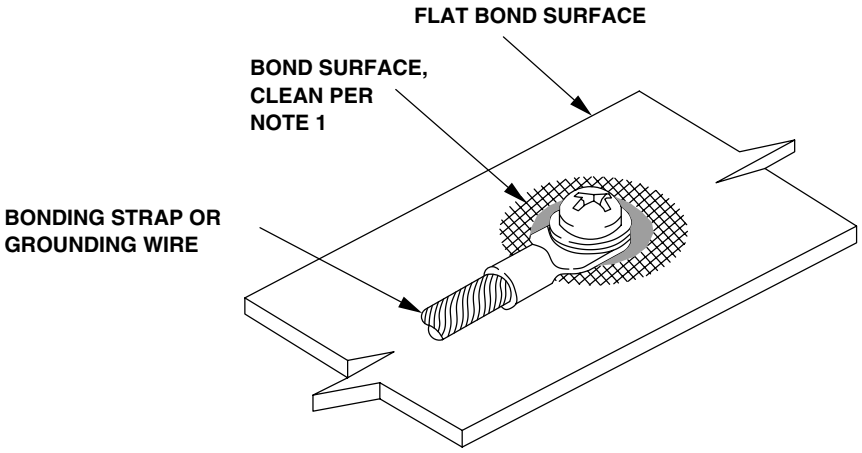
When tested in accordance with paragraph M-11, the bond resistance reading shall be in accordance with the requirements of paragraph M-5.

WARNING

To prevent injury to personnel, do not use the Shallcross Model 670-D milliohmmeter where explosive hazards (such as propellants or volatile compounds) are present. Do not perform electrical resistance measurements on the surfaces of electro-explosive devices.

M-11. TEST OF BOND

Measure the resistance across each bond, using the tools listed in paragraph M-4. When performing resistance measurements on bonds that either are designed for movement during aircraft operation or use bonding straps, gently vibrate the bonded parts to ensure they are tightened.

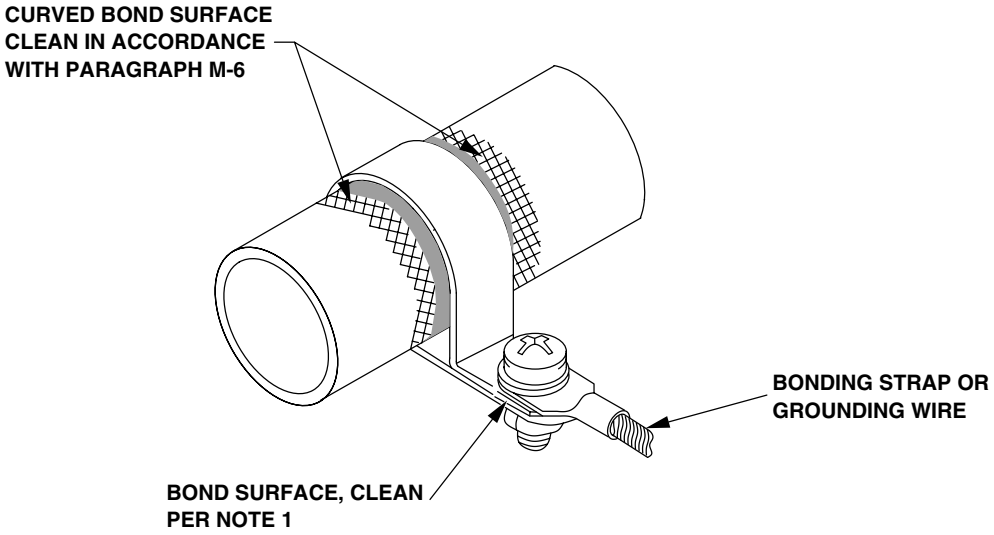


NOTES:

1. Immediately before bonding, ensure that the bond surfaces have been prepared in accordance with paragraph M-6.
2. Hardware stackup shall be in accordance with Appendix F.
3. Sealing shall be accomplished in accordance with paragraph M-8.
4. Refinishing shall be accomplished in accordance with paragraph M-9.

406075-1523-1
J0824

Figure M-1. Cleaning of Flat Bond Surfaces

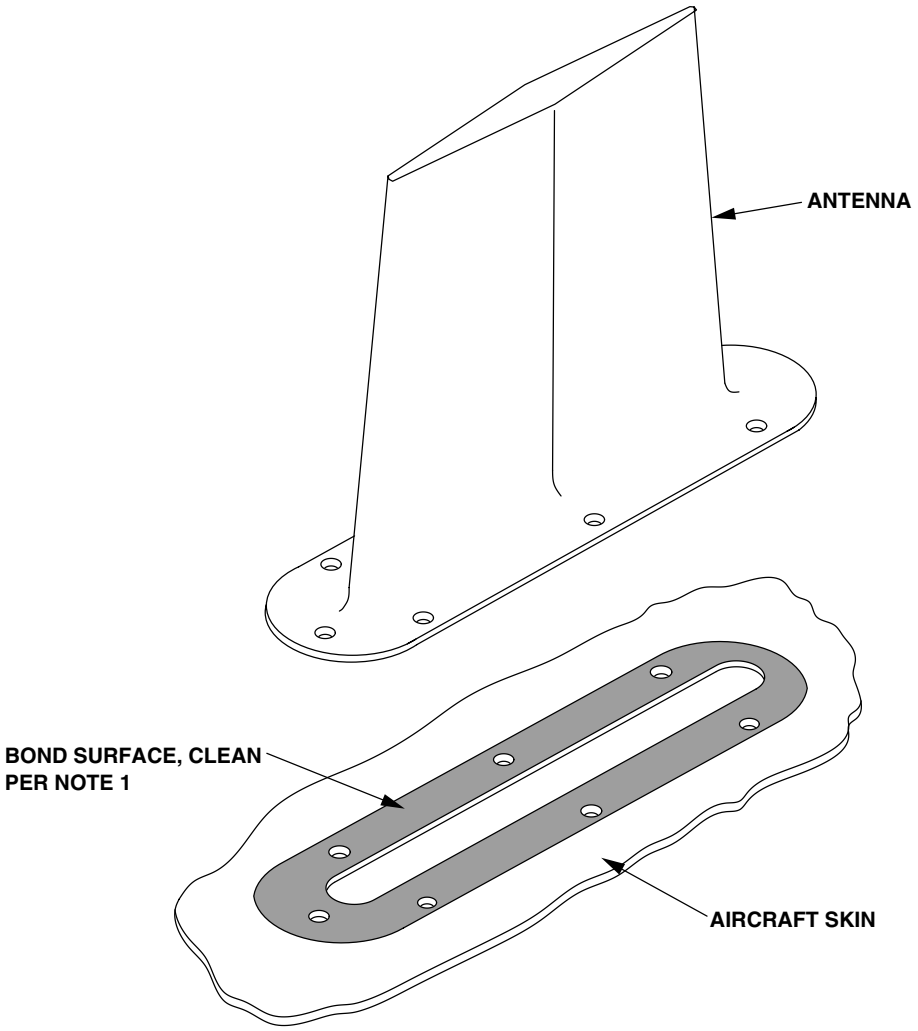


NOTES:

1. Immediately before bonding, ensure that the bond surfaces have been prepared in accordance with paragraph M-6.
2. Hardware stackup shall be in accordance with Appendix F.
3. Sealing shall be accomplished in accordance with paragraph M-8.
4. Refinishing shall be accomplished in accordance with paragraph M-9.

406075-1523-2
J0824

Figure M-2. Cleaning of Curved Bond Surfaces

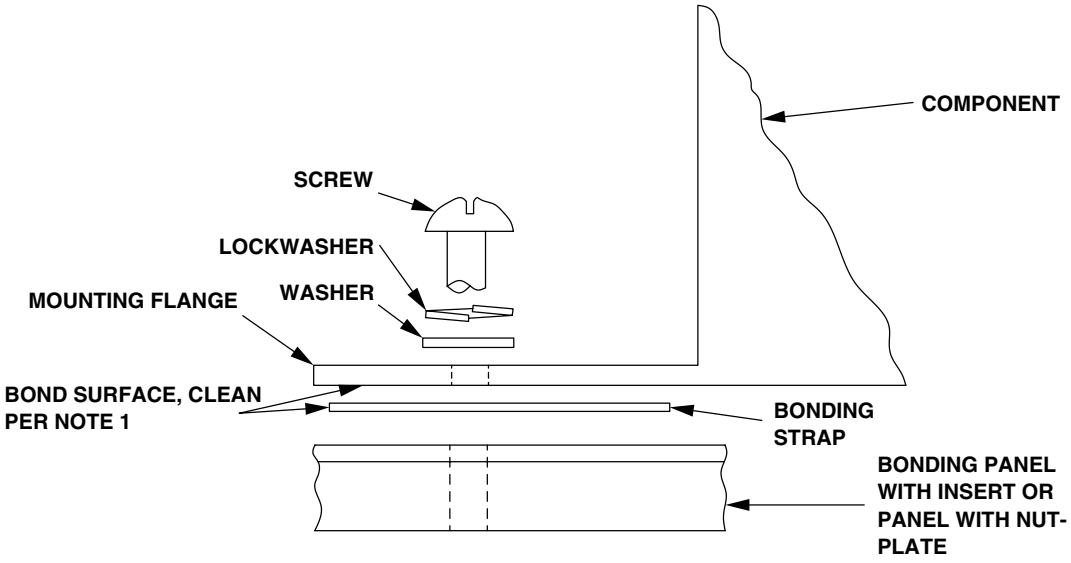


NOTES:

1. **Immediately before bonding, ensure that the bond surfaces have been prepared in accordance with paragraph M-6.**
2. **Sealing shall be accomplished in accordance with paragraph M-8.**

406075-1523-3
J0824

Figure M-3. Cleaning of Bond Surfaces on Antenna Mounting Areas

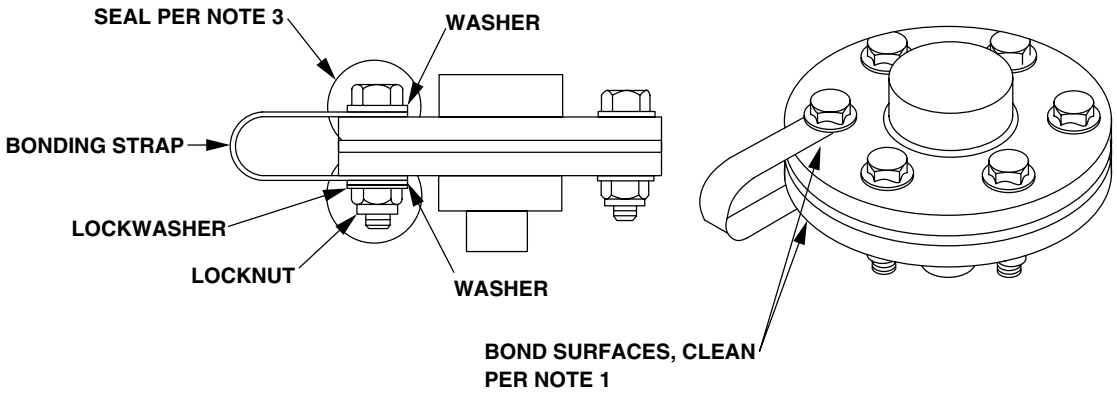


NOTES:

1. **Immediately before bonding, ensure that the bond surfaces have been prepared in accordance with paragraph M-6.**
1. **If insufficient edge distance, less than one-half diameter of hole, exists on the upper surface of the component, the bonding strap may be installed under the component.**
3. **Hardware stackup shall be in accordance with Appendix F.**
4. **Sealing shall be accomplished in accordance with paragraph M-8.**
5. **Refinishing shall be accomplished in accordance with paragraph M-9.**

406075-1523-4
J0824

Figure M-4. Bonding Accomplished with a Bonding Strap and Threaded Fasteners

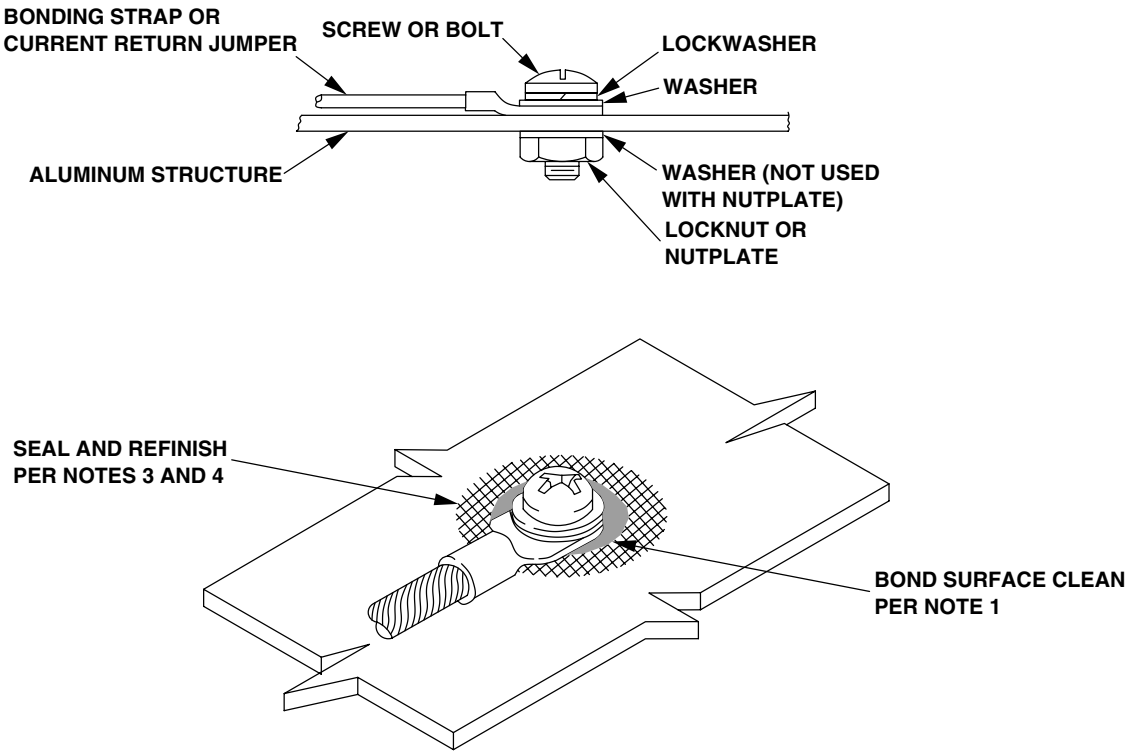


NOTES:

1. **Immediately before bonding, ensure that the bond surfaces have been prepared in accordance with paragraph M-6.**
2. **Hardware stackup shall be in accordance with Appendix F.**
3. **Sealing shall be accomplished in accordance with paragraph M-8.**
4. **Refinishing shall be accomplished in accordance with paragraph M-9.**

406075-1523-5
J0824

Figure M-5. Bonding Accomplished with a Bonding Strap and Threaded Fasteners Between Bolthead and Nut

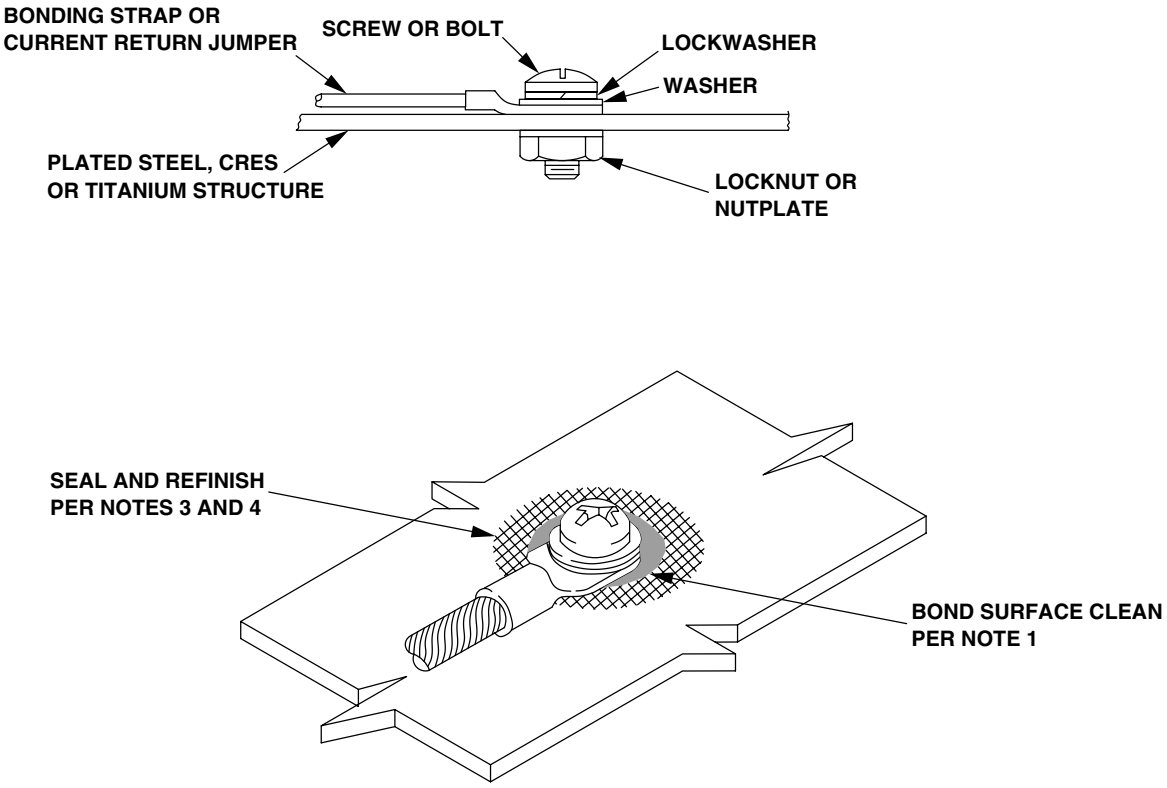


NOTES:

1. **Immediately before bonding, ensure that the bond surfaces have been prepared in accordance with paragraph M-6.**
2. **Hardware stackup shall be in accordance with Appendix F.**
3. **Sealing shall be accomplished in accordance with paragraph M-8.**
4. **Refinishing shall be accomplished in accordance with paragraph M-9.**
5. **Steel screws or bolts may be used, in lieu of aluminum alloy screws or bolts.**
6. **The order of the screw and nut may be reversed to facilitate installation.**

406075-1523-6
J0824

Figure M-6. Bonding to an Aluminum Structure Using Bonding Strap and Threaded Fasteners

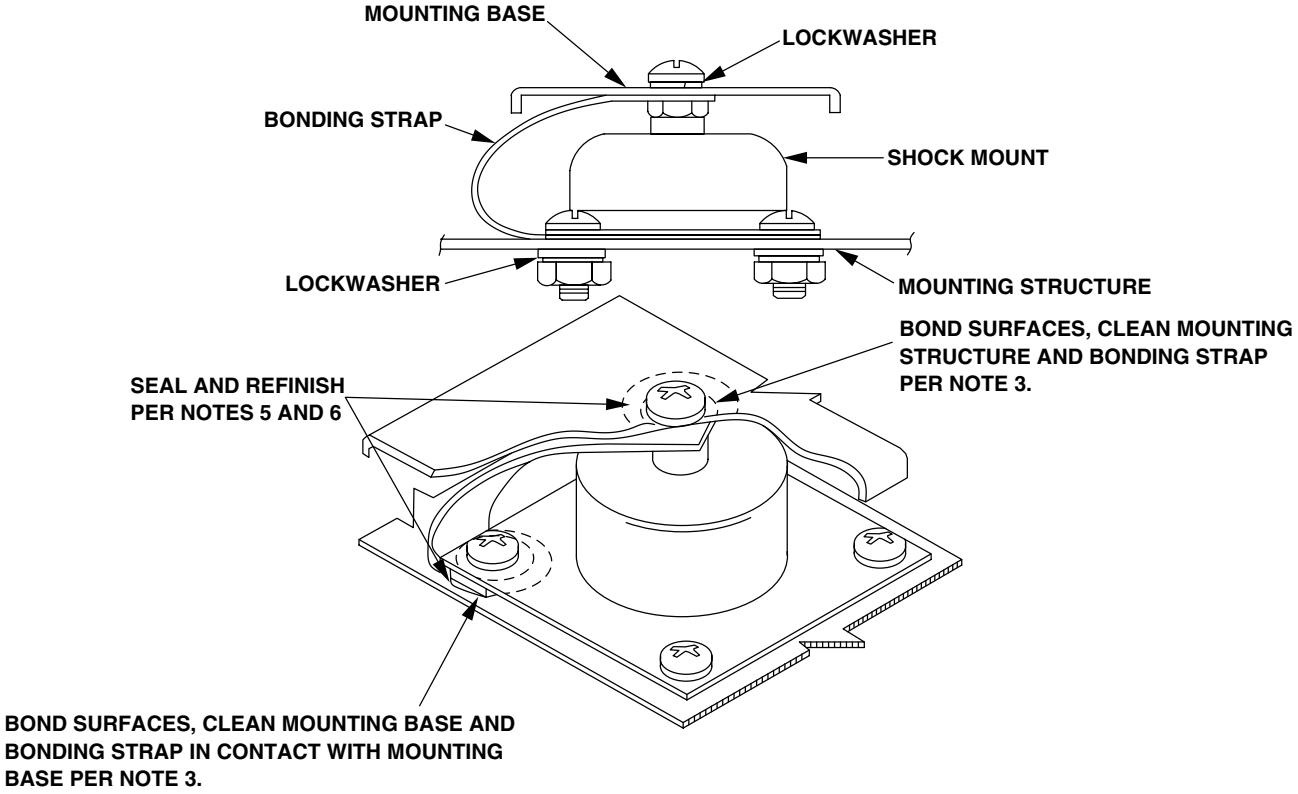


NOTES:

1. **Immediately before bonding, ensure that the bond surfaces have been prepared in accordance with paragraph M-6.**
2. **Hardware stackup shall be in accordance with Appendix F.**
3. **Sealing shall be accomplished in accordance with paragraph M-8.**
4. **Whenever the maximum temperature is below 600 °F (316 °C), refinishing shall be accomplished in accordance with paragraph M-9. Whenever the maximum temperature exceeds 600 °F, refinishing is not required.**
5. **Use only titanium or CRES fasteners in titanium structures.**

406075-1523-7
J0824

Figure M-7. Bonding to Plated Steel, CRES, or Titanium Using Bonding Strap and Threaded Fasteners

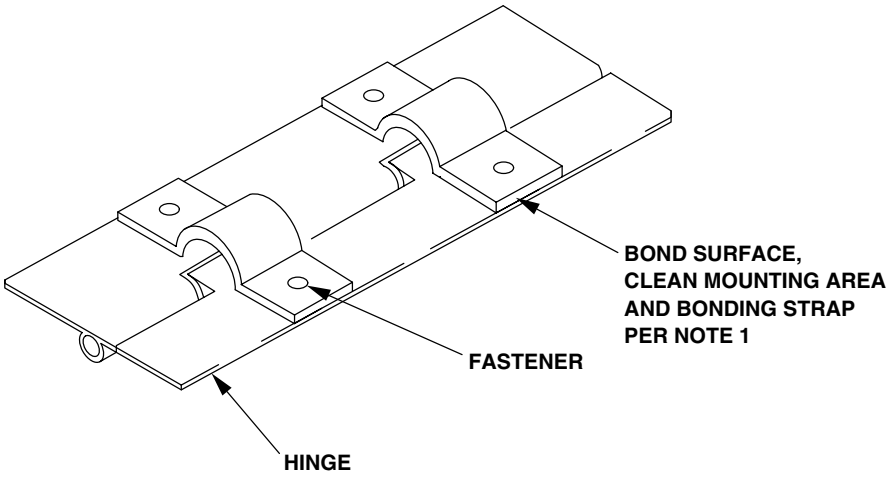


NOTES:

1. Install the bonding strap under the shock mount so that the strap does not impair the operation of the shock mount.
2. All riveted elements of the shock mount shall form a conductive bond.
3. Immediately before bonding, ensure that the bond surfaces have been prepared in accordance with paragraph M-6.
4. Hardware stackup shall be in accordance with Appendix F.
5. Sealing shall be accomplished in accordance with paragraph M-8.
6. Refinishing shall be accomplished in accordance with paragraph M-9.

406075-1523-8
J0824

Figure M-8. Bonding Accomplished with a Bonding Strap and Threaded Fasteners on Shock Mounts

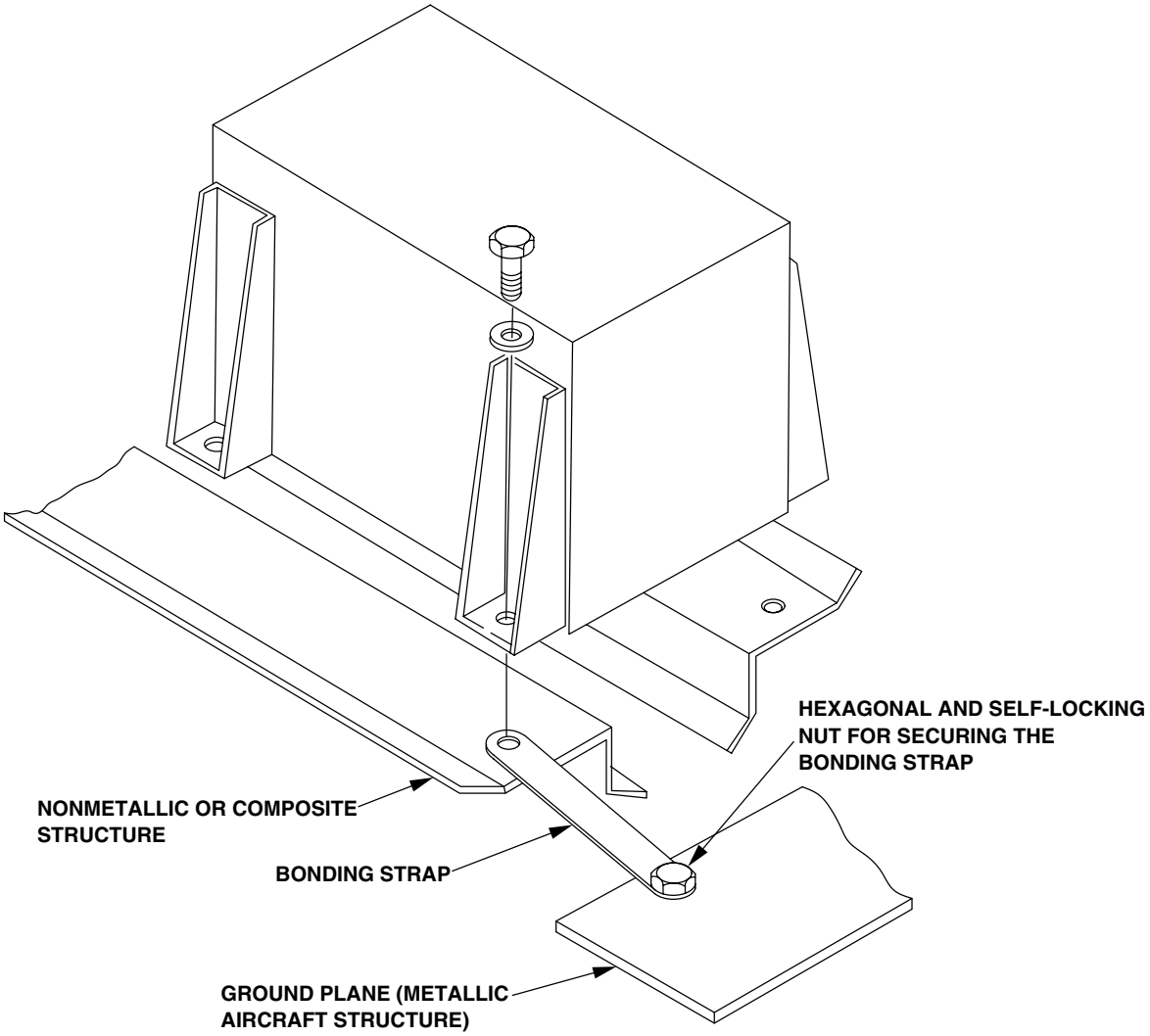


NOTES:

1. **Immediately before bonding, ensure that the bond surfaces have been prepared in accordance with paragraph M-6.**
2. **Hardware stackup shall be in accordance with Appendix F.**
3. **Sealing shall be accomplished in accordance with paragraph M-8.**
4. **Refinishing shall be accomplished in accordance with paragraph M-9.**

406075-1523-9
J0824

Figure M-9. Bonding Accomplished with a Bonding Strap and Threaded Fasteners Across Hinges

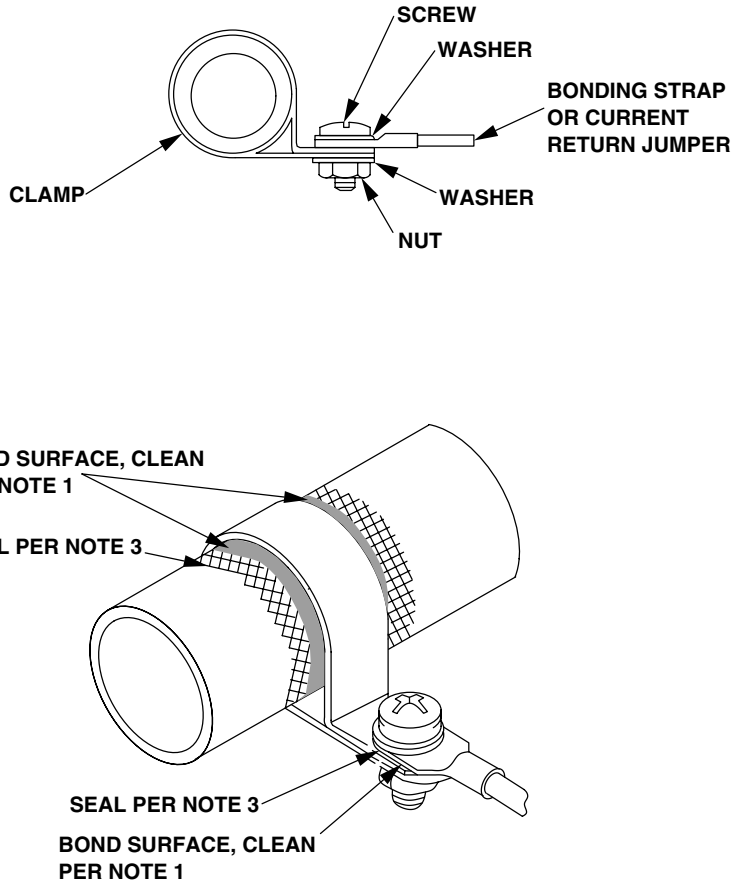


NOTES:

1. **Immediately before bonding, ensure that the bond surfaces have been prepared in accordance with paragraph M-6. Composite surfaces shall be finished, prior to bonding, with 2 coats of epoxy polyamide primer (D13).**
2. **Hardware stackup shall be in accordance with Appendix F.**
3. **Sealing shall be accomplished in accordance with paragraph M-8.**
4. **Refinishing shall be accomplished in accordance with paragraph M-9.**

406075-1523-10
J0824

Figure M-10. Bonding Accomplished with a Bonding Strap and Threaded Fasteners on Equipment to Composite Material

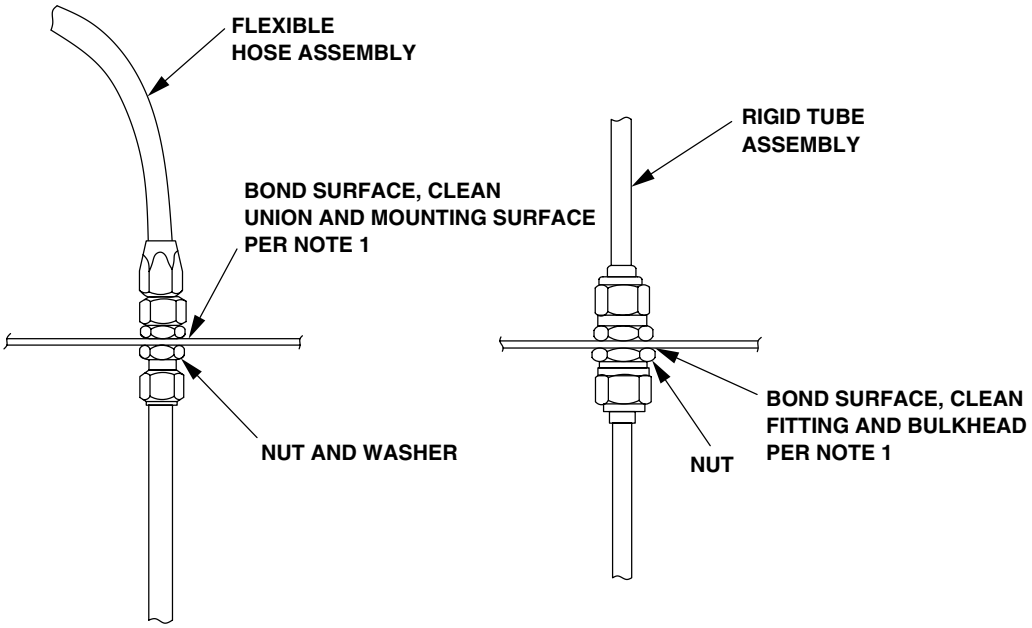


NOTES:

1. **Immediately before bonding, ensure that the bond surfaces have been prepared in accordance with paragraph M-6.**
2. **Hardware stackup shall be in accordance with Appendix F.**
3. **Sealing shall be accomplished in accordance with paragraph M-8.**
4. **Refinishing shall be accomplished in accordance with paragraph M-9.**

406075-1523-11
J0824

Figure M-11. Bonding of Structures to Tubular Components (including fluid lines, fuel system components, etc.)

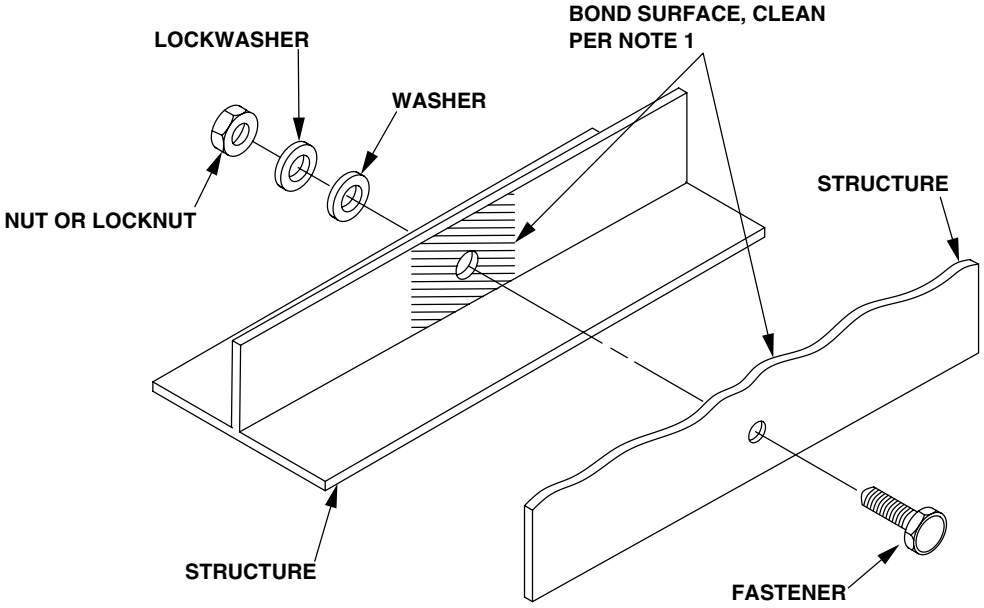


NOTES:

1. **Immediately before bonding, ensure that the bond surfaces have been prepared in accordance with paragraph M-6.**
2. **Hardware stackup shall be in accordance with Appendix F.**
3. **Sealing shall be accomplished in accordance with paragraph M-8.**
4. **Refinishing shall be accomplished in accordance with paragraph M-9.**

406075-1523-12
J0824

Figure M-12. Bonding to Tubular Components (including conduits, fluid lines, fuel system components, etc.)

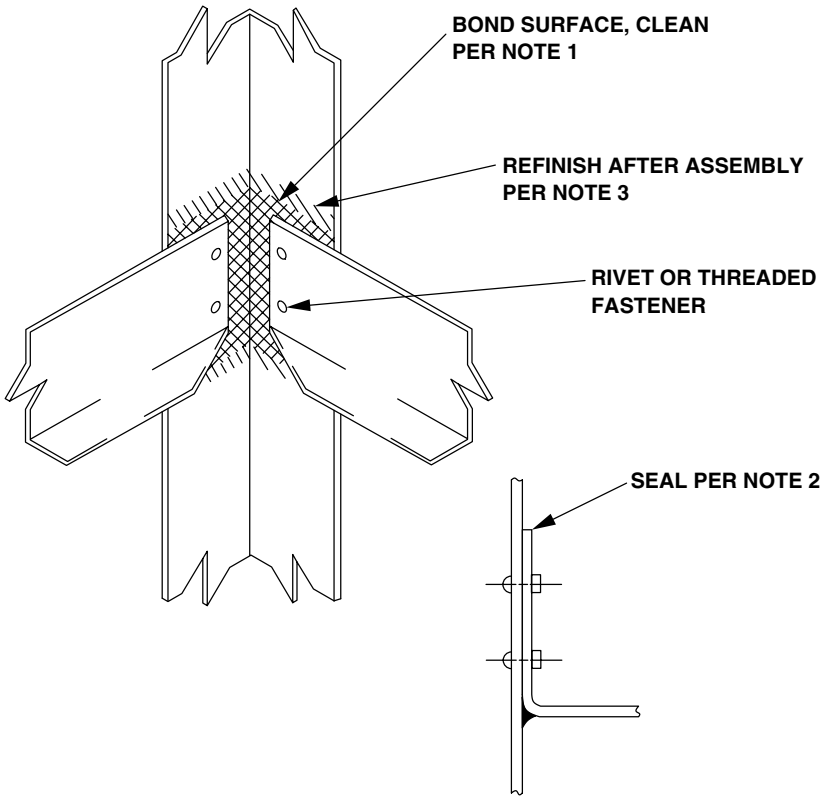


NOTES:

1. **Immediately before bonding, ensure that the bond surfaces have been prepared in accordance with paragraph M-6.**
2. **Hardware stackup shall be in accordance with Appendix F.**
3. **Sealing shall be accomplished in accordance with paragraph M-8.**
4. **Refinishing shall be accomplished in accordance with paragraph M-9.**

406075-1523-13
J0824

Figure M-13. Bonding of Structures by Direct Contact/Assembly Using Fasteners

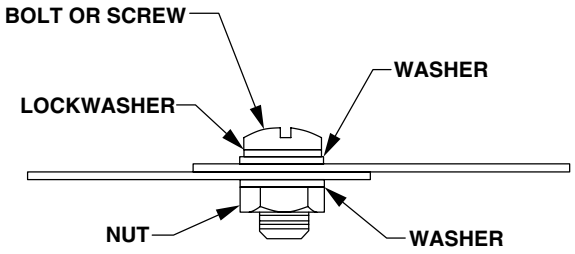


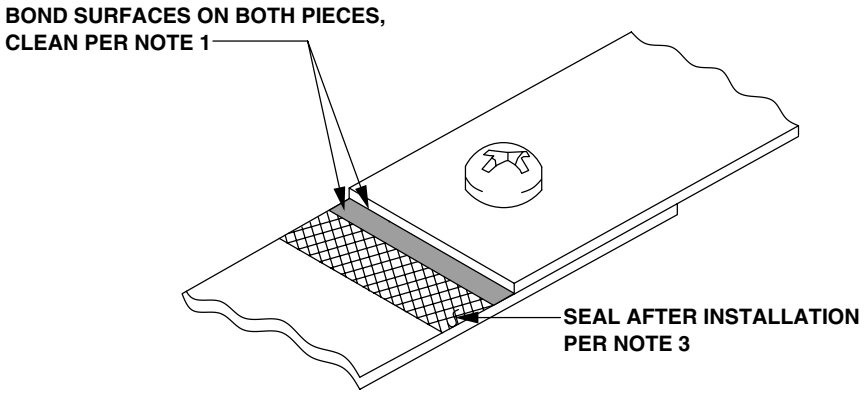
NOTES:

1. **Immediately before bonding, ensure that the bond surfaces have been prepared in accordance with paragraph M-6.**
2. **Sealing shall be accomplished in accordance with paragraph M-8.**
3. **Refinishing shall be accomplished in accordance with paragraph M-9.**

406075-1523-14
J0824

Figure M-14. Bonding of Structures by Direct Contact/Assembly Using Fasteners or Rivets



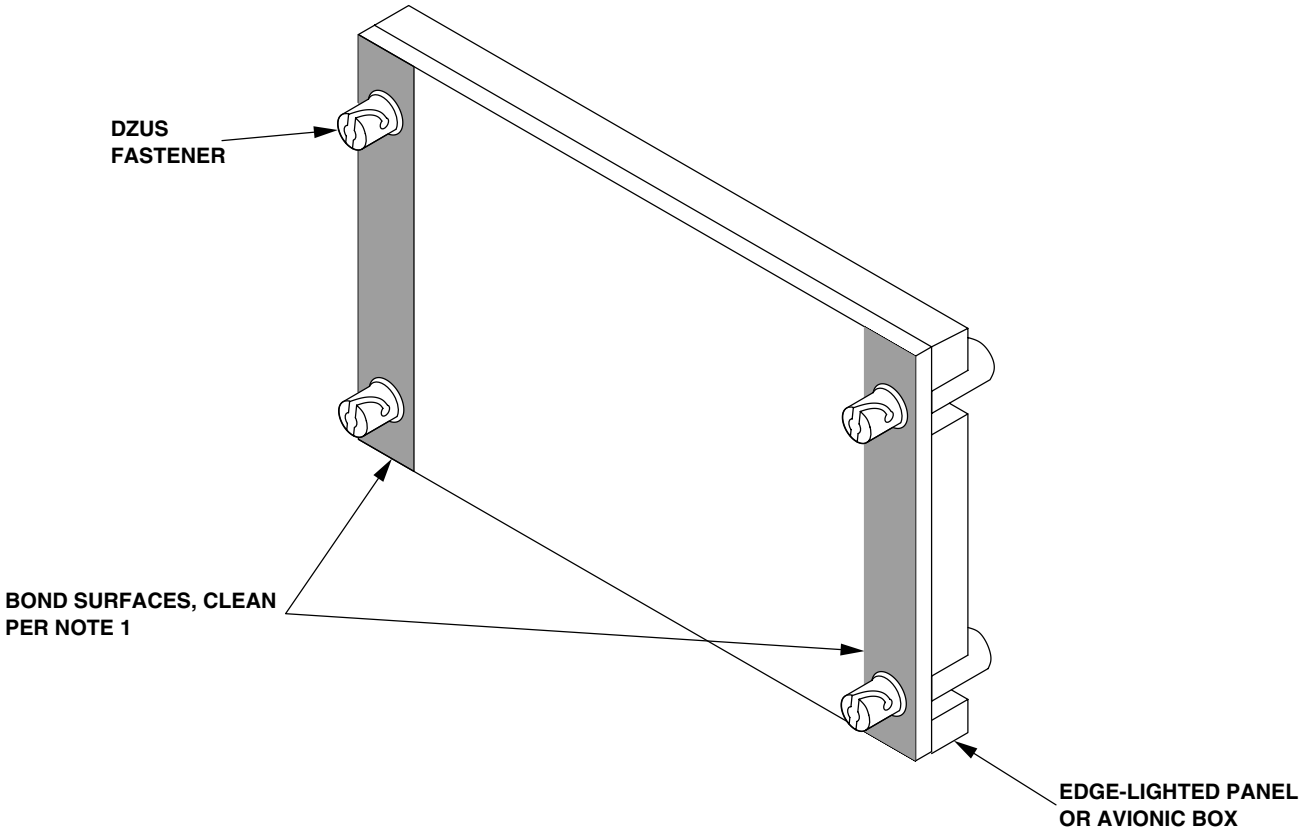


NOTES:

1. **Immediately before bonding, ensure that the bond surfaces have been prepared in accordance with paragraph M-6.**
2. **Hardware stackup shall be in accordance with Appendix F.**
3. **Sealing shall be accomplished in accordance with paragraph M-8.**
4. **Refinishing shall be accomplished in accordance with paragraph M-9.**

406075-1523-15
J0824

Figure M-15. Bonding of Structures by Direct Contact/Assembly Using Fasteners in Bolted Structural Joints

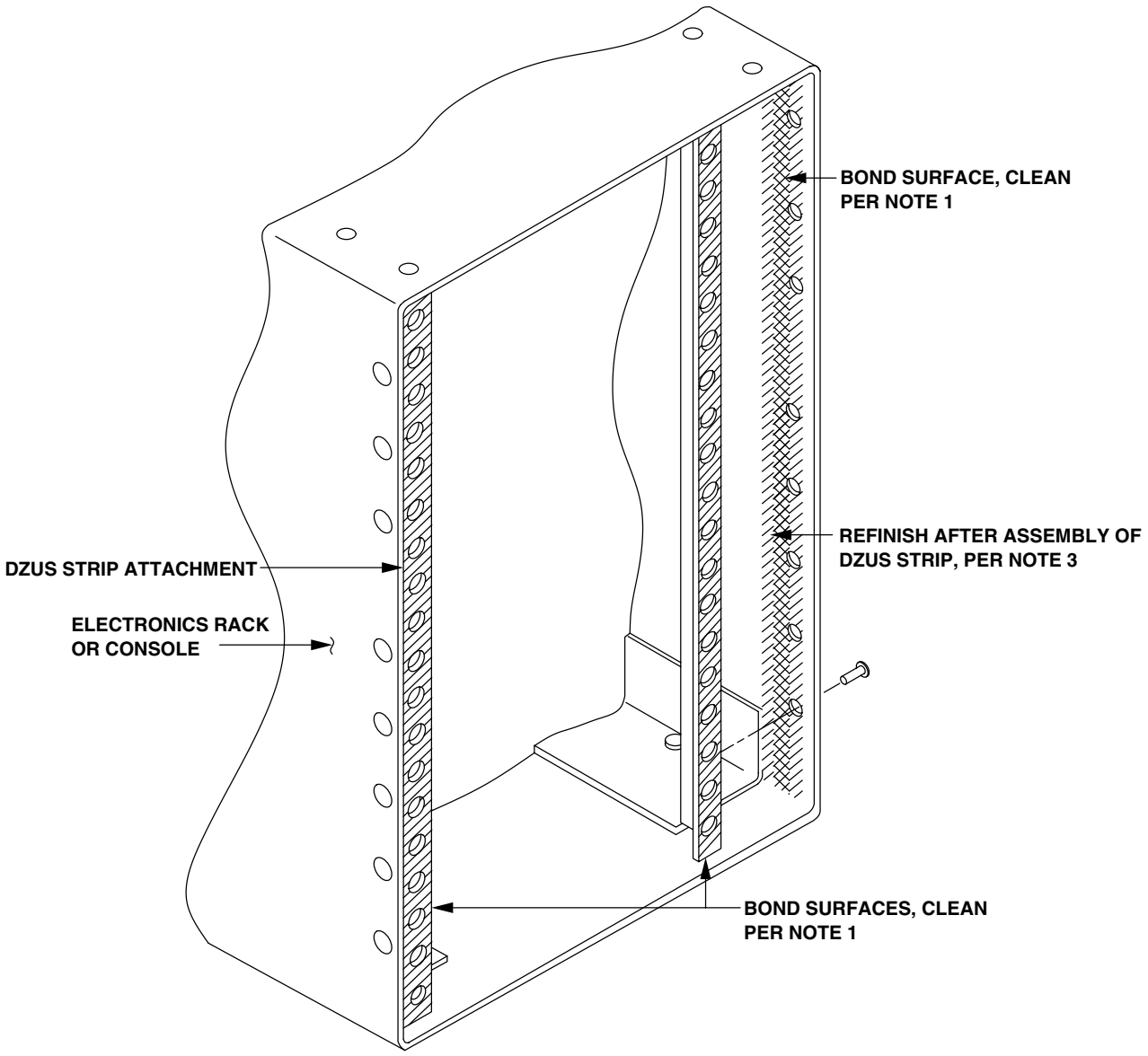


NOTES:

1. **Immediately before bonding, ensure that the bond surfaces have been prepared in accordance with paragraph M-6.**
2. **Sealing shall be accomplished in accordance with paragraph M-8.**
3. **Refinishing shall be accomplished in accordance with paragraph M-9.**

406075-1523-16
J0824

Figure M-16. Bonding of Structures by Direct Contact/Assembly Using Fasteners on Edge-Lighted Panels and/or Avionic Boxes

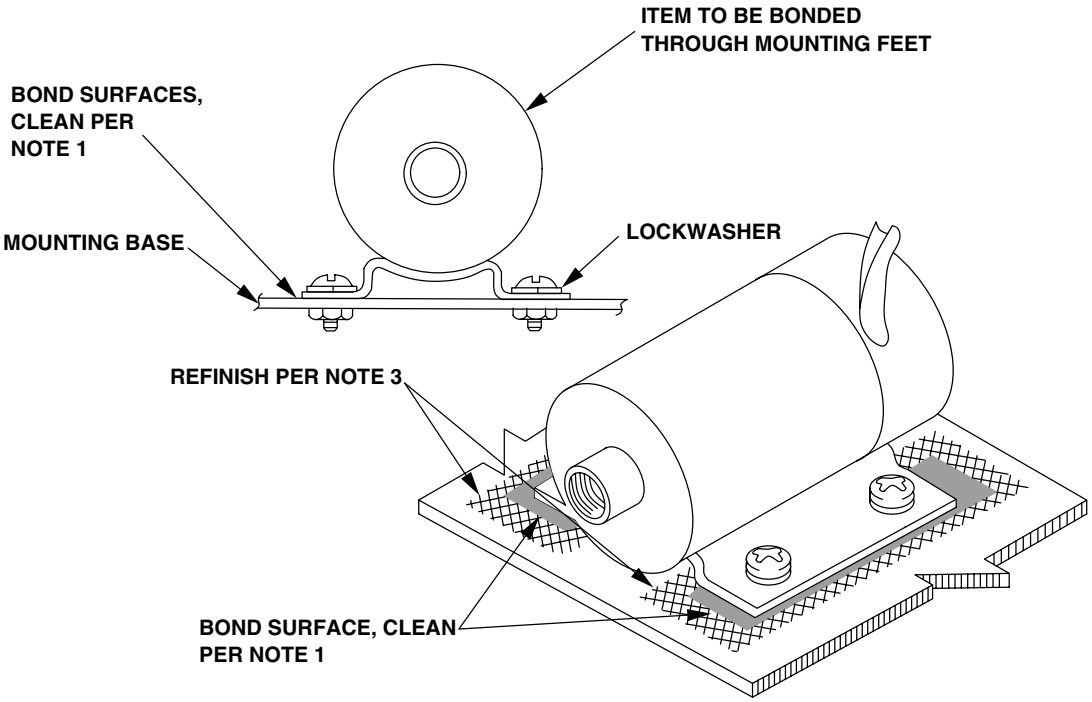


NOTES:

1. **Immediately before bonding, ensure that the bond surfaces have been prepared in accordance with paragraph M-6.**
2. **Sealing shall be accomplished in accordance with paragraph M-8.**
3. **Refinishing shall be accomplished in accordance with paragraph M-9.**

406075-1523-17
J0824

Figure M-17. Bonding of Structures by Direct Contact/Assembly Using Fasteners on Electronic Racks and/or Consoles

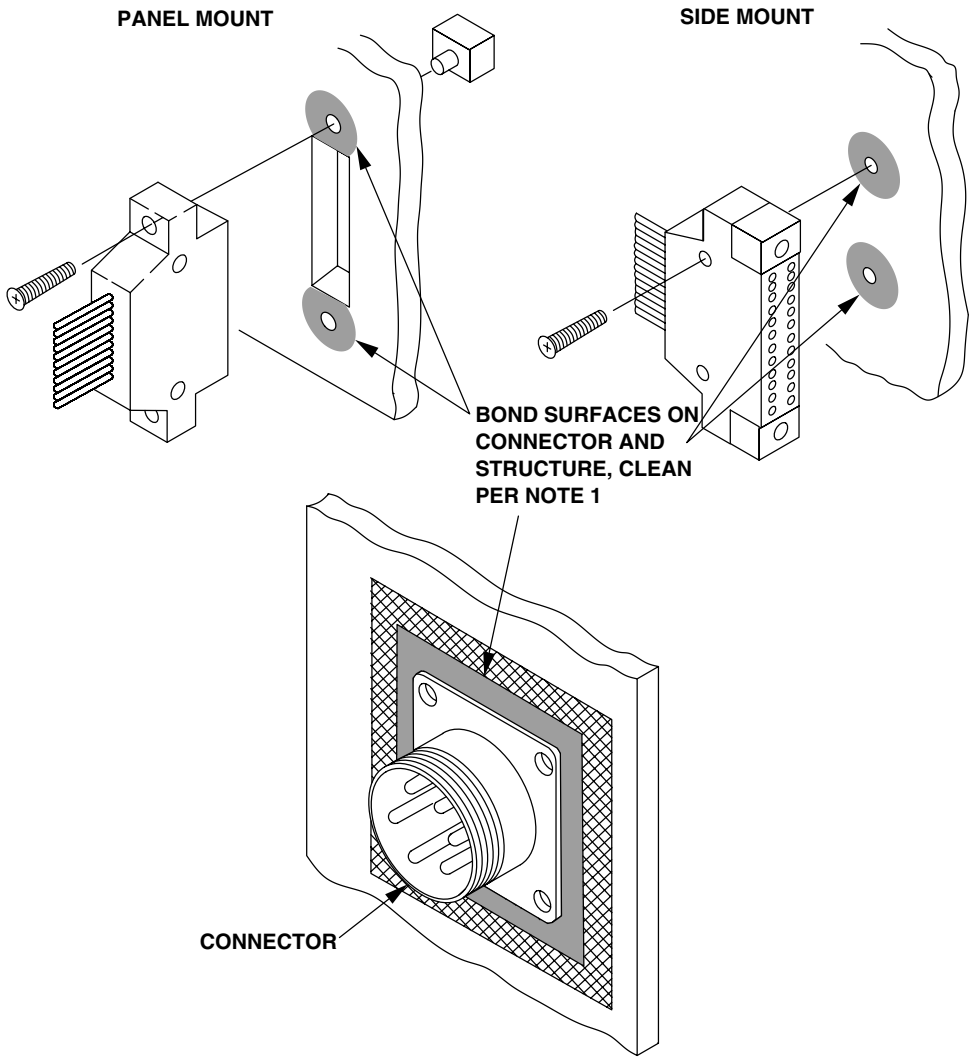


NOTES:

1. Immediately before bonding, ensure that the bond surfaces have been prepared in accordance with paragraph M-6.
2. Sealing shall be accomplished in accordance with paragraph M-8.
3. Refinishing shall be accomplished in accordance with paragraph M-9.

406075-1523-18
J0824

Figure M-18. Bonding of Equipment by Direct Contact/Assembly Using Fasteners Equipment Installed through the Aircraft Structure and Mounting Feet



NOTES:

1. **Immediately before bonding, ensure that the bond surfaces have been prepared in accordance with paragraph M-6.**
2. **Sealing shall be accomplished in accordance with paragraph M-8.**
3. **Refinishing shall be accomplished in accordance with paragraph M-9.**

406075-1523-19
J0824

Figure M-19. Bonding of Structures by Direct Contact/Assembly Using Fasteners on Electrical Connectors

APPENDIX N

RESERVED FOR FUTURE USE

APPENDIX P

STANDARD TORQUE VALUES

P-1. INTRODUCTION

Appendix P lists standard torque values, torque wrench selection, and usage required throughout the maintenance manual for use on OH-58D helicopters.

P-2. TORQUE VALUES

CAUTION

Do not exceed the maximum allowable torque value. Overstressing of the bolt or nut may result.

P-3. Torque

1. The torque value charts, figure P-1, provide required torque for various combinations of bolts and nuts. The torque specified is the torque, plus friction drag of the self-locking feature.

NOTE

- Recommended installation torque range and maximum allowable torque values are given. Tare torque (the locking torque for a self locking nut) shall be added to torque value listed unless otherwise stated.
- Torque values for fluid connections are given in figure P-2.
- Torque values for studs are given in figure P-3.

2. Threaded fastener design useage.

a. Nuts.

(1) Shear application; Nuts capable of developing 55% of the mating fasteners minimum axial yield strength.

(2) Tension application; Nuts capable of developing 110% of the mating fasteners minimum axial yield strength.

b. Bolts.

(1) Shear application; Primary load is shear.

(2) Tension application; Primary load is tension.

3. The installation torque for electrical connections to threaded terminals shall be obtained by tightening the coupling nut or accessory 1/8 turn past the point of finger tight.

4. Torque value charts usage.

a. To locate the correct torque for a bolt and nut the following information must be known:

(1) Type of bolt used (AN, MS, NAS144, NAS583, etc.).

(2) Type of nut used (AN316, AN310, MS21043, etc.).

NOTE

A No. 10 bolt (or screw) has a diameter of 0.190 (3/16) inch. A No. 8 bolt (or screw) has a diameter of 0.164 (5/32) inch.

(3) Thread size of bolts (10-32, 1/4-28, 5/16-24, 3/8-24, etc.).

b. When all three items of information are known, the correct torque can be found in figure P-1. If any of the required information is not known, refer to TM1-1500-204-23.

(1) Locate the sheet that carries the primary bolt number (designation) and number of the nut.

(2) Locate thread size and read across for torque values.

(3) Minimum breakaway torque values of self-locking bolts and nuts are found in table P-1.

Table P-1. Breakaway Torque

THREAD SIZE	MINIMUM BREAKAWAY TORQUE (INCH-POUNDS)
10-32	2.0
1/4-28	3.5
5/16-24	6.5
3/8-24	9.5
7/16-20	14.0
1/2-20	18.0
9/16-18	24.0
5/8-18	32.0
3/4-16	50.0
7/8-14	70.0
1-12	90.0
1-1/8-12	117.0
1-1/4-12	143.0
1-3/8-12	180.0
1-1/2-12	210.0

P-4. Recommended Installation Torque Range

The recommended installation torque range shall be used for all applications for bolts and nuts, figure P-1.

P-5. Specified Torques

When torques are specified in procedural steps of the applicable maintenance or overhaul manual, they take preference over torque values given in figures P-1 through P-3.

TORQUE VALUE CHART (DRY)
FOR SPECIFIED NUTS ON 125000 PSI MINIMUM
ULTIMATE TENSILE STRENGTH FASTENERS

BOLT	NUT	BOLT DIAMETER/ THREAD SIZE	SHEAR RECOMMENDED INSTALLATION TORQUE RANGE
AN3 thru AN20 AN21 thru AN37 AN42 thru AN49 AN173 thru AN186 AN502 AN503 AN525 MS9088 MS20073 thru MS20081 MS24694 MS27039 NAS428 NAS1297	MS17826 MS14144	10 - 32	7 to 12 in - lb
		1/4 - 28	25 to 35 in - lb
		5/16 - 24	50 to 70 in - lb
		3/8 - 24	70 to 90 in - lb
		7/16 - 20	110 to 150 in - lb
		1/2 - 20	150 to 200 in - lb
		9/16 - 18	200 to 300 in - lb
		5/8 - 18	300 to 420 in - lb
		3/4 - 16	45 to 62 ft - lb
		7/8 - 14	79 to 96 ft - lb
		1 - 12	125 to 150 ft - lb
		1 1/8 - 12	208 to 292 ft - lb
		1 1/4 - 12	292 to 375 ft - lb

NOTE: The above values apply to any combination of bolt and nut shown unless otherwise specified.

406010-506-1
J1296

Figure P-1. Torque Values (Sheet 1 of 7)

TORQUE VALUE CHART (DRY)
FOR SPECIFIED NUTS ON 125000 PSI MINIMUM
ULTIMATE TENSILE STRENGTH FASTENERS

BOLT	NUT	BOLT DIAMETER/ THREAD SIZE	TENSION RECOMMENDED INSTALLATION TORQUE RANGE
AN3 thru AN20 AN21 thru AN37 AN42 thru AN49 AN173 thru AN186 AN502 AN503 AN525 MS9088 MS20073 thru MS20081 MS24694 MS27039 NAS428 NAS1297	MS17825 MS14144	10 - 32	12 to 15 in - lb
		1/4 - 28	30 to 40 in - lb
		5/16 - 24	60 to 85 in - lb
		3/8 - 24	95 to 110 in - lb
		7/16 - 20	270 to 300 in - lb
		1/2 - 20	24 to 34 ft - lb
		9/16 - 18	40 to 50 ft - lb
		5/8 - 18	55 to 65 ft - lb
		3/4 - 16	108 to 125 ft - lb
		7/8 - 14	125 to 150 ft - lb
		1 - 12	183 to 275 ft - lb
		1 1/8 - 12	250 to 350 ft - lb
		1 1/4 - 12	450 to 500 ft - lb

NOTE: The above values apply to any combination of bolt and nut shown unless otherwise specified.

406010-506-2
J1296

Figure P-1. Torque Values (Sheet 2 of 7)

TORQUE VALUE CHART (DRY)
FOR SPECIFIED NUTS ON 125000 PSI MINIMUM
ULTIMATE TENSILE STRENGTH FASTENERS

BOLT	NUT	BOLT DIAMETER/ THREAD SIZE	SHEAR RECOMMENDED INSTALLATION TORQUE RANGE
AN3 thru AN20 AN21 thru AN37 AN42 thru AN49 AN173 thru AN186 AN502 AN503 AN525 MS9088 MS20073 thru MS20081 MS24694 MS27039 NAS428 NAS1297	AN316 AN320 MS14145 NAS1022	10 - 32	12 to 15 in - lb
		1/4 - 28	30 to 40 in - lb
		5/16 - 24	60 to 85 in - lb
		3/8 - 24	95 to 110 in - lb
		7/16 - 20	270 to 300 in - lb
		1/2 - 20	24 to 34 ft - lb
		9/16 - 18	40 to 50 ft - lb
		5/8 - 18	55 to 65 ft - lb
		3/4 - 16	108 to 125 ft - lb
		7/8 - 14	125 to 150 ft - lb
		1 - 12	183 to 275 ft - lb
		1 1/8 - 12	250 to 350 ft - lb
		1 1/4 - 12	450 to 500 ft - lb

NOTE: The above values apply to any combination of bolt and nut shown unless otherwise specified.

406010-506-3
J1296

Figure P-1. Torque Values (Sheet 3 of 7)

TORQUE VALUE CHART (DRY)
FOR SPECIFIED NUTS ON 125000 PSI MINIMUM
ULTIMATE TENSILE STRENGTH FASTENERS

BOLT	NUT	BOLT DIAMETER/ THREAD SIZE	TENSION RECOMMENDED INSTALLATION TORQUE RANGE
AN3 thru AN20 AN21 thru AN37 AN42 thru AN49 AN173 thru AN186 AN502 AN503 AN525 MS9088 MS20073 thru MS20081 MS24694 MS27039 NAS428 NAS1297	AN310 AN315 MS14144 MS21043 MS21044 MS21047 thru MS21049 MS21051 thru MS21056 MS21058 thru MS21062 MS21069 thru MS21076 MS21225 NAS509 NAS1473 NAS1474	10 - 32	20 to 55 in - lb
		1/4 - 28	50 to 70 in - lb
		5/16 - 24	100 to 140 in - lb
		3/8 - 24	160 to 190 in - lb
		7/16 - 20	37 to 42 ft - lb
		1/2 - 20	40 to 58 ft - lb
		9/16 - 18	66 to 83 ft - lb
		5/8 - 18	91 to 108 ft - lb
		3/4 - 16	191 to 208 ft - lb
		7/8 - 14	208 to 250 ft - lb
		1 - 12	308 to 458 ft - lb
		1 1/8 - 12	416 to 583 ft - lb
		1 1/4 - 12	750 to 916 ft - lb

NOTE: The above values apply to any combination of bolt and nut shown unless otherwise specified.

406010-506-4
J1296

Figure P-1. Torque Values (Sheet 4 of 7)

TORQUE VALUE CHART (DRY)
FOR SPECIFIED NUTS ON 160000 PSI MINIMUM
ULTIMATE TENSILE STRENGTH FASTENERS

BOLT	NUT	BOLT DIAMETER/ THREAD SIZE	SHEAR RECOMMENDED INSTALLATION TORQUE RANGE
20-057 MS16997 thru MS16998 MS20004 thru MS20024 NAS144 thru NAS158 NAS333 thru NAS340 NAS517 NAS623 NAS1101 NAS1189 NAS1190 NAS1303 thru NAS1320 NAS1351 NAS1352 NAS1801 NAS6203 thru NAS6220 NAS6603 thru NAS6620 NAS7500 thru NAS7516	AN310 AN315 MS14144 MS21043 MS21044 MS21047 thru MS21049 MS21051 thru MS21056 MS21058 thru MS21062 MS21069 thru MS21076 MS21225 NAS509 NAS1473 NAS1474	10 - 32	20 to 25 in - lb
		1/4 - 28	50 to 70 in - lb
		5/16 - 24	100 to 140 in - lb
		3/8 - 24	160 to 190 in - lb
		7/16 - 20	37 to 42 ft - lb
		1/2 - 20	40 to 58 ft - lb
		9/16 - 18	66 to 83 ft - lb
		5/8 - 18	91 to 108 ft - lb
		3/4 - 16	191 to 208 ft - lb
		7/8 - 14	208 to 250 ft - lb
		1 - 12	308 to 458 ft - lb
		1 1/8 - 12	416 to 583 ft - lb
		1 1/4 - 12	750 to 916 ft - lb

NOTE: The above values apply to any combination of bolt and nut shown unless otherwise specified.

406010-506-5
J1296

Figure P-1. Torque Values (Sheet 5 of 7)

TORQUE VALUE CHART (DRY)
FOR SPECIFIED NUTS ON 160000 PSI MINIMUM
ULTIMATE TENSILE STRENGTH FASTENERS

BOLT	NUT	BOLT DIAMETER/ THREAD SIZE	TENSION RECOMMENDED INSTALLATION TORQUE RANGE
20-057 MS16997 thru MS16998 MS20004 thru MS20024 NAS144 thru NAS158 NAS333 thru NAS340 NAS517 NAS623 NAS1101 NAS1189 NAS1190 NAS1303 thru NAS1320 NAS1351 NAS1352 NAS1801 NAS6203 thru NAS6220 NAS6603 thru NAS6620 NAS7500 thru NAS7516	MS21042 NAS577 NAS1291	10 - 32	30 to 40 in - lb
		1/4 - 28	75 to 95 in - lb
		5/16 - 24	120 to 160 in - lb
		3/8 - 24	25 to 28 ft - lb
		7/16 - 20	39 to 43 ft - lb
		1/2 - 20	53 to 71 ft - lb
		9/16 - 18	83 to 100 ft - lb
		5/8 - 18	116 to 133 ft - lb
		3/4 - 16	200 to 216 ft - lb
		7/8 - 14	333 to 375 ft - lb
		1 - 12	433 to 583 ft - lb
		1 1/8 - 12	691 to 858 ft - lb
		1 1/4 - 12	1441 to 1608 ft - lb

NOTE: The above values apply to any combination of bolt and nut shown unless otherwise specified.

406010-506-6
J1296

Figure P-1. Torque Values (Sheet 6 of 7)

TORQUE VALUE CHART (DRY)
FOR SPECIFIED NUTS ON 180000 PSI MINIMUM
ULTIMATE TENSILE STRENGTH FASTENERS

BOLT	NUT	BOLT DIAMETER/ THREAD SIZE	SHEAR RECOMMENDED INSTALLATION TORQUE RANGE
20-065 20-069 MS21250 NAS624 thru NAS644	MS21042 NAS577 NAS1291	10 - 32	22 to 28 in - lb
		1/4 - 28	56 to 79 in - lb
		5/16 - 24	112 to 158 in - lb
		3/8 - 24	180 to 214 in - lb
		7/16 - 20	42 to 47 ft - lb
		1/2 - 20	45 to 54 ft - lb
		9/16 - 18	74 to 93 ft - lb
		5/8 - 18	102 to 122 ft - lb
		3/4 - 16	215 to 234 ft - lb
		7/8 - 14	234 to 281 ft - lb
		1 - 12	346 to 515 ft - lb
		1 1/8 - 12	468 to 656 ft - lb
		1 1/4 - 12	844 to 1030 ft - lb

NOTE: The above values apply to any combination of bolt and nut shown unless otherwise specified.

406010-506-7
J1296

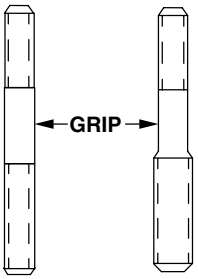
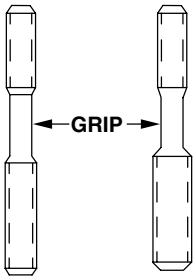
Figure P-1. Torque Values (Sheet 7 of 7)

TUBE SIZE	AL TUBING FLARE (MS33583 and MS33584)	STEEL TUBING FLARE (MS33584)	HOSE END FITTINGS AND HOSE ASSY (MS28740 and MS28759)	NAS591 THRU NAS596		
				DASH NO.	STEEL TUBING	AL TUBING
3/16	30 to 45 in-lb	90 to 100 in-lb	70 to 100 in-lb			
1/4	40 to 65 in-lb	135 to 150 in-lb	70 to 120 in-lb	-4	60 to 96 in-lb	48 to 96 in-lb
5/16	60 to 80 in-lb	180 to 200 in-lb	85 to 180 in-lb	-5	66 to 108 in-lb	60 to 108 in-lb
3/8	75 to 125 in-lb	270 to 300 in-lb	100 to 250 in-lb	-6	72 to 120 in-lb	72 to 120 in-lb
1/2	150 to 250 in-lb	450 to 500 in-lb	210 to 420 in-lb	-8	144 to 232 in-lb	120 to 216 in-lb
5/8	200 to 350 in-lb	54 to 58 ft-lb	300 to 480 in-lb	-10	204 to 360 in-lb	144 to 360 in-lb
3/4	300 to 500 in-lb	75 to 83 ft-lb	41 to 70 ft-lb	-12	300 to 540 in-lb	216 to 540 in-lb
1	41 to 58 ft-lb	100 to 116 ft-lb	58 to 95 ft-lb	-16	42 to 58 ft-lb	40 to 58 ft-lb
1 1/4	50 to 75 ft-lb			-20	50 to 75 ft-lb	50 to 75 ft-lb
1 1/2	50 to 75 ft-lb			-24	50 to 75 ft-lb	50 to 75 ft-lb
1 3/4				-28	60 to 90 ft-lb	62 to 90 ft-lb
2				-32	75 to 110 ft-lb	75 to 110 ft-lb
2 1/2				-40	150 to 175 ft-lb	110 to 150 ft-lb
3				-48	150 to 175 ft-lb	
4				-64	200 to 225 ft-lb	

NOTE: Flareless tubing connections shall be tightened as follows: Tighten the flareless tubing nut 1/6 to 1/3 turn (1 to 2 flats) past point of sharp torque rise on all sizes and materials. The 1/6 to 1/3 turn (performed after the presetting operation) is the final installation torque.

406010-507-1
J1296

Figure P-2. Torque Values (Fluid Connections)

THREAD SIZE		TORQUE RANGE	
			
NUT END	STUD END	TYPE "A"	TYPE "B"
10 - 32	10 - 24		30 to 40 in-lb
10 - 32	1/4 - 20	30 to 40 in-lb	30 to 40 in-lb
1/4 - 28	1/4 - 20	50 to 95 in-lb	50 to 70 in-lb
1/4 - 28	5/16 - 18	50 to 110 in-lb	50 to 80 in-lb
5/16 - 24	5/16 - 18	100 to 225 in-lb	100 to 130 in-lb
5/16 - 24	3/8 - 16	100 to 240 in-lb	100 to 160 in-lb
3/8 - 24	3/8 - 16	175 to 375 in-lb	175 to 250 in-lb
3/8 - 24	7/16 - 14	175 to 475 in-lb	175 to 325 in-lb
7/16 - 20	7/16 - 14	20 to 54 ft-lb	250 to 400 in-lb
7/16 - 20	1/2 - 13	20 to 60 ft-lb	250 to 525 in-lb
1/2 - 20	1/2 - 13	33 to 83 ft-lb	33 to 58 ft-lb
1/2 - 20	9/16 - 12	33 to 95 ft-lb	33 to 70 ft-lb
9/16 - 18	9/16 - 12	50 to 120 ft-lb	41 to 87 ft-lb
9/16 - 18	5/8 - 11	50 to 137 ft-lb	50 to 95 ft-lb
5/8 - 18	5/8 - 11	75 to 166 ft-lb	58 to 116 ft-lb
5/8 - 18	11/16 - 11	75 to 200 ft-lb	75 to 141 ft-lb

*** For nut torque refer to applicable chart for type of nut used.**

Note: Threaded Stud

Type A: The grip portion of the stud is approximately the same diameter as the pitch diameter of the nut end thread.

Type B: The grip portion of the stud is less than the minor diameter of the nut end thread.

406010-507-2
J1296

Figure P-3. Torque Values (Studs)

P-6. SELECTION AND USE OF TORQUE WRENCH

1. Selecting Torque Wrench:

a. The accuracy of most torque wrenches tends to decrease at the extremes of the torque range. When practical, the torque value being measured should be between the 30 and 80 percent points of the torque wrench range.

b. The graduation increments of the torque wrench should not be greater than 10 percent of the torque value being measured.

c. The torque wrench should be calibrated in the same torque units as the specified torque for the bolt.

2. Force Application on Torque Wrench Grip: A smooth, steady force must be applied to obtain an accurate torque value. Rapid or jerky force can result in error in the torque applied.

3. Tightening a Bolt on the Head End: When a bolt is tightened from the head end, some of the torque applied is absorbed in turning the bolt in the hole. The amount of torque absorbed will vary. For this reason, torque values specified are for tightening bolts on the nut end.

a. Use specified torque range if bolt can be inserted through the hole and started into the nut using fingers.

b. Torque to high limit of specified torque range if bolt is inserted through a hole that increases tightening resistance.

c. Use specified torque range if bolt is inserted into a threaded hole and hole thread length is more than the bolt diameter. Use a reduced torque range if hole thread length is less than bolt diameter.

4. Tightening New Bolt: Tighten bolt to desired torque value. Loosen bolt by backing off one-half turn. Retighten to desired torque value. This aids in cleaning and smoothing threads and results in more accurate torque.

5. Bolt Thread Condition: Threads should be clean and free from nicks, burrs, paint, grease, and oil to obtain correct torque. However, there are some applications where lubrication or antiseize compound is used on threads.

6. Checking Bolt for Torque Applied: Torque value of an installed bolt cannot be checked. If torque of installed bolt must be known, loosen bolt from one-half to one turn and tighten to recommended torque.

7. Tightening Chilled or Heated Bolt: Do not tighten a chilled or heated bolt until it has returned to room temperature. Heated bolt may loosen when it cools. Chilled bolt may become overstressed when it warms.

8. Tightening Bolt on Part with a Slow Permanent Set: Hold desired torque until the part is seated.

9. Tightening Bolts in a Series: Select a median torque value within the torque range if bolts are to be torqued in a series. Torque is not distributed evenly if some bolts are tightened to minimum value and others to maximum. Unequal distribution of force may cause bolt failure. Do not apply final torque during first drawdown. After median torque value is applied, loosen bolts one at a time and apply final torque. Tightening in a diametrically opposite (staggered) sequence is desirable in most cases.

10. Tightening Bolts with Concentric Attachment: The use of a concentric attachment which operates concentrically with torque wrench drive square presents no particular problem. Torque value applied is torque value indicated (figure P-4).

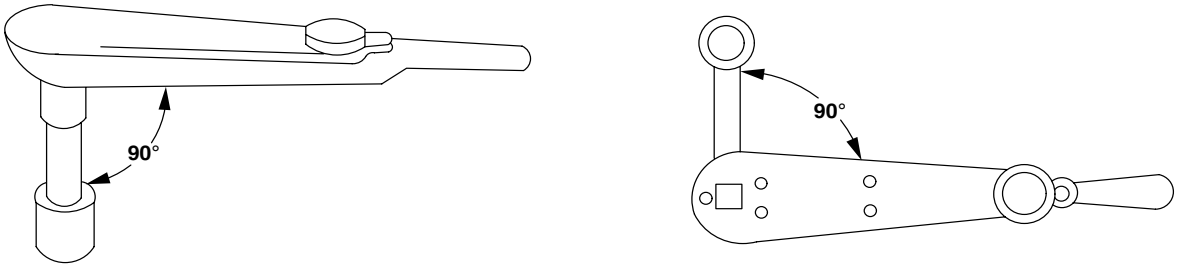
11. Tightening Bolt with Nonconcentric Attachment: The use of a nonconcentric attachment which does not operate concentrically with the drive square presents a mathematical problem. This type of

attachment affects lever length. Torque value applied is not torque value indicated. It is necessary to calculate the effect of the lever length to determine correct indicated torque value (figure P-5).

12. Force Application When Using Nonconcentric Attachment:

a. The point of force applied on a flexible beam-type torque wrench pivoted grip will not affect calculated torque applied to bolt.

b. The point of force applied on rigid frame and audible indicating torque wrench grips will affect the calculated torque applied to bolt. Refer to figure P-6 for proper and improper application of force and its effect.



NOTE: APPLIED AND INDICATED TORQUE VALUES ARE THE SAME.

406010-509
J0744

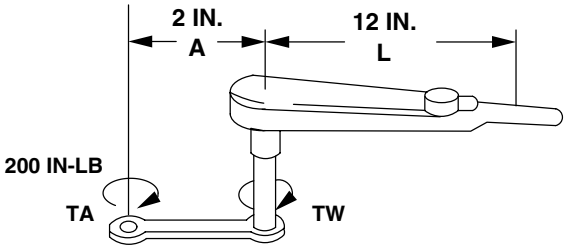
Figure P-4. Torque Wrench Concentric Type Attachments

FORMULA TO OBTAIN CORRECT INDICATED TORQUE VALUE WHEN USING NONCONCENTRIC ATTACHMENT

$$TW = \frac{(TA) \times (L)}{(L) \pm (A)}$$

TW = INDICATED TORQUE VALUE ON TORQUE WRENCH
TA = ACTUAL TORQUE VALUE APPLIED TO FASTENER
L = LEVEL LENGTH
A = ATTACHMENT LENGTH

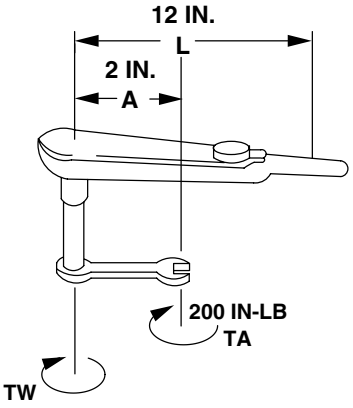
FORMULA



$$TW = \frac{200 \times 12}{12 + 2} = \frac{2400}{14} = 171.4 \text{ IN-LB}$$

RESULTS: FASTENER TORQUED 200 IN-LB WHEN WRENCH INDICATES 171.4 IN-LB

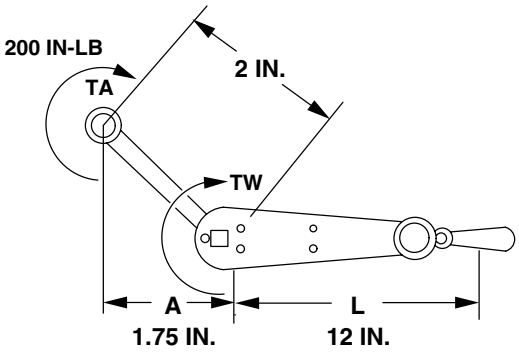
EXAMPLE 1



$$TW = \frac{200 \times 12}{12 - 2} = \frac{2400}{10} = 240 \text{ IN-LB}$$

RESULTS: FASTENER TORQUED 200 IN-LB WHEN WRENCH INDICATES 240 IN-LB

EXAMPLE 2



$$TW = \frac{200 \times 12}{12 + 1.75} = \frac{2400}{13.75} = 174.5 \text{ IN-LB}$$

RESULTS: FASTENER TORQUED 200 IN-LB WHEN WRENCH INDICATES 174.5 IN-LB

EXAMPLE 3

406010-510
J0744

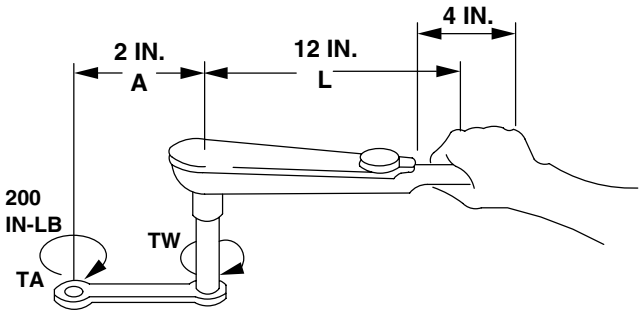
Figure P-5. Torque Wrench Nonconcentric Type Attachments

FORMULA TO OBTAIN CORRECT INDICATED TORQUE VALUE WHEN USING NONCONCENTRIC ATTACHMENT

$$TW = \frac{(TA) \times (L)}{(L) + (A)}$$

TW = INDICATED TORQUE VALUE ON TORQUE WRENCH
TA = ACTUAL TORQUE VALUE APPLIED TO FASTENER
L = LEVEL LENGTH
A = ATTACHMENT LENGTH

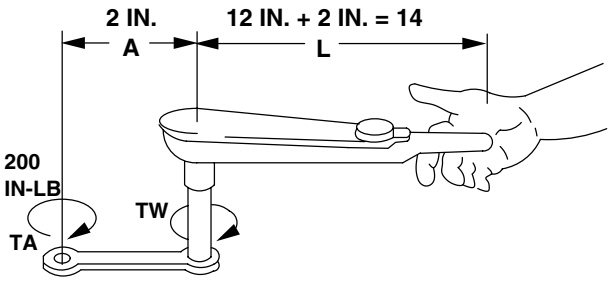
FORMULA



$$TW = \frac{200 \times 12}{12 + 2} = \frac{2400}{14} = 171.4 \text{ IN-LB}$$

RESULTS: FASTENER TORQUED 200 IN-LB WHEN WRENCH INDICATES 171.4 IN-LB

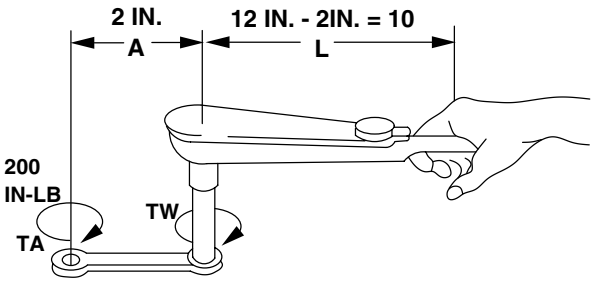
PROPER APPLICATION OF FORCE
EXAMPLE 1



$$TW = \frac{200 \times (12 + 2)}{(12 + 2) + 2} = \frac{2800}{16} = 175 \text{ IN-LB}$$

RESULTS: FASTENER TORQUED 200 IN-LB WHEN WRENCH INDICATES 175 IN-LB

IMPROPER APPLICATION OF FORCE
EXAMPLE 2



$$TW = \frac{200 \times (12 - 2)}{(12 - 2) + 2} = \frac{2000}{12} = 166.6 \text{ IN-LB}$$

RESULTS: FASTENER TORQUED 200 IN-LB WHEN WRENCH INDICATES 166.6 IN-LB

IMPROPER APPLICATION OF FORCE
EXAMPLE 3

406010-511
J0744

Figure P-6. Effect of Applied Force Using Nonconcentric Attachments

APPENDIX Q

CORROSION CONTROL

Section I. INTRODUCTION

Q-1. PURPOSE

This appendix contains corrosion control information and references to ensure that maintenance personnel have adequate guidelines in locating and repairing corrosion found in corrosion prone areas throughout the helicopter. Corrosion control in corrosion prone designated areas is practiced to ensure that:

1. Helicopter has proper drainage of airframe.
2. Corrosion prone areas are identified.
3. Type of corrosion is properly identified.
4. Proper cleanup procedures for corroded areas are used.
5. Correct repair procedures are used.
6. Proper protective coatings are correctly applied.

Q-2. DEFINITIONS

Corrosion is the electrochemical deterioration of a metal because of its chemical reaction with the surrounding environment.

1. For different types of corrosion, their effects on different metals and the repair of the corrosion affected area, refer to TM 1-1500-344-23.

2. For material removal and cleanup limitations of specific parts not listed in this appendix, refer to appropriate chapter of this manual.

Section II. INSPECTION AND CORROSION PRONE AREAS

Q-3. PURPOSE

Frequent corrosion inspections are essential to the overall corrosion control program. Costs are minimized by early detection, identification, and treatment. Without regular systematic inspections, corrosion will seriously damage aviation equipment. Refer to TM 1-1500-344-23 for more detailed corrosion control, inspection, and repair information. Appendix Q is to be used in conjunction with 14-day/20 hour inspection located in TM 1-1520-248-PPM.

Q-4. RESPONSIBILITY

Inspection of aircraft for corrosion is the responsibility of all aviation personnel. All maintenance personnel must be able to identify and report corrosion problems.

Section III. PREVENTIVE MAINTENANCE

Q-5. PREVENTION

Corrosion prevention of aircraft structure depends on a comprehensive corrosion prevention and control plan, implemented from the start of operation of the aircraft which includes the following:

1. Adequate training of personnel in corrosion identification techniques, corrosion detection, cleaning, treatment, lubrication and preservation of aircraft structures and components.

2. Inspection for corrosion and corrosion inducing conditions on a scheduled basis.

3. Keeping drain holes and passages open and functional.

4. Avoidance of water intrusion and entrapment and replacement of deteriorated or damaged gaskets and sealants.

5. Minimizing the exposure of aircraft to adverse environmental conditions by hangaring, use of covers, etc.

6. Thorough cleaning, inspection, lubrication, and preservation at prescribed intervals.

7. Prompt treatment of corrosion after detection to keep damage to a minimum.

8. Accurate recording and reporting of problem areas and material and/or design deficiencies. Use of DA Form 2028 to submit list of deficiencies.

9. Proper use of appropriate materials, equipment, and technical publications.

10. Reapplication of surface finish after corrosion cleanup and repair of area using TM 1-1500-344-23.

Q-6. PRESERVATION

For complete information on preserving aircraft parts using corrosion preventive compounds (CPC), water displacing compounds (WDC), and other surface treatments, refer to TM 1-1500-344-23.

1. Corrosion preventive compounds are used to protect metal aircraft parts. They function by preventing corrosive materials from contacting and corroding bare metal surfaces.

2. Corrosion preventive compounds can be separated into two major categories, water displacing and nonwater displacing compounds.

a. Water displacing compounds (WDC) are CPCs that can be used to remove water or other electrolytes from metal surfaces to stop the corrosion process.

b. Nonwater displacing compounds are CPCs that may be used on dried surfaces or on surfaces which have been first treated with water displacing CPCs.

Section IV. PROCESSES AND EQUIPMENT REQUIREMENTS

Refer to TM 1-1500-344-23 and TM 55-1500-343-23 for corrosion control processes and equipment.

Section V. CORROSION PRONE AREAS

Q-7. INSPECTION AND REPAIR

1. Corrosion inspection and repair shall be accomplished using this appendix and TM 1-1500-344-23 and TM 55-1500-343-23.

2. To identify different types of corrosion by appearance, refer to table Q-1.

Table Q-1. Corrosion of Metals - Appearance of Corrosion Products.

Alloy	Type of Attack to Which Alloy is Susceptible	Appearance of Corrosion Product
Aluminum alloy	Surface pitting and intergranular.	White or gray powder
Titanium alloy	Highly corrosion resistant. Extended or repeated contact with chlorinated solvents may cause embrittlement. Cadmium plated tools can cause embrittlement of titanium.	No visible corrosion products.
Magnesium alloy	Highly susceptible to pitting.	White powder snow-like mounds, white spots on surface.
Carbon and low alloy steel (1000-8000 series)	Surface oxidation and pitting, surface and intergranular.	Reddish-brown oxide (rust)
Stainless steel (300-400 series)	Intergranular corrosion. Some tendency to pitting in marine environment (300 series more corrosion resistant than 400 series).	Corrosion evidenced by rough surface; sometimes by red, brown or black stain.
Cadmium (used as a protective plating for steel)	Good corrosion resistance. Will cause embrittlement if improperly applied.	White to brown to black mottling of the surface.
Chromium (used as a wear-resistant plating for steels)	Subject to pitting in chloride environments.	Chromium being cathodic to steel does not corrode itself, but promotes rusting of steel where pits occur in the coating.

Q-8. CORROSION PRONE COMPONENTS.

Inspection and repair for corrosion prone components shall be accomplished using figure Q-1.

Q-9. ENGINE AREAS.

For engine areas that are corrosion prone, see figure Q-2.

Q-10. AIRCRAFT DRAINS.

Inspection of drain holes and drain tubes shall be accomplished using figures Q-3 and Q-4.

Q-11. CORROSION PRONE HONEYCOMB PANELS.

Inspection and repair for corrosion prone areas of honeycomb panels shall be accomplished using figure Q-5.

Q-12. FUSELAGE CORROSION DATA.

Inspection and repair for corrosion prone areas of fuselage shall be accomplished using figure Q-6.

Q-13. TAILBOOM CORROSION REPAIR.

Inspection and repair for corrosion prone areas of tailboom shall be accomplished using figure Q-7.

Q-14. LANDING GEAR CORROSION REPAIR.

Inspection and repair for corrosion prone areas of landing gear shall be accomplished using figure Q-8.

Q-15. UNIVERSAL WEAPONS PYLON ELECTRICAL CONNECTORS (TM 55-1500-343-23).

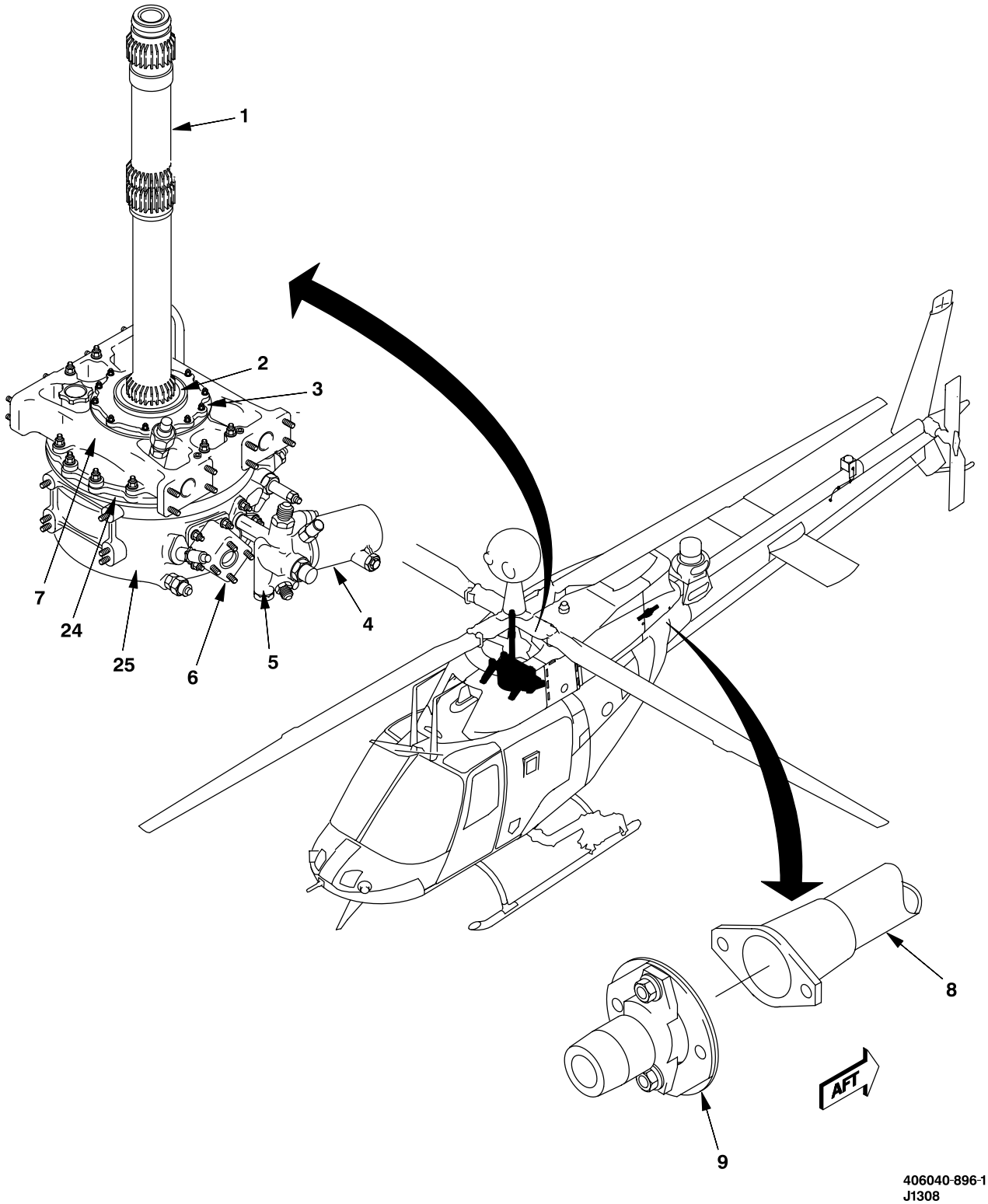


Figure Q-1. Corrosion Prone Components (Sheet 1 of 6)

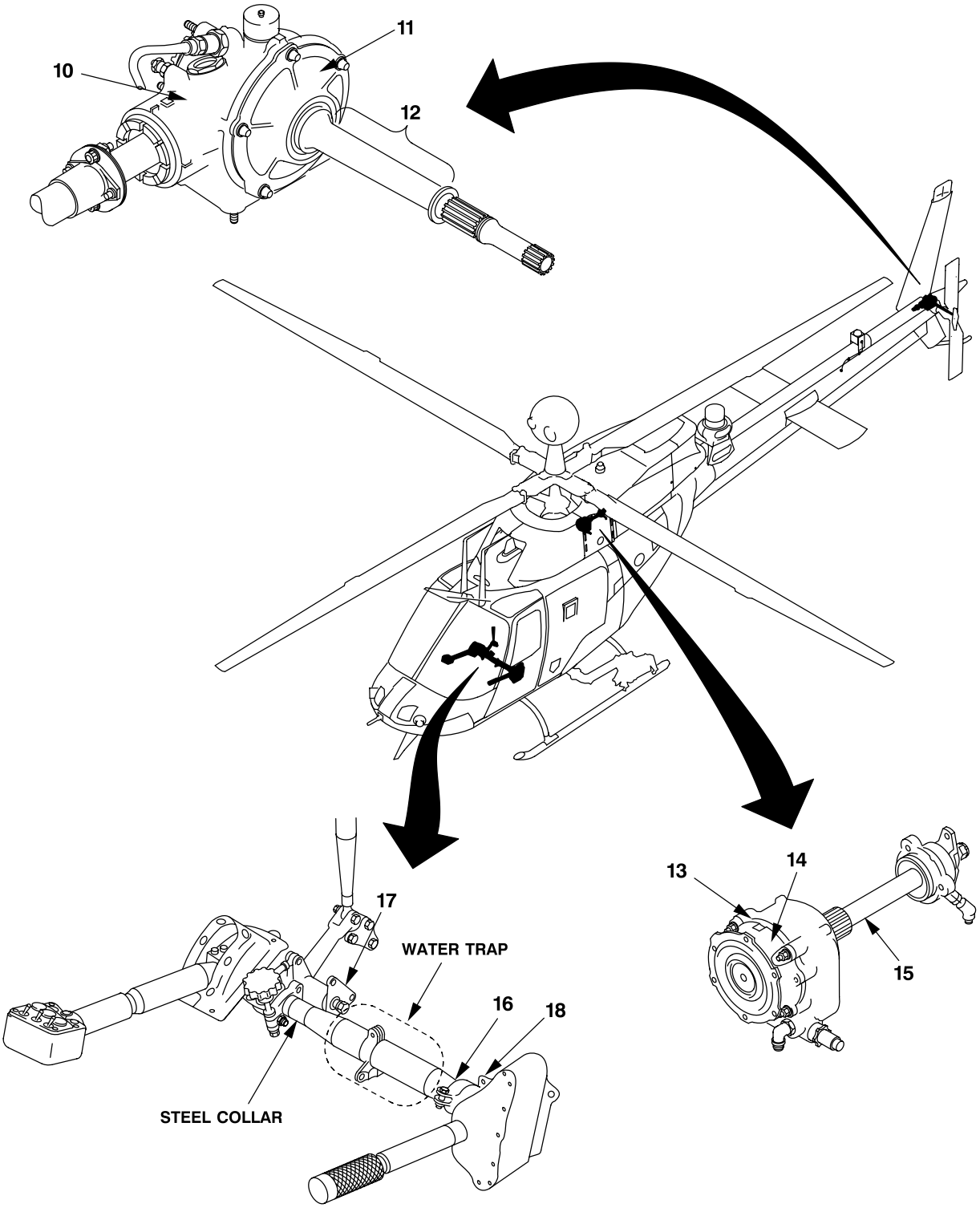


Figure Q-1. Corrosion Prone Components (Sheet 2)

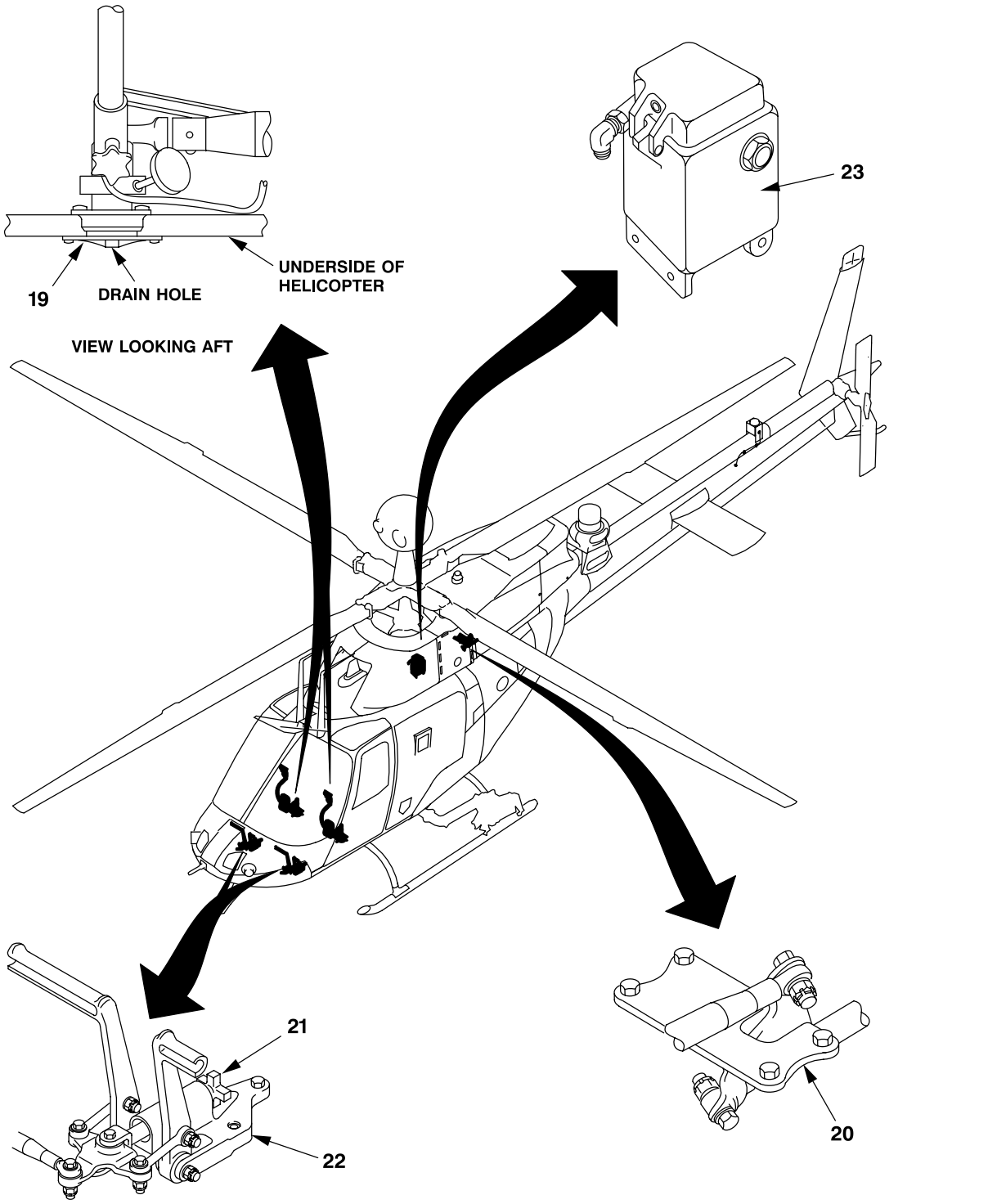


Figure Q-1. Corrosion Prone Components (Sheet 3)

NO.	NOMENCLATURE	PART NUMBER	MATERIAL	TYPE INSP	WDC CDC	NOTES
1	Mast Assy	406-040-040-105/109	Steel Alloy	Visual/ Measure	4	Refer to Tasks 6-4-17 and 6-4-18.
2	Nut, Bearing	406-040-090-101/103	Stainless Steel/ Chrome Plate	Visual/ Measure		6 Refer to Tasks 6-4-17 and 6-4-18.
3	Seal Retainer Plate, Surface	406-040-052-101	Magnesium Aly.	Visual/ Measure	4	6 7 Refer to Task 6-3-1.
4	FIlter Body	406-040-060-105	Magneslum Aly.	VIsual/ Measure	4	Refer to Task 6-8-3.
5	Manlfold	406-040-058-109	Magneslum Aly.	VIsual/ Measure	4	Refer to Task 6-8-5.
6	Housing, Input	406-040-055-105	Magneslum Aly.	Visual/ Measure	4	Refer to Task 6-3-1.
7	Top Case Assy	406-040-052-101	Magneslum Aly.	Visual/ Measure	4	Refer to Task 6-3-1.
8	Forward Tall Rotor Driveshaft Assy	406-040-315-105	4130 Steel Aly.	VIsual	4	Refer to Tasks 6-6-1 and 6-6-2.
9	DIsk Pack Coupling	406-040-340-101	301 StaInless Steel	VIsual	4	Refer to Task 6-6-7.
10	Case Assy - Tail Rotor Gearbox	406-040-406-101	Magneslum Aly.	VIsual	4	6 Refer to Task 6-7-2.
11	Cap Assy	406-040-408-101	Magnesium Aly.	Visual/ Measure	4	Refer to Task 6-7-9.
12	Output Shaft - Tail Rotor Gearbox	406-040-416-101	Steel Aly., Cadmium Plated	Visual/ Measure	4	Refer to Task 6-7-8.
13	Housing Assy - Freewheeling Unit	406-040-506-101	Magnesium Aly.	Visual/ Measure	N/A	Refer to Task 6-5-3.
14	Cap Assy - Freewheeling Unit	406-040-508-101	Magnesium Aly.	Visual/ Measure	N/A	Refer to Task 6-5-3.

406040-896-4
J1437

Figure Q-1. Corrosion Prone Components (Sheet 4)

NO.	NOMENCLATURE	PART NUMBER	MATERIAL	TYPE INSP	WDC CDC	NOTES
15	Shaft - Freewheeling Unit	406-040-517-101	Steel Aly., Black Oxide	Visual/ Measure	N/A	Refer to Task 6-5-3.
16	Jackshaft	206-001-174-101	4130 Steel Aly.	Visual	N/A	Refer to Task 11-2-17.
17	Support	206-001-139-001	Magnesium Aly.	Visual/ Measure	N/A	Refer to Task 11-5-3.
18	Support	206-001-119-001	Magnesium Aly.	Visual/ Measure	N/A	Refer to Task 11-2-39.
19	Cover	206-001-376-001	Magnesium Aly.	Visual/ Measure	N/A	9
20	Support	206-001-734-001	Magnesium Aly.	Visual/ Measure	N/A	N/A
21	Knob	206-001-709-001	Magnesium Aly.	Visual/ Measure	N/A	N/A
22	Support Assy	206-001-713-001	Magnesium Aly.	Visual/ Measure	N/A	N/A
23	Hydraulic Reservoir	206-076-368-101	Magnesium Aly.	Visual/ Measure	3 4	Refer to Task 7-7-8.
24	Gearshaft Support Case	406-040-056-105	Magnesium Aly.	Visual/ Measure	4	Refer to Task 6-3-1.
25	Main Case Assy	400-040-050-101	Magnesium Aly.	Visual/ Measure	4	Refer to Task 6-3-1.

406040-896-5
J1437

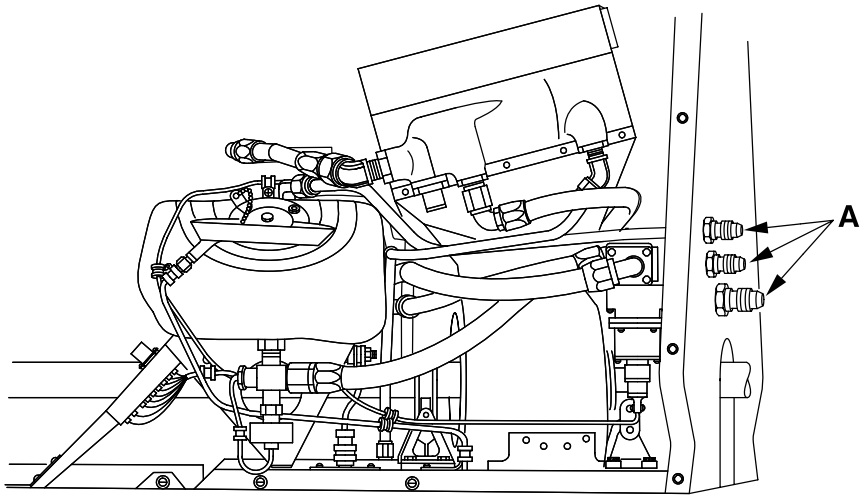
Figure Q-1. Corrosion Prone Components (Sheet 5)

NOTES

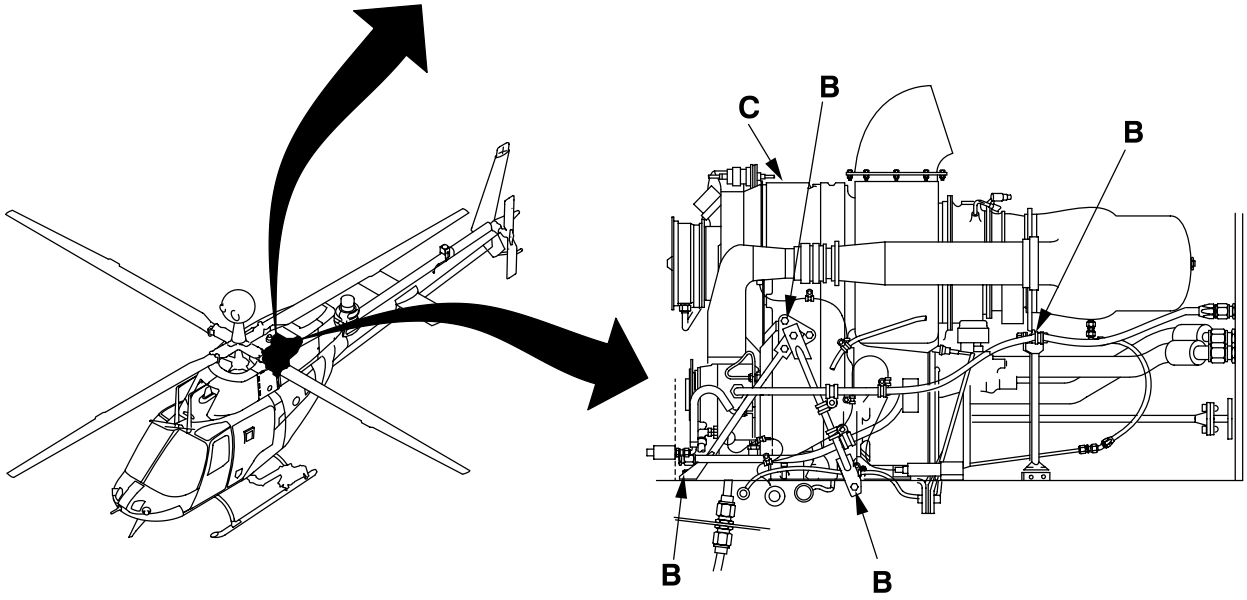
1. Visually inspect using 4-10X magnifying glass.
2. For precise location of component, use part number and refer to TM 1-1520-248-23P.
3. Apply WDC to hydraulic reservoir only.
4. Apply water displacement compound (WDC) (D85) to readily accessible areas of components only after each wash and each flight in rain.
5. Refer to TM 1-1500-344-23 for complete corrosion control, repair methods, and application of corrosion preventive compounds (CPC), and water displacement compounds (WDC).
6. Check that lockwire has not chafed magnesium.
7. Movement of brackets 20-032-7 on topcase breaks Proseal and paint coating between magnesium case and brackets. Water can then leak down stud into magnesium case and cause corrosion.
8. CAUTION: Do not allow CPC and WDC to contact elastomer surfaces or get into lubricated bearings.
9. Ensure drain/rigging pin hole is clear.

406040-896-6
J1386

Figure Q-1. Corrosion Prone Components (Sheet 6)



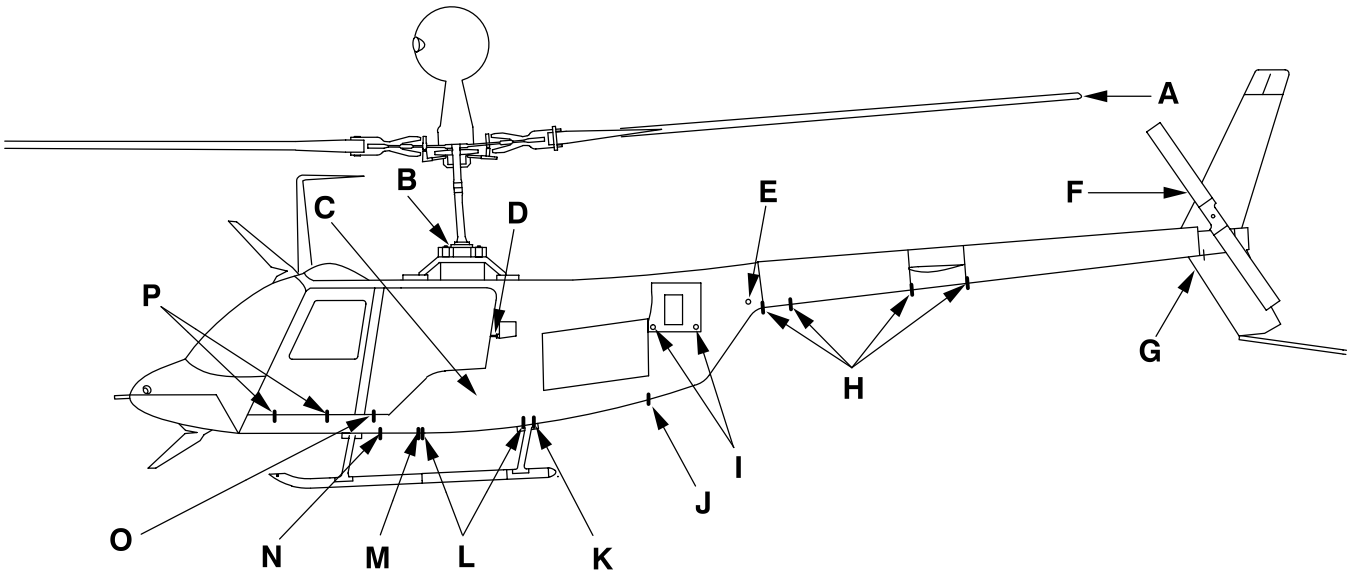
VIEW LOOKING INBOARD RIGHT SIDE



INDEX	ITEM
A	Oil line fittings
B	Engine mount nuts and threads
C	Engine lifting pad
NOTE:	Ensure nuts, threads, lifting pad and oil lines are clean and dry. Spray areas with corrosion preventive compound (D85) after wash procedures.

406060-577
J1308

Figure Q-2. Engine Area Corrosion Prone Components

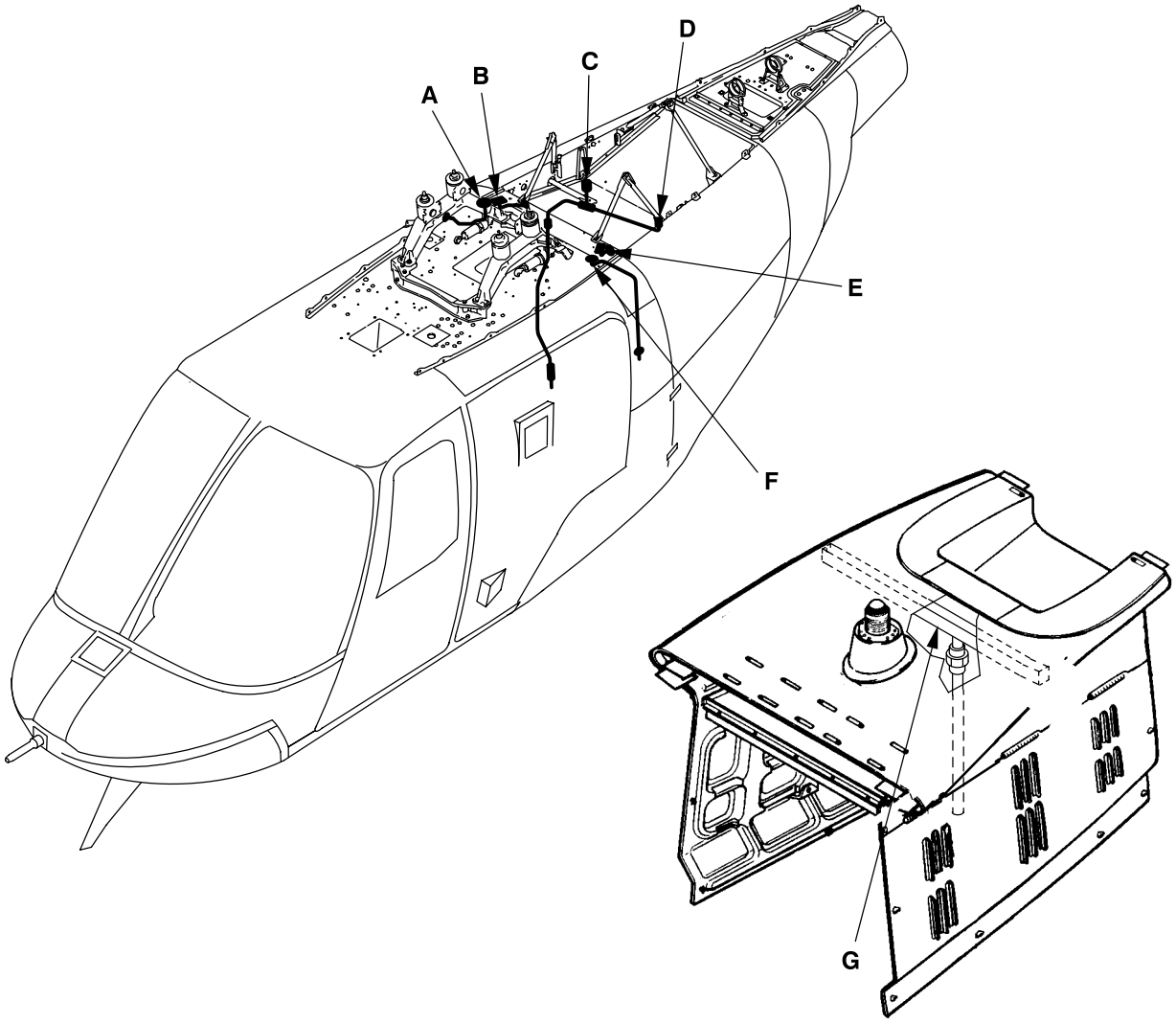


DRAIN HOLE	LOCATION
A	Main rotor blade drain hole
B	Swashplate support drain hole
C	Fuel cell cavity
D	Aft cabin closure
E	Tailboom attach fitting (left/right side)
F	Tail rotor blade drain hole
G	Vertical fin supports (left/right)
H	Bottom and aft of bulkheads
I	Bottom of laser sensor support
J	Lower fairing LBL/RBL 0.88
K	Lower fairing BL 0.00
L	Lower shell BL 0.00
M	Lower shell RBL 0.5
N	Lower shell LBL 1.80
O	Bottom of avionics compartment door (left/right door)
P	Bottom of crew door (left/right door)

NOTE: Ensure drain holes are clear, clean and dry. Spray areas with corrosion preventive compound (D84) after wash procedures.

406961-1322
J1308

Figure Q-3. Aircraft Drain Holes



DRAIN PORT	LOCATION			TUBE ASSEMBLY PART NUMBER
	FUSELAGE STA.	WATERLINE	BUTTOCK LINE	
A	124.40	72.00	R14.06	206-032-333-039
B	125.70	72.00	R13.41	206-032-333-035
C	147.53	65.75	R10.80	206-032-326-001
D	147.53	65.75	L10.80	406-030-167-101
E	124.40	72.00	L14.06	206-032-333-037
F	125.70	72.00	L13.41	206-032-333-015
G	151.00	95.60	L13.00	406-060-006-101

NOTE: Ensure drain holes are clear, clean and dry.
Spray areas with corrosion preventive compound (D84) after wash procedures.

406060-579
J2588

Figure Q-4. Engine and Pylon Area Drain Tubes

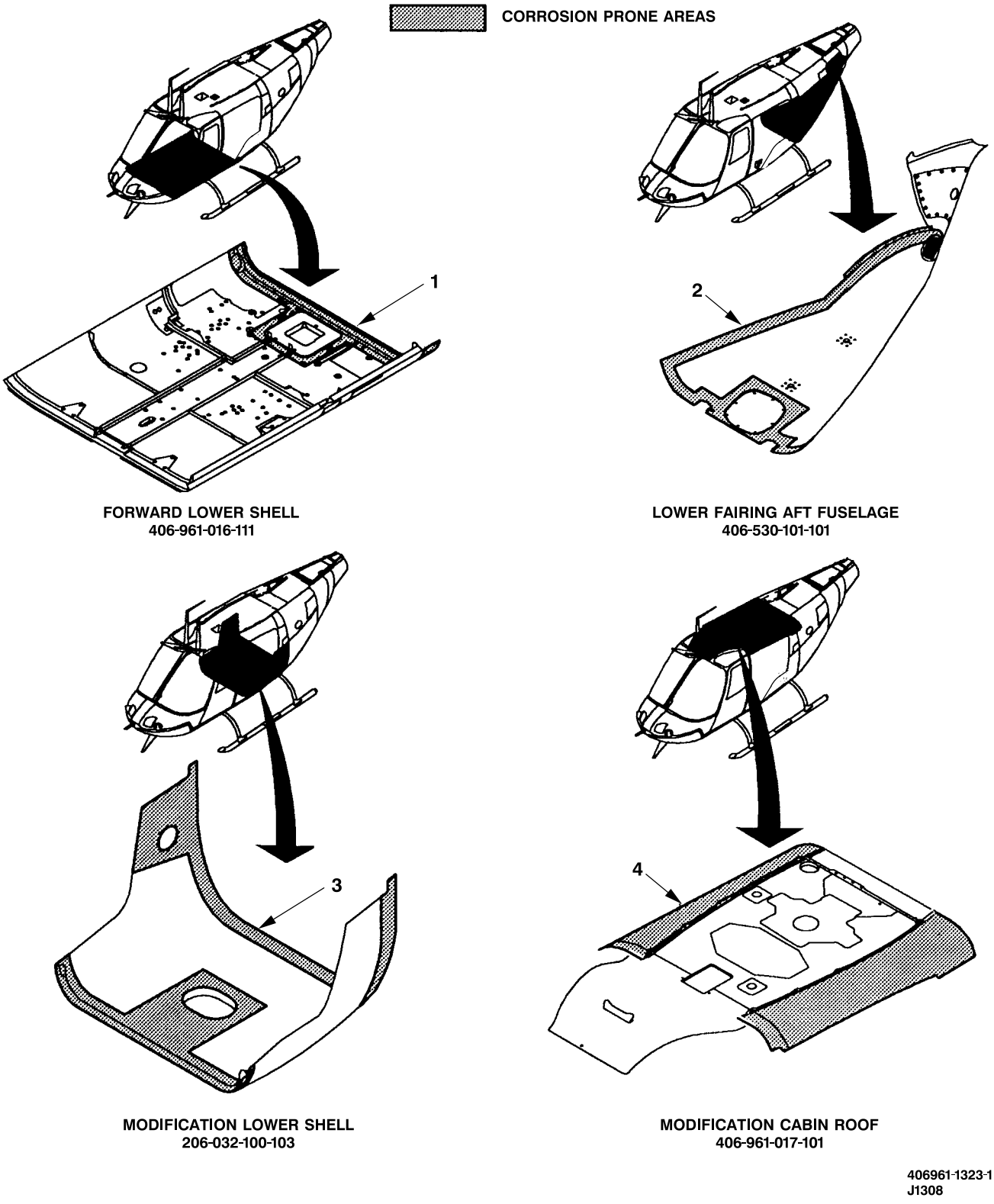


Figure Q-5. Corrosion Prone Panels (Sheet 1 of 3)

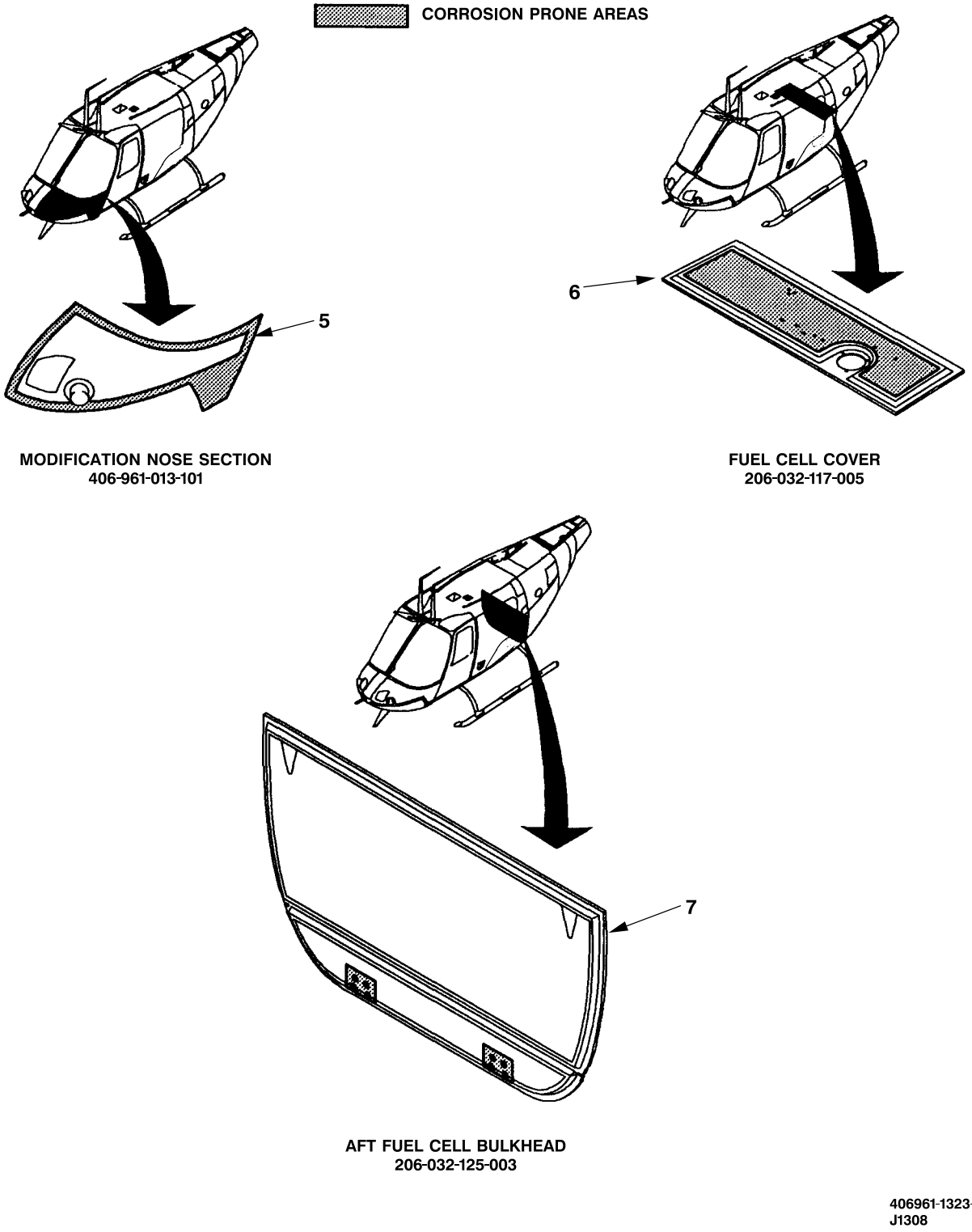


Figure Q-5. Corrosion Prone Panels (Sheet 2)

NO.	NOMEN	PART NUMBER	MATERIAL	TYPE INSP	NOTES
1	Forward Lower Shell	406-961-016-111	Alumlnum Honeycomb	Vlsual	1 2
2	Lower Fairlng Aft Fuselage	406-530-101-101	Alumlnum Honeycomb	Vlsual	1 2
3	Modlflcatlon Lower Shell	206-032-100-103	Alumlnum Honeycomb	Vlsual	1 2
4	Modification Cabin Roof	406-961-017-101	Aluminum Honeycomb	Visual	1 2
5	Modification Nose Section	406-961-013-101	Aluminum Honeycomb	Visual	2
6	Fuel Cell Cover	206-032-117-005	Aluminum Honeycomb	Visual	1 2
7	Aft Fuel Cell Bulkhead	206-032-125-003	Aluminum Honeycomb	Visual	1 2

NOTES

1 Refer to task 2-1-61.

2 If corroslon ls present, repalr or replace panel.

3. Finish, WDC/CPC column not required.

406961-1323-3
J1386

Figure Q-5. Corrosion Prone Panels (Sheet 3)

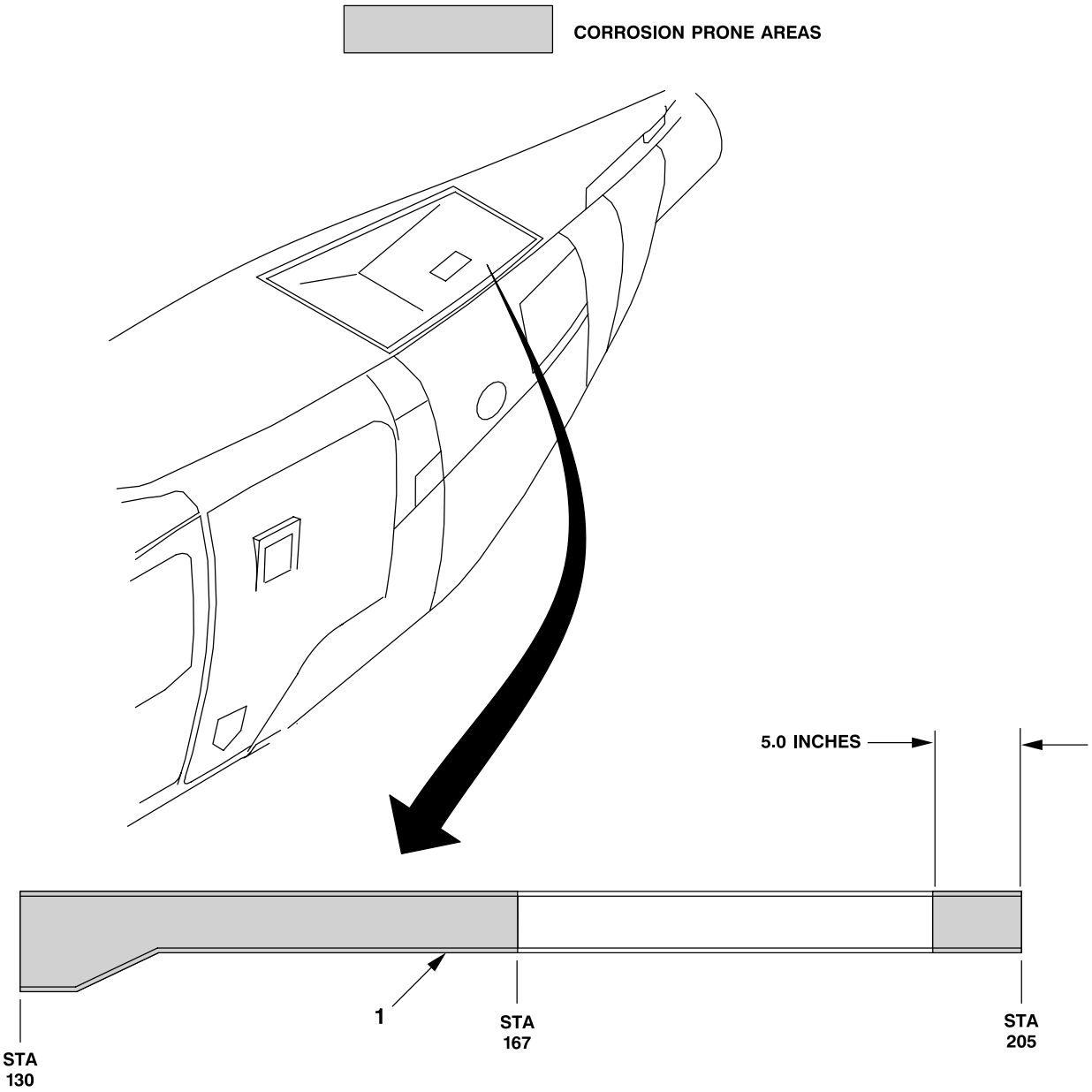
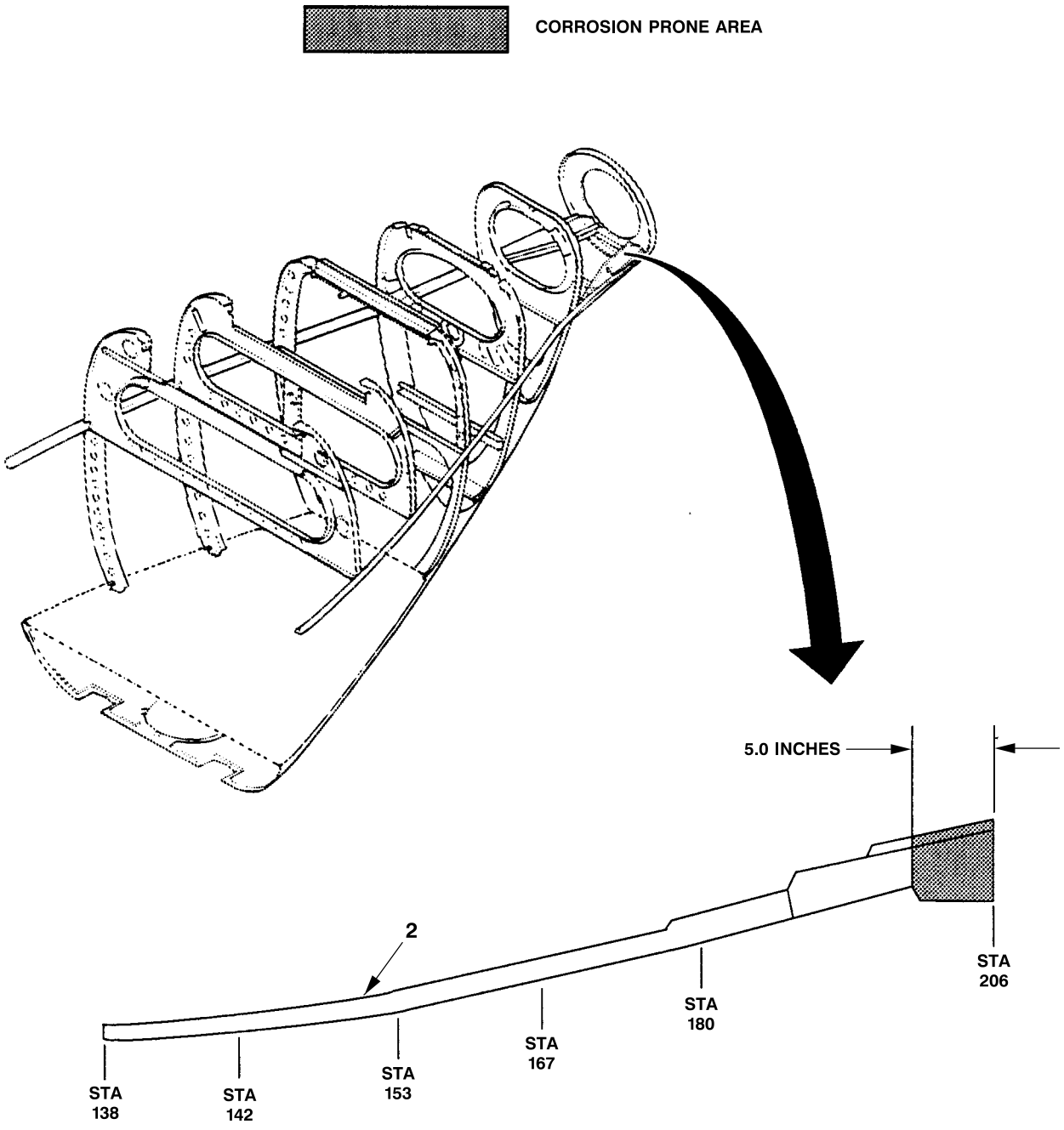


Figure Q-6. Fuselage Corrosion Prone Areas (Sheet 1 of 6)



LONGERON - CENTER FUSELAGE
(206-032-319-003)

206031-66-3
J1308

Figure Q-6. Fuselage Corrosion Prone Areas (Sheet 2)

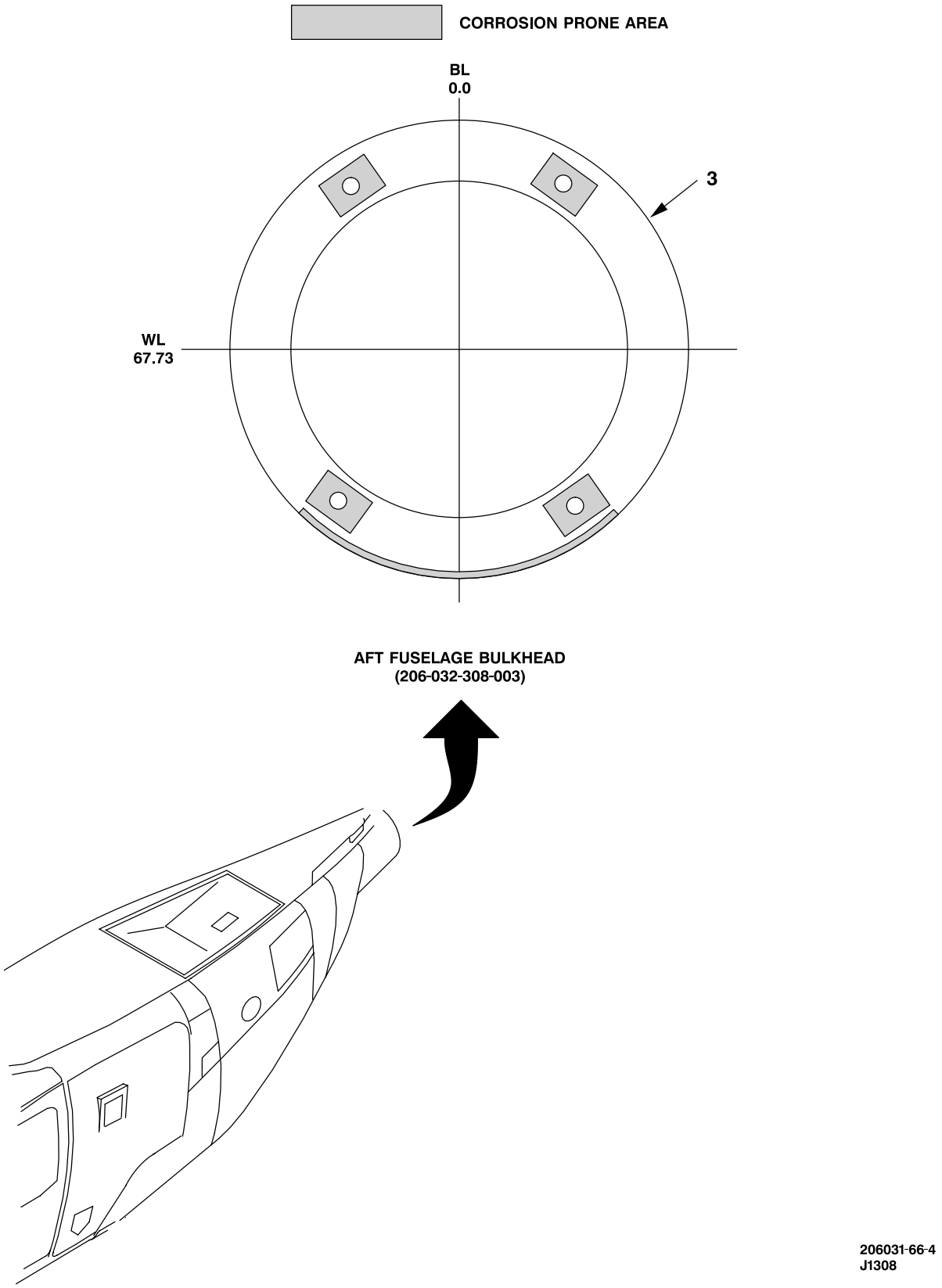
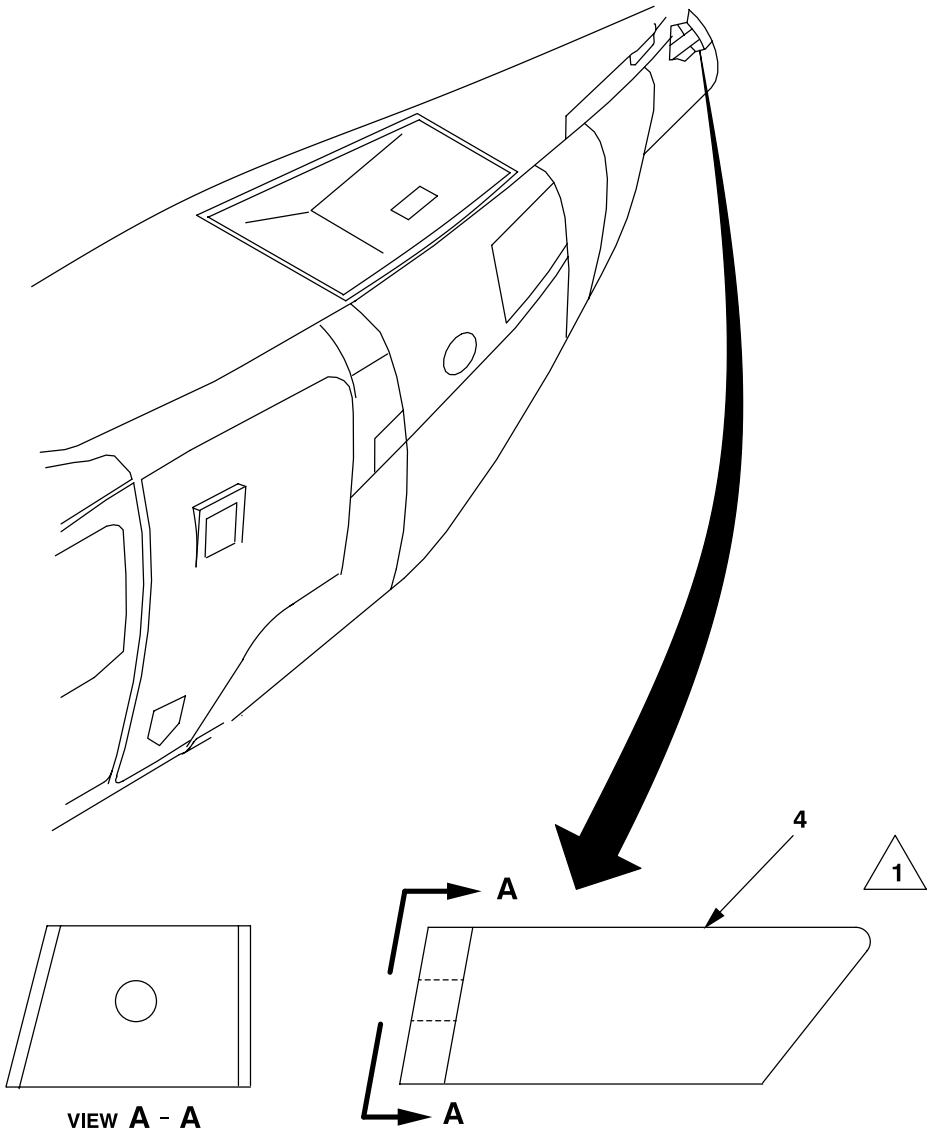


Figure Q-6. Fuselage Corrosion Prone Areas (Sheet 3)



UNDER TAILBOOM ATTACHMENT FITTING
(206-032-329-003 and 004)

206031-66-5
J1308

Figure Q-6. Fuselage Corrosion Prone Areas (Sheet 4)

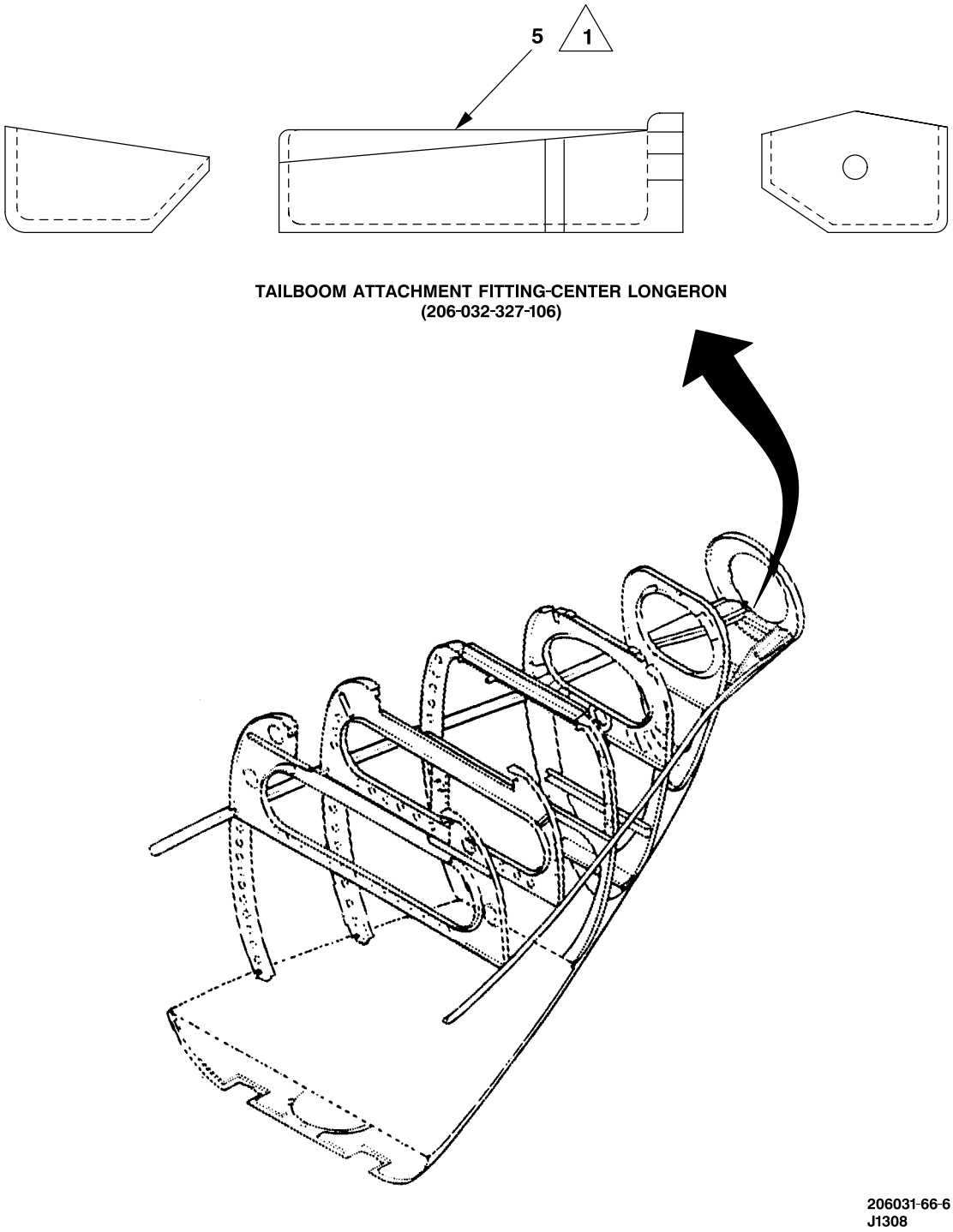


Figure Q-6. Fuselage Corrosion Prone Areas (Sheet 5)

NO.	NOMENCLATURE	PART NUMBER	MATERIAL	TYPE INSP	WDC CPC	NOTES
1	Longeron - Upper Aft Fuselage	206-031-314-055/063	Al. Aly. 7075	Visual	2	
2	Longeron - Center Fuselage	206-032-319-003	Al. Aly. 7075	Visual	2	
3	Aft Fuselage Bulkhead	206-032-308-003		Visual		
4	Upper Tailboom Attachment Fitting	206-031-329-003/004	Al. Aly. 2014-T6	Visual/ Measure	2	1
5	Tailboom Attachment Fitting - Center Longeron	206-031-327-106	Al. Aly. 2014-T6	Visual/ Measure	2	1

NOTES

1. Entire part is corrosion prone.

2. Apply water displacement compound (WDC)(D85) only to readily accessible areas of components after each wash and after each flight in the rain.

3. Refer to TM 1-1500-344-23 for complete corrosion control, repair methods, and application of corrosion preventive compounds (CPC), and water displacement compounds (WDC).

406031-11
J1386

Figure Q-6. Fuselage Corrosion Prone Areas (Sheet 6)

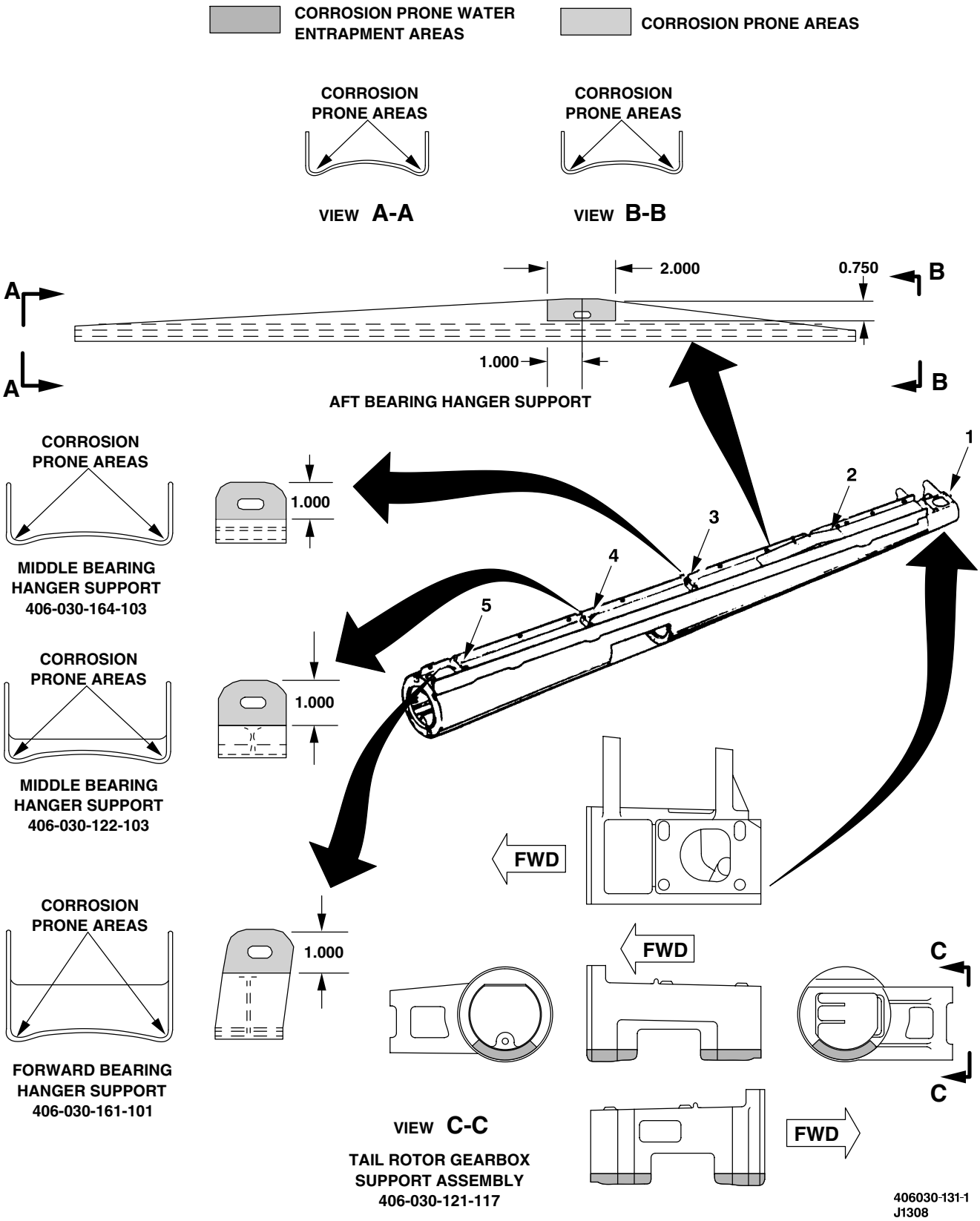


Figure Q-7. Tailboom Corrosion Prone Areas (Sheet 1 of 3)

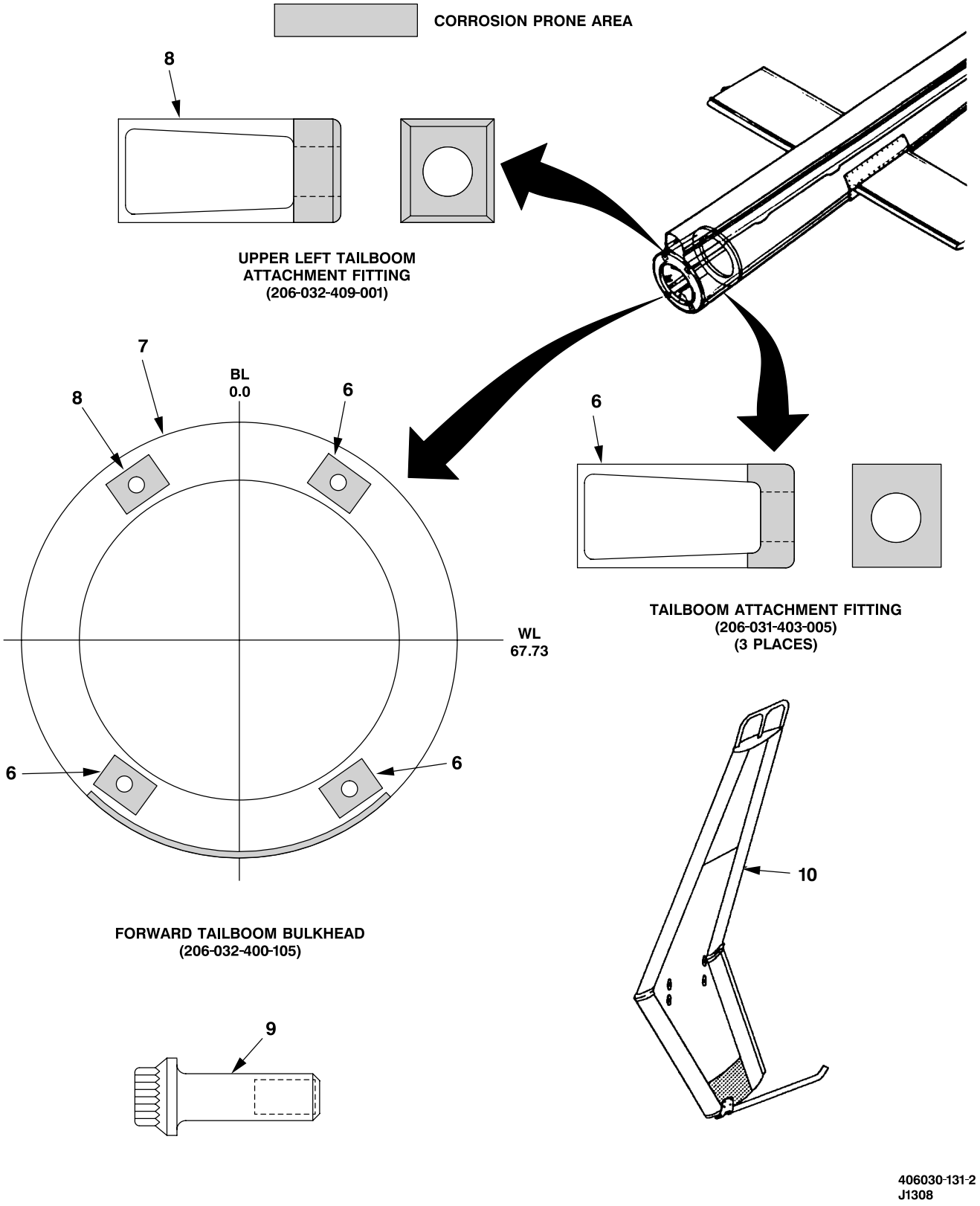


Figure Q-7. Tailboom Corrosion Prone Areas (Sheet 2)

NO.	NOMENCLATURE	PART NUMBER	MATERIAL	TYPE INSP	WDC CPC	NOTES
1	Tailrotor Gearbox Support	406-030-121-117	Al. Aly. A356	Visual/ Measure	2	Refer to Task 2-2-6
2	Aft Hanger Bearing Support 1	406-030-165-101	Al. Aly. 2024-T42	Visual/ Measure	2	Refer to Task 2-2-9
3	Middle Hanger Bearing Support 1	406-030-164-103	CRES 301	Visual/ Measure	2	Refer to Task 2-2-9
4	Middle Hanger Bearing Support 1	406-030-122-103	Al. Aly. 356-T6	Visual/ Measure	2	Refer to Task 2-2-9
5	Forward Hanger Bearing Support 1	406-030-161-101	Al. Aly. 356-T6	Visual/ Measure	2	Refer to Task 2-2-9
6	Tailboom Attachment Fitting (3) 1	206-031-403-005	Al. Aly. 2014-T6	Visual/ Measure	2	Refer to Task 2-2-3
7	Forward Tailboom Bulkhead	206-032-400-105	Al. Aly. 7075	Visual/ Measure		Refer to Task 2-2-3
8	Upper Left Tailboom Attachment Fitting 1	206-032-409-001	Al. Aly. 2014-T6	Visual/ Measure	2	Refer to Task 2-2-3
9	Bolt (4) 1	NAS626	Steel 8735	Visual/ Measure	2	Refer to Task 2-2-5
10	Vertical Fin	206-022-113-101 406-961-025-107	Honeycomb/ Al. Aly.	Visual/ Measure	2	Refer to Task 2-2-16

NOTES

1 Entire part is corrosion prone.

2 Apply water dlsplacement compound (WDC) (D85), to readily accessible areas of components only.

3. Refer to TM 1-1500-344-23 for complete corrosion control, repair methods, and application of corrosion preventive compounds (CPC), and water displacement compounds (WDC).

406030-131-3
J1386

Figure Q-7. Tailboom Corrosion Prone Areas (Sheet 3)

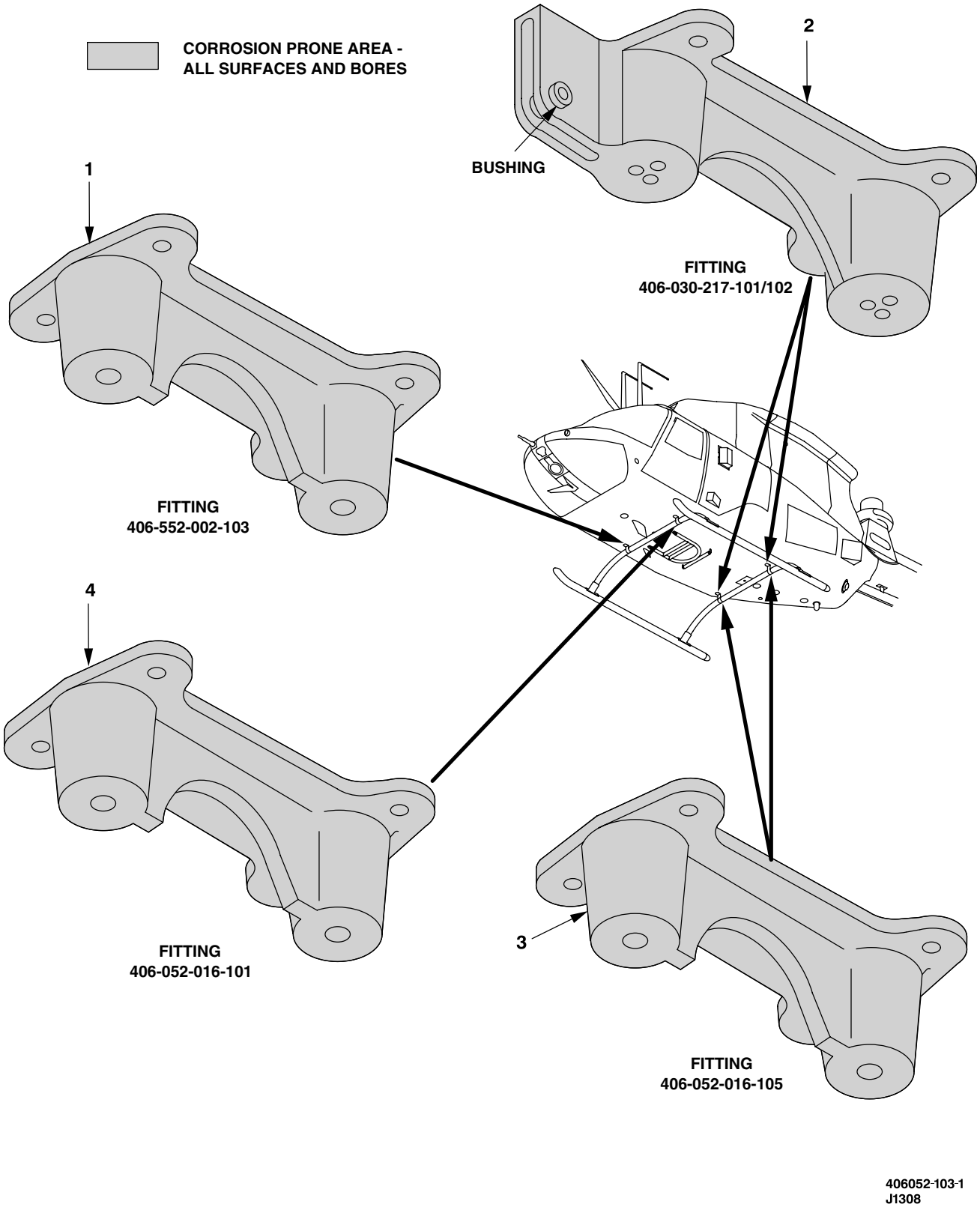


Figure Q-8. Landing Gear Corrosion Prone Areas (Sheet 1 of 3)

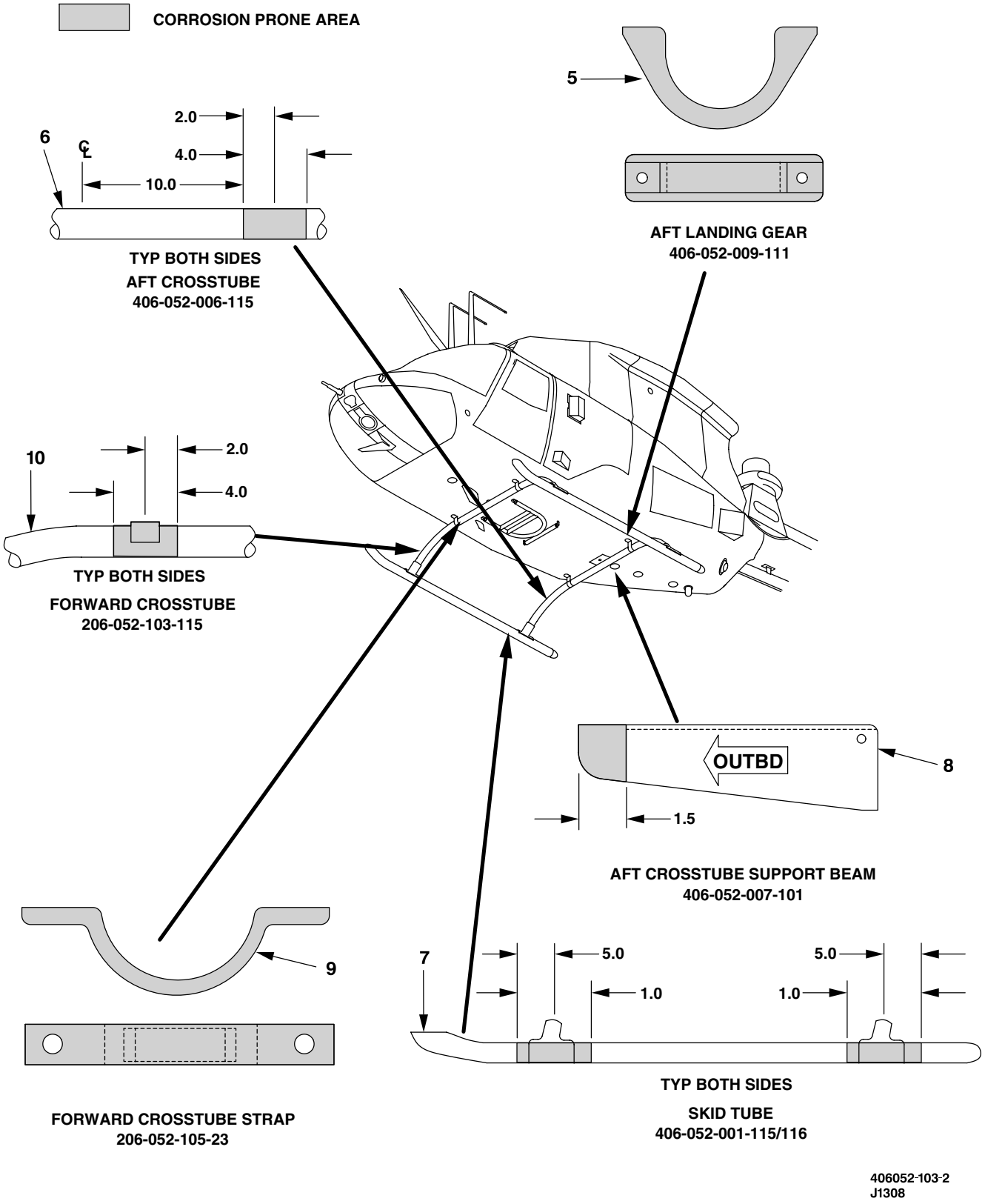


Figure Q-8. Landing Gear Corrosion Prone Areas (Sheet 2)

NO.	NOMENCLATURE	PART NUMBER	MATERIAL	TYPE INSP	REPAIR DATA/ COMMENTS/NOTES
1	Fitting 1	406-552-002-103	Al. Aly. 2014-T6	Visual/ Measure	Refer to Task 2-1-78
2	Fitting 1	406-030-217-101/102	Al. Aly. 7050	Visual/ Measure	Refer to Task 2-1-78
3	Fitting 1	406-052-016-105	Al. Aly. 2014-T6	Visual/ Measure	Refer to Task 2-1-78
4	Fitting 1	406-052-016-101	Al. Aly. 2014-T6	Visual/ Measure	Refer to Task 2-1-78
5	Aft Landing 1 Gear Support	406-052-009-111	Al. Aly. 7075-T73	Visual	Refer to Task 3-1-8 for corrosion repair limits.
6	Aft Crosstube	406-052-006-115	Al. Aly. 7075-T6	Visual	Refer to Task 3-1-35. Typical on both sides.
7	Skid Tube	406-052-001-115/116	Al. Aly. 7075-T6	Visual	Refer to Task 3-1-11 for corrosion repair limits.
8	Aft Crosstube Support Beam	406-052-007-101	Al. Aly. 7075-T73	Visual	Refer to Task 3-1-45. Typical on both sides.
9	Forward 1 Crosstube Strap	206-052-105-23	Al. Aly. 7075-T6510	Visual	Refer to Task 3-1-7 for corrosion repair limits.
10	Forward Crosstube	206-052-103-115	Al. Aly. 7075	Visual	Refer to Task 3-1-7 for corrosion repair limits. Typical on both sides.

NOTES

1 Entlre part Is corroslon prone.

2. After wash or flight in rain, apply water displacement compound (WDC), to readily accessible components only.

3. Refer to TM 1-1500-344-23 for complete corrosion control, repair methods, and application of corrosion preventive compounds (CPC), and water displacement compounds (WDC).

406052-103-3
J1386

Figure Q-8. Landing Gear Corrosion Prone Areas (Sheet 3)

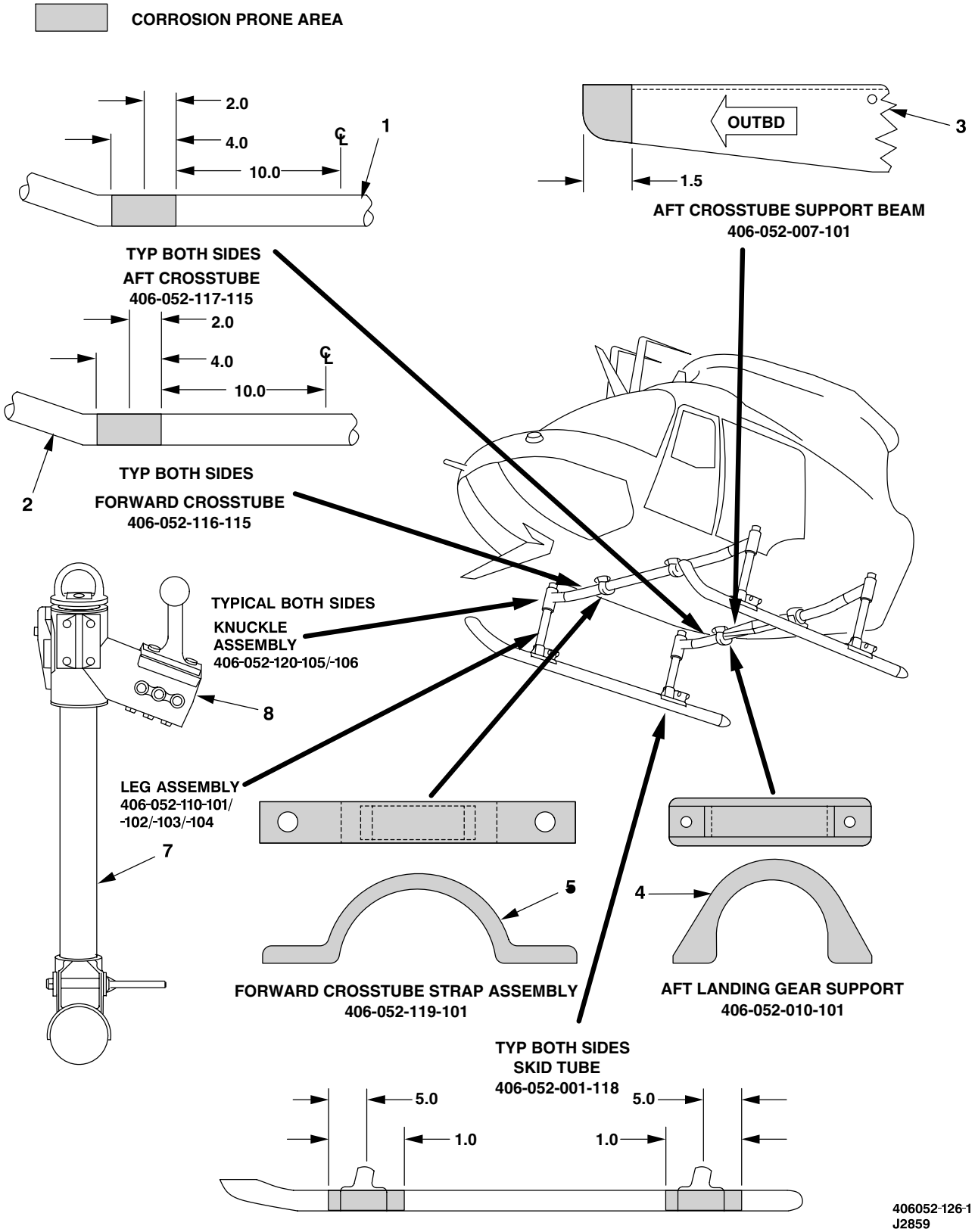


Figure Q-9. Landing Gear Corrosion Prone Areas (Rapid Deployment)(Sheet 1 of 2)

NO.	NOMENCLATURE	PART NUMBER	MATERIAL	TYPE INSP	REPAIR DATA/ COMMENTS/NOTES
1	Aft Crosstube	406-052-117-115	Al. Aly. 7075-T6	Visual	Refer to Task 3-1-37. Typlcal on both slde.
2	Forward Crosstube	206-052-116-115	Al. Aly. 7075	Visual	Refer to Task 3-1-27 for corrosion repair limits. Typical on both sides.
3	Aft Crosstube Support Beam	406-052-007-101	Al. Aly. 7075-T73	Vlsual	Refer to Task 3-1-46. Typical on both sides.
4	Aft Landing Gear Support △1	406-052-010-101	Al. Aly. 7075-T73	Visual	Refer to Task 3-1-9 for corroslon repalr llmlts.
5	Forward Crosstube Strap △1	406-052-119-101	Al. Aly. 7075-T6510	Vlsual	Refer to Task 3-1-10 for corrosion repalr llmlts.
6	Skld Tube	406-052-001-118	Al. Aly. 7075-T6	Visual	Refer to Task 3-1-12 for corrosion repair limits.
7	Leg Assembly	406-052-121-101 /-102/-103/-104	Steel Aly.	Vlsual	Refer to Task 3-1-52 for corroslon repair llmits.
8	Knuckle Assembly	406-052-120-105/-106	Al. Aly.	Visual	Refer to Task 3-1-52 for corrosion repair limits.

NOTES

△1 Entire part is corrosion prone.

2. After wash or flight in rain, apply water displacement compound (WDC), to readily accessible components only.

3. Refer to TM 1-1500-344-23 for complete corrosion control, repair methods, and application of corrosion preventive compounds (CPC), and water displacement compounds (WDC).

406052-126-2
J2859

Figure Q-9. Landing Gear Corrosion Prone Areas (Rapid Deployment)(Sheet 2)

APPENDIX R

RESERVED FOR FUTURE USE

GLOSSARY

Abbreviation/ Acronym	Definition
AC	Alternating Current
ACK	Acknowledge
ADF	Automatic Direction Finder
ADS	Air Data System
ADSS	ANVIS Display Symbology System
ADU	Audio Distribution Unit
ADV	Advisory
AEU	Armament Electronic Unit
AI	Airborne Intercept
AJ	Antijamming
ALSE	Aviation Life Support Equipment
ALT	Altitude
AM	Amplitude Modulation
AMP	Ampere
AMP	Amplifier
ANVIS	Aviators Night Vision Imaging System
AOAP	Army Oil Analysis Program
APU	Aircraft Power Unit
AR	Army Regulation
ARMT	Armament
ASE	Aircraft Survivability Equipment
ATAS	Air-to-Air Stinger
ATHS	Airborne Target Handover System
ATTD	Attitude
AUTO	Automatic
AUX	Auxiliary
AVIM	Aviation Intermediate Maintenance
AVTR	Airborne Video Tape Recorder
AVUM	Aviation Unit Maintenance
AWG	American Wire Gauge
BATT	Battery
B HOT	Black Hot
BIT	Built-In Test
BITE	Built-In Test Equipment
BKUP	Backup

Glossary (Cont)

Abbreviation/ Acronym	Definition
BL	Butt Line
BLWR	Blower
BNR	Burner
BRSIT	Boresight
BRT	Bright
CAGE	Commercial and Government Entity Code
CARC	Chemical Agent Resistant Coating
CB	Circuit Breaker
CDS	Control Display System
CFT	Captive Flight Trainer
CG	Center of Gravity
CHGR	Charger
CIPH	Cipher
CIT	Compressor Inlet Temperature Sensor
CKPT	Cockpit
CKPT LT	Cockpit Light
CL	Center Line
CLR	Clear
COLL	Collision
COMSEC	Communication Security
CPC	Corrosion Preventive Compound
CPG	Copilot/Gunner
CRES	Corrosion Resistant Steel
CTRL	Control
DA PAM	Department of the Army Pamphlet
DC	Direct Current
DEFOG	Windshield Defogger System
DES	Designation
DETR	Detector
DIGT	Digital
DIR	Directional
DISENG	Disengage
DN	Down
DOD	Department of Defense
DRA	Data Rate Adapter
DSC	Digital Scan Converter

Glossary (Cont)

Abbreviation/ Acronym	Definition
DSPL	Display
DTS	Data Transfer System
DX	Direct Exchange
ECU	Electronic Control Unit
ECUIC	Electronic Control Unit Interface Computer
EGI	Embedded Global Position/Inertial Navigation
ELEV	Elevation
EMI	Electromagnetic Interference
ENG	Engine
ENGA	Engage
ESC	Electronic Supervisory Control
ESNTL	Essential
EU	Electronics Unit
EXT	External
FADEC	Full Authority Digital Electronic Control
FCU	Fuel Control Unit
FDLS	Fault Detection and Locating System
FFAR	Folding Fin Aerial Rocket
FM	Frequency Modulation
FOC	Focus
FOV	Field-of-View
FR	Frame
FREQ	Frequency
FRZ	Freeze
FS	Fuselage Station
FWD	Forward
FXD	Fixed
GEN	Generator
GRBX	Gearbox
GSE	Ground Support Equipment
HDG	Heading
HF	High Frequency
HHM	Heading Hold Mode
HLFR	Hellfire
HMS	HELLFIRE Missile System
HMU	Hydromechanical Unit

Glossary (Cont)

Abbreviation/ Acronym	Definition
HOM	Homing (FM)
HSD	Horizontal Situation Display
HSF	Hot Section Factor
HTR	Heater
HYD	Hydraulic
ICS	Internal Communication System
ID	Inside Diameter
IDM	Improved Data Modem
IEU	Interface Electronics Unit
IFF	Identification Friend or Foe
IFM	Improved Frequency Modulation
IGN	Ignition
INIT	Initiate
INST	Instrument
INST LT	Instrument Light
INTCOM	Intercommunication
INV	Inverter
IR	Infrared
ISP	Integrated Systems Processor
JETT	Jettison
KM	Kilometer
KPH	Kilometers Per Hour
KTS	Knots
KYBD	Keyboard
LAT	Latitude
LCF	Low Cycle Fatigue
LDS	Laser Detecting System
LOAL	Lock On After Launch
LOBL	Lock On Before Launch
LRF/D	Laser Rangefinder/Designator
LRU	Line Replaceable Unit
LT	Light
L/H	Left Hand
LVDT	Linear Variable Differential Transformer
MAC	Maintenance Allocation Chart
MAINT	Maintenance

Glossary (Cont)

Abbreviation/ Acronym	Definition
MAPS	Maintenance Action Precise Symptom
MCPS	MMS Central Power Supply
MCPU	Master Controller Processor Unit
MFD	Multifunction Display
MFK	Multifunction Keyboard
MLM	Multipurpose Lightweight Missile
MMS	Mast Mounted Sight
MMSS	Mast Mounted Sight Subsystem
MNL	Manual
MOC	Maintenance Operational Check
MOM	Moment
MPD	Multiparameter Display
MPLH	Multi Purpose Light Helicopter
M/R	Main Rotor
MOS	Military Occupational Specialty
MSDS	Material Safety Data Sheets
MSP	MMS System Processor
MSS	Missile Sight System
MSSEU	Missile Sight System Electronics Unit
MTA	Mast Turret Assembly
MTF	Maintenance Test Flight
MWO	Modification Work Order
MUX	Multiplex
NAV	Navigation
NBC	Nuclear Biological and Chemical
NG	Gas Generator Speed
NICAD	Nickel-Cadmium Battery
NOE	Nap-of-the-Earth
NP	Power Turbine RPM
NR	Main Rotor RPM
NSN	National Stock Number
NVG	Night Vision Goggles
OAT	Outside Air Temperature
OD	Outside Diameter
ODA	Optical Display Assembly
OPR	Operate

Glossary (Cont)

Abbreviation/ Acronym	Definition
OS	Overspeed
OSET	Offset
OSHA	Occupational Safety and Health Administration
PART SEP	Particle Separator
PDU	Pilot Display Unit
PLT	Pilot
PMA	Permanent Magnet Alternator
POS	Position
POS LT	Position Light
PPM	Progressive Phase Maintenance
PSI	Pounds Per Square Inch
PSID	Pounds Per Square Inch Differential
PSIG	Pounds Per Square Inch Gauge
PWR	Power
QAD	Quick Attach-Detach
QE	Engine Torque
QM	Mast Torque
QTY	Quantity
RALT	Radar Altimeter
RAST	Raster
RCCB	Remote Control Circuit Breaker
RCPT	Receptacle
RDS	Radar Detecting System
REC	Receive
RECT	Rectifier
REL	Release
RET	Retract
RFD	Remote Frequency Display
RHE	Remote HELLFIRE Electronics Unit
RKT	Rocket
RPM	Revolutions Per Minute
RPSTL	Repair Parts and Special Tools List
RST	Reset
RT	Receiver/Transmitter
R/H	Right Hand
SAM	Surface-To-Air Missile

Glossary (Cont)

Abbreviation/ Acronym	Definition
SCAS	Stability and Control Augmentation System
SCTY	Security
SEL	Select
SEU	Sight Electronics Unit
SINCGARS	Single Channel Ground/Air Radio System
SMR	Source, Maintenance, and Recoverability
SRCH	Search
STA	Station
STBY	Standby
SYMB	Symbology
TACFIRE	Tactical Fire Direction
TAMS	Transmission Attitude Measurement System
TB	Technical Bulletin
TBD	To Be Designated
TBO	Time Between Overhaul
TCU	Thermal Control Unit
TEMP	Temperature
TGT	Turbine Gas Temperature
TGT/TRQ	Turbine Gas Temperature/Torque
TI	Technical Inspector
TIS	Thermal Imaging Sensor
TM	Technical Manual
TMDE	Test, Measurement, and Diagnostic Equipment
TMOPS	Torquemeter Oil Pressure Sensor
T/R	Tail Rotor
TRK	Track
TRQ	Torque
TRU	Transformer Rectifier Unit
TVS	Television System
UHF	Ultra High Frequency
U/M	Unit of Measure
UTM	Universal Transverse Mercator
UUT	Unit Under Test
UWP	Universal Weapons Pylon
VAC	Volts Alternating Current
VAR	Variation

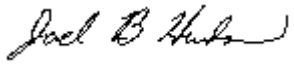
Glossary (Cont)

Abbreviation/ Acronym	Definition
VDC	Volts Direct Current
VDU	Video Downlink/Uplink
VHF	Very High Frequency
VID	Video
VSD	Vertical Situation Display
VSI	Vertical Scale Instrument
VTR	Video Tape Recorder
VTS	Video Tracker System
VTVM	Vacuum Tube Voltmeter
WDC	Water Displacing Compound
WL	Water Line
WRN	Warning
WSPS	Wire Strike Protection System
XDCR	Transducer (Sensor)
XFMR	Transformer
XMSN	Transmission

ALPHABETICAL INDEX

By Order of the Secretary of the Army:

Official:



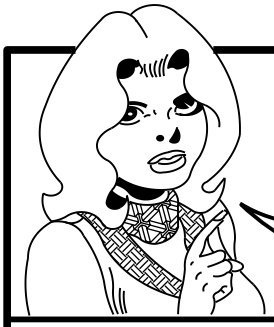
JOEL B. HUDSON
Administrative Assistant to the Secretary of the Army

9934907

ERIC K. SHINSEKI
General, United States Army
Chief of Staff

Distribution:
To be distributed in accordance with Initial Distribution Number (IDN) 311435, requirements for TM 1-1520-248-23-6.

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS



SOMETHING WRONG WITH THIS PUBLICATION?

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)
PFC John DOE
CO A 3rd Engineer Bn
Ft. Leonardwood, MO 63108

DATE SENT 22 August 1992

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE
TM 1-1520-250-10	15 June 1992	Operator's Manual MH60K Helicopter

BE EXACT...PIN-POINT WHERE IT IS

PAGE NO	PARA-GRAPH	FIGURE NO	TABLE NO
6	2-1 a		
B1		4-3	

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

In line 6 of paragraph 2-1a the manual states the engine has 6 cylinders. The engine on my set only has 4 cylinders. Change the manual to show 4 cylinders.

Callout 16 on figure 4-3 is pointed at a bolt. In key to figure 4-3, item 16 is called a shim - Please correct one or the other

PRINTED NAME. GRADE OR TITLE. AND TELEPHONE NUMBER
JOHN DOE, PFC (268) 317-7111

SIGN HERE John Doe
JOHN DOE

TEAR ALONG PERFORATED LINE

DA FORM 1 JUL 79 2028-2 PREVIOUS EDITIONS ARE OBSOLETE

DRSTS-M Overprint 1, 1 Nov 80

P.S.--IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION MAKE A CARBON COPY OF THIS AND GIVE IT TO YOUR HEADQUARTERS

AK2534 SA

TEAR ALONG PERFORATED LINE

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS

SOMETHING WRONG WITH THIS PUBLICATION?

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)

DATE SENT

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE

BE EXACT...PIN-POINT WHERE IT IS

PAGE NO	PARA-GRAPH	FIGURE NO	TABLE NO

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

PRINTED NAME. GRADE OR TITLE. AND TELEPHONE NUMBER

SIGN HERE

DA FORM 1 JUL 79 **2028-2**

PREVIOUS EDITIONS ARE OBSOLETE

DRSTS-M Overprint 2, 1 Nov 80

P.S.--IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION MAKE A CARBON COPY OF THIS AND GIVE IT TO YOUR HEADQUARTERS

AK2533
SA

TEAR ALONG PREFORATED LINE

FILL IN YOUR UNIT'S ADDRESS

FOLD BACK

DEPARTMENT OF THE ARMY

POSTAGE AND FEES PAID
DEPARTMENT OF THE ARMY
DOD 314

U.S. MAIL

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE $300

COMMANDER
US ARMY AVIATION & MISSILE COMMAND
ATTN: AMSAM−MMC−LS−LPS
REDSTONE ARSENAL, AL 35898−5238

AA7278
SA

PIN: 077551-001