

**TECHNICAL MANUAL**

**AVIATION UNIT AND  
AVIATION INTERMEDIATE  
MAINTENANCE MANUAL**

**ENGINE, GAS TURBINE  
MODEL T55-L-712  
NSN 2840-01-030-4890**

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**HEADQUARTERS, DEPARTMENT OF THE ARMY**

**26 APRIL 1983**

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WASHINGTON, D.C., 30 SEPTEMBER 1996

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**ENGINE, GAS TURBINE  
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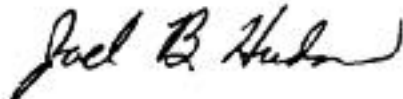
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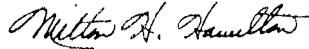
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## WARNING AND FIRST AID DATA

Warnings, cautions and notes emphasize important and critical instructions. They are defined as follows:

### WARNING

An operating procedure or practice which, if not correctly followed, will result in personnel injury or loss of life.

### CAUTION

An operating procedure or practice which, if not strictly observed, will result in damage or destruction of equipment.

### NOTE

An operating procedure or condition which it is essential to highlight.

Personnel performing instructions involving operations, procedures, materials, and practices which are included or implied in this technical manual shall observe the following instructions. Disregard of these warnings and precautionary information can cause serious injury or death. Refer to FM 21-11 for first aid data to treat injuries resulting from working on the engine.

### WARNING

#### Fuels

- Turbine fuels are very flammable. They may cause drying and irritation of skin or eyes.
- Handle only in well-ventilated areas away from heat and open flame.
- Drain and store in approved metal safety containers.
- Avoid prolonged or repeated contact with skin and do not take internally.
- Wash contacted area of skin thoroughly after handling. If irritation of skin results, get medical attention. Get medical attention for eyes.

**WARNING**

**Lubricating Oils**

- Lubricating oils cause paralysis if swallowed. Prolonged contact with them may irritate the skin.
- Handle only in well-ventilated areas away from heat and flame.
- Drain and store in approved metal safety containers.
- Avoid prolonged or repeated contact with skin and do not take internally.
- Wash contacted areas of skin thoroughly after handling. If irritation of skin results, get medical attention. Get medical attention for eyes.

**WARNING**

**Dangerous Voltages**

- The ignition exciter stores very high and possibly fatal voltage. Use extreme care when working around spark and ignition exciters.
- Serious injury could result if exciter or igniters are improperly discharged or accidentally grounded.
- Do not probe inside of output receptacles, ignition leads, or spark igniters with finger or metal objects.
- Discharge exciter only with insulated screwdriver.
- In case of shock or injury, get medical attention.

**WARNING**

**Discharging Ignition Exciter**

- When discharging ignition exciter, remove one lead at a time and discharge receptacle that lead was removed from. Failure to do so may result in serious shock when you are removing second lead.
- In case of serious shock, get medical attention.

**WARNING****Compressed Air**

- When using compressed air for cleaning, use approved protective equipment for eyes and face.
- Do not use more than 30 psig air pressure.
- Do not direct air toward yourself or another person. Failure to comply could result in injury to eyes or skin.
- In case of injury, get medical attention.

**WARNING****Corrosion Preventive Compounds**

- These materials are flammable and toxic.
- Use only in well-ventilated area away from heat, sparks and open flames.
- If swallowed, do not induce vomiting. Get medical attention.
- In case of contact immediately flush skin and eyes with water for 15 minutes. Get medical attention for eyes.

**WARNING****Cleaning Solvents**

- These materials are flammable and toxic. They can irritate skin and cause burns.
- Use only in well-ventilated area, away from heat, sparks and open flame.
- In case of contact, immediately flush skin and eyes with water for at least 15 minutes. Get medical attention for eyes.

**WARNING**

**Handling of Heated Parts**

- Wear asbestos gloves when handling heated parts for assembly and disassembly. Failure to comply may cause severe burns.
- Get medical attention for burns.

**WARNING**

**Handling of Parts Treated with Dry Ice**

- Dry ice is very cold. It can cause severe burns.
- Wear approved protective equipment and handle only in well-ventilated areas. Get medical attention for burns.

**WARNING**

**Handling of Spring Loaded Parts**

- Be careful when removing and installing retaining ring to spring loaded parts.
- Spring tension could cause parts to spring up and cause injury.
- If injury occurs, get medical attention.

**WARNING**

**Nitric Acid**

- Both nitric acid and its vapors are a personnel hazard.
- Avoid contact with skin, eyes or clothing. Avoid inhalation of vapors.
- In case of contact, immediately flush skin and eyes with water for at least 15 minutes. Get medical attention.

**WARNING****Handling Engine Shipping Container**

- Be careful when working with engine shipping container. Make sure both sections of container are grounded.
- Make sure container is opened in well-ventilated area. Failure to do so could result in explosion.
- Shipping container is pressurized. Make certain that all air pressure has been released before removing valve stem or loosening nuts. If nuts are removed before pressure is released, internal pressure could blow cover off and cause serious injury.
- If injury occurs, get medical attention.

**WARNING****Handling of Skimming Maintenance Kit**

- Contact with skimming maintenance kit rotating parts could cause injury. Exposure to maintenance kit noise may cause ringing in ears, and temporary or permanent hearing loss.
- Keep hands and clothing away from rotating parts and wear approved hearing protection.
- If injury occurs, or ringing in ears or loss of hearing persists, get medical attention.

**WARNING****Sodium Bichromate**

- Sodium bichromate is highly toxic, do not take internally.
- Use only with adequate ventilation. Avoid prolonged or repeated contact with skin.
- Wear approved gloves and goggles, or face shield and apron, and wash hands thoroughly after handling.
- Wear respirator if sodium bichromate is in powdered form.
- In case of contact, immediately flush skin and eyes with water for at least 15 minutes. Get medical attention.

**WARNING**

**Welding Operations**

- Welding operations are hazardous. Harmful light rays may injure eyes and burn skin. Poisonous fumes may cause illness. Burns and fires may result from hot sparks.
- Wear approved protective clothing and equipment.
- Perform welding operations in well-ventilated areas away from flammable liquids and gases.
- If fire occurs, call for assistance and use proper extinguishing procedures.
- If injury or illness occurs, get medical attention.

**WARNING**

**Use of Engine Maintenance Sling**

- Inspect sling prior to use for signs of abuse or wear. Failure to comply may cause injury to personnel and/or damage to engine.
- When using sling, make sure hoist lifting capacity is-l 200 pounds.
- In case of injury get medical attention.

**WARNING**

**Power Grinding**

- Power grinding is hazardous to personnel. Sparks and metal chips may injure eyes.
- Wear approved goggles.
- If injury occurs, get medical attention.

**WARNING**

**Handling Torque Multiplier**

- Make sure handle is fully seated and ratchet selector on torque pack is properly set before applying torque. Rotating ratchet selector with load on torque pack may damage unit and injure personnel.
- Do not change ratchet selector when torque load is on torque pack.
- If injury occurs, get medical attention.

**WARNING**

**Flight Safety Critical Aircraft Parts (FSCAP)**

The T-55 flight safety critical aircraft parts inclusion in this manual will be restricted to the flight safety critical aircraft parts section, including Table 1. Warnings will not be included throughout the manual. Flight safety critical air-craft parts require special handling during maintenance and compliance to all maintenance procedures are mandatory.



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(NSN 2840=01 -030-4890)

**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 the back of this manual direct to: Commander, USATSARCOM, ATTN: DRSTS-MPSD, 4300 Goodfellow Blvd., St. Louis, MO. 63120. A reply will be furnished to you.

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## HOW TO USE THIS MANUAL

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### OVERVIEW

This information gives a general description of the entire manual and how to use it along with the repair parts and special tools list (TM 55-2840-254-23P). If you cannot find information, you cannot do the job. Learning how to use this manual can help. Check how the manual is put together and how its system works.

### 1. DESCRIPTION OF MANUAL

This manual has nine chapters and six appendixes. Each chapter is divided into sections. Each section in Chapter 1 is divided into paragraphs or tasks. Each section in Chapters 2 thru 9 is divided into tasks. The tasks tell you what you need and how to do any job. The paragraphs have specific information you will need to know. The appendixes have general information you will need to know. They list references, expendable supplies and materials etc.

A. Chapters. Chapters divide the manual into usable engine maintenance groups. They align with standard groupings shown in the MAC chart. Refer to Appendix B.

B. Sections. Sections divide the chapters into smaller groups. They have information about the components of parts for which the chapter is titled. They align with components shown in the MAC chart. Refer to Appendix B.

C. Paragraphs/Tasks. Paragraphs make up some of the sections in Chapter 1. They contain specific information about the engine. Tasks make up some of the sections in Chapter 1 and the sections in Chapters 2 thru 9. It is the tasks that have the information you need to do any job. The upper heading after the task number is the task name. It tells the job to be done in the task. The task heading at the top of each page specifies the task to be performed and the lowest maintenance level authorized to perform that task. Tasks to be accomplished by the Aviation Intermediate Maintenance level only will be reflected by the term (AVIM) at the end of the task heading. If the term (AVIM) is not at the end of the task heading, then either the Aviation Unit or Aviation Intermediate Maintenance (AVUM) or (AVIM) level can accomplish that task. All paragraphs and tasks are numbered. This helps you find what you need when you need it. USE THE INDEX TO FIND THE PARAGRAPH OR TASK YOU NEED. DO NOT USE PAGE NUMBERS. Paragraphs and tasks are numbered as follows:

(1) Two-element numbers are used as shown in the examples:



(2) The first number is the number of the chapter. The second number is the paragraph or task in that chapter. The two elements are separated by a dash.

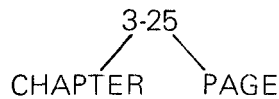
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**HOW TO USE THIS MANUAL (Continued)**

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D. Page Numbers. Pages are numbered by order of chapters, from front to back of manual, They are used as follows:

(1) Two-element numbers are used as shown in the example:



(2) The first number is the number of the chapter. The second number is the page in that chapter.

E. Initial Setup Tables. An initial setup table is the first part of every task in the manual. It lists information you will need to know before you can do the job. How to prepare the work area, what tools will be needed, and other critical information are listed when they apply. The following headings are used when they apply.

(1) Applicable Configuration. If the task does not apply to all engine configurations, different configurations covered by the same procedure will be brought to your attention.

(2) Tool. Tools, kits, or shop sets needed to do the task are listed here. If tools from your repairman's tool kit are needed, the kit is listed. Individual tools from your shop set are listed, as needed, by name, type, and size. Tools you need that are not in the kit or set, are listed by name, type, and size. Special tools and test and support equipment are listed by a T-number. Find these items in Table 1-1.

(3) Materials. This heading lists all expendable items and support materials (things you normally use up doing a job). These are things like solvent, rags, grease, safety wire, etc. They are listed by an E-number; example: Grease (E23). Find these items in Appendix C.

(4) Parts. This heading lists all mandatory replacement parts (parts you must replace if you expose or remove them during the task). These are things like gaskets, packings, cotter pins, lockwashers, etc. They are listed by RPSTL nomenclature.

(5) Personnel Required. This heading lists the people needed to do the job. They are identified by their MOS. The heading identifies the MOS and the recommended skill level to accomplish the subject task. The assigned skill level should not be construed as the only skill level authorized to accomplish that task. The Maintenance Allocation Chart (MAC) (Ref. Appendix B) assigns maintenance functions to the authorized maintenance level without regard to the MOS skill level. When more than one of any MOS is needed, the number needed is shown in parentheses. The text will tell you when the additional MOS is needed.

(6) References. This heading lists related tasks and TM's you will need to do the job. The task steps tell you when these tasks and TM's are needed.

(7) Equipment Condition. This heading lists all the things to be done before you start the job. To help, the number of the task that tells you how to do them is given when applicable.

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## HOW TO USE THIS MANUAL (Continued)

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### NOTE

**All tasks covered in this manual are off helicopter tasks.** If a task is an off engine task, it will be brought to your attention under "Equipment Condition." Example: "Off Engine Task. "

(8) **General Safety Instructions.** Safety precautions that must be observed when you are doing the job are described under this heading. Warnings also include basic first aid instructions.

F. **Locator Illustrations.** When needed (for removal, installation and other procedures) a locator illustration is included on or facing initial setup pages. They show you the area of the engine to be worked on. Parts involved in the task are called out.

G. **Illustration Arrows.** You will find five types of arrows used. They areas shown below:



Locator arrow used to show parts that cannot be easily seen or to indicate area of engine being worked on.



Index arrow used to identify parts on artwork.



Direction arrow used to indicate position; i.e., fwd, aft.



Movement arrow used to indicate direction of movement.



Movement arrow used to indicate direction of rotation.

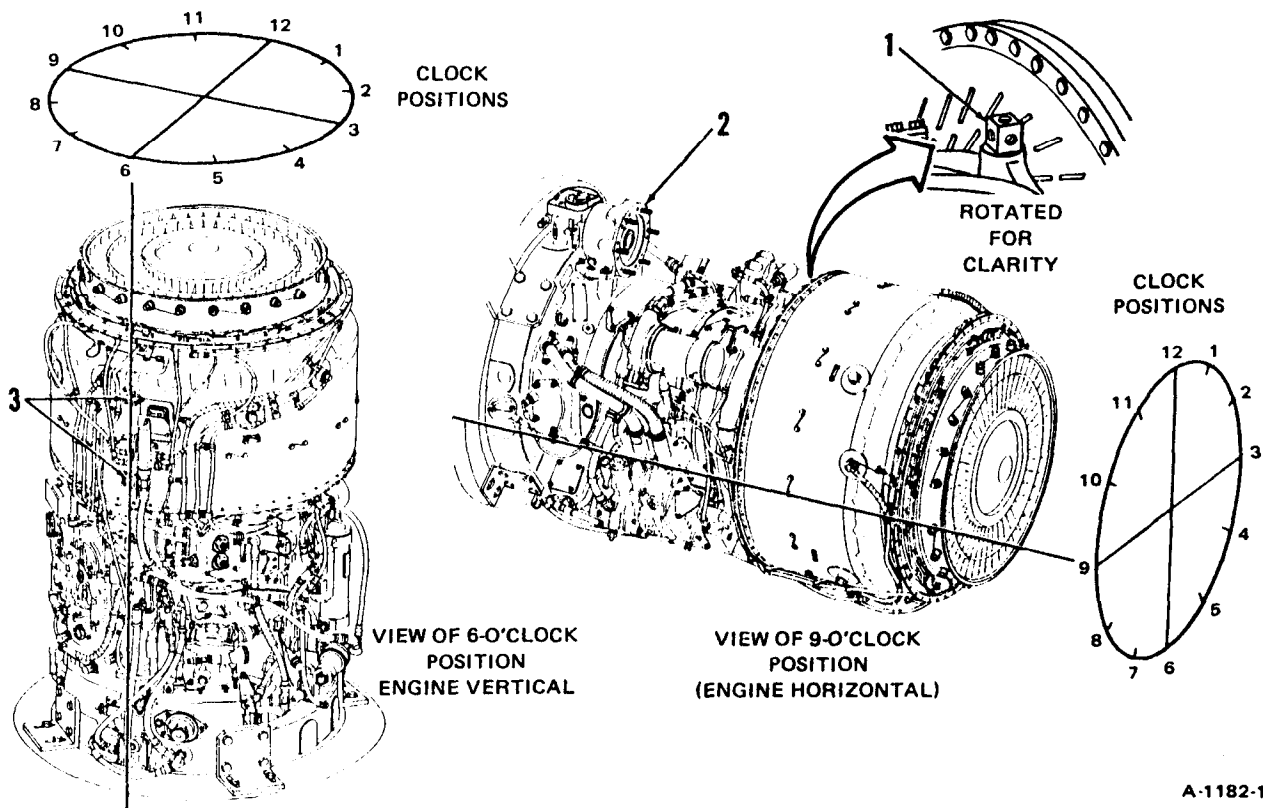
H. **Procedures.** Step by step procedures tell you how to do the job. They are arranged in logical sequence to help you get the job done efficiently.



**HOW TO USE THIS MANUAL (Continued)**

I. Use of Clock Positions. Many procedures contain references to or views of clock positions. Comparing engine to face of clock is an easy way to locate specific engine areas. To help find clock positions on the engine, remember the following:

- (1) Clock position is always determined from rear of engine.
- (2) Once a clock position is determined from rear of engine, visualize that clock position along entire length of engine.
- (3) Hoist adapter (1) and starter drive assembly (2) are mounted at the 12-o'clock position.
- (4) Two fuel drain valves (3) are mounted at the 6-o'clock position.
- (5) Some procedures show engine mounted vertical in maintenance stand. This does not change the method for finding clock positions on the engine.



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## HOW TO USE THIS MANUAL (Continued)

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J. Appendix A – References. This appendix lists all referenced publications needed to perform the maintenance procedures in this manual.

K. Appendix B – Maintenance Allocation Chart (MAC). This appendix consists of four sections as follows:

Section I – Introduction. This section is a summary of what is in the MAC.

Section II. This section is the MAC. The MAC assigns maintenance functions in accordance with the Three Levels of Maintenance concept for Army Aviation. The MAC has six columns, containing the following information:

Columns 1 and 2 – Functional Groups. These columns identify maintenance significant components, assemblies, subassemblies, and modules.

Column 3 – Maintenance Function. This column lists the maintenance functions to be performed on the items listed in column 2.

Column 4 – Maintenance Categories. The maintenance categories (levels) AVUM, AVIM, and DEPOT are listed with individual columns. These columns identify the maintenance level at which each maintenance function is to be performed.

Column 5 – Tools and Equipment. This column lists the reference code identifying the tool or test equipment required, as listed in Section III.

Column 6 – Remarks. Remarks identified by an alphabetical code, where applicable, are listed in Section IV and identified in column 6.

Section III – Tool and Test Equipment Requirements. This section consists of five columns, containing the following information:

Tool or Test Equipment Reference Code. This column lists the reference code listed in Column 5 – Tools and Equipment in the MAC.

Maintenance Category. This column lists the maintenance category (level) authorized to use the tool or test equipment.

Nomenclature. This column lists the nomenclature of the tools and test equipment.

National/NATO Stock Number. This column lists the stock number applicable to each tool or test equipment.

Tool Number. The tool number is listed to aid in identifying the tool or test equipment.

Section IV – Remarks. This section has two columns, containing the following information:

Reference Code. This column contains alphabetical codes or numbers in parentheses corresponding to the codes appearing in the applicable columns in the MAC.

Remarks/Notes. This column contains the actual notes cross-referenced by the reference codes to the MAC.

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**HOW TO USE THIS MANUAL (continued)**

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L. Appendix C – Expendable Supplies and Materials List. This appendix lists all expendable supplies and materials called out in the manual. The following columns are provided.

(1) Item Number. This is the E-number assigned to the expendable item. It is referred to in the detail procedures. Example: “Use cleaning solution (EI 1 ).”

(2) National Stock Number. This is the national stock number assigned to the item. Use it to request or requisition the item.

(3) Description. This column lists the Federal name and, if required, a description to identify the item. The last line for each item shows the part number followed by the Federal Supply Code for Manufacturer (FSCM) in parentheses, if applicable.

M. Appendix D – Wiring Diagrams. This appendix contains the engine wiring diagram. Use this appendix to help you understand the description of the engine electrical system.

N. Appendix E – Illustrated List of Manufactured Items. This appendix lists and illustrates any parts or tools you may have to make to do a job.

O. Appendix F – Abbreviations. This appendix lists abbreviations you will find in the manual.

P. Glossary. Definitions of terms you find in the manual are listed here to help you.

Q. Index. This appears at the end of the manual. It lists all subjects in the manual by alphabetical order. Items are listed as follows:

(1) Each paragraph/task number is listed with the subject it applies to:

Example:

	<u>Para./</u>	<u>Page</u>
	<u>Task</u>	
Fuel Boost Pump Assembly		
Clean . . . . .	6-10	6-42
Inspect . . . . .	6-11	6-43
Install . . . . .	6-13	6-48
Package . . . . .	6-15	6-56
Preserve . . . . .	6-14	6-55
Remove . . . . .	6-9	6-39
Repair . . . . .	6-12	6 44

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**HOW TO USE THIS MANUAL (Continued)**

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(2) Some tasks are listed by the job to be done. The subjects or components are listed under them.

Example:

	<u>Para./ Task</u>	<u>Page</u>
Remove		
Accessory Gear Assembly (AVIM) . . . . .	5-8	5-45
Accessory Gearbox Assembly . . . . .	5-1	5-3
Air Diffuser Assembly (AVIM) . . . . .	2-36	2-351
Anti-Icing Air Gallery Cover. . . . .	2-14	2-51

Check over the index and see how it can work for you. It can make finding information easy.

R. Part Numbers. Part numbers are not listed in this manual except where absolutely needed for clarity. You can find the part number you need in the Repair Parts and Special Tools List ( RPSTL) (TM 55-2840-264-23P) .

**2. HOW TO FIND WHAT YOU NEED**

A. General Information (Troubleshooting).

(1) Look at the “INDEX.” Find “Symptom Index.” The “INDEX” gives the paragraph number for the symptom index. Go to the Symptom Index.

(2) Find your symptom in the “Symptom Index.” Next to the symptom is the page number of the troubleshooting procedure that will help you solve your problem. Turn to the troubleshooting procedure page.

(3) Follow the troubleshooting procedure until you find the problem. The troubleshooting procedure gives you the task number of the maintenance procedure needed to fix the engine. Turn to that task.

(4) Follow the maintenance procedure and complete all work. Check again and make sure you are right. When the job is done, recheck that the trouble has been corrected.

B. Part Numbers. To find a part number go to the RPSTL (TM 55-2840-254-23P). Find the “How To Locate Repair Parts” paragraph in the introduction. It will tell you how to find your part number.

C. Tasks To find any task, use the “INDEX.” Find the subject you want. The “INDEX” gives you the task number you want.

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## HOW TO USE THIS MANUAL (Continued)

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### 3. HOW TO PREPARE FOR A TASK

Read the initial setup page carefully before starting. It tells you what you will need and what you have to know to start the job. DO NOT START A JOB UNTIL:

- You know what is needed
- You have the things you need
- You understand what to do

A. If a tool has a T-number in front of it, go to the Special Tools and Test and Support Equipment List in Table 1-1. Read down the far left-hand column to your T-number. This is the tool you need for your task.

B. If an expendable material has an E-number in front of it, go to the Expendable Supplies and Materials List in Appendix C. Read down the Item Number column to your E-number. This is the expendable you need for your task.

C. If parts are listed, they can be drawn from supply. Before you start the job, check and make sure you can get the needed parts. Part numbers are listed in TM 55-2840-254-23P.

D. Check for personnel required.

E. If preliminary procedures are listed under "Equipment Conditions," BE SURE THE LISTED JOBS ARE DONE; then do this job.

### 4. HOW TO DO THE JOB

Before starting, read the entire task. Familiarize yourself with the entire procedure before you begin the task. As you read, remember the following:

A. PAY ATTENTION TO WARNING, CAUTIONS AND NOTES.

B. Always follow standard maintenance practices (Chapter 1, Section XIII).

C. When values are underlined or followed by the word INSPECT, an inspector must OK the completed step.

D. Major steps and key words are printed in bold type for experienced repairers.

E. A GLOSSARY is provided. It lists the special words and terms used in this manual and gives their meaning. Use it. It may help you understand the instructions.

## COMPRESSOR SECTION – MAINTENANCE INSTRUCTIONS

**CHAPTER OVERVIEW**

This chapter contains maintenance procedures for the compressor section. It is divided into the following sections and tasks:

<u>SECTION</u>	<u>TASK NO.</u>	<u>TITLE</u>	<u>PAGE</u>
1		INTERSTAGE AIR-BLEED ACTUATOR – MAINTENANCE PROCEDURES	
	2-1	Remove Interstate Air-Bleed Actuator	2-5
	2-2	Disassemble Interstate Air-Bleed Actuator	2-12
	2-3	Clean Interstate Air-Bleed Actuator	2-14
	2-4	Inspect Interstate Air-Bleed Actuator	2-16
	2-5	Repair Interstate Air-Bleed Actuator	2-18
	2-6	Assemble Interstate Air-Bleed Actuator	2-19
	2-7	Install Interstate Air-Bleed Actuator	2-21
	2-8	Adjust Interstate Air-Bleed Actuator	2-28
II		COMPRESSOR BLEED BAND – MAINTENANCE PROCEDURES	
	2-9	Remove Compressor Bleed Band	2-41
	2-10	Clean Compressor Bleed Band	2-44
	2-11	Inspect Compressor Bleed Band	2-45
	2-12	Repair Compressor Bleed Band	2-46
	2-13	Install Compressor Bleed Band	2-47
III		ANTI-ICING AIR GALLERY COVER – MAINTENANCE PROCEDURES	
	2-14	Remove Anti-Icing Air Gallery Cover	2-51
	2-15	Clean Anti-Icing Air Gallery Cover	2-55
	2-16	Inspect Anti-Icing Air Gallery Cover	2-58
	2-17	Repair Anti-Icing Air Gallery Cover	2-60
	2-18	Install Anti-Icing Air Gallery Cover	2-62
IV		COMPRESSOR HOUSING – MAINTENANCE PROCEDURES	
	2-19	Remove Upper Compressor Housing	2-71
	2-20	Remove Lower Compressor Housing	2-104
	2-21	Clean Compressor Housing	2-144
	2-22	Inspect Compressor Housing	2-146
	2-23	Repair Compressor Housing	2-147
	2-24	Install Upper Compressor Housing	2-149
	2-25	Install Lower Compressor Housing	2-178

<u>SECTION</u>	<u>TASK NO.</u>	<u>TITLE</u>	<u>PAGE</u>
V		STATOR VANE ASSEMBLIES – MAINTENANCE PROCEDURES	
	2-26	Remove Stator Vane Assemblies	2-219
	2-27	Clean Stator Vane Assemblies	2-228
	2-28	Inspect Stator Vane Assemblies	2-230
	2-29	Repair Stator Vane Assemblies	2-232
	2-30	Install Stator Vane Assemblies	2-234
VI		COMPRESSOR ROTOR BLADES – MAINTENANCE PROCEDURES	
	2-31	Remove Compressor Rotor Blades	2-255
	2-32	Clean Compressor Rotor Blades	2-278
	2-33	Inspect Compressor Rotor Blades	2-281
	2-34	Repair Compressor Rotor Blades	2-312
	2-35	Install Compressor Rotor Blades	2-317
VII		AIR DIFFUSER ASSEMBLY – MAINTENANCE PROCEDURES	
	2-36	Remove Air Diffuser Assembly (AVIM)	2-351
	2-37	Clean Air Diffuser Assembly (AVIM)	2-361
	2-38	Inspect Air Diffuser Assembly (AVIM)	2-363
	2-39	Repair Air Diffuser Assembly (AVIM)	2-371
	2-40	Repair Air Diffuser Assembly	2-375
	2-41	Install Air Diffuser Assembly (AVIM)	2-383
VIII		NO. 2 BEARING PACKAGE – MAINTENANCE PROCEDURES	
	2-42	Remove No. 2 Bearing Package (AVIM)	2-395
	2-43	Disassemble No. 2 Bearing Package (AVIM)	2-402
	2-44	Clean No. 2 Bearing Package (AVIM)	2-411
	2-45	Inspect No. 2 Bearing Package (AVIM)	2-414
	2-46	Assemble No. 2 Bearing Package (AVIM)	2-417
	2-47	Install No. 2 Bearing Package (AVIM)	2-427
IX		OUTPUT SHAFT SEAL AND HOUSING ASSEMBLY – MAINTENANCE PROCEDURES	
	2-48	Remove Output Shaft Seal and Housing Assembly	2-431
	2-49	Clean Output Shaft Seal and Housing Assembly	2-436
	2-50	Inspect Output Shaft Seal and Housing Assembly	2-437
	2-51	Repair Output Shaft Seal and Housing Assembly	2-438
	2-52	Install Output Shaft Seal and Housing Assembly	2-447

<u>SECTION</u>	<u>TASK NO.</u>	<u>TITLE</u>	<u>PAGE</u>
X		INLET HOUSING COVER ASSEMBLY – MAINTENANCE PROCEDURES	
	2-53	Remove Inlet Housing Cover Assembly (AVIM)	2-455
	2-54	Clean Inlet Housing Cover Assembly (AVIM)	2-458
	2-55	Inspect Inlet Housing Cover Assembly (AVIM)	2-459
	2-56	Repair Inlet Housing Cover Assembly (AVIM)	2-460
	2-57	Install Inlet Housing Cover Assembly (AVIM)	2-461
XI		OUTPUT SHAFT SUPPORT HOUSING – MAINTENANCE PROCEDURES	
	2-58	Remove Output Shaft Support Housing (AVIM)	2-465
	2-59	Disassemble Output Shaft Support Housing (AVIM)	2-470
	2-60	Clean Output Shaft Support Housing (AVIM)	2-478
	2-61	Inspect Output Shaft Support Housing (AVIM)	2-481
	2-62	Assemble Output Shaft Support Housing (AVIM)	2-484
	2-63	Install Output Shaft Support Housing (AVIM)	2-490
XII		AIR INLET HOUSING ASSEMBLY – MAINTENANCE PROCEDURES	
	2-64	Clean Air Inlet Housing Assembly	2-497
	2-65	Inspect Air Inlet Housing Assembly	2-498
	2-66	Repair Air Inlet Housing Assembly	2-499
XIII		NO. 3 BEARING PACKAGE – MAINTENANCE PROCEDURES	
	2-67	Remove No. 3 Bearing Package (AVIM)	2-501
	2-68	Disassemble No. 3 Bearing Package (AVIM)	2-506
	2-69	Clean No. 3 Bearing Package (AVIM)	2-508
	2-70	Inspect No. 3 Bearing Package (AVIM)	2-511
	2-71	Assemble No. 3 Bearing Package (AVIM)	2-513
	2-72	Install No. 3 Bearing Package (AVIM)	2-515



<u>SECTION</u>	<u>TASK NO.</u>	<u>TITLE</u>	<u>PAGE</u>
XIV	AIR LINES	–MAINTENANCE PROCEDURES	
	2-73	Remove Hose Assembly (Interstage Air-Bleed Actuator to Fuel Control)	2-525
	2-74	Install Hose Assembly (Interstate Air-Bleed Actuator to Fuel Control)	2-528
	2-75	Remove Hose Assembly ( Interstate Air-Bleed Actuator to Air Diffuser Assembly)	2-532
	2-76	Install Hose Assembly ( Interstate Air-Bleed Actuator to Air Diffuser Assembly)	2-534
	2-77	Remove Hose Assembly (Compressor Housing to Inlet Housing)	2-536
	2-78	Install Hose Assembly (Compressor Housing to Inlet Housing)	2-543
	2-79	Remove Hose Assembly (Air Diffuser Assembly to Fuel Control)	2-550
	2-80	Install Hose Assembly (Air Diffuser Assembly to Fuel Control)	2-553

Section I. INTERSTAGE AIR-BLEED ACTUATOR - MAINTENANCE PROCEDURES

2-1 REMOVE INTERSTAGE AIR-BLEED ACTUATOR-MAINTENANCE PROCEDURES  
P/N 2-200-071-54 INSTALLED

2-1

INITIAL SETUP

*Applicable Configurations:*

All

*Tools:*

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944

*Materials:*

None

*Personnel Required:*

68B10 Aircraft Powerplant Repairer

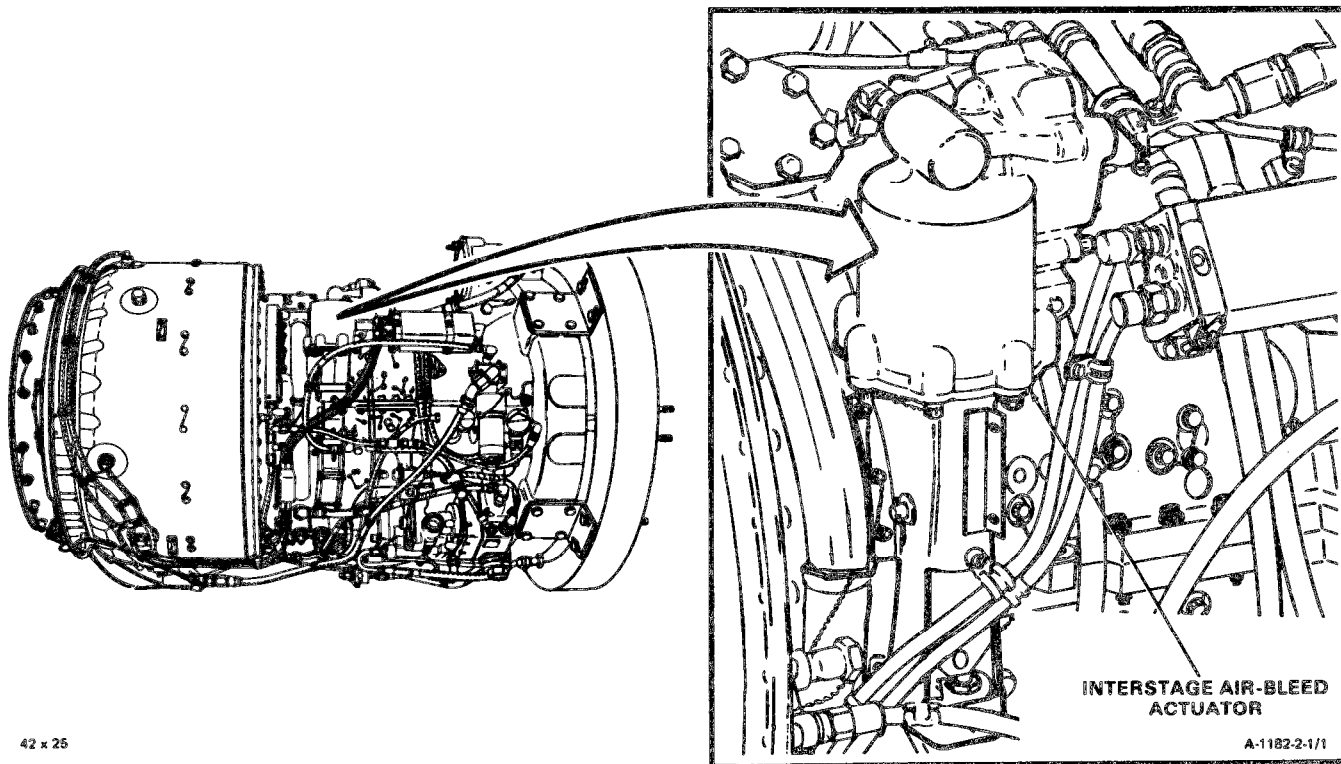
*Equipment Condition:*

Oil Cooler Assembly Removed (Task 8-5)

*General Safety Instructions:*

**WARNING**

The ignition exciter stores very high and possibly fatal voltage. Use extreme care when working around ignition exciter. Serious injur could result if exciter is accidentally grounded. Do not probe inside of putpit receptacles with fingers or metal object. Discharge exciter only with insulated screwdriver. In case of shock or injury, get medical attention



42 x 25

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**WARNING**

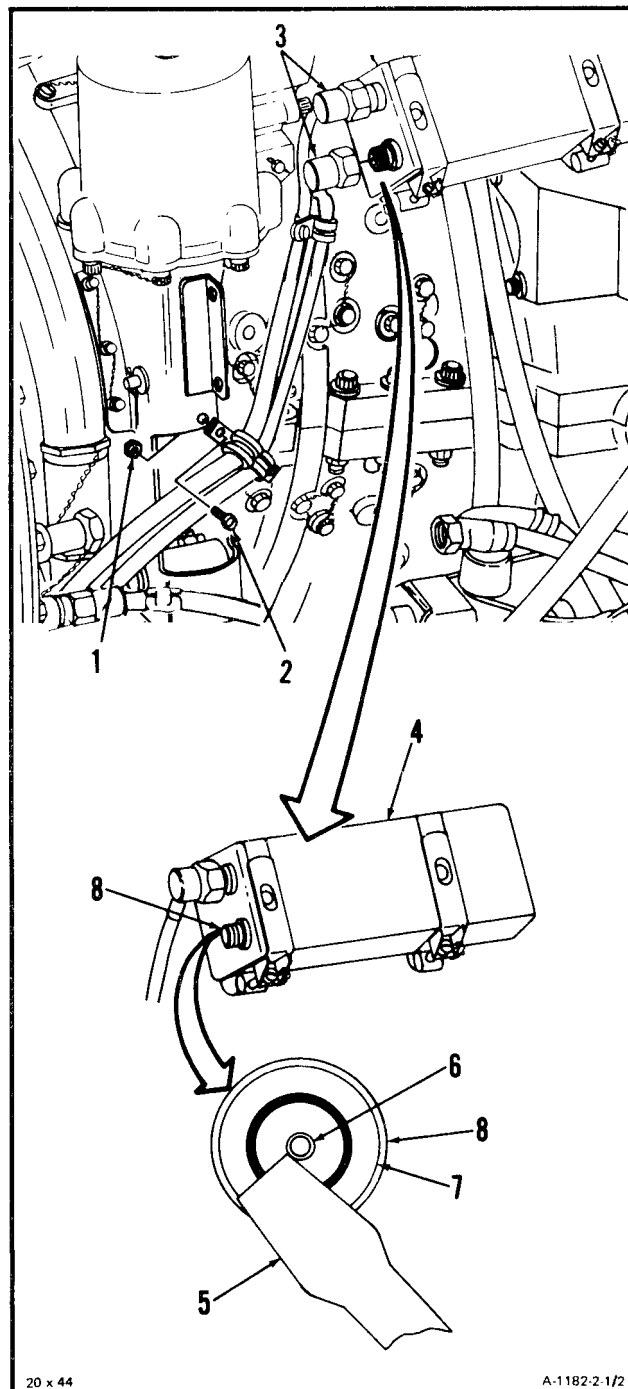
When discharging ignition exciter, remove one lead at a time and discharge receptacle that lead was removed from. Failure to do so may result in serious shock when you are removing second lead. In case of serious shock, get medical attention.

1. Remove nut (1) and screw (2).

**NOTE**

Steps 2. and 3. apply to both output receptacles.

2. Remove lockwire and disconnect coil and cable assembly leads (3).
3. Discharge ignition exciter (4) by placing tip of insulated screwdriver (5) against pin (6) and edge (7) of receptacle (8).
4. Place leads (3) to one side.



20 x 44

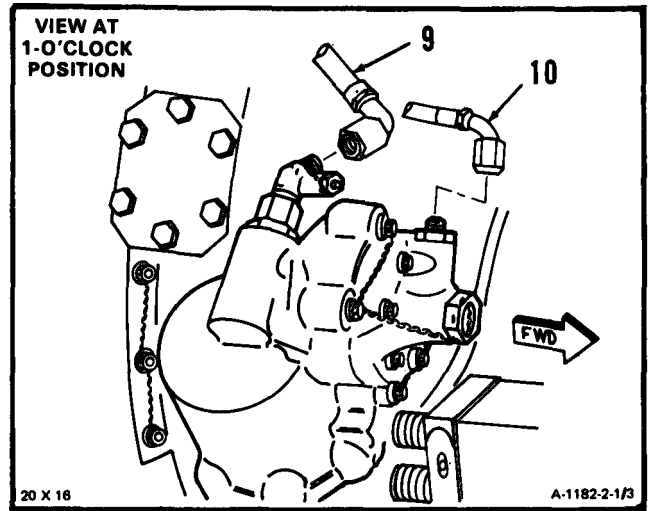
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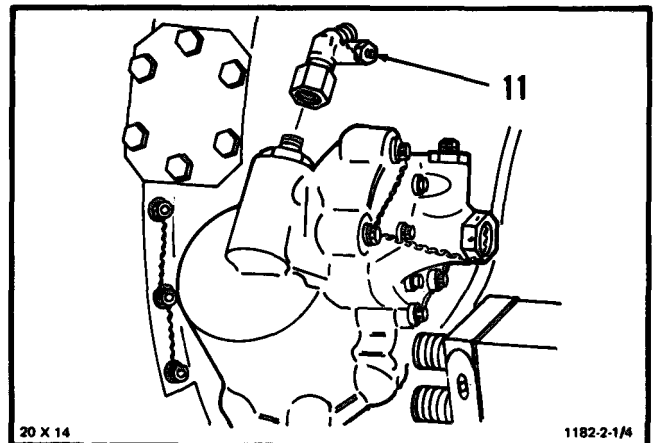
2-1 REMOVE INTERSTAGE AIR-BLEED ACTUATOR (WITHOUT WATER WASH KIT P/N 2-200-071-54 INSTALLED) (Continued)

2-1

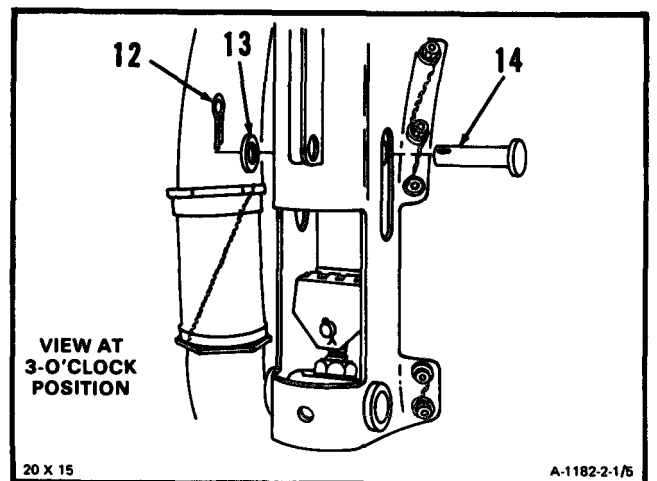
5. Disconnect hose assemblies (9 and 10).



6. Disconnect and remove tee (11).



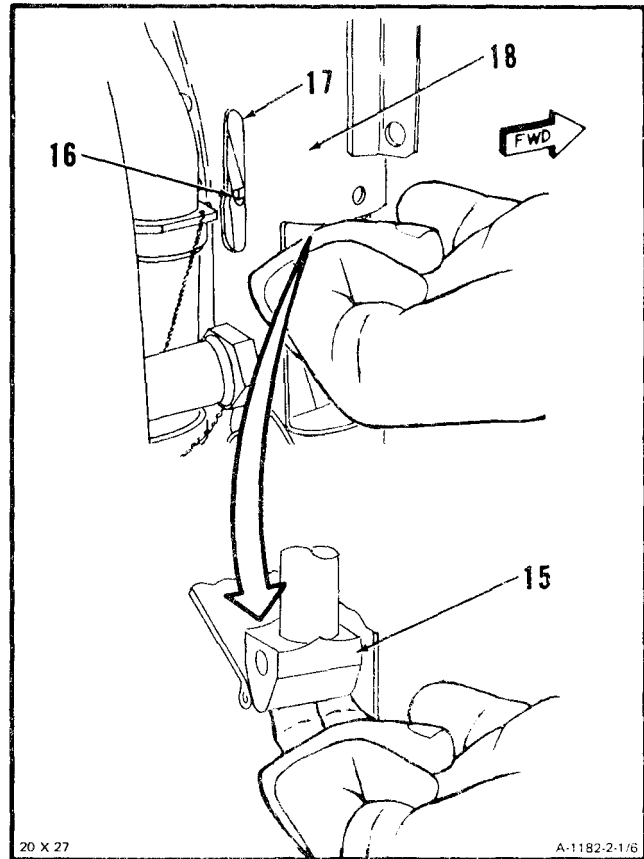
7. Remove cotter pin (12), washer (13), and pin (14).



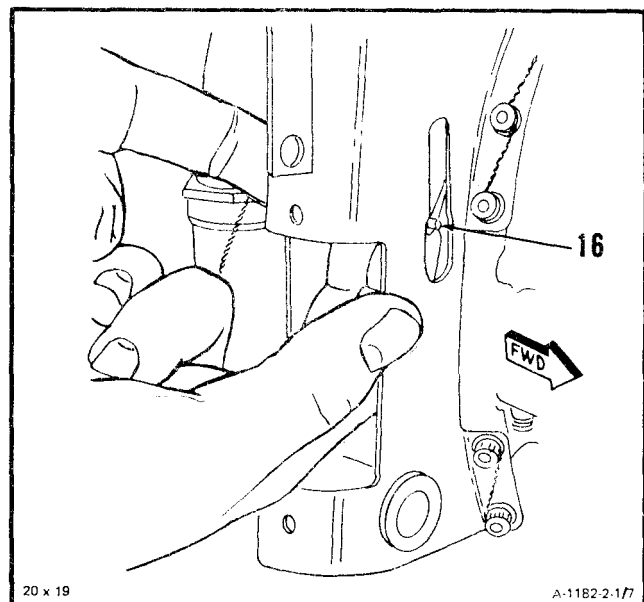
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2-1 REMOVE INTERSTAGE AIR-BLEED ACTUATOR (WITHOUT WATER WASH KIT  
 P/N 2-200-077-54 INSTALLED) (Continued)

8. Position piston assembly (15) so pin (16) can be seen through slot (17) in actuator bracket (18).



9. Push pin (16) forward as far as possible.

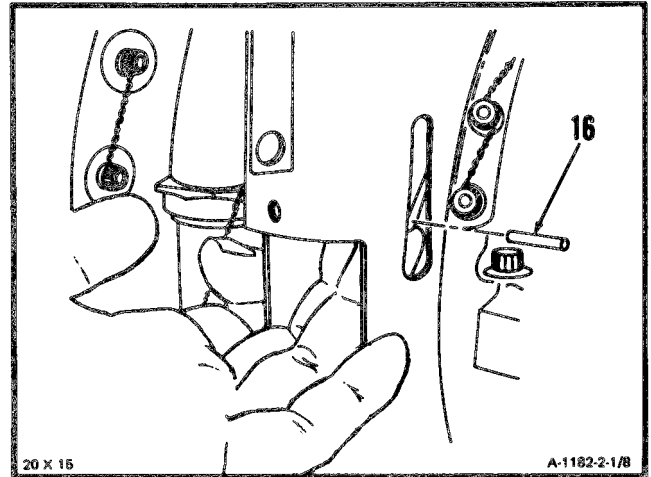


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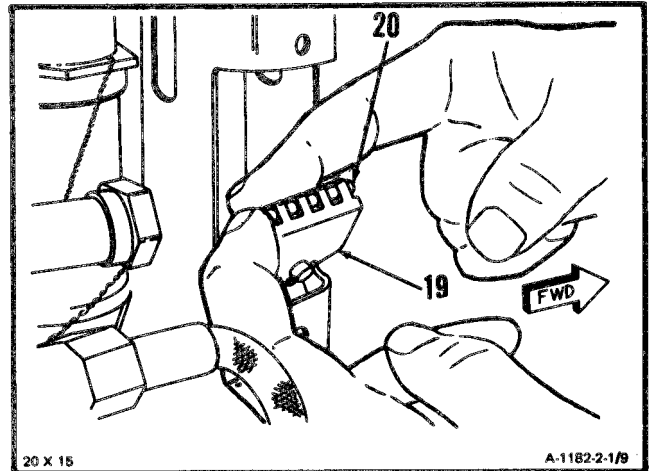
2-1 REMOVE INTERSTAGE AIR-BLEED ACTUATOR (WITHOUT WATER WASH KIT PIN 2-200-071-54 INSTALLED) (Continued)

2-1

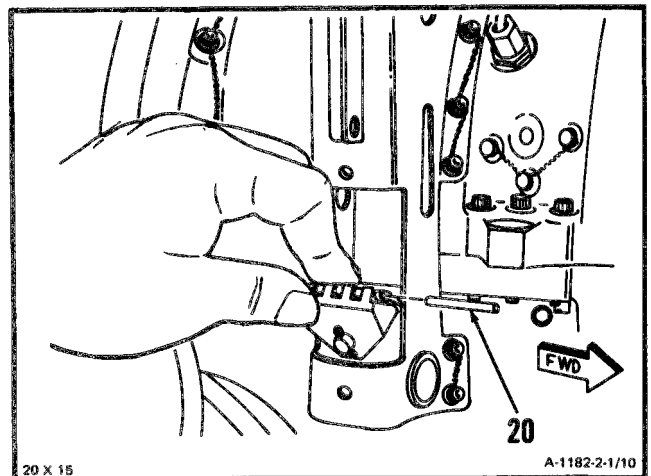
10. Remove pin (16)



11. Pull lower yoke (19) outward, and push pin (20) forward as far as possible.



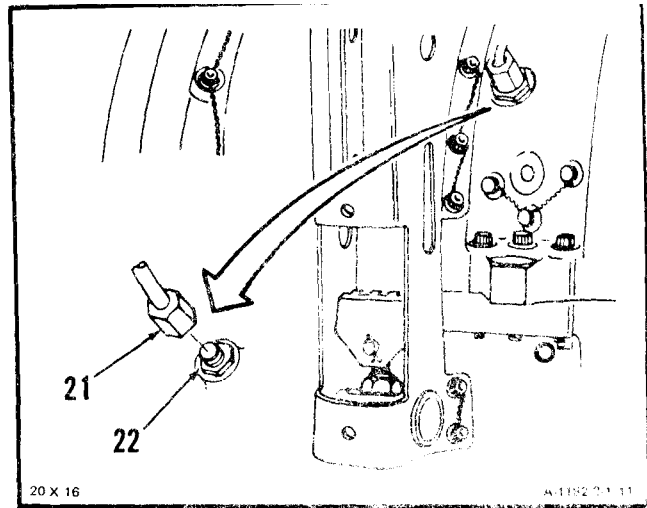
12. Remove pin (20).



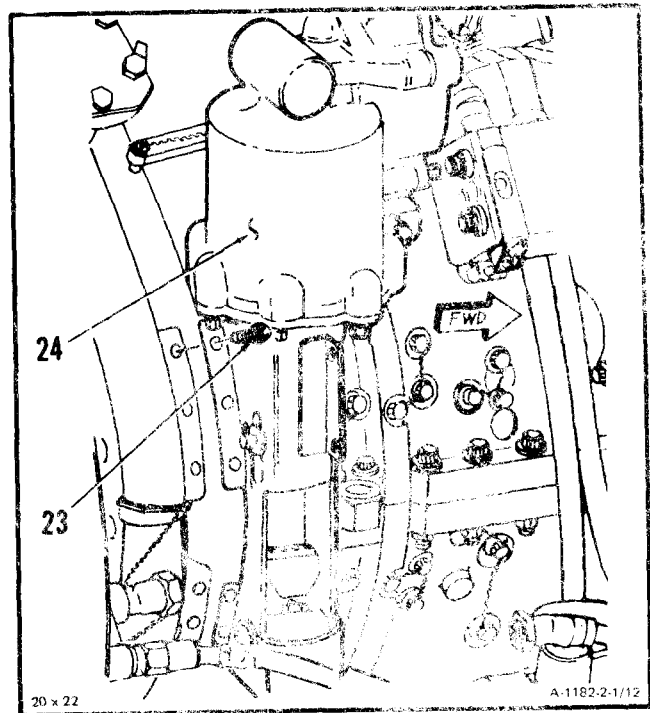
Go TO NEXT PAGE

2-1 REMOVE INTERSTAGE AIR-BLEED ACTUATOR (WITHOUT WATER WASH KIT  
PIN 2-200-071-54 INSTALLED) (Continued)

13. Disconnect tube assembly (21) from union (22).



14. Remove lockwire and ten bolts (23). Remove interstage air-bleed actuator (24).



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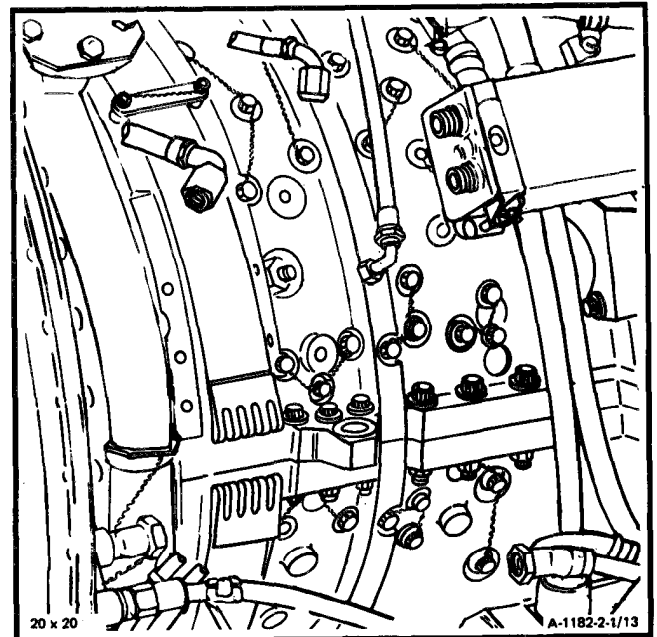
**2-1 REMOVE INTERATAGE AIR-BLEED ACTUATOR (WITHOUT WATER WASH KIT  
P/N 2-200-071 INSTALLED (CONTINUED))**

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2-1

**FOLLOW-ON MAINTENANCE:**

None

**END OF TASK**



2-1.1 REMOVE INTERSTAGE AIR-BLEED ACTUATOR WITH WATER WASH KIT  
 P/N 2-200-071-54 INSTALLED)

2-1.1

INITIAL SETUP

Applicable Configurations:  
 All

Tools:  
 Powerplant Mechanic's Tool Kit,  
 NSN 5180-00-323-4944

Materials:  
 None

Personnel Required:  
 68B10 Aircraft Powerplant Repairer

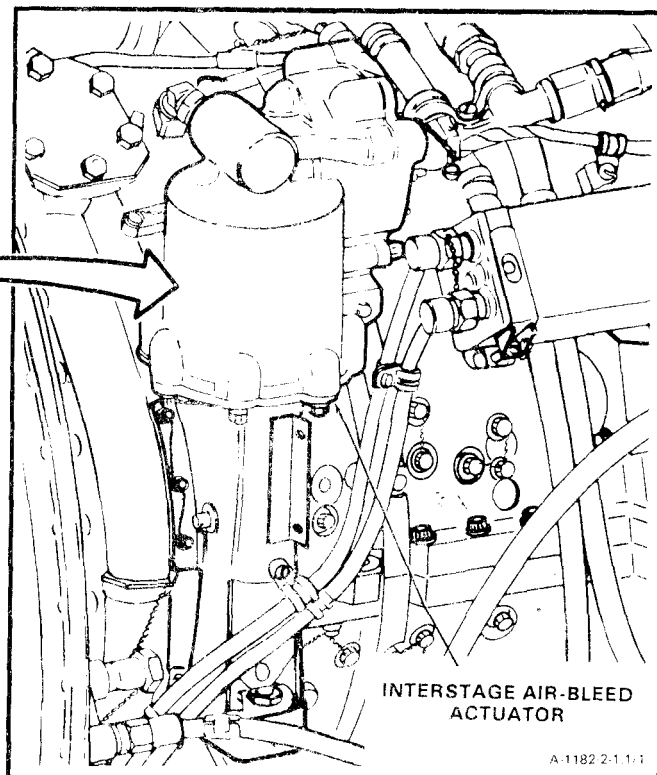
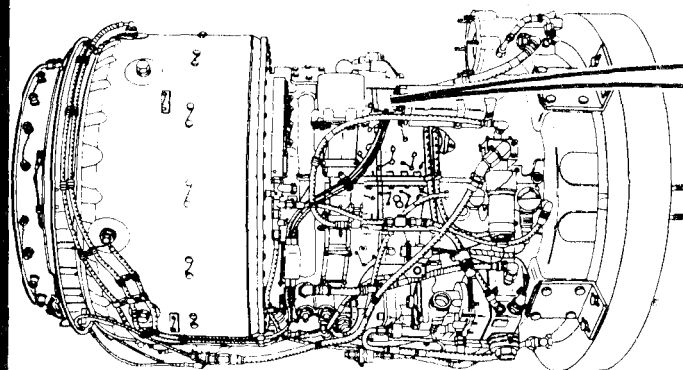
Equipment Condition:

Oil cooler Assembly Removed (Task 8-5)

General Safety Instructions:

**WARNING**

The ignition exciter stores very high and possibly fatal voltage. Use extreme care when working around ignition exciter. serious injury could result if exciter is accidentally grounded. Do not probe inside of output receptacles with fingers or metal object. Discharge exciter only with insulated screwdriver. In case of shock or injury, get medical attention.



42 x 24

A-1182 2-1 1-1

GO TO NEXT PAGE

## 2-1.1 REMOVE INTERSTAGE AIR-BLEED ACTUATOR (WITH WATER WASH KIT P/N 2-200-071-54 INSTALLED)(Continued)

2-1.1

**WARNING**

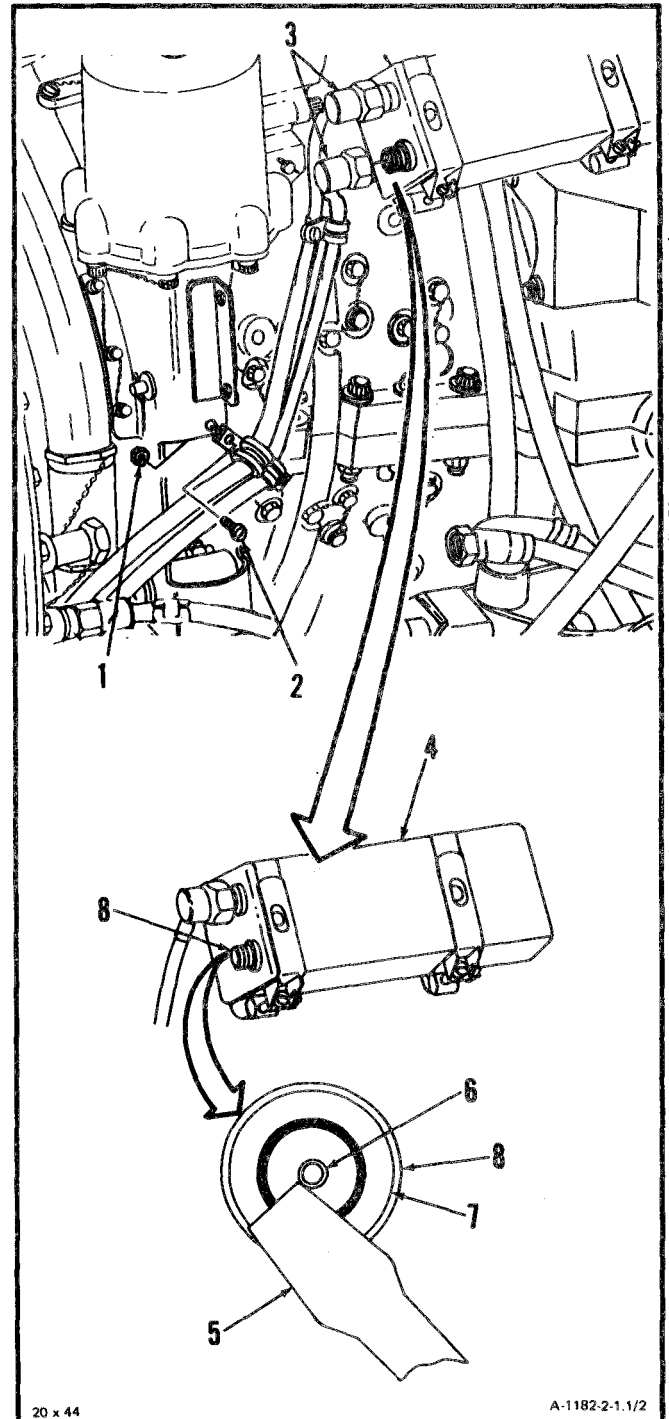
When discharging ignition exciter, remove one lead at a time and discharge receptacle that lead was removed from. Failure to do so may result in serious shock when you are removing second lead. In case of serious shock, get medical attention.

1. Remove nut (1) and screw (2)

**NOTE**

Steps 2. and 3. apply to both output receptacles.

2. Remove lockwire and disconnect coil and cable assembly leads (3).
3. Discharge ignition exciter (4) by placing tip of insulated screwdriver (5) against pin (6) and edge (7) of receptacle (8).
4. Place leads (3) to one side.



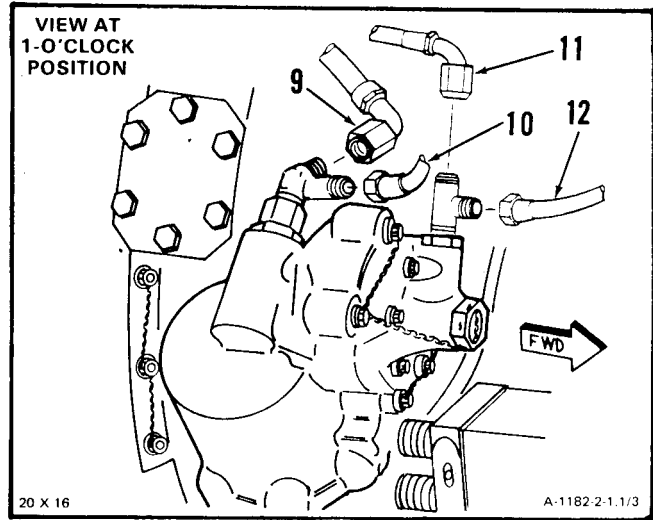
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Change 5 2-12.1

2-1.1 REMOVE INTERSTAGE AIR-BLEED ACTUATOR (WITH WATER WASH KIT P/N 2-200-071-54 INSTALLED) (Continued)

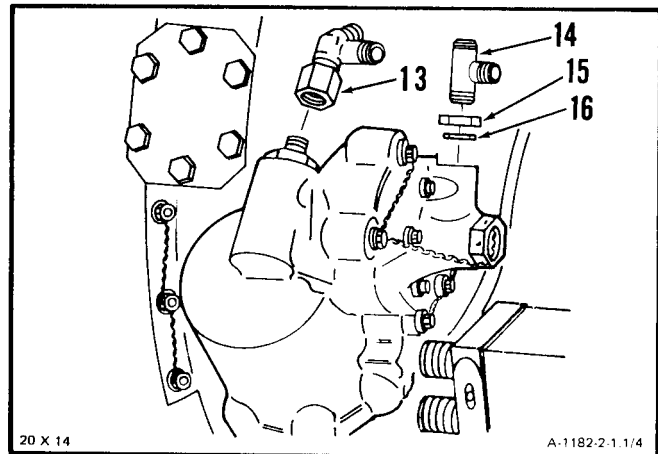
2-1.1

5. Disconnect hose assemblies (9, 10, 11 and 12).

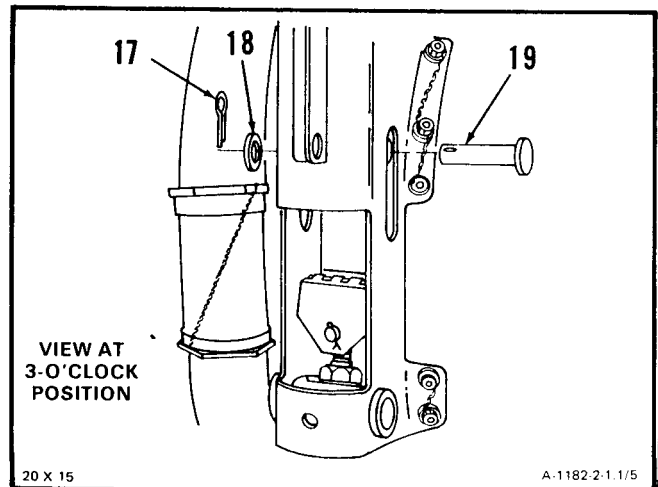


6. Disconnect and remove tee (13).

7. Disconnect and remove tee (14), nut (15), and packing (16).



8. Remove cotter pin (17), washer (18), and pin (19).

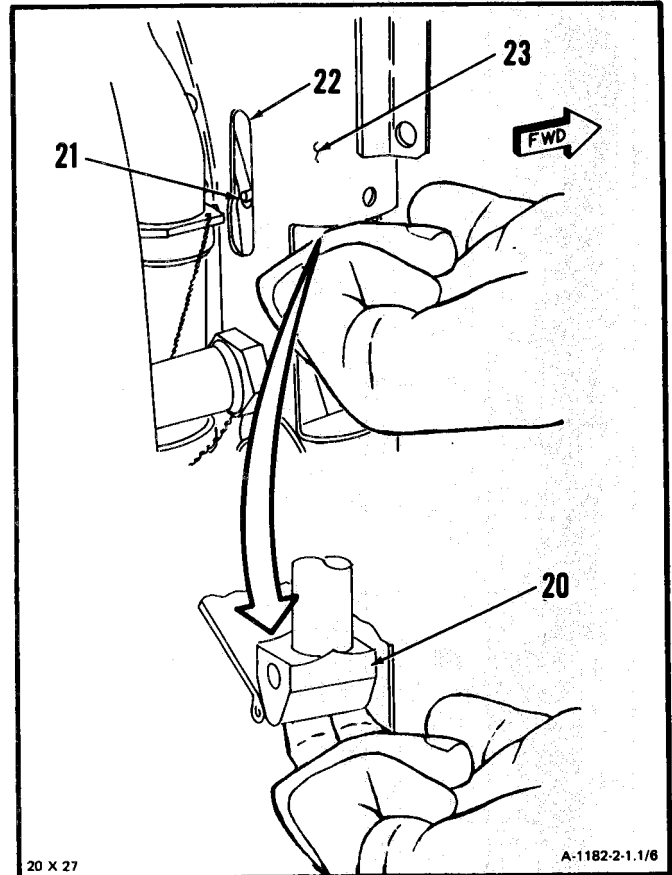


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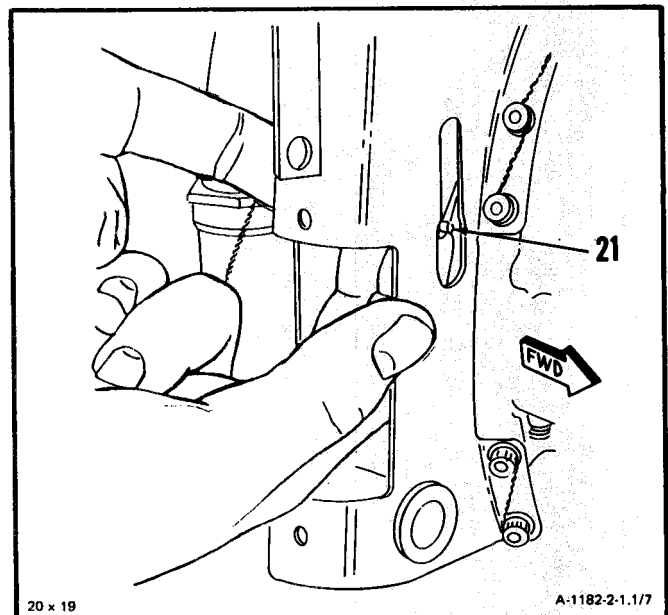
**2-1.1 REMOVE INTERSTAGE AIR-BLEED ACTUATOR (WATER WASH KIT  
P/N 2-200-071-54 INSTALLED) (Continued)**

2-1.1

9. Position piston assembly (20) so pin (21) can be seen through slot (22) in actuator bracket (23).



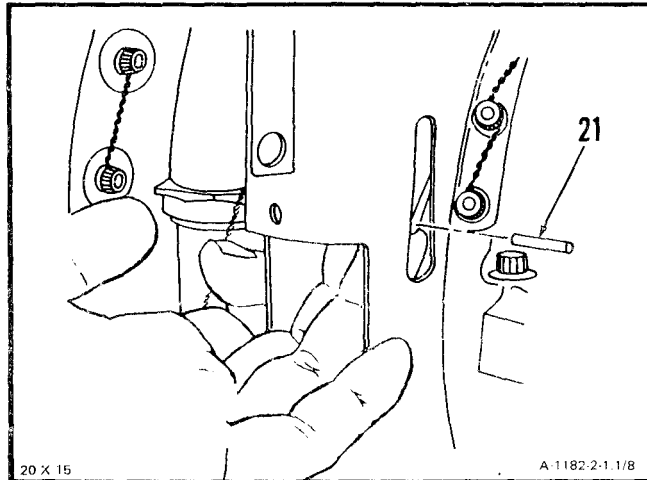
10. Push pin (21) forward as far as possible.

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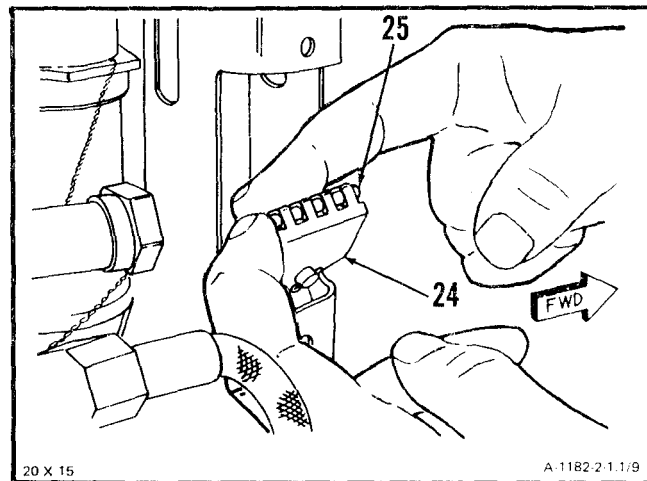
2-1.1 REMOVE INTERSTAGE AIR-BLEED ACTUATOR (WITH WATER WASH KIT P/N 2-200-071-54 INSTALLED) (Continued)

2-1.1

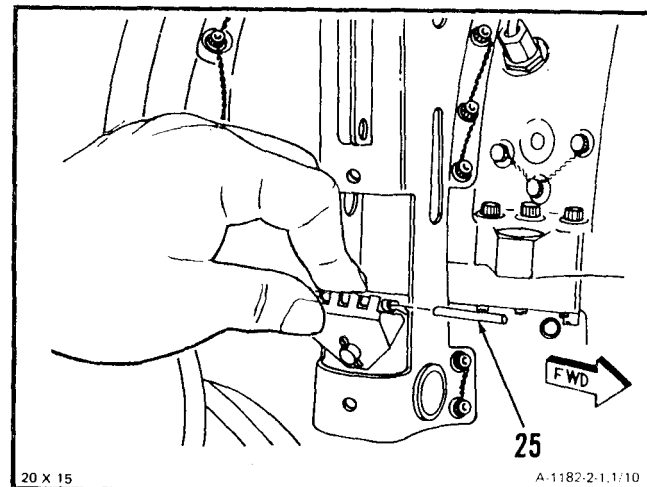
11. Remove pin (21)



12. Pull lower yoke (24) outward, and push pin (25) forward as far as possible.



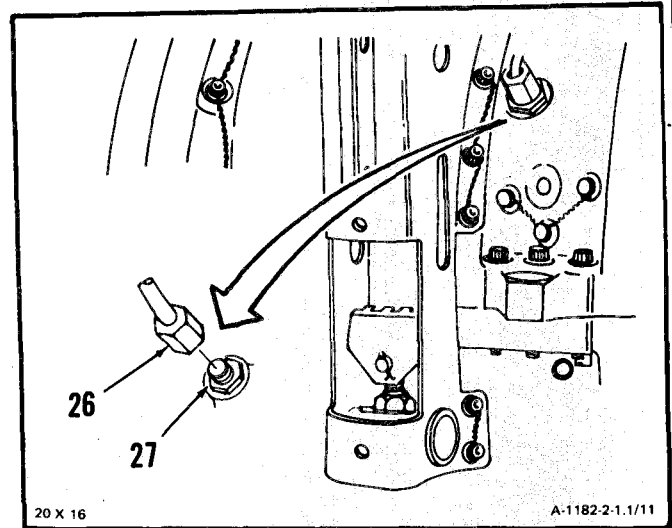
13. Remove pin (25)



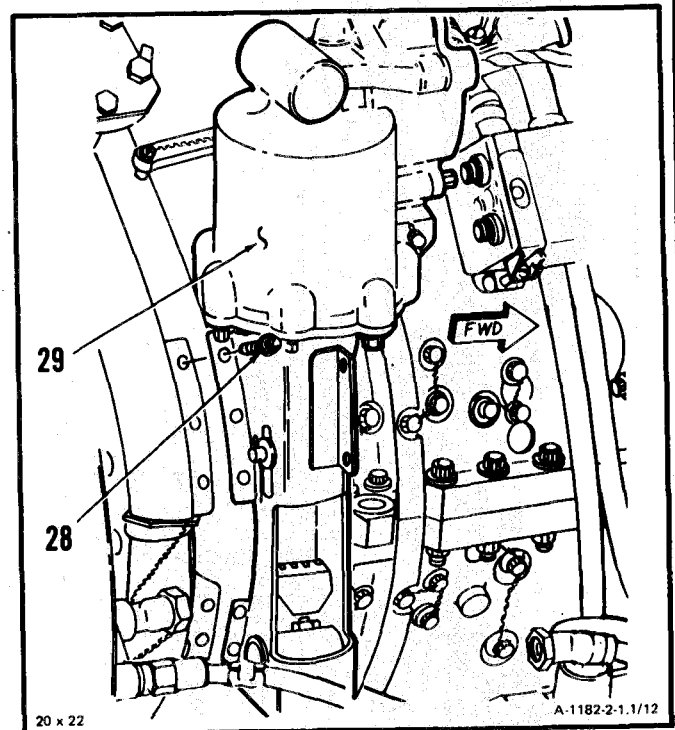
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## 2-1.1 REMOVE INTERSTAGE AIR-BLEED ACTUATOR (WITH WATER WASH KIT P/N 2-200-071-54 INSTALLED) (Continued)

14. Disconnect tube assembly (26) from union (27).



15 Remove lockwire and ten bolts (28). Remove interstage air-bleed actuator (29).



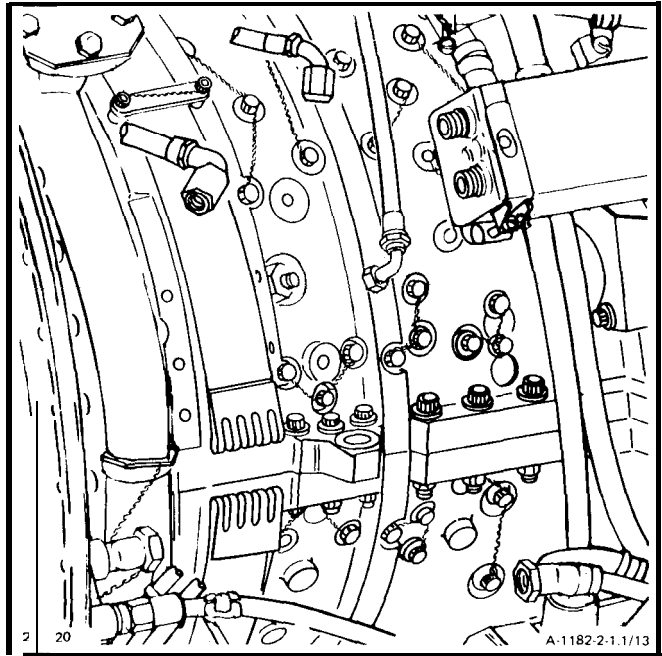
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2-1.1 REMOVE INTERSTAGE AIR-BLEED ACTUATOR (WITH WATER WASH KIT  
P/N 2-200-071-54 INSTALLED) (Continued)

2-1.1

FOLLOW-ON MAINTENANCE:

None



END OF TASK

---

**2-2 DISASSEMBLE INTERSTAGE AIR-BLEED ACTUATOR**

---

**2-2****INITIAL SETUP****Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Deep Style Socket, 1-Inch  
Vise  
Jaw Caps

**Materials:**

Crocus Cloth (EI 5)

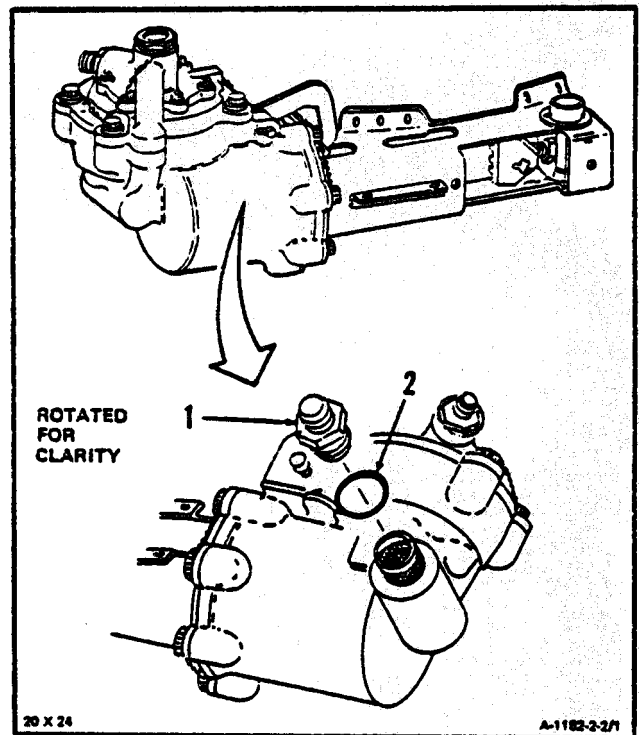
**Personnel Required:**

68B10 Aircraft Powerplant Repairer

**Equipment Condition:**

Off Engine Task  
Oil Cooler Assembly Removed (Task 8-5)  
Interstage Air-Bleed Actuator Removed )  
(Task 2-1 )

- 
1. Remove reducer (1) using vise with jaw caps and deep style socket. Remove packing (2).



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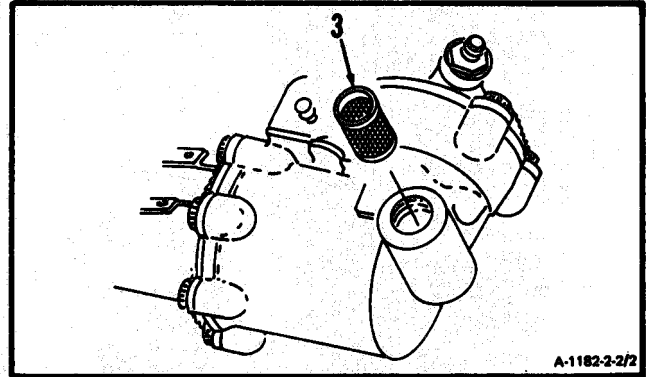




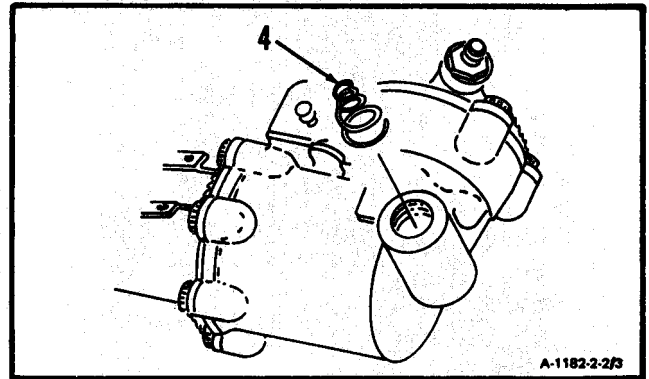
**2-2 DISASSEMBLE INTERSTAGE AIR-BLEED ACTUATOR (Continued)**

2-2

2. Remove strainer element (3).



3. Remove spring (4).



FOLLOW-ON MAINTENANCE:

None

**END OF TASK**

## INITIAL SETUP

**Applicable Configurations:**

All

**Tools:****Goggles**

Compressed Air Source

**Materials:**

Dry Cleaning Solvent (E17)

Gloves (E20)

Lint-Free Cloth (E26)

**Personnel Required:****68B10** Aircraft Powerplant Repairer**Equipment Condition:**

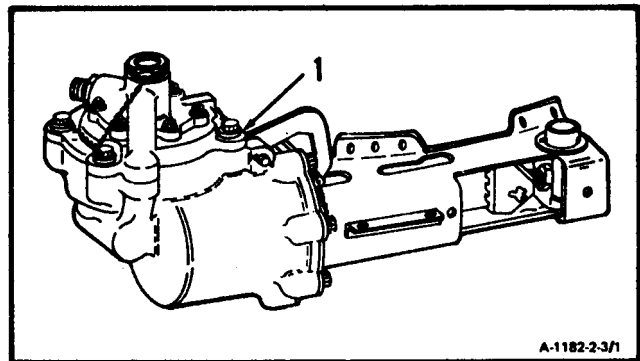
Off Engine Task

Oil Cooler Assembly Removed (Task 8-5)

Interstage Air-Bleed Actuator Removed  
(Task 2-1)Interstage Air-Bleed Actuator Disassembled  
(Task 2-2)**General Safety Instructions:****WARNING**

Dry cleaning solvent (E17) is flammable and toxic. It can irritate skin and cause burns. Use only in well-ventilated area, away from heat and open flame. In case of contact, immediately flush skin or eyes with water for at least 15 minutes. Get medical attention for eyes.

1. Wear gloves (E20). **Clean interstage air-bleed actuator (1)** with lint-free cloth (E26) dampened in dry cleaning solvent (E17).



A-1182-2-3/1

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## 2-3 CLEAN INTERSTAGE AIR-BLEED ACTUATOR (Continued)

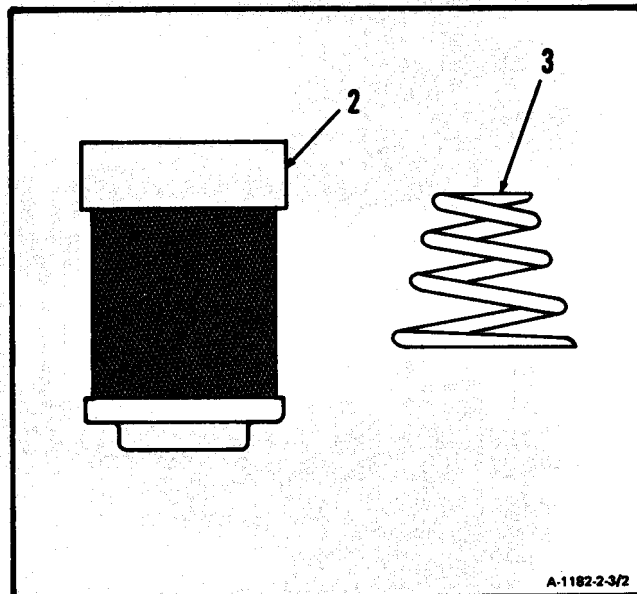
2-3

- Clean strainer element (2) and spring (3).  
Use dry cleaning solvent (E17).

**WARNING**

When using compressed air for cleaning, use approved protective equipment for eye and face. Do not use more than 30 psig air pressure. Do not direct air toward yourself or another person. Failure to comply could result in injury to eyes or skin. In case of injury, get medical attention

- Wear goggles. Blow dry strainer element (2) using clean, dry compressed air.

**FOLLOW-ON MAINTENANCE:**

Inspect Interstate Air-Bleed Actuator (Task 2-4).

**END OF TASK**

INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**

Technical Inspection Tool Kit,  
NSN 5180-00-323-5114

**Materials:**

None

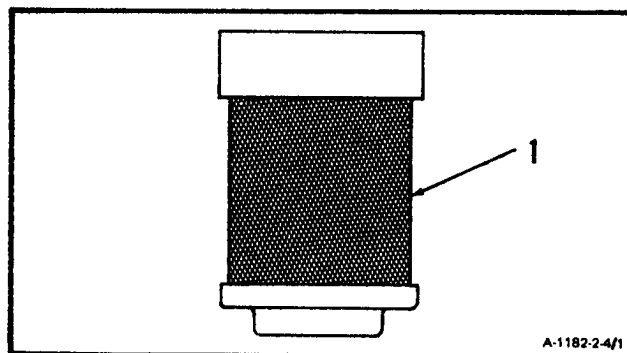
**Personnel Required:**

68B30 Aircraft Powerplant Inspector

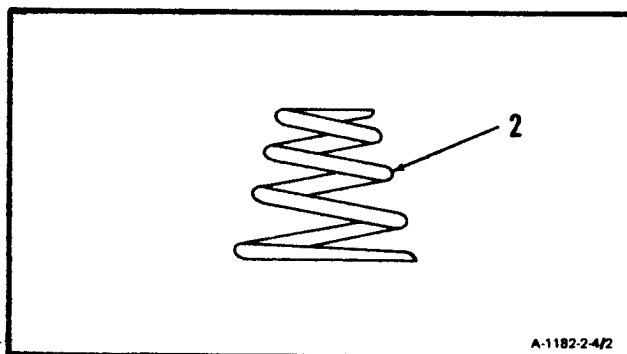
**Equipment Condition:**

Off Engine Task

1. **Inspect strainer element (1).** There shall be no tears, punctures, or broken wires in screen.



2. **Inspect spring (2).** There shall be no broken coils.



**GO TO NEXT PAGE**

## 2-4 INSPECT INTERSTAGE AIR-BLEED ACTUATOR (Continued)

2-4

3. Inspect interstage air-bleed actuator as follows:

a. Inspect bracket (3).

(1) There shall be no more than one crack in the gusset support area (4) of the uppermost holes less than 0.500 inch in length that is acceptable without stop drilling. one crack that exceeds 0.500 inch in length is allowed providing it is stop drill repaired.

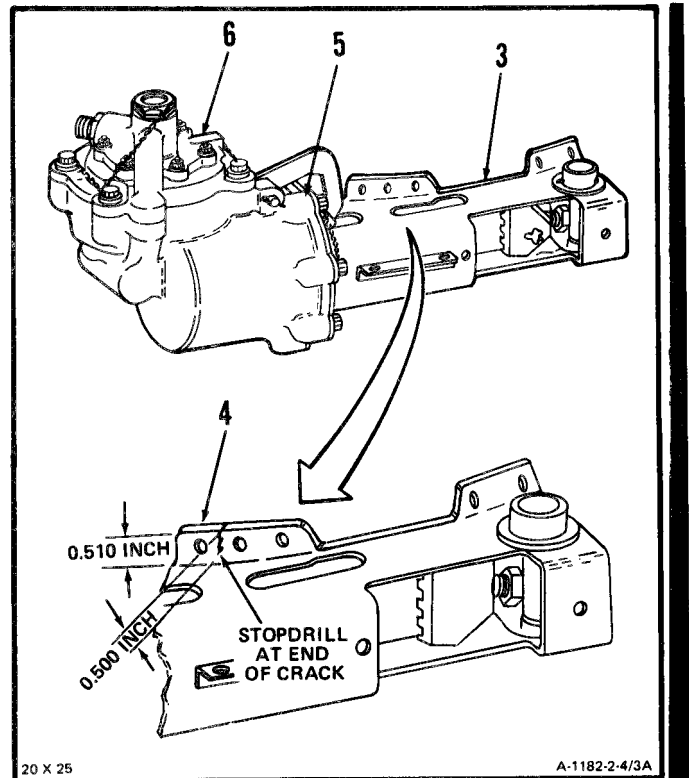
(2) There shall be no sharp corners or protrusions which result from tears or gouges.

(3) There shall be no bending.

b. Inspect housing (5) and cover (6). There shall be no cracks.

FOLLOW-ON MAINTENANCE:

None



END OF TASK

---

**2-5 REPAIR INTERSTAGE AIR-BLEED ACTUATOR**

---

2-5

**INITIAL SETUP***Applicable Configurations:*

All

*Tools:*Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944Technical Inspection Tool Kit,  
NSN 5180-00-323-5114

Hand File Set

Portable Electric Drill

Drill Bit, 3/32-inch

Drill Bit, 1/8 inch

*Materials:*

Crocus Cloth (E 5)

*Personnel Required:*

68B10 Aircraft Powerplant Repairer

68B30 Aircraft Powerplant Inspector

*Equipment Condition:*

Off Engine Task

1. Remove sharp comers or protrusions from tears or gouges in bracket (1) as follows:

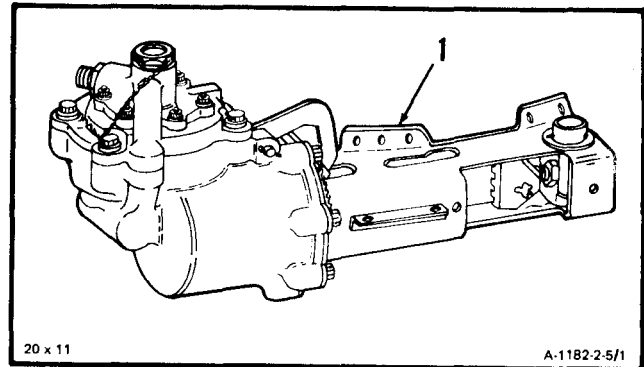
**NOTE**

This repair is allowed as long as it does not change original shape of existing holes or slots.

- a. Blend-repair using file.
  - b. Polish repaired area. Use crocus cloth (E 15).
2. Straighten bends in bracket (1).

**NOTE**

This repair is allowed as long as it does not generate cracks or affect actuator operation.

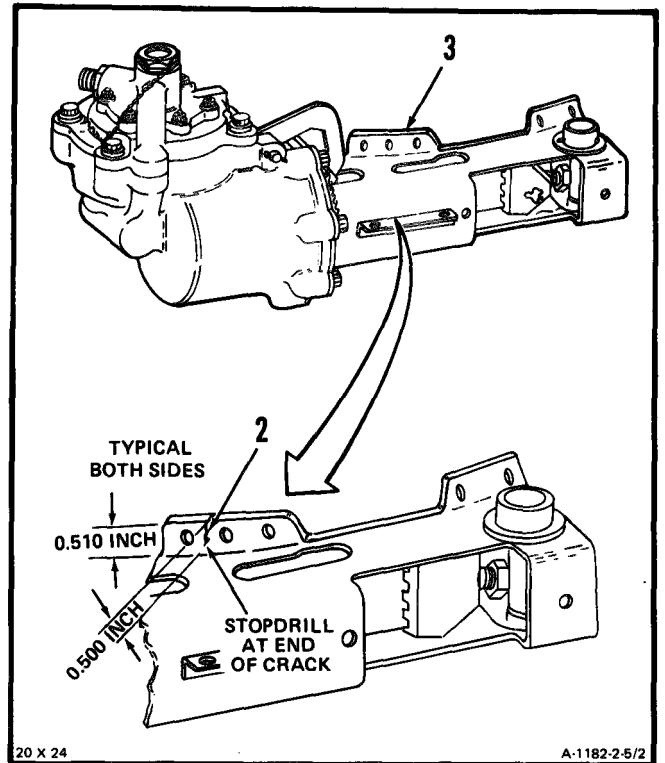
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## 2-5 REPAIR INTERSTAGE AIR-BLEED ACTUATOR (Continued)

2-5

**3. Repair one crack (2) gusset support area, adjacent to the uppermost bolt holes (3).**

- a. Stop drill crack (2) using portable electrical drill and a 3/32 inch drill bit.
- b. Remove burrs on each side of stop drilled hole using 1/8 inch drill bit.



INSPECT

FOLLOW-ON MAINTENANCE:

None

END OF TASK





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**2-6 ASSEMBLE INTERSTAGE AIR-BLEED ACTUATOR**

---

2-6

**INITIAL SETUP****Applicable Configuration:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Technical inspection Tool Kit,  
NSN 5180-00-323-5114  
Deep Style Socket, 1-Inch

**Materials:**

None

**Parts:**

Packing

**Personnel Required:**

68B10 Aircraft Powerplant Repairer  
68B30 Aircraft Powerplant Inspector

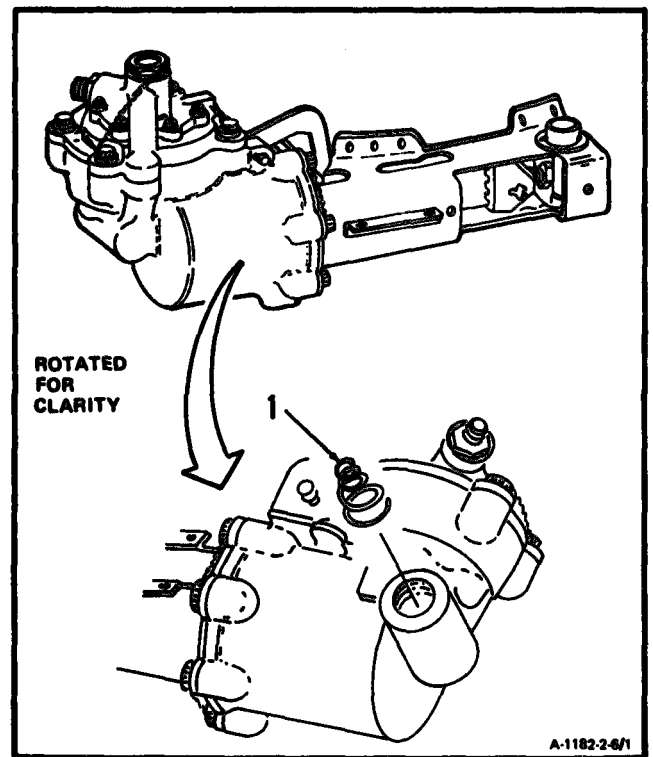
**References:**

TM 55-2840-254-23P

**Equipment Condition:**

Off Engine Task

- 
1. Install spring (1), large end down.

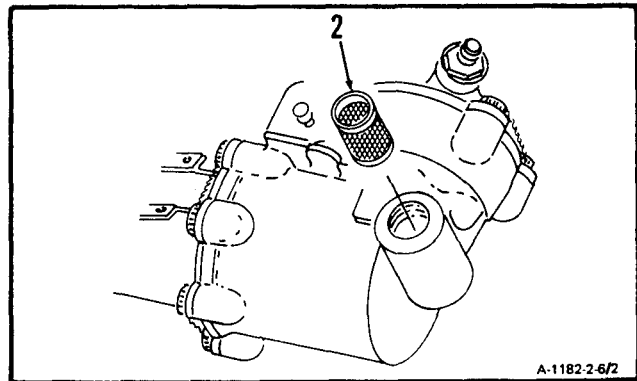


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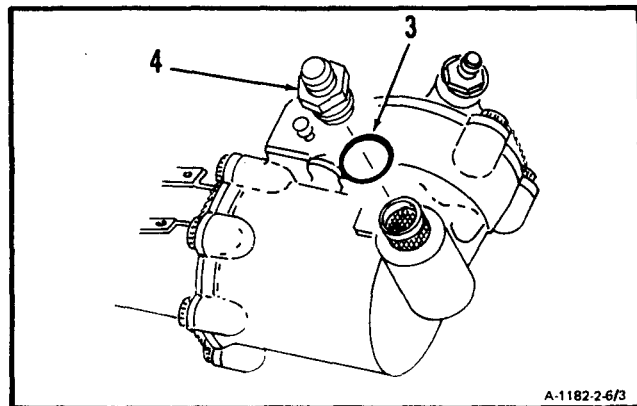
2-6 ASSEMBLE INTERSTAGE AIR-BLEED ACTUATOR (Continued)

2-6

2. Install strainer element (2), open end up.



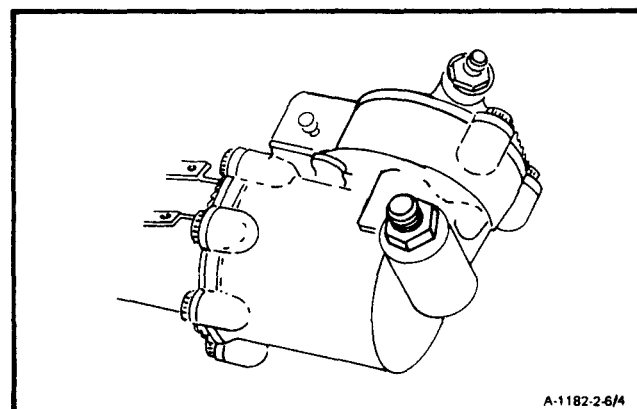
3. Install packing (3) and reducer (4). Use deep style socket,



INSPECT

FOLLOW-ON MAINTENANCE:

None



END OF TASK

2-7 INSTALL INTERSTAGE AIR-BLEED ACTUATOR (WITHOUT WATER WASH KIT  
P/N 2-200-071-54 INSTALLED)

2-7

INITIAL SETUP

**Applicable Configurations**

All

**Tools:**

- Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944
- Technical Inspection Tool Kit,  
NSN 5180-00-323-5114
- Torque Wrench, 0-30 Inch-Pounds
- Torque Wrench, 30-150 Inch-Pounds

**Materials:**

- Lockwire (E29)

**Parts:**

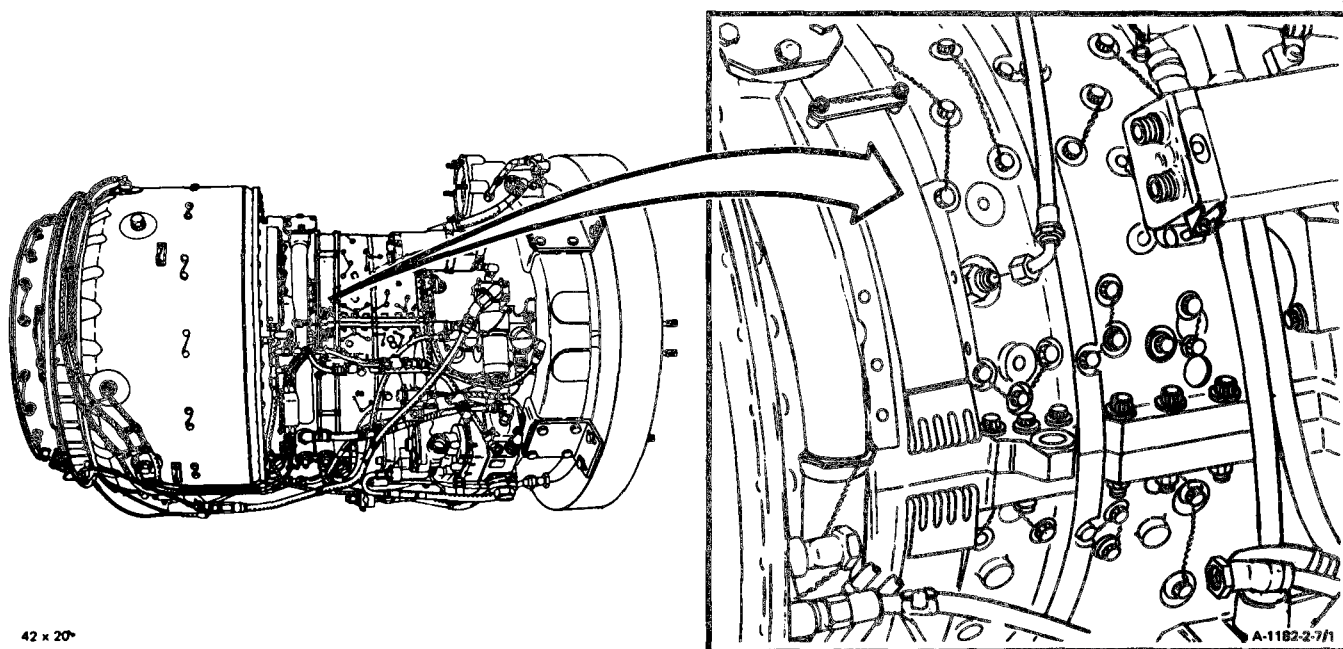
- Cotter Pin

**Personnel Required;;**

- 68B10 Aircraft Powerplant Repairer
- 68B10 Aircraft Powerplant Inspector

**References:**

- TM 55-2840-254-23P
- Task 2-8

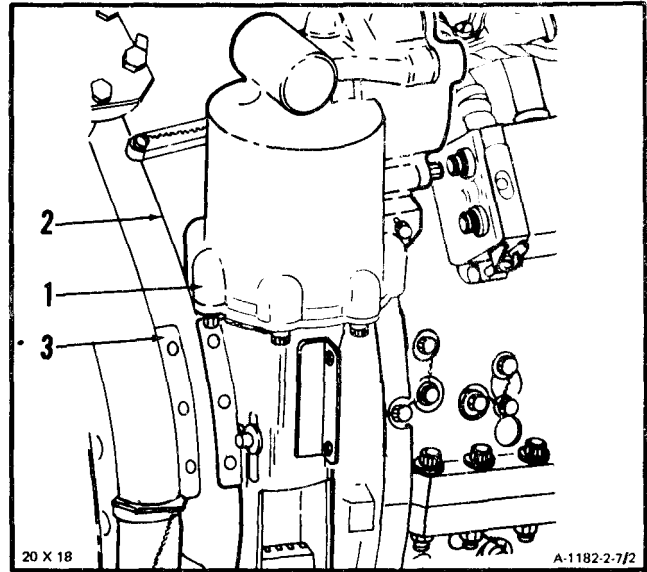


42 x 20"

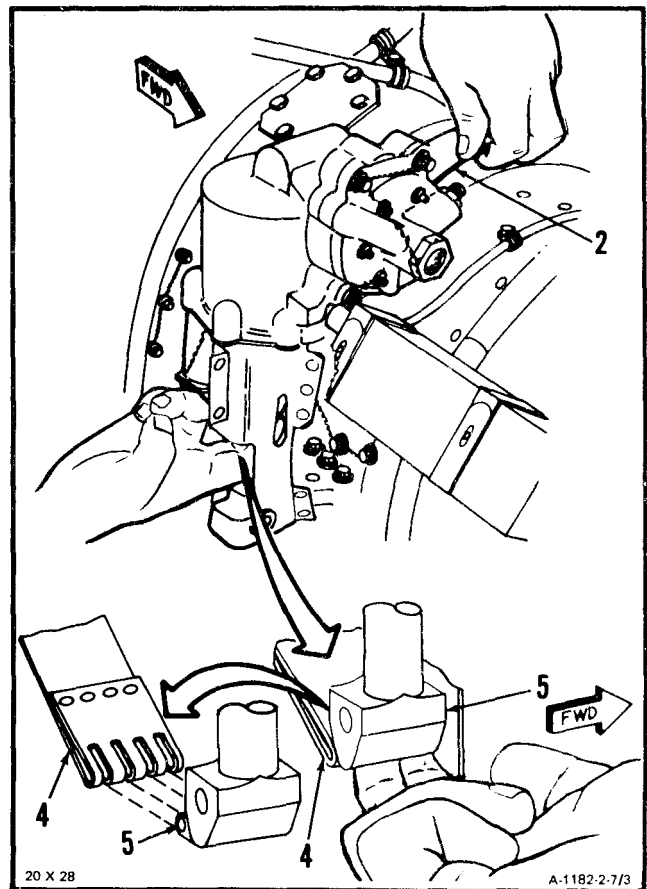
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2-7 INSTALL INTERSTAGE AIR-BLEED ACTUATOR WITHOUT WATER WASHKIT  
 P/N 2-200-071-54 INSTALLED) (Continued)

1. Install interstate air-bleed actuator (1) over ends of bleed band (2) and on compressor housing (3).



2. Position bleed band (2) and interlock bleed band upper end (4) with tangs on piston assembly (5).

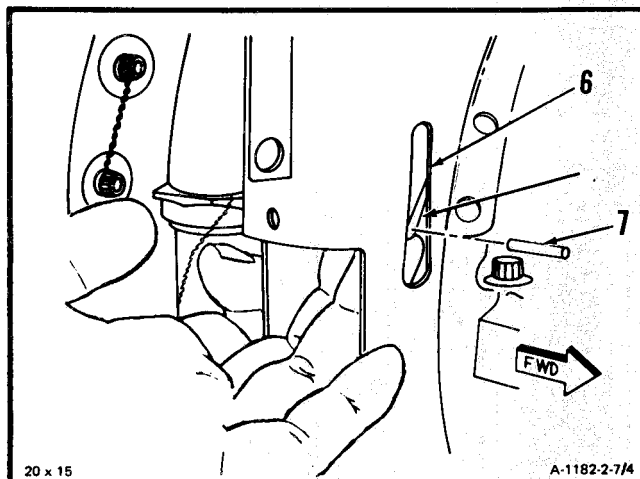


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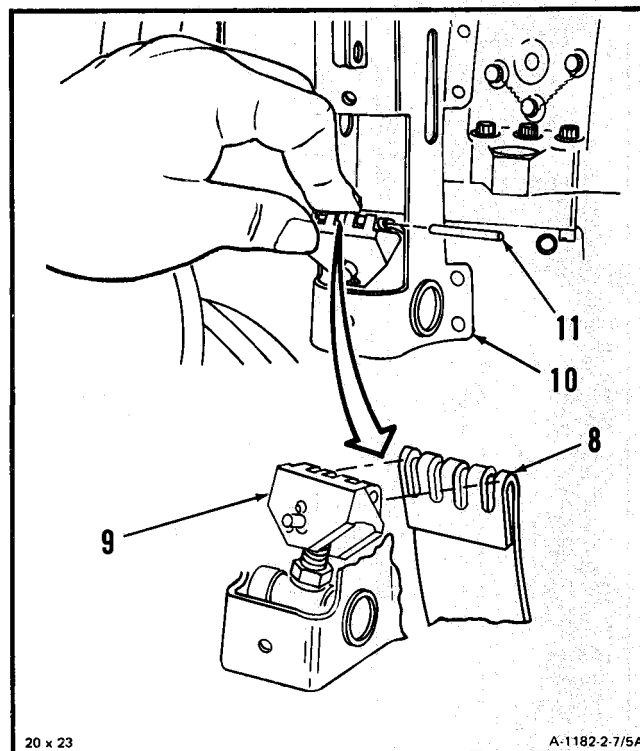
2-7 INSTALL INTERSTAGE AIR-BLEED ACTUATOR (WITHOUT WATER WASH KIT P/N 2-200-071-54 INSTALLED) **(Continued)**

2-7

3. Hold interlock parts together and position them so bleed band upper end (4) is seen through slot (69.) install pin (7).



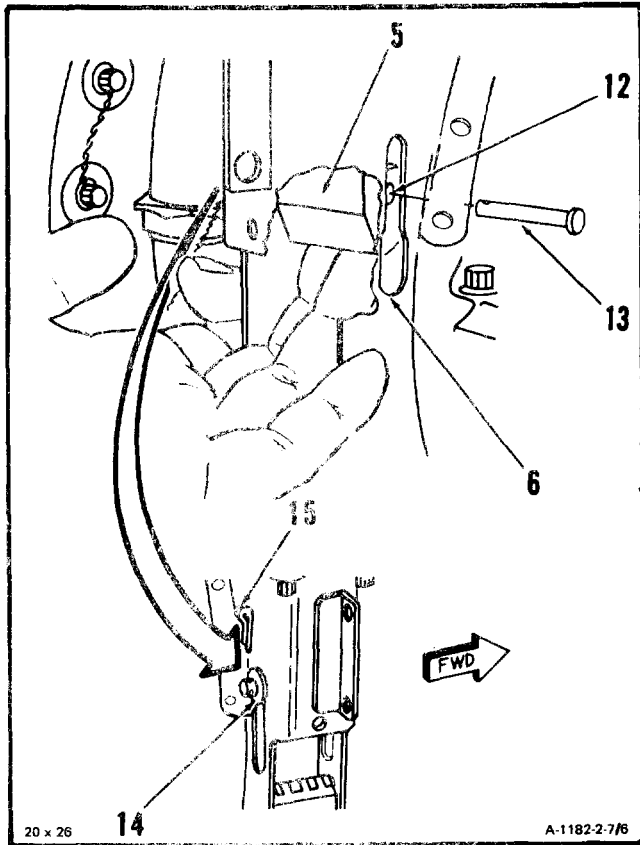
4. Interlock bleed band lower end (8) and tangs of yoke (9). Hold interlocked parts together and position them out of bracket (10). Install pin (11).



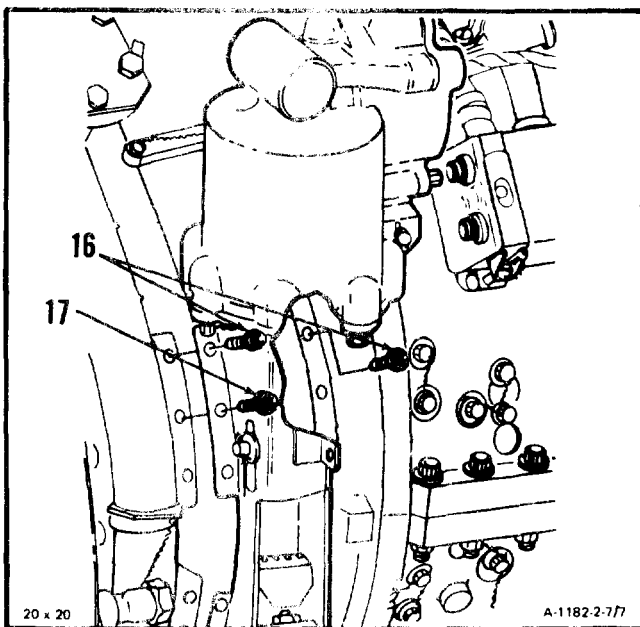
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2-7 INSTALL INTERSTAGE AIR-BLEED ACTUATOR (WITHOUT WATER WASH KIT  
P/N 2-200-071-54 INSTALLED) (Continued)

5. Position piston assembly (5) so hole (12) can be seen through slot (6). Install pin (13), washer (14), and cotter pin (15).



6. Install on compressor housing. Secure with two bolts (16) and eight bolts (17). Torque two top bolts (16) to ten inch-pounds, Torque remaining eight bolts (17) in pairs, 180 degrees apart, in rotation to 20 inch-pounds initial torque. Retorque same eight bolts (17) in same sequence to 35 to 40 inch-pounds. Lockwire ten bolts (16 and 17). Use lockwire (E29).

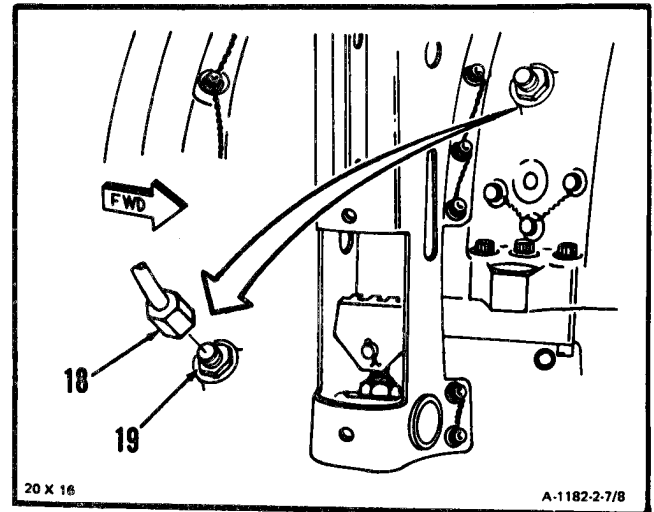


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**2-7 INSTALL INTERSTAGE AIR-BLEED ACTUATOR (WITHOUT WATER WASH KIT  
PIN 2-200-071-54 INSTALLED) (Continued)**

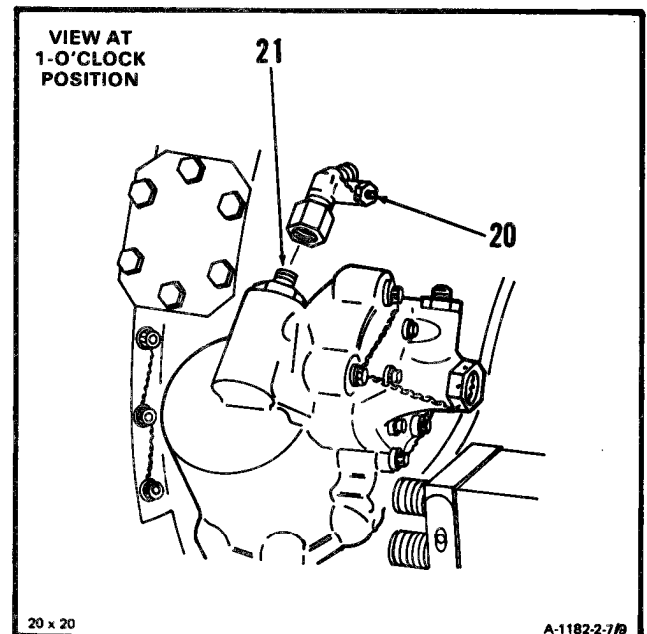
2-7

7. Connect tube assembly(18) to union (19).



8. Install tee (20) on reducer (21).

9. Adjust interstate air-bleed actuator (Ref. Task 2-8, steps 6. thru 17.)

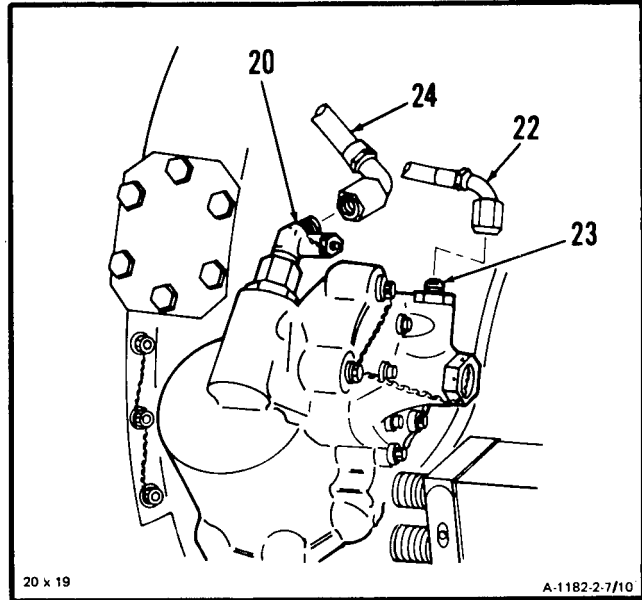


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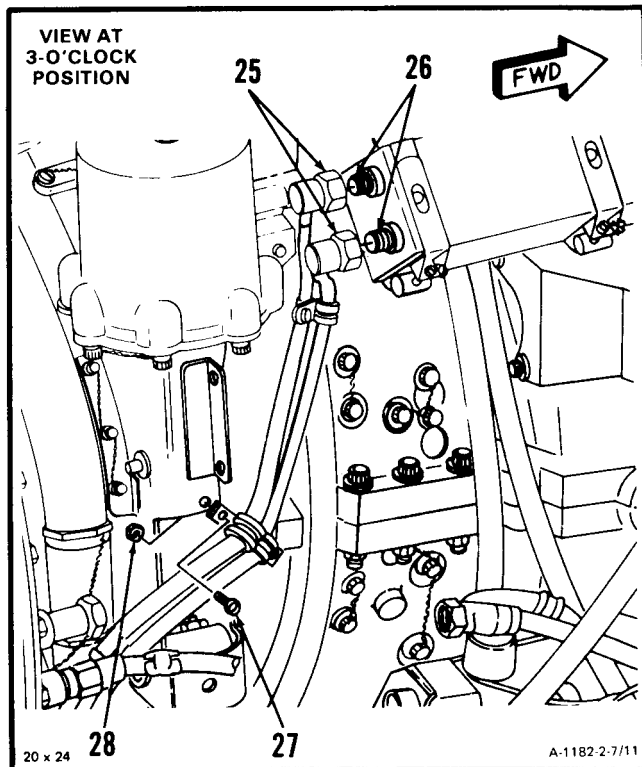


2-7 INSTALL INTERSTAGE AIR-BLEED ACTUATOR (WITHOUT WATER WASH KIT P/N 2-200-071-54 INSTALLED) (Continued)

- 10. Connect hose assembly (22) to union (23).
- 11. Connect hose assembly (24) to tee (20).



- 12. Connect two coil and cable assembly leads (25) to ignition exciter output receptacles (26). LockWire leads. Use lockwire (E29).
- 13. Install screw (27) and nut (28).



INSPECT

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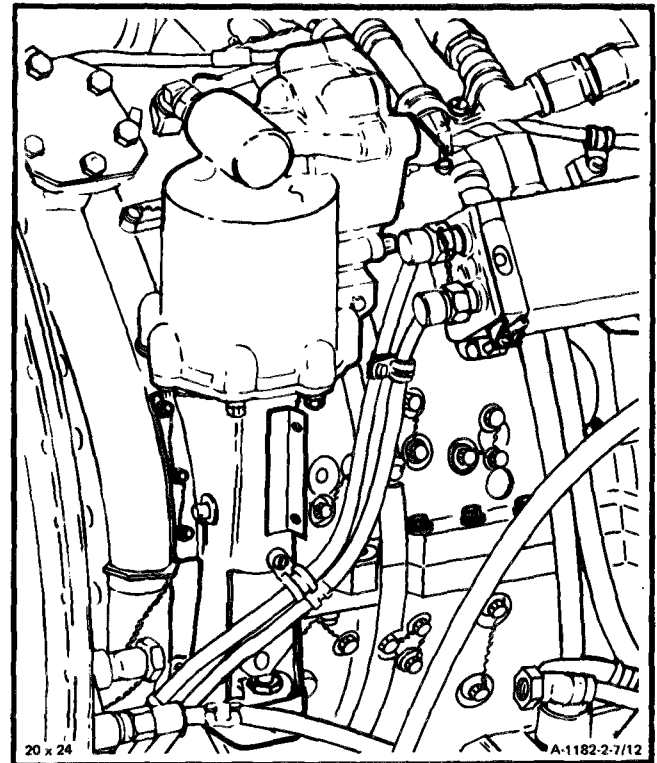
**2-7 INSTALL INTERSTAGE AIR-BLEED ACTUATOR (WITHOUT WATER WASH KIT  
P/N 2-200-071-54 INSTALLED) (Continued)**

2-7

**FOLLOW-ON MAINTENANCE:**

Install Oil Cooler Assembly (Task 8-11).

Perform Bleed Band Closure Check (Task 1-107).

**END OF TASK****Change 5 2-27**

2-7.1 INSTALL INTERSTAGE AIR-BLEED ACTUATOR (WITH WATER WASH KIT  
P/N 2-200-071-54 INSTALLED)

2-7.1

INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Technical Inspection Tool Kit,  
NSN 5180-00-3235114  
Torque Wrench, 0-30 Inch-Pounds  
Torque Wrench, 30-150 Inch-Pounds

**Materials:**

Lockwire (E29)

**Parts:**

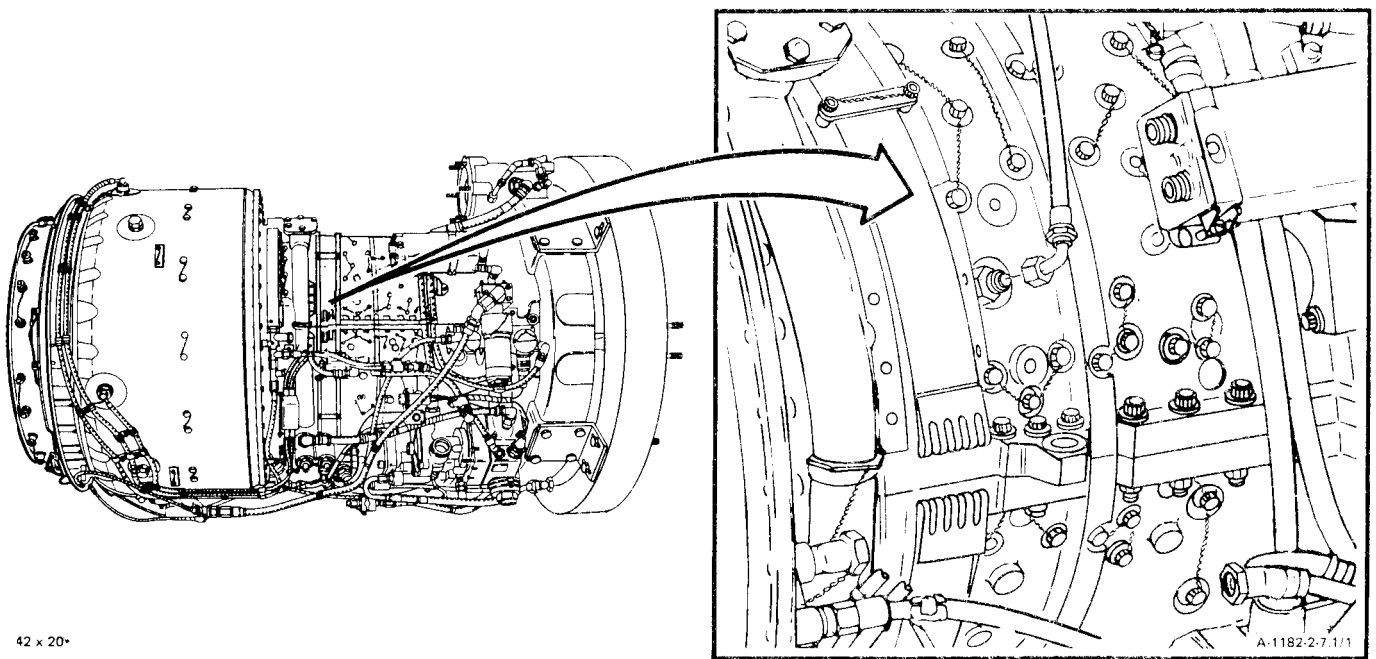
Cotter Pin

**Personnel Required:**

68B10 Aircraft Powerplant Repairer  
68B30 Aircraft Powerplant Inspector

**References:**

TM 55-2840-254-23P  
Task 2-8

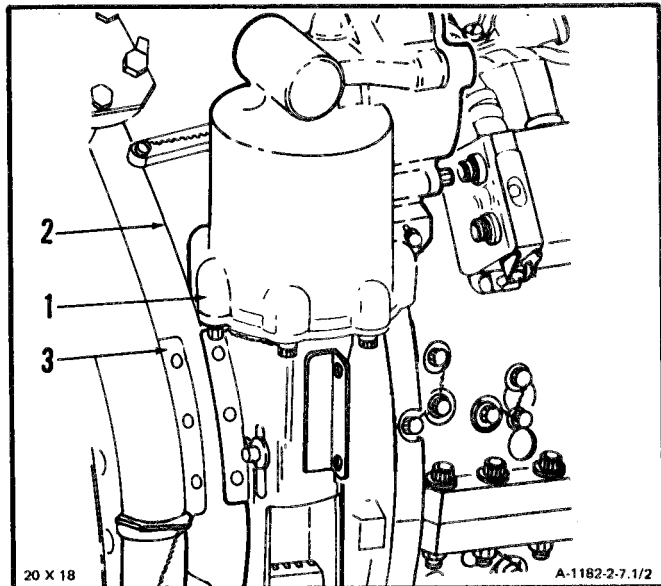


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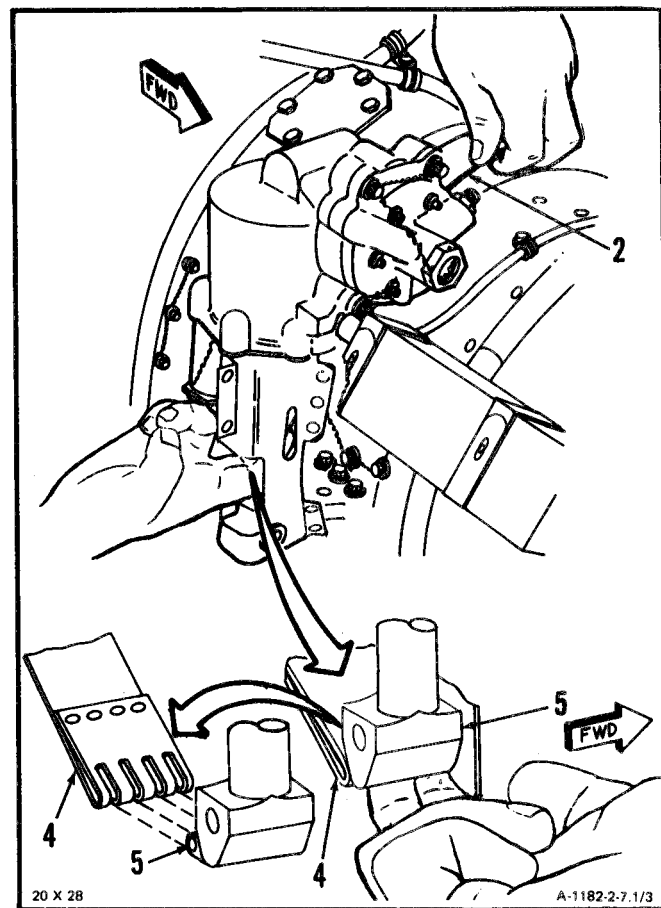
2-7.1 INSTALL INTERSTAGE AIR-BLEED ACTUATOR WITH WATER WASH KIT  
 P/N 2-200-071-54 INSTALLED) (Continued)

2-7.1

1. Install interstage air-bleed actuator (1) over ends of bleed band (2) and on compressor housing (3).



2. Position bleed band (2) and interlock bleed band upper and (4) with tangs on piston assembly (5).

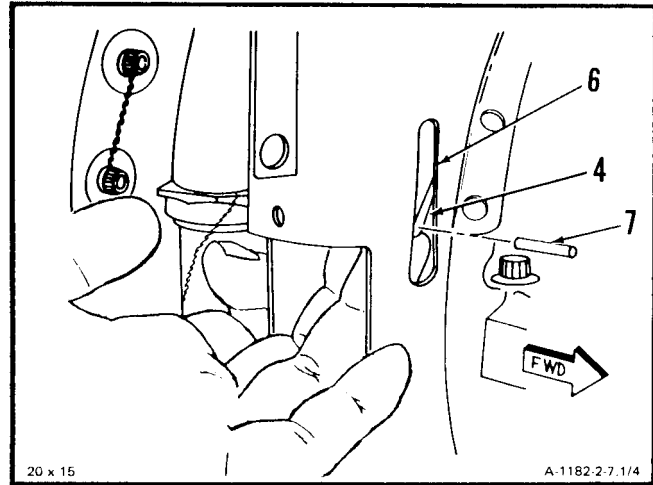


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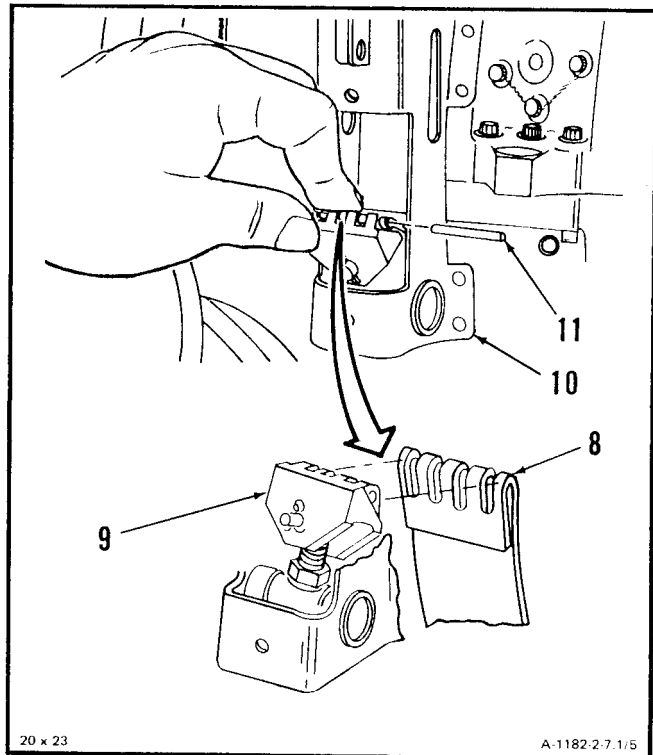
2-7.1 INSTALL INTERSTAGE AIR-BLEED ACTUATOR (WITH WATER WASH KIT P/N 2-200-071-54 INSTALLED) (Continued)

2-7.1

3. Hold interlocked parts together and position them so bleed band upper end (4) is seen through slot (6). Install pin (7).



4. Interlock bleed band lower end (8) and tangs of yoke (9). Hold interlocked parts together and position them out of bracket (10). Install pin (11).

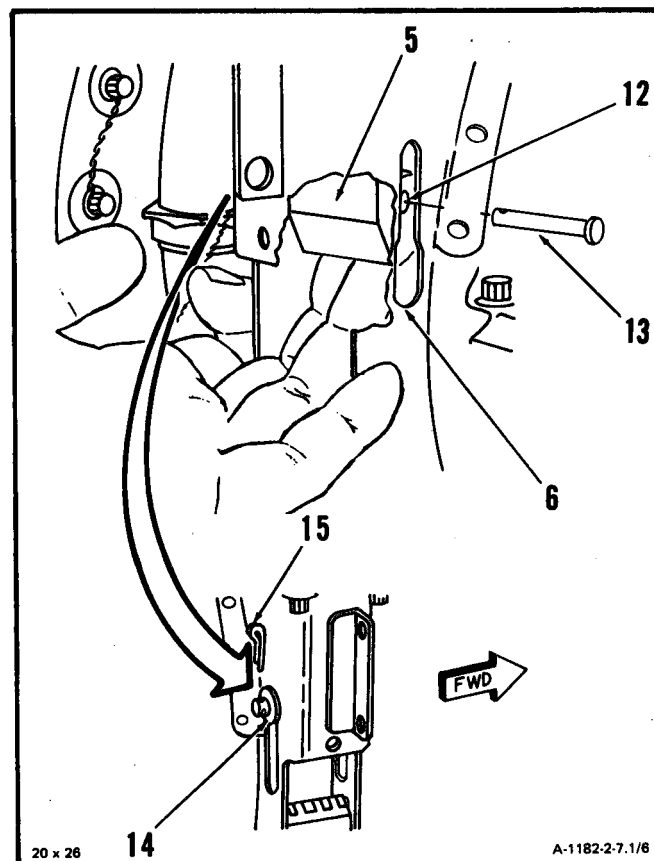


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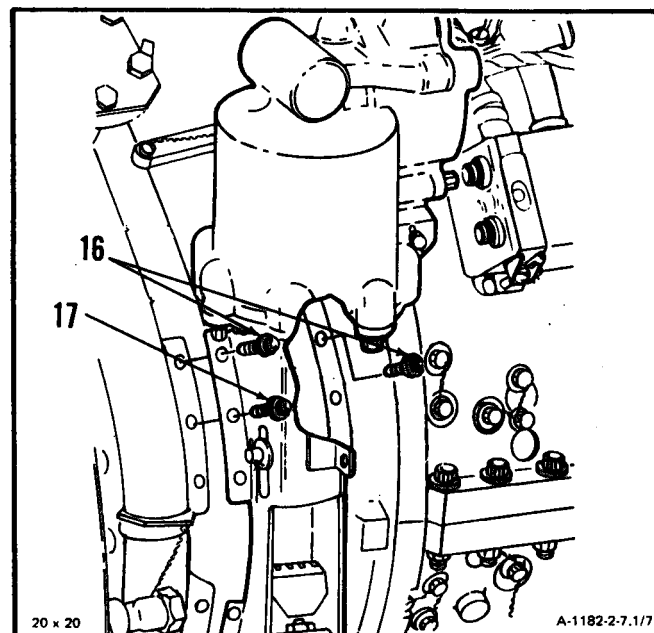
## 2-7.1 INSTALL INTERSTAGE AIR-BLEED ACTUATOR (WITH WATER WASH KIT PIN 2-200-071-54 INSTALLED) (Continued)

2-7.1

5. Position piston assembly (5) so hole (12) can be seen through slot (6). Install pin (13), washer (14), and cotter pin (15).



6. Install on compressor housing. Secure with two bolts (16) and eight bolts (17). Torque two top bolts (16) to ten inch-pounds. Torque remaining eight bolts (17) in pairs 180 degrees apart in rotation to 20 inch-pounds initial torque. Retorque same eight bolts (17) in same sequence to 35 to 40 inch-pounds. LockWire ten bolts (16 and 17). Use lockwire (E29).



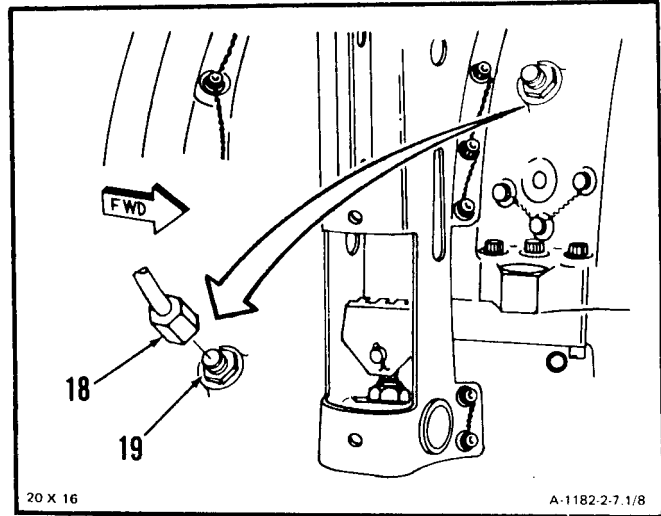
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**Change 5 2-28.3**

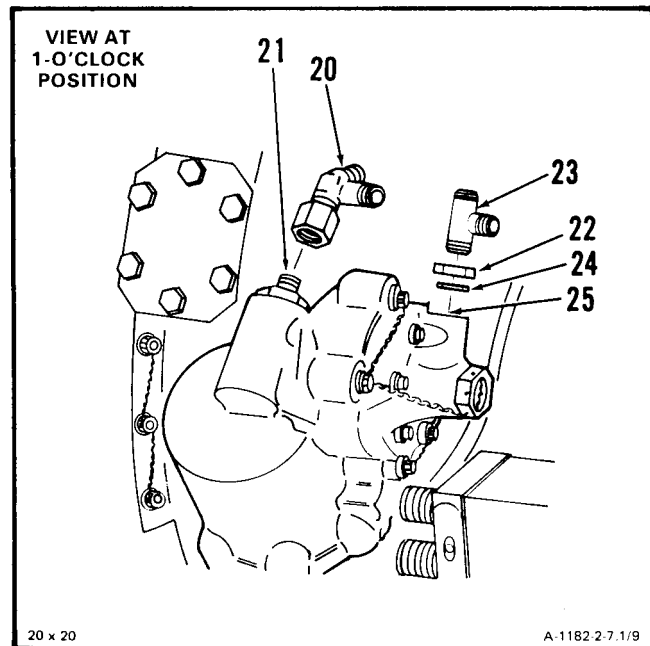
2-7.1 INSTALL INTERSTAGE AIR-BLEED ACTUATOR (WITH WATER WASH KIT P/N 2-200-071-54 INSTALLED) (Continued)

2-7.1

7. Connect tube assembly(18) to union (19).



8. Install tee (20) on reducer (21).
9. Install nut (22) on tee (23). Install packing (24) on tee (23). Position nut to make sure packing is in groove between two sets of threads on tee.
10. Install tee (23) into air-bleed port (25).
11. Adjust interstate air-bleed actuator (Ref. Task 2-8, steps 6. thru 17.)

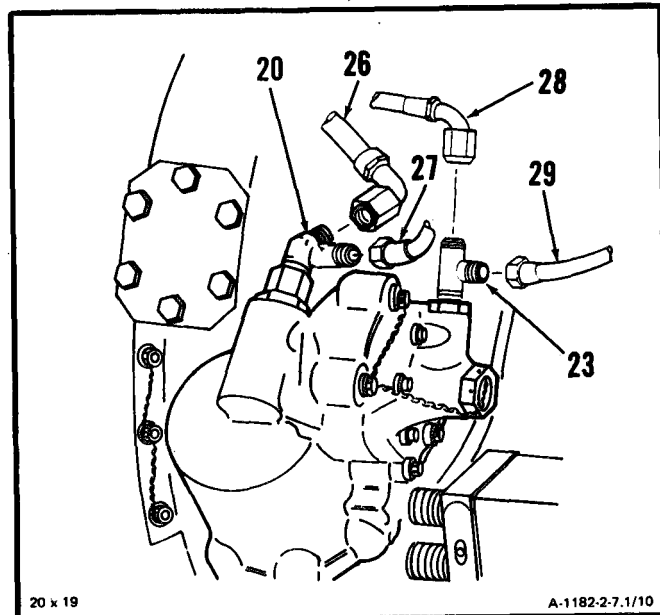


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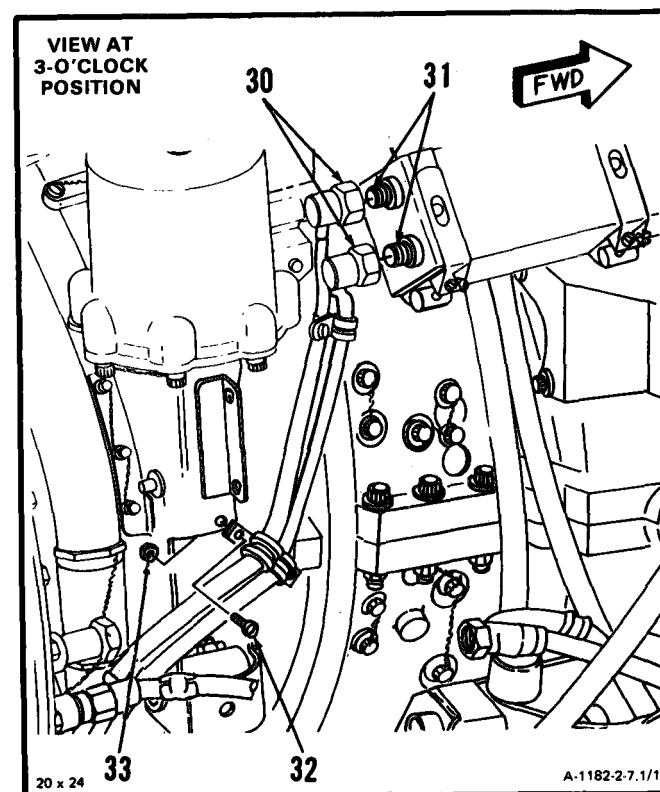
2-7.1 INSTALL INTERSTAGE AIR-BLEED ACTUATOR (WATER WASH KIT  
P/N 2-200-071-54 INSTALLED) (Continued)

2-7.1

12. Connect hose assembly (26 and 27) to tee (20).
13. Connect hose assembly (28 and 29) tee (23).



14. Connect two coil and cable assembly leads (30) to igniton exciter output receptacles (31). Lockwire leads. Use lockwire (E29).
15. Install screw (32) and nut (33).



**INSPECT**

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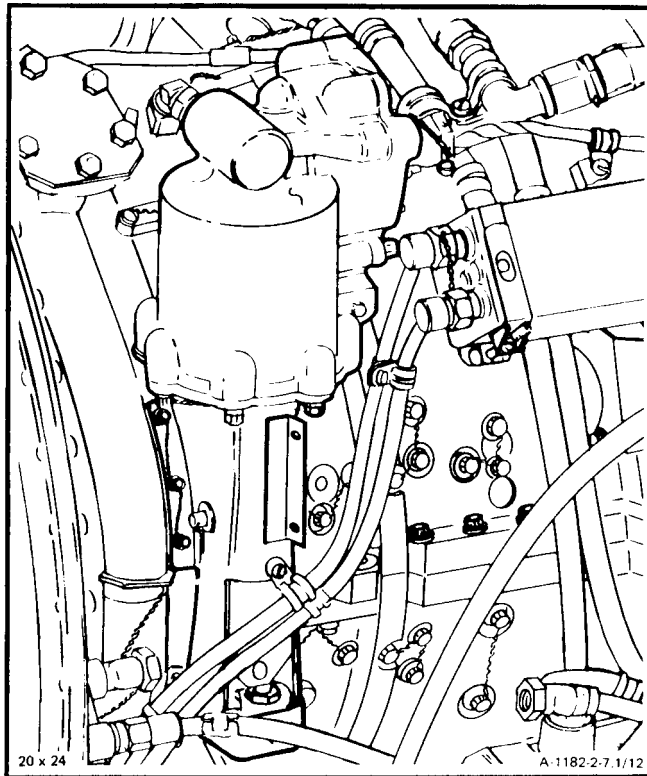


2-7.1 INSTALL INTERSTAGE AIR-BLEED ACTUATOR (WITH WATER WASH KIT 2-7.1  
P/N 2-200-071-54 INSTALLED) (Continued)

FOLLOW-ON MAINTENANCE:

Install Oil Cooler Assembly (Task 8-11).

Perform Bleed Band Closure Check (Task 1-107).



END OF TASK

2-28.6 Change 5

## 2-8 ADJUST INTERSTAGE AIR-BLEED ACTUATOR (WITHOUT WATER WASH KIT-8 P/N 2-200-071-54 INSTALLED)

### INITIAL SETUP

#### **Applicable Configurations:**

All

#### **Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Technical Inspection Tool Kit,  
NSN 5180-00-323-5114  
Compressed Air Source  
Torque Wrench, 30-150 Inch-Pounds

#### **Materials:**

Carborundum Stone (E10)  
Crocus Cloth (E15)  
Dry Cleaning Solvent (E17)  
Gloves (E20)  
Lockwire (E29)  
Wiping Rag (E58)

#### **Personnel Required:**

68B10 Aircraft Powerplant Repairer  
68B30 Aircraft Powerplant Inspector

#### **References:**

Task 2-9  
Task 2-13

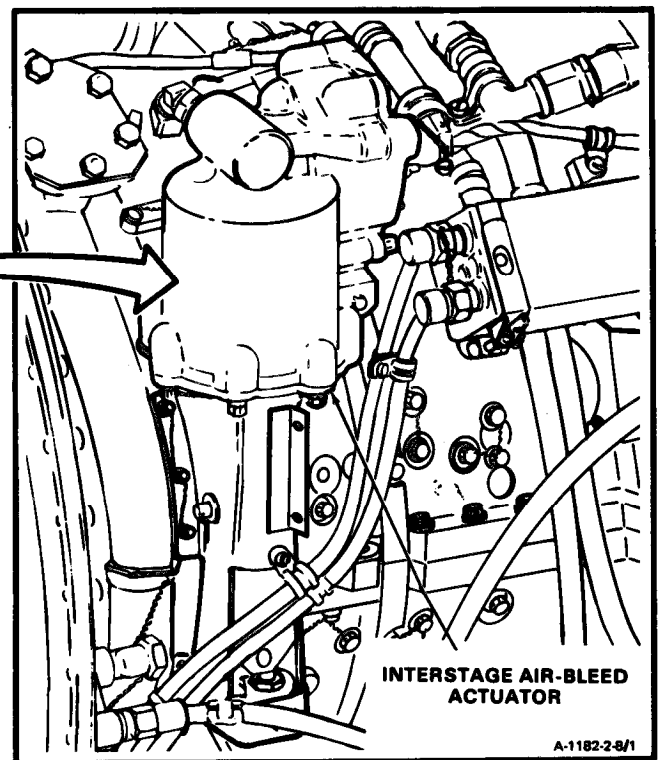
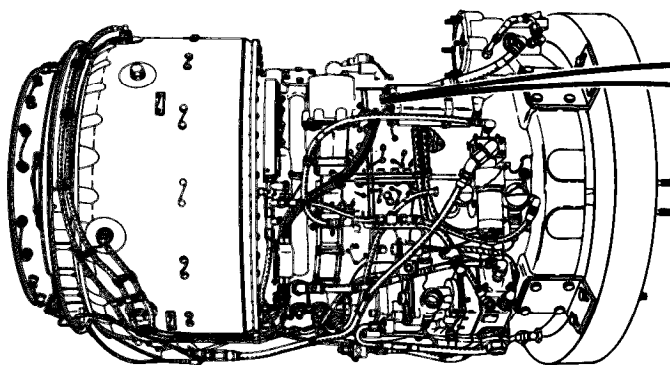
#### **Equipment Condition:**

Oil Cooler Assembly Removed (Task 8-5)

#### **General Safety Instructions:**

### **WARNING**

The ignition exciter stores very high and possibly fatal voltage. Use extreme care when working around ignition exciter. Serious injury could result if exciter is accidentally grounded. Do not probe inside of output receptacles **with fingers** or metal object. Discharge exciter only with insulated screwdriver. In case of shock or injury, get medical attention.



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## 2-8 ADJUST INTERSTAGE AIR-BLEED ACTUATOR (WITHOUT' WATER WASH KIT P/N 2-200-071-54 INSTALLED) (Continued)

2-8

### NOTE

Adjustment of interstate air-bleed actuator can be done with oil cooler removed or installed. This task is shown with oil cooler removed. Procedure is the same.

When discharging ignition exciter, remove one lead at a time and discharge receptacle that lead was removed from. Failure to do so may result in serious shock when you are removing second lead. In case of serious shock, get medical attention.

1. Remove nut (1) and screw (2).

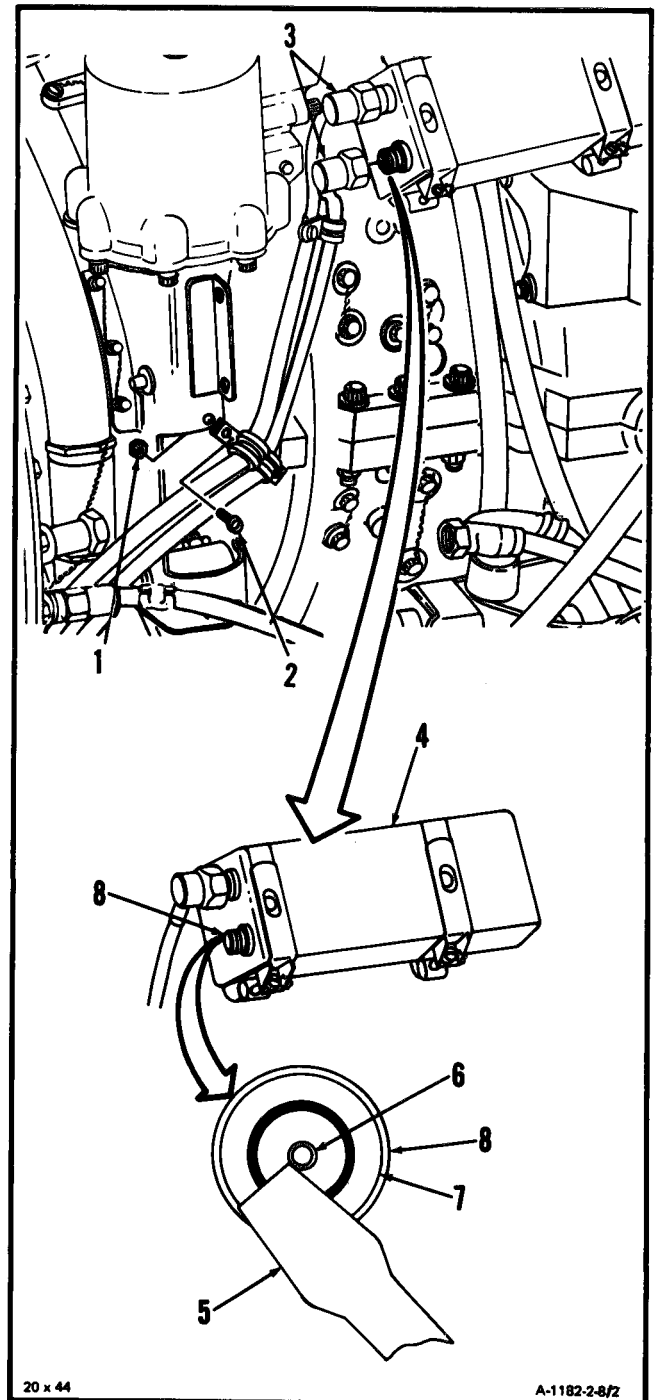
### NOTE

Steps 2. and 3. apply to both output receptacles.

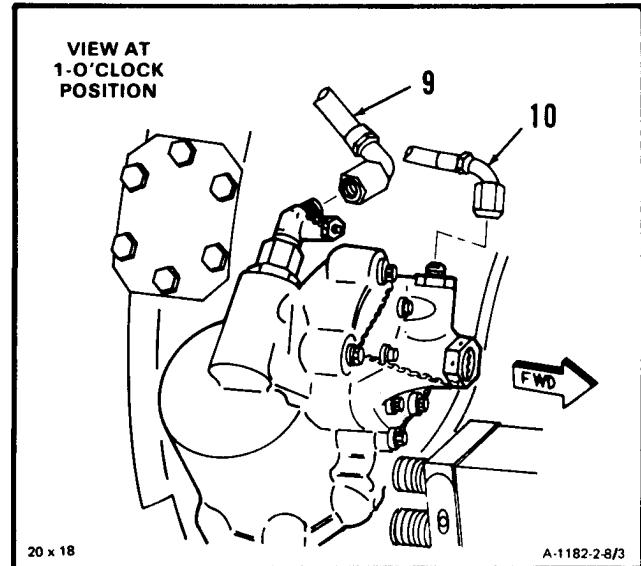
2. Remove lockwire and disconnect coil and cable assembly lead (3).

3. **Discharge ignition exciter (4)** by placing tip of insulated screwdriver (5) against pin (6) and edge (7) of receptacle (8).

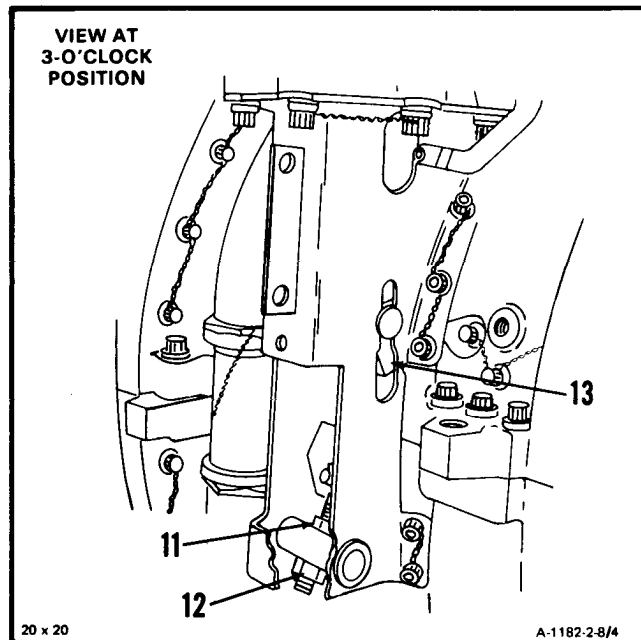
4. Place leads (3) to one side.



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**5. Disconnect hose assemblies (9 and 10).**

Remove lockwire and **loosen upper nut (11) and lower nut (12)** to allow full travel of actuator piston (13).

**NOTE**

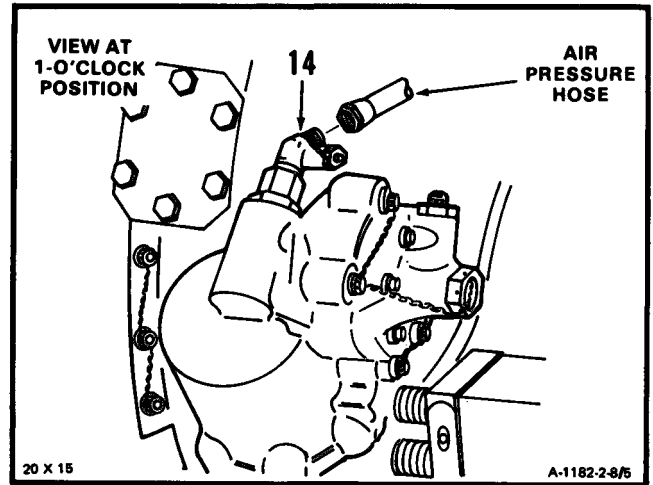
Before adjusting actuator, area under bleed band should be checked for foreign objects.

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## 2-8 ADJUST INTERSTAGE AIR-BLEED ACTUATOR (WITHOUT WATER WASH KIT P/N 2-200-071-54 INSTALLED) (Continued)

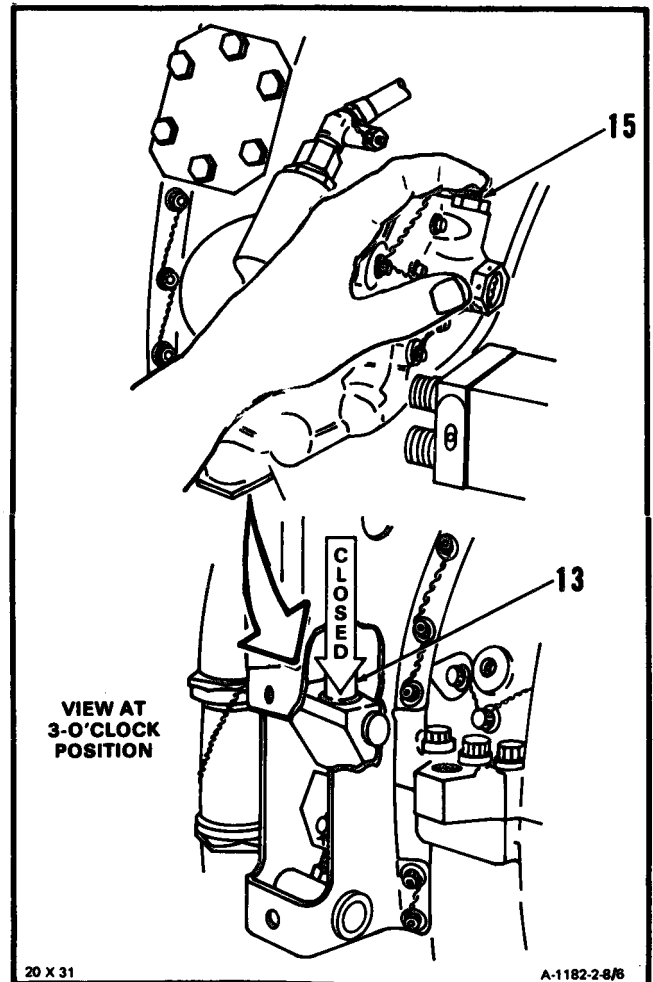
2-8

7. Connect air pressure hose from air compressor to tee (14). Apply 60 psig. air pressure.



- 7.1 Visually check that there is no piston (13) movement in the open position.

8. Activate piston (13) to closed position by placing finger over union (15).

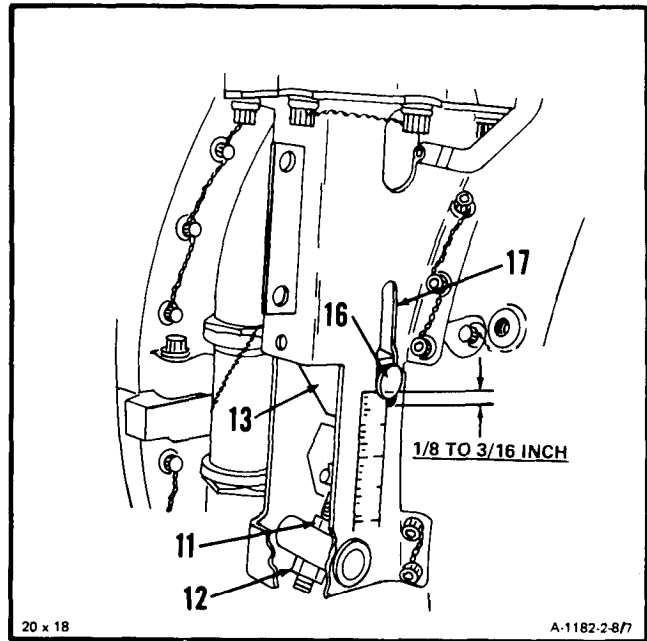


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2-8 ADJUST INTERSTAGE AIR-BLEED ACTUATOR (WITHOUT WATER WASH KIT  
P/N 2-200-071-54 INSTALLED) (Continued)

2-8

9. Adjust nuts (11 and 12) until clearance between shaft of pin (16) and bottom of slot (17) is 1/8 to 3/16-inch.
10. Allow piston (13) to return to open position by removing finger from union.



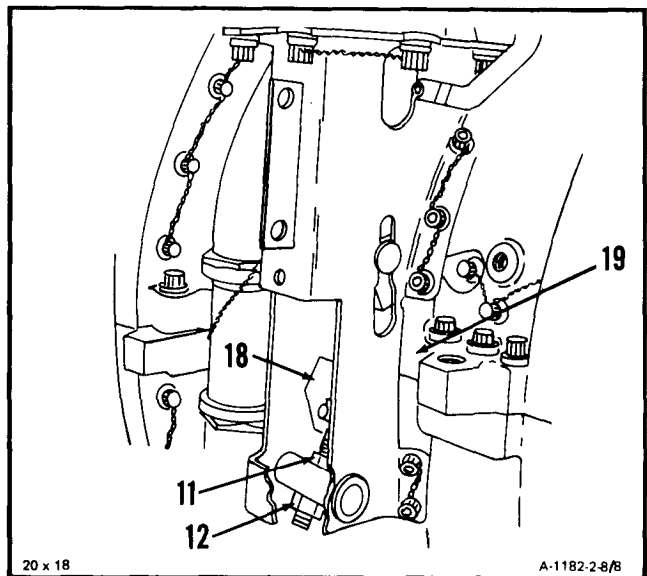
**CAUTION**

Do not allow yoke to twist when torquing nut. Twisting of yoke may cause binding and will not allow bleed band to close properly.

**CAUTION**

After torquing, two threads must remain showing below nut. Failure to comply may cause nut to break loose and prevent bleed band from closing. Replace bleed band if two threads do not show.

11. Position yoke (18) against compressor housing (19) and hold upper nut (11). Torque lower nut (12) to 145 pound-inch.



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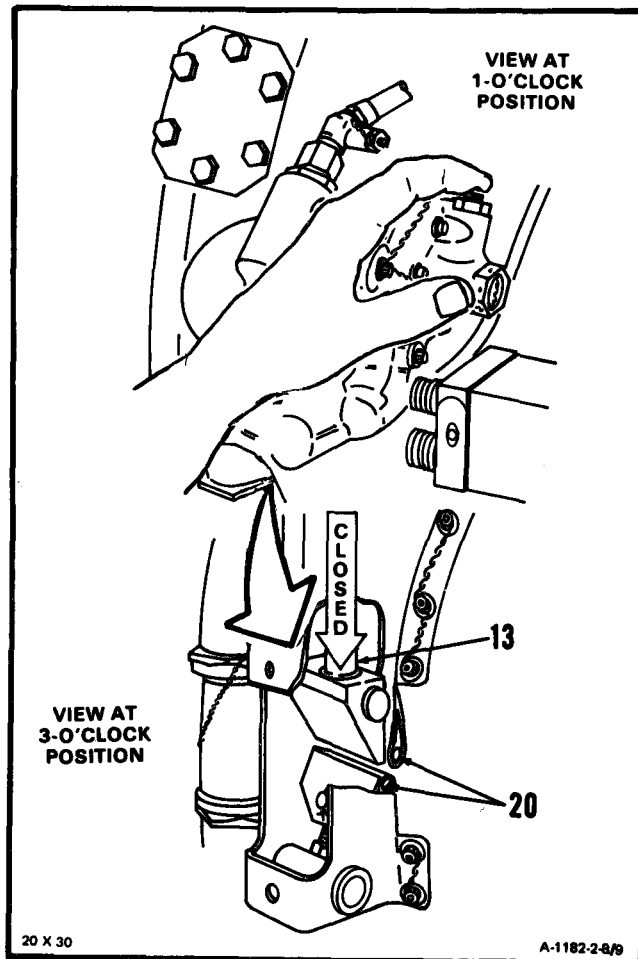
2-8 ADJUST INTERSTAGE AIR-BLEED ACTUATOR (WITHOUT WATER WASH KIT  
P/N 2-200-071-54 INSTALLED) (Continued)

2-8

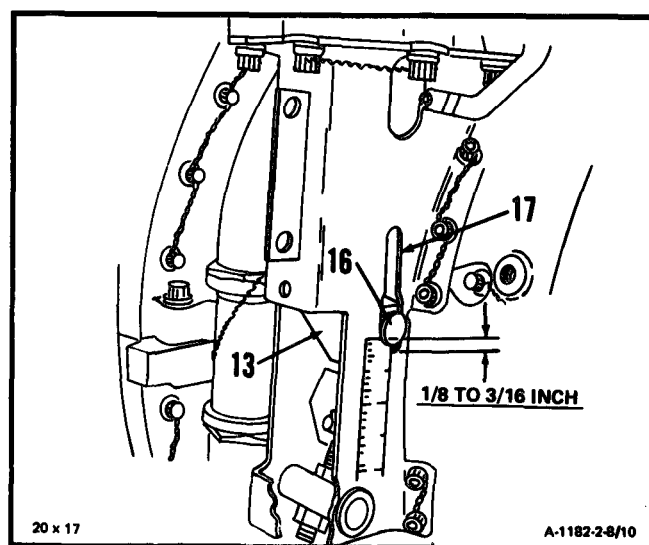
**CAUTION**

Make sure bleed band pins do not bind against actuator when piston moves to closed position. Binding will not allow bleed band to close properly.

12. Activate and release piston (13) several times. **Check that pins (20) are not binding.** If pins (20) are binding, reposition or replace pins (20).



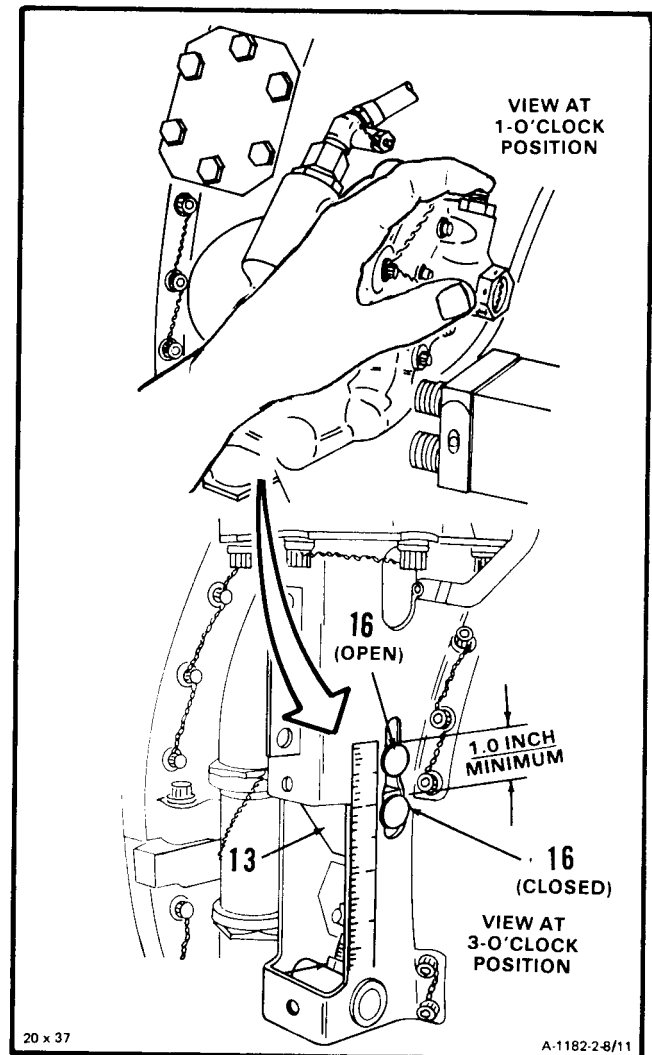
13. With piston (13) in closed position, **check clearance between shaft of pin (16) and bottom of slot (17).** Clearance shall be 1/8 to 3/16-inch. Allow piston(13) to return to open position.



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14. Note location of pin (16). Activate piston (13) to closed position, and **measure distance pin (16) moves from open to closed**. Pin shall move at least 1.0 inch.



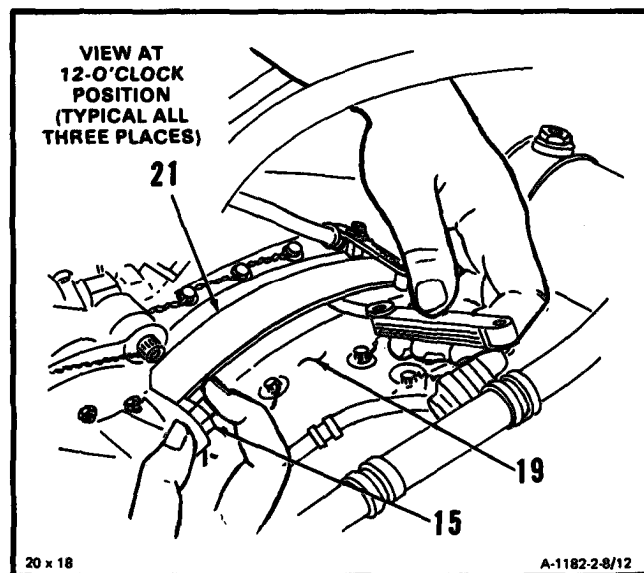
15. If you can not obtain clearance and minimum pin movement, proceed as follows until requirements are met:
- Readjust interstage air-bleed actuator** (steps 8. thru 13.).
  - If clearance and minimum pin movement cannot be obtained after readjustment replace compressor bleed band** (Ref. Tasks 2-9 and 2-13).

**GO TO NEXT PAGE**

**2-8 ADJUST INTERSTAGE AIR-BLEED ACTUATOR (WITHOUT WATER WASH KIT  
P/N 2-200-071-54 INSTALLED) (Continued)**

2-8

16. Place finger over union (15). **Check clearance between bleed band (21) and compressor housing (19) at 12-, 5-, and 8-o'clock positions.** Use thickness gage. Clearance shall not be more than 0.002-inch drag fit. If fit is too loose, proceed as follows:
- Check bleed band (21)** for twists, kinks, and dirt or other deposits on side that goes against compressor housing (19). **Replace bleed band (21) if twisted or kinked** (Ref. Task 2-9 and 2-13).

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- b. **Check compressor housing (19)** for nicks, chafing, and dirt or other deposits in bleed band area. If nicks, chafing, dirt or other deposits are found, proceed as follows:

- (1) **Remove compressor bleed band** (Ref. Task 2-9).

**WARNING**

Dry cleaning solvent (E17) is flammable and toxic. It can irritate skin and cause burns. Use only in well-ventilated area, away from heat and open flame. In case of contact immediately flush skin or eyes with water for at least **15 minutes**. Get medical attention for eyes.

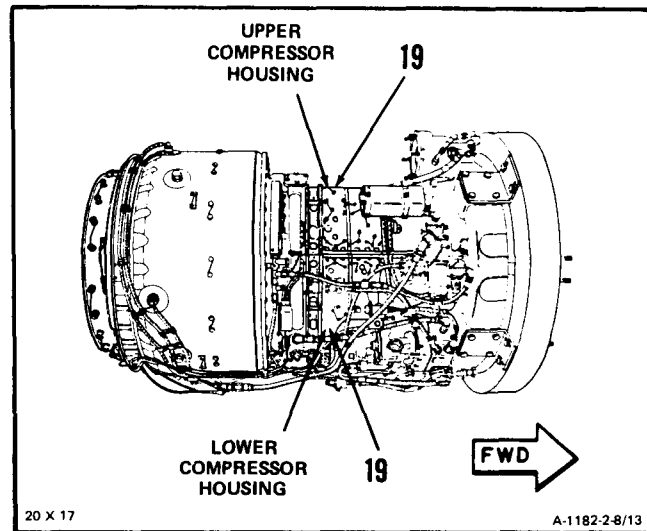
- (2) **Clean compressor housing** as follows:

- (a) Wear gloves (E20), and clean compressor housing (19). Use brush and wiping rag (E58) dampened in dry cleaning solvent (E17).

**WARNING**

When using compressed air for cleaning, use approved protective equipment for eyes and face. Do not use more than **30 psig** air pressure. Do not direct air toward yourself or another person. Failure to comply could result in injury to eyes or skin. In case of injury, get medical attention.

- (b) Wear goggles. Blow dry compressor housing (19) using clean, dry compressed air.



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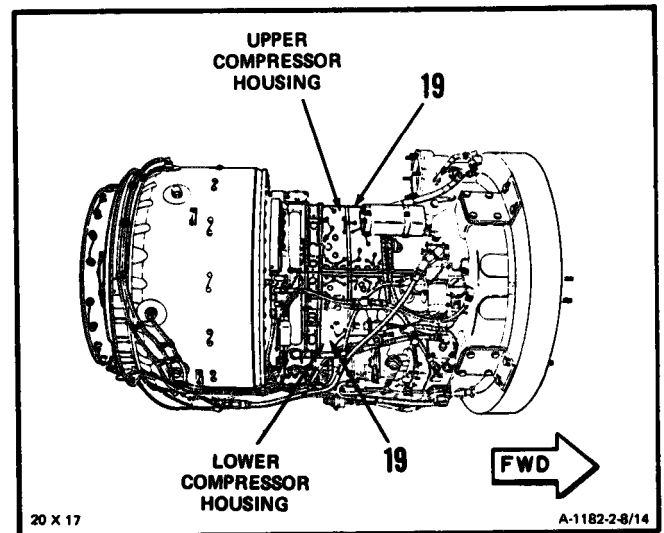
(3) **Inspect compressor housing (19)** as follows:

- (a) There shall be no cracks.
- (b) There shall be no nicks, dents or gouges greater than 0.500 inch length to 0.007 inch depth.
- (c) There shall be no corrosion or paint

(4) **Repair compressor housing** as follows:

Repair of nicks, dents and gouges on outside diameter of compressor housing (19), is acceptable after blend-repair as follows:

- 1 Defects shall not project into mating surfaces.
- 2 **Repair gouges** up to 0.500 inch length to 0.070 inch depth.
  - a Blend all sharp edges using Carborundum stone (E10).
  - b Polish to smooth finish using crocus cloth (E15).
- 3 **Repair dents** up to 0.500 inch length to 0.070 inch depth.
  - a Blend all sharp edges using Carborundum stone (E10).
  - b Polish to smooth finish using crocus cloth (E15).
- 4 **Repair nicks** up to 0.500 inch length to 0.070 inch depth.
  - a Blend all sharp edges using Carborundum stone (E10).
  - b Polish to smooth finish using crocus cloth (E15).



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2-8 ADJUST INTERSTAGE AIR-BLEED ACTUATOR (WITHOUT WATER WASH KIT P/N 2-200-071-54 INSTALLED) (Continued)

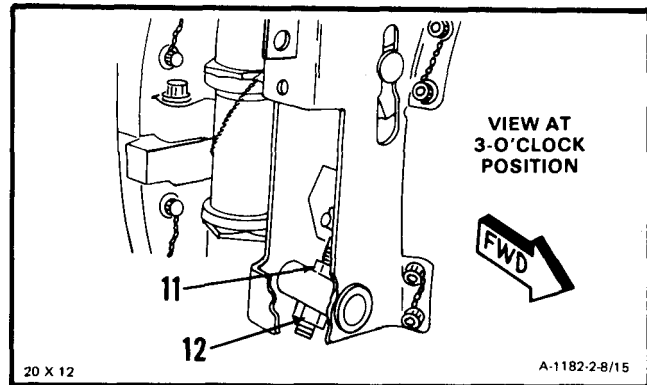
(b) **Repair corrosion damage** up to 0.070 inch depth.

1 Blend all sharp edges using Carborundum stone (E10).

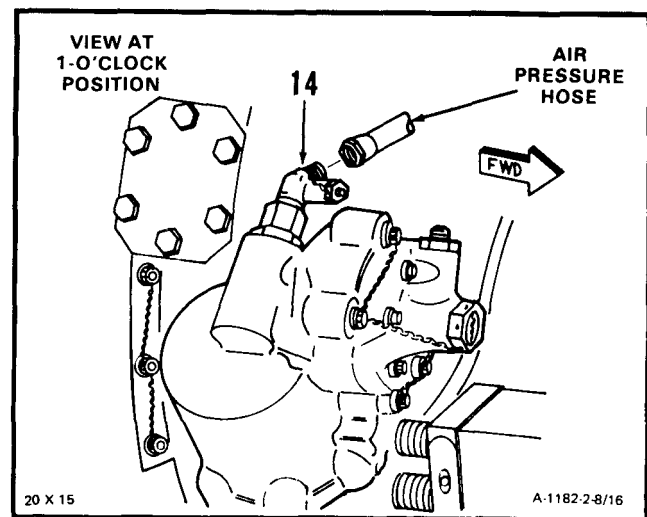
2 Polish to smooth finish using crocus cloth (E15).

(5) **Install compressor bleed band** (Ref. Task 2-13)

17. **Lockwire nuts (11 and 12) together.** Use lockwire (E29).



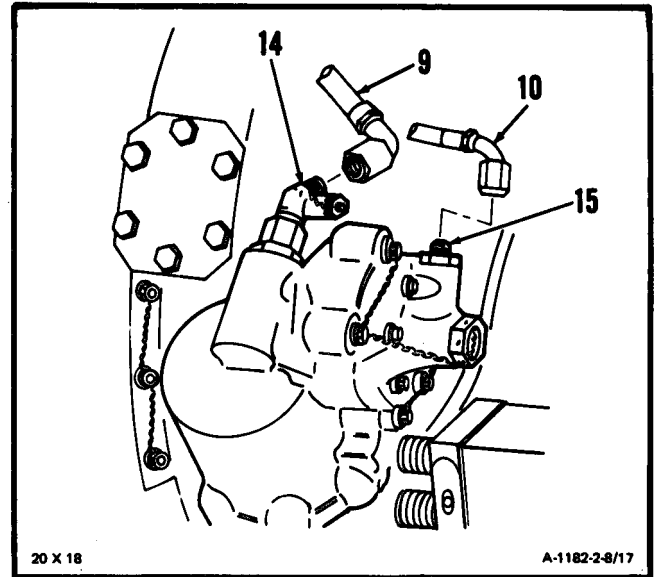
18. Disconnect air pressure hose from tee (14).



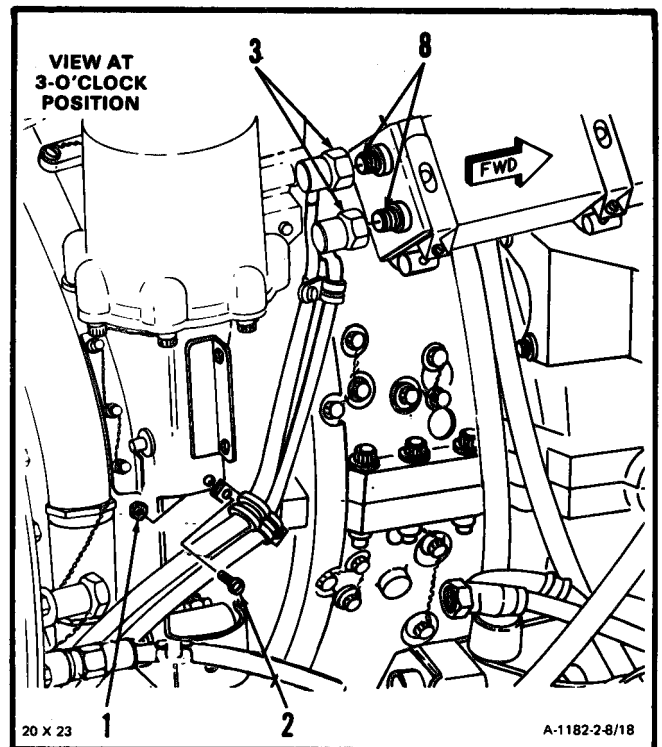
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**2-8 ADJUST INTERSTAGE AIR-BLEED ACTUATOR (WITHOUT WATER WASH KIT  
P/N 2-200-071-54 INSTALLED) (Continued)**

- 19. **Connect hose assembly (9) to tee (14).**
- 20. **Connect hose assembly (10) to union (15).**



- 21. **Connect two coil and cable assembly leads (3) to ignition excitor output receptacles (8).**  
Lockwire lead connectors. Use lockwire (E29).



- 22. **Install screw (2) and nut(1).**

INSPECT

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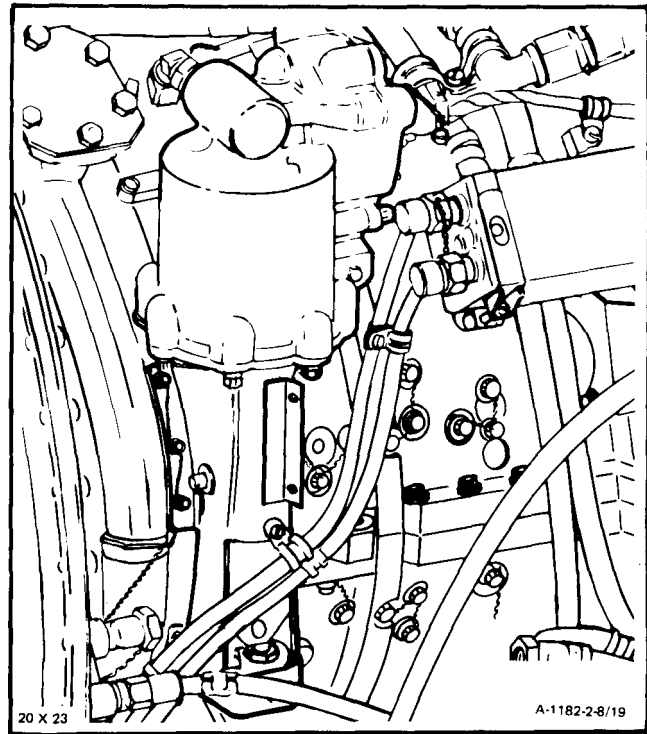
2-8 ADJUST INTERSTAGE AIR-BLEED ACTUATOR (WITHOUT WATER WASH KIT  
P/N 2-200-071-54 INSTALLED) (Continued)

2-8

FOLLOW-ON MAINTENANCE:

If Removed, Install Oil Cooler Assembly  
(Task 8-11).

Perform Bleed Band Closure Check (Task 1-107).



**END OF TASK**

2-8.1 ADJUST INTERSTAGE AIR-BLEED ACTUATOR (WITH WATER WASH KIT  
PIN 2-200-071-54 INSTALLED)

2-8.1

**INITIAL SETUP****Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Technical Inspection Tool Kit,  
NSN 5180-00-3235114  
Compressed Air Source  
Torque Wrench, 30-150 Inch-Pounds

**Materials:**

Carborundum Stone (E10)  
Crocus cloth (E15)  
Dry Cleaning Solvent (E17)  
Gloves (E20)  
Lockwire (E29)  
Vviping Rag (E58)  
Tube cap MS9314-03

**Personnel Required:**

68B100 Aircraft Powerplant Repairer  
68B30 Aircraft Powerplant Inspector

**References:**

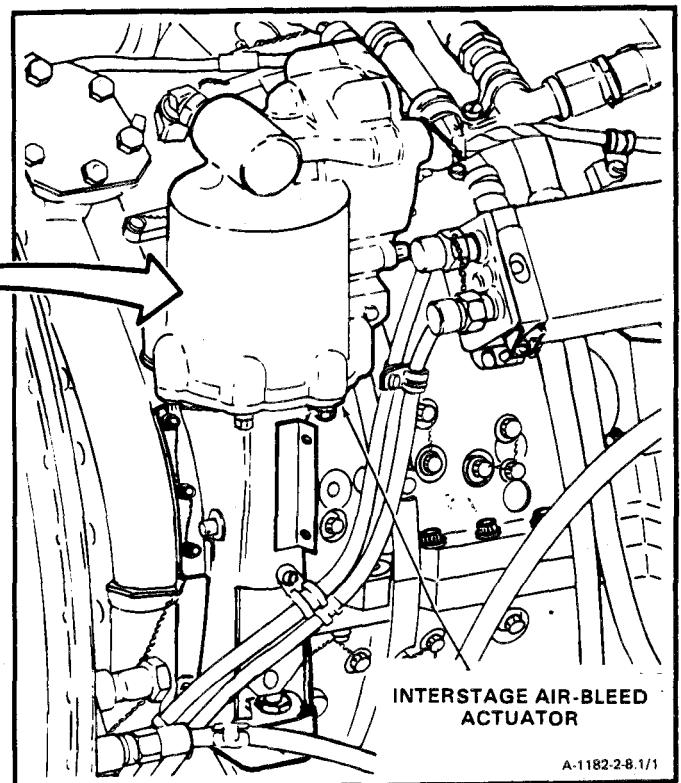
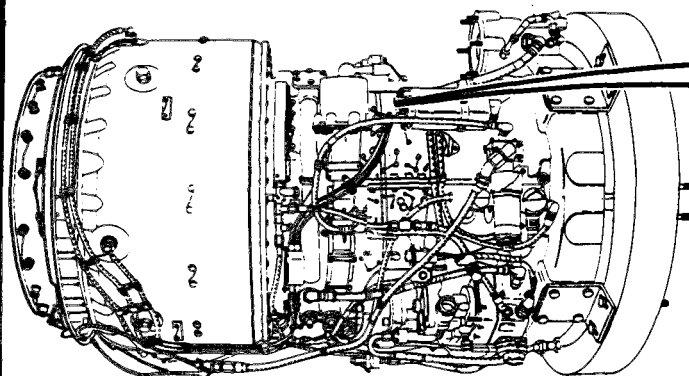
Task 2-9  
Task 2-13

**Equipment Condition:**

Oil Cooler Assembly Removed (Task 8-5)

**General Safety Instructions:****WARNING**

The ignition exciter stores very high and possibly fatal voltage. Use extreme care when working around ignition exciter. Serious injury could result if exciter is accidentally grounded. Do not probe inside of output receptacles with fingers or metal object. Discharge exciter only with insulated screwdriver. In case of shock or injury, get medical attention.



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42 x 24

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## 2-8.1 ADJUST INTERSTAGE AIR-BLEED ACTUATOR (WITH WATER WASH KIT P/N 2-200-071-54 INSTALLED) (Continued)

2-8.1

### NOTE

Adjustment of interstage air-bleed actuator can be done with oil cooler removed or installed. This task is shown with oil cooler removed. Procedure is the same.

### WARNING

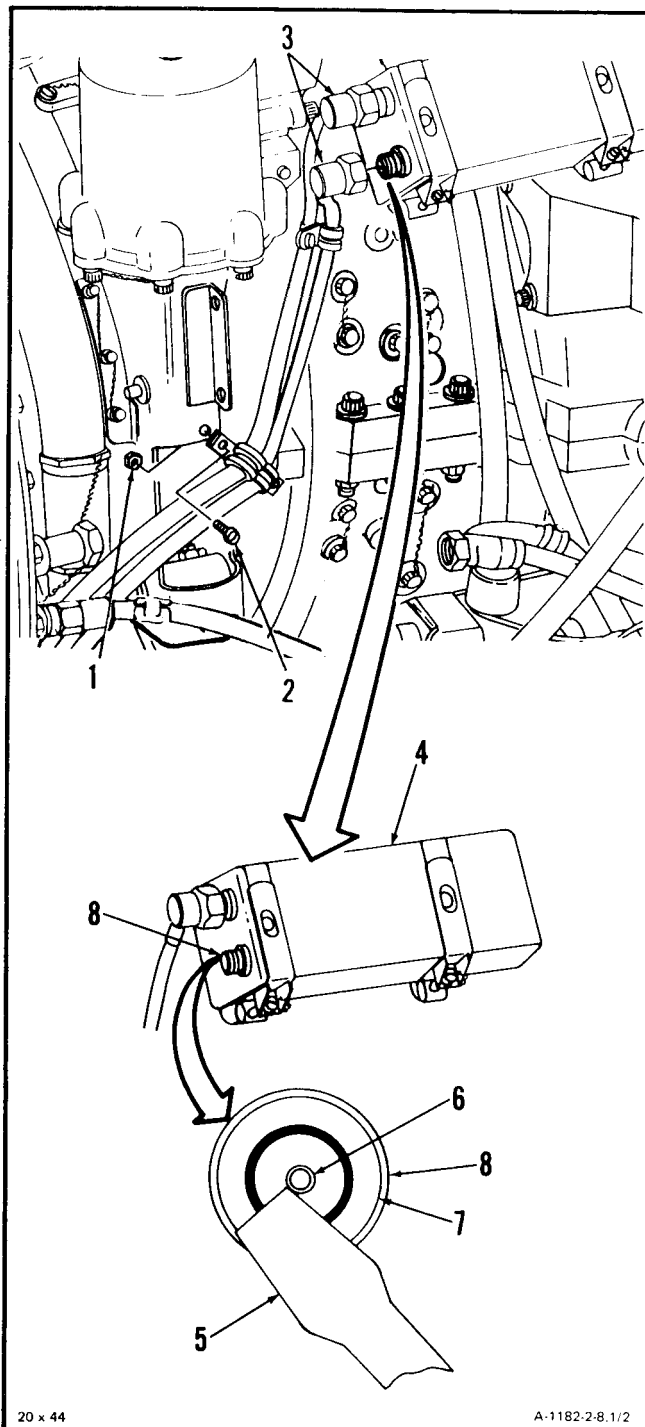
When discharging ignition exciter, remove one lead at a time and discharge receptacle that lead was removed from. Failure to do so may result in serious shock when you are removing second lead. In case of serious shock, get medical attention.

1. Remove nut (1) and screw (2).

### NOTE

Steps 2. and 3. apply to both output receptacles.

2. Remove lockwire and disconnect coil and cable assembly lead (3).
3. Discharge ignition exciter (4) by placing tip of insulated screwdriver (5) against pin (6) and edge (7) of receptacle (8).
4. Place leads (3) to one side.



20 x 44

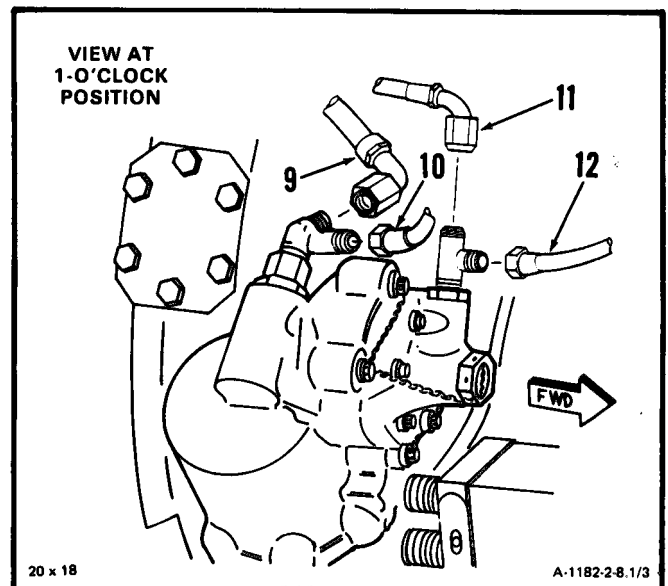
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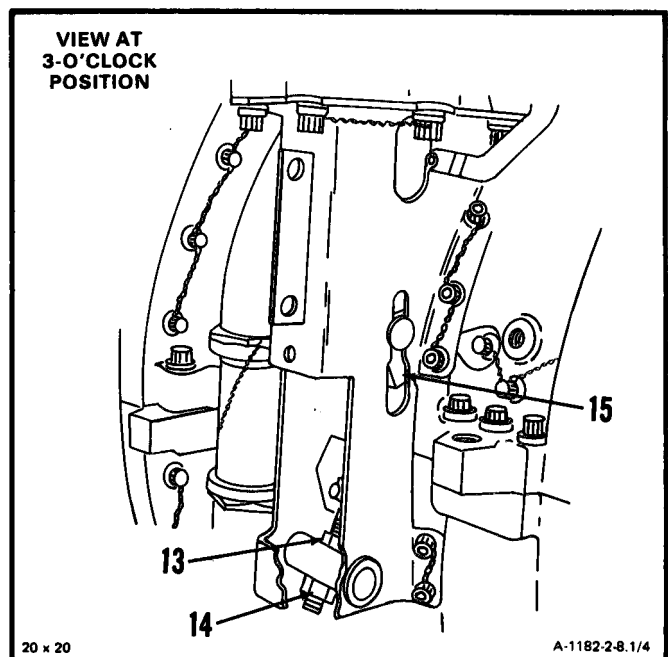
## 2-8.1 ADJUST INTERSTAGE AIR-BLEED ACTUATOR (WITH WATER WASH KIT P/N 2-200-071-54 INSTALLED) (Continued)

2-8.1

5. Disconnect hose assemblies (9, 10, 11 and 12).



6. Remove lockwire and loosen **upper nut (13)** and **lower nut (14)** to allow full travel of actuator piston (15).



### NOTE

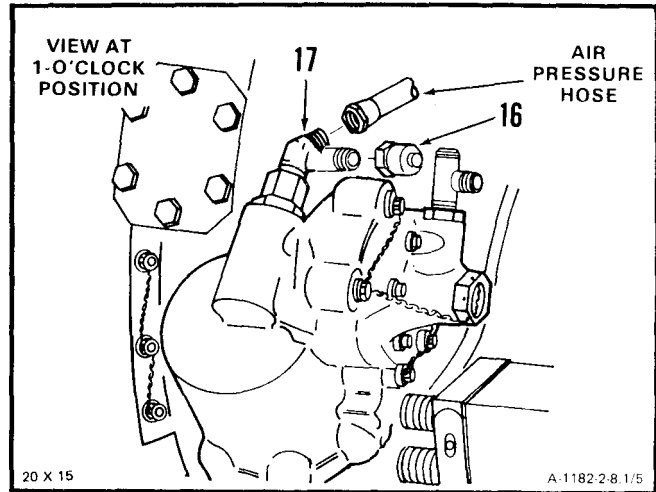
Before adjusting actuator, area under bleed band should be checked for foreign objects.

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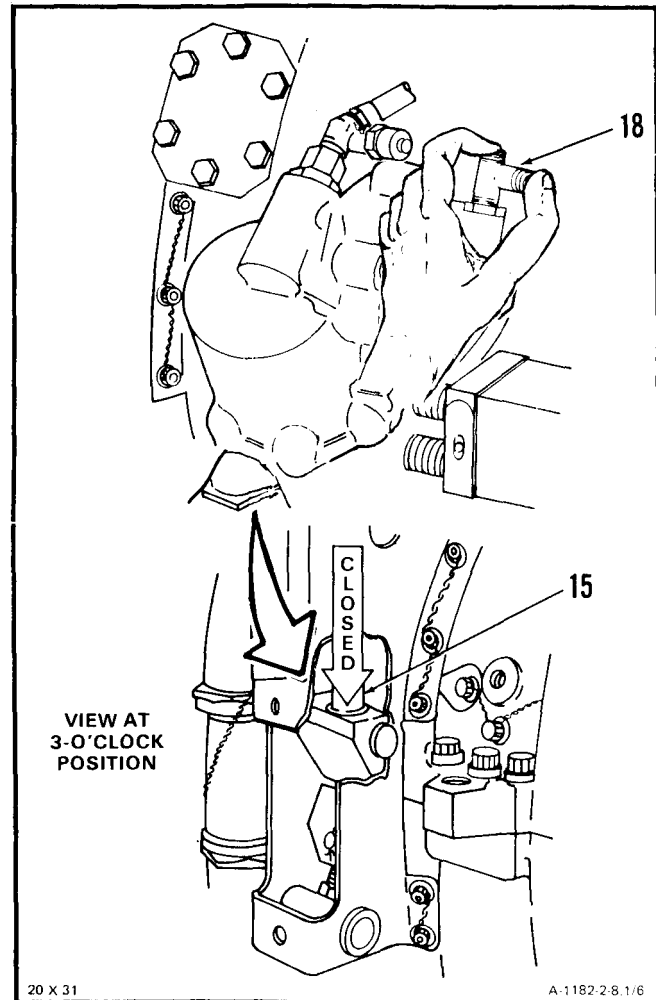
2-8.1 ADJUST INTERSTAGE AIR-BLEED ACTUATOR (WITH WATER WASH KIT P/N 2-200-071-54 INSTALLED) (Continued)

2-8.1

7. Install tube cap (16) to tee (17).
8. Connect air pressure hose from air compressor to tee (17). Apply 60 psig air pressure.



- 8.1. Visually check that there is no piston (5) movement in the open position.
9. **Activate piston (15) to closed position** by placing fingers over two opening of tee (18).

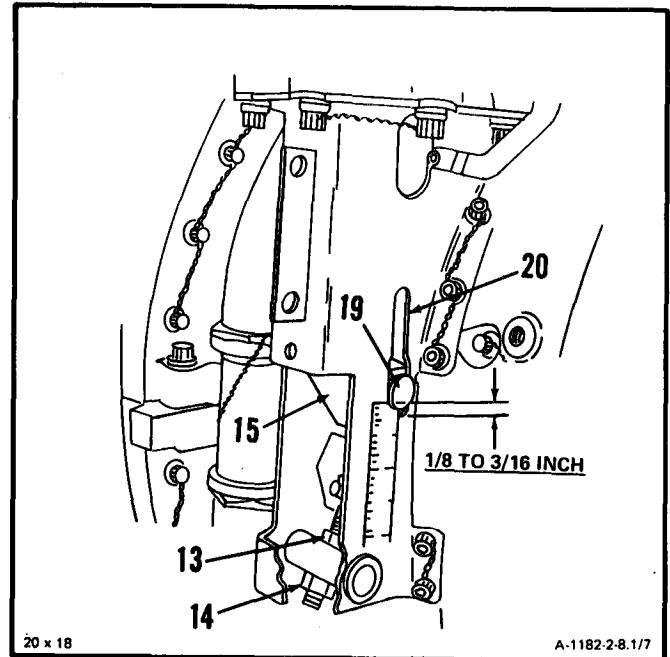


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## 2-8.1 ADJUST INTERSTAGE AIR-BLEED ACTUATOR (WITH WATER WASH KIT P/N 2-200-071-54 INSTALLED) (Continued)

2-81

10. Adjust nuts (13 and 14) until clearance between shaft of pin (19) and bottom of slot (20) is 1/8 to 3/16-inch.
11. **Allow piston (15) to return to open position** by removing fingers from tee.



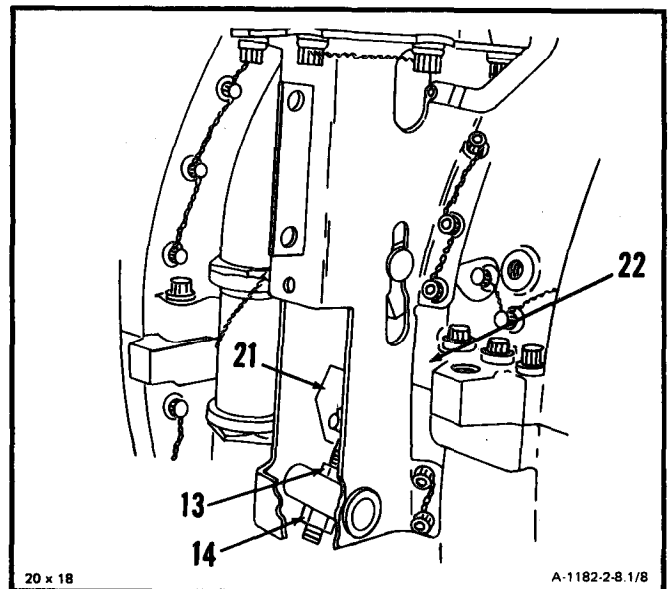
### CAUTION

Do not allow yoke to twist when torquing nut. Twisting of yoke may cause binding and will not allow bleed band to close properly.

### CAUTION

After torquing, two threads must remain showing below nut. Failure to comply may cause nut to break **hose** and prevent bleed band from closing. Replace bleed band if two threads do not show.

112. **Position yoke (21) against compressor housing (22) and hold upper nut (13).** Torque lower nut (14) 145 inch-pounds.



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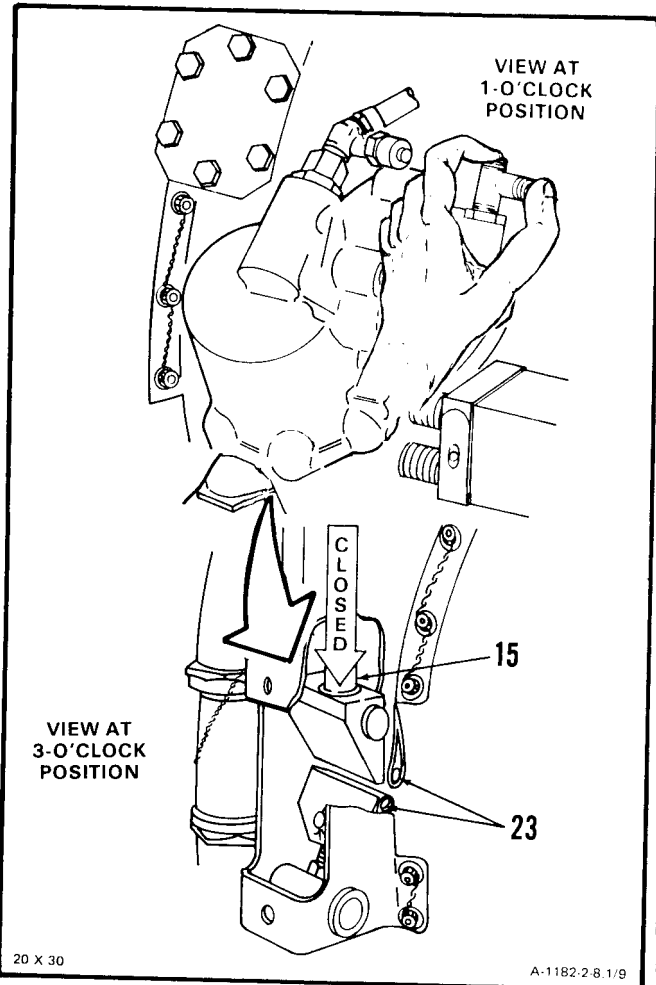
2-8.1 ADJUST INTERSTAGE AIR-BLEED ACTUATOR (WITH WATER WASH KIT P/N 2-200-071-54 INSTALLED) (Continued)

2-8.1

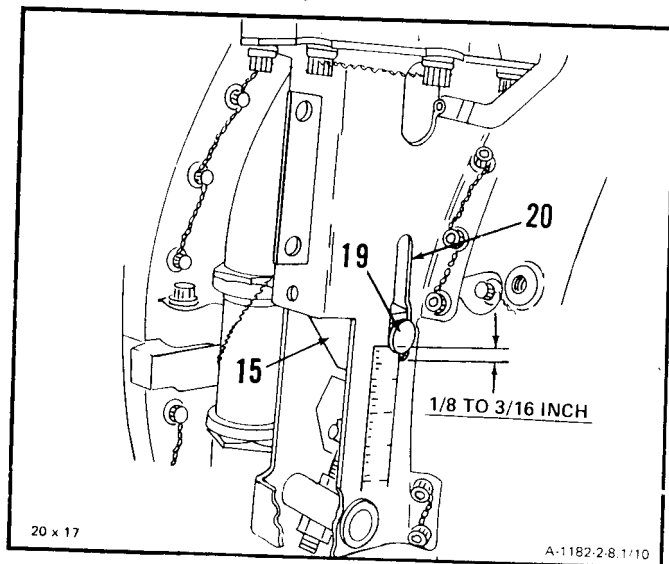
**CAUTION**

Make sure bleed band pins do not bind against actuator when piston moves to closed position. Binding will not allow bleed band to close properly.

13. Activate and release piston (15) several times, **Check that pins (23) are not binding.** If pins (23) are binding, reposition or replace pins (23).



14. With piston (15) in closed position, **check clearance between shaft of pin (19) and bottom of slot (20).** Clearance shall be 1/8 to 3/16-inch. Allow piston (15) to return to open position.

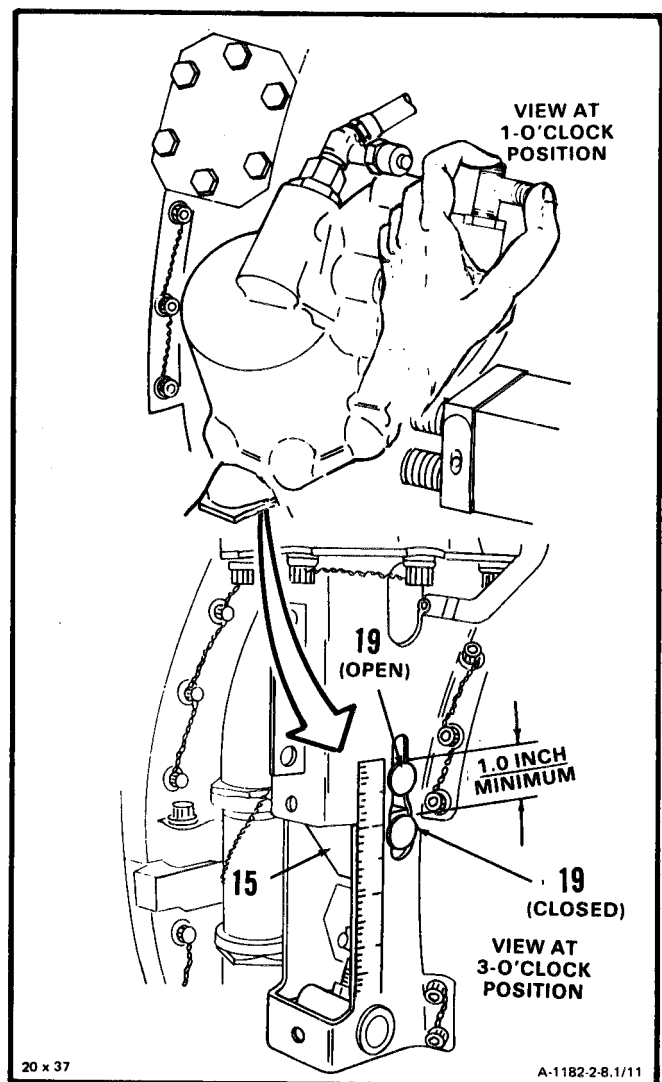


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## 2-8.1 ADJUST INTERSTAGE AIR-BLEED ACTUATOR (WITH WATER WASH KIT P/N 2-200-071-54 INSTALLED) (Continued)

2-8.1

15. Note location of pin (19). Activate piston (15) to closed position, and **measure distance pin (19) moves from open to closed**. Pin shall move at least 1.0 inch.



16. If you can not obtain clearance and minimum pin movement, proceed as follows until requirements are met

- a. **Readjust interstage air-bleed actuator** (steps 8. thru 13.).
- b. **If clearance and minimum pin movement cannot be obtained after readjustment replace compressor bleed band** (Ref. Tasks 2-9 and 2-13).

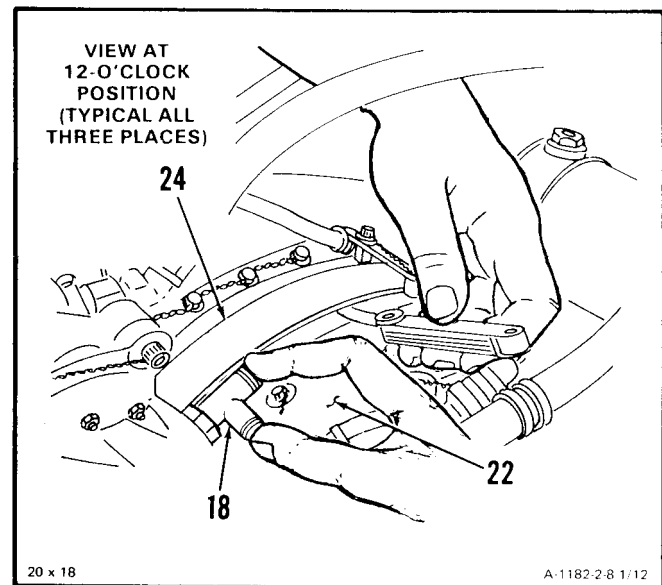
**GO TO NEXT PAGE**

## 2-8.1 ADJUST INTERSTAGE AIR-BLEED ACTUATOR (WITH WATER WASH KIT P/N 2-200-071-54 INSTALLED) (Continued)

2-8.1

17. Place fingers over two port openings on tee (18). **Check clearance between bleed band (24) and compressor housing (22) at 12-, 5-, and 8-o'clock positions.** Use thickness gage. Clearance shall not be more than 0.002-inch drag fit. **If fit is too loose**, proceed as follows:

- a. **Check bleed band (24)** for twists, kinks, and dirt or other deposits on side that goes against compressor housing (22). **Replace bleed band (24) if twisted or kinked** (Ref. Task 2-9 and 2-13).



**GO TO NEXT PAGE**

**2-8.1 ADJUST INTERSTAGE AIR-BLEED ACTUATOR (WITH WATER WASH KIT P/N 2-200-071-54 INSTALLED) (Continued)****2-8.1**

- b. Check compressor housing (22) for nicks, chafing, and dirt or other deposits in bleed band area. If nicks, chafing, dirt or other deposits are found, proceed as follows:

- (1) Remove compressor bleed band (Ref. Task 2-9).

**WARNING**

Dry cleaning solvent (E17) is flammable and toxic. It can irritate skin and cause burns. Use only in well-ventilated area, away from heat and open flame. In case of contact immediately flush skin or eyes with water for at least 15 minutes. Get medical attention for eyes.

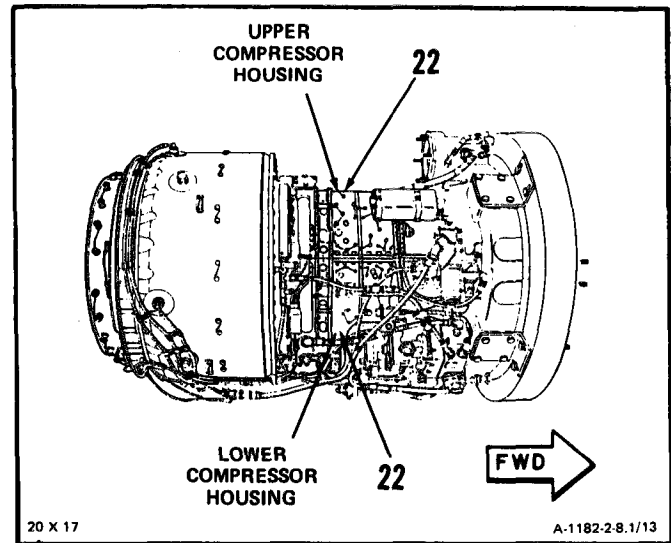
- (2) Clean compressor housing as follows:

- (a) Wear gloves (E20), and clean compressor housing (22). Use brush and wiping rag (E58) dampened in dry cleaning solvent (E17).

**WARNING**

when using compressed air for cleaning, use approved protective equipment for eyes and face. Do not use more than 30 psig air pressure. Do not direct air toward yourself or another person. Failure to comply could result in injury to eyes or skin. In case of injury, get medical attention.

- (b) Wear goggles. Blow dry compressor housing (22) using clean, dry compressed air.

**GO TO NEXT PAGE**



## 2-8.1 ADJUST INTERSTAGE AIR-BLEED ACTUATOR (WITH WATER WASH KIT P/N 2-200-071-54 INSTALLED) (Continued)

2-8.1

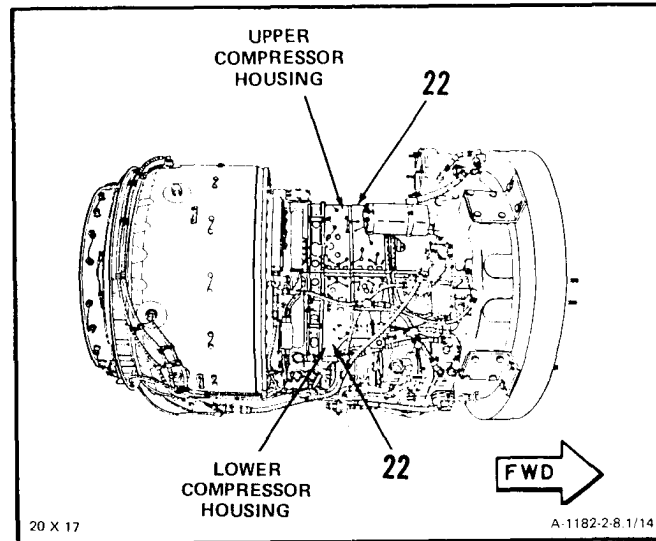
(3) **Inspect compressor housing (22)** as follows:

- (a) There shall be no cracks.
- (b) There shall be no nicks, dents or gouges greater than 0.500 inch length to 0.070 inch depth.
- (c) There shall be no corrosion or paint damage.

(4) **Repair compressor housing** as follows:

(a) Repair of nicks, dents and gouges on outside diameter of compressor housing (22), is acceptable after blend-repair as follows:

- 1 Defects shall not project into mating surfaces.
- 2 **Repair gouges** up to 0.500 inch length to 0.070 inch depth.
  - a Blend all sharp edges using Carborundum stone (E10).
  - b Polish to smooth finish using crocus cloth (E15).
- 3 **Repair dents** up to 0.500 inch length to 0.070 inch depth.
  - a Blend all sharp edges using Carborundum stone (E10).
  - b Polish to smooth finish using crocus cloth (E15).
- 4 **Repair nicks** up to 0.500 inch length to 0.070 inch depth.
  - a Blend all sharp edges using Carborundum stone (E10).
  - b Polish to smooth finish using crocus cloth (E15).



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## 2-8.1 ADJUST INTERSTAGE AIR-BLEED ACTUATOR (WITH WATER WASH KIT P/N 2-200071-54 INSTALLED) (Continued)

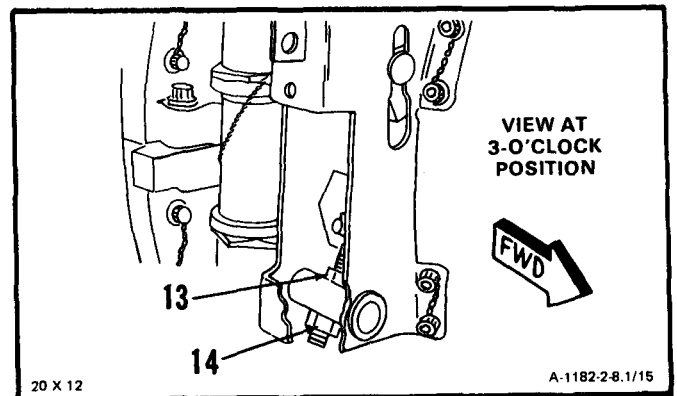
2-8.1

(b) **Repair corrosion damage** up to 0.070 inch dept

- 1 Blend all sharp edges using Carborundum stone (E10).
- 2 Polish to smooth finish using crocus cloth (E15).

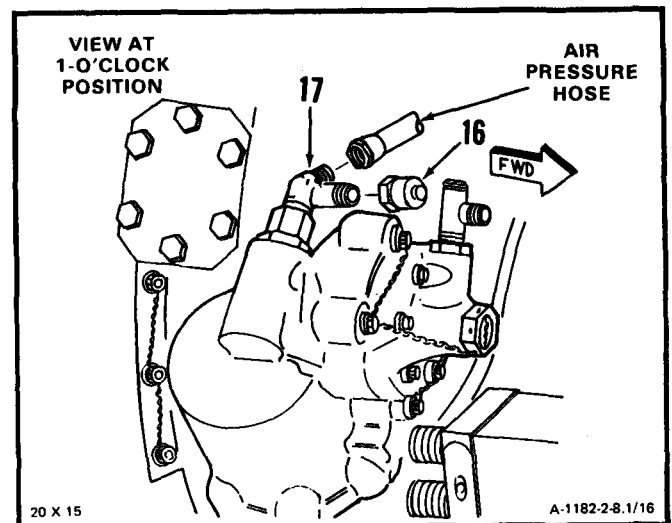
(5) **Install compressor bleed band** (Ref. Task 2-13).

17. **Lockwire nuts (13 and 14) together.** Use



18. **Disconnect air pressure hose** from tee (17)

19. **Disconnect tube cap (16)** from tee (17).



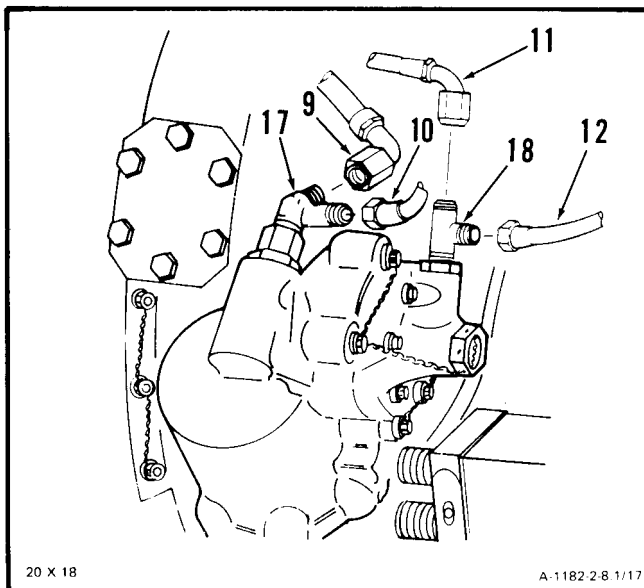
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2-8.1 ADJUST INTERSTAGE AIR-BLEED ACTUATOR (WITH WATER WASH KIT P/N 2-200-071-54 INSTALLED) (Continued)

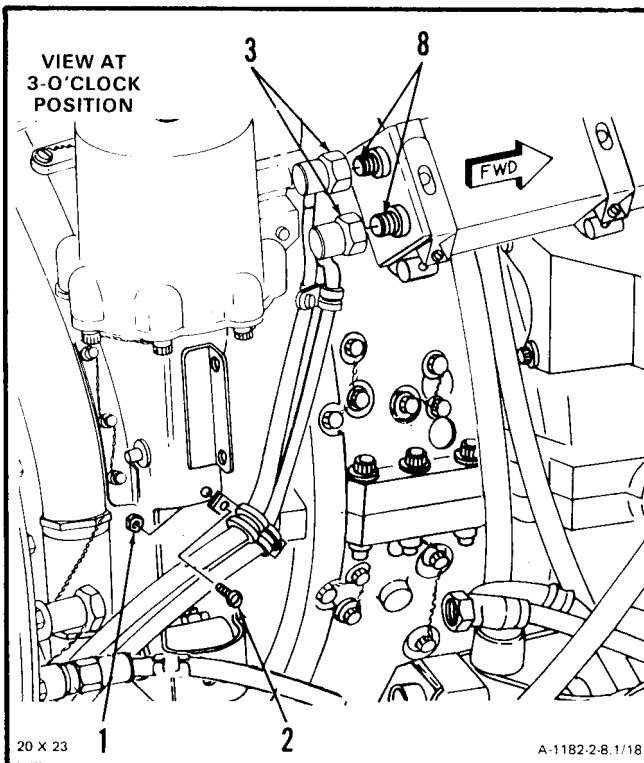
2-8.1

20. Connect hose assembly (9 and 10) to tee (17).

21. Connect hose assembly (11 and 12) to tee (18).



22. Connect two coil and cable assembly leads (3) to ignition exciter output receptacles (8). Lockwire lead connectors. Use lockwire (E29).



23. Install screw (2) and nut (1).

**INSPECT**

**GO TO NEXT PAGE**

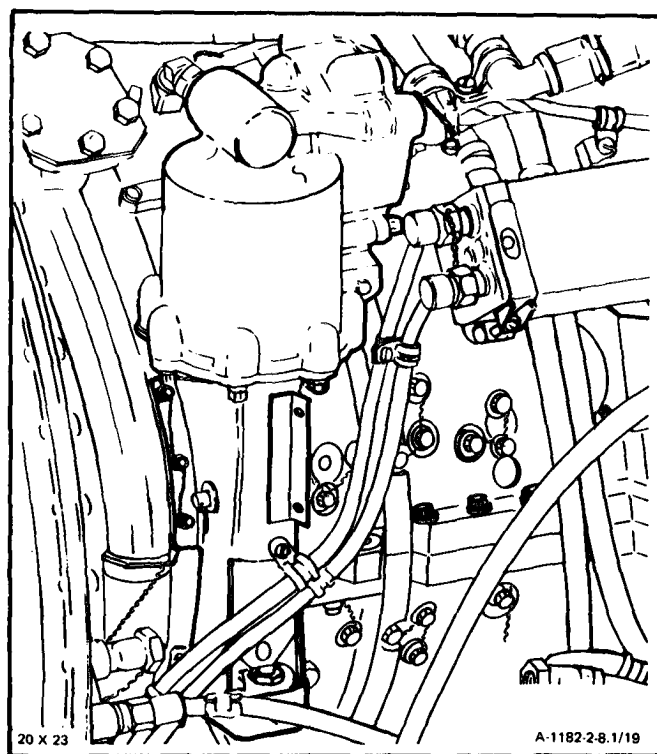
**2-8.1 ADJUST INTERSTAGE AIR-BLEED ACUATOR (WITH WATER WASH KIT  
P/N 2-200-071-54 INSTALLED) (Continued)**

2-8.1

**FOLLOW-ON MAINTENANCE:**

If Removed, Install Oil Cooler Assembly  
(Task 8-11).

Perform Bleed Band Closure Check  
(Task 1-107).



END OF TASK



Section II. COMPRESSOR BLEED BAND - MAINTENANCE PROCEDURES

2-9 REMOVE COMPRESSOR BLEED BAND

2-9

INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**

None

**Materials:**

None

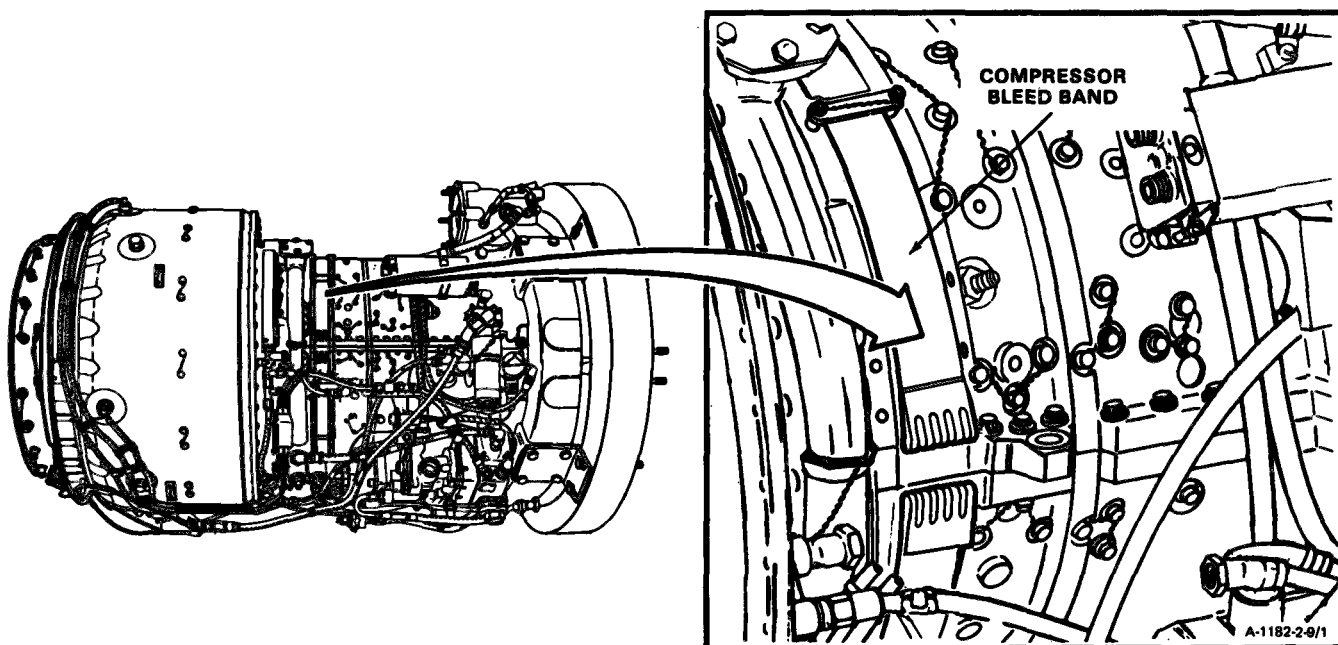
**Personnel Required:**

68B10 Aircraft Powerplant Repairer (2)

**Equipment Condition:**

Oil Cooler Assembly Removed (Task 8-5)

Interstage Air-Bleed Actuator Removed  
(Task 2-1 )



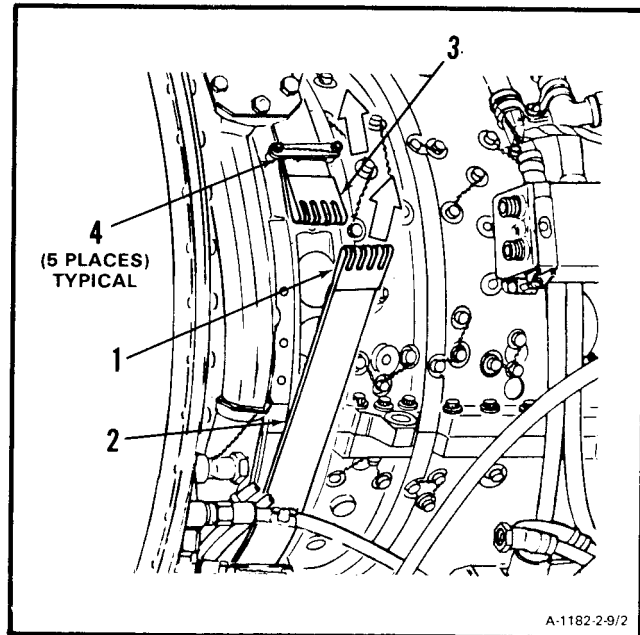
GO TO NEXT PAGE

2-9 REMOVE COMPRESSOR BLEED BAND (Continued)

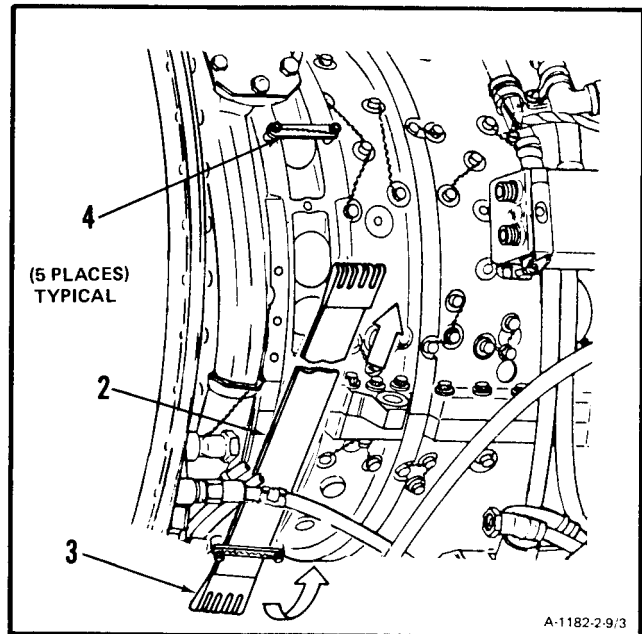
**CAUTION**

The bleed band is very thin and bends easily. Be careful not to kink or bend it during handling. If kinked or bent, bleed band must be replaced.

1. Pull lower end (1) of bleed band (2) until trailing end (3) reaches first of five retainers (4).

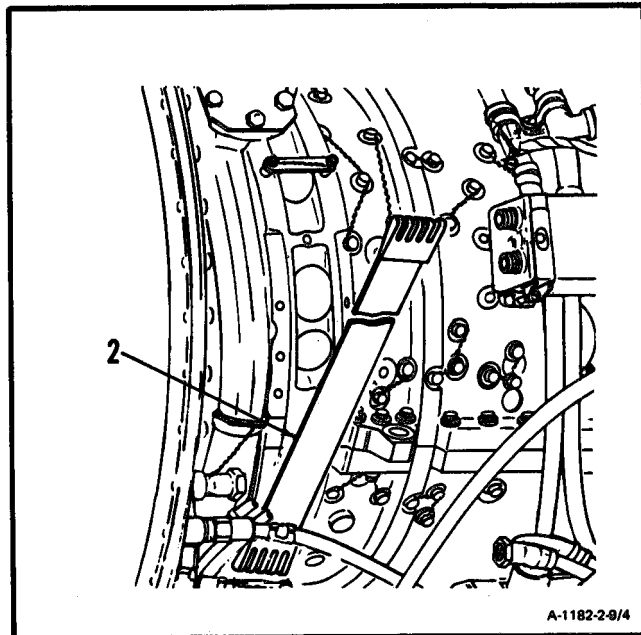


2. Continue pulling bleed band (2). Have helper guide trailing end (3) through five retainers (4).



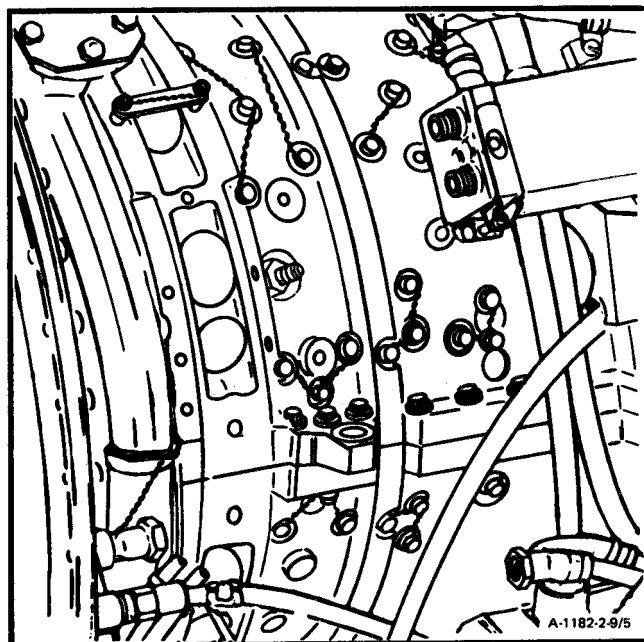
**GO TO NEXT PAGE**

3. Remove bleed band (2).



FOLLOW-ON MAINTENANCE:

None



END OF TASK



## 2-10 CLEAN COMPRESSOR BLEED BAND

2-10

## INITIAL SETUP

*General Safety Instructions:***Applicable Configurations:**

All

**Tools:**

None

**Materials:**

Dry Cleaning Solvent (E17)  
 Gloves (E20)  
 Lint-Free Cloth (E26)

**Personnel Required:**

68B10 Aircraft Powerplant Repairer

**Equipment Condition:**

Off Engine Task  
 Oil Cooler Assembly Removed (Task 8-5)  
 Interstage Air-Bleed Actuator Removed  
 (Task 2-1 )  
 Compressor' Bleed Band Removed (Task 2-9)

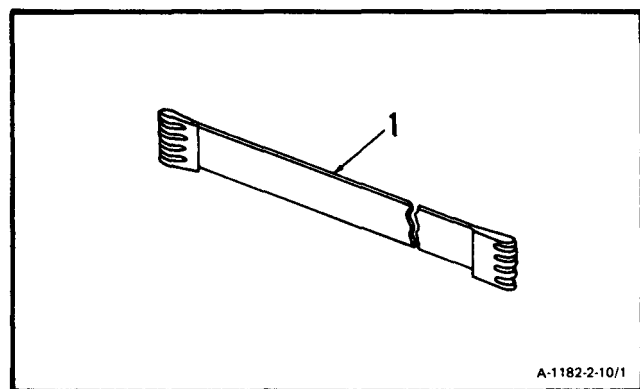
**WARNING**

Dry cleaning solvent (E17) is flammable and toxic. It can irritate skin and cause burns. Use only in well-ventilated area, away from heat and open flame. In case of contact, immediately flush skin or eyes with water for at least 15 minutes. Get medical attention for eyes.

**CAUTION**

The bleed band is very thin and bends easily. Be careful not to kink or bend it during handling. If kinked or bent, bleed band must be replaced.

1. Wear gloves (E20). **Clean bleed band (1)** with clean lint-free cloth (E26) dampened in dry cleaning solvent (E17).
2. **Remove residue from band ends** with clean, dry lint-free cloth (E26) after cleaning.



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## FOLLOW-ON MAINTENANCE:

Inspect Compressor Bleed Band (Task 2-11).

**END OF TASK**

## 2-11 INSPECT COMPRESSOR BLEED BAND

2-11

**INITIAL SETUP****Applicable Configurations:**

All

**Tools:**

Technical Inspection Tool Kit,  
NSN 5180-00-323-5114

**Materials:**

None

**Personnel Required:**

68B30 Aircraft Powerplant Inspector

**References:**

Task 2-12

**Equipment Condition:**

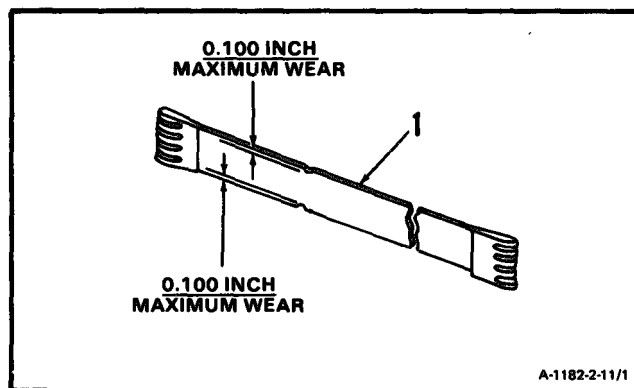
Off Engine Task

**CAUTION**

The bleed band is very thin and bends easily. Be careful not to kink or bend it during handling. If kinked or bent, bleed band must be replaced.

**1. Inspect bleed band (1).**

- a. There shall be no cracks or distortion.
- b. There shall be no edge wear deeper than 0.100 inch on either side over entire length. **Repair edge wear up to 0.100 inch deep** (Ref. Task 2-12).
- c. There shall be no scratches deeper than 30 percent of band thickness. There shall be no scratches that cause band to be deformed.

**FOLLOW-ON MAINTENANCE:**

None

**END OF TASK**

## 2-12 REPAIR COMPRESSOR BLEED BAND

2-12

## INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**

Technical Inspection Tool Kit,  
NSN 5180-00-323-5114  
Hand File Set

**Materials:**

Carborundum Stone (E10)  
Crocus Cloth (E15)  
Fluorescent-Penetrant Materials (E19)

**Personnel Required:**

68B10 Aircraft Powerplant Repairer  
68B30 Aircraft Powerplant Inspector

**References:**

TM 43-0103

**Equipment Condition:**

Off Engine Task

CAUTION

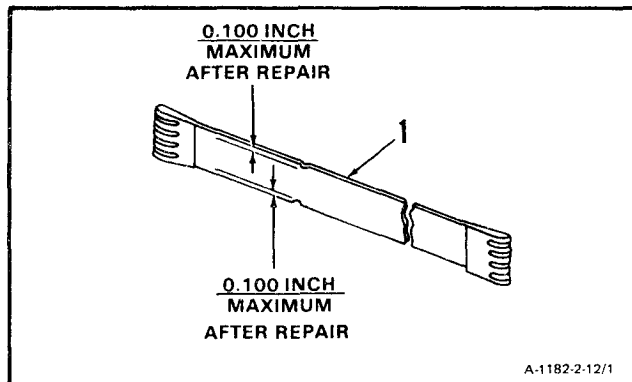
The bleed band is very thin and bends easily. Be careful not to kink or bend it during handling. If kinked or bent, bleed band must be replaced.

1. Repair edge wear, up to 0.100 inch deep, on bleed band (1) as follows:

**NOTE**

Repair is allowed only if depth after repair is not more than 0.100 inch.

- a. **Blend-repair** to a smooth contour using Carborundum stone (E10).
- b. **Remove burrs** around repair from both sides of band. Use file.
- c. **Final polish** area with crocus cloth (E15).
- d. **Fluorescent-penetrant inspect** repaired area (TM 43-0103). There shall be no cracks.

**INSPECT****FOLLOW-ON MAINTENANCE:**

None

**END OF TASK**

---

**2-13 INSTALL COMPRESSOR BLEED BAND**

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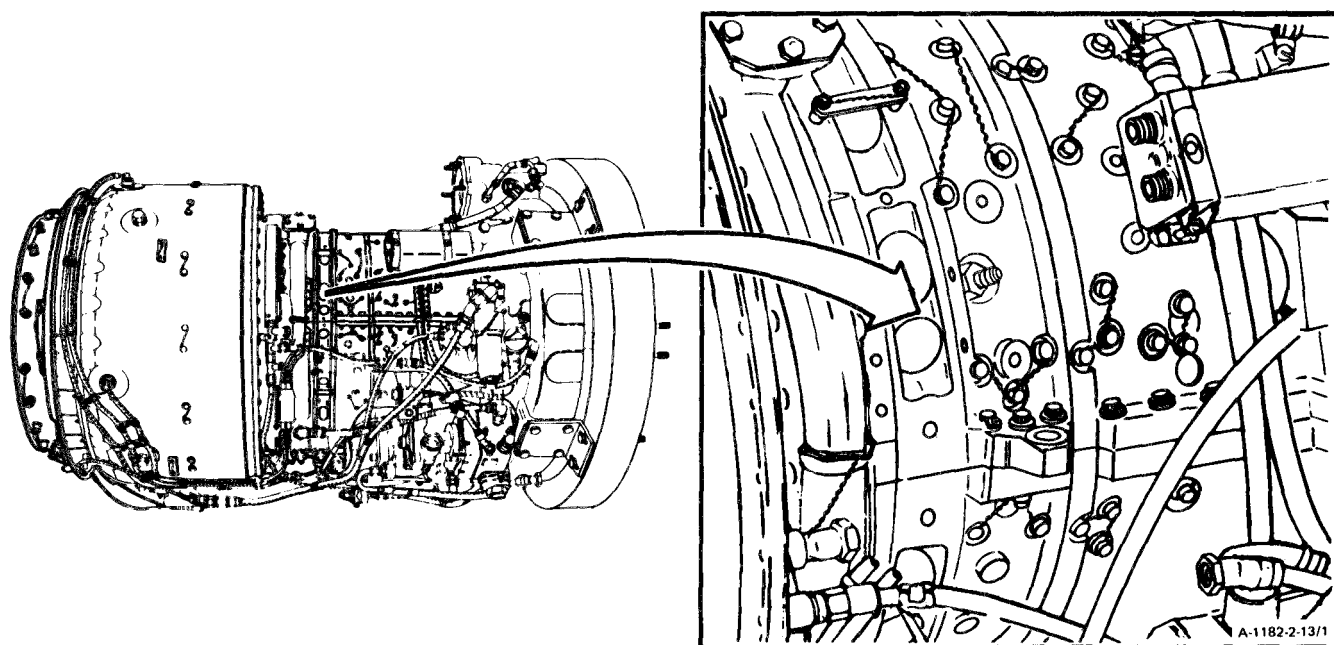
2-13

**INITIAL SETUP****Applicable Configurations:**

All

**Tools:**Technical Inspection Tool Kit,  
NSN 5180-00-323-5114**Materials:**

None

**Personnel Required:**68B10 Aircraft Powerplant Repairer  
68B30 Aircraft Powerplant Inspector**GO TO NEXT PAGE**

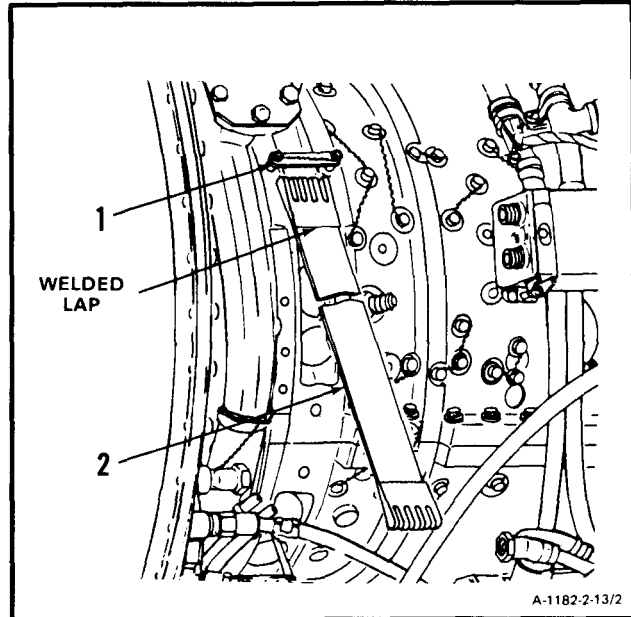
**CAUTION**

The bleed band is very thin and bends easily. Be careful not to kink or bend it during handling. If kinked or bent, bleed band must be replaced.

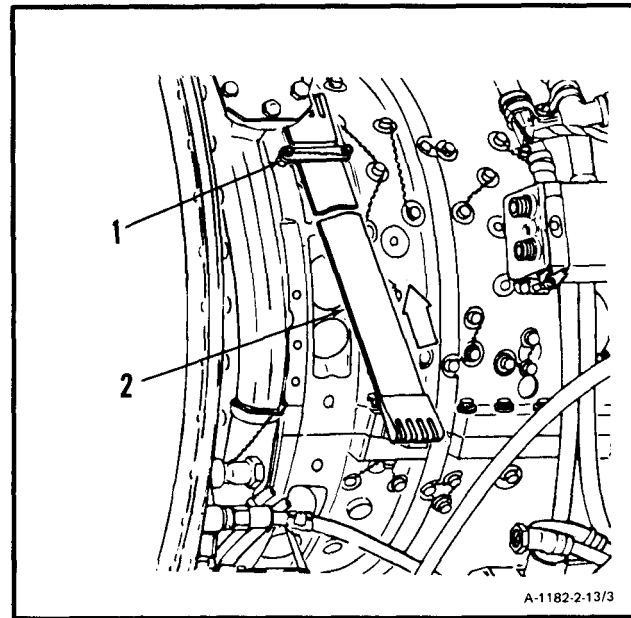
1. Locate retainer (1) and align bleed band (2) with it.

**NOTE**

Welded lap must face away from engine.



2. Position end of bleed band (2) under and through retainer (1).



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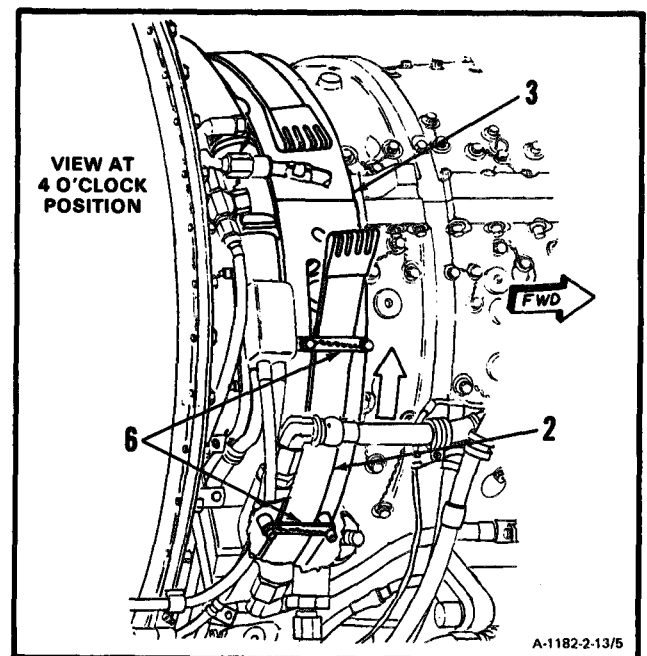
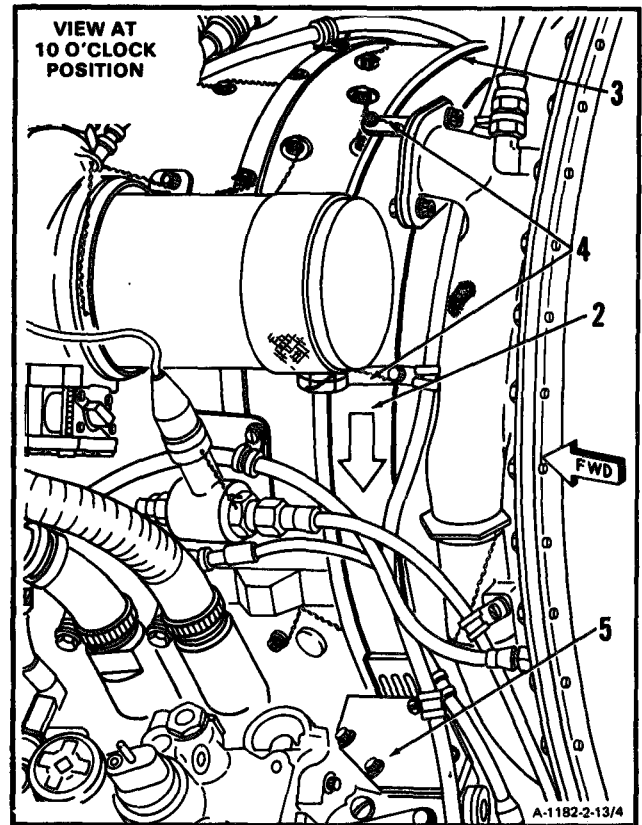
2-13 INSTALL COMPRESSOR BLEED BAND (Continued)

2-13

3. Slide bleed band (2) up and over compressor housing (3) and through two retainers (4).

4. Continue sliding bleed band (2) around compressor housing (3). Guide it between fuel control (5) and compressor housing (3).

5. Continue sliding bleed band (2) around compressor housing (3). **Install bleed band (2) under and through two retainers (6) and into position shown.**



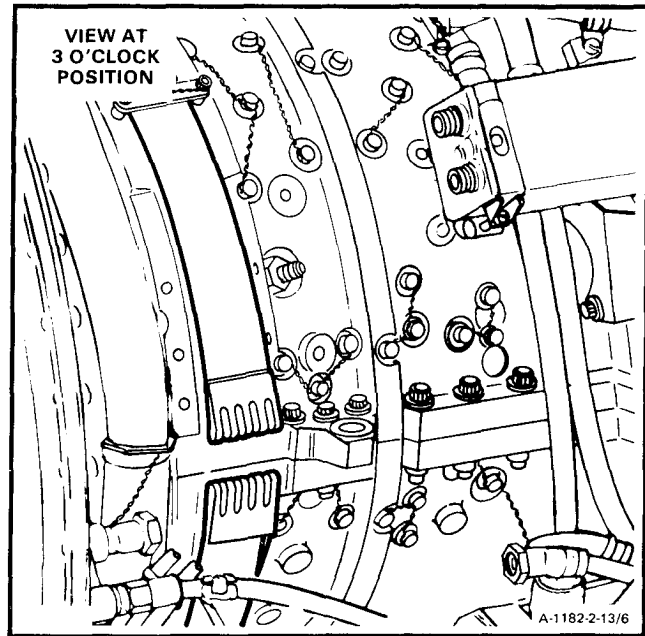
**INSPECT**

**GO TO NEXT PAGE**

**FOLLOW-ON MAINTENANCE:**

Install Interstage Air-Bleed Actuator (Task 2-7).

Install Oil Cooler Assembly (Task 8-11).



**END OF TASK**

---

2-14 REMOVE ANTI-ICING AIR GALLERY COVER

---

2-14

**INITIAL SETUP**

**Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Padded Conduit Pliers

**Materials:**

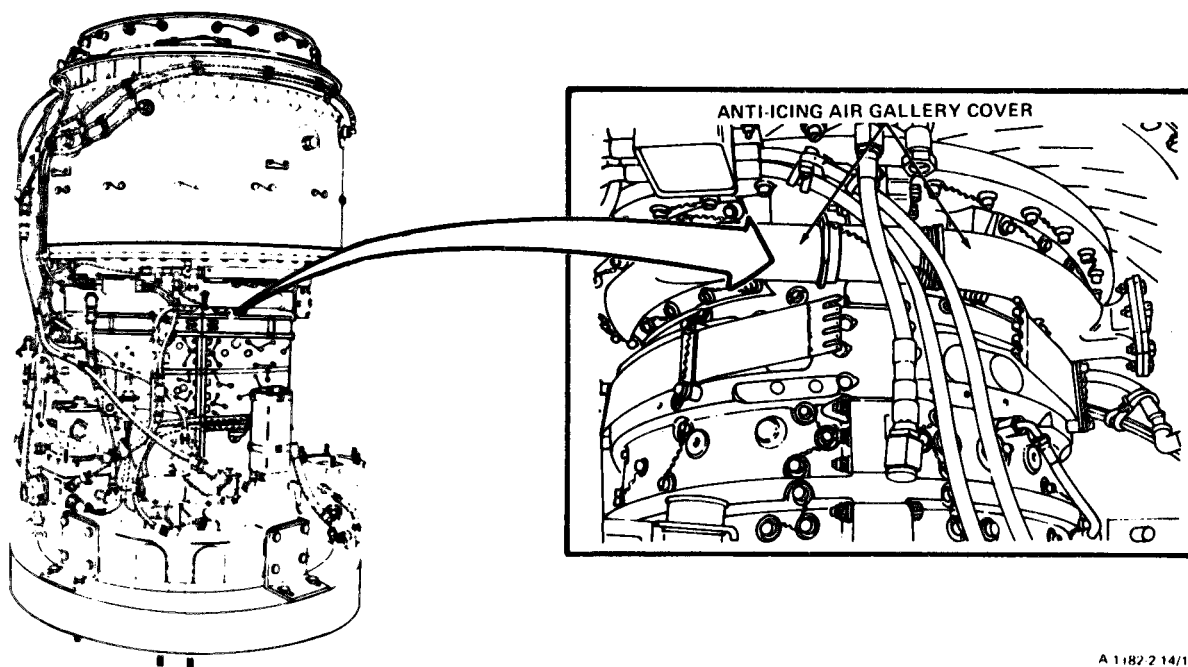
None

**Personnel Required:**

68B10 Aircraft Powerplant Repairer

**Equipment Condition:**

Oil Cooler Assembly Removed (Task 8-5)  
Interstate Air-Bleed Actuator Removed  
(Task 2-1 )  
Dual Chip Detector Removed (Task 8-28)  
Fuel Control Removed (Task 6-1 )  
Main Fuel Filter and Bracket Removed  
(Task 6-29)



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## 2-14 REMOVE ANTI-ICING AIR GALLERY COVER (Continued)

2-14

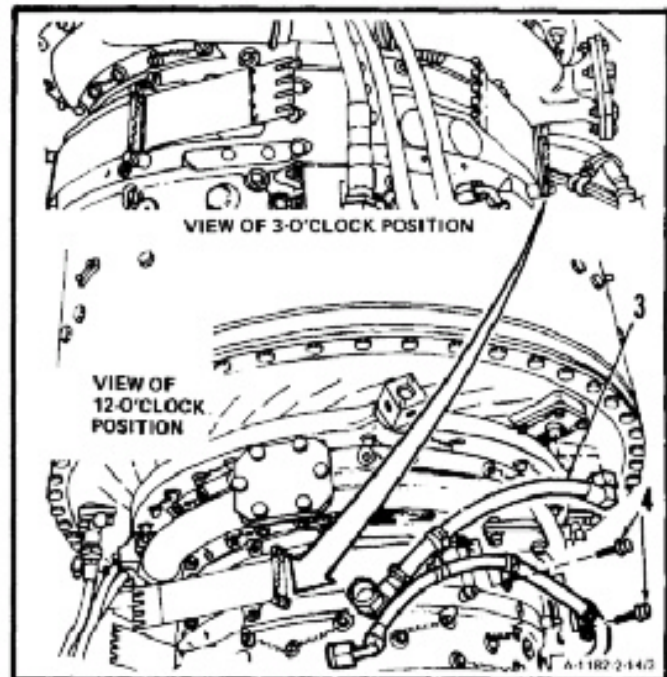
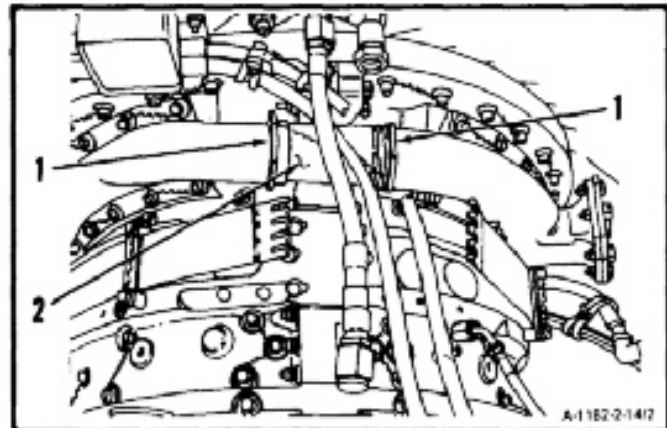
**NOTE**

Step 1. applies to connectors at both 3- and 9-o'clock positions. Connector at 3-o'clock position is shown.

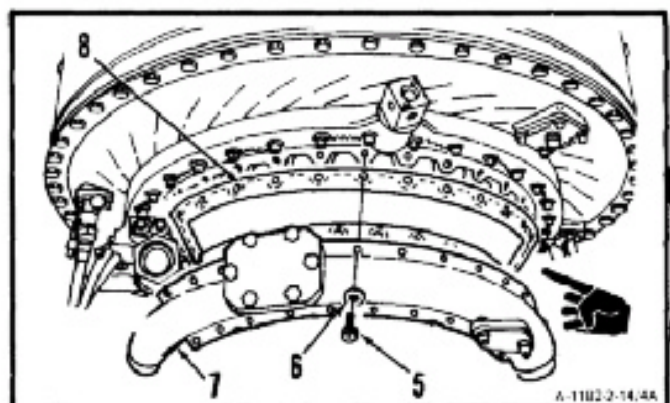
**NOTE**

Do not remove nuts from connector.

1. Remove lockwire and **loosen two nuts (1) on connector (2)**. Use padded conduit pliers.
2. **Disconnect hose assembly (3)**.
3. **Remove lockwire and two bolts (4)**.



4. **Remove lockwire, 23 bolts (5), and washers (6)**.
5. **Remove anti-icing gallery cover upper half (7) and gasket (8)**.



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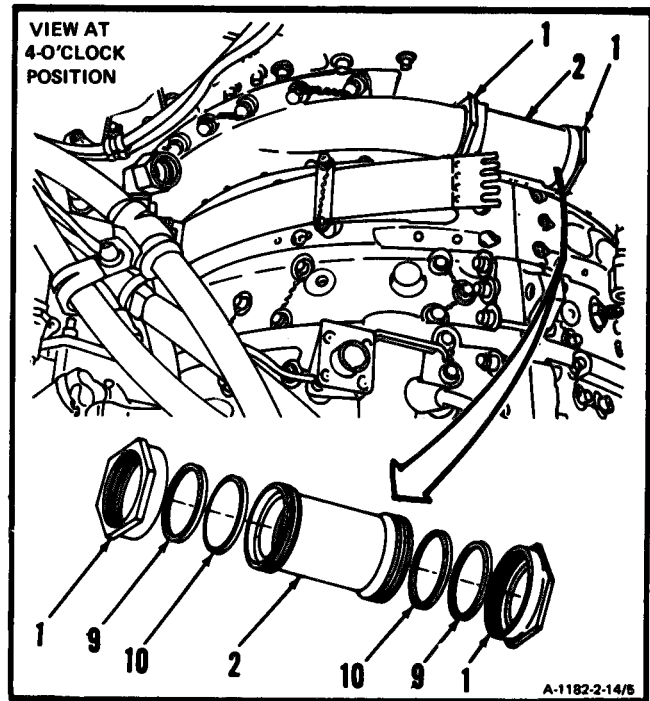
**2-14 REMOVE ANTI-ICING AIR GALLERY COVER (Continued)**

2-14

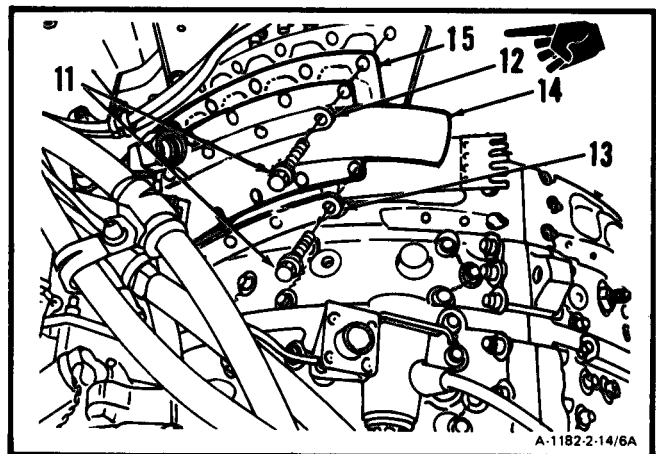
**NOTE**

Steps 6. and 7. apply to connectors at both 3- and 9-o'clock positions. Connector at 3-o'clock position is shown.

6. **Remove connector (2)** with two nuts (1) installed.
7. **Remove two nuts (1)** spacers (9), and retainers (10) from connector (2).



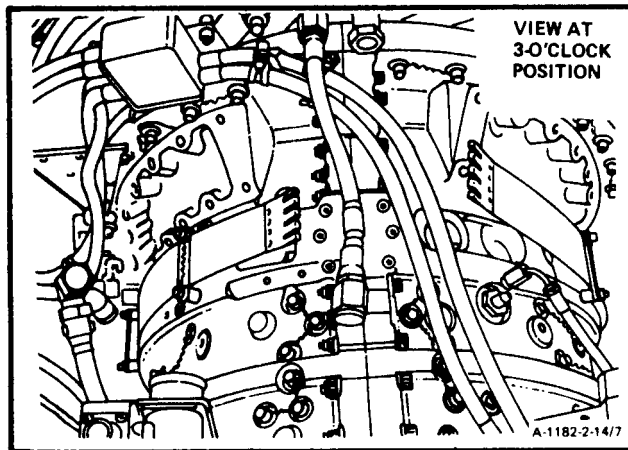
8. **Remove lockwire, 23 bolts (11),** and two strips (12 and 13).
9. **Remove air gallery cover lower half (14)** and gasket (15).



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FOLLOW-ON MAINTENANCE:

None



**END OF TASK**

---

**2-15 CLEAN ANTI-ICING AIR GALLERY COVER**

---

2-15

**INITIAL SETUP****General Safety Instructions:****Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Putty Knife

**Materials:**

Dry Cleaning Solvent (E17)  
Gloves (E20)  
Lint-Free Cloth (E26)

**Personnel Required:**

68B10 Aircraft Powerplant Repairer

**Equipment Condition:**

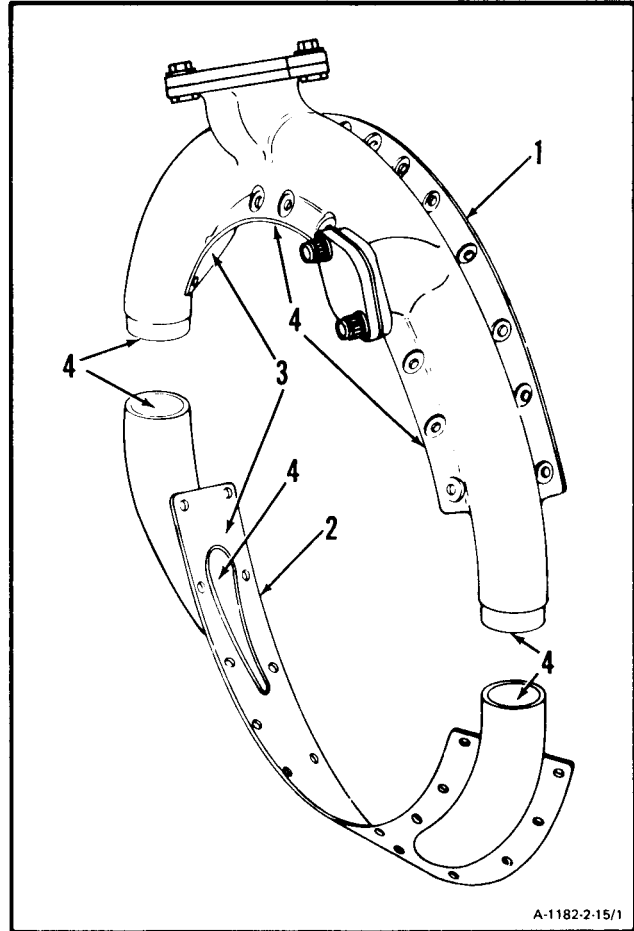
Off Engine Task  
Oil Cooler Assembly Removed (Task 8-5)  
Interstage Air-Bleed Actuator Removed  
(Task 2-1)  
Dual Chip Detector Removed (Task 8-28)  
Fuel Control Removed (Task 6-1)  
Main Fuel Filter and Bracket Removed  
(Task 6-29)  
Anti-Icing Air Gallery Cover Removed  
(Task 2-14)

**WARNING**

Dry cleaning solvent (E17) is flammable and toxic. It can irritate skin and cause burns. Use only in well-ventilated area, away from heat and open flame. In case of contact, immediately flush skin or eyes with water for at least 15 minutes. Get medical attention for eyes.

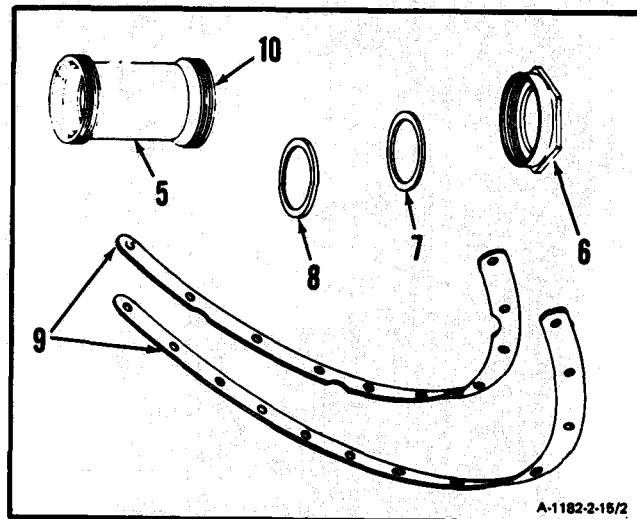
**GO TO NEXT PAGE**

1. Wear gloves (E20). **Clean anti-icing air gallery cover upper half (1) and lower half (2).** Use lint-free cloth (E26) dampened in dry cleaning solvent (E17). Use putty knife to remove gasket material from sealing surfaces (3). Use brush to clean inside surfaces (4).



**GO TO NEXT PAGE**

2. Clean two connectors (5), four nuts (6), four spacers (7), four retainers (8) and two strips (9). Use lint-free cloth (E26) dampened in dry cleaning solvent (E17). Use brush to clean inside surfaces (10).



**FOLLOW-ON MAINTENANCE:**

Inspect Anti-Icing Air Gallery Cover (Task 2-16).

**END OF TASK**

**INITIAL SETUP**

**Applicable Configurations:**

All

**Tools:**

Technical Inspection Tool Kit,  
NSN 5180-00-323-5114

**Materials:**

None

**Personnel Required:**

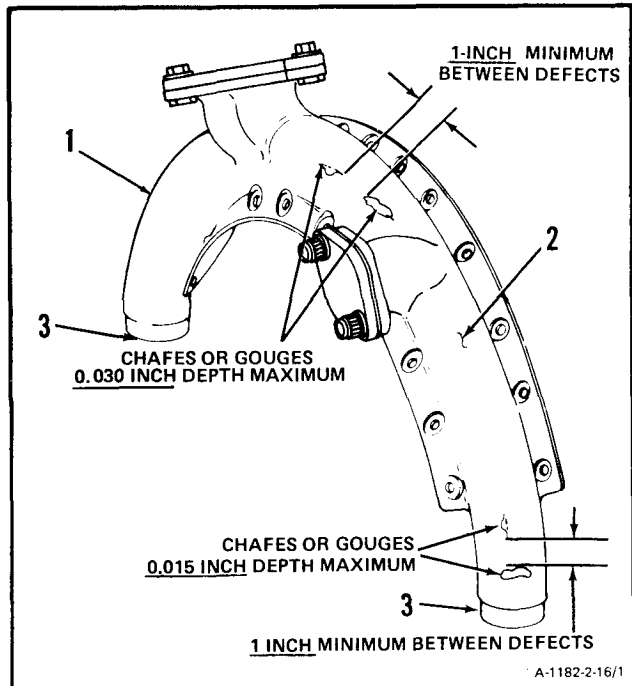
68B30 Aircraft Powerplant Inspector

**Equipment Condition:**

Off Engine Task

**1. Inspect anti-icing air gallery cover upper half (1).**

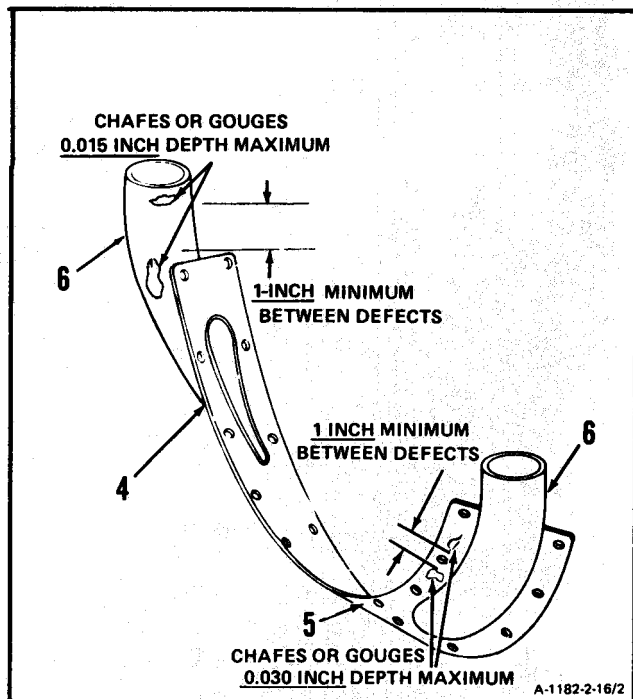
- a. There shall be no cracks or corrosion.
- b. There shall be no gouges or chafes deeper than 0.030 inch in cover (2). Any length or width gouge or chafe is acceptable.
- c. There shall be no gouges or chafes deeper than 0.015 inch in tubes (3). Any length or width gouge or chafe is acceptable.
- d. There shall be no two gouges or chafes closer to each other than 1 -inch.



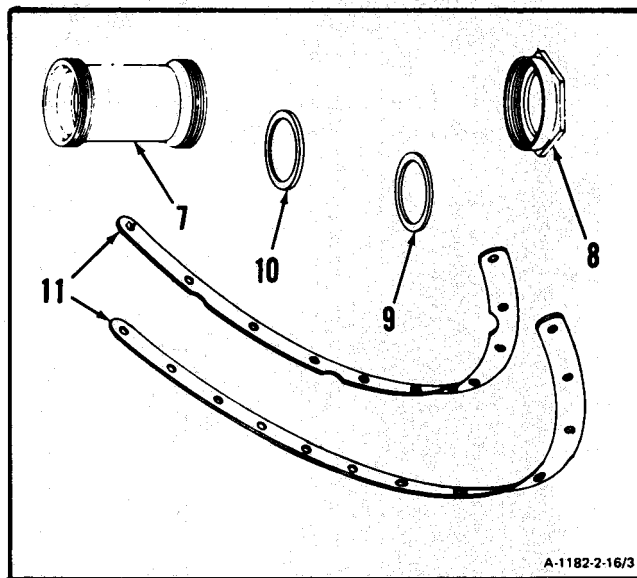
**GO TO NEXT PAGE**

**2. Inspect anti-icing air gallery cover lower half (4).**

- a. There shall be no cracks.
- b. There shall be no gouges or chafes deeper than 0.030 inch in cover (5). Any length or width gouge or chafe is acceptable.
- c. There shall be no gouges or chafes deeper than 0.015 inch in tubes (6), Any length or width gouge or chafe is acceptable.
- d. There shall be no two gouges or chafes closer to each other than 1 -inch.



**3. Inspect two connectors (7), four nuts (8), four spacers (9), four retainers (10) and two strips (11). There shall be no cracks.**



**FOLLOW-ON MAINTENANCE:**

None

**END OF TASK**



## 2-17 REPAIR ANTI-ICING AIR GALLERY COVER

2-17

## INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**

Technical Inspection Tool Kit,  
NSN 5180-00-323-5114

**Materials:**

Acid Swabbing Brush (E2)  
Carborundum Stone (E10)  
Crocus Cloth (E15)  
Engine Gray Enamel (E22)

**Personnel Required:**

68B10 Aircraft Powerplant Repairer  
68B30 Aircraft Powerplant Inspector

**References:**

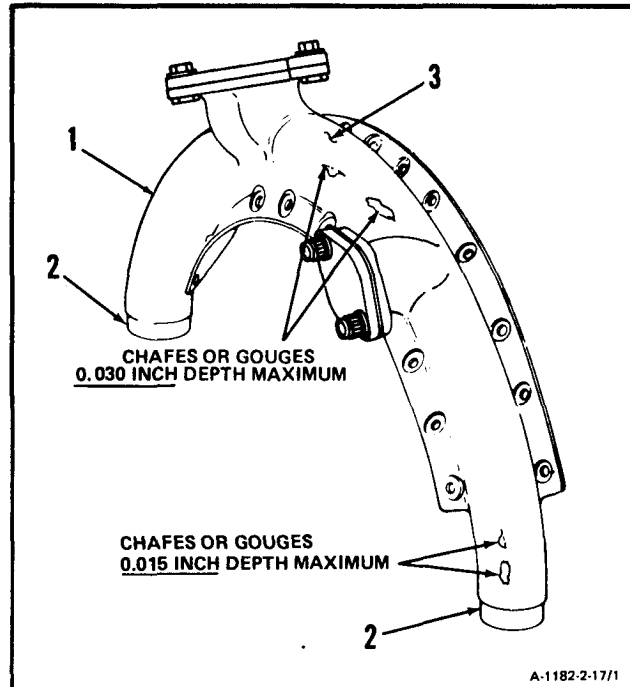
Task 1-119

**Equipment Condition:**

Off Engine Task

**1. Repair anti-icing air gallery cover upper half (1).**

- a. Repair gouges or chafes up to 0.015 inch deep on tubes (2). Blend repair. Use carborundum stone (E10) and crocus cloth (E15).
- b. Repair gouges or chafes up to 0.030 inch deep on cover (3). Blend repair. Use carborundum stone (E10) and crocus cloth (E15).
- c. Repair corroded surfaces or damaged paint. **Use engine gray enamel (E22)** (Ref. Task 1-119),

**GO TO NEXT PAGE**

## 2-17 REPAIR ANTI-ICING AIR GALLERY COVER (Continued)

2-17

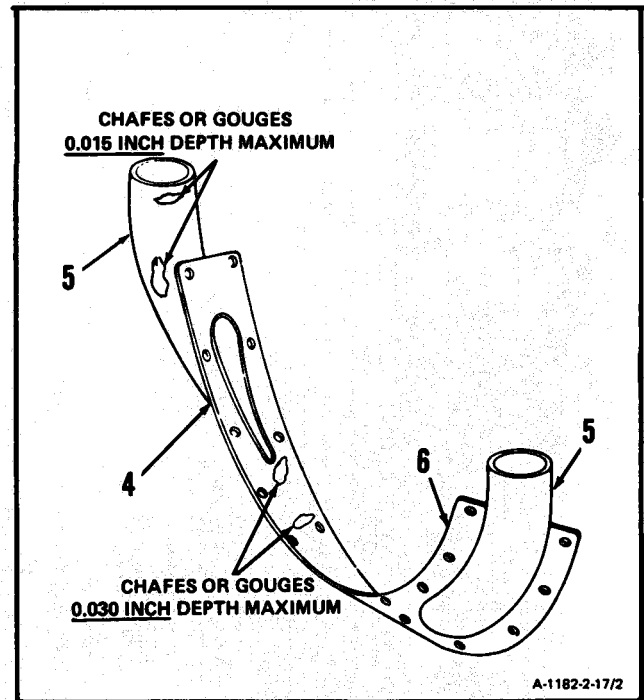
## 2. Repair anti-icing air gallery cover lower half (4).

- a. Repair gouges or chafes up to 0.015 inch deep on tubes (5). Blend repair. Use carborundum stone (E10) and crocus cloth (E15).
- b. Blend repair gouges or chafes up to 0.030 inch deep on cover (6). Blend repair. Use Carborundum stone (E10) and crocus cloth (E15).
- c. Repair corroded surfaces or damaged paint. Use **engine gray enamel (E22)** (Ref. Task 1-119).

## INSPECT

## FOLLOW-ON MAINTENANCE

None



## END OF TASK

## 2-18 INSTALL ANTI-ICING AIR GALLERY COVER

2-18

**INITIAL SETUP****Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,

NSN 5180-00-323-4944

Technical Inspection Tool Kit,

NSN 5180-00-323-5114

Torque Wrench, 30-150 Inch-Pounds

Crowfoot Attachment (T66)

Open-End Wrench, 1 -5/8 Inch

**Materials:**

Lockwire (E29)

**Parts:**

Gaskets

Seals

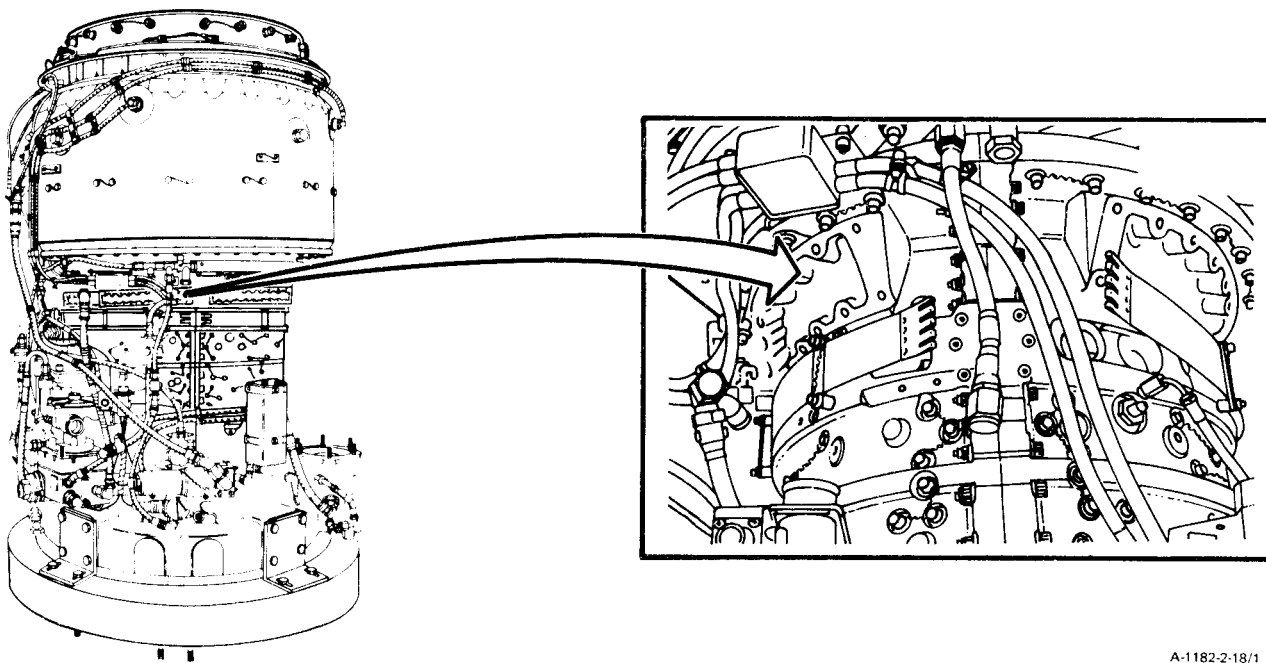
**Personnel Required:**

68B10 Aircraft Powerplant Repairer

68B30 Aircraft Powerplant Inspector

**References:**

TM 55-2840-254-23P



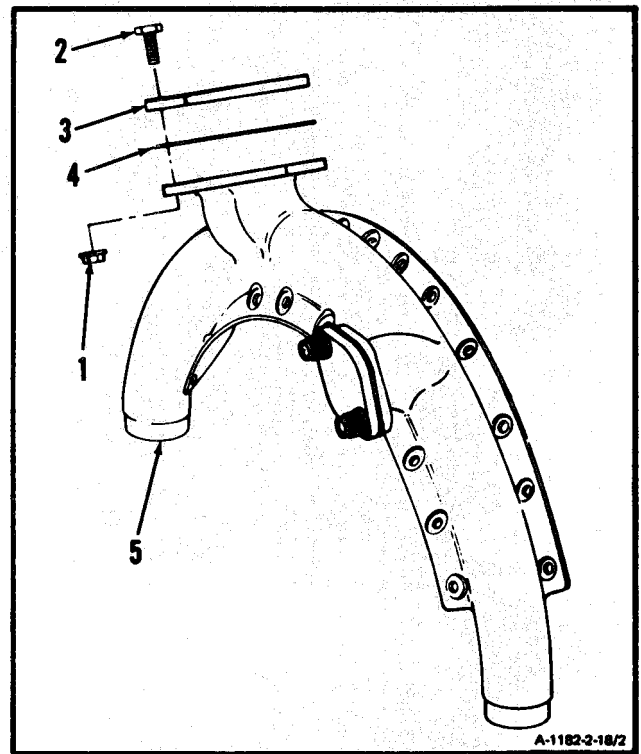
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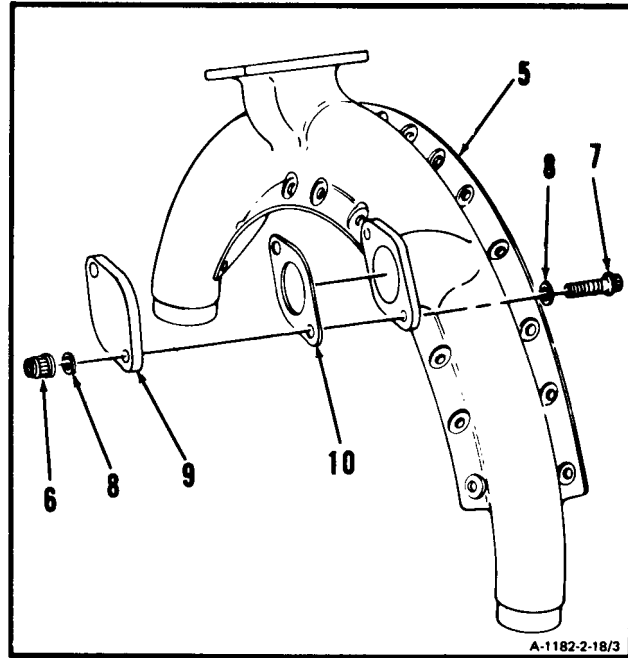
**2-18 INSTALL ANTI-ICING AIR GALLERY COVER (Continued)****2-18****NOTE**

If anti-icing air gallery cover is a replacement, do steps 1. thru 4. If same anti-icing air gallery cover that was removed is to be installed, skip steps 1. thru 4.

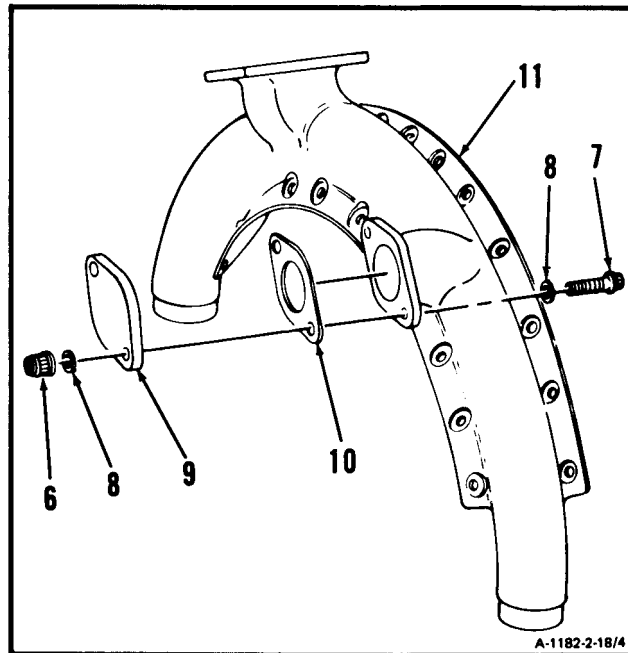
1. **Remove six nuts (1), six bolts (2), cover (3), and gasket (4) from removed air gallery cover upper half (5).**

**GO TO NEXT PAGE**

2. Remove two nuts (6), two bolts (7), four washers (8), **cover (9)**, and gasket ( 10) from removed air gallery cover upper half (5).



3. **Install** gasket (10), **cover (9)**, two bolts (7), four washers (8), and two nuts (6) on serviceable air gallery cover upper half (11 ).

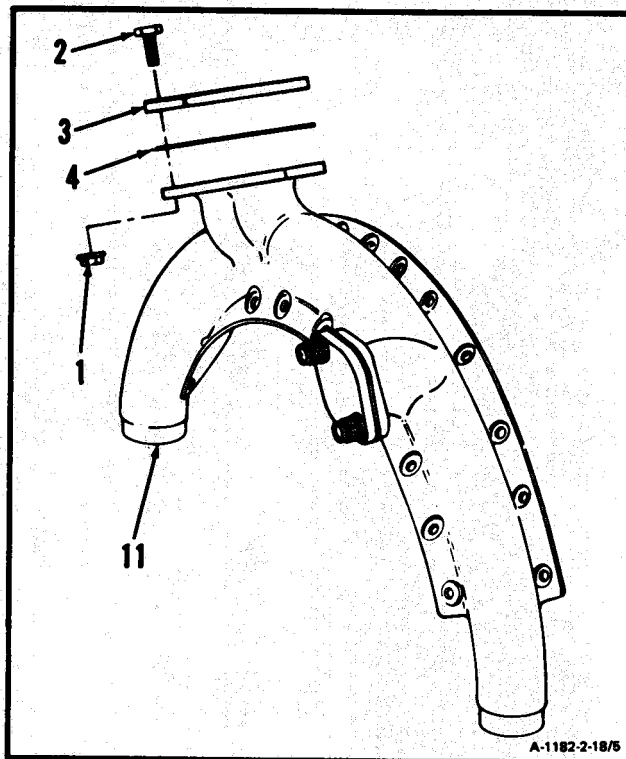


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## 2-18 INSTALL ANTI-ICING AIR GALLERY COVER (Continued)

2-18

4. **Install** gasket (4), **cover** (3), six bolts (2), and nuts ( 1 ) on serviceable air gallery cover upper half (11).



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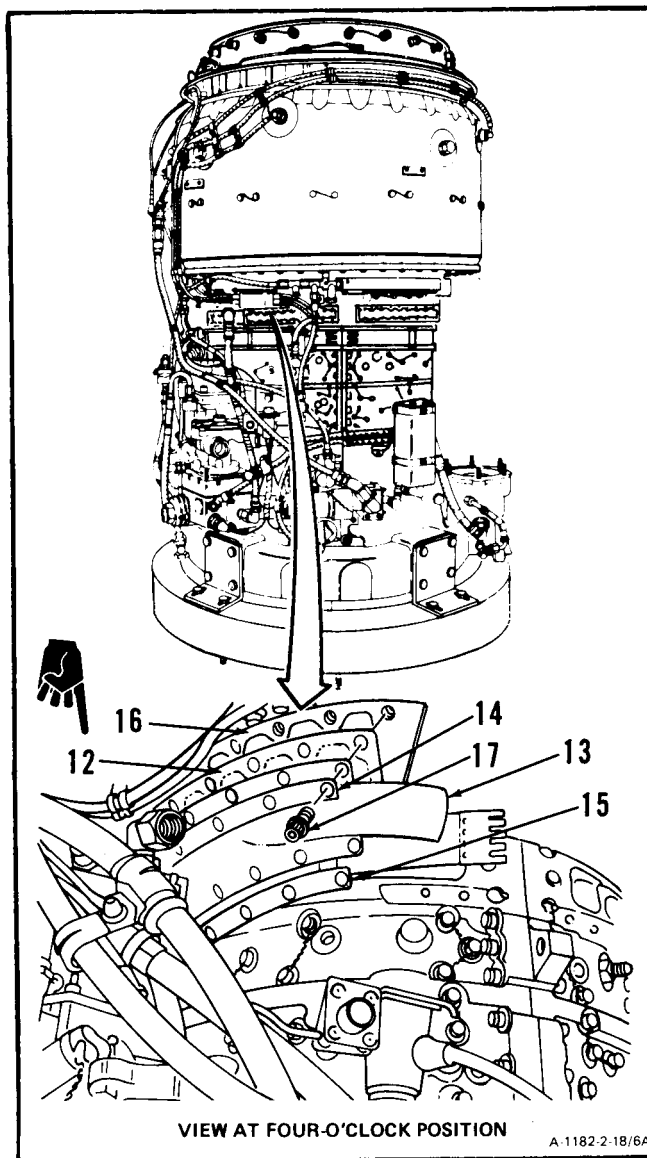
## 2-18 INSTALL ANTI-ICING AIR GALLERY COVER (Continued)

2-18

## NOTE

In following step, engage only two or three threads of 23 bolts.

5. **Install gasket (12), air gallery cover lower half (13), and strips (14 and 15) on compressor housing (16).** Loosely install 23 bolts (17).



GO TO NEXT PAGE

## 2-18 INSTALL ANTI-ICING AIR GALLERY COVER (Continued)

2-18

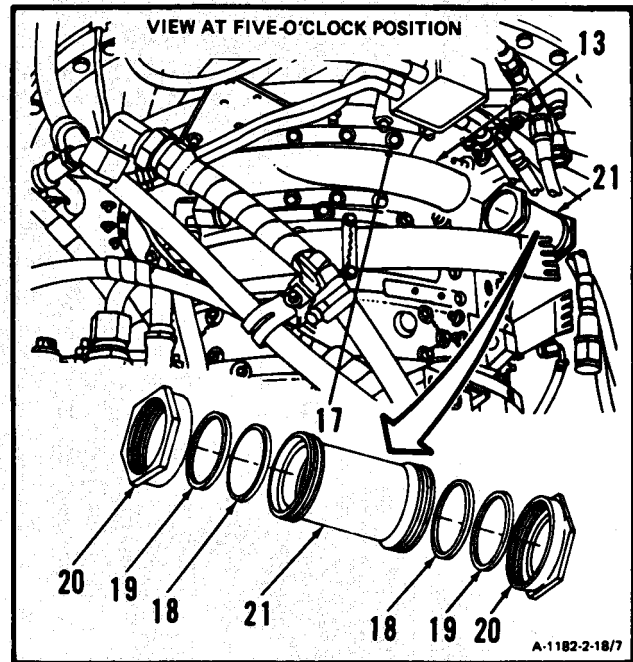
**NOTE**

Steps 6. and 7. apply to connectors at each end of air gallery cover lower half (3- and 9-o'clock positions). Connector at 3-o'clock position is shown.

**NOTE**

When installing nuts on connector, engage about two threads only,

6. **Install** two retainers (18), spacers (19), and **nuts (20)** on connector (21).
7. **Install connectors (21)** on ends of air gallery cover lower half (13).
8. **Torque 23 bolts (17) to 85 inch-pounds** and lockwire. Use lockwire (E29).



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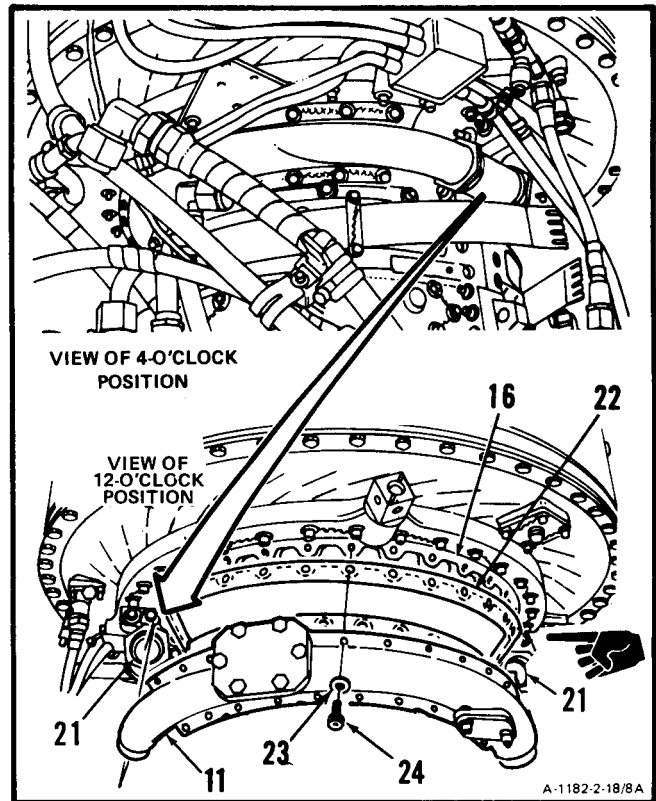
2-18 INSTALL ANTI-ICING AIR GALLERY COVER (Continued)

9. **Install** gasket (22) and **air gallery cover upper half (11)** on compressor housing (16) with ends of air gallery cover upper half (11) in two connectors (21).

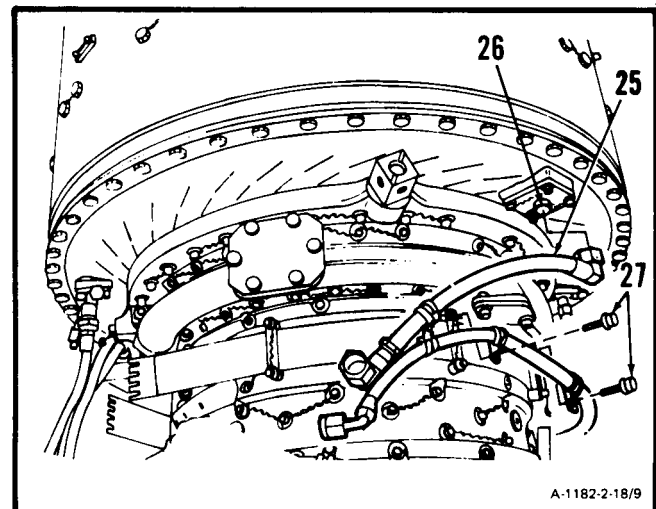
**NOTE**

In following step, engage only two or three threads of 23 bolts.

10. Loosely **install** 23 washers (23) and **bolts (24)**. **Torque bolts (24) to 85 inch-pounds** and lockwire. Use lockwire (E29).



11. **Connect hose assembly (25)** to adapter (26).
12. **Install two bolts (27)** and lockwire. Use lockwire (E29).



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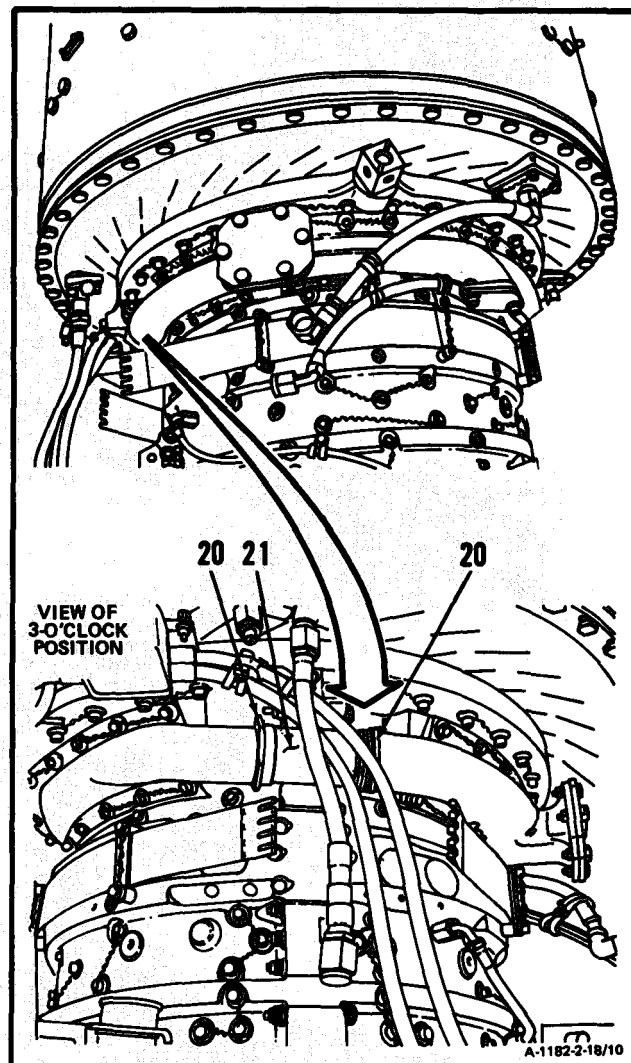
## 2-18 INSTALL ANTI-ICING AIR GALLERY COVER (Continued)

2-18

**NOTE**

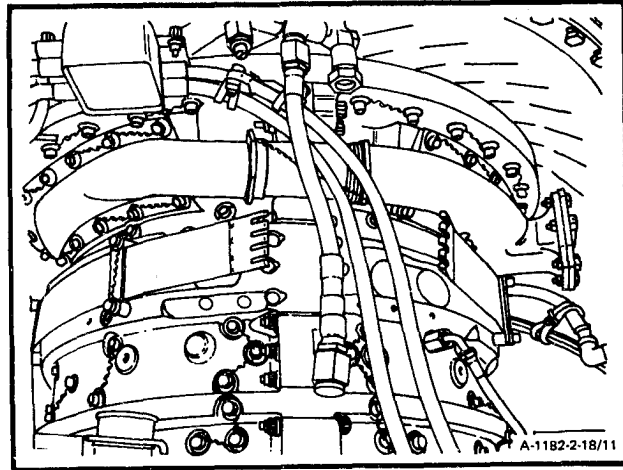
Step 12. applies to connectors at 3- and 9-o'clock positions. Connector at 3-o'clock position is shown.

13. **Torque two nuts (20) on connectors (21) to 90 inch-pounds.** Use crowfoot attachment (T66) and open-end wrench. Lockwire nuts (20). Use lockwire (E29).

**INSPECT****GO TO NEXT PAGE**

**FOLLOW-ON MAINTENANCE:**

- Install Main Fuel Filter and Bracket (Task 6-35).
- Install Fuel Control (Task 6-6).
- Install Dual Chip Detector (Task 8-35).
- Install Interstate Air-Bleed Actuator (Task 2-7).
- Install Oil Cooler Assembly (Task 8-11).

**END OF TASK**

## Section IV. COMPRESSOR HOUSING - MAINTENANCE PROCEDURES

## 2-19 REMOVE UPPER COMPRESSOR HOUSING

2-19

## INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Mechanical Puller (T6)  
Padded Conduit Pliers

**Materials:**

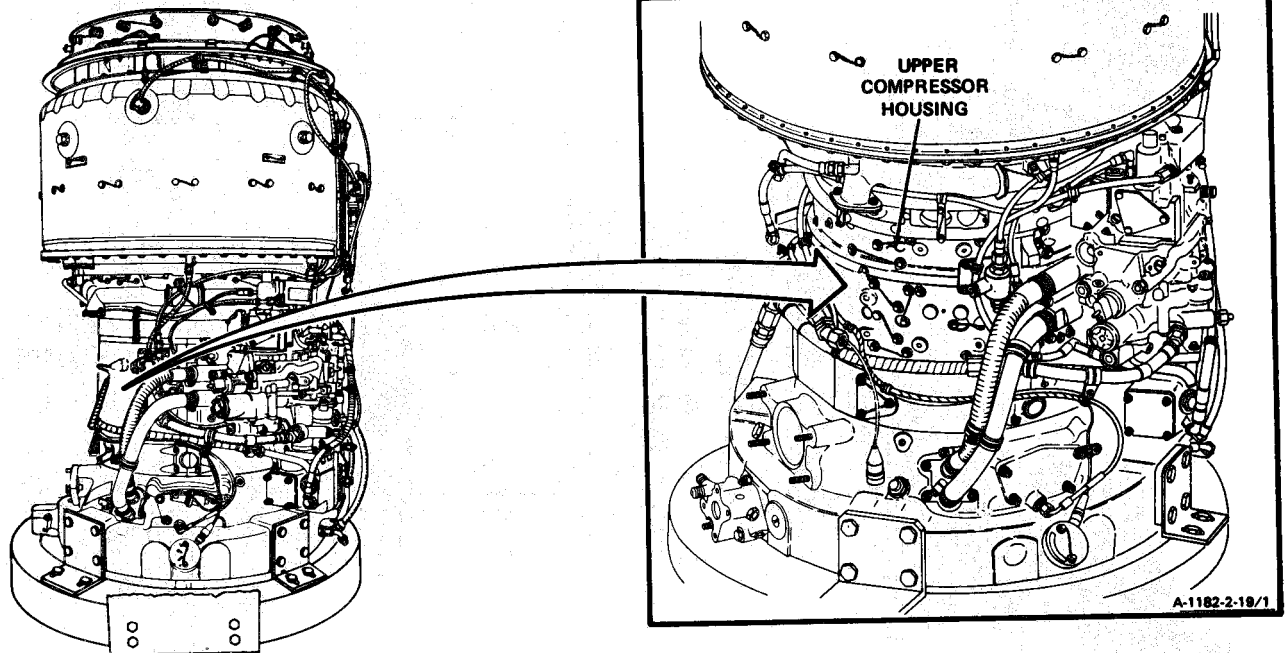
None

**Personnel Required:**

68B10 Aircraft Powerplant Repairer (2)

**Equipment Condition:**

Engine Oil System Drained (Task 1-75)  
Oil Cooler Assembly Removed (Task 8-5)  
In-Line Fuel Filter Assembly Removed  
(Task 6-36)  
Ignition Exciter Removed (Task 7-11 )  
Oil Filler Assembly and Oil Filler Strainer  
Removed (Task 8-16)  
Starter Drive Removed (Task 5-12)  
Main Fuel Filter and Bracket Removed  
(Task 6-29)  
Interstage Air-Bleed Actuator Removed  
(Task 2-1 )  
Compressor Bleed Band Removed (Task 2-9)

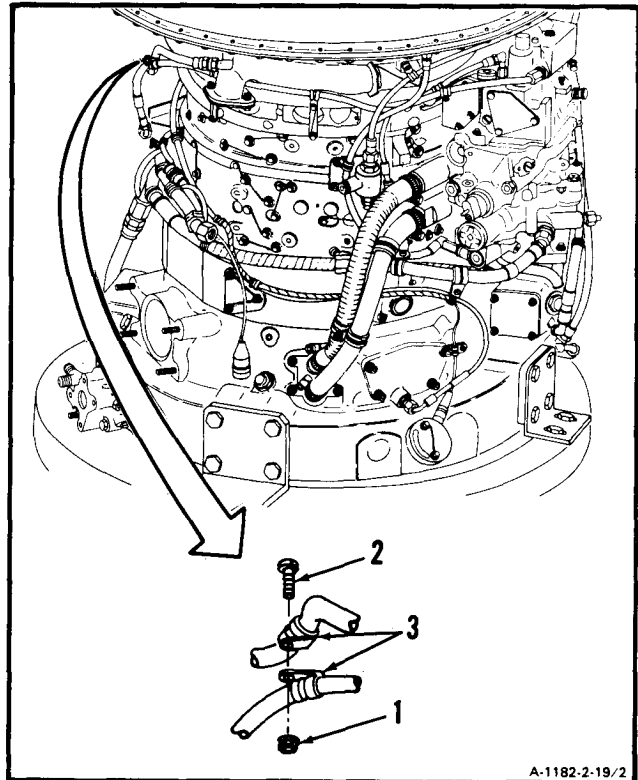


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**CAUTION**

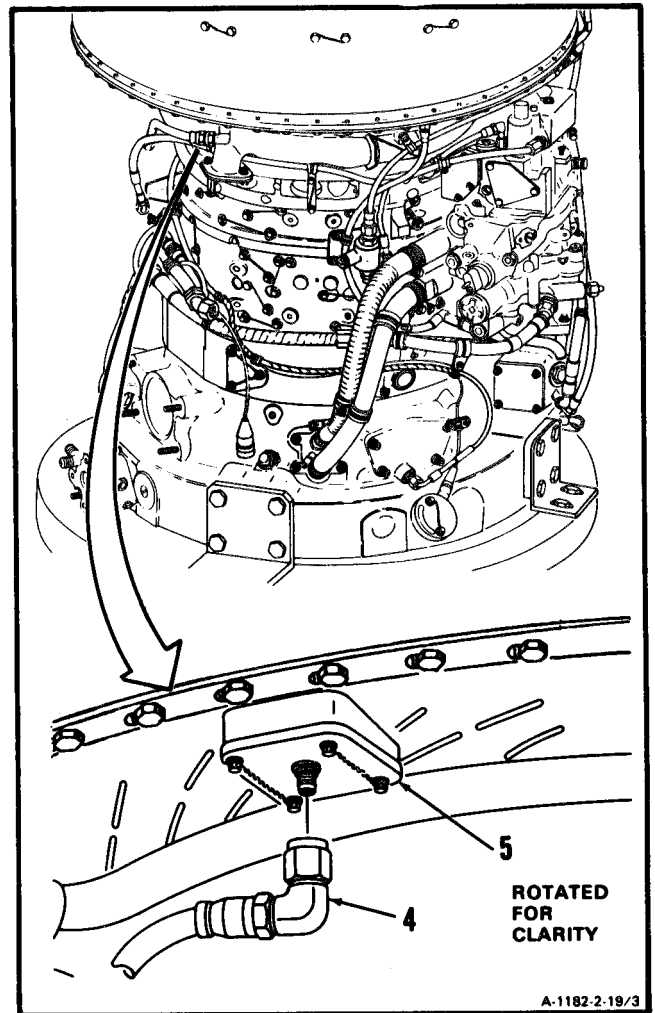
When removing compressor housing, only upper or lower compressor housing half shall be removed at one time. At no time shall personnel attempt to remove both upper and lower compressor housing halves simultaneously, Failure to comply will cause engine damage,

1. Remove nut (1), bolt (2) and two clamps (3).



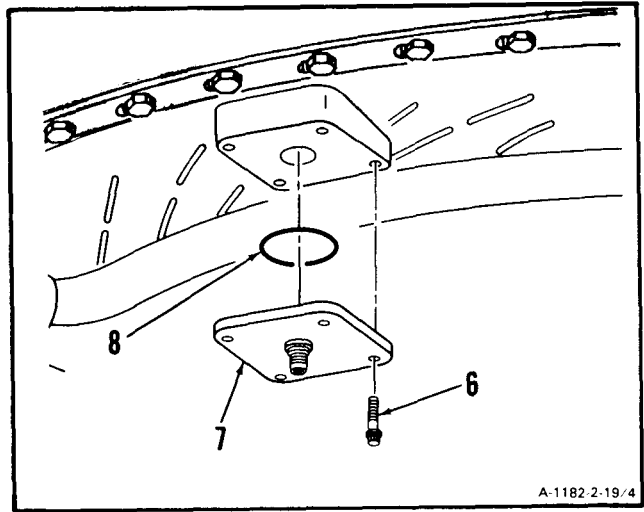
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2. **Disconnect and remove hose assembly (4) from adapter (5).**

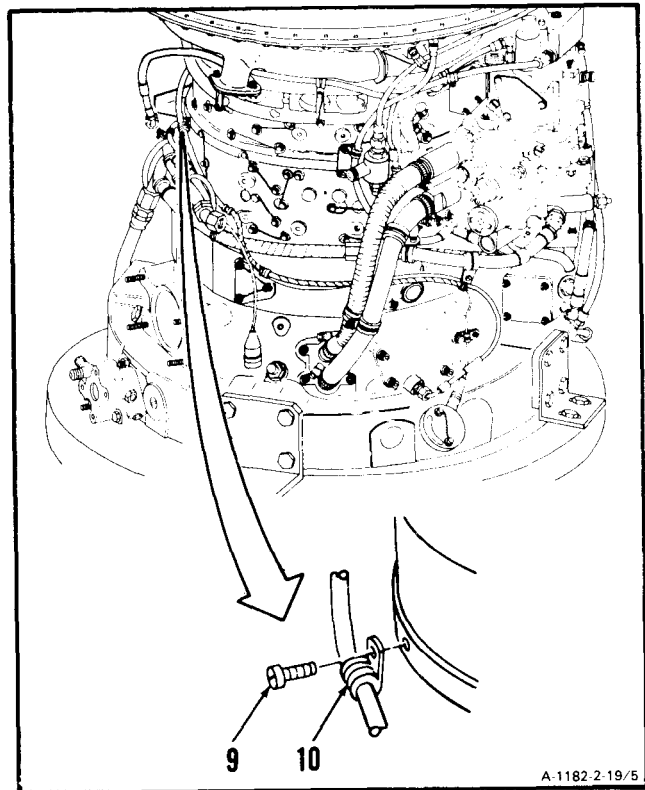


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3. **Remove** lockwire, four bolts (6), **adapter** (7), and packing (8).



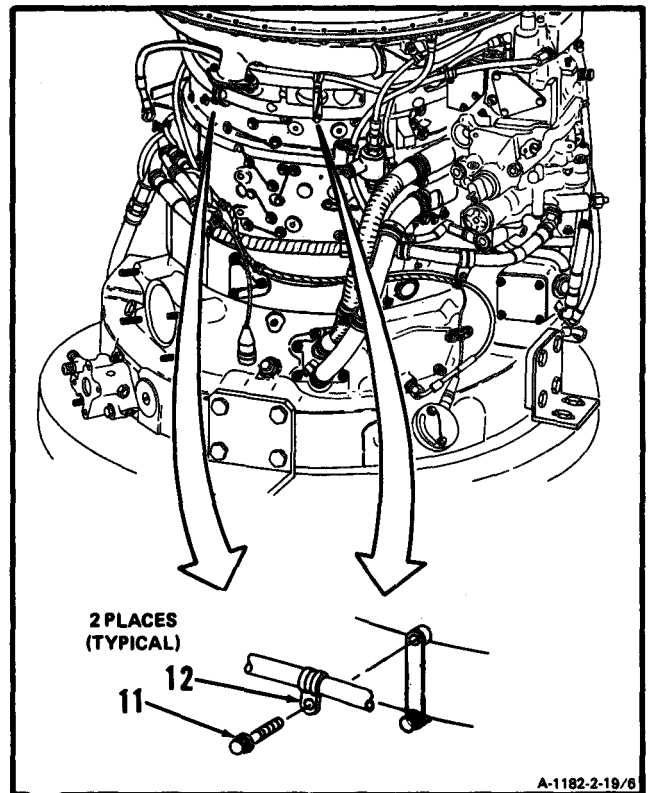
4. **Remove** lockwire, screw (9), and **clamp** (10).



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**2-19 REMOVE UPPER COMPRESSOR HOUSING (Continued)****2-19**

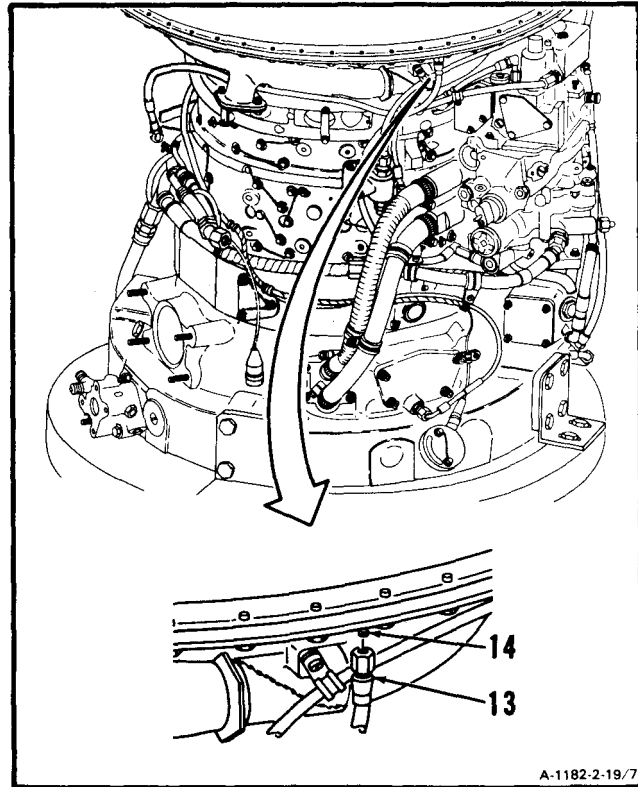
5. Remove lockwire, two bolts (11), and clamps (12).



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6. **Disconnect hose assembly (13) from union (14).**

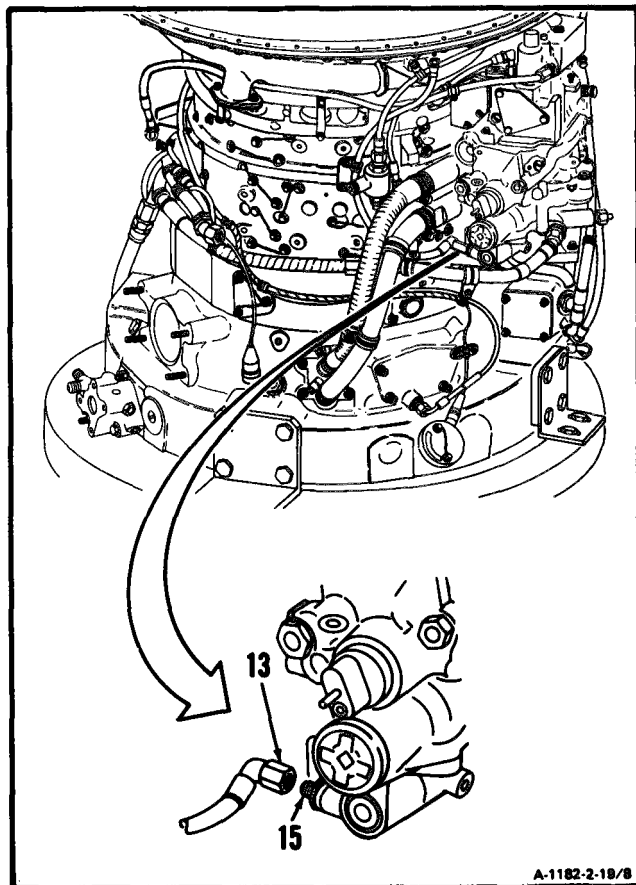


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## 2-19 REMOVE UPPER COMPRESSOR HOUSING (Continued)

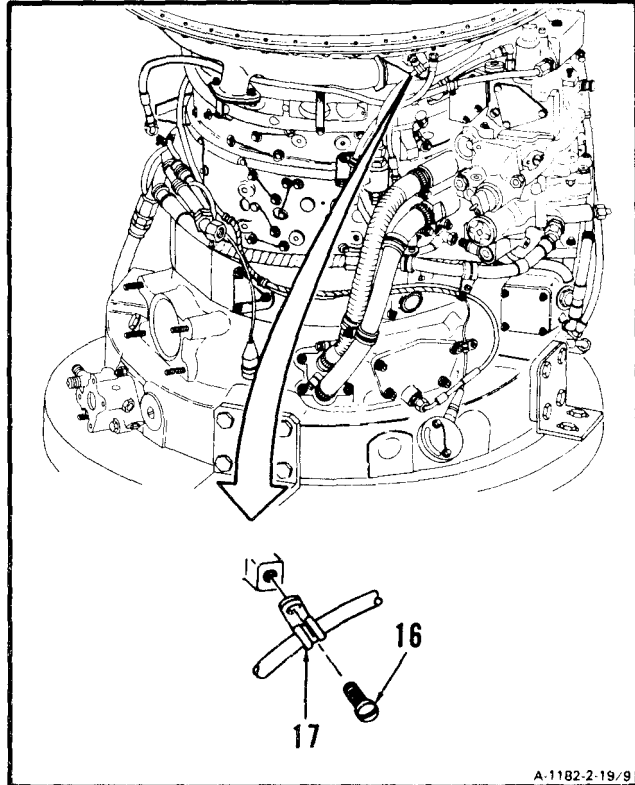
2-19

7. **Disconnect hose assembly (13) from nipple (15).**



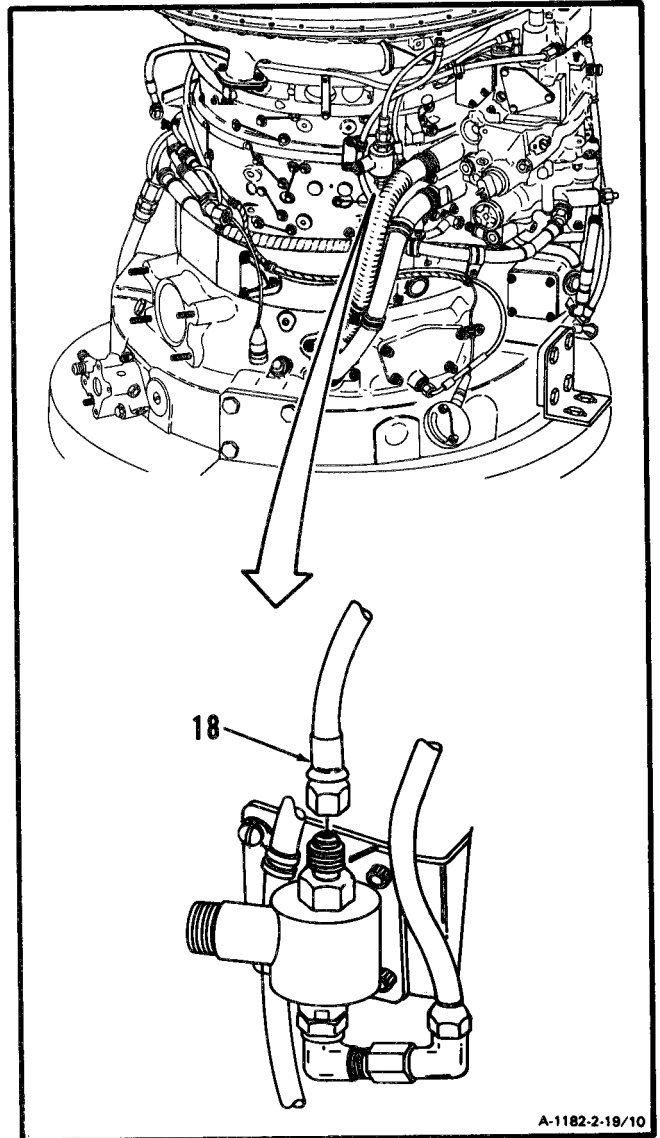
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8. **Remove** lockwire, screw ( 16), and **clamp** (17).



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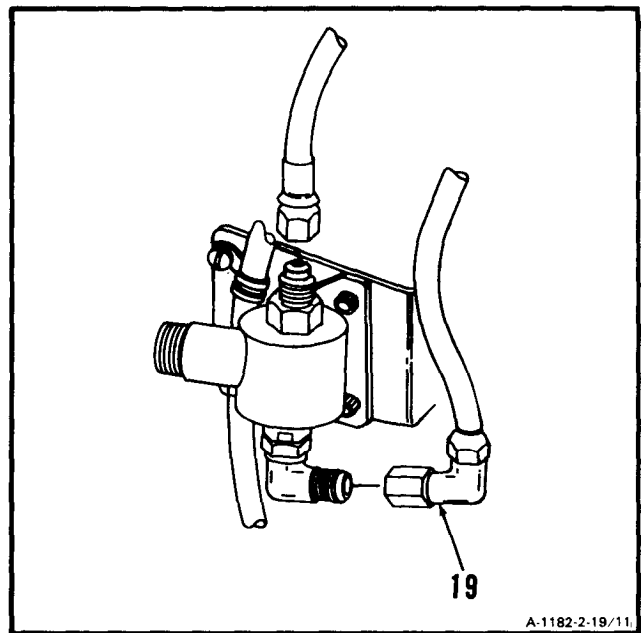
9. Disconnect hose assembly (18).



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10. Disconnect hose assembly (19).

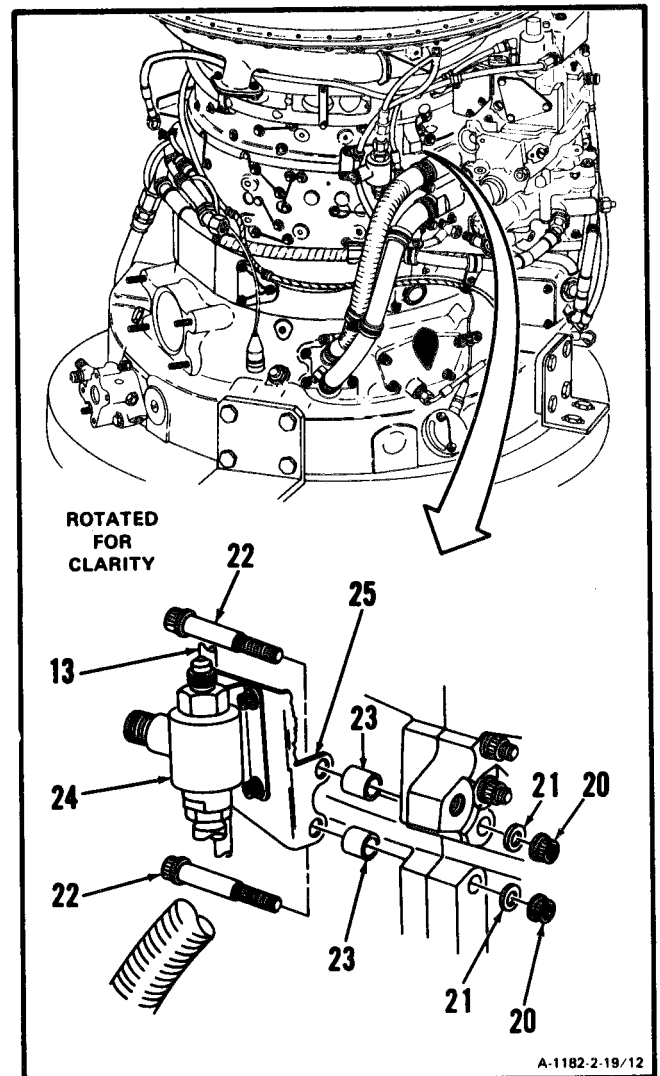


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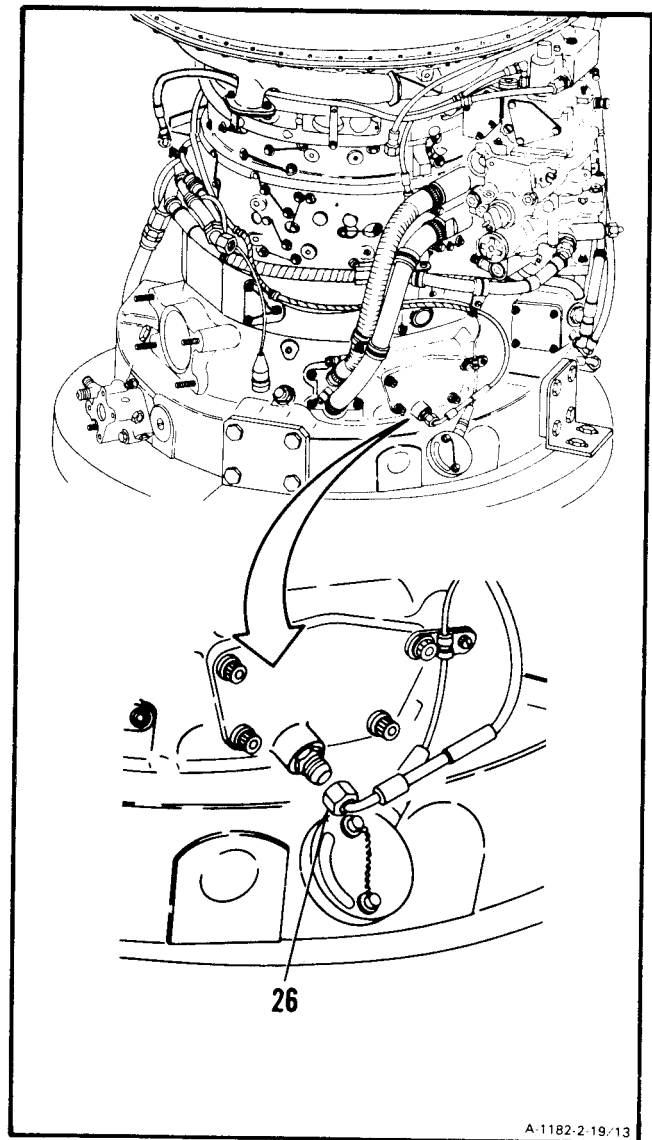
## 2-19 REMOVE UPPER COMPRESSOR HOUSING (Continued)

2-19

11. Remove two nuts (20), washers (21), bolts (22), and spacers (23).
12. Remove solenoid valve (24), hose assembly (13), and bracket (25) as an assembly.

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13. Disconnect hose assembly (26).

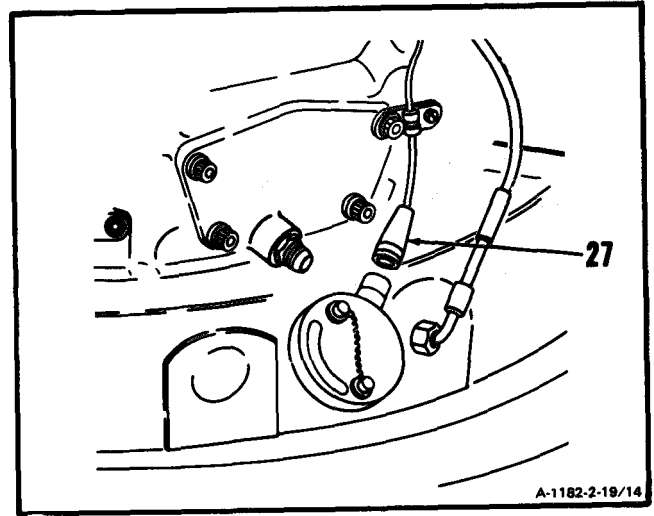


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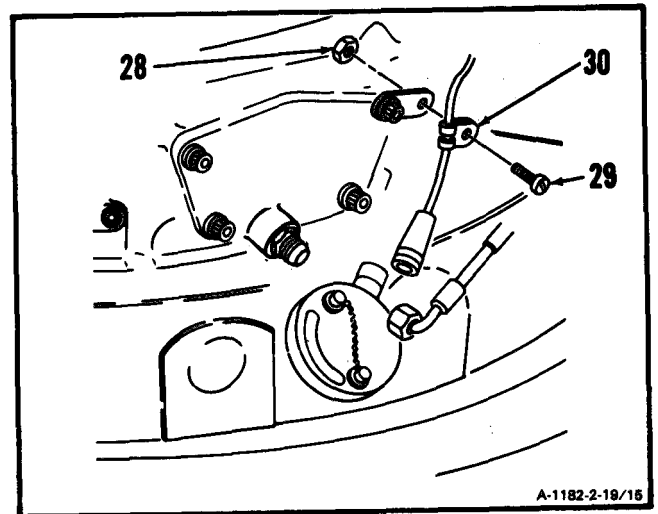
2-19 REMOVE UPPER COMPRESSOR HOUSING (Continued)

2-19

14. Disconnect electrical connector (27).



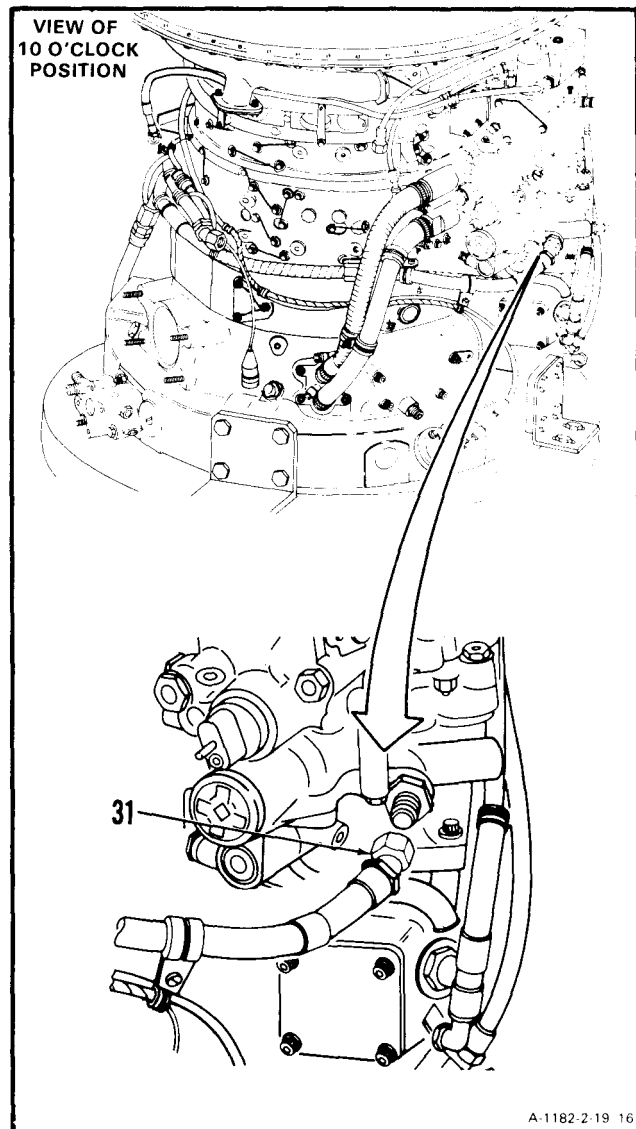
15. Remove nut (28), screw (29), and clamp (30).



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16. Disconnect hose assembly (31 ).

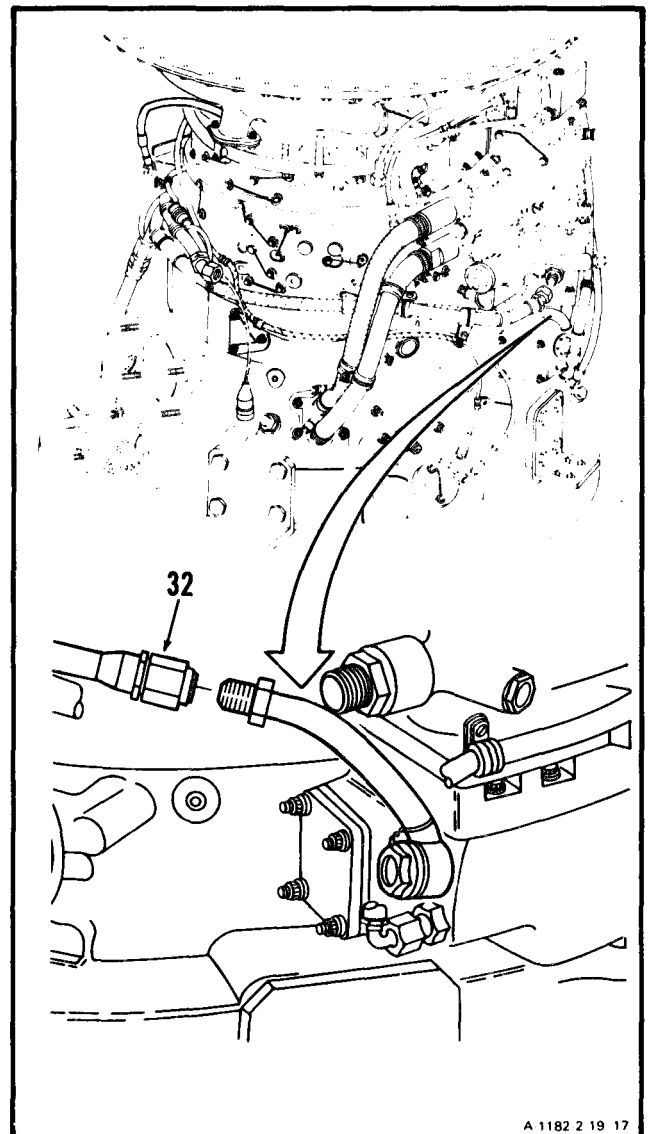


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## 2-19 REMOVE UPPER COMPRESSOR HOUSING (Continued)

2-19

17. Disconnect tube and hose assembly (32).

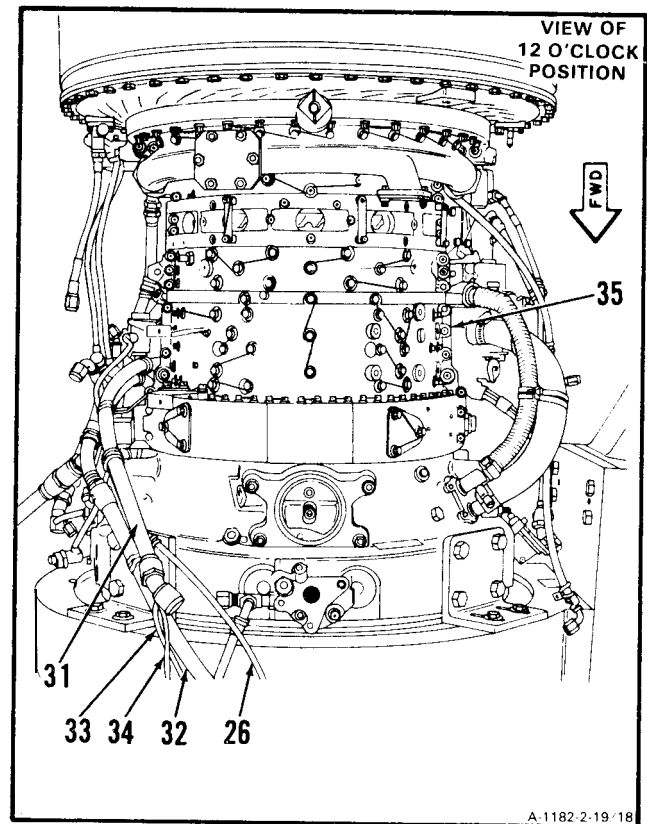


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## 2-19 REMOVE UPPER COMPRESSOR HOUSING (Continued)

2-19

18. Move hose assemblies (26, 31, and 32) and electrical cable leads (33 and 34) away from compressor housing (35).

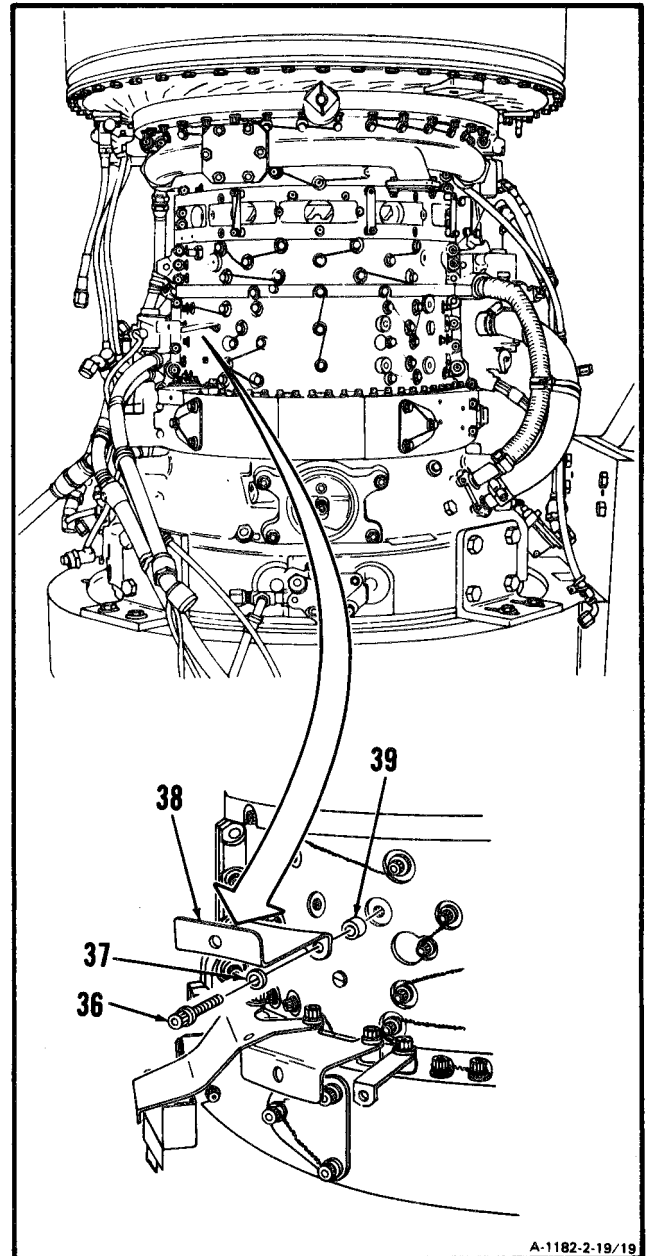


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## 2-19 REMOVE UPPER COMPRESSOR HOUSING (Continued)

2-19

19. **Remove** lockwire, two bolts (36), washers (37), **bracket (38)**, and spacers (39).

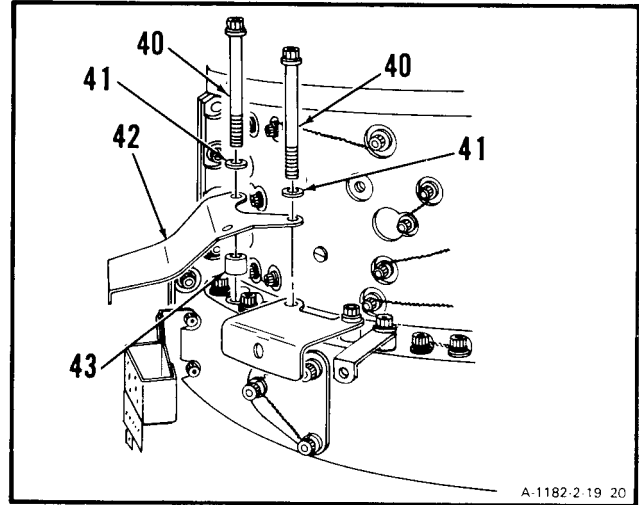


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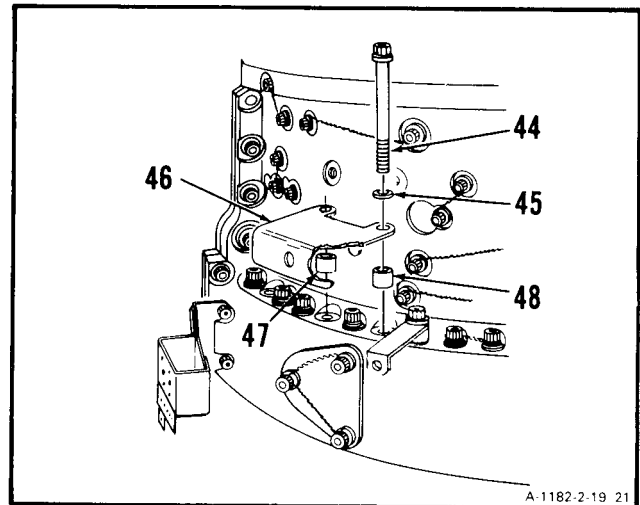
**2-19 REMOVE UPPER COMPRESSOR HOUSING (Continued)**

2-19

20. **Remove** lockwire, two bolts (40), washers (41), **bracket (42)**, and spacer (43).



21. **Remove** lockwire, bolt (44), washer (45), **bracket (46)** and spacers (47 and 48).

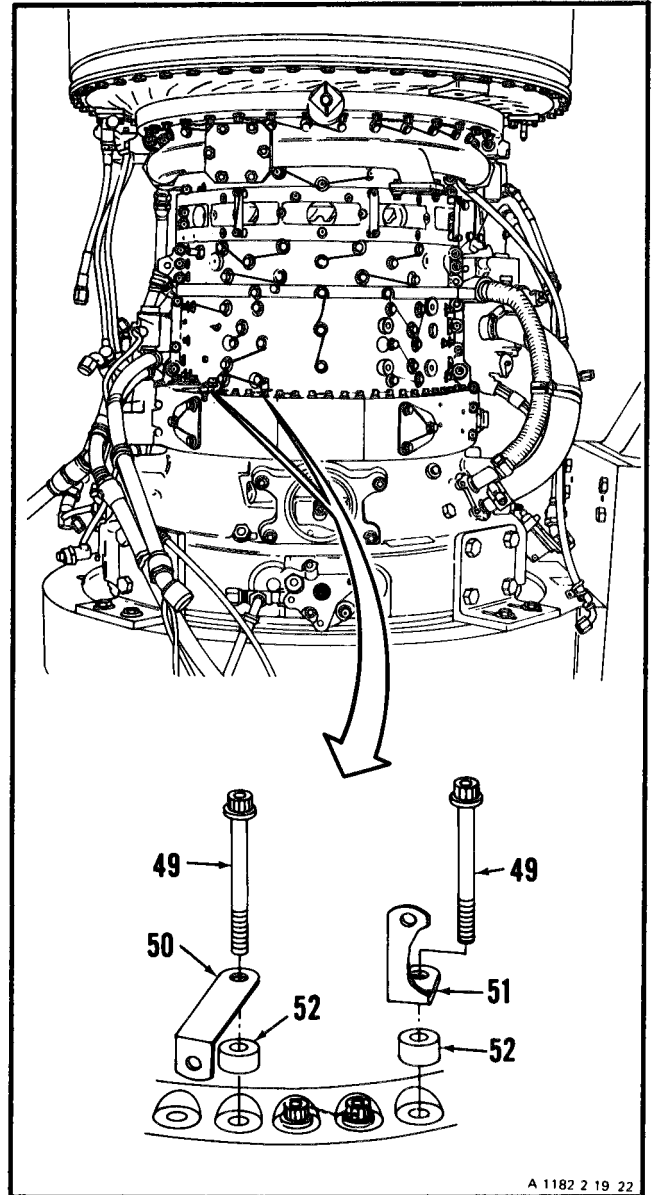


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## 2-19 REMOVE UPPER COMPRESSOR HOUSING (Continued)

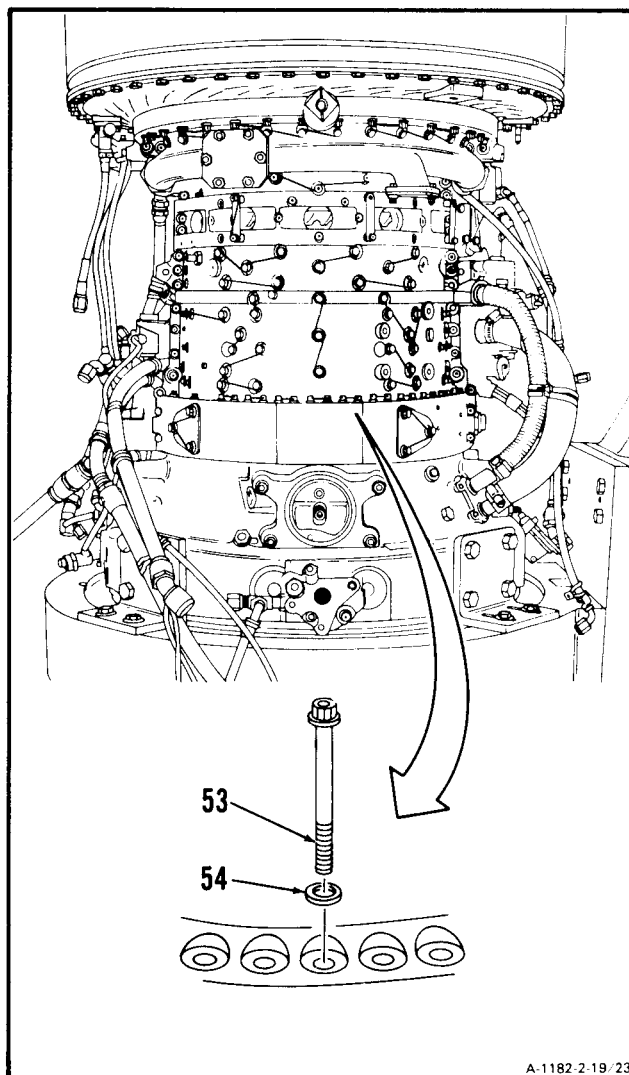
2-19

22. Remove lockwire, two bolts (49), brackets (50 and 51), and spacers (52).



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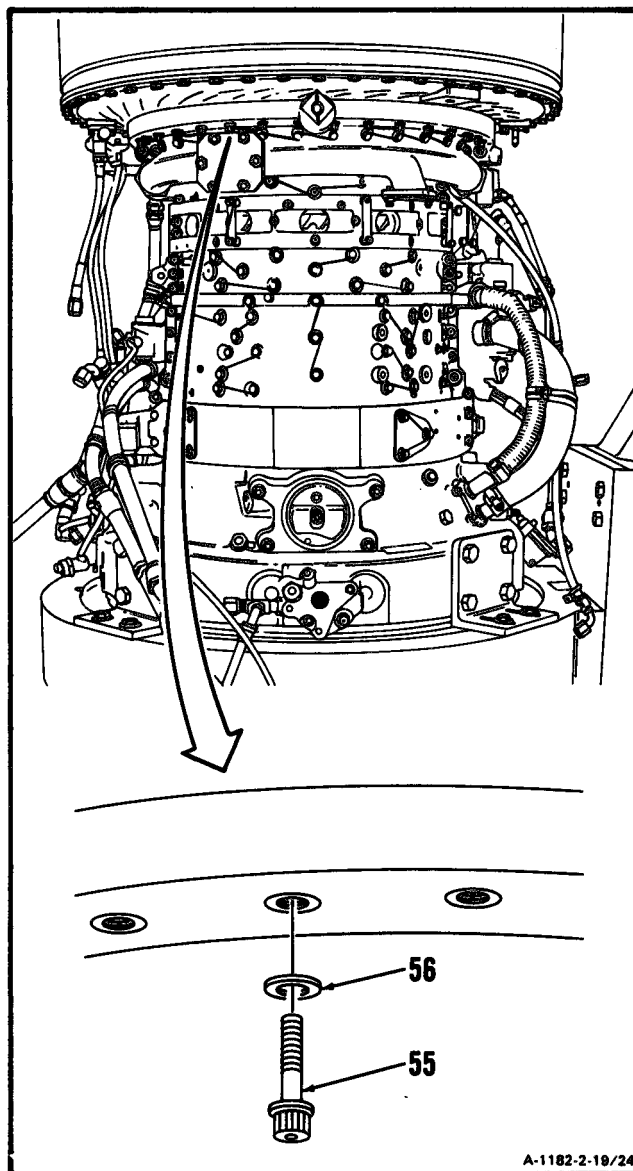
23. **Remove** lockwire, 23 **bolts** (53), and washers (54).



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24. **Remove** lockwire, **16 bolts (55)**, and washers (56).

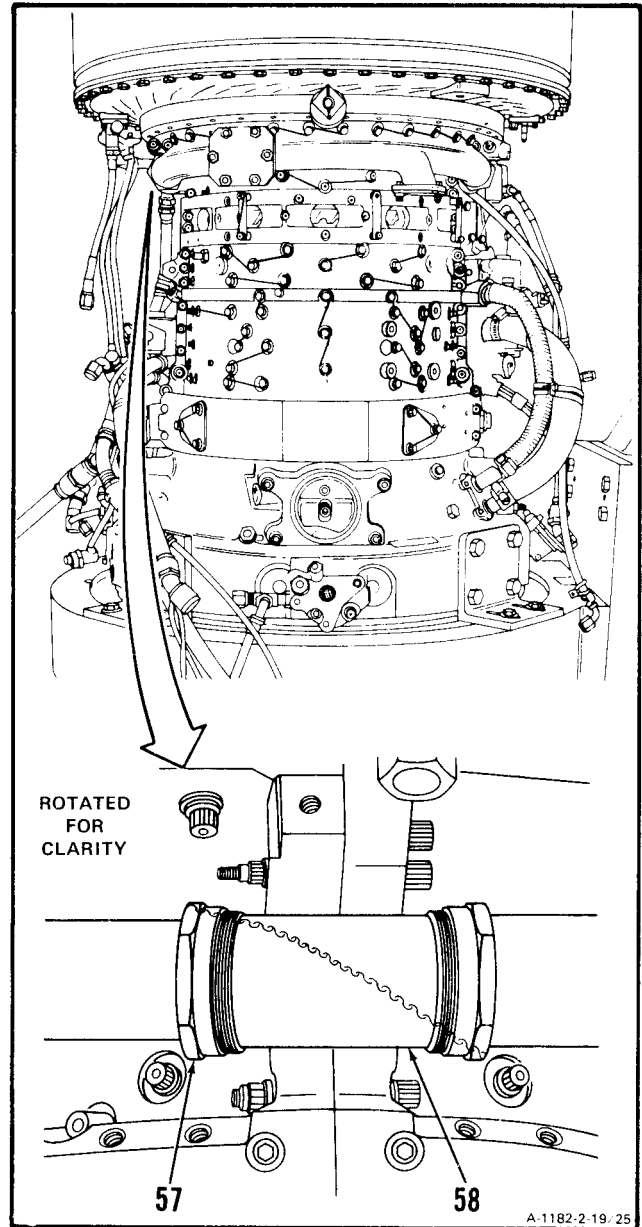


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25. Remove lockwire. **Disconnect nut (57)** from connector (58). Use padded conduit pliers.

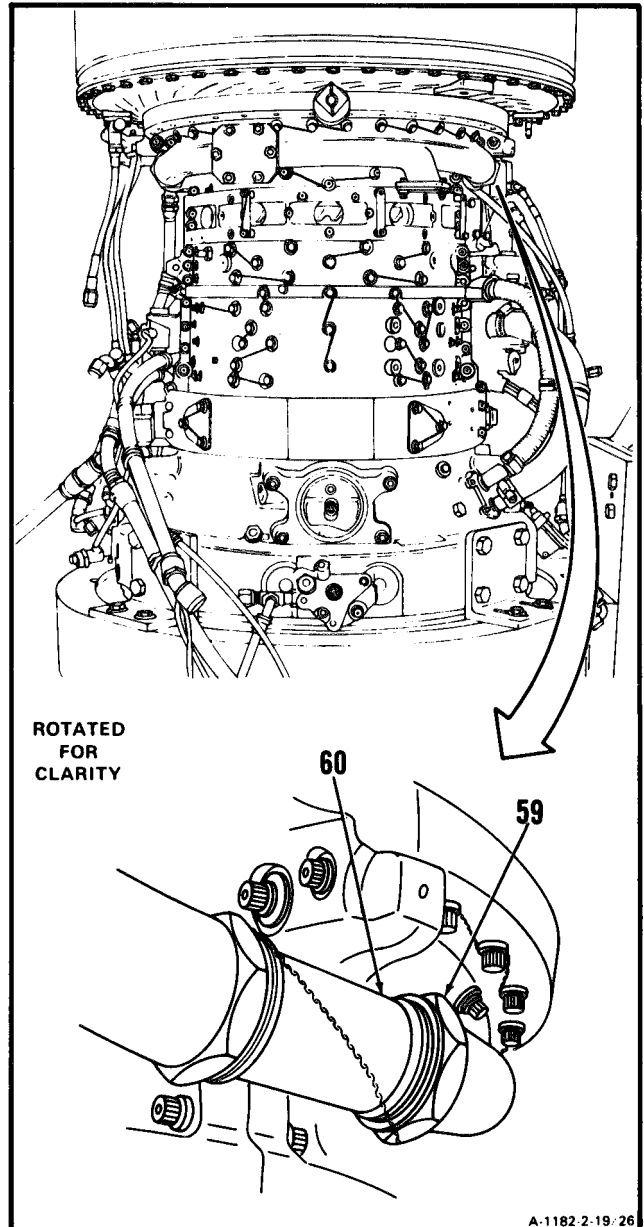


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## 2-19 REMOVE UPPER COMPRESSOR HOUSING (Continued)

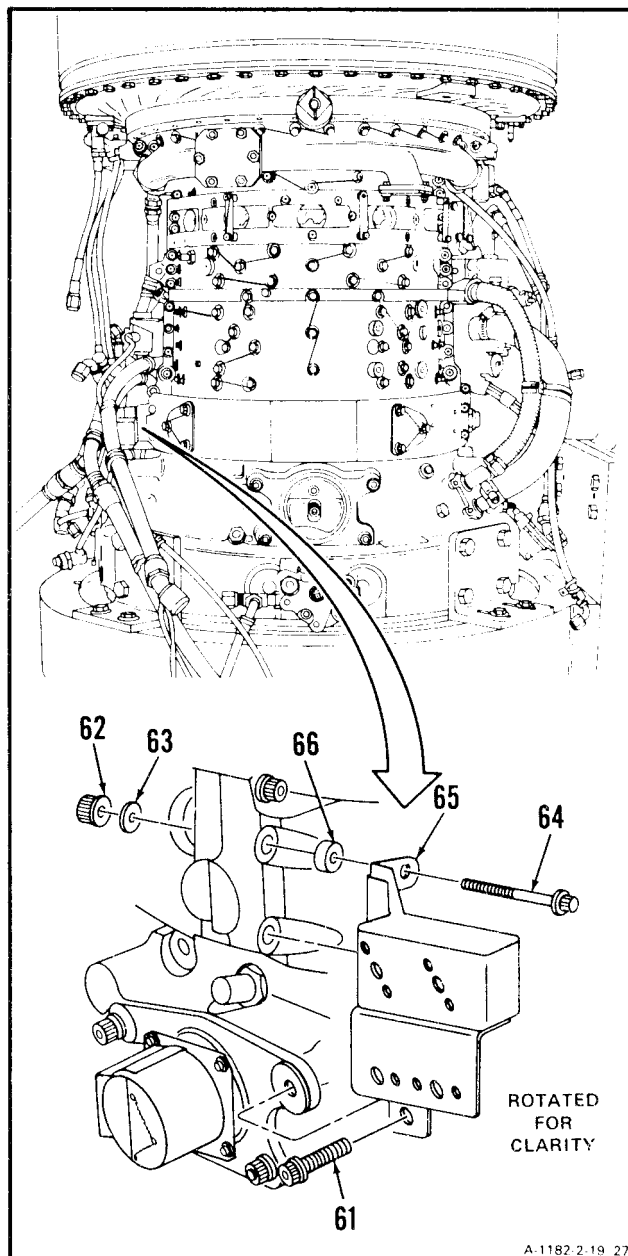
2-19

26. Remove lockwire. **Disconnect nut (59)** from connector (60). Use padded conduit pliers.



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- 27. Remove lockwire and bolt (61).
- 28. **Remove** two nuts (62), washers (63), bolts (64), bracket (65), and spacers (66).



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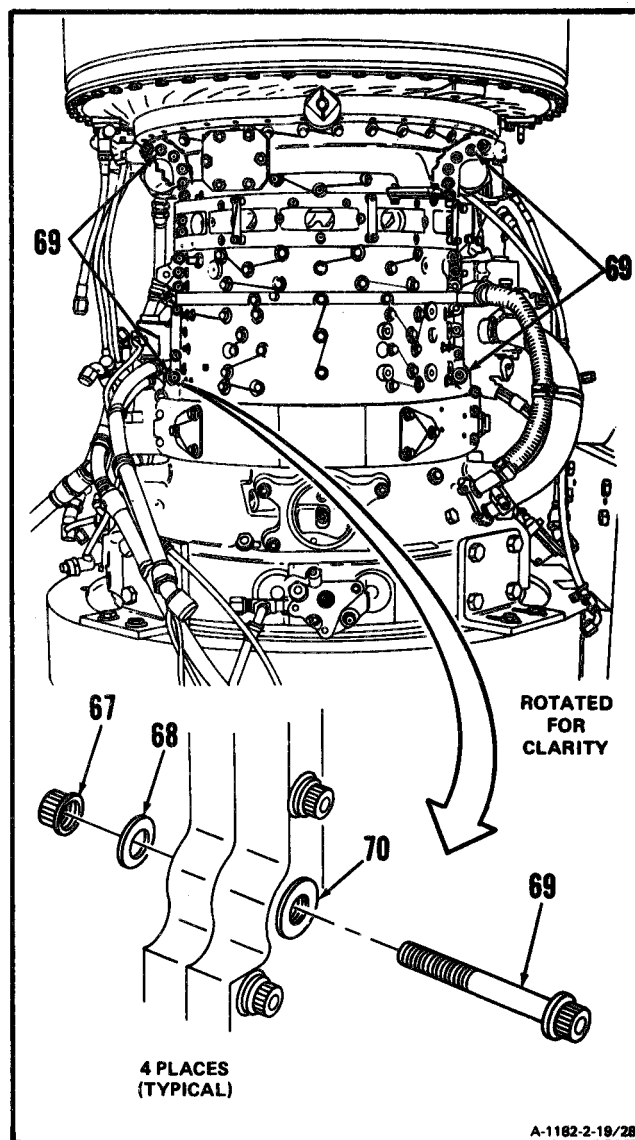
## 2-19 REMOVE UPPER COMPRESSOR HOUSING (Continued)

2-19

**NOTE**

Procedure for removing nuts, bolts and washers from four dowel pins is the same.

- 29 **Remove** four nuts (67), washers (68), and bolts (69) from dowel pins (70).

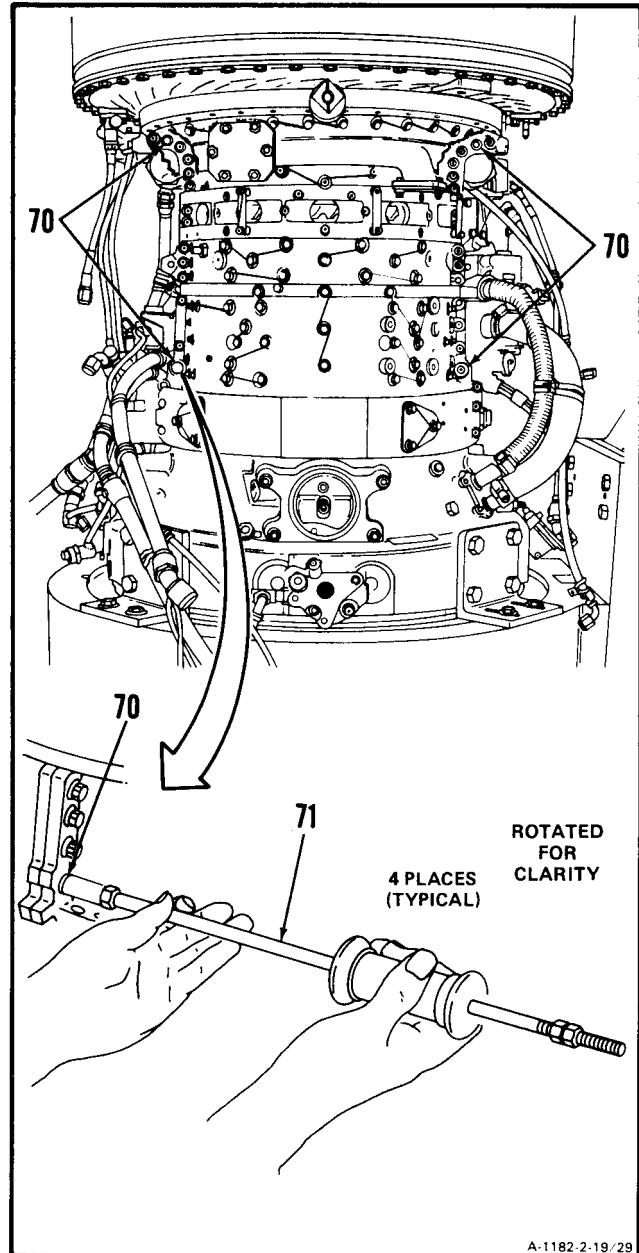


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**NOTE**

Procedure for removing four dowel pins is the same. Procedure for only one is shown.

30. Thread mechanical puller (T6) (71) into dowel pin (70).

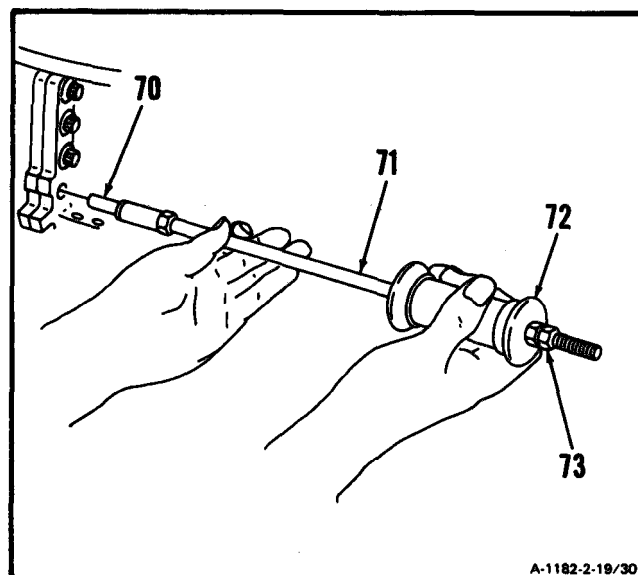


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## 2-19 REMOVE UPPER COMPRESSOR HOUSING (Continued)

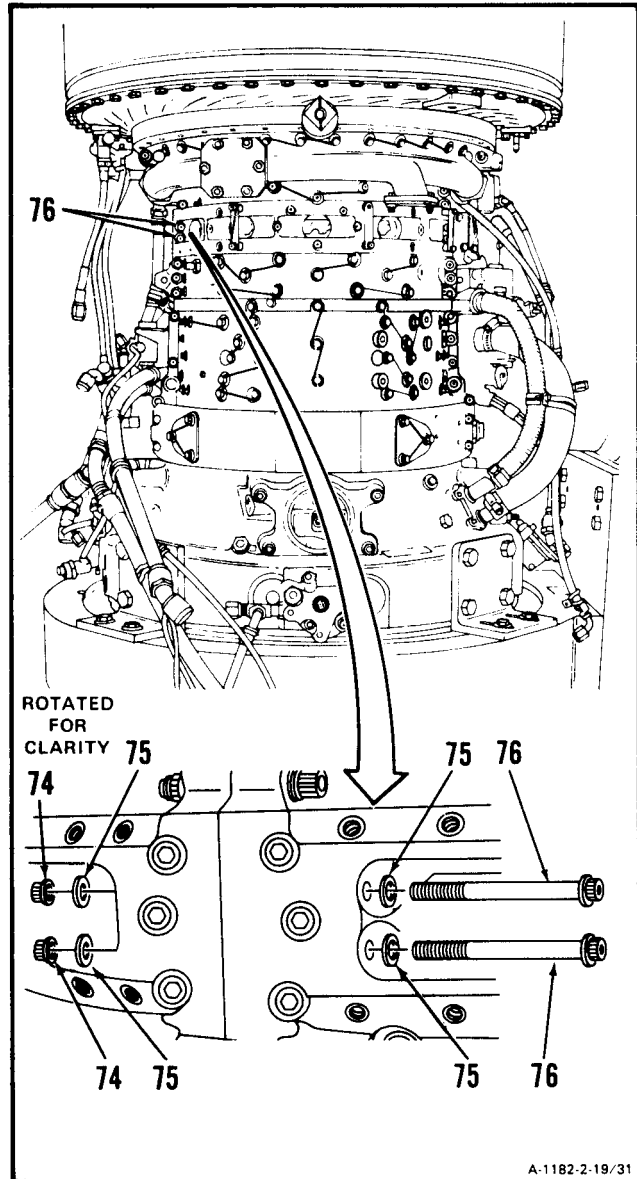
2-19

31. Slide mechanical puller handle (72) up against nuts (73) and **remove dowel pin (70)**.
32. Remove dowel pin (70) from mechanical puller (T6) (71).



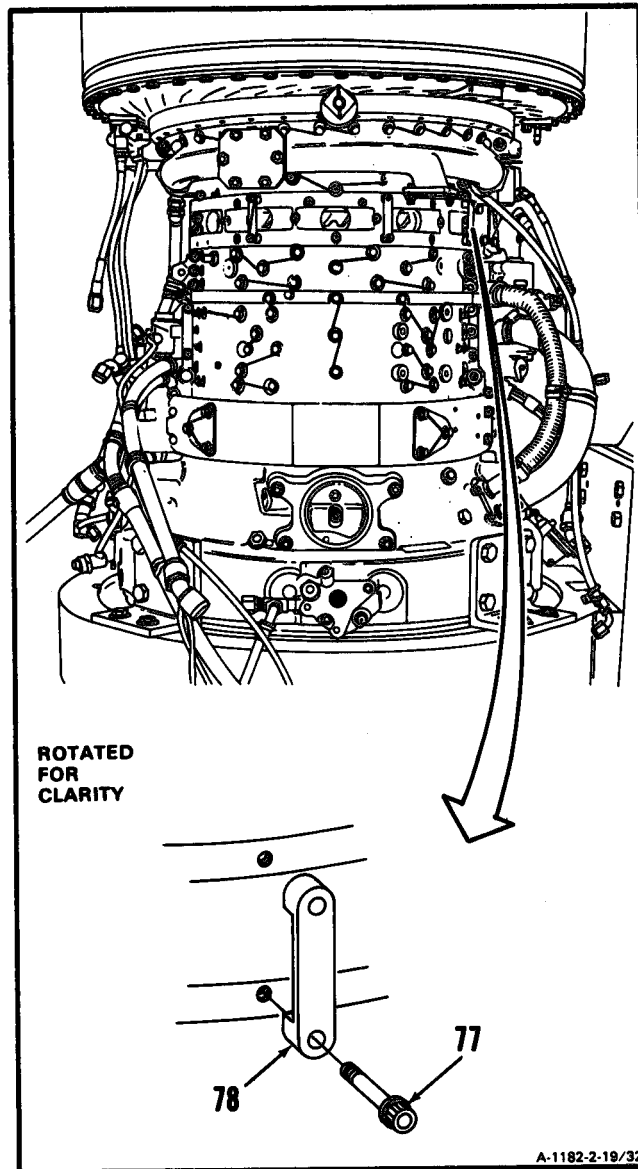
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33. Remove two nuts (74), four washers (75), and two bolts (76).



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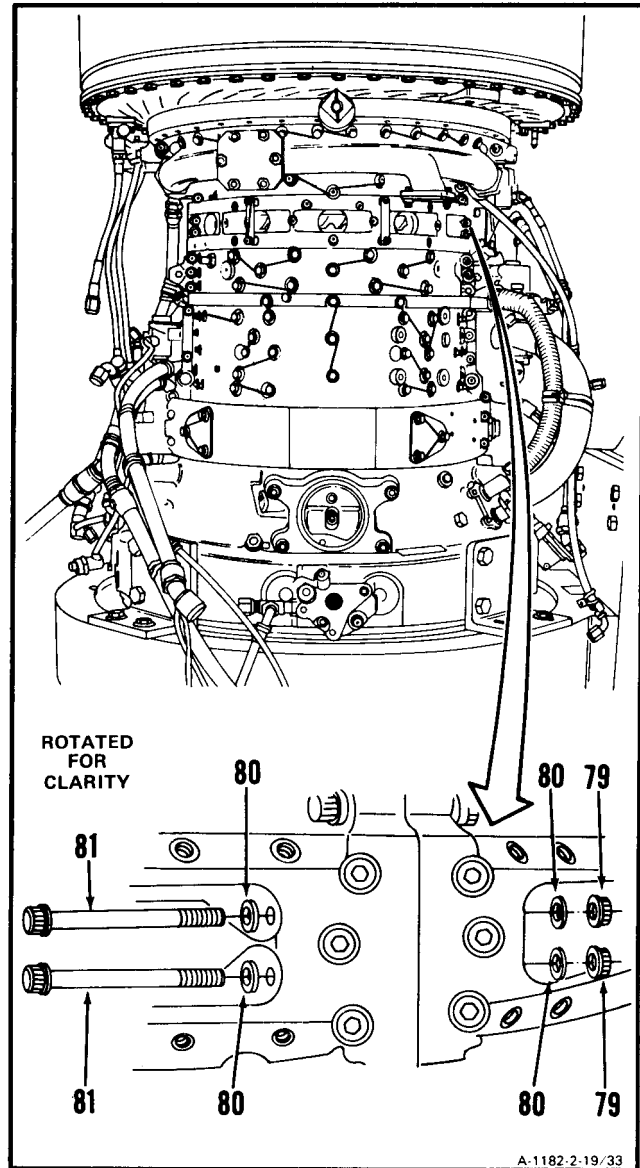
34. Remove lockwire, bolt (77), and bleed bend retainer (78).



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35. **Remove** two nuts (79), four washers (80), and two bolts (81).

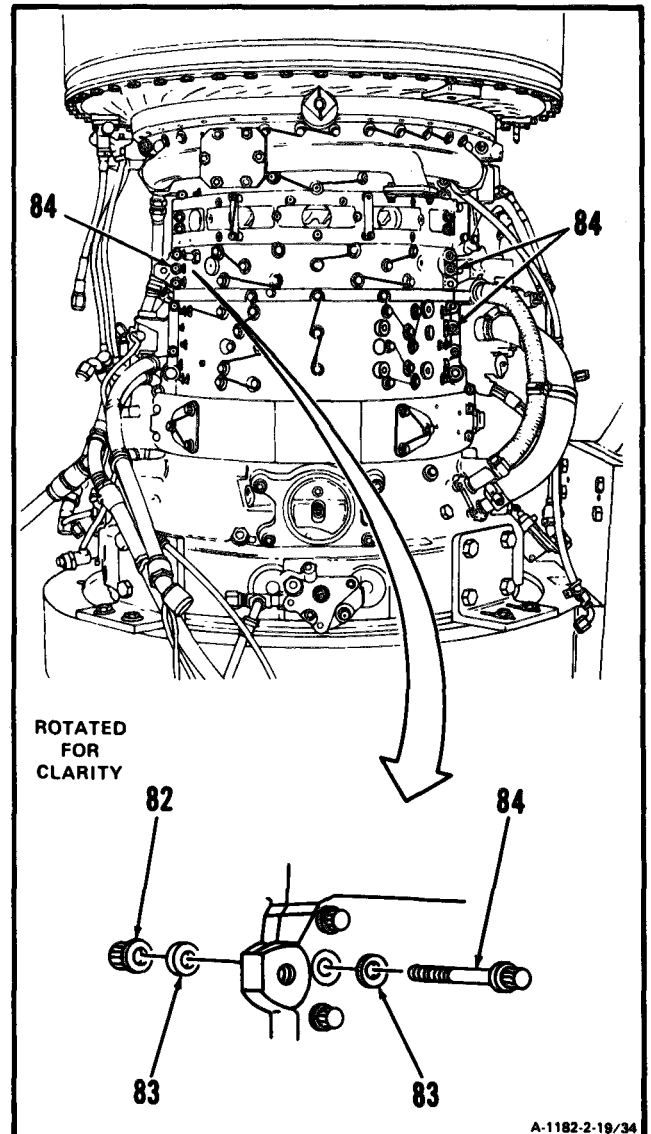


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## 2-19 REMOVE UPPER COMPRESSOR HOUSING (Continued)

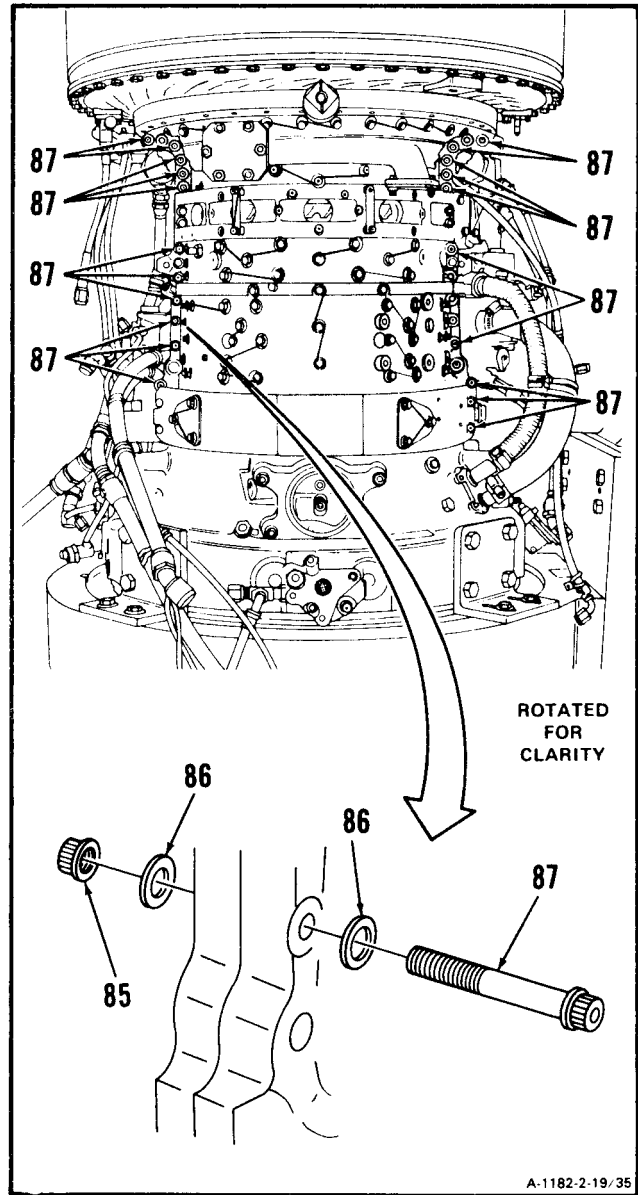
2-19

36. **Remove** three nuts (82), six washers (83), and three bolts (84).



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37. **Remove** 21 nuts (85), 42 washers (86), and 21 bolts (87).

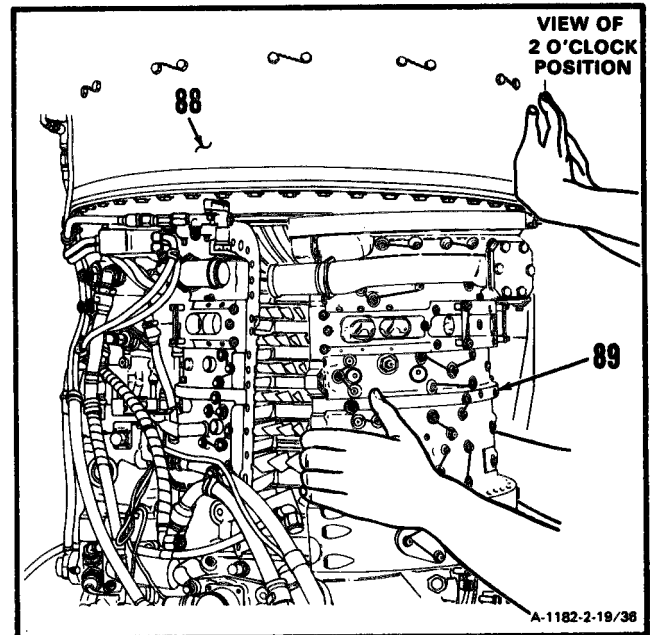


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## 2-19 REMOVE UPPER COMPRESSOR HOUSING (Continued)

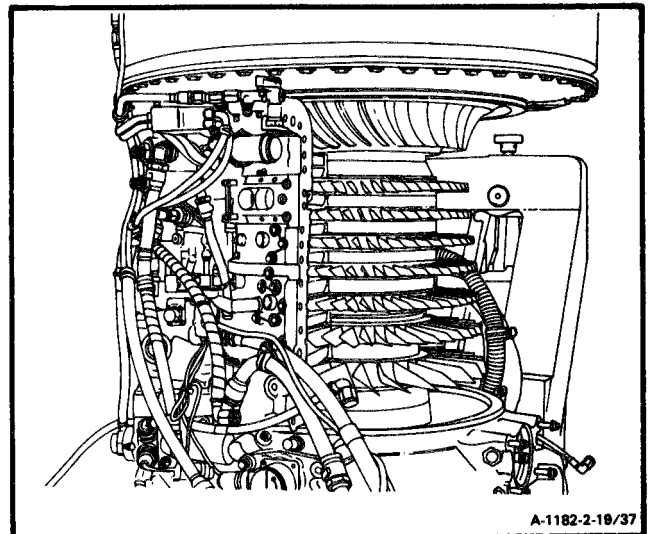
2-19

38. Have helper lift upon combustion section and power turbine (88) and **remove upper compressor housing (89)**.



## FOLLOW-ON MAINTENANCE:

None



END OF TASK

**INITIAL SETUP**

**Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Mechanical Puller (T6)  
Padded Conduit Pliers

**Materials:**

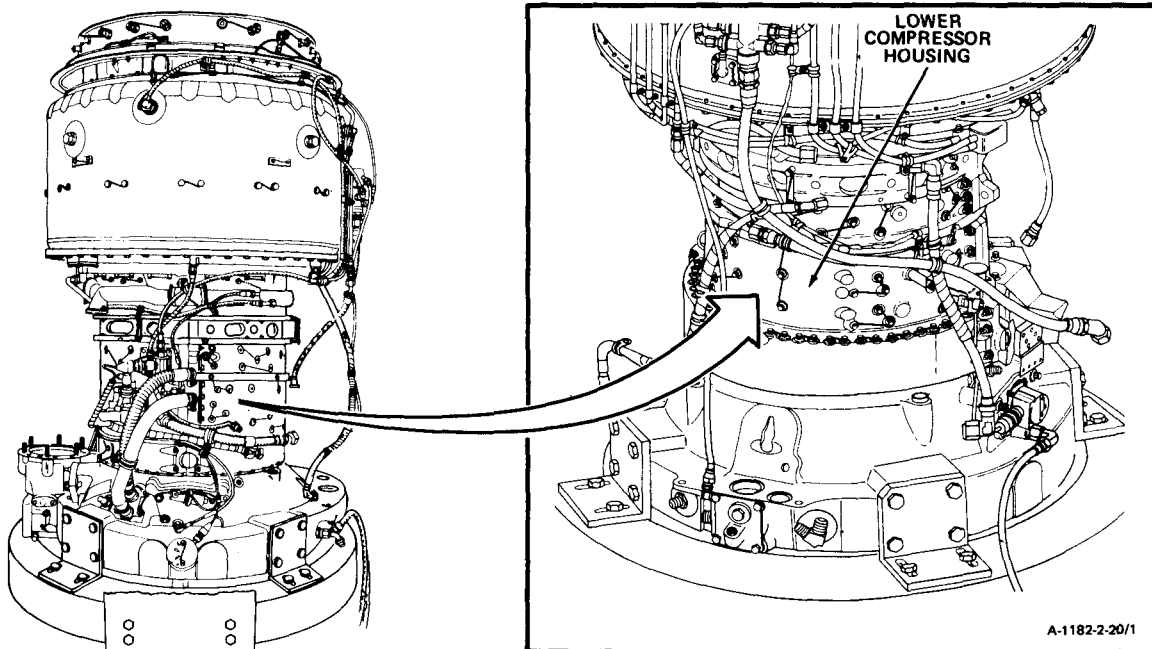
None

**Personnel Required:**

**68B10** Aircraft Powerplant Repairer (2)

**Equipment Condition:**

Engine Oil System Drained (Task 1-75)  
Ignition Exciter Removed (Task 7-11)  
Oil Cooler Assembly Removed (Task 8-5)  
In-Line Fuel Filter Assembly Removed  
(Task 6-36)  
Dual Chip Detector Removed (Task 8-28)  
Fuel Boost Pump Assembly Removed (Task 6-9)  
Hose Assembly (Inlet Housing to Mail Oil Pump)  
Removed (Task 8-50)  
Main Oil Pump and Scavenge Oil Screen Re-  
moved (Task 8-1 )  
Fuel Control Removed (Task 6-1)  
Accessory Gearbox Assembly Removed  
(Task 5-1 )  
Main Fuel Filter and Bracket Removed  
(Task 6-29)  
Interstage Air-Bleed Actuator Removed  
(Task 2-1 )  
Compressor Bleed Band Removed (Task 2-9)



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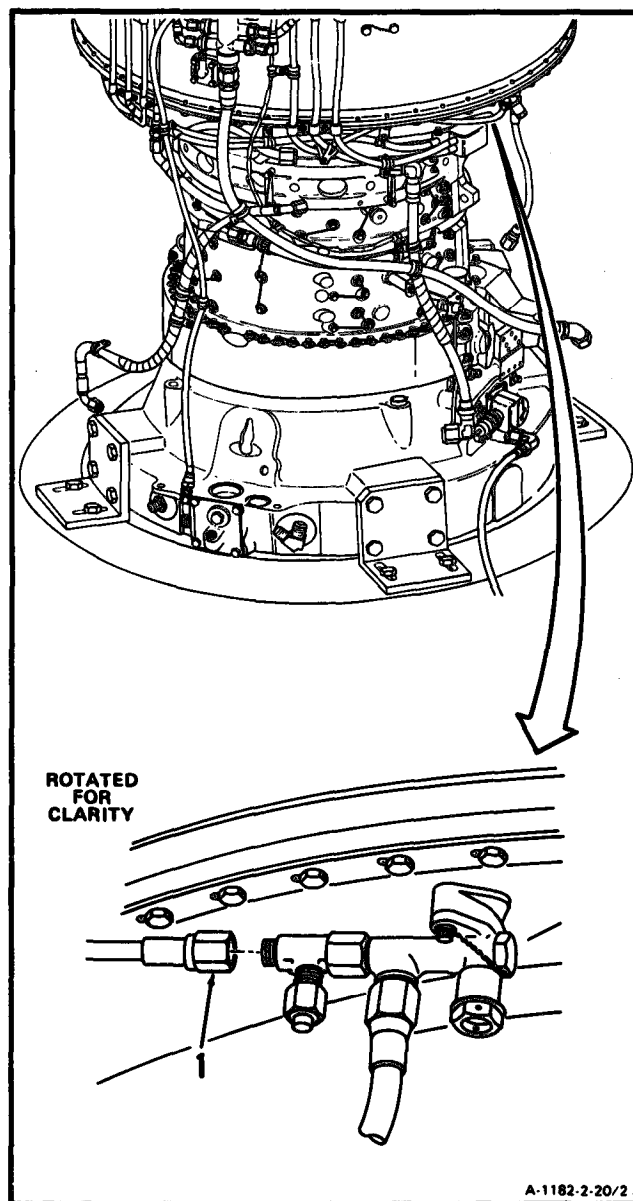
## 2-20 REMOVE LOWER COMPRESSOR HOUSING (Continued)

2-20

**CAUTION**

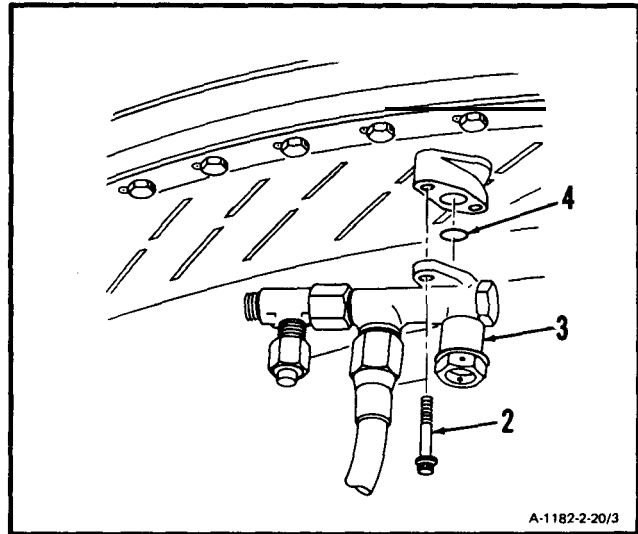
When removing compressor housing, only upper or lower compressor housing half shall be removed-at one time. At no time shall personnel attempt to remove both upper and lower compressor housing halves at the same time. Failure to comply will cause engine damage.

1. Disconnect hose assembly (1).

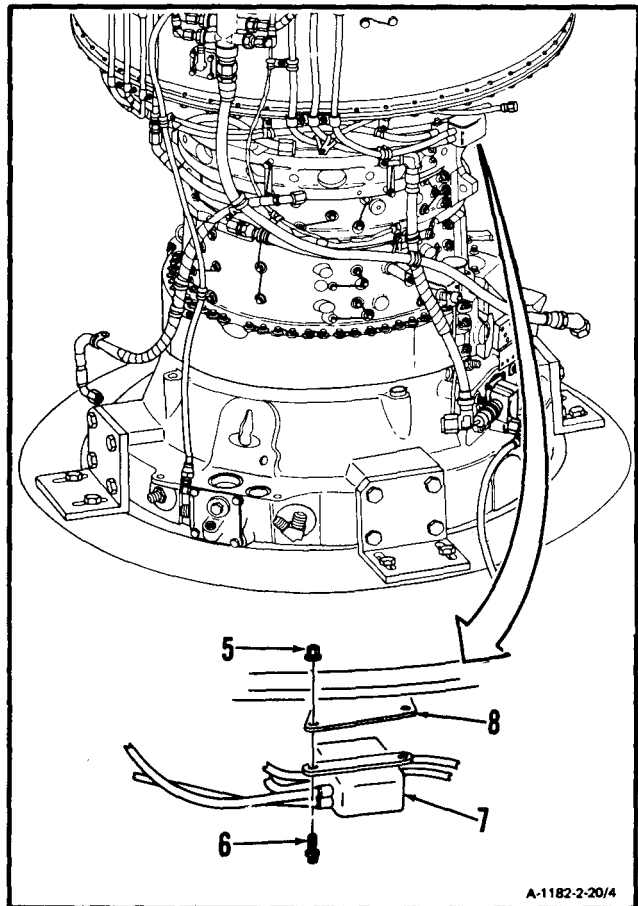


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2. **Remove** lockwire, two bolts (2), **connector (3)**, and packing (4).



3. Remove two nuts (5) and bolts (6) and **remove ignition coil and cable (7)** from bracket (8).

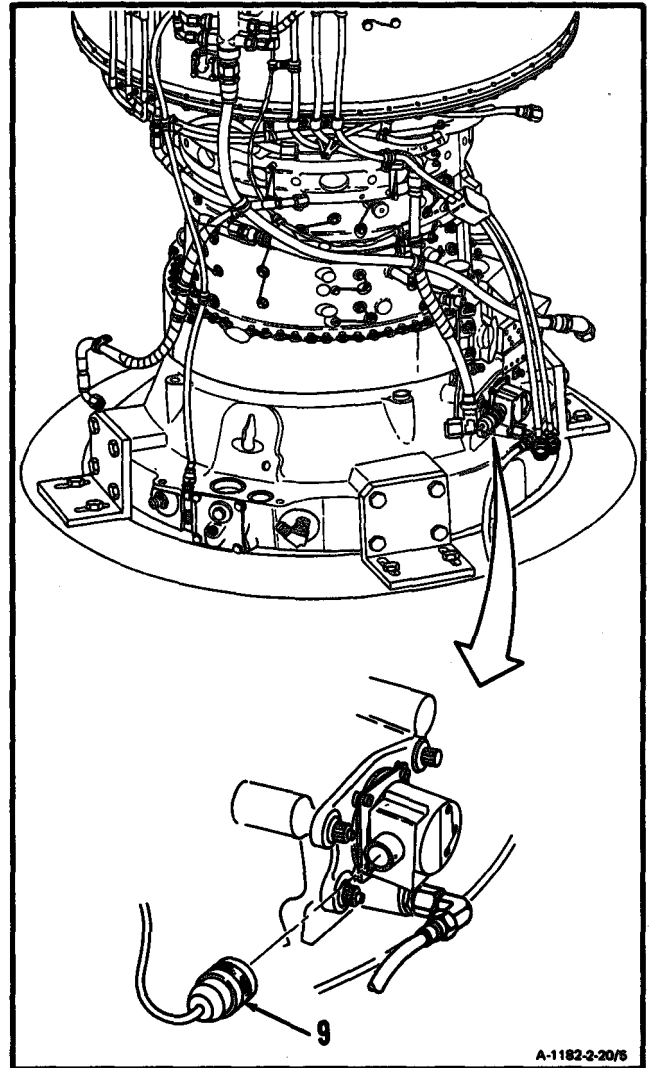


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## 2-20 REMOVE LOWER COMPRESSOR HOUSING (Continued)

2-20

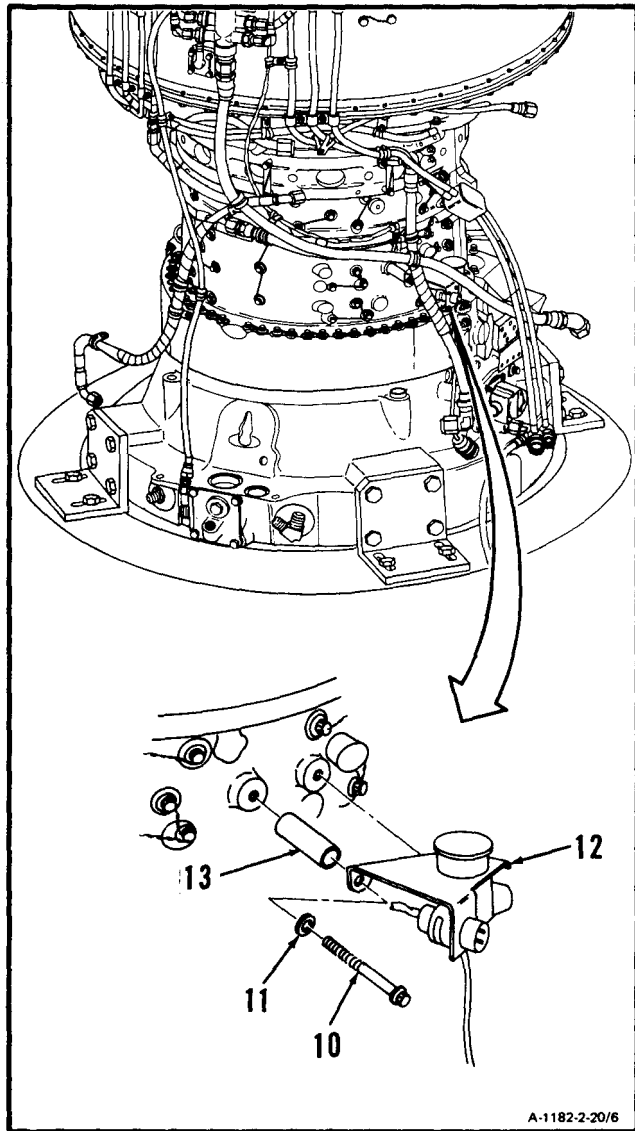
4. Disconnect electrical cable (9).



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5. **Remove** lockwire, two bolts (10), washers(11), **bracket (12)** and two spacers (13).

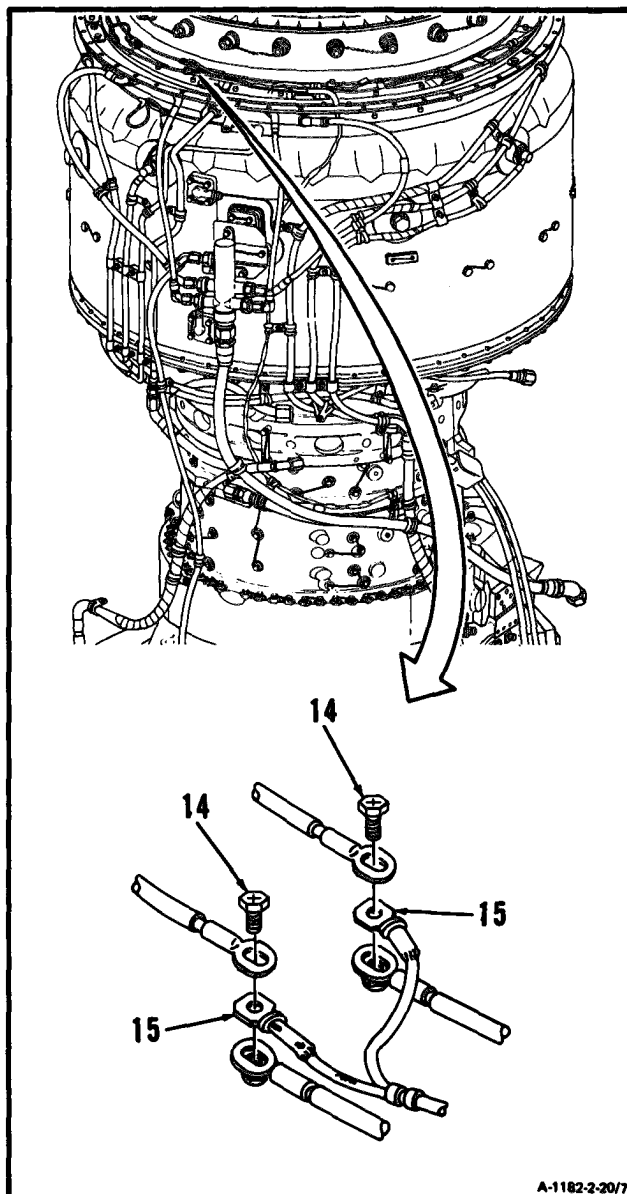


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## 2-20 REMOVE LOWER COMPRESSOR HOUSING (Continued)

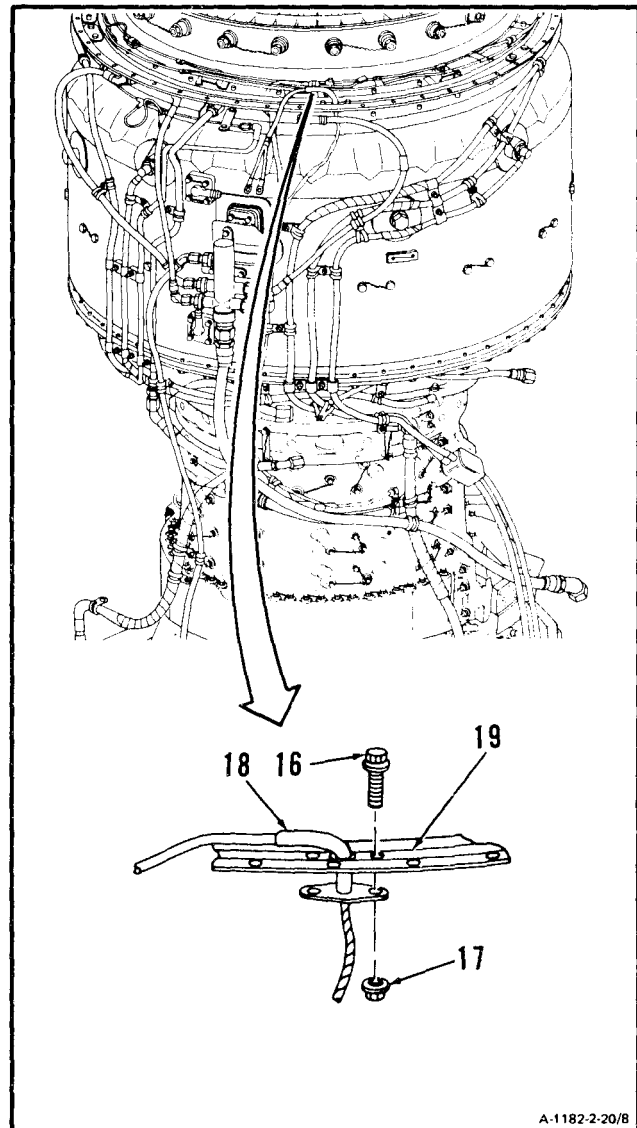
2-20

6. Remove two screws (14) and thermocouple leads (15).



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7. Remove two bolts (16) and nuts (17) and pull thermocouple leads (18) through fireshield (19).

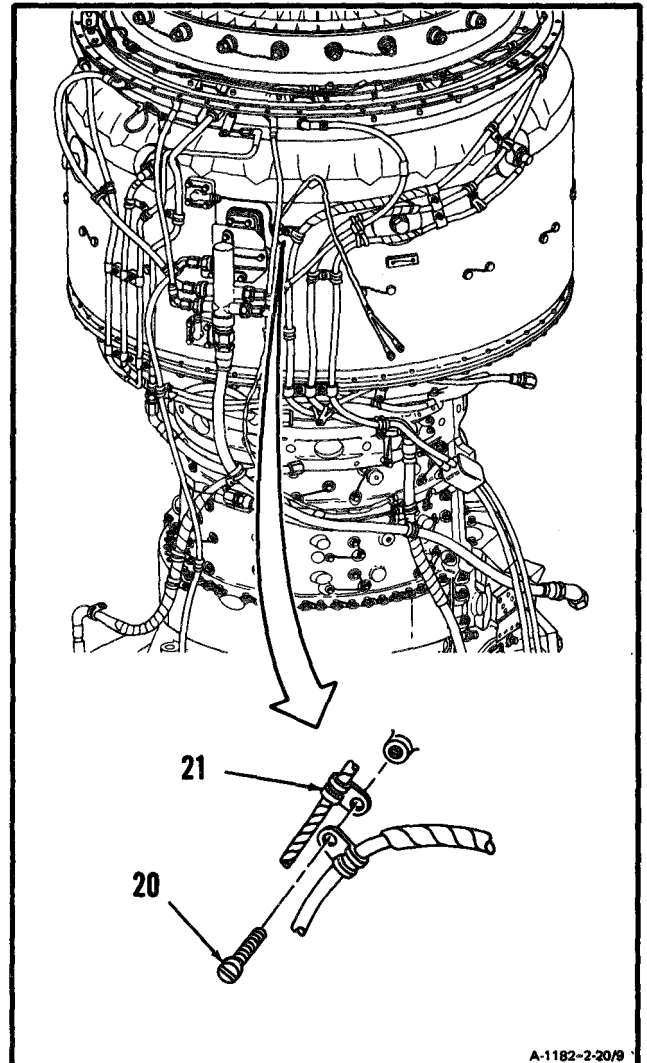


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## 2-20 REMOVE LOWER COMPRESSOR HOUSING (Continued)

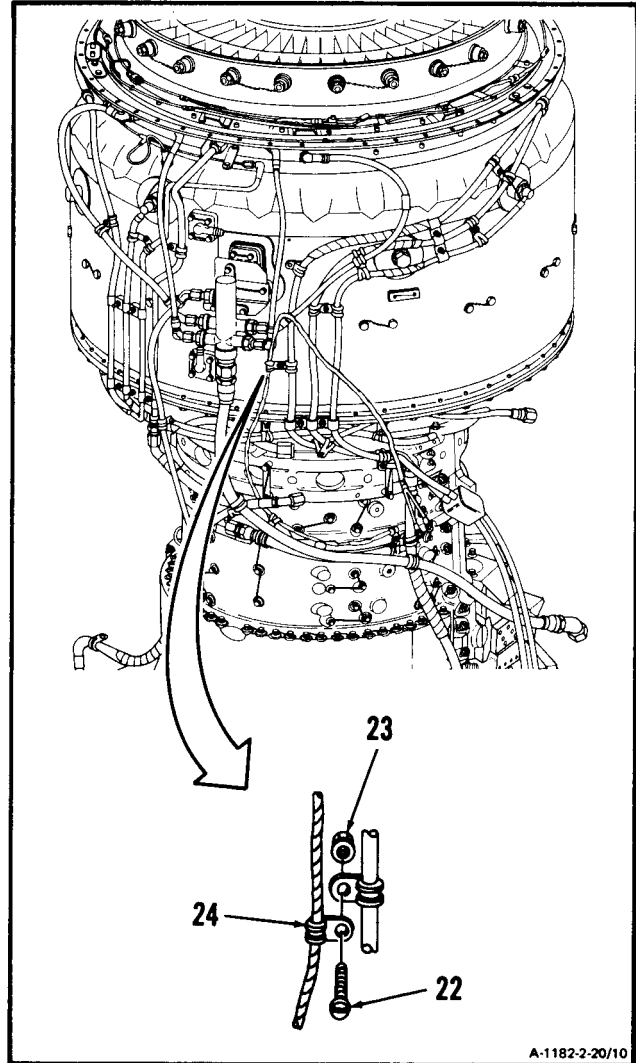
2-20

8. Remove lockwire, screw (20), and clamp (21).



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9. Remove screw (22), nut (23), and clamp (24).

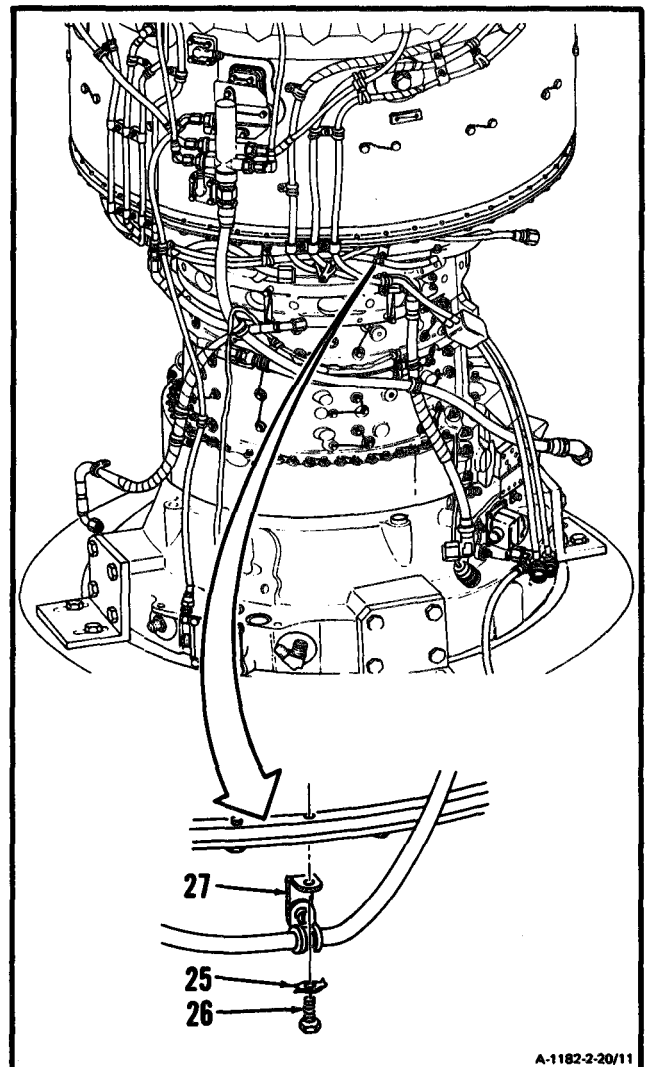


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## 2-20 REMOVE LOWER COMPRESSOR HOUSING (Continued)

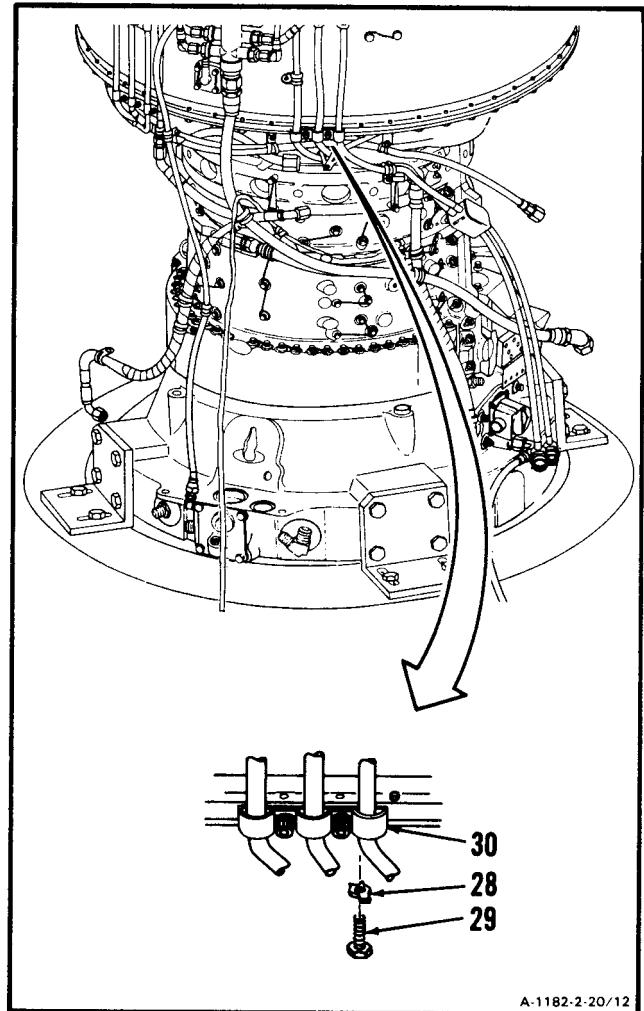
2-20

10. Bend tabs of key washer (25) and **remove** bolt (26), key washer (25), and **bracket (27)**.



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11. Bend tabs of two key washers (28) and **remove** two bolts (29), key washers (28), and **bracket (30)**.



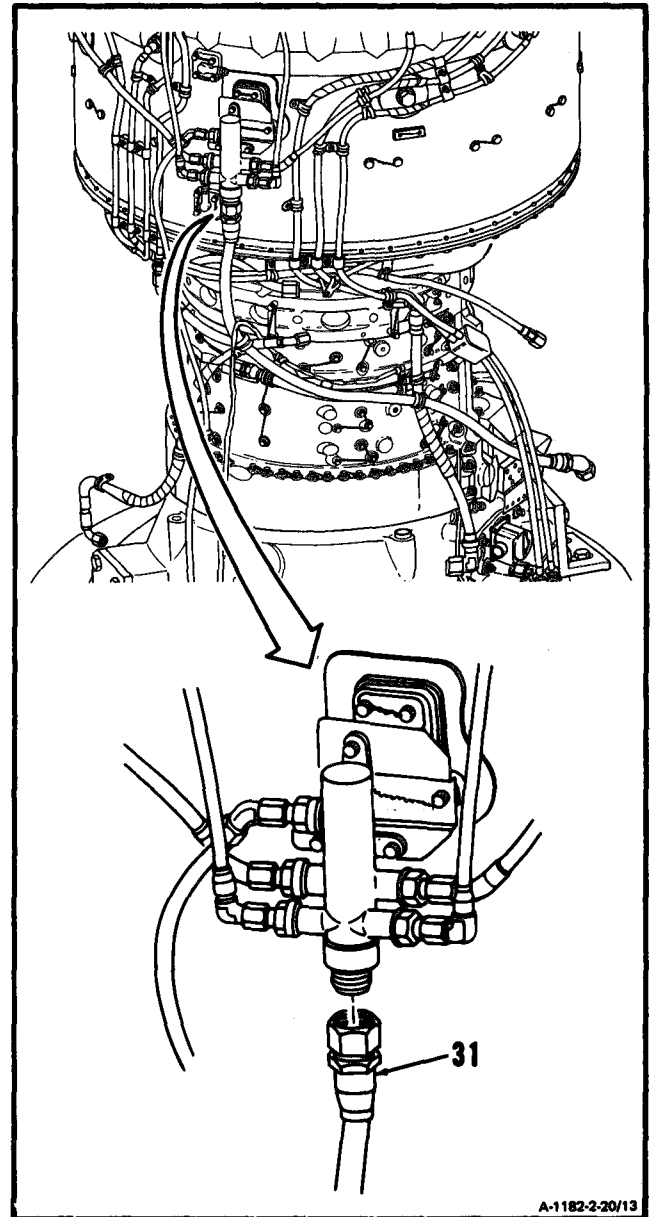
A-1182-2-20/12

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## 2-20 REMOVE LOWER COMPRESSOR HOUSING (Continued)

2-20

12. Disconnect hose assembly (31).

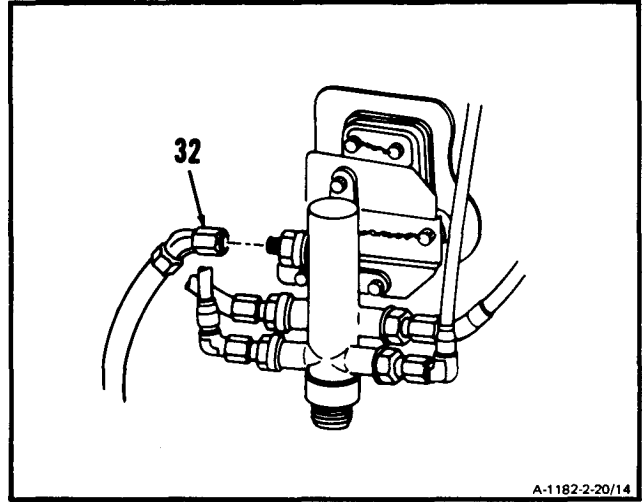


A-1182-2-20/13

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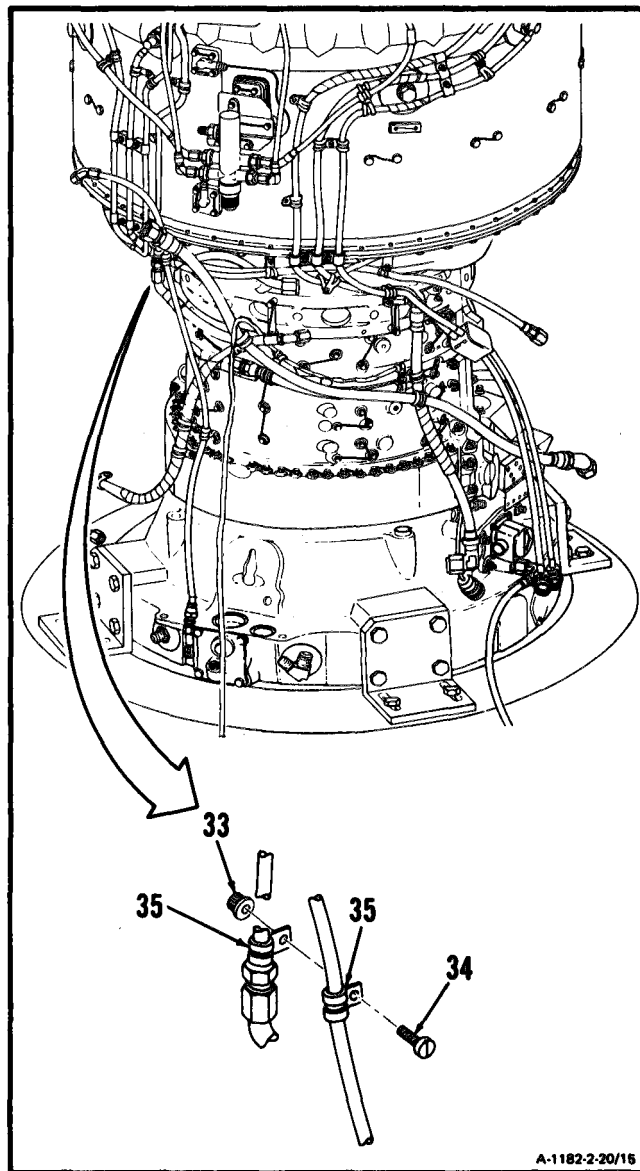


13. **Disconnect hose assembly (32).**



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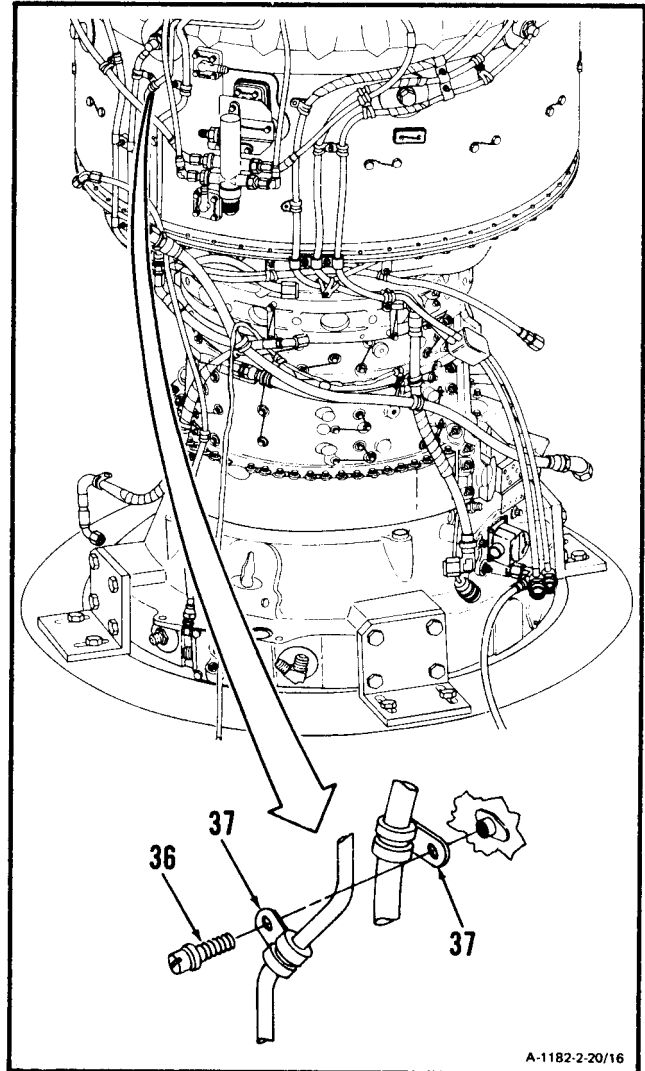
14. Remove nut (33), screw (34), and two clamps (35).



A-1182-2-20/16

**GO TO NEXT PAGE**

15. **Remove** lockwire, screw (36), and two **clamps** (37).



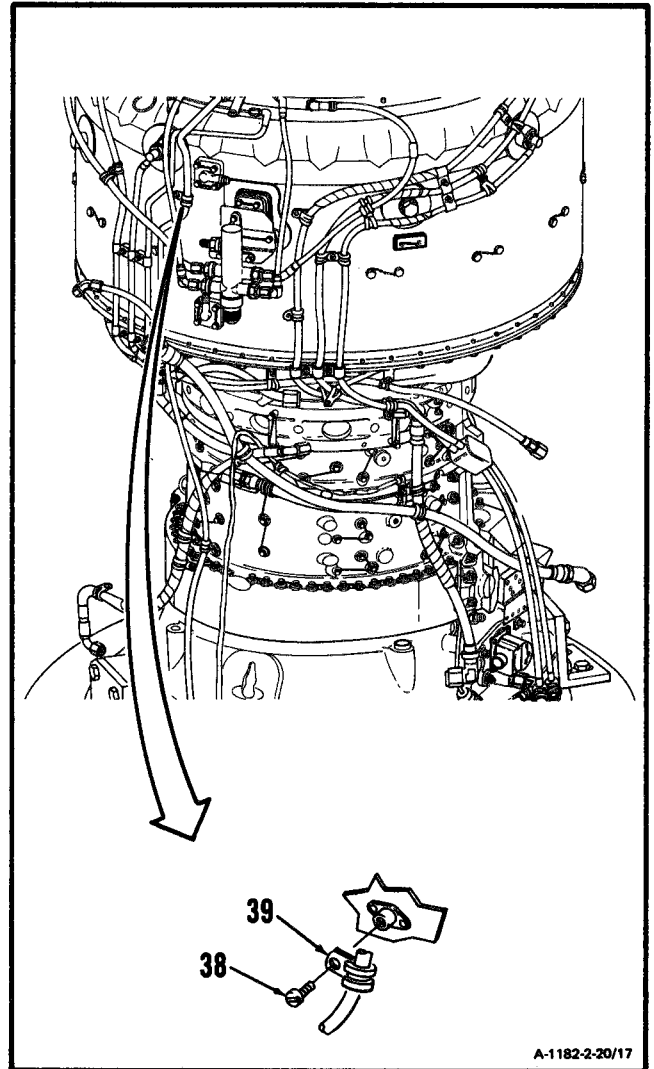
A-1182-2-20/16

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## 2-20 REMOVE LOWER COMPRESSOR HOUSING (Continued)

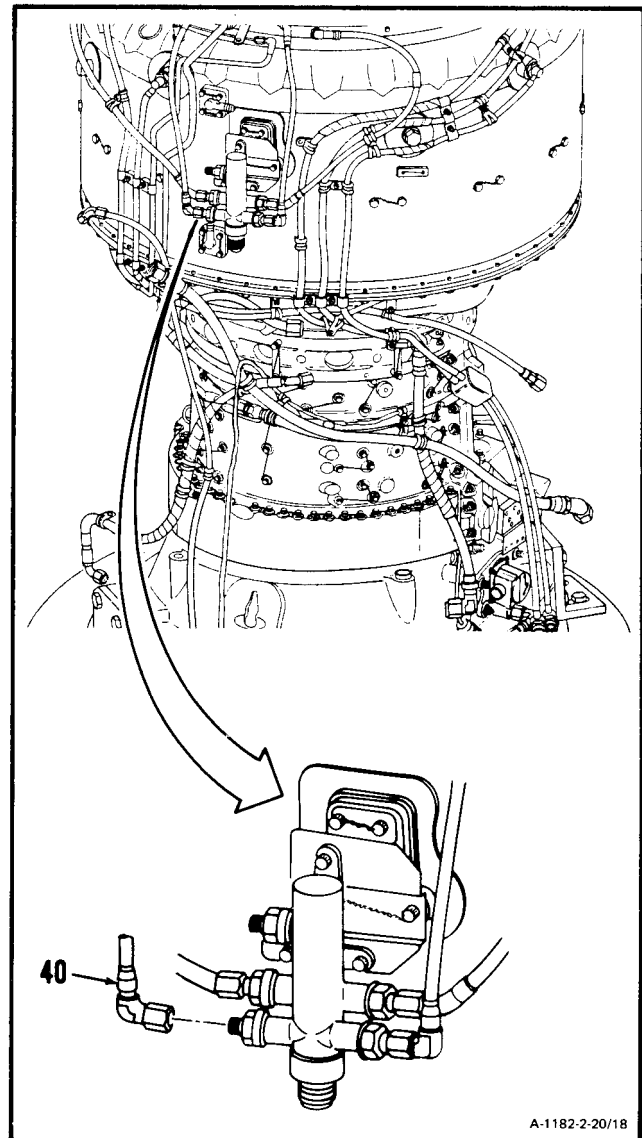
2-20

16. **Remove** lockwire, screw (38), and **clamp (39)**.



**GO TO NEXT PAGE**

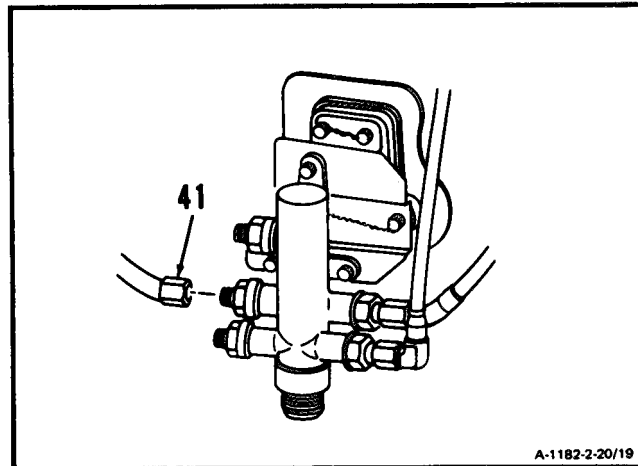
17. Disconnect hose assembly (40).



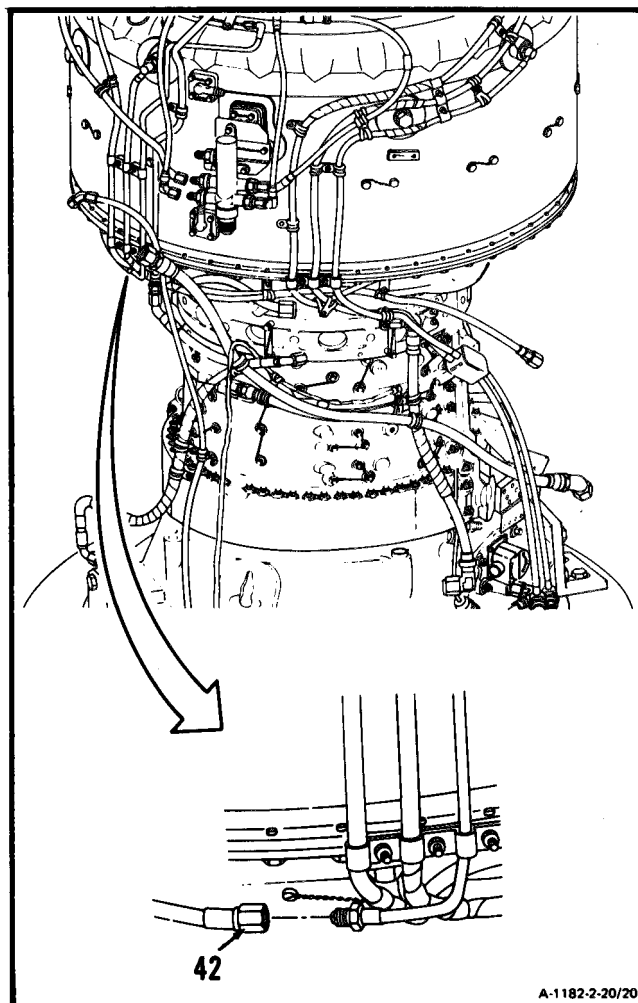
A-1182-2-20/18

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18. Disconnect hose assembly (41).

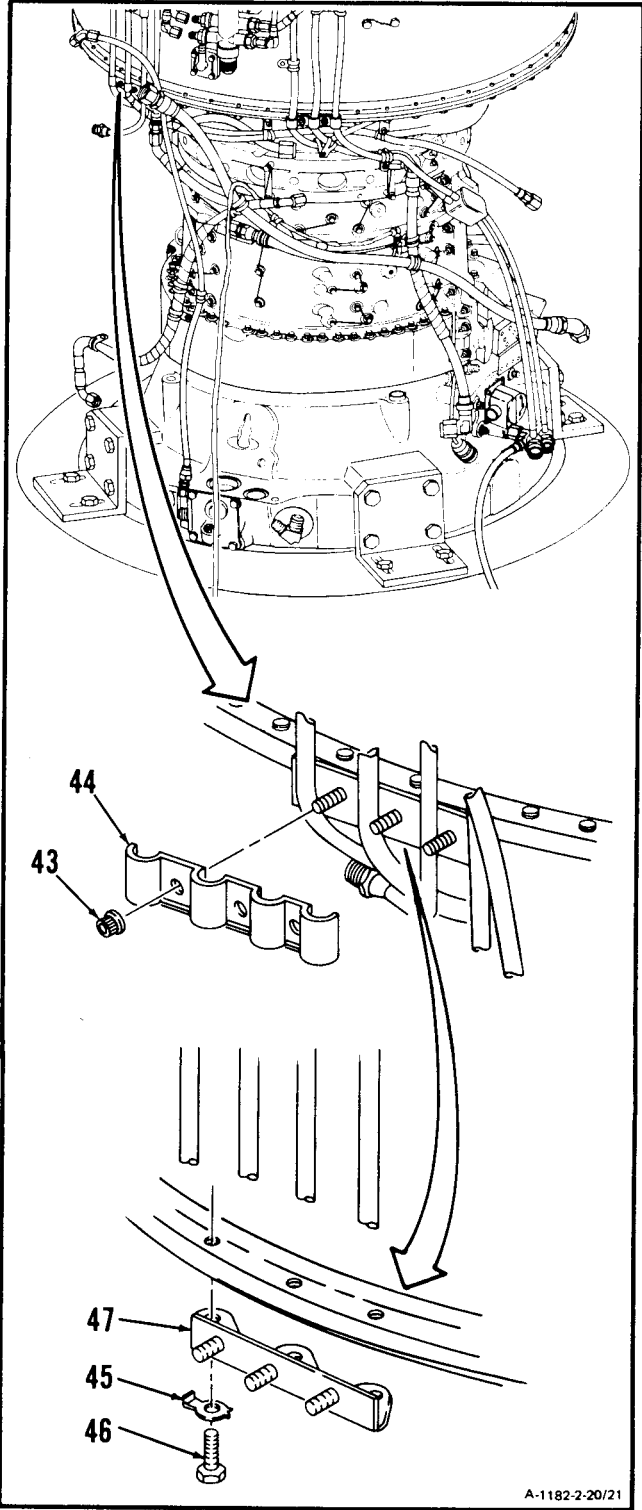


19. Disconnect hose assembly (42).



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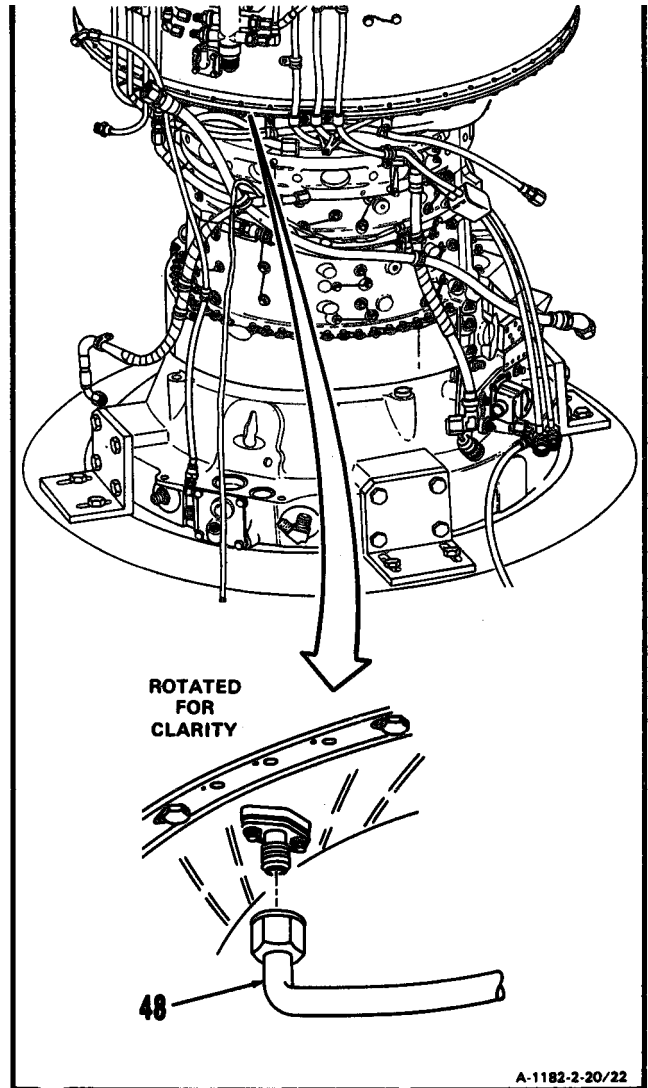
20. Remove three nuts (43) and clamp (44).



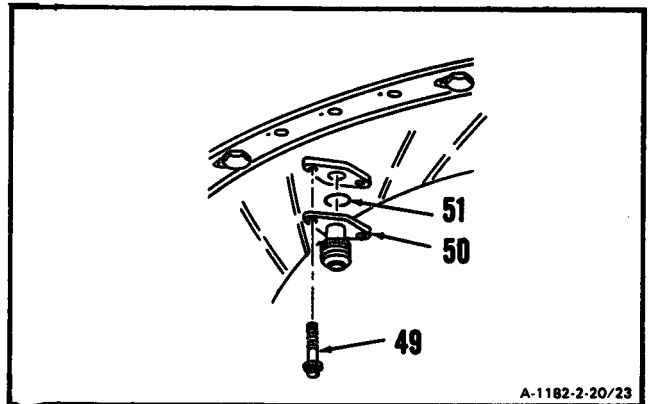
21. Bend tabs of three key washers (45). Remove three bolts (46), key washers (45), and bracket (47).

**GO TO NEXT PAGE**

22. Disconnect hose assembly (48).



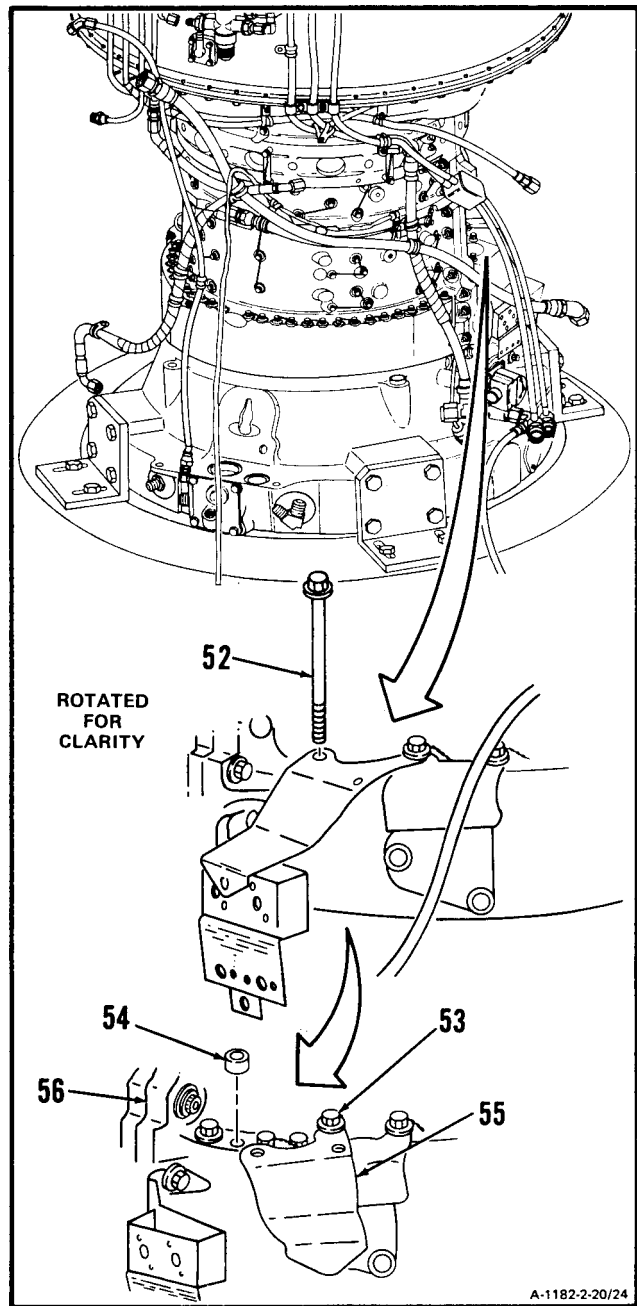
23. Remove lockwire, two bolts (49), adapter (50), and packing (51).



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- 24. **Remove** lockwire, and **bolt (52)**.
- 25. **Remove** lockwire and **loosen bolt (53)** and swing bracket (55) away from housing splitline (56). **Remove spacer (54)**.



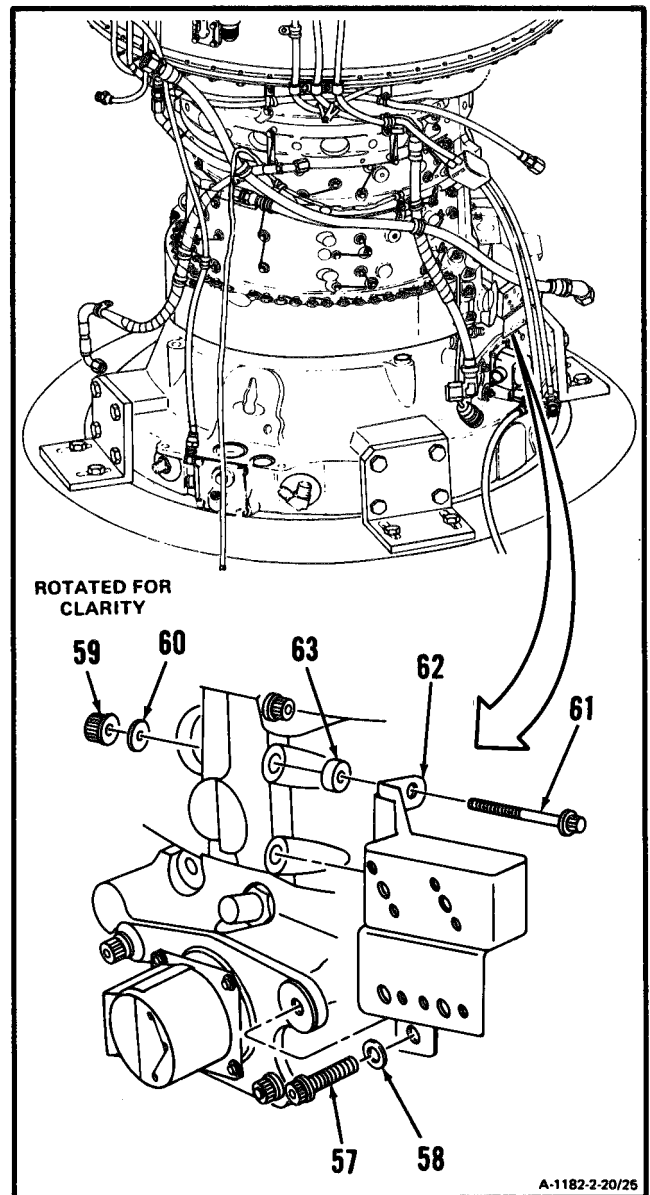
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## 2-20 REMOVE LOWER COMPRESSOR HOUSING (Continued)

2-20

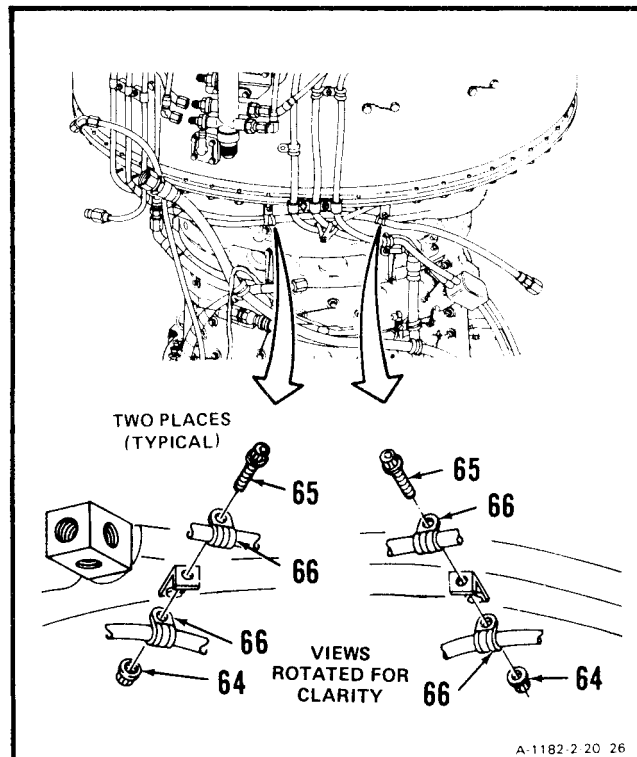
26. Remove lockwire, bolt (57), and washer (58).

27. Remove two nuts (59), washers (60), bolts (61), bracket (62), and spacers (63).



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28. Remove two nuts (64), two bolts (65), and four clamps (66).



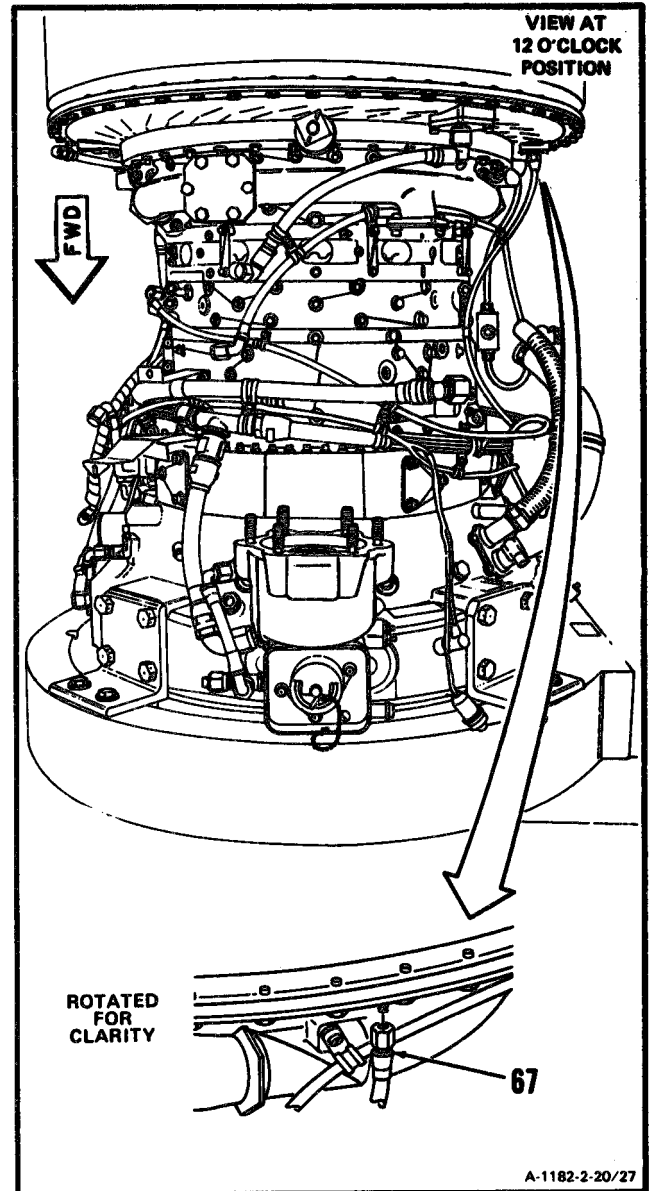
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## 2-20 REMOVE LOWER COMPRESSOR HOUSING (Continued)

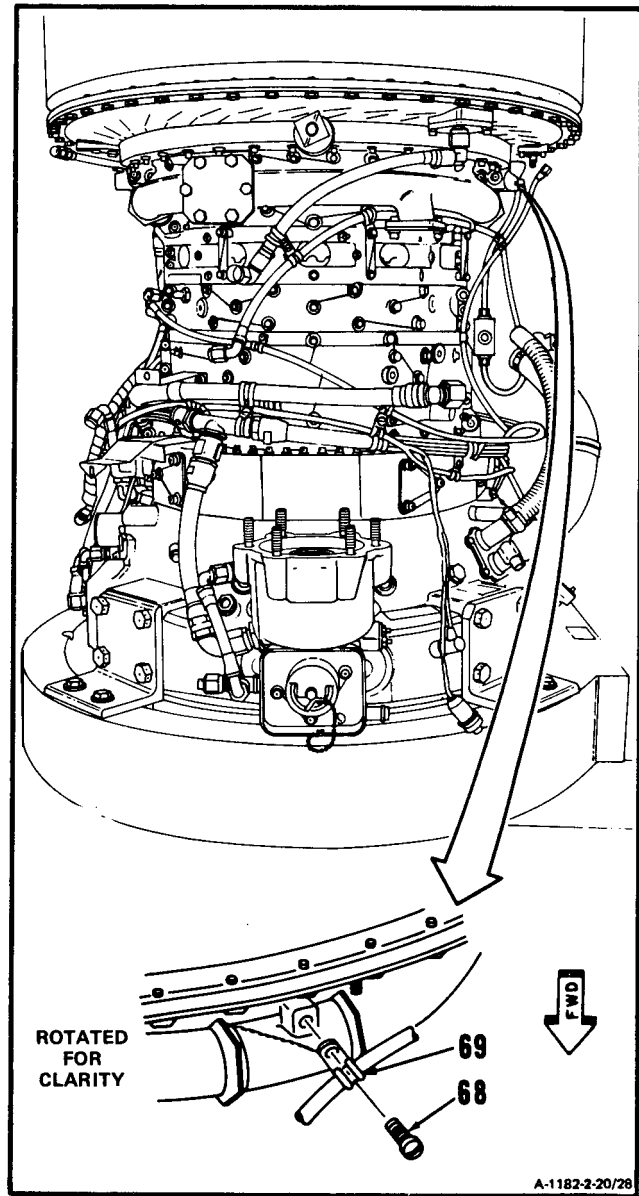
2-20

**NOTE**

If lockwire is disturbed when disconnecting hose in following step, remove lockwire.

**29. Disconnect hose assembly (67).****GO TO NEXT PAGE**

30. **Remove** lockwire, screw (68), and **clamp (69)**.

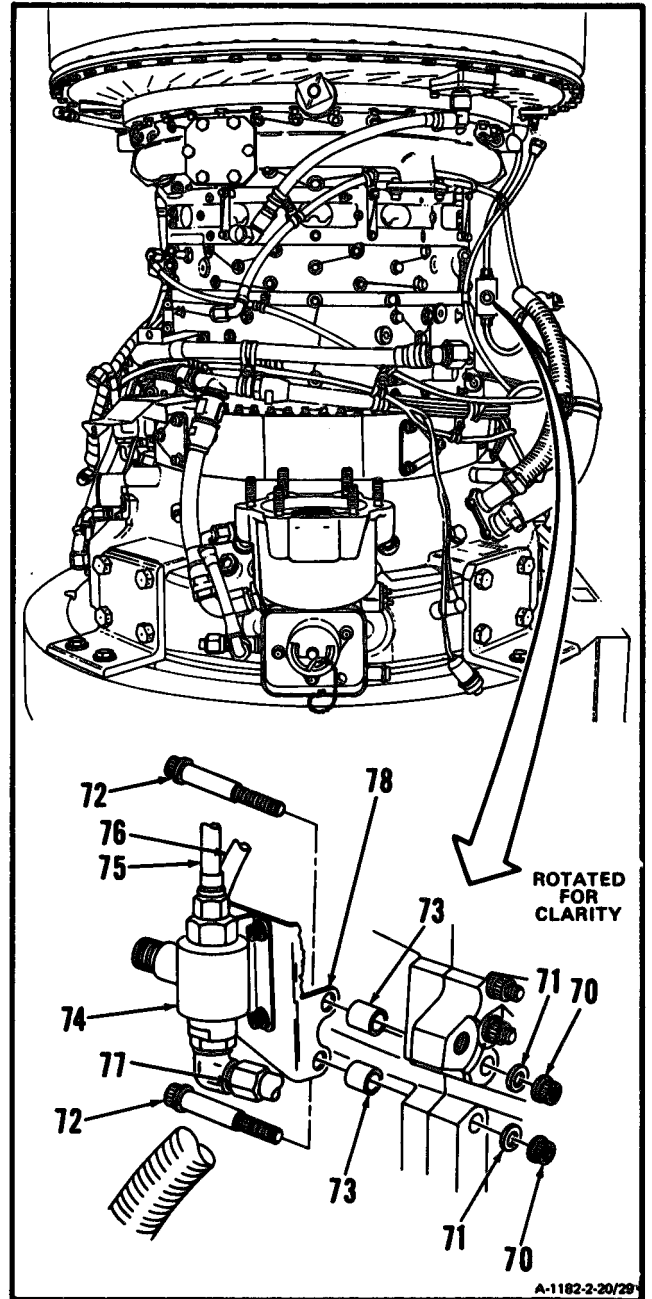


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## 2-20 REMOVE LOWER COMPRESSOR HOUSING (Continued)

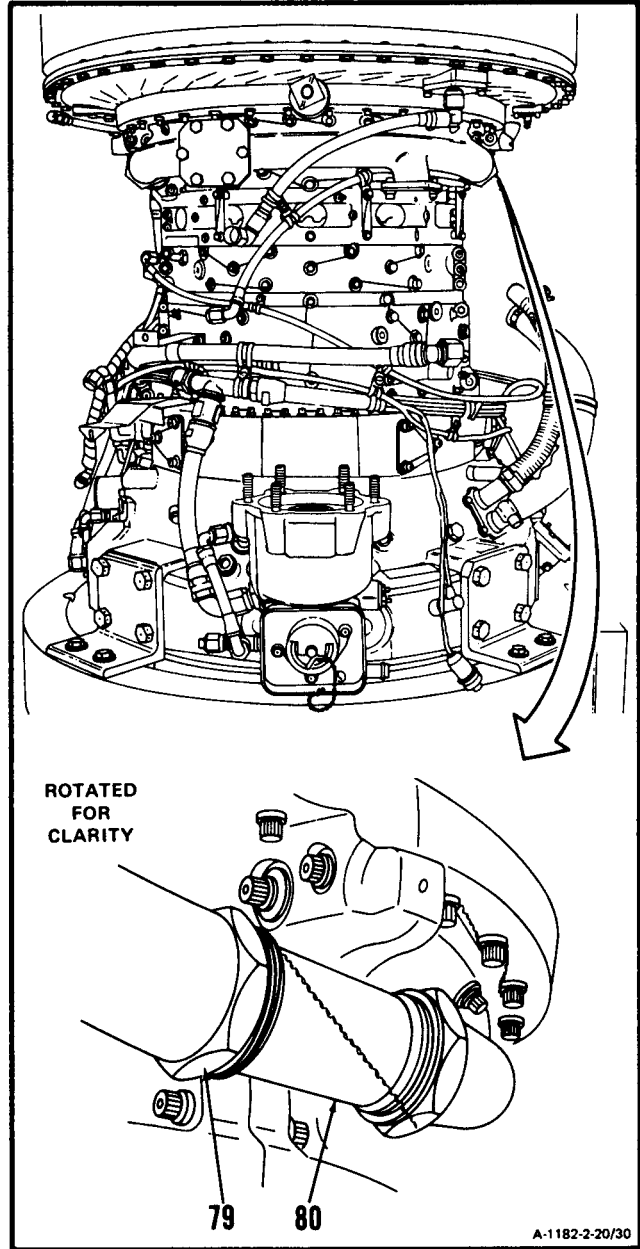
2-20

31. Remove two nuts (70), washers (71), bolts (72), and spacers (73).
32. Remove solenoid valve (74), hose assembly (75, 76, and 77), and bracket (78) as an assembly.



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33. Remove lockwire and **disconnect nut (79)** from connector (80). Use padded conduit pliers.

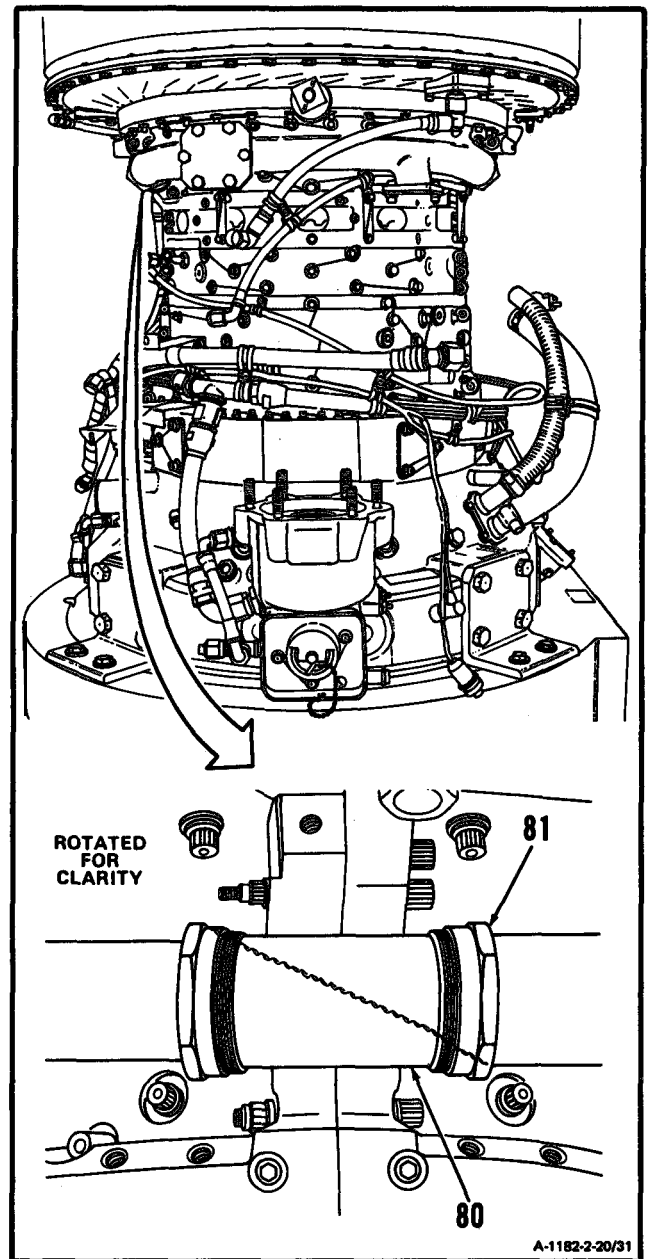


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## 2-20 REMOVE LOWER COMPRESSOR HOUSING (Continued)

2-20

34. Remove lockwire and **disconnect nut (81)** from connector (80). Use padded conduit pliers.

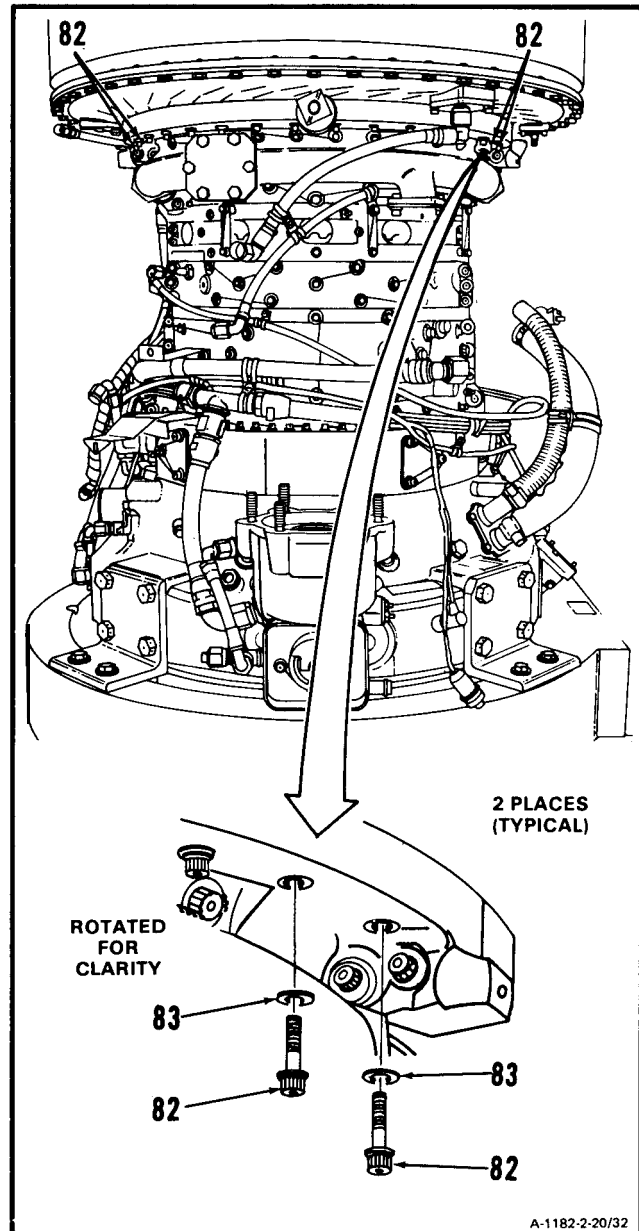


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35. Remove lockwire, four bolts (82) and washers (83).



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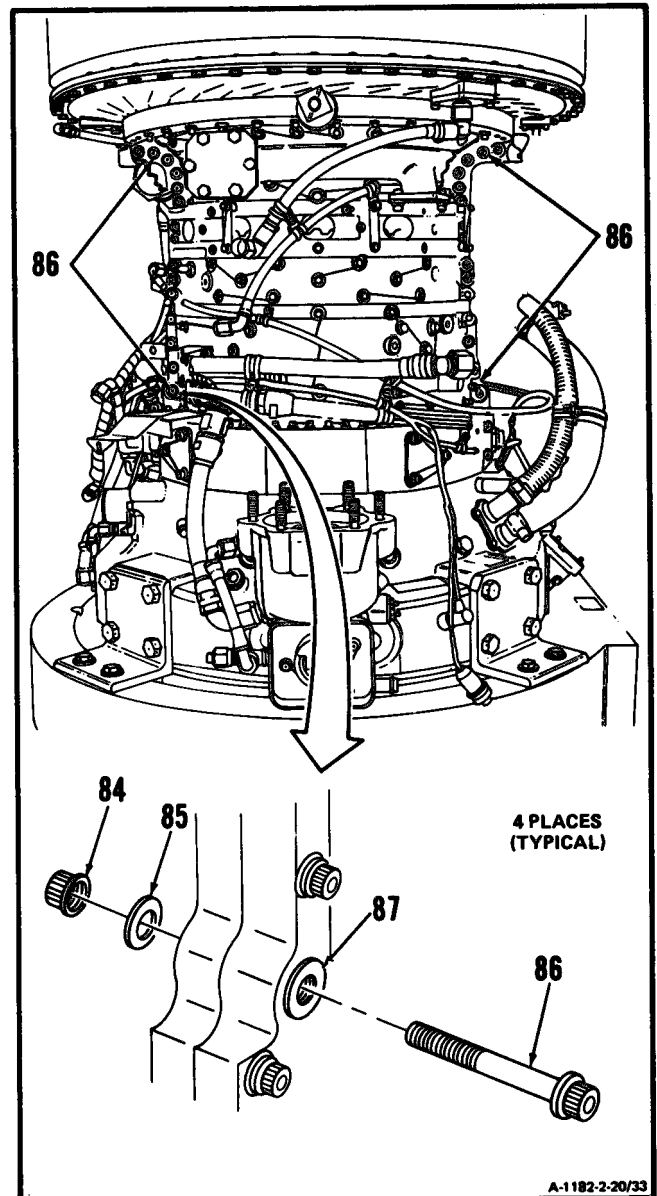
## 2-20 REMOVE LOWER COMPRESSOR HOUSING (Continued)

2-20

**NOTE**

Procedure for removing nuts, bolts, and washers from four dowel pins is the same.

- 36 **Remove** four nuts (84), washers (85), and bolts (86) from dowel pins (87).

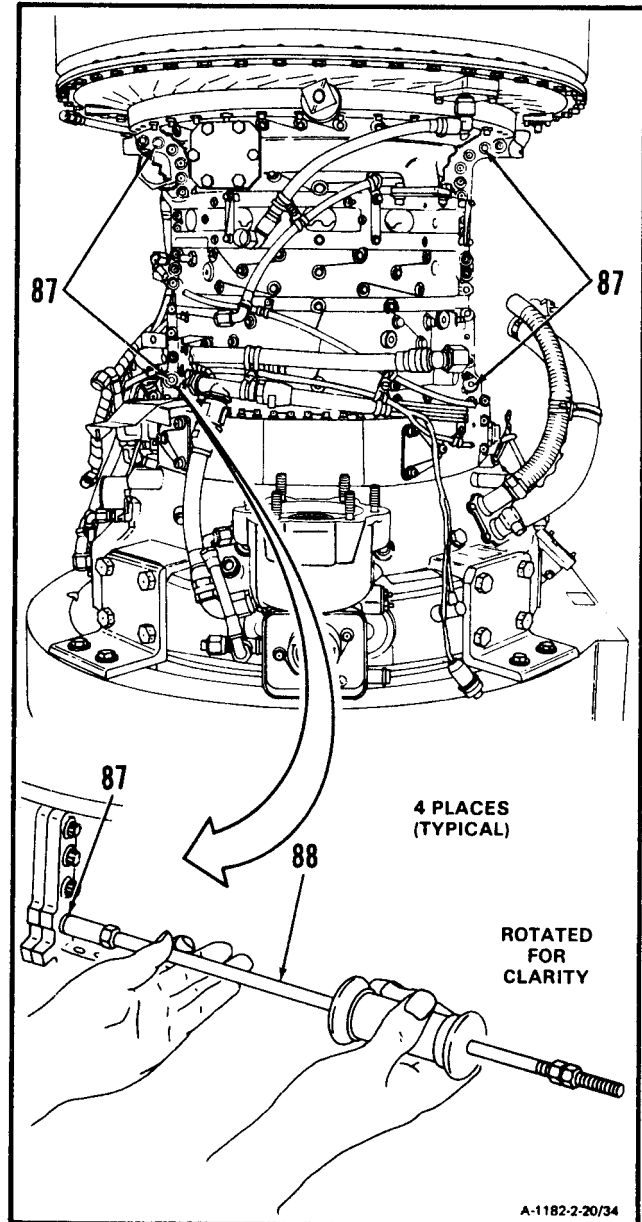


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**NOTE**

Procedure for removing four dowel pins is the same. Procedure for only one is shown.

37. Thread mechanical puller (T6) (88) into dowel pin (87).

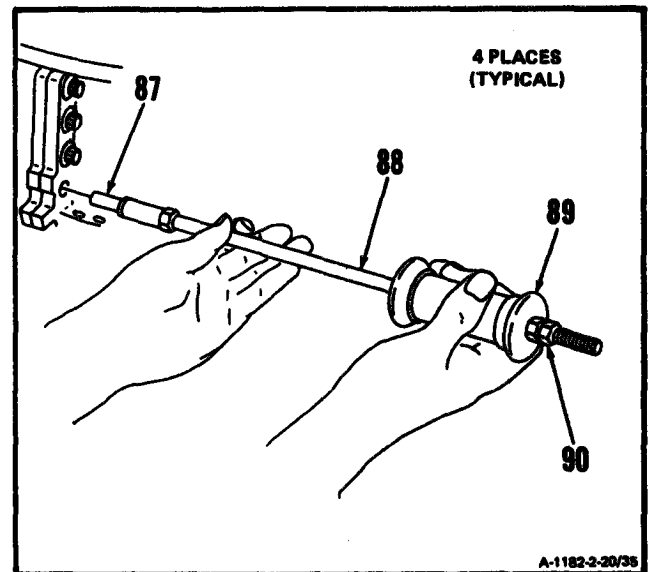


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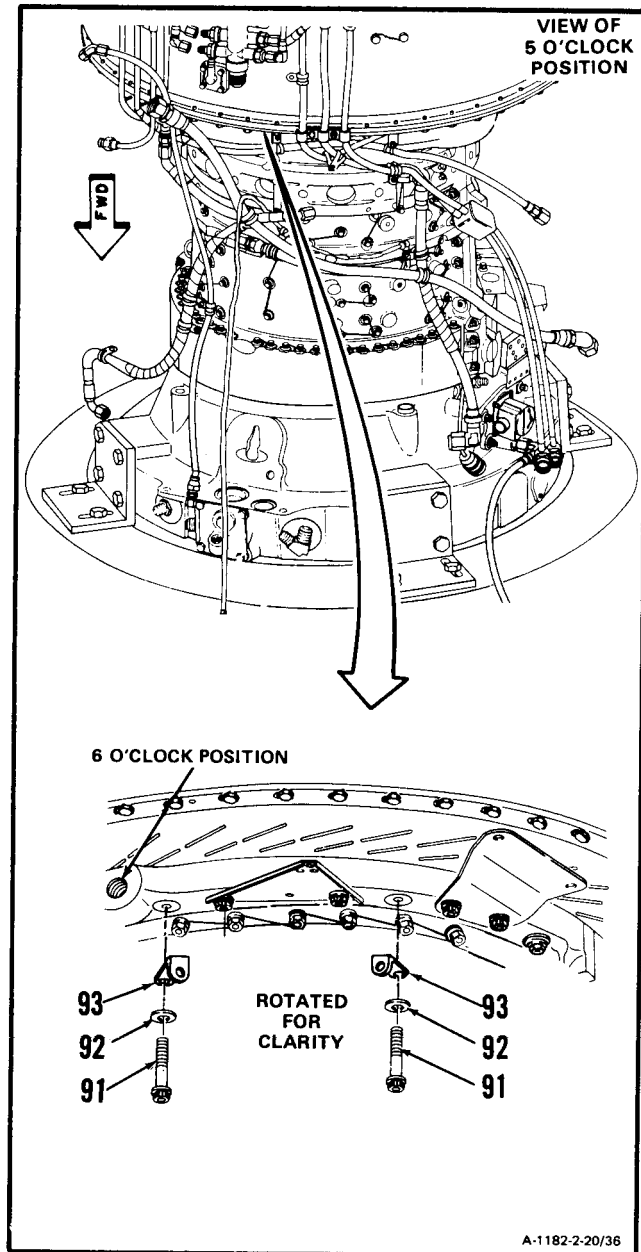
## 2-20 REMOVE LOWER COMPRESSOR HOUSING (Continued)

2-20

38. Slide mechanical puller handle (89) up against nuts (90) and **remove dowel pin (87)**.
39. Remove dowel pin (87) from mechanical puller (T6) (88).

**GO TO NEXT PAGE**

40. **Remove** lockwire, two bolts (91), washers (92), and **brackets (93)**.

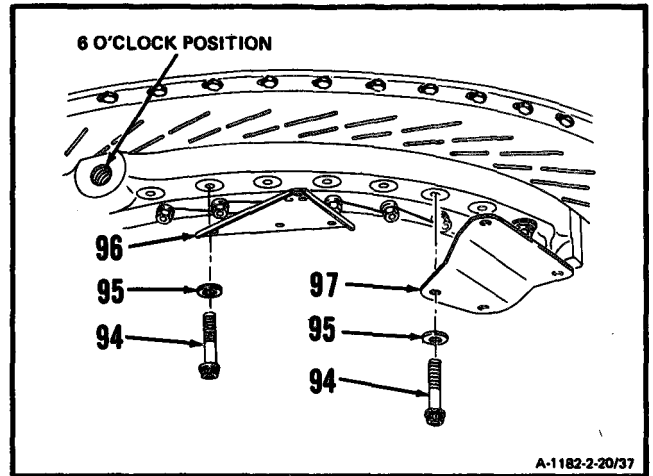


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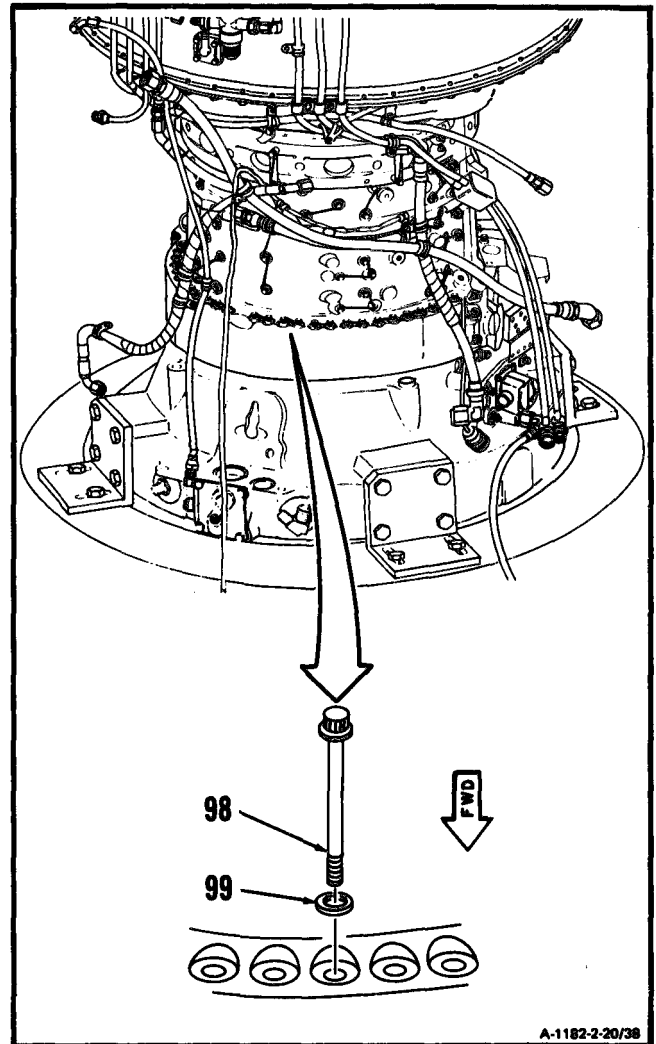
2-20 REMOVE LOWER COMPRESSOR HOUSING (Continued)

2-20

41. **Remove** lockwire, 14 bolts (94), washers (95), and brackets (96 and 97).

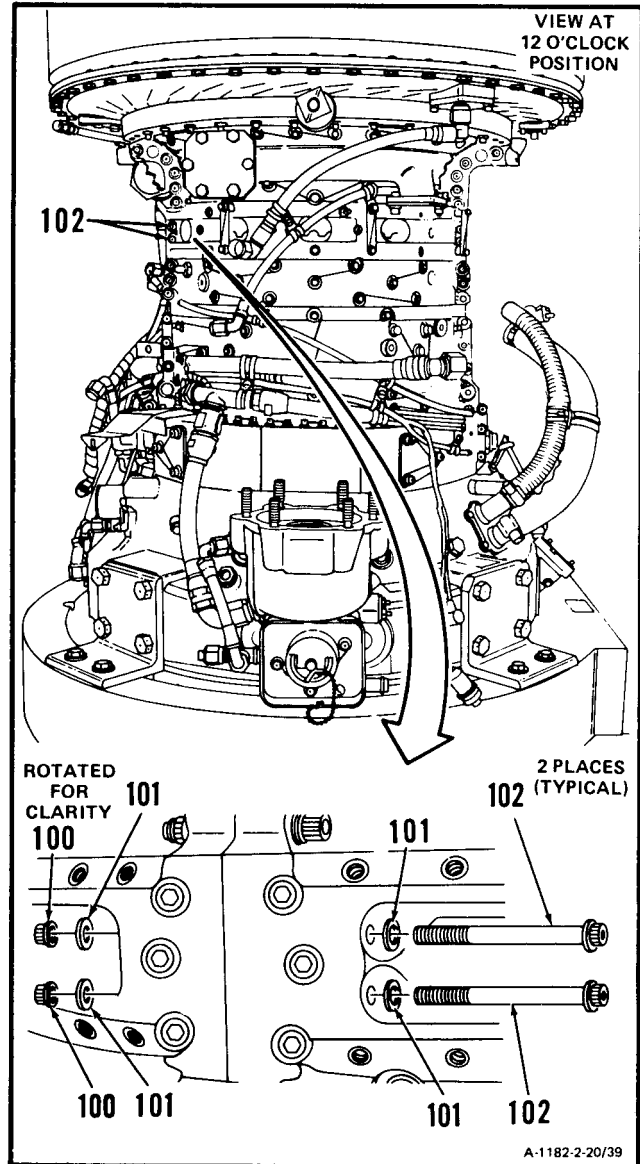


42. **Remove** lockwire, 27 bolts (98) and washers (99).



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43. **Remove** two nuts (100), four washers (101), and two bolts (102).

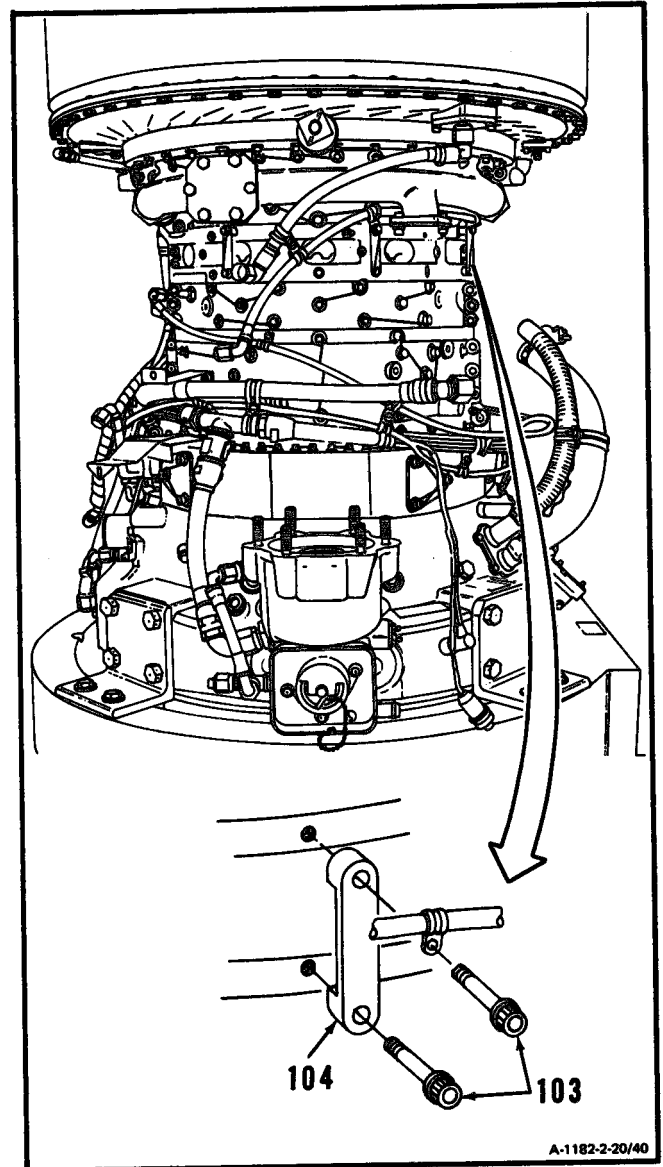


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## 2-20 REMOVE LOWER COMPRESSOR HOUSING (Continued)

2-20

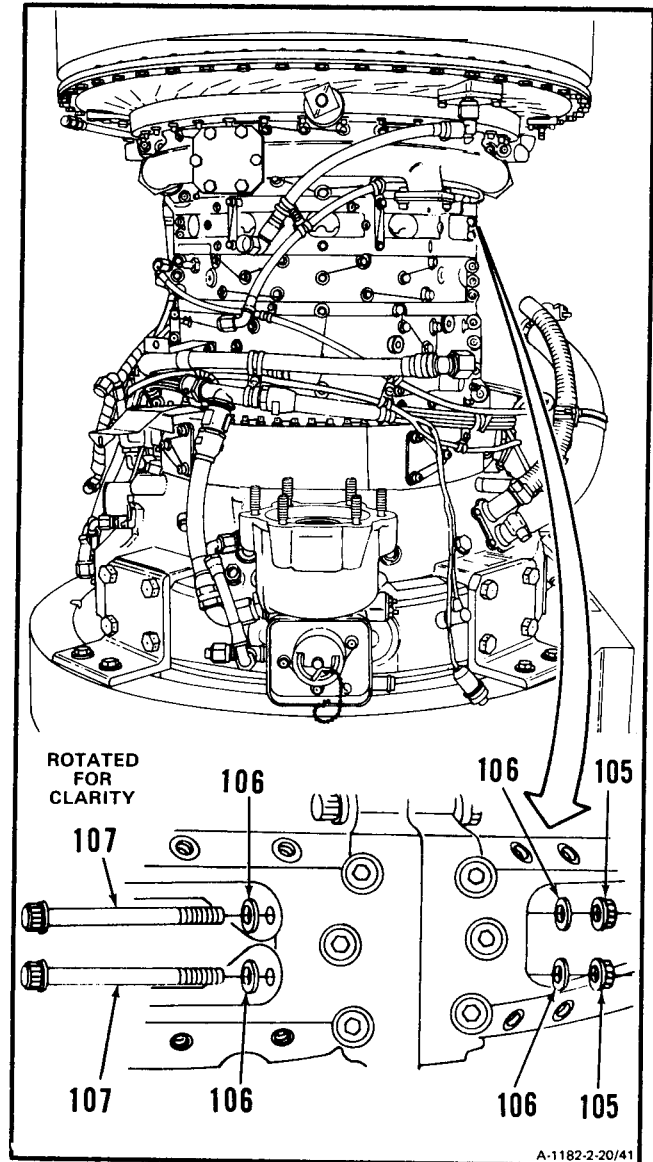
44. Remove lockwire, two bolts (103) and bleed band retainer (104).



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45. Remove two nuts (105), four washers (106) and two bolts (107).

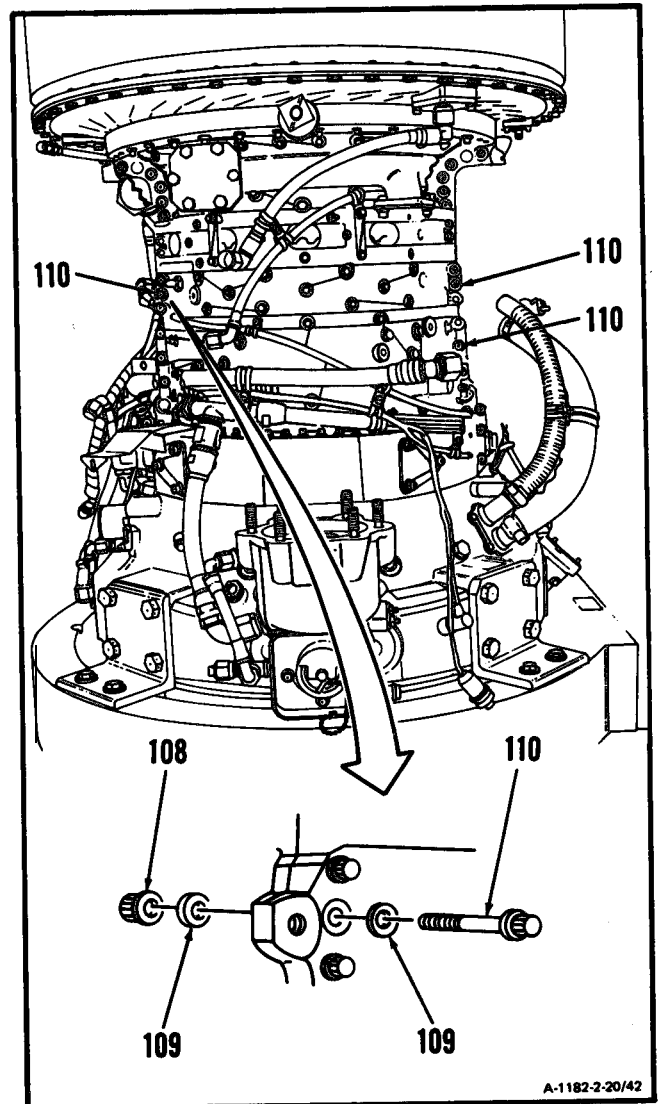


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## 2-20 REMOVE LOWER COMPRESSOR HOUSING (Continued)

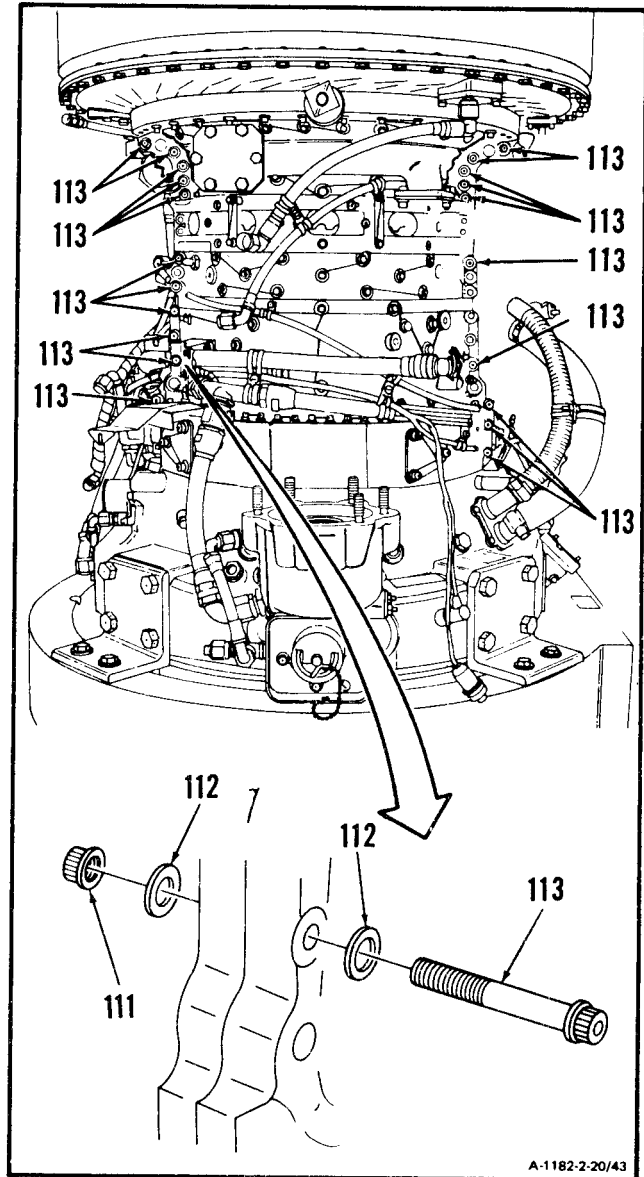
2-20

46. **Remove** three nuts (108), six washers (109), and **three bolts (110)**.



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47. Remove 21 nuts (111), 42 washers (112) and 21 bolts (113).

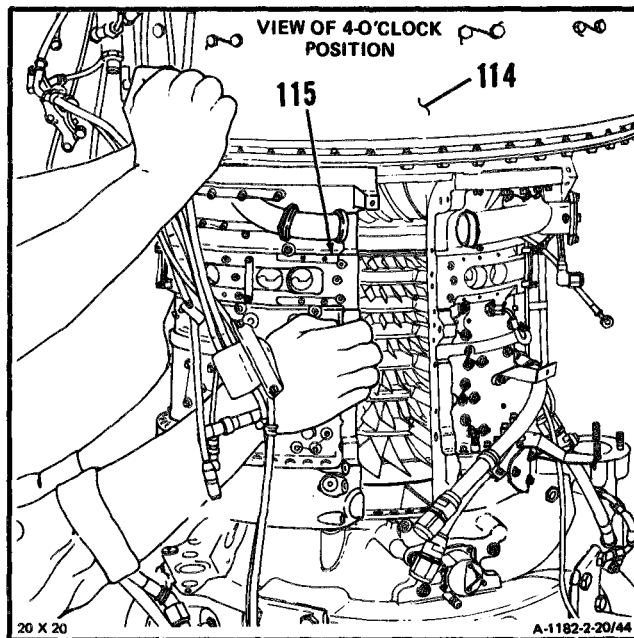


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## 2-20 REMOVE LOWER COMPRESSOR HOUSING (Continued)

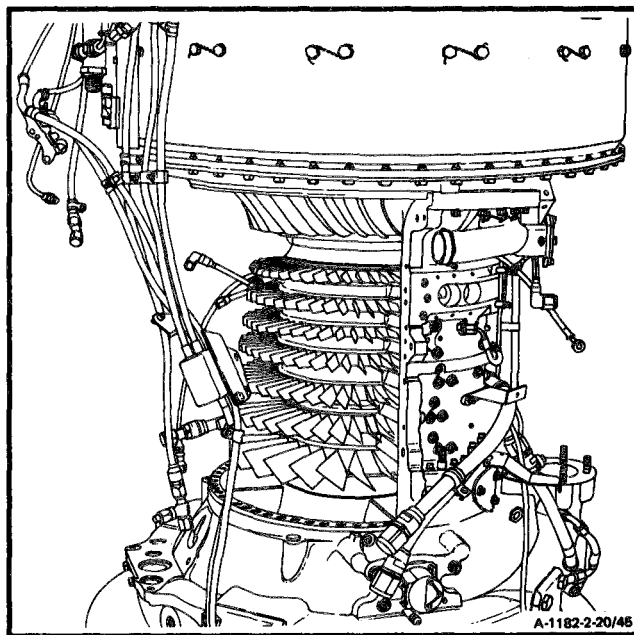
2-20

48. Have helper lift upon combustion section and power turbine (114) and remove lower compressor housing (115).



## FOLLOW-ON MAINTENANCE:

None



END OF TASK

**INITIAL SETUP****Applicable Configurations:**

All

**Tools:**Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944

Goggles

Compressed Air Source

Fiber Brush

**Materials:**

Dry Cleaning Solvent (E17)

Gloves (E20)

**Personnel Rewired:**

68B10 Aircraft Powerplant Repairer

**Equipment Condition:**

Engine Oil System Drained (Task 1-75)

Oil Cooler Assembly Removed (Task 8-5)

In-Line Fuel Filter Assembly Removed  
(Task 6-36)

Ignition Exciter Removed (Task 7-11)

Oil Filler Assembly and Oil Filler Strainer Re-  
moved (Task 8-16) (Upper Compressor  
Housing Only)Starter Drive Assembly Removed (Task 5-12)  
(Upper Compressor Housing Only)Main Fuel Filter and Bracket Removed  
(Task 6-29)Dual Chip Detector Removed (Task 8-28)  
(Lower Compressor Housing Only)Fuel Boost Pump Assembly Removed  
(Task 6-9) (Lower Compressor Housing  
Only)Tube Assembly (Inlet Housing to Main Oil  
Pump Removed (Task 8-50) ( Lower  
Compressor Housing Only)Main Oil Pump and Scavenge Oil Screen Re-  
moved (Task 8-1 ) (Lower Compressor  
Housing Only)Fuel Control Removed (Task 6-1) ( Lower  
Compressor Housing Only)Accessory Gearbox Removed (Task 5-1)  
(Lower Compressor Housing Only)Interstage Air-Bleed Actuator Removed  
(Task 2-1)Compressor Bleed Band Removed (Task  
2-9)Compressor Housing Removed (Task 2-19  
or 2-20)**General Safety Instructions:****WARNING**

Dry cleaning solvent (E17) is flammable and toxic. It can irritate skin and cause burns. Use only in well-ventilated area, away from heat and open flame. In case of contact, immediately flush skin or eyes with water for at least 15 minutes. Get medical attention for eyes.

**GO TO NEXT PAGE**

**NOTE**

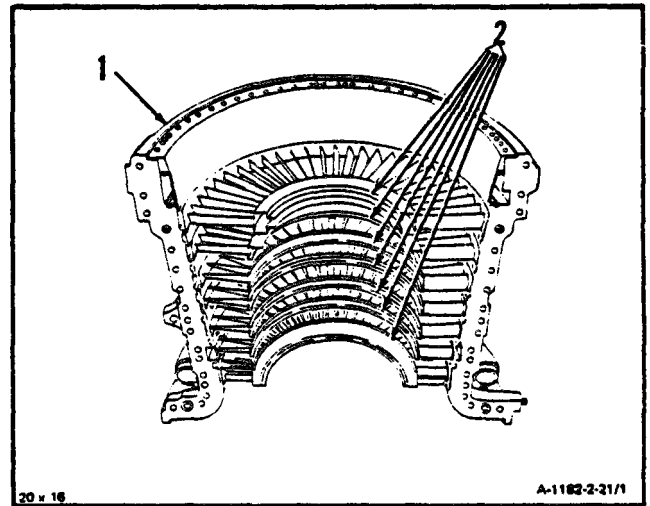
The following procedure applies to both (upper and lower) compressor halves.

1. Wear gloves (E20), and **clean compressor housing (1) and stator vanes (2)**. Use fiber brush and dry cleaning solvent (E17).

**WARNING**

When using compressed air for cleaning, use approved protective equipment for eyes and face. Do not use more than **30 psig** air pressure. Do not direct air toward yourself or another person. Failure to comply could result in injury to eyes or skin. In case of injury, get medical attention.

2. Wear goggles. **Blow dry compressor housing (1) and stator vanes (2)** using clean, dry compressed air.

**FOLLOW-ON MAINTENANCE:**

Inspect Compressor Housing (Task 2-22).

**END OF TASK**

## 2-22 INSPECT COMPRESSOR HOUSING

2-22

## INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**

Technical Inspector's Tool Kit,  
NSN 5180-00-3235114

**Materials:**

None

**Personnel Required:**

68B30 Aircraft Powerplant Inspector

**References:**

Task 2-28

**Equipment Condition:**

Off Engine Task  
Stator Vane Assemblies Removed  
(Task 2-26)

**NOTE**

The following procedure applies to both (upper and lower) compressor halves.

**1. Inspect compressor housing (1) as follows:**

- a. There shall be no cracks.
- b. There shall be no nicks, dents or gouges greater than 0.500 inch length to 0.070 inch depth.
- c. There shall be no corrosion or paint damage.
- d. There shall be no RTV residue on mounting surface of first stage stator vane assembly (1-1).

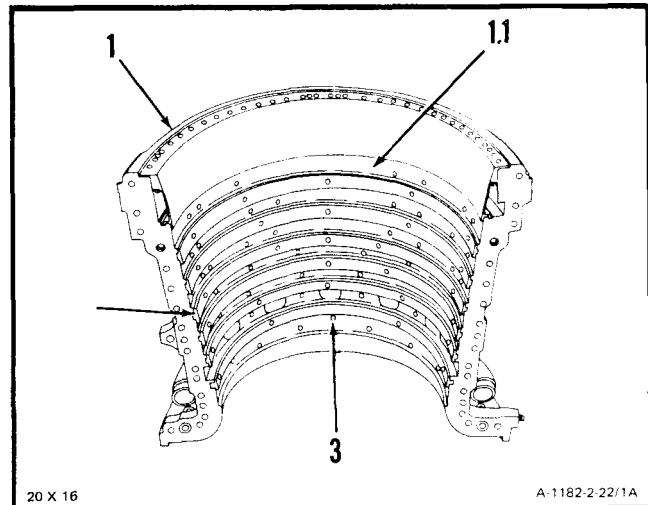
**2. Inspect seven inserts (2) as follows:**

- a. There shall be no blade tip rubs.
- b. There shall be no looseness.
- c. There shall be no cracks.
- d. Inspect bolt ends (3). Both ends shall be flush, or not more than 0.035 inch below surface of inserts (2).

**3. Inspect stator vane assemblies (Ref. Task 2-28).**

## FOLLOW-ON MAINTENANCE:

Install Stator Vane Assemblies (Task 2-30).

**END OF TASK**

## 2-23 REPAIR COMPRESSOR HOUSING

2-23

## INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**

Technical Inspection Tool Kit,  
NSN 51830-00-323-5114

**Materials:**

Acid Swabbing Brush (E2)  
Carborundum Stone (E10)  
Crocus Cloth (E15)  
Engine Gray Enamel (E22)

**Personnel Required:**

68B10 Aircraft Powerplant Repairer  
68B30 Aircraft Powerplant Inspector

**References:**

Task 1-119

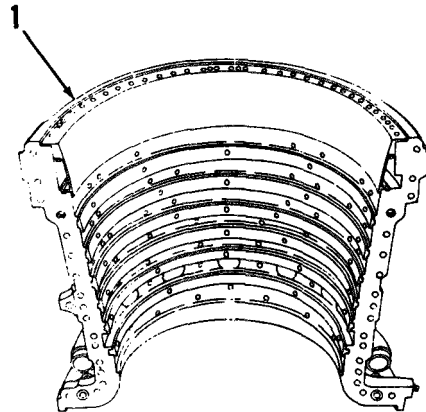
**Equipment Condition:**

Off Engine Task  
Stator Vane Assemblies Removed (Task 2-26)

**NOTE**

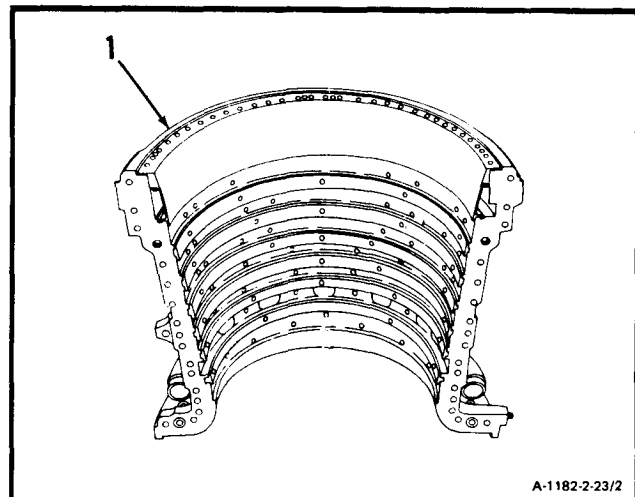
The following procedures apply to both (upper and lower) compressor halves.

- 1, Repair nicks, dents and gouges on inside and outside diameter of compressor housing (1) as follows:
  - a. Defects of 0.070 inch depth shall not be opposite each other on the inside and outside diameter of housing (1).
  - b. Defects shall not project into mating surfaces.
  - c. **Repair gouges** up to 0.500 inch length to 0.070 inch depth.
    - (1) Blend all sharp edges using Carborundum stone (E10).
    - (2) Polish to smooth finish using crocus cloth (E15).
  - d. **Repair dents** up to 0.500 inch length to 0.070 inch depth.
    - (1) Blend all sharp edges using Carborundum stone (E10).
    - (2) Polish to smooth finish using crocus cloth (E15).

**GO TO NEXT PAGE**



- e. **Repair nicks** up to 0.500 inch length to 0.070 inch depth.
- (1) Blend all sharp edges using Carborundum stone (E10).
  - (2) Polish to smooth finish using crocus cloth (E15).
2. **Repair corrosion damage** up to 0.070 inch depth
- a. Blend all sharp edges using Carborundum stone (E10).
  - b. Polish to smooth finish using crocus cloth (E15).
  - c. Use touch-up procedure for magnesium and magnesium alloys (Ref. Task 1-1 19). Use engine gray enamel (E22).
3. **Repair damaged paint** on compressor housing
- (1). Use engine gray enamel (E22).



## INSPECT

## FOLLOW-ON MAINTENANCE:

Install Stator Vane Assemblies (Task 2-30).

## END OF TASK

## 2-24 INSTALL UPPER COMPRESSOR HOUSING

2-24

**INITIAL SETUP****Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Technical Inspection Tool Kit,  
NSN 5180-00-323-5114  
Torque Wrench, 0-30 Inch-Pounds  
Torque Wrench, 30-150 Inch-Pounds  
Open-End Wrench, 1-5/8 Inch  
Crowfoot Attachment (T66)

**Materials:**

Lockwire (E29)

**Parts:**

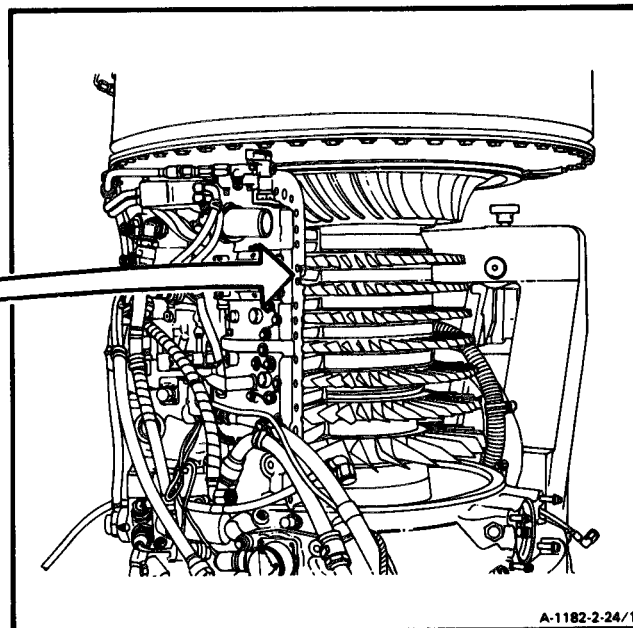
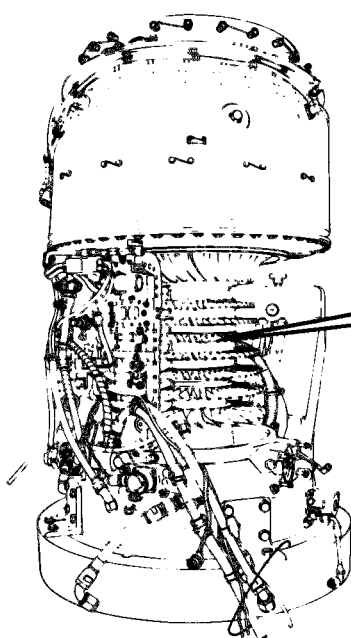
Packing

**Personnel Required:**

68B10 Aircraft Powerplant Repairer (2)  
68B30 Aircraft Powerplant Inspector

**References:**

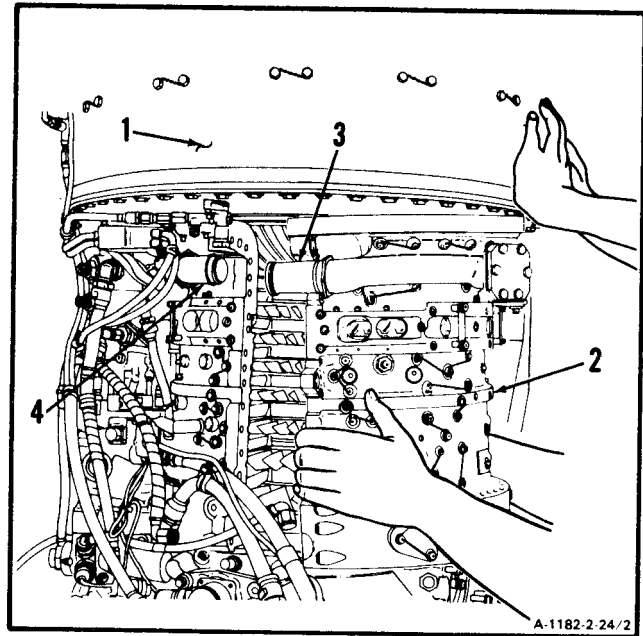
TM 55-2840-254-23P

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**NOTE**

Some engine compressor housings may have provisions for a packing and plug installed at the 9-o'clock position. If required, assure installation.

1. Have helper lift up on combustion section and power turbine (1) and **install upper compressor housing (2)**. Align two connectors (3) with air gallery (4).



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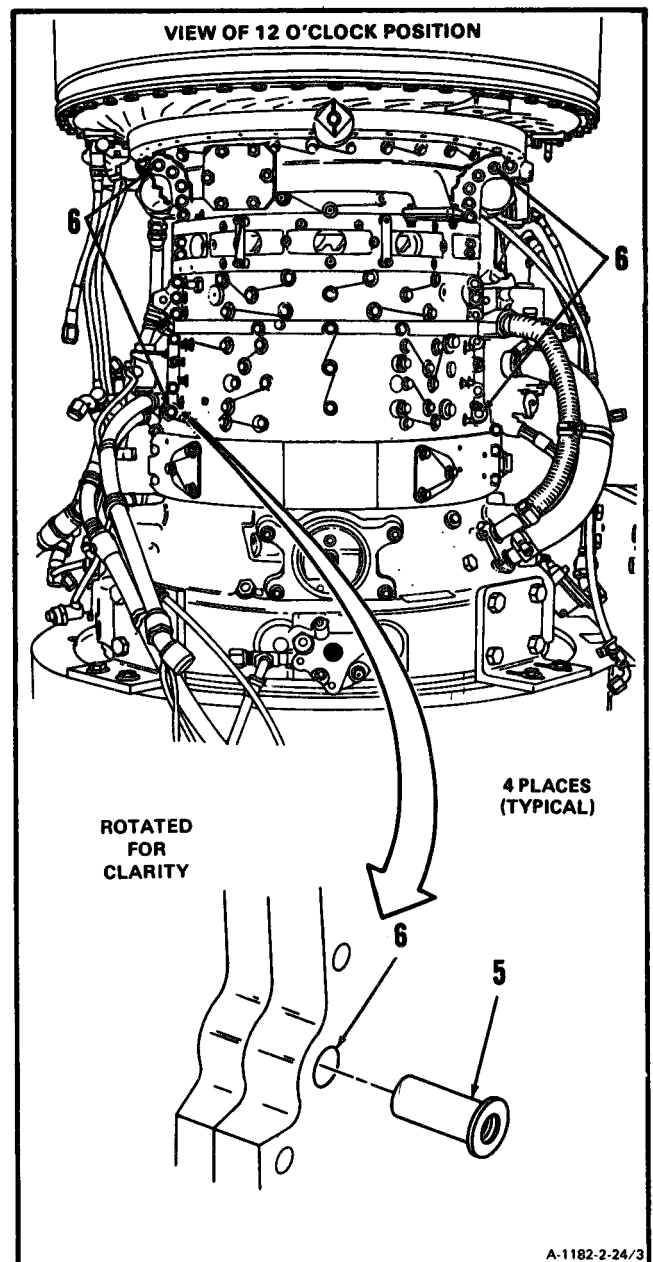
## 2-24 INSTALL UPPER COMPRESSOR HOUSING (Continued)

2-24

**NOTE**

Procedure for installing four dowel pins is the same. Procedure for only one is shown.

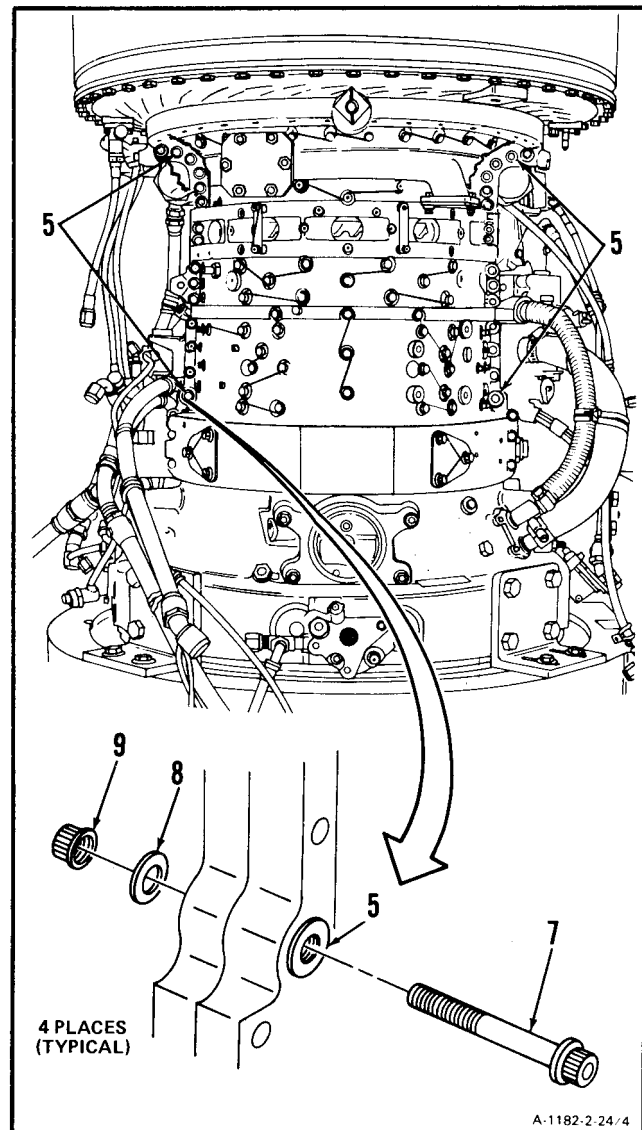
2. Align dowel pin (5) with hole (6) and **tap in dowel pin (5)**. Use soft face mallet.

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NOTE

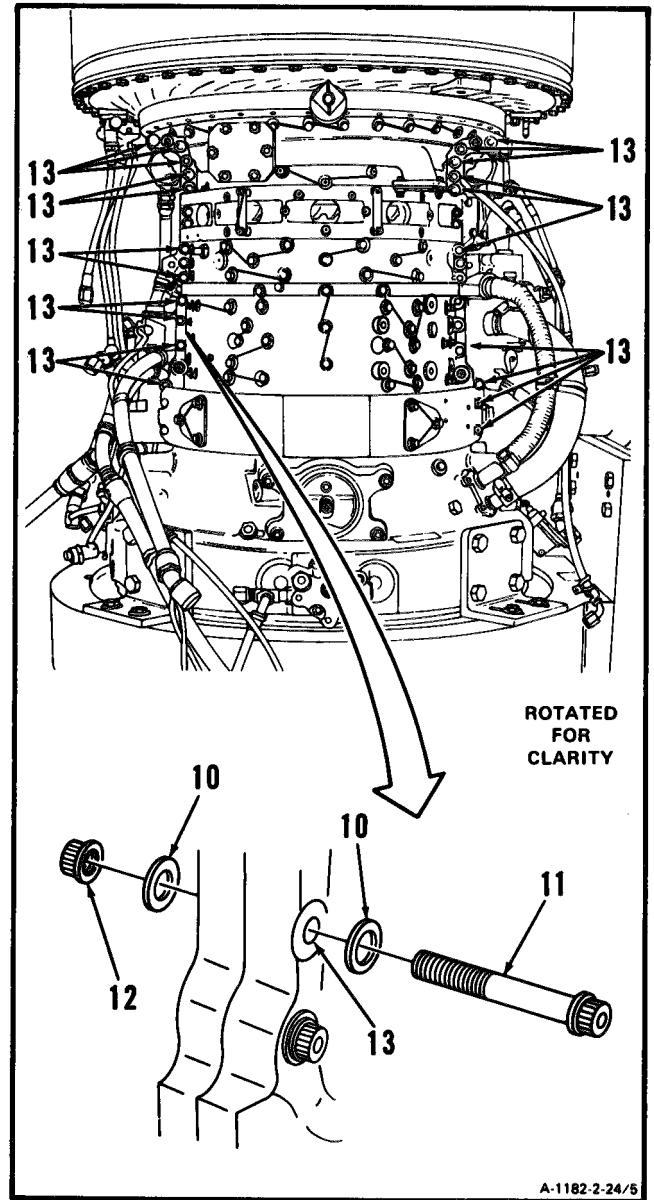
Procedure for installing nuts, bolts, and washers in four dowel pins is the same. Procedure for only one is shown.

3. Install bolt (7), washer (8), and nut (9) in dowel pin (5).



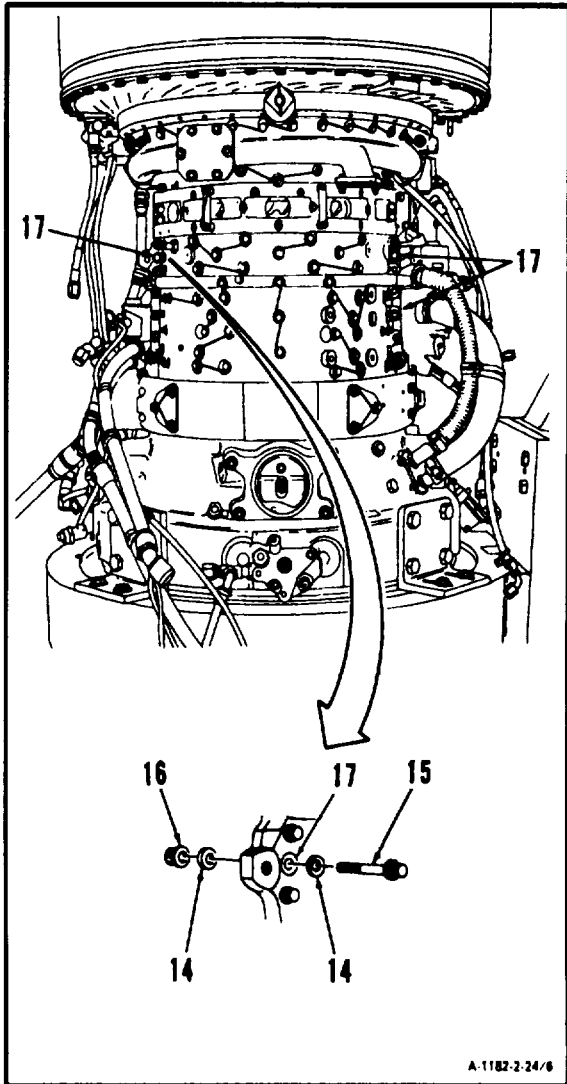
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4. **Install 42 washers (10), 21 bolts (11), and nuts (12) into holes (13).**



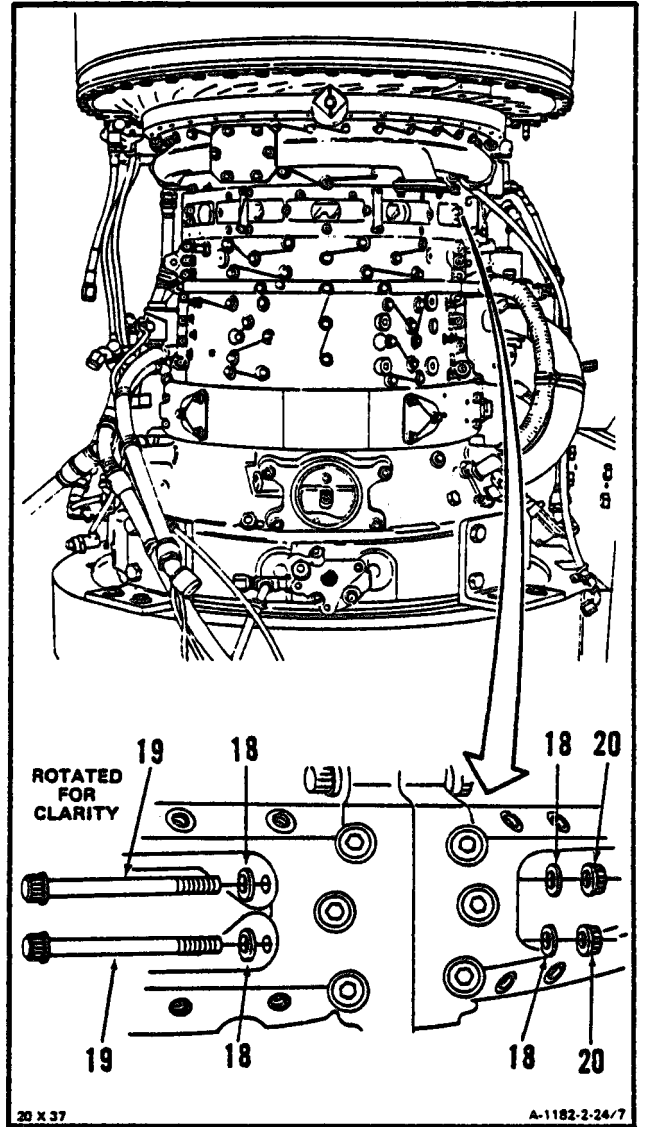
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5. Install six washers (14), three bolts with 1/4 inch heads (15), and nuts (16) into holes (17).



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6. **Install** four washers (18), **two bolts** (19), and two nuts (20).



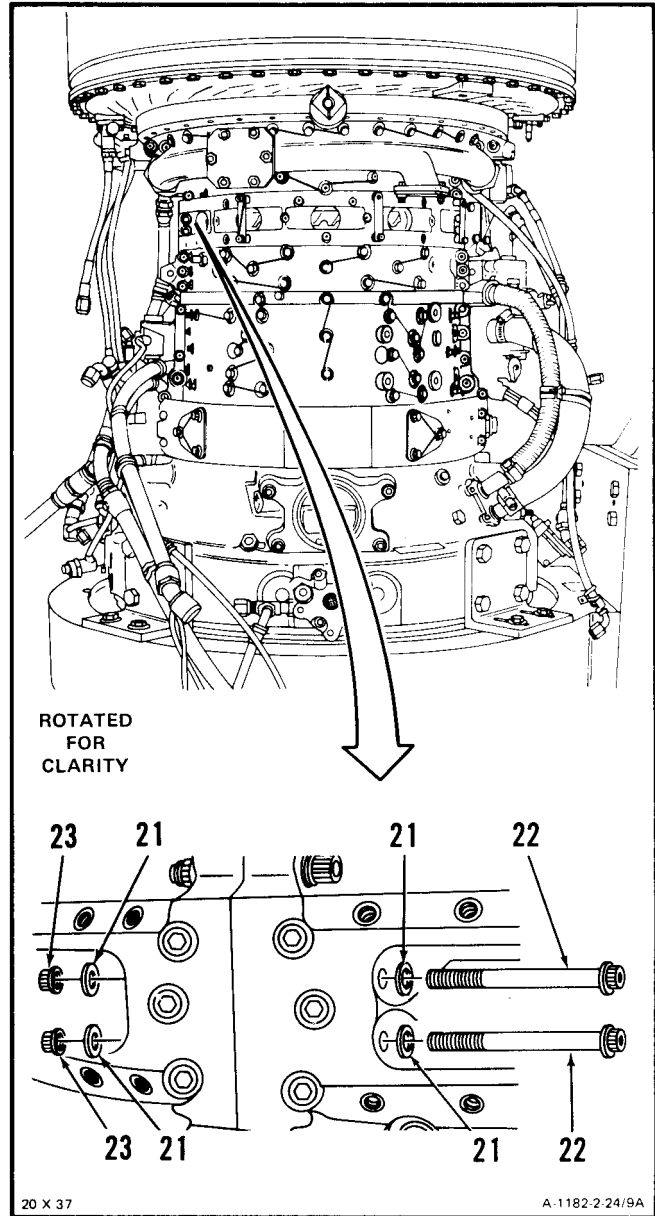
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2-24 INSTALL UPPER COMPRESSOR HOUSING (Continued)

2-24

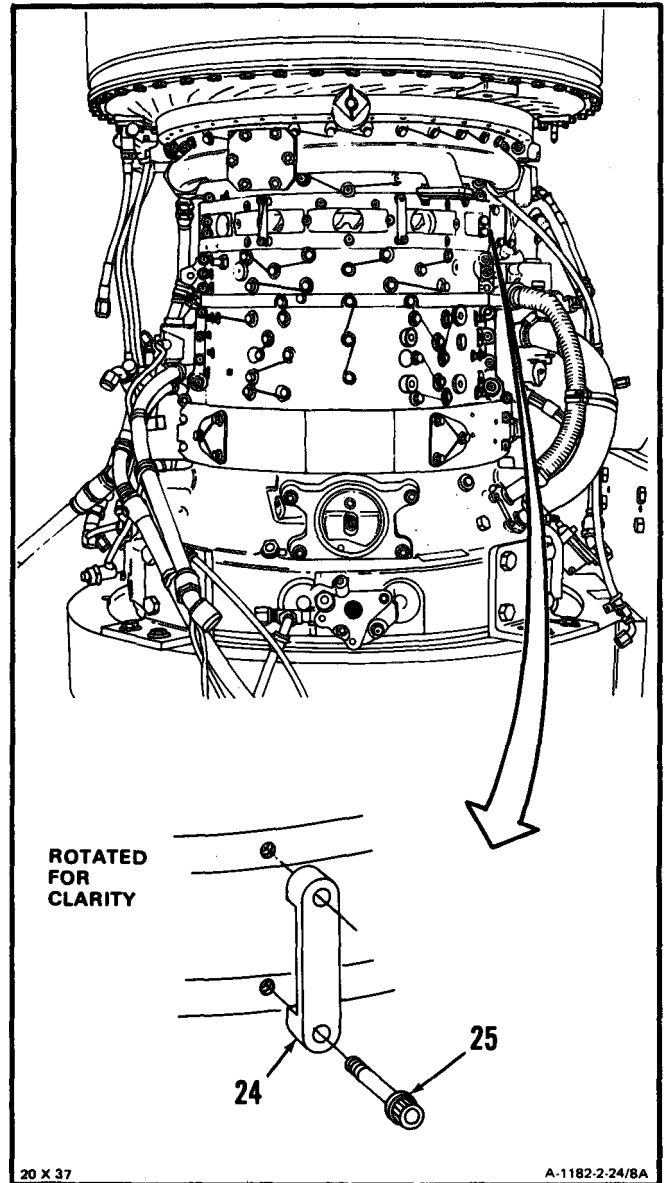
- 7. Install four washers (21), two bolts (22), and two nuts (23).



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2-24 INSTALL UPPER COMPRESSOR HOUSING (Continued)

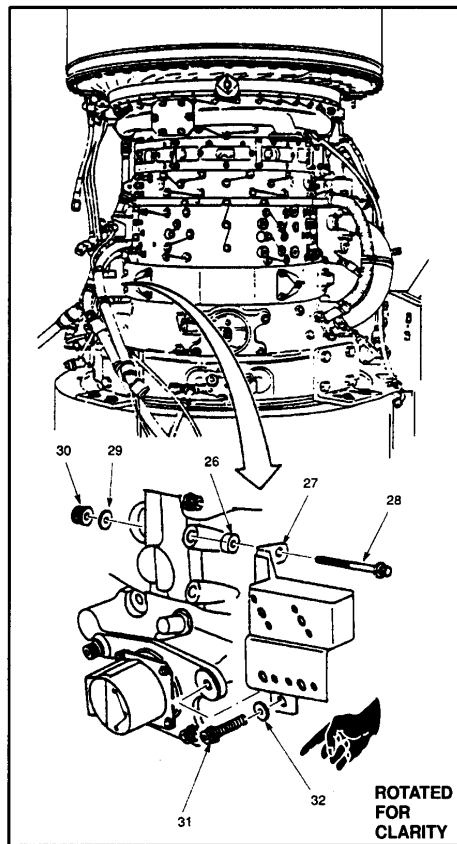
8. Install bleed band retainer (24) and bolt (25).



GO TO NEXT PAGE

2-24 INSTALL UPPER COMPRESSOR HOUSING (Continued)

9. Install two spacers (26), bracket (27), two bolts (28), washers (29), nuts (30), bolt (31), and washer (32).
10. Lockwire bolt (31). Use lockwire (E29).

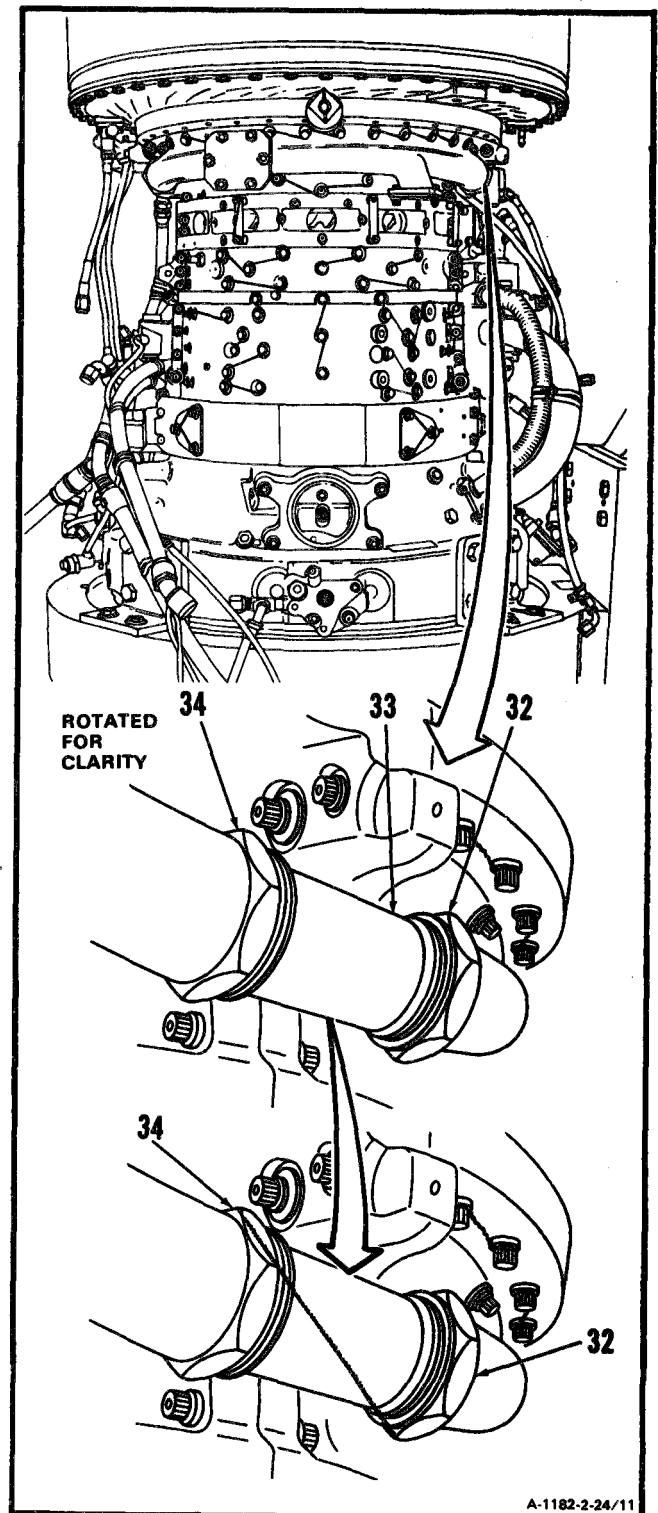


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## 2-24 INSTALL UPPER COMPRESSOR HOUSING (Continued)

2-24

11. **Connect nut (32) to connector (33). Torque nuts (32 and 34) to 90 inch-pounds.** Use crow-foot attachment (T66) and 1-5/8 inch open-end wrench.
12. Lockwire nuts (32 and 34). Use lockwire (E29).

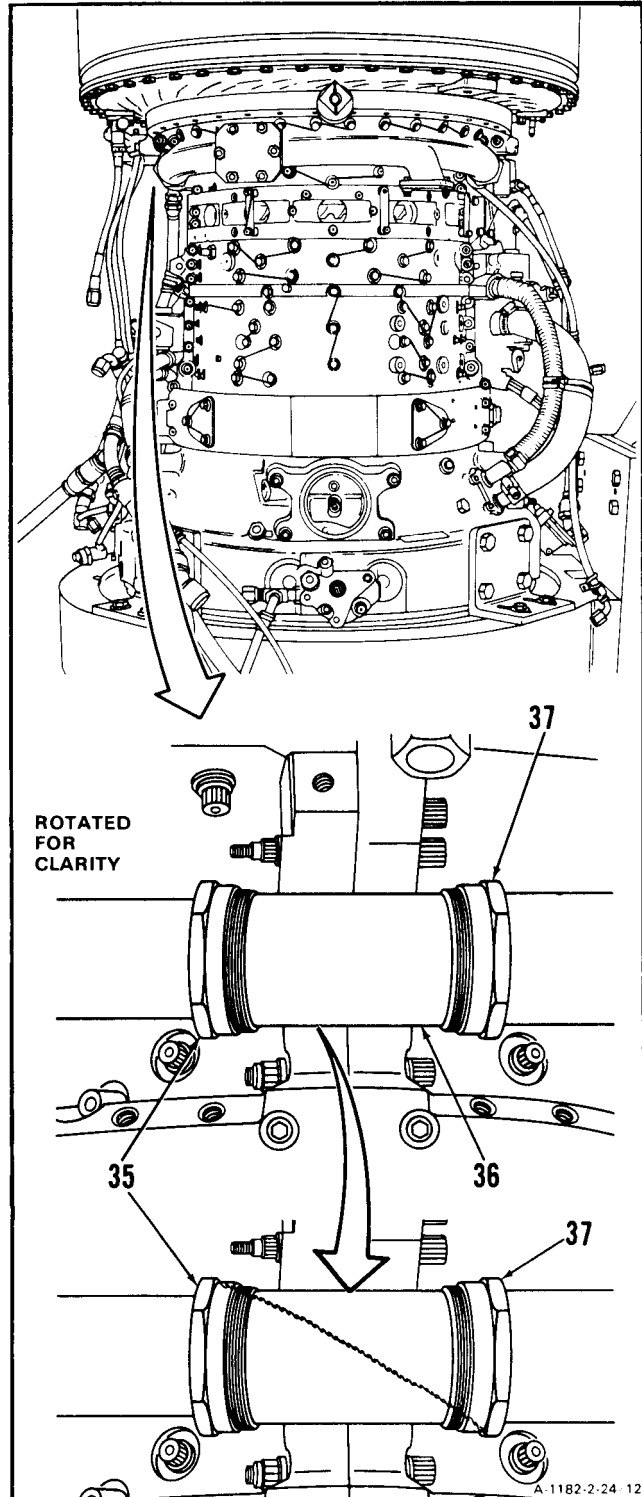


A-1182-2-24/11

**GO TO NEXT PAGE**

13. **Connect nut (35) to connector (36). Torque nuts (35 and 37) to 90 inch-pounds.** Use crow-foot attachment (T66) and 1-5/8 inch open-end wrench.

14. Lockwire nuts (35 and 37). Use lockwire (E29).



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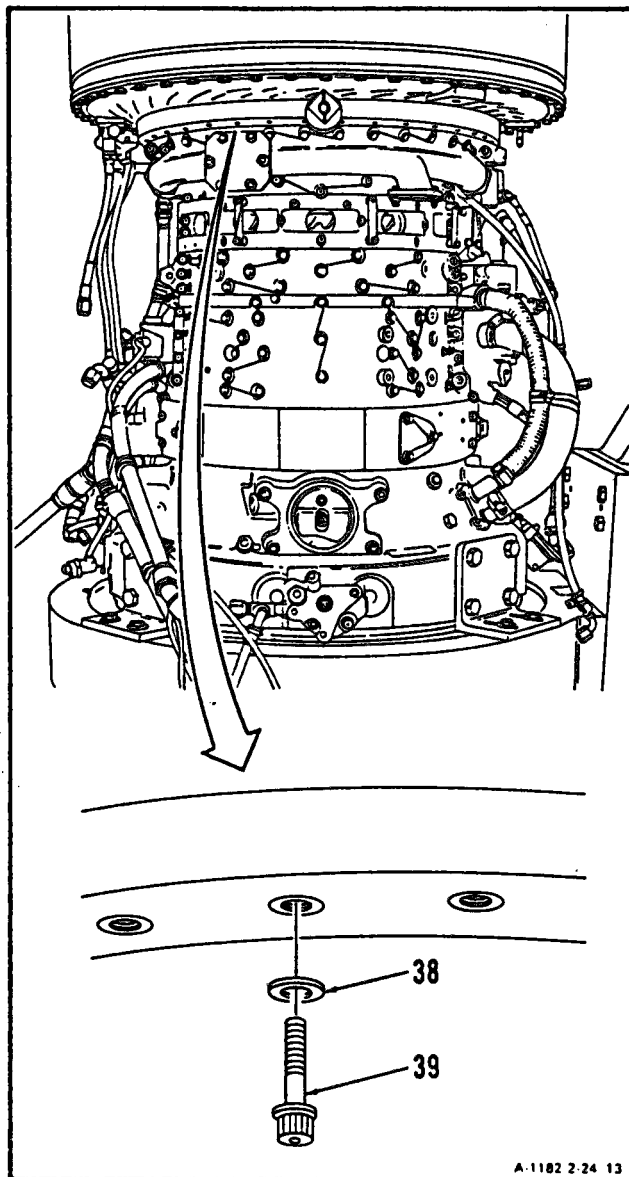
**2-24 INSTALL UPPER COMPRESSOR HOUSING (Continued)****2-24****NOTE**

If compressor housing has **thin walled rear hoist point** do steps 15. and 16. and omit step 16.1, 16.2, 16.3 and 16.4.

If compressor housing has **beefed-up rear hoist point**, omit steps 15. and 16. and do steps 16.1, 16.2, 16.3 and 16.4.

15. **Install 16** washers (38) and **bolts (39)**.

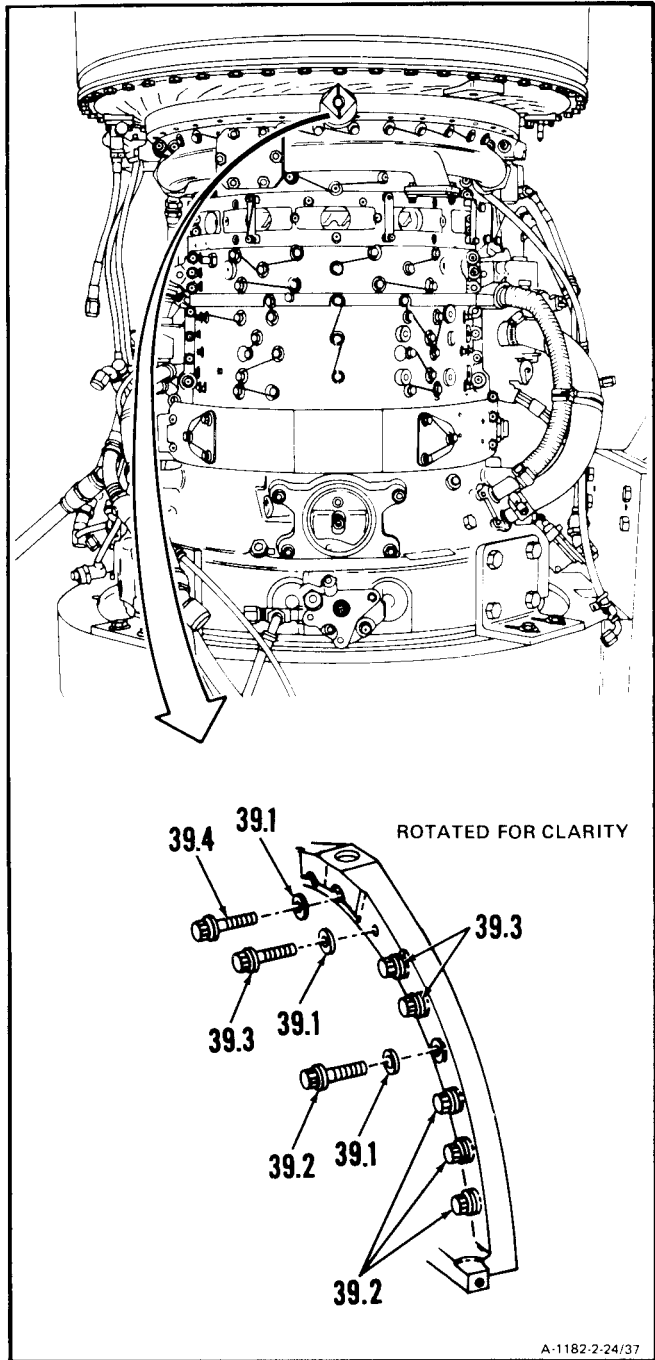
16. Lockwire bolts (39). Use lockwire (E29).



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2-24 INSTALL UPPER COMPRESSOR HOUSING (Continued)

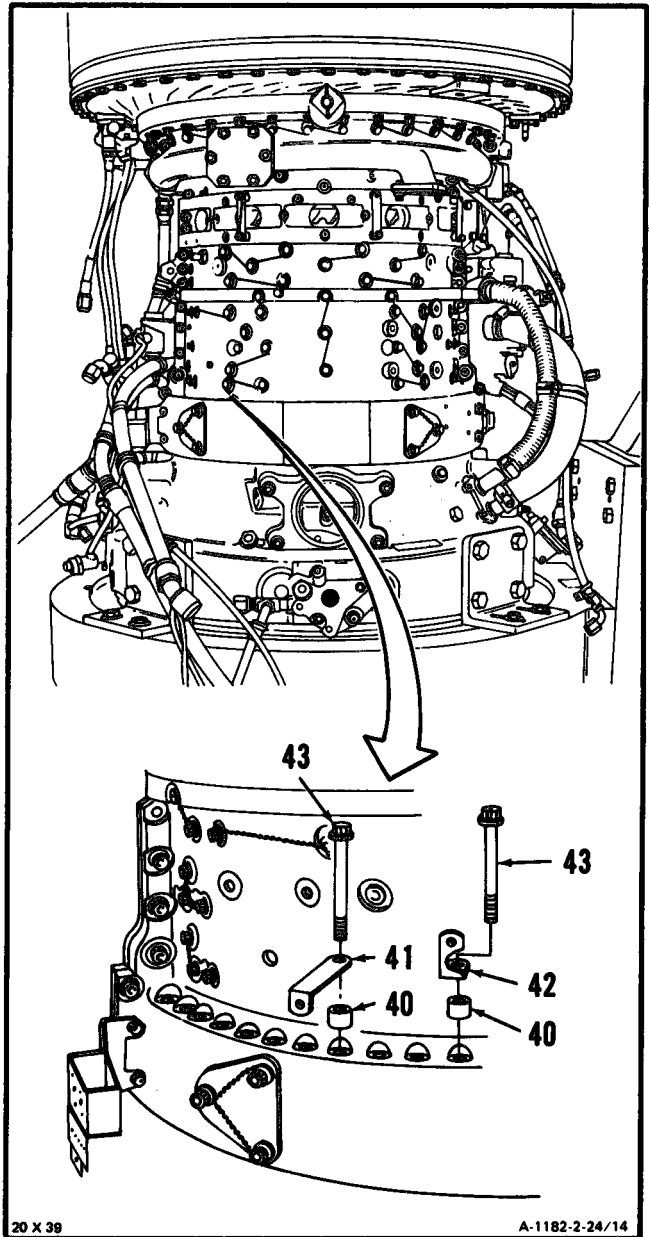
- 16.1 **Install** eight washers (39.1) and **bolts (39.2)**.
- 16.2 **Install** six washers (39.1) and **bolts (39.3)**.
- 16.3 **Install** two washers (39.1) and **bolts (39.4)**.
- 16.4 Lockwire bolts (39.2), (39.3) and (39.4). Use lockwire (E29).



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**2-24 INSTALL UPPER COMPRESSOR HOUSING (Continued)**

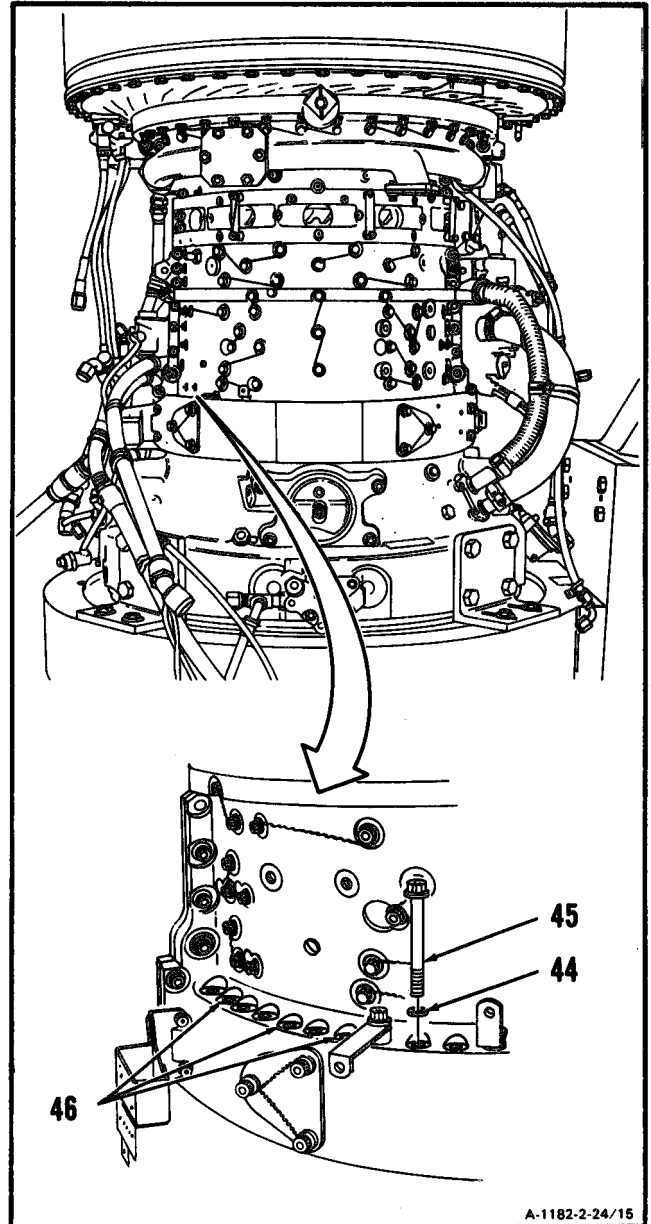
17. Install two spacers (40), brackets (41 and 42), and bolts (43).



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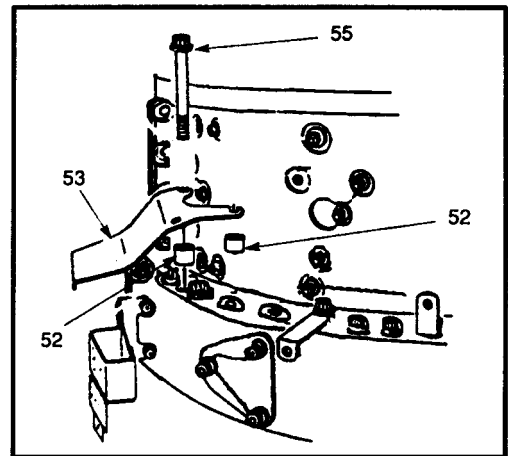
18. Install **23** washers (44) and **bolts** (45) in all holes except for three locations (46).



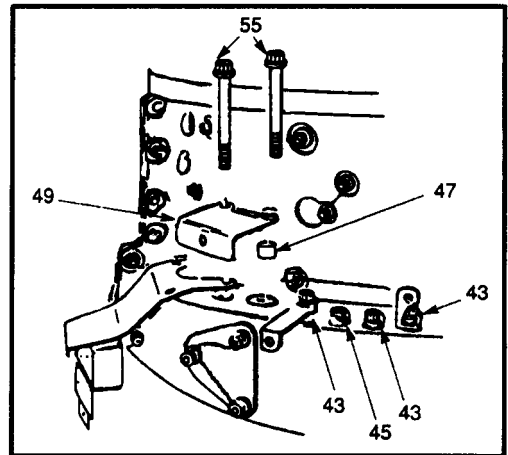
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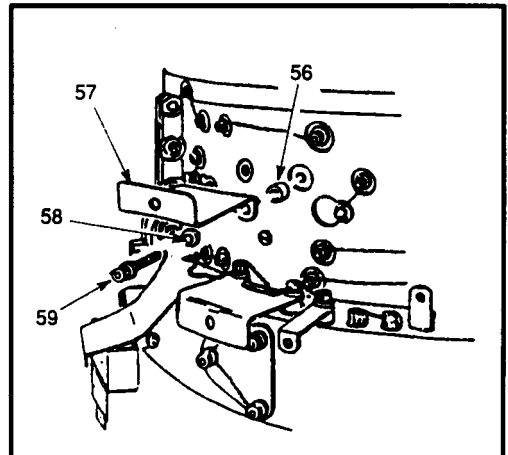
19. **Install** two spacers (52), **bracket (53)**, and bolt (55).



20. **Install** spacer (47), **bracket (49)**, and bolts (55). Lockwire bolts (43), (45), and (55). Use lockwire (E29).



21. **Install** two spacers (56), **bracket (57)**, two washers (58), and bolts (59). **Torque bolts (59) to 15 inch-pounds.**



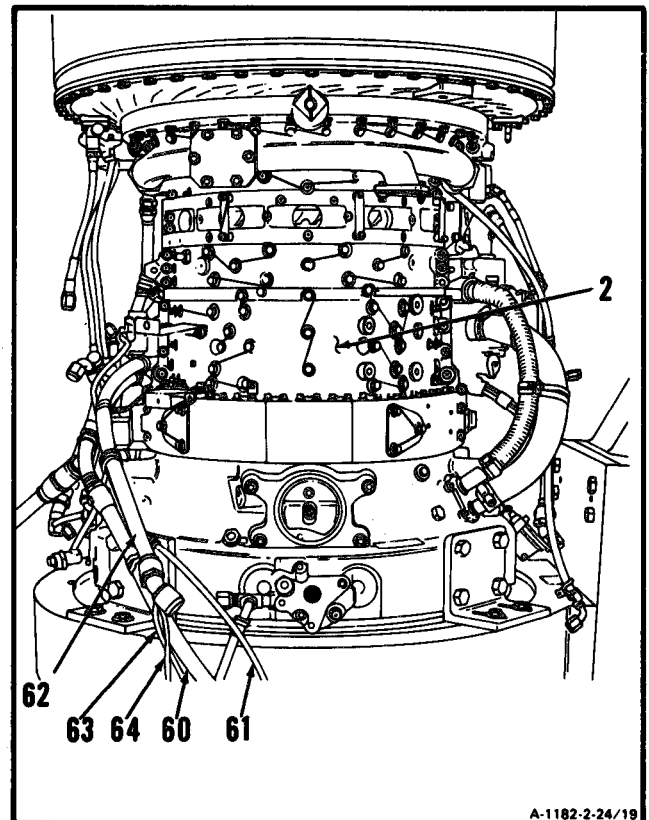
22. Lockwire two bolts (59). Use lockwire (E29).

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## 2-24 INSTALL UPPER COMPRESSOR HOUSING (Continued)

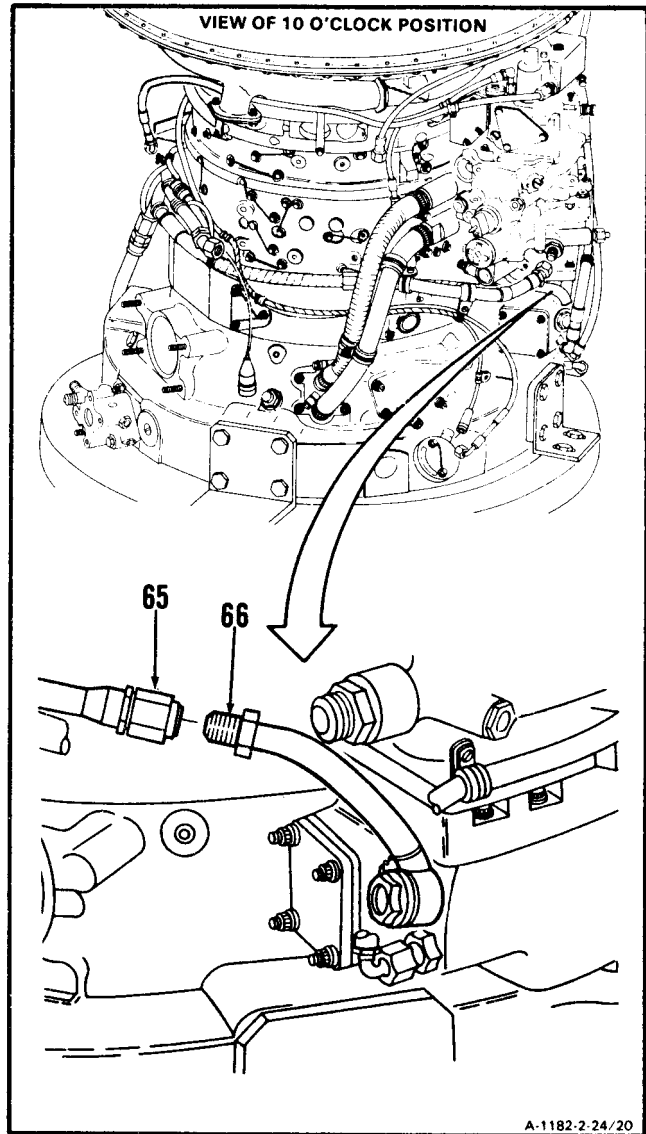
2-24

23. Position hose assemblies (60, 61 and 62) and electrical cable leads (63 and 64) around upper compressor housing (2).



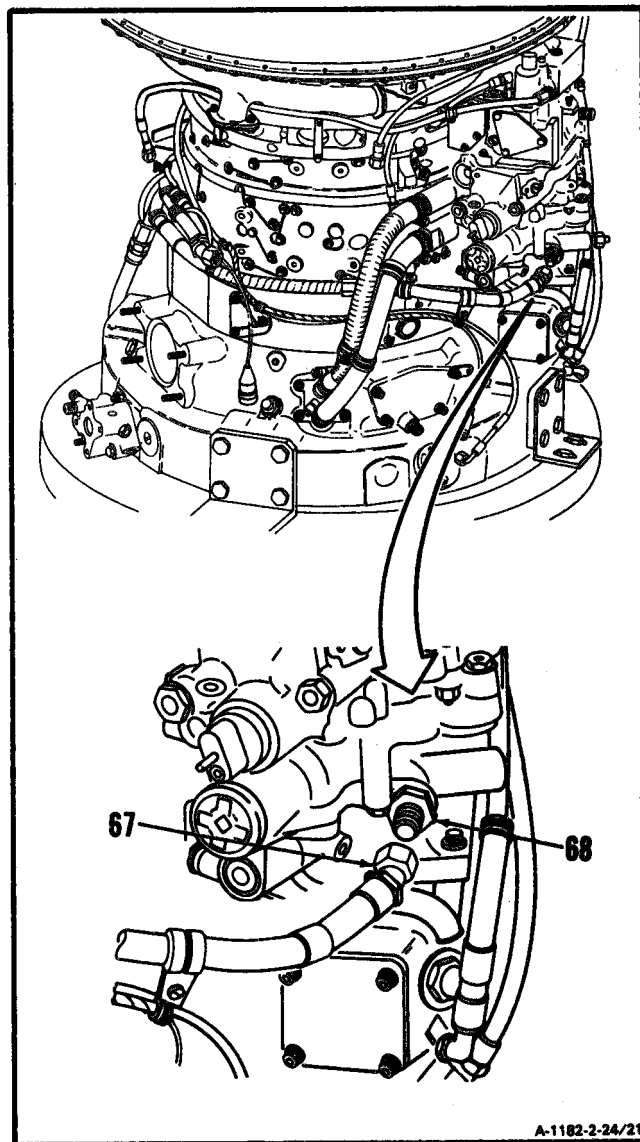
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**24. Connect tube and hose assembly (65) to tube assembly (66).**



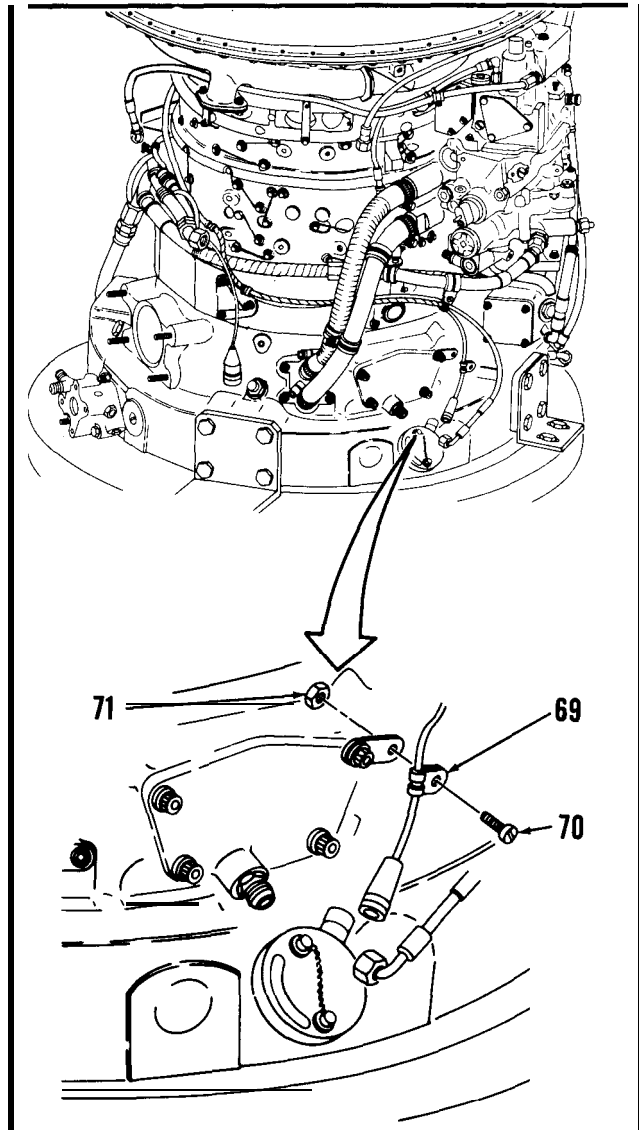
**GO TO NEXT PAGE**

25. Connect hose assembly (67) to union (68).



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26. Install clamp (69), screw (70), and nut (71).

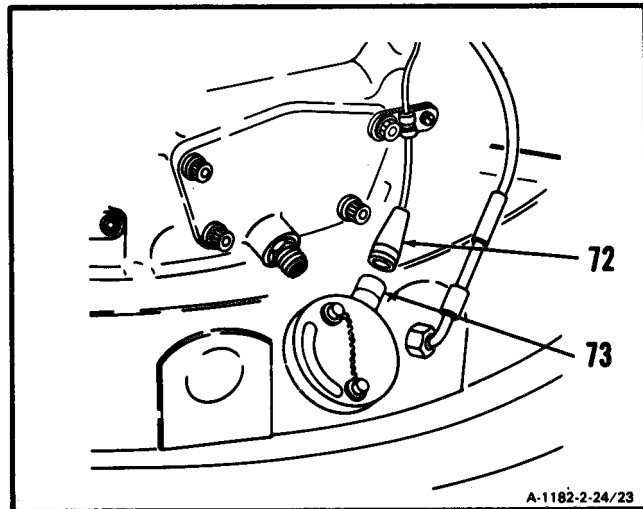


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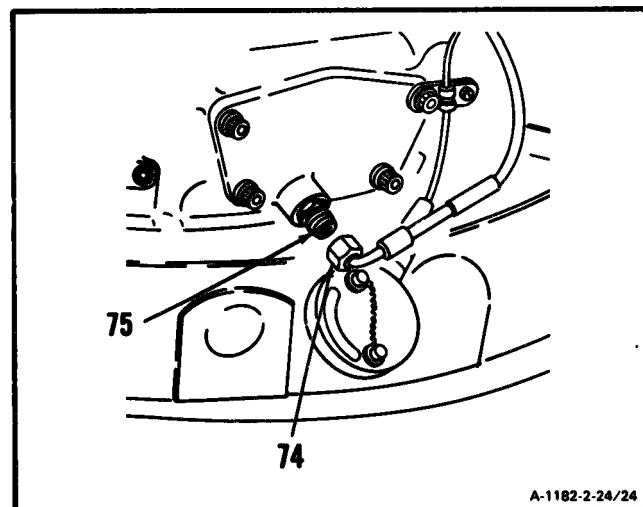
## 2-24 INSTALL UPPER COMPRESSOR HOUSING (Continued)

2-24

27. Connect electrical connector (72) to oil level indicator (73).



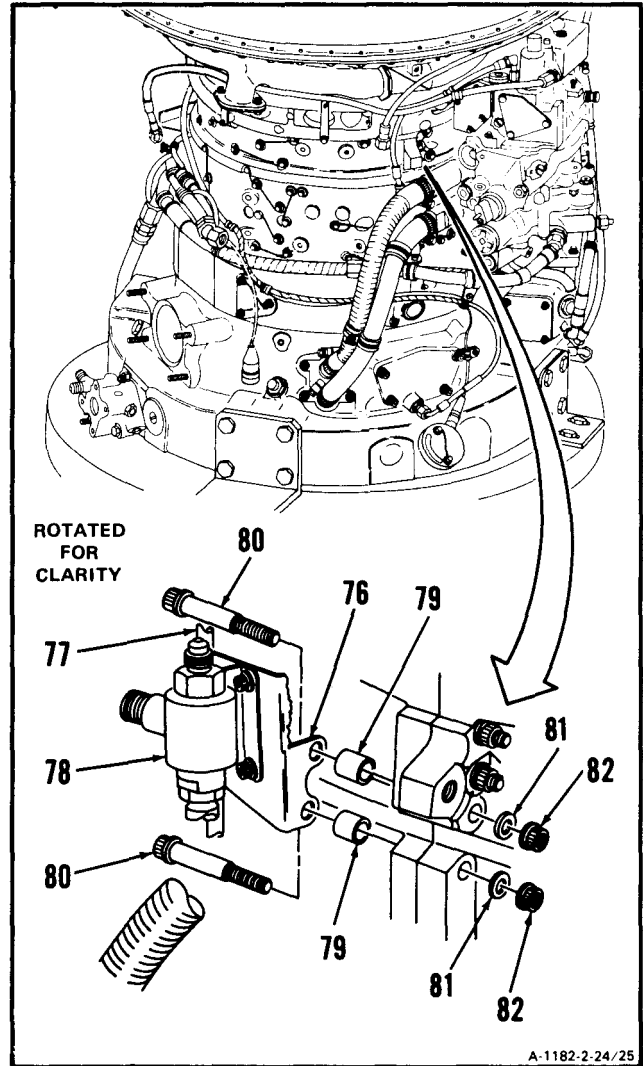
28. Connect hose assembly (74) to nipple (75).



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29. **Install** bracket (76), hose assembly (77), and **solenoid valve (78)** as an assembly.

30. **Install** two spacers (79), **bolts (80)**, washers (81), and nuts (82).



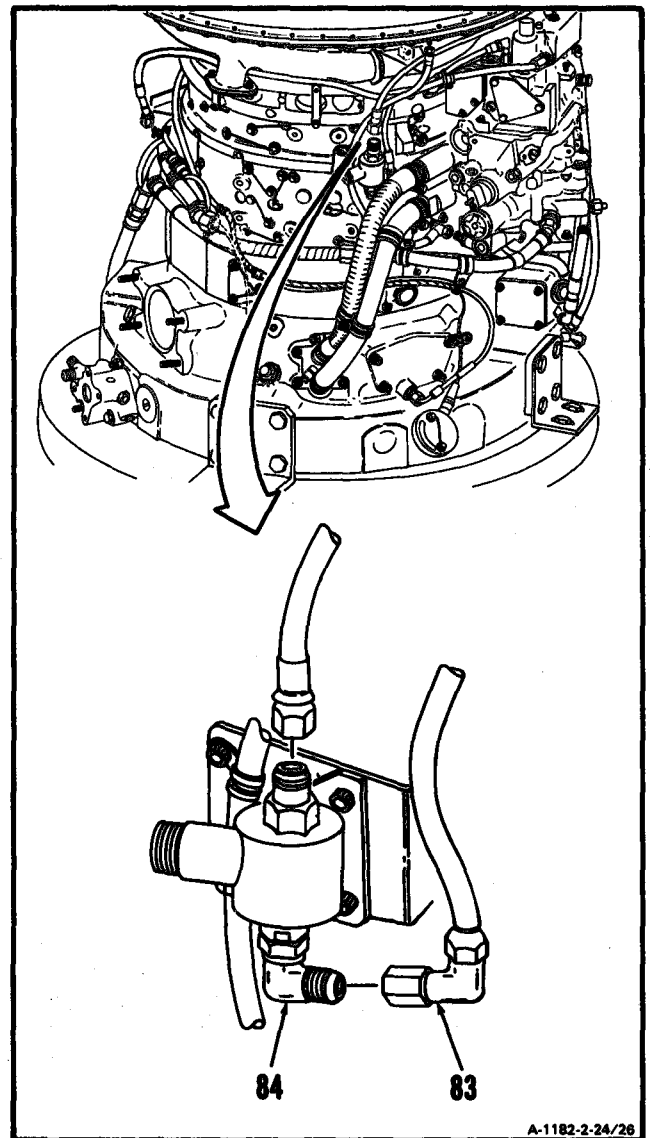
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## 2-24 INSTALL UPPER COMPRESSOR HOUSING (Continued)

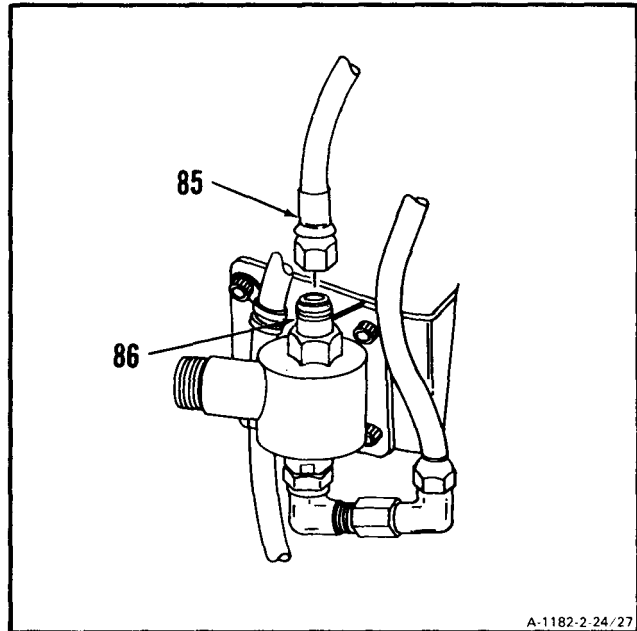
2-24

31. Connect hose assembly (83) to elbow (84).

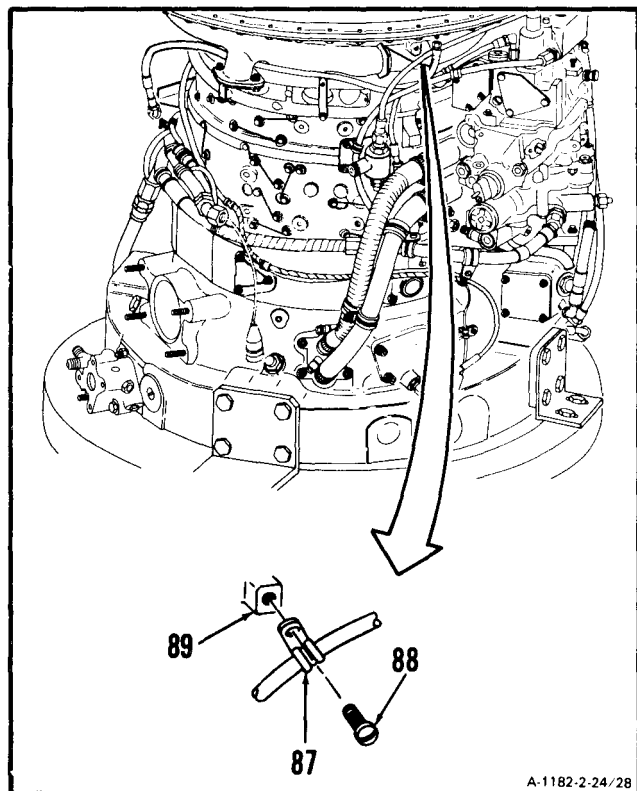


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32. Connect hose assembly (85) to valve (86).



33. Install clamp (87) and screw (88) to compressor housing boss (89). Lockwire screw (88). Use lockwire (E29).

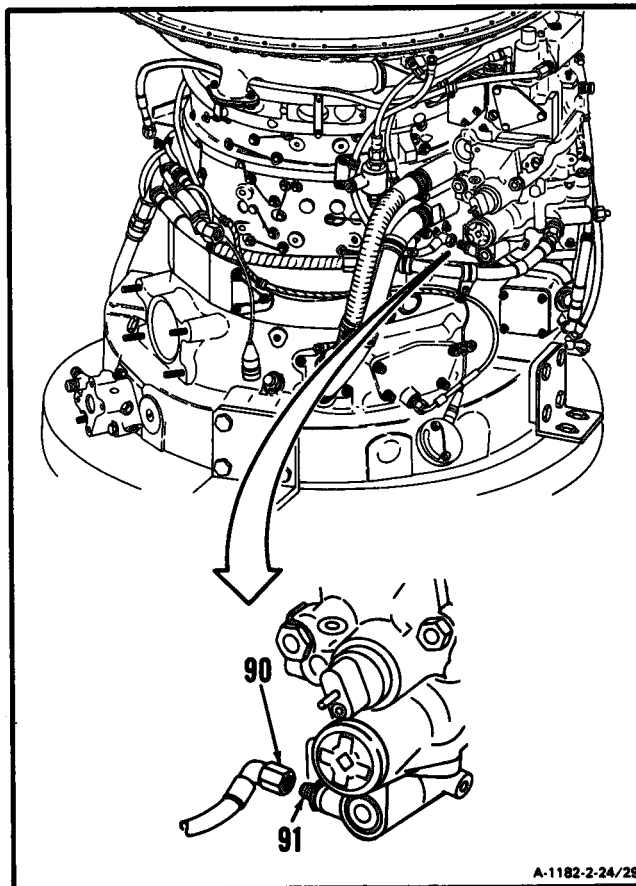


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## 2-24 INSTALL UPPER COMPRESSOR HOUSING (Continued)

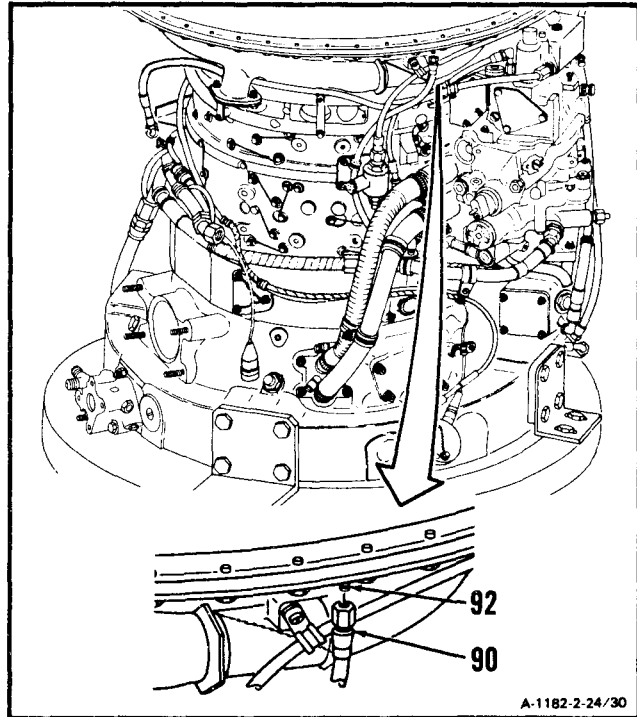
2-24

34. Connect hose assembly (90) to nipple (91).



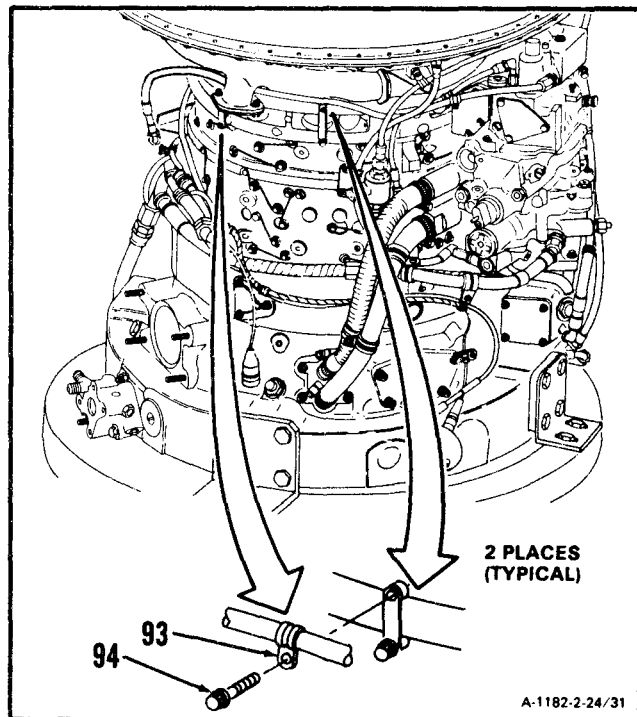
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35. Connect hose assembly (90) to union (92).



36. Install two clamps (93) and bolts (94).

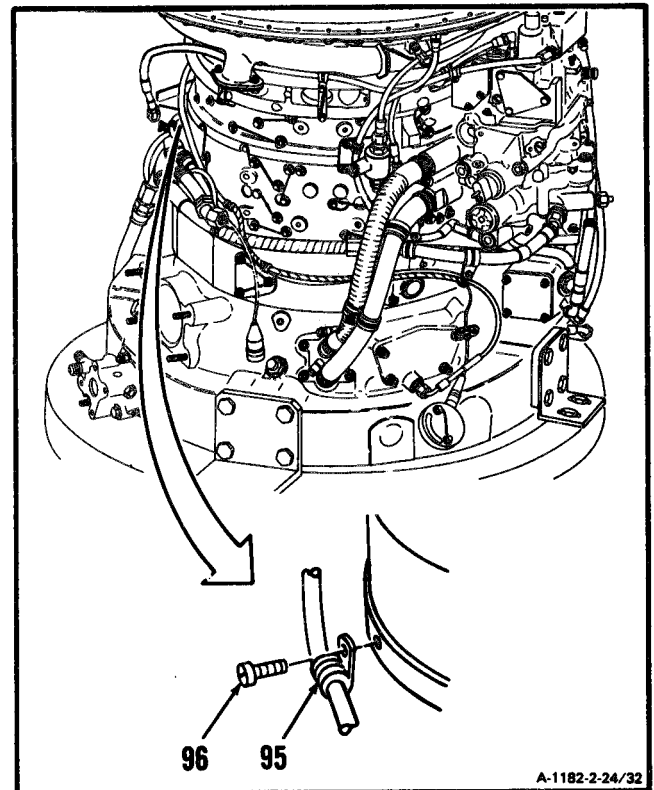
37. Lockwire bolts (94). Use lockwire (E29).



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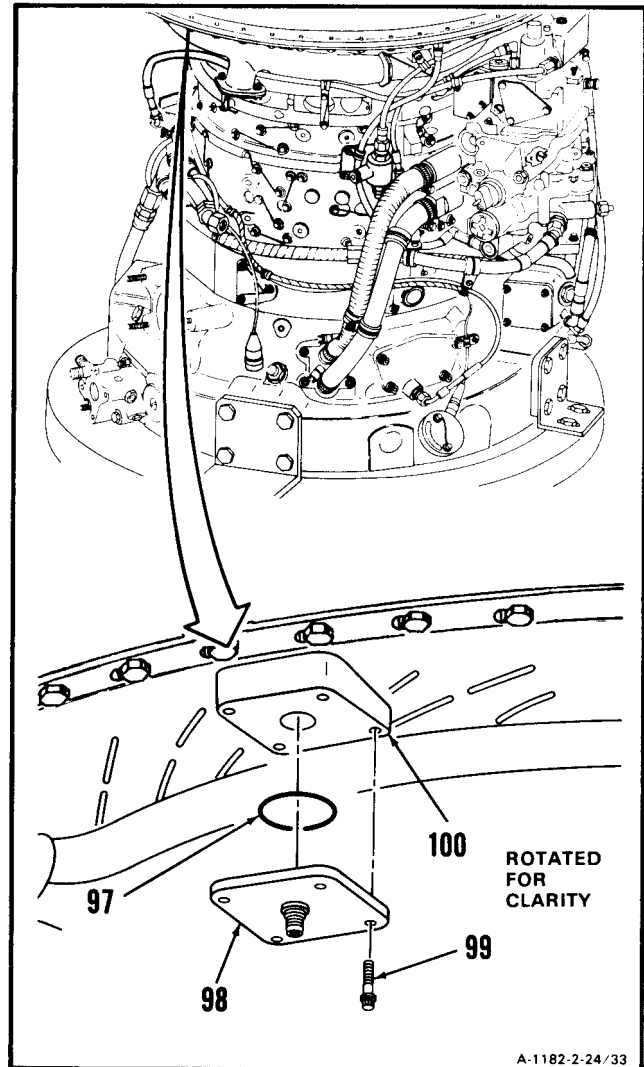
38. Install clamp (95) and screw (96).

32. Lockwire screw (96). Use lockwire (E29).

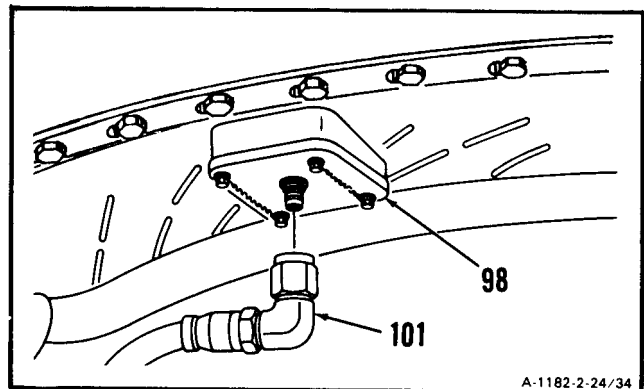


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- 40. **Install** packing (97), **adapter (98)**, and four bolts (99) to housing (100).
- 41. Lockwire four bolts (99). Use lockwire (E29).



- 42. **Connect** hose assembly (101) to adapter (98).

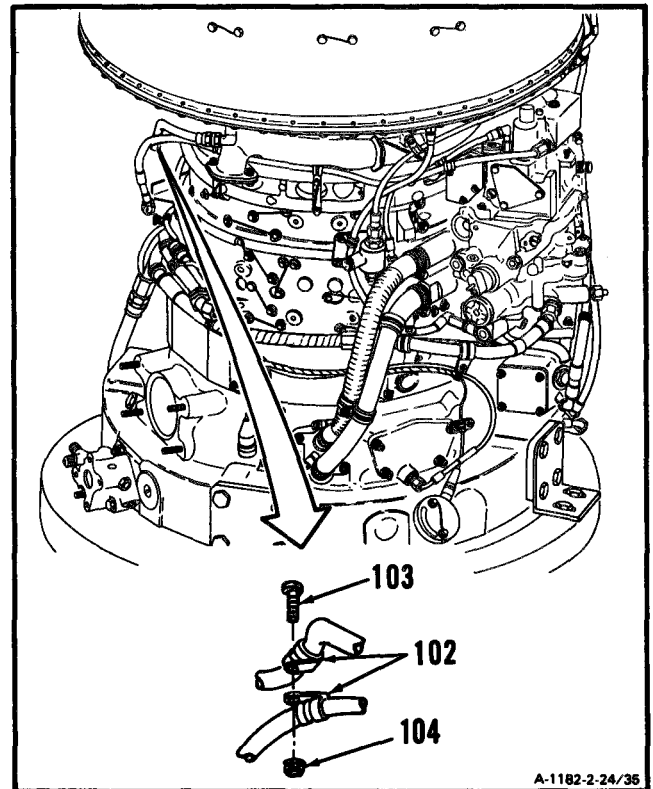


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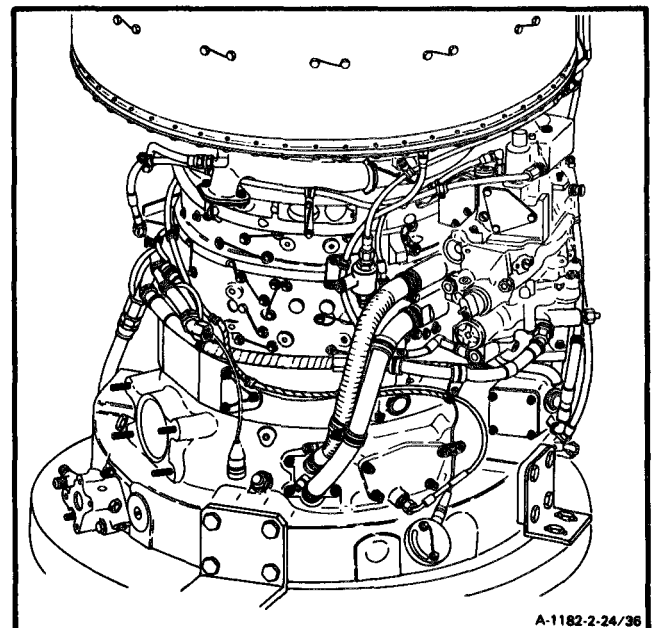
## 2-24 INSTALL UPPER COMPRESSOR HOUSING (Continued)

2-24

**43. Install two clamps (102), bolt (103) and nut (104).**

**INSPECT****FOLLOW-ON MAINTENANCE:**

- Install Compressor Bleed Band (Task 2-1 3).
- Install Interstage Air-Bleed Actuator (Task 2-7).
- Install Main Fuel Filter and Bracket (Task 6-35).
- Install Starter Drive Assembly (Task 5-16).
- Install Oil Filler Assembly and Oil Filler Strainer (Task 8-22).
- Install Ignition Exciter (Task 7-15).
- Install In-Line Fuel Filter Assembly (Task 6-41).
- Install Oil Cooler Assembly (Task 8-11).
- Service Engine Oil System (Task 1-74).

**END OF TASK**

**INITIAL SETUP**

**Applicable Configurations:**

All

**Tools:**

- Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944
- Technical Inspection Tool Kit,  
NSN 5180-00-323-5114
- Torque Wrench, 30-150 Inch-Pounds
- Open-End Wrench, 1-5/8 Inch
- Crowfoot Attachment (T66)

**Materials:**

Lockwire (E29)

**Parts:**

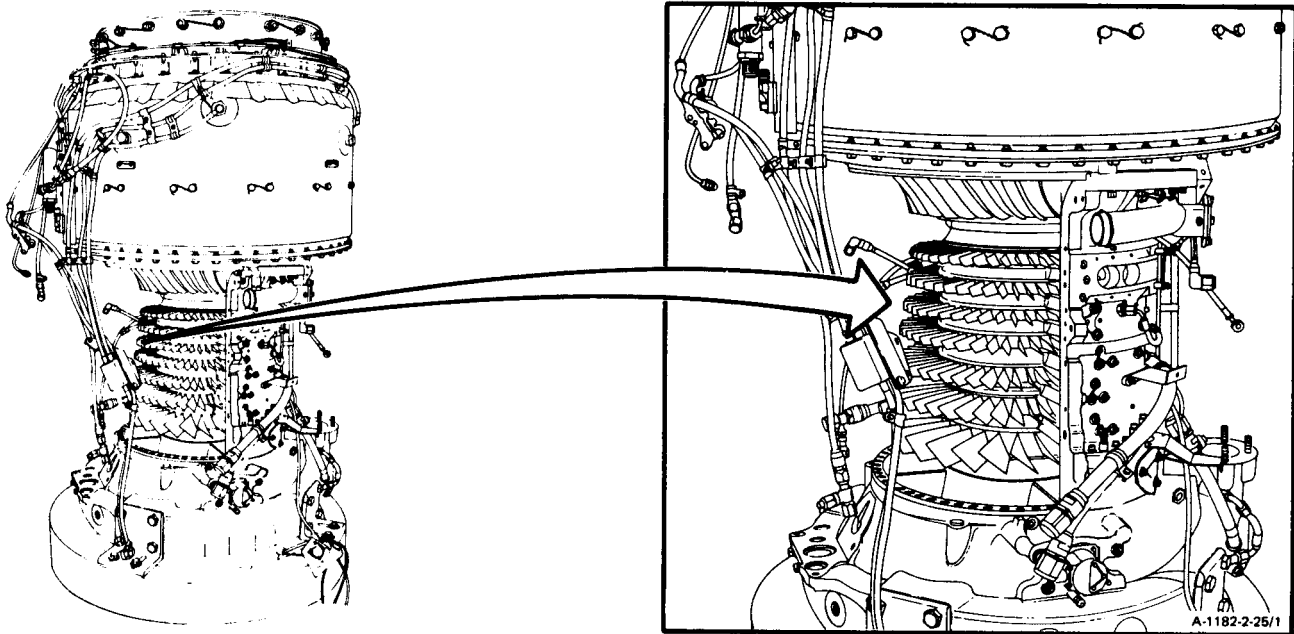
- Key Washers
- Packings

**Personnel Required:**

- 68B10** Aircraft Powerplant Repairer (2)
- 68B30** Aircraft Powerplant Inspector

**References:**

TM 55-2840-254-23P



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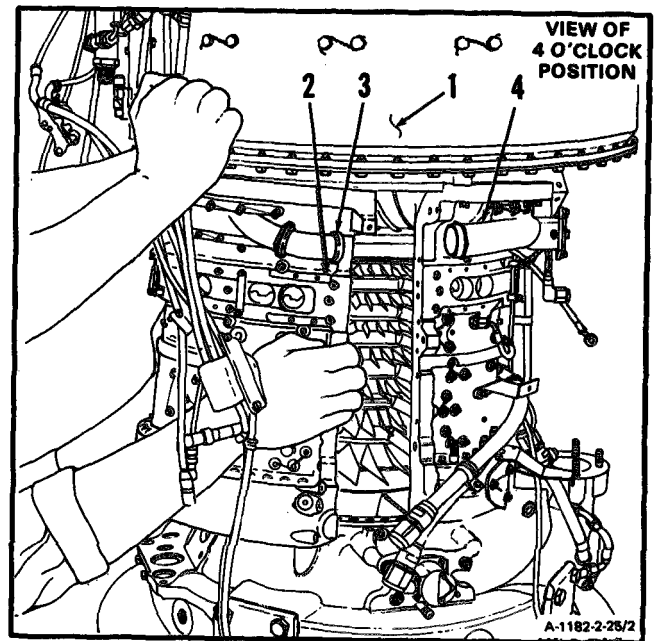
## 2-25 INSTALL LOWER COMPRESSOR HOUSING (Continued)

2-25

**NOTE**

Some engine compressor housings may have provisions for a packing and plug installed at the 9-o'clock position. If required, assure installation.

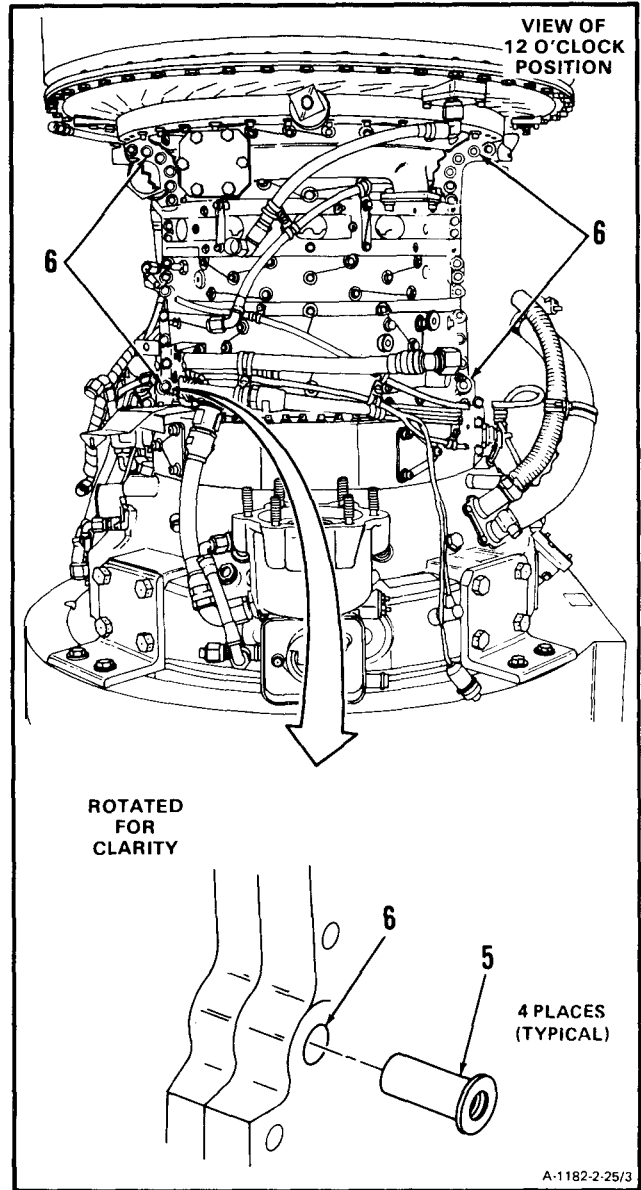
1. Have helper lift up on combustion section and power turbine (1) and **install lower compressor housing (2)**. Align two connectors (3) with air gallery (4).

**GO TO NEXT PAGE**

**NOTE**

Procedure for installing four dowel pins is the same. Procedure for only one is shown.

2. **Align dowel pin (5)** with hole (6) and tap in dowel pin (5). Use soft faced mallet.



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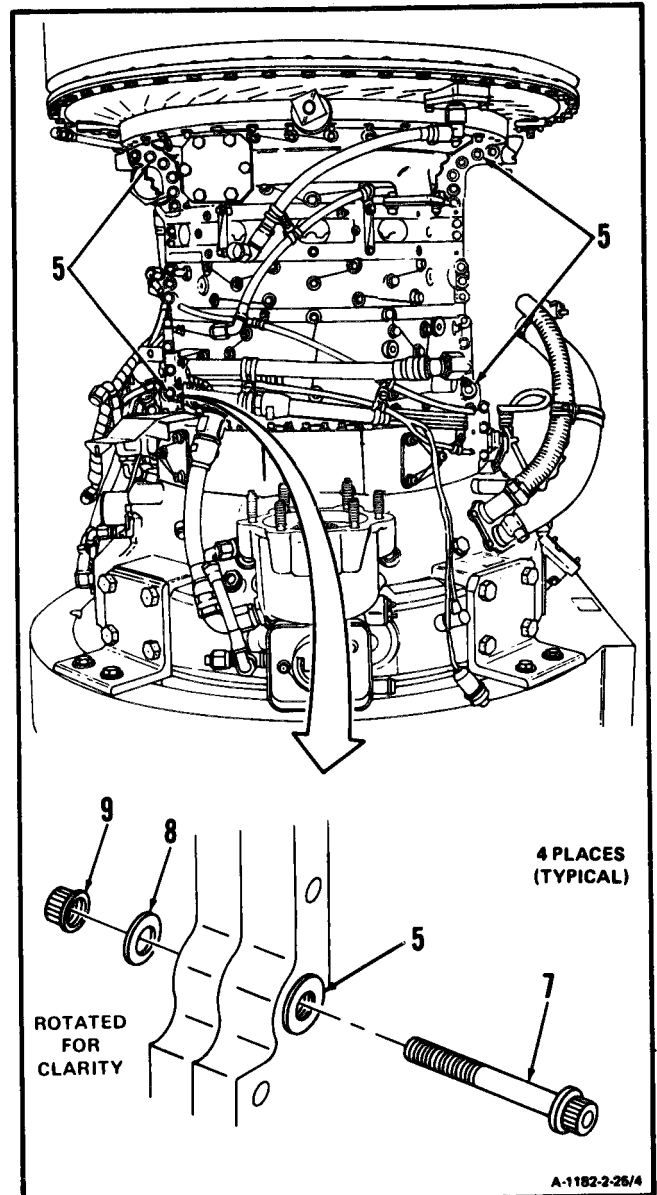
## 2-25 INSTALL LOWER COMPRESSOR HOUSING (Continued)

2-25

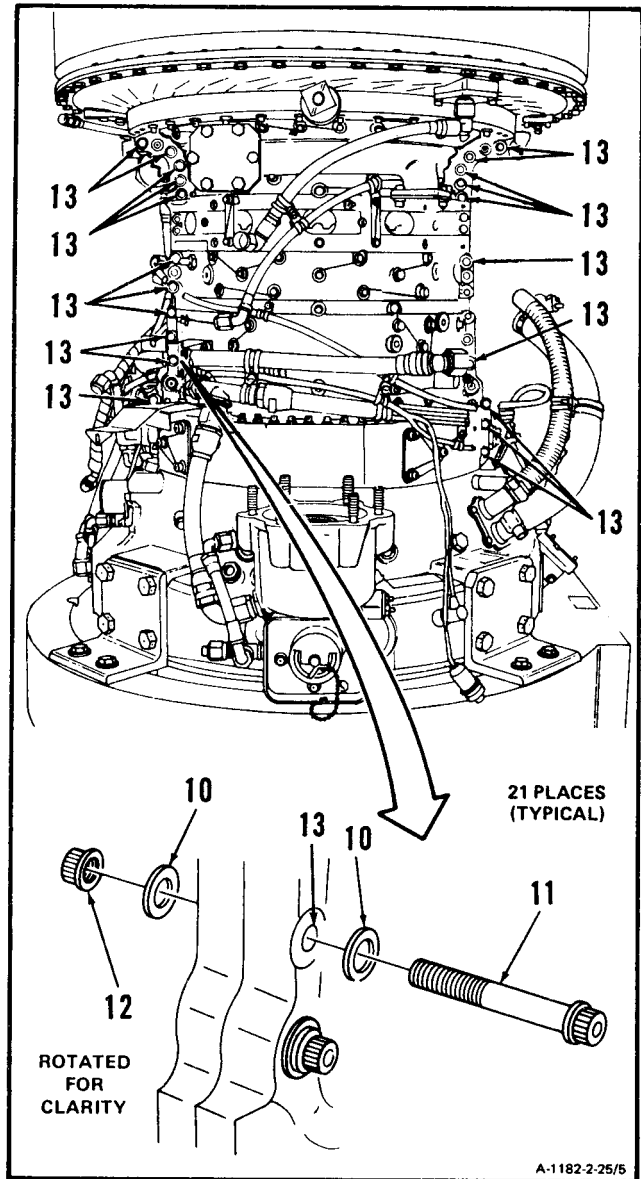
**NOTE**

Procedure for installing bolts and washers in four dowel pins is the same. Only one is shown.

3. Install bolt (7), washer (8), and nut (9) in dowel pin (5).

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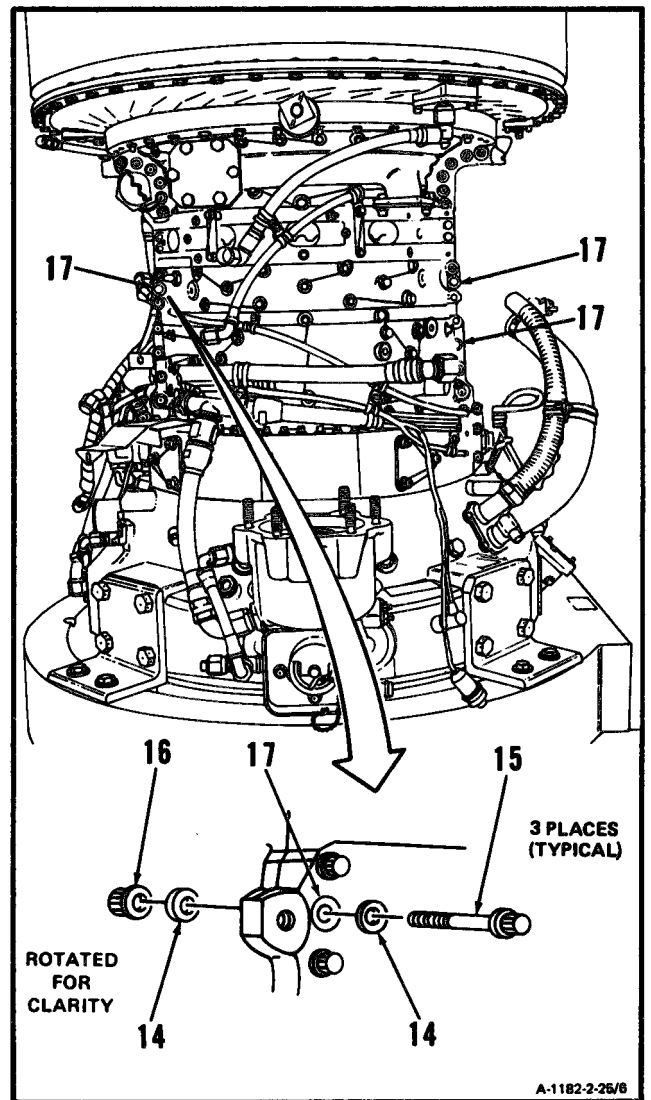
4. **Install** 42 washers (10), **21 bolts** (11), and 21 nuts (12) into holes (13).



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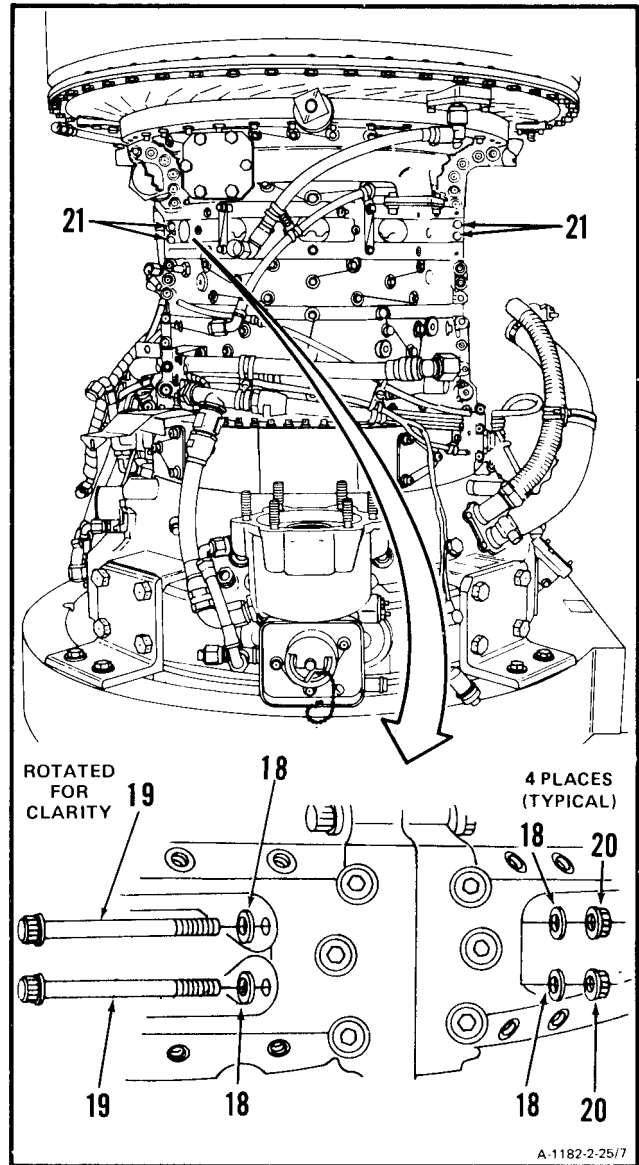
2-25 INSTALL LOWER COMPRESSOR HOUSING (Continued)

5. Install six washers (14), three bolts (15), and three nuts (16) into holes (17).



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6. **Install** eight washers (18), **four bolts (19)**, and four nuts (20) into holes (21).



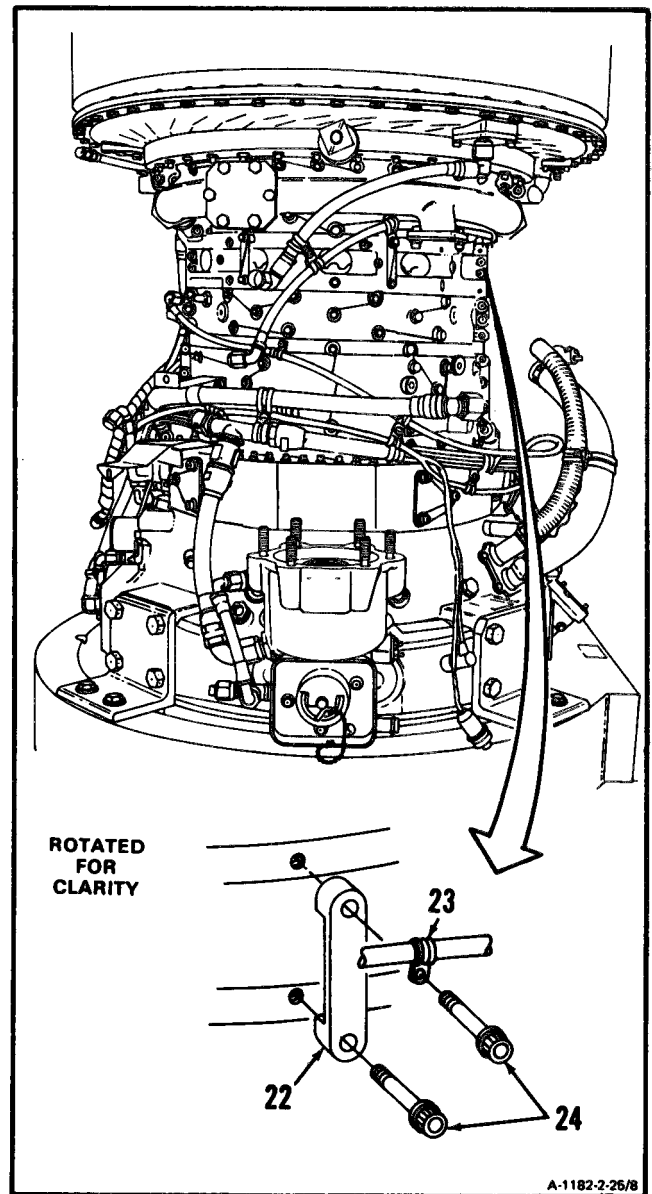
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## 2-25 INSTALL LOWER COMPRESSOR HOUSING (Continued)

2-25

7. Install bleed band retainer (22), clamp (23) and two bolts (24).

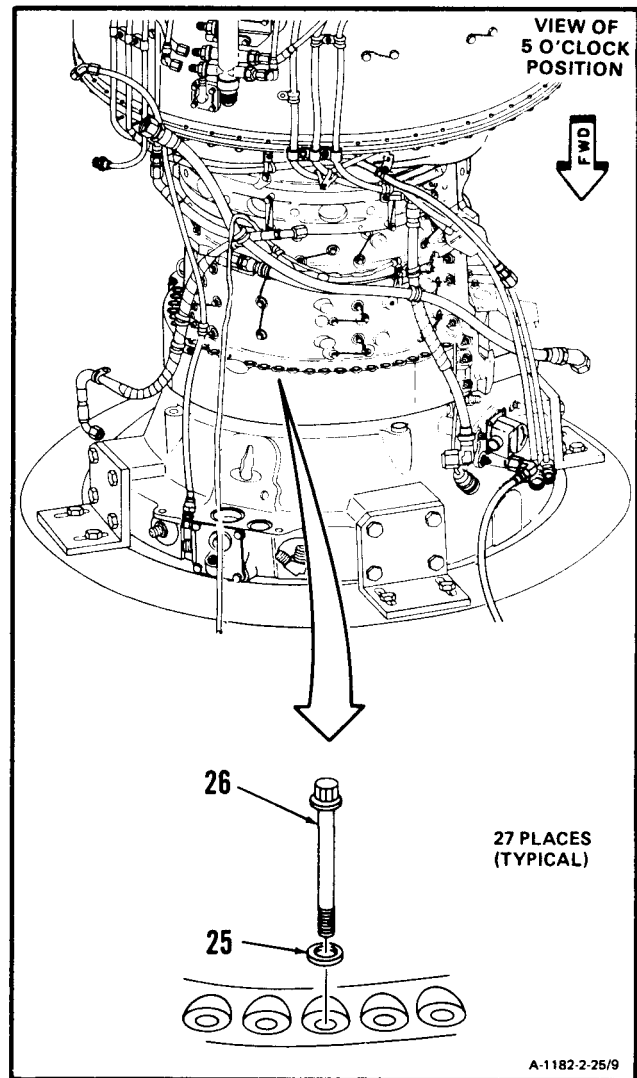
8. Lockwire bolts (24). Use lockwire (E29).



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9. Install 27 washers (25) and bolts (26).

10. Lockwire bolts (26). Use lockwire (E29).



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2-25 INSTALL LOWER COMPRESSOR HOUSING (Continued)

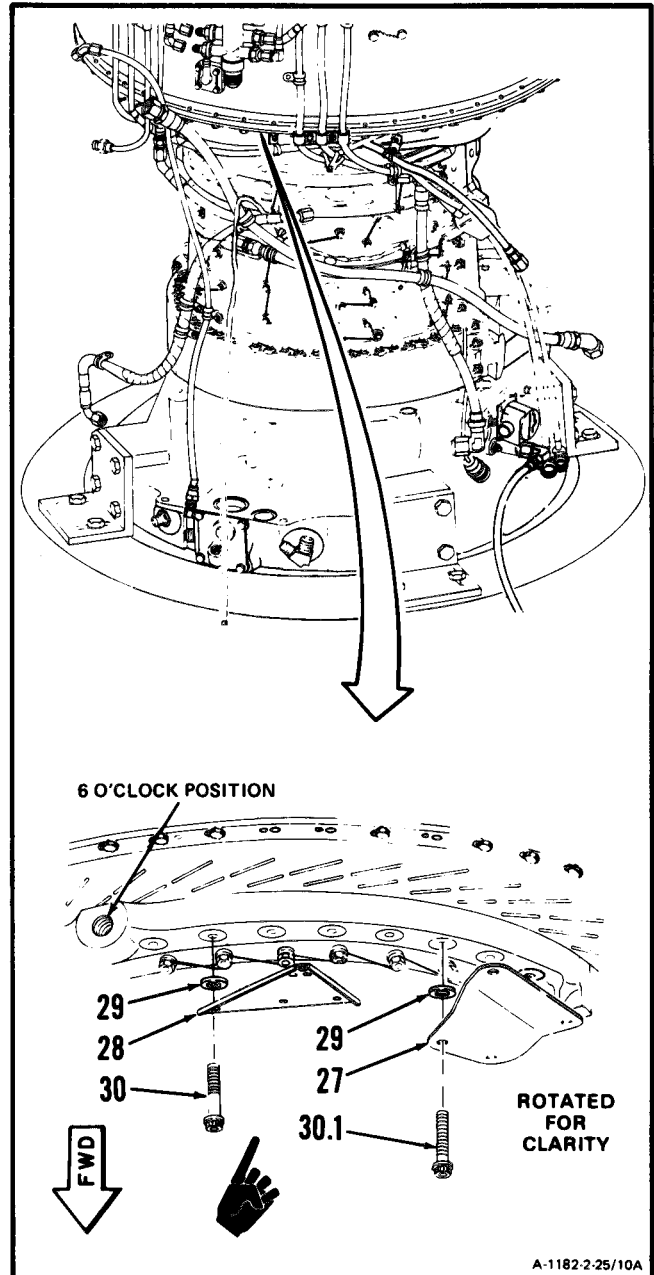
2-25

**NOTE**

If compressor housing is thin walled at 6 o'clock position do steps 11., 12., 13., 14. and 15.

If compressor housing is beefed-up at 6 o'clock position omit steps 11., 12., 13., 14. and 15.; and do steps 15.1, 15.2, 15.3, 15.4, 15.5, 15.6, 15.7 and 15.8.

- 11. **Install brackets (27 and 28)**, five washers (29), three bolts (30) and two bolts (30.1).

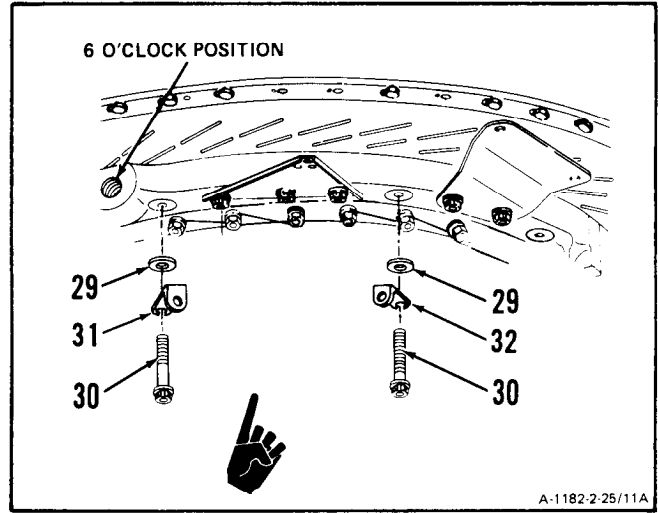


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**2-25 INSTALL LOWER COMPRESSOR HOUSING (Continued)**

12. **Install bracket (31),** spacer (29) and bolt (30).

13. **Install bracket (32),** spacer (29) and bolt (30).

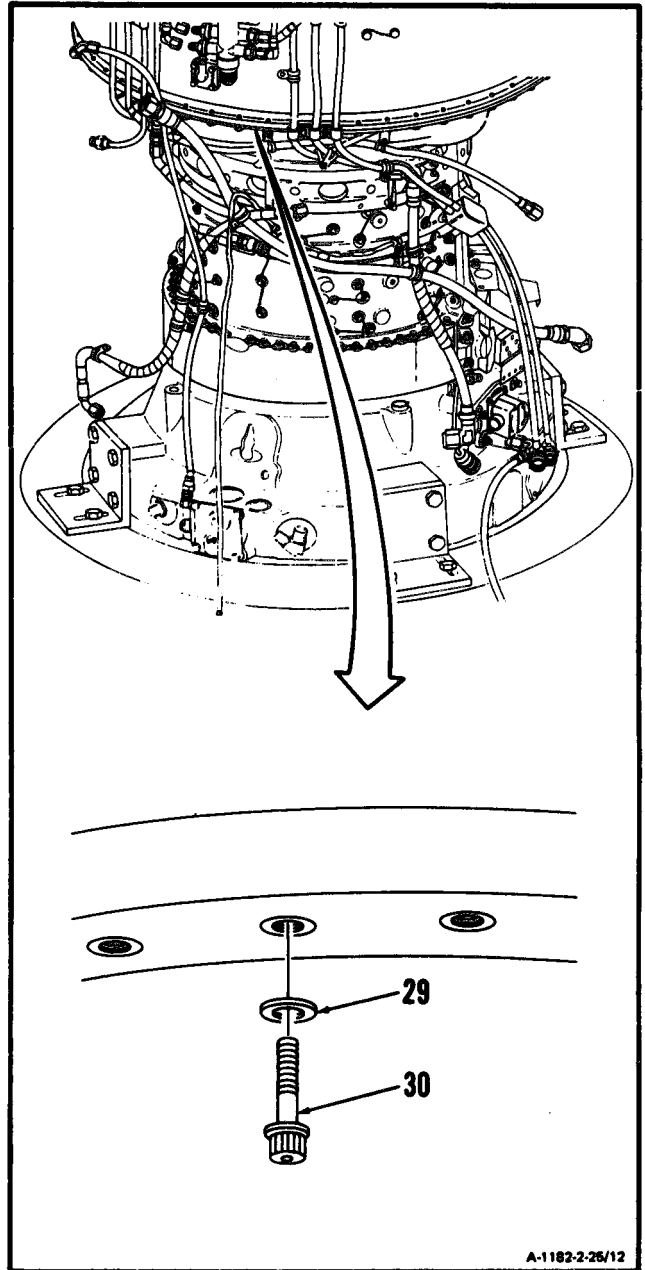


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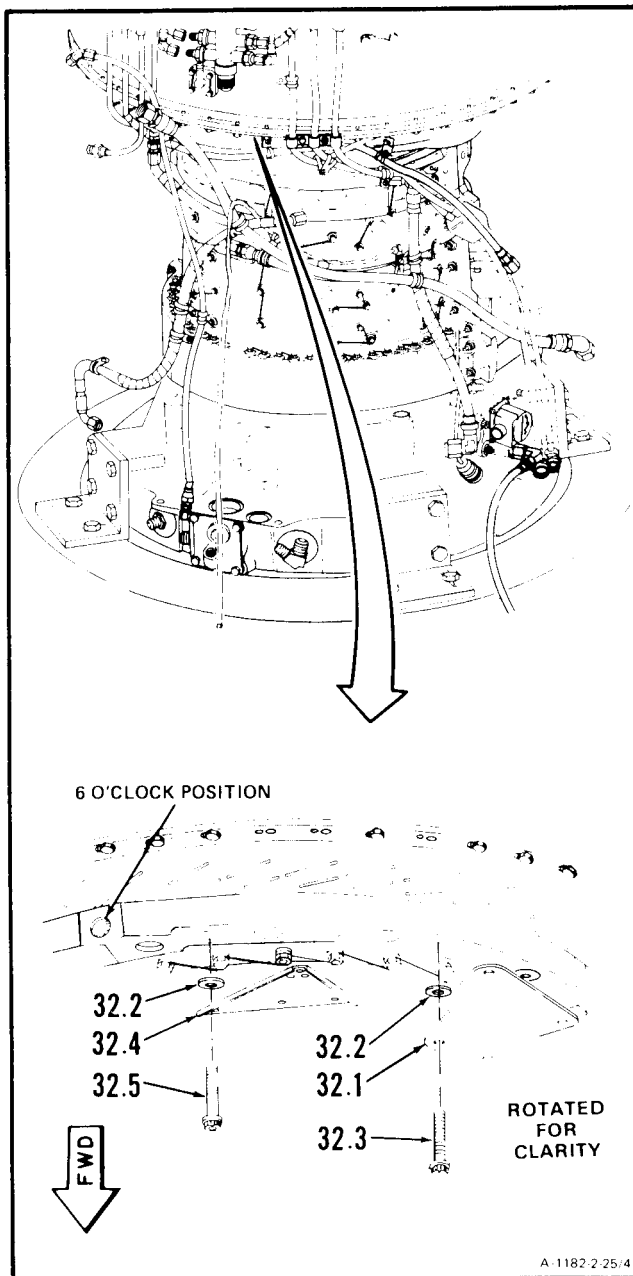
## 2-25 INSTALL LOWER COMPRESSOR HOUSING (Continued)

2-25

14. Install nine remaining washers (29) and bolts (30).
15. Lockwire 16 bolts (30). Use lockwire (E29).

**GO TO NEXT PAGE**

- 15.1 **Install bracket (32.1)**, two washers (32.2), and two bolts (32.3).
- 15.2 **Install bracket (32.4)**, three washers (32.2), and three bolts (32.5).

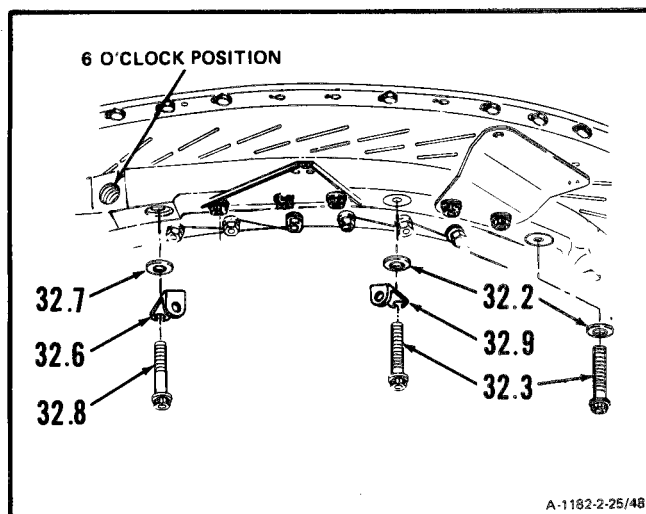


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**2-25 INSTALL LOWER COMPRESSOR HOUSING (Continued)**

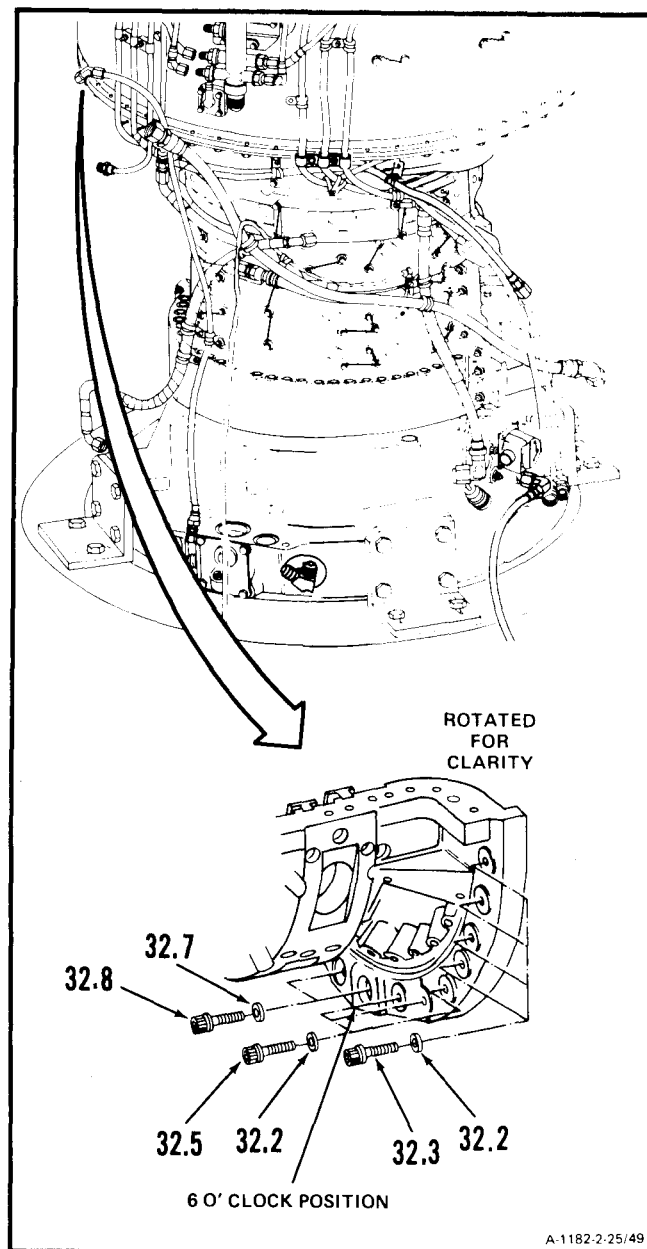
2-25

- 15.3 **Install bracket (32.6)**, spacer (32.7), and bolt (32.8).
- 15.4 **Install bracket (32.9)**, washer (32.2), and bolt (32.3).
- 15.5 Install remaining washer (32.2) and bolt (32.3).

**GO TO NEXT PAGE**

**2-25 INSTALL LOWER COMPRESSOR HOUSING (Continued)**

- 15.6 Install four washers (32.2) and four bolts (32.3).
- 15.7 Install three washers (32.2) and three bolts (32.5).
- 15.8 Install spacer (32.7) and bolt (32.8).
- 15.9 Lockwire bolts (32.3), (32.5), and (32.8). Use lockwire (E29).

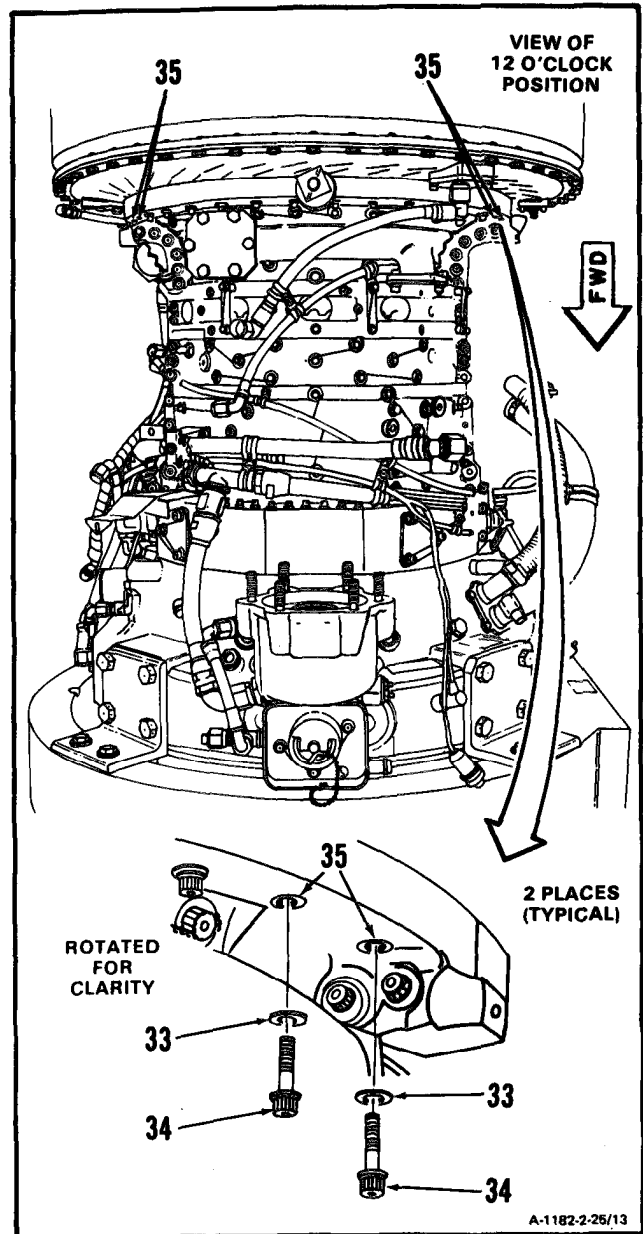


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**2-25 INSTALL LOWER COMPRESSOR HOUSING (Continued)**

**2-25**

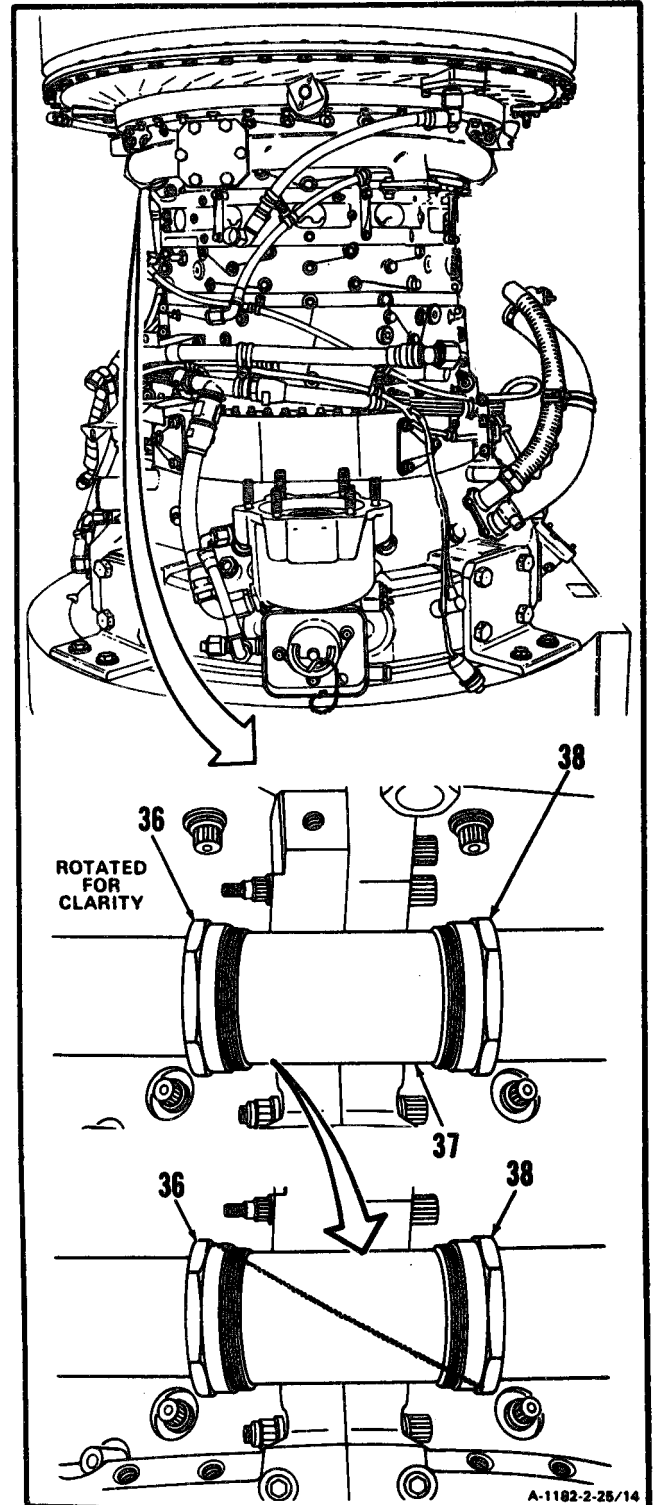
16. Install four washers (33) and bolts (34) into upper compressor housing bolt holes (35).
17. Lockwire four bolts (34). Use lockwire (E29).



**GO TO NEXT PAGE**

18. **Connect nut (36) to connector (37).** Hand tighten nut (36). Using crowfoot attachment (T66) and 1-5/8 inch open-end wrench, **torque nuts (36 and 38) to 90 inch-pound.**

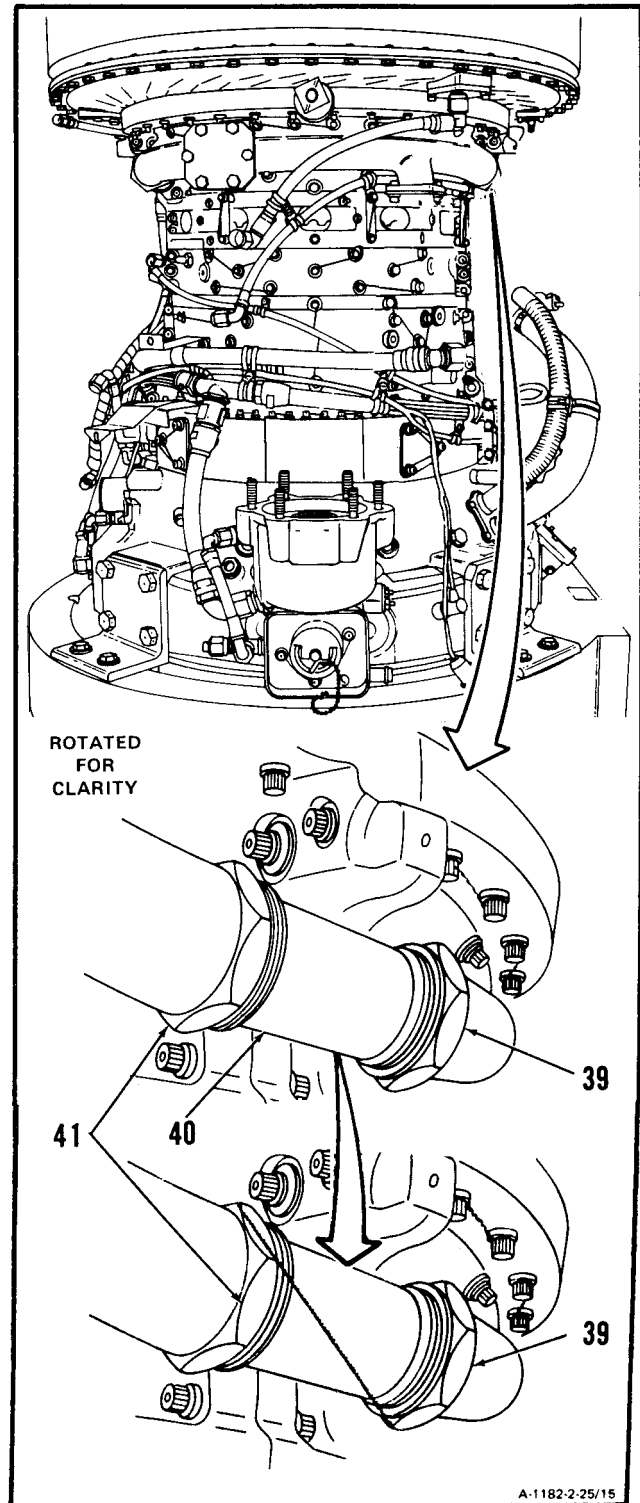
19. Lockwire nuts (36 and 38). Use lockwire (E29).



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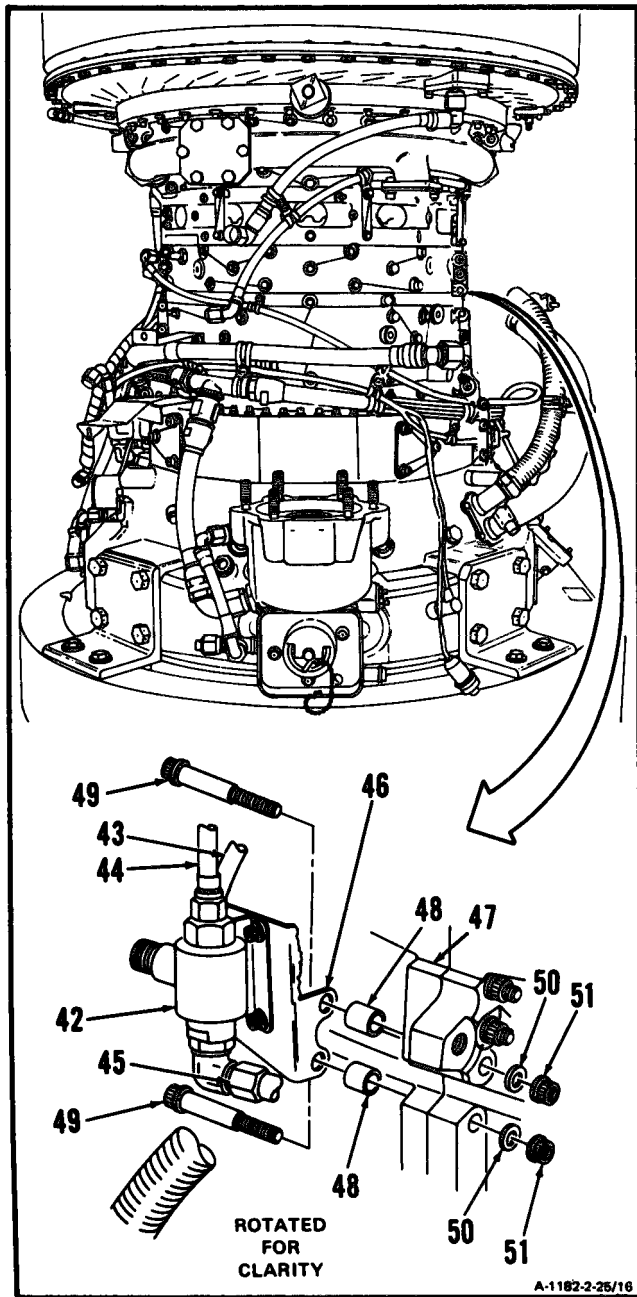


20. Connect nut (39) to connector (40). Hand tighten nut (39). Using crowfoot attachment (T66) and 1-5/8 inch open-end wrench, torque nuts (39 and 41) to 90 inch-pounds.
21. Lockwire nuts (39 and 41). Use lockwire (E29).



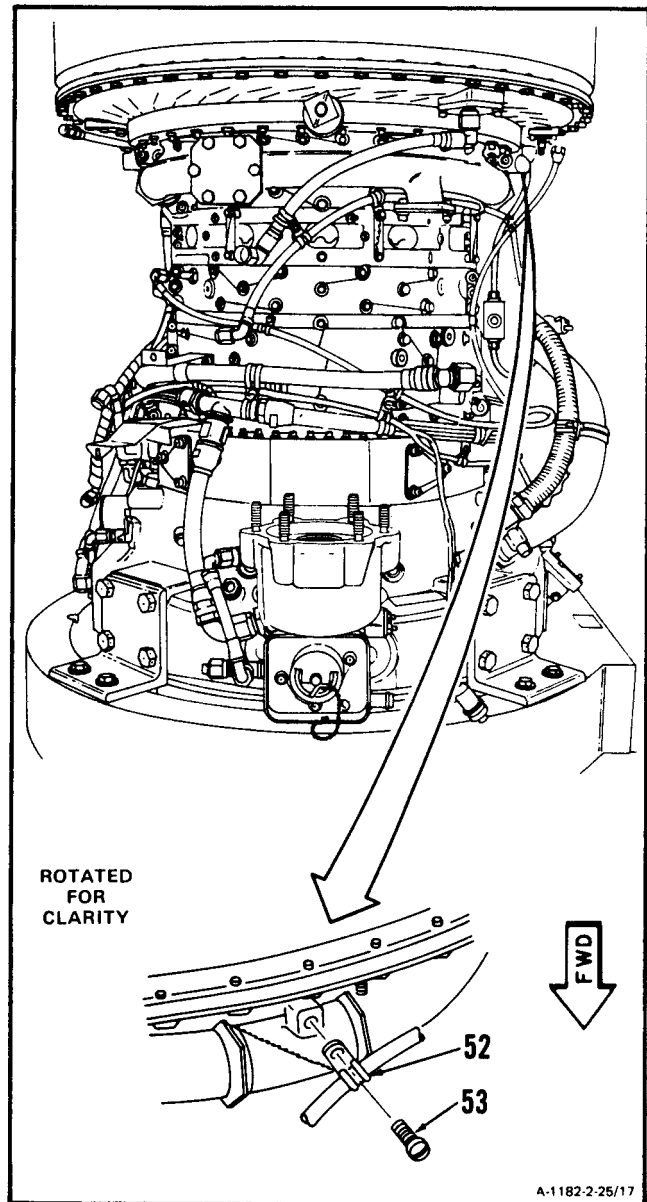
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- 22. **Position solenoid valve (42), hose assemblies (43, 44, and 45) and bracket (46) on upper compressor housing (47) as an assembly.**
- 23. **Install two spacers (48), bolts (49), washers (50), and nuts (51).**



GO TO NEXT PAGE

- 24. **Install clamp (52)** and screw (53).
- 25. Lockwire screw (53). Use lockwire (E29).

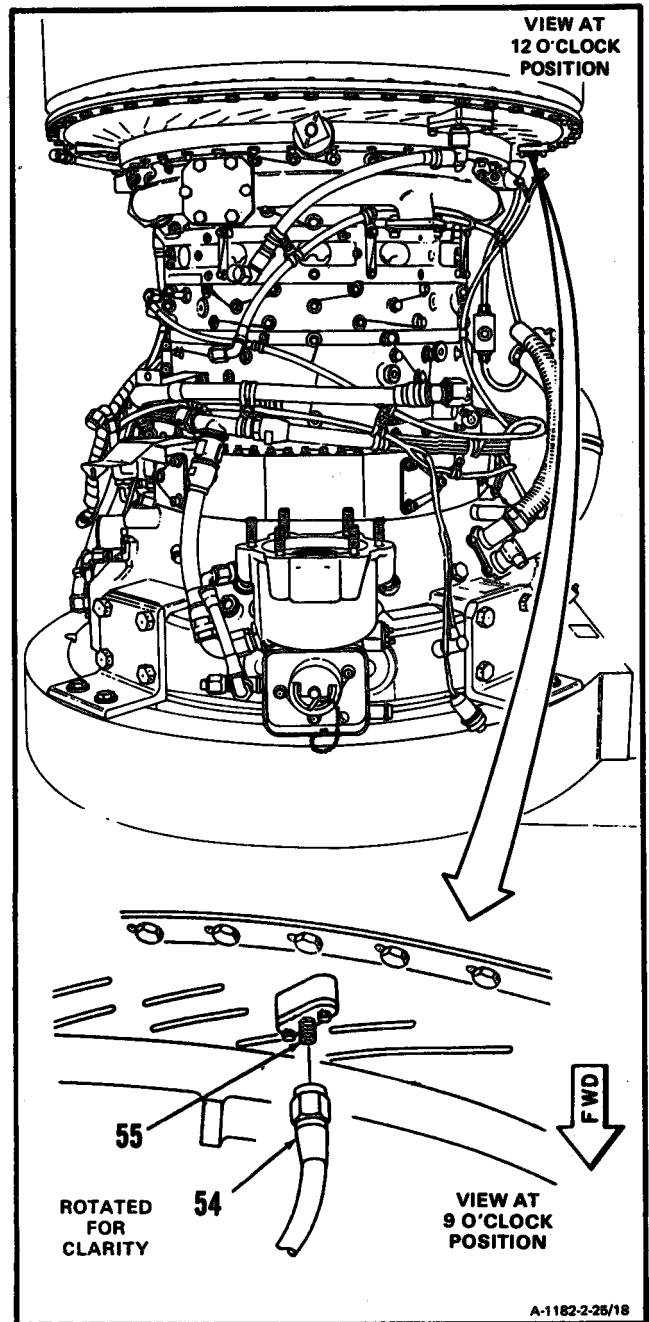


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2-25 INSTALL LOWER COMPRESSOR HOUSING (Continued)

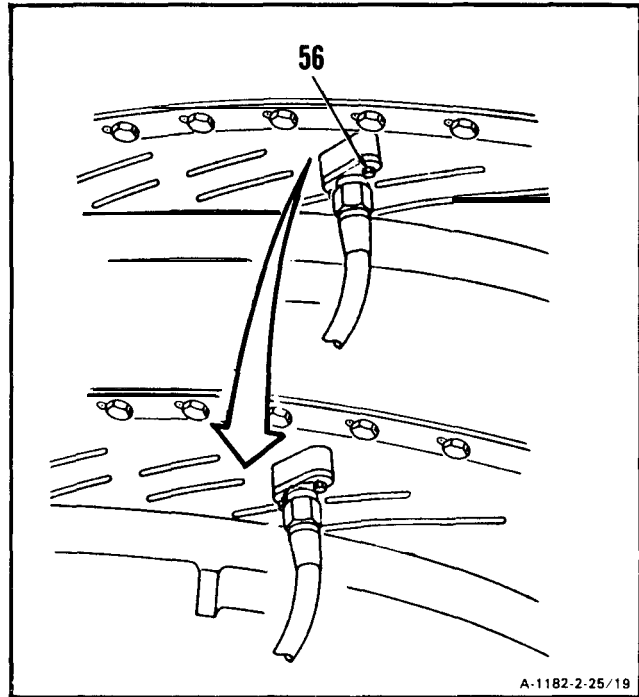
2-25

26. Connect hose assembly (54) to adapter (55).

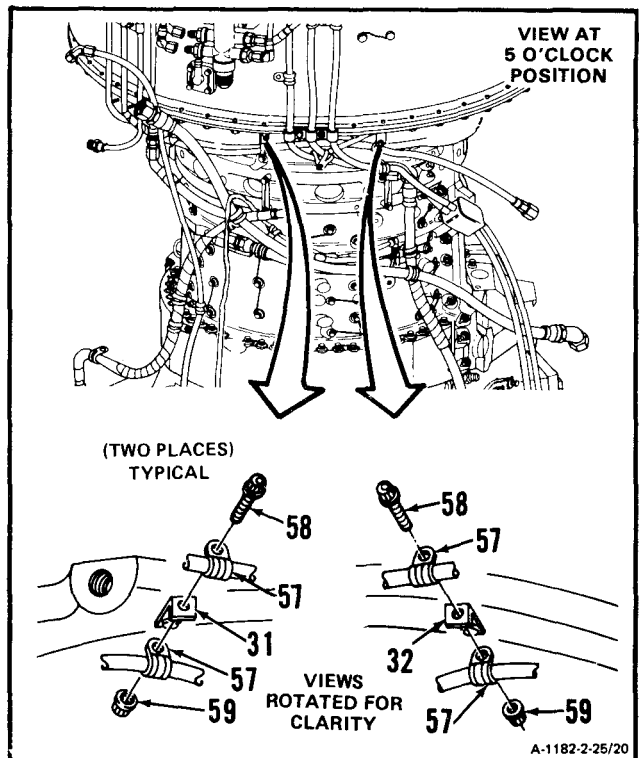


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27. Lockwire two bolts (56), Use lockwire (E29).



28. Install four ignition coil assembly clamps (57) with two bolts (58) and two nuts (59) to brackets (31) and (32).

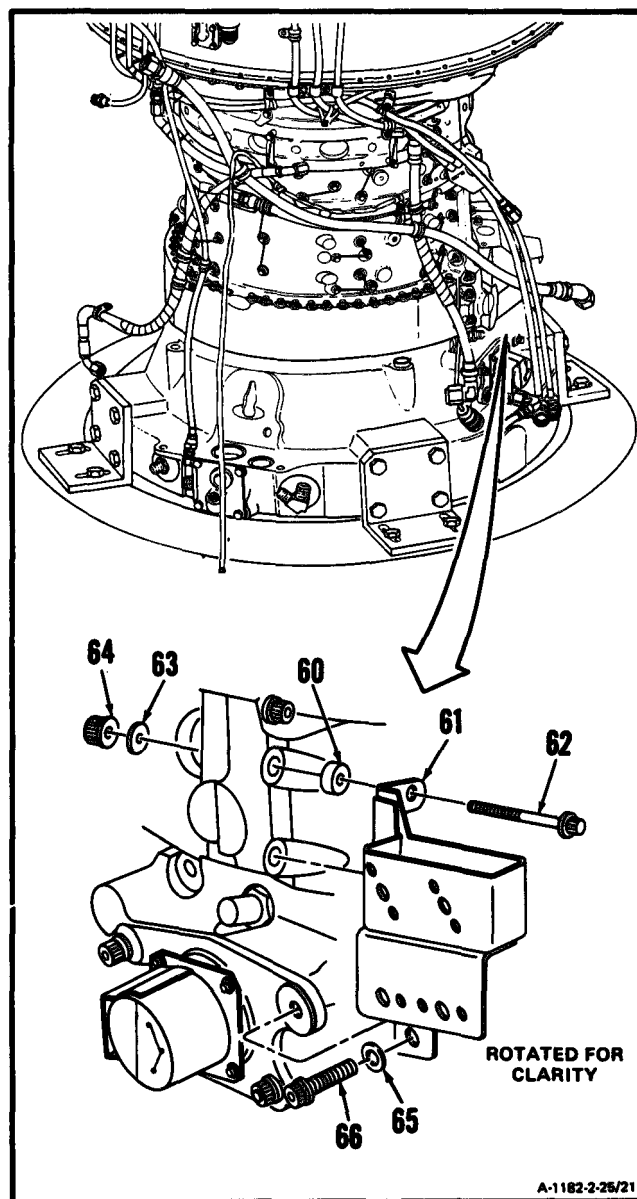


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## 2-25 INSTALL LOWER COMPRESSOR HOUSING (Continued)

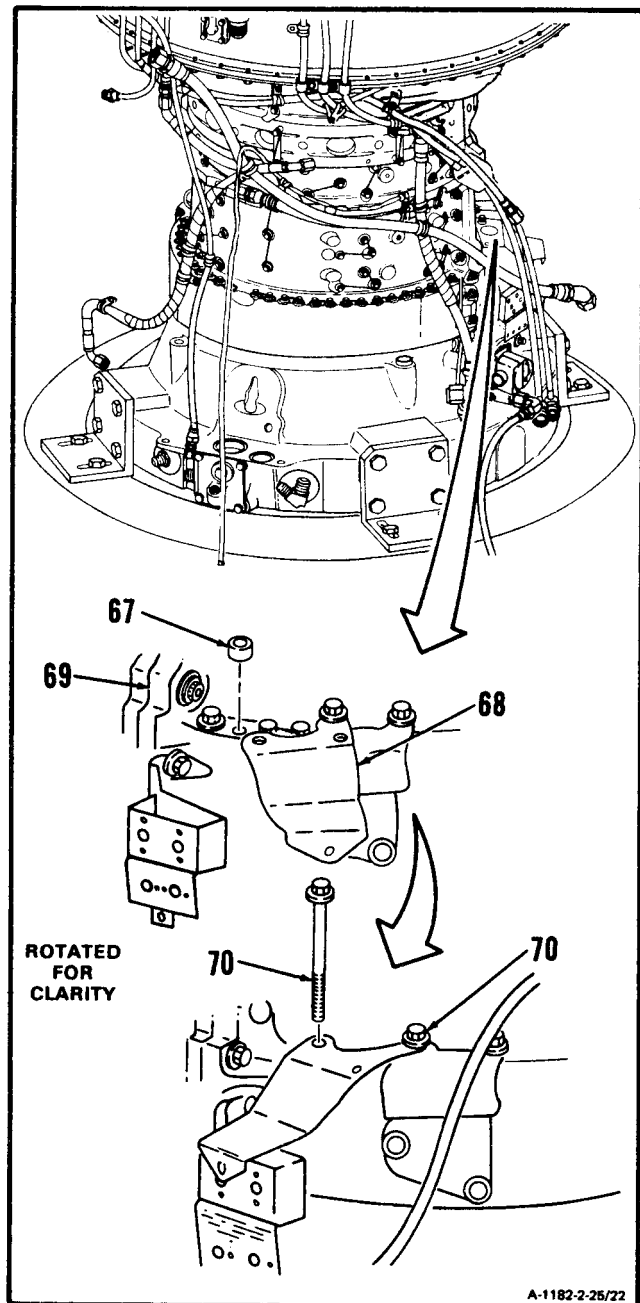
2-25

29. **Install two spacers (60), bracket (61), two bolts (62), washers (63), and nuts (64).**
30. Install washer (65) and bolt (66).
31. Lockwire bolt (66). Use lockwire (E29).



**GO TO NEXT PAGE**

32. Install spacer (67).
33. Swing bracket (68) towards housing split line (69).
34. Install two bolts (70).
35. Torque two bolts (70) to **82 inch-pounds.** lockwire bolts (70), Use lockwire (E29).

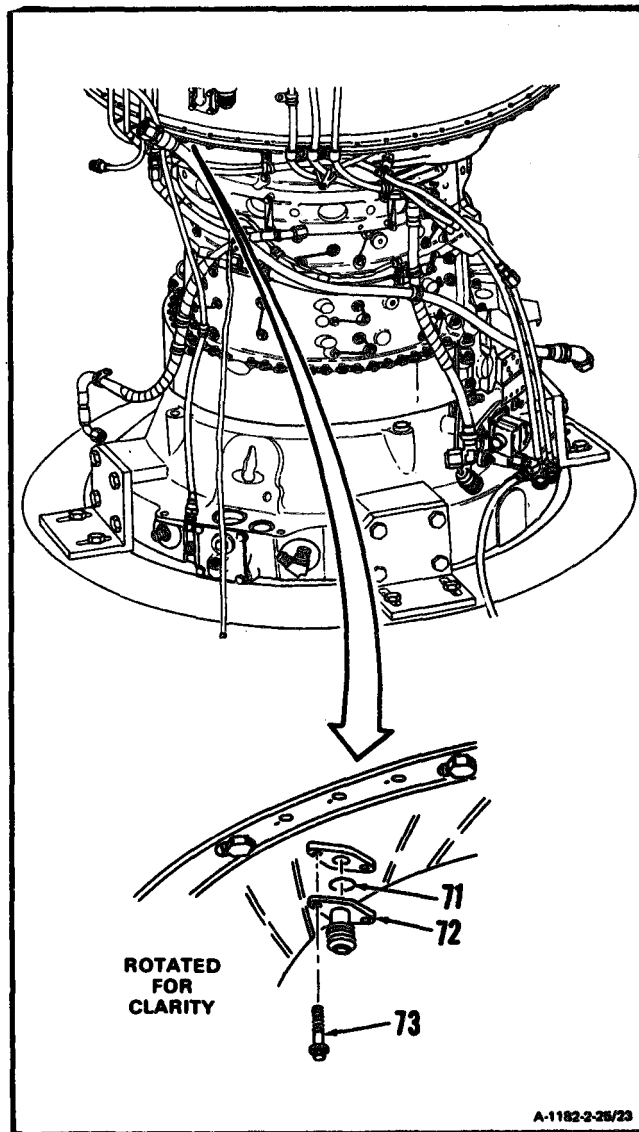


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## 2-25 INSTALL LOWER COMPRESSOR HOUSING (Continued)

2-25

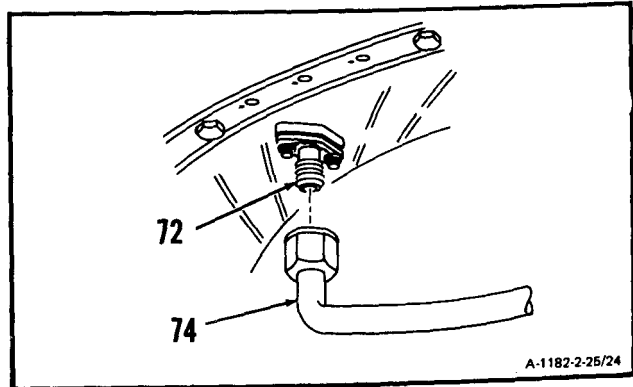
36. **Install** packing (71), **adapter** (72), and two bolts (73).
37. Lockwire bolts (73). Use lockwire (E29).



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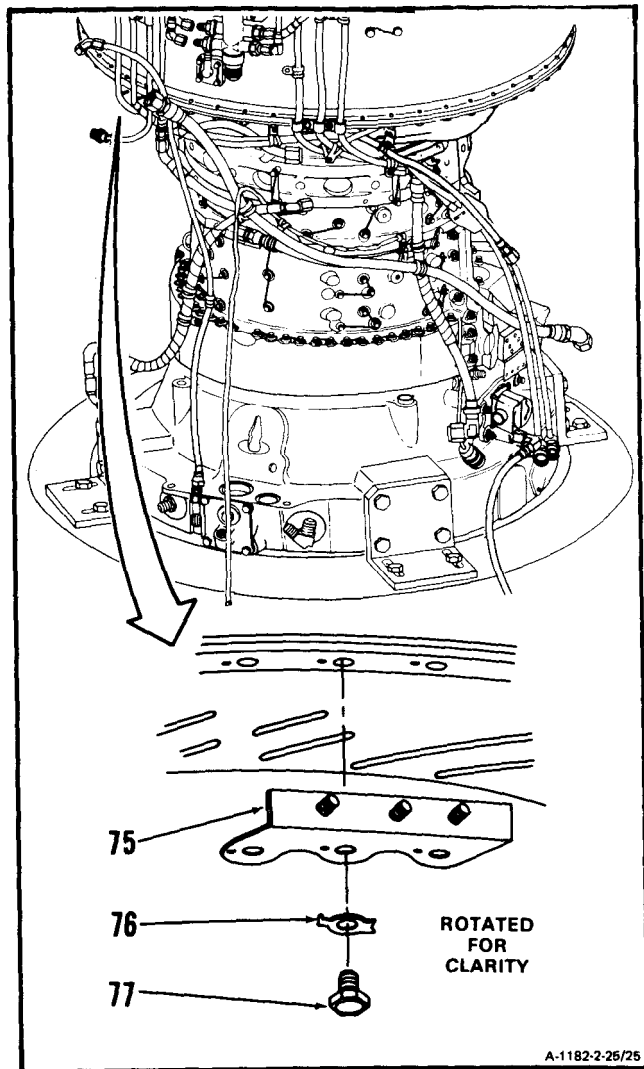


38. Connect hose assembly (74) to adapter (72).



39. Install bracket (75), three key washers (76), and three bolts (77).

40. Lock three bolts (77) by bending tabs of key washers (76).

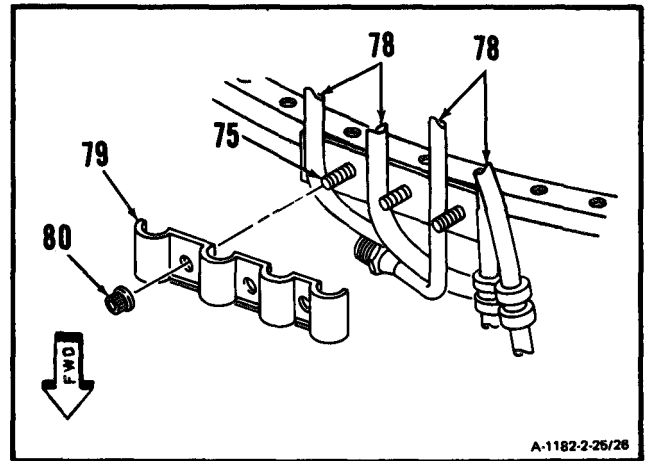


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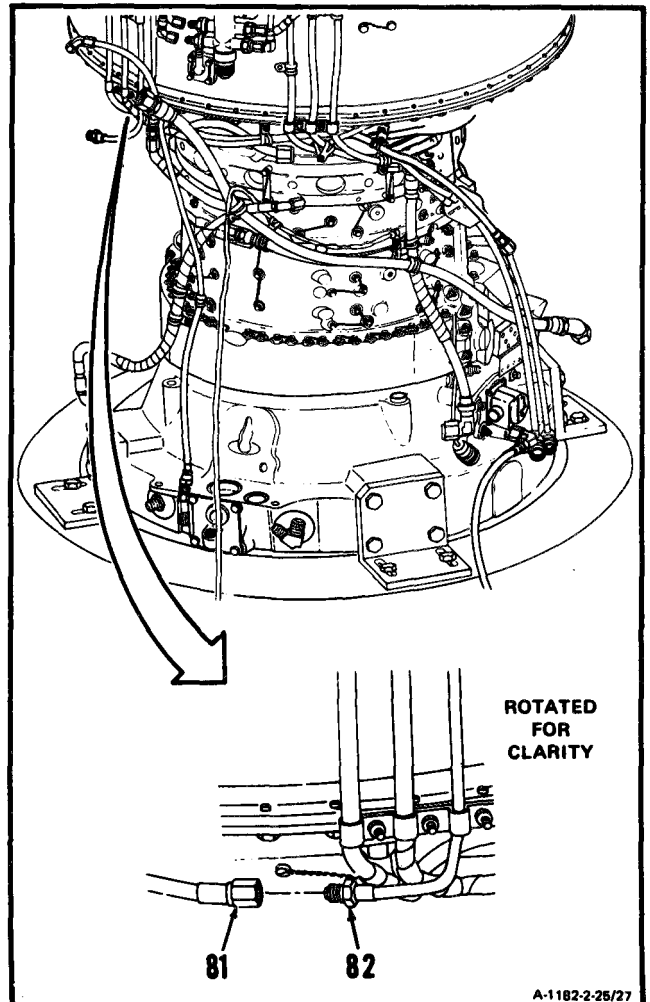
2-25 INSTALL LOWER COMPRESSOR HOUSING (Continued)

2-25

- 41. Position hoses (78) on bracket (75).
- 42. Install clamp (79) and three nuts (80) on bracket (75).

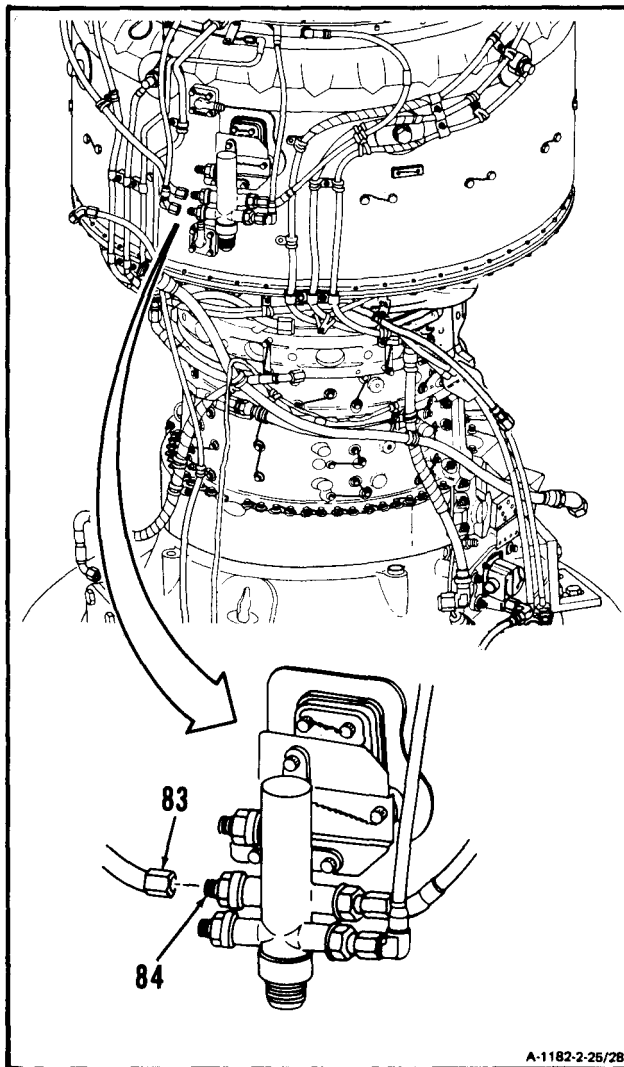


- 43. Connect hose assembly (81) to tube assembly (82).

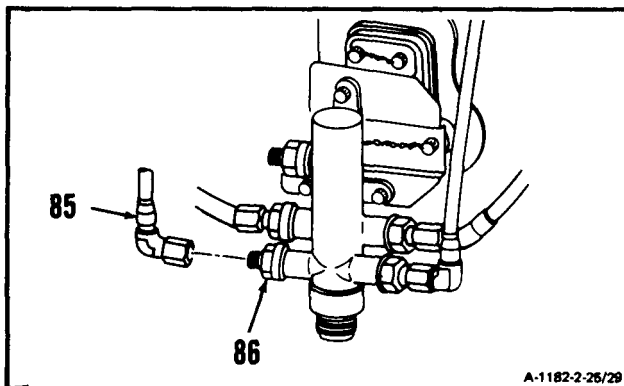


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44. Connect hose assembly (83) to union (84).



45. Connect hose assembly (85) to union (86).

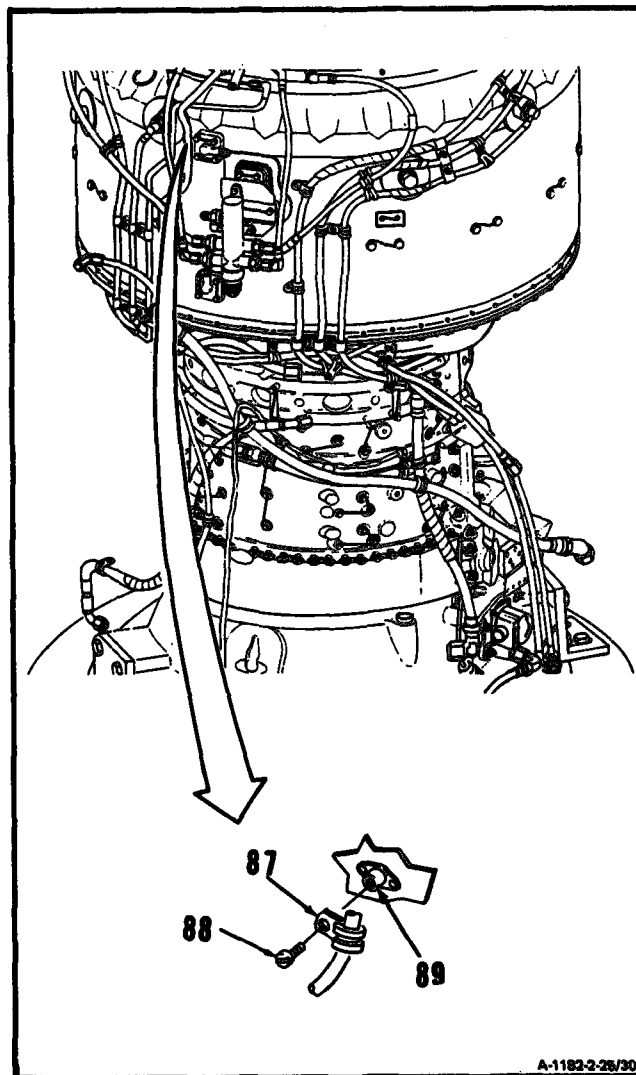


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## 2-25 INSTALL LOWER COMPRESSOR HOUSING (Continued)

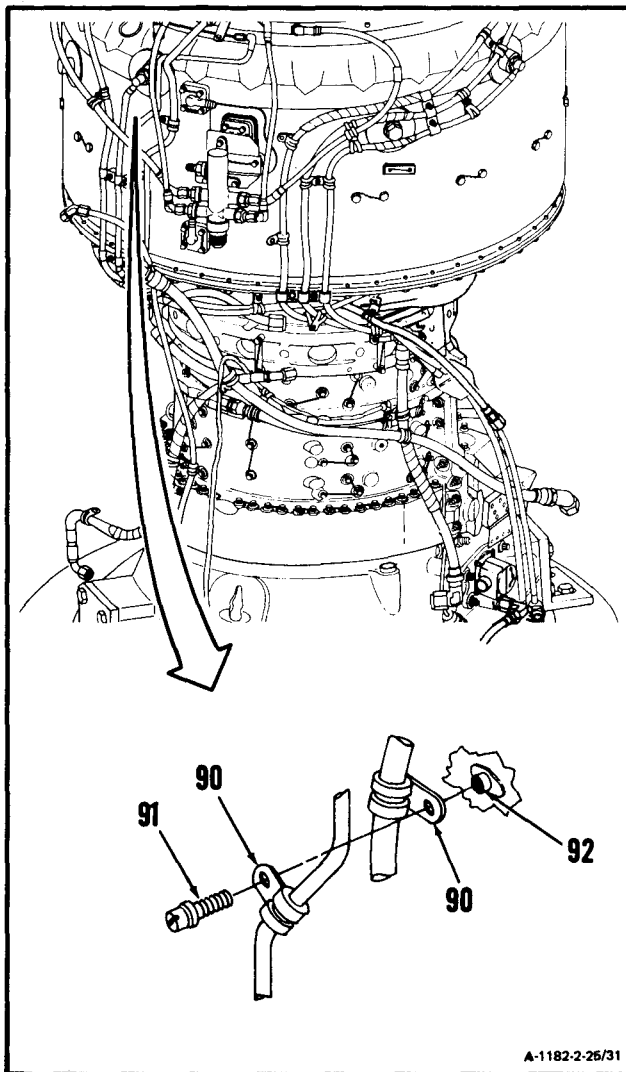
2-25

46. **Install clamp (87)** and screw (88) to anchor nut (89). Lockwire screw (88). Use lockwire (E29).



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47. **Install two clamps (90)** and screw (91 ) to anchor nut (92). Lockwire screw (91). Use lockwire (E29).

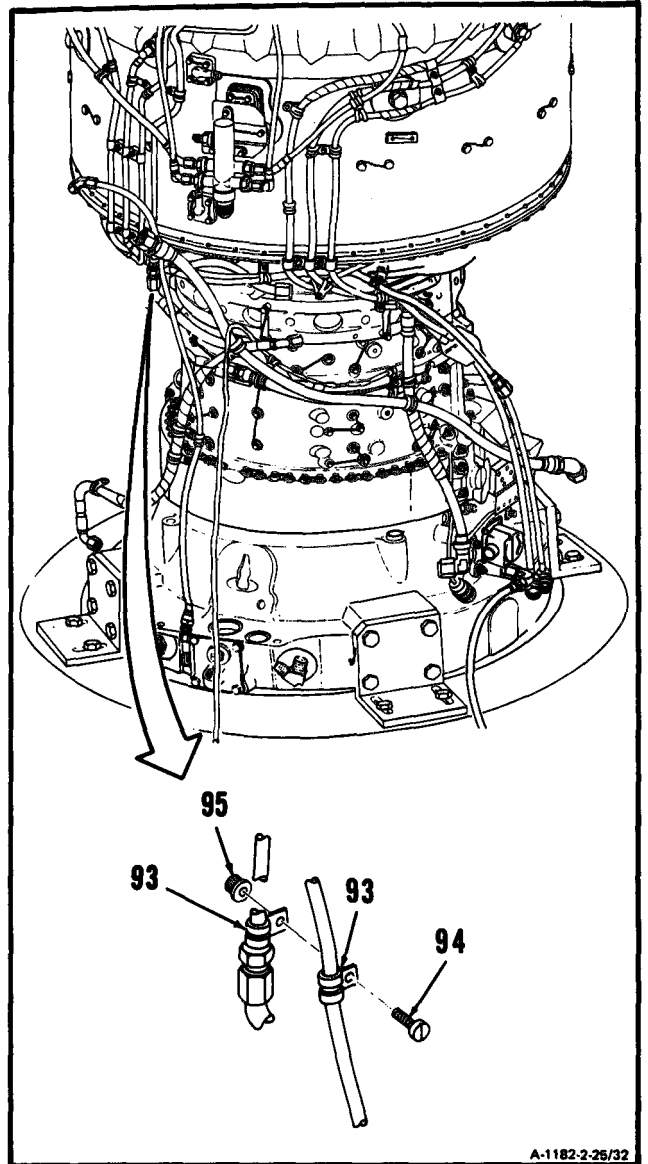


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## 2-25 INSTALL LOWER COMPRESSOR HOUSING (Continued)

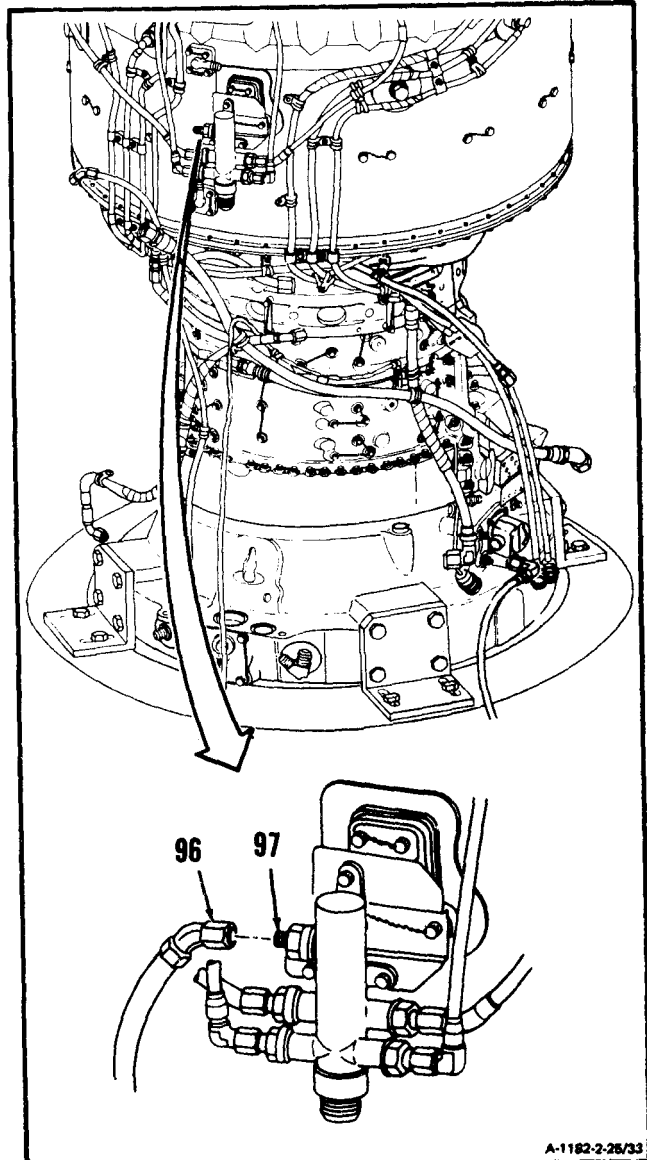
2-25

48. Install two clamps (93), screw (94) and nut (95).



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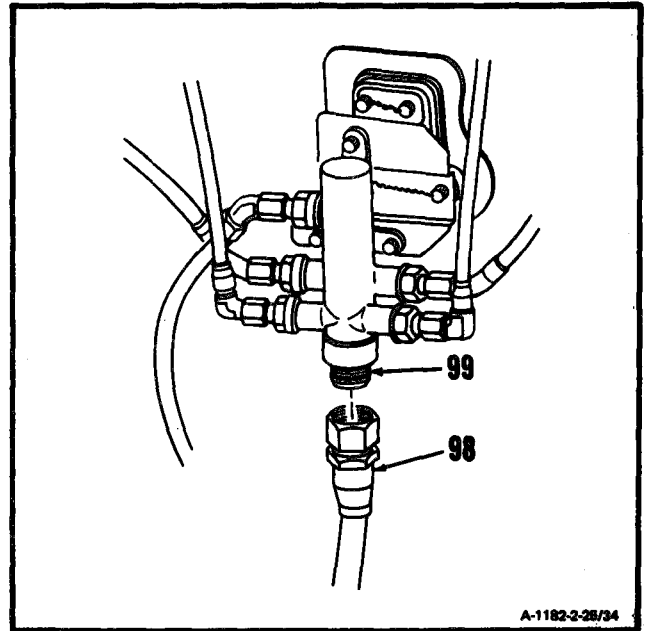
49. **Connect hose assembly (96)** to flow divider check valve (97).



A-1182-2-25/33

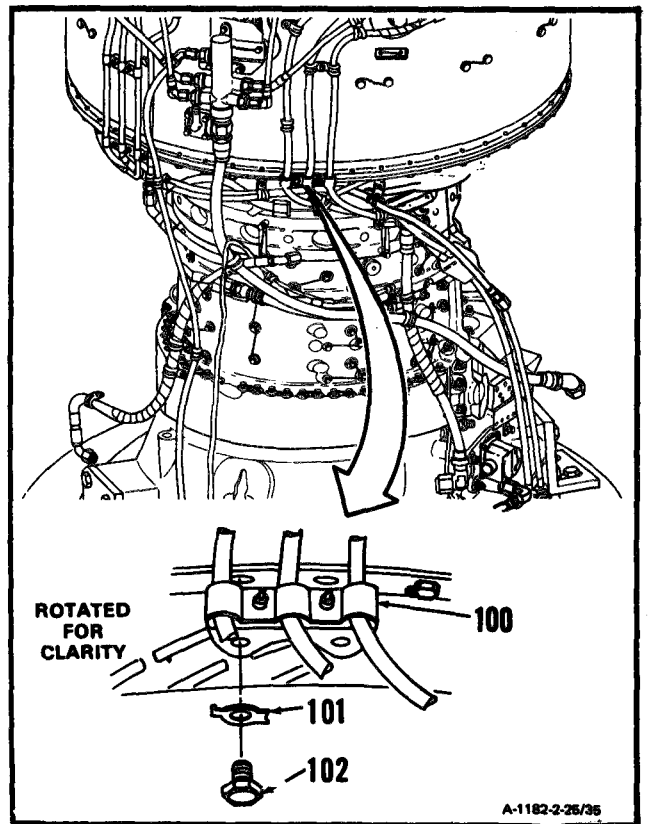
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50. Connect hose assembly (98) to flow divider (99).



51. Install bracket (100), two key washers (101) and two bolts (102).

52. Lock two bolts (102) by bending tabs of key washers (101).

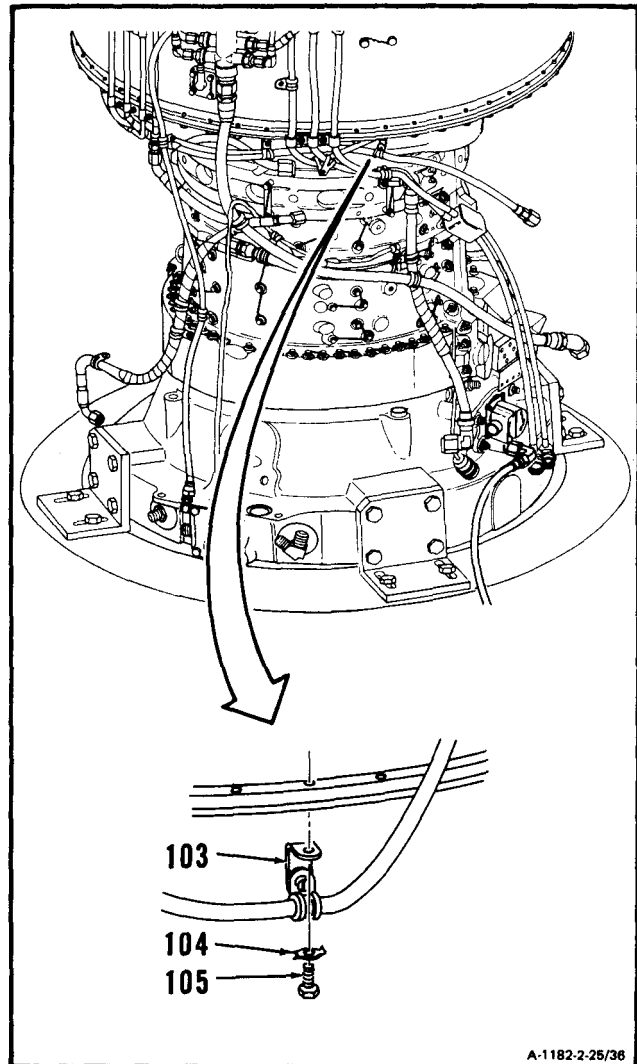


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53. Install bracket (103), key washer (104), and bolt (105).

54. Lock bolt (105) by bending tab of key washer (104).



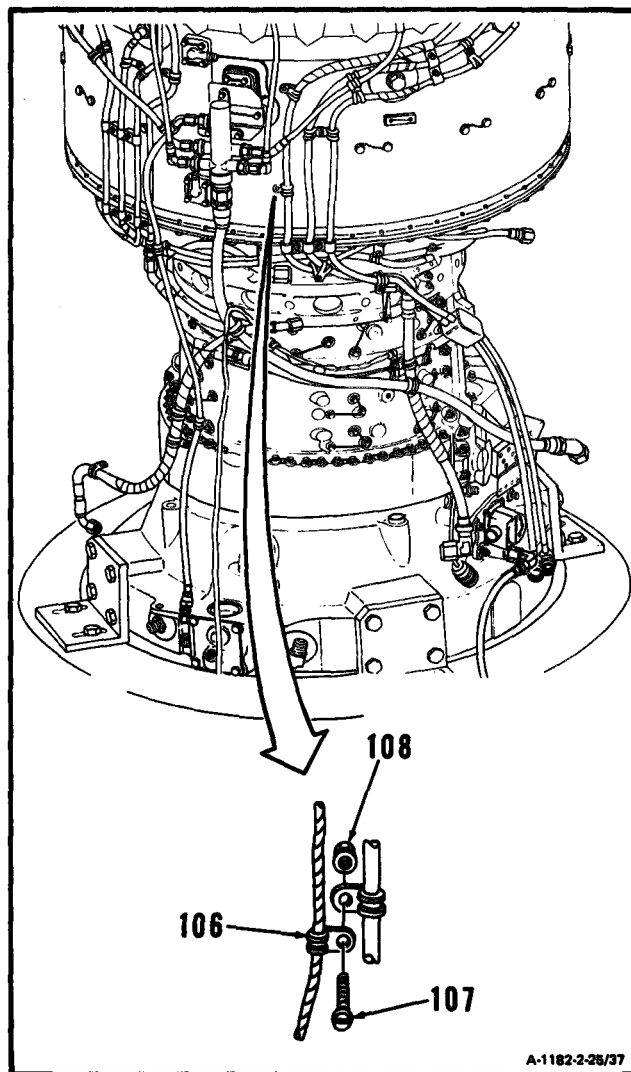
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## 2-25 INSTALL LOWER COMPRESSOR HOUSING (Continued)

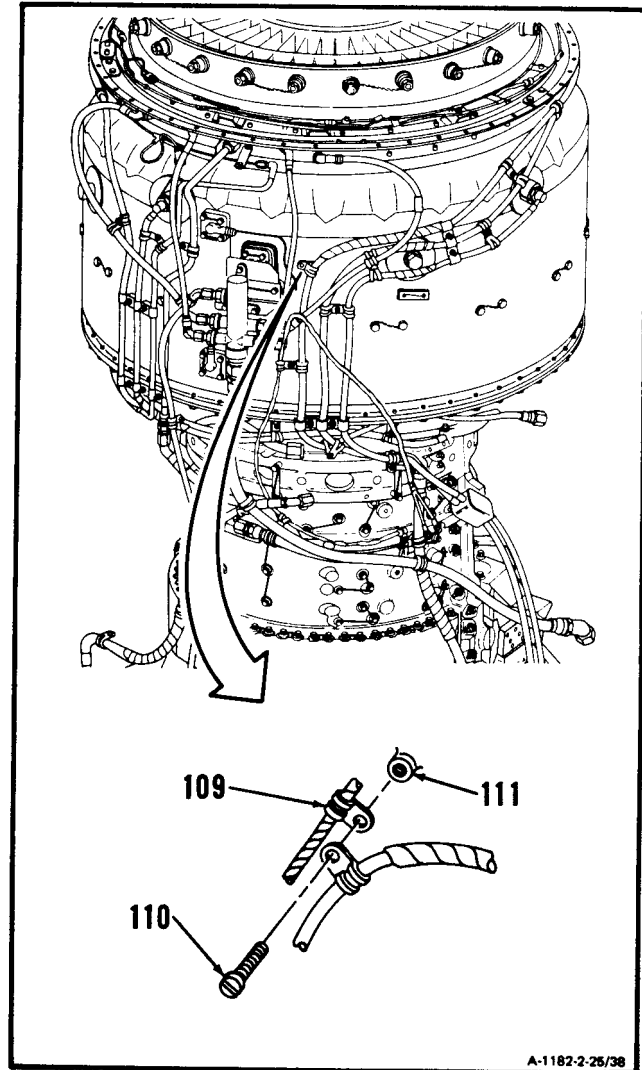
2-25

55. Install clamp (106), screw (107) and nut (108).



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**56. Install clamp (109) and screw (110) to anchor nut (111). Lockwire screw (110). Use lockwire (E29).**

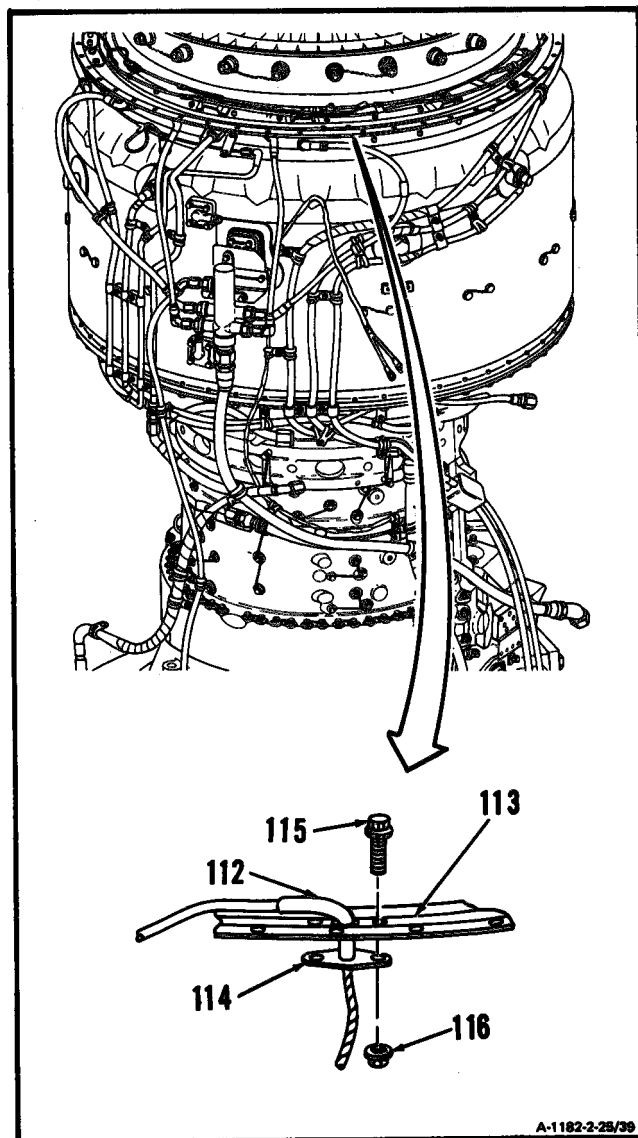


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## 2-25 INSTALL LOWER COMPRESSOR HOUSING (Continued)

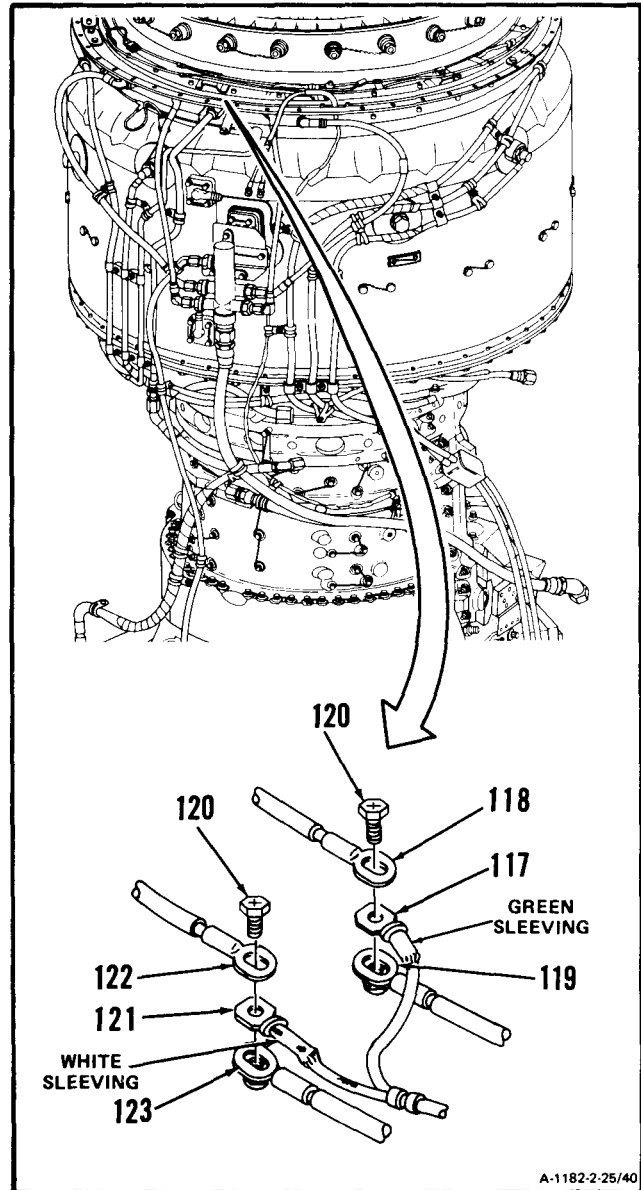
2-26

57. Route thermocouple leads (112) through fire-shield (113).
58. **Install bracket (114)**, two bolts (115) and nuts (116).



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59. Install green sleeved terminal lug (117) between terminal lugs (118 and 119) and install screw (120).
60. Install white sleeved terminal lug (121) between terminal lugs (122 and 123) and install screw (120).

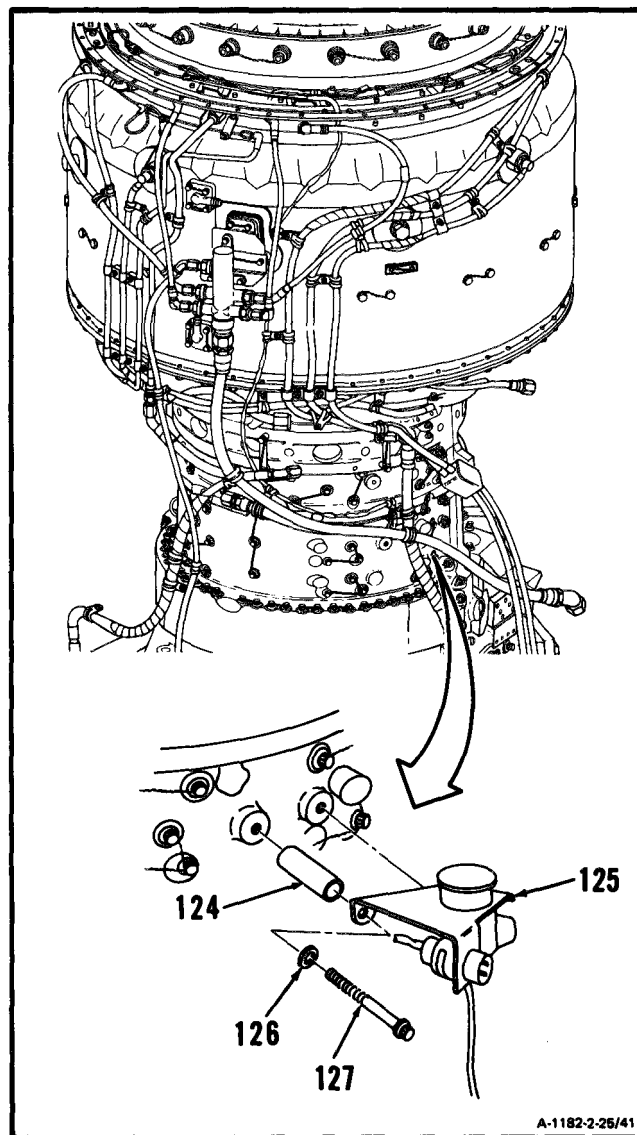


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## 2-25 INSTALL LOWER COMPRESSOR HOUSING (Continued)

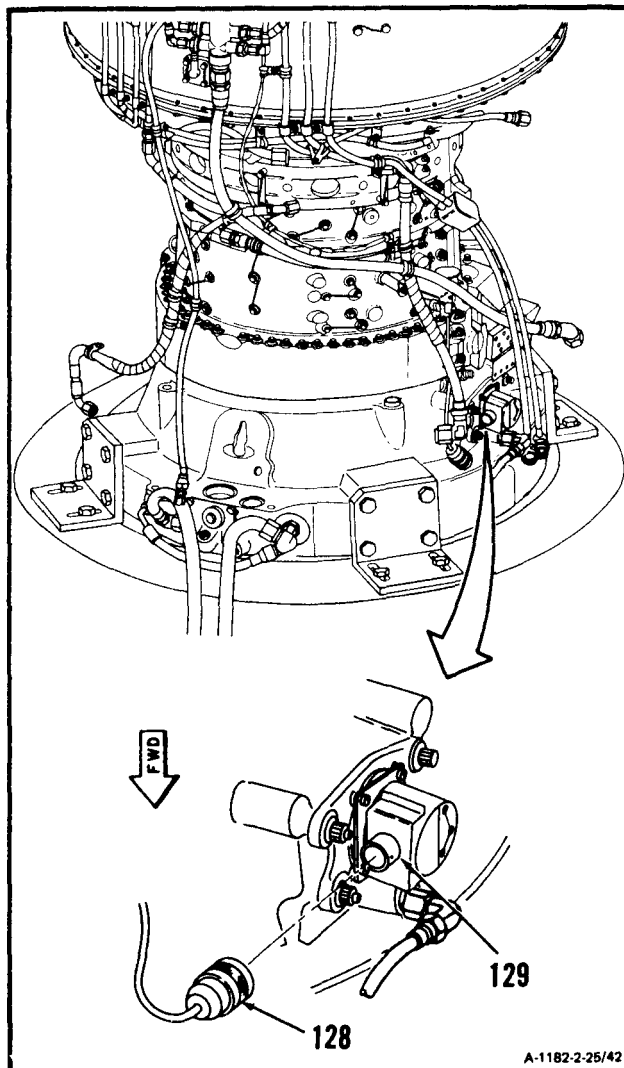
2-25

61. **Install** two spacers (124), **bracket (125)**, washers (126) and bolts (127). Lockwire bolts (127). We lockwire (E29).



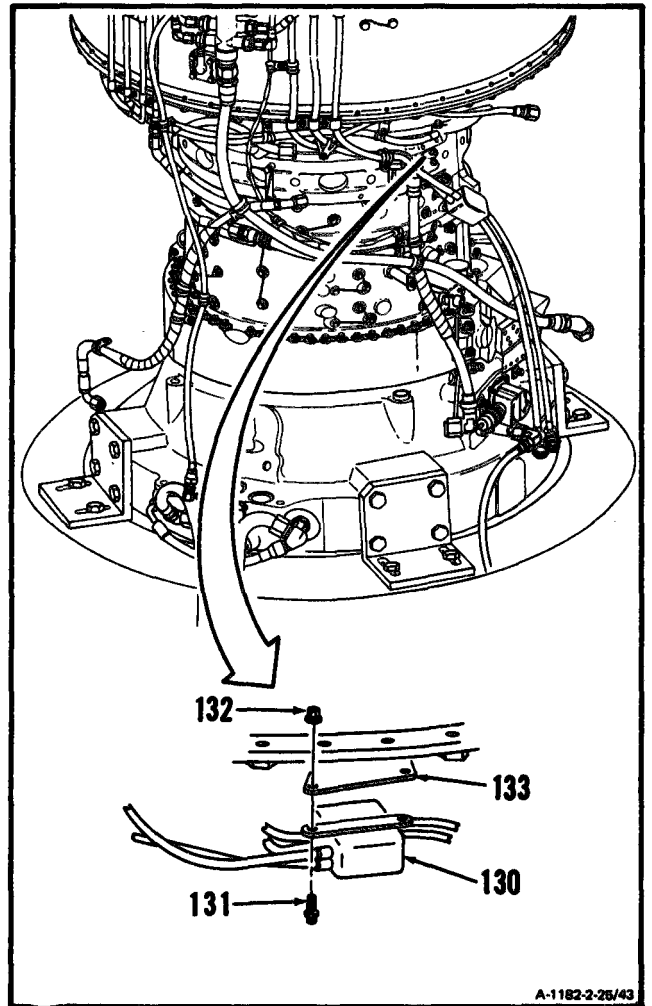
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62. **Connect electrical cable (128) to receptacle (129).**



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63. Install ignition coil (130), two bolts (131) and nuts (132) on bracket (133).

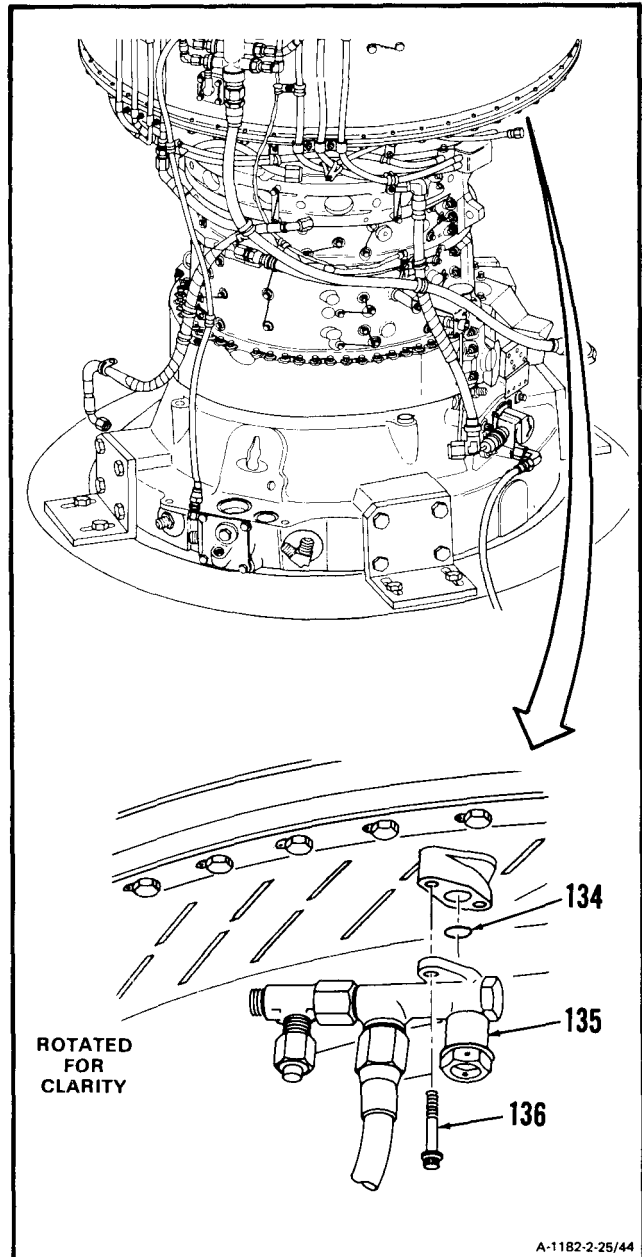


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64. Install packing (134), connector (135) and two bolts (136).

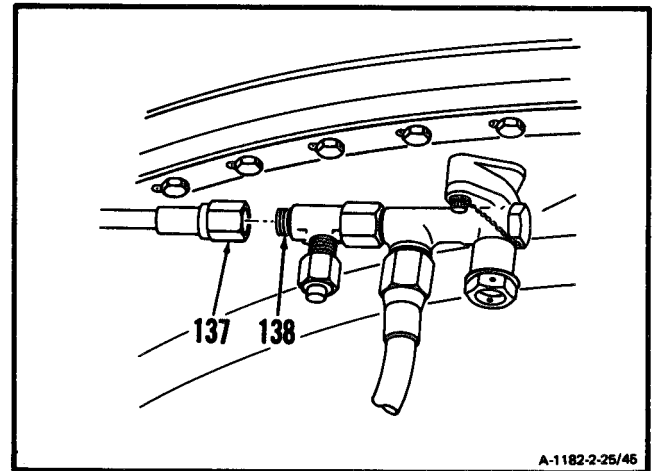
65. Lockwire two bolts (136). Use lockwire (E29).



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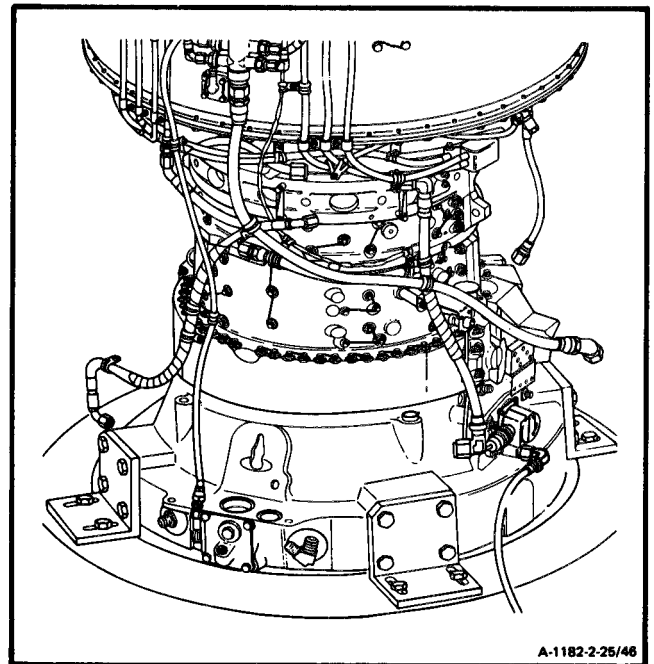
66. Connect hose assembly (137) to tee and snubber (138).

### INSPECT



### FOLLOW-ON MAINTENANCE:

- Install Compressor Bleed Band (Task 2-13).
- Install Interstage Air-Bleed Actuator (Task 2-7).
- Install Main Fuel Filter and Bracket (Task 6-35).
- Install Accessory Gearbox Assembly (Task 5-7).
- Install Fuel Control (Task 6-6).
- Install Main Oil Pump and Scavenge Oil Screen (Task 8-4).
- Install Tube Assembly (Inlet Housing to Main Oil Pump) (Task 8-51).
- Install Fuel Boost Pump Assembly (Task 6-13).
- Install Dual Chip Detector (Task 8-35).
- Install In-Line Fuel Filter Assembly (Task 6-41).
- Install Oil Cooler Assembly (Task 8-11).
- Install Ignition Exciter (Task 7-15).
- Service Engine Oil System (Task 1-74).



### END OF TASK



Section V. STATOR VANE ASSEMBLIES - MAINTENANCE PROCEDURES

2-26 REMOVE STATOR VANE ASSEMBLIES

2-26

INITIAL SETUP

**Applicable Configurations:**

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944

**Materials:**

Tag (E53)  
Dry Cleaning Solvent (E17)  
Gloves (20)  
Lint-Free Cloth (E26)

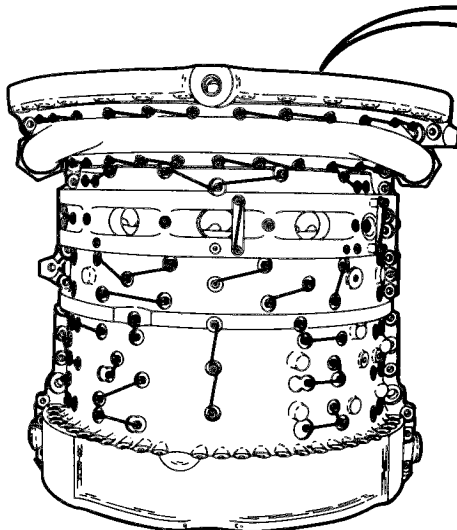
**Personnel Required:**

68B10 Aircraft Powerplant Repairer

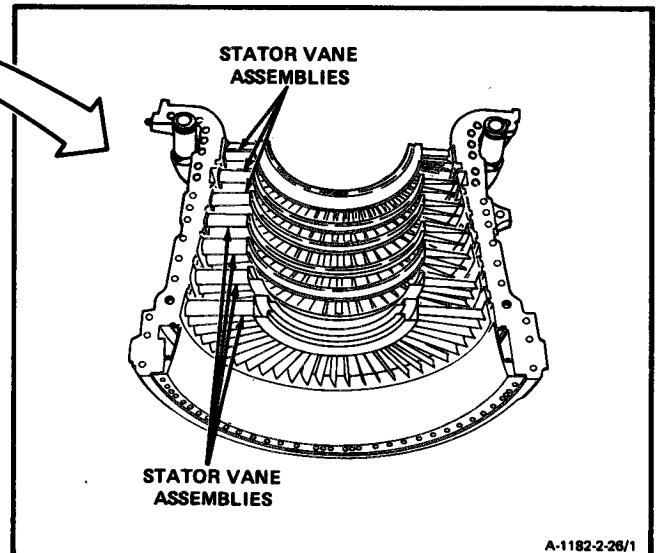
**Equipment Condition:**

Engine Oil System Drained (Task 1-75)  
Oil Cooler Assembly Removed (Task 8-5)  
(Mine Fuel Filter Assembly Removed (Task 6-36)  
Ignition Exciter Removed (Task 7-11)  
Oil Filler Assembly and Oil Filler Strainer Removed (Task 8-16)  
(Upper Compressor Housing Only)

Starter Drive Assembly Removed (Task 512) (Upper Compressor Housing Only)  
Main Fuel Filter and Bracket Removed mask 6-29)  
Dual Chip Detector Removed (Task 8-28) (Lower Compressor Housing Only)  
Fuel Boost Pump Assembly Removed (Task 6-9) (Lower Compressor Housing Only)  
Tube Assembly (Inlet Housing to Main Oil Pump) Removed (Task W50) (Lower Compressor Housing Only)  
Main Oil Pump and Scavenge Oil Screen Removed (Task 8-1) (Lower Compressor Housing Only)  
Fuel Control Removed (Task 6-1) (Lower Compressor Housing Only)  
Accessory Gearbox Removed (Task 5-1) (Lower Compressor Housing Only)  
Interstate Air-Bleed Actuator Removed (Task 2-1)  
Compressor Bleed Band Removed  
  
Compressor Housing Removed (Task 2-9 or 2-20)



42 x 18



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**NOTE**

To help in installation, tag (E53) each stator vane assembly as they are removed.

**NOTE**

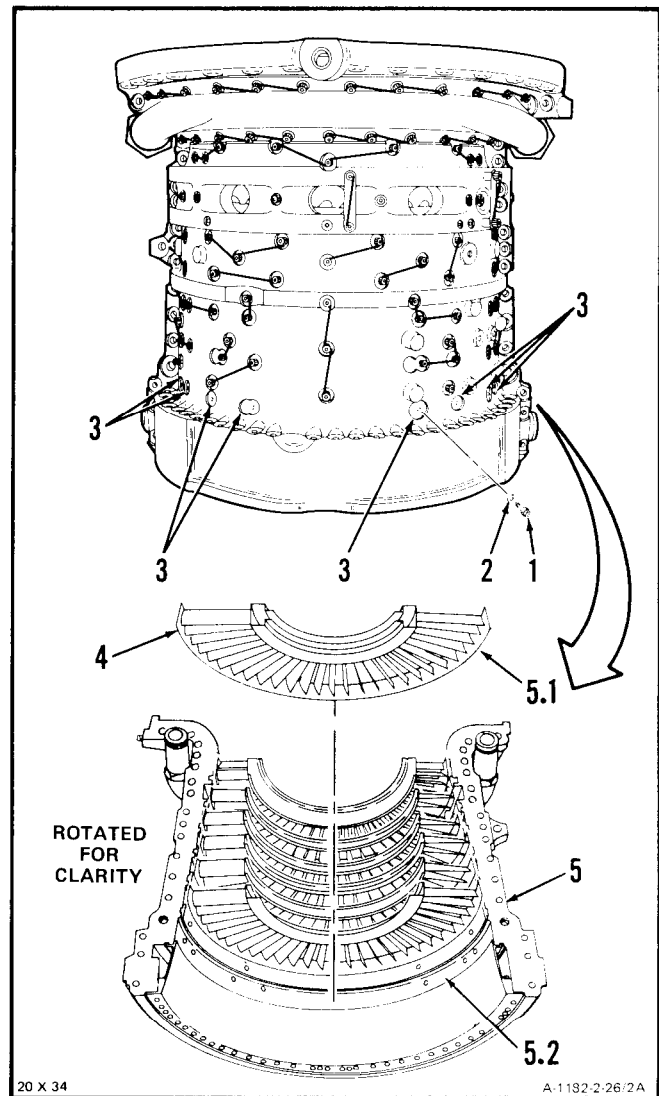
Procedures for removing upper and lower compressor housing stator vane assemblies are the same. Instructions for removing lower compressor housing stator vane assemblies are given.

1. Remove lockwire, eight bolts (1), and washers (2) from bolt locations (3).
2. **Remove one-half of first stage stator vane (4)** from lower compressor housing (5).
- 2.1. Remove RTV potting compound from outer shroud (5.1) of stator vane (4) and from mounting surface (5.2) of first stage stator vane (4).

**WARNING**

**Dry cleaning solvent (E17) is flammable and toxic. It can irritate skin and cause burns. Use only in well-ventilated area, away from heat and open flame. In case of contact, immediately flush skin or eyes with water for at least 15 minutes. Get medical attention for eyes.**

- 2.2. If necessary, remove excess RTV potting compound from mounting surface (5.2) of first stage stator vane using gloves (E20) and lint-free cloth (E26) dampened in dry cleaning solvent (E17).
- 2.3. Wipe dry using dry, lint-free cloth (E26).

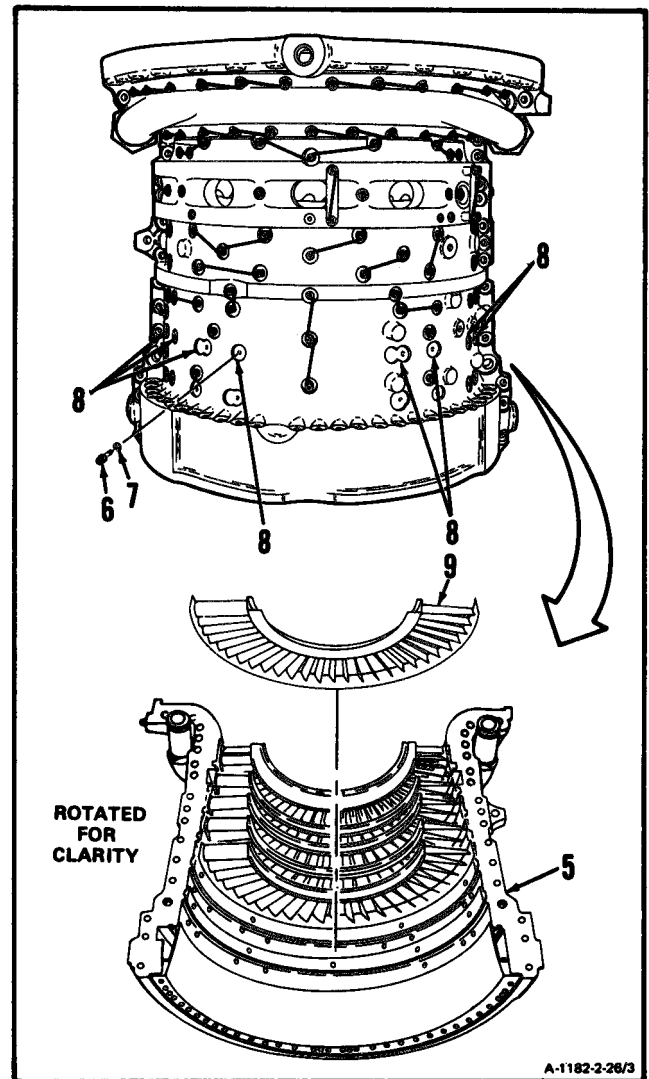


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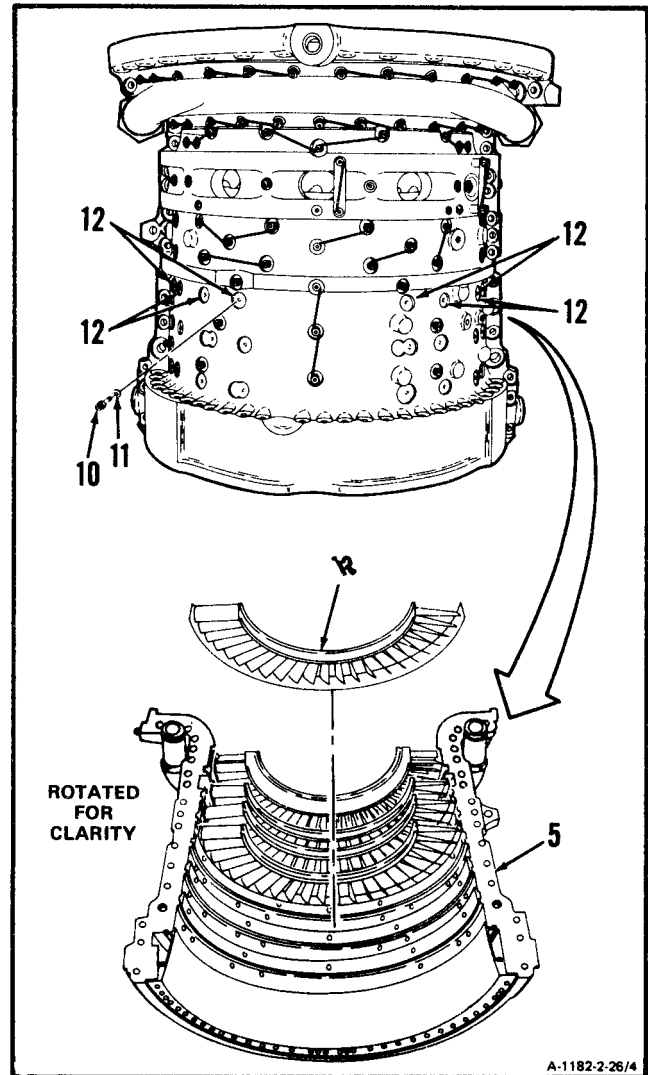
## 2-26 REMOVE STATOR VANE ASSEMBLIES (Continued)

2-26

3. Remove lockwire, eight bolts (6), and washers (7) from bolt locations (8).
4. Remove one-half of second stage stator vane (9) from lower compressor housing (5).

**GO TO NEXT PAGE**

5. Remove lockwire, eight bolts (10), and washers (11) from bolt locations (12).
6. Remove one-half of third stage stator vane (13) from lower compressor housing (5).

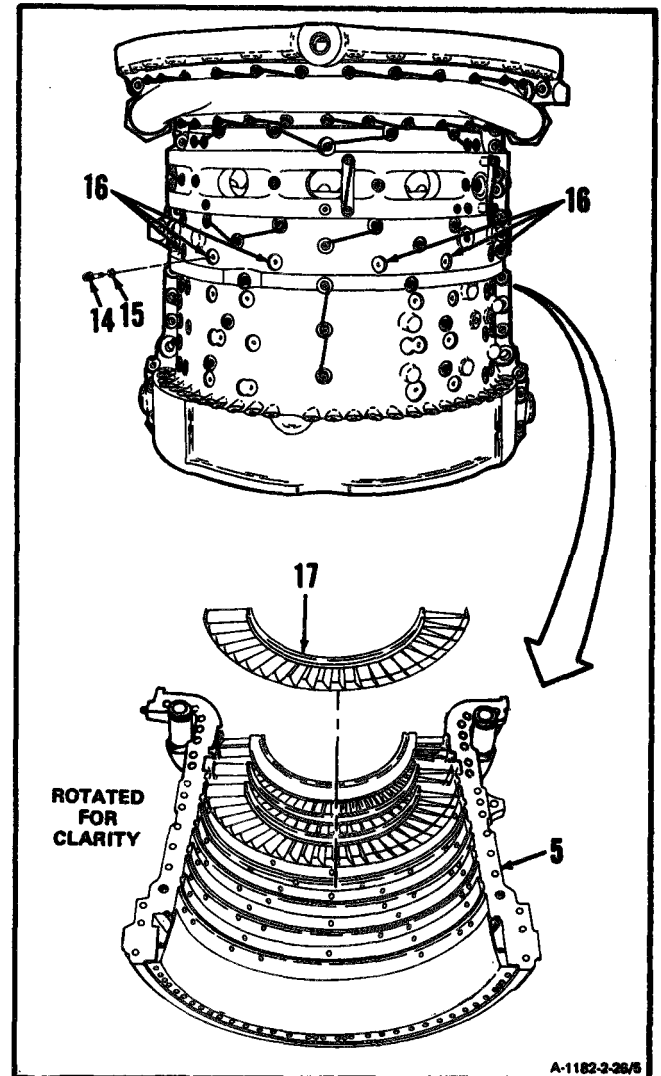


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## 2-26 REMOVE STATOR VANE ASSEMBLIES (Continued)

2-26

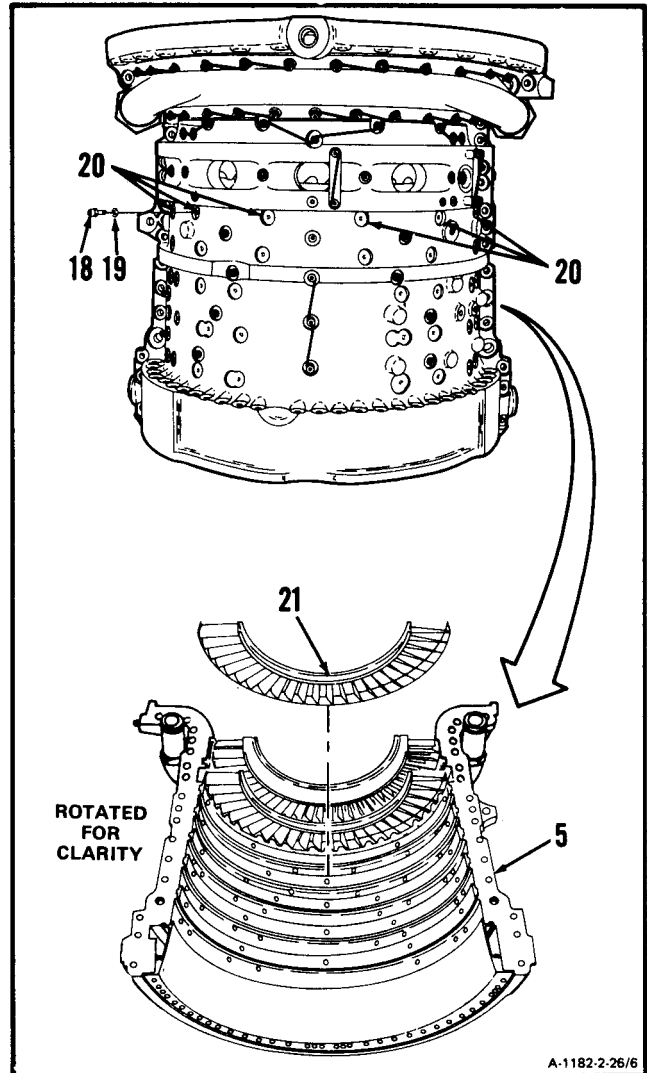
7. Remove lockwire, six bolts (14), and washers (15) from bolt locations (16).
8. Remove one-half of fourth stage stator vane (17) from lower compressor housing (5).



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9. Remove lockwire, six bolts (18), and washers (19) from bolt locations (20).
10. **Remove one-half of fifth stage stator vane (21) from lower compressor housing (5).**

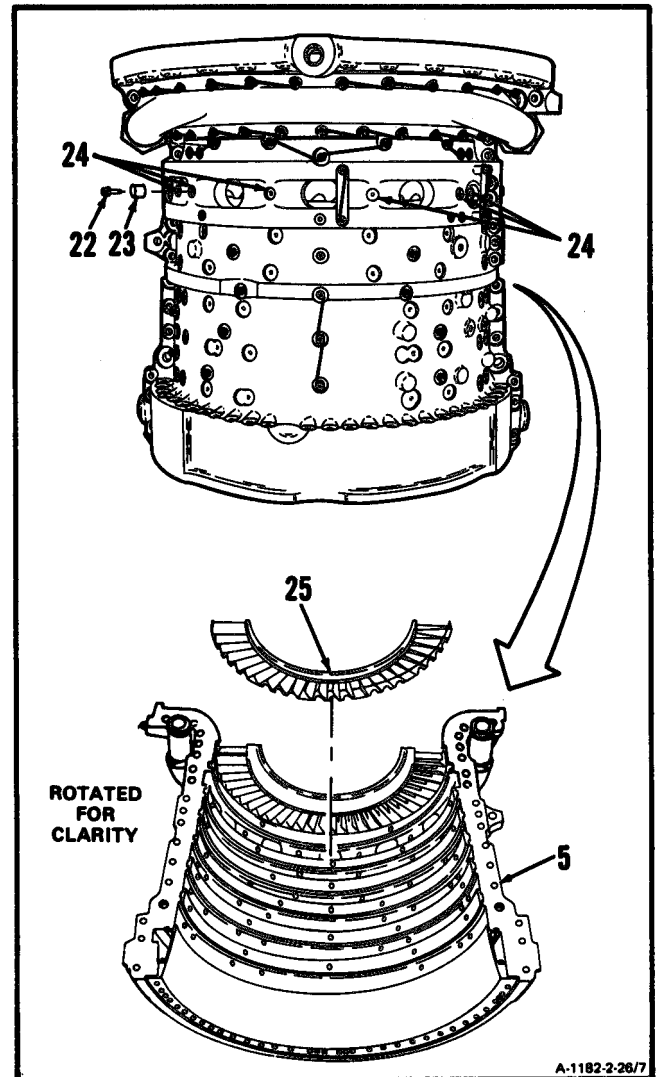


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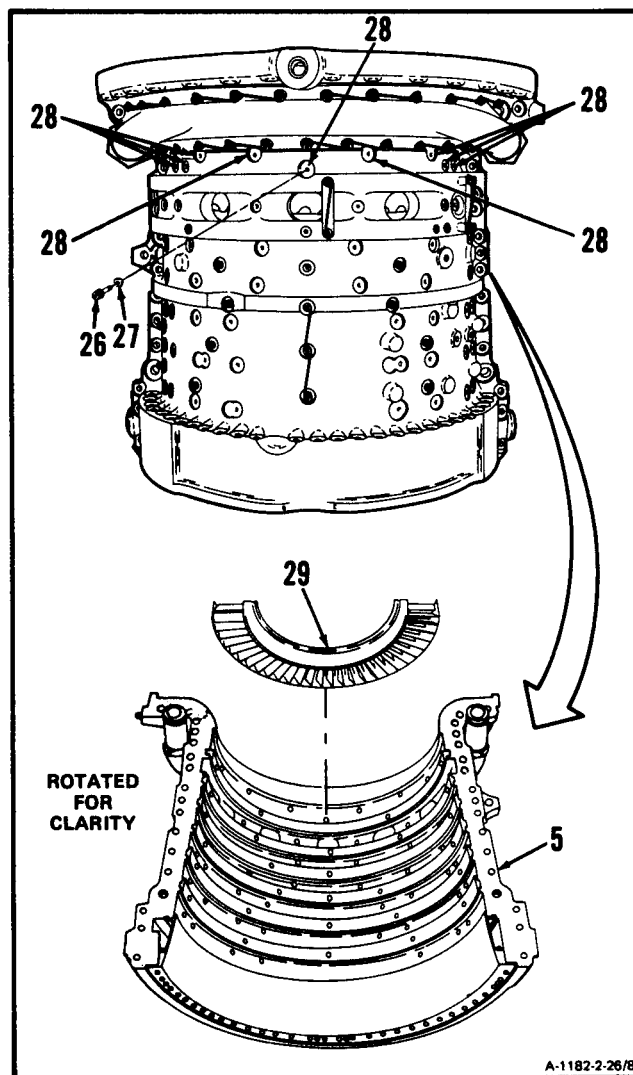
## 2-26 REMOVE STATOR VANE ASSEMBLIES (Continued)

2-26

11. Remove six screws (22) and six locking cups (23) from bolt locations (24).
12. Remove one-half of sixth stage stator vane (25) from lower compressor housing (5).

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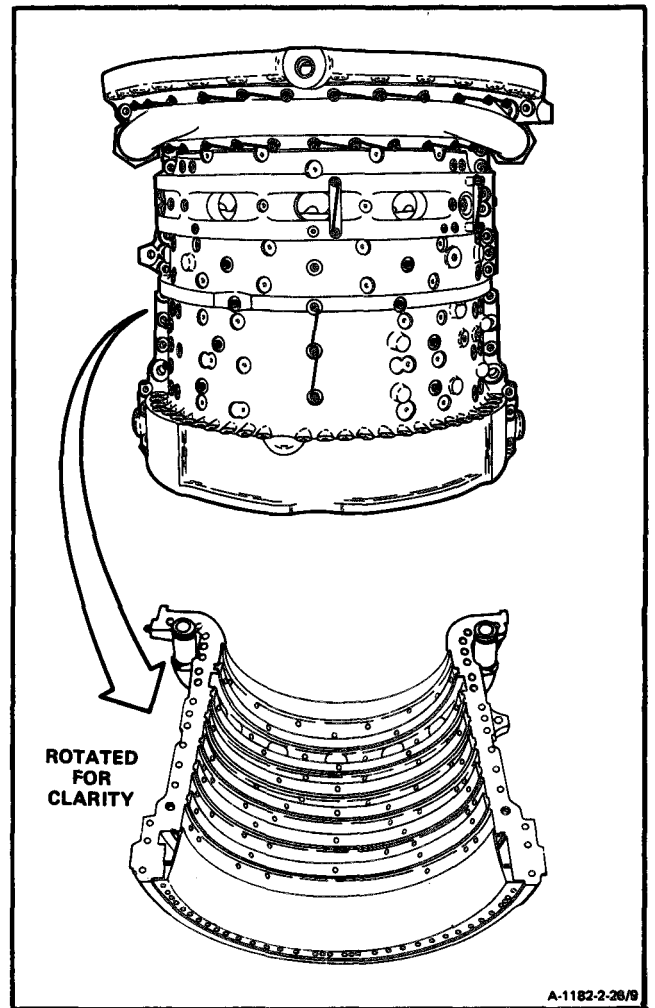
13. Remove lockwire, nine bolts (26) and nine washers (27) from bolt locations (28).
14. **Remove one-half of seventh stage stator vane (29) from lower compressor housing (5).**



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FOLLOW-ON MAINTENANCE:

None



END OF TASK

**INITIAL SETUP****Applicable Configurations:**

All

**Tools:**

Goggles  
Compressed Air Source  
Fiber Brush

**Materials:**

Dry Cleaning Solvent (E17)  
Gloves (E20)

**Personnel Required:**

68B10 Aircraft Powerplant Repairer

**Equipment Condition:**

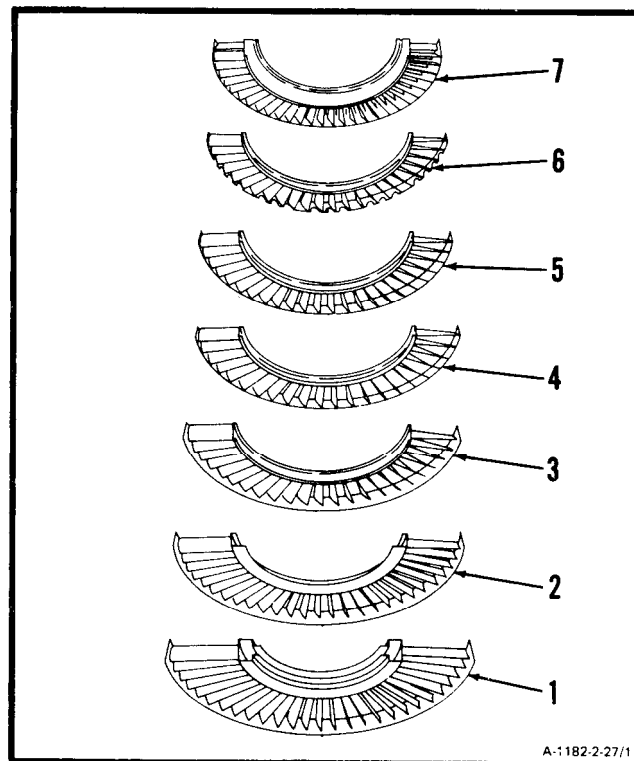
Compressor Housing Removed (Task 2-19  
or 2-20)  
Stator Vane Assemblies Removed (Task 2-26)

**General Safety Instructions:**

**WARNING**

Dry cleaning solvent (E17) is flammable and toxic. It can irritate skin and cause burns, Use only in well-ventilated area, away from heat and open flame. In case of contact, immediately flush skin or eyes with water for at least 15 minutes. Get medical attention for eyes.

1. Wear gloves and immerse stator vane assemblies (1,2,3,4,5,6, and 7) in dry cleaning solvent (E17).
2. Remove contaminants by scrubbing stator vane assemblies with fiber brush.

**GO TO NEXT PAGE**

**WARNING**

When using compressed air for cleaning, use approved protective equipment for eyes and face. Do not use more than **30 psig** air pressure. Do not direct air toward yourself or another person. Failure to comply could result in injury to eyes or skin. In case of injury, get medical attention.

3. Wear goggles and **blow dry stator vane assemblies** using clean, dry compressed air.

**FOLLOW-ON MAINTENANCE:**

Inspect Stator Vane Assemblies (Task 2-28).

**END OF TASK**

**INITIAL SETUP****Applicable Configurations:**

All

**Tools:**Technical Inspection Tool Kit,  
NSN 5180-00-323-5114**Materials:**

None

**Personnel Required:**

68B30 Aircraft Powerplant Inspector

**Equipment Condition:**

Off Engine Task

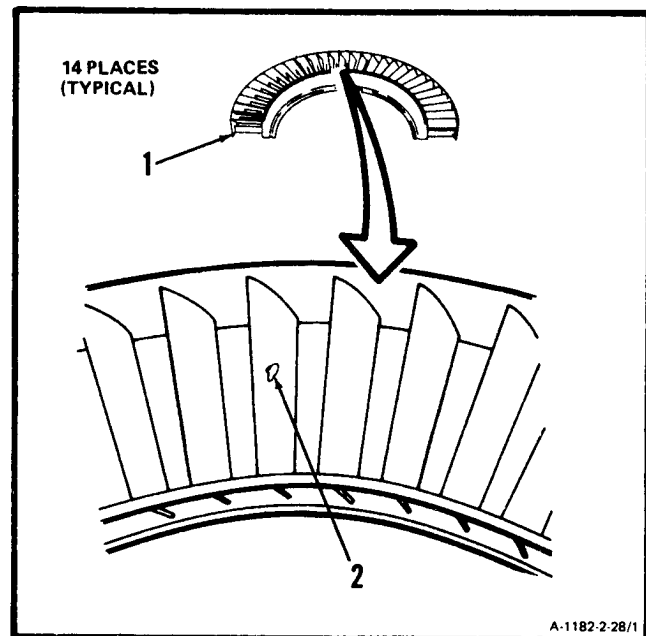
**NOTE**

The following procedure applies to both upper and lower stator vane halves.

**1. Inspect stator vanes (1) as follows:****NOTE**

Stator vanes may be copper flashed. Copper flashed stator vanes may appear corroded or rusty. Do not reject stator vanes for this reason.

- a. There shall be no cracks. There shall be no damage with sharp edges.
- b. There shall be no nicks, burrs, pits and dents greater than 0.100 inch depth to 0.500 inch length.
- c. Airfoil damage (2) shall not be greater than 0.030 inch depth and 0.025 inch length.



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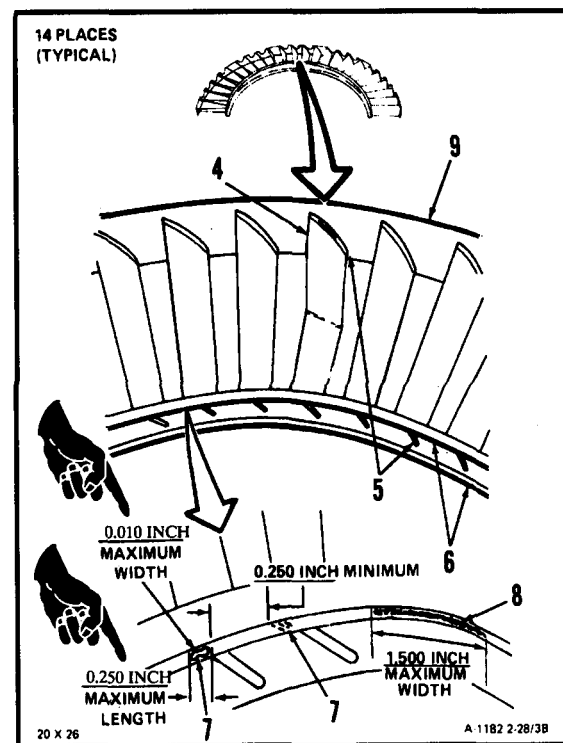
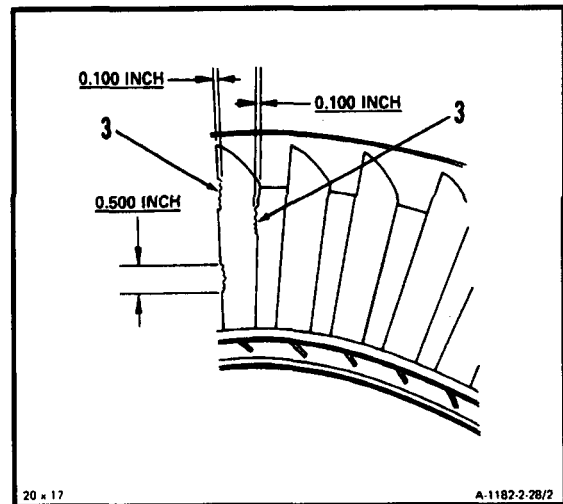
2-28 INSPECT STATOR VANE ASSEMBLIES (Continued)

2-28

- d. Leading and trailing edge (3) damage shall not be greater than 0.100 inch depth or 0.500 inch length. The total length of all damage on either edge shall not exceed 40 percent of vane length.
- e. Inspect for bent vanes (4).
- f. There shall be no cracks in the vane brazement areas (5) longer than 0.100 inch.
- g. Inspect lead seal (6).
  - (1) There shall be no nicks, scratches, voids or pits (7) in lead seal (6) deeper than 0.010 inch or wider than 0.030 inch.
  - (2) Lead seal rub (8) up to .010 inch deep is acceptable. Loss of lead up to 0.250 inch per stator half and 0.500 inch per stator assembly is acceptable. Total loss of lead per compressor assembly shall not exceed 1.500 inch.
  - (3) There shall not be more than one of these defects (7 & 8) per inch and not less than 0.250 inch between any defects (7 & 8).
- h. Inspect outer shroud (9). There shall be no RTV residue.

FOLLOW-ON MAINTENANCE:  
None

END OF TASK





**INITIAL SETUP****Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Technical Inspection Tool Kit,  
NSN 5180-00-323-5114

**Materials:**

Carborundum Stone (E10)  
Crocus Cloth (E15)  
Fluorescent Penetrant Materials (E19)

**Personnel Required:**

68B10 Aircraft Powerplant Repairer  
68B30 Aircraft Powerplant Inspector

**References:**

TM 43-0103

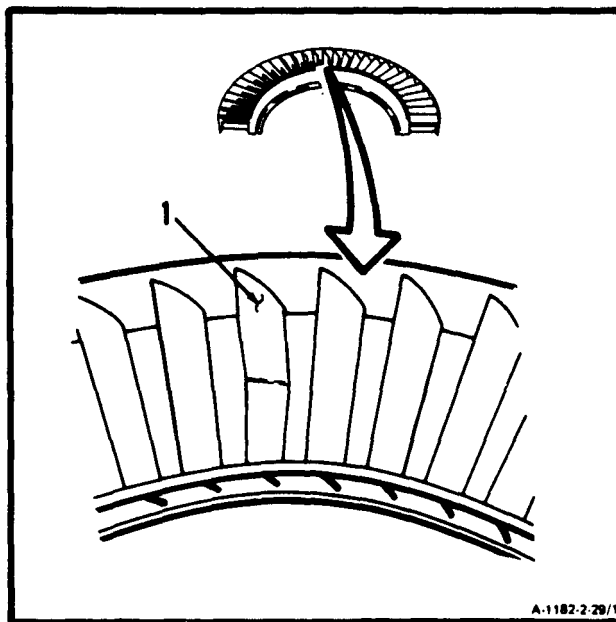
**Equipment Condition:**

Off Engine Task

**NOTE**

This repair procedure applies to both top and bottom stator vanes.

1. **Repair bent vanes (1)** by cold-straightening vanes (1) with duck-billed pliers. Use duck-billed pliers to firmly hold vane (1). Apply hand pressure and straighten vane (1).
2. **Perform fluorescent penetrant inspection of vanes (1)** after straightening. (Ref: TM 43-0103). There shall be no cracks in repaired area.

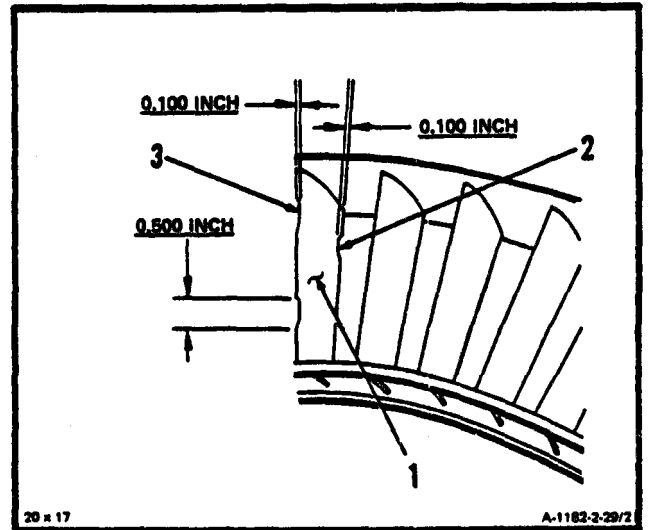
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## 2-29 REPAIR STATOR VANE ASSEMBLIES (Continued)

2-29

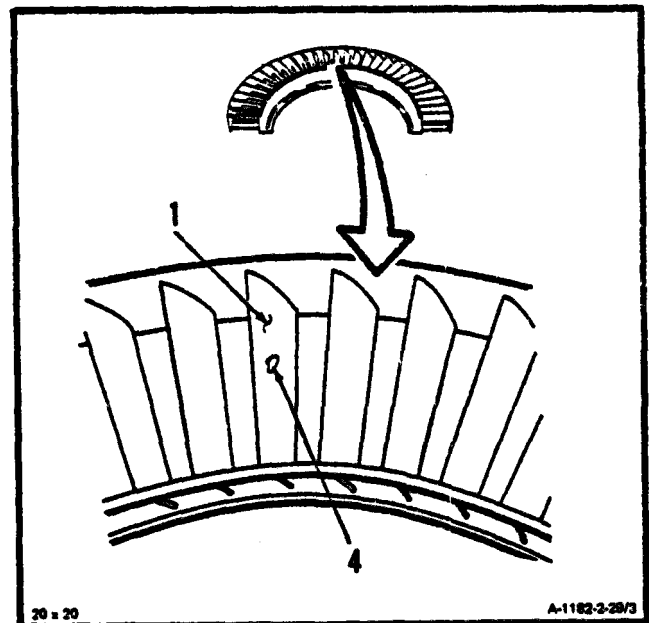
3. **Remove nicks, burrs, pits and dents on vanes (1), leading edge (2) and trailing edge (3).** Depth of repair shall not exceed 0.100 inch. Length of repair shall not exceed 0.500 inch.

- a. Blend all sharp edges using Carborundum stone (E10).
- b. Polish to smooth finish using crocus cloth (E15).



4. **Repair airfoil damage (4) on vane (1) as follows:**

- a. Blend all sharp edges using Carborundum stone (E10).
- b. Polish to smooth finish using crocus cloth (E15). Repair shall not be greater than 0.030 inch depth and 0.025 inch length.



**INSPECT**

FOLLOW-ON MAINTENANCE:

None

**END OF TASK**

**INITIAL SETUP**

**Applicable Configurations:**

All

**Tools:**

- Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944
- Technical Inspector Tool Kit,  
NSN 518000-323-5114
- Locking Cup Punch (T21)
- Flat Hand File

**Materials:**

- Acid Swabbing Brush (E2)
- Dry Cleaning Solvent (E1 7)
- Gloves (E20)
- Lint-Free Cloth (E26)
- Non-lead Gear Marking Compound (E38.1)

**Personnel Required:**

- 68B10 Aircraft Powerplant Repairer
- 68B30 Aircraft Powerplant Inspector

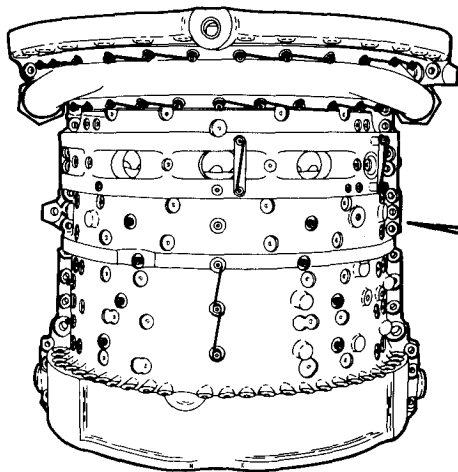
**References:**

- Task 2-19 Task 2-25
- Task 2-20 Task 2-26
- Task 2-24 Task 2-27

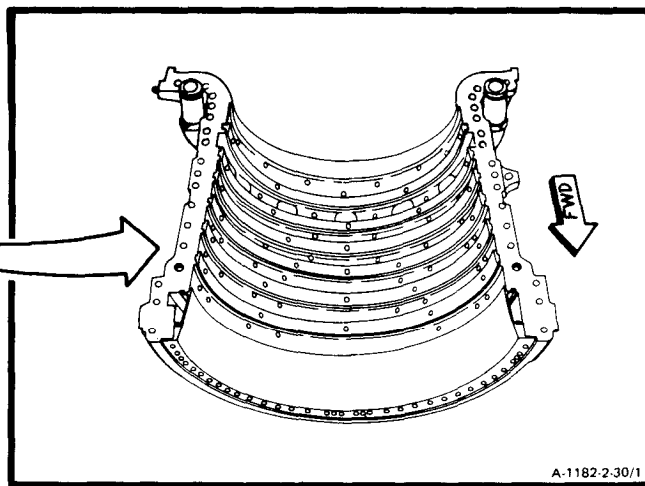
**General Safety Instructions:**

**WARNING**

Dry cleaning solvent (E17) is flammable and toxic. It can irritate skin and cause burns. Use only in well-ventilated area, away from heat and open flame. In case of contact, immediately flush skin or eyes with water for at least **15 minutes**. Get medical attention for eyes.



42 x 15



A-1182-2-30/1

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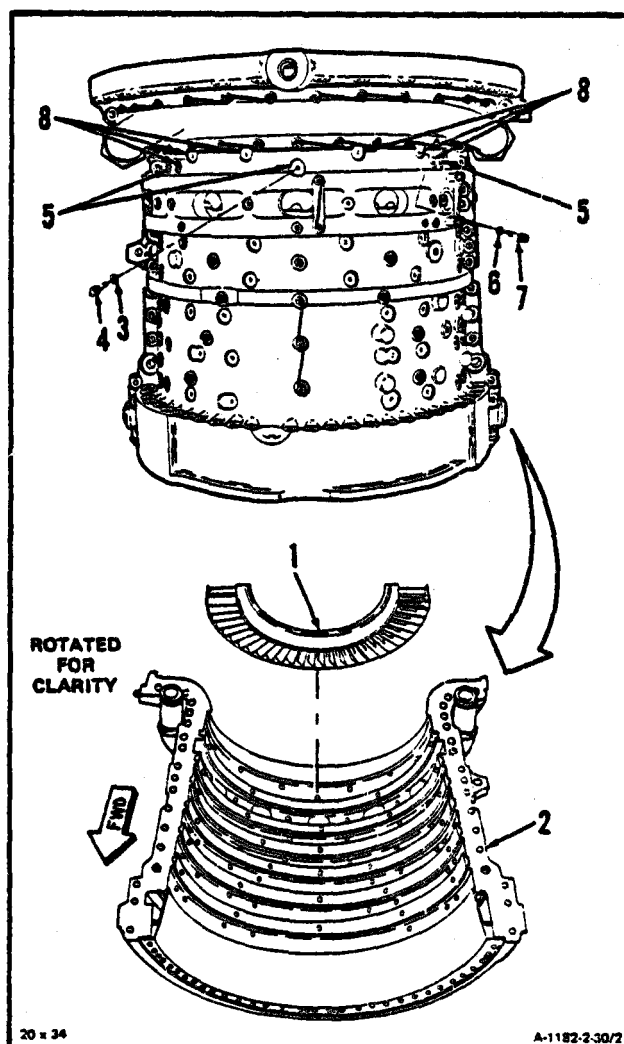
**NOTE**

Stator vane assembly halves which meet serviceable limits may be matched with other serviceable vane assembly halves. Rematched halves shall meet all assembly requirements. Rematched halves should have about the same amount of erosion or FOD.

**NOTE**

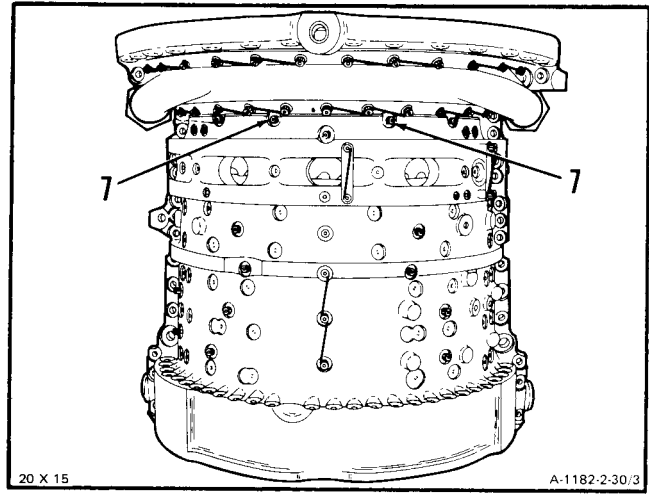
Procedural for installing upper and lower compressor housing stator vane assemblies are the same. Instructions for installing lower compressor housing stator vanes are given.

1. Install one-half of seventh stage stator vane (1) into compressor housing half (2) as follows:
  - a. Install three washers (3) and three bolts (4) in bolt locations (5). Finger tighten bolts (4).
  - b. Install six washers (6) and six bolts (7) in bolt locations (8). Finger tighten bolts (7).

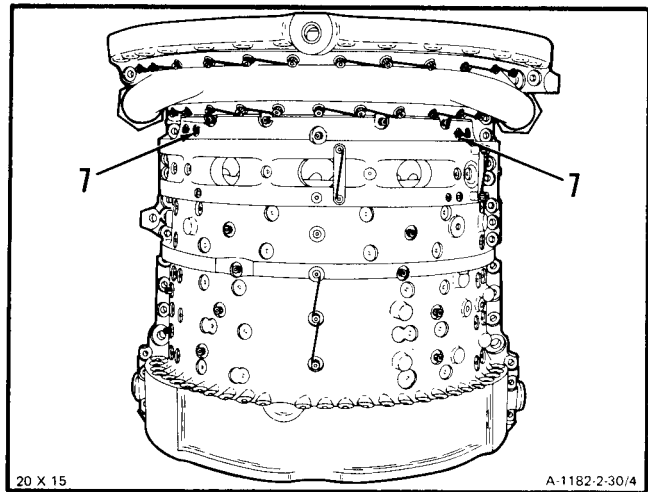


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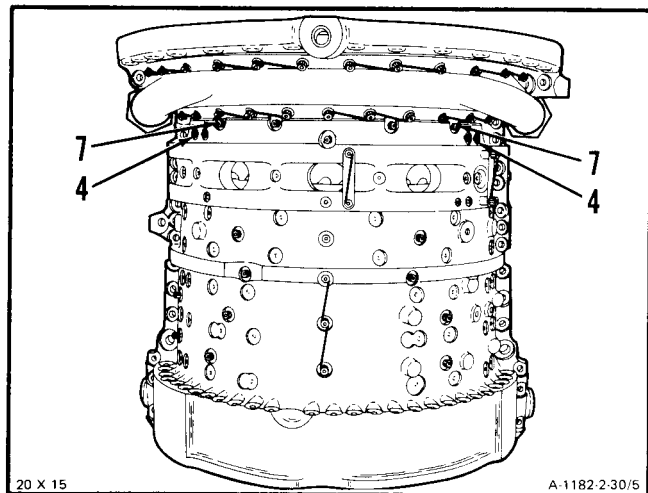
c. Torque two bolts (7) to 45 inch-pounds.



d. Torque two bolts (6) to 22 inch-pounds.

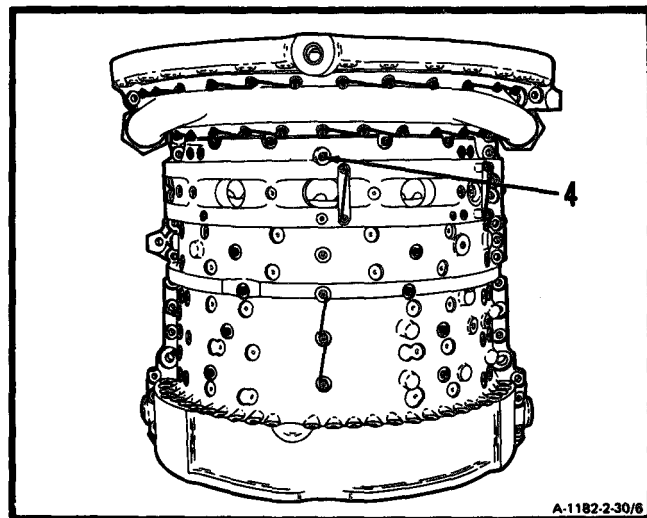


e. Torque two bolts (4) and two bolts (7) to 22 inch-pounds.

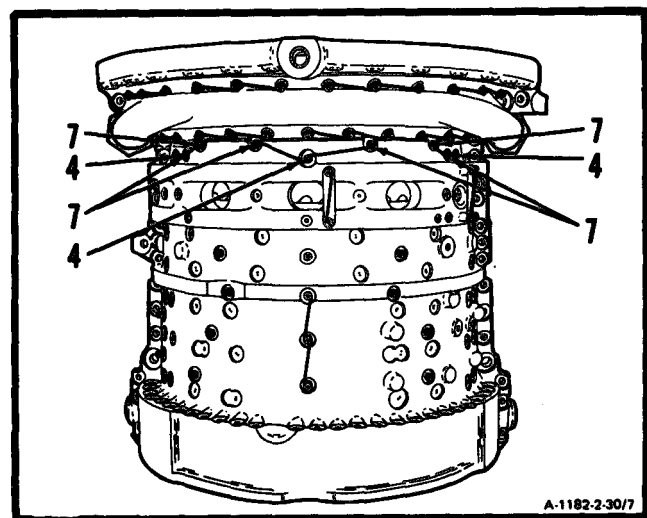


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f. Torque bolt (4) to 65 inch-pounds.



- g. Check ends of bolts (4 and 7). Bolt ends shall be flush or not more than 0.035 inch below surface of stator. If necessary, add washers under bolt heads. There must be at least one washer under each bolt had.
- h. Calculate gap between stator vane shrouds as outlined in step 8.
- i. Lockwire bolts (4 and 7). Use lockwire (E29).

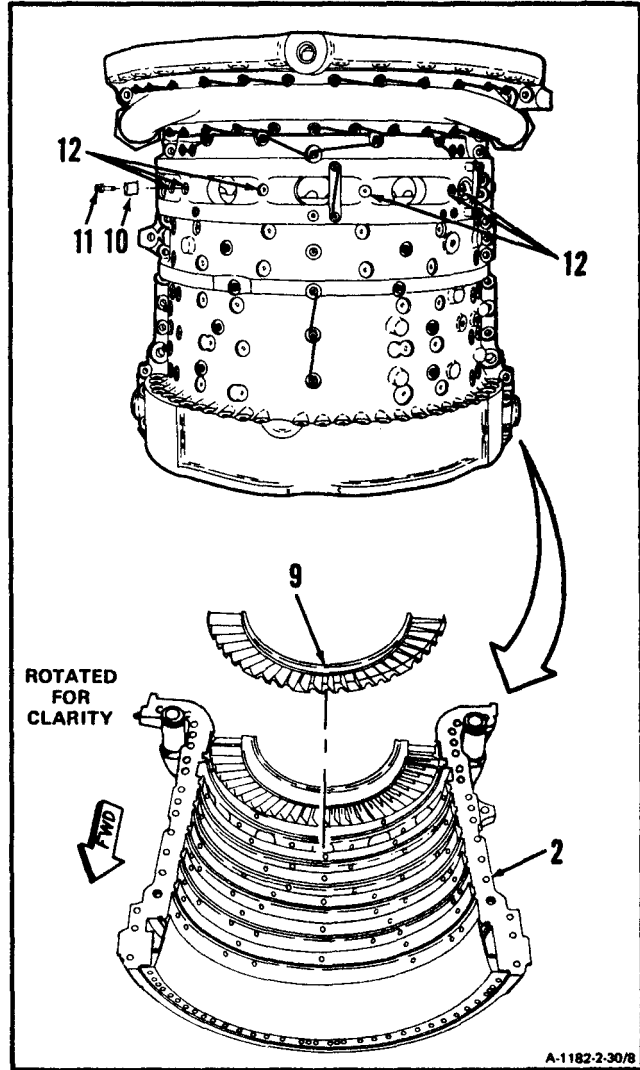


## INSPECT

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**2. Install one-half of sixth stage stator vane (9) into compressor housing half (2).**

Install six locking cups (10) and six screws (11) in screw holes locations (12). Finger tighten screws (11).

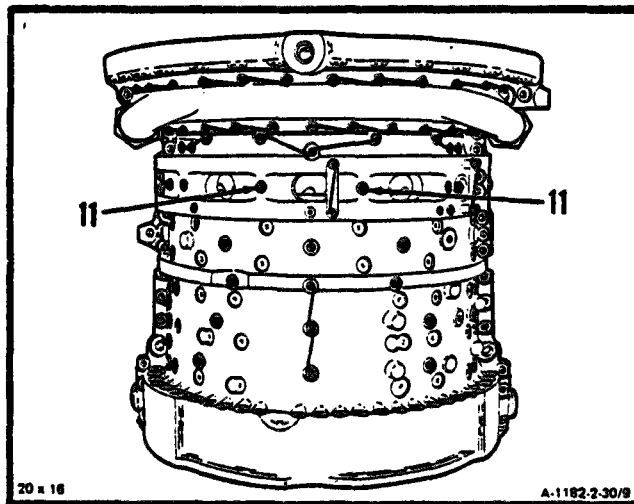


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**2-30 INSTALL STATOR VANE ASSEMBLIES (Continued)**

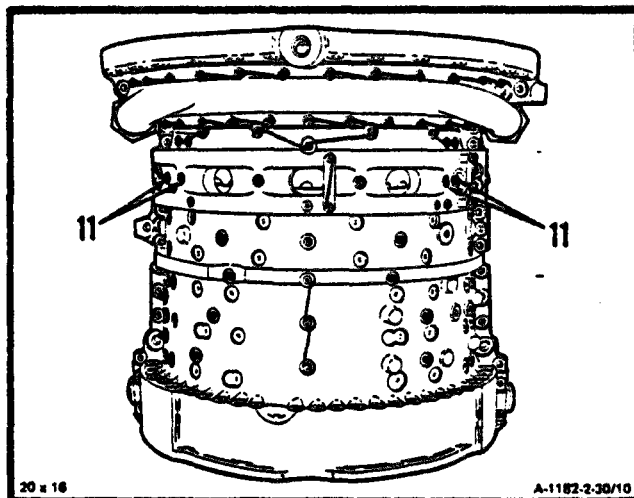
2-30

b. Torque two screws(11) to 45 inch-pound



c. Torque four screws (11) to 15 inch-pounds.

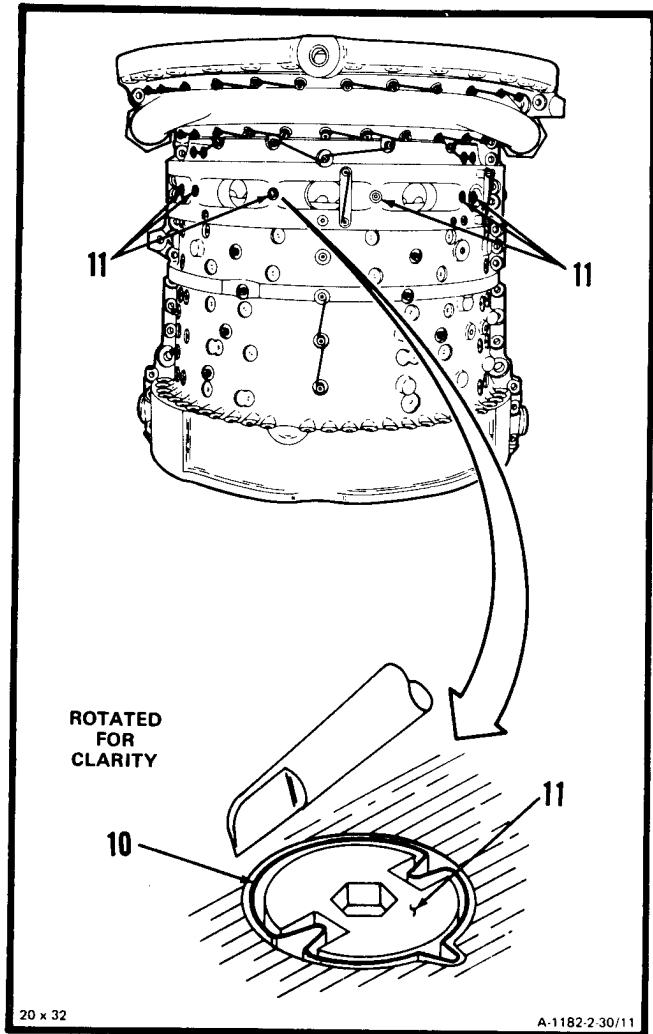
d. Check ends of screws (11). Screw ends shall be flush or not more than 0.035 inch below surface of stator. If necessary add washers



**GO TO NEXT PAGE**



- e. Calculate gap between stator vane shrouds as outlined in step 8.
- f. Lock six screws (11 ) by deforming rim of six locking cups (10). Deform rim of locking cups (10) into two screw slots and compressor housing on opposite sides. Use locking cup punch (T21).



INSPECT

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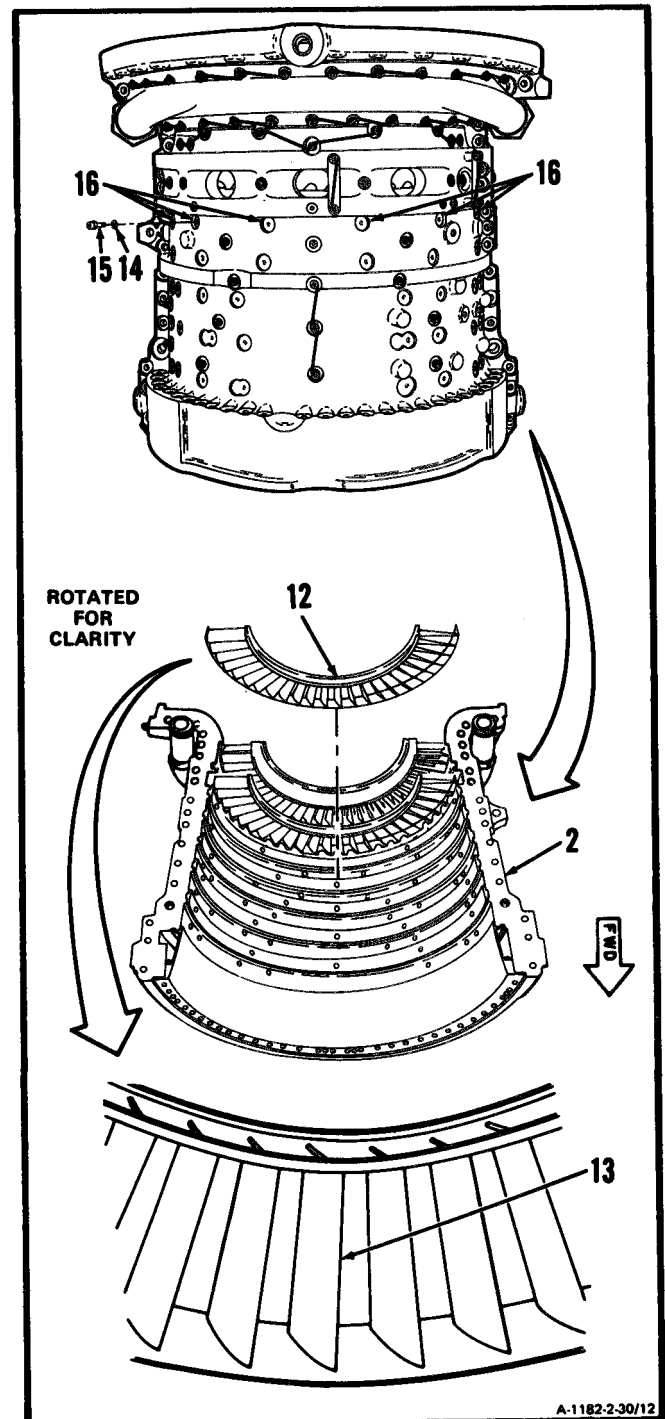
## 2-30 INSTALL STATOR VANE ASSEMBLIES (Continued)

2-30

**CAUTION**

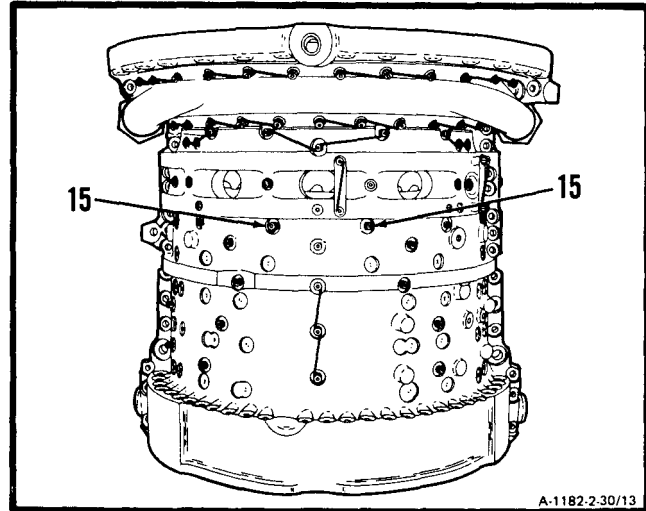
Make certain that fifth stage stator vane is installed with leading edge of vanes facing forward. If vane assembly is installed wrong, the outer shroud will protrude into airflow path. This may cause unusual stresses on compressor blades which could result in blade failure.

3. Install one-half of fifth stage stator vane (12) into compressor housing half (2).
  - a. Make certain that leading edge (13) of vane faces forward
  - b. Install six washers (14) and six bolts (15) in bolt hole locations (16). Finger tighten bolts (15).



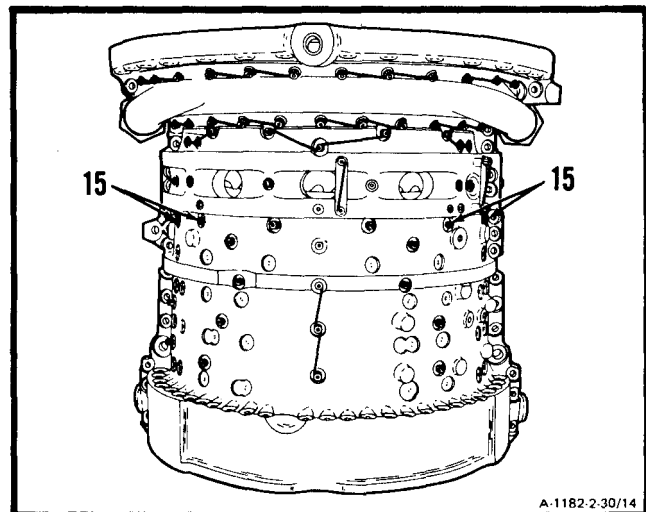
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c. Torque two bolts (15) to 45 inch-pounds.



d. Torque four bolts (15) to 15 inch-pounds.

e. Check ends of bolts (15). Bolt ends shall be flush, or not more than 0.035 inch below surface of stator. If necessary add washers under bolt heads. There must be at least one washer under each bolt head.



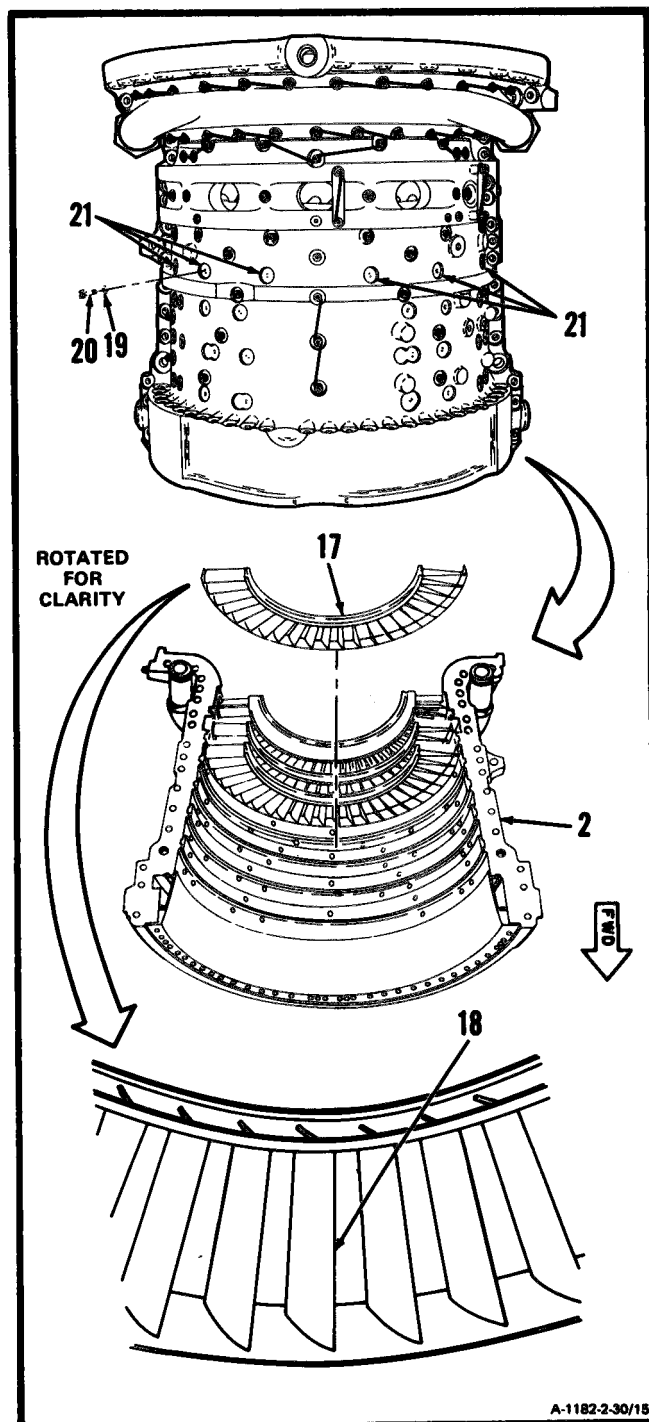
f. Calculate gap between stator vane shrouds as outlined in step 8.

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**CAUTION**

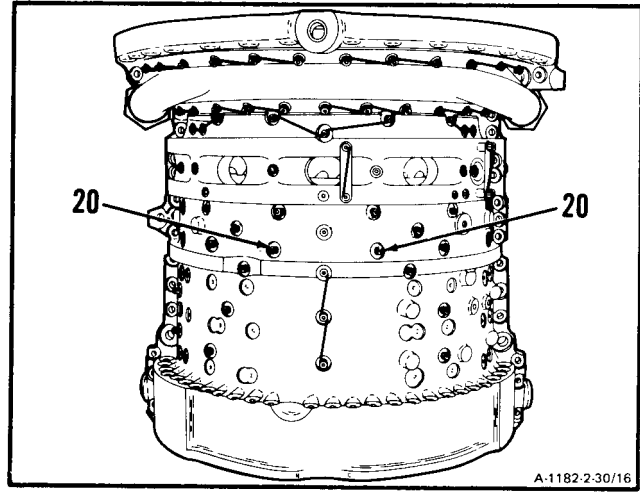
Make certain that fourth stage vane is installed with leading edge of vanes facing forward. If vane assembly is installed wrong, the outer shroud will protrude into airflow path. This may cause unusual stresses on compressor blades which could result in blade failure.

4. Install one-half of fourth stage stator vane (17) into compressor housing half (2).
  - a. Make certain that leading edge (18) of vane faces forward.
  - b. Install six washers (19) and six bolts (20) in bolt hole locations (21). Finger tighten bolts (20).



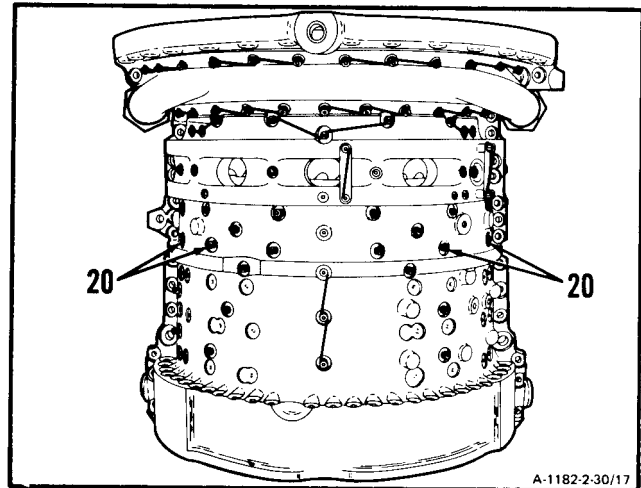
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c. Torque two bolts (20) to 45 inch-pounds.



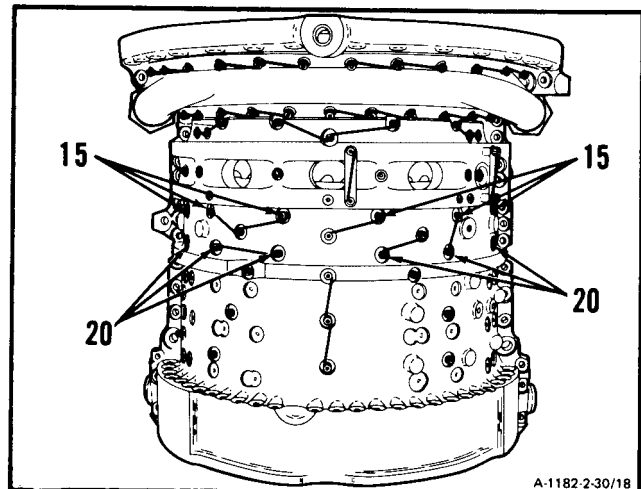
d. Torque four bolts (20) to 15 inch-pounds.

e. Check ends of bolts (20). Bolt ends shall be flush, or not more than 0.035 inch below surface of stator. If necessary add washers under bolt heads. There must be at least one washer under each bolt head.



f. Calculate gap between stator vane shrouds as outlined in step 8.

g. Lockwire bolts (15) and (20). Use lockwire (E29).

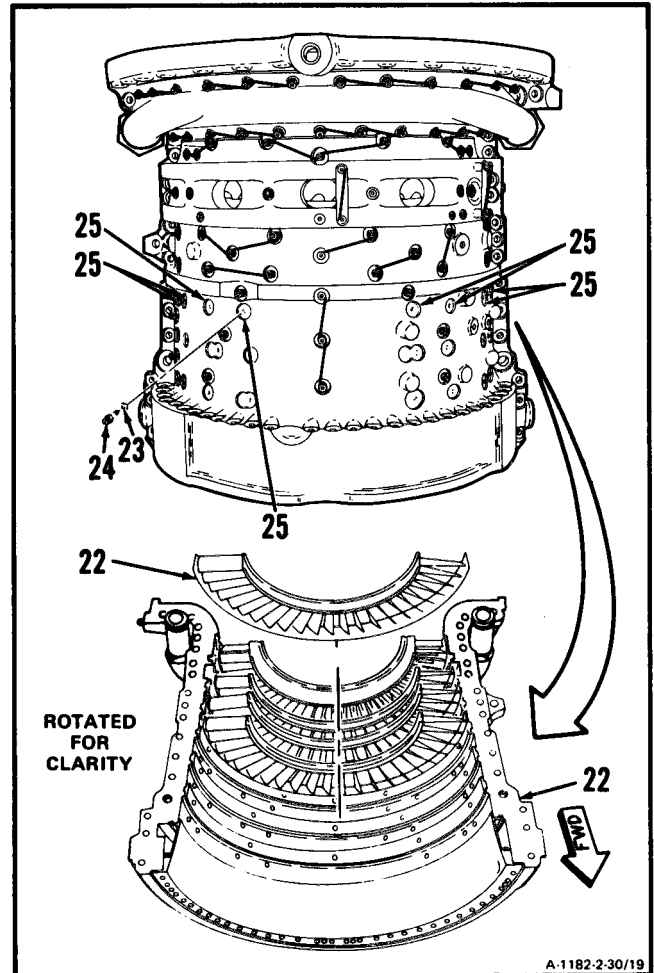


**INSPECT**

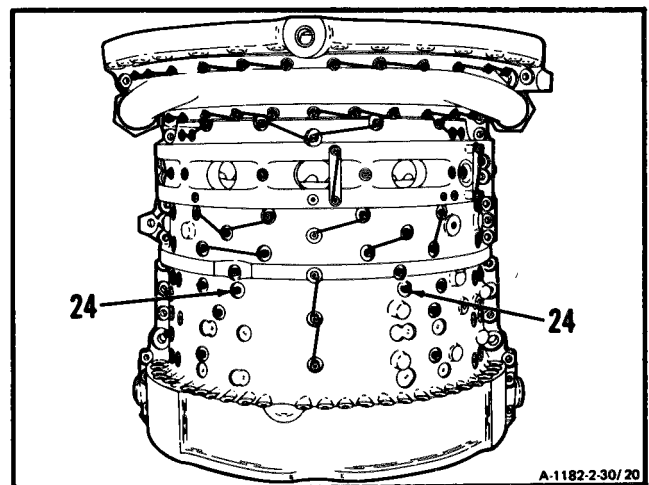
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5. Install one-half of third stage stator vane (22) into compressor housing half (2).

- a. Install eight washers (23) and eight bolts (24) in bolt hole locations (25). Finger tighten bolts (24).

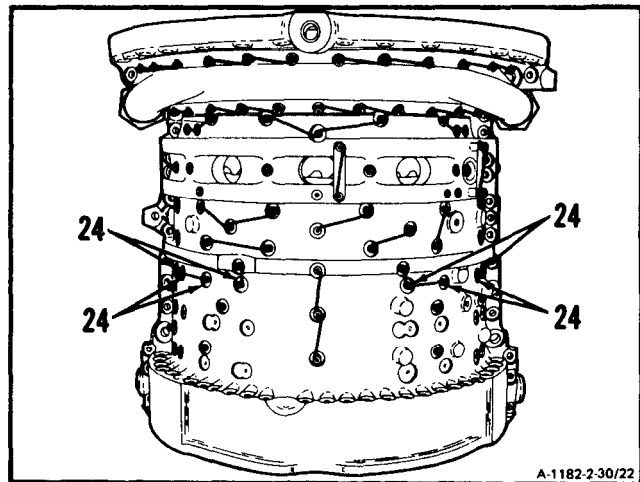
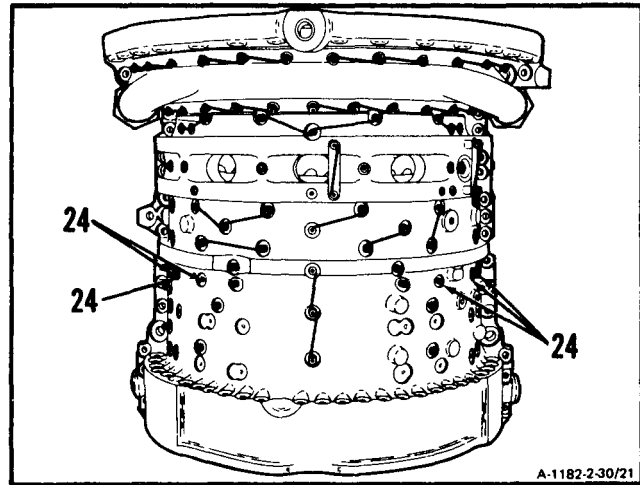


- b. Torque two bolts (24) to 45 inch-pounds.



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- c. Torque six bolts (24) to 15 inch-pounds.
- d. Check ends of bolts (24), Bolts ends shall be flush, or not more than 0.035 inch below surface of stator. If necessary add washers under bolt heads. There must be at least one washer under each bolt head.
- e. Calculate gap between stator vane shrouds as outlined in step 8.
- f. Lockwire bolts (24). Use lockwire (E29).



**INSPECT**

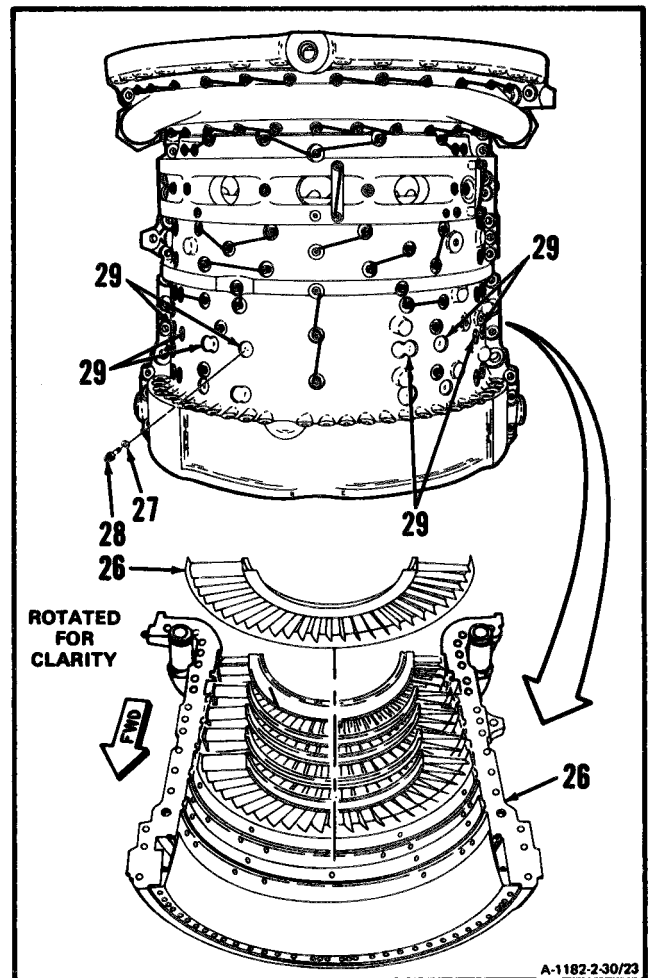
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## 2-30 INSTALL STATOR VANE ASSEMBLIES (Continued)

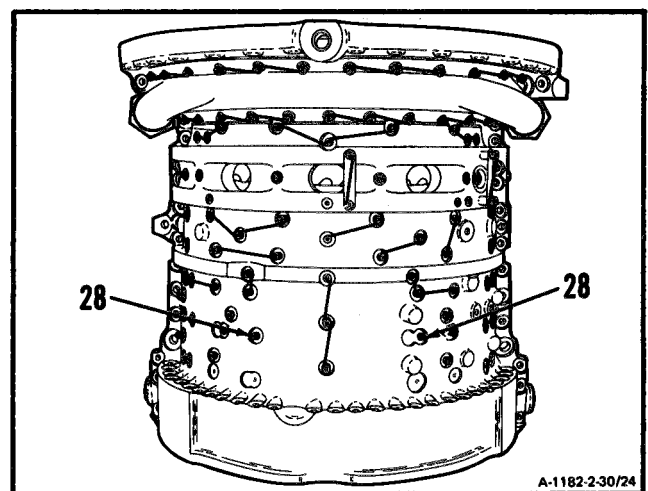
2-30

6. Install one-half of second stage stator vane (26) into compressor housing half (2).

- a. Install eight washers (27) and eight bolts (28) in bolt hole locations (29). Finger tighten bolts (28).



- b. Torque two bolts (28) to 45 inch-pounds.



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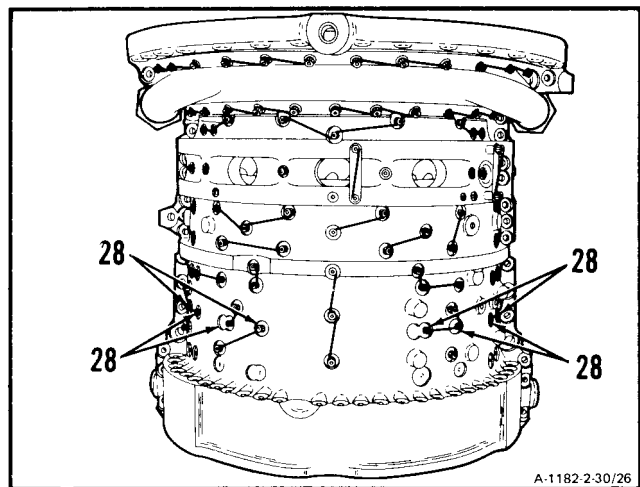
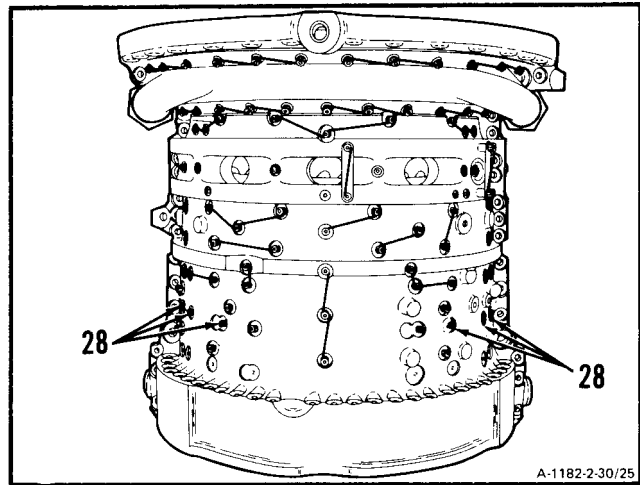


c. Torque six bolts (28) to 15 inch-pounds.

d. Check ends of bolts (28). Bolt ends shall be flush, or not more than 0.035 inch below surface of stator. If necessary add washers under bolt heads. There must be at least one washer under each bolt head.

e. Calculate gap between stator vane shrouds as outlined in step 8.

f. Lockwire bolts (28). Use lockwire (E29).



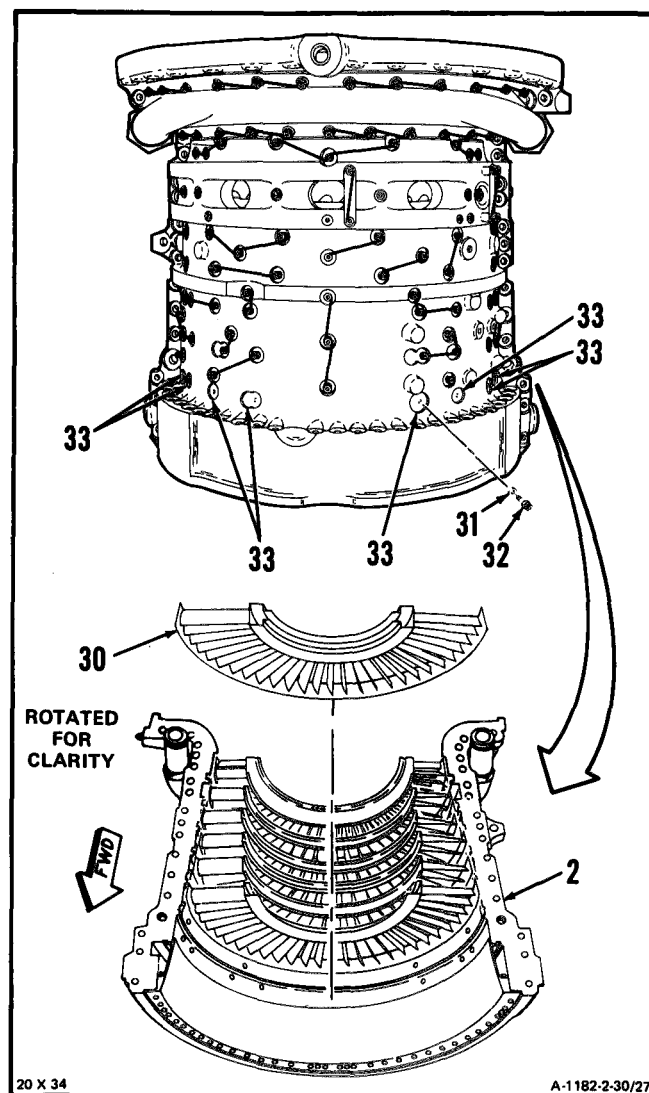
**INSPECT**

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**NOTE**

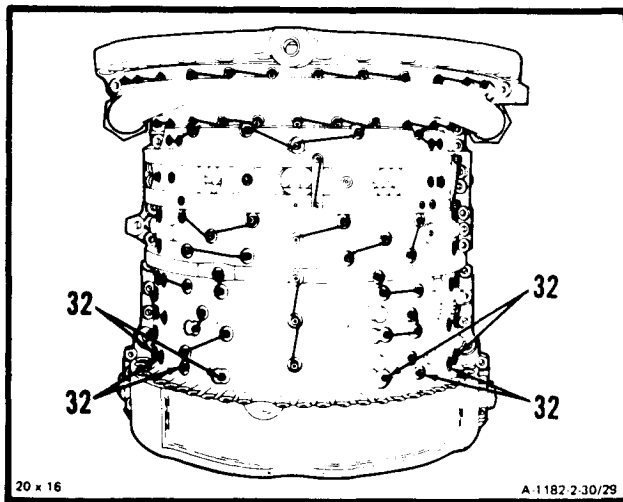
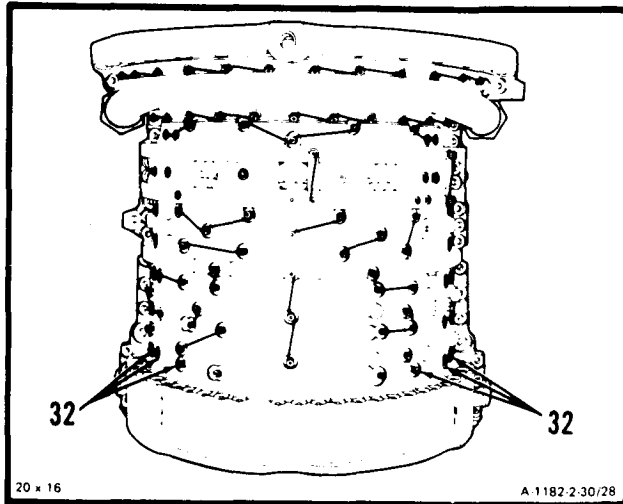
The following step is for P/N 2-101-790-01 only.  
For P/N 2-101-790-47 and P/N 2-101-790R46  
Ref. to Task 2-30.1.

7. **Install one-half of first stage stator vane (30) into each half of compressor housing (2).**
  - a. Install eight washers (31) and eight bolts (32) in bolt hole locations (33). Finger tighten bolts (32).



**GO TO NEXT PAGE**

- b. Starting with center bolts (32) torque bolts (32) first to 45 inch-pounds. Loosen all bolts and retorque to 15 inch-pounds using the same order.
- c. Check ends of bolts (32). Bolt ends shall be flush, or not more than 0.035 inch below surface of stator. If necessary add washers under bolt heads. There must be at least one washer under each bolt head.
- d. Calculate gap between stator vane shrouds as outlined in step 8.
- e. Lockwire bolts (32). Use lockwire (E29).



**INSPECT**

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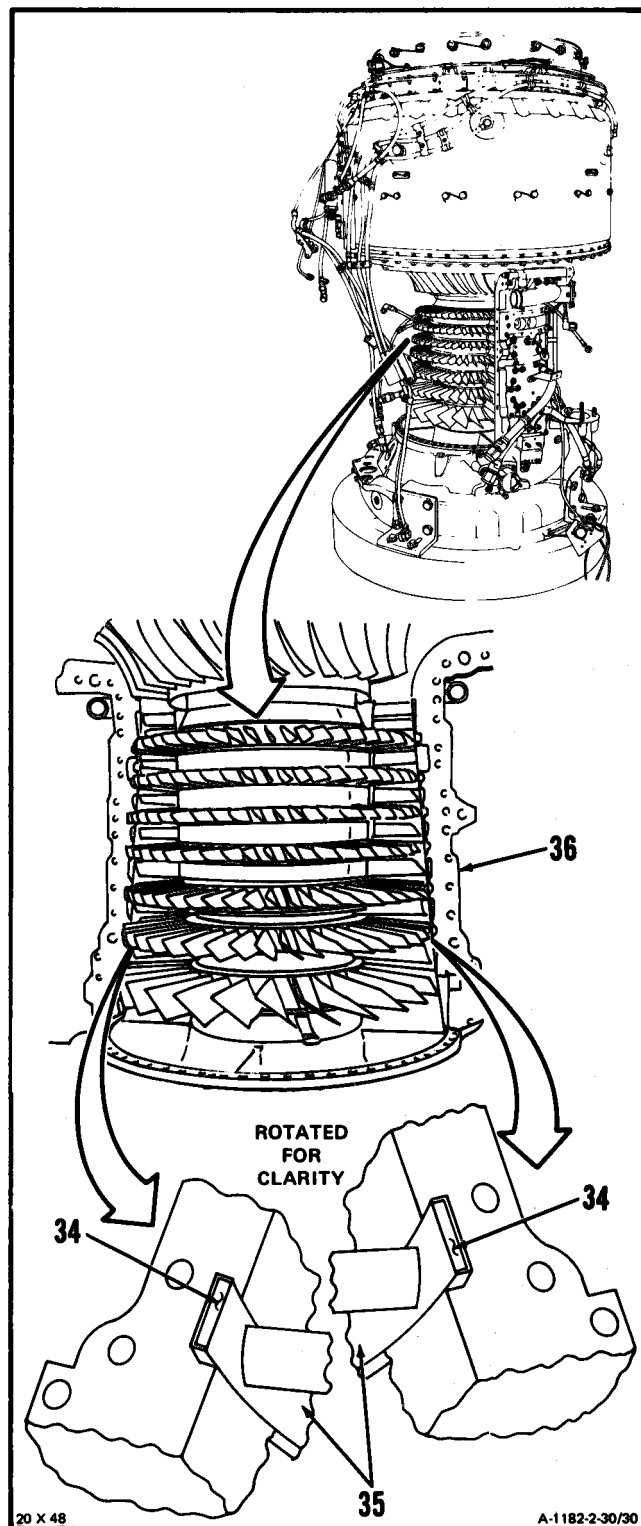
## 2-30 INSTALL STATOR VANE ASSEMBLIES (Continued)

2-30

## NOTE

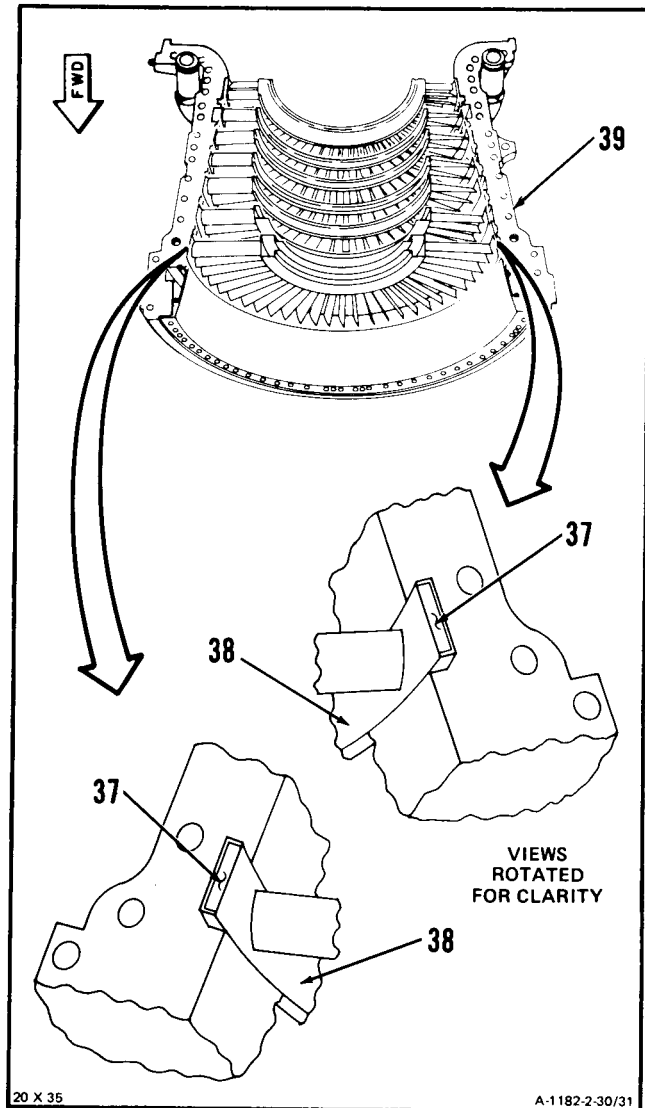
The following procedure applies to the first thru seventh stage stator vane assemblies. First stage stator vane assembly is shown.

8. **Inspect for clearance between stator vane shrouds** as follows:
  - a. Apply non-lead gear marking compound (E38.1) to both ends (34) of stator vane shroud (35) on installed compressor housing half (36). Use acid swabbing brush (E2).



**GO TO NEXT PAGE**

- b. Apply non-lead gear marking compound (E38.1) to both ends (37) of stator vane shroud (38) on removed compressor housing half (39). Use acid swabbing brush (E2).
- c. **Temporarily install removed compressor housing half** (Ref. Task 2-24, steps 1. thru 3. or Task 2-25, steps 1. thru 3.).
- d. **Remove temporarily installed compressor housing half** (Ref. Task 2-19, steps 29. thru 32. and 38. or Task 2-20, steps 35. thru 38. and 48.).
- e. Inspect both ends (37) of stator vane shroud (38) of removed compressor housing half (39). There shall be no non-lead marking compound.
- f. If no non-lead gear marking compound is visible, clearance is acceptable.
- g. Wear gloves (E20). Use dry cleaning solvent (E17) and brush, clean off all non-lead marking compound. Wipe dry using lint-free cloth (E26).
- h. If non-lead gear marking compound is visible, proceed as follows:
  - (1) Loosen stator vane mounting bolts, shift stator vane and retorque mounting bolts (Refer to steps 1 thru 7).
  - (2) Repeat steps 8.a. thru 8.e.
  - (3) If non-lead gear marking compound is still visible, proceed as follows:

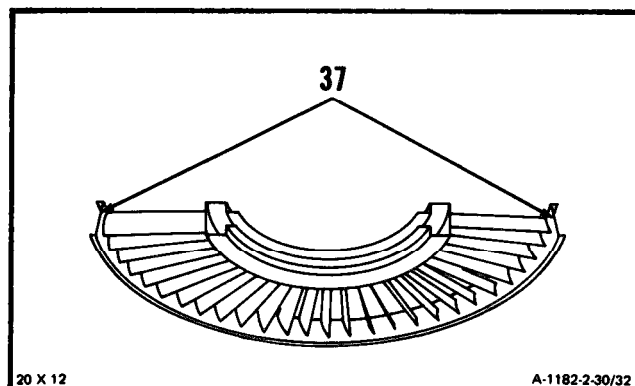


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## 2-30 INSTALL STATOR VANE ASSEMBLIES (Continued)

2-30

- (a) **Remove stator vane assemblies.**  
(Ref. Task 2-26).
- (b) **File shroud ends (37).** Use flat hand file.
- (c) **Clean stator vane assemblies.**  
(Ref. Task 2-27).

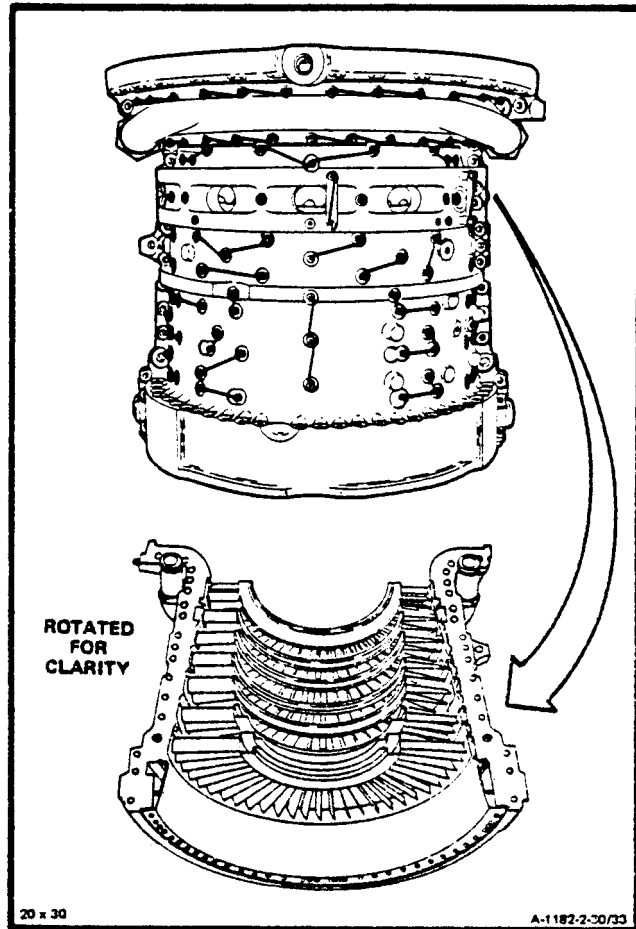
**INSPECT**

- (d) **Install stator vane assemblies**  
(steps 1 thru 7).
- (e) **Repeat steps 8a. thru 8.e.**
- (f) If non-lead making compound is still visible, repeat step 8.h., (3), (a) thru (f).

**GO TO NEXT PAGE**

**FOLLOW-ON MAINTENANCE:**

Install Upper Compressor Housing (Task 2-24)  
or Lower Compressor Housing (Task 2-25).



**END OF TASK**

2-254

## 2-30.1 INSTALL RTV IN FIRST STAGE STATOR VANE ASSEMBLY

2-30.1

## INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Technical Inspection Tool Kit,  
NSN 5180-00-323-5114  
Goggles  
Compressed Air Source  
RTV Application Kit (T38.1)  
RTV Masking Kit, First Stage  
Stator (T36.1)  
Tongue Depressor

**Materials:**

Acetone (E1)  
Acid Swabbing Brush (E2)  
Dry Cleaning Solvent (E17)  
Frekote 1 (E-19.1)  
Dry Film Lubricant  
Gloves (E20)  
Lint-Free Cloth (E26)  
Lockwire (E29)  
Masking Tape (E54)  
Non-Lead Gear Marking Compound (E38.1)

**Personnel Required:**

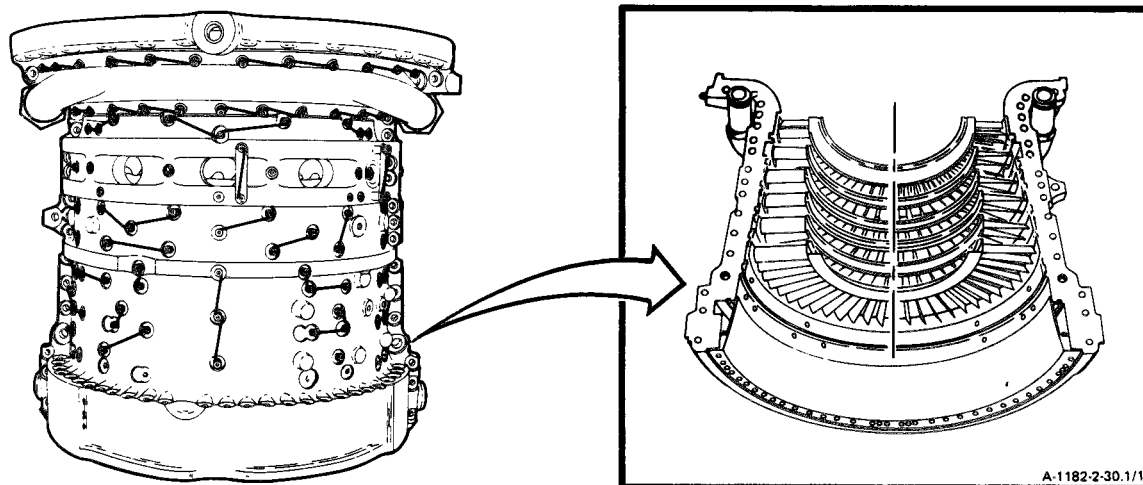
68B10 Aircraft Powerplant Repairer  
68B30 Aircraft Powerplant Inspector

**References:**

Task 2-19 Task 2-26  
Task 2-20 Task 2-27  
Task 2-24 Task 2-30  
Task 2-25

**General Safety Instructions:****WARNING**

Dry cleaning solvent (E17) is flammable and toxic. It can irritate skin and cause burns. Use only in well-ventilated area, away from heat and open flame. In case of contact immediately flush skin or eyes with water for at least **15 minutes**. Get medical attention for eyes.



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**NOTE**

This task is for first stage stator assemblies P/N 2-101-790-47 and P/N 2-101-790R46.

**NOTE**

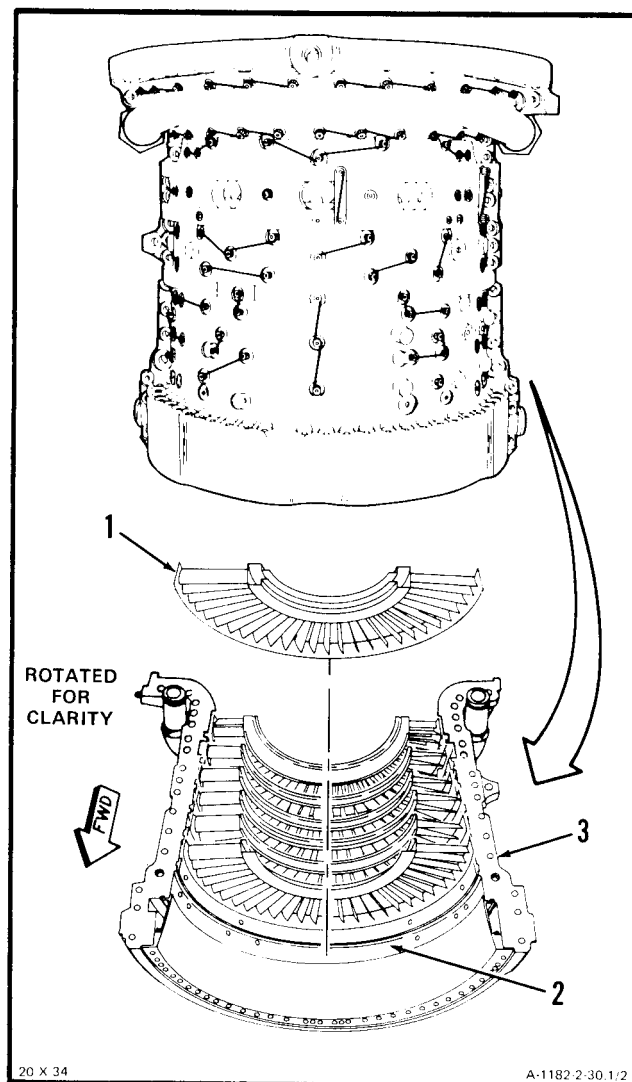
Procedure for installing upper and lower first stage stator assembly are the same. Instructions for installing lower compressor housing first stage stator vane are given.

1. Inject RTV in first stage stator vane assembly (1) as follows:

**WARNING**

**Acetone (E1) is flammable and toxic. It can irritate skin and cause burns. Use only in well-ventilated area, away from heat and open flame. In case of contact, immediately flush skin or eyes with water for at least 15 minutes. Get medical attention for eyes.**

- a. Wear gloves (E20) and using acetone (E1) and acid swabbing brush (E2) and lint-free cloth (E26) clean first stage stator mounting surface (2) of compressor housing half (3).



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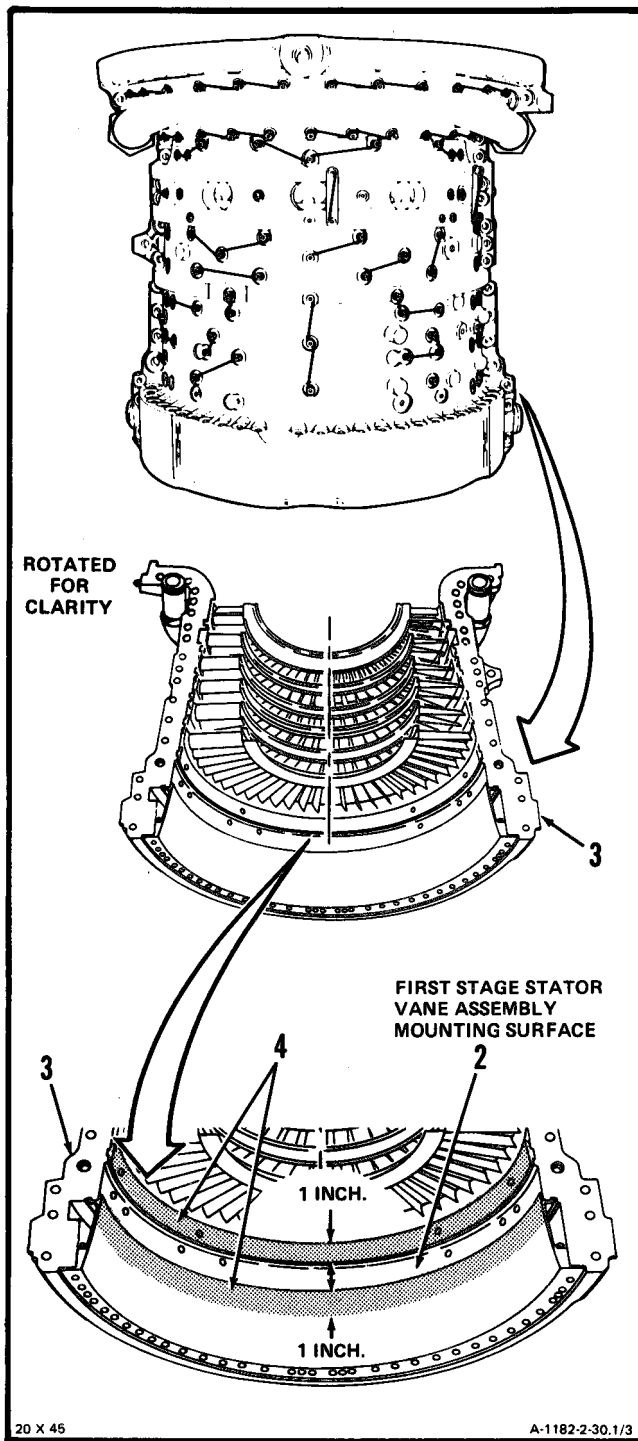
## 2-30.1 INSTALL RTV IN FIRST STAGE STATOR VANE ASSEMBLY (Continued)

2-30.1

**WARNING**

When using compressed air for cleaning, use approved protective equipment for eyes and face. Do not use more than 30 psig air pressure. Do not direct air toward yourself or another person. Failure to comply could result in injury to eyes or skin. In case of injury, get medical attention.

- b. Wear goggles. Blow dry first stage stator mounting surface (2) using dean, dry compressed air.
- c. Mask compressor housing half (3) using one inch wide masking tape (E54) (4) leaving first stage stator vane assembly mounting surface (2) unmasked.



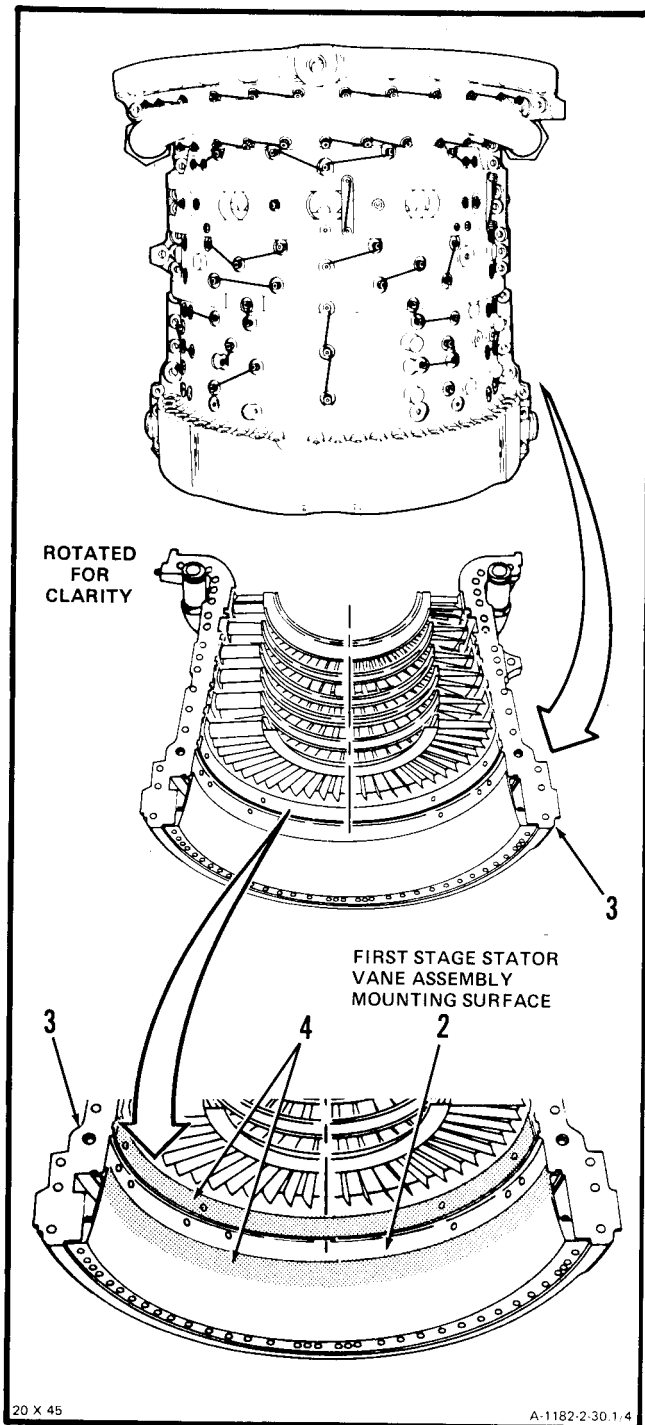
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**NOTE**

In following step take care not to overspray onto masked areas.

d. **Apply a thin, even film of dry film lubricant (E19.1)** mold resistant fluorocarbon to first stage stator vane assembly mounting surface (2) of compressor housing half (3).

e. **Remove masking tape (4).**



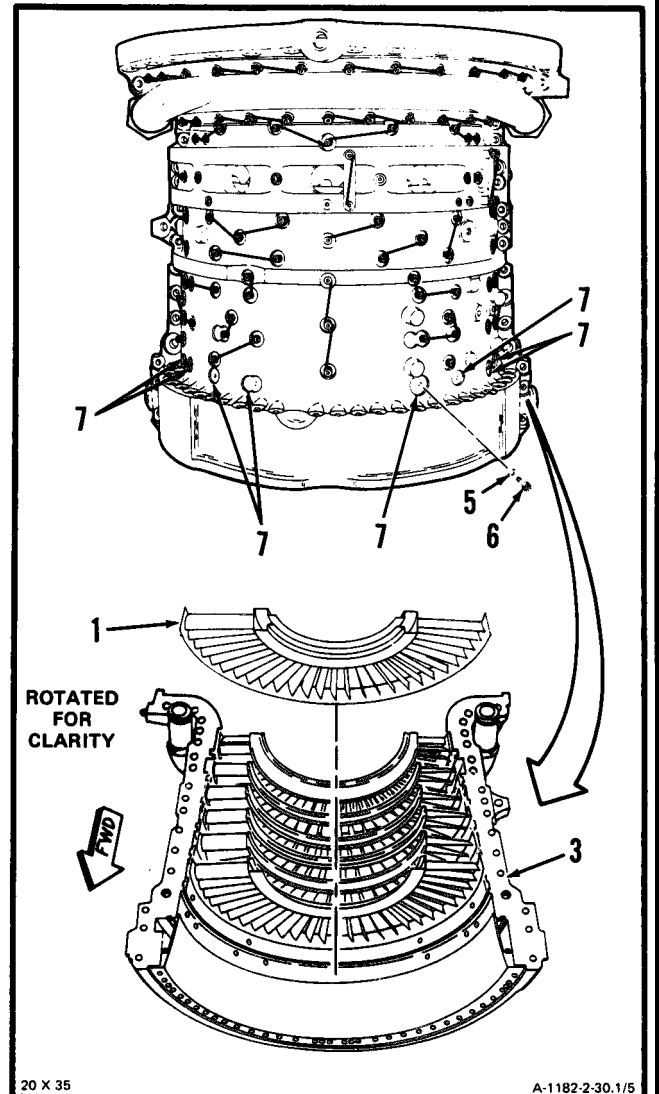
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## 2-30.1 INSTALL RTV IN FIRST STAGE STATOR VANE ASSEMBLY (Continued)

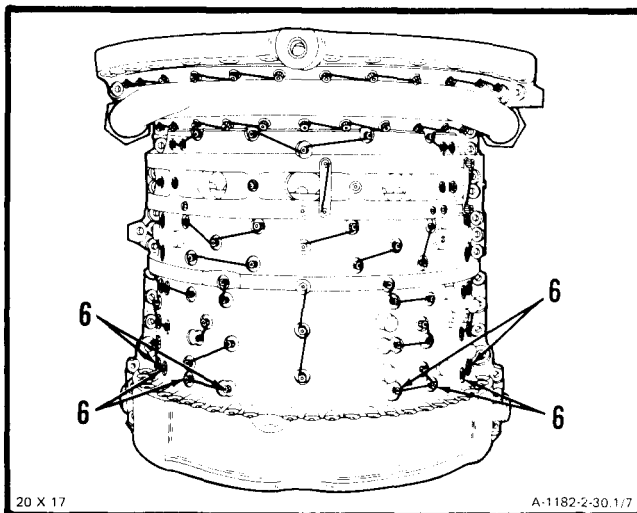
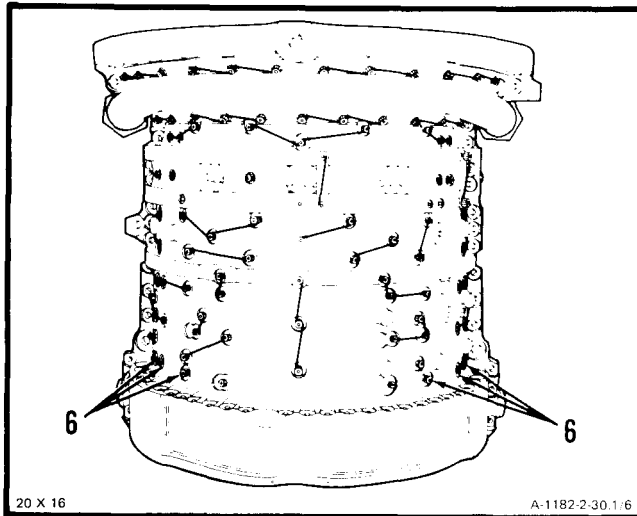
2-30.1

**2. Install first stage stator vane (1) into compressor housing half (3).**

- a. Install eight washers (5) and eight bolts (6) in bolt hole locations (7). Finger tighten bolts (6).

**GO TO NEXT PAGE**

- b. Starting with center bolts (6) in torque bolts (6) first to 45 inch-pounds. Loosen all bolts and retorque to 15 inch-pounds using the same order.
- c. Check ends of bolts (6). Bolt ends shall be flush, or not more than 0.035 inch below surface of stator. If necessary, add washers under bolt heads. There must be at least one washer under each bolt head.
- d. Calculate gap between stator vane shrouds as outlined in step 3.
- e. Lockwire bolts (6). Use lockwire (E29).



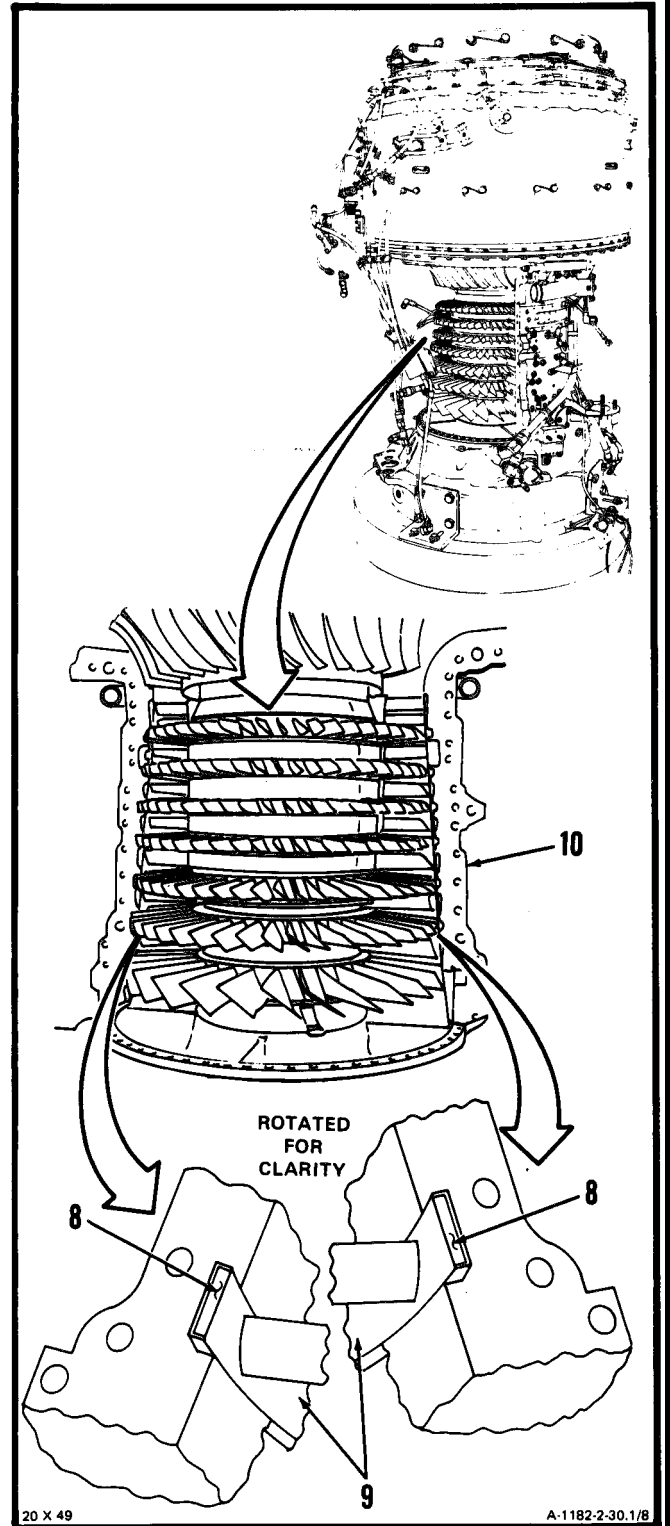
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## 2-30.1 INSTALL RTV IN FIRST STAGE STATOR VANE ASSEMBLY (Continued)

2-30.1

**3. Inspect for clearance between stator vane shrouds** as follows:

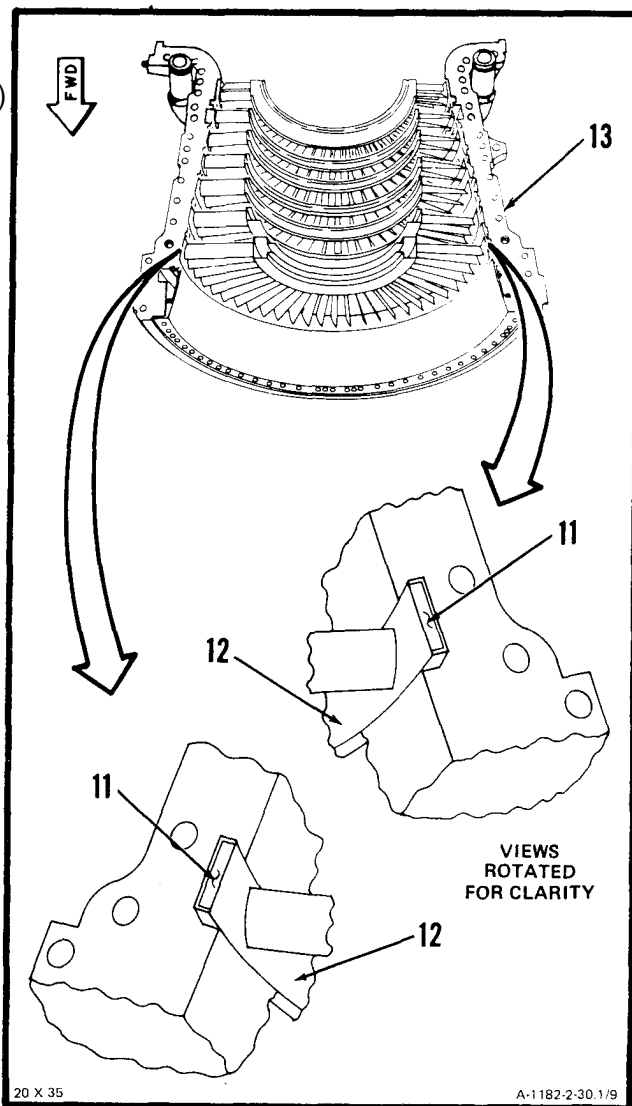
- a. Apply non-lead gear marking compound (E38.1) to both ends (8) of stator vane shroud (9) on installed compressor housing half (10). Use acid swabbing brush (E2).

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## 2-30.1 INSTALL RTV FIRST STAGE STATOR VANE ASSEMBLY (Continued)

2-30.1

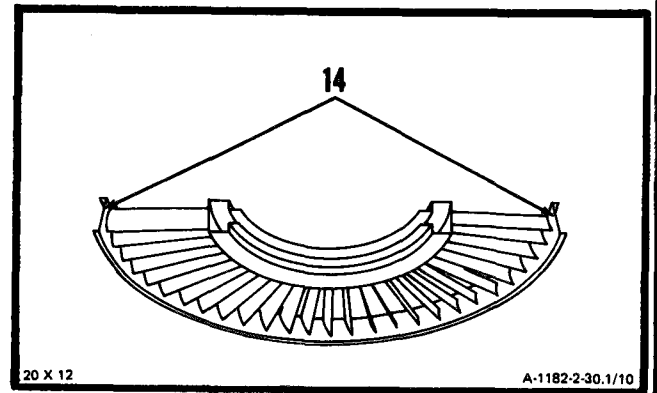
- b. Apply non-lead gear marking compound (E38.1) to both ends (11) of stator vane shroud (12) on removed compressor housing half (13).
- c. **Temporarily install removed compressor housing half** (Ref. Task 2-24, steps 1 thru 3. or Task 2-25, steps 1. thru 3.).
- d. **Remove temporarily installed compressor housing half** (Ref. Task 2-19, steps 29. thru 32. and 38. or Task 2-20, steps 35. thru 38. and 48.)
- e. Inspect both ends (11) of stator vane shroud (12) of removed compressor housing half (13). There shall be no non-lead gear marking compound visible.
- f. If no non-lead gear marking compound is visible, clearance is acceptable.
- g. If non-lead gear marking compound is visible proceed as follows:
- (1) Loosen stator vane mounting bolts, shift stator vane and retorque mounting bolts (Refer to steps 1. thru 7).
  - (2) Repeat steps 3a. thru 3.e.
  - (3) If non-lead gear marking compound is still visible, proceed as follows:

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## 2-30.1 INSTALL RTV IN FIRST STAGE STATOR VANE ASSEMBLY (Continued)

2-30.1

- (a) Remove stator vane assembly. (Ref. Task 2-26).
- (b) File shroud ends (14). Use flat hand file.
- (c) Clean stator vane assembly. (Ref. Task 2-27).
- (d) Install stator vane assembly (steps 1 thru 7).
- (e) Repeat steps 8. a. thru e.
- (f) If non-lead gear marking compound is still visible, repeat step 3.h., (3), (a) thru (f).
- (g) Wear gloves (E20). Using dry cleaning solvent (E17) and brush, clean off all non-lead gear marking compound. Wipe dry using lint-free cloth (E26).

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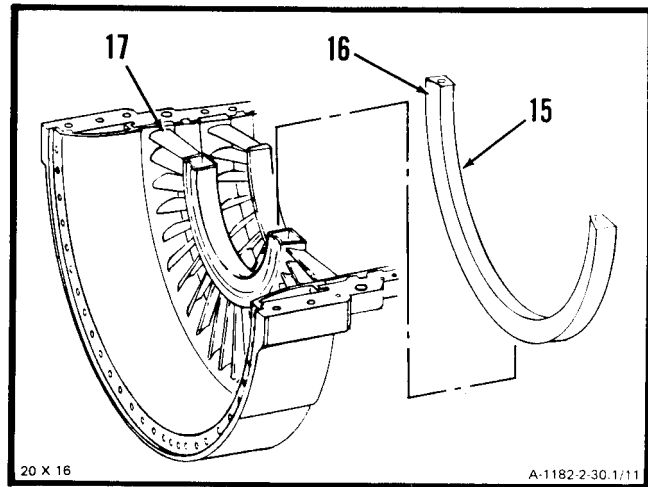


**2-30.1 INSTALL RTV IN FIRST STAGE STATOR VANE ASSEMBLY (Continued)**

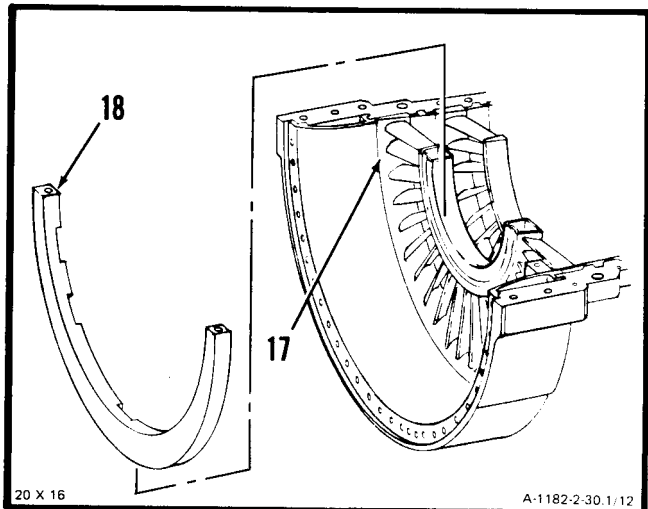
2-30.1

i. Install first stage stator vane retainers. detail of RTV masking kit (T36.1) as follows:

(1) Install aft retainer (15) with chamfered edge of (16) toward first stage stator vane (17).



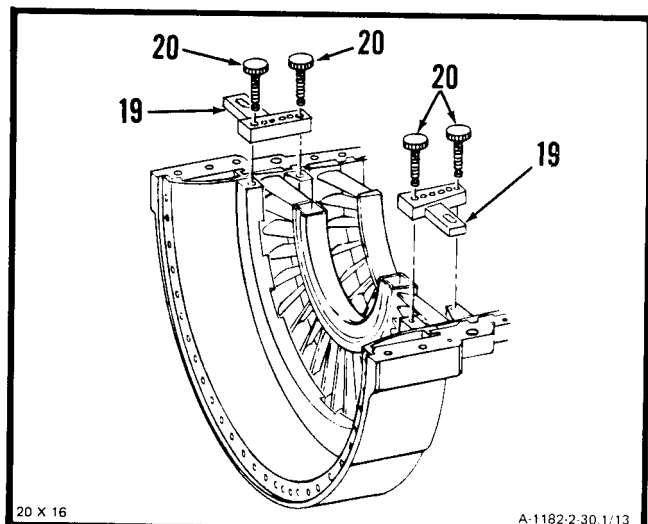
(2) Install forward retainer (18) with cutouts toward first stage stator vane (17).



**NOTE**

Make sure forward and aft retainers are tightly secured against first stage stator vane.

(3) Install two clamps (19) and four screws (20). Tighten screws evenly to clamp retainers in place.

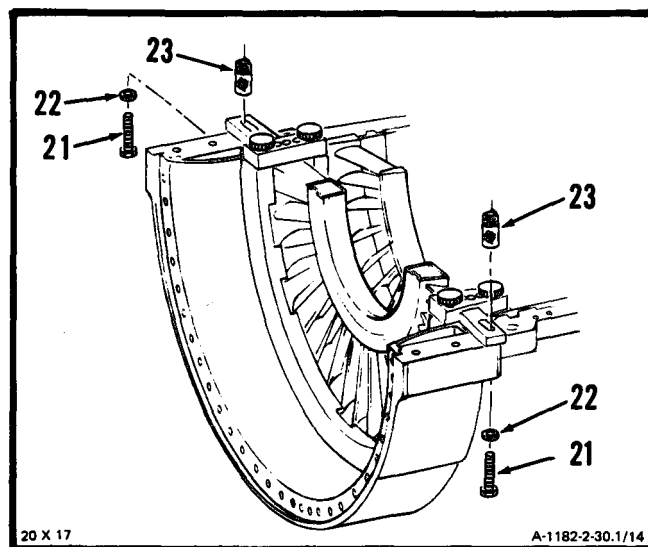


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## 2-30.1 INSTALL RTV IN FIRST STAGE STATOR VANE ASSEMBLY (Continued)

2-30.1

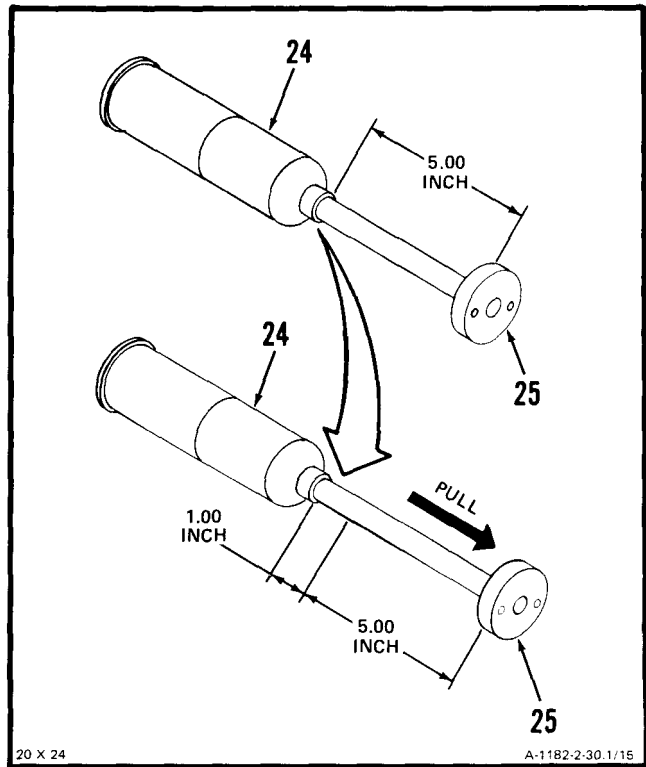
- (4) Install two bolts (21), two washers (22), and two nuts (23). Stagger tighten evenly to clamp retainers in place.



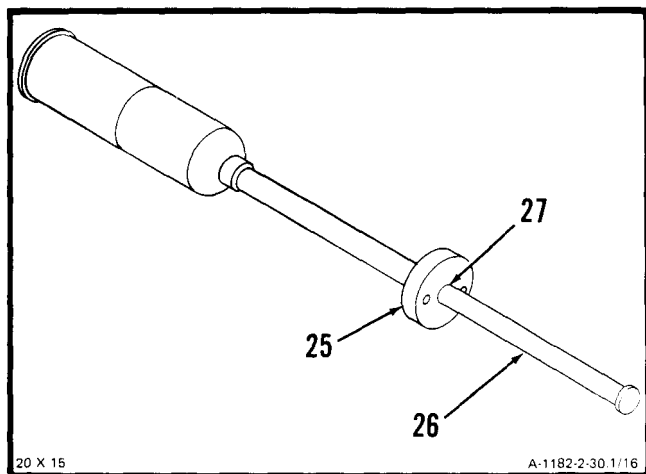
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j. Prepare RTV application kit (T38.1) as follows:

- (1) **Hold cartridge (24).** Grasp mixing rod (25) and pull back about one inch.



- (2) **Insert ramrod (26)** into hold (27) at top of mixing rod (25).



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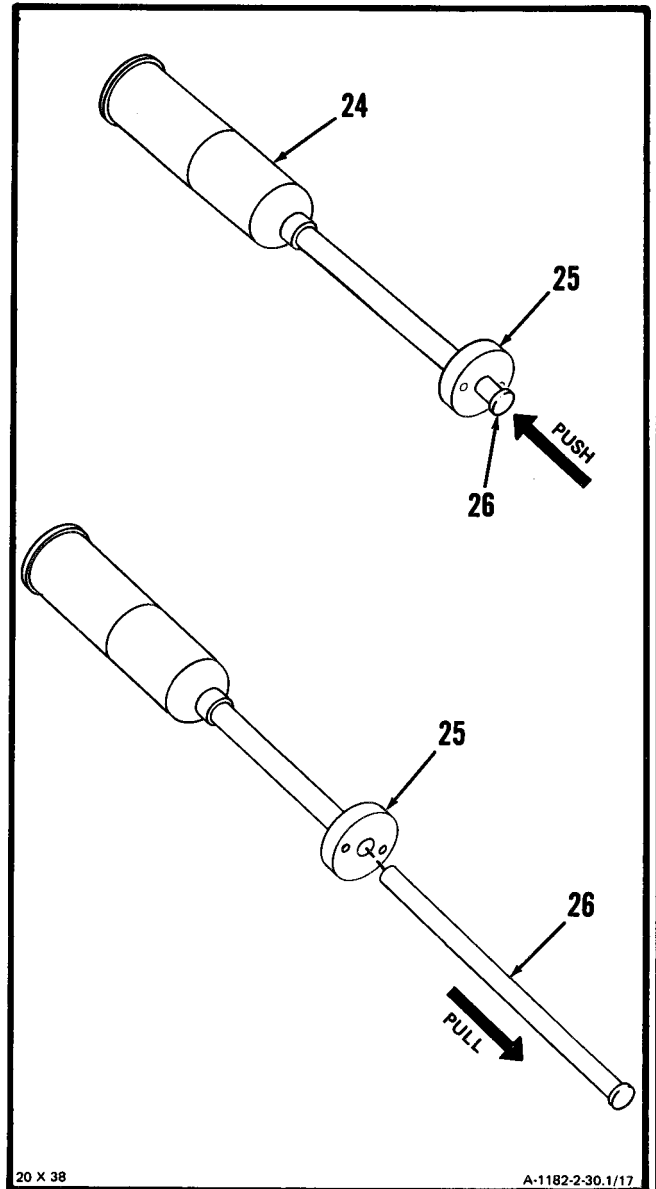
## 2-30.1 INSTALL RTV IN FIRST STAGE STATOR VANE ASSEMBLY (Continued)

2-30.1

**NOTE**

In following step, use even pressure. Do not use excess force, tap, pound or jolt ramrod if piston does not break loose easily.

- (3) **Inject all of catalyst into** cartridge (24) by pushing ramrod (26) into mixing rod (25).
- (4) **Remove ramrod (26)** from mixing rod (25).



20 X 38

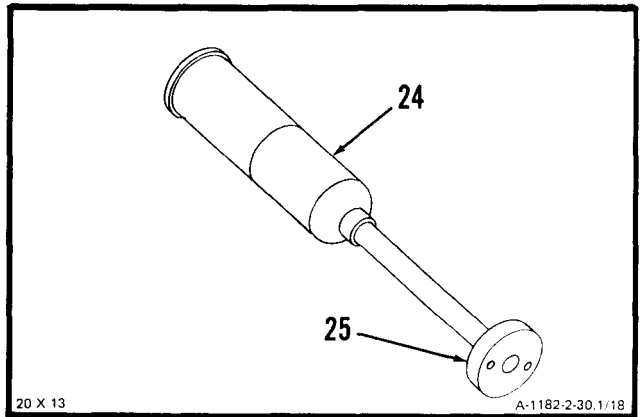
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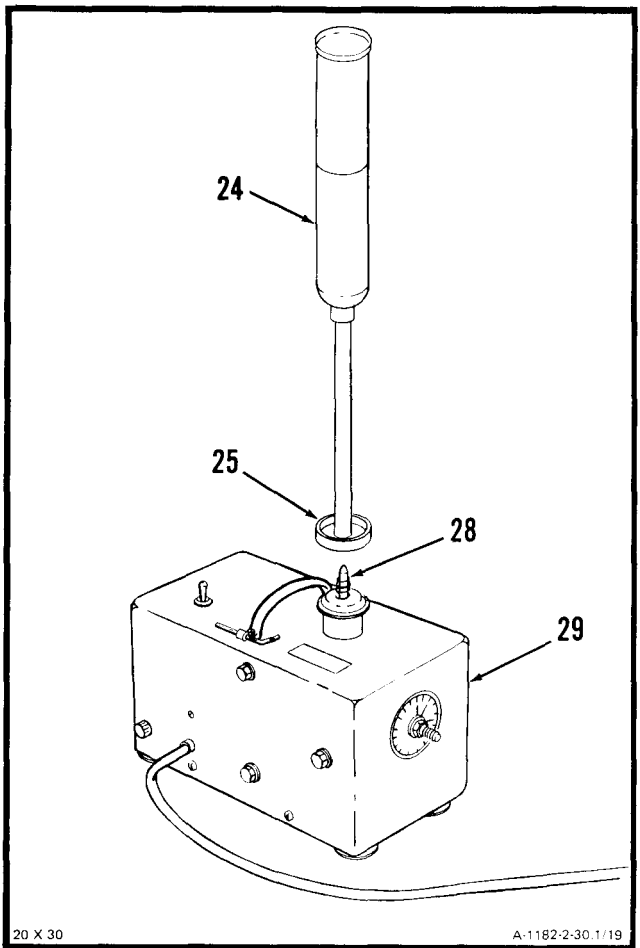
2-30.1 INSTALL RTV IN FIRST STAGE STATOR VANE ASSEMBLY (Continued)

2-30.1

- (5) **Pull mixing rod (25)** from cartridge (24) until it is fully extended.



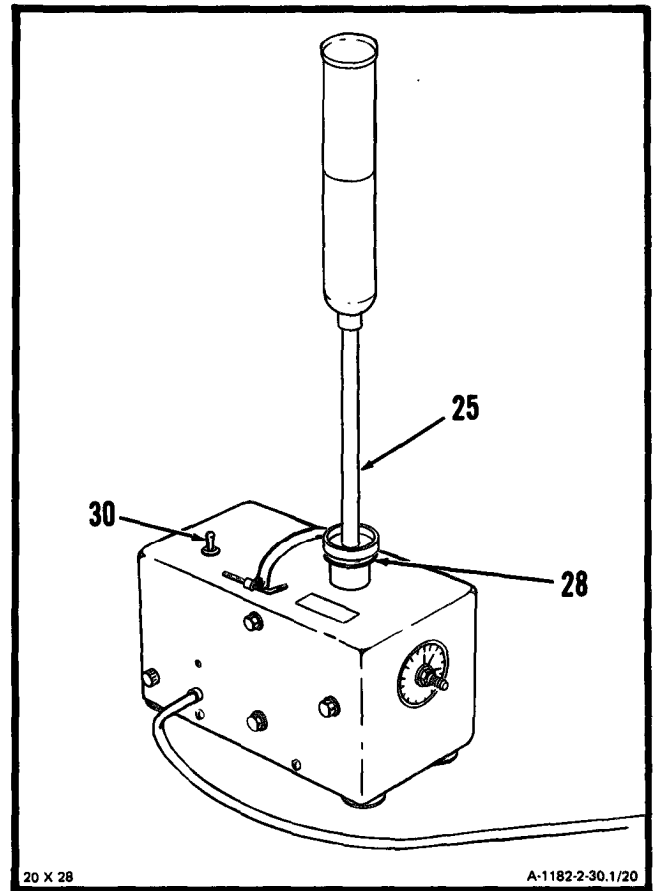
- (6) **Turn cartridge (24) upside down.** Align hole in center of mixing rod (25) with drive screw (28) of mixer (29), detail of RTV masking kit (T36.1) .



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## 2-30.1 INSTALL RTV IN FIRST STAGE STATOR VANE ASSEMBLY (Continued) 2-30.1

- (7) **Grasp mixing rod (25) firmly** and turn mixer switch (30) to MIX position. Turn mixer OFF as soon as drive screw (28) is totally engaged.

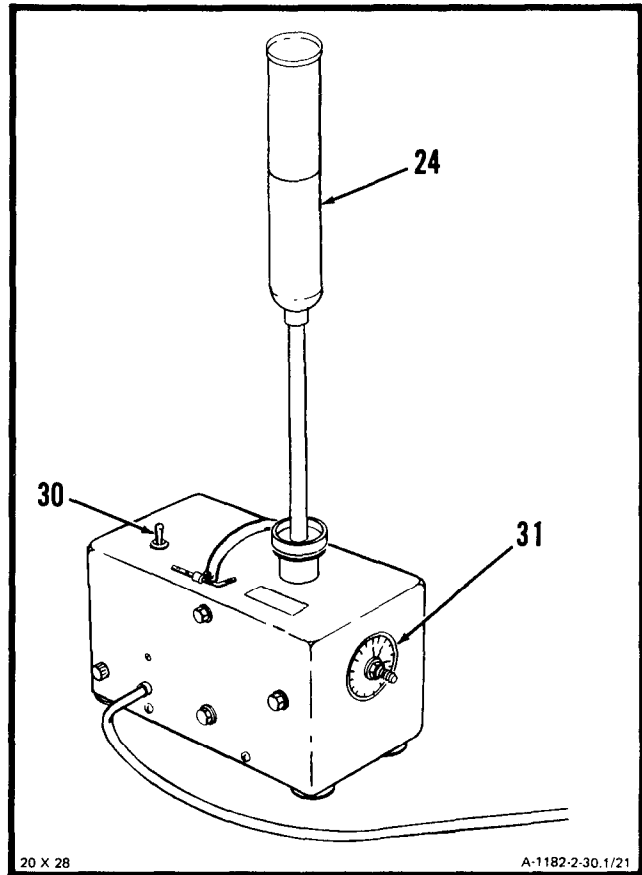


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**CAUTION**

If mixer switch is in REVERSE position, the internal mixing paddle will disconnect from shaft and result in improper mixing.

- (8) Grasp cartridge (24) firmly. Turn mixer switch (30) to mix position. Set timer (31) for four minutes.

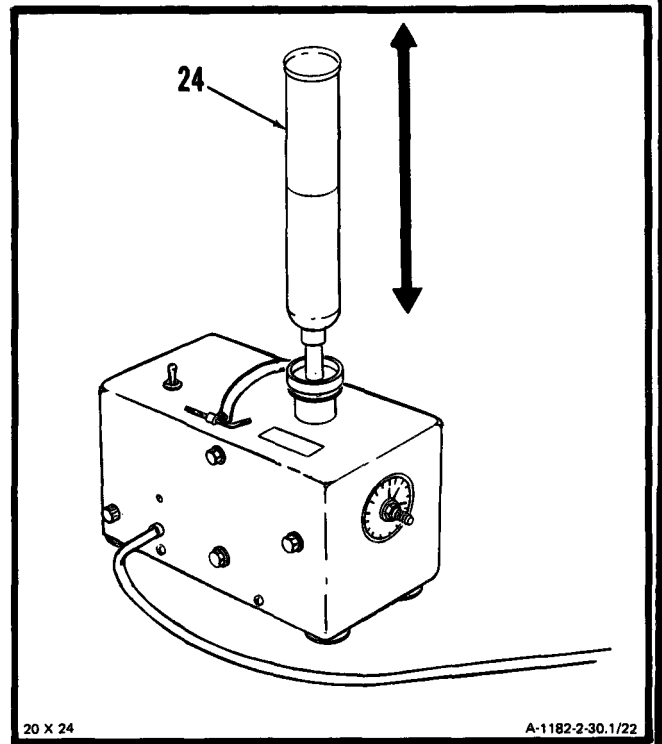


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## 2-30.1 INSTALL RTV IN FIRST STAGE STATOR VANE ASSEMBLY (Continued)

2-30.1

- (9) **Move cartridge (24) up and down.** The internal mixing paddle must traverse the entire filled length of the cartridge (24).



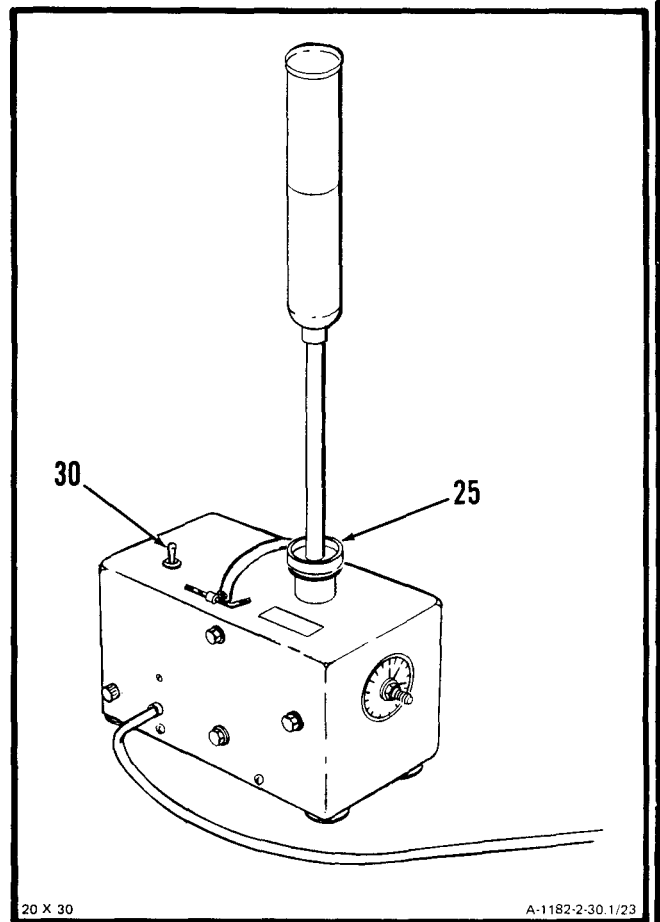
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## 2-30.1 INSTALL RTV IN FIRST STAGE STATOR VANE ASSEMBLY (Continued)

2-30.1

- (10) When bell rings on timer **turn mixer switch (30) OFF**. Mixing rod (25) should be fully extended at this time.

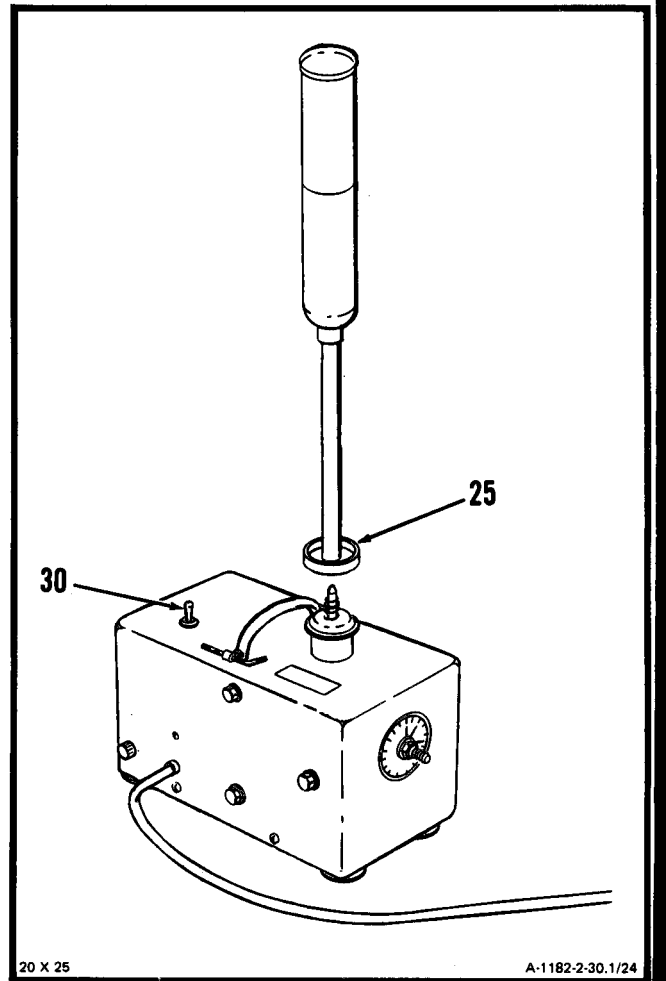


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## 2-30.1 INSTALL RTV IN FIRST STAGE STATOR VANE ASSEMBLY (Continued)

2-30.1

- (11) **Grasp mixing rod (25) firmly and turn mixer switch (30) to REVERSE position.** This will unscrew mixing rod (25) from internal drive screw assembly. When mixing rod is free, turn mixer switch (30) to OFF position.

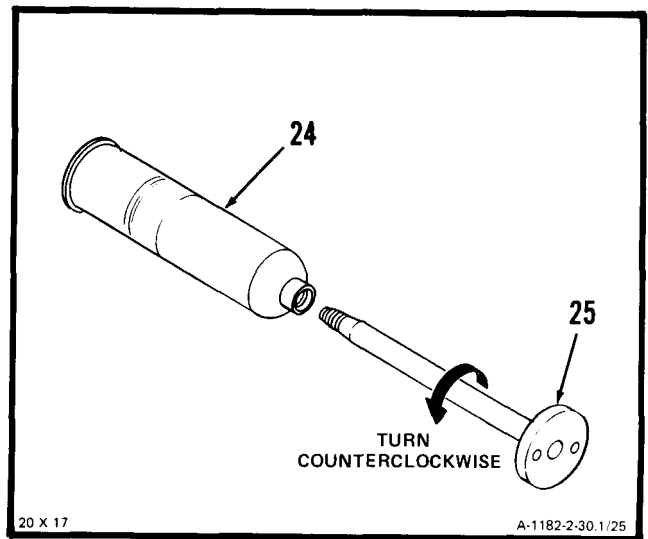


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## 2-30.1 INSTALL RTV IN FIRST STAGE STATOR VANE ASSEMBLY (Continued)

2-30.1

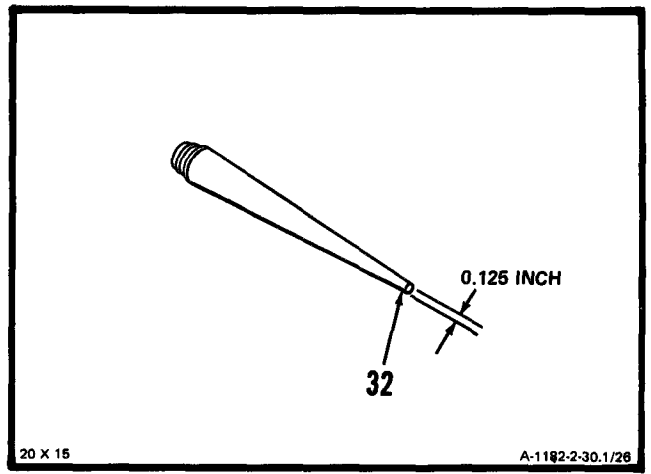
- (12) **Grasp cartridge (24)** with mixing rod (25) fully extended.
- (13) **Rotate mixing rod (25)** counterclockwise to disengage internal mixing paddle.
- (14) **Withdraw mixing rod (25).**

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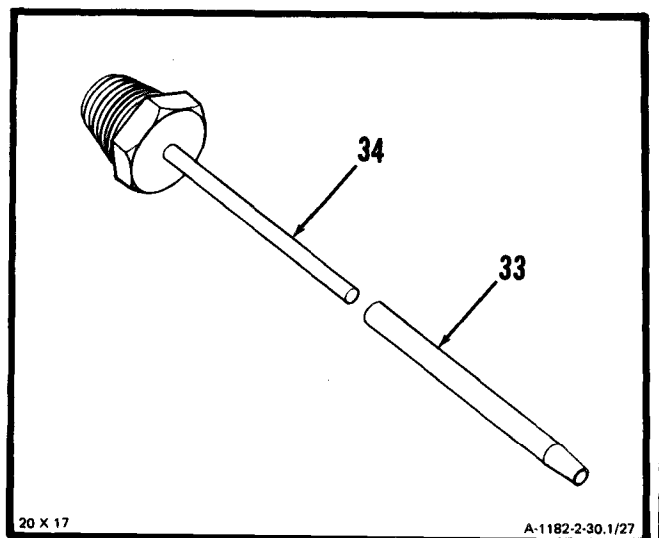
## 2-30.1 INSTALL RTV IN FIRST STAGE STATOR VANE ASSEMBLY (Continued) 2-30.1

(15) Prepare injection tip as follows:

- (a) If Semko No. 410 or No. 440 nozzle, detail of RTV application kit (T38.1) is being used, cut tip (32) on a 5 degree angle to expose a 0.125 inch orifice.

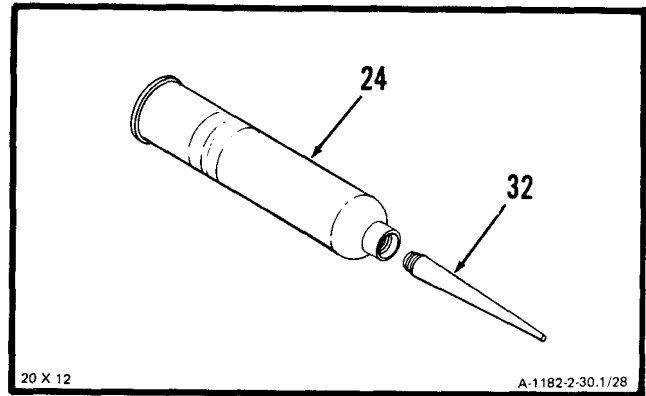


- (b) If Philip Fishman No. FN-250-12-5 needle, detail of application kit (T38.1) is used, slide cover (33) over needle (34).

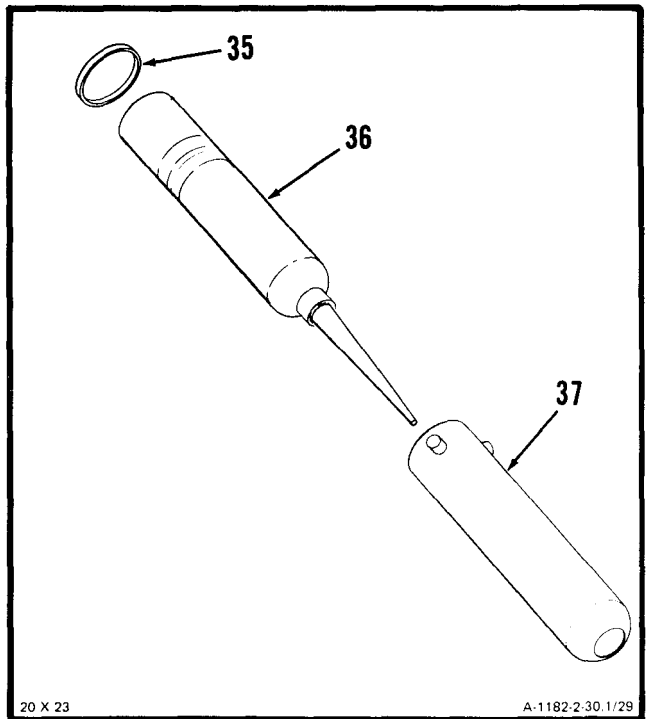


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- (16) **Install injection tip (32)** on cartridge (24).



- (17) Remove cap (35) from RTV cartridge assembly (36) and **install cartridge assembly (36)** in cartridge holder (37).

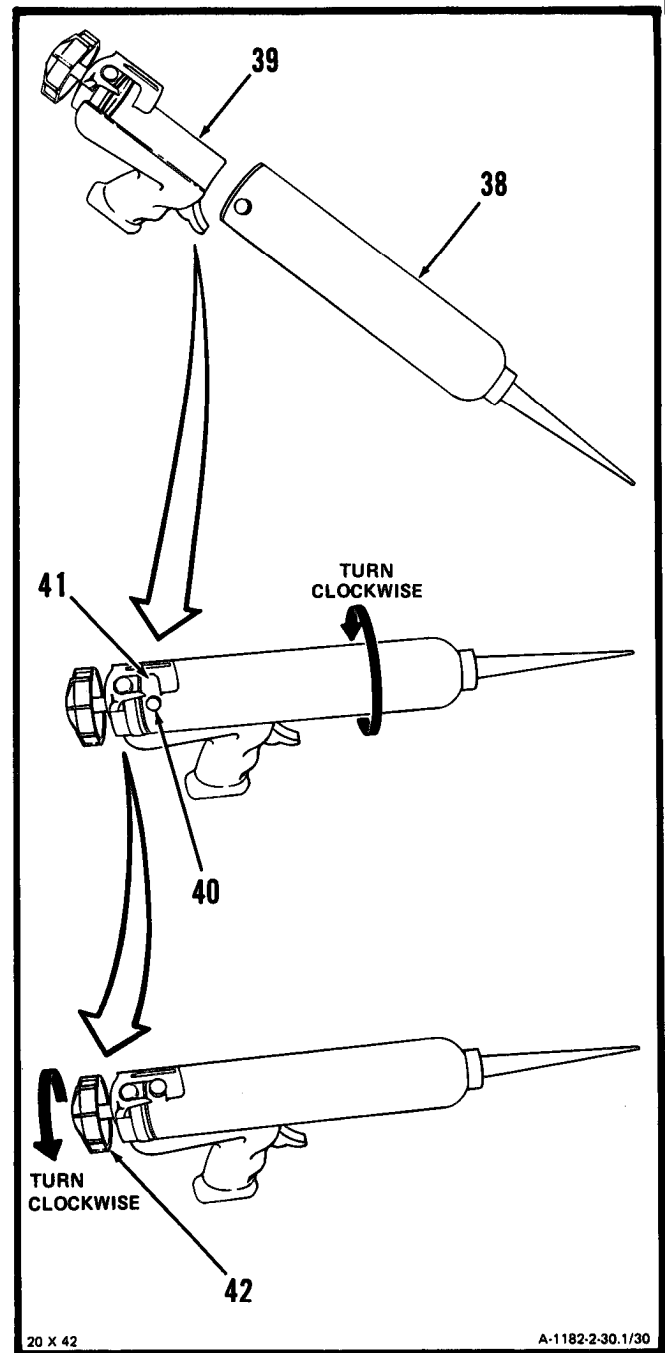


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## 2-30.1 INSTALL RTV IN FIRST STAGE STATOR VANE ASSEMBLY (Continued)

2-30.1

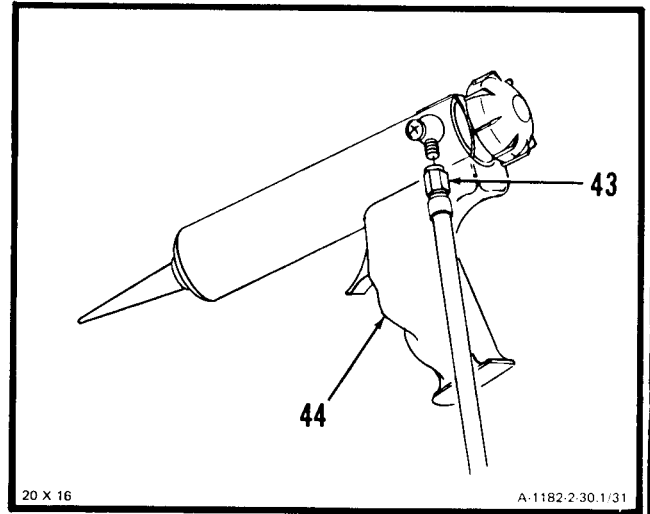
- (18) Install cartridge holder assembly (38) on injection gun (39). Turn cartridge holder assembly (28) clockwise until pin (40) engages slot (41) on injection gun (39).
- (19) Secure cartridge holder assembly (38) to injection gun (39) by turning knob (42) clockwise until it seats firmly.

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2-30.1 INSTALL RTV IN FIRST STAGE STATOR VANE ASSEMBLY (Continued)

2-30.1

**(20) Install shop air hose (43) on injection gun assembly (44).**



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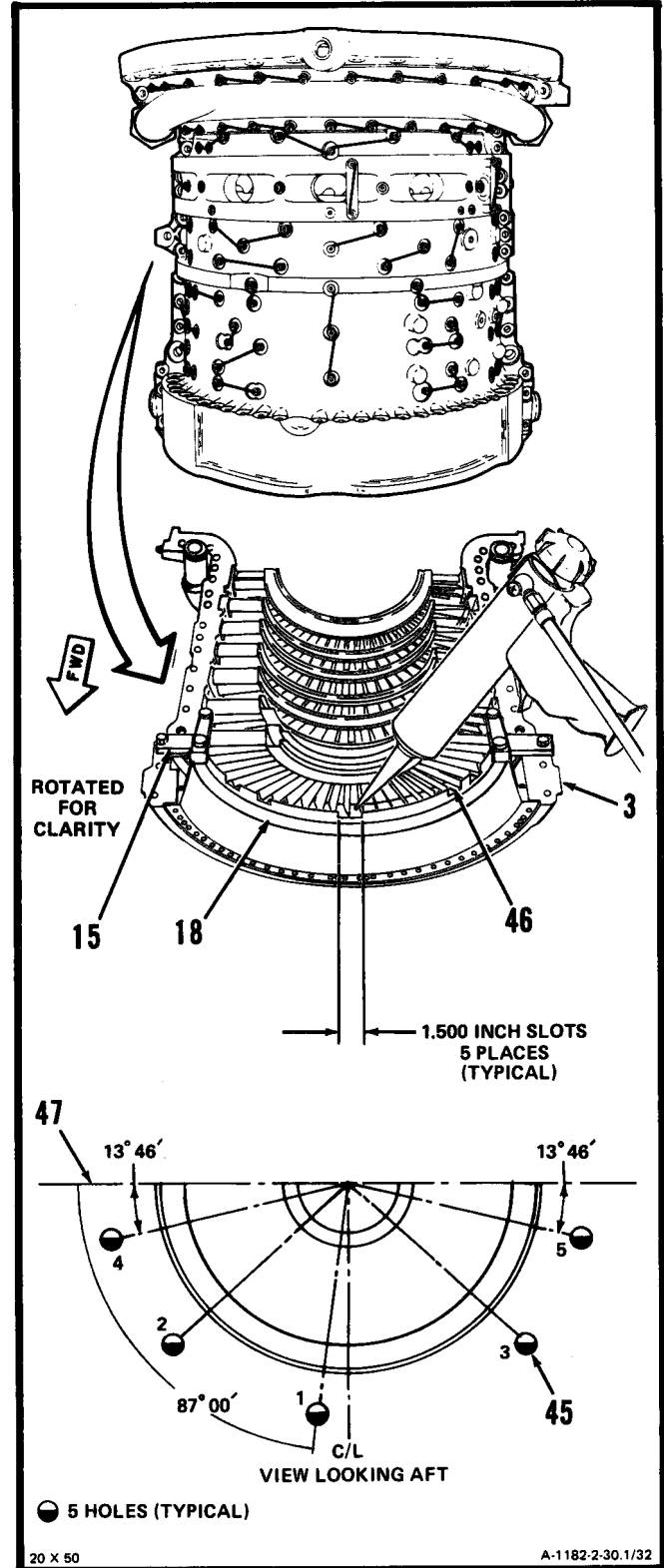
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(21) **Position compressor housing half (3)** facing up and level.

(22) Adjust air pressure regulator to 60 psi.  
**Inject RTV as follows:**

- (a) **Inject RTV through five holes (45)** in stator outer shroud (46) starting with center hole marked 1 and work in sequence alternately toward housing splitline (47).
- (b) Inject all five holes (45) until RTV begins to flow out through the five 1.500 inch slots in forward retainer (18).

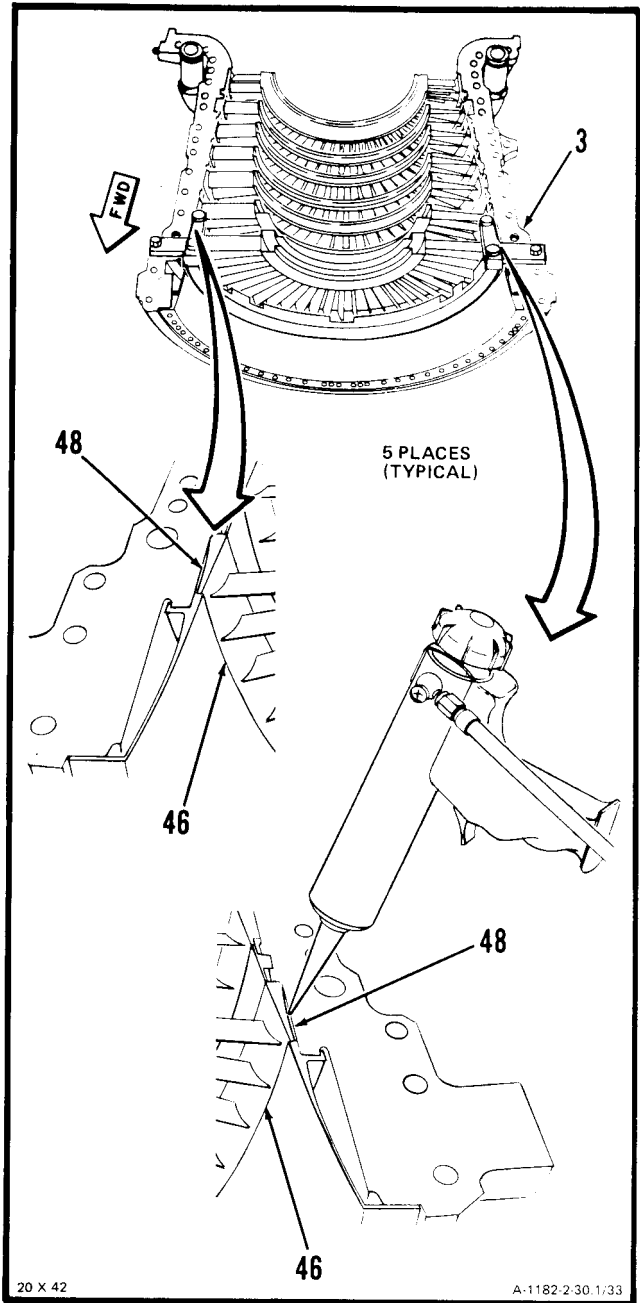


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(c) **Fill outer shroud (46) splitline cavities (48) with RTV.**

- (23) **Place compressor housing half (3) in oven** and cure for three hours at 225 degrees F. Ensure compressor housing is level. If suitable oven is not available, allow to cure at ambient temperature for 24 hours.
- (24) Remove compressor housing from oven and allow to cool for 1/2 hour.

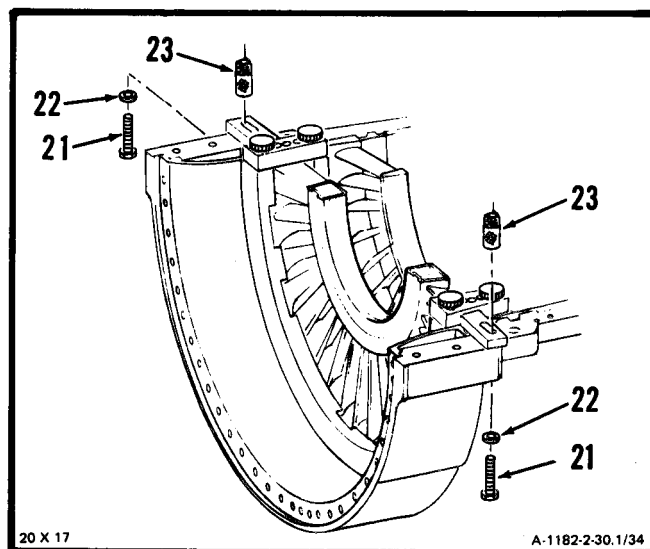


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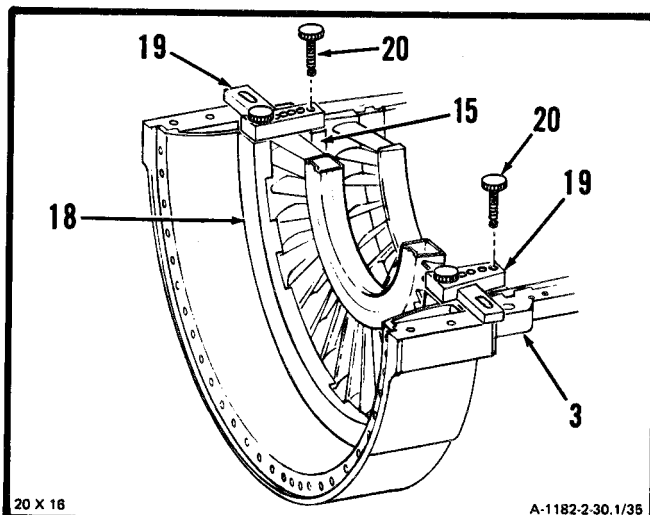
## 2-30.1 INSTALL RTV IN FIRST STAGE STATOR VANE ASSEMBLY (Continued) 2-30.1

(a) Remove first stage stator retainers, details of RTV masking kit (T36.1) as follows:

- 1 Remove two bolts (21), two washers (22), and two nuts (23).

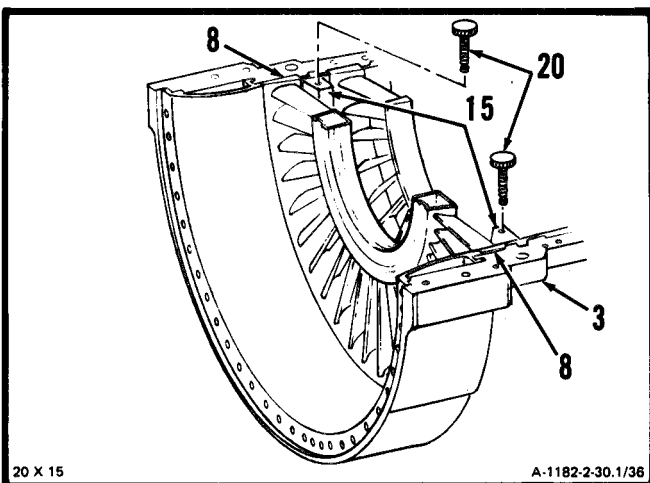


- 2 Remove two screws (20) from aft retainer (15). Remove two clamps (19) and forward retainer (18) from compressor housing half (3).



- 3 Install two screws (20) into aft retainer (15) and remove aft retainer (15) from compressor housing half (3).

Using tongue depressor, remove excess RTV from compressor housing half (3) and splitline cavities (48).

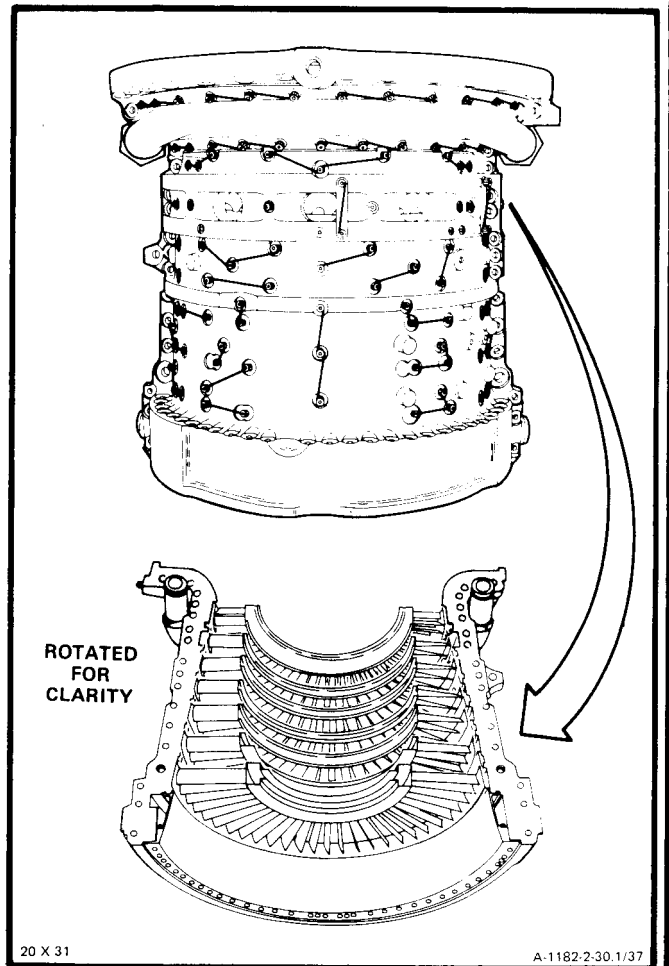


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2-30.1 INSTALL RTV IN FIRST STAGE STATOR VANE ASSEMBLY (Continued) 2-30.1

FOLLOW-ON MAINTENANCE:

Install Upper Compressor Housing (Task 2-24) or Lower Compressor Housing (Task 2-25).



END OF TASK

## Section VI. COMPRESSOR ROTOR BLADES - MAINTENANCE PROCEDURES

## 2-31 REMOVE COMPRESSOR ROTOR BLADES

2-31

**INITIAL SETUP****Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Drift Assembly (T19)  
Installing Tool (T20)  
Tweezers, NSN 5120-00-247-0868  
Twist Drill, NSN 5133-00-232-6398

**Materials:**

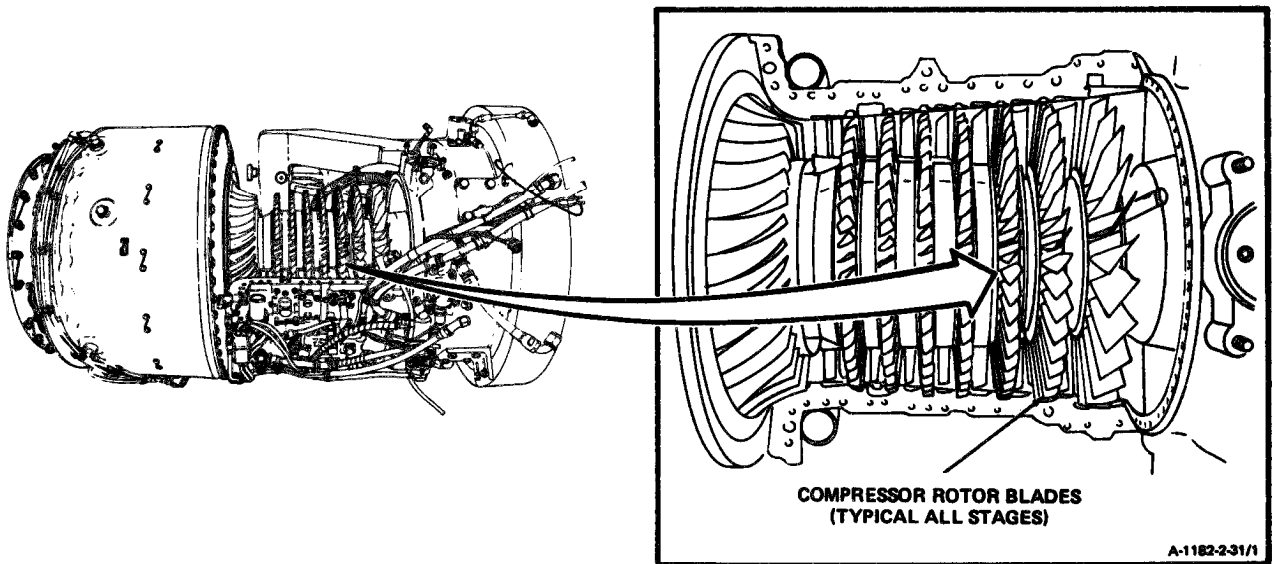
Masking Tape (E35)

**Personnel Required:**

68B10 Aircraft Powerplant Repairer

**Equipment Condition:**

Engine Oil System Drained (Task 1-75)  
Oil Cooler Assembly Removed (Task 8-5)  
In-Line Fuel Filter Assembly Removed  
(Task 6-36)  
Ignition Exciter Removed (Task 7-11)  
Oil Filler Assembly and Oil Filler Strainer  
Removed (Task 8-16)  
Starter Drive Assembly Removed (Task 5-12)  
Main Fuel Filter and Bracket Removed  
(Task 6-29)  
Interstage Air-Bleed Actuator Removed  
(Task 2-1).  
Compressor Bleed Band Removed (Task 2-9)  
Upper Compressor Housing Removed  
(Task 2-19)

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**NOTE**

Number of blades and stages in which they were replaced must be entered in engine record. Maximum of 50 blades may be replaced on compressor rotor between overhaul cycles.

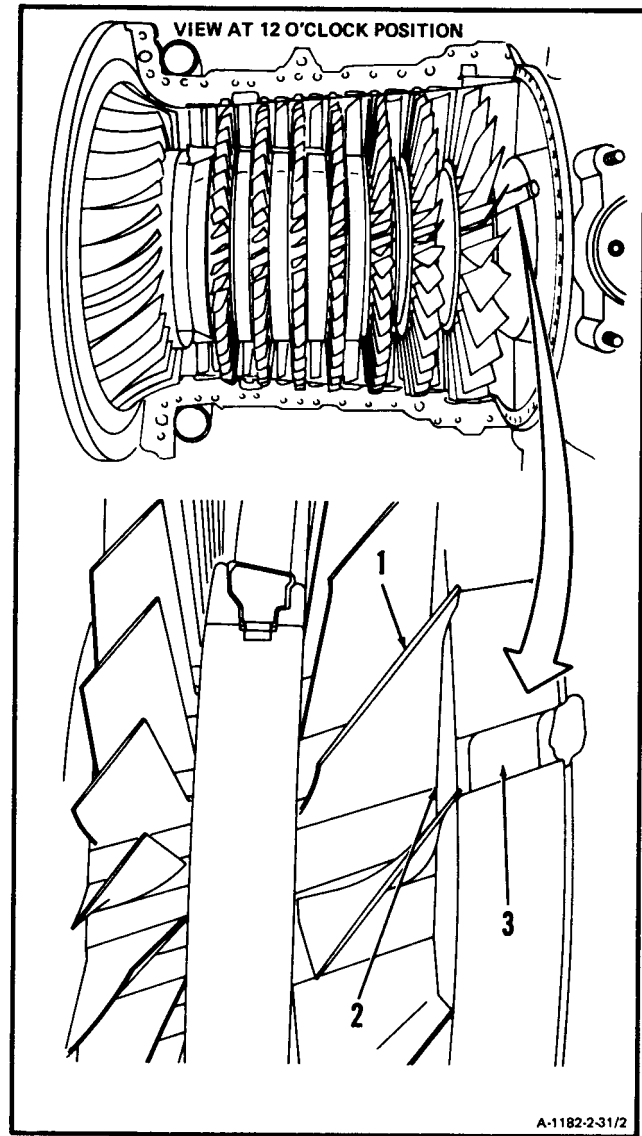
**NOTE**

First, second and third stage blades are removed forward. Removal of first stage blade is shown in step 1.

**CAUTION**

When removing compressor blades, be certain that blade, pieces of lockpin, and spring do not fall into lower compressor housing. These items could cause compressor rotor malfunction. If these items do fall into lower compressor housing, they must be removed.

1. Remove first stage blade (1) from disc as follows:
  - a. Align forward blade root (2) with slot (3) in bearing housing.



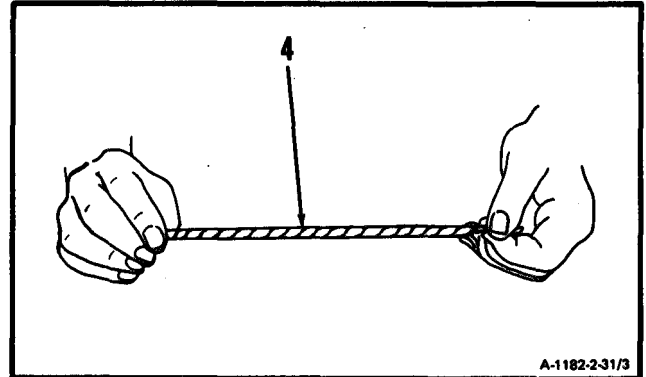
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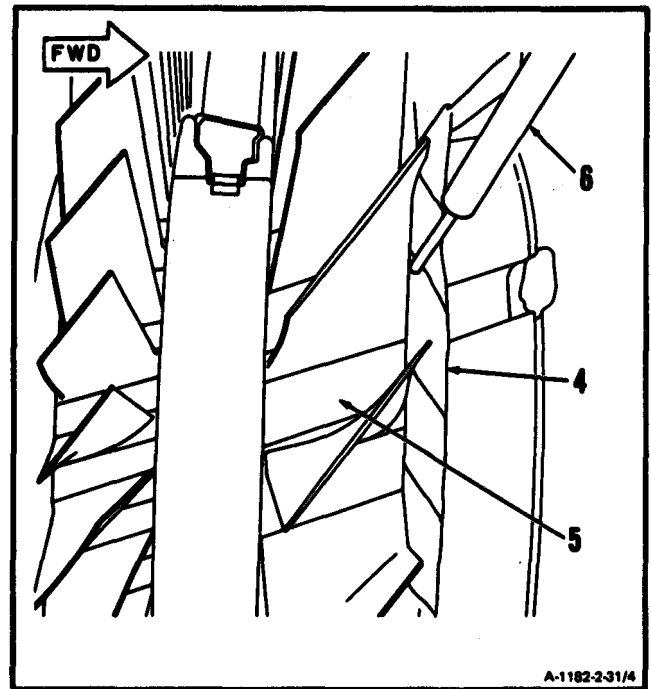
## 2-31 REMOVE COMPRESSOR ROTOR BLADES (Continued)

2-31

- b. Twist masking tape (E35) (4), sticky side out, as shown. Make the tape (4) 1/2-inch wide.



- c. Insert masking tape (E35) (4) into space forward of first stage disc (5). Use punch (6) for insertion.

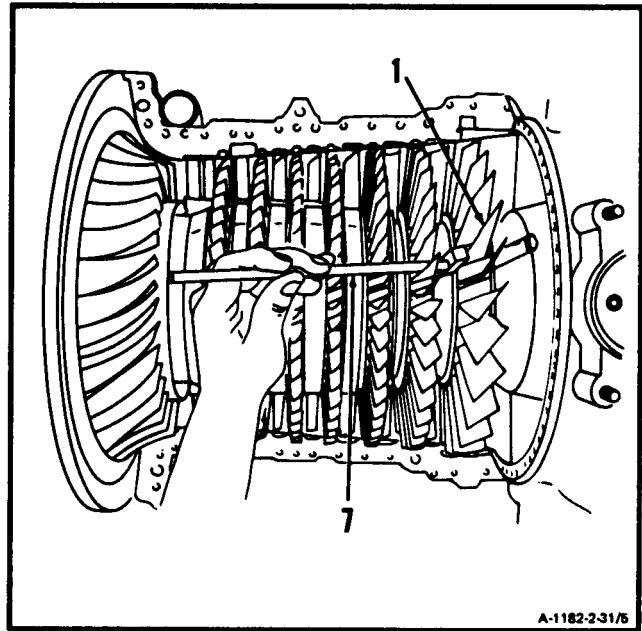


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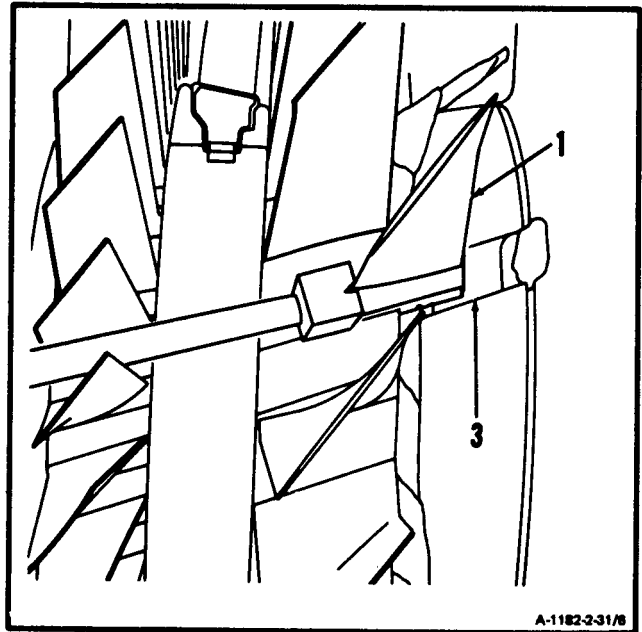
d. Position drift assembly (T19) (7) at rear of blade (1).

**CAUTION**

In following step, be sure that blade root is aligned with slot. Failure to comply will cause damage to No. 1 bearing housing.

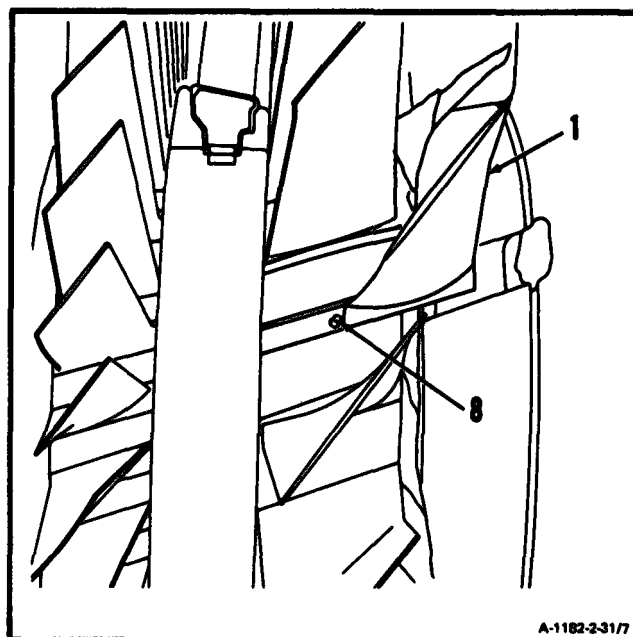


e. Tap blade (1) firmly forward into slot (3). Use ballpeen hammer.



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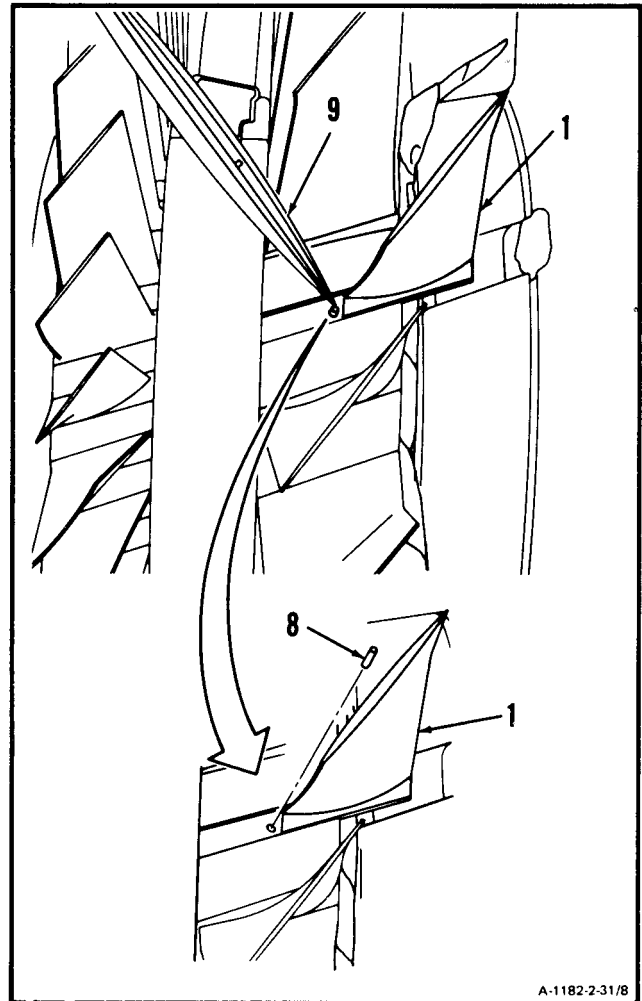
- f. Continue to tap blade (1) forward until lock-pin (8) is sheared.



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- g. Move blade (1) forward and **remove sheared lockpin (8)**. Use tweezers (9).

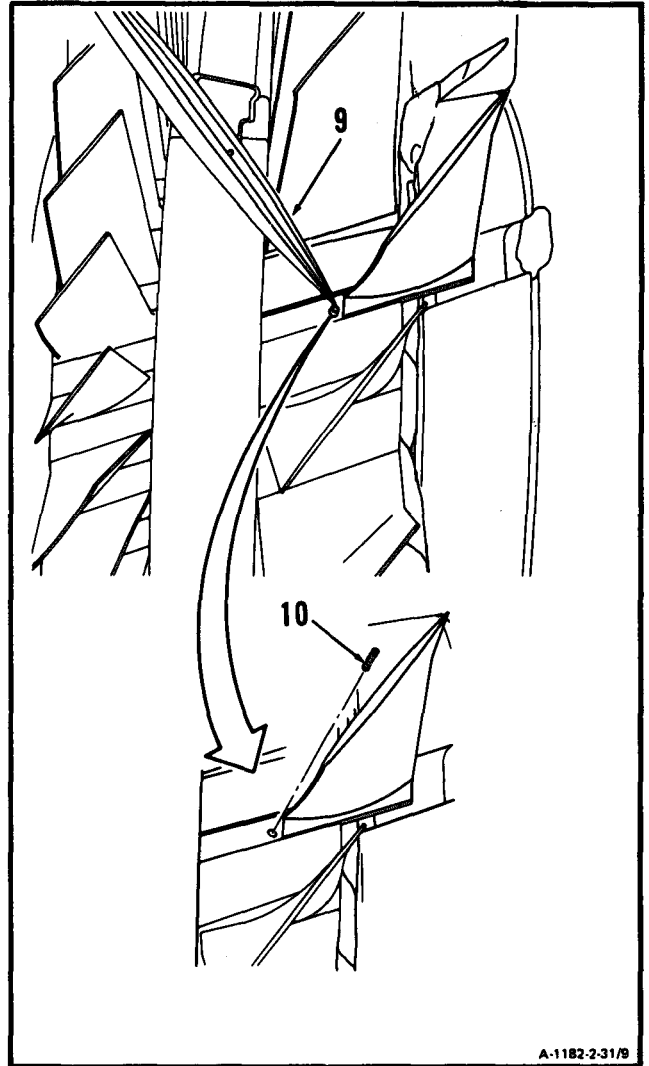


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## 2-31 REMOVE COMPRESSOR ROTOR BLADES (Continued)

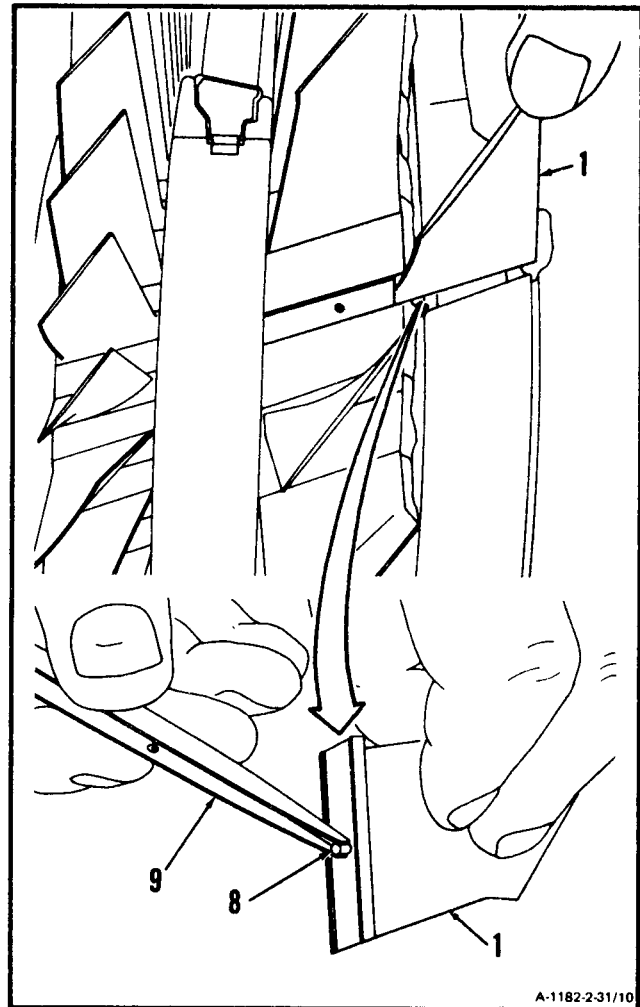
2-31

h. **Remove spring (10).** Use tweezers (9).



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- i. Remove first stage compressor blade (1).
- j. Remove sheared lockpin (8) from blade (1).  
Use tweezers (9).



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**CAUTION**

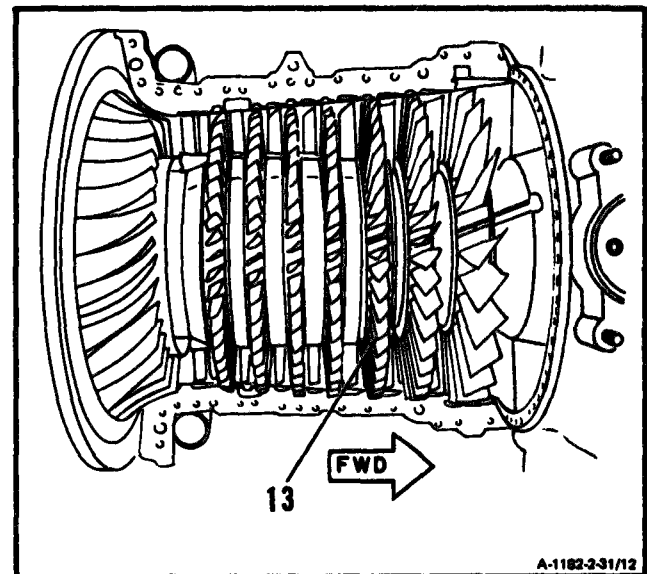
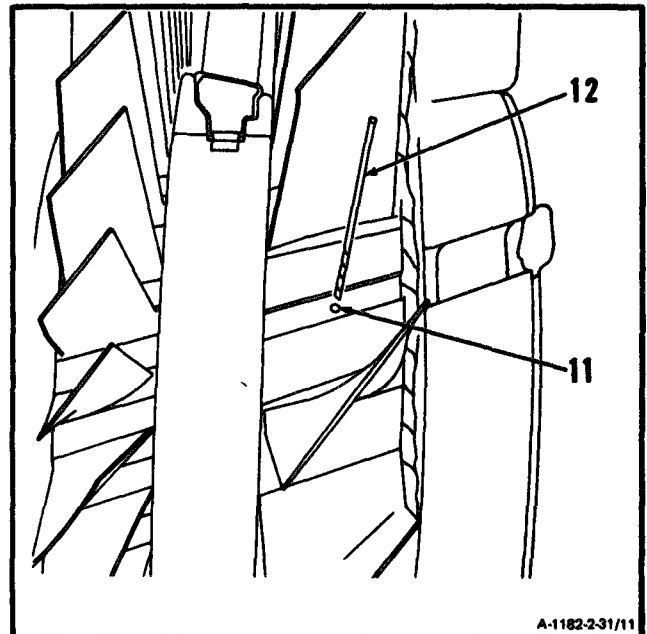
Do not remove any parent metal from inside lockpin hole. Removing material will enlarge hole. If this happens, compressor rotor assembly will have to be replaced.

- k. Clean out lockpin hole (11). Use twist drill (12). Remove tape.

**NOTE**

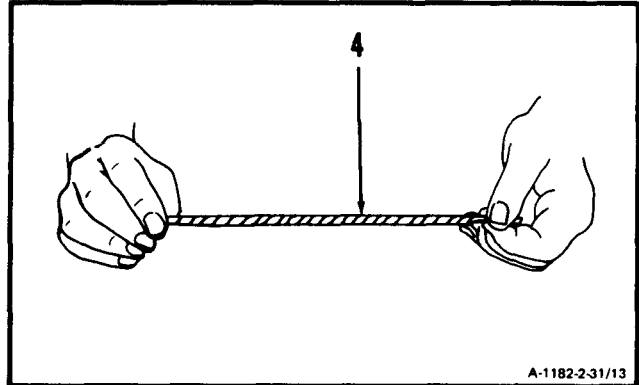
Second and third stage blades are removed forward. Removal of third stage blade is shown.

2. Remove third stage compressor blades (13) as follows:

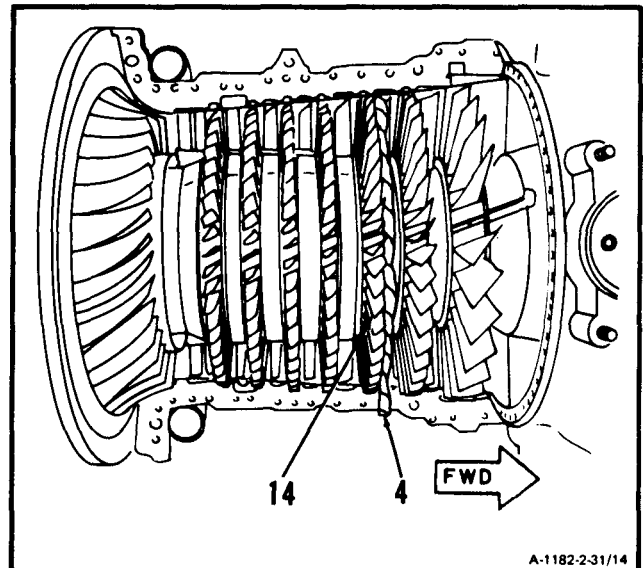


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a. Twist masking tape (E35) (4), sticky side out. Make the tape 1/2-inch wide.



b. Insert masking tape (E35) (4) into space forward of third stage disc (14).

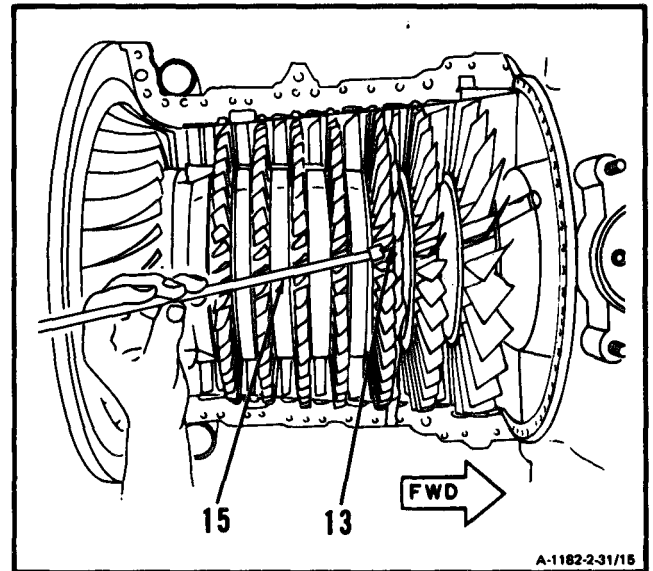


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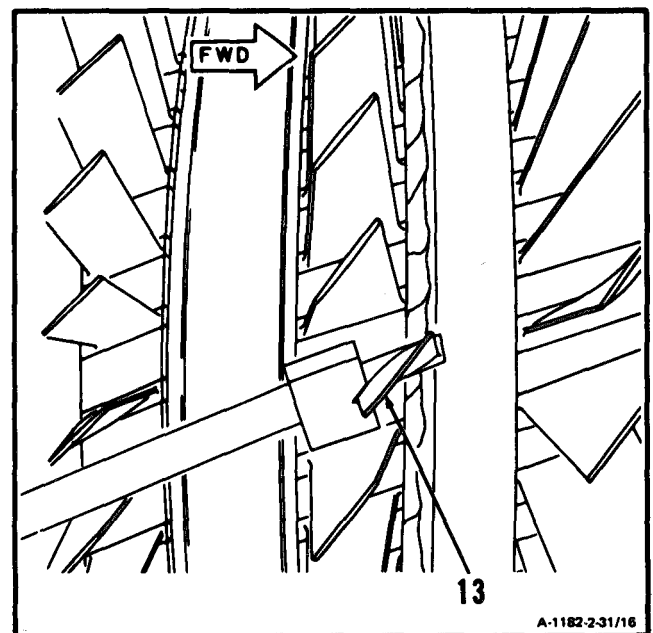
**NOTE**

Use drift assembly (T19) for second stage blades. Use installing tool (T20) for third stage blades.

- c. **Position installing tool (T20) (15) at rear of blade (13).**

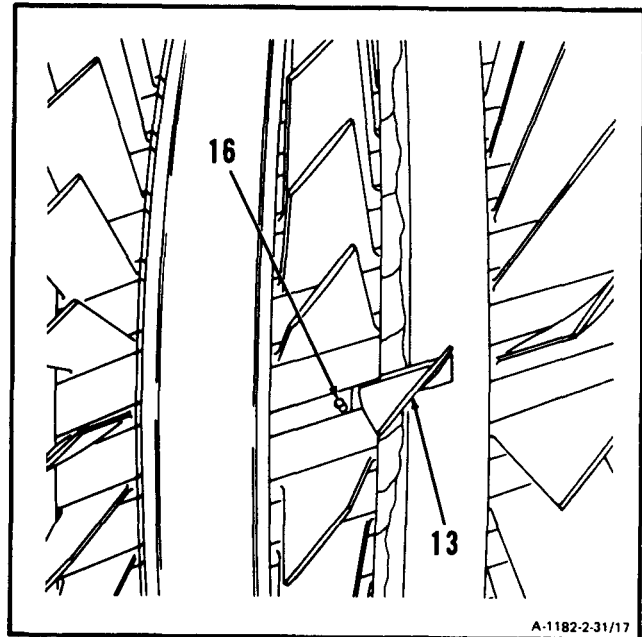


- d. **Tap blade (13) firmly forward.** Use ballpeen hammer.



**GO TO NEXT PAGE**

- e. Continue to tap blade (13) forward until lock-pin (16) is sheared.

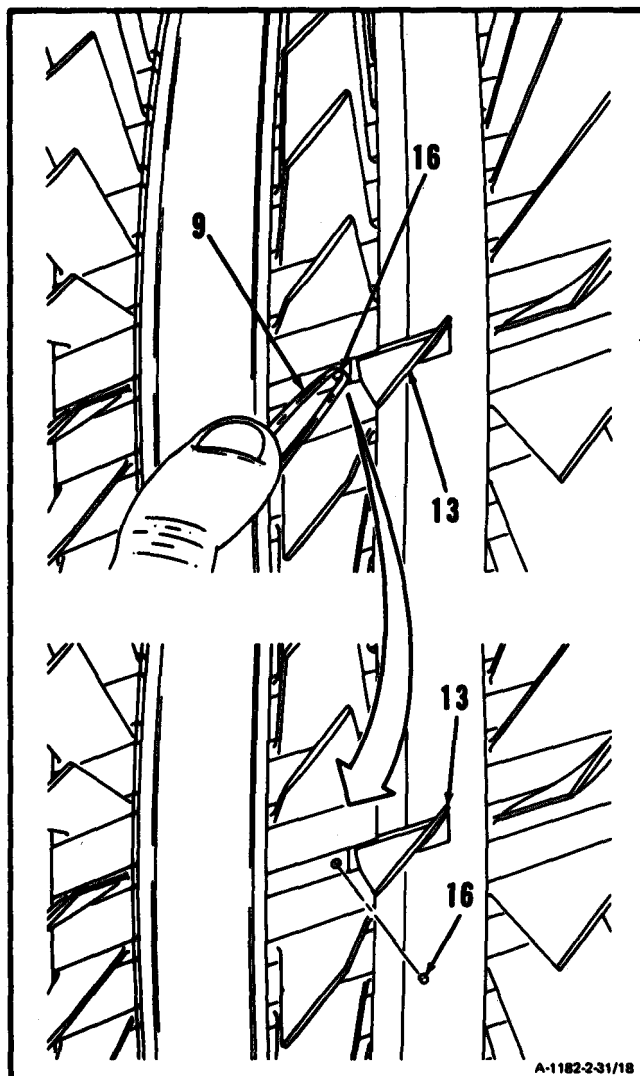


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## 2-31 REMOVE COMPRESSOR ROTOR BLADES (Continued)

2-31

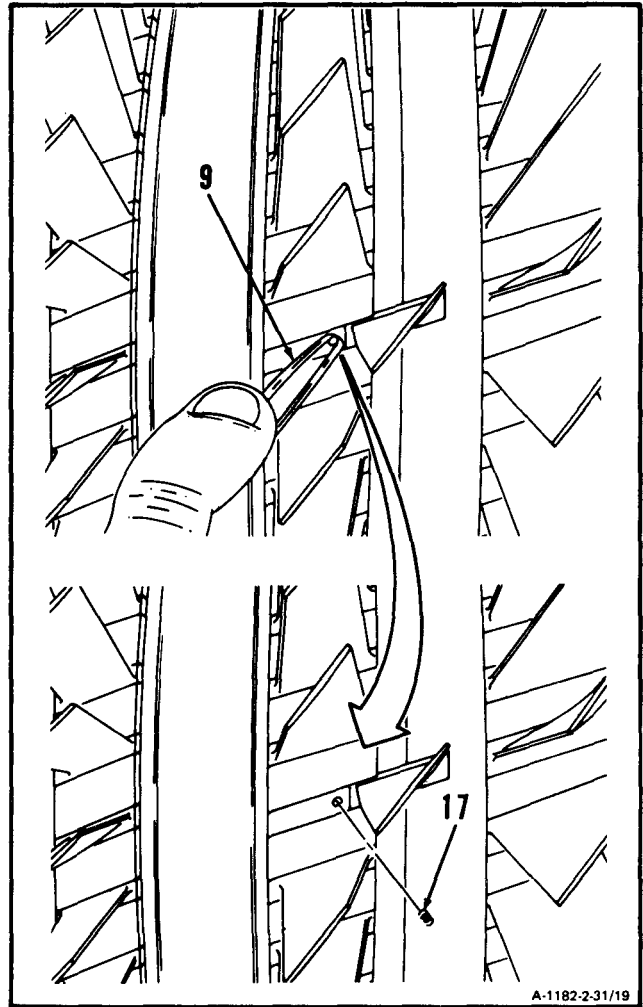
- f. Move blade (13) forward and **remove sheared lockpin (16)**. Use tweezers (9).



**GO TO NEXT PAGE**



g. **Remove spring (17),** Use tweezers (9).

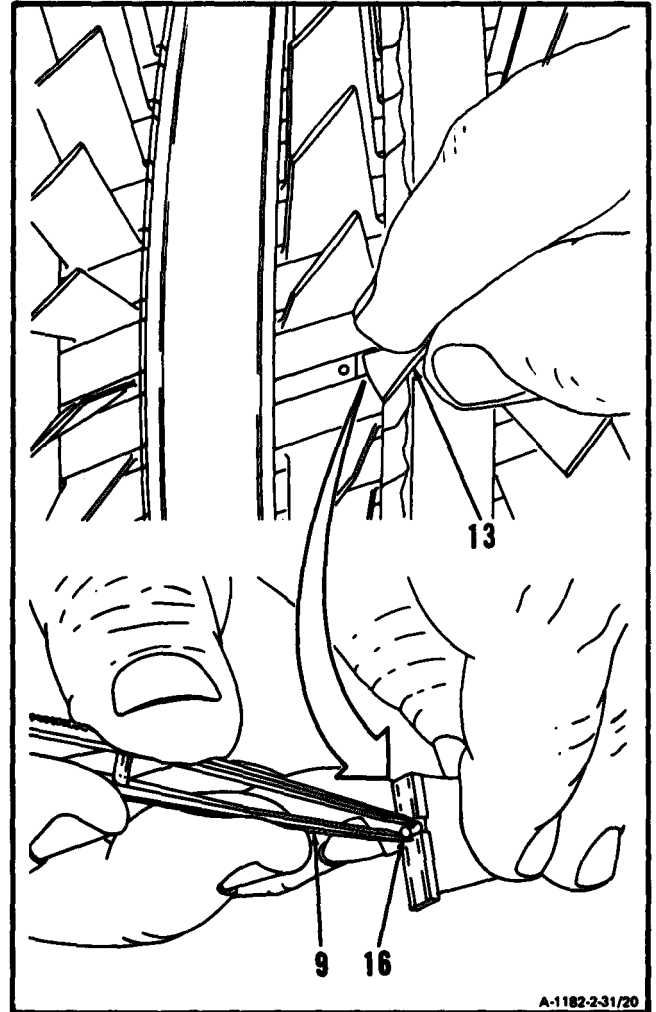


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## 2-31 REMOVE COMPRESSOR ROTOR BLADES (Continued)

2-31

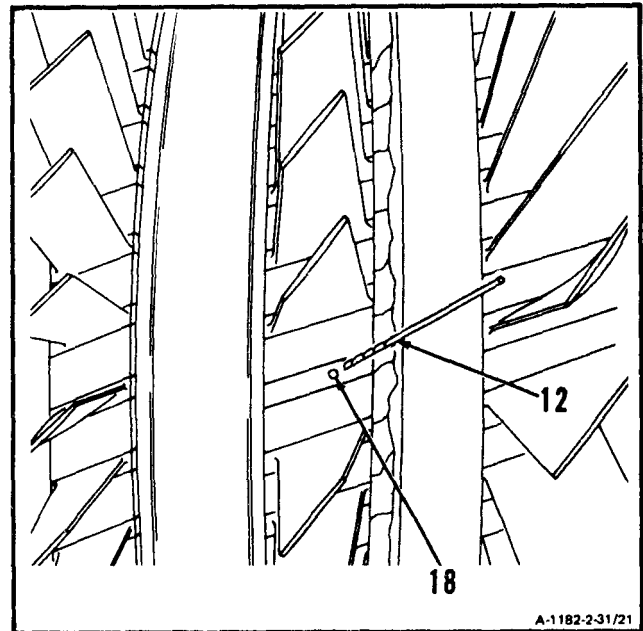
- h. Remove third stage compressor blade (13).
- i. Remove sheared lockpin (16) from blade.  
Use tweezers (9).

**GO TO NEXT PAGE**

**CAUTION**

Do not remove any parent metal from inside retaining pin hole. Removing material will enlarge hole. If this happens compressor rotor assembly will have to be replaced.

- j. Clean out lockpin hole (18). Use twist drill (12). Remove tape.

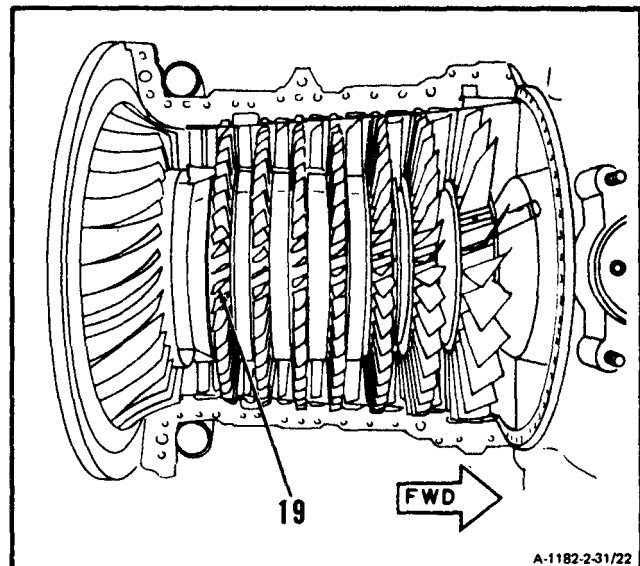
**NOTE**

Fourth through seventh stage blades shall be removed rearward.

3. Remove fourth through seventh stage compressor blades (19) as follows:

**NOTE**

Procedure to remove fourth through seventh stage blades is the same. Removal of seventh stage blades is shown.

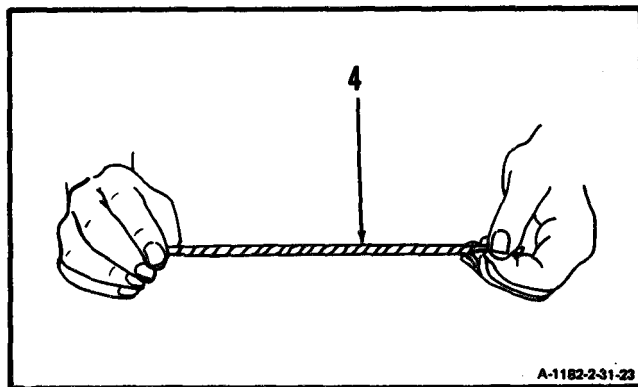


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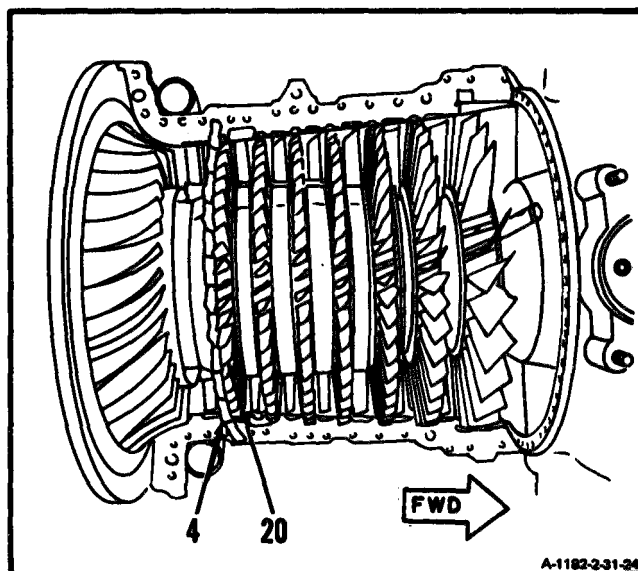
## 2-31 REMOVE COMPRESSOR ROTOR BLADES (Continued)

2-31

- a. Twist masking tape (E35) (4), sticky side out. Make the tape 1/2-inch wide.

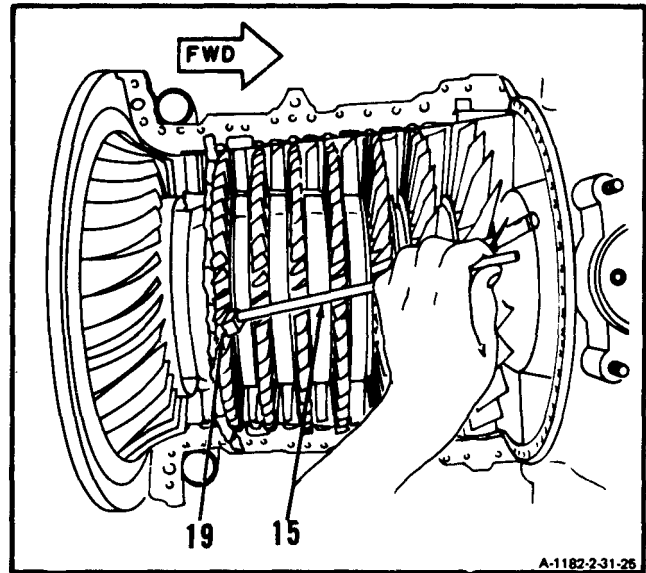


- b. Insert masking tape (E35) (4) into space rearward of seventh stage disc (20).

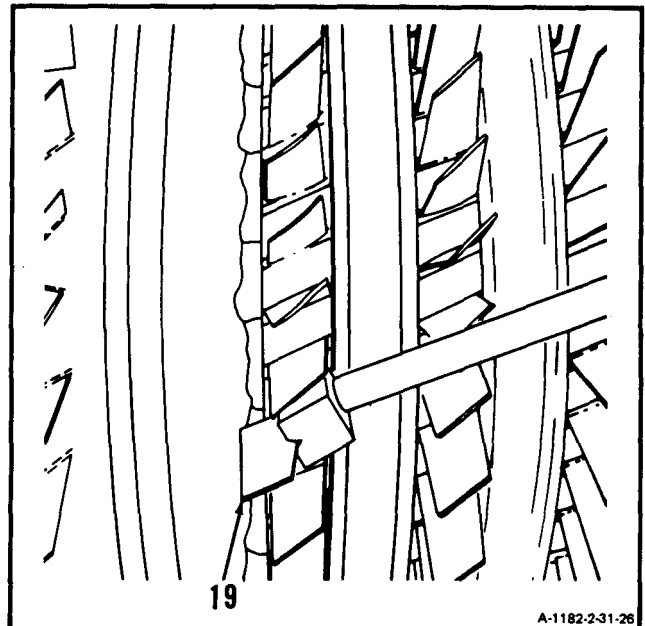


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- c. Position installing tool (T20) (15) forward of blade (19).



- d. Tap blade (19) firmly rearward. Use ballpeen hammer.

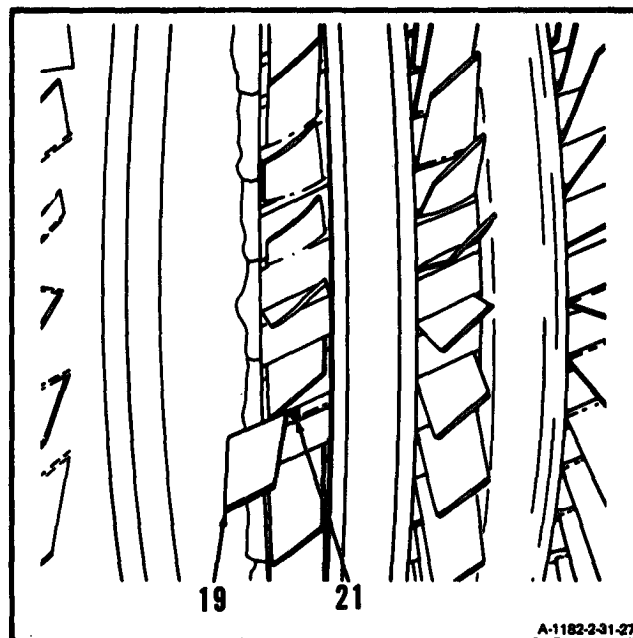


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## 2-31 REMOVE COMPRESSOR ROTOR BLADES (Continued)

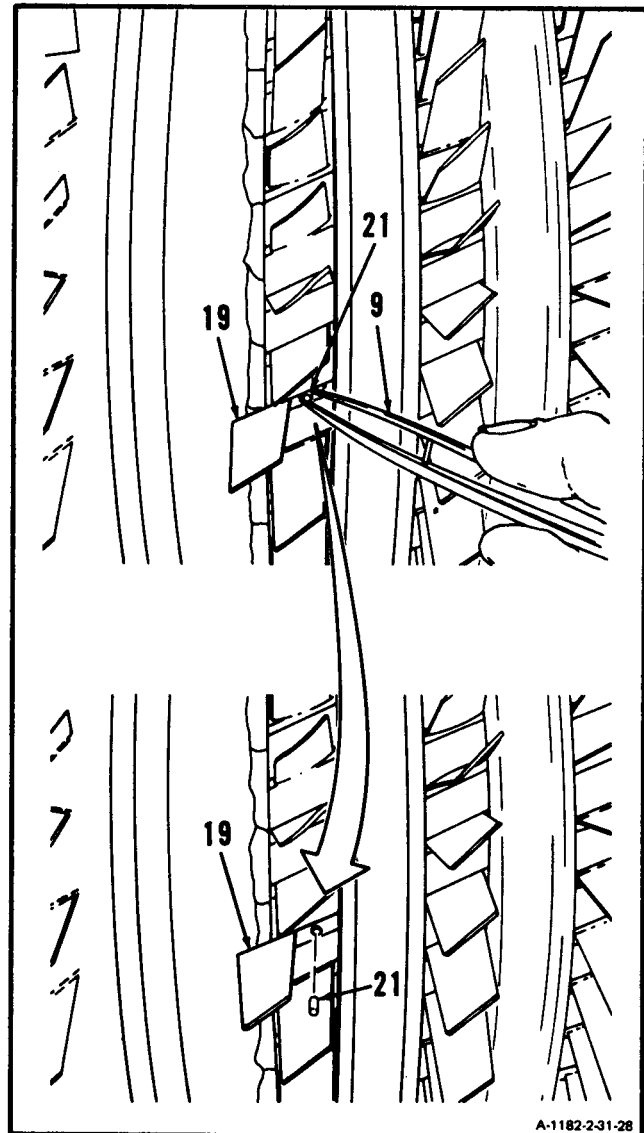
2-31

- e. Continue to tap blade (19) rearward until lockpin (21) is sheared.



**GO TO NEXT PAGE**

- f. Move blade (19) rearward and **remove sheared lockpin (21)**. Use tweezers (9).



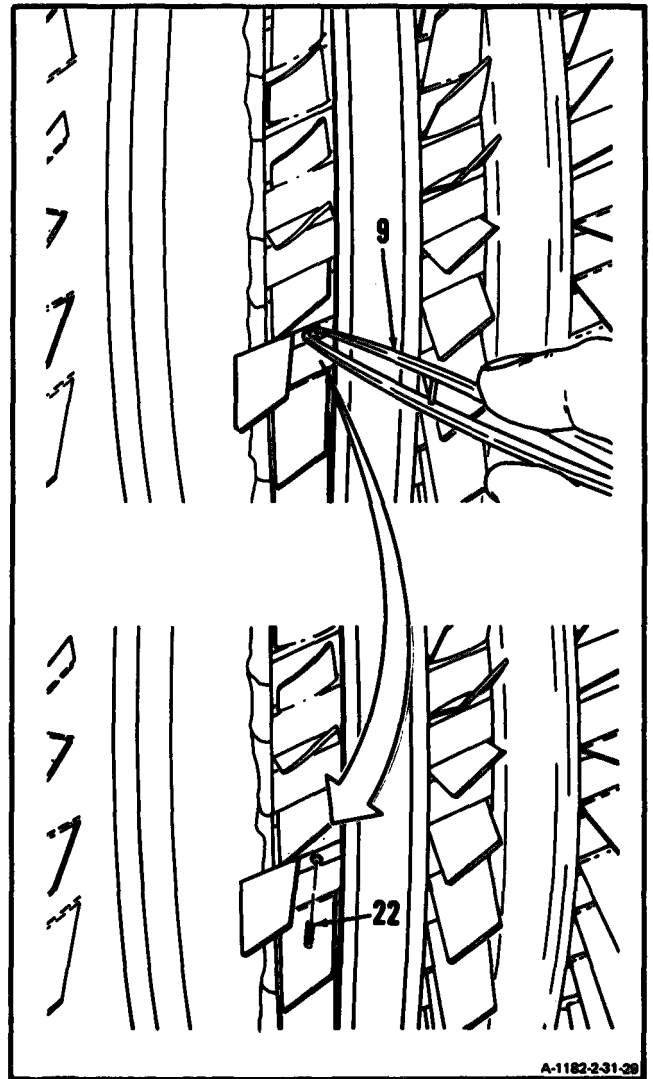
A-1182-2-31-28

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## 2-31 REMOVE COMPRESSOR ROTOR BLADES (Continued)

2-31

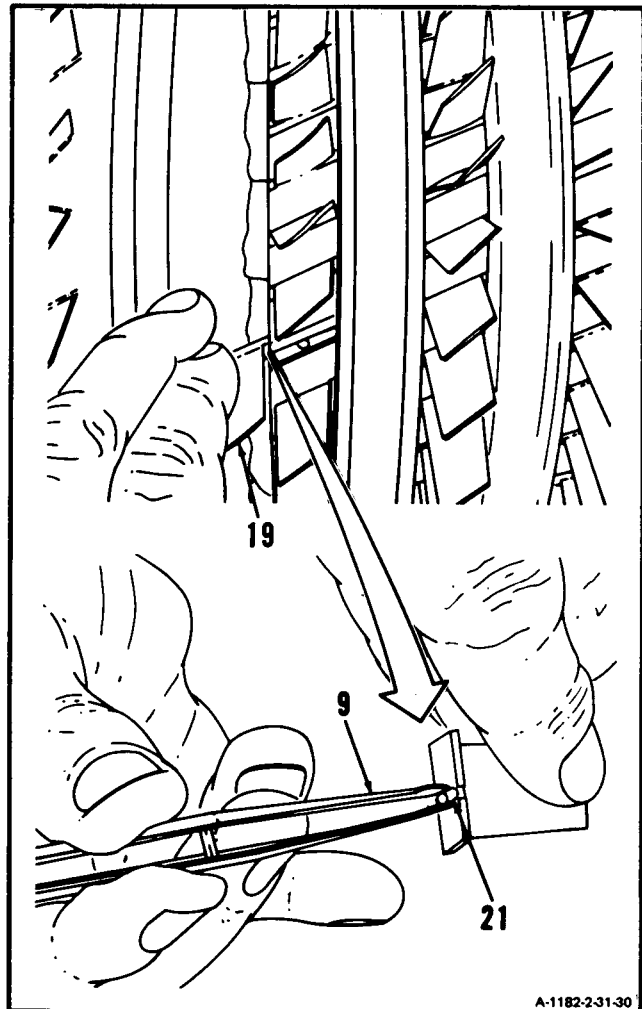
g. Remove spring (22). Use tweezers (9).



**GO TO NEXT PAGE**



- h. Remove seventh stage compressor blade (19).
- i. Remove sheared lockpin (21) from blade. Use tweezers (9).



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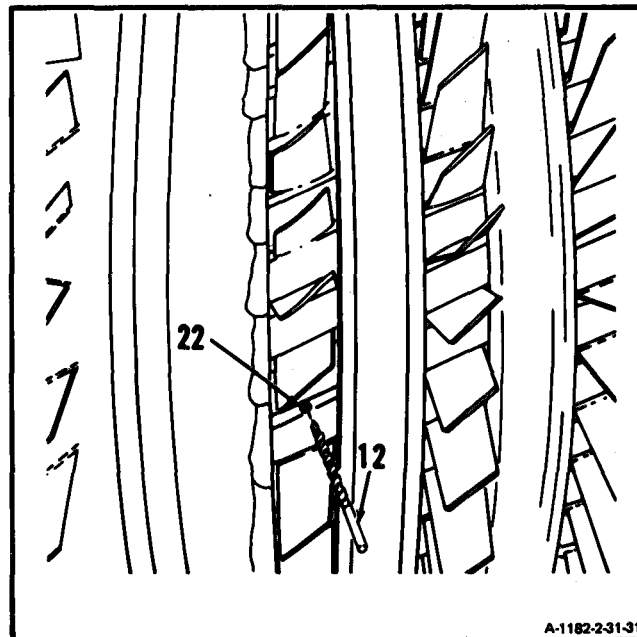
## 2-31 REMOVE COMPRESSOR ROTOR BLADES (Continued)

2-31

**CAUTION**

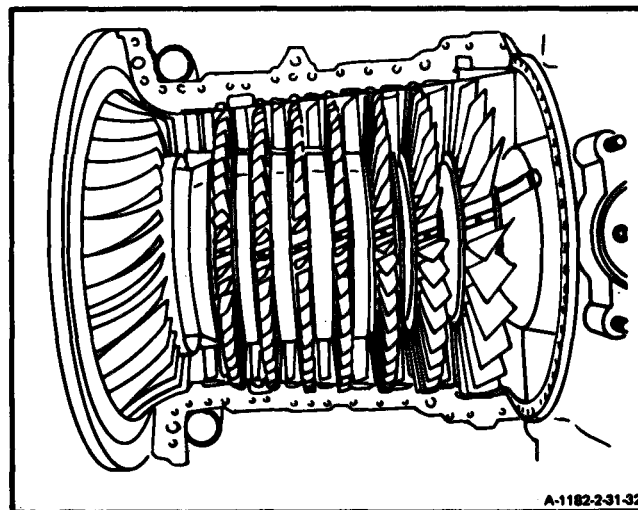
Do not remove any parent metal from inside retaining pin hole. Removing material will enlarge hole. If this happens replace compressor rotor assembly.

- j. Clean out lockpin hole (22). Use twist drill (12). Remove tape.



## FOLLOW-ON MAINTENANCE:

None



END OF TASK

**INITIAL SETUP****Applicable Configurations:**

All

**Tools:**

None

**Materials:**

Dry Cleaning Solvent (E17)

Gloves (E20)

Lint-Free Cloth (E26)

**Personnel Required:**

68B10 Aircraft Powerplant Repairer

**Equipment Condition:**

Engine Oil System Drained (Task 1-75)

Oil Cooler Assembly Removed (Task 8-5)

In-Line Fuel Filter Assembly Removed

(Task 6-36)

Ignition Exciter Removed (Task 7-11)

Oil Filler Assembly and Oil Filler Strainer  
Removed (Task 8-16)

Starter Drive Assembly Removed (Task 5-12)

Main Fuel Filter and Bracket Removed  
(Task 6-29)Interstate Air-Bleed Actuator Removed  
(Task 2-1)

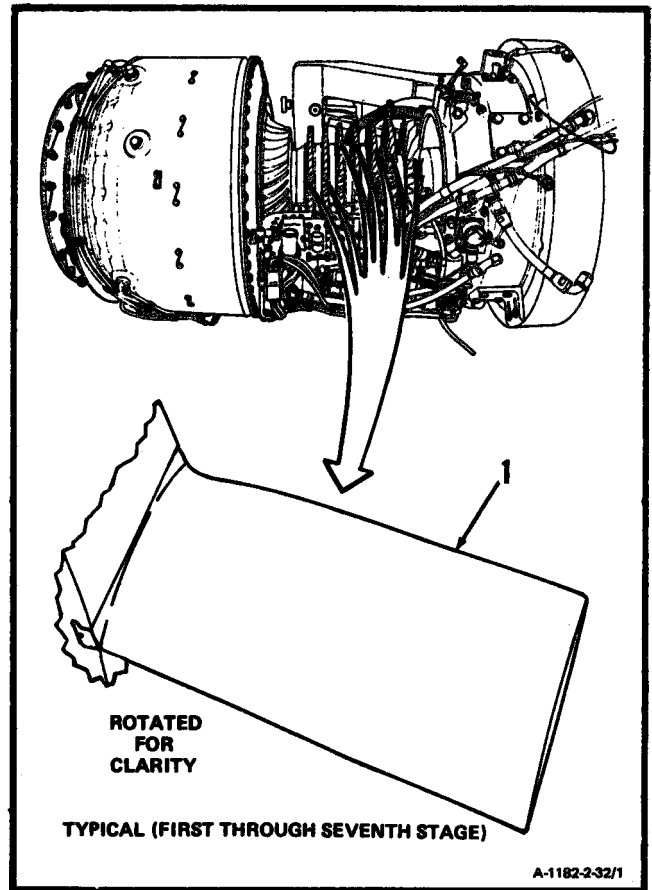
Compressor Bleed Band Removed (Task 2-9)

Upper Compressor Housing Removed  
(Task 2-19)**General Safety Instructions:****WARNING**

Dry cleaning solvent (E17) is flammable and toxic. It can irritate skin and cause burns. Use only in well-ventilated area, away from heat and open flame. In case of contact, immediately flush skin or eyes with water for at least 15 minutes. Get medical attention for eyes.

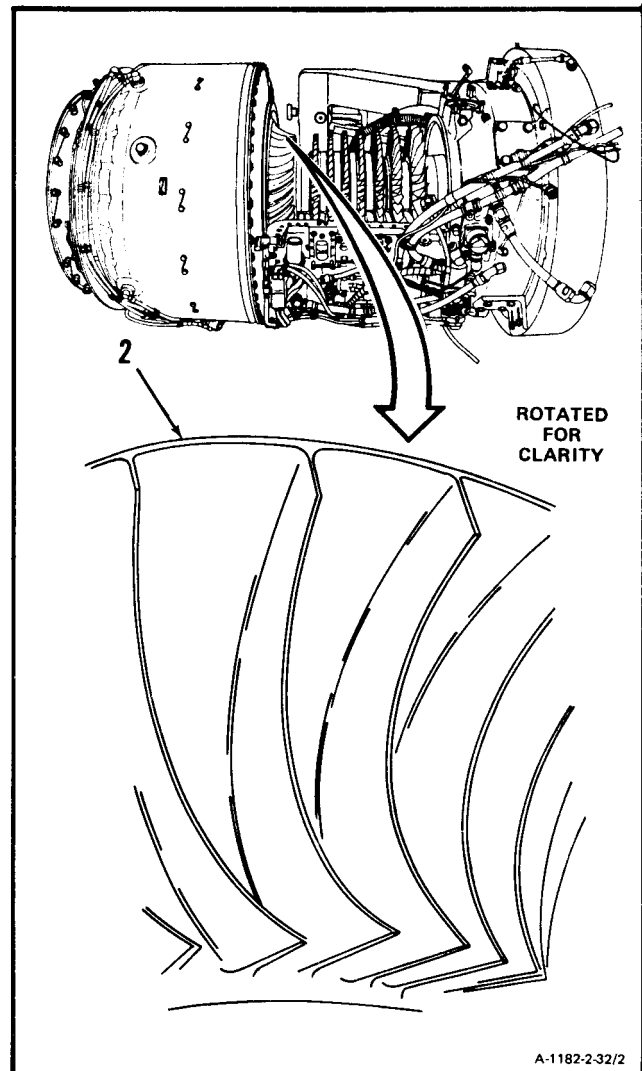
**GO TO NEXT PAGE**

1. Wear gloves (E20) and **clean compressor rotor blades (1)**. Use lint-free cloth (E26) dampened in dry cleaning solvent (E17).
2. **Wipe dry**. Use clean, dry lint-free cloth (E26).



**GO TO NEXT PAGE**

3. Wear gloves (E20). **Clean centrifugal impeller (2).** Use lint-free cloth (E26) dampened in dry cleaning solvent (E17).
4. **Wipe dry.** Use clean, dry lint-free cloth (E26).

**FOLLOW-ON MAINTENANCE:**

Inspect Compressor Rotor Blades (Task 2-33).

**END OF TASK**

2-33 INSPECT COMPRESSOR ROTOR BLADES

2-33

INITIAL SETUP

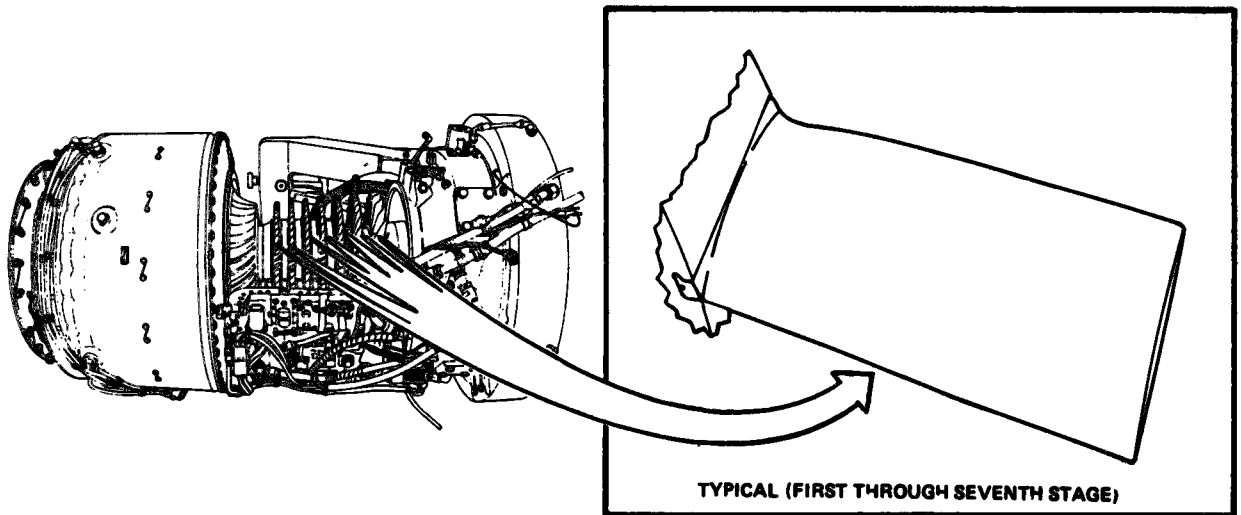
**Materials:**  
None

**Applicable Configurations:**  
All

**Personnel Required:**  
68B30 Aircraft Powerplant Inspector

**Tools:**  
Technical Inspection Tool Kit,  
NSN 5180-00-323-5114

**Equipment Condition:**  
Upper Compressor Housing Removed (Task 2-19)

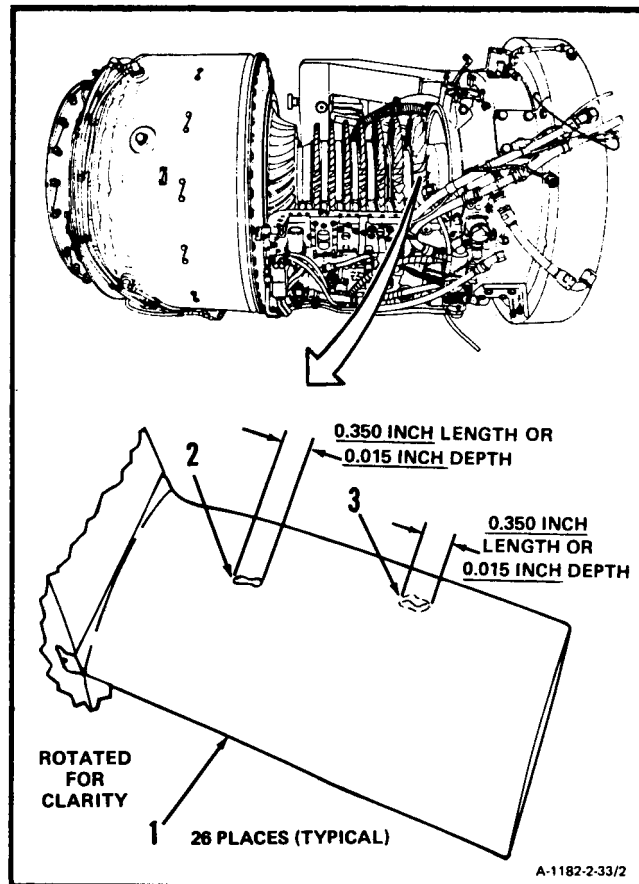


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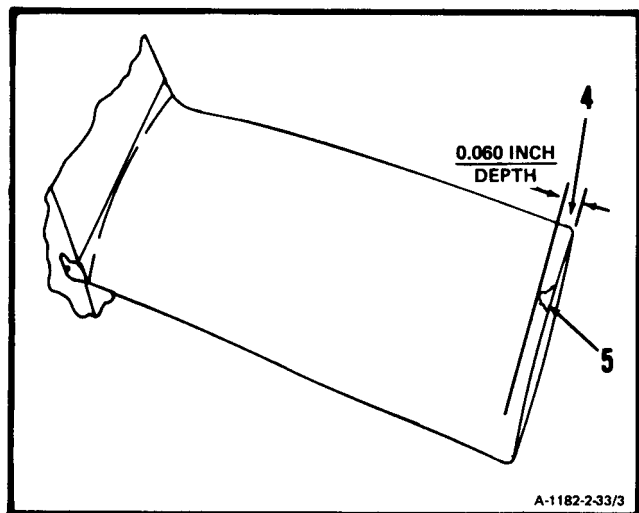
1. **Inspect first stage compressor rotor blades (1)** as follows:

- a. There shall be no cracks.
- b. There shall be no bends or distortion.
- c. There shall be no corrosion pitting.
- d. There shall be no surface nicks (2) or dents (3) greater than:
  - (1) 0.015 inch in depth.
  - (2) 0.350 inch in length.



e. **Inspect blade tip (4)** as follows:

- (1) There shall be no nicks or dents (5) deeper than 0.060 inch.

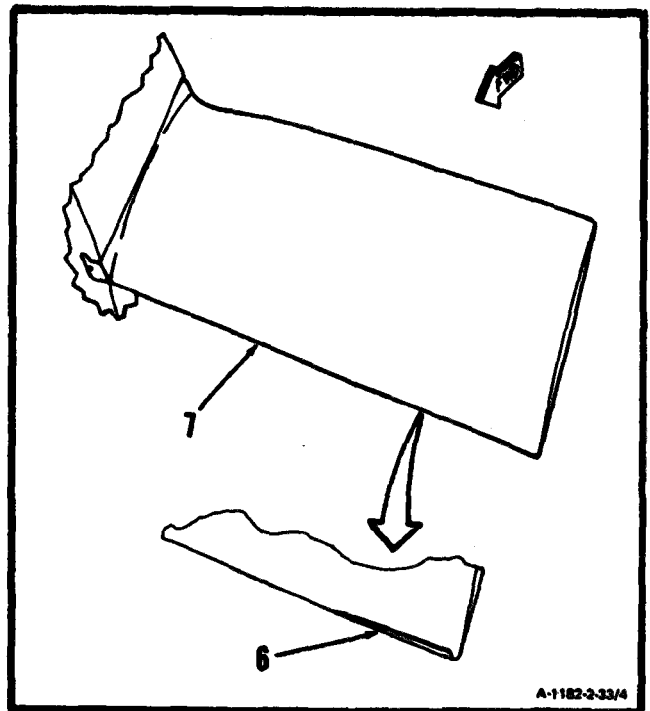


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2-33 INSPECT COMPRESSOR ROTOR BLADES (Continued)

2-33

- f. Inspect for leading edge material rollover resulting from erosion. Minor rollover is allowed if within repairable limits. Refer to Task 2-34. Leading edge rollover can be detected by running a fingernail along airfoil on convex side until edge is contacted.

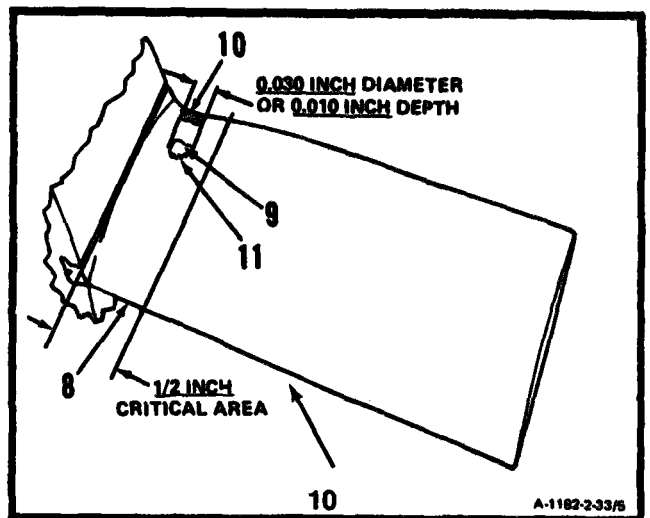


- g. Inspect critical area (8) as follows:

**NOTE**

No repair is allowed within the critical area (8).

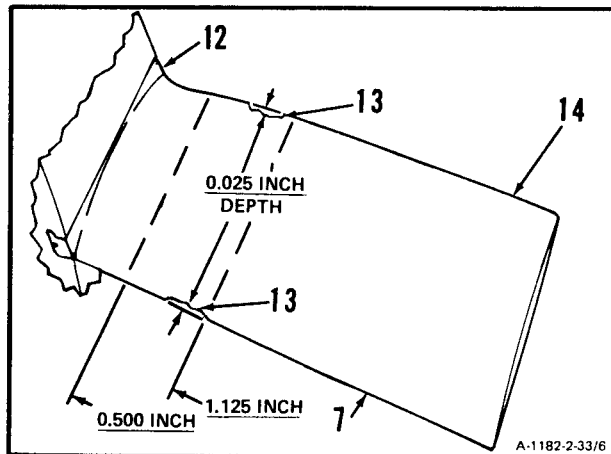
- (1) There shall be no nicks.
- (2) Smooth dents (9) are permitted except on leading and trailing edges provided they do not exceed 0.030 inch in diameter and/or 0.010 inch in depth. These dents (9) must not have sharp edges (11). Minor sand and dust peening (10) is acceptable on leading edge.



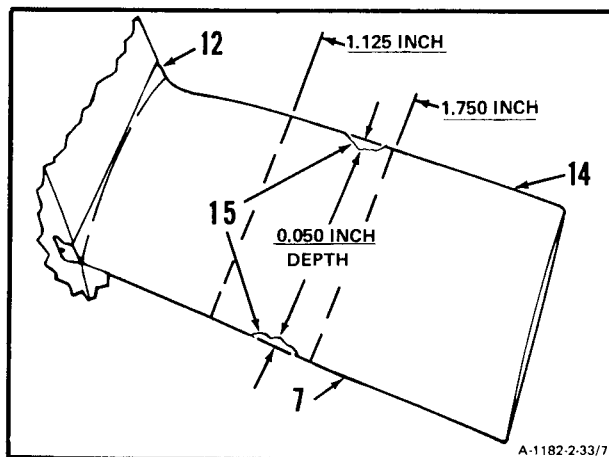
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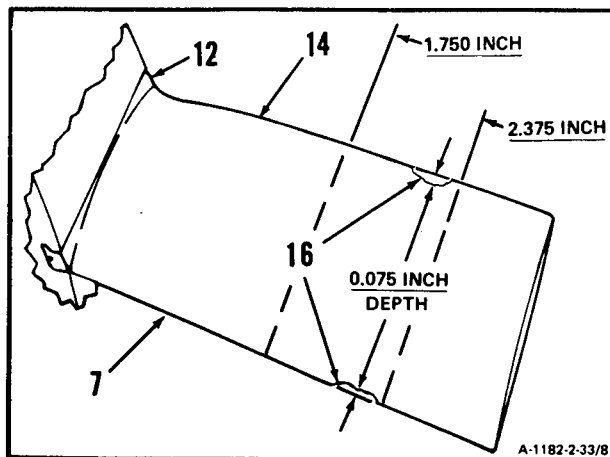
h. Inspect area between 0.500 inch and 1.125 inches above blade root (12). There shall be no nicks or dents (13) in edges (7 and 14) deeper than 0.025 inch.



i. Inspect area between 1.125 inches and 1.750 inches above blade root (12). There shall be no nicks or dents (15) in edges (7 and 14) deeper than 0.050 inch.

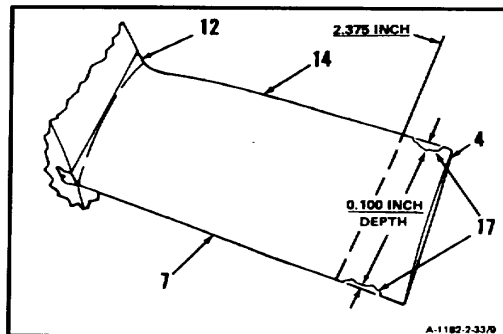


j. Inspect area between 1.750 inches and 2.375 inches above blade root (12). There shall be no nicks or dents (16) in edges (7 and 14) deeper than 0.075 inch.

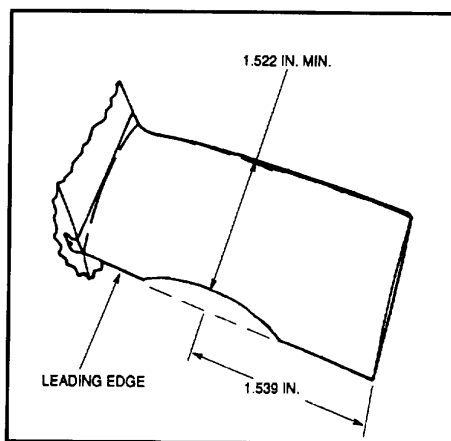


**2-33 INSPECT COMPRESSOR ROTOR BLADES (Continued)2-33**

- k. Inspect area between 2.375 inches above blade root (12) and blade tip (4). There shall be no nicks or dents (17) in edges (7 and 14) deeper than 0.100 inch.



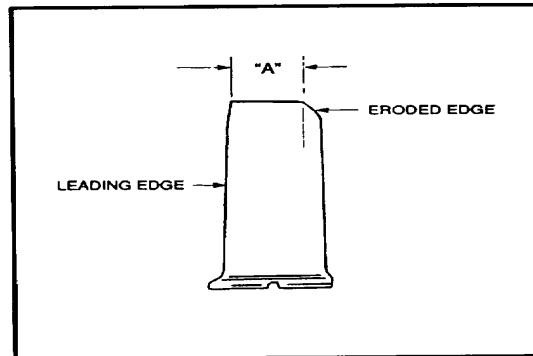
- l. Inspect leading edge of first stage compressor blades for erosion. Erosion shall be within limits shown.



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2-33 INSPECT COMPRESSOR ROTOR BLADES (Continued)2-33

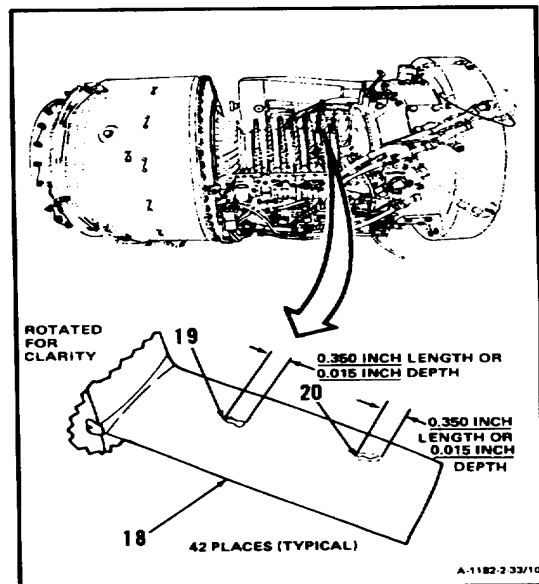
- m. Inspect tip of 2nd through 7th stage compressor blades for erosion. Using a 6 inch scale measure dimension "A" at blade tip. Blades with dimension "A" less than shown below shall be replaced.



COMPRESSOR STAGEDIA "A" (INCHES)

2	0.919
3	0.704
4 THROUGH 7	0.562

- 2. Inspect second stage compressor rotor blades (18) as follows:
  - a. There shall be no cracks.
  - b. There shall be no bends or distortion.
  - c. There shall be no corrosion pitting.
  - d. There shall be no surface nicks (19) or dents (20) greater than:
    - (1) 0.015 inch in depth.
    - (2) 0.350 inch in length.

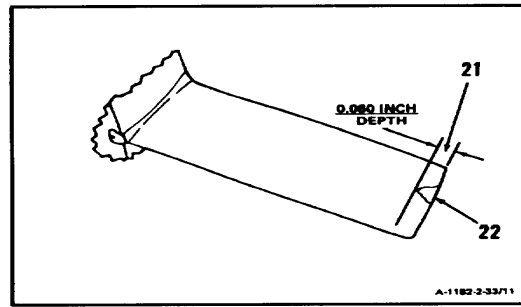


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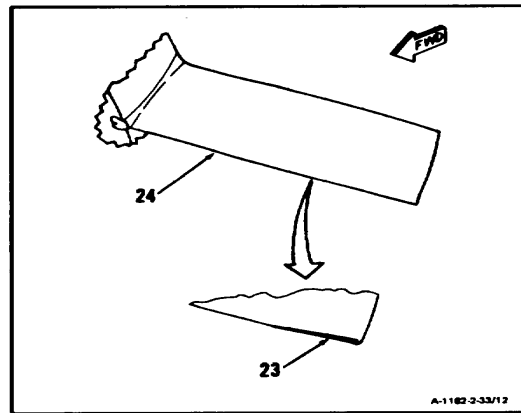
**2-33 INSPECT COMPRESSOR ROTOR BLADES (Continued)**

e. Inspect blade tip (21) as follows:

(1) There shall be no nicks or dents (22) deeper than 0.060 inch.



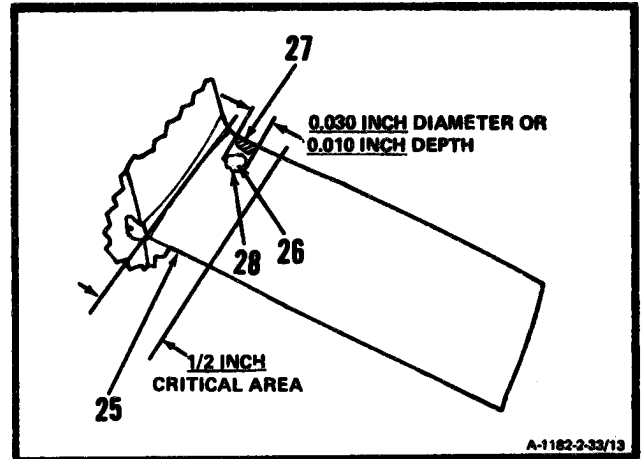
f. There shall be no material rollover (23) on forward surface at blade leading edge (24). Use fingernail to detect rollover.



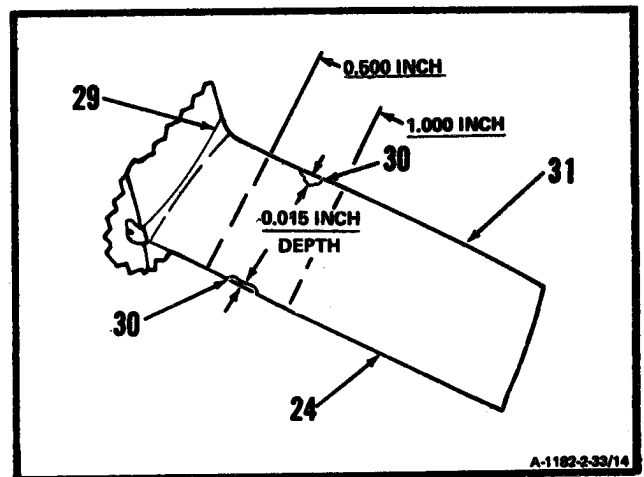
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**a. Inspect critical area (25) as follows:**

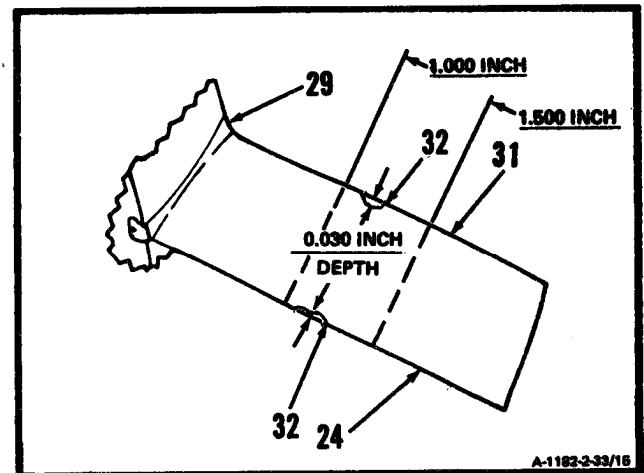
- (1) There shall be no nicks.
- (2) There shall be no surface dents (26) or sand and dust peening (27) deeper than 0.010 inch or wider than 0.030 inch diameter. These dents (26) must not have sharp edges (28).



- h. Inspect area between 0.500 inch and 1.000 inches above blade root (29). There shall be no nicks or dents (30) in edges (24 and 31) deeper than 0.015 inch.

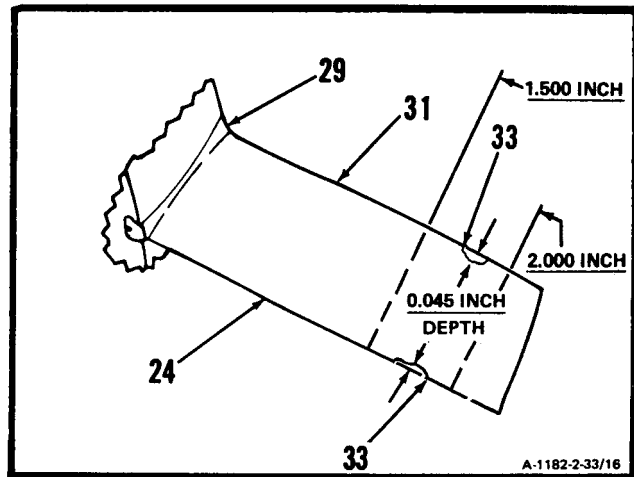


Inspect area between 1.000 inches and 1.500 inches above blade root (29). There shall be no nicks or dents (32) in edges (24 and 31) deeper than 0.030 inch.

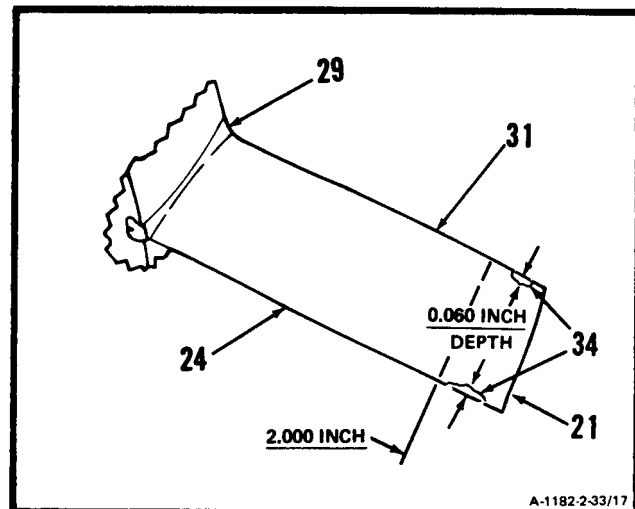


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- j. Inspect area between 1.500 inches and 2.000 inches above blade root (29). There shall be no nicks or dents (33) in edges (24 and 31) deeper than 0.045 inch.



- k. Inspect area between 2.000 inches above blade root (29) and blade tip (21). There shall be no nicks or dents (34) in edges (24 and 31) deeper than 0.060 inch.



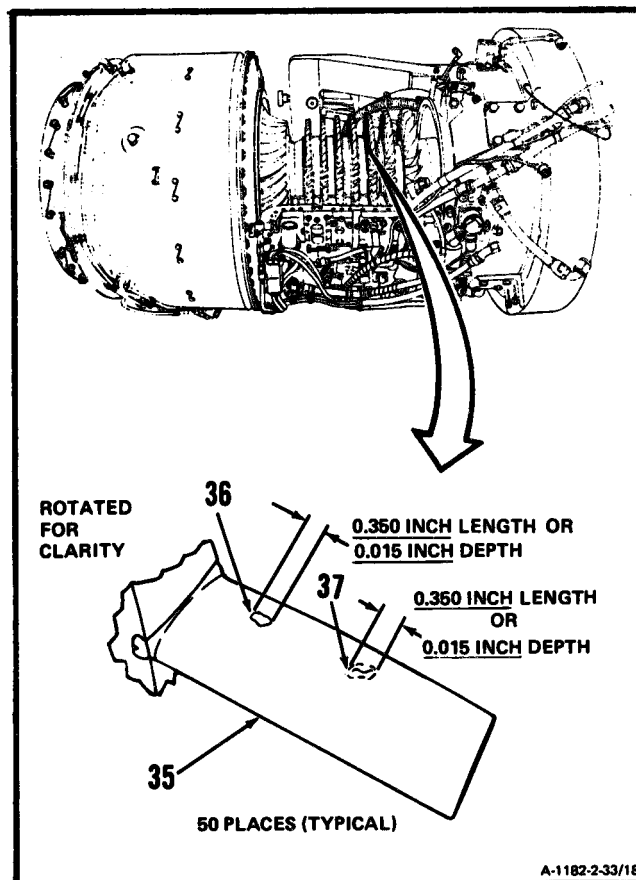
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## 2-33 INSPECT COMPRESSOR ROTOR BLADES (Continued)

2-33

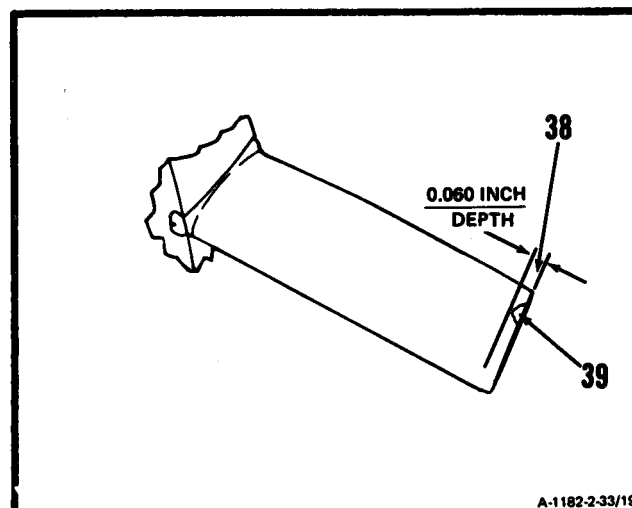
3. Inspect third stage compressor rotor blades (35) as follows:

- a. There shall be no cracks.
- b. There shall be no bends or distortion.
- c. There shall be no corrosion pitting.
- d. There shall be no surface nicks (36) or dents (37) greater than:
  - (1) 0.015 inch in depth.
  - (2) 0.350 inch in length.



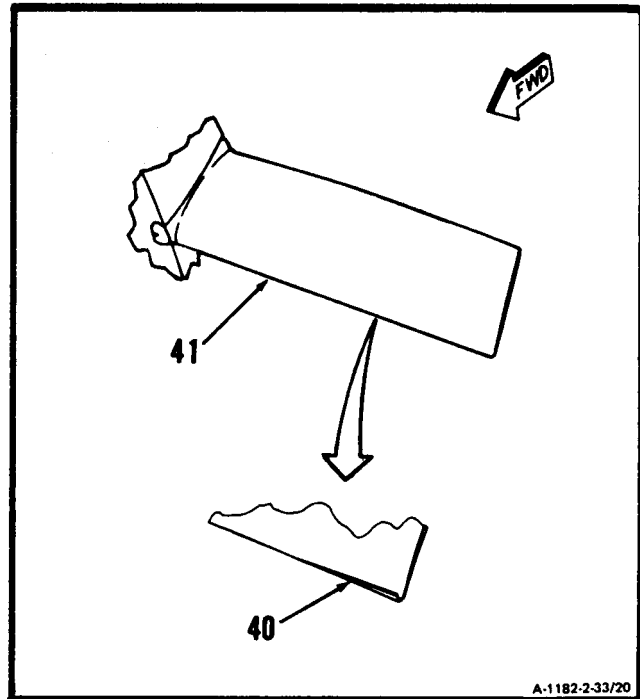
e. Inspect blade tip (38) as follows:

- (1) There shall be no nicks or dents (39) deeper than 0.060 inch.



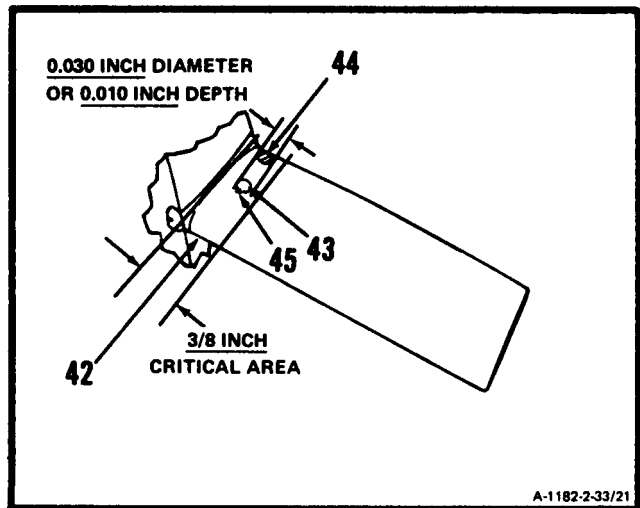
**GO TO NEXT PAGE**

- f. There shall be no material rollover (40) on forward surface at blade leading edge (41). Use fingernail to detect rollover.



- g. **Inspect critical area (42)** as follows:

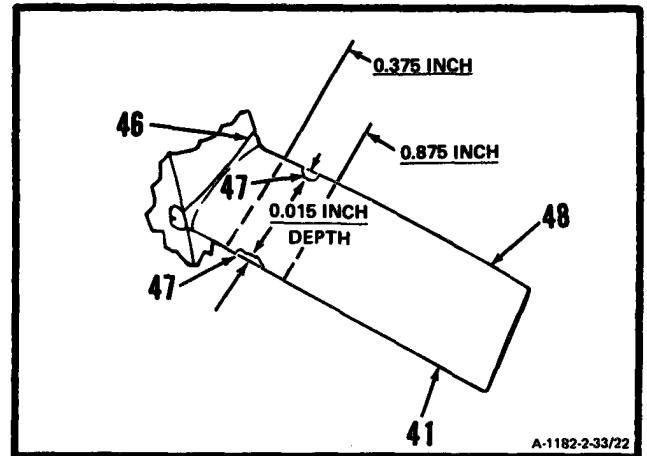
- (1) There shall be no nicks.
- (2) There shall be no surface dents (43) or sand and dust peening (44) deeper than 0.010 inch or wider than 0.030 inch diameter. These dents (43) must not have sharp edges (45).



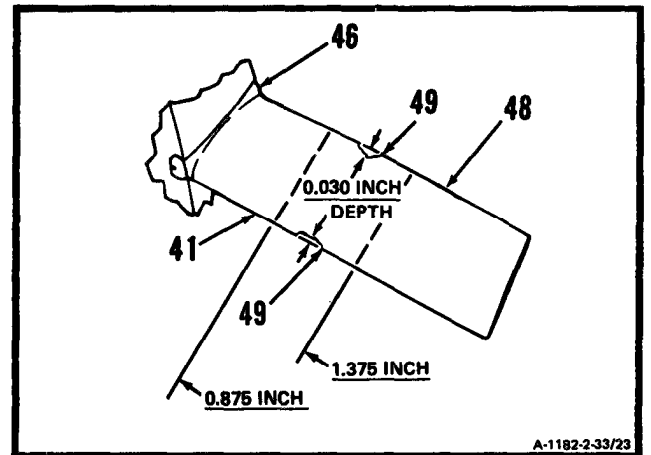
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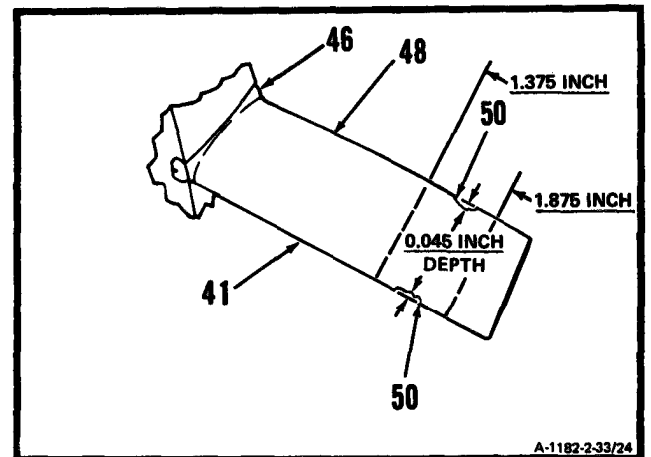
- h. Inspect area between 0.375 inch and 0.875 inch above blade root (46). There shall be no nicks or dents (47) in edges (41 and 48) deeper than 0.015 inch.



- i. Inspect area between 0.875 inch and 1.375 inches above blade root (46). There shall be no nicks or dents (49) in edges (41 and 48) deeper than 0.030 inch.

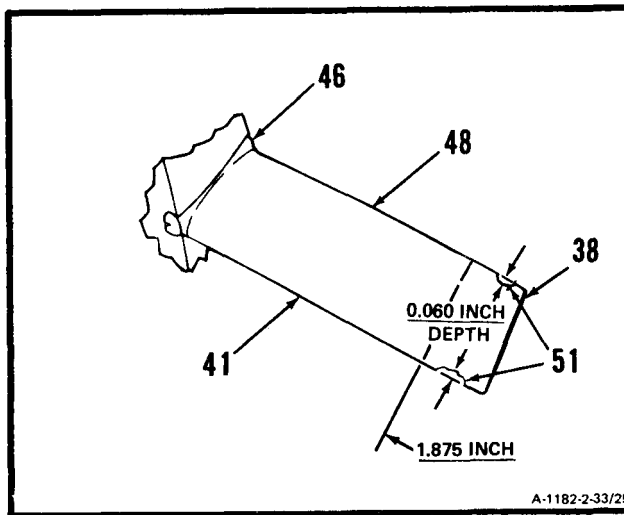


Inspect area between 1.375 inches and 1.875 inches above blade root (46). There shall be no nicks or dents (50) in edges (41 and 48) deeper than 0.045 inch.



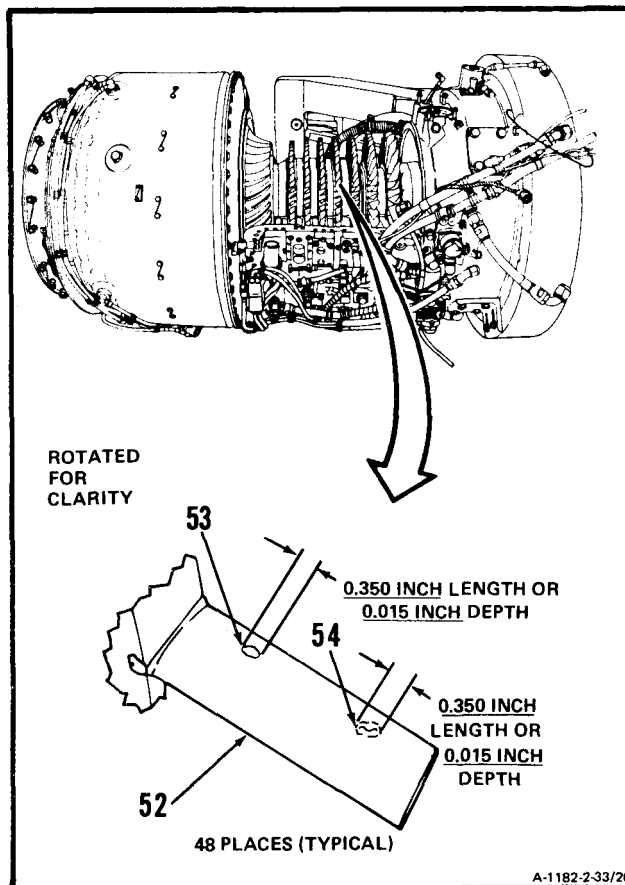
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- k. Inspect area between 1.875 inches above blade root (46) and blade tip (38). There shall be no nicks or dents (51) in edges (41 and 48) deeper than 0.060 inch.



**Inspect fourth stage compressor rotor blades (52) as follows:**

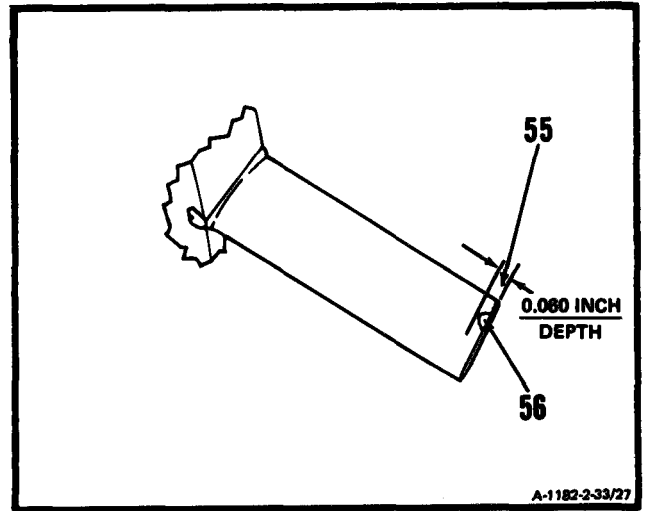
- a. There shall be no cracks.
- b. There shall be no bends or distortion.
- c. There shall be no corrosion pitting.
- d. There shall be no surface nicks (53) or dents (54) greater than:
  - (1) 0.015 inch in depth.
  - (2) 0.350 inch in length.



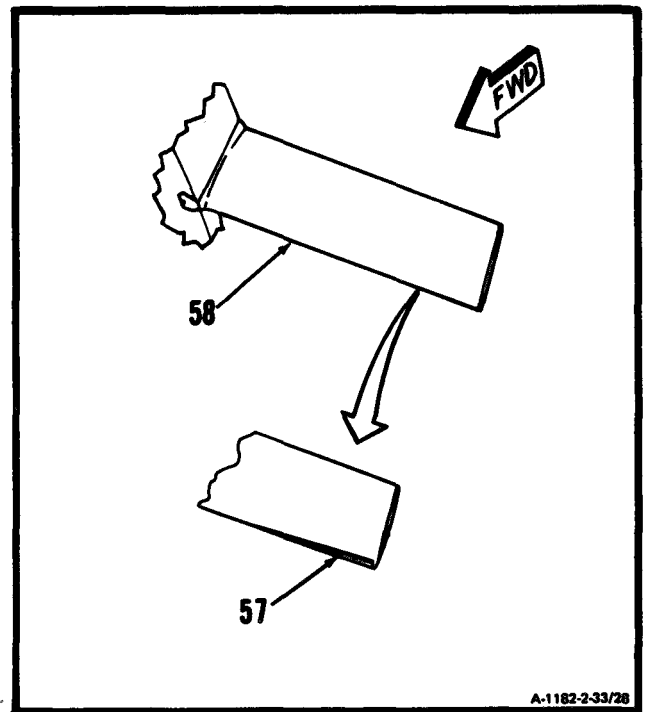
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e. **Inspect blade tip (55)** as follows:

- (1) There shall be no nicks or dents (56) deeper than 0.060 inch.



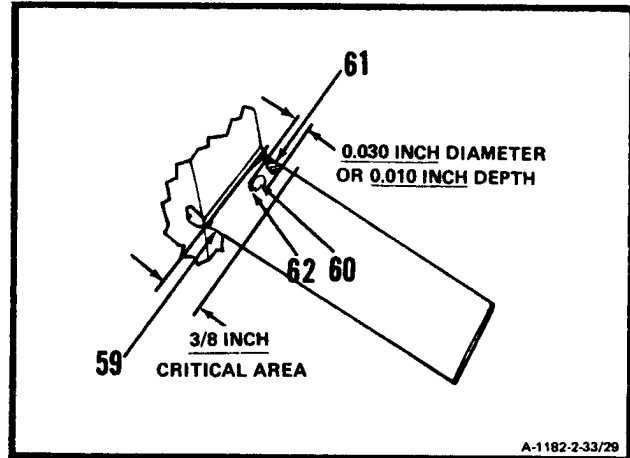
- f. There shall be no material rollover (57) on forward surface at blade leading edge (58). Use fingernail to detect rollover.



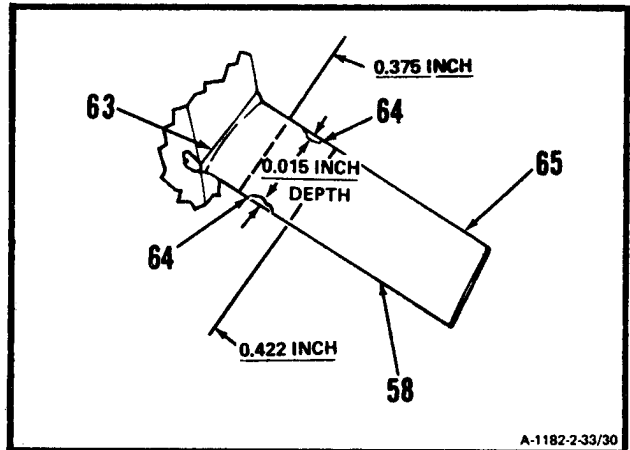
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g. Inspect critical area (59) as follows:

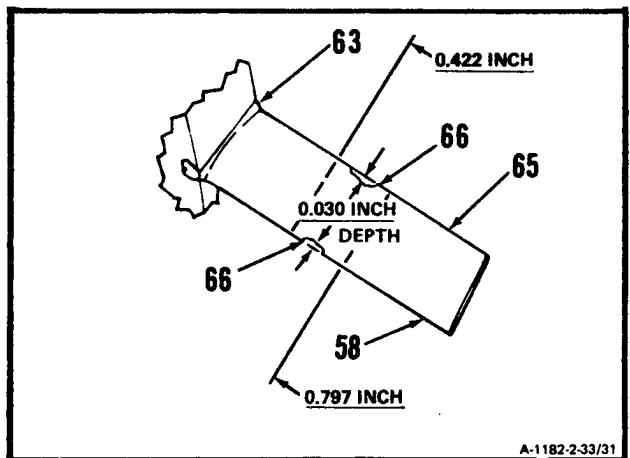
- (1) There shall be no nicks.
- (2) There shall be no surface dents (60) or sand and dust peening (61) deeper than 0.010 inch or wider than 0.030 inch diameter. These dents (60) must not have sharp edges (62).



h. Inspect area between 0.375 inch and 0.422 inch above blade root (63). There shall be no nicks or dents (64) in edges (58 and 65) deeper than 0.015 inch.

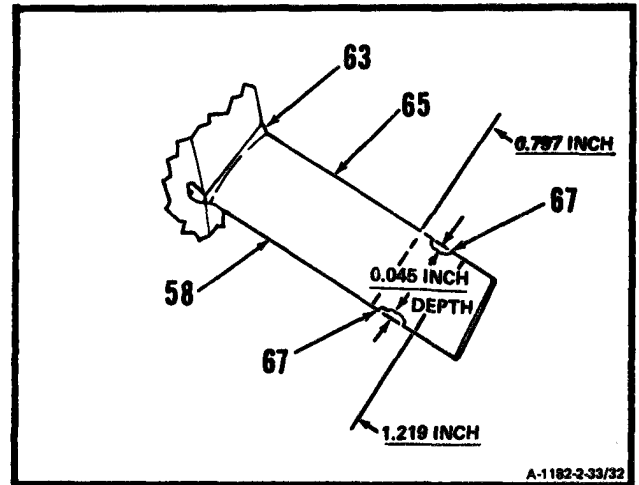


i. Inspect area between 0.422 inch and 0.797 inch above blade root (63). There shall be no nicks or dents (66) in edges (58 and 65) deeper than 0.030 inch.

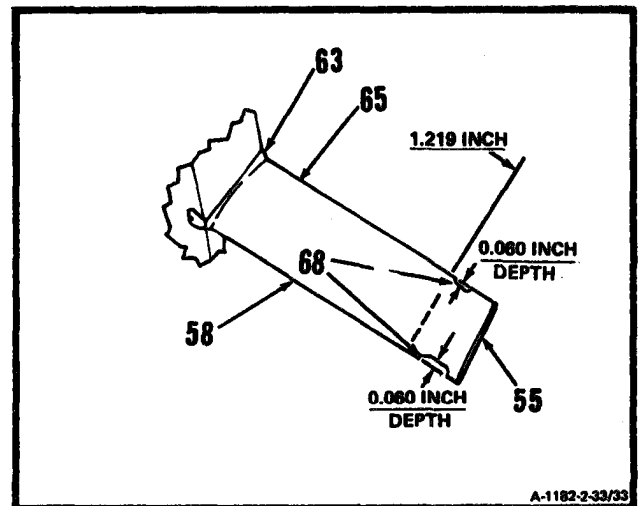


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- j. Inspect area between 0.797 inch and 1.219 inches above blade root (63). There shall be no nicks or dents (67) in edges (58 and 65) deeper than 0.045 inch.



- k. Inspect area between 1.219 inches above blade root (63) and blade tip (55). There shall be no nicks or dents (68) in edges (58 and 65) deeper than 0.060 inch.

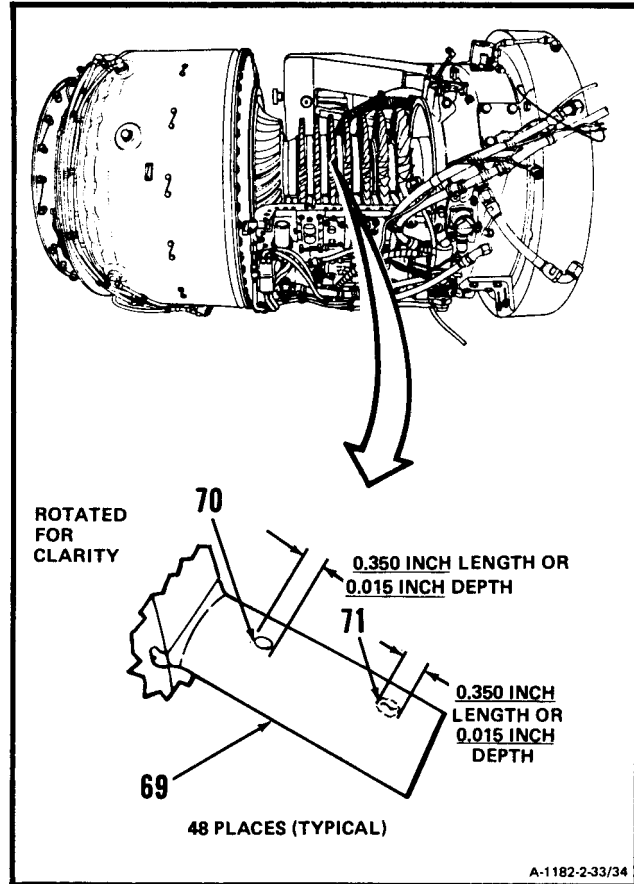


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5. **Inspect fifth stage compressor rotor blades (69)**

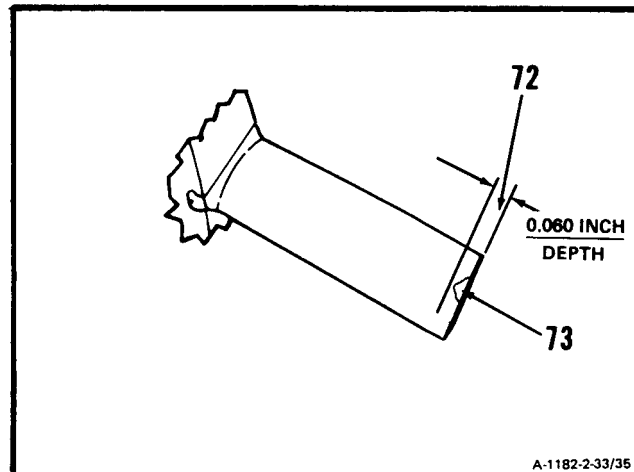
as follows:

- a. There shall be no cracks.
- b. There shall be no bends or distortion.
- c. There shall be no corrosion pitting.
- d. There shall be no surface nicks (70) or dents (71) greater than:
  - (1) 0.015 inch in depth.
  - (2) 0.350 inch in length.



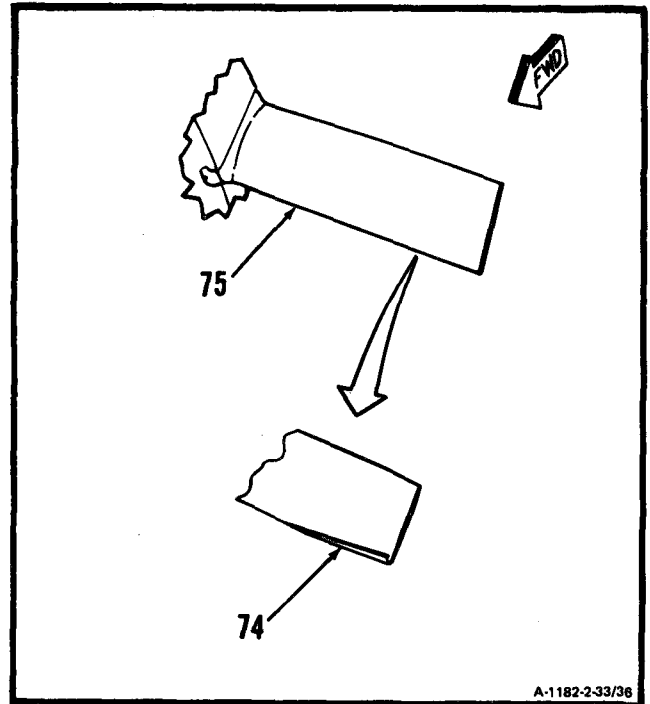
e. Inspect blade tip (72) as follows:

- (1) There shall be no nicks or dents (73) deeper than 0.060 inch.



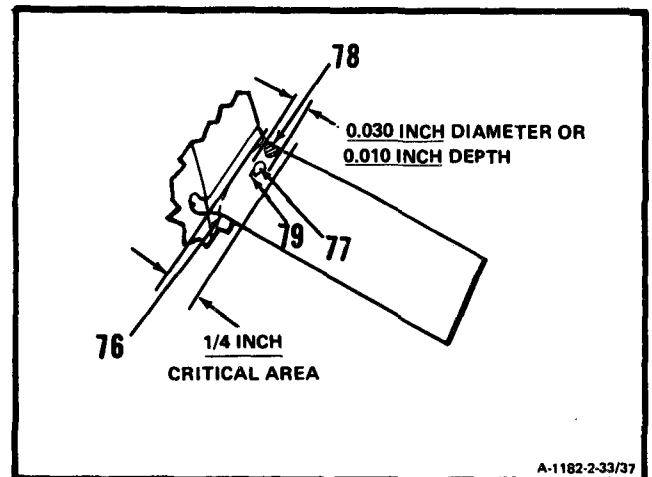
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- f. There shall be no material rollover (74) on forward surface at blade leading edge (75). Use fingernail to detect rollover.



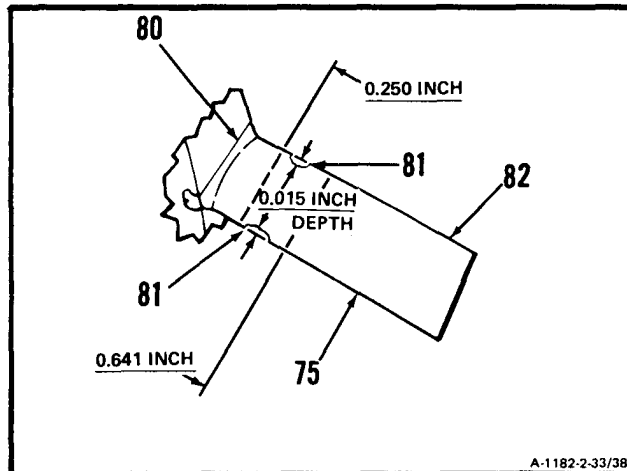
- g. Inspect critical area (76) as follows:

- (1) There shall be no nicks.
- (2) There shall be no surface dents (77) or sand and dust peening (78) deeper than 0.010 inch or wider than 0.030 inch diameter. These dents (77) must not have sharp edges (79).

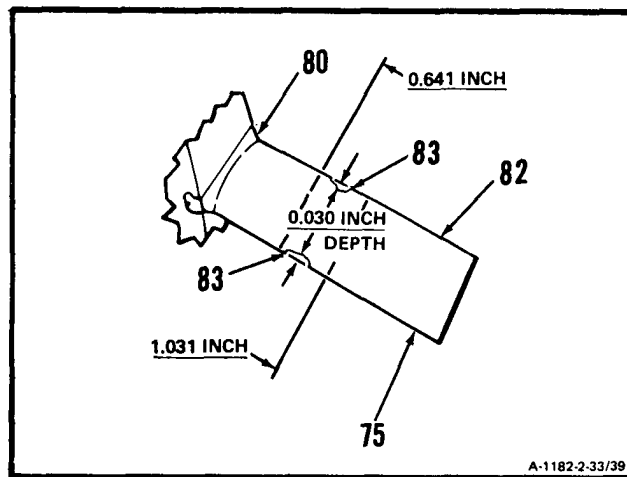


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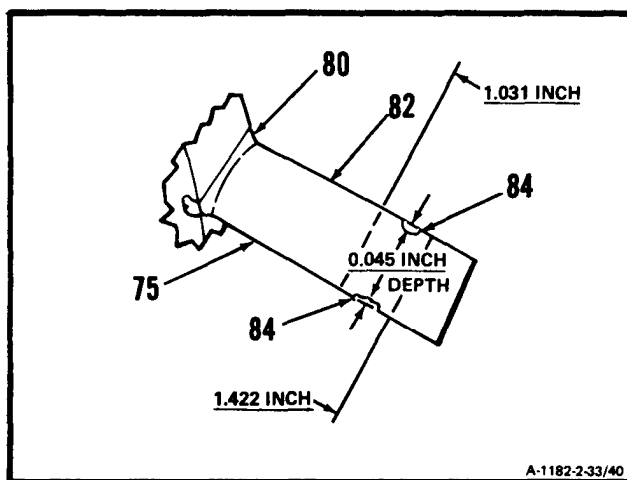
- h. Inspect area between 0.250 inch and 0.641 inch above blade root (80). There shall be no nicks or dents (81) in edges (75 and 82) deeper than 0.015 inch.



- i. Inspect area between 0.641 inch and 1.031 inches above blade root (80). There shall be no nicks or dents (83) in edges (75 and 82) deeper than 0.030 inch.



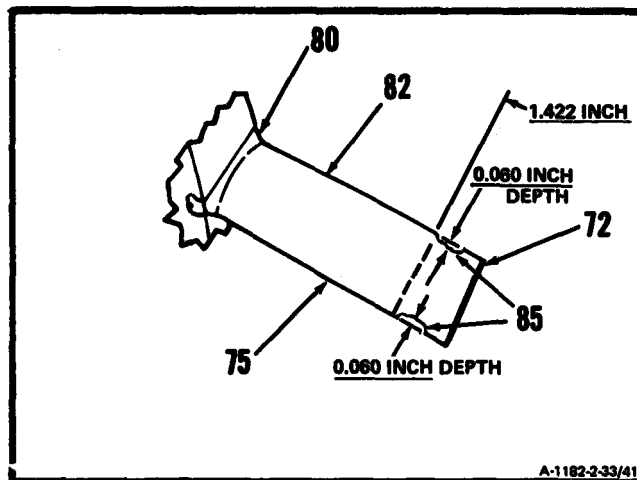
- j. Inspect area between 1.031 inches and 1.031 inches above blade root (80). There shall be no nicks or dents (84) in edges (75 and 82) deeper than 0.045 inch.



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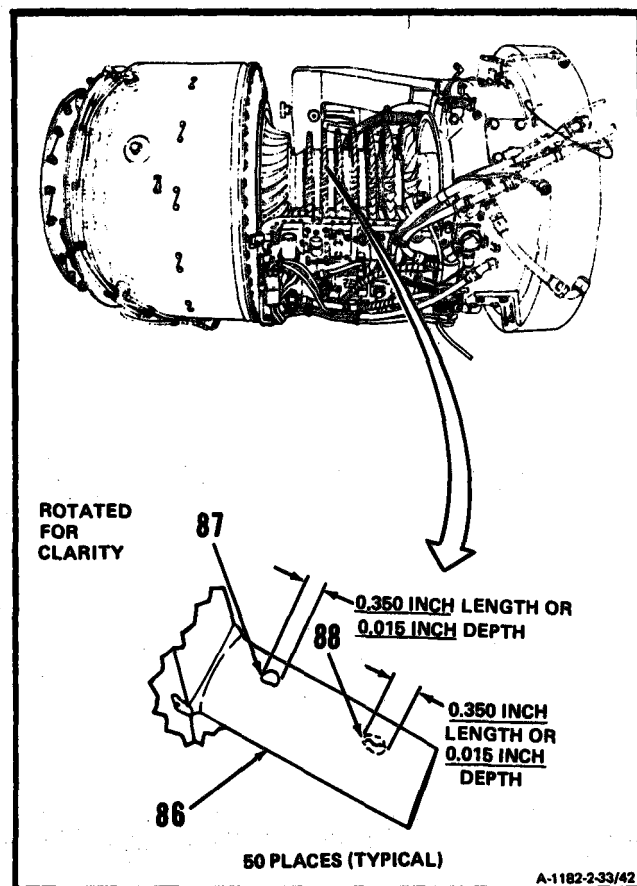


- k. Inspect area between 1.422 inches above blade root (80) and blade tip (72). There shall be no nicks or dents (85) in edges (75 and 82) deeper than 0.080 inch.



6. Inspect sixth stage compressor rotor blades (86) as follows:

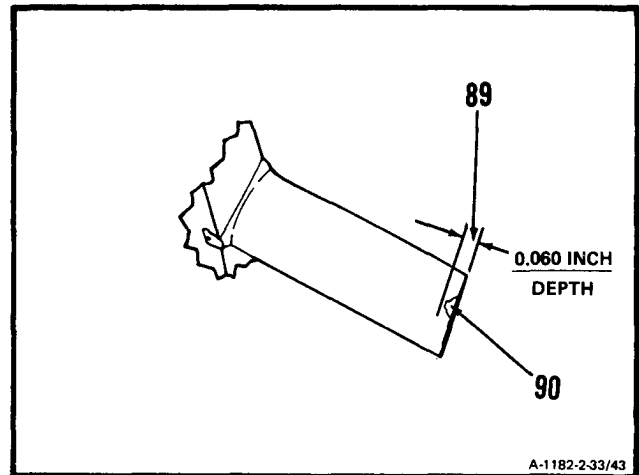
- a. There shall be no cracks.
- b. There shall be no bends or distortion,
- c. There shall be no corrosion pitting.
- d. There shall be no surface nicks (87) or dents (88) greater than:
  - (1) 0.015 inch in depth.
  - (2) 0.350 inch in length.



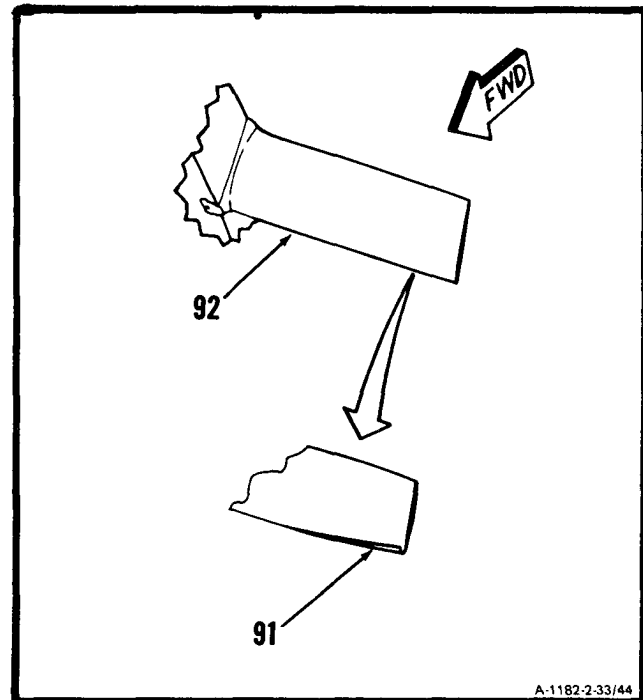
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e. Inspect blade tip (89) as follows:

- (1) There shall be no nicks or dents (90) deeper than 0.060 inch.



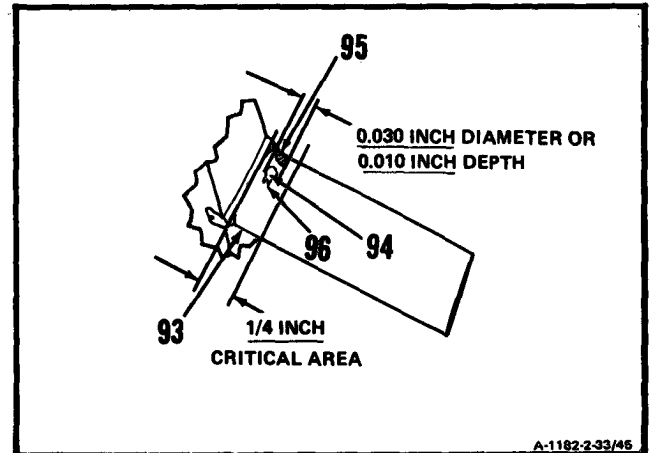
f. There shall be no material rollover (91) on forward surface at blade leading edge (92). Use fingernail to detect rollover.



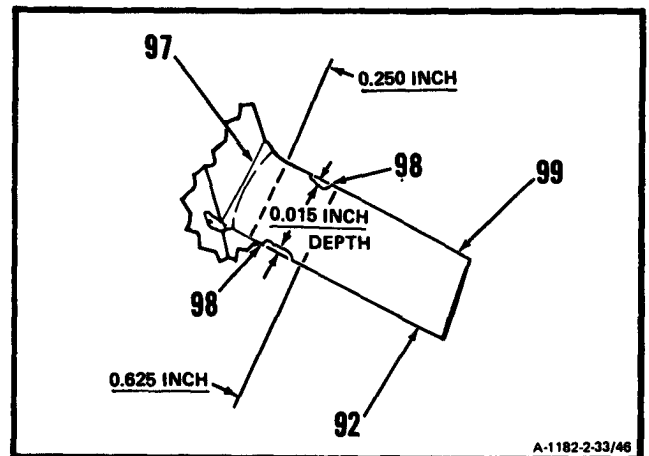
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g. Inspect critical area (93) as follows:

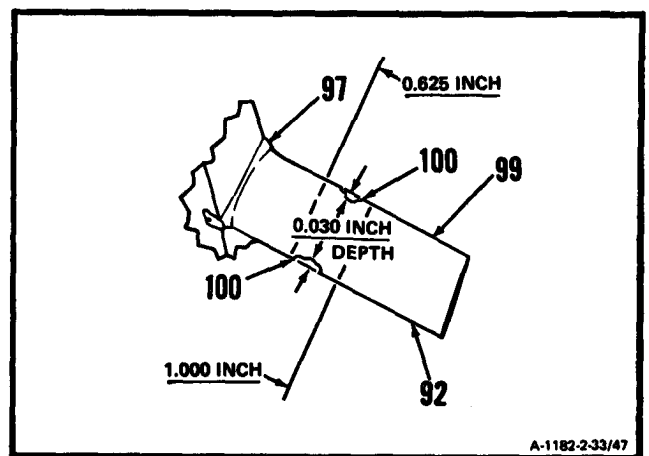
- (1) There shall be no nicks.
- (2) There shall be no surface dents (94) or sand and dust peening (95) deeper than 0.010 inch or wider than 0.030 inch diameter. These dents (94) must not have sharp edges (96).



h. Inspect area between 0.250 inch and 0.625 inch above blade root (97). There shall be no nicks or dents (98) in edges (92 and 99) deeper than 0.015 inch.

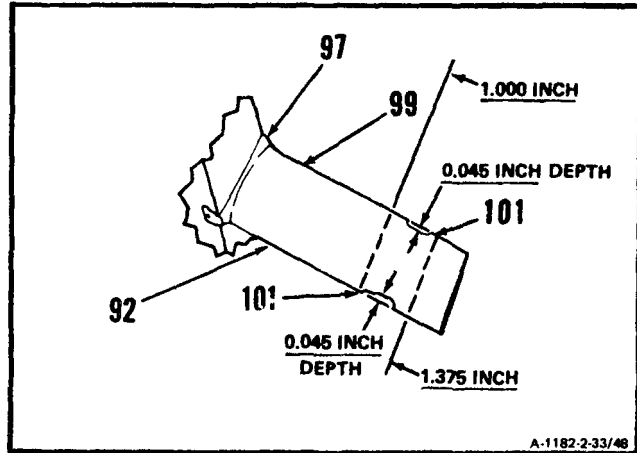


i. Inspect area between 0.625 inch and 1.000 inches above blade root (97). There shall be no nicks or dents (100) in edges (92 and 99) deeper than 0.030 inch.

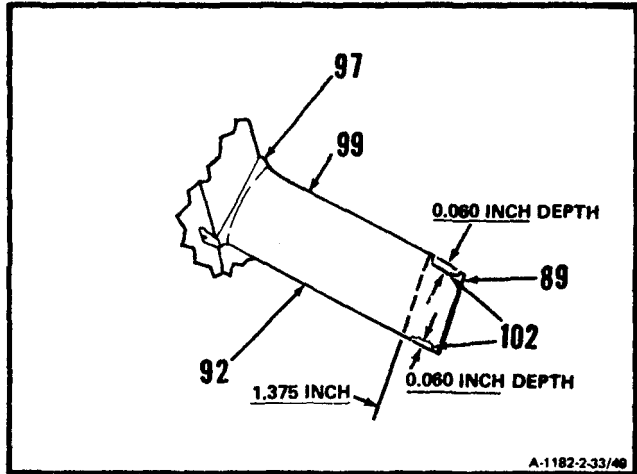


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- j. Inspect area between 1.000 inches and 1.375 inches above blade root (97). There shall be no nicks or dents (101) in edges (92 and 99) deeper than 0.045 inch.



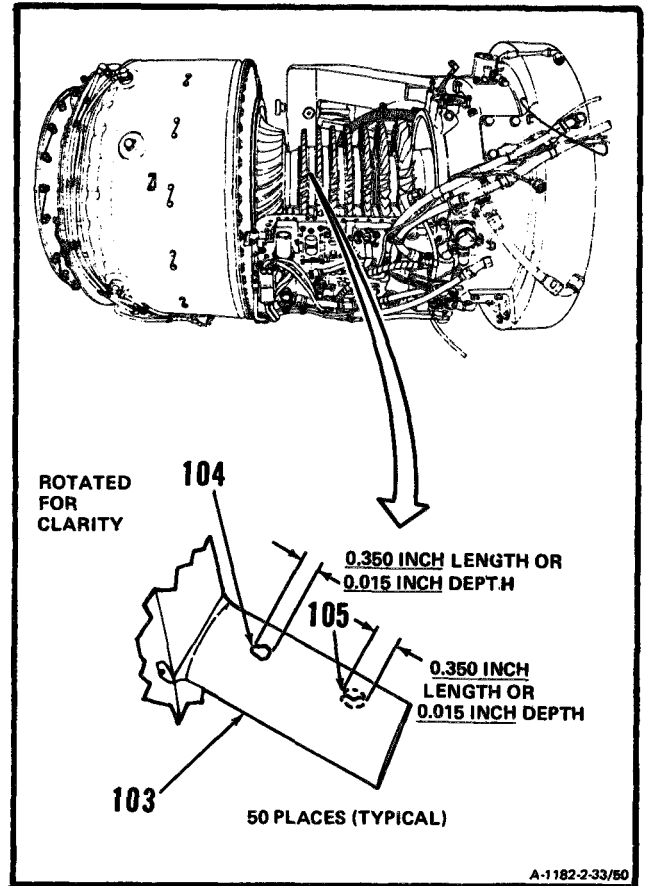
- k. Inspect area between 1.375 inches above blade root (97) and blade tip (89). There shall be no nicks or dents (102) in edges (92 and 99) deeper than 0.060 inch.



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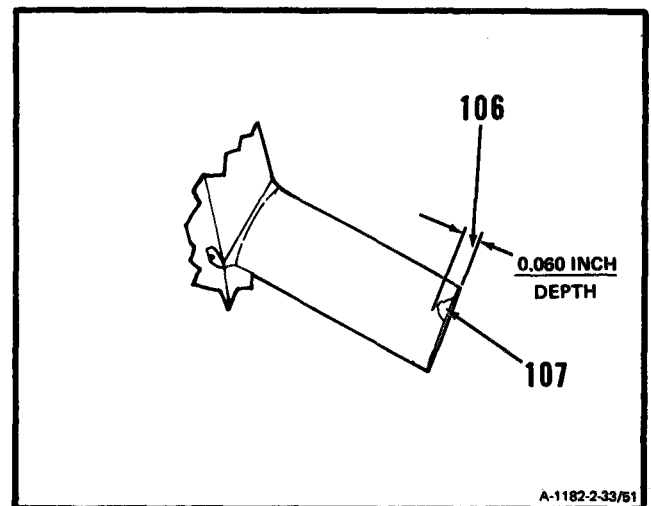
**7. Inspects stage compressor rotor blades (103) as follows:**

- a. There shall be no cracks.
- b. There shall be no bends or distortion.
- c. There shall be no corrosion pitting.
- d. There shall be no surface nicks (104) or dents (105) greater than:
  - (1) 0.015 inch in depth.
  - (2) 0.350 inch in length.



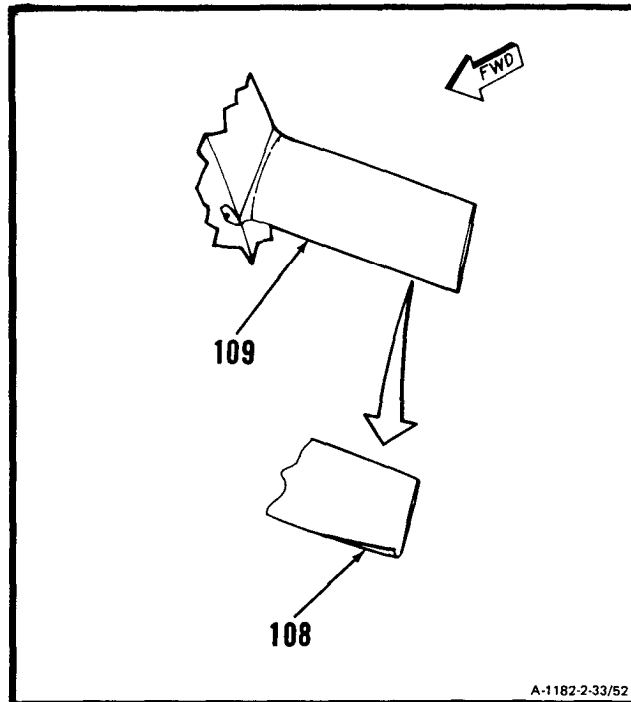
**e. Inspect blade tip (106) as follows:**

- (1) There shall be no nicks or dents (107) deeper than 0.060 inch.



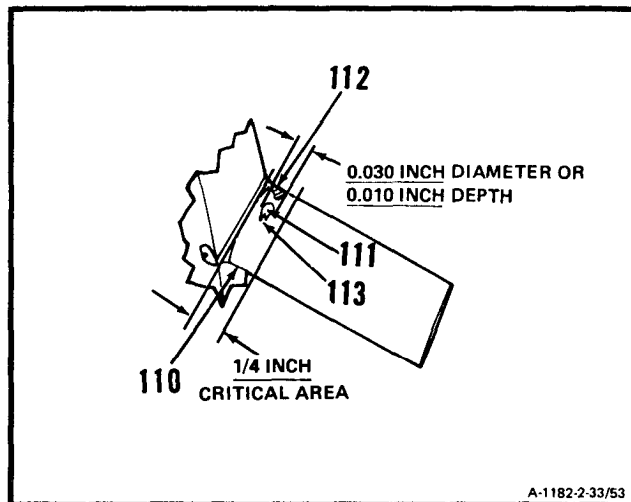
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- f. There shall be no material rollover (108) on forward surface at blade leading edge (109). Use fingernail to detect rollover.



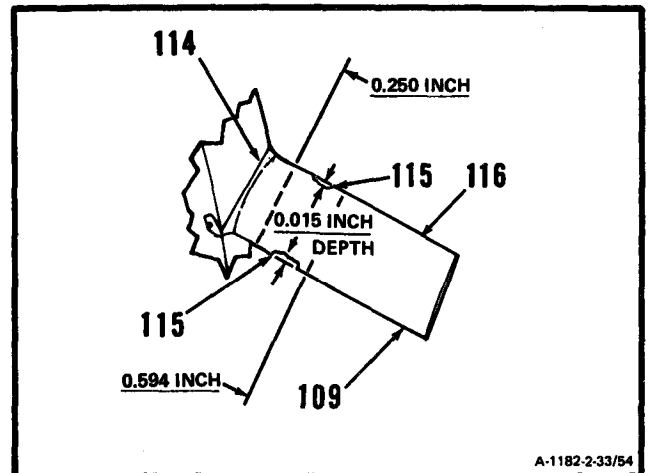
- g. Inspect critical area (110) as follows:

- (1) There shall be no nicks.
- (2) There shall be no surface dents (111) or sand and dust peening (112) deeper than 0.010 inch or wider than 0.030 inch diameter. These dents (111) must not have sharp edges (113).

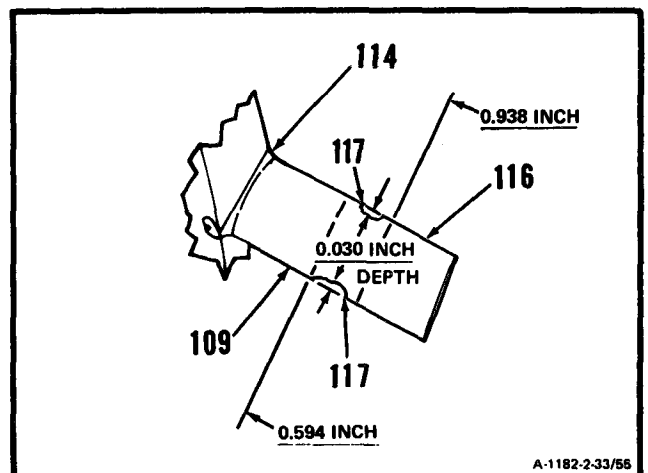


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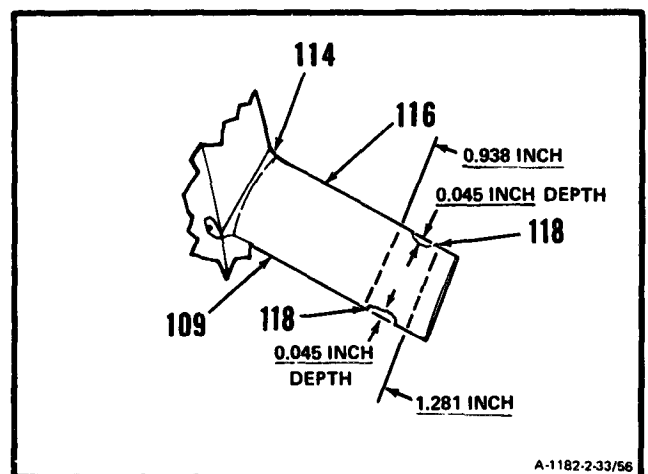
- h. Inspect area between 0.250 inch and 0.594 inch above blade root (114). There shall be no nicks or dents (115) in edges (109 and 116) deeper than 0.015 inch.



- i. Inspect area between 0.594 inch and 0.938 inch above blade root (114). There shall be no nicks or dents (117) in edges (109 and 116) deeper than 0.030 inch.

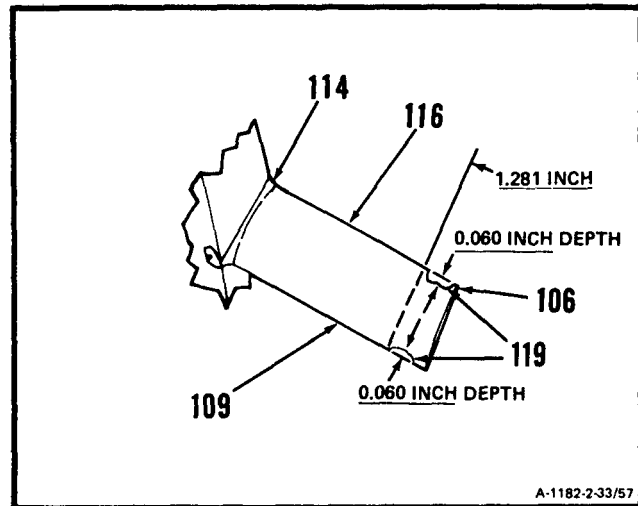


- j. Inspect area between 0.938 inch and 1.281 inches above blade root (114). There shall be no nicks or dents (118) in edges (109 and 116) deeper than 0.045 inch.



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- k. Inspect area between 1.281 inches above blade root (114) and blade tip (106). There shall be no nicks or dents (119) in edges (109 and 116) deeper than 0.060 inch.

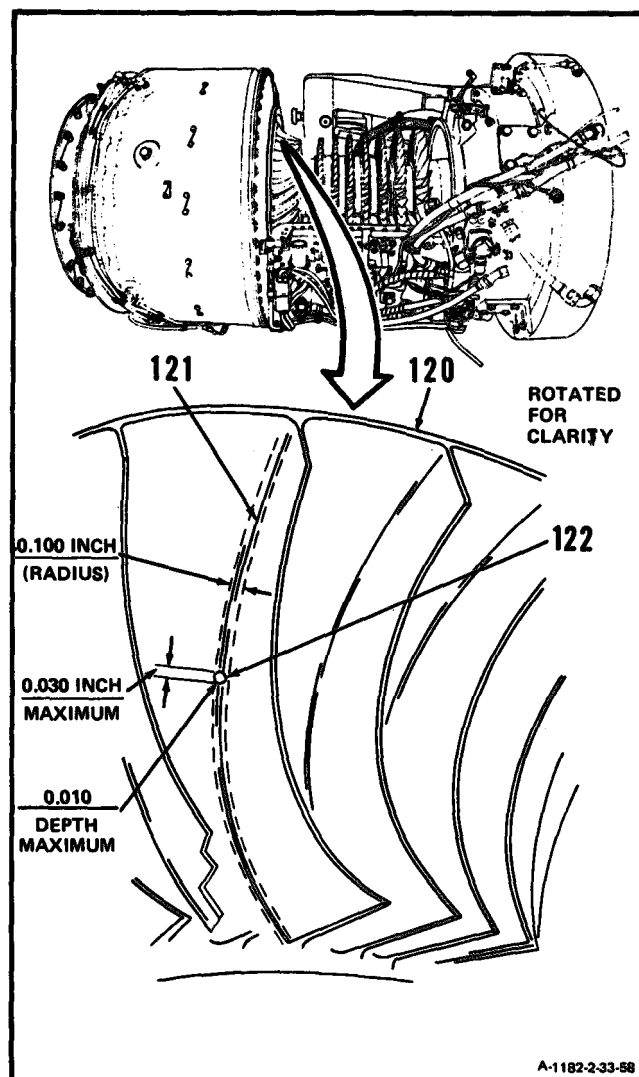


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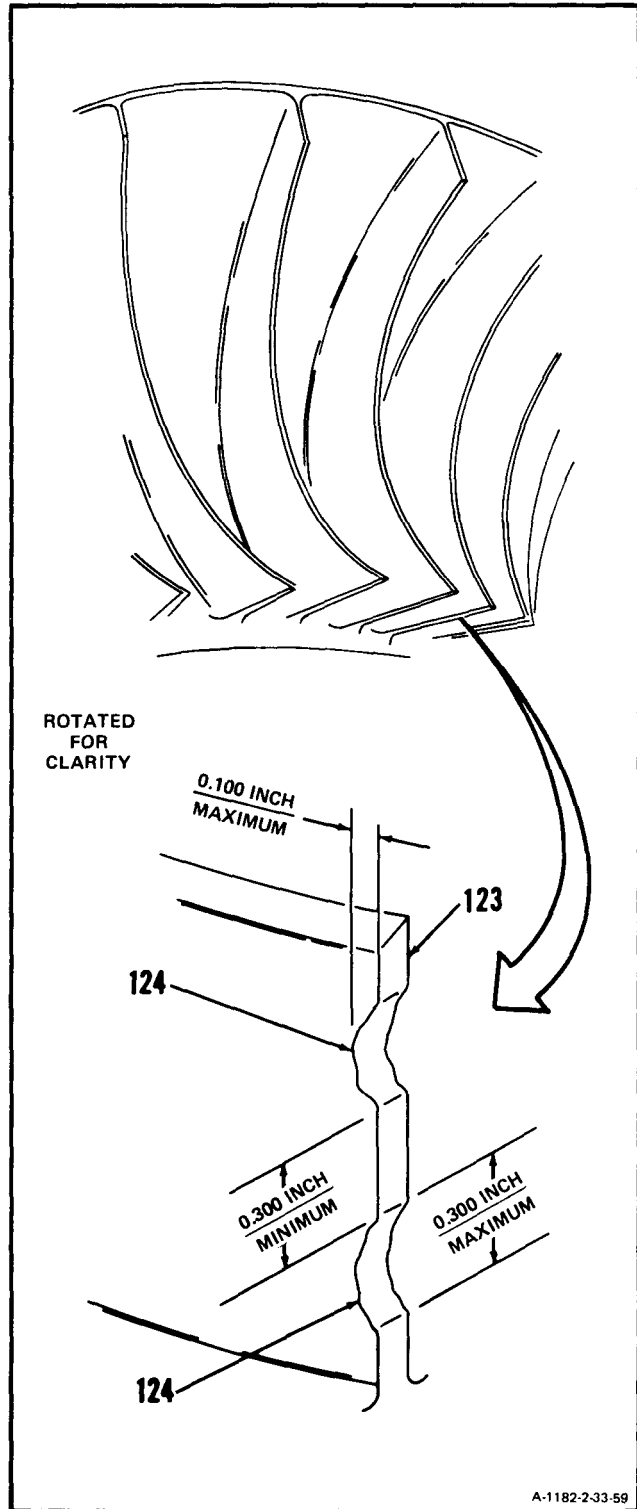
**8. Inspect centrifugal impeller (120) as follows:**

- a. **Inspect critical area (121).** There shall be no cracks or nicks. There shall be no bends or distortion. There shall be no dents with sharp edges. There shall be no smooth-edged dents (122) deeper than 0.010 inch or larger than 0.030 inch in diameter.



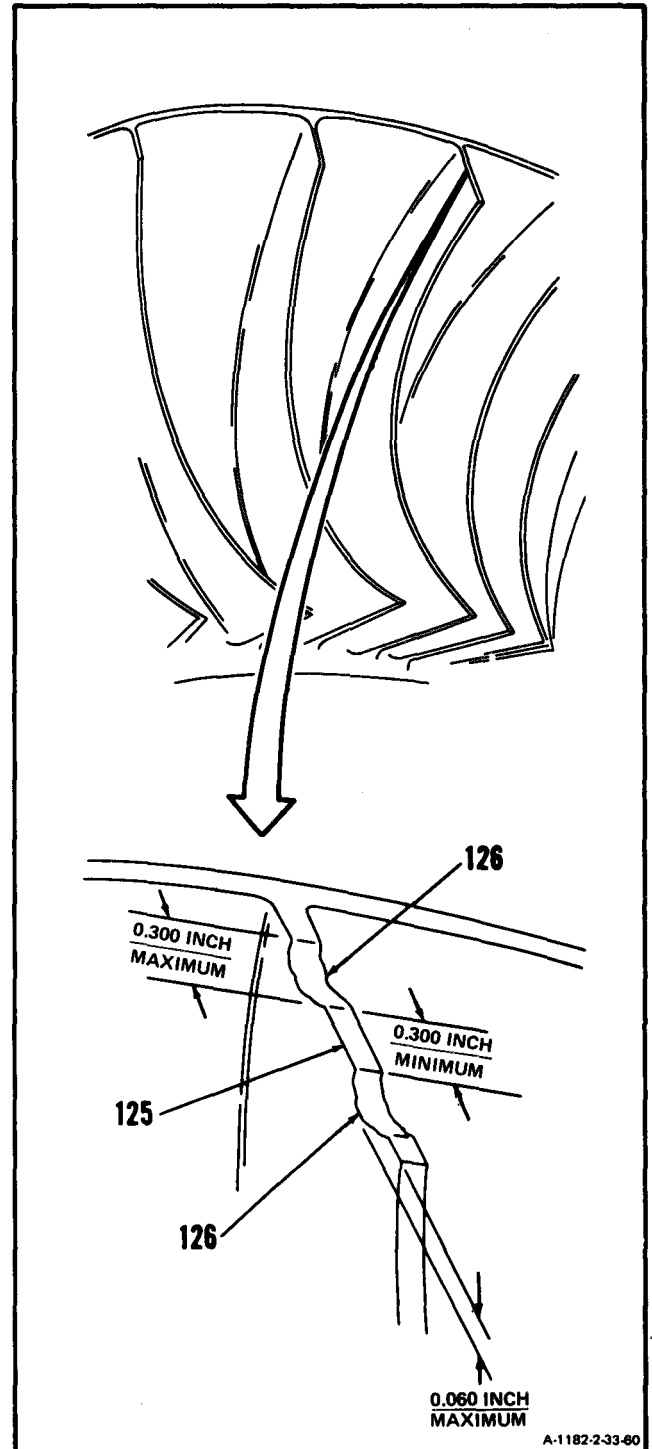
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b. **Inspect leading edge (123).** There shall be no cracks. There shall be no bends or distortion. There shall be no nicks or dents (124) deeper than 0.100 inch or longer than 0.300 inch. These nicks and dents (124) must be separated by at least the length of the longest nick or dent.



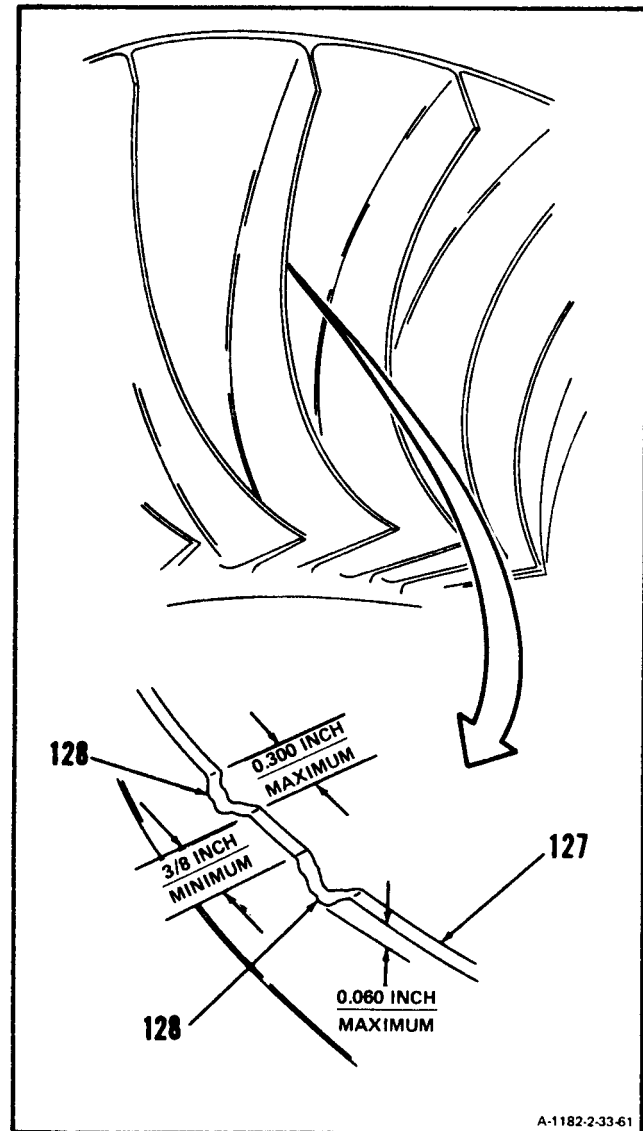
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- c. **Inspect trailing edge (125).** There shall be no cracks. There shall be no bends or distortion. There shall be no nicks or dents (126) deeper than 0.060 inch or longer than 0.300 inch. These nicks and dents (126) must be separated by at least the length of the longest nick or dent.



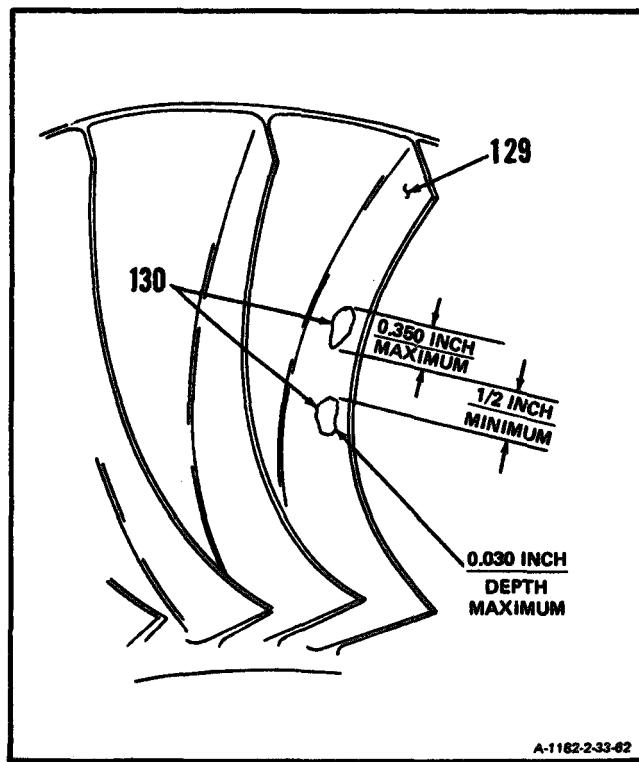
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- d. **Inspect blade tip (127).** There shall be no cracks. There shall be no bends or distortion. There shall be no more than six nicks or dents (128). These nicks and dents (128) shall not be deeper than 0.060 inch or longer than 0.300 inch and must be separated by 3/8-inch minimum.



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e. **Inspect airfoil surfaces (129).** There shall be no cracks. There shall be no bends or distortion. There shall be no nicks or dents (130) deeper than 0.030 inch or longer than 0.350 inch. These nicks and dents (130) must be separated by 1/2-inch minimum.



FOLLOW-ON MAINTENANCE:

None

END OF TASK

## INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Technical Inspection Tool Kit,  
NSN 5180-00-323-5114  
Hand File Set  
Micrometer Caliper Set

**Materials:**

Carborundum Stone (E10)  
Crocus Cloth (E15)

**Personnel Required:**

68B10 Aircraft Powerplant Repairer  
68B30 Aircraft Powerplant Inspector

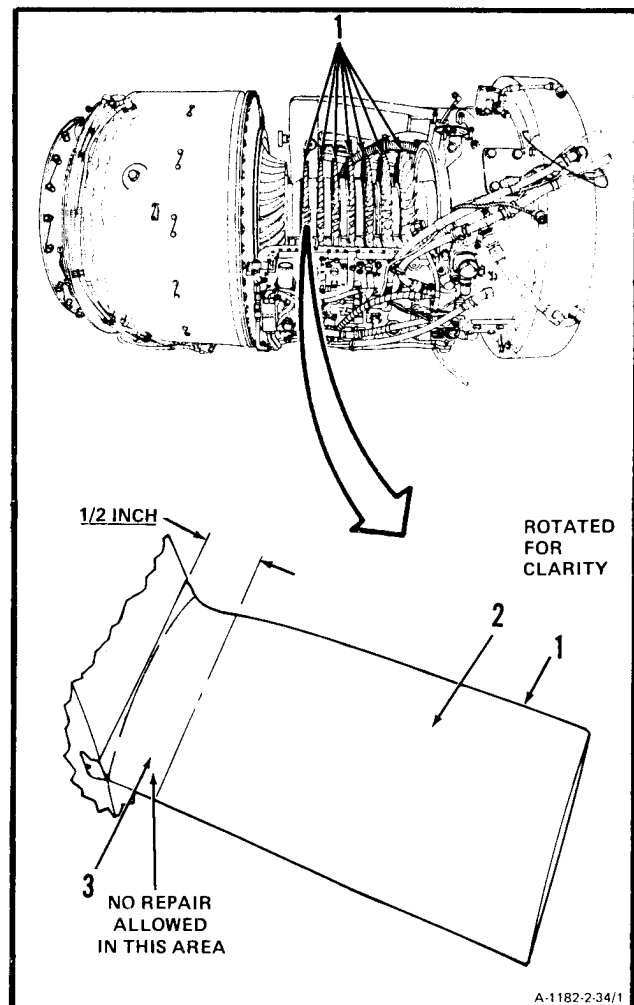
**References:**

Task 2-31  
Task 2-33  
Task 2-35

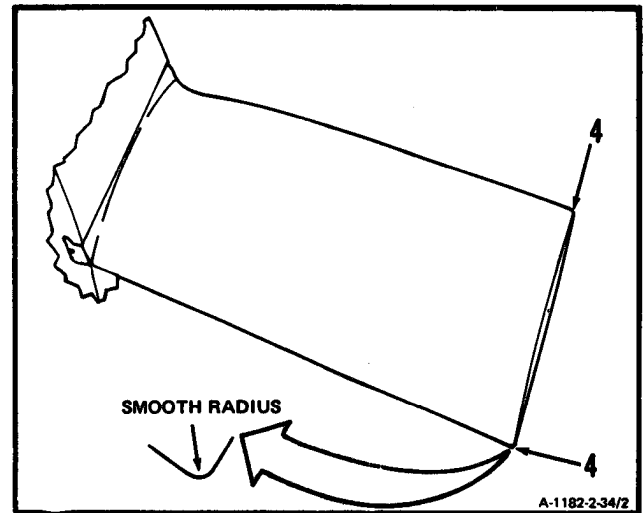
**NOTE**

In following step, finish strokes shall be parallel to leading and trailing edges. When blade is repaired on leading or trailing edges, blend edges to a smooth radius.

1. **Blend-repair compressor rotor blades (1) that have allowable damage (Ref. Task 2-33).** Use files, Carborundum stone (E10) and crocus cloth (E15).
2. **Inspect repaired areas of blades (1).** Degree of repair shall not exceed maximum allowable inspection dimensions (Ref. Task 2-33) and the following:
  - a. On airfoil surfaces (2), three-quarters of blade thickness shall remain after repair.
  - b. Length of any repair shall be at least twice the depth of repair.
  - c. Length of any repair shall not be longer than five times the depth of repair.
  - d. There shall be no repair in critical area (3) of blade. Repairs begun out of critical area (3) shall not extend into critical area (3).

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- e. Repairs made within **0.120 inch** of blade tip corners (4) shall be blended to a smooth radius.

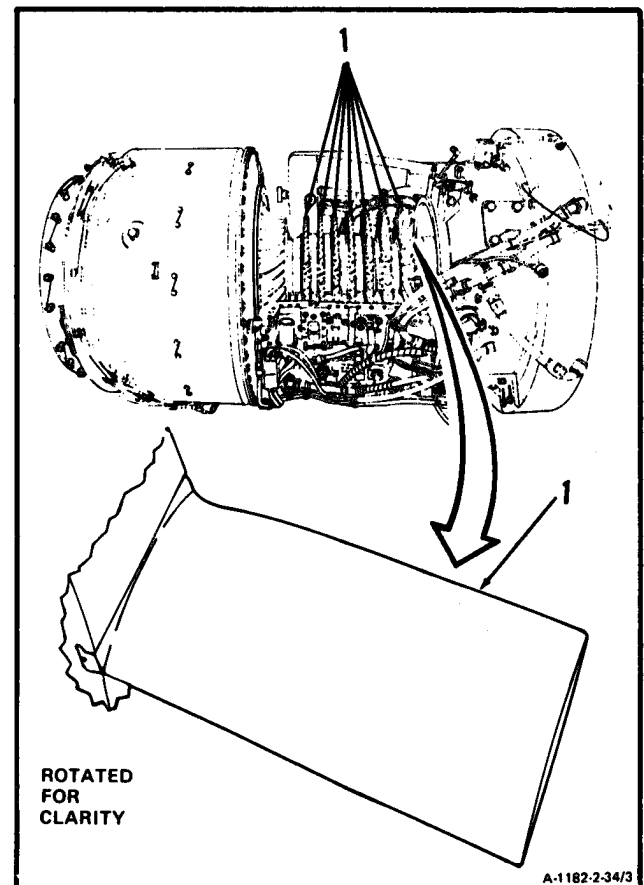


3. Replace blades (1) that have damage beyond limits or if repair limits cannot be met, as follows:

**NOTE**

There shall be no more than 50 blades replaced on compressor rotor between overhaul cycles.

- a. Replace blades (Ref. Task 2-31 and 2-35).
- b. Record number of blades replaced in engine log.

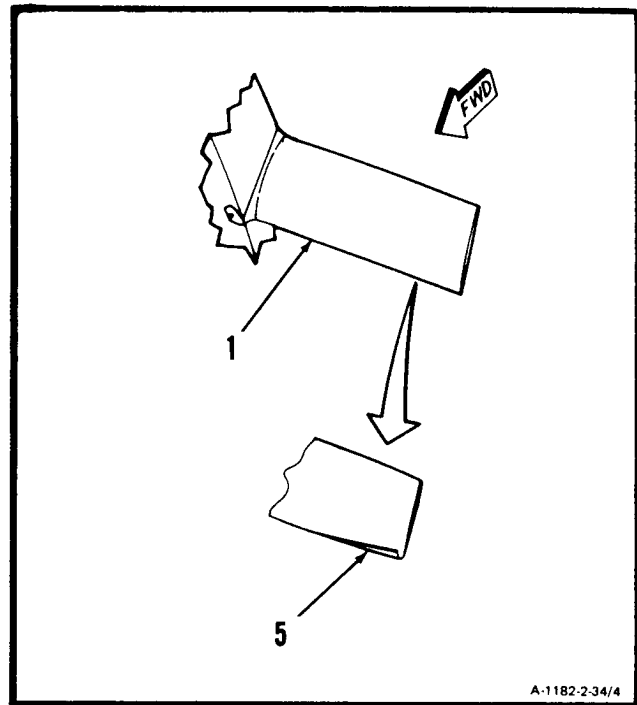


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**NOTE**

In following step, finish strokes shall be parallel to leading edge.

Blend-repair blades (1) to remove material roll-over(s) (5). Use files, Carborundum stone (E10) and crocus cloth (E15).

**INSPECT**

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## 2-34 REPAIR COMPRESSOR ROTOR BLADES (Continued)

2-34

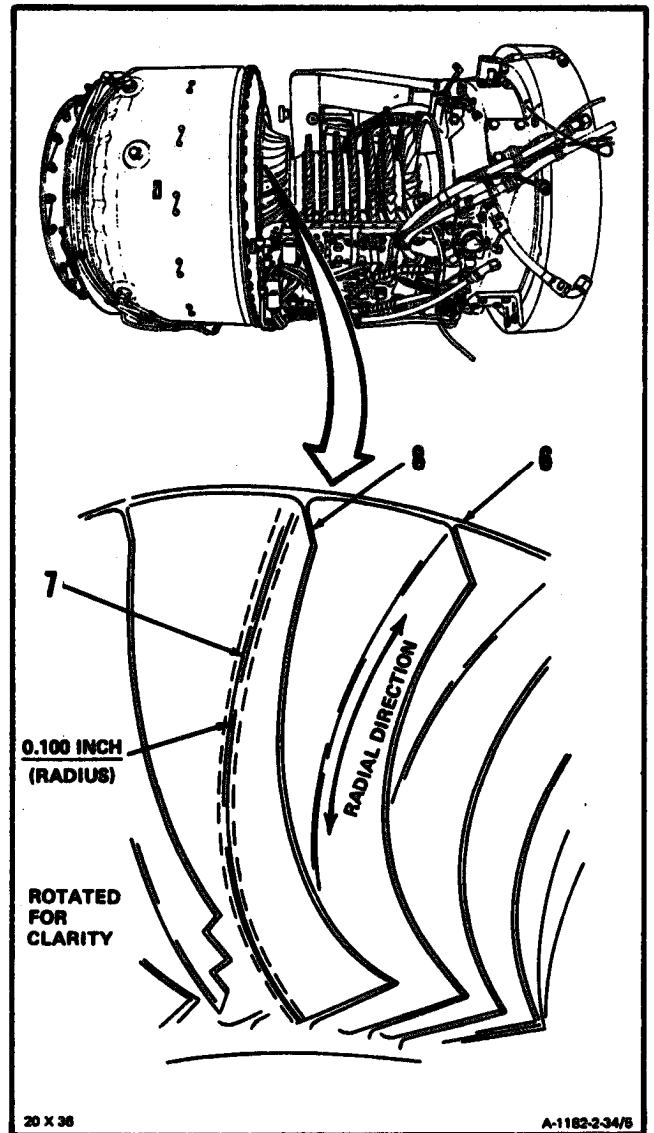
## 5. Repair impeller assembly (6) as follows:

- a. There shall be no repair in critical area (7) of blade (8).

**NOTE**

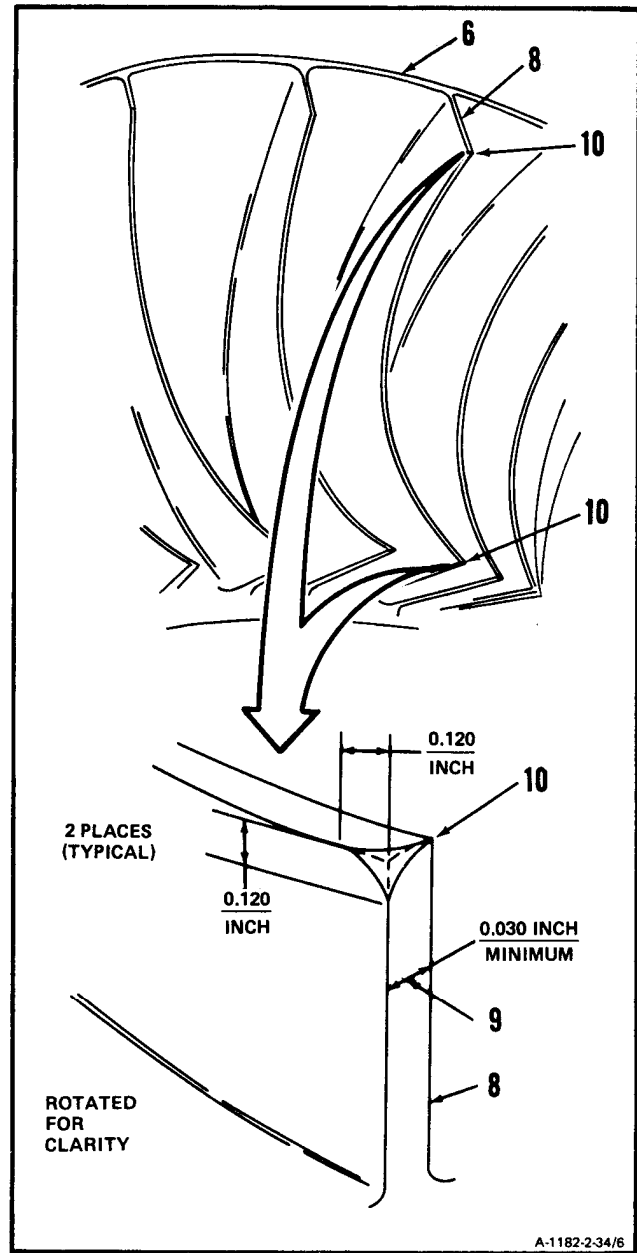
The following repair is allowed only if size of defect after repair does not exceed inspection limits (Ref. Task 2-33).

- b. **Blend repair blades (8)** to a smooth contour in area of defect. Use Carborundum stone (E10). Make final strokes in radial direction.
- c. **Remove sharp edges** around repair. Use file. Make final strokes in radial direction.
- d. **Final polish repair area.** Use crocus cloth (E15). Make final strokes in radial direction.

**INSPECT****GO TO NEXT PAGE**

e. **Inspect repaired areas of blades (8)** as follows:

- (1) Use micrometer caliper. Measure blade wall thickness (9). Minimum blade wall thickness shall be 0.030 inch.
- (2) Inspect blade corners (10). Repaired areas within 0.120 inch of corners (10) shall be blended to a smooth radius. There shall be no sharp edges.
- (3) If damage to impeller assembly (6) exceeds limits after repair, replace engine.



**INSPECT**

**FOLLOW-ON MAINTENANCE:**

None

**END OF TASK**

## 2-35 INSTALL COMPRESSOR ROTOR BLADES

2-35

## INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Technical Inspection Tool Kit,  
NSN 5180-00-323-5114  
Drift Assembly (T19)  
Installing Tool (T20)  
Dial Indicator Support (T27)  
Installation Tool Kit (T31)  
Hand File Set  
Balance Scale,  
NSN 6670-00-401 -7195  
Dial Indicator  
Rawhide Mallet

Tweezers,  
NSN 5120-00-247-0868  
Surface Plate

**Materials:**

Abrasive Paper (E3)  
Lockwire (E28)

**Parts:**

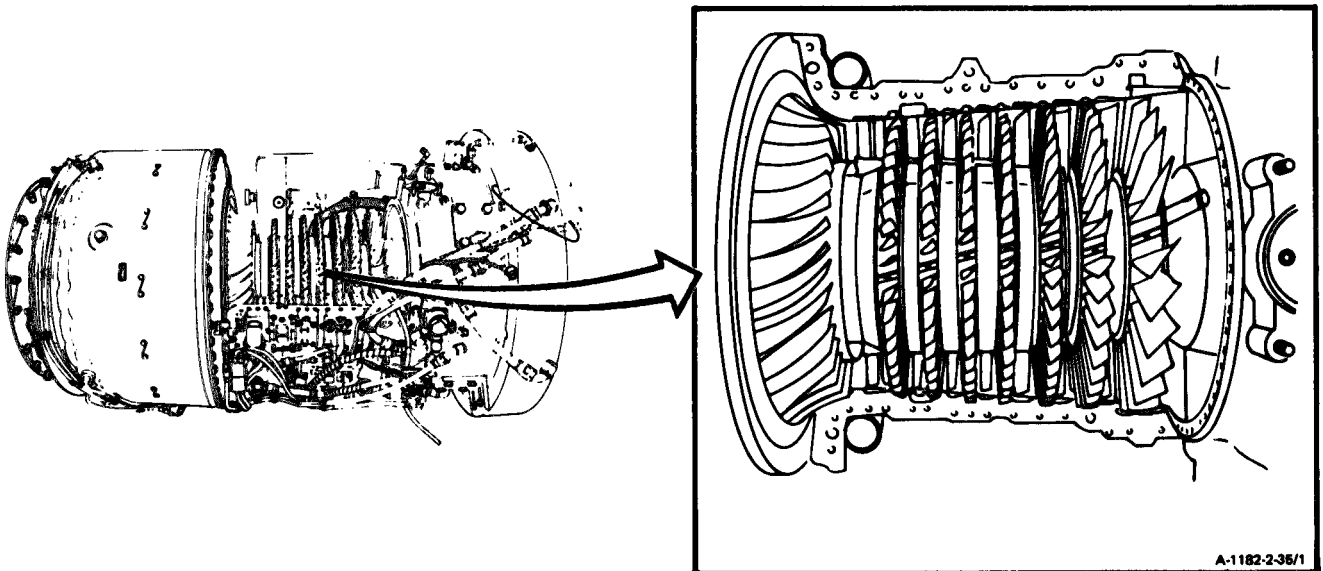
Springs  
Pins  
Key Washers

**Personnel Required:**

68B10 Aircraft Powerplant Repairer (2)  
68B30 Aircraft Powerplant Inspector

**References:**

TM 55-2840-254-23P



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1. **Install first stage blade (1) into disc** as follows:

- a. **Weigh serviceable blade and damaged blade** that is to be replaced using balance scale.

**NOTE**

Weight of blades shall be within 0.1 gram of each other.

**NOTE**

Damaged blade may have excessive missing material. If this occurs, remove opposite blade 180 degrees away. Weigh and select serviceable blade having same weight within 0.1 gram difference. If correct blade weight is not available, select two serviceable blades of equal weight. Install blades 180 degrees apart.

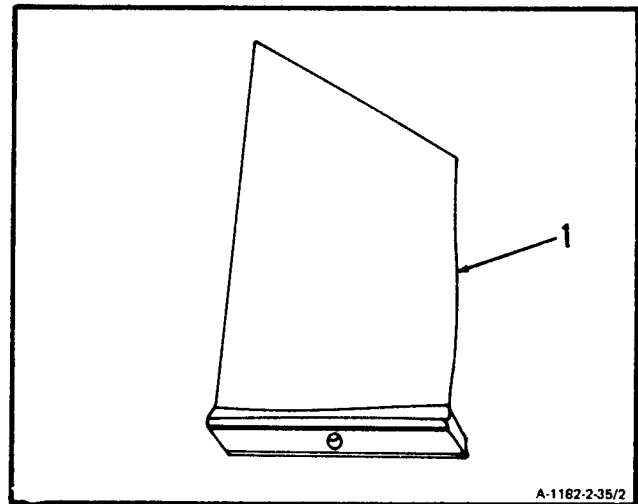
**NOTE**

If more than 10 single blades are replaced, each additional serviceable blade must exactly match weight of blade removed. It may not be possible to match weights of old and serviceable blades. If this happens, additional blades must be replaced in matched sets.

**NOTE**

Number of blades and stages in which they were replaced must be entered in engine record. Maximum of 50 blades may be replaced on compressor rotor between overhaul cycles.

- b. **Select serviceable blade (1) that is within 0.1 gram in weight of blade to be replaced.** Refer step a. above for weighing procedure.

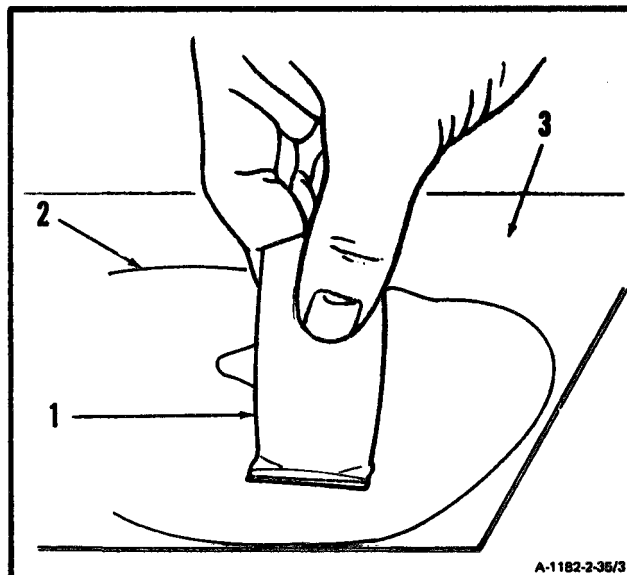


**INSPECT**

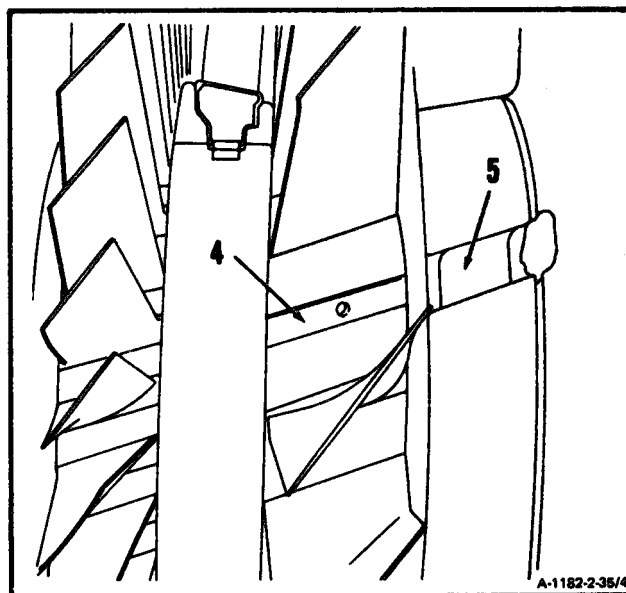
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**2-35 INSTALL COMPRESSOR ROTOR BLADES (Continued)****2-35**

- c. Remove metal evenly from bottom of base of serviceable blade (1) with abrasive paper (E3) (2) and flat surface plate (3). Remove just enough metal to obtain slight press fit in disc.



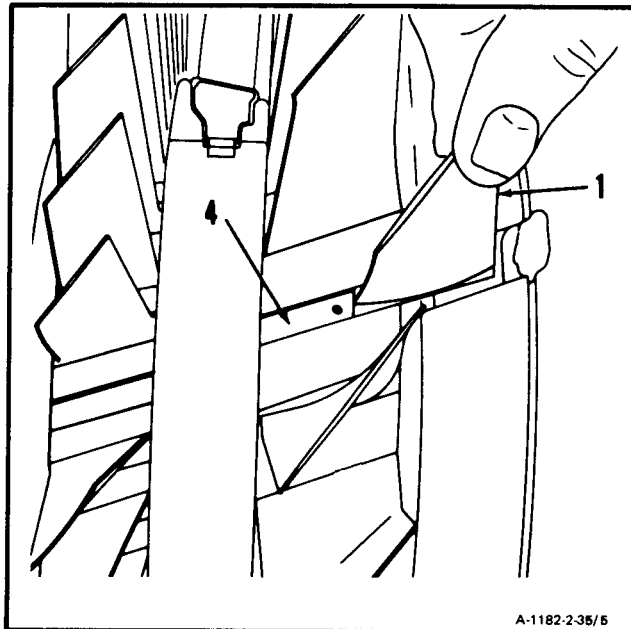
- d. Align empty blade dot in disc (4) with dot (5) in bearing housing.

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e. Install blade (1) rearward by hand temporarily into disc slot (4).

**NOTE**

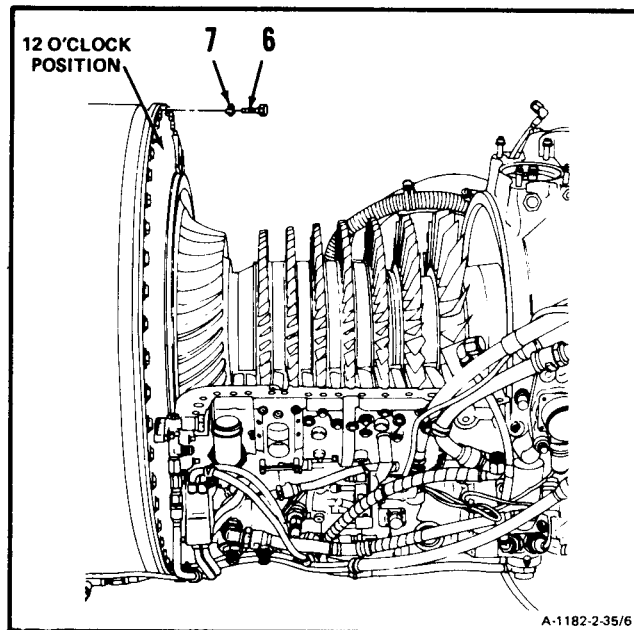
It is not necessary to install lockpin or spring at this time.



A-1182-2-35/5

f. Install dial indicator as follows:

(1) Remove three bolts (6) and key washers (7).



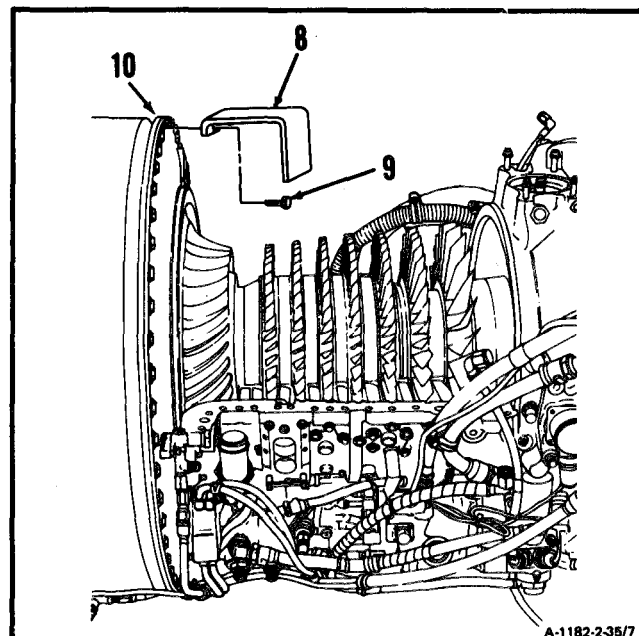
A-1182-2-35/6

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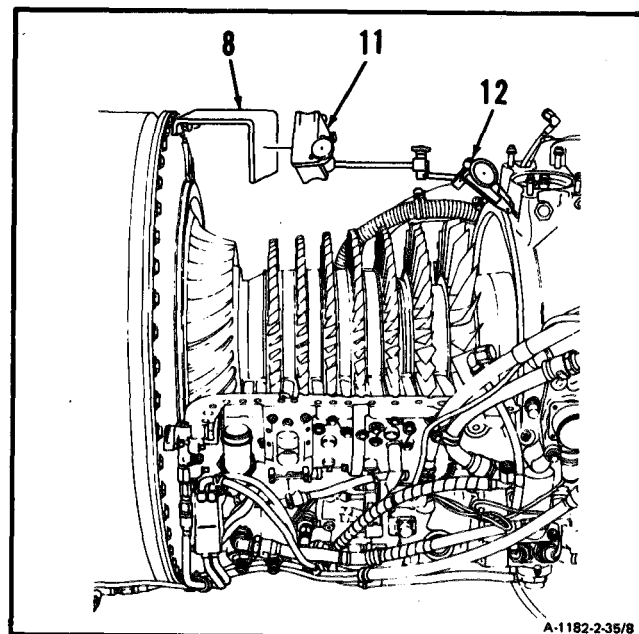
**2-35 INSTALL COMPRESSOR ROTOR BLADES (Continued)**

2-35

- (2) Install dial indicator support (T27) (8) and three bolts (9) on housing (10).



- (3) Install dial indicator magnetic base (11) and dial indicator (12) on dial indicator support (8).

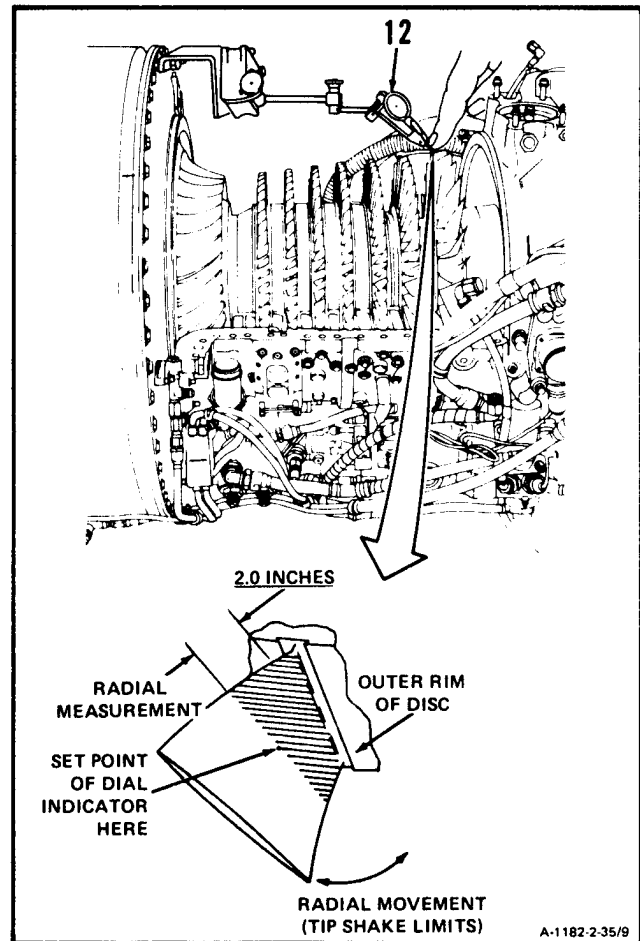


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## NOTE

Tip shake limits shall be taken only if blade was replaced.

- g. **Check tip shake limits** with dial indicator (12). Measure radial movement of blade by a radial measurement of 2.0 inches from outer rim of disc. **Tip shake limits shall be 0.005 to 0.059 inch.** If minimum tip shake cannot be met, repeat steps c. through e. If tip shake exceeds maximum limits, replace blade.



## INSPECT

- h. **Remove dial indicator** from dial indicator support.

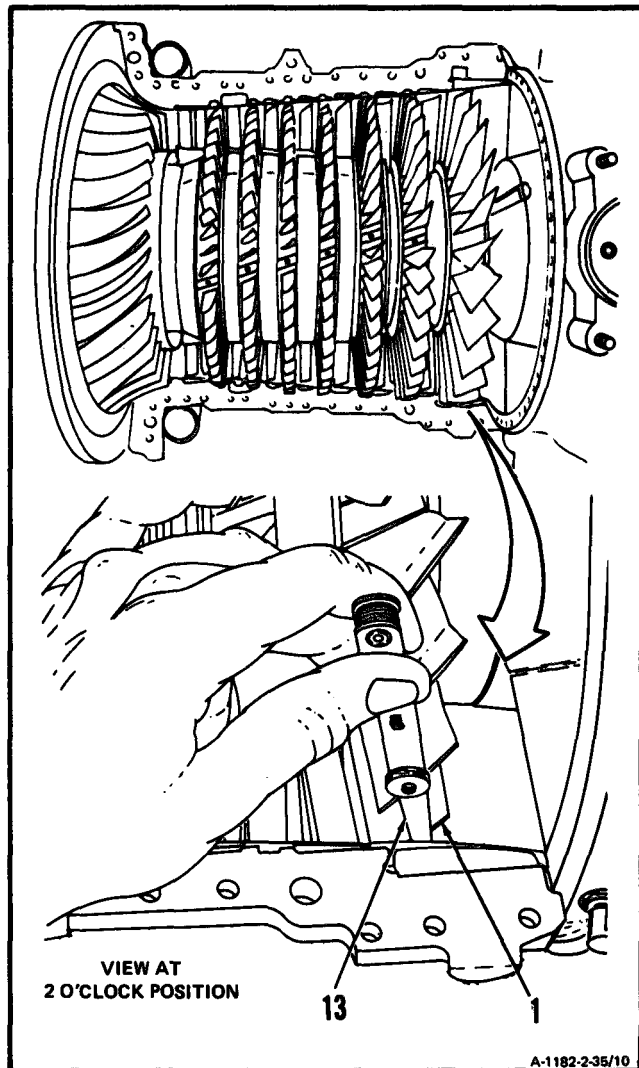
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## 2-35 INSTALL COMPRESSOR ROTOR BLADES (Continued)

2-35

- i. Measure tip clearance of serviceable blade(1) using thickness gage (13).



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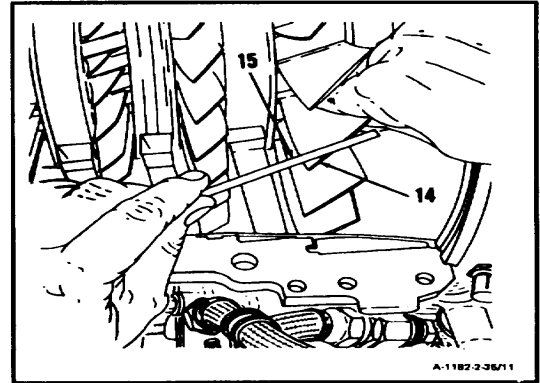
**CAUTION**

Do not use power grinder to remove metal from blade. Power grinder could easily damage blade.

**NOTE**

Measure the tip clearance of the adjoining blades to ensure serviceability (.019 - .029 inch) prior to filing.

- j. File tip of blade (14) with file (15) to obtain tip clearance equal to two adjacent blades.

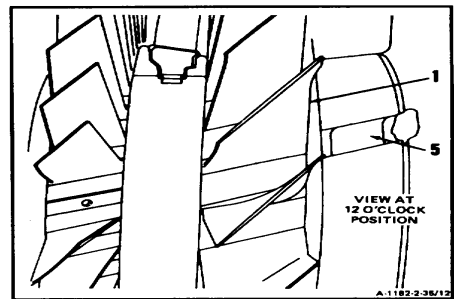


**INSPECT**

- k. Realign blade (1) with slot (5) in bearing housing.

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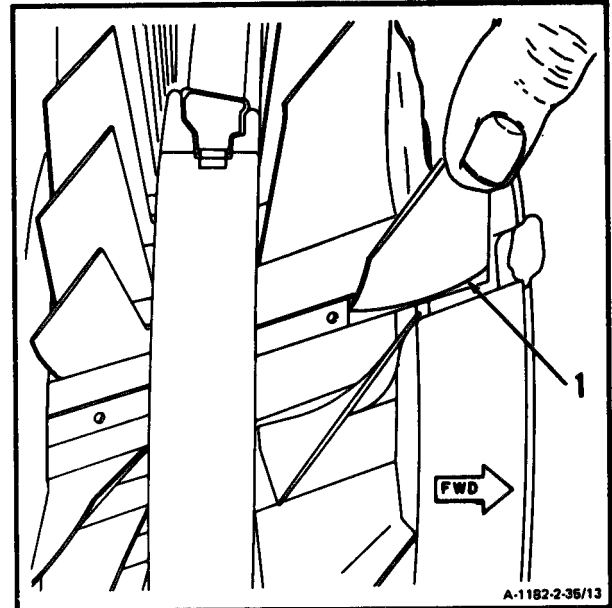
**2-324 Change 6**



## 2-35 INSTALL COMPRESSOR ROTOR BLADES (Continued)

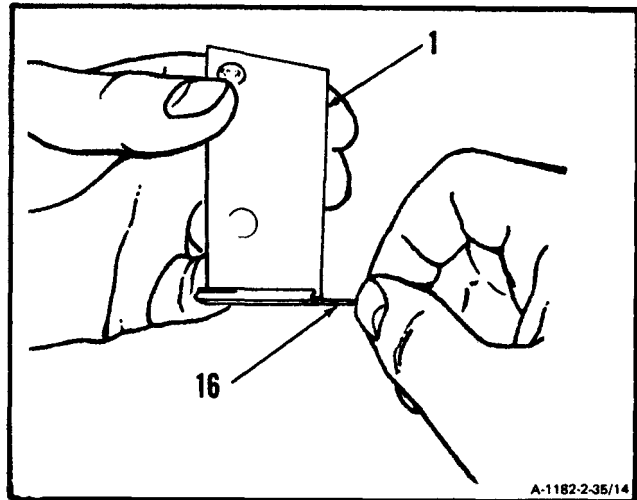
2-35

1. Remove blade (1) by hand. Sliding blade forward.

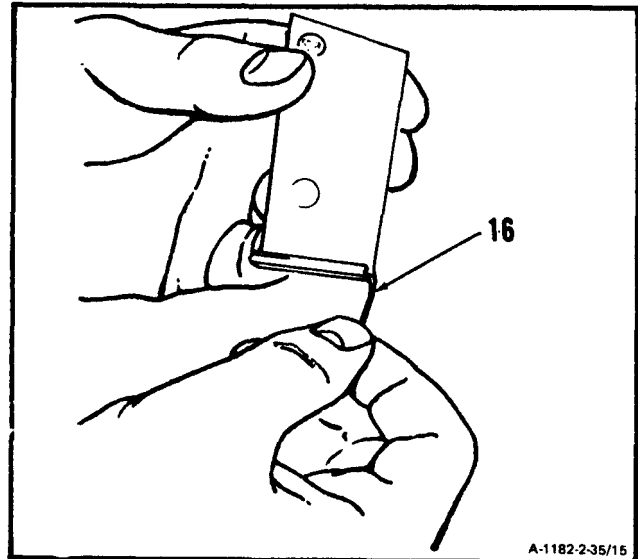


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m. **Insert** length of **lockwire (E28) (16)** into slot in base of blade (1 ) as far as it will go.

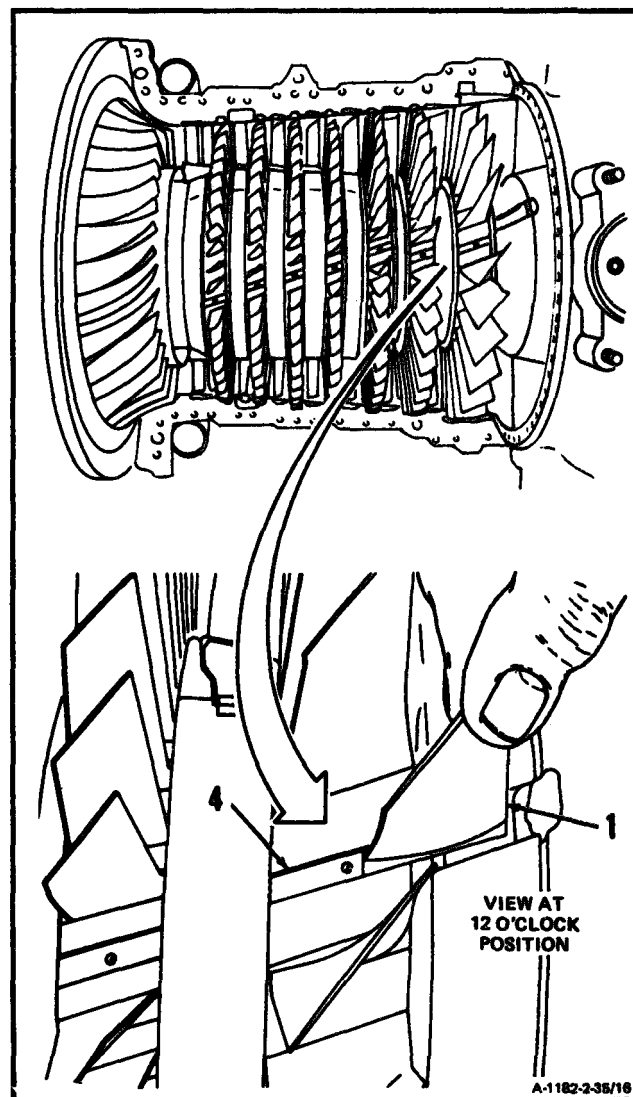


n. **Bend** lockwire (16) to indicate depth of slot. **Remove** lockwire (16) and retain for use in following step t.



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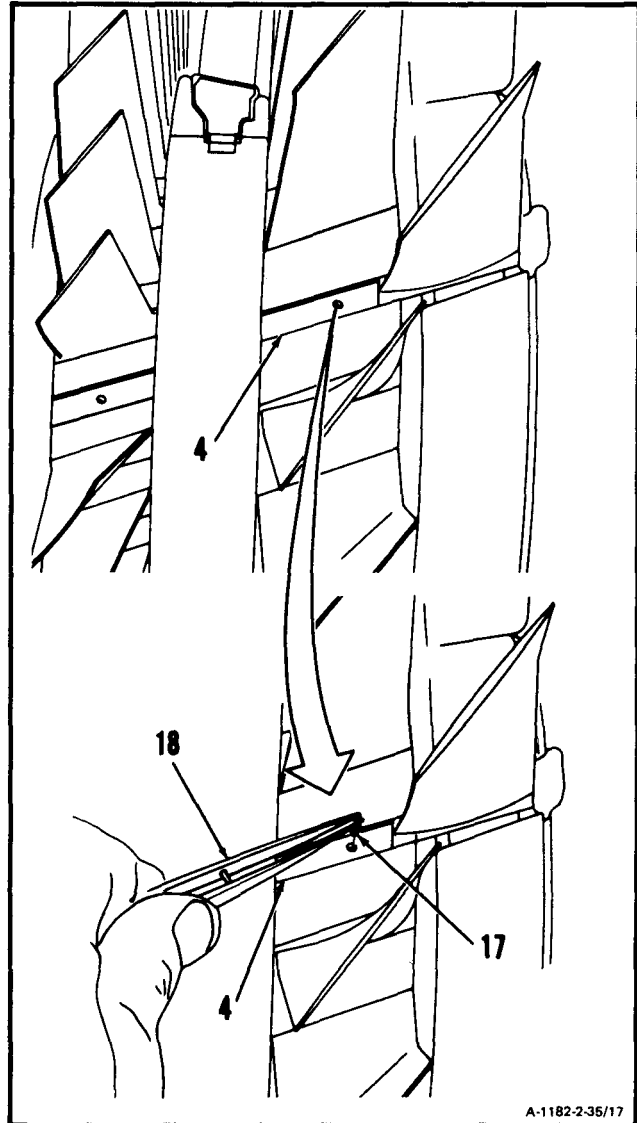
- o. Reinsert blade (1) rearward partway into disc slot (4).



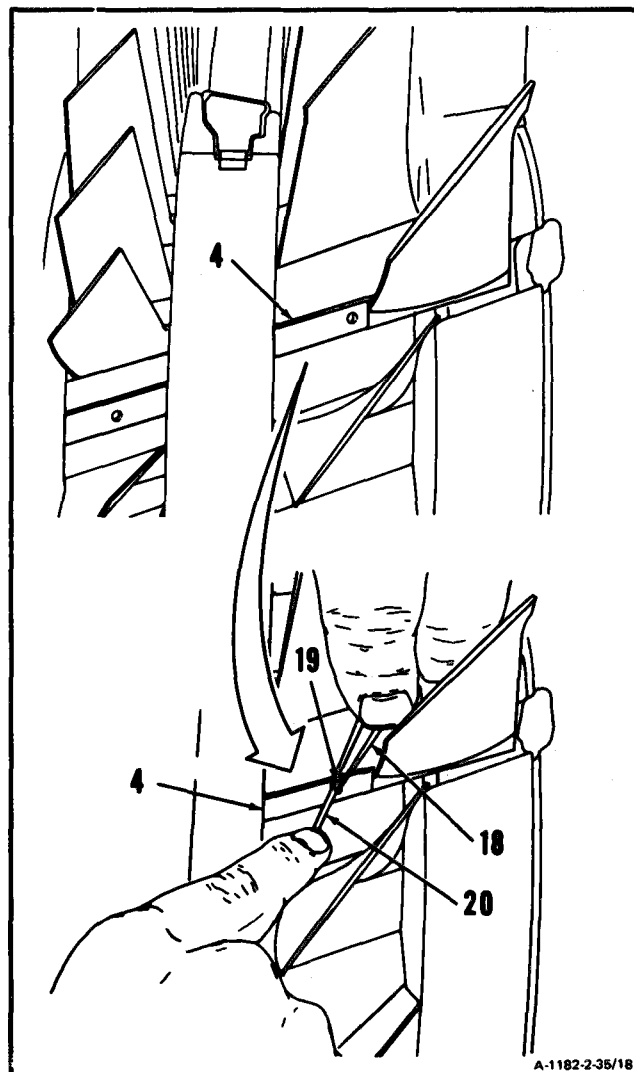
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**2-35 INSTALL COMPRESSOR ROTOR BLADES (Continued)****2-35**

- p. **Install new spring (17)** into hole in disc slot (4) using tweezers (18).

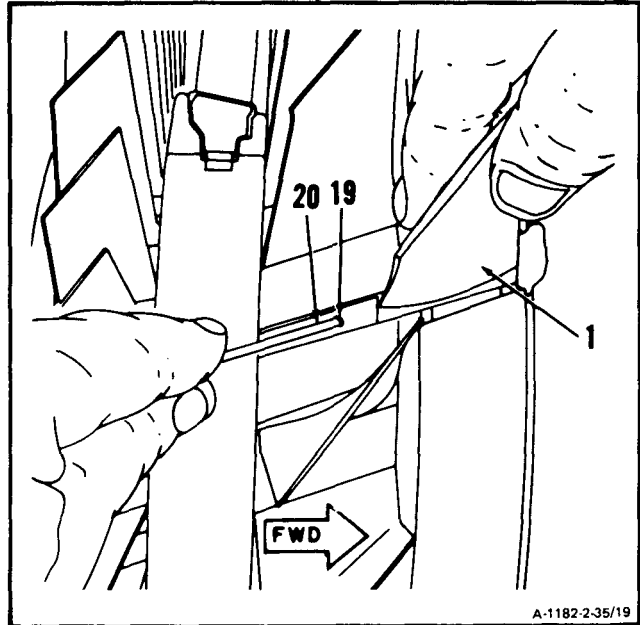
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- q. **Install new lockpin (19)** into hole in disc slot (4) using tweezers (18) and scribe (20).

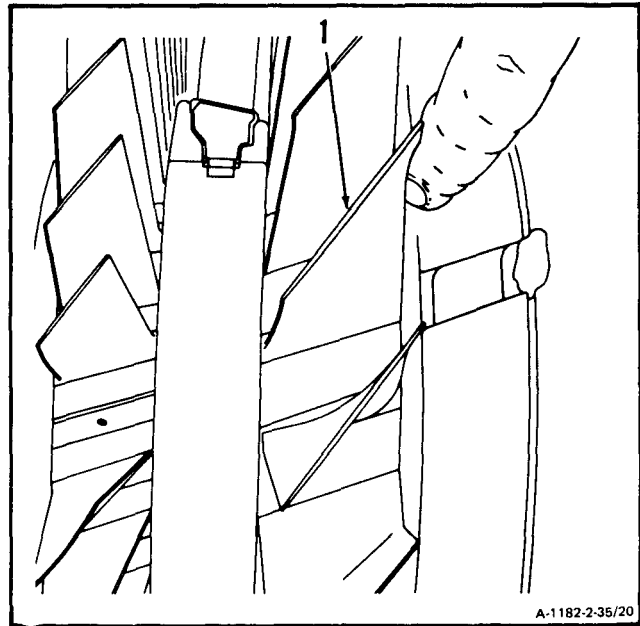


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- r. **Depress lockpin (19) with scribe (20)** and install blade (1) rearward. As soon as blade (1) edge catches lockpin pull scribe (20) away.



- s. **Engage lockpin** by installing blade (1) completely into disc slot by hand.



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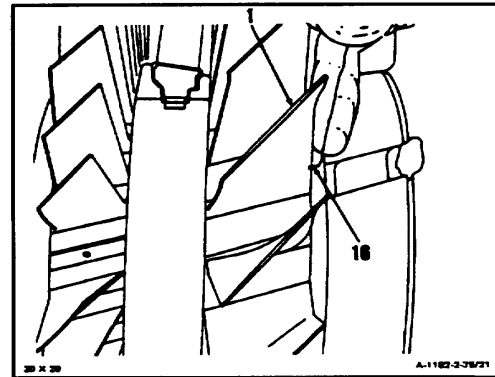
**2-35 INSTALL COMPRESSOR ROTOR BLADES (Continued)**

2-35

- t. Check engagement of lock-pin by reinserting bent piece of lock-wire (16) used in previous step n. Insert lock-wire (16) into slot in base of blade (1).

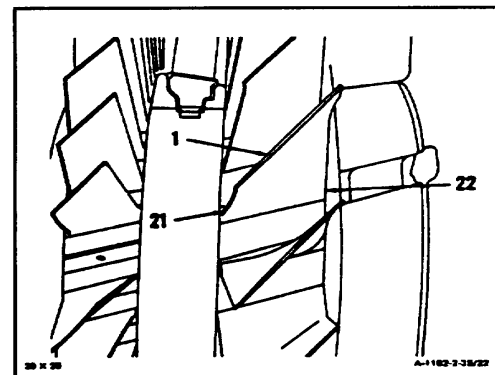
**NOTE**

Bend of wire shall protrude 1/16 inch from end of blade when wire is bottomed on lock-pin.



**INSPECT**

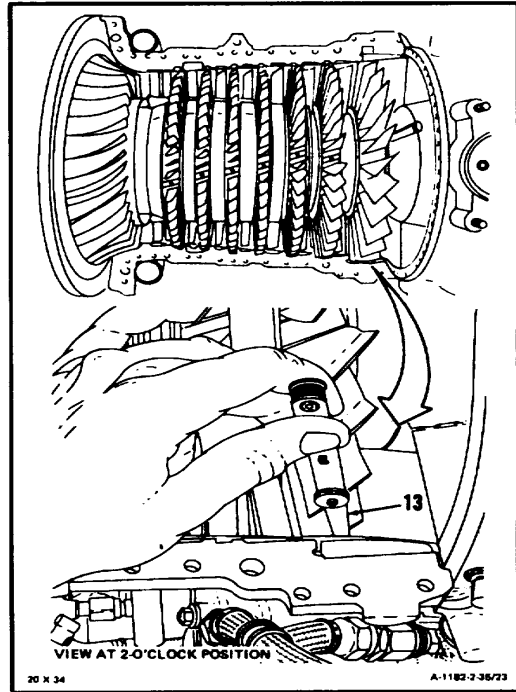
- u. Inspect for (1) protrusion from disc. Protrusion at forward face (22) shall not exceed 0.015 inch. Protrusion at rear face (21) shall not exceed 0.010 inch.



**INSPECT**

**GO TO NEXT PAGE**

- v. Check clearance between compressor housing and compressor rotor blades. Using thickness gage (13) check right and left sides of compressor housing. Tip clearance shall be 0.019 inch minimum.



INSPECT

GO TO NEXT PAGE

2-332 Change 6

**2. Install second through seventh stage compressor blades** as follows:

- a. **Weigh serviceable blade and damaged blade** that is to be replaced using balance scale.

**NOTE**

Weight of blades shall be within 0.1 gram of each other.

**NOTE**

Damaged blade may have excessive missing material. If this occurs, remove opposite blade 180 degrees away. Weigh and select serviceable blade having same weight within 0.1 gram difference. If correct blade weight is not available, select two serviceable blades of equal weight. Install blades 180 degrees apart.

**NOTE**

If more than 10 single blades are replaced, each additional serviceable blade must exactly match weight of blade removed. It may not be possible to match weights of old and serviceable blades. If this happens, additional blades must be replaced in matched sets.

**NOTE**

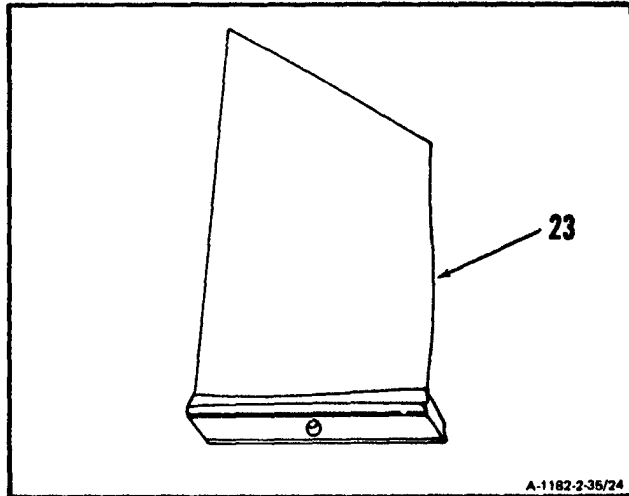
Number of blades and stages in which they were replaced must be entered in engine record. Maximum of 50 blades may be replaced on compressor rotor between overhaul cycles.

**NOTE**

This procedure shows third stage compressor blades. It is also applicable to second, fourth, fifth, sixth and seventh stage compressor blades.

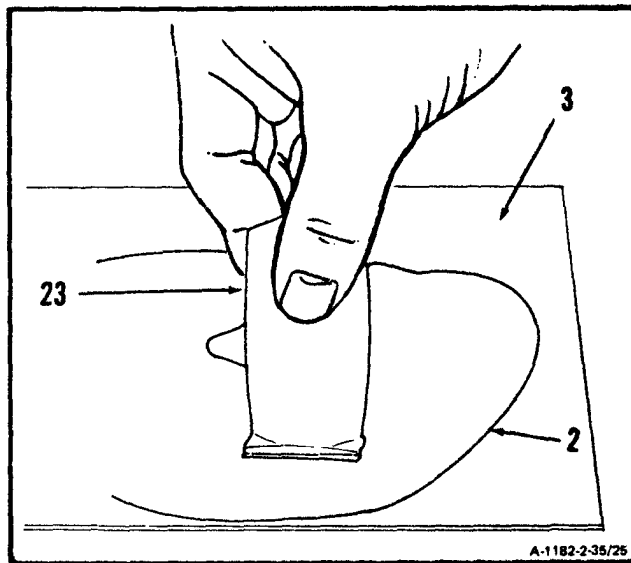
**GO TO NEXT PAGE**

- b. **Select serviceable blade (23) that is within 0.1 gram in weight of blade to be replaced.**  
Refer to step 2.a. for weighing procedure.



**INSPECT**

- c. **Remove metal evenly from bottom of base of serviceable blade (23) with abrasive paper (E3) (2) and flat surface plate (3). Remove just enough metal to obtain slight press fit in disc.**



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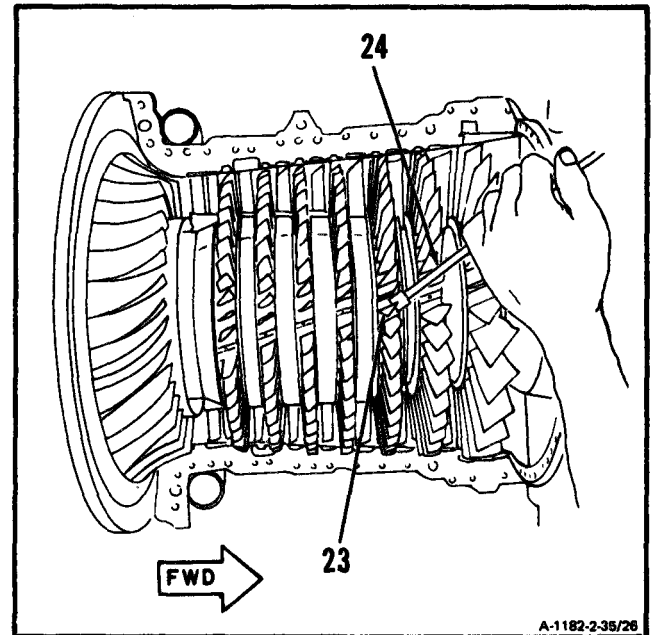
## 2-35 INSTALL COMPRESSOR ROTOR BLADES (Continued)

2-35

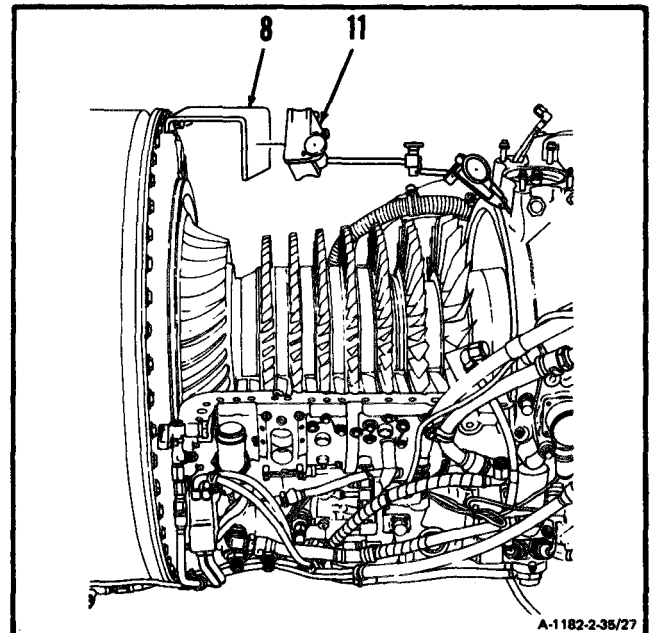
- d. Install blade (23) rearward temporarily into compressor disc slot using rawhide mallet and installation tool and rod contained in kit (T31) (24).

**NOTE**

It is not necessary to install lockpin or spring at this time.



- e. Install dial indicator magnetic base (11) on dial indicator support (8).



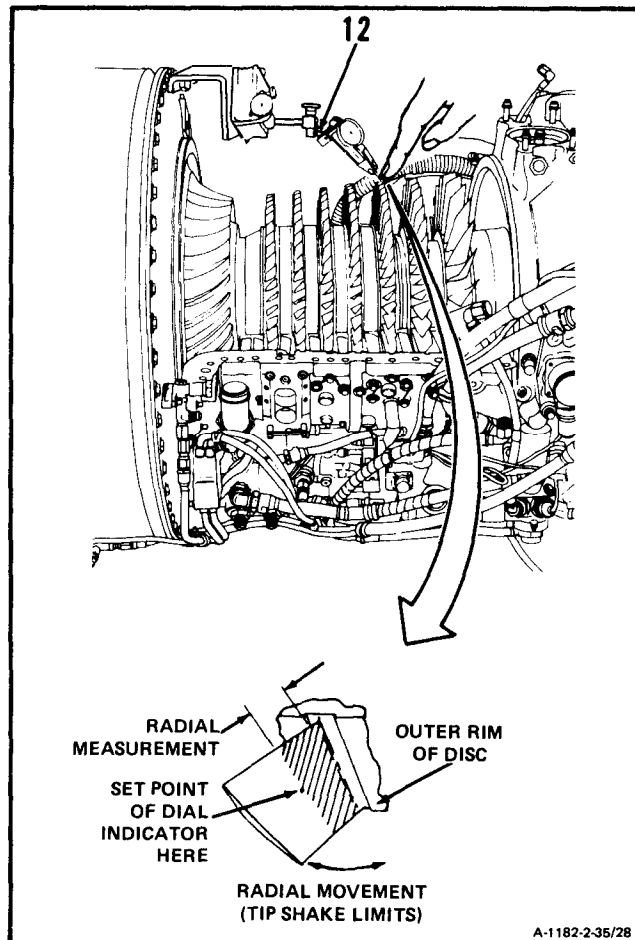
**GO TO NEXT PAGE**

- f. **Check tip shake limits** for second through seventh stage blades with dial indicator (12). **Measure radial movement of blade using a radial measurement from outer rim of disc.** Tip shake limits are as follows:

**NOTE**

Tip shake limits shall be taken only on replaced blade.

- (1) **Second Stage.** Measure radial movement of blade using a radial measurement of 1.75 inches from outer rim of disc. Tip shake limits shall be 0.005 to 0.051 inch.
- (2) **Third Stage.** Measure radial movement of blade using a radial measurement of 1.5 inches from outer rim of disc. Tip shake limits shall be 0.005 to 0.045 inch.
- (3) **Fourth through seventh stage.** Measure radial movement of blade using a radial measurement of 1.375 inches from outer rim of disc. Tip shake limits shall be 0.005 to 0.040 inch.



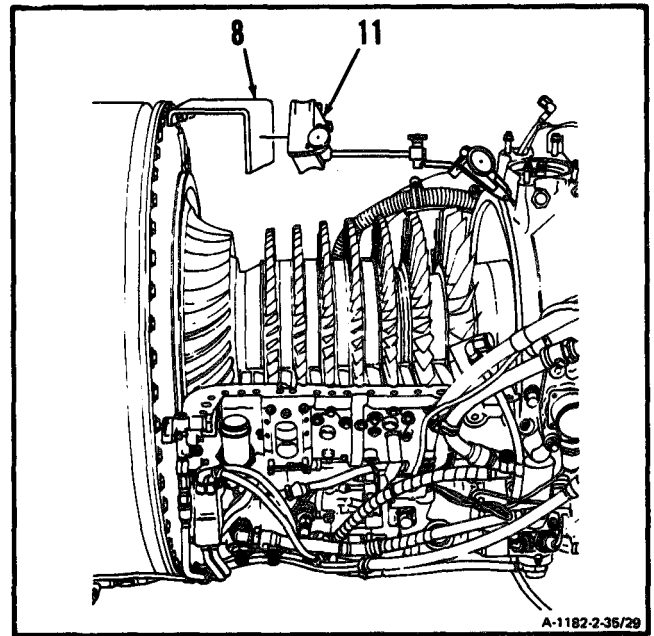
**INSPECT**

**GO TO NEXT PAGE**

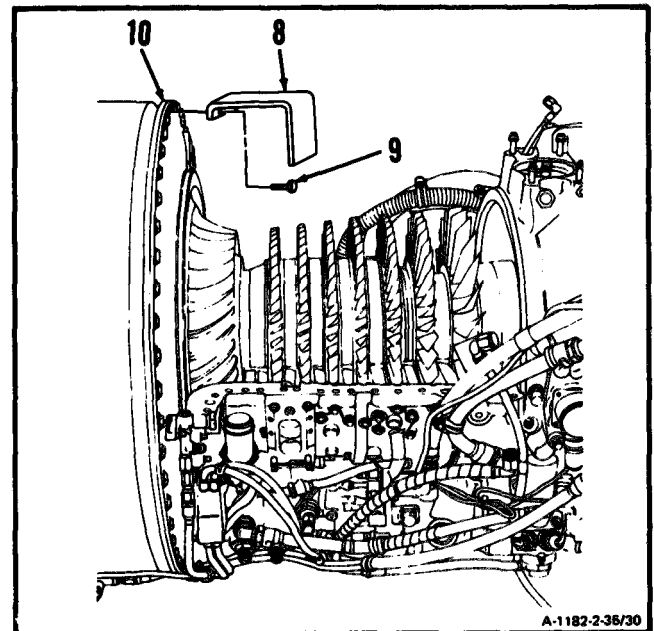
**2-35 INSTALL COMPRESSOR ROTOR BLADES (Continued)****2-35**

g. **Remove dial indicator** as follows:

- (1) Remove magnetic base (11) of dial indicator from dial indicator support (8).



- (2) Remove three bolts (9) and dial indicator support (T27) (8) from housing (10).

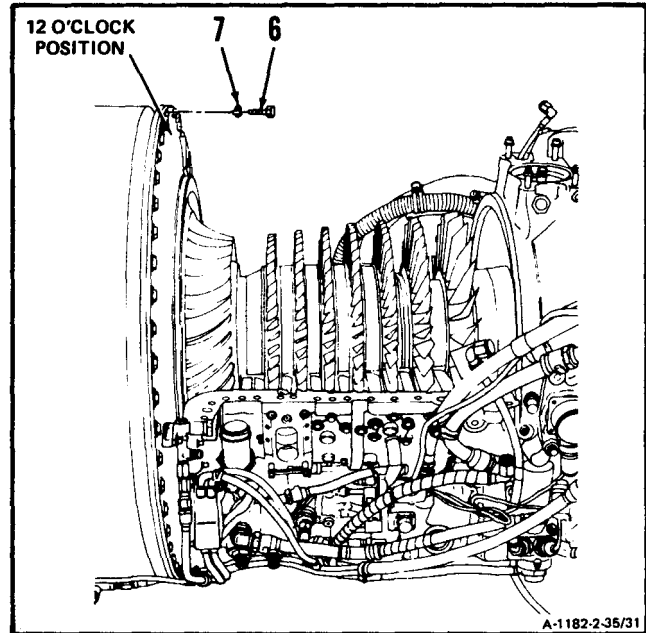


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**2-35 INSTALL COMPRESSOR ROTOR BLADES (Continued)**

2-35

- (3) Install three bolts (6) and key washers (7).
- (4) Lock bolts (6) by bending tabs of key washers (7).

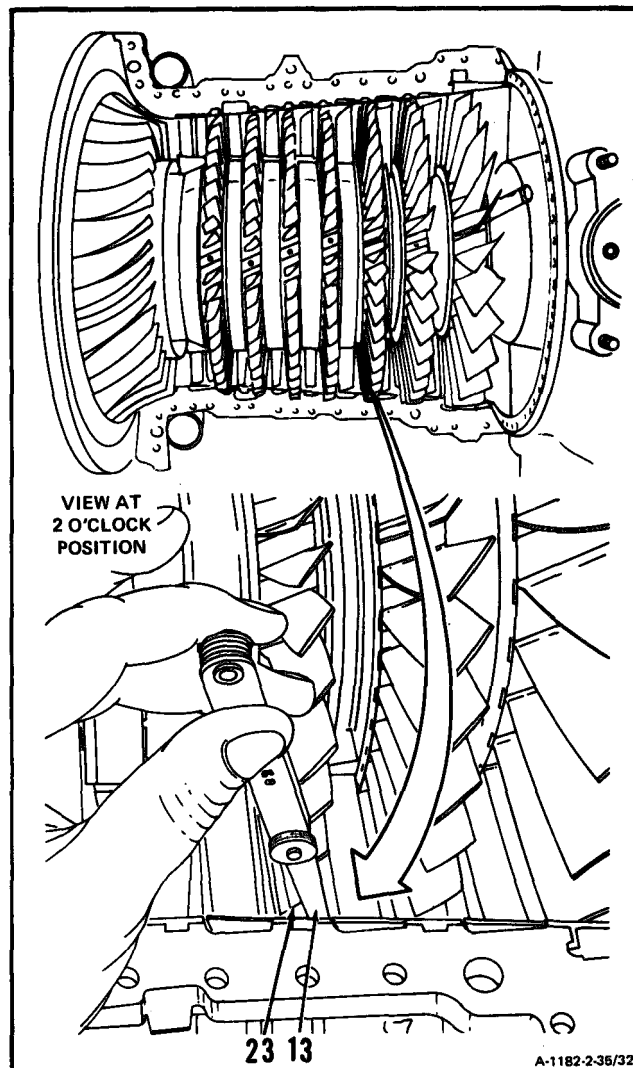
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## 2-35 INSTALL COMPRESSOR ROTOR BLADES (Continued)

2-35

- h. **Measure tip clearance** of serviceable blade (23) using thickness gage (13).

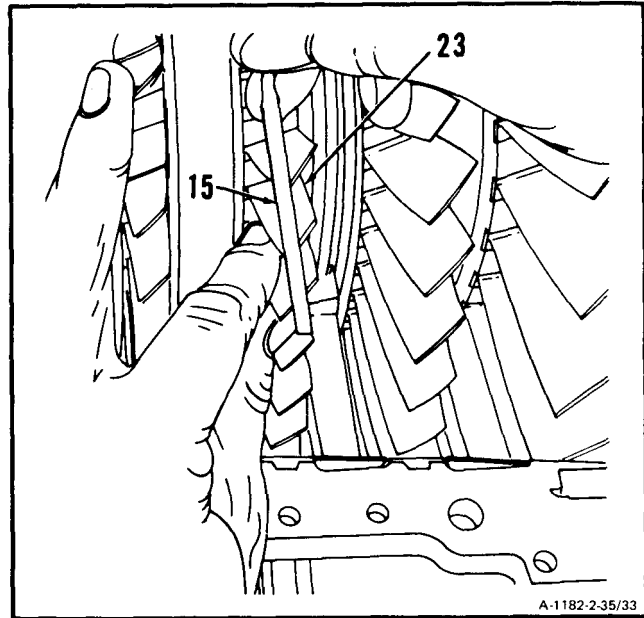


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**CAUTION**

Do not use power grinder to remove metal from blade. Power grinder could easily damage blade.

- i. **File tip of blade (23)** with file (15) to obtain tip clearance equal to two adjacent blades.



**INSPECT**

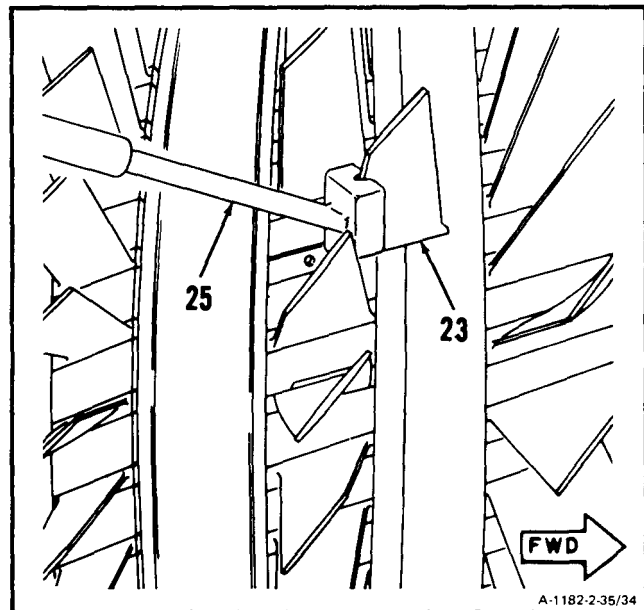
**NOTE**

In following step, use drift assembly (T19) for second stage blades. Use installing tool (T20) for third through seventh stage blades.

**NOTE**

In following step, second and third stage blades are removed forward, fourth through seventh stage blades are removed rearward. Third stage blade removal is shown.

- j. **Remove blade (23)** using rawhide mallet and installing tool (T20) (25) **by tapping blade (23) forward.**

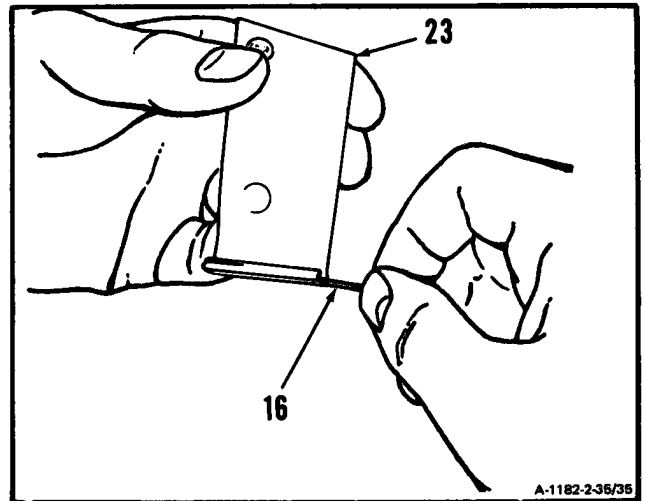


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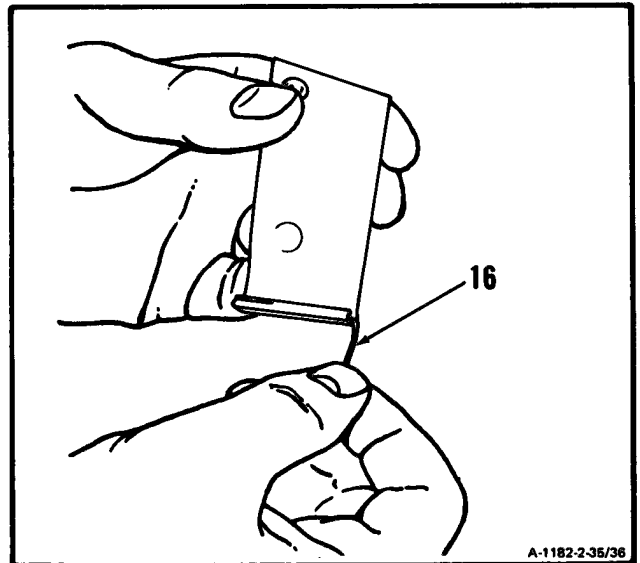
**CAUTION**

A new piece of lockwire must be used for each stage.

- k. **Insert** length of **lockwire (E28) (16)** into slot in base of blade (23) as far as it will go.

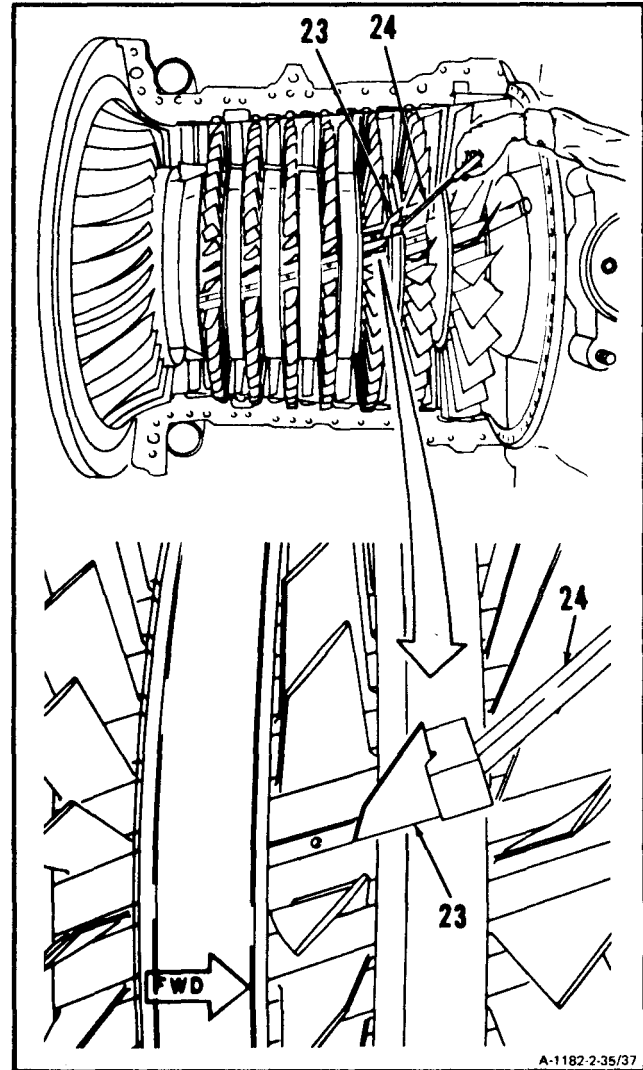


- l. **Bend** lockwire (16) to indicate depth of slot. **Remove** lockwire (16) and **retain** for use in following step r.



**GO TO NEXT PAGE**

- m. Reinsert blade (23) rearward part way into disc slot. Use rawhide mallet and installation tool and rod contained in kit (T31) (24).

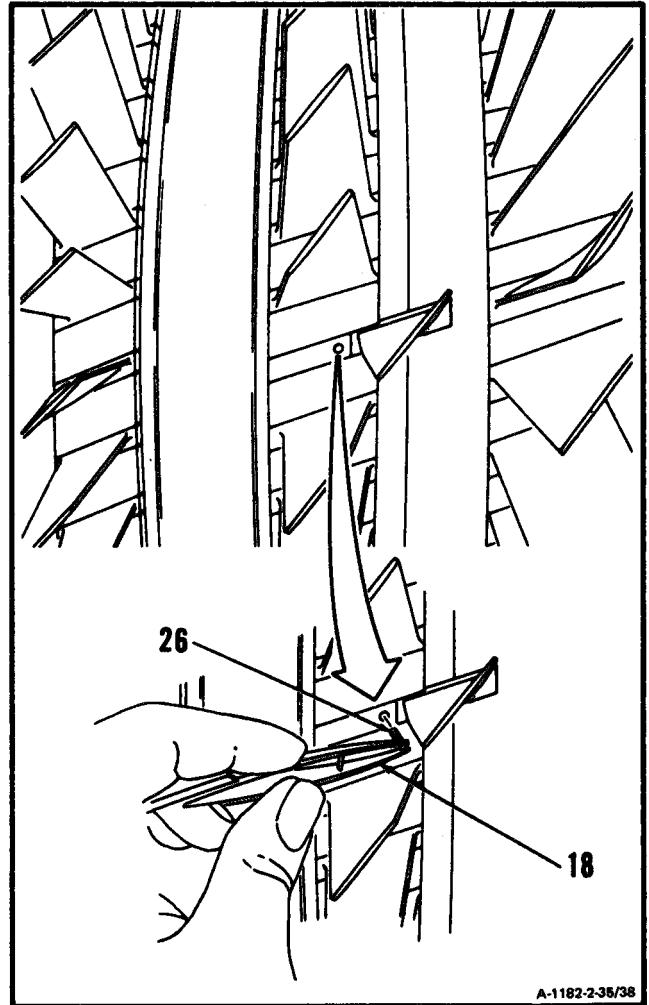


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## 2-35 INSTALL COMPRESSOR ROTOR BLADES (Continued)

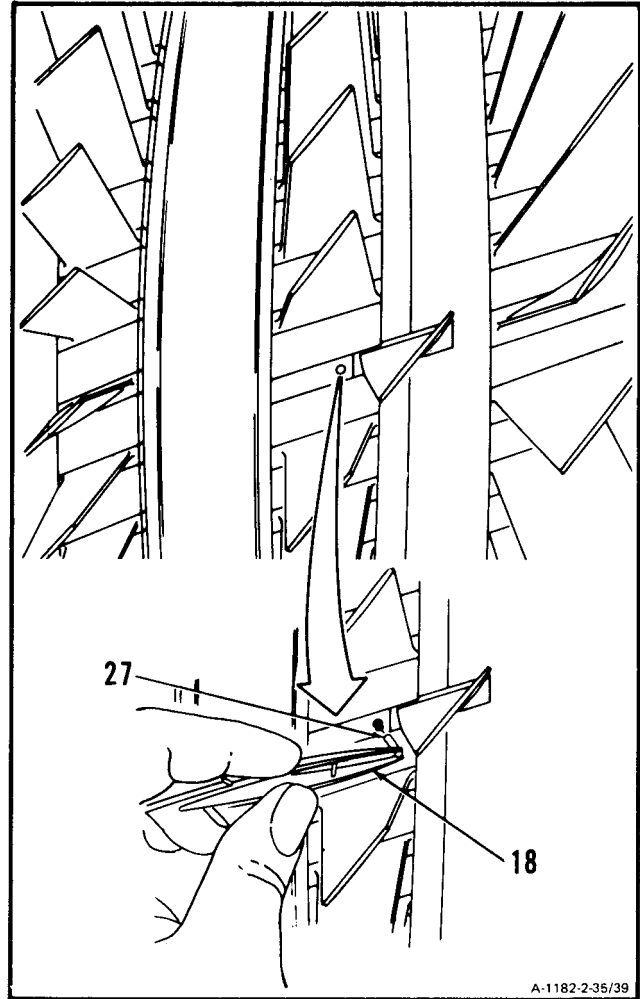
2-35

- n. **Install new spring (26)** into hole in disc slot using tweezers (18).



**GO TO NEXT PAGE**

- o. Install new lockpin (27) into hole in disc slot using tweezers (18).**

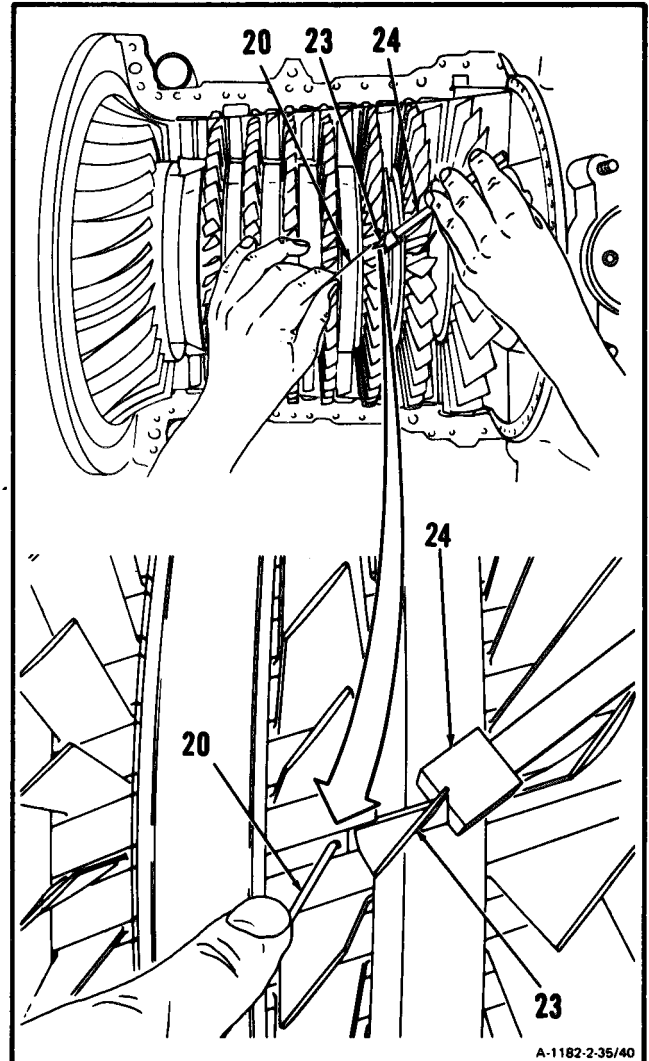


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**NOTE**

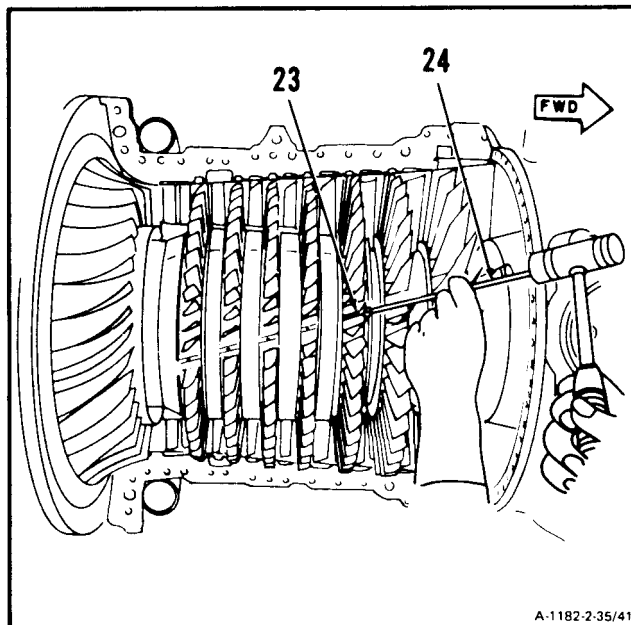
Two people are required for this step.

- p. **Depress lockpin with scribe (20). Have helper tap blade (23) rearward into disc slot using rawhide mallet and installation tool and rod contained in kit (T31) (24). As soon as blade (23) catches lockpin, pull scribe (20) away.**

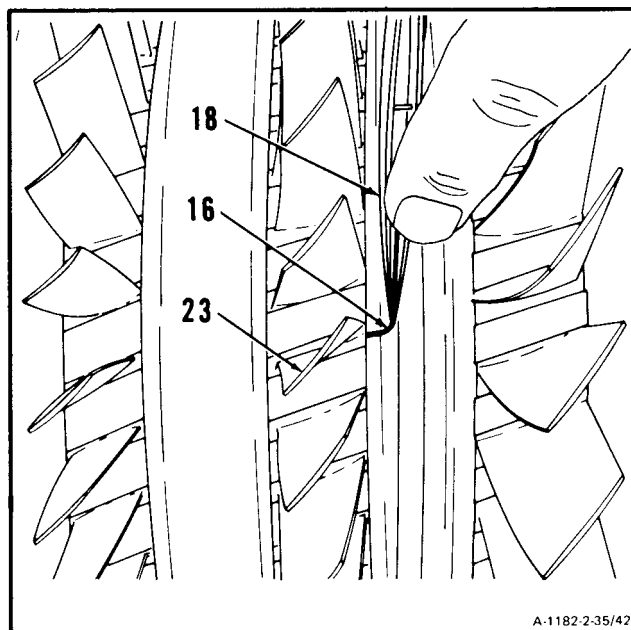


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- q. **Engage lockpin** by installing blade (23) rearward completely into disc slot. Use rawhide mallet and installation tool and rod contained in kit (T31) (24).



- r. **Check engagement of lockpin** by reinserting bent piece of lockwire (16) used in previous step 1. **Insert lockwire (16)** into slot in base of blade (23) with tweezers (18). Bend of wire shall protrude 1/16 inch from end of blade (23) when wire is bottomed on lockpin.



**INSPECT**

**GO TO NEXT PAGE**



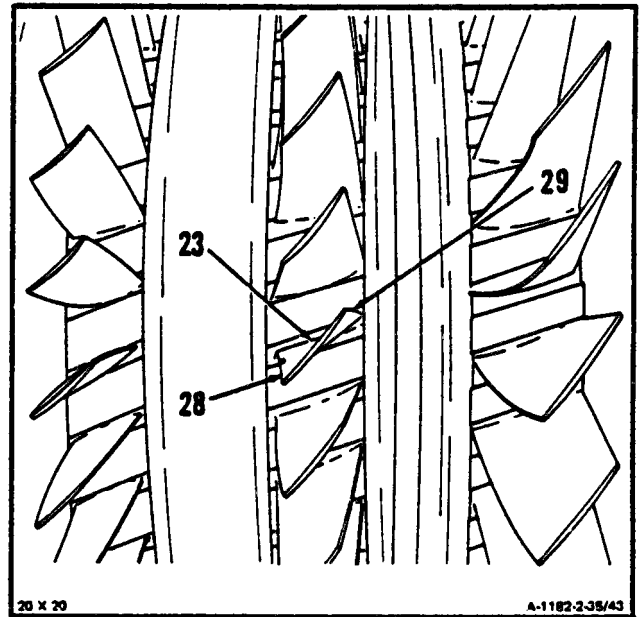
## 2-35 INSTALL COMPRESSOR ROTOR BLADES (Continued)

2-35

s. Inspect for blade (23) protrusion from disc. Protrusion at rear face (28) shall not exceed 0.010 inch. Protrusion at forward face (29) shall not exceed following limits:

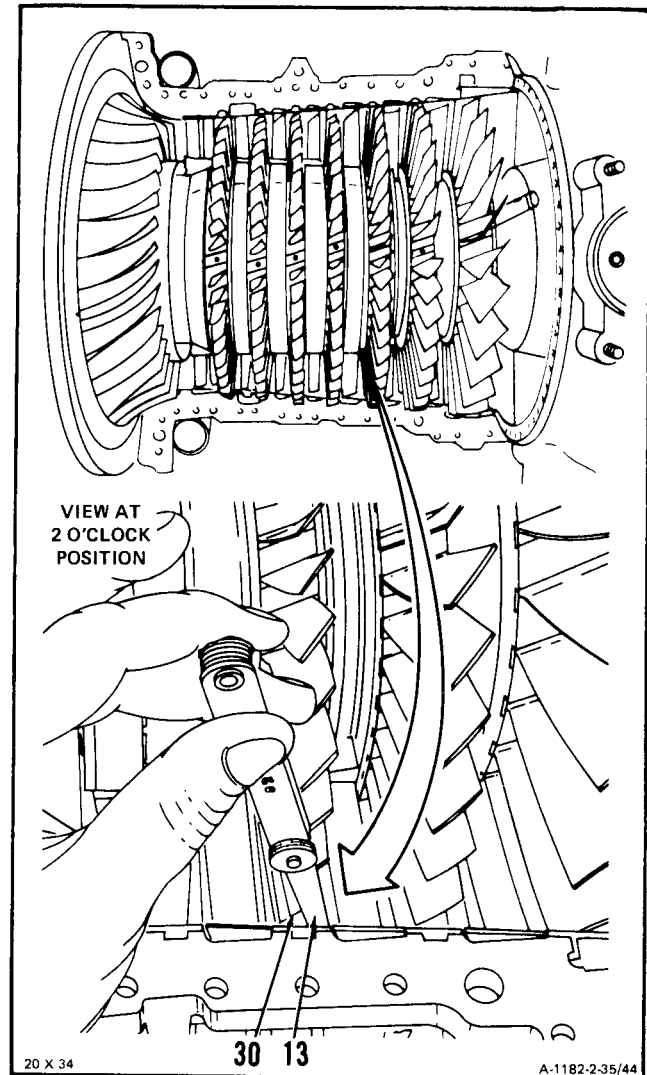
- (1) Second stage 0.015 inch.
- (2) Third stage 0.014 inch.
- (3) Fourth through seventh stage 0.018 inch.

**INSPECT**



**GO TO NEXT PAGE**

- t. Check clearance between compressor housing (30) and compressor rotor blades. Use thickness gage (13). Check right and left sides of compressor housing (30). Tip clearance shall be 0.016 inch minimum for all second through seventh stages.

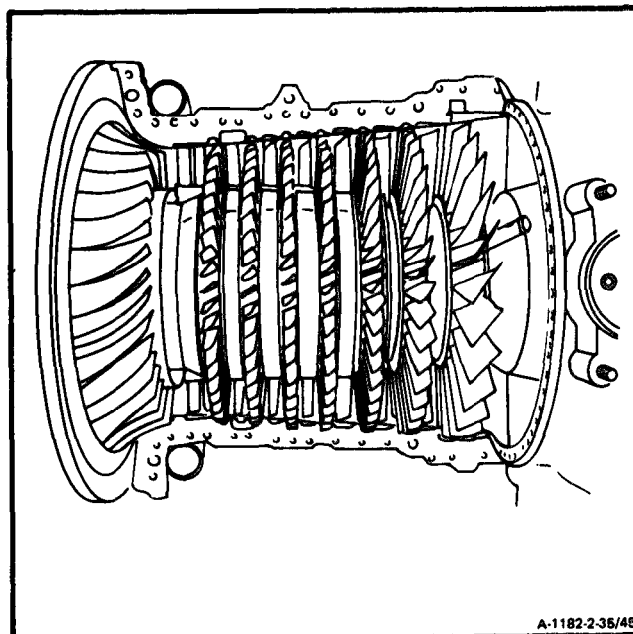


INSPECT

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**FOLLOW-ON MAINTENANCE:**

- Install Upper Compressor Housing (Task 2-24).
- Install Compressor Bleed Band (Task 2-13).
- Install Interstage Air-Bleed Actuator (Task 2-7).
- Install Main Fuel Filter and Bracket (Task 6-35).
- Install Starter Drive Assembly (Task 5-16).
- Install Oil Filler Assembly and Oil Filler Strainer (Task 8-22).
- Install Ignition Exciter (Task 7-15).
- Install In-Line Fuel Filter Assembly (Task 6-41).
- Install Oil Cooler Assembly (Task 8-11).
- Service Engine Oil System (Task 1-74).

**END OF TASK**



## Section VII. AIR DIFFUSER ASSEMBLY - MAINTENANCE PROCEDURES

## 2-36 REMOVE AIR DIFFUSER ASSEMBLY (AVIM)

2-36

## INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Mechanical Puller (T25)

**Materials:**

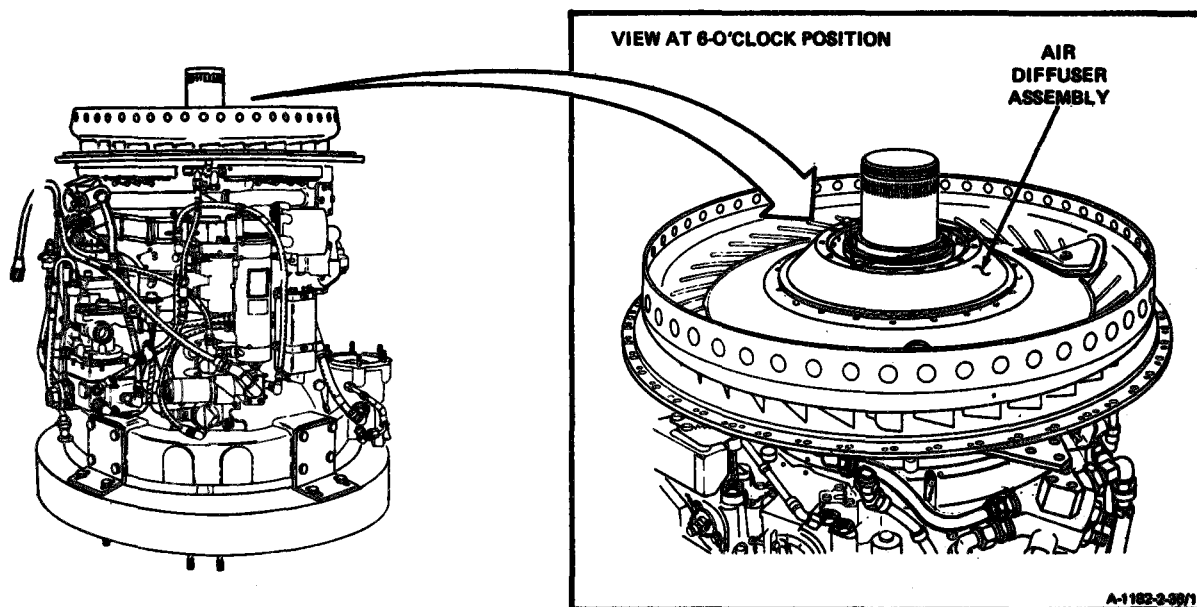
None

**Personnel Required:**

68B10 Aircraft Powerplant Repairer

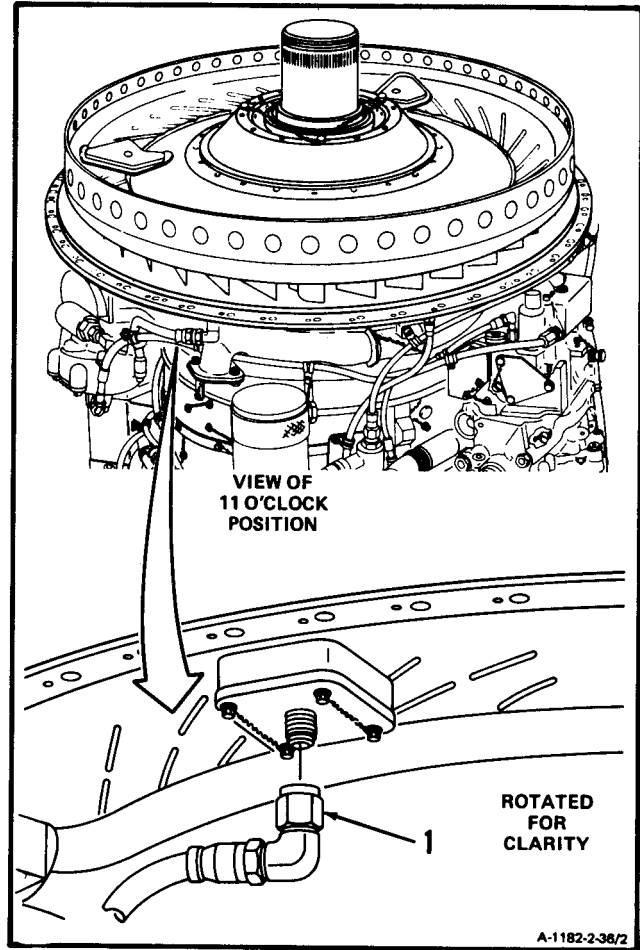
**Equipment Condition:**

Engine Oil System Drained (Task 1-75)  
Combustion Section and Power Turbine  
Removed (Task 3-5)  
Second Turbine Disc Assembly Removed  
(Task 4-53)  
Second Turbine Nozzle, Spacer and Case  
Removed (Task 4-57)  
First Turbine Disc Assembly Removed  
(Task 4-62)  
First Turbine Nozzle Removed  
(Task 4-67)  
Diffuser Curl Removed (Task 4-73)



GO TO NEXT PAGE

1. Disconnect hose assembly (1).

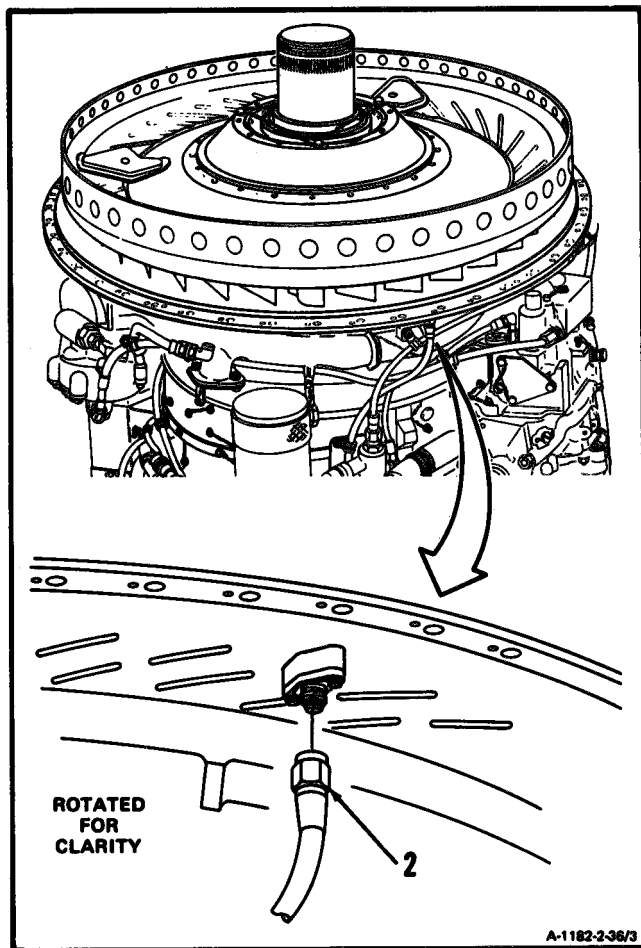


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2-36 REMOVE AIR DIFFUSER ASSEMBLY (AVIM) (Continued)

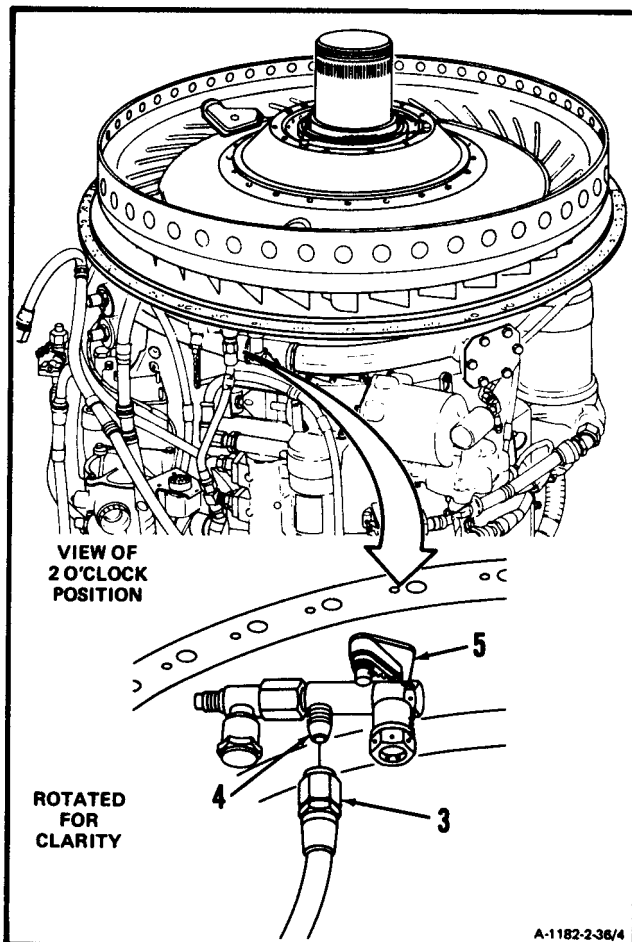
2-36

2. Remove lockwire and **disconnect hose assembly (2).**

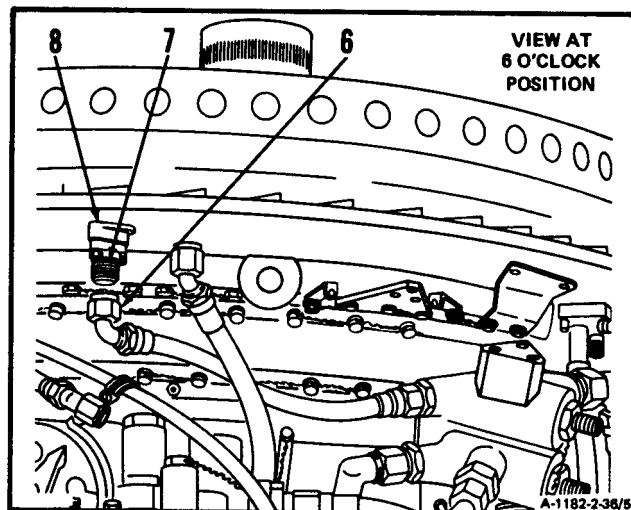


GO TO NEXT PAGE

- 3. Disconnect hose assembly (3).
- 4. Check for evidence of oil leakage around pressure connector (4) and welded area (5). If evidence of leakage is found, have an aircraft powerplant inspector examine air diffuser assembly (Ref. Task 2-38).



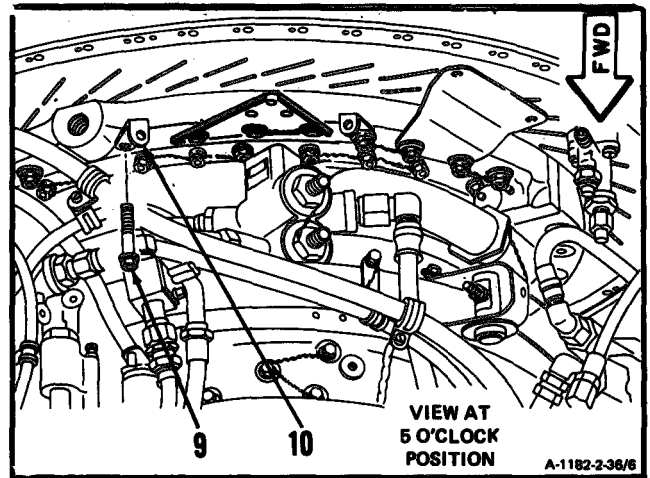
- 5. Disconnect hose assembly (6).
- 6. Check for evidence of oil leakage around scavenge connector (7) and welded area (8). If evidence of leakage is found, have an aircraft powerplant inspector examine air diffuser assembly (Ref. Task 2-38).



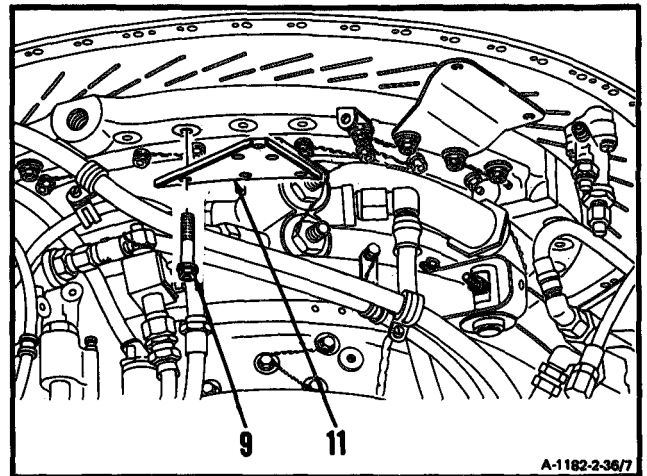
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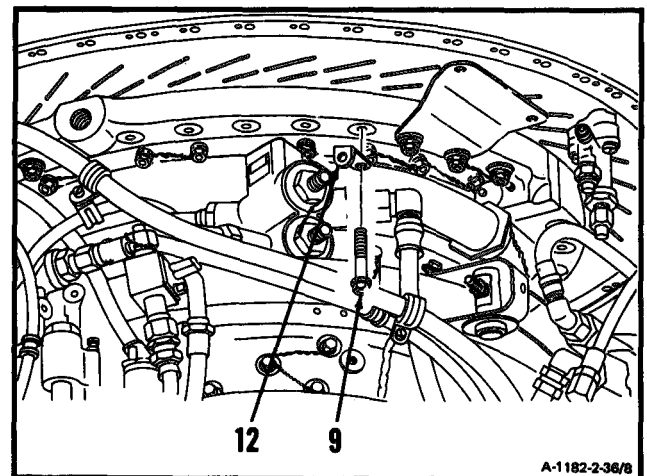
7. Remove lockwire, bolt (9), and bracket (10).



8. Remove lockwire, three bolts (9), and bracket (11).

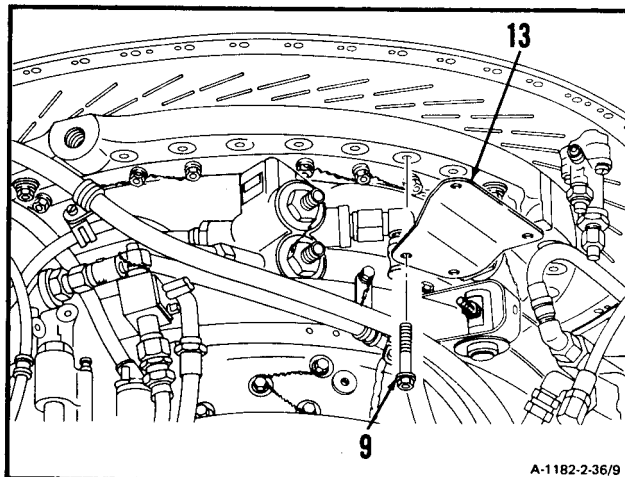


9. Remove lockwire, bolt (9), and bracket (12).

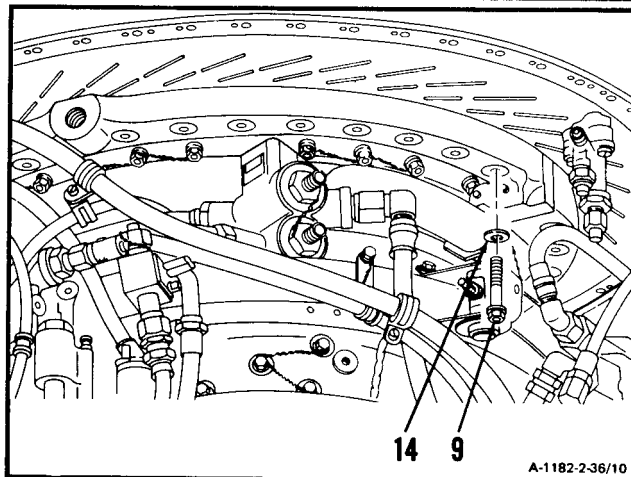


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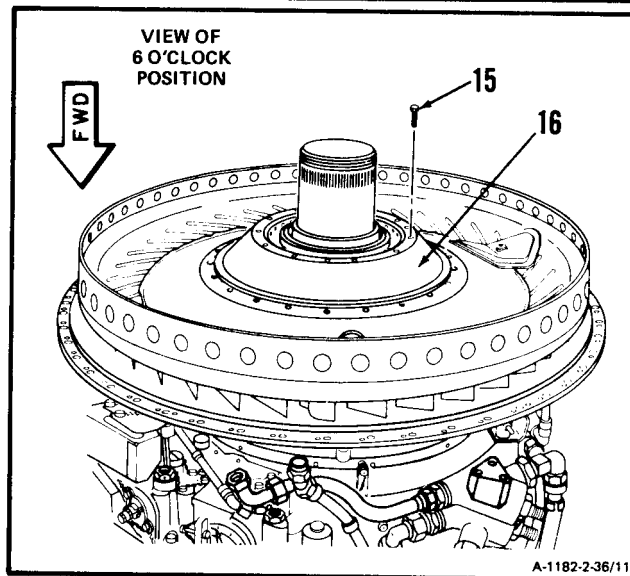
10. Remove lockwire, two bolts (9), and bracket (13).



11. Remove lockwire, 25 bolts (9) and washers (14).



12. Remove three bolts (15) from air diffuser assembly (16).

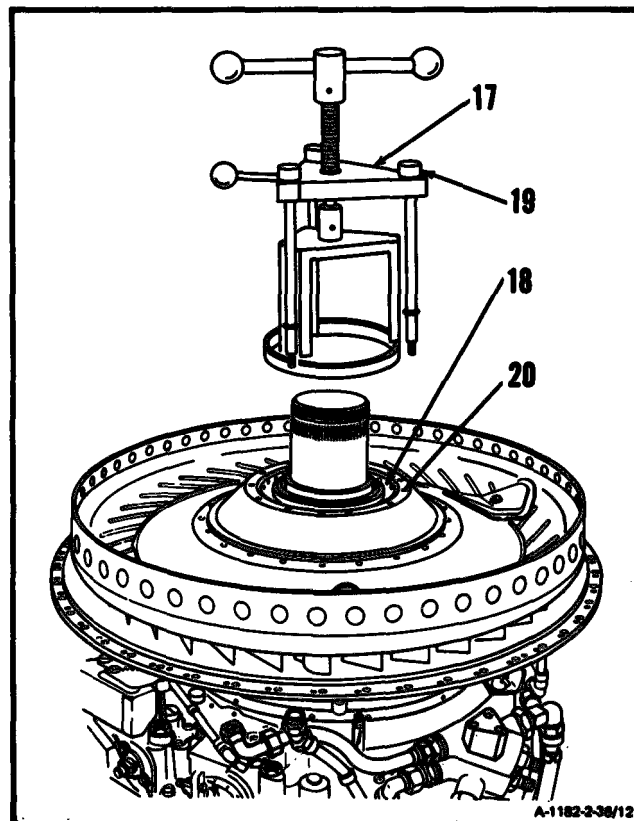


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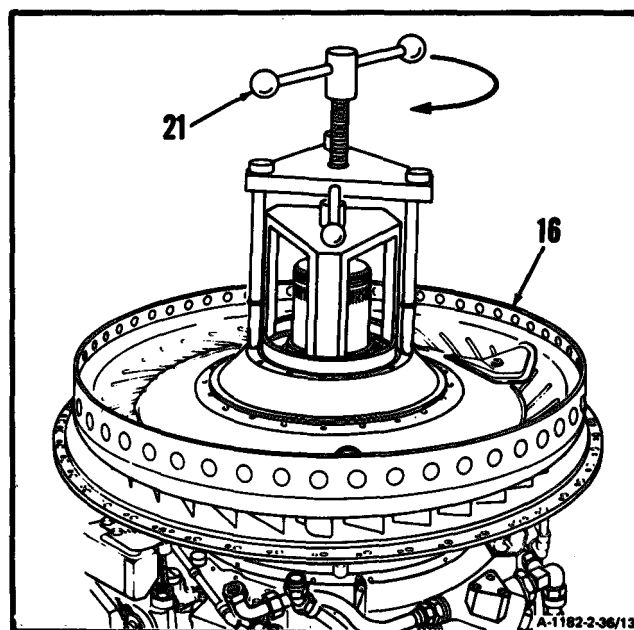
## 2-36 REMOVE AIR DIFFUSER ASSEMBLY (AVIM) (Continued)

2-36

13. **Position puller (T25) (17)** on No. 2 bearing housing (18).
14. **Screw three bolts (19)** into air diffuser assembly holes (20).



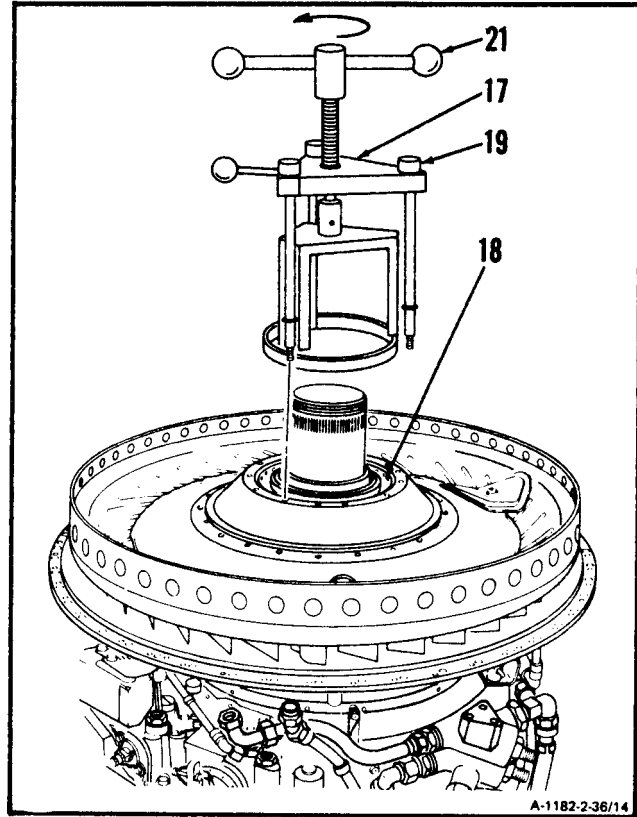
15. **Turn puller handle (21) clockwise** until air diffuser assembly (16) is loose.



**GO TO NEXT PAGE**

2-357

16. Turn puller handle (21) counterclockwise until puller handle (21) is loose.
17. Unscrew three bolts (19) and remove puller (T25) (17) from No. 2 bearing housing (18).



**GO TO NEXT PAGE**

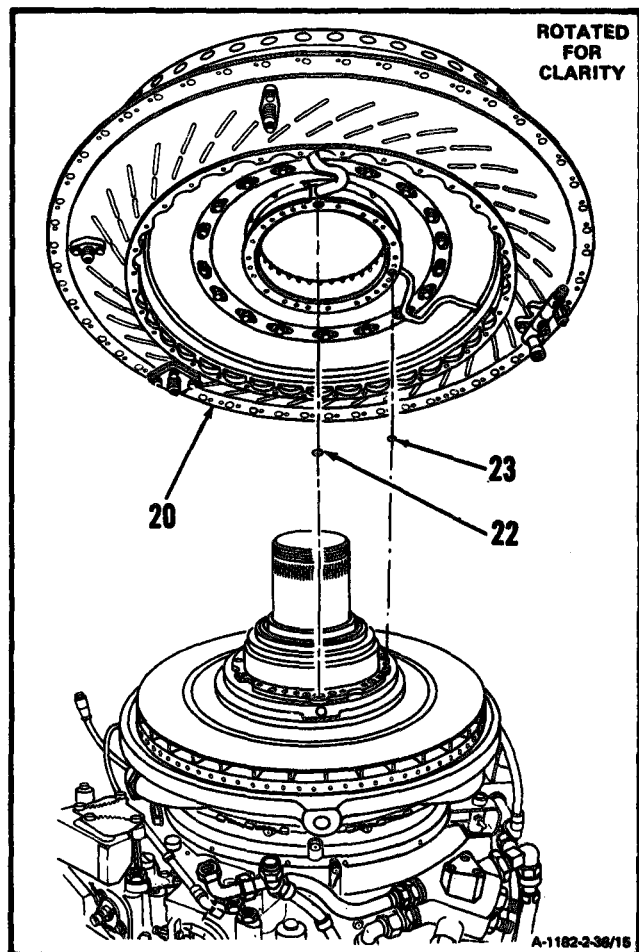
## 2-36 REMOVE AIR DIFFUSER ASSEMBLY (AVIM) (Continued)

2-36

**NOTE**

Metal gaskets may stick to underside of air diffuser housing.

18. Remove air diffuser assembly (20), and two gaskets (22 and 23).



## FOLLOW-ON MAINTENANCE:

None

**END OF TASK**



## 2-37 CLEAN AIR DIFFUSER ASSEMBLY (AVIM)

2-37

## INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**

Fiber Brush  
Goggles  
Compressed Air Source

**Materials:**

Gloves (E20)  
Methyl Ethyl Ketone (E36)

**Personnel Required:**

68B10 Aircraft Powerplant Repairer

**Equipment Condition:**

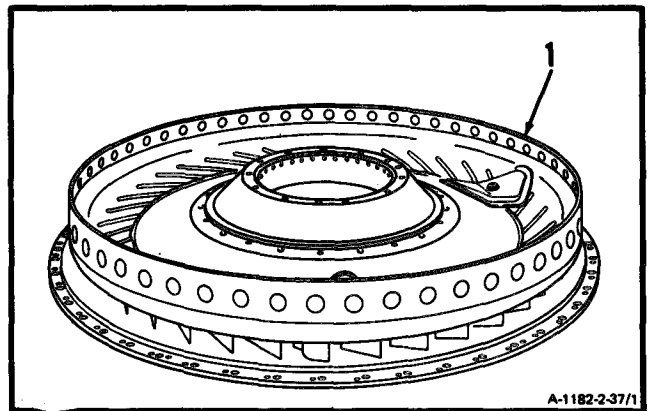
Off Engine Task  
Engine Oil System Drained (Task 1-75)  
Combustion Section and Power Turbine Removed (Task 3-5)  
Second Turbine Disc Assembly Removed (Task 4-53)  
Second Turbine Nozzle, Spacer and Case Removed (Task 4-57)  
First Turbine Disc Assembly Removed (Task 4-62)  
First Turbine Nozzle Assembly Removed (Task 4-67)  
Diffuser Curl Removed (Task 4-73)  
Air Diffuser Assembly Removed (Task 2-36)

**General Safety Instructions:****WARNING**

Methyl ethyl ketone (E36) is flammable and toxic. It can irritate skin and cause burns. Use only in well-ventilated area, away from heat and open flame. In case of contact, immediately flush skin or eyes with water for at least 15 minutes. Get medical attention for eyes.

**1. Clean air diffuser assembly (1) as follows:**

- a. Wear gloves (E20) and goggles. Use methyl ethyl ketone (E36) and fiber brush.



A-1182-2-37/1

**GO TO NEXT PAGE**

**WARNING**

When using compressed air for cleaning, use approved protective equipment for eyes and face. Do not use more than 30 psig air pressure. Do not direct air toward yourself or another person. Failure to comply could result in injury to eyes or skin. In case of injury, get medical attention.

- b. **Blow dry air diffuser assembly.** Use clean, dry compressed air.

**FOLLOW-ON MAINTENANCE:**

Inspect Air Diffuser Assembly (Task 2-38).

**END OF TASK**



## 2-38 INSPECT AIR DIFFUSER ASSEMBLY (AVIM)

2-38

## INITIAL SETUP

**Materials:**

None

**Applicable Configurations:**

All

**Personnel Required:**

68B30 Aircraft Powerplant Inspector

**Tools:**Technical Inspection Tool Kit,  
NSN 5180-00-323-5114

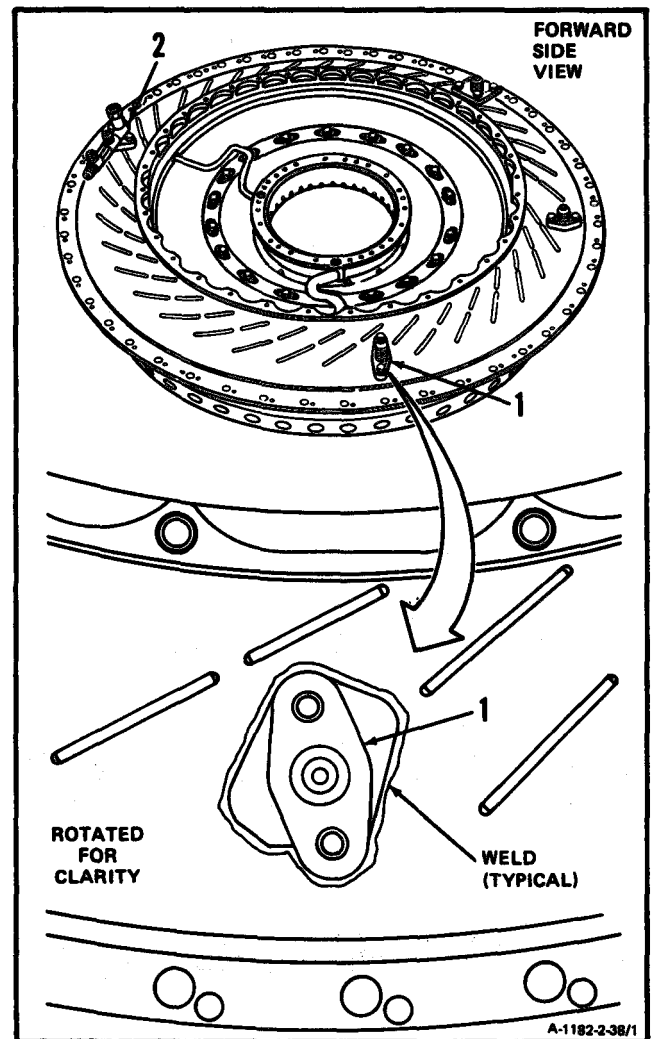
Compressed Air Source

Goggles

**Equipment Condition:**

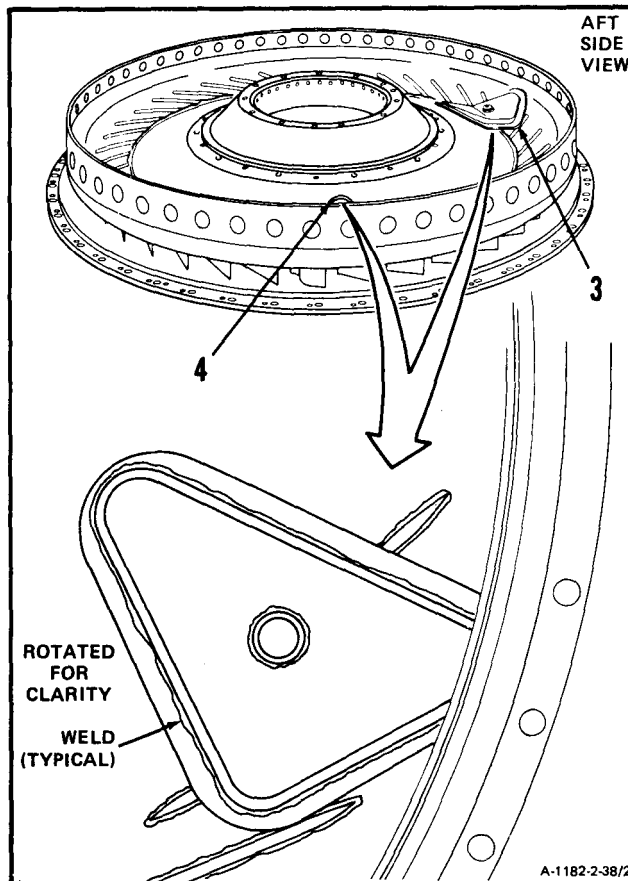
Off Engine Task

1. Inspect oil scavenge adapter mount boss (1) and pressure line connector mount boss (2). There shall be no more than two cracks per weld on each adapter. These cracks shall not be longer than 1/8-inch and must be separated by 1 -inch minimum.

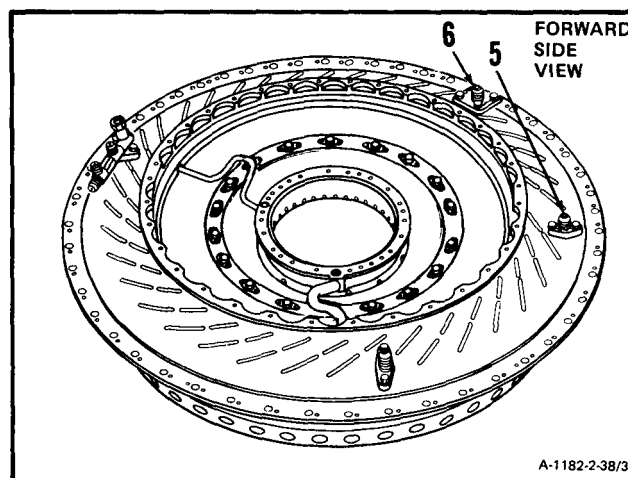


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2. **Inspect oil scavenge and pressure lines inner adapter plates (3 and 4).** There shall be no cracks in welds around the edge of the plates. There shall be no cracks in adapter plates (3 and 4).



3. **Inspect pressure pickup connector (5) and adapter (6) mount bosses.** There shall be no cracks on boss longer than 1/8-inch or closer than 1-inch



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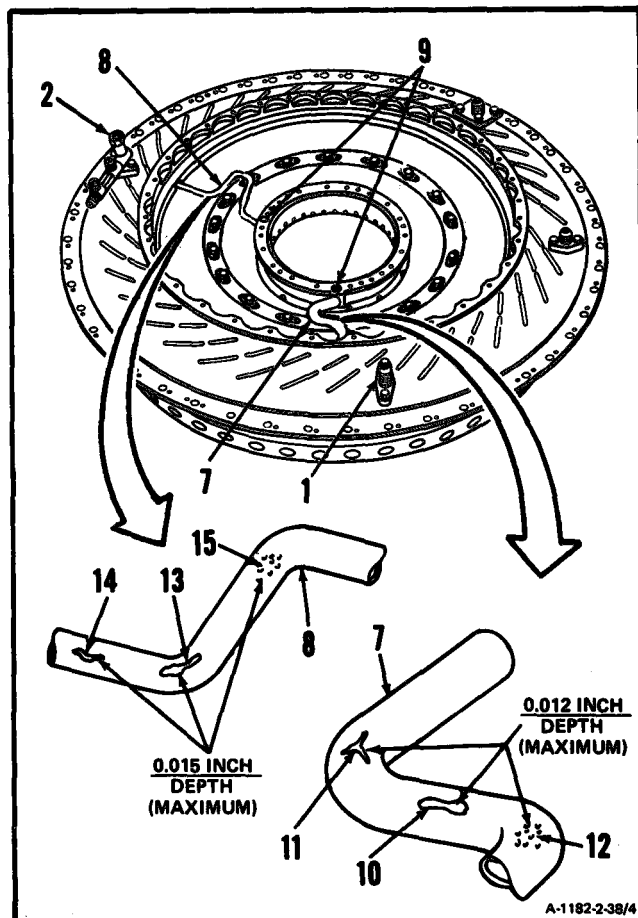
4. Inspect oil tubes (7 and 8) as follows:

- a. There shall be no cracks.

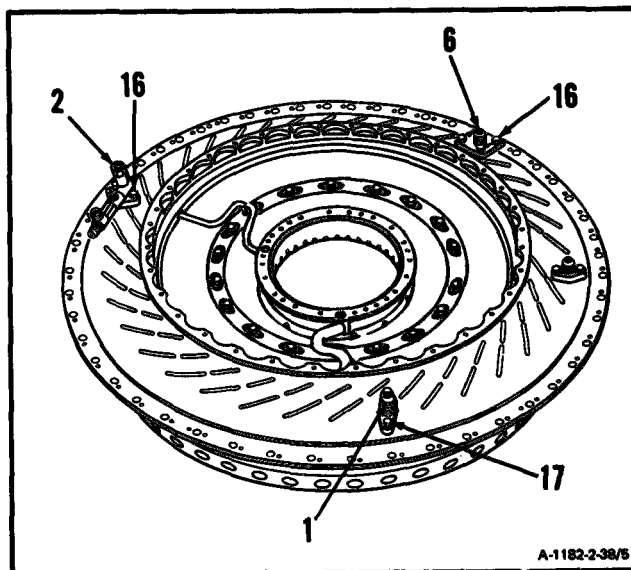
**WARNING**

When using compressed air for cleaning, use approved protective equipment for eyes and face. Do not use more than 30 psig air pressure. Do not direct air toward yourself or another person. Failure to comply could result in injury to eyes or skin. In case of injury, get medical attention.

- b. There shall be no clogged oil tubes. Wear goggles. Apply compressed air to oil scavenge adapter (1) and pressure line connector (2). Use clean, dry compressed air. Feel for air flow at tube ends (9).
- c. There shall be no chafes (10), nicks (11) or pits (12) deeper than 0.012 inch on tube (7). Any length chafe, nick or pit is acceptable.
- d. There shall be no chafes (13), nicks (14) or pits (15) deeper than 0.015 inch on tube (8). Any length chafe, nick or pit is acceptable.

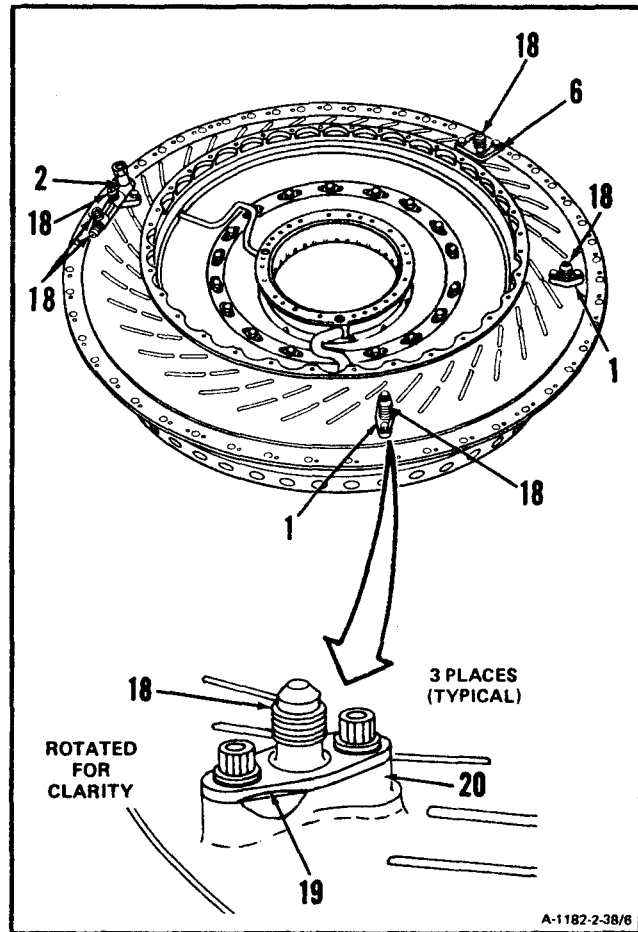


- 5. Inspect bolts (16) and screws (17) on connector (2) and adapters (1 and 6). There shall be no loose bolts or screws. There shall be no broken, loose or improperly installed lockwire.



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6. **Inspect connector (2) and adapters (1 and 6).**  
 There shall be no cracked nipples (18). There shall be no evidence of leakage. There shall be no gap (19) between boss (20) and adapter.

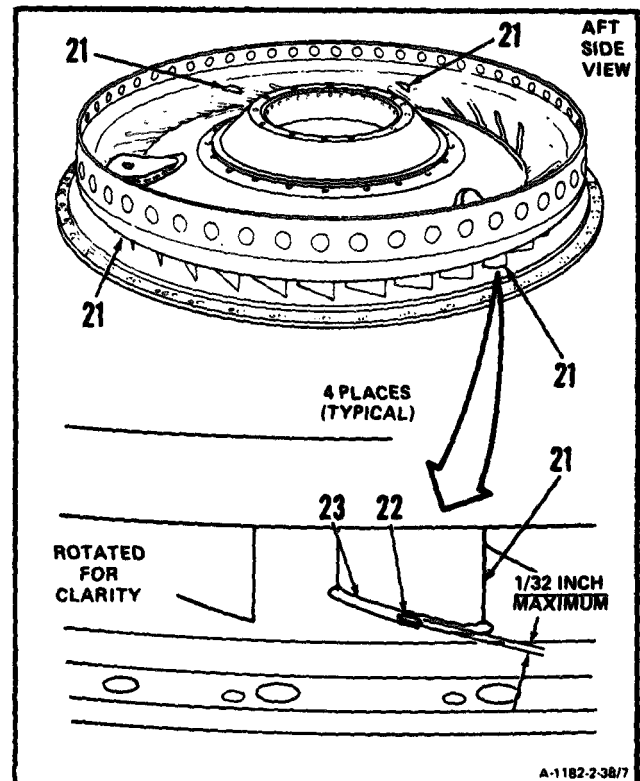


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## 2-38 INSPECT AIR DIFFUSER ASSEMBLY (AVIM) (Continued)

2-38

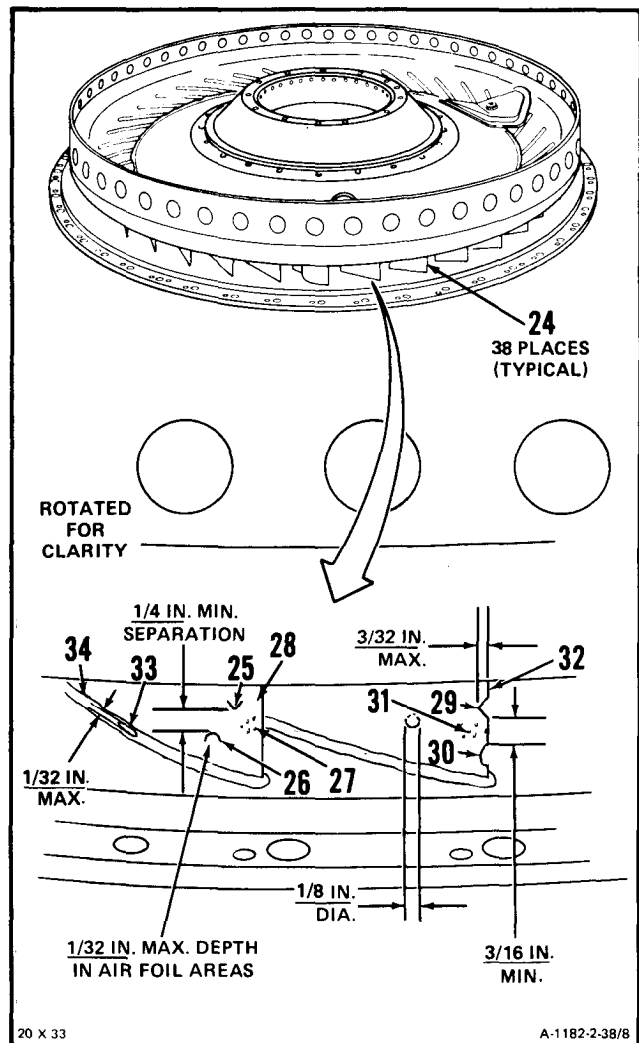
7. Inspect four air diffuser assembly air and oil transfer vanes (21).
- There shall be no nicks, dents or pits.
  - There shall be no cracks (22) in brazement (23) wider than 1/32-inch or longer than 1/2-inch. Any size void in brazement (23) is acceptable.



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8. Inspect 38 air diffuser assembly vanes (24).

- a. There shall be no nicks (25), dents (26) or pits (27) in airfoil surface (28) deeper than 1/32-inch. These nicks (25), dents (26) or pits (27) shall not be larger than 1/8-inch diameter or separated by less than 1/4-inch.
- b. There shall be no nicks (29), dents (30) or pits (31) in trailing edge (32) deeper than 3/32-inch. There shall be no more than three 3/32-inch deep nicks (29), dents (30) or pits (31) in trailing edges of any vane (24). These nicks (29), dents (30) or pits (31) shall be separated by not less than 3/16-inch. There shall be no more than 20 vanes (24) with these nicks (29), dents (30), or pits (31). Burrs on vanes (24) are acceptable provided they are blend repaired.
- c. There shall be no cracks (33) in brazement (34) wider than 1/32-inch or longer than 1/2-inch. Any void in brazement (34) is acceptable.



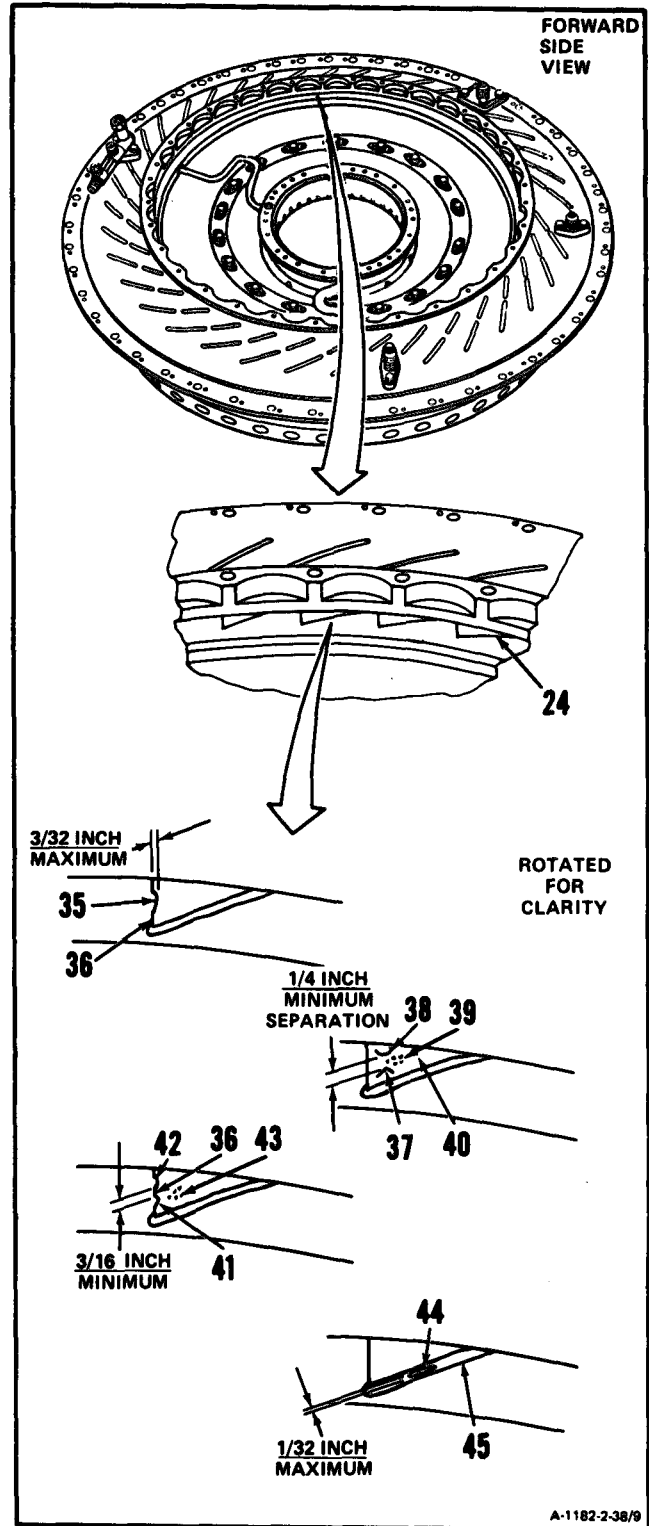
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9. Inspect 38 air diffuser assembly vanes (24).

- a. There shall be no erosion (35) of vane leading edge (36) deeper than 3/32-inch.
- b. There shall be no nicks (37), dents (38) or pits (39) in airfoil surface (40) deeper than 1/32-inch. These nicks (37), dents (38) or pits (39) shall not be larger than 1/8-inch diameter or separated by less than 1/4-inch.
- c. There shall be no nicks (41), dents (42) or pits (43) in leading edge (36) deeper than 3/32-inch. There shall be no more than three 3/32-inch deep nicks (41), dents (42) or pits (43) in leading edges of any vane (24). These nicks (41), dents (42) or pits (43) shall be separated by not less than 3/16-inch. There shall be no more than 20 vanes (24) with these nicks (41), dents (42) or pits (43). Burrs on vanes (24) are acceptable provided they are blend repaired.
- d. There shall be no cracks (44) in brazement (45) wider than 1/32-inch or longer than 1/2-inch. Any void in brazement (45) is acceptable.

FOLLOW-ON MAINTENANCE:

None



END OF TASK





**2-39 REPAIR AIR DIFFUSER ASSEMBLY (AVIM)****2-39****INITIAL SETUP****Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 518000-323-4944  
Technical Inspection Tool Kit,  
NSN 5180-00-323-5114  
Goggles  
Micrometer Depth Gage  
Compressed Air Source

**Materials:**

Crocus Cloth (EI 5)

**Personnel Required:**

68B10 Aircraft Powerplant Repairer  
68B30 Aircraft Powerplant Inspector

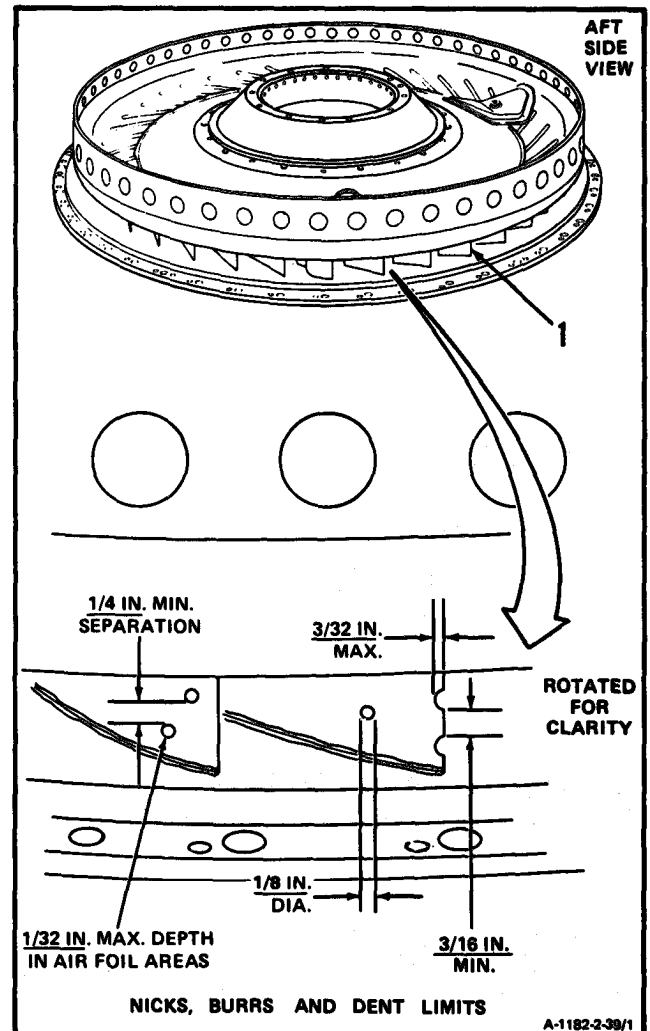
**References:**

Task 8-76  
Task 8-77  
Task 8-79

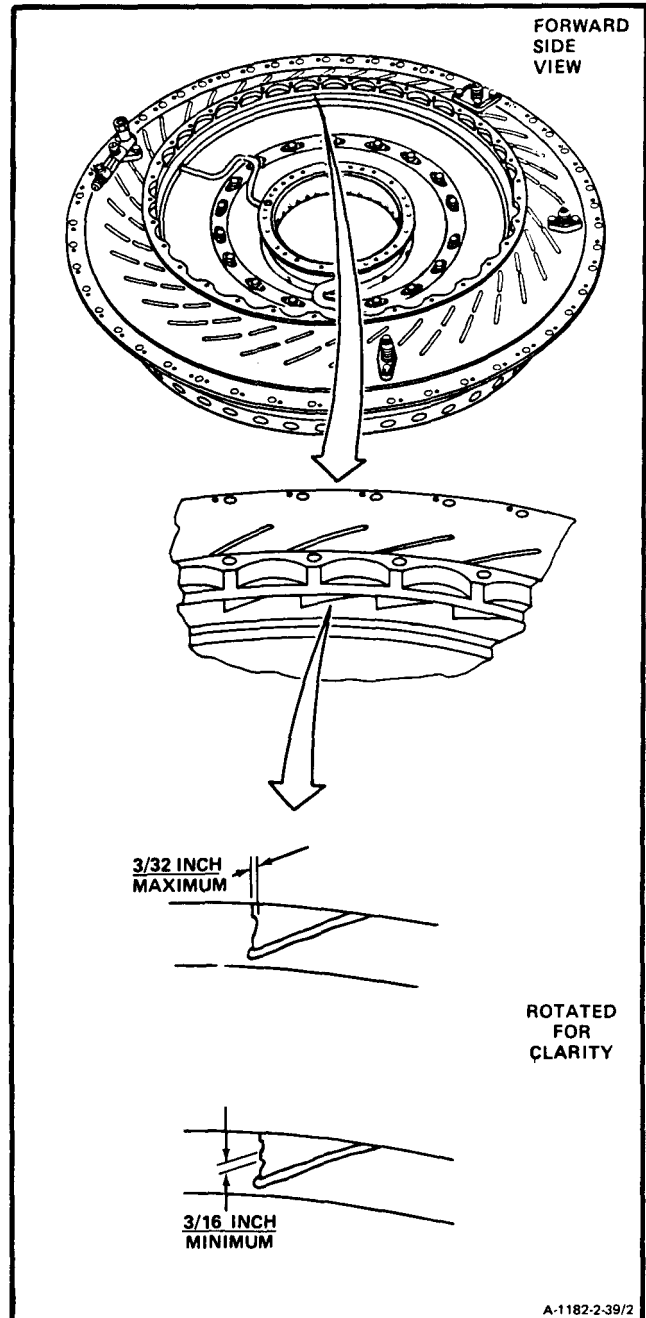
**Equipment Condition:**

Off Engine Task

1. Repair nicks, burrs, dents and pits on vanes (1) by blend repairing not to exceed the following limits.
  - a. Random nicks, dents or pits to 1/32-inch maximum.
  - b. Diameter of defects shall not be greater than 1/8-inch with a minimum of 1/4-inch between defects.
  - c. Trailing edge nicks, dents or pits up to 3/32-inch maximum depth. There shall be no more than three per vane. There shall be no more than 20 vanes with these defects. These defects shall be separated by not less than 3/16-inch.

**GO TO NEXT PAGE**

- d. Leading edge nicks, dents or pits up to 3/32-inch maximum depth. There shall be no more than three per vane. There shall be no more than 20 vanes with these defects. These defects shall be separated by not less than 3/16-inch.



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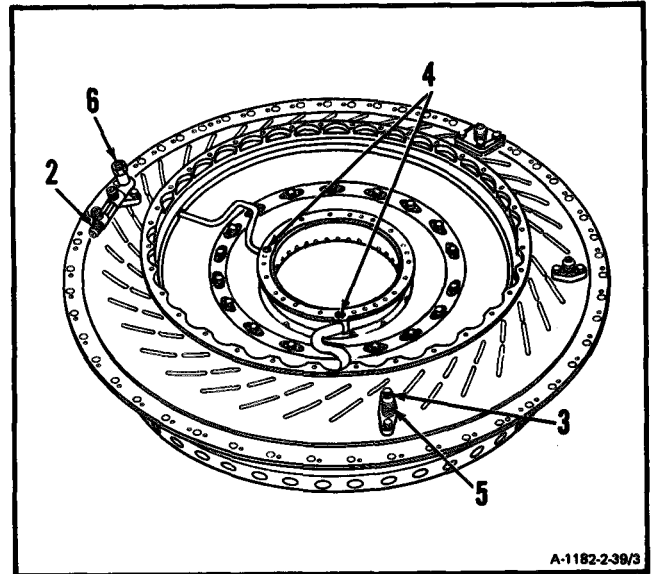
2. Wear goggles. Clear contaminated oil passages (2 and 3) as follows:

- a. Remove No. 2 bearing pressure oil strainer (Ref. Task 8-76).

**WARNING**

When using compressed air for cleaning, use approved protective equipment for eyes and face. Do not use more than 30 psig air pressure. Do not direct air toward yourself or another person. Failure to comply could result in injury to eyes or skin. In case of injury, get medical attention.

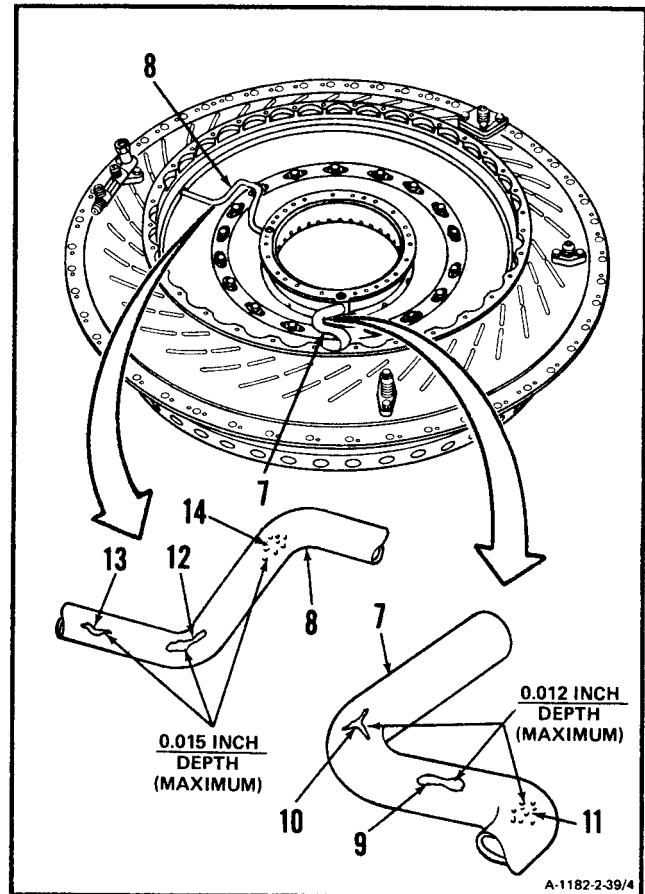
- b. Apply compressed air to tube ends (4). Use clean, dry compressed air. Feel for air flow at scavenge adapter (5) and pressure line connector (6).
- c. Clean No. 2 bearing pressure oil strainer (Ref. Task 8-77).
- d. Install No. 2 bearing pressure oil strainer (Ref. Task 8-79).



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**3. Repair oil tubes (7 and 8) as follows:**

- a. For oil tube (7), remove sharp edges of chafes (9), nicks (10) or pits (11) up to 0.012 inch. Use crocus cloth (E15).
- b. For oil tube (8), remove sharp edges of chafes (12), nicks (13) or pits (14) up to 0.015 inch. Use crocus cloth (E15).

**INSPECT****FOLLOW-ON MAINTENANCE:**

None

**END OF TASK**

## 2-40 REPAIR AIR DIFFUSER ASSEMBLY

2-40

**INITIAL SETUP****Applicable Configurations:**  
All**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Technical Inspection Tool Kit,  
NSN 5180-00-323-5114

**Materials:**

Lockwire (E28)  
Lockwire (E29)

**Parts:**

Packings  
Seal Ring

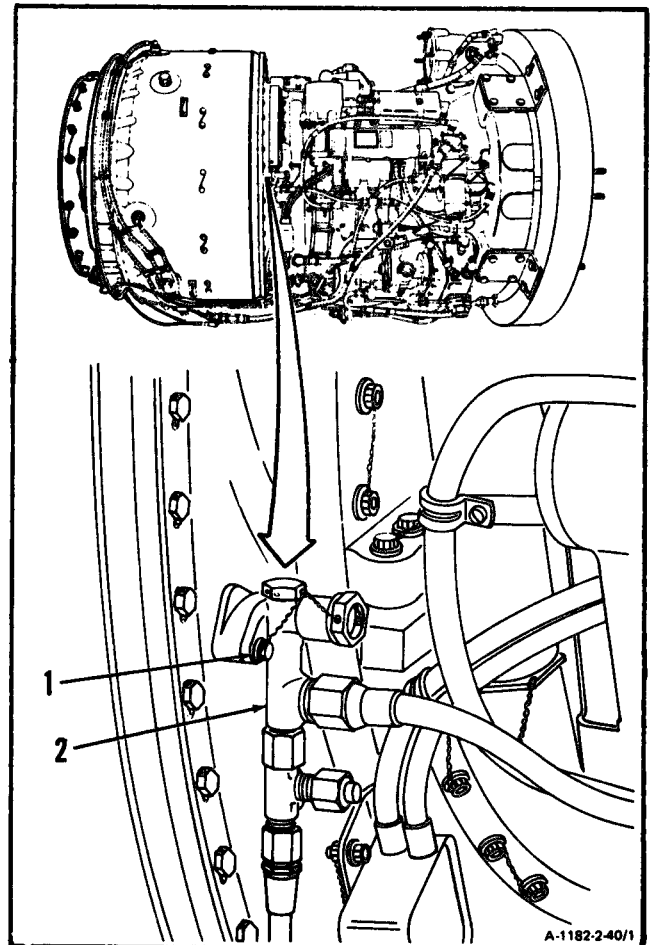
**Personnel Required:**

68B10 Aircraft Powerplant Repairer  
68B30 Aircraft Powerplant Inspector

**References:**

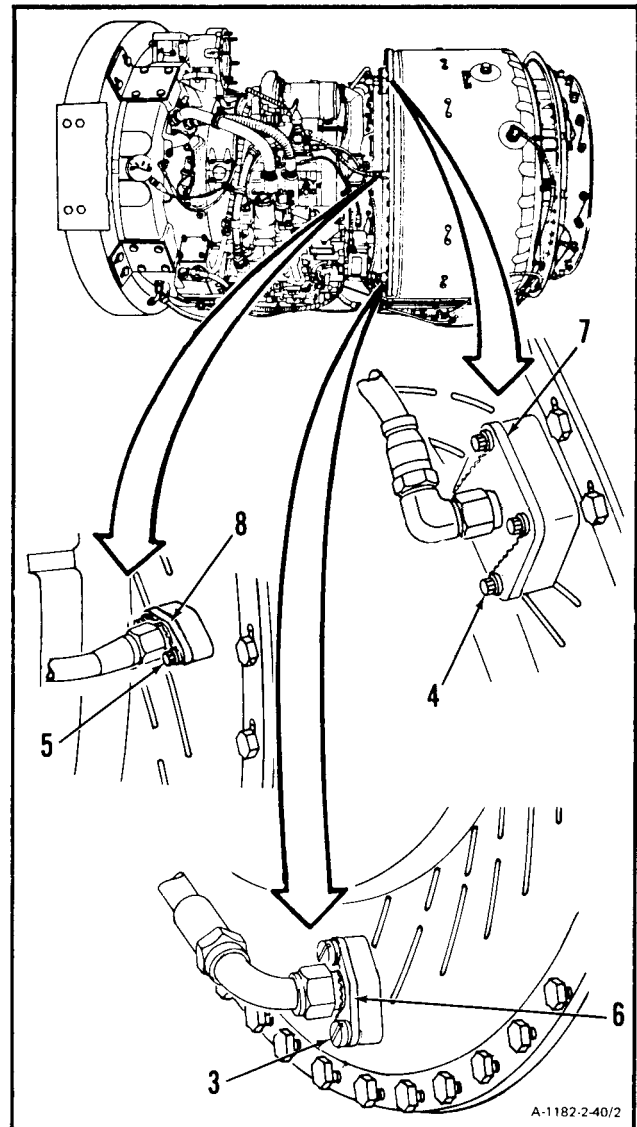
TM 55-2840-254-23P

1. **Tighten loose bolts (1)** on pressure connector (2) as follows:
  - a. Remove lockwire from bolts (1).
  - b. Tighten bolts (1).
  - c. Lockwire bolts (1). Use lockwire (E29).



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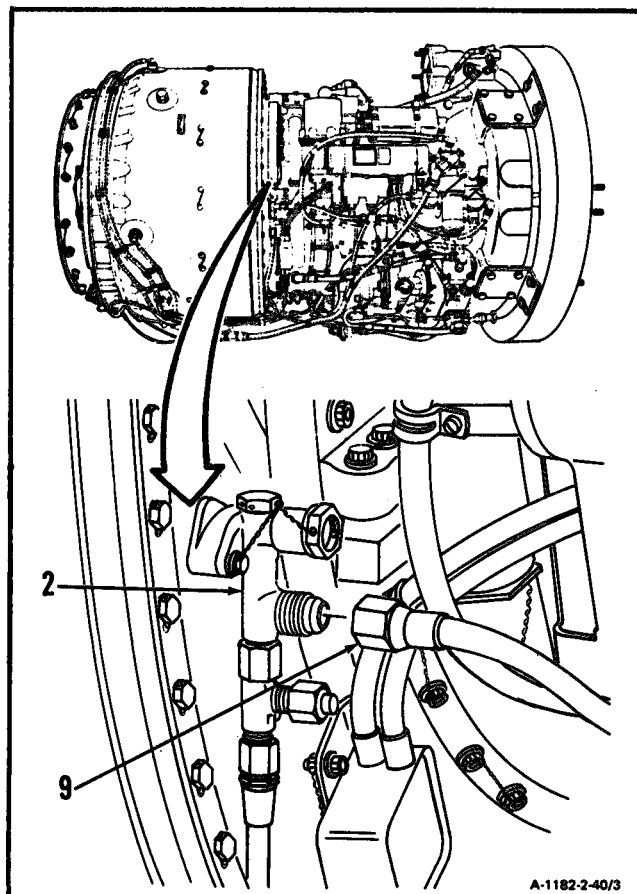
2. **Tighten loose screws (3) and bolts (4 and 5)** on adapters (6 and 7) and union (8) as follows:
- Remove lockwire from screws (3) and bolts (4 and 5).
  - Tighten screws (3) and bolts (4 and 5).
  - Lockwire screws (3). Use lockwire (E28).
  - Lockwire bolts (4 and 5). Use lockwire (E29).



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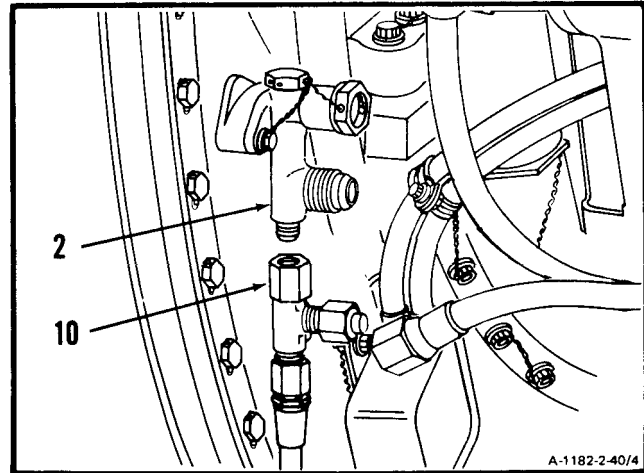
**3. Repair leaking or cracked pressure connector (2)**  
as follows:

- a. Disconnect hose assembly (9) from pressure connector (2).

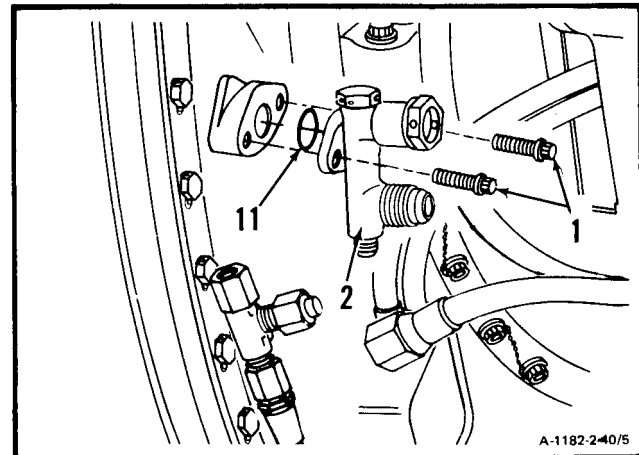


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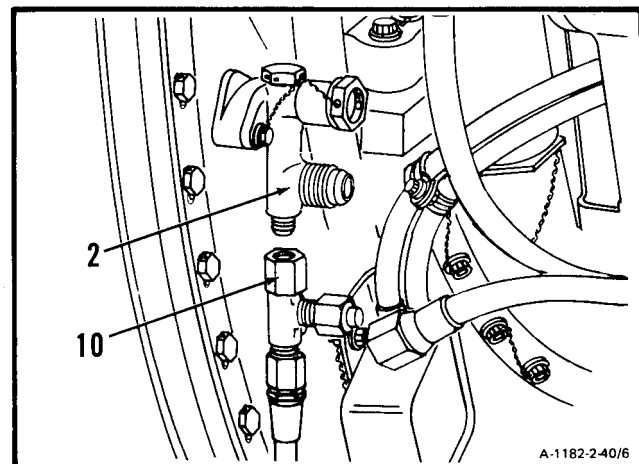
- b. Disconnect tee and snubber (10) from pressure connector (2).



- c. Remove lockwire and two bolts (1).
- d. Remove pressure connector (2) and packing (11).
- e. Install packing (11), serviceable pressure connector (2), and two bolts (1).
- f. Lockwire two bolts (1). Use lockwire (E29).



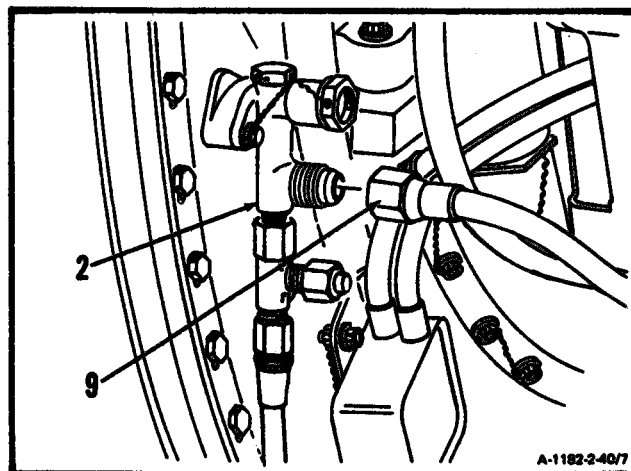
- g. Connect tee and snubber (10) to pressure connector (2).



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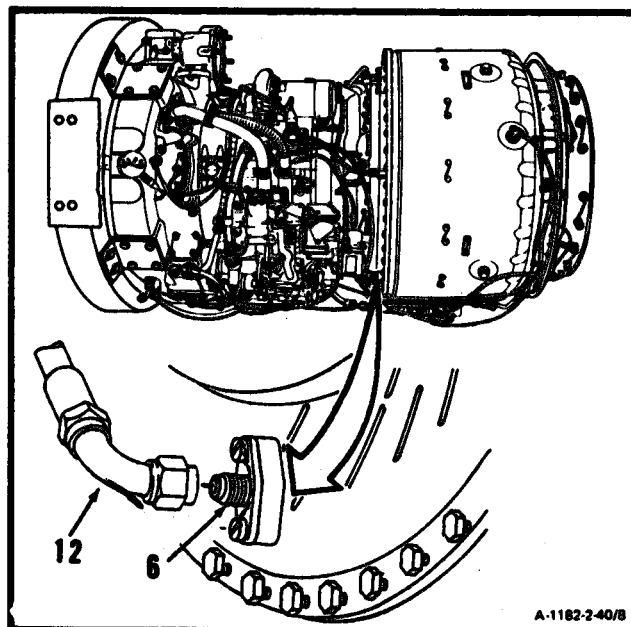


- h. Connect hose assembly (9) to pressure connector (2).



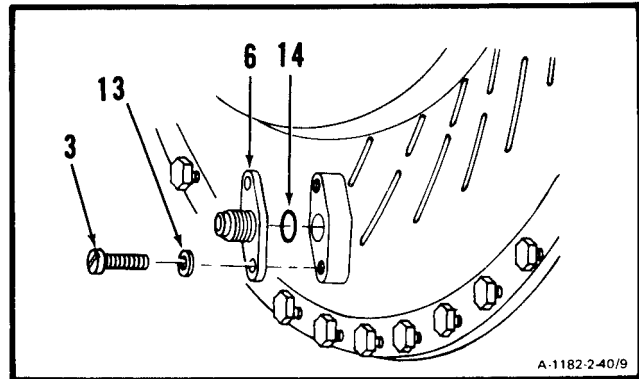
4. Repair leaking or cracked adapter (6) as follows:

- a. Disconnect hose assembly (12) from adapter (6).

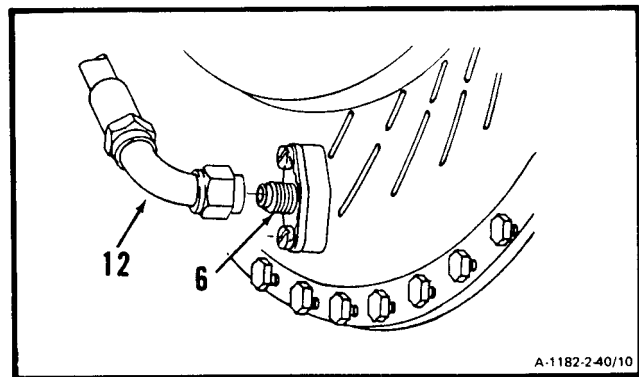


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- b. Remove lockwire, two screws (3), and washers (13).
- c. Remove adapter (6) and packing (14).
- d. Install packing (14), serviceable adapter (6), and two washers (13) and screws (3).
- e. Lockwire two screws (3). Use lockwire (E29).

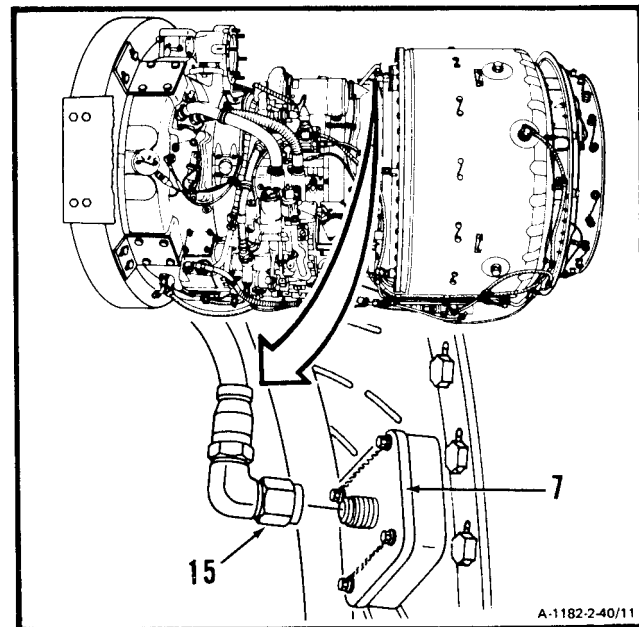


- f. Connect hose assembly (12) to adapter (6).



**5. Repair leaking or cracked adapter (7) as follows:**

- a. Disconnect hose assembly (15) from adapter (7).

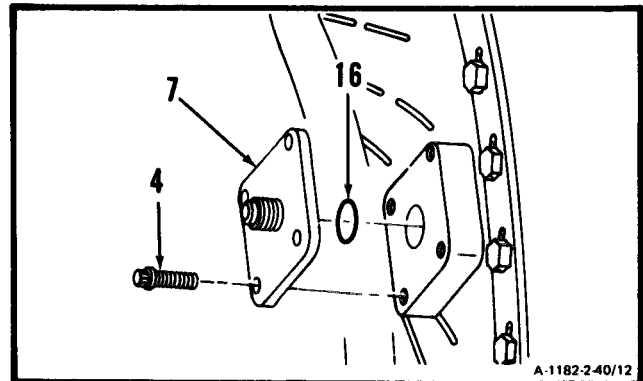


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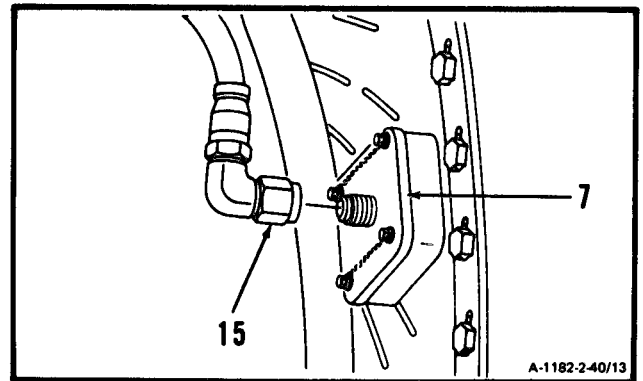
## 2-40 REPAIR AIR DIFFUSER ASSEMBLY (Continued)

2-40

- b. Remove lockwire and four bolts (4).
- c. Remove adapter (7) and packing (16).
- d. Install packing (16), serviceable adapter (7) and four bolts (4).
- e. Lockwire four bolts (4). Use lockwire (E29).

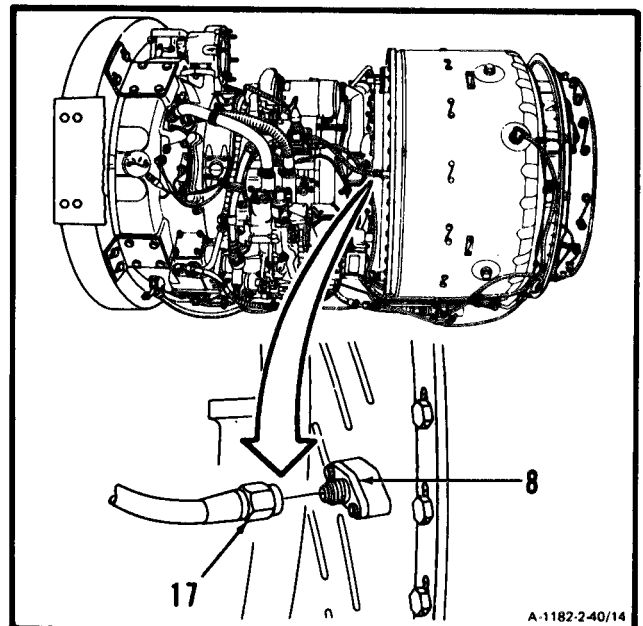


- f. Connect hose assembly (15) to adapter (7).



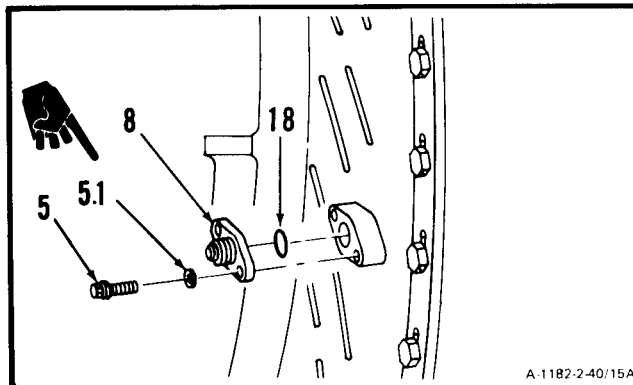
## 6. Repair leaking or cracked union (8) as follows:

- a. Remove lockwire and disconnect hose assembly (17) from union (8).

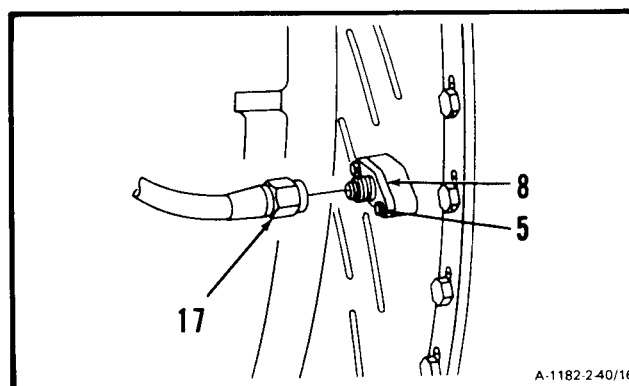
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**2-40 REPAIR AIR DIFFUSER ASSEMBLY (Continued)**

- b. Remove two bolts (5) and washers (5.1).
- c. Remove union (8) and seal ring (18).
- d. Install seal ring (18), serviceable union (8), two washers (5.1) and bolts (5).



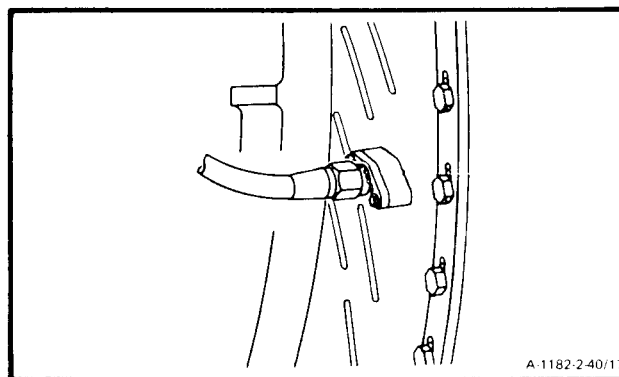
- e. Connect hose assembly (17) to union (8).
- f. Lockwire two bolts (5). Use lockwire (E29).



**INSPECT**

FOLLOW-ON MAINTENANCE:

None



**END OF TASK**

## 2-41 INSTALL AIR DIFFUSER ASSEMBLY (AVIM)

2-41

## INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Technical Inspection Tool Kit,  
NSN 5180-00-323-5114  
Alignment Pin (T2) (3) or  
Guide Pin (Appendix E) (3)  
Torque Wrench, 30-150 Inch-Pounds

**Materials:**

Lockwire (E29)

**Parts:**

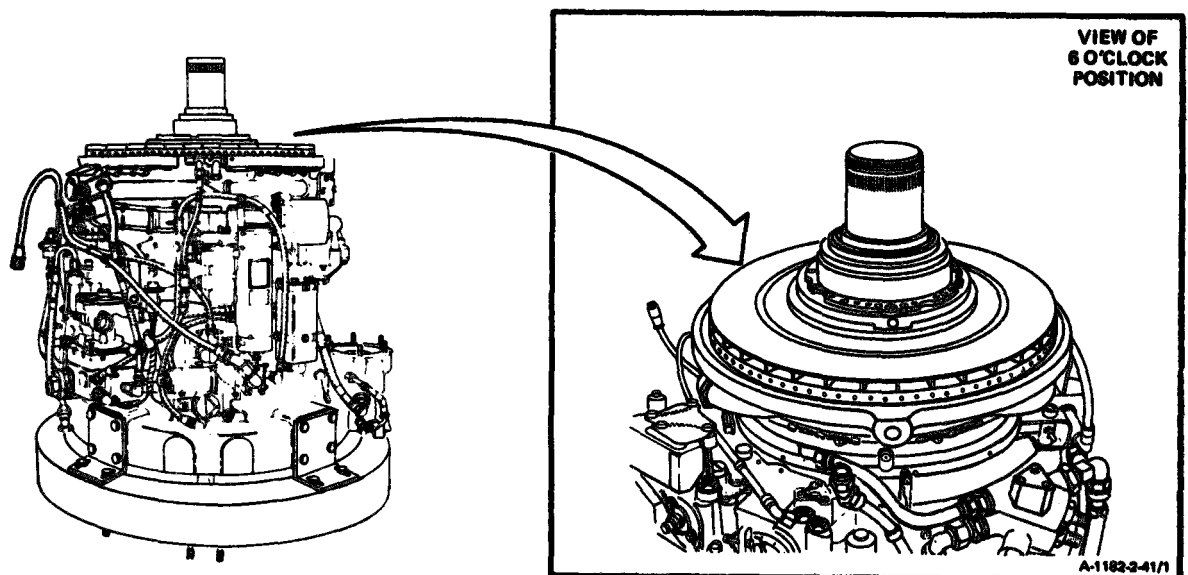
Gaskets

**Personnel Required:**

68B10 Aircraft Powerplant Repairer  
68B30 Aircraft Powerplant Inspector

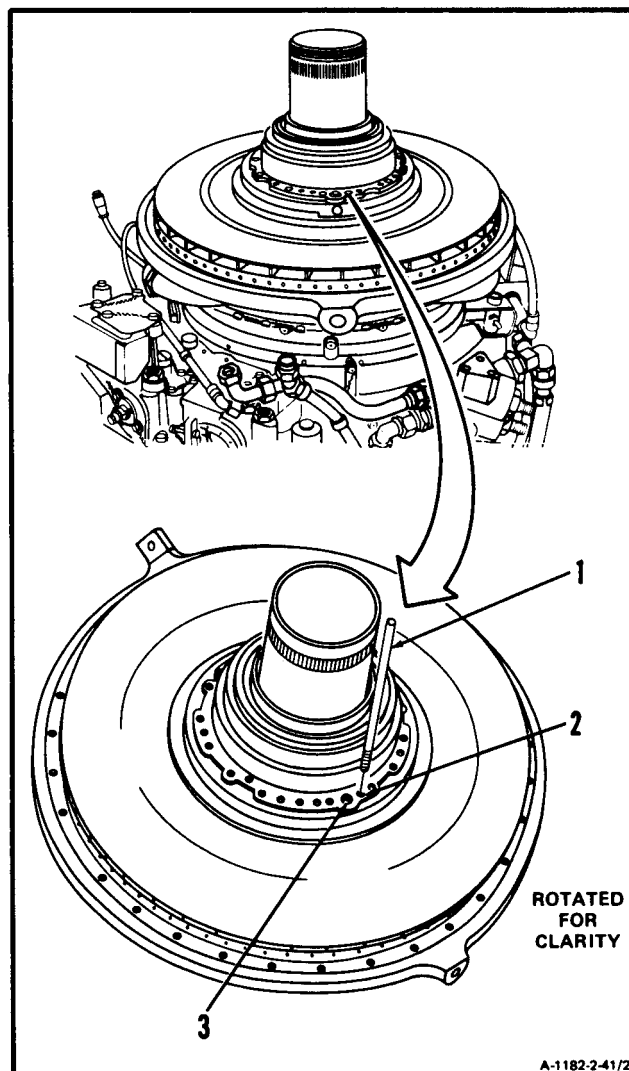
**References:**

TM 55-2840-254-23P



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1. Install alignment pin (T2) or guide pin (Appendix E) (1) in hole (2) located at the 6-o'clock position on the right of oil scavenge port (3).

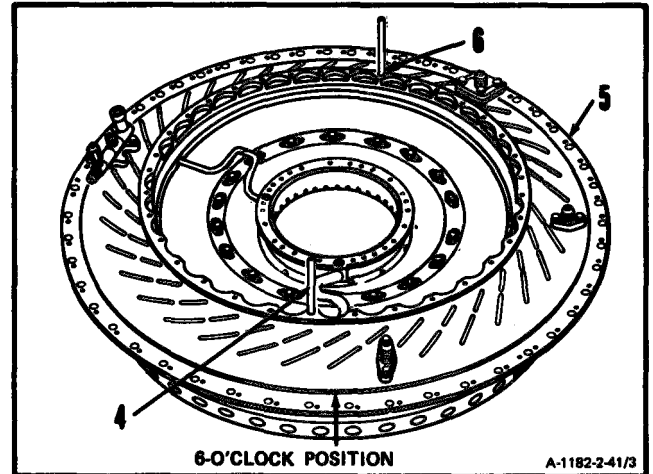


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## 2-41 INSTALL AIR DIFFUSER ASSEMBLY (AVIM) (Continued)

2-41

2. Install alignment pin (T2) or guide pin (Appendix E) (4) at 6-o'clock position on forward flange of air diffuser assembly (5).
3. Install alignment pin (T2) or guide pin (Appendix E) (6) at 12-o'clock position on forward flange of air diffuser assembly (5).

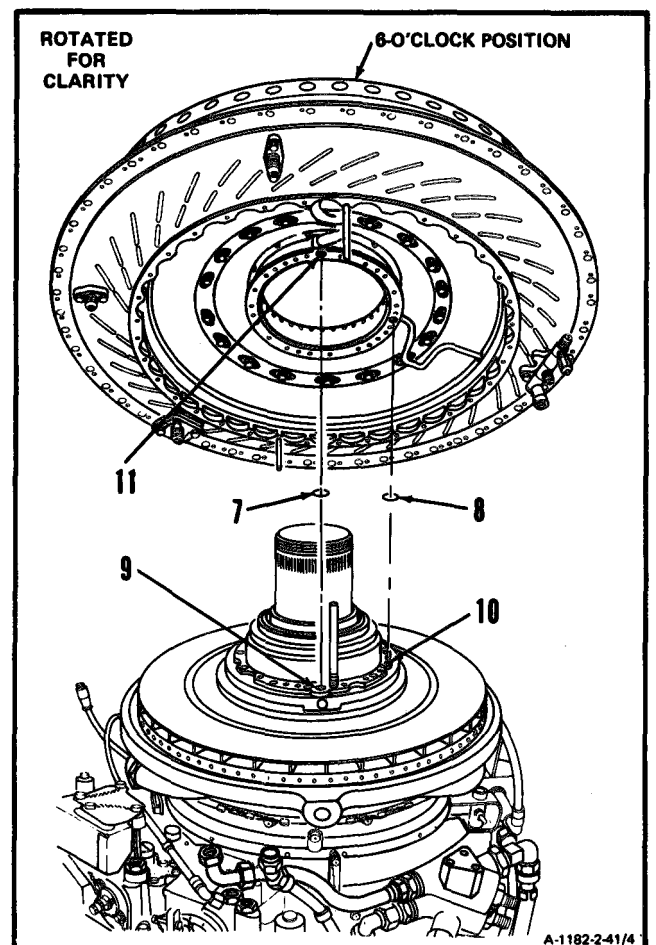


4. Install gaskets (7 and 8) on No. 2 bearing housing oil ports (9 and 10).

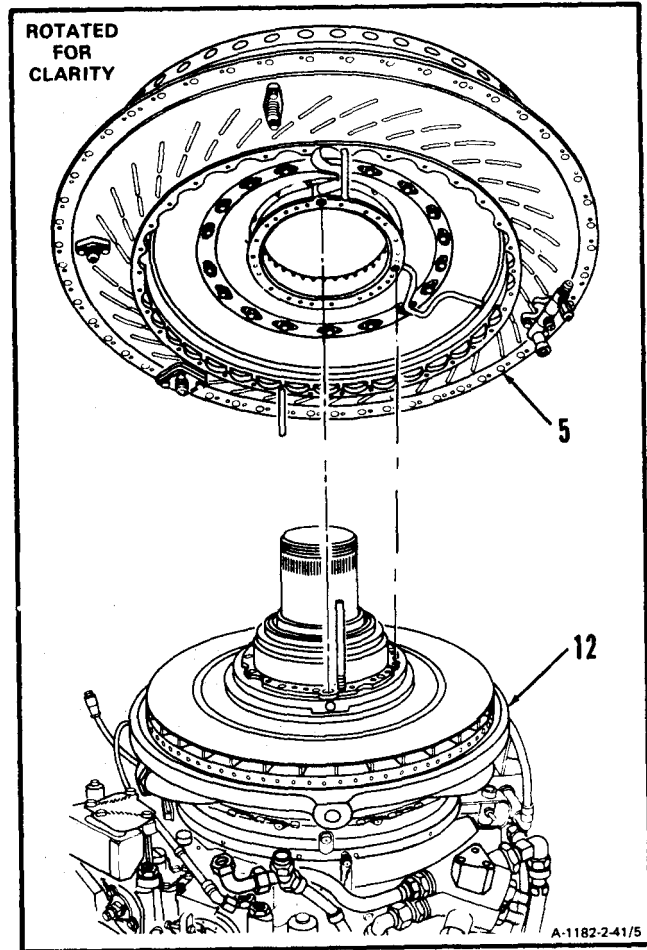
**NOTE**

Insure that all mounting holes in compressor spacer are properly aligned with the air diffuser assembly holes.

5. Align oil port (9) with oil port (11).

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6. Install air diffuser assembly (5) on compressor housing (12).

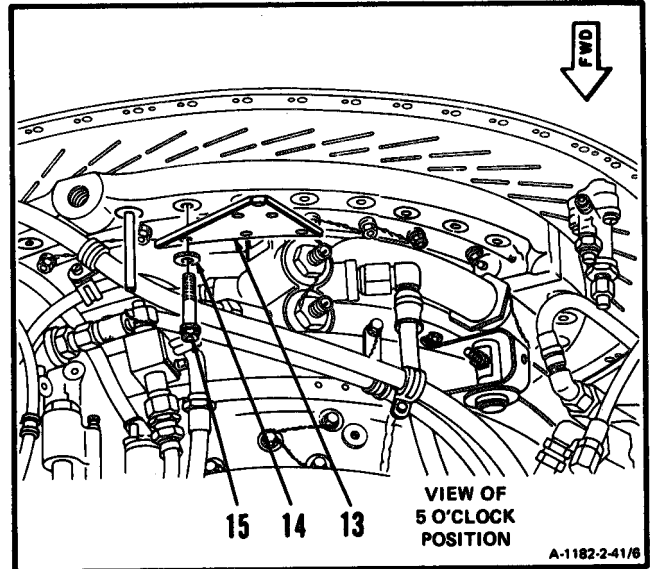


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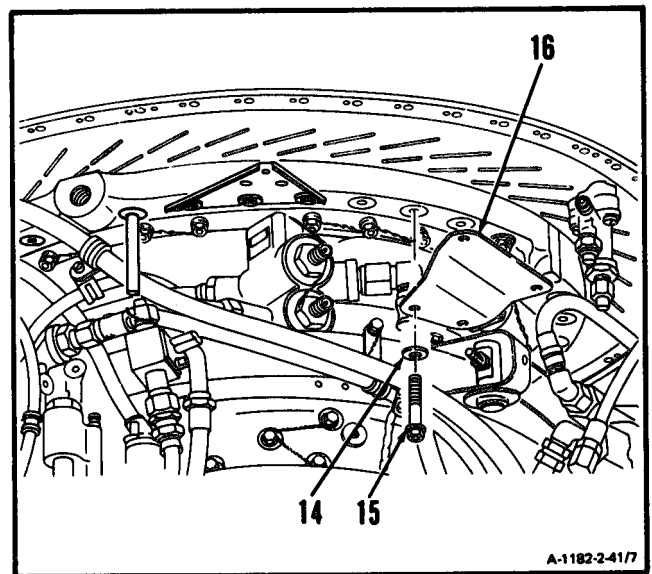


2-41 INSTALL AIR DIFFUSER ASSEMBLY (AVIM) (Continued)

7. Install bracket (13), three washers (14) and bolts (15). Hand tighten bolts (15).

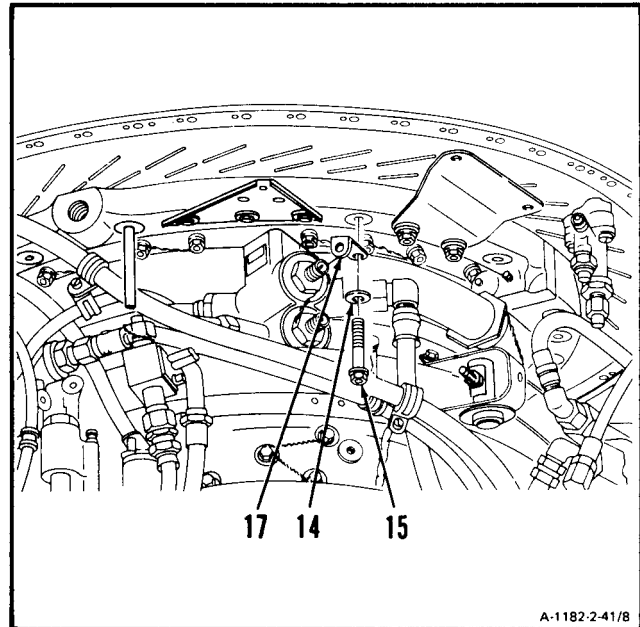


8. Install bracket (16), two washers (14) and two bolts (15). Hand tighten bolts (15).

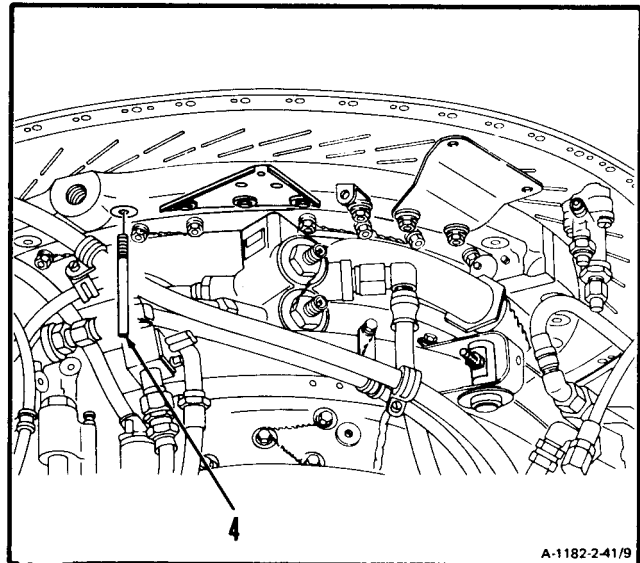


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9. Install bracket (17), washer (14) and bolt (15).  
Hand tighten bolt (15).



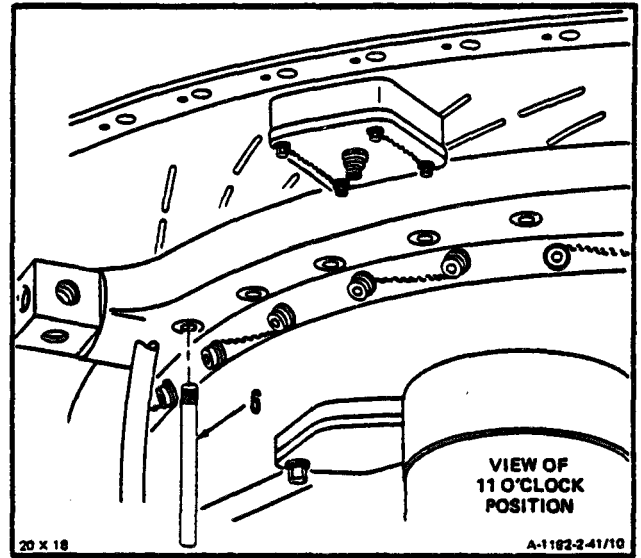
10. Remove alignment pin (T2) or guide pin (Appendix E) (4).



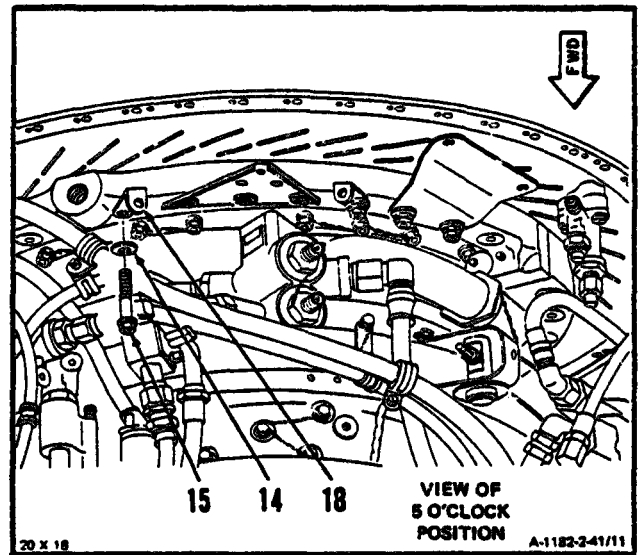
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2-41 INSTALL AIR DIFFUSER ASSEMBLY (AVIM) (Continued)

11. Remove alignment pin (T2) or guide pin (Appendix E) (6).

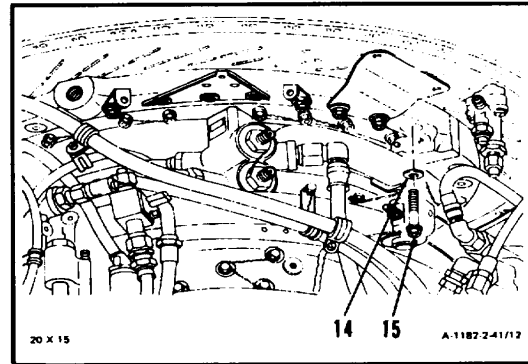


12. Install bracket (18) , washer (14), and bolt (15). Hand tighten bolt 15).

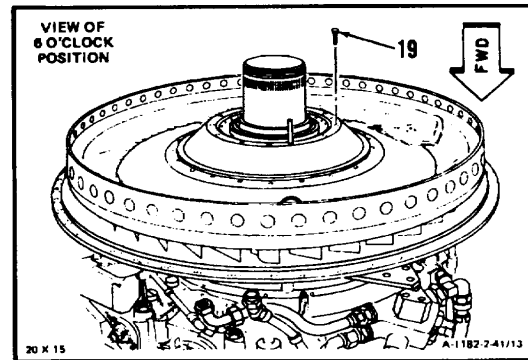


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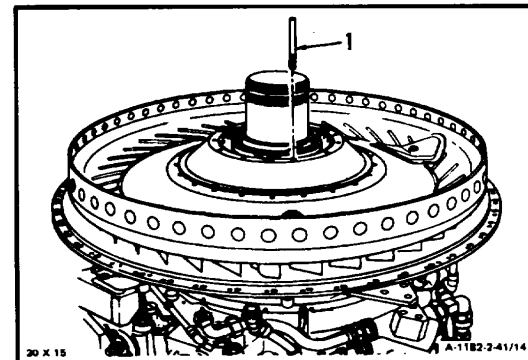
- 13. Install remaining 25 washers (1) and bolts (15). Hand tighten bolts (15).
- 14. Torque 32 bolts (15) to 95 inch-pounds.
- 15. Lock-wire 32 bolts (15). Use lock-wire (E29).



- 16. Install 3 bolts (19) into No. 2 bearing package. Torque bolts to 70 to 95 pound-inches. Bolts (19) do not require lock-wire.



- 17. Remove alignment pin (T2) or guide pin (Appendix E) (1).

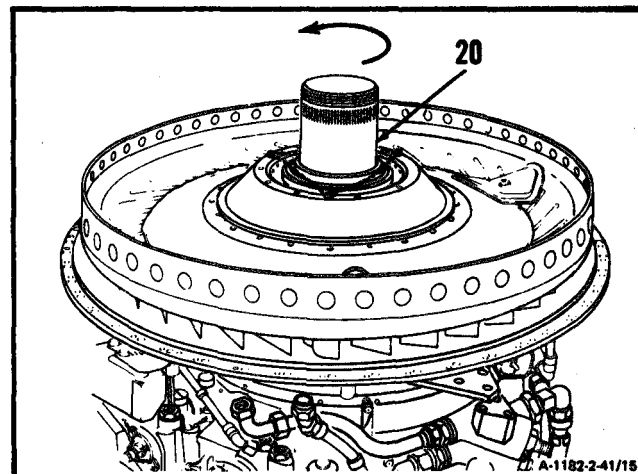


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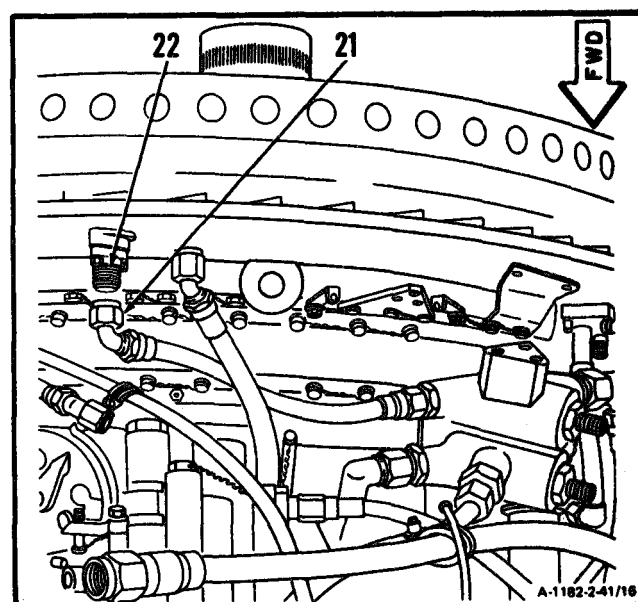
## 2-41 INSTALL AIR DIFFUSER ASSEMBLY (AVIM) (Continued)

2-41

18. Slowly rotate compressor rotor shaft (20) by hand. Listen for any indications of rubbing or interference. If rubs are heard replace engine.

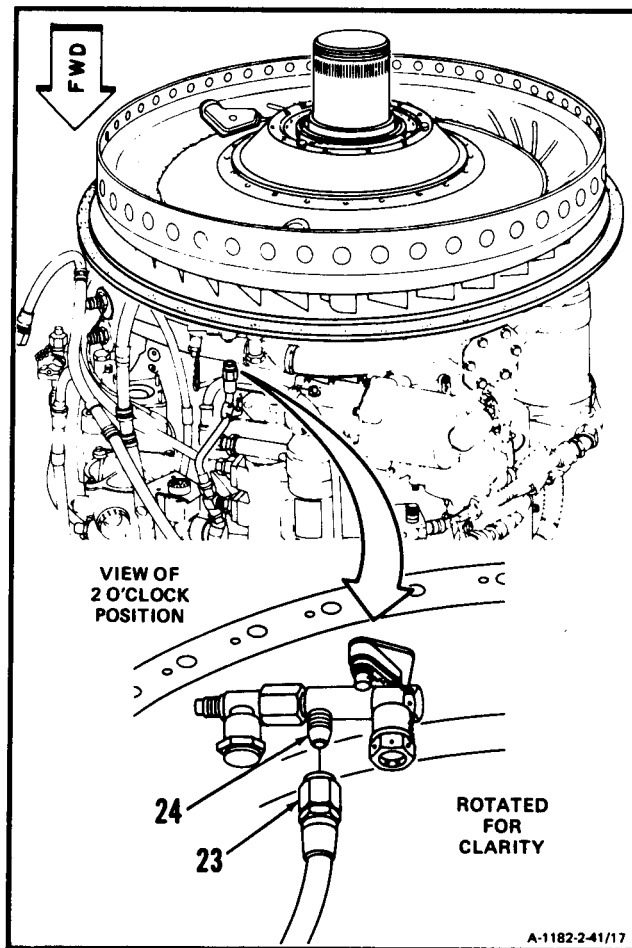


19. Connect hose assembly (21) to adapter (22).



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20. Connect hose assembly (23) to pressure connector (24).

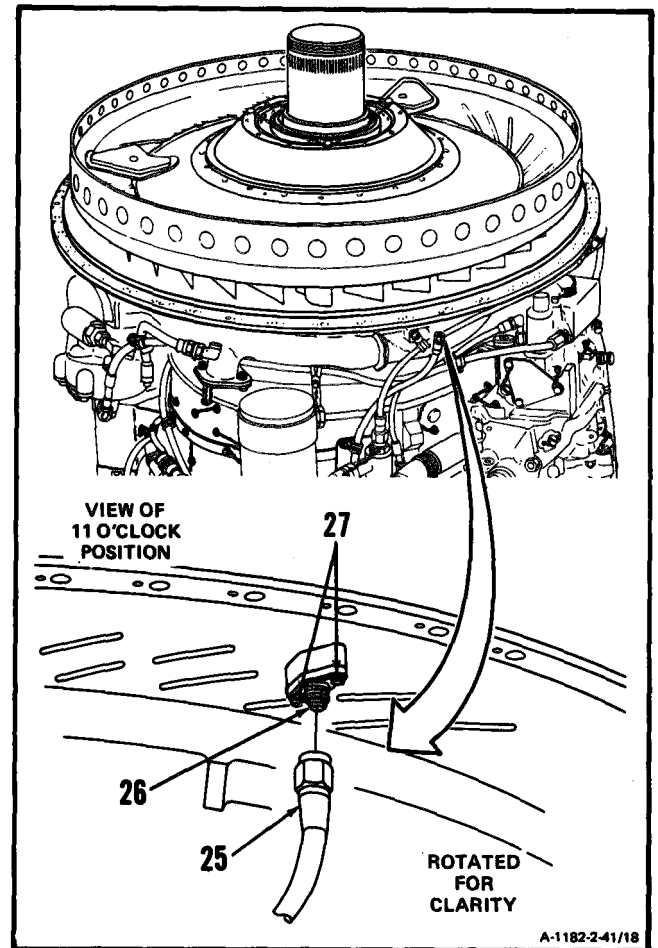


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## 2-41 INSTALL AIR DIFFUSER ASSEMBLY (AVIM) (Continued)

2-41

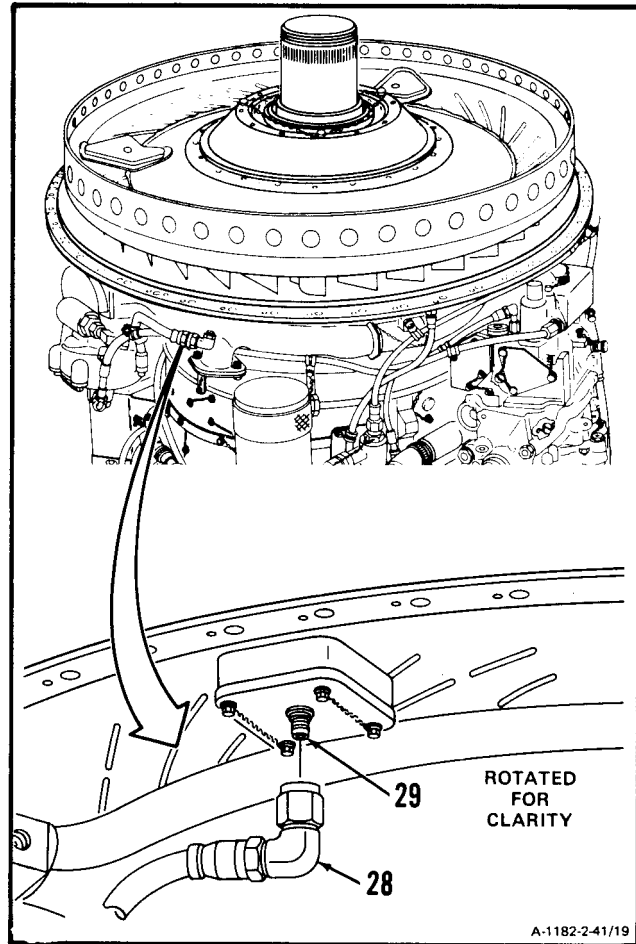
21. Connect hose assembly (25) to union (26).
22. Lockwire bolts (27). Use lockwire (E29).



**GO TO NEXT PAGE**

2-41 INSTALL AIR DIFFUSER ASSEMBLY (AVIM) (Continued)

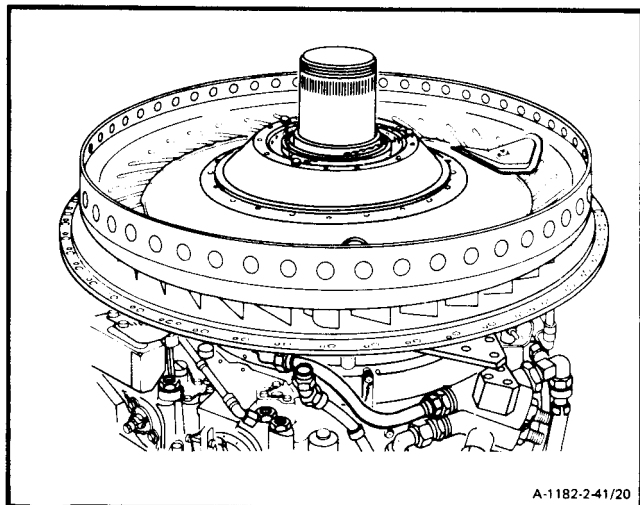
23. Connect hose assembly (28) to adapter (29).



**INSPECT**

**FOLLOW-ON MAINTENANCE:**

- Install Diffuser Curl (Task 4-77).
- Install First Turbine Nozzle (Task 4-71 ).
- Install First Turbine Disc Assembly (Task 4-66).
- install Second Turbine Nozzle, Spacer and Case (Task 4-61 ).
- Install Second Turbine Disc Assembly (Task 4-56).
- Install Combustion Section and Power Turbine (Task 3-8).
- Service Engine Oil System Task 1 -74).



**END OF TASK**



## Section VIII. NO. 2 BEARING PACKAGE - MAINTENANCE PROCEDURES

2-42 REMOVE NO. 2 BEARING PACKAGE (AVIM)

2-42

## INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Mechanical Puller (T28)

**Materials:**

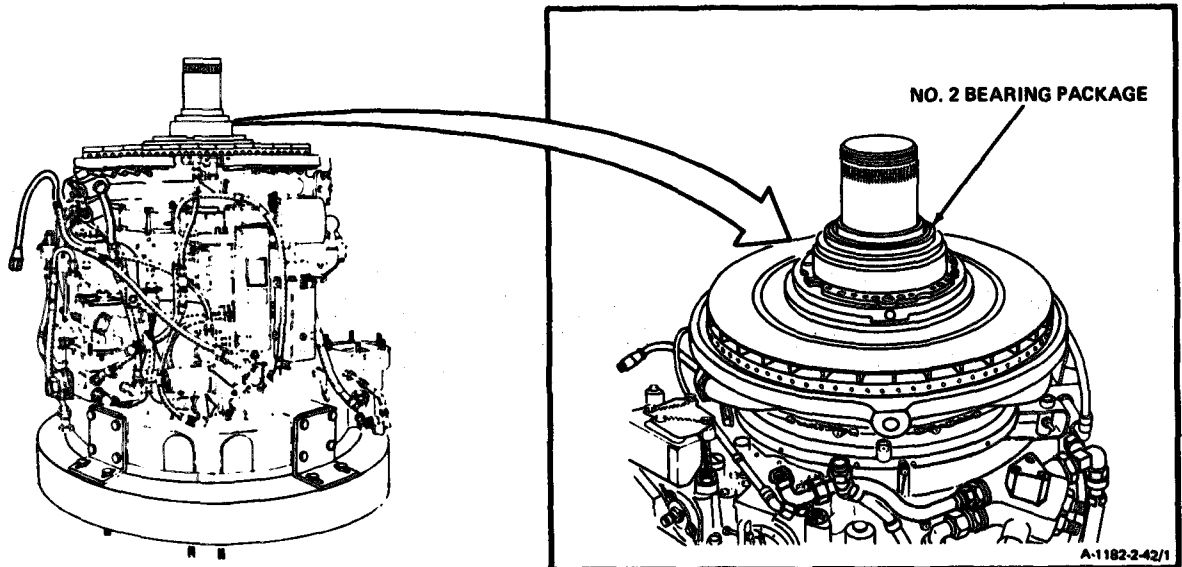
None

**Personnel Required:**

68B10 Aircraft Powerplant Repairer

**Equipment Condition:**

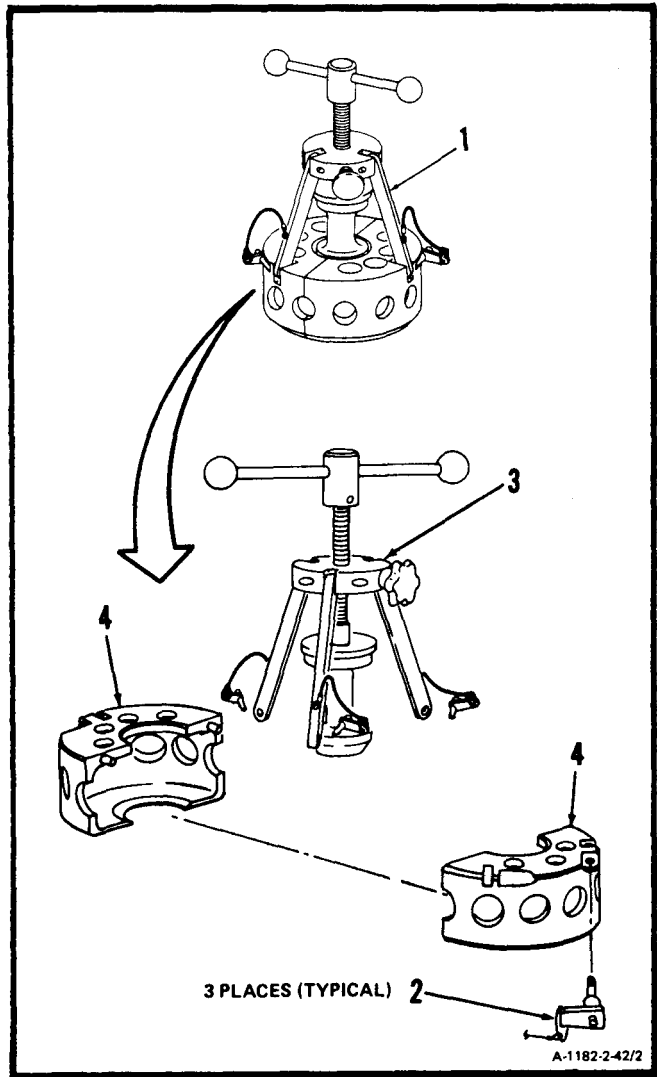
Engine Oil System Drained (Task 1-75)  
Combustion Section and Power Turbine  
Removed (Task 3-5)  
Second Turbine Disc Assembly Removed  
(Task 4-53)  
Second Turbine Nozzle, Spacer and Case  
Removed (Task 4-57)  
First Turbine Disc Assembly Removed  
(Task 4-62)  
First Turbine Nozzle Assembly Removed  
(Task 4-67)  
Diffuser Curl Removed (Task 4-73)  
Air Diffuser Assembly Removed (Task 2-36)



GO TO NEXT PAGE

1. **Disassemble mechanical puller (T28) (1)** as follows:

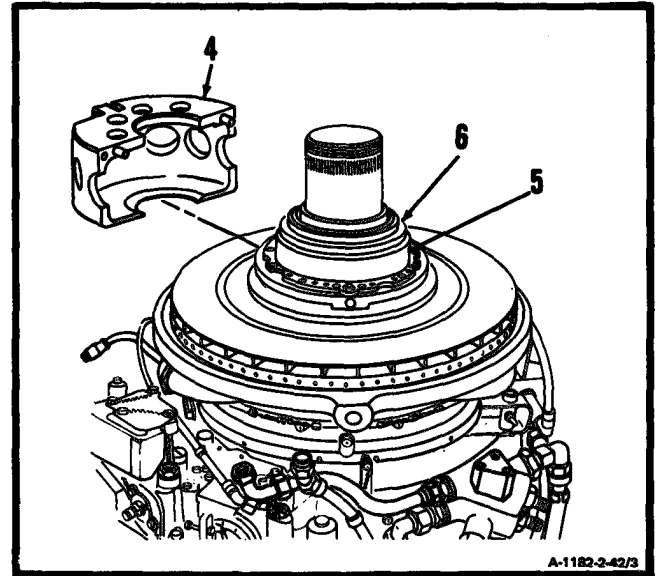
- a. Remove pins (2).
- b. Remove arm and pilot assembly (3).
- c. Separate two base halves (4).



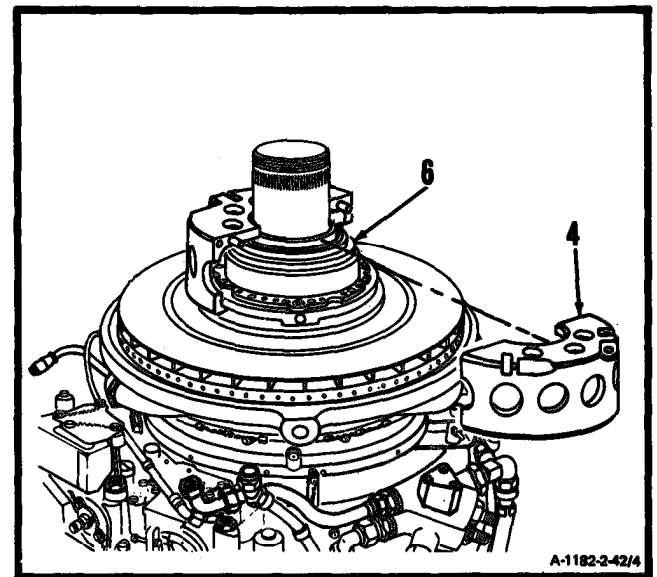
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**2. Install mechanical puller (T28) as follows:**

- a. Lift bearing housing (5) and install one half of base (4) on No. 2 bearing package (6).

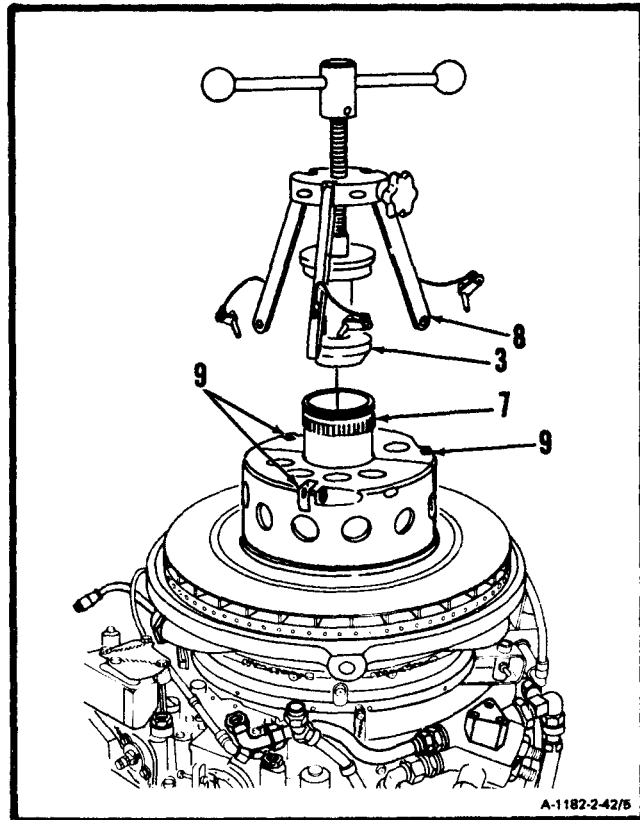


- b. Install second half of base (4) on No. 2 bearing package (6).



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- c. Install pilot assembly (3) in shaft (7).
- d. Install arms (8) in slots (9).

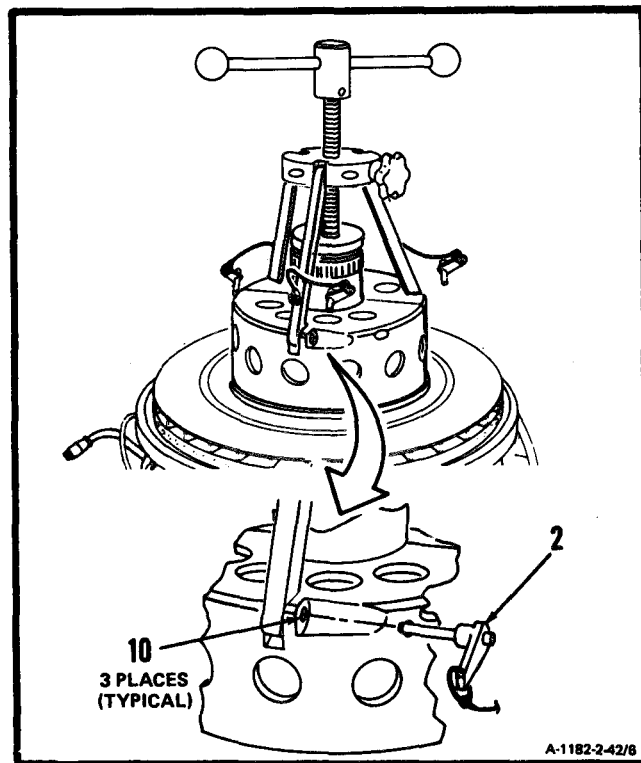


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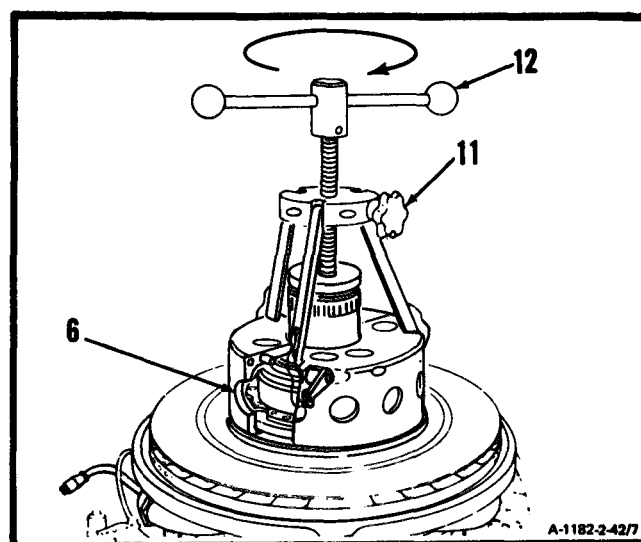
## 2-42 REMOVE NO. 2 BEARING PACKAGE (AVIM) (Continued)

2-42

e. Install pin (2) into hole (10).

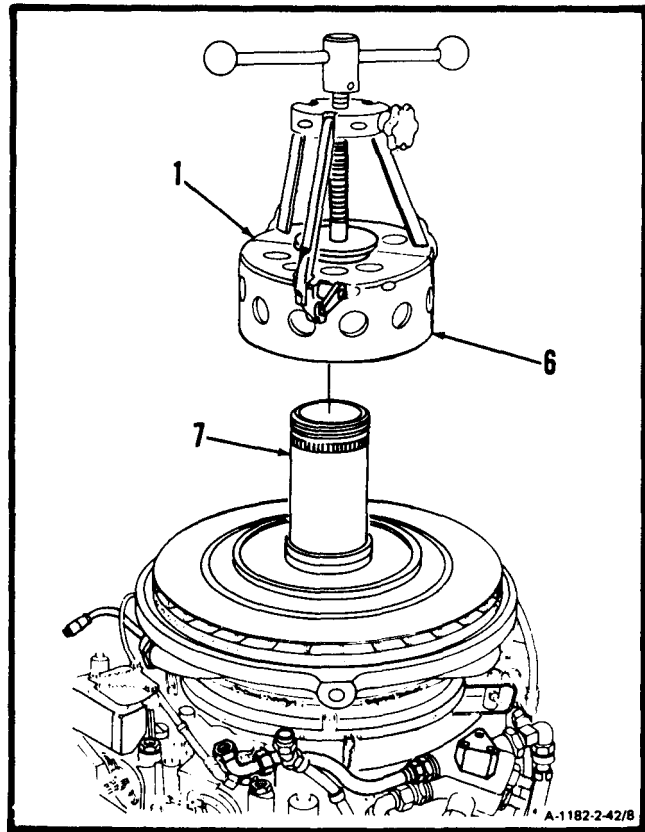


3. Hold knob (11) and turn handle (12) clockwise until No. 2 bearing package (6) is loose.



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4. Remove mechanical puller (T28) (1) with No. 2 bearing package (6) from shaft (7) and place on table.

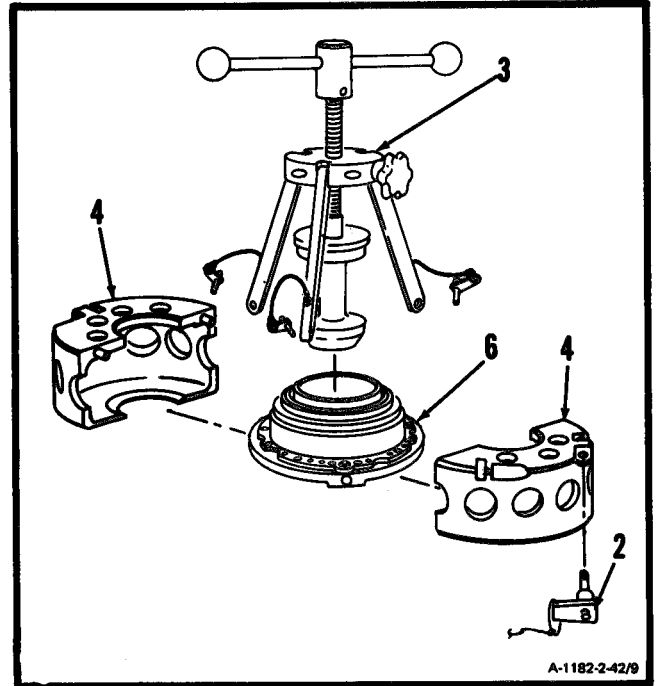


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2-42 REMOVE NO. 2 BEARING PACKAGE (AVIM) (Continued)

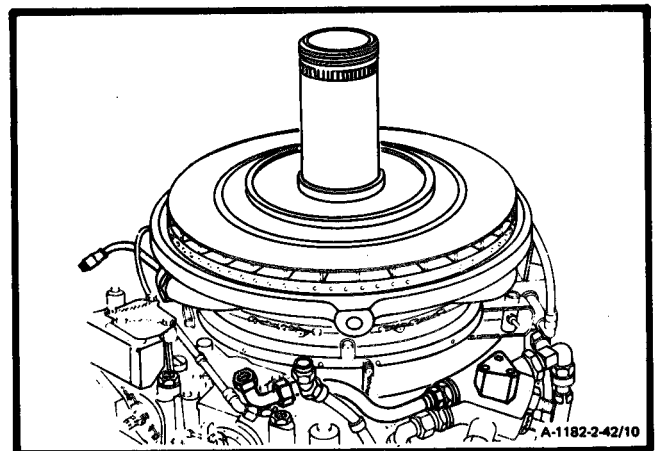
2-42

**5. Remove** pins (2), arm and pilot assembly (3), base (4) and **No. 2 bearing package (6).**



FOLLOW-ON MAINTENANCE:

None



END OF TASK

**INITIAL SETUP****Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Handling Tools (T17)  
Oil Seal Removal Tool (Appendix E)  
Sleeve Bushing (Appendix E)  
Arbor Press  
Goggles

**Materials:**

Lint-Free Cloth (E26)

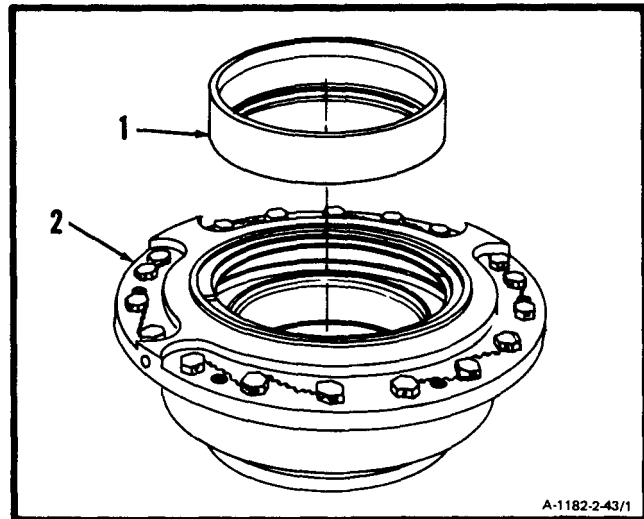
**Personnel Required:**

68B10 Aircraft Powerplant Repairer

**Equipment Condition:**

Engine Oil System Drained (Task 1-75)  
Combustion Section and Power Turbine  
Removed (Task 3-5)  
Second Turbine Disc Assembly Removed  
(Task 4-53)  
Second Turbine Nozzle, Spacer and Case  
Removed (Task 4-57)  
First Turbine Disc Assembly Removed  
(Task 4-62)  
First Turbine Nozzle Assembly Removed  
(Task 4-67)  
Diffuser Curl Removed (Task 4-73)  
Air Diffuser Assembly Removed (Task 2-36)  
No. 2 Bearing Package Removed (Task 2-42)

1. Remove bearing housing liner (1) from retainer assembly (2).



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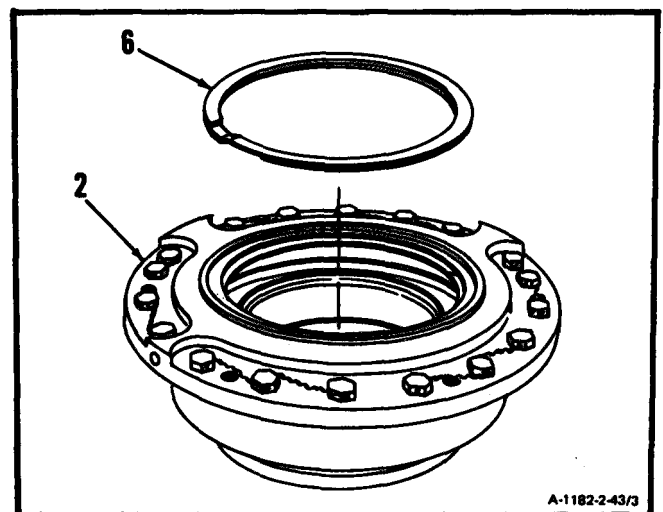
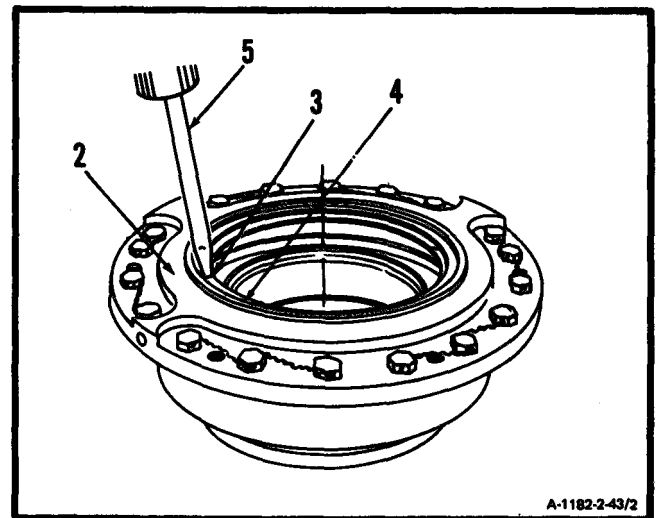
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**WARNING**

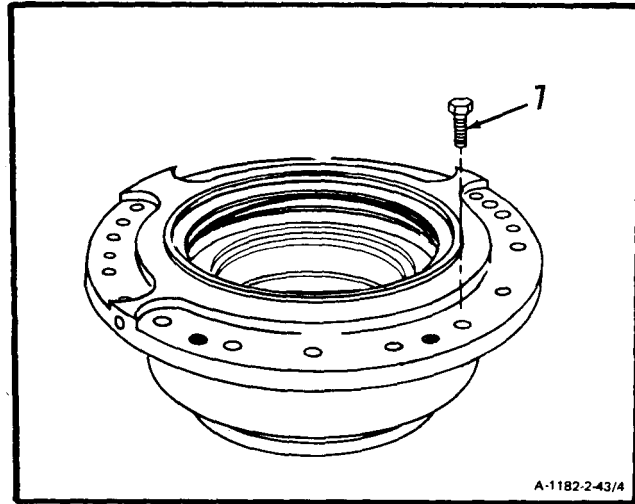
Be careful when removing retaining ring. Spring tension could cause screwdriver to dip and cause injury. If injury occurs, get medical attention.

2. Wear goggles. Pry slot of retaining ring (3) out from under lip (4) of retainer assembly (2). Use screwdriver (5).
3. Remove retaining ring (6) from retainer assembly (2).

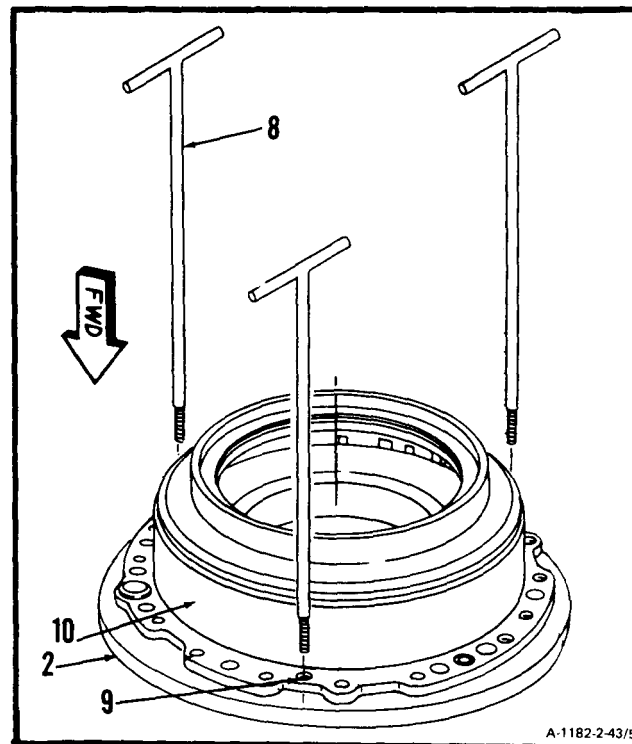


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4. Remove lockwire and 18 bolts (7).

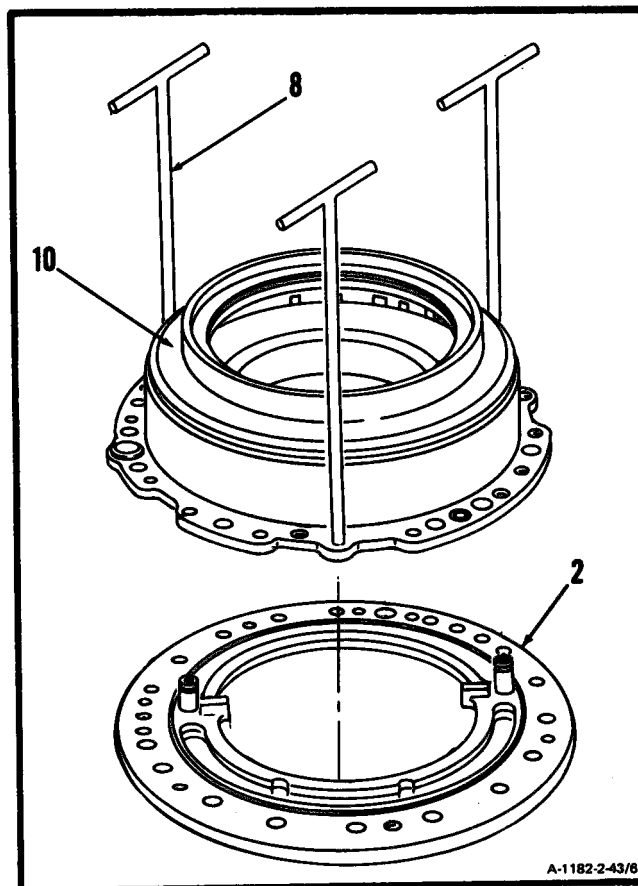


5. Turn retainer assembly (2) over and install three handling tools (T17) (8) into three holes (9) in housing (10).



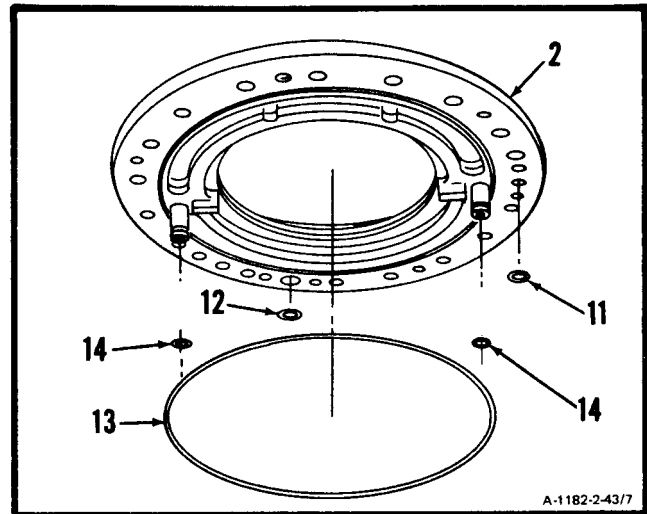
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6. Remove retainer assembly (2) from housing (10) using three handling tools (T17) (8).
7. Remove three handling tools (T17) (8) from housing (10).

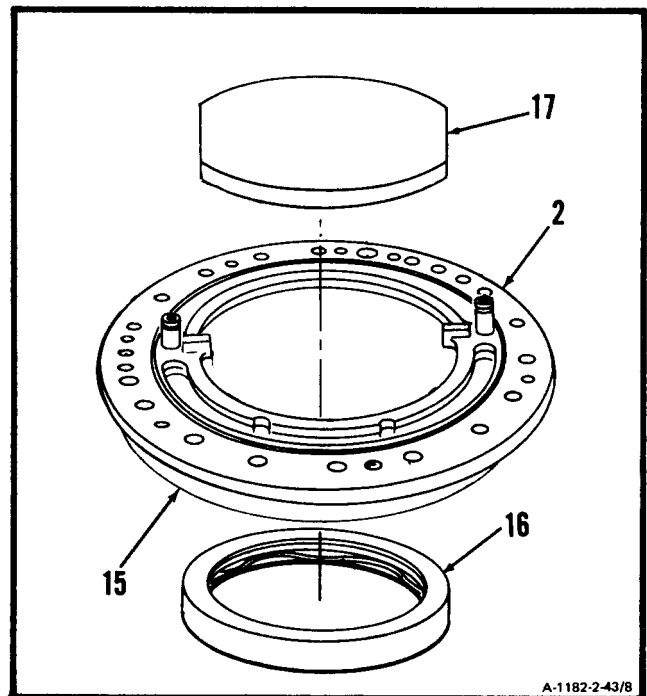


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8. Remove gaskets (11, 12, and 13) and packings (14) from retainer assembly (2).

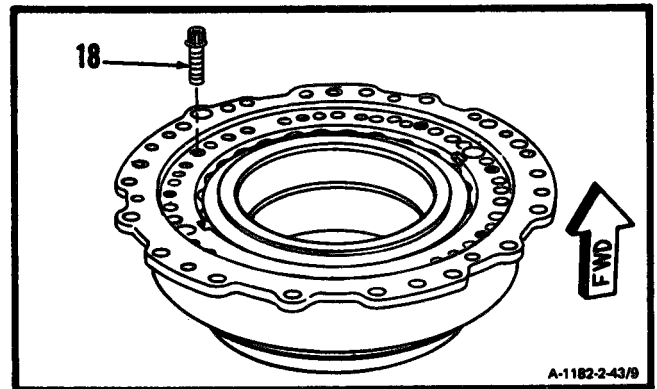


9. Place retainer assembly (2) on sleeve bushing (Appendix E) (15). **Remove seal (16)** from retainer assembly (2). Use oil seal removal tool (Appendix E) (17) and arbor press.

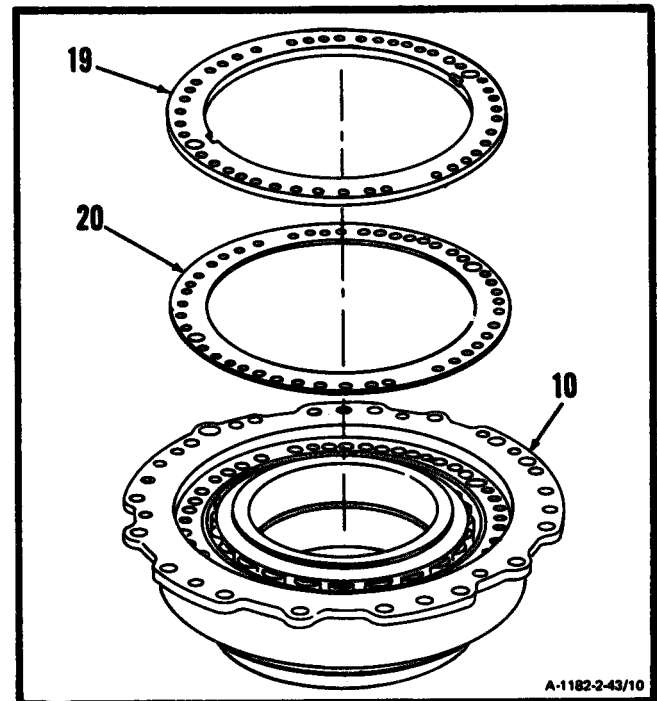


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10. Remove lockwire and eight bolts (18).



11. Remove bearing retaining ring (19) and shim (20) from housing (10).

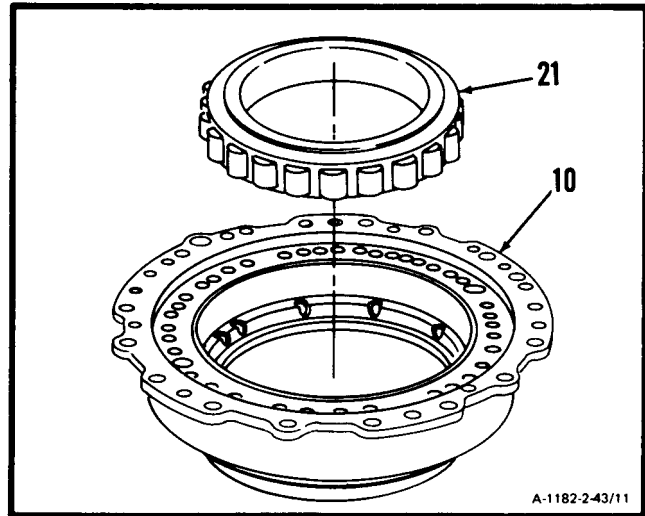


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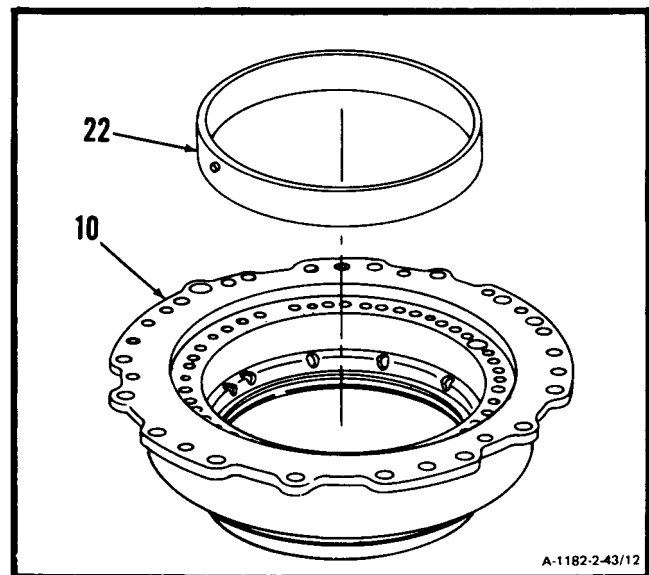
**CAUTION**

Protect bearings from damage. Handle only in clean area, Use clean, lint-free cloth (E26). Damaged bearings can cause engine failure.

12. Remove No. 2 bearing inner race (21) from housing (10).

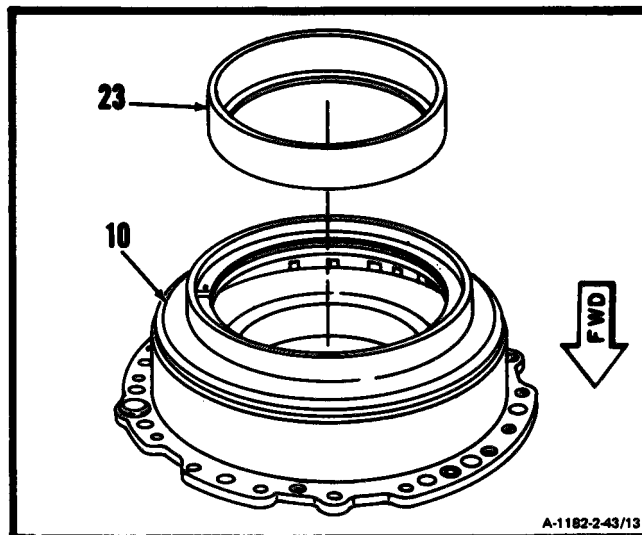


13. Remove No. 2 bearing outer race (22) from housing (10).



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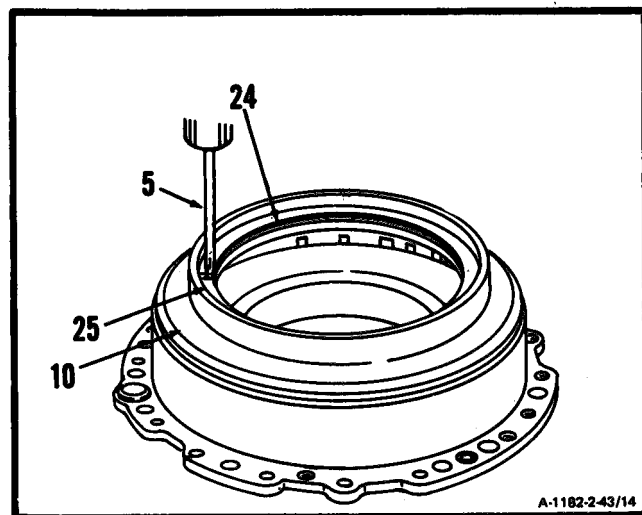
14. Remove bearing housing liner (23) from housing (10).



**WARNING**

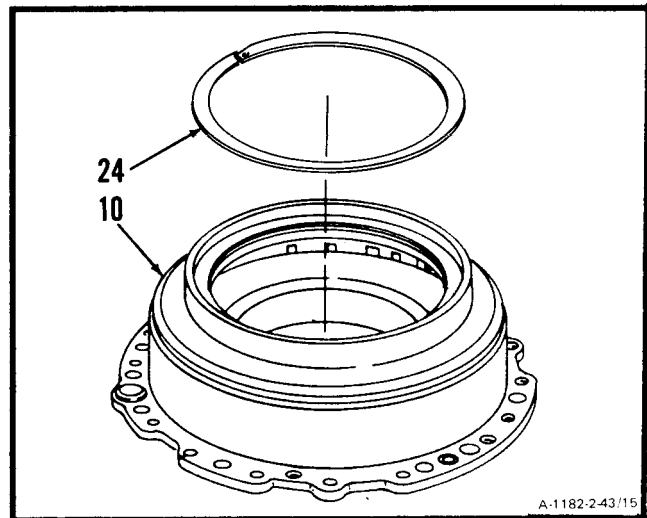
Be careful when removing retaining ring. Spring tension could cause screwdriver to slip and cause injury. If injury occurs, get medical attention.

15. Wear goggles. Pry slot of retaining ring (24) out from under lip (25) of housing (10). Use screwdriver (5).

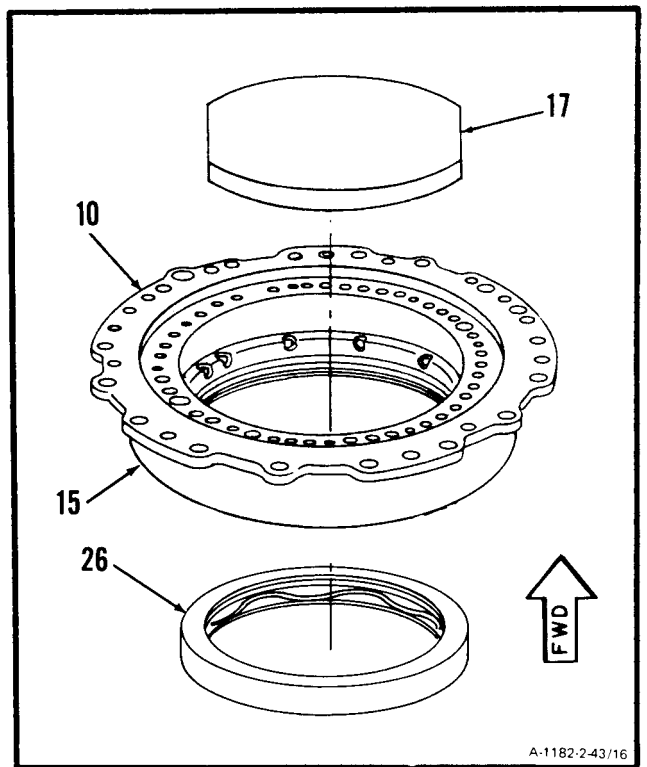


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16. Remove retaining ring (24) from housing (10).



17. Place housing (10) on sleeve bushing (Appendix E) (15). **Remove seal (26)** from housing (10). Use oil seal removal tool (Appendix E) (17) and arbor press.



FOLLOW-ON MAINTENANCE:

None

END OF TASK



## 2-44 CLEAN NO. 2 BEARING PACKAGE (AVIM)

2-44

**INITIAL SETUP****Applicable Configurations:**

All

**Tools:**

Compressed Air Source  
Fiber Brush  
Goggles

**Materials:**

Dry Cleaning Solvent (E17)  
Gloves (E20)  
Lint-Free Cloth (E26)  
Lubricating Oil (E32 or E33)

**Personnel Required:**

68B10 Aircraft Powerplant Repairer

**Equipment Condition:**

Off Engine Task  
Engine Oil System Drained (Task 1-75)  
Combustion Section and Power Turbine  
Removed (Task 3-5)  
Second Turbine Disc Assembly Removed  
(Task 4-53)

Second Turbine Nozzle, Spacer and Case  
Removed (Task 4-57)

First Turbine Disc Assembly Removed  
(Task 4-62)

First Turbine Nozzle Assembly Removed  
(Task 4-67)

Diffuser Curl Removed (Task 4-73)

Air Diffuser Assembly Removed (Task 2-36)

No. 2 Bearing Package Removed (Task 2-42)

No. 2 Bearing Package Disassembled  
(Task 2-43)

**General Safety Instructions:**

<b>WARNING</b>
----------------

**Dry cleaning solvent (E17) is flammable and toxic. It can irritate skin and cause burns. Use only in well-ventilated area, away from heat and open flame. In case of contact, immediately flush skin or eyes with water for at least 15 minutes. Get medical attention for eyes.**

**GO TO NEXT PAGE**

## 1. Clean No. 2 bearing package as follows:

**CAUTION**

Protect bearings from damage. Handle only in clean area. Use clean, lint-free cloth (E26). Damaged bearings can cause engine failure.

- a. Wear gloves (E20). Immerse two liners (1), two retaining rings (2), two seals (3), re-retain assembly (4), retaining ring (5), shim (6), bearing (7), and housing assembly (8) in dry cleaning solvent (E17).
- b. Remove contaminants from parts other than carbon seals by scrubbing with fiber brush.

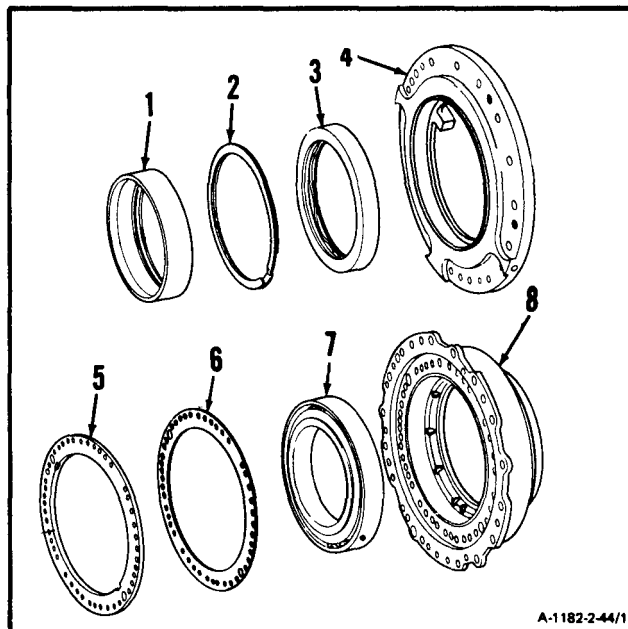
**WARNING**

When using compressed air for cleaning, use approved protective equipment for eyes and face. Do not use more than 30 psig air pressure. Do not direct air toward yourself or another person. Failure to comply could result in injury to eyes or skin. In case of injury, get medical attention.

- c. Wear goggles. Blow dry parts using clean, dry compressed air.

**WARNING**

Lubricating oils (E32 and E33) cause paralysis if swallowed. Prolonged contact with them may irritate the skin. Handle only in well-ventilated areas away from heat and flame. Drain and store in approved metal safety containers. Avoid prolonged or repeated contact with skin and do not take internally. Wash contacted areas of skin thoroughly after handling. If irritation of skin results, get medical attention. Get medical attention for eyes.



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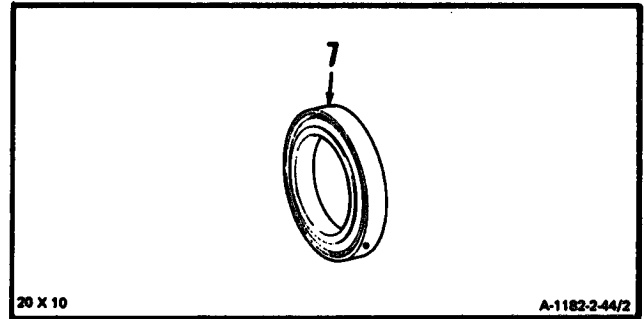
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**2-44 CLEAN NO. 2 BEARING PACKAGE (AVIM) (Continued)**

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2-44

2. Dip bearing (7) in lubricating oil (E32 or E33).

**FOLLOW-ON MAINTENANCE:**

Impact No. 2 Bearing Package (Task 245).

END OF TASK

**INITIAL SETUP**

**Applicable Configuration:**

All

**Tools:**

Technical Inspection Tool Kit,  
 NSN 5180-00-323-5114  
 Goggles  
 Compressed Air Source

**Materials:**

None

**Personnel Required:**

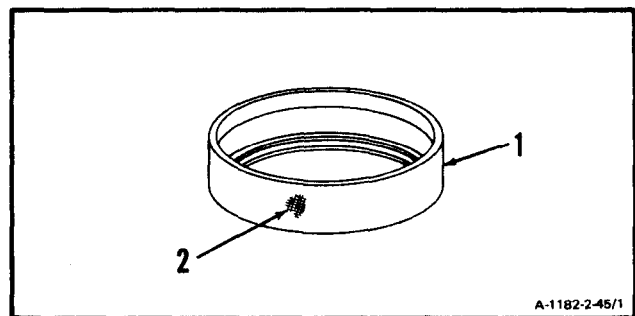
68B30 Aircraft Powerplant Inspector

**Equipment Condition:**

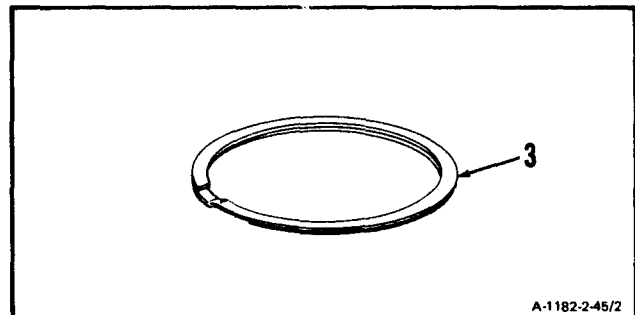
Off Engine Task

**1. Inspect two bearing housing liners (1).**

- a. There shall be no corrosion or pitting.
- b. There shall be no cracks.
- c. There shall be no scoring or wear on any area of the liner outside circumference (2).



**2. Inspect two retaining rings (3).** There shall be no cracks or bends.



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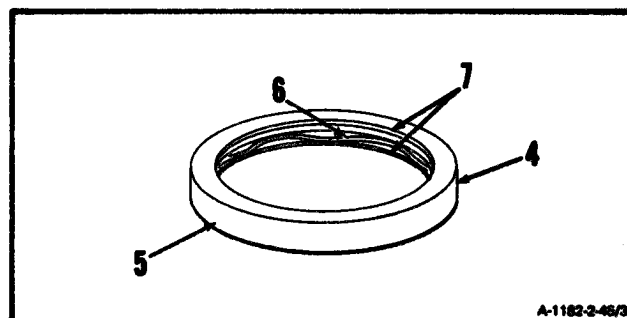
**3. Inspect two seals (4), as follows:**

- a. There shall be no cracks, nicks or scratches on housing (5).
- b. There shall be no corrosion on housing (5).

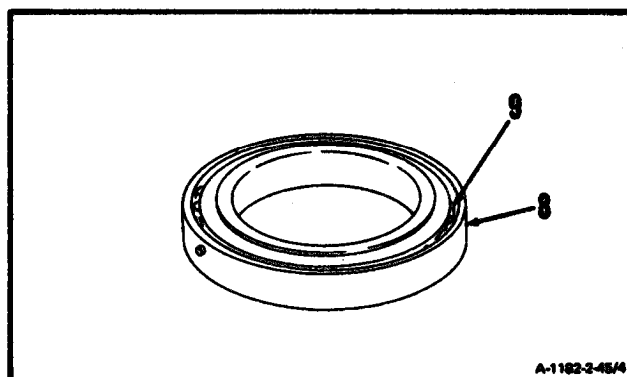
**NOTE**

In following step do not mistake segment for cracks.

- c. There shall be no springs (6) or carbon elements (7) cracked or broken out of housing (5).
- d. There shall be no chipping on seal carbon elements (7).

**4. Inspect bearing (8).**

- a. There shall be no rust or broken parts.
- b. There shall be no pits or dents deeper than 0.002 inch on rolling surfaces (9).
- c. There shall be no foreign matter clogging the bearing which would prevent free rotation.
- d. There shall be no purple, red-purple, or blue discoloration.



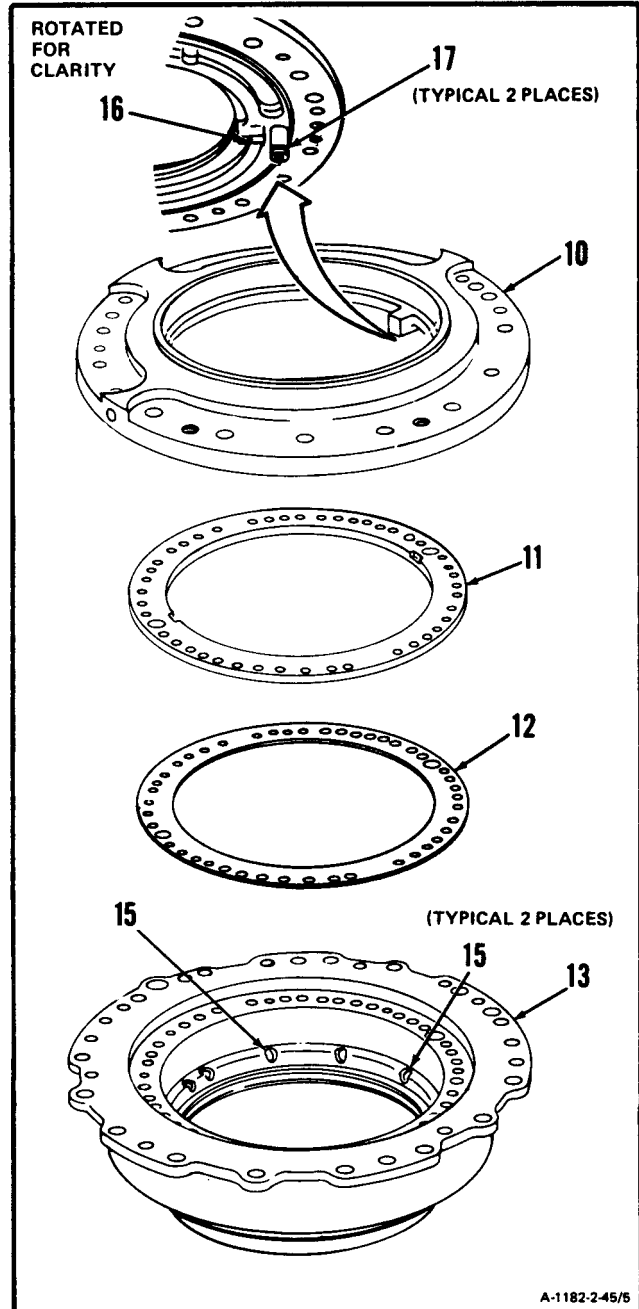
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5. Inspect retainer assembly (10), bearing retaining ring (11), shim (12), and housing assembly (13). There shall be no cracks.

**WARNING**

When using compressed air for cleaning, use approved protective equipment for eyes and face. Do not use more than 30 psig air pressure. Do not direct air toward yourself or another person. Failure to comply could result in injury to eyes or skin. In case of injury, get medical attention.

6. Inspect oil jet couplings (17) and passages (15 and 16). There shall be no blockage. Wear goggles and apply compressed air to jet couplings (17). Use clean, dry compressed air. Feel for air flow at passage holes (15 and 16).



FOLLOW-ON MAINTENANCE:

None

**END OF TASK**

## 2-46 ASSEMBLE NO. 2 BEARING PACKAGE (AVIM)

2-46

**INITIAL SETUP****Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-3234944  
Technical Inspection Tool Kit,  
NSN 5180-00-323-5114  
Oil Seal Installation Tool (Appendix E)  
Outside Micrometer Caliper Set  
Micrometer Depth Gage  
Arbor Press  
Sleeve Bushing (Appendix E)  
Torque Wrench, 30-150 Inch-Pounds

**Materials:**

Lockwire (E29)  
Lubricating Oil (E32)  
Lubricating Oil (E33)  
Shortening Compound (E46)

**Parts:**

Packings  
Gaskets  
Shims

**Personnel Required:**

68B10 Aircraft Powerplant Repairer  
68B30 Aircraft Powerplant Inspector

**References:**

TM 55-2840-254-23P

**Equipment Condition:**

Off Engine Task

**General Safety Instructions:****WARNING**

Lubricating oils (E32 and E33) cause paralysis if swallowed. Prolonged contact with them may irritate the skin. Handle only in well-ventilated areas away from heat and flame. Drain and store in approved metal safety containers. Avoid prolonged or repeated contact with skin and do not take internally. Wash contacted areas of skin thoroughly after handling. If irritation of skin results, get medical attention. Get medical attention for eyes.

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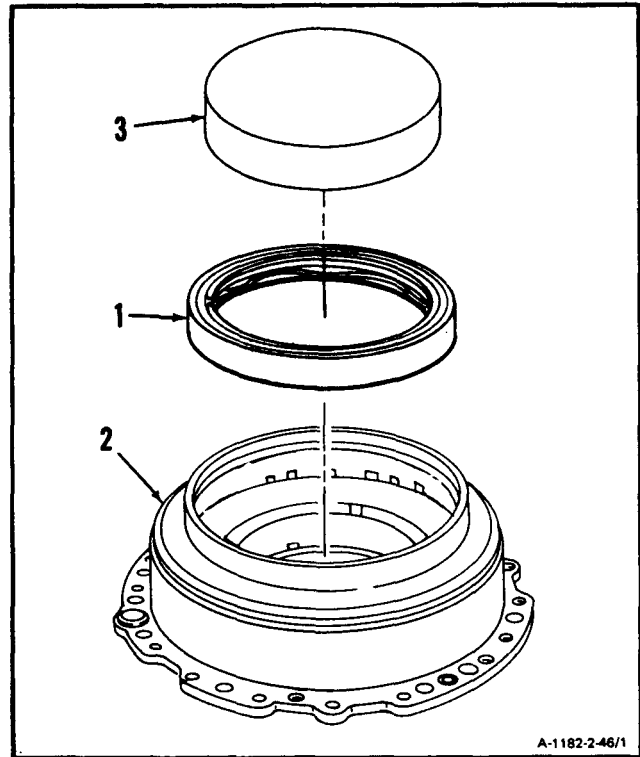
**CAUTION**

Seal must be dipped in lubricating oil before installation. Failure to comply will cause damage to seal during dry running period of initial engine starts.

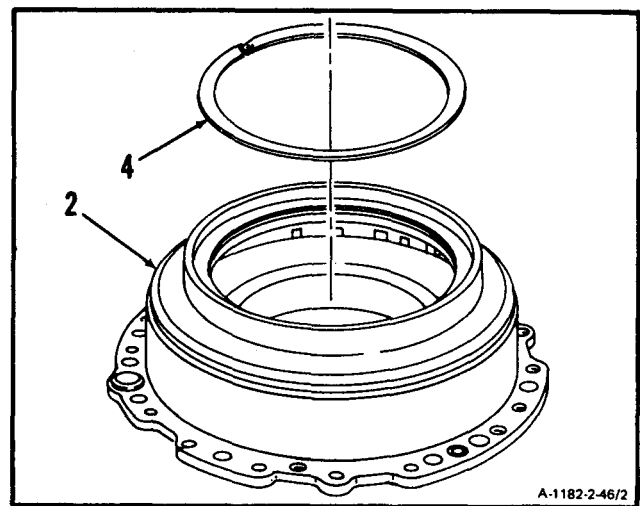
**NOTE**

If part number is not visible, retaining ring that holds carbon seal elements should face out.

1. Dip serviceable seal (1) in lubricating oil (E32 or E33), **Press seal (1) in housing (2)** with part number facing down. Use oil seal installation tool (Appendix E) (3) and arbor press.



2. Install retaining ring (4) in housing (2).

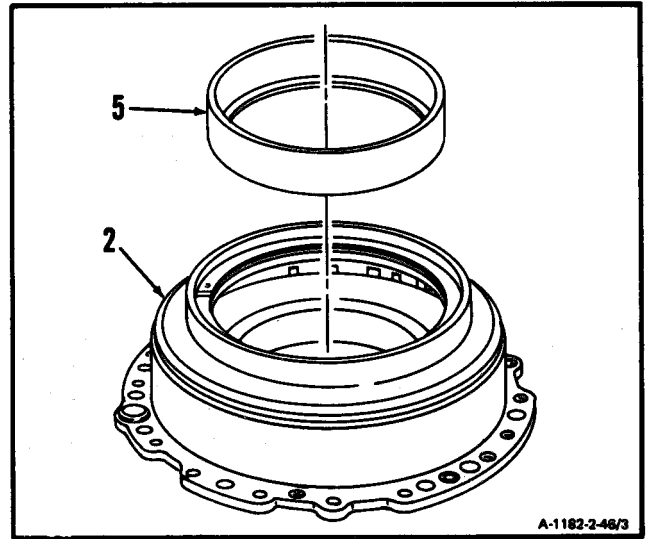


**INSPECT**

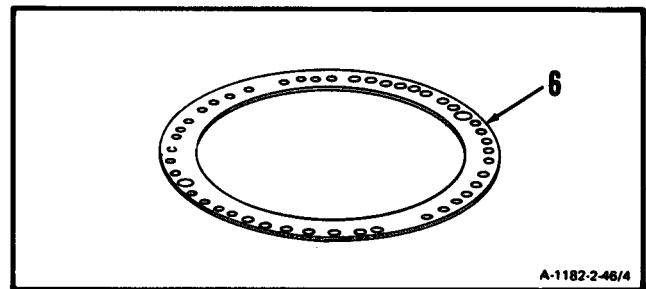
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3. Install bearing housing liner (5) in housing (2).

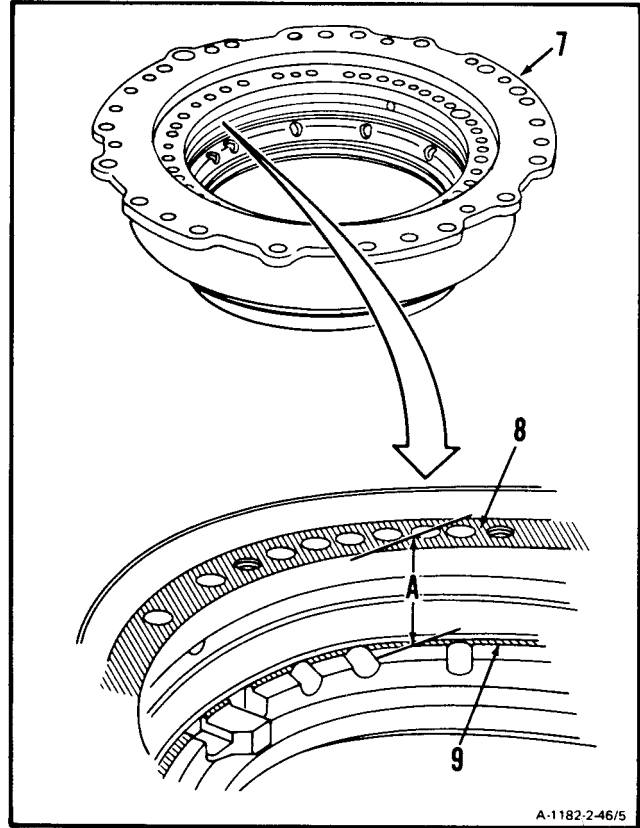


4. Determine required thickness of shim (6) as follows:

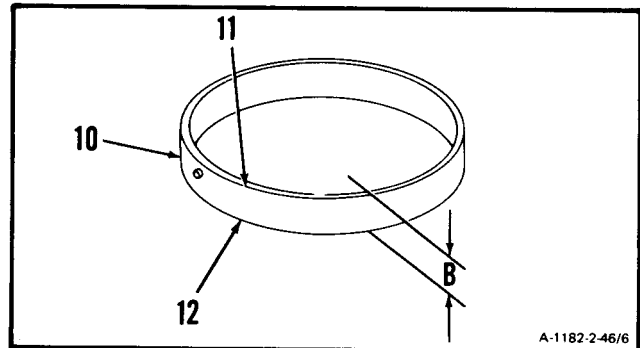


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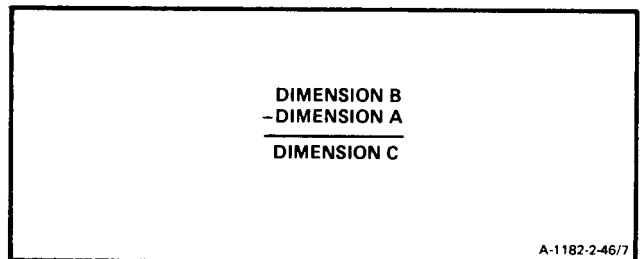
- a. On housing assembly (7), measure from forward surface (8) to rear surface (9). Record as Dimension A.



- b. On bearing outer race (10), measure from forward edge (11) to rear edge (12). Record as Dimension B.

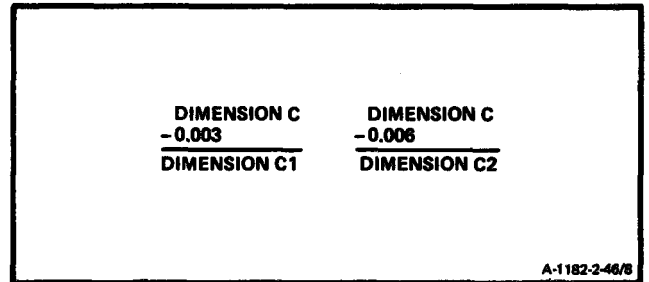


- c. Subtract Dimension A from Dimension B. Record as Dimension C.

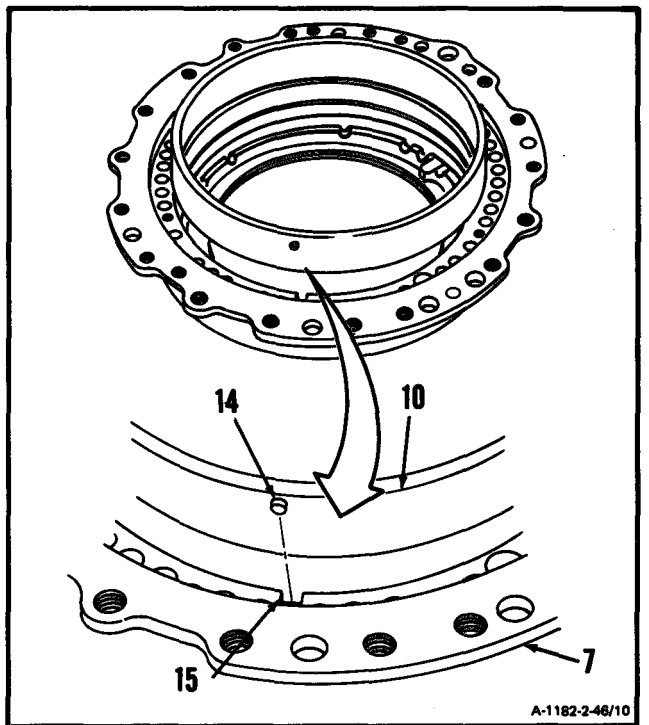
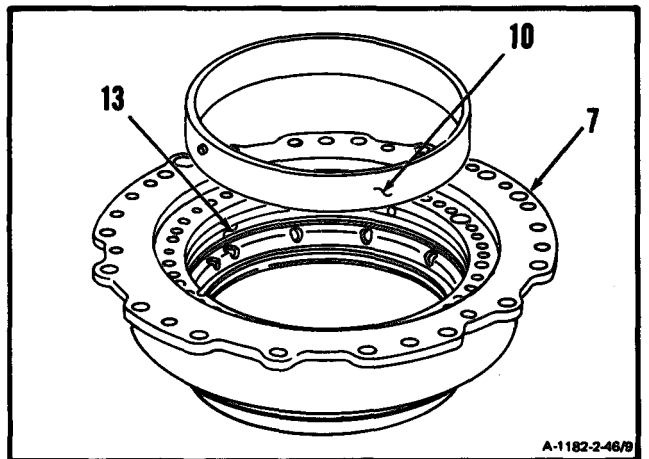


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- d. Subtract 0.003 from Dimension C. Record as Dimension C1. Subtract 0.006 from Dimension C. Record as Dimension C2.
  - e. Using micrometer measure the thickness of shims.
  - f. Select shims so total thickness is no less than Dimension C2 and no more than C1 in step d.
5. Apply shortening compound (E46) to surface (13) on housing assembly (7) and to bearing outer race (10).



6. Align pin (14) in outer race (10) with slot (15) in housing assembly (7). **Press outer race (10) into housing assembly (7).**



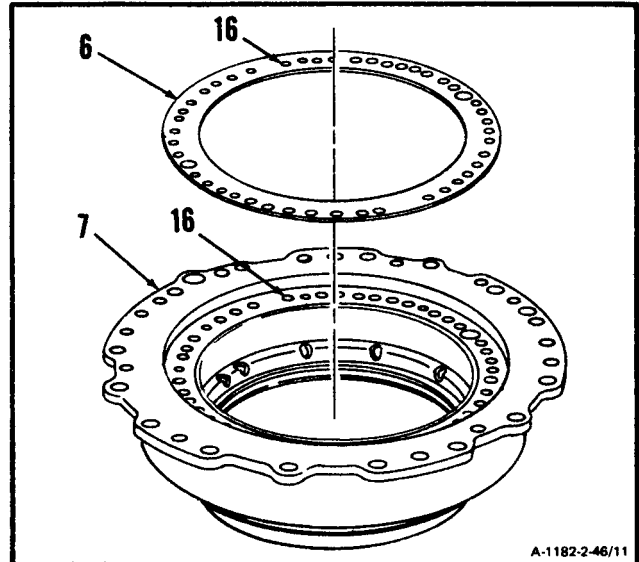
**INSPECT**

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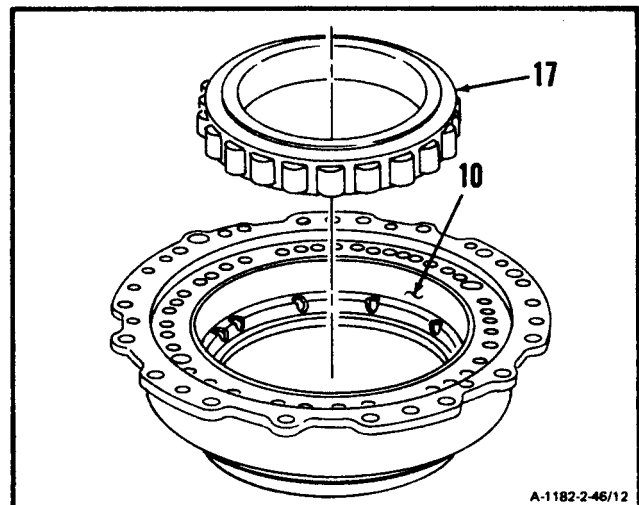
**NOTE**

In following step, no more than three shims shall be used. If more than three shims are needed, replace bearing. If more than three shims are still needed, replace housing. If no shim is required, omit steps 7. and 8.

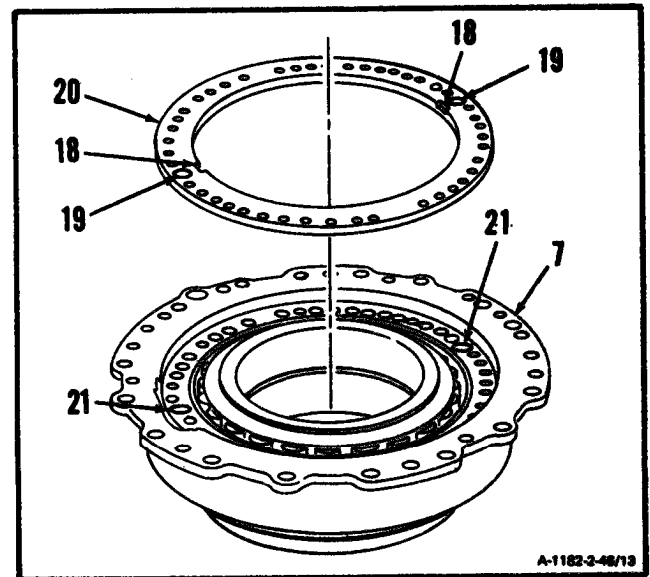
7. Align holes (16) and **install** previously determined **shim(s) (6)** in housing assembly (7).



8. Dip bearing inner race (17) in lubricating oil (E32 or E33). Install bearing inner race (17) in outer race (10) with part number facing down.

**INSPECT****GO TO NEXT PAGE**

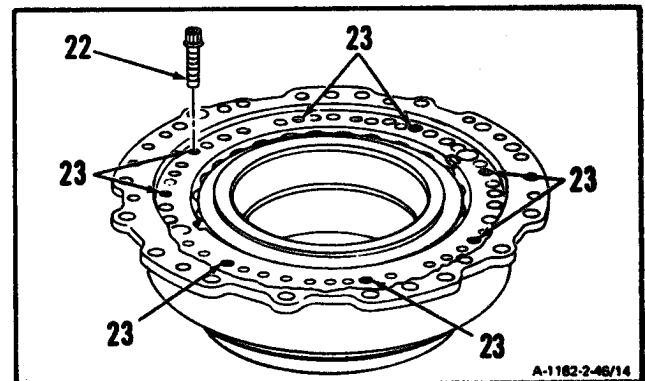
9. With two notches (18) facing up, align two large holes (19) in retaining ring (20) with oil transfer holes (21) in housing assembly (7). **Install retaining ring (20)** in housing assembly (7).



#### NOTE

Do not lockwire over oil transfer holes.

Install eight bolts (22) in holes (23). Lockwire bolts (22) in pairs. Use lockwire (E29).



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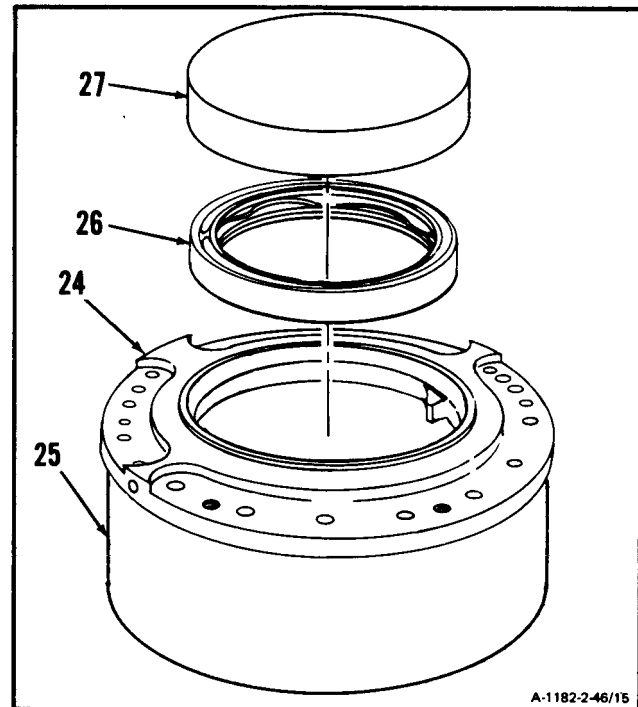
**CAUTION**

Seal must be dipped in lubricating oil before installation. Failure to comply will cause damage to seal during dry running period of initial engine starts.

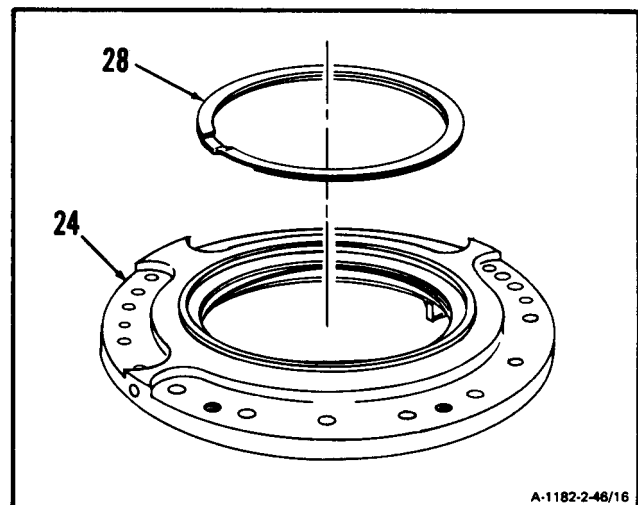
**NOTE**

If part number is not visible, retaining ring that holds carbon seal elements should face out.

11. Place retainer assembly (24) on sleeve bushing (Appendix E) (25). Dip serviceable seal (26) in lubricating oil (E32 or E33). **Press seal (26) into retainer assembly (24)** with part number facing down. Use oil seal installation tool (Appendix E) (27) and arbor press.



12. **Install retaining ring (28)** in retainer assembly (24).

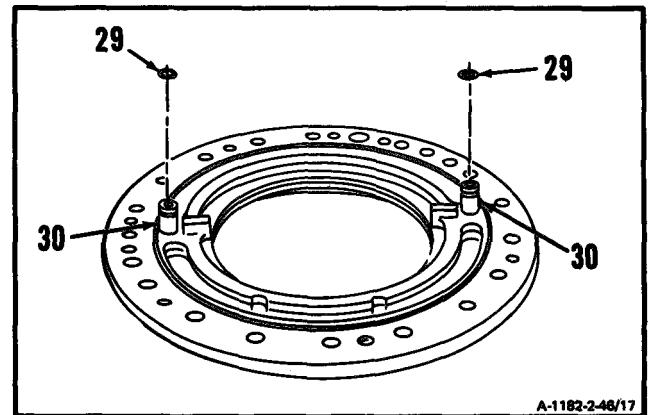


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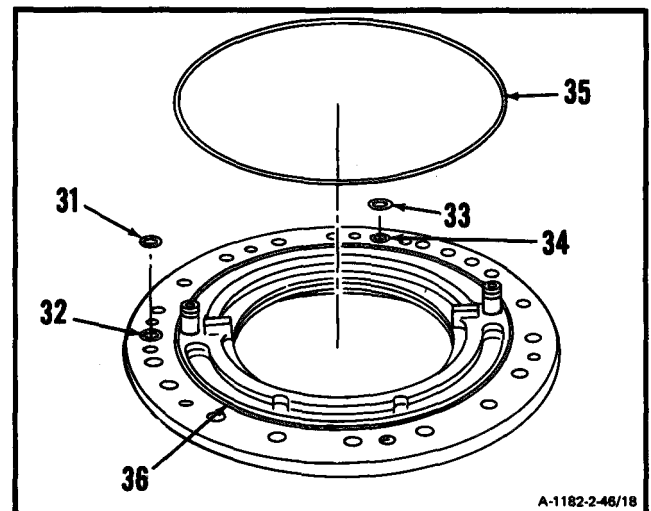
## 2-46 ASSEMBLE NO. 2 BEARING PACKAGE (AVIM) (Continued)

2-46

13. Install packings (29) on two oil transfer couplings (30).



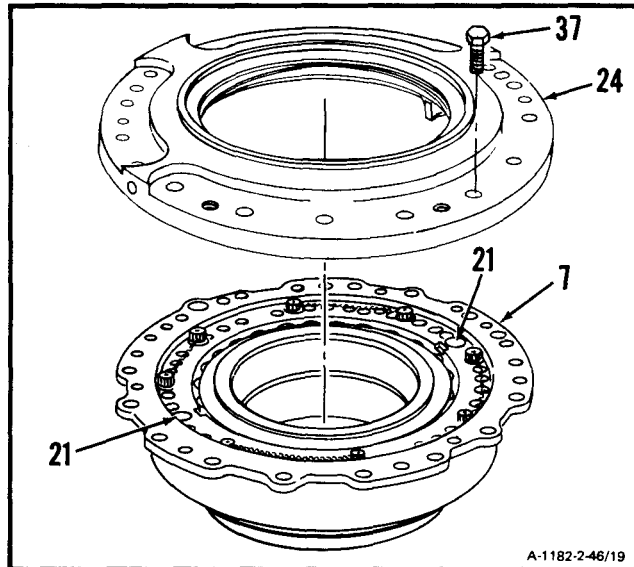
14. Install gasket (31) in oil port (32).
15. Install gasket (33) in oil port (34).
16. Install gasket (35) in groove (36).



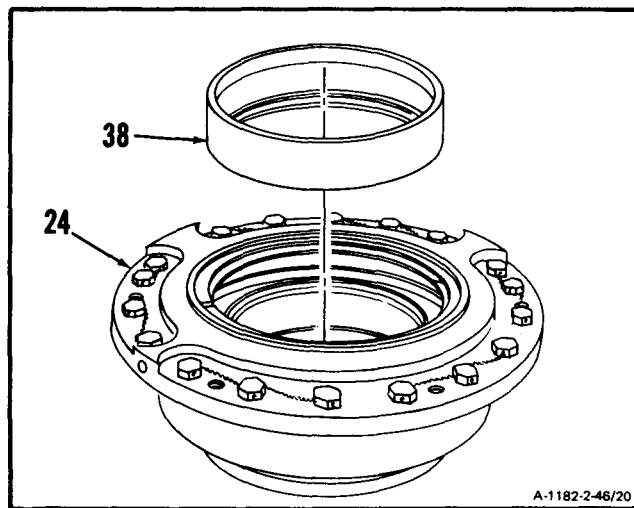
**INSPECT**

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17. Align oil tubes on retainer assembly (24) with oil transfer holes (21) in housing assembly (7). **Install retainer assembly (24)** and 18 bolts (37) on housing assembly (7). Torque to 85 inch-pounds. Lockwire bolts (37). Use lockwire (E29).



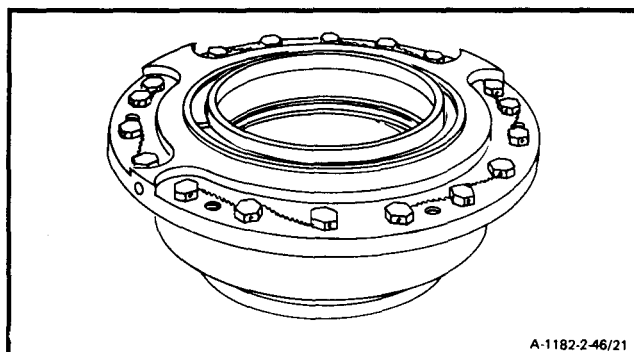
18. **Install bearing liner (38)** in retainer assembly (24).



**INSPECT**

**FOLLOW-ON MAINTENANCE:**

None



**END OF TASK**



## 2-47 INSTALL NO. 2 BEARING PACKAGE (AVIM)

2-47

## INITIAL SETUP

**Applicable Configurations:**

All

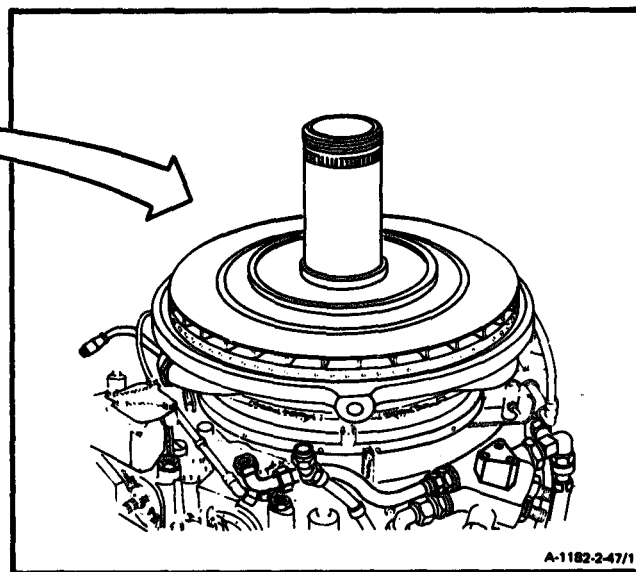
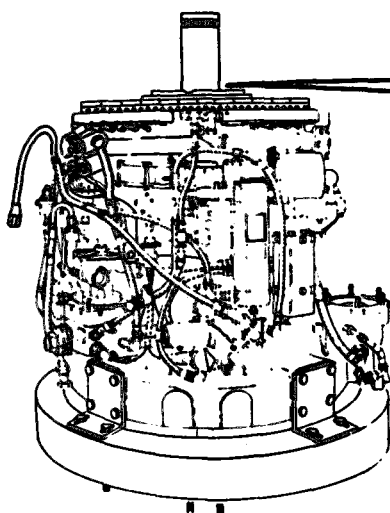
**Tools:**Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944Technical Inspection Tool Kit,  
NSN 5180-00-323-5114

Installing Tool (T26)

**Personnel Required:**

68910 Aircraft Powerplant Repairer

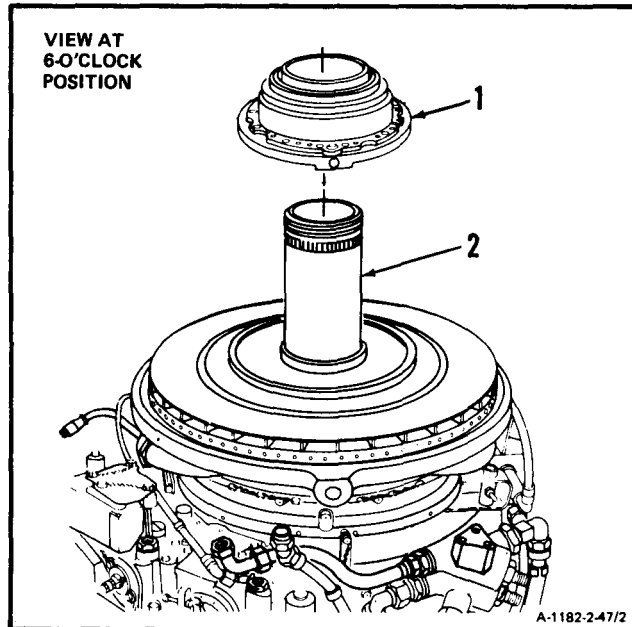
68B30 Aircraft Powerplant Inspector

**GO TO NEXT PAGE**

**CAUTION**

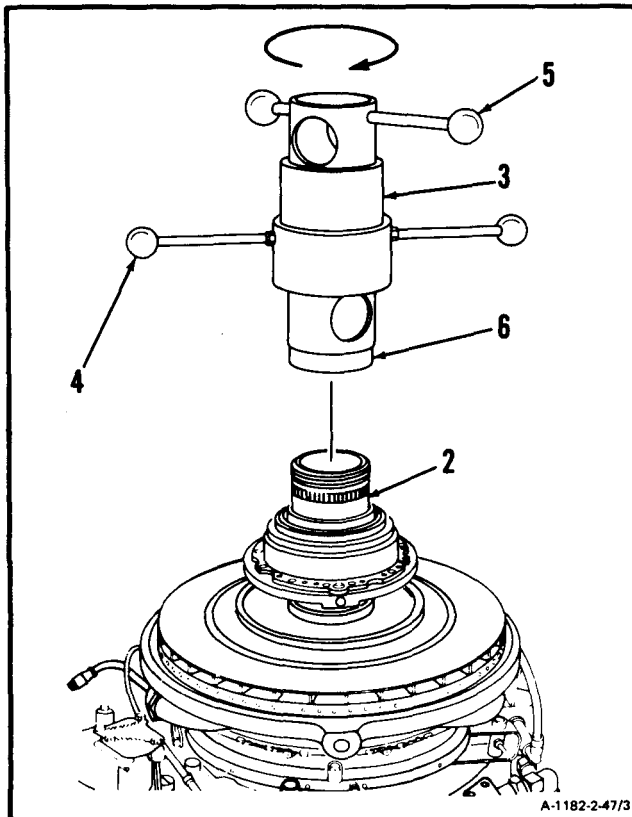
Be careful when installing bearing package. Carbon elements inside seals could easily break. This would cause oil leakage and damage to engine.

1. Place No. 2 bearing package (1) on compressor shaft (2).



2. Install installing tool (T26) (3) as follows:

- a. Place installing tool (T26) (3) on compressor shaft (2).
- b. Hold handle (4). Turn handle (5) clockwise until sleeve (6) is completely threaded on compressor shaft (2).

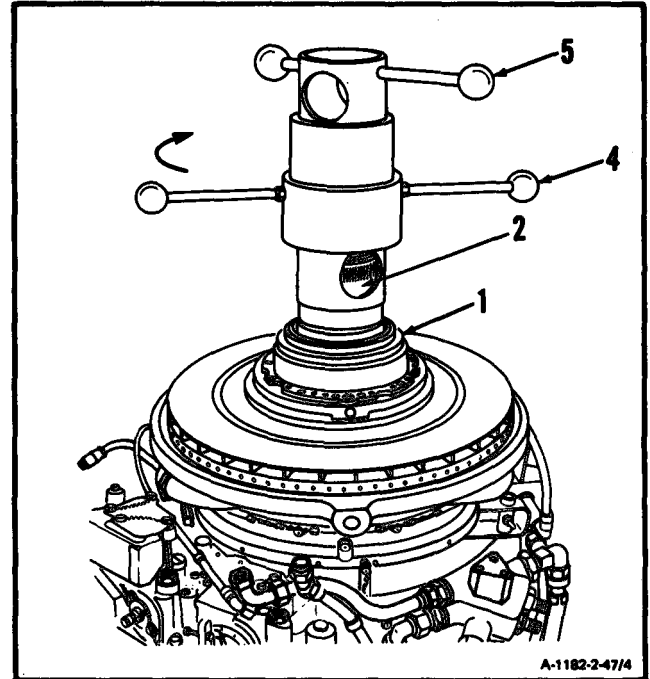


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## 2-47 INSTALL NO. 2 BEARING PACKAGE (AVIM) (Continued)

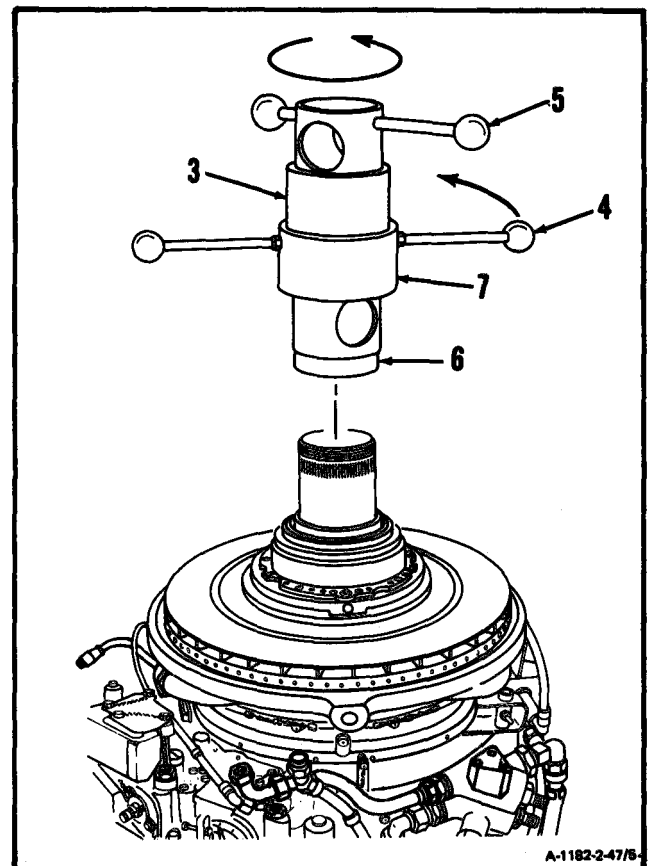
2-47

3. Hold handle (5) and turn handle (4) clockwise until No. 2 bearing package (1) is firmly seated on compressor shaft (2).



4. Remove installing tool (T26) (3) as follows:

- a. Turn handle (4) counterclockwise and loosen sleeve (7).
- b. Turn handle (5) counterclockwise and unscrew sleeve (6).
- c. Remove installing tool (T26) (3).



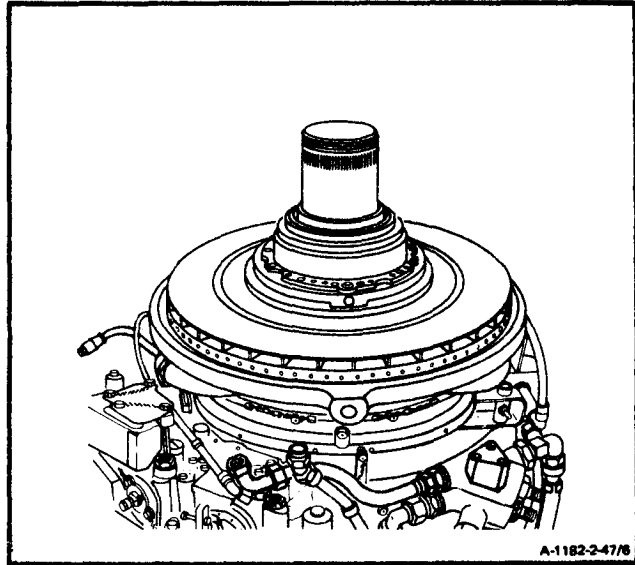
INSPECT

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2-429

**FOLLOW-ON MAINTENANCE:**

- Install Air Diffuser Assembly (Task 2-41).
- Install Diffuser Curl (Task 4-77).
- Install First Turbine Nozzle (Task 4-71).
- Install First Turbine Disc Assembly (Task 4-66).
- Install Second Turbine Nozzle, Spacer and Case (Task 4-61).
- Install Second Turbine Disc Assembly (Task 4-56).
- Install Combustion Section and Power Turbine (Task 3-8).
- Service Engine Oil System (Task 1-74).

**END OF TASK**

## Section IX. OUTPUT SHAFT SEAL AND HOUSING ASSEMBLY - MAINTENANCE PROCEDURES

## 2-43 REMOVE OUTPUT SHAFT SEAL AND HOUSING ASSEMBLY

2-48

## INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Handling Tool (T16) (3)

**Materials:**

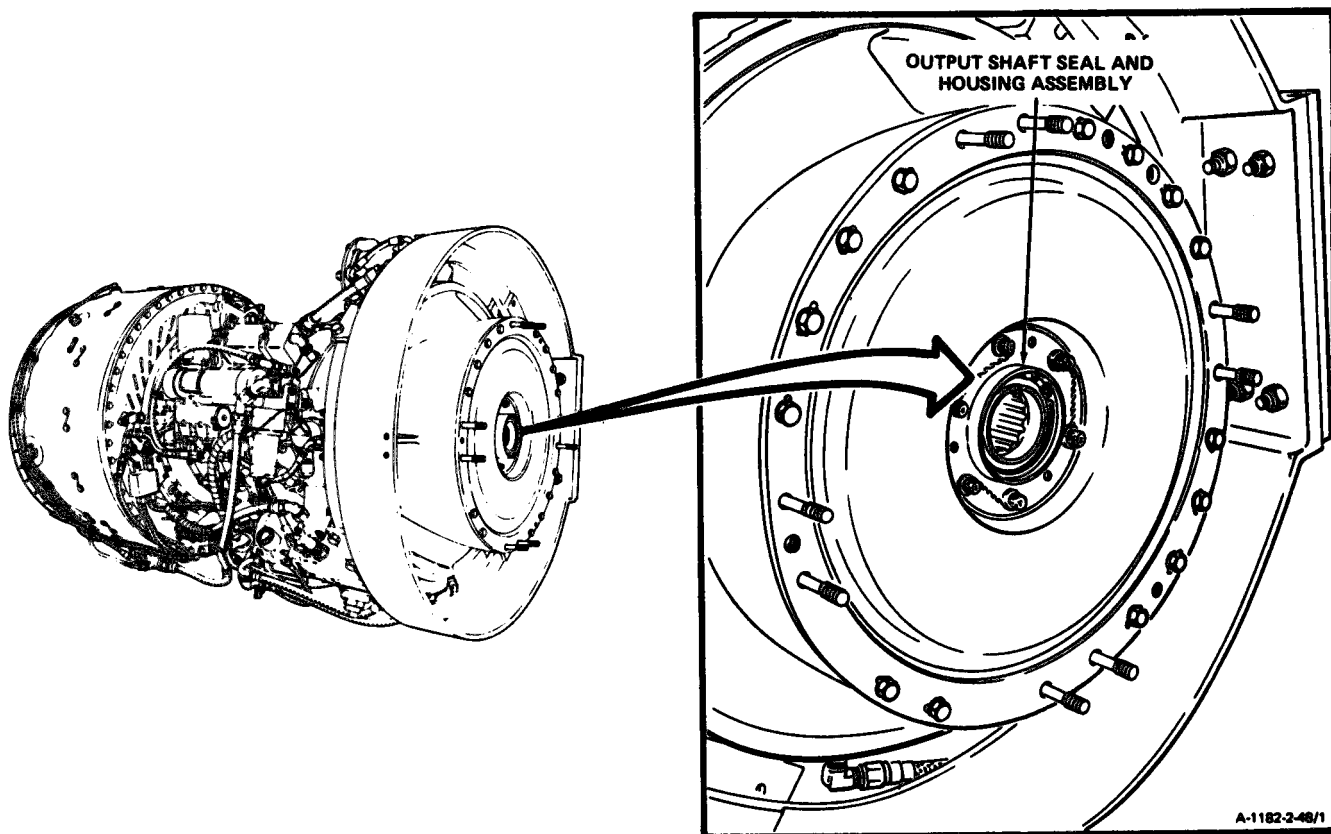
Wiping Rag (E58)

**Personnel Required:**

68B10 Aircraft Powerplant Repairer

**References:**

Task 2-50

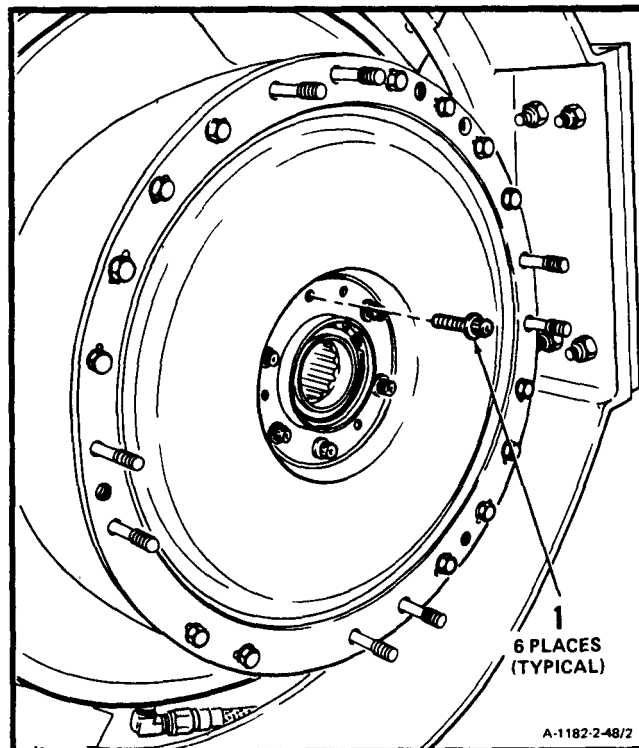


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**NOTE**

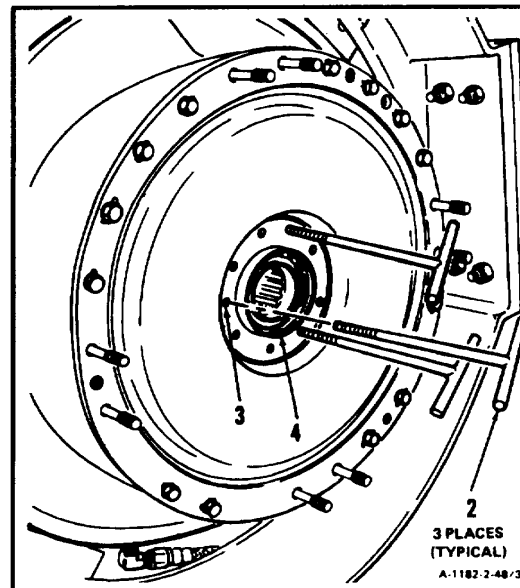
Before removing output shaft seal and housing assembly, check for evidence of oil leakage from seal. If evidence of leakage is found, have aircraft powerplant inspector examine seal housing assembly in accordance with Task 2-50.

1. Remove lockwire and six bolts (1).



**GO TO NEXT PAGE**

2. Install three handling tools (T16) or (T17) (2) in three threaded holes (3) in output shaft seal and housing assembly (4).



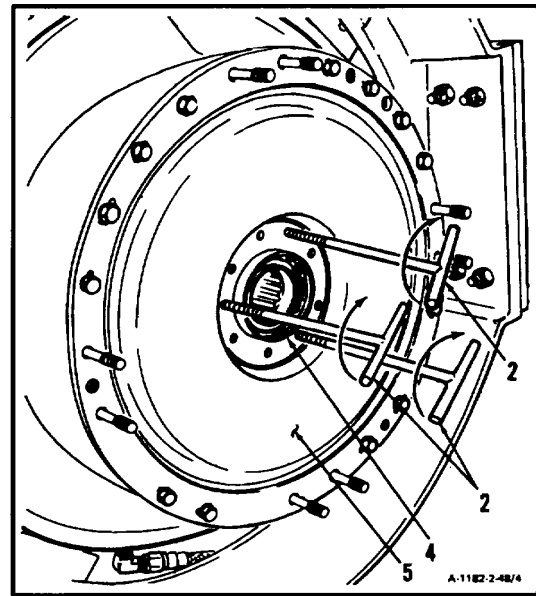
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Change 6 2-433

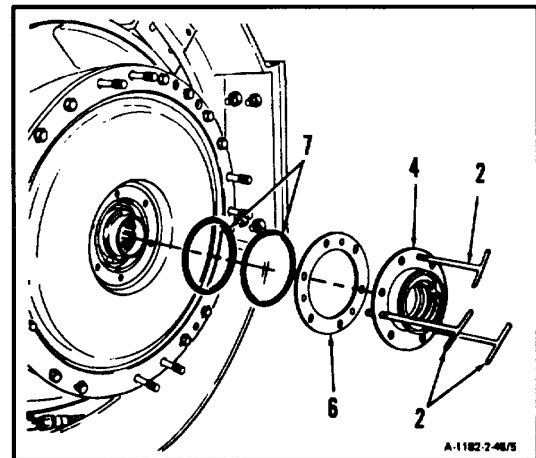
**CAUTION**

In following step 3, be sure to remove output shaft seal and housing assembly carefully and evenly. Carbon elements inside seals could easily break. This would result in oil leakage and damage to engine.

3. Tighten three handling tools (T16) or (T17) (2) evenly. Separate output shaft seal and housing assembly (4) from inlet housing cover assembly (5).



4. Remove output shaft seal and housing assembly (4), shim (6) and two packings (7). Remove three handling tools (T16) or (T17) (2).



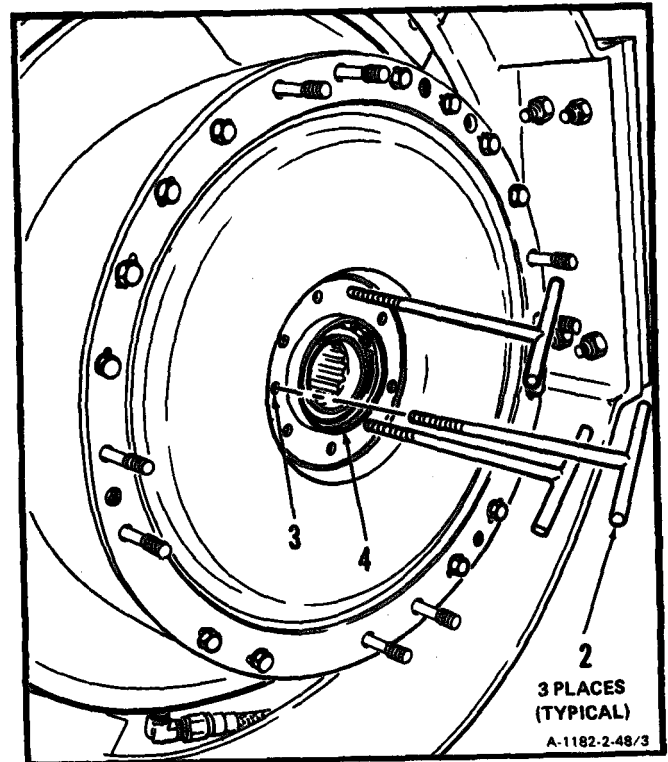
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## 2-48 REMOVE OUTPUT SHAFT SEAL AND HOUSING ASSEMBLY (Continued)

2-48

2. Install three handling tools (T16) (2) in three threaded holes (3) in output shaft seal and housing assembly (4).

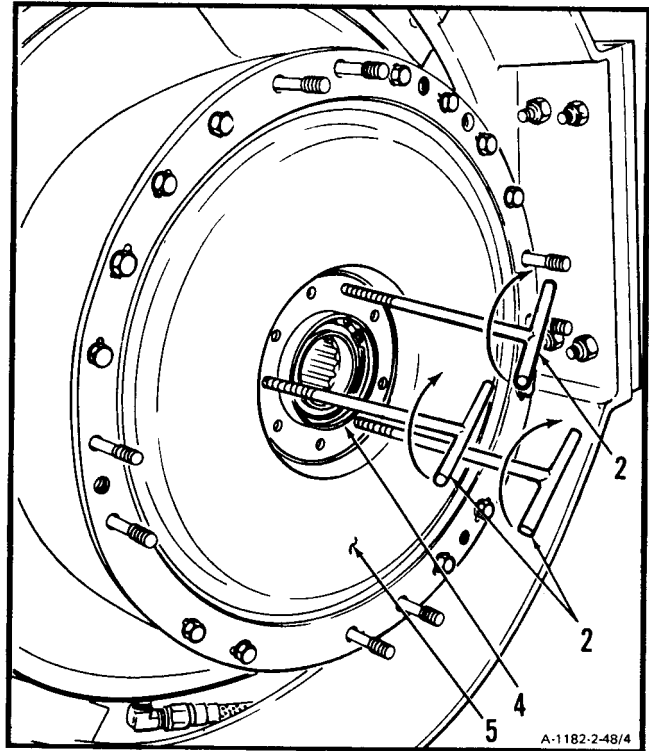
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2-433

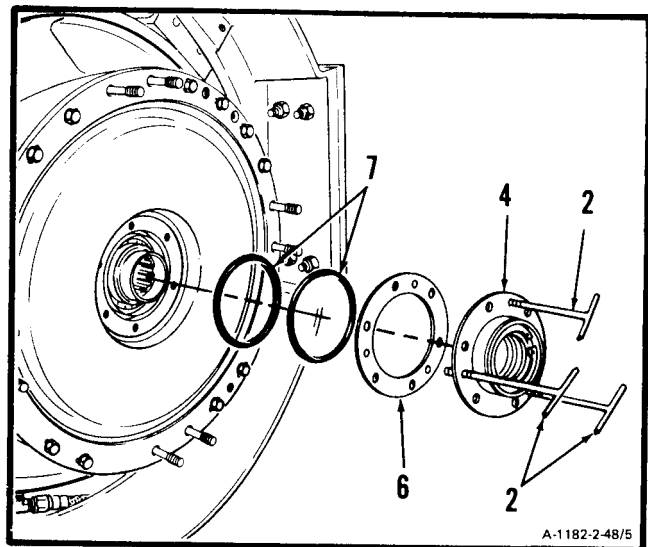
**CAUTION**

In following step 3., be sure to remove output shaft seal and housing assembly carefully and evenly. Carbon elements inside seals could easily break. This would result in oil leakage and damage to engine.

3. Tighten three handling tools (T16) (2) evenly. Separate output shaft-seal and housing assembly (4) from inlet housing cover assembly (5).



4. Remove output shaft seal and housing assembly (4), shim (6) and two packings (7). Remove three handling tools (T16) (2).



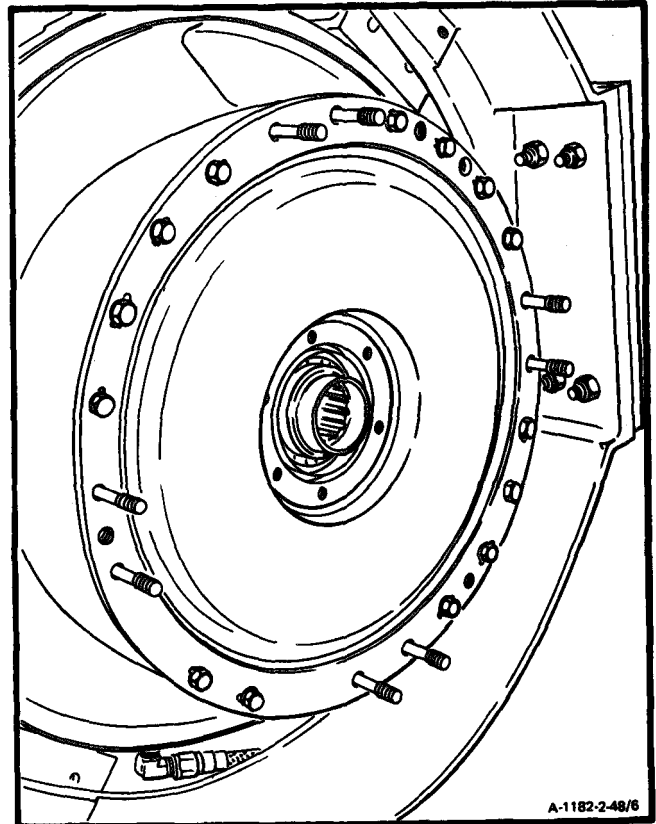
**GO TO NEXT PAGE**

## 2-48 REMOVE OUTPUT SHAFT SEAL AND HOUSING ASSEMBLY (Continued)

2-48

## FOLLOW-ON MAINTENANCE:

None



END OF TASK

**INITIAL SETUP**

**Applicable Configurations:**

All

**Tools:**

- Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944
- Goggles
- Compressed Air Source

**Materials:**

- Dry Cleaning Solvent (E17)
- Glove (E20)
- Lint-Free Cloth (E26)

**Personnel Required:**

68B10 Aircraft Powerplant Repairer

**Equipment Condition:**

- Off Engine Task
- Output Shaft Seal and Housing Assembly  
Removed (Task 2-48)

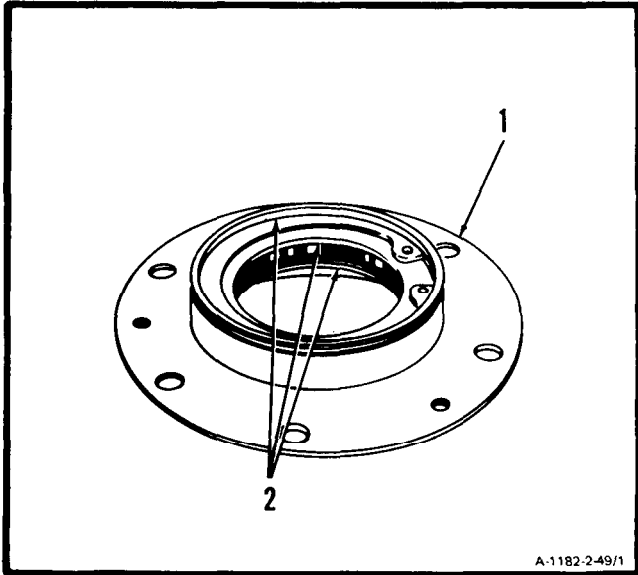
**General Safety Instructions:**

Dry cleaning solvent (EI 7) is flammable and toxic. it can irritate skin and cause burns. Use only in well-ventilated area, away from heat and open flame. In case of contact, immediately flush skin or eyes with water for at least 15 minutes, Get medical attention for eyes.

1. Wear gloves (E20). immerse output shaft seal housing assembly (1) in dry cleaning solvent (E17) and agitate. Use brush on inside surfaces (2).
2. Wipe dry, Use clean, dry, lint-free cloth (E26).

**WARNING**

When using compressed air for cleaning, use approved protective equipment for eyes and face. Do not use more than 30 psig air pressure. Do not direct air toward yourself or another person. Failure to comply could result in injury to eyes or skin. In case of injury, get medical attention.



3. Wear goggles. Blow dry inside surfaces (2) using clean, dry compressed air.

**FOLLOW-ON MAINTENANCE:**

Inspect Output Shaft Seal and Housing Assembly (Task 2-50).

**END OF TASK**

## 2-50 INSPECT OUTPUT SHAFT SEAL AND HOUSING ASSEMBLY

2-50

## INITIAL SETUP

**Applicable Configurations:**

All

## Tools:

Technical inspection Tool Kit,  
NSN 5180-00-323-5114

**Materials:**

None

**Personnel Required:**

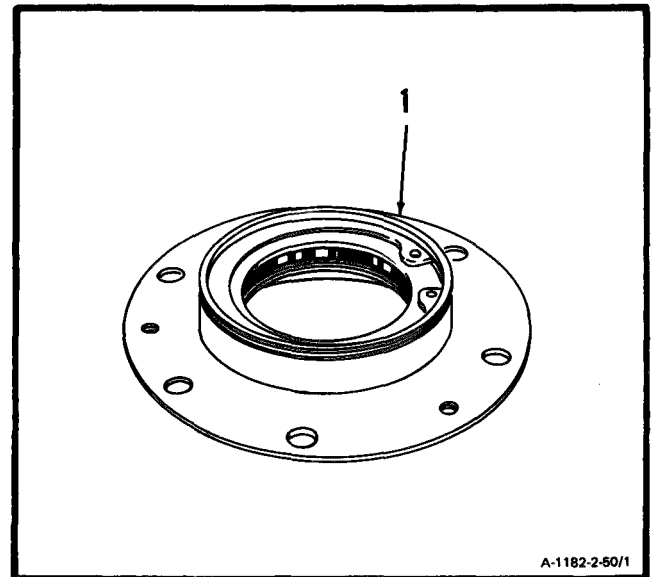
68B30 Aircraft Powerplant Inspector

**Equipment Condition:**

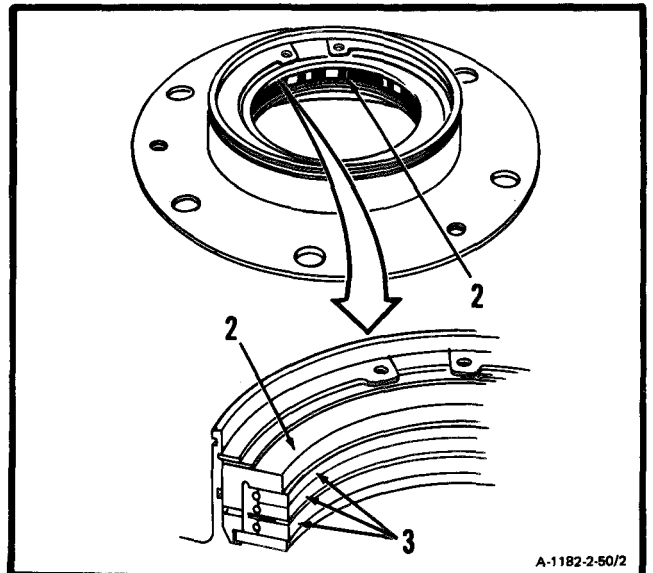
Off Engine Task

**1. Inspect output shaft seal and housing assembly (1)** as follows:

- a. There shall be no evidence of oil leakage.
- b. There shall be no cracks.



**2. Inspect oil seal (2).** There shall be no cracks or chips in three carbon elements (3).



## FOLLOW-ON MAINTENANCE:

None

## END OF TASK

## 2-51 REPAIR OUTPUT SHAFT SEAL AND HOUSING ASSEMBLY

2-51

## INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Technical Inspection Tool Kit,  
NSN 5180-00-323-5114  
Installation Tool (T7)  
Sleeve, 2-1/2 Inch Diameter (Appendix E)  
Arbor Press  
Goggles  
Compressed Air Source  
Outside Micrometer Caliper Set  
Retaining Ring Pliers

**Materials:**

Dry Cleaning Solvent (E17)  
Gloves (E20)  
Lint-Free Cloth (E26)

**Parts:**

Packings  
Seal

**Personnel Required:**

68610 Aircraft Powerplant Repairer  
68B30 Aircraft Powerplant Inspector

**References:**

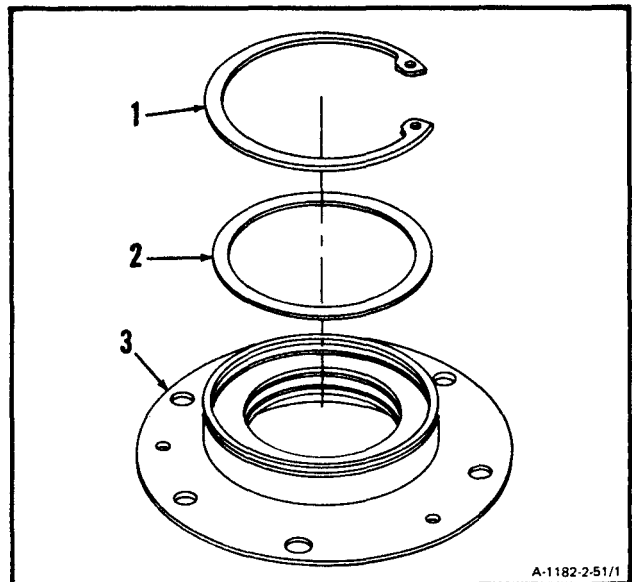
TM 55-2840-254-23P

**Engine Condition:**

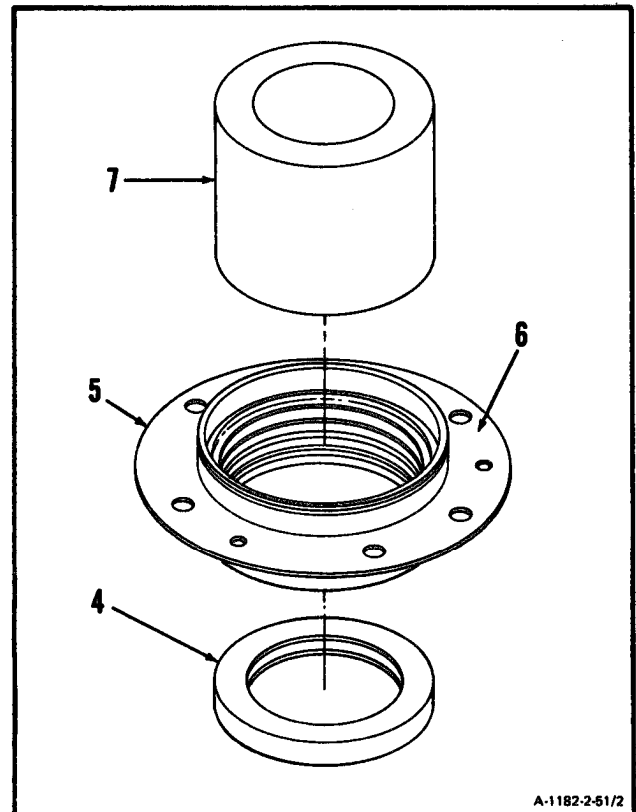
Off Engine Task

1. Repair output shaft seal and housing assembly if oil leakage or cracks are evident as follows:

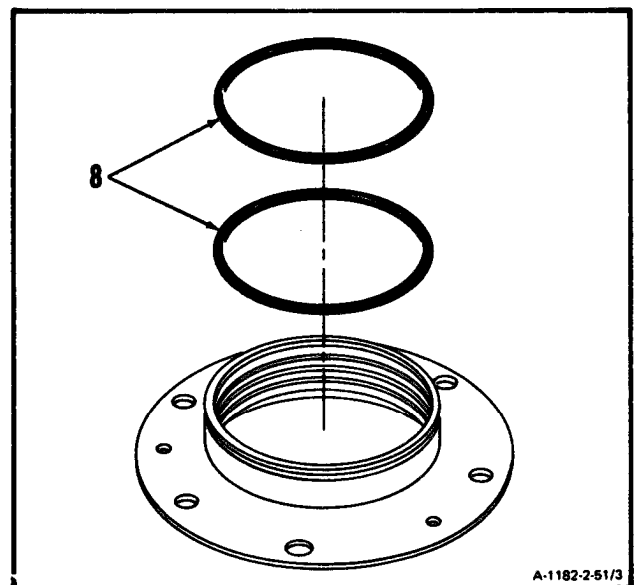
- a. **Remove retaining ring (1) and shim (2) from housing (3).**

**GO TO NEXT PAGE**

- b. Press oil seal (4) out of housing (5) from aft side (6). Use 2-1/2 inch diameter sleeve (7).



- c. Remove two packings (8).



**GO TO NEXT PAGE**

d. **Clean housing (5)** as follows:

**WARNING**

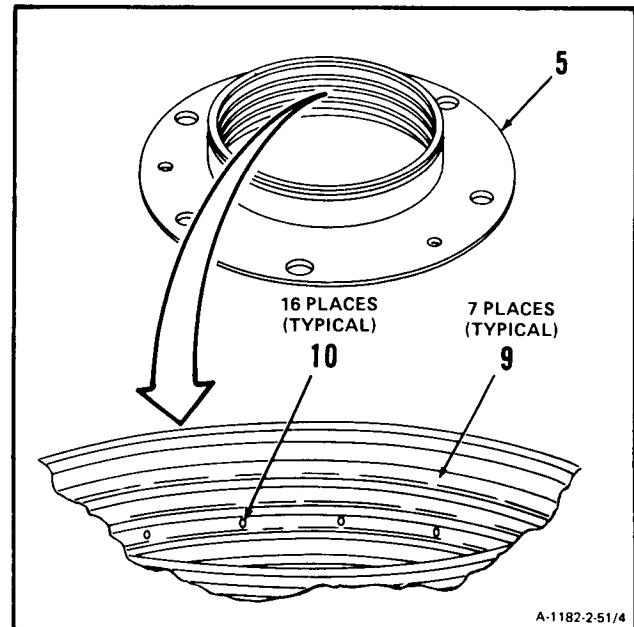
Dry cleaning solvent (E17) is flammable and toxic. It can irritate skin and cause burns. Use only in well-ventilated area, away from heat and open flame. In case of contact, immediately flush skin or eyes with water for at least 15 minutes. Get medical attention for eyes.

- (1) Wear gloves (E20). Immerse and agitate in dry cleaning solvent (E17). Use brush in seven grooves (9).
- (2) Wipe dry using clean dry lint-free cloth (E26).

**WARNING**

When using compressed air for cleaning, use approved protective equipment for eyes and face. Do not use more than 30 psig air pressure. Do not direct air toward yourself or another person. Failure to comply could result in injury to eyes or skin. In case of injury, get medical attention.

- (3) Wear goggles. Blow dry seven grooves (9) and 16 air-bleed holes (10).



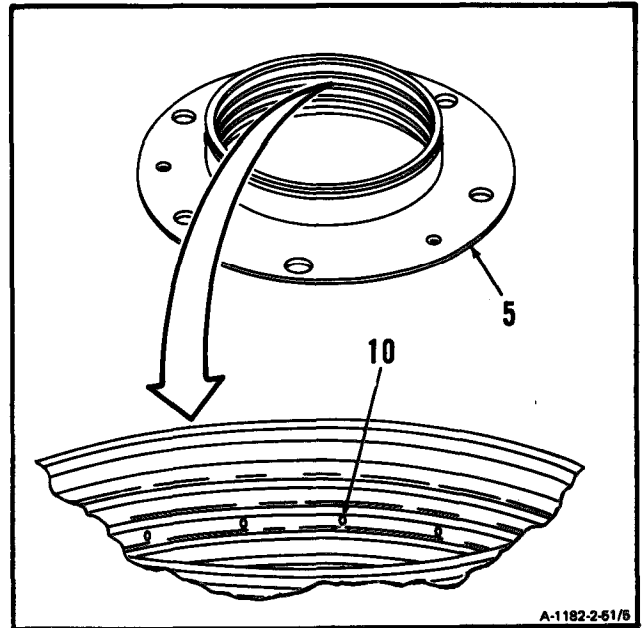
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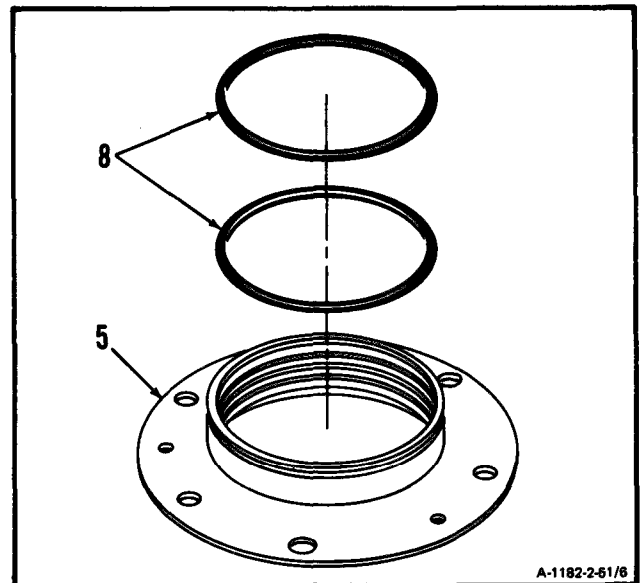
## 2-51 REPAIR OUTPUT SHAFT SEAL AND HOUSING ASSEMBLY (Continued)

2-51

- e. **Inspect housing (5).** There shall be no cracks. The 16 air-bleed holes (10) shall not be clogged.



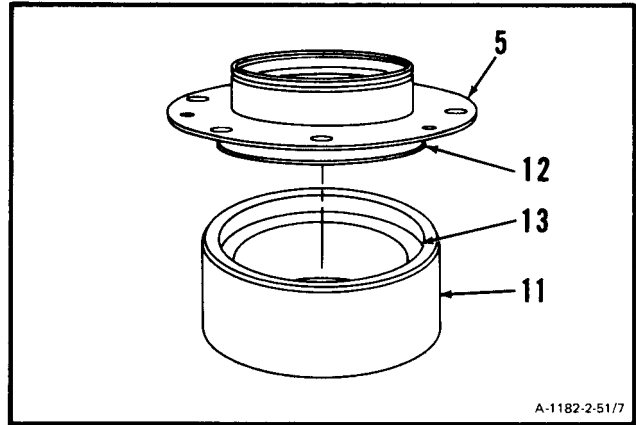
- f. Install two packings (8) in housing (5).



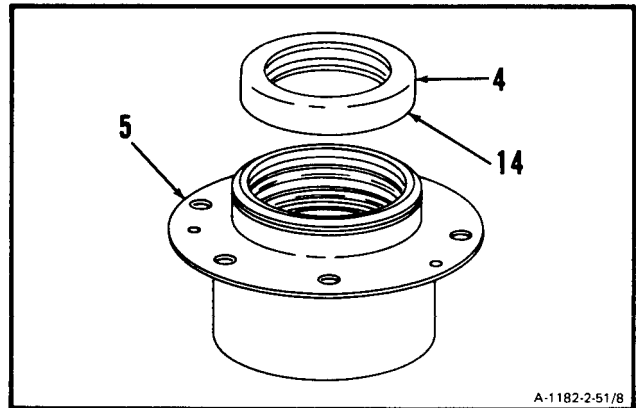
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**g. Install oil seal as follows:**

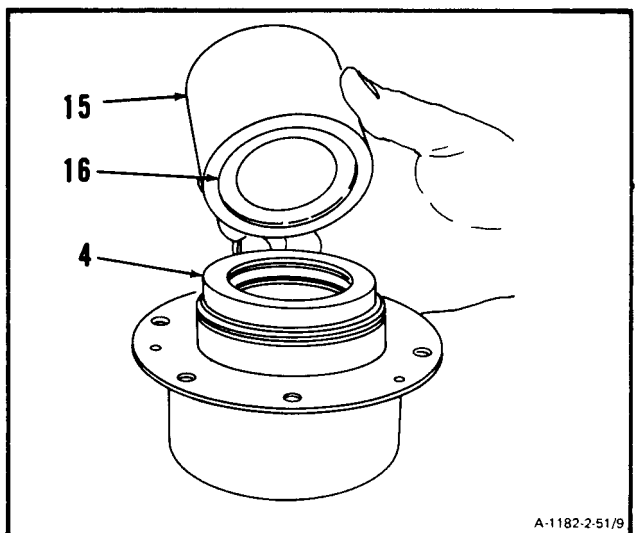
- (1) Position housing (5) on ring (11) of installation tool (T7) with aft side (12) seated into recessed I.D. (13).



- (2) Position oil seal (4) on housing (5) with face marked OIL SIDE (14) facing down.

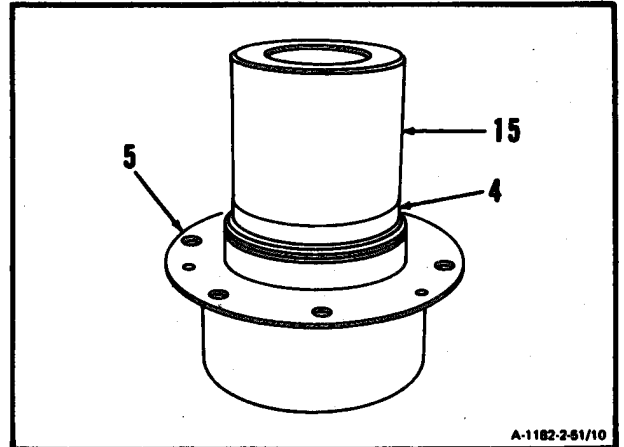


- (3) Position sleeve (15) of installation tool (T7) on oil seal (4) with recessed I.D. (16) facing down.

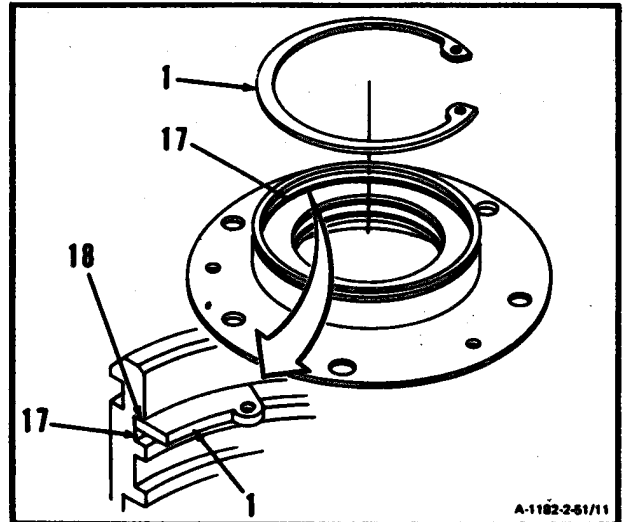


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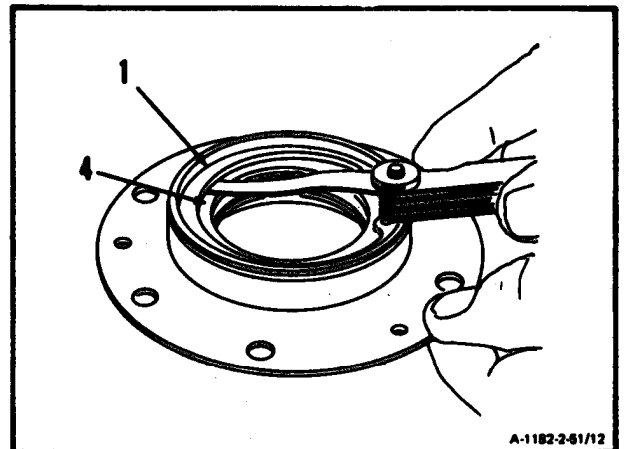
- (4) Press oil seal (4) into housing (5).
- (5) Remove sleeve (15) of installation tool (T7).



- h. **Temporarily install retaining ring (1)** in groove (17). Seat retaining ring (1) against groove upper lip (18).



- i. Measure gap between oil seal (4) and retaining ring (1).



**INSPECT**

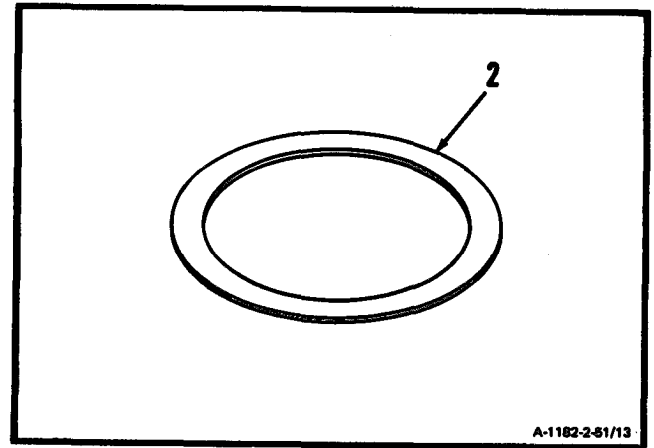
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j. Find gap measurement in shim selection table. Read across to find shim thickness.

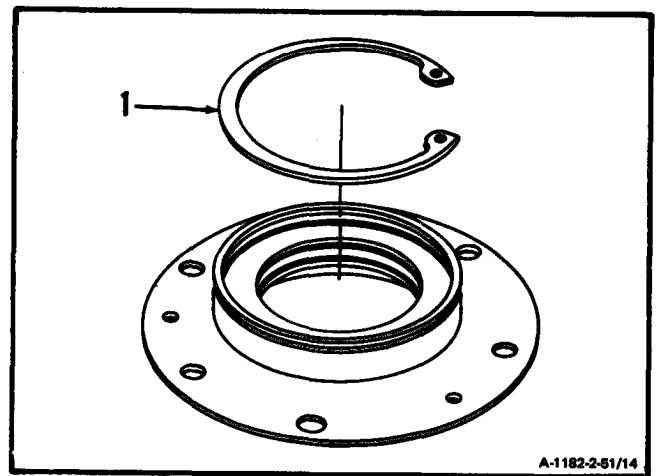
SHIM THICKNESS	
If Gap Measures	Shim Thickness Required
Inches	Inches
0.005	0.004
0.006	0.004
0.007	0.006
0.008	0.006
0.009	0.008
0.010	0.008
0.011	0.010
0.012	0.010
0.013	0.012
0.014	0.012
0.015	0.014
0.016	0.014
0.017	0.016
0.018	0.016
0.019	0.018
0.020	0.018
0.021	0.020
0.022	0.020
0.023	0.022
0.024	0.022
0.025	0.024
0.026	0.024

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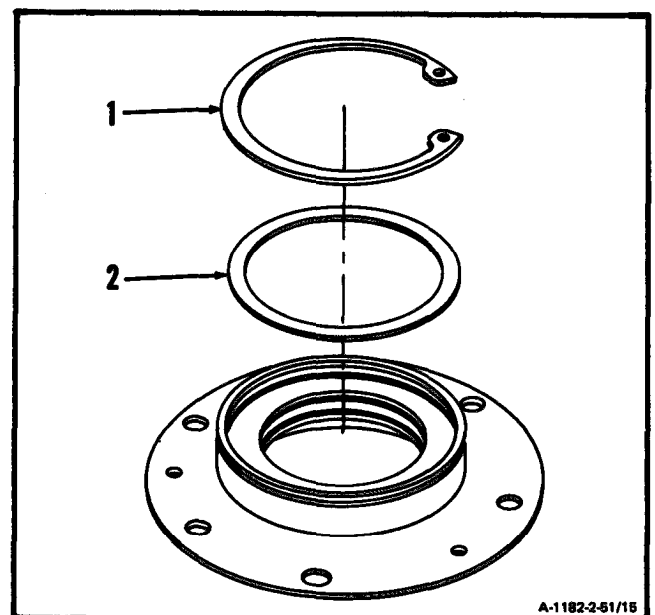
k. Measure thickness of shim (2) and check against shim selection table.



l. Remove retaining ring (1).

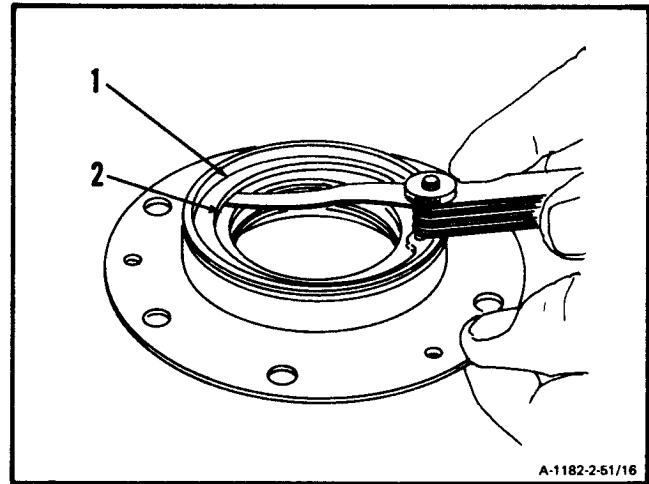


m. Install shim (2) and retaining ring (1).



**GO TO NEXT PAGE**

- n. Check gap between shim (2) and retaining ring (1). Gap shall not be more than 0.003-inch.

**INSPECT**

## FOLLOW-ON MAINTENANCE:

None

**END OF TASK**

2-446

## 2-52 INSTALL OUTPUT SHAFT SEAL AND HOUSING ASSEMBLY

2-52

## INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Technical Inspection Tool Kit,  
NSN 5180-00-323-5114  
Alignment Pin (T2) (2)  
Installation Tool (T8)  
Micrometer Depth Gage.  
Outside Micrometer Caliper Set

**Materials:**

Lockwire (E29)

**Parts:**

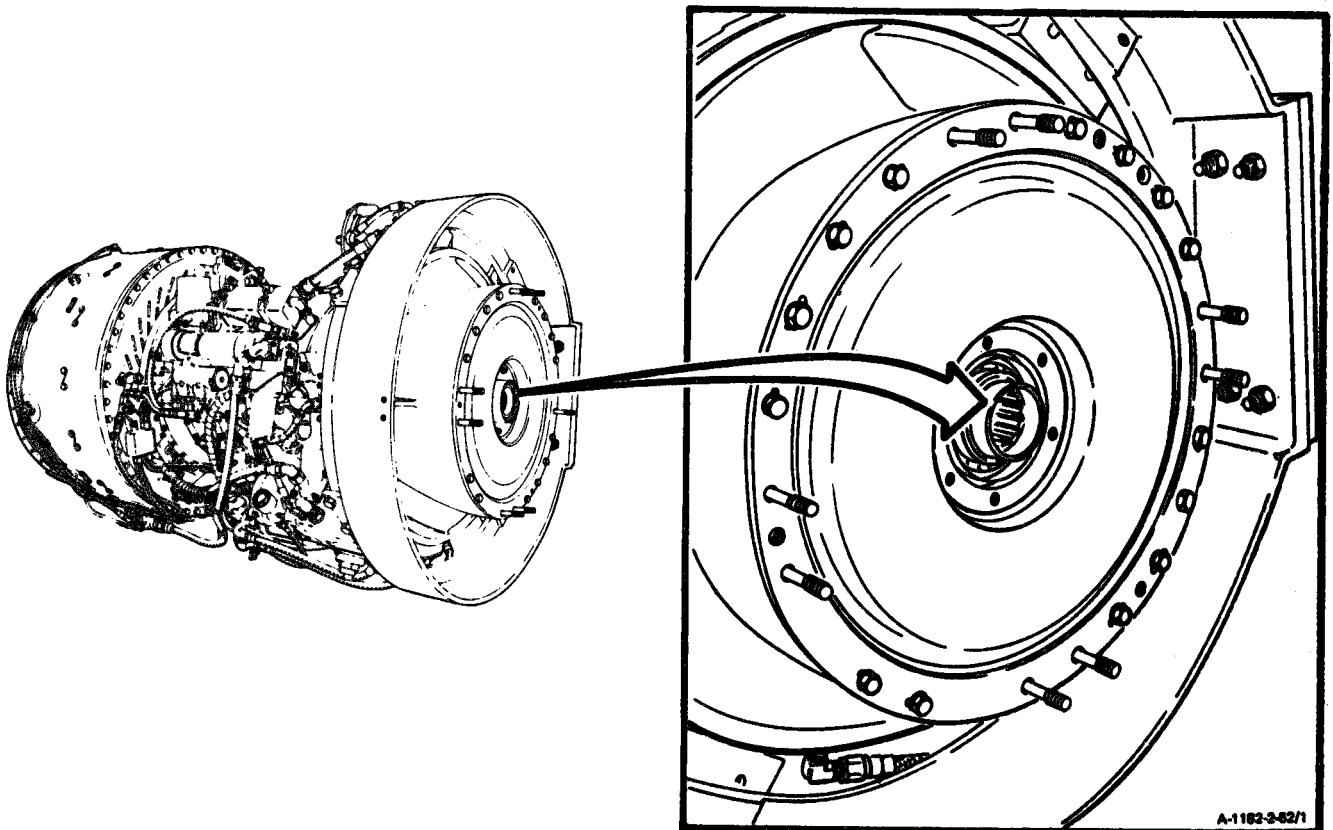
Packings  
Shim

**Personnel Required:**

68B10 Aircraft Powerplant Repairer  
68B30 Aircraft Powerplant Inspector

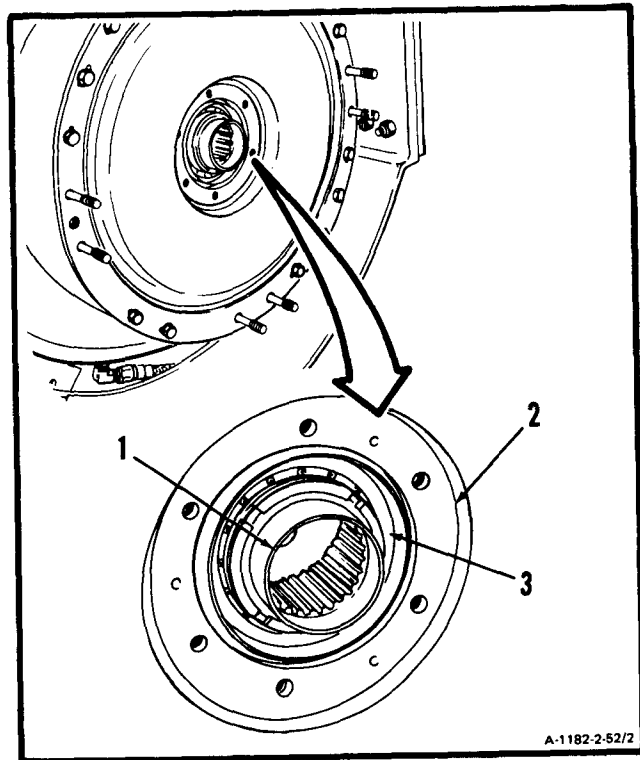
**References:**

TM 55-2840-254-23P



GO TO NEXT PAGE

1. Determine shim needed as follows:
  - a. Push output shaft (1) rearward and **measure depth from flange (2) to edge of bearing (3)**. Use micrometer depth gage.



**GO TO NEXT PAGE**



- b. Find depth measured in shim selection table.  
Read across to find shim thickness required.

<b>SHIM SELECTION TABLE</b>	
<b>Depth Measured</b>	<b>Shim Thickness Required</b>
<b>Inch</b>	<b>Inch</b>
0.510	0.038
0.511	0.036
0.512	0.036
0.513	0.034
0.514	0.034
0.515	0.032
0.516	0.032
0.517	0.030
0.518	0.030
0.519	0.028
0.520	0.028
0.521	0.026
0.522	0.026
0.523	0.024
0.524	0.024
0.525	0.022
0.526	0.022
0.527	0.020
0.528	0.020
0.529	0.018
0.530	0.018
0.531	0.016
0.532	0.016
0.533	0.014
0.534	0.014
0.535	0.012
0.536	0.012
0.537	0.010
0.538	0.010
0.539	0.008
0.540	0.008

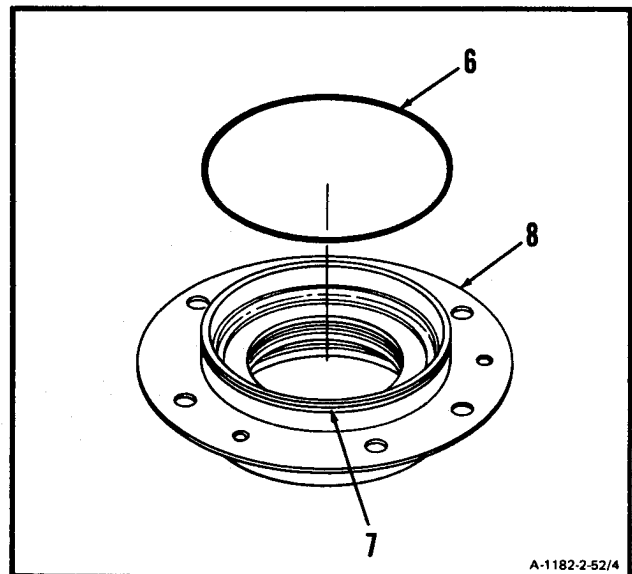
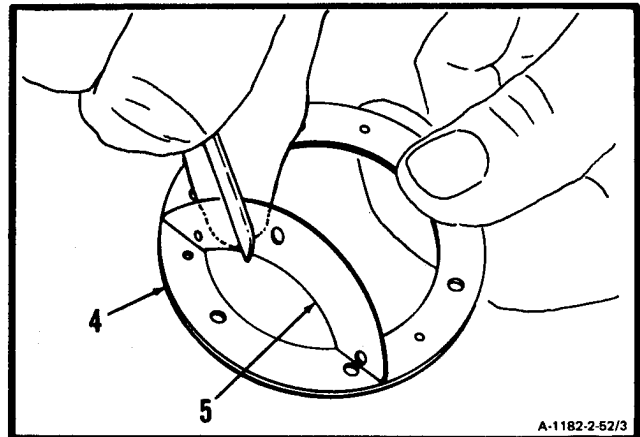
**GO TO NEXT PAGE**

**2. Prepare shim (4) as follows:**

- a. Peel off layers (5) as required to obtain shim thickness required.
- b. **Measure thickness of shim (4)** and check against shim selection table. Use outside micrometer caliper.

**INSPECT**

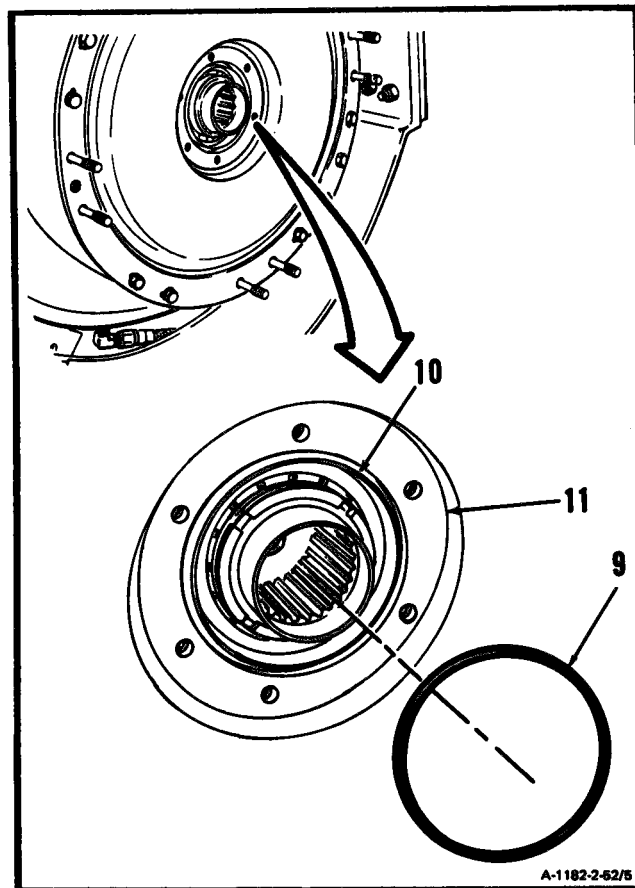
3. Install packing (6) in groove (7) on output shaft seal housing assembly (8).

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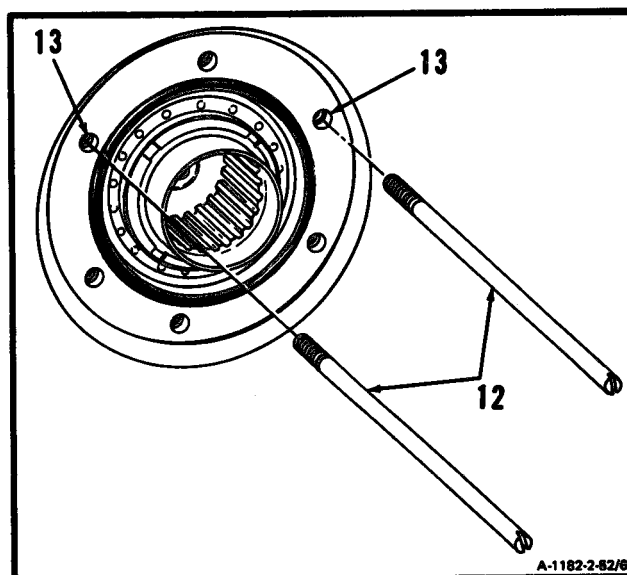
## 2-52 INSTALL OUTPUT SHAFT SEAL AND HOUSING ASSEMBLY (Continued)

2-52

4. Install packing (9) in groove (10) on inlet housing cover assembly (11).

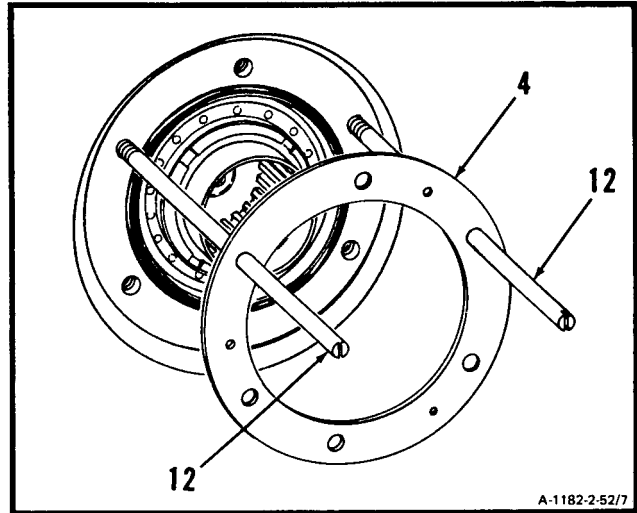


5. Install two alignment pins (T2) (12) in holes (13).

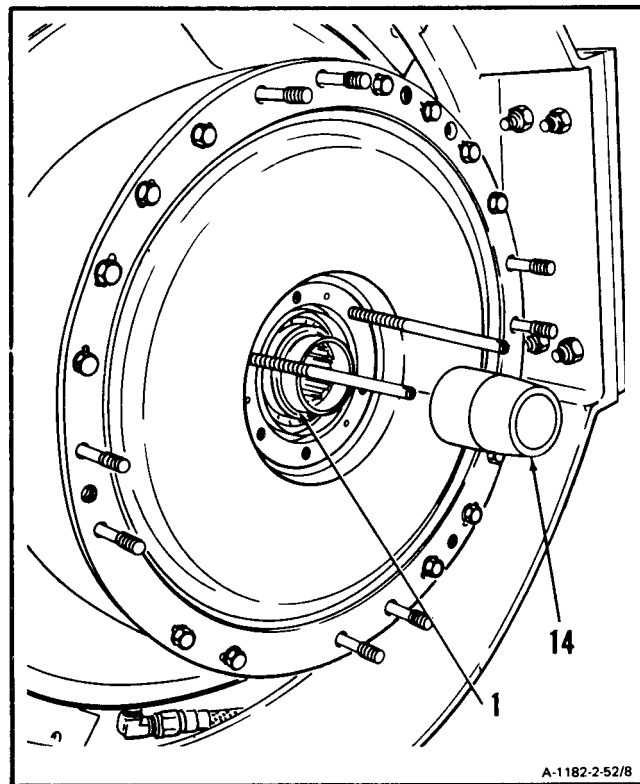


**GO TO NEXT PAGE**

6. Using two alignment pins (T2) (12), install shim (4).



7. Install installation tool (T8) (14) on output shaft (1).



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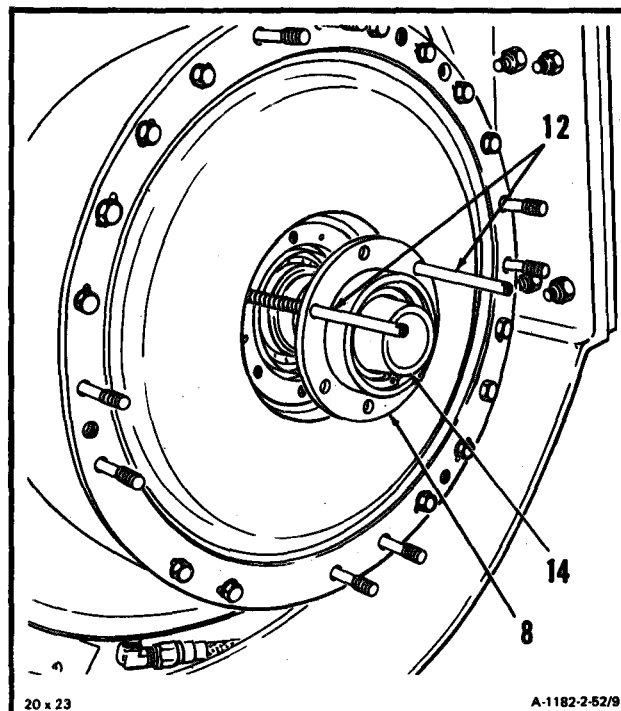
**2-52 INSTALL OUTPUT SHAFT SEAL AND HOUSING ASSEMBLY (Continued)**

2-52

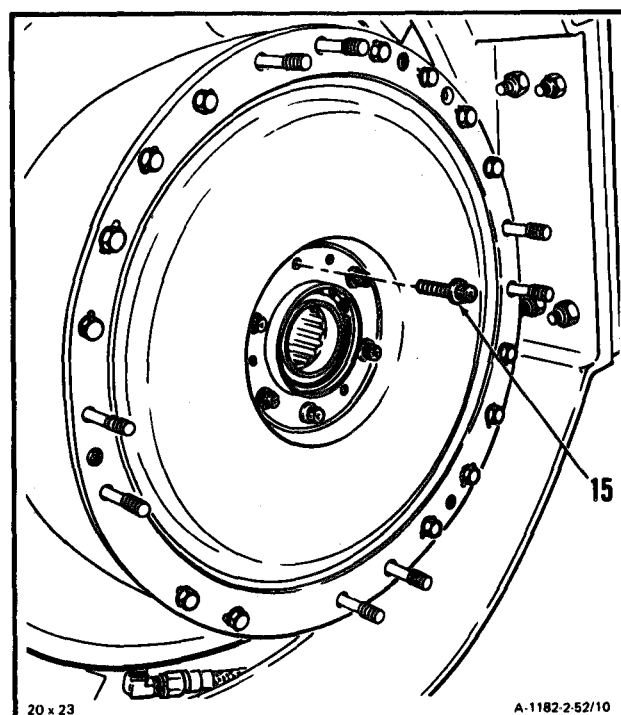
**CAUTION**

**When installing seal and housing assembly, be careful not to damage seals. Failure to comply will cause oil leakage.**

- Using two alignment pins (T2) (12) and installation tool (T8) (14), **install output shaft seal and housing assembly (8)**. Remove installation tool and alignment pins.



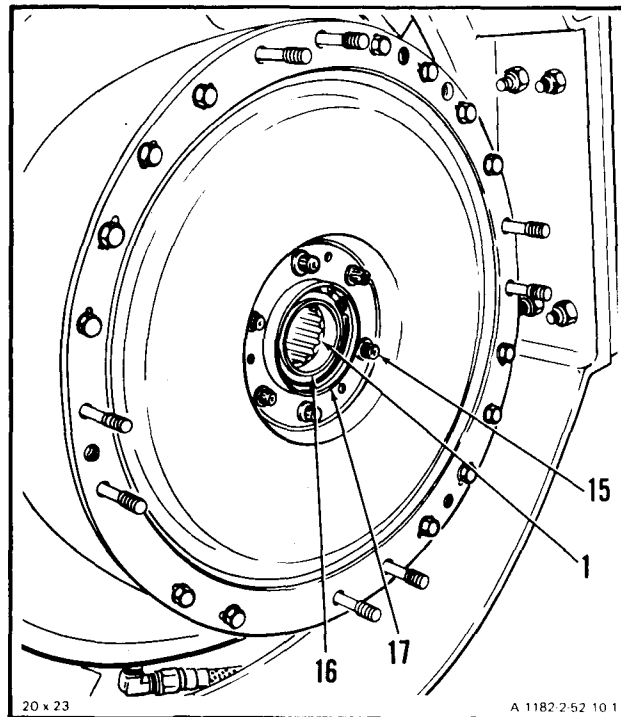
- Install six bolts (15). Do not lockwire bolts at this time.

**INSPECT****GO TO NEXT PAGE**

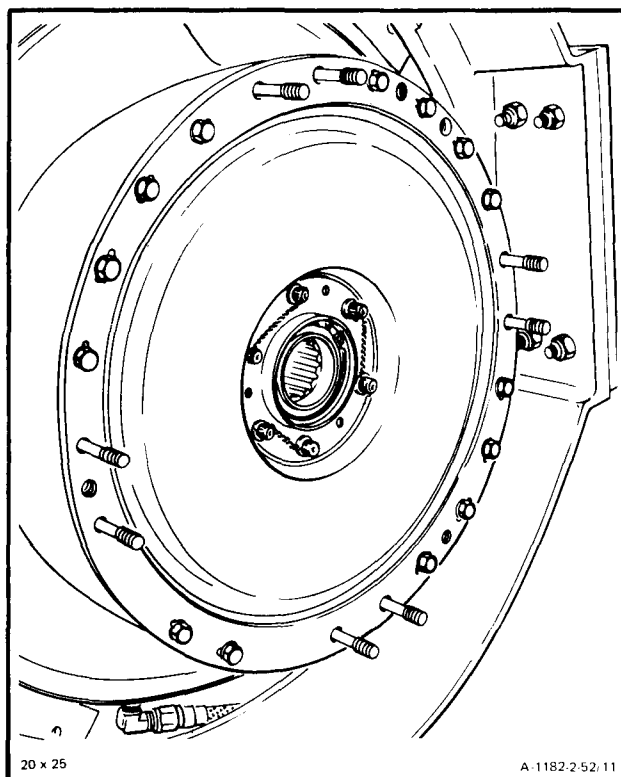
**2-52 INSTALL OUTPUT SHAFT SEAL AND HOUSING ASSEMBLY (Continued)**

2-52

10. Check and set output shaft drift as follows:
- Push output shaft (1) rearward, and measure depth from shaft end (16) seal housing edge (17) using micrometer depth gage.
  - Pull output shaft (1) forward and repeat measurement in step a.
  - Subtract dimension in step b. from dimension in step a. Depth of drift shall be between 0.060 and 0.070 inch.
  - If needed to set drift, remove output shaft and seal housing (Ref. Task 2-48), and repeat steps 2. through 10. Lockwire bolts (15). Use lockwire (E29).

**FOLLOW-ON MAINTENANCE:**

Service Engine Oil System (Task 1-74).

**END OF TASK**

Section X. INLET HOUSING COVER ASSEMBLY - MAINTENANCE PROCEDURES

2-53 REMOVE INLET HOUSING COVER ASSEMBLY (AVIM)

2-53

**INITIAL SETUP**

**Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Handling Tool (T16) or (T17) (3)

**Materials:**

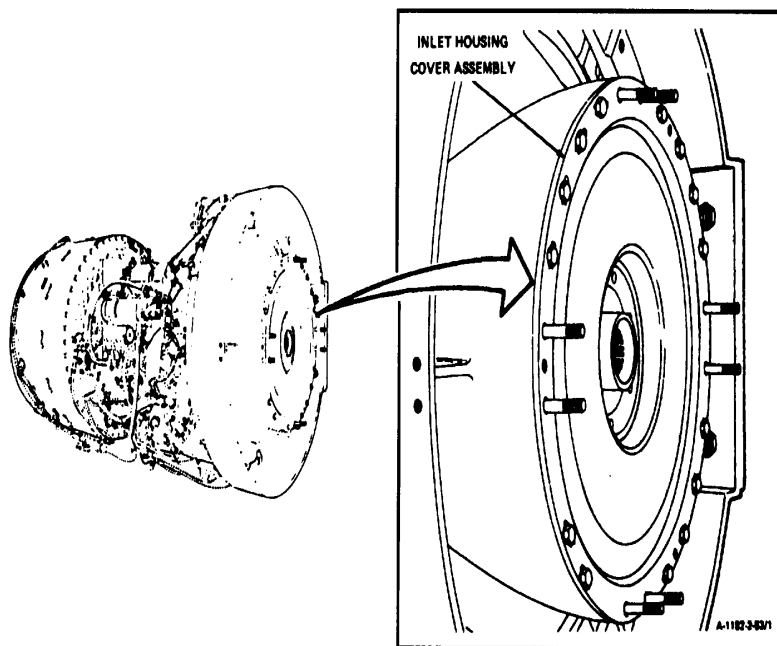
Wiping Rag (E58)

**Personnel Required:**

68B10 Aircraft Powerplant Repairer

**Equipment Condition:**

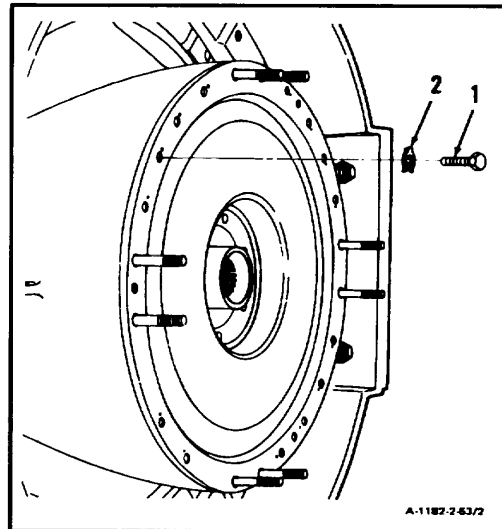
Engine Oil System Drained (Task 1-75)  
Output Shaft Seal and Housing Removed  
(Task 2-48)



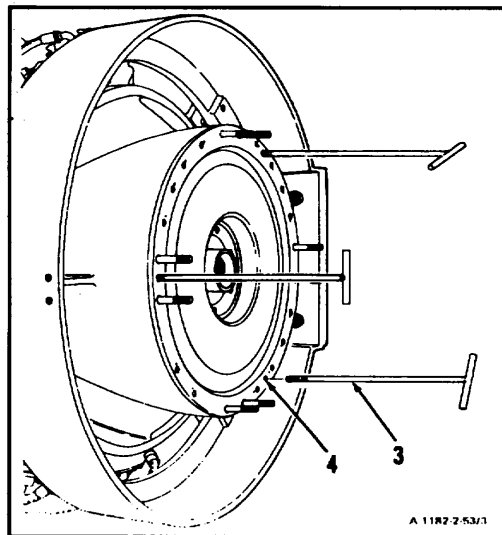
GO TO NEXT PAGE

Change 6 2-455

1. Remove 14 bolts (1) and washers (2).



2. Install three handling tools (TI6) or (TI7) (3) in three threaded holes (4).



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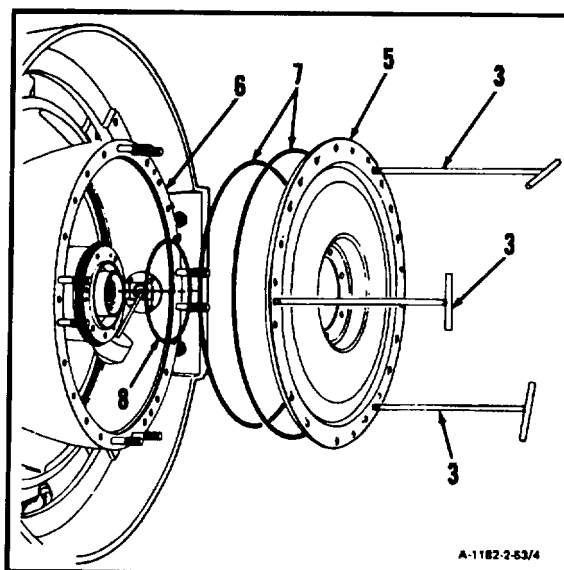
2-456 Change 6



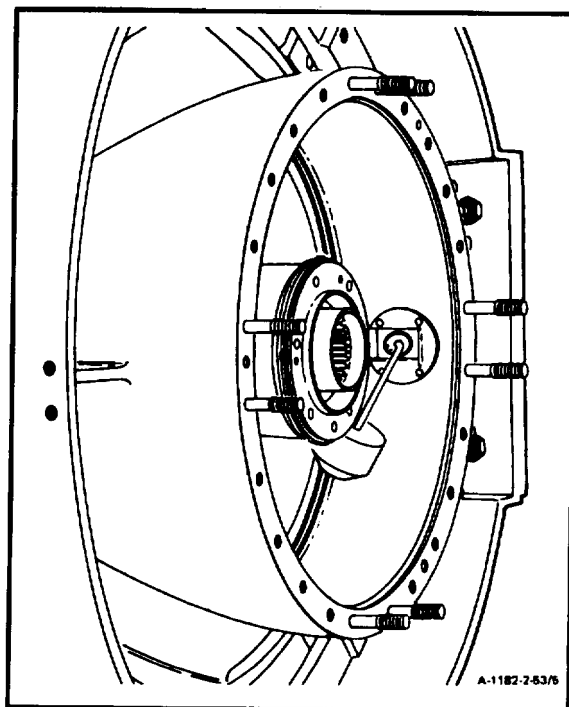
## 2-53 REMOVE INLET HOUSING COVER ASSEMBLY (AVIM) (Continued)

2-53

3. Tighten three handling tools (T16) or C(T17) (3) evenly until inlet housing cover assembly (5) separates from inlet housing (6). Remove cover assembly (5).
4. Remove two packings (7), and packing (8).



FOLLOW-ON MAINTENANCE:  
None



END OF TASK

Change 6 2-457

## 2-54 CLEAN INLET HOUSING COVER ASSEMBLY (AVIM)

2-54

## INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**

None

**Materials:**

Dry Cleaning Solvent (E17)

Gloves (E20)

Lint-Free Cloth (E26)

**Personnel Required:**

68B30 Aircraft Powerplant Repairer

**Equipment Condition:**

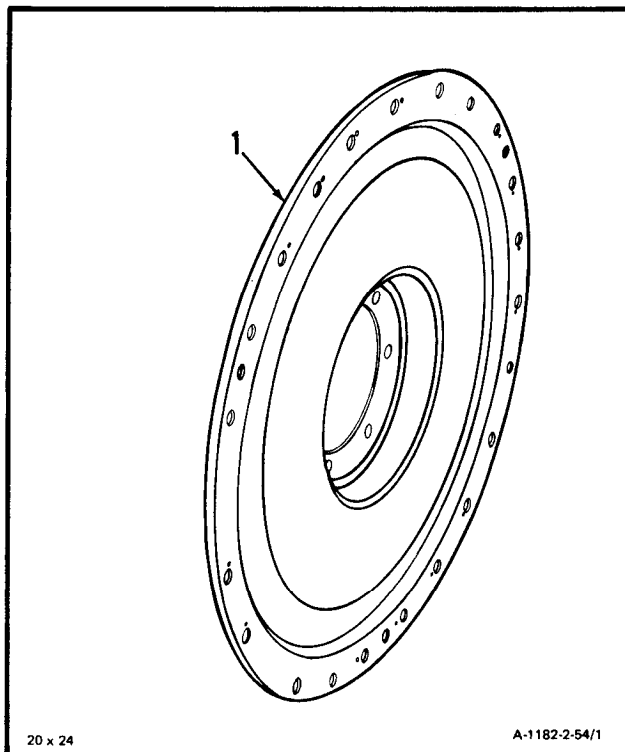
Off Engine Task

Engine Oil System Drained (Task 1-75)

Output Shaft Seal and Housing Removed  
(Task 2-48)Inlet Housing Cover Assembly Removed  
(Task 2-53)**General Safety Instructions:****WARNING**

Dry cleaning solvent (E17) is flammable and toxic. It can irritate skin and cause burns. Use only in well-ventilated area, away from heat and open flame. In case of contact, immediately flush skin or eyes with water for at least 15 minutes. Get medical attention for eyes.

1. Wear gloves (E20). **Clean inlet housing cover assembly (1).** Use lint-free cloth (E26) dampened in dry cleaning solvent (E17).
2. Wipe dry using clean, dry lint-free cloth (E26).



20 x 24

A-1182-2-54/1

## FOLLOW-ON MAINTENANCE:

Inspect Inlet Housing Cover Assembly  
(Task 2-55).

## END OF TASK

## 2-55 INSPECT INLET HOUSING COVER ASSEMBLY (AVIM)

2-55

## INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**Technical Inspection Tool Kit,  
NSN 5180-00-323-5114**Materials:**

Fluorescent-Penetrant Materials (E19)

**Personnel Required:**

68630 Aircraft Powerplant Inspector

**References:**

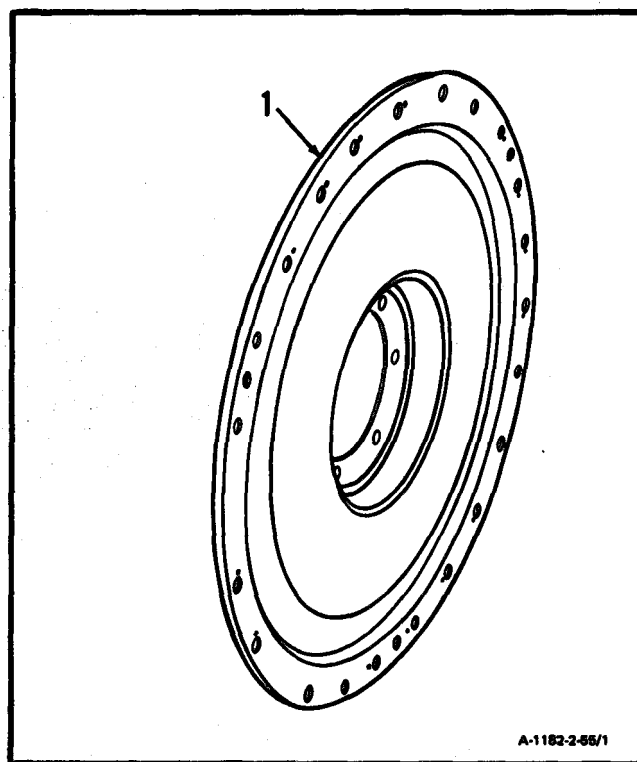
TM 43-0103

**Equipment Condition:**

Off Engine Task

## 1. Inspect inlet housing cover assembly (1).

- a. **Fluorescent-penetrant cover.** (Ref. TM 43-0103.) There shall be no cracks.
- b. There shall be no nicks or scratches deeper than 0.030 inches.
- c. There shall be no corrosion or paint damage.



A-1182-2-55/1

## FOLLOW-ON MAINTENANCE:

None

## END OF TASK

## 2-56 REPAIR INLET HOUSING COVER ASSEMBLY (AVIM)

2-56

## INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**

Technical Inspection Tool Kit,  
NSN 5180-00-323-5114

**Materials:**

Carborundum Stone (E10)  
Crocus Cloth (E15)  
Engine Gray Enamel (E22)

**Personnel Required:**

68B10 Aircraft Powerplant Repairer  
68B30 Aircraft Powerplant Inspector

**References:**

Task 1-119

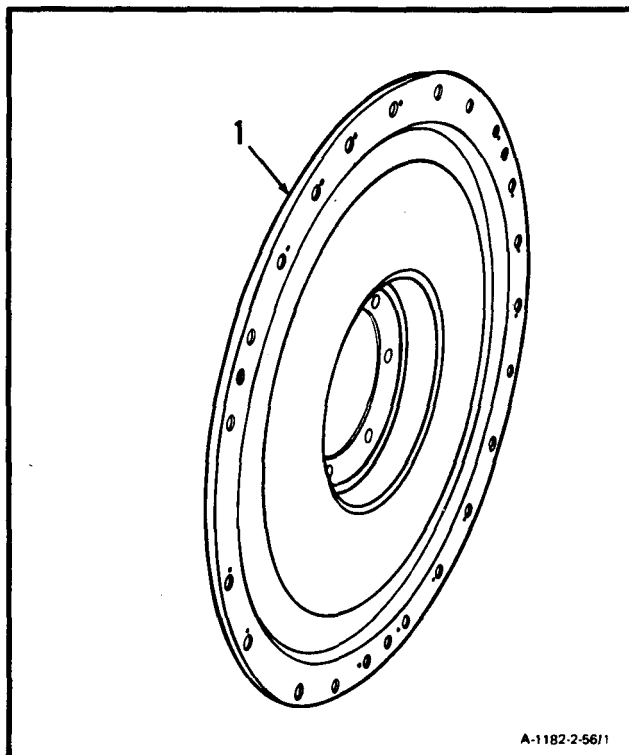
**Equipment Condition:**

Off Engine Task

1. **Repair nicks and scratches less than 0.030 inch deep** on inlet housing cover assembly (1) as follows:

- a. **Blend all sharp edges** next to nicks and scratches. Use Carborundum stone (E10).
- b. **Polish to smooth finish. Use** crocus cloth (E15).

2. **Repair damaged paint or corrosion** on inlet housing cover assembly (1). Use engine gray enamel (E22) (Ref. Task 1-119).

**INSPECT**

## FOLLOW-ON MAINTENANCE:

None

**END OF TASK**

## 2-57 INSTALL INLET HOUSING COVER ASSEMBLY (AVIM)

2-57

**INITIAL SETUP****Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Technical Inspection Tool Kit,  
NSN 5180-00-323-5114

**Materials:**

None

**Parts:**

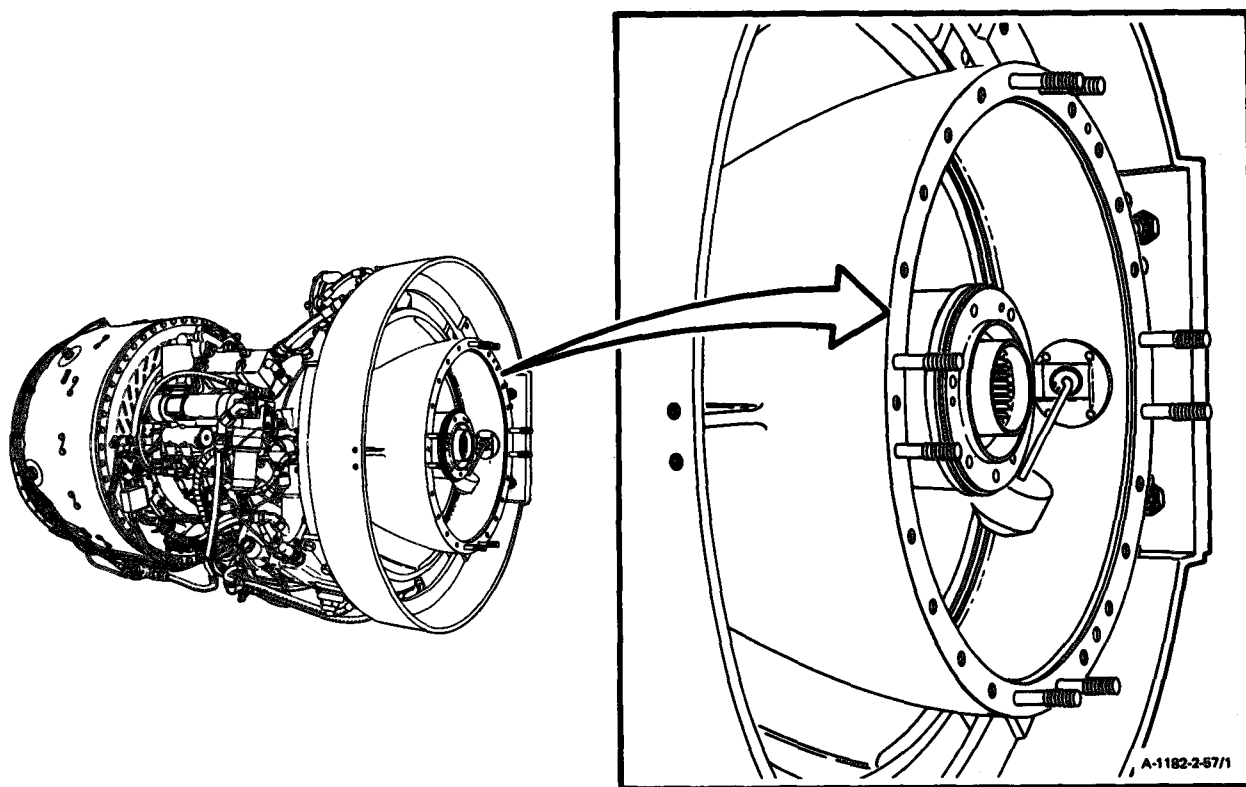
Packings

**Personnel Required:**

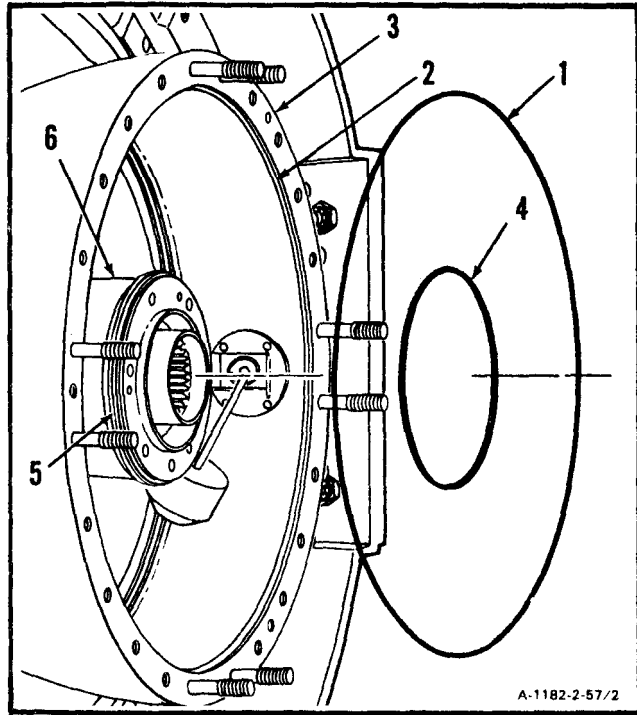
68B10 Aircraft Powerplant Repairer  
68B30 Aircraft Powerplant Inspector

**References:**

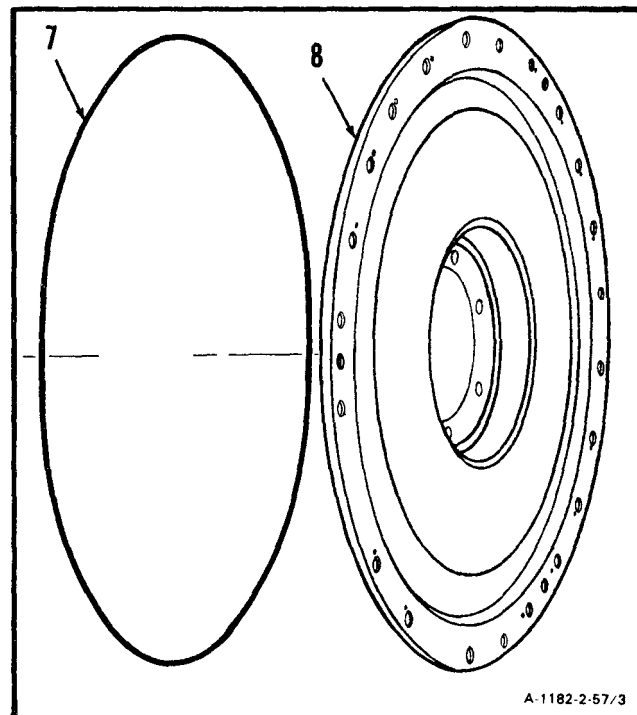
TM 55-2840-254-23P

**GO TO NEXT PAGE**

1. Install packing (1) in groove (2) of inlet housing (3).
2. Install packing (4) in groove (5) of support housing (6).



3. Install packing (7) on inlet housing cover assembly (8).

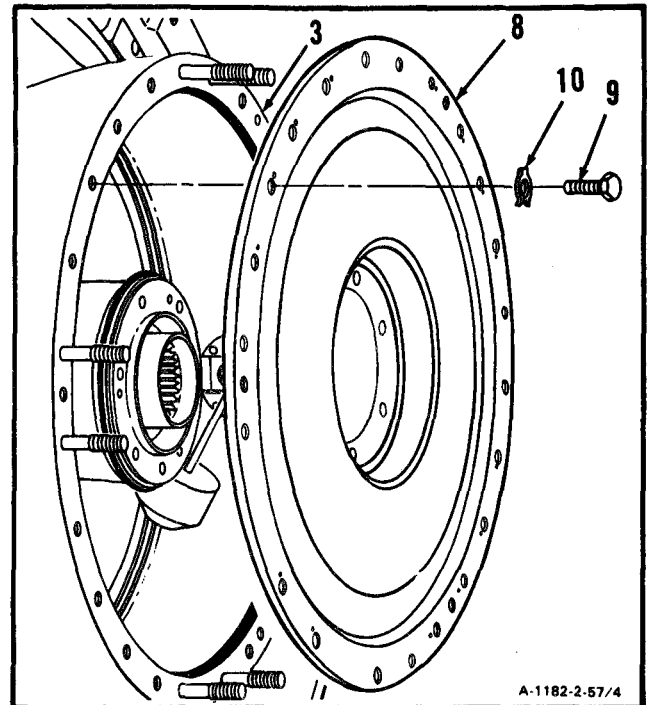


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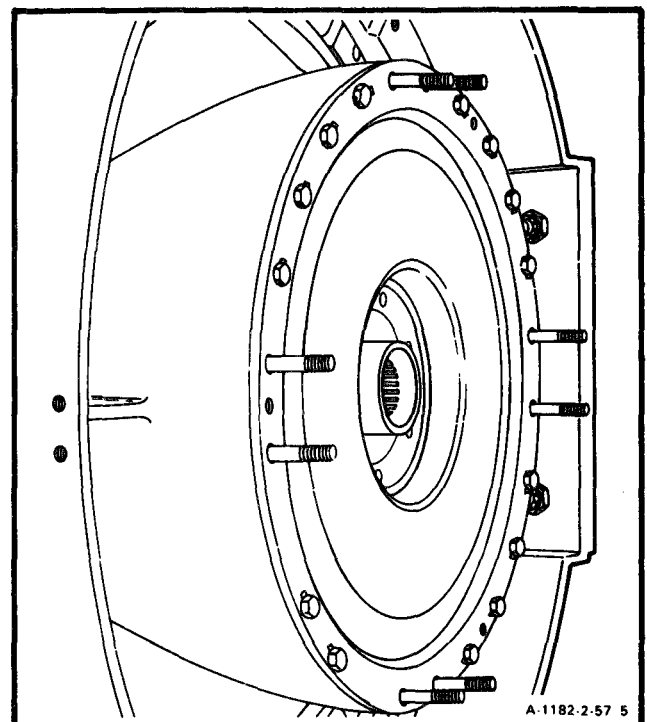
## 2-57 INSTALL INLET HOUSING COVER ASSEMBLY (AVIM) (Continued)

2-57

4. Install inlet housing cover assembly (8) on inlet housing (3). Install 14 bolts (9) and washers (10). Bend tabs on washers (10).

**INSPECT****FOLLOW-ON MAINTENANCE :**

- Install Output Shaft Seal and Housing Assembly (Task 2-52).
- Service Engine Oil System (Task 1-74).

**END OF TASK**





## Section XI. OUTPUT SHAFT SUPPORT HOUSING – MAINTENANCE PROCEDURES

## 2-58 REMOVE OUTPUT SHAFT SUPPORT HOUSING (AVIM)

2-58

## INITIAL SETUP

Overspeed Drive and Outlet Cover Assembly  
Removed (Task 5-17)  
Output Shaft Removed (Task 9-6)

**Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool  
NSN 5180-00-323-4944  
Handling Tool (T18) (3)  
Aircraft Group Cover (T29)

**Materials:**

Wiping Rag (E58)

**Personnel Required:**

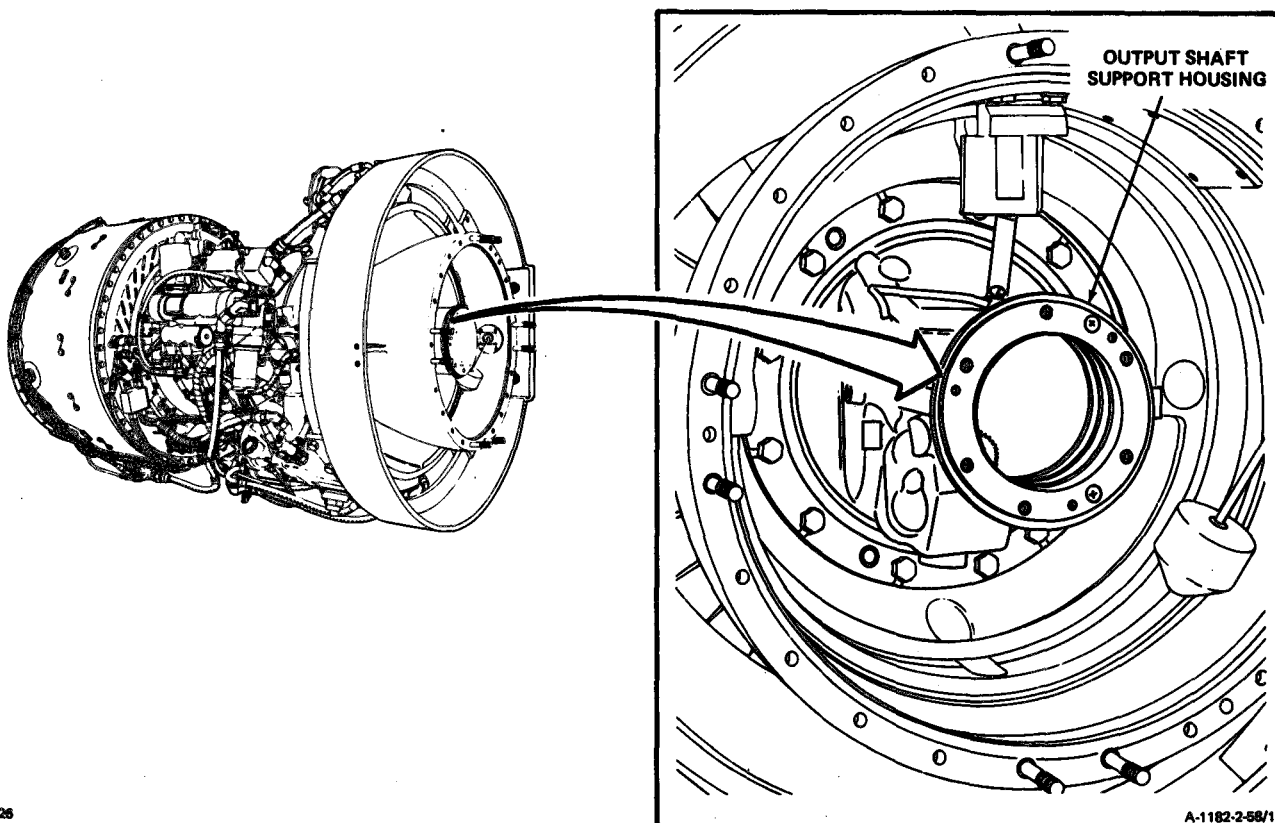
68B10 Aircraft Powerplant Repairer

**Equipment Condition:**

Engine Oil System Drained (Task 1-75)  
Output Shaft Seal and Housing Removed  
(Task 2-48)  
Inlet Housing Cover Assembly Removed  
(Task 2-53)

**General Safety Instructions:****WARNING**

Lubricating oils (E32 and E33) cause paralysis if swallowed. Prolonged contact with them may irritate the skin. Handle only in well-ventilated areas away from heat and flame. Drain and store in approved metal safety containers. Avoid prolonged or repeated contact with skin and do not take internally. Wash contacted areas of skin thoroughly after handling. If irritation of skin results, get medical attention. Get medical attention for eyes.



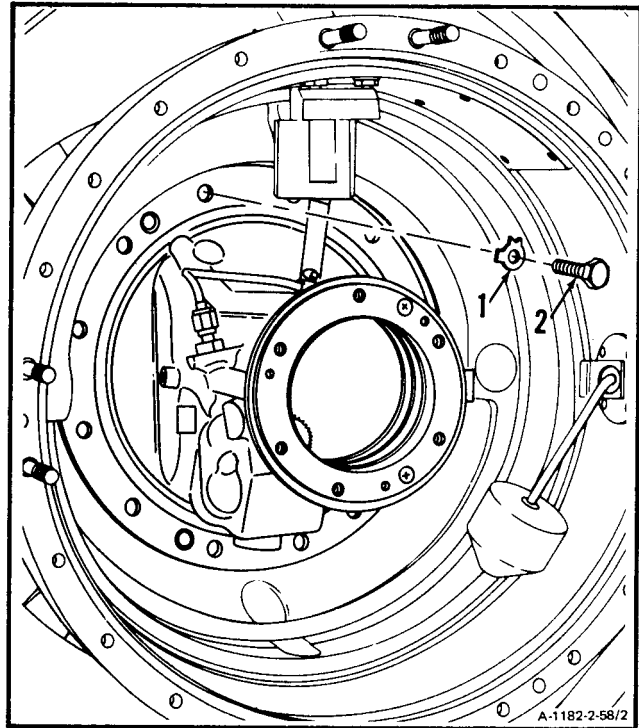
42 X 26

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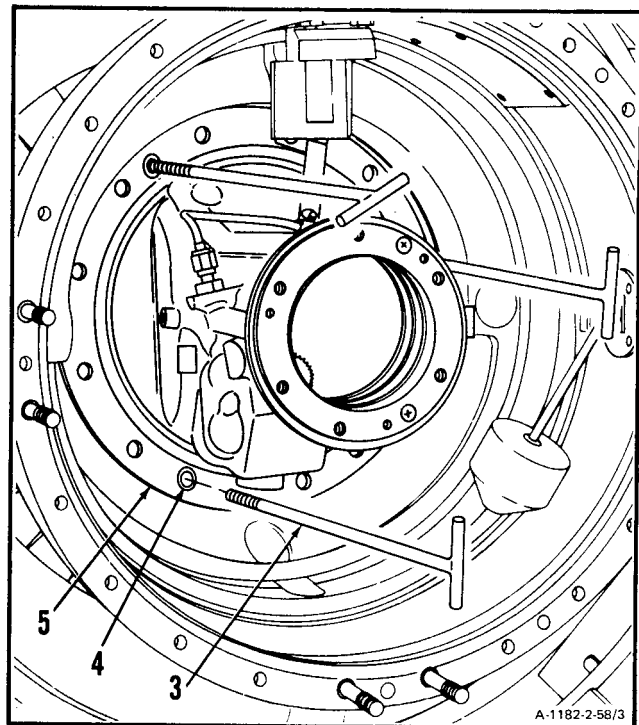
A-1182-2-58/1

2-58 REMOVE OUTPUT SHAFT SUPPORT HOUSING (AVIM) (Continued)

1. Straighten tabs of 12 key washers (1). Remove 12 bolts (2) and key washers (1).



2. Install three handling tools (T18) (3) in threaded holes (4) on output shaft support housing (5).

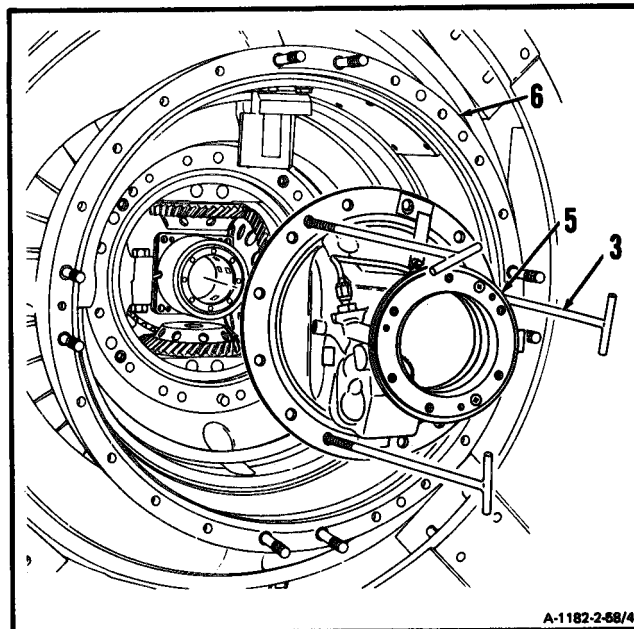


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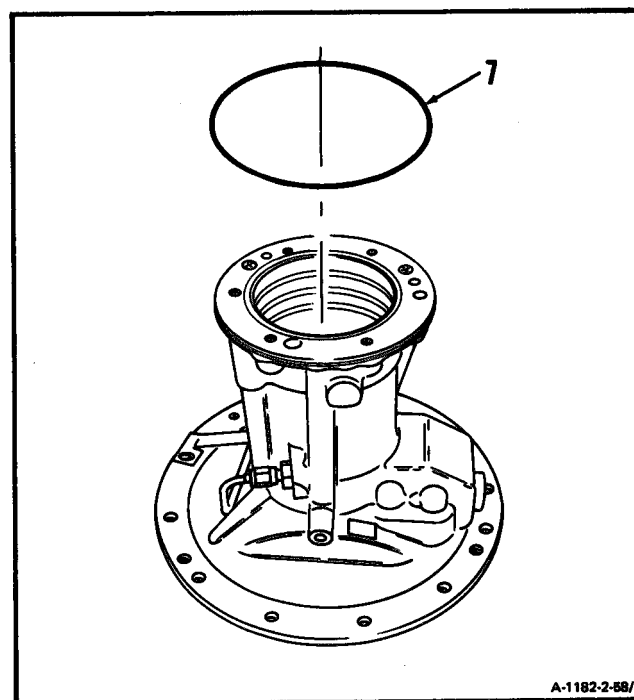
## 2-58 REMOVE OUTPUT SHAFT SUPPORT HOUSING (AVIM) (Continued)

2-58

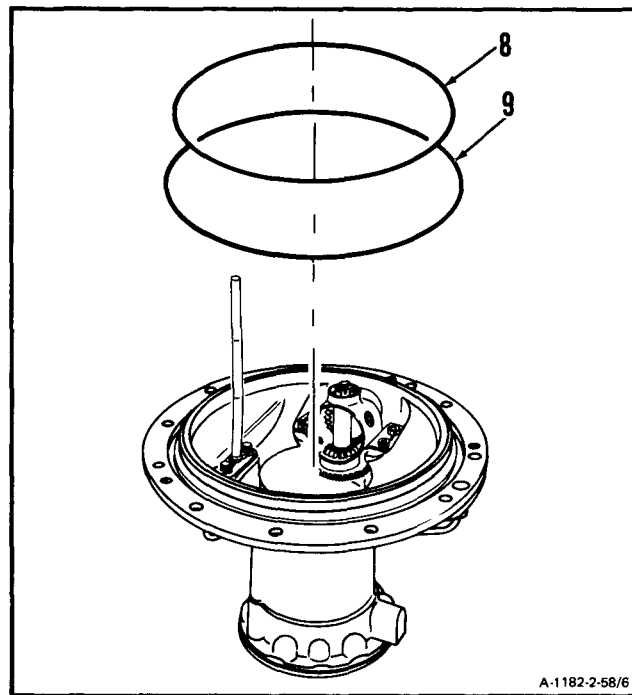
3. Using three handling tools (T18) (3), jack output shaft support housing (5) from inlet housing assembly (6).
4. Remove output shaft support housing (5). Remove three handling tools (T18) (3).



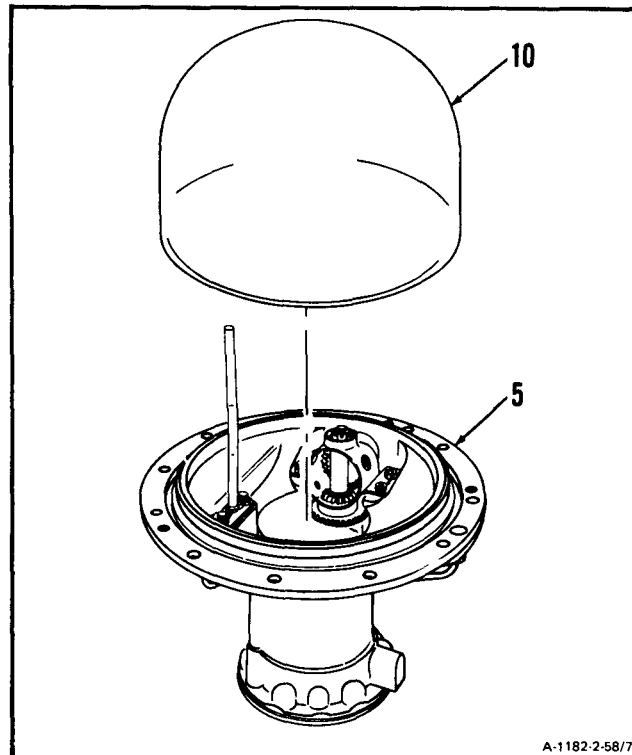
5. Remove packing (7).

**GO TO NEXT PAGE**

6. Remove two packings (8 and 9).



7. Install aircraft group cover (T29) (10) on aft end of output shaft support housing (5).



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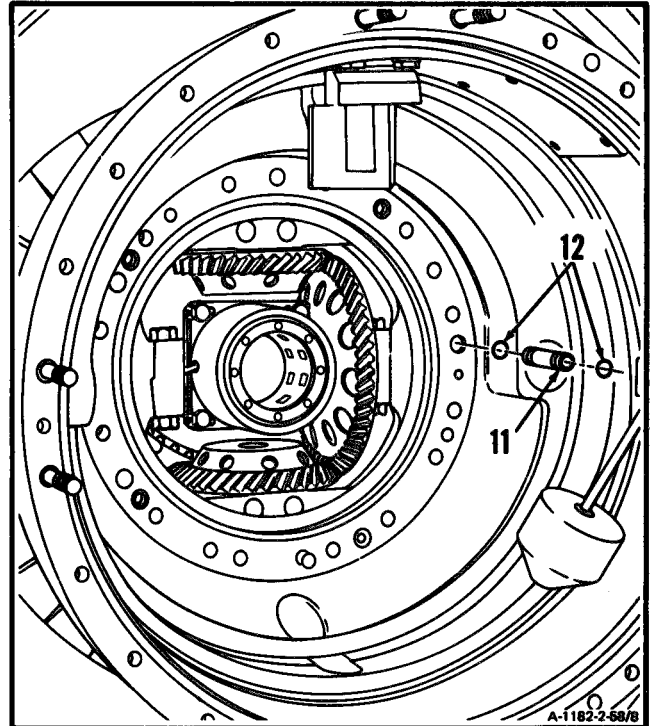
## 2-58 REMOVE OUTPUT SHAFT SUPPORT HOUSING (AVIM) (Continued)

2-58

**NOTE**

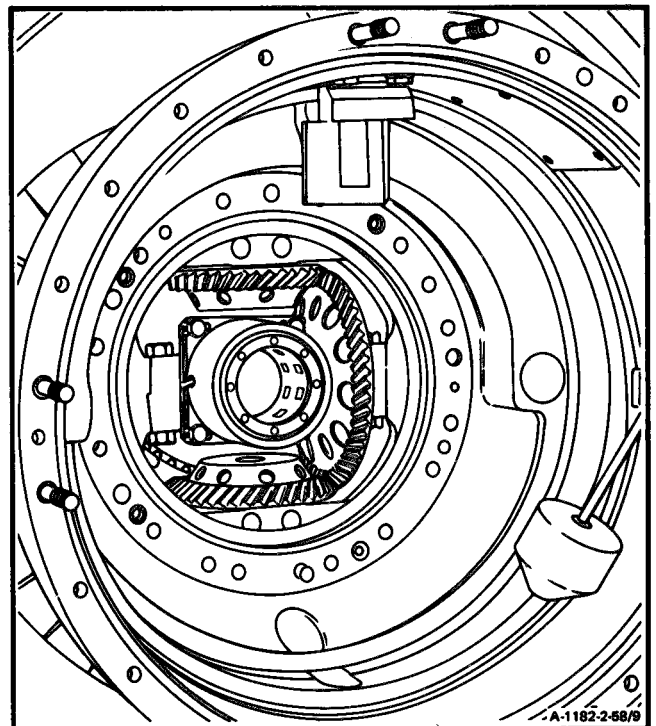
In following step, remove transfer tube either from inlet housing, as shown, or from rear of output shaft support housing.

8. Remove transfer tube (11) and two packings (12).



## FOLLOW-ON MAINTENANCE:

None



**END OF TASK**

**INITIAL SETUP**

**Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Handling Tool (T16)

**Materials:**

None

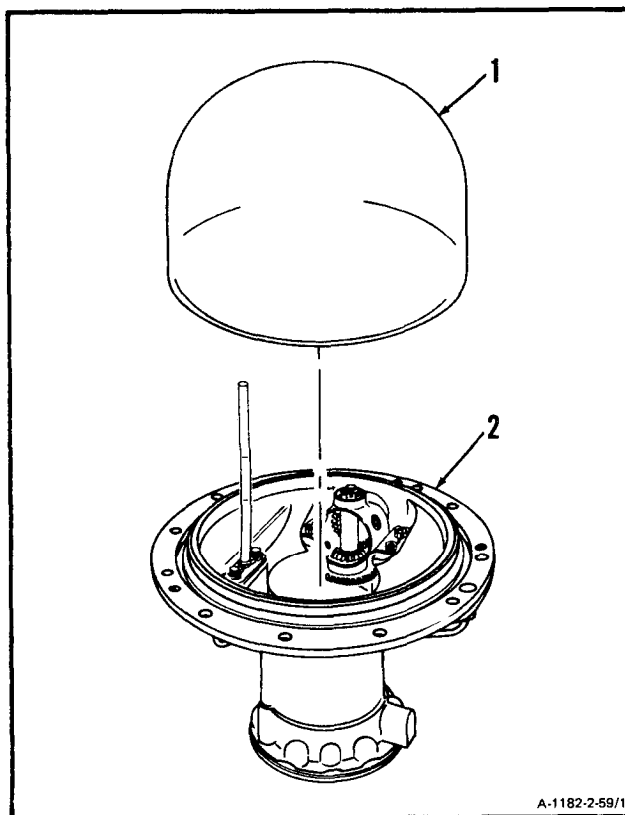
**Personnel Required:**

68B10 Aircraft Powerplant Repairer

**Equipment Condition:**

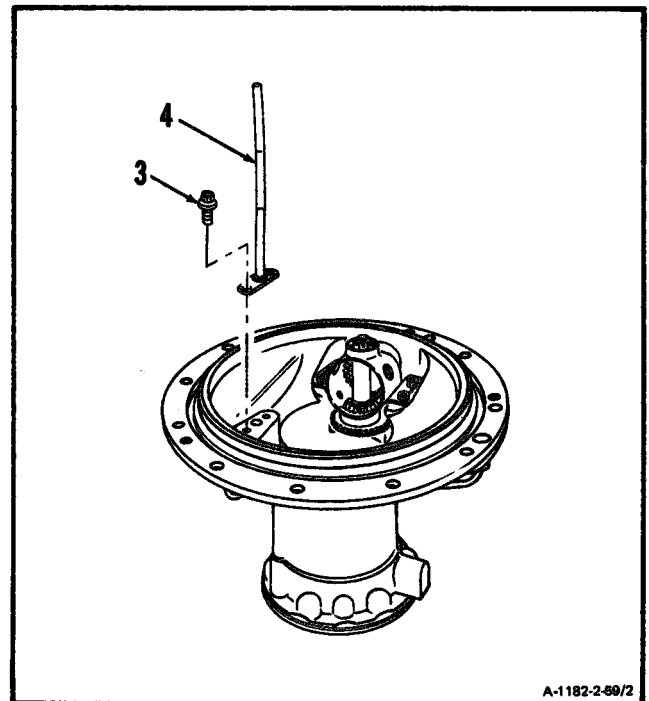
Off Engine Task  
Engine Oil System Drained (Task 1-75)  
Output Shaft Seal and Housing Removed  
(Task 2-48)  
Inlet Housing Cover Assembly Removed  
(Task 2-53)  
Overspeed Drive and Outlet Cover Assembly  
Removed (Task 5-17)  
Output Shaft Removed (Task 9-6)  
Output Shaft Support Housing Removed  
(Task 2-58)

1. Remove aircraft group cover (T29) (1) from output shaft support housing (2).



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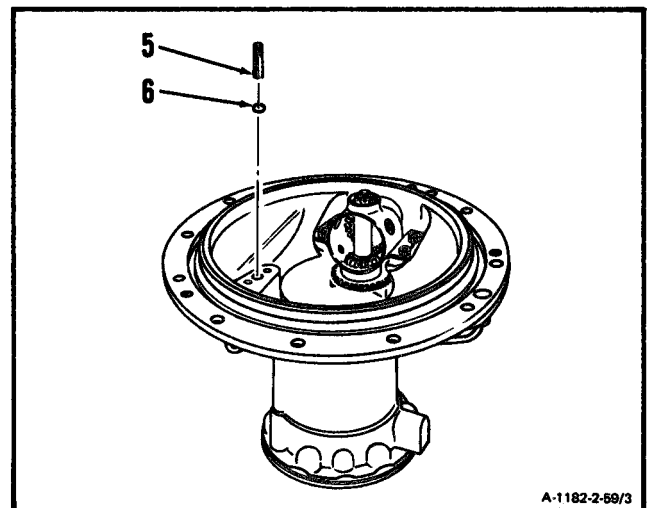
2. Remove lockwire, two bolts (3), and bearing lube tube assembly (4).



NOTE

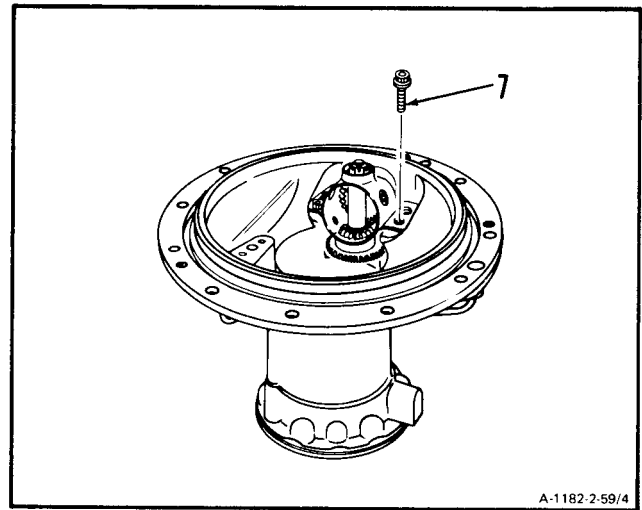
In following step, remove oil filter element either from output shaft support housing, as shown, or from bearing lube tube assembly.

3. Remove oil filter element (5) and packing (6).

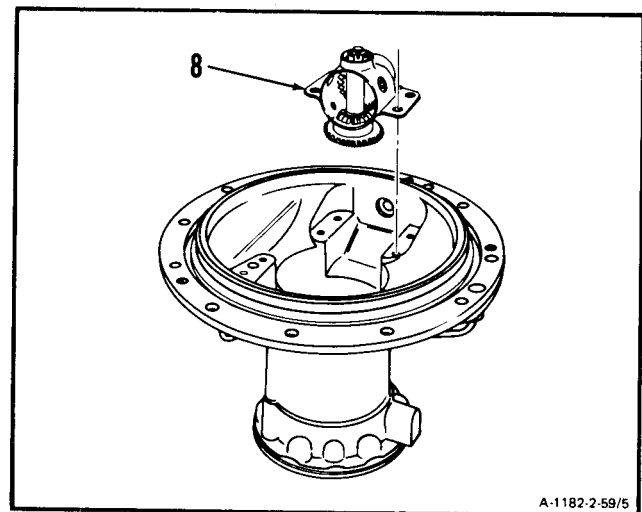


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4. Remove lockwire and four bolts (7).



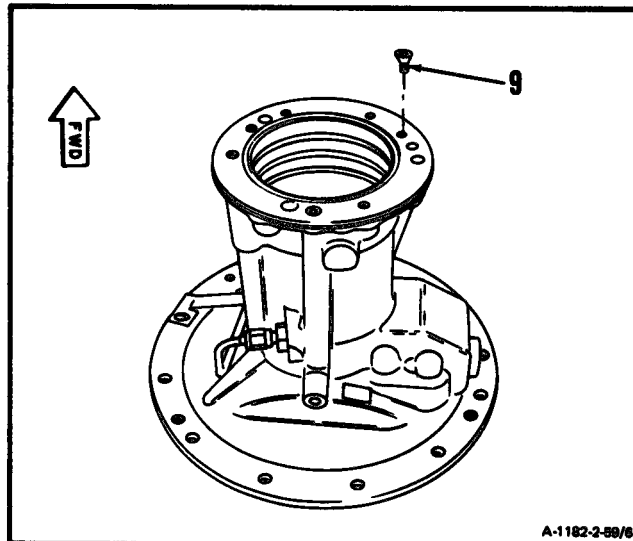
5. Remove overspeed gear assembly (8).



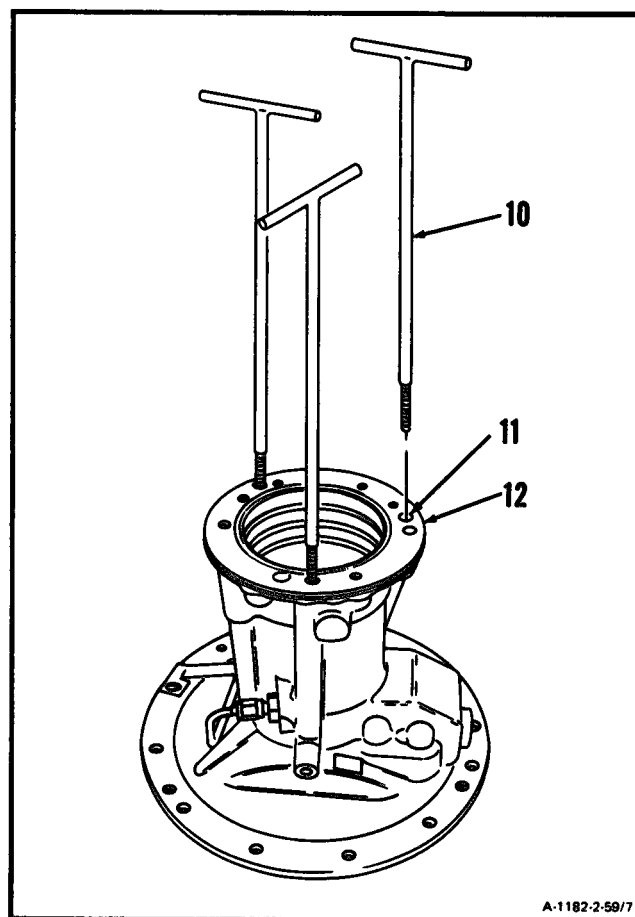
**GO TO NEXT PAGE**



6. Remove two screws (9).

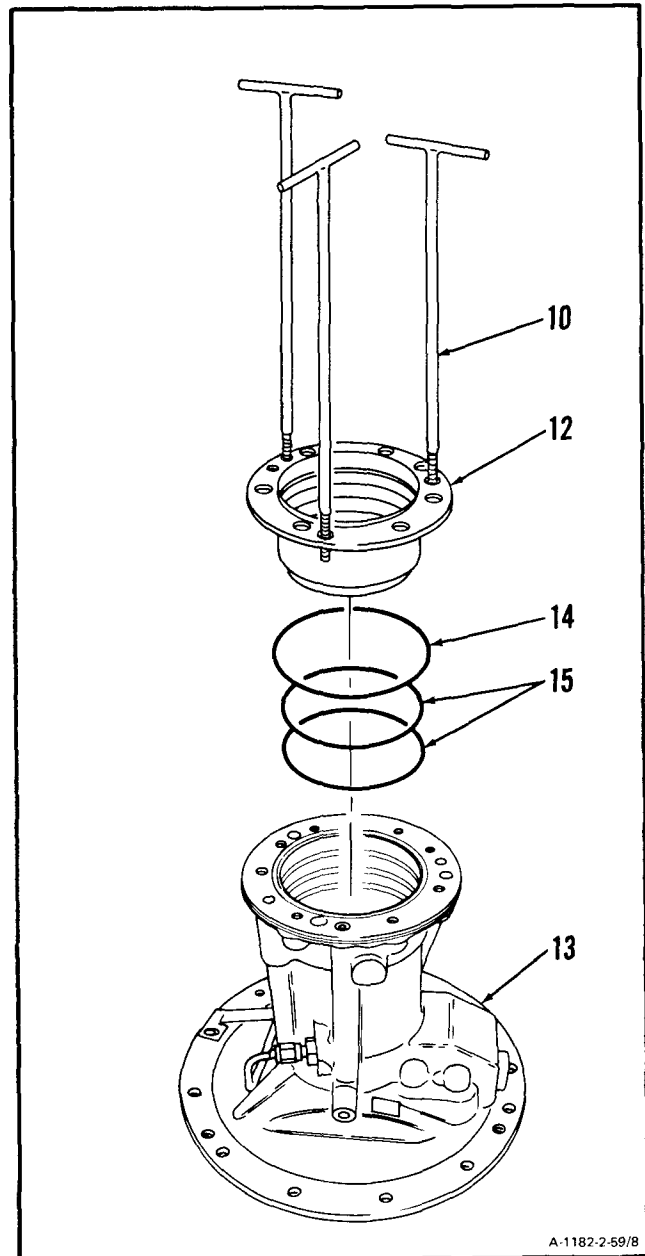


7. Install three handling tools (T16) (10) in threaded holes (11) on bearing housing liner (12).



**GO TO NEXT PAGE**

8. Using three handling tools (T16) (10), jack bearing housing liner (12) from housing assembly (13).
9. **Remove bearing housing liner (12), packing (14), and two packings (15).** Remove three handling tools (T16) (10).

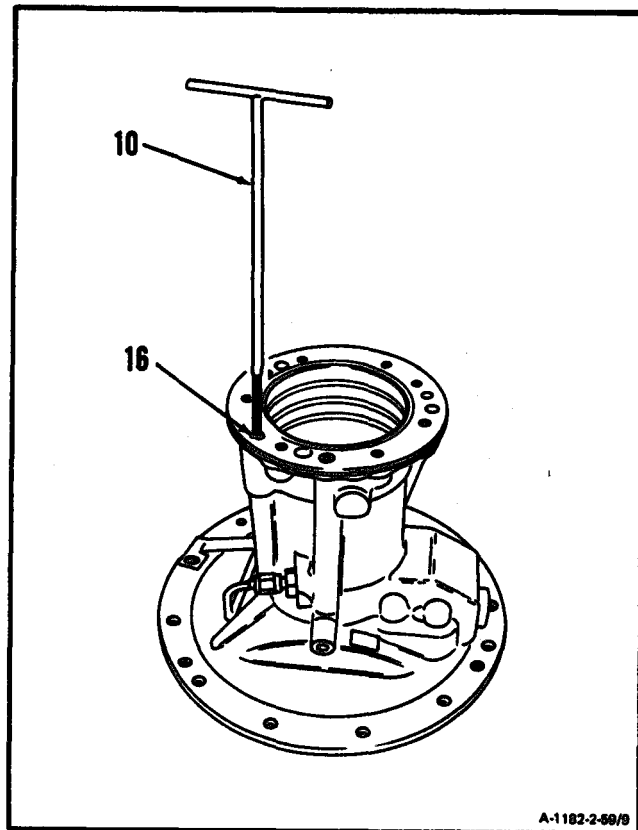


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## 2-59 DISASSEMBLE OUTPUT SHAFT SUPPORT HOUSING (AVIM) (Continued)

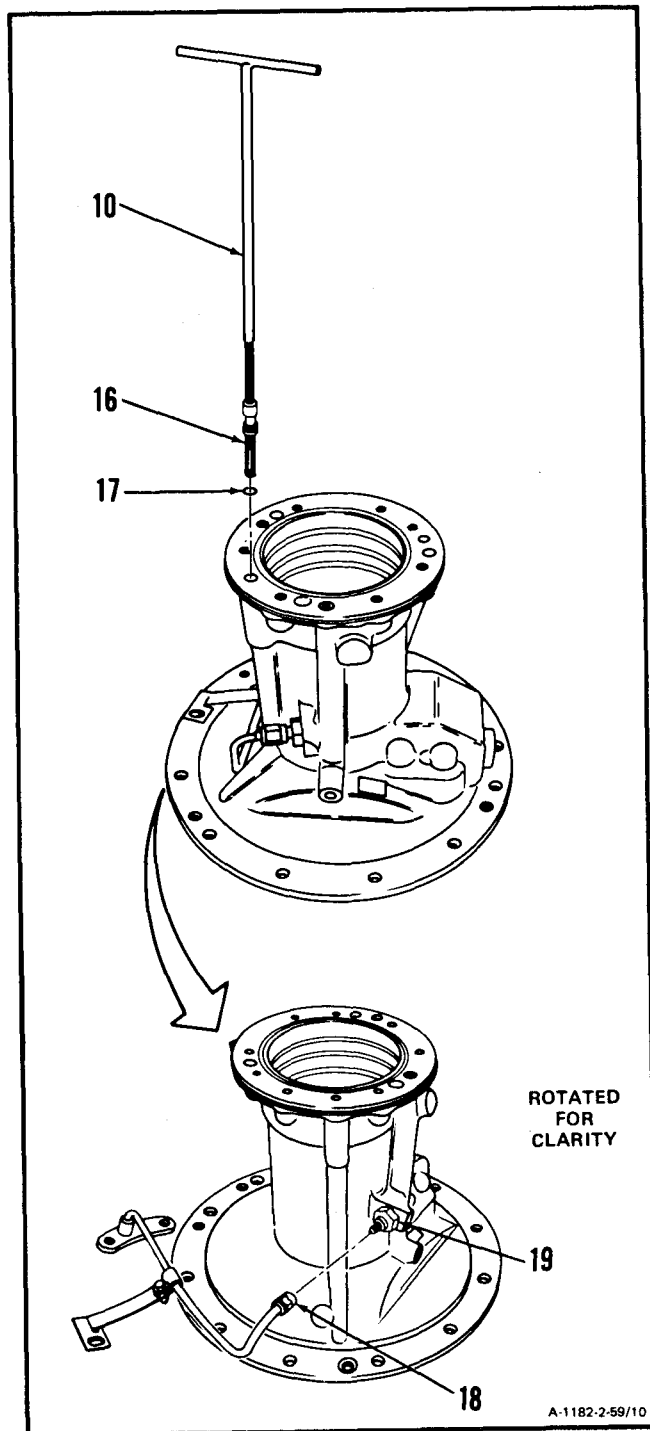
2-59

10. Install handling tool (T16) (10) in oil filter element (16).



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11. Using handling tool (T16) (10), **remove oil filter element (16)** and packing (17). Remove handling tool (T16) (10).



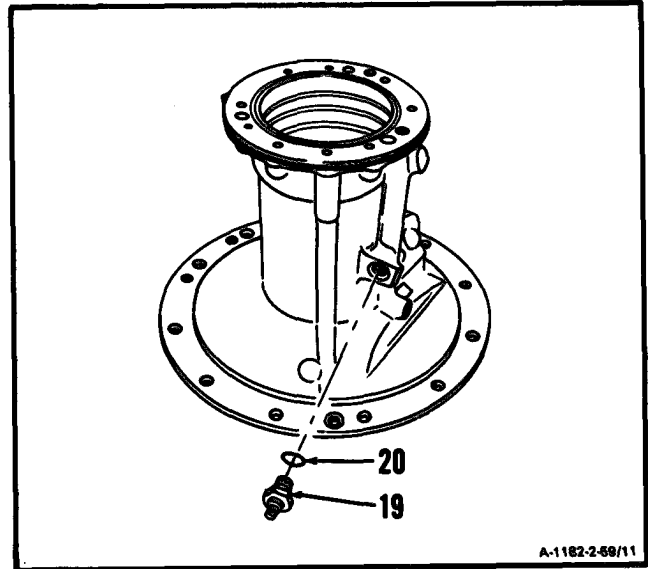
12. **Remove tube assembly (18)** from nipple ( 19).

**GO TO NEXT PAGE**

## 2-59 DISASSEMBLE OUTPUT SHAFT SUPPORT HOUSING (AVIM) (Continued)

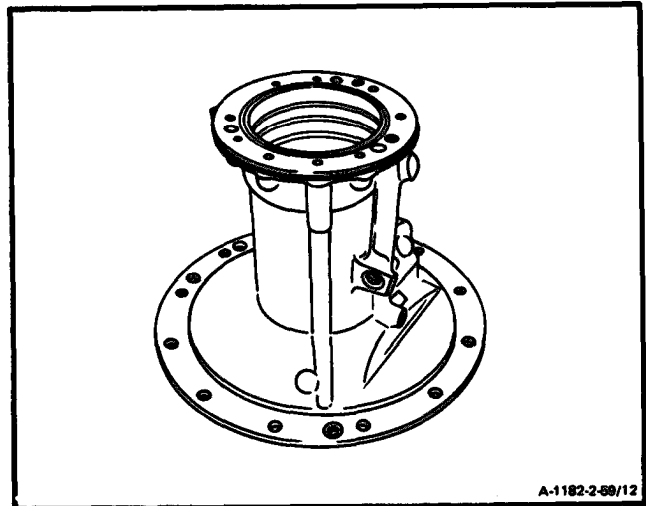
2-59

13. Remove nipple (19) and packing (20).



FOLLOW-ON MAINTENANCE:

None



END OF TASK

2-477

## INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944

Goggles

Compressed Air Source

**Materials:**

Dry Cleaning Solvent (E17)

Gloves (E20)

**Personnel Required:**

68B10 Aircraft Powerplant Repairer

**Equipment Condition:**

Off Engine Task

Engine Oil System Drained (Task 1-75)

Output Shaft Seal and Housing Assembly  
Removed (Task 2-48)Inlet Housing Cover Assembly Removed  
(Task 2-53)Overspeed Drive and Outlet Cover Assembly  
Removed (Task 5-17)

Output Shaft Removed (Task 9-6)

Output Shaft Support Housing Removed  
(Task 2-58)Output Shaft Support Housing Disassembled  
(Task 2-59)**General Safety Instructions:****WARNING**

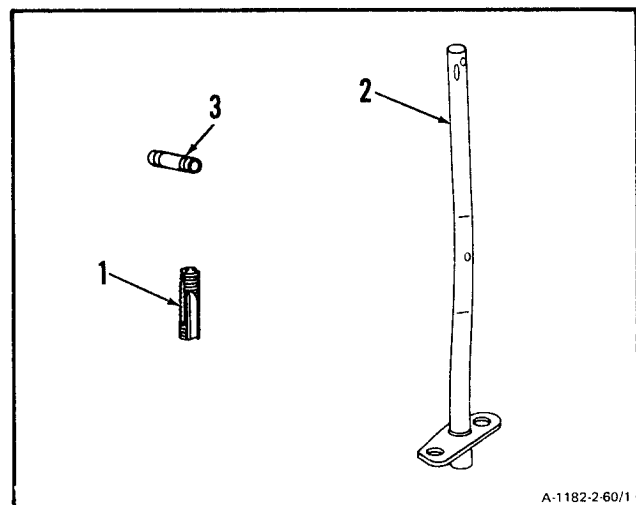
Dry cleaning solvent (E17) is flammable and toxic. It can irritate skin and cause burns. Use only in well-ventilated area, away from heat and open flame. In case of contact, immediately flush skin or eyes with water for at least 15 minutes. Get medical attention for eyes.

**WARNING**

When using compressed air for cleaning, use approved protective equipment for eyes and face. Do not use more than 30 psig air pressure. Do not direct air toward yourself or another person. Failure to comply could result in injury to eyes or skin. In case of injury, get medical attention.

1. Clean oil filter element (1), bearing lube tube assembly (2) and transfer tube (3) as follows:

- Wear gloves (E20). Immerse oil filter element (1), bearing lube tube assembly (2) and transfer tube (3) in dry cleaning solvent (E17) and agitate. Use brush on inner surfaces.
- Wear goggles. **Blow dry parts.** Use clean, dry, compressed air.

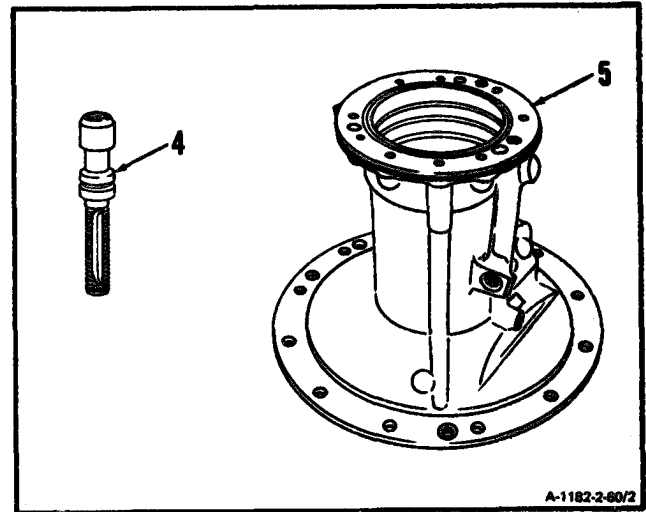


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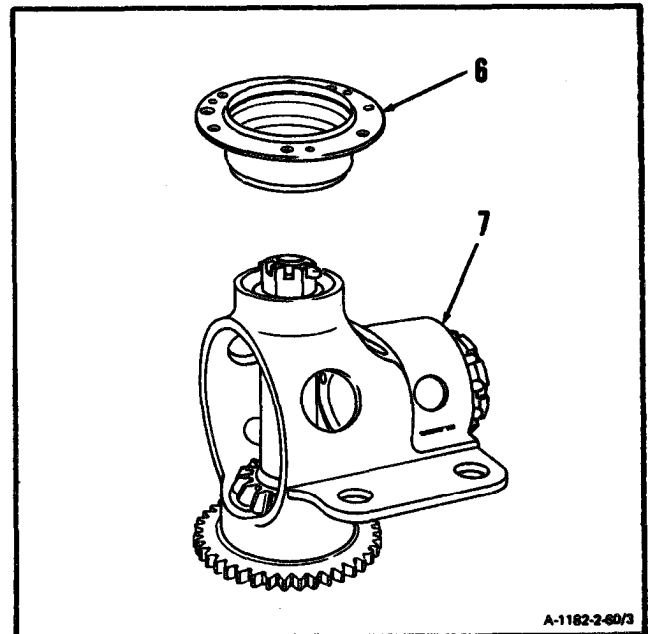
2. Clean oil filter element (4) and housing assembly (5) as follows:

- a. Immerse oil filter element (4) in dry cleaning solvent (E17) and agitate. Use brush on inner surfaces.
- b. Clean housing assembly (5) with dry cleaning solvent (E17). Use brush on inner surfaces.
- c. Blow dry parts. Use clean, dry compressed air.



3. Clean bearing housing liner (6) and overspeed gear assembly (7) as follows:

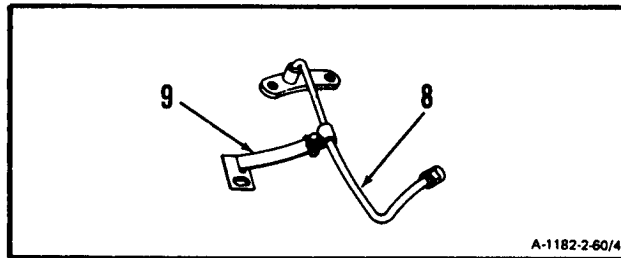
- a. Clean bearing housing liner (6) and overspeed gear assembly (7) with dry cleaning solvent (E17). Use brush on inner surfaces.
- b. Blow dry parts. Use clean, dry compressed air.



**GO TO NEXT PAGE**

4. Clean tube assembly (8) and bracket (9) as follows:

- a. Immerse tube assembly (8) and bracket (9) in dry cleaning solvent (E17) and agitate. Use brush on inner surfaces.
- b. Blow dry tube assembly (8) and bracket (9). Use clean, dry, compressed air.



FOLLOW-ON MAINTENANCE:

Inspect Output Shaft Support Housing  
(Task 2-61).

**END OF TASK**



## 2-61 INSPECT OUTPUT SHAFT SUPPORT HOUSING (AVIM)

2-61

**INITIAL SETUP****Applicable Configurations:**

All

**Tools:**Technical Inspection Tool Kit,  
NSN 5180-00-323-5114**Materials:**

Lockwire (E29)

**Personnel Required:**

68B30 Aircraft Powerplant Inspector

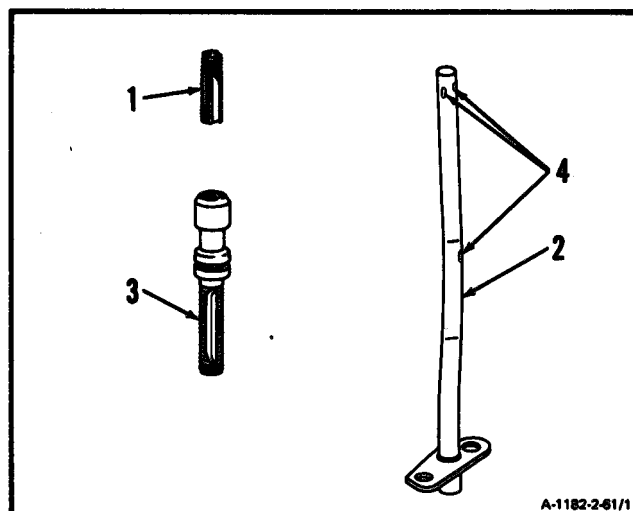
**References:**

Task 1-118

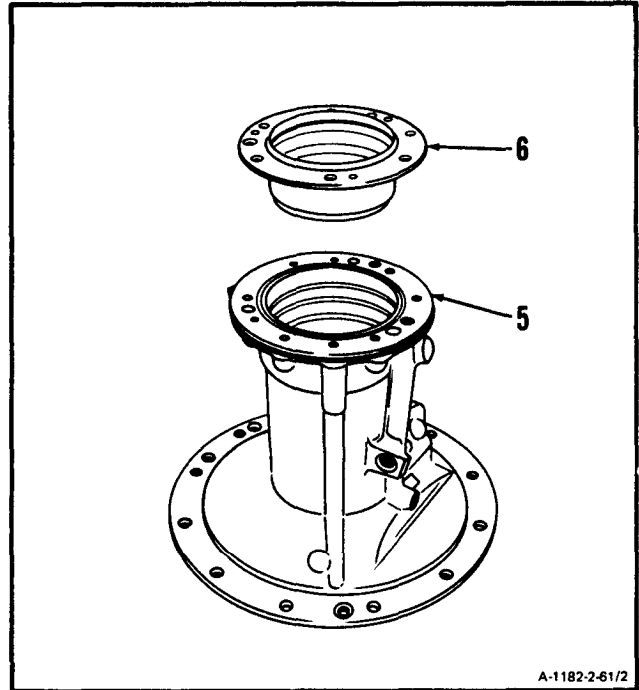
**Equipment Condition:**

Off Engine Task

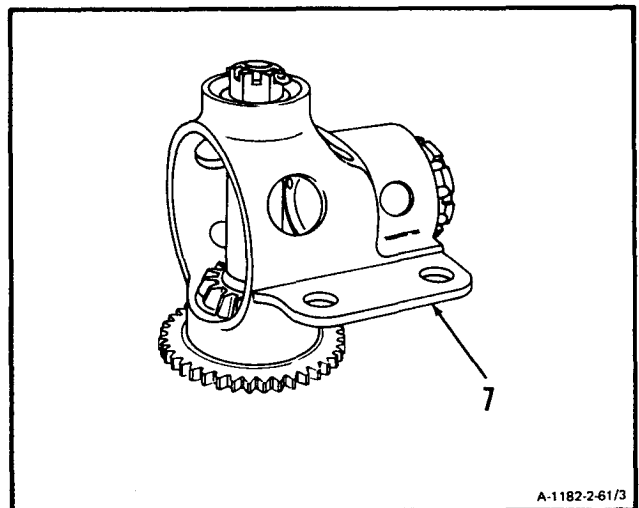
1. **Inspect oil filter element (1), bearing lube tube assembly (2), and oil filter element (3).** There shall be no clogging or contamination. Check oil spray holes (4) for blockage. Use short piece of lockwire (E29).

**GO TO NEXT PAGE**

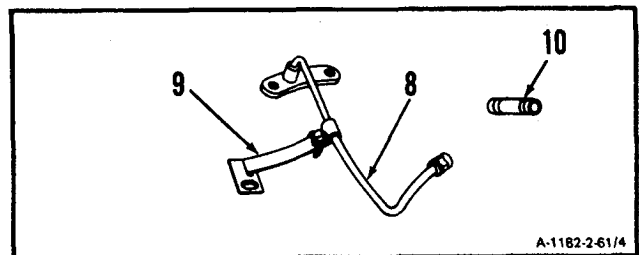
2. **Inspect housing assembly (5) and bearing housing liner (6).** There shall be no cracks.



3. **Inspect overspeed gear assembly (7)** for gear pattern. There shall be no improper gear pattern. **Clean, inspect, and repair splines and gears** (Ref. Task 1-118).



4. **Inspect tube assembly (8), bracket (9), and transfer tube (10).** There shall be no cracks. There shall be no clogging or contamination of tube assembly (8) or transfer tube (10).



**FOLLOW-ON MAINTENANCE:**

None

**END OF TASK**

---

**2-62 ASSEMBLE OUTPUT SHAFT SUPPORT HOUSING (AVIM)**

---

2-62

**INITIAL SETUP****Parts:****Applicable Configurations:**

All

Packings

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Technical Inspection Tool Kit,  
NSN 5180-00-323-5114  
Aircraft Group Cover (T29)  
Rubber Mallet  
Insertion Tools (E36 and E37)

**Personnel Required:**

68B30 Aircraft Powerplant Repairer  
68B30 Aircraft Powerplant Inspector

**References:**

TM 55-2840-254-23P

**Materials:**

Lockwire (E29)

**Equipment Condition:**

Off Engine Task

- 
1. **Install** packing (1) and **nipple (2)** in housing assembly (3).

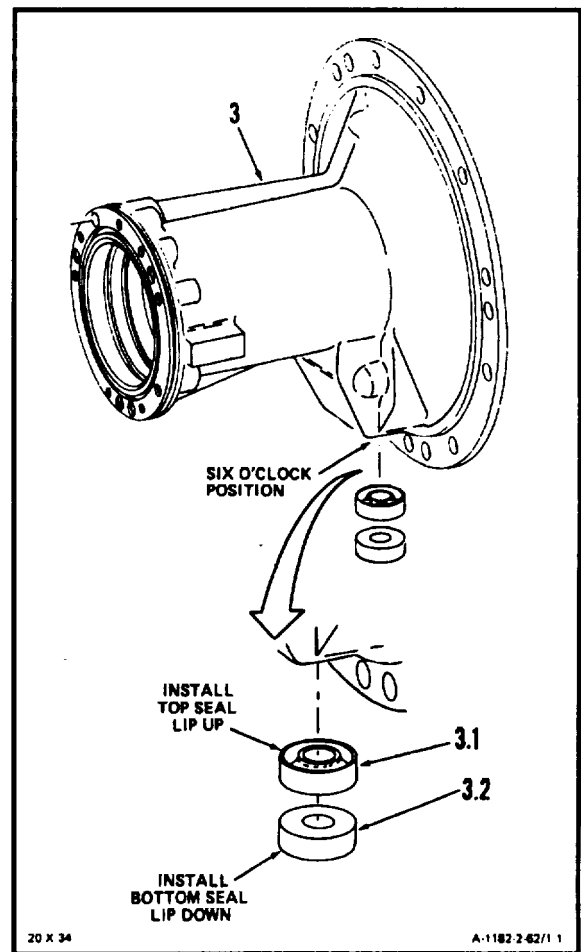
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Change 6 2-483

**CAUTION**

Seal must be dipped in lubricating oil before installation. Failure to comply will cause damage to seal.

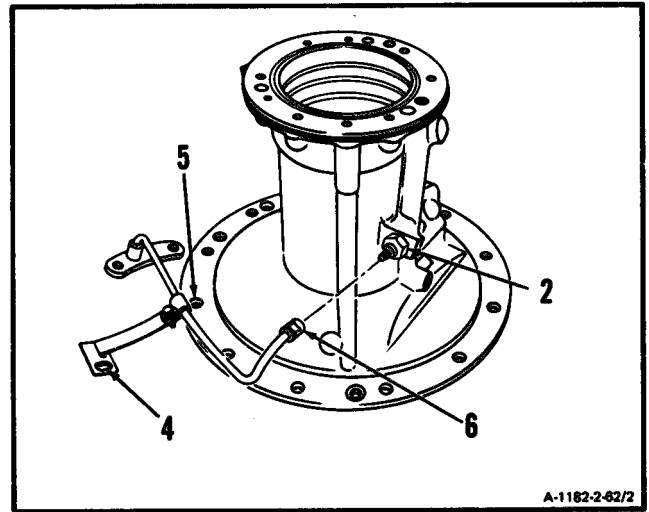
1. **Install seals (3.1 and 3.2) in housing (3).**
  - a. Using the insertion tools (E36) and an arbor press, press two seals (3.1 and 3.2) into the housing.
  - b. Dip top seal (3.1) in lubrication oil (E32 or E33).
  - c. Install top seal (3.1) **with lip up in housing (3)** using top seal installation tool (E36) and arbor press.
  - d. Dip bottom seal (3.2) in lubricating oil (E32 or E33).
  - e. Install bottom seal (3.2) with **lip down in housing (3)** using bottom seal installation tool (E36) and arbor press.



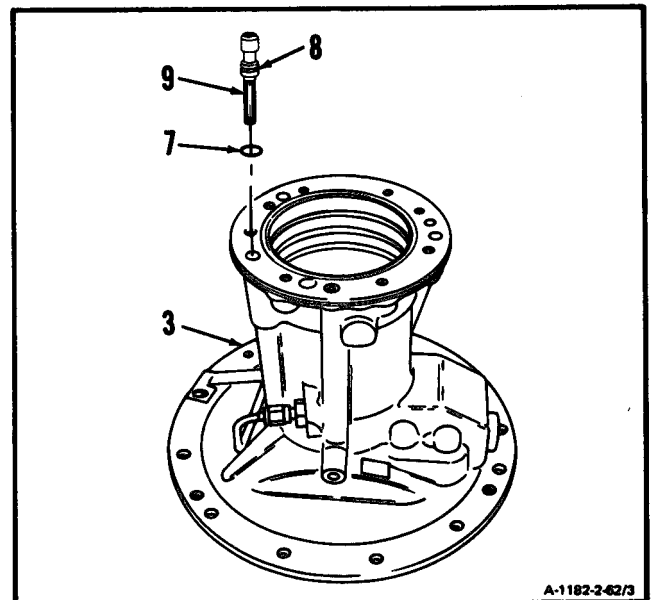
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**2-484 Change 6**

2. Align hole (4) with hole (5) and **install tube assembly (6)** on nipple (2).

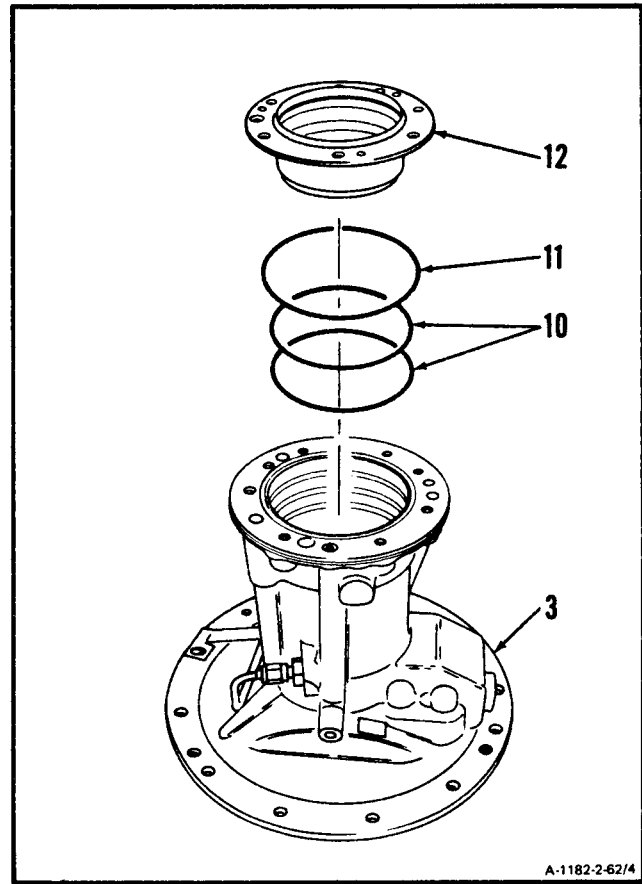


3. **Install** packing (7) in groove (8) in oil filter element (9) and install **oil filter element (9)** in housing assembly (3). Use rubber mallet.

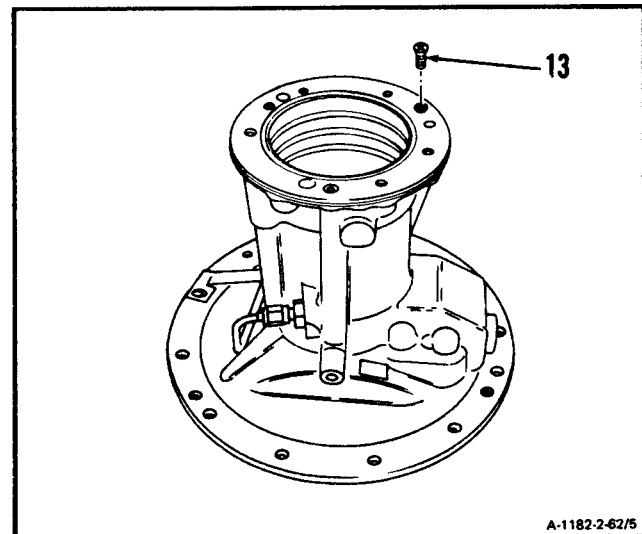


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4. **Install** two packings (10), packing (11), and **bearing housing liner (12)** in housing assembly (3).  
Use rubber mallet.

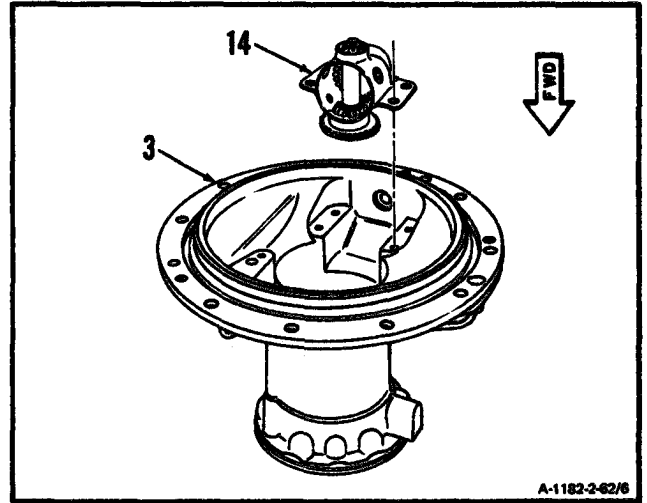


5. Install two screws (13).

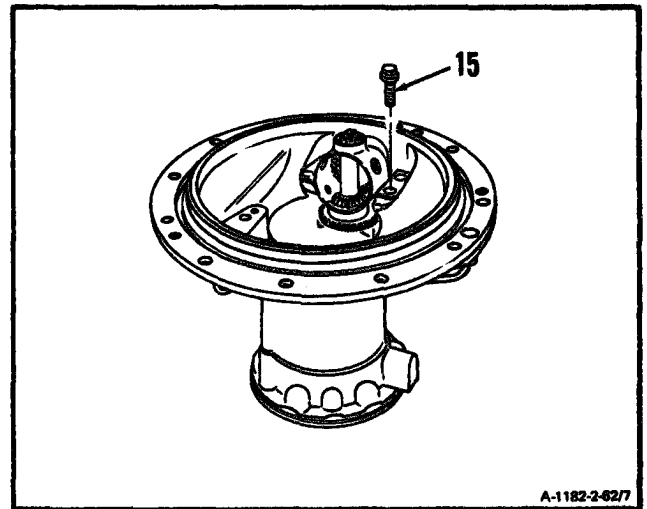


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6. Install **overspeed gear assembly (14)** in housing assembly (3).

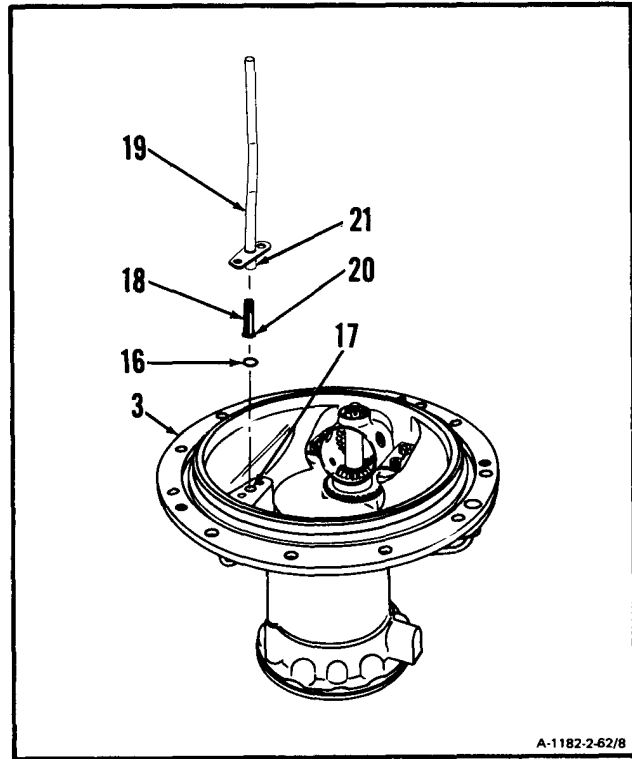


7. Install four bolts (15). Lockwire bolts (15). Use lockwire (E29).

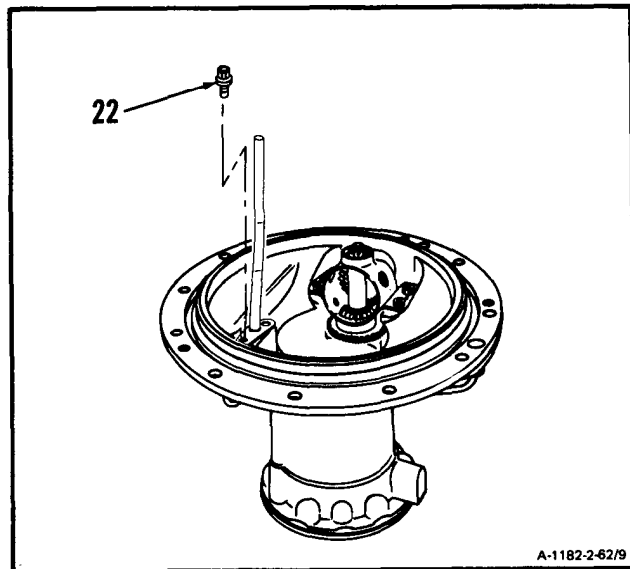


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8. Install packing (16) in groove (17) in housing assembly (3). Install oil filter element (18) in bearing lube tube assembly (19) until shoulder (20) seats against tube end (21). **Install bearing lube tube assembly (19)** in housing assembly (3).



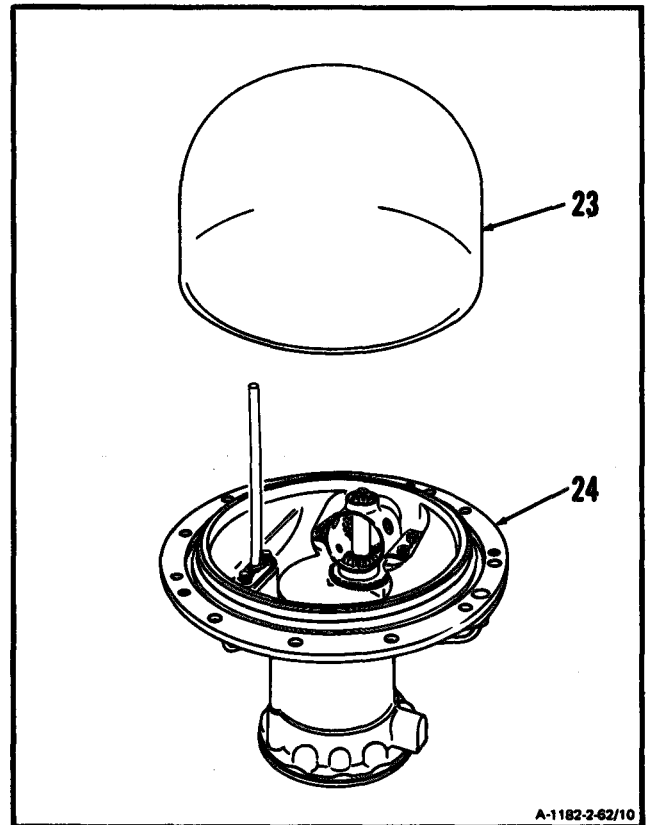
9. Install two bolts (22). Lockwire bolts (22). Use lockwire (E29).



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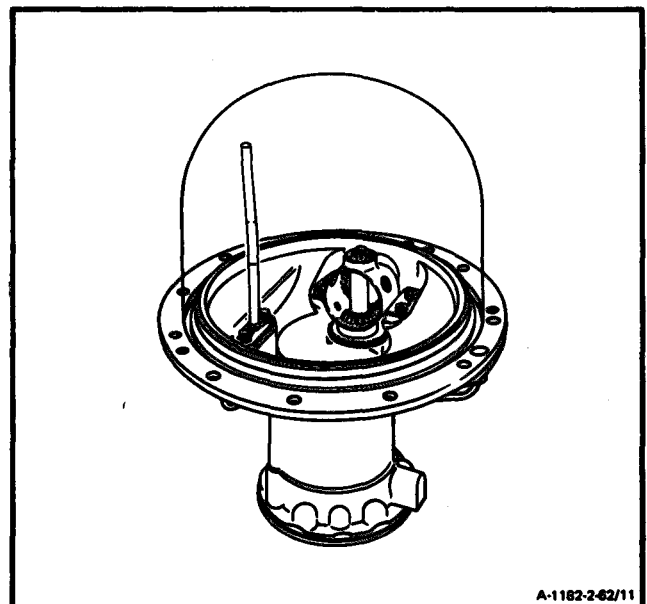
10. Install aircraft group cover (T29) (23) on aft end of output shaft support housing (24).



INSPECT

FOLLOW-ON MAINTENANCE:

None



END OF TASK

---

2-63 INSTALL OUTPUT SHAFT SUPPORT HOUSING (AVIM)

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2-63

**INITIAL SETUP**

**Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Technical Inspection Tool Kit,  
NSN 5180-00-323-5114

**Materials:**

Marking Pencil (E34)

**Parts:**

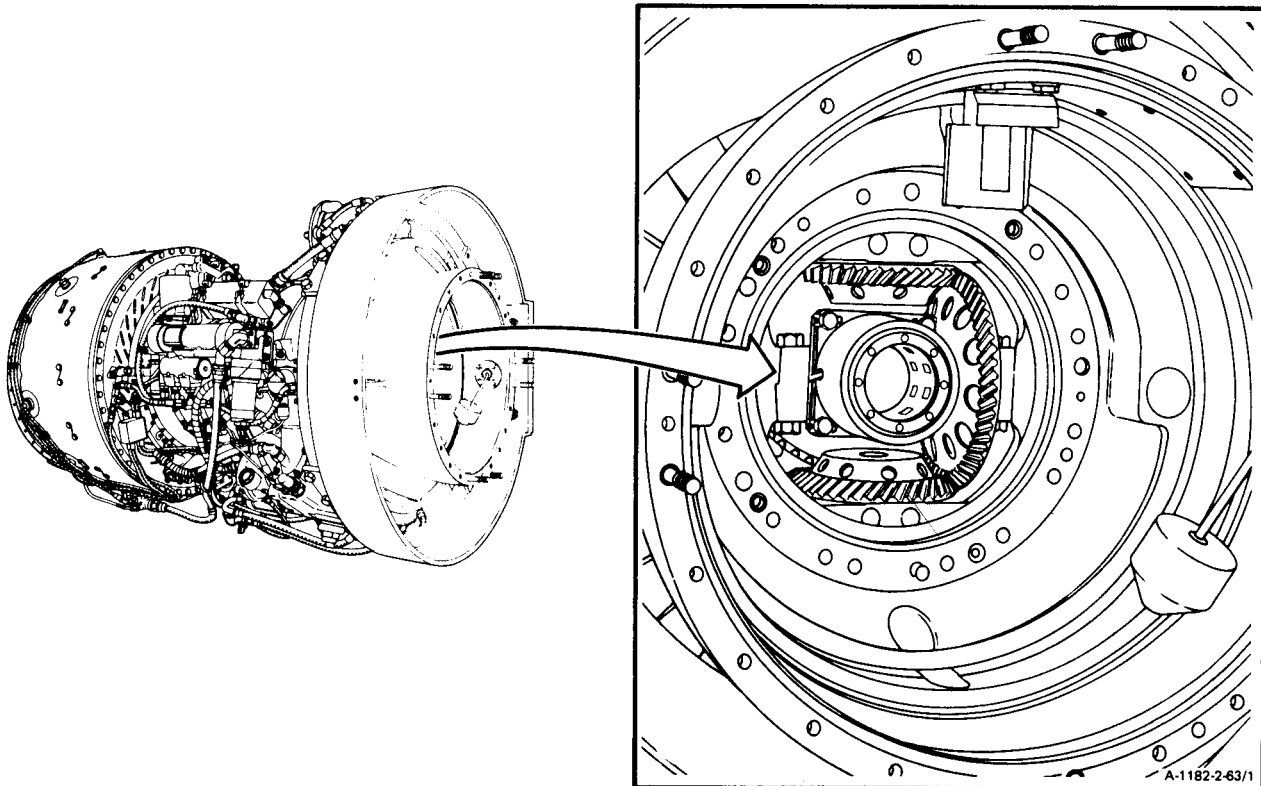
Packings  
Key Washers

**Personnel Required:**

68B10 Aircraft Powerplant Repairer  
68B30 Aircraft Powerplant Inspector

**References:**

TM 55-2840-254-23P



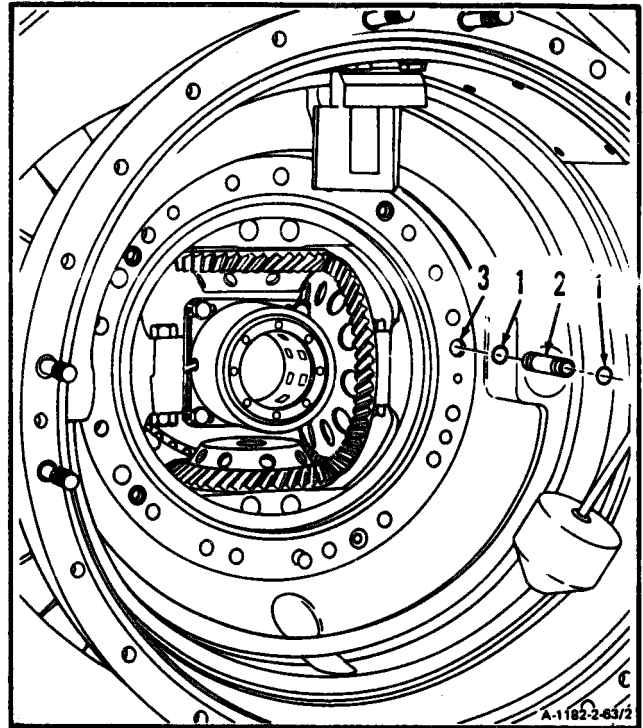
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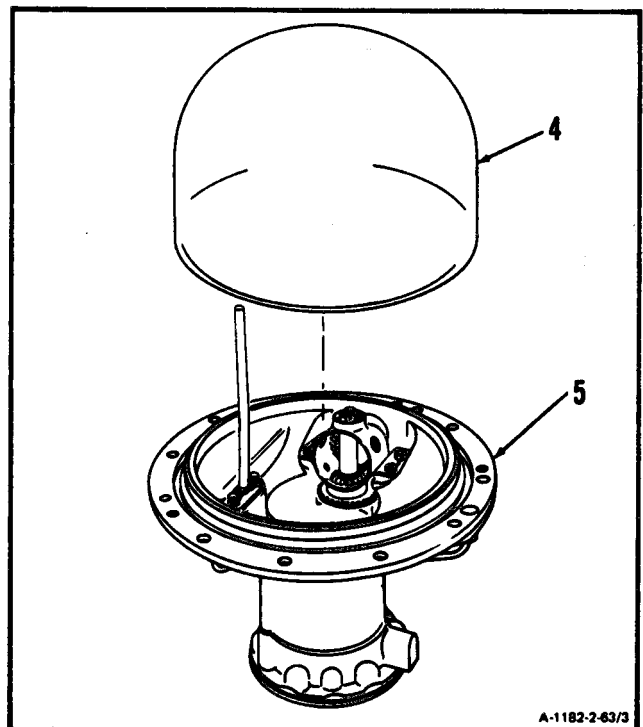
## 2-63 INSTALL OUTPUT SHAFT SUPPORT HOUSING (AVIM) (Continued)

2-63

1. Install two packings(1) on transfer tube (2), and **install transfer tube (2)** in accessory gear assembly (3).

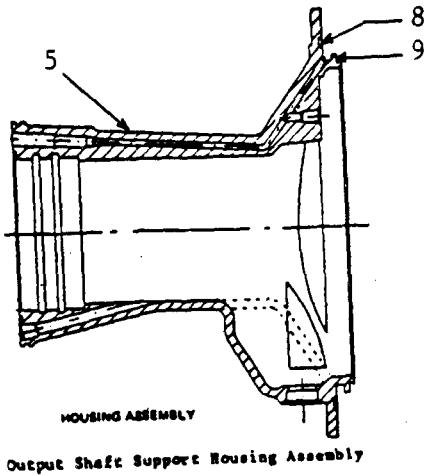


2. Remove aircraft group cover (T29) (4) from output shaft support housing (5).



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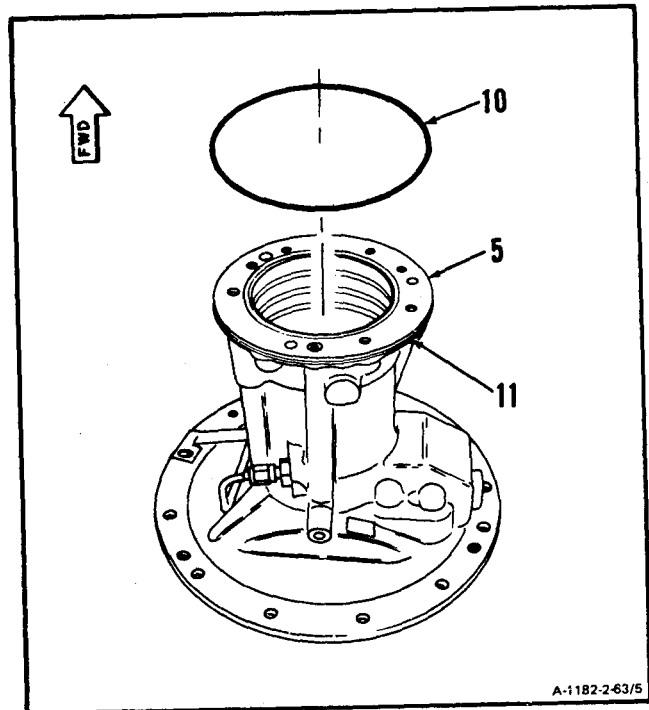
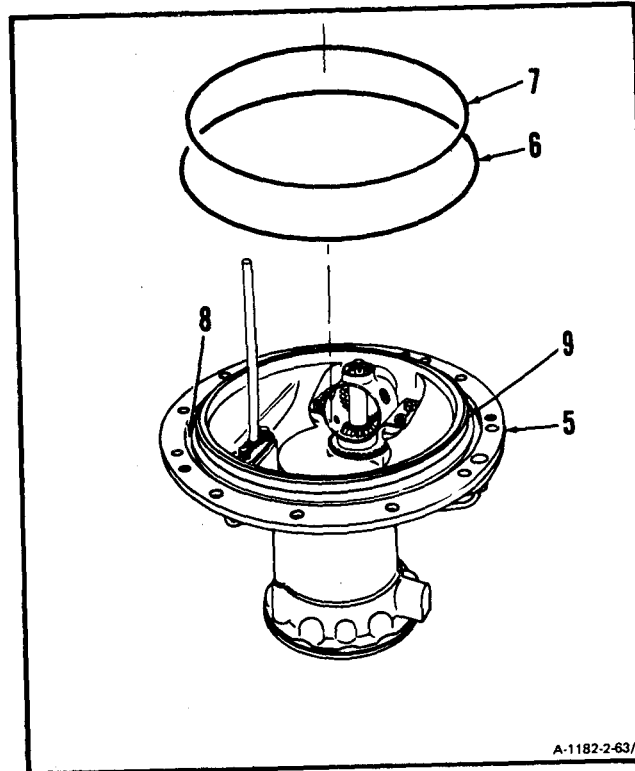
3. Install two packings (6 and 7) in grooves (8 and 9) on output shaft support housing (5).



**NOTE**

Be sure that packing (7) is correctly installed on the aft face of the output shaft support housing (5) to the groove (9) above. Improper installation may interfere with the lubrication patch in housing (5) and may cause instances of low engine oil pressure.

4. Install packing (10) in groove (11) on output shaft support housing (5).

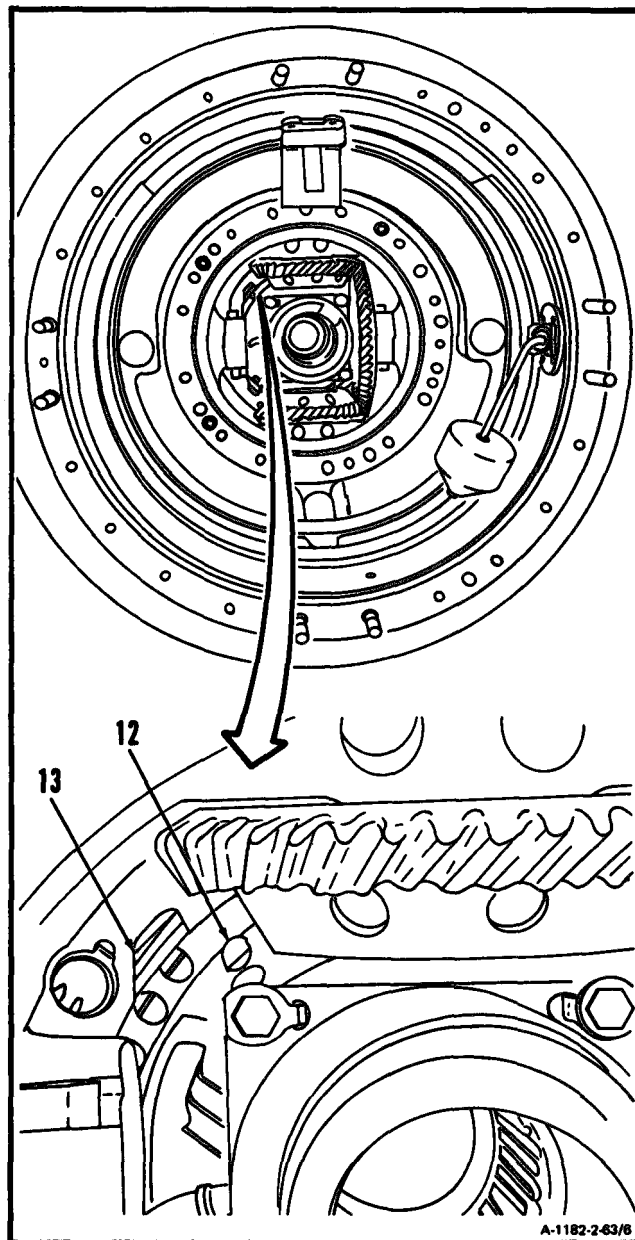


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## 2-63 INSTALL OUTPUT SHAFT SUPPORT HOUSING (AVIM) (Continued)

2-63

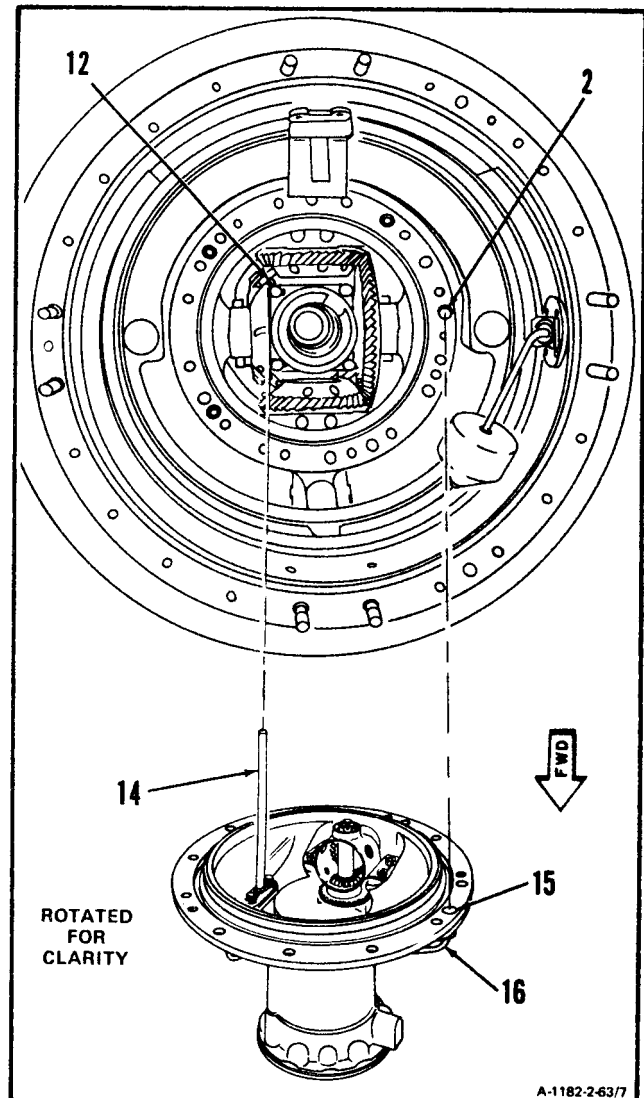
5. Locate and mark irregularly shaped hole (12) in No. 3 bearing support (13) near 11-o'clock position looking aft. Use marking pencil (E34).

**GO TO NEXT PAGE**

**CAUTION**

In following step 6., be sure you are inserting bearing lube tube in the proper hole. Failure to do so will bend the tube and cause improper bearing lubrication. This would cause component damage and possible engine failure.

6. Align and partially insert bearing lube tube assembly (14) into marked hole (12).
7. Align hole (15) behind tube assembly (16) with transfer tube (2).

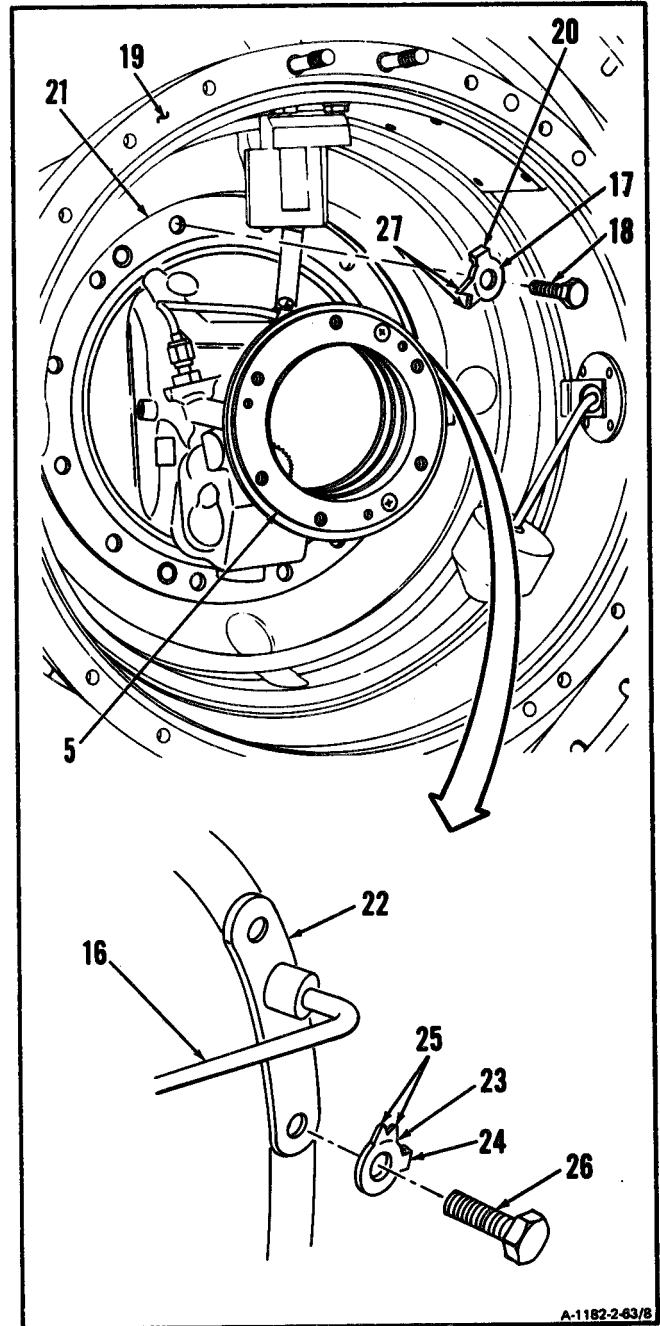


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**CAUTION**

In following step 8., be sure to install output shaft support housing carefully and evenly. You could easily damage the gears or air transfer tube packings which would cause improper engine operation.

8. Install output shaft support housing (5), 10 key washers (17) and 10 bolts (18) in inlet housing (19). Position key washers (17) with bent single tab (20) pointing aft and hooked over O.D. of flange (21).
9. Secure flange (22) of tube assembly (16) as follows:
  - a. Position two key washers (23) with bent single tab (24) pointing aft and hooked over outer side of flange (22).
  - b. Hold double tabs (25) of two key washers (23) on flange (22) of tube assembly (16). Use duckbill pliers.
  - c. Install two bolts (26) in inlet housing (19).
10. Bend up double tabs (25 and 27) of 10 key washers (17) and 2 key washers (23).

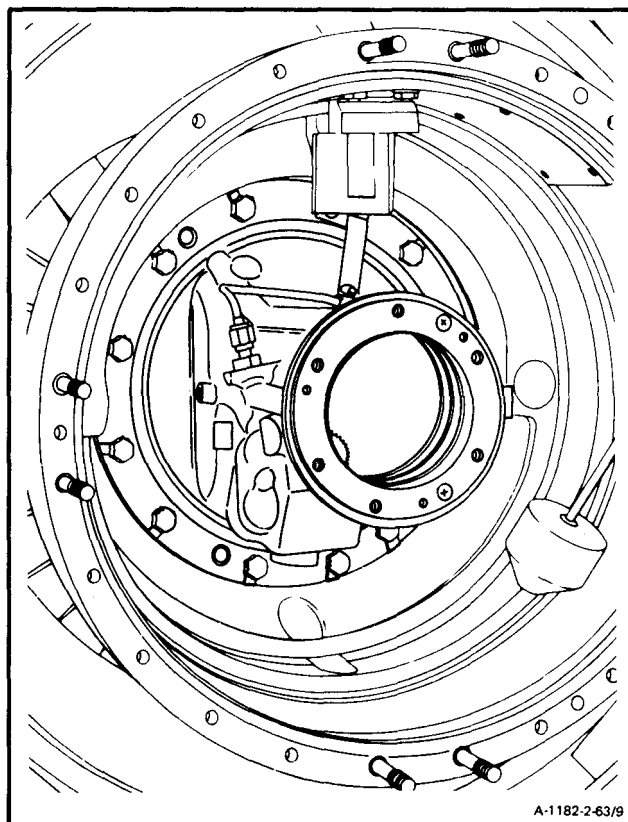


**INSPECT**

**GO TO NEXT PAGE**

**FOLLOW-ON MAINTENANCE:**

- Install Output Shaft (Task 9-10).
- Install Overspeed Drive and Outlet Cover Assembly (Task 5-23).
- Install Inlet Housing Cover Assembly (Task 2-57).
- Install Output Shaft Seal and Housing Assembly (Task 2-52).
- Service Engine Oil System (Task 1-74).

**END OF TASK**



## Section XII. AIR INLET HOUSING ASSEMBLY - MAINTENANCE PROCEDURES

2-64 CLEAN AIR INLET HOUSING ASSEMBLY

2-84

**INITIAL SETUP****Applicable Configurations:**

All

**Tools:**

None

**Materials:**

Dry Cleaning Solvent (E17)

Gloves (E20)

Wiping Rag (E58)

**Personnel Required:**

68B10 Aircraft Powerplant Repairer

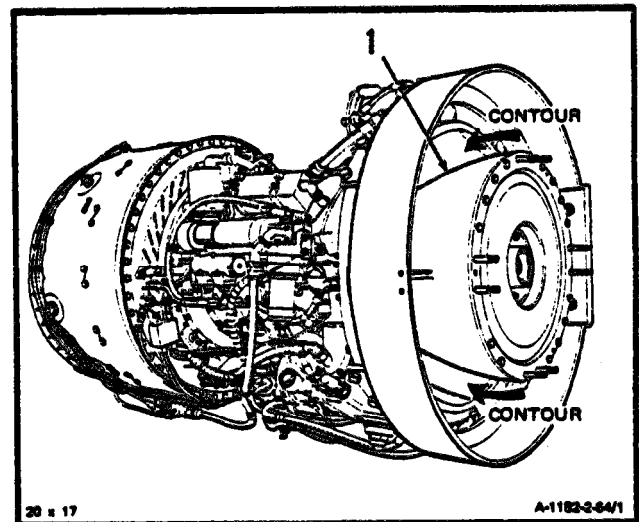
**WARNING**

Dry cleaning solvent (E17) is flammable and toxic. It can irritate skin and cause burns. Use only in well-ventilated area, away from heat and open flame. In case of contact, immediately flush skin or eyes with water for at least 15 minutes. Get medical attention for eyes.

**NOTE**

Look for accumulations of dirt conforming to contour of air inlet. Buildup of foreign matter maybe difficult to detect because of the windswept contour it assumes.

1. Wear gloves (E20). **Clean** visible portion of **air inlet housing assembly (1)** with wiping rag (E58) dampened in dry cleaning solvent (E17).

**FOLLOW-ON MAINTENANCE:**

Inspect Air Inlet Housing Assembly (Task 2-65).

**END OF TASK**

## INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**

Technical Inspection Tool Kit,  
NSN 5180-00-323-5114

**Materials:**

None

**Personnel Required:**

68B10 Aircraft Powerplant Repairer

**References:**

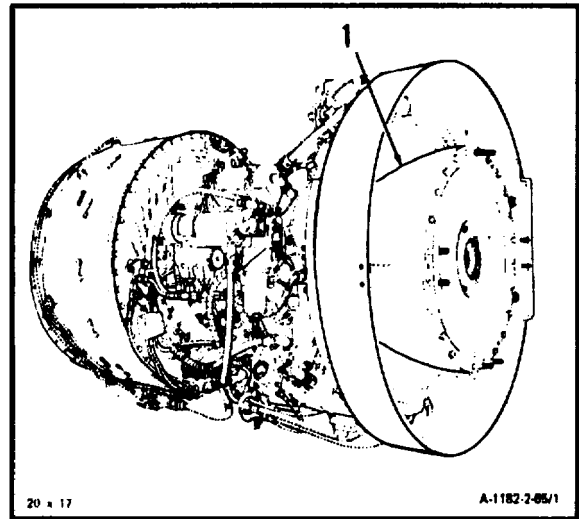
Task 1-92

Task 1-119

**NOTE**

If there is foreign object damage (FOD), look for more FOD throughout engine. Perform a FOD inspection (Ref. Task 1-92).

1. **Inspect air inlet housing assembly (1)**, using strong light beam.
  - a. There shall be no cracks or FOD.
  - b. There shall be no paint damage.
  - c. Corrosion shall be treated using touch-up procedure for magnesium and magnesium alloys (Ref. Task 1-119).
    - (1) Visually inspect inlet housing for corrosion.
    - (2) A cumulative total of 8 inches of missing material as measured around the flange circumference is allowed.
    - (3) Individual defects shall not exceed 4 inches in length.
    - (4) Individual defects must be separated by a minimum of 1 inch of unaffected material.
    - (5) If within preceding limits, repair as outlined in Task 1-119.
    - (6) Any number of random minor corroded areas not exceeding 0.25 inch diameter are acceptable with repair.
    - (7) One single corroded area is acceptable after repair provided the area does not exceed 4 inches in length, 1.375 inches in width and 0.070 inch in depth at deepest point.
    - (8) Forward engine to overhaul if preceding limits are exceeded.
    - (9) If within preceding limits repair as outlined in Task 1-119.

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## 2-65 INSPECT AIR INLET HOUSING ASSEMBLY (Continued)

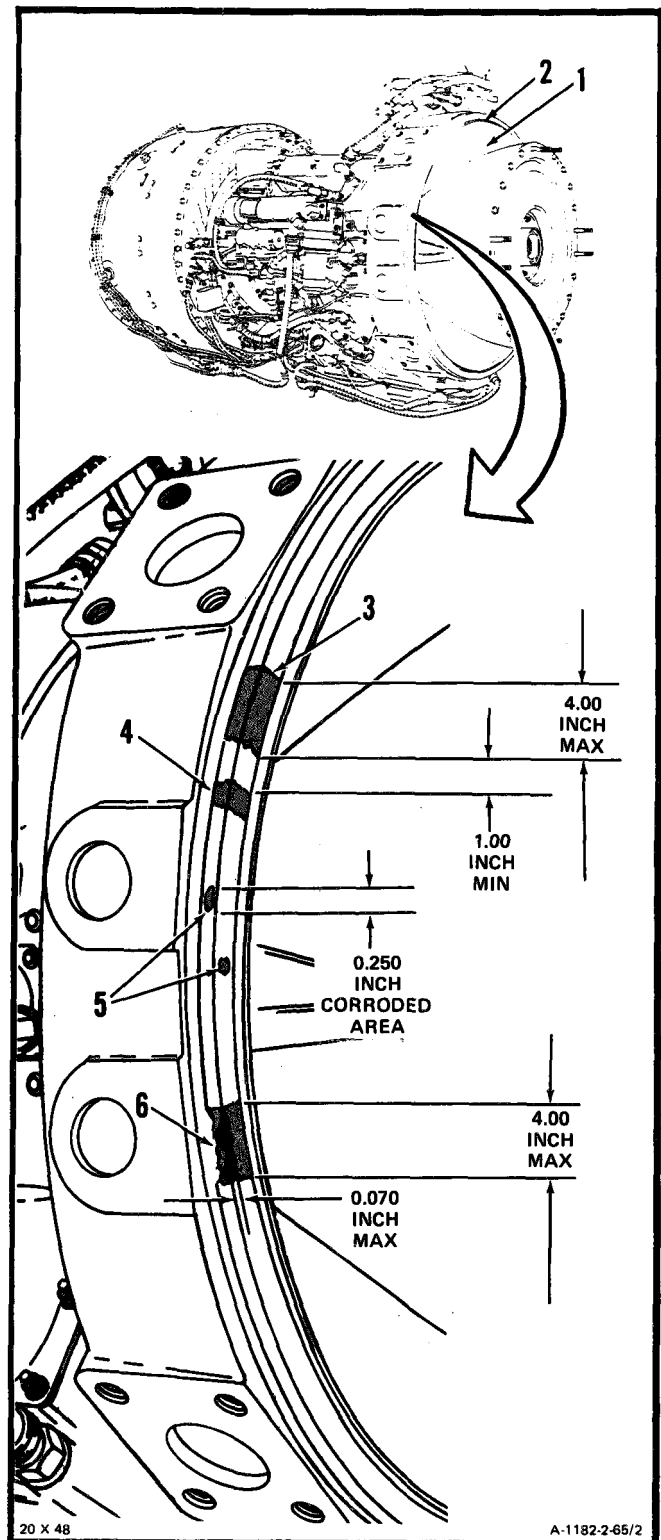
2-65

**2. Inspect air inlet housing (1) V-band mounting flange (2) for corrosion.**

- a. There shall be no more than a cumulative total of eight inches of missing material around the circumference of V-band clamping flange (2).
- b. There shall be no individual defects (3) that exceed 4 inches in length.
- c. There shall be no individual defects (4) that are not separated by a minimum of one inch of unaffected material.
- d. Any defects that fall within limits outlined in preceding **steps a., b., and c.** shall be repaired. (Refer to Task 1-119).
- e. Any number of random minor corroded areas (5) not exceeding 0.025 inch diameter are acceptable with repair. (Refer to Task 1-119).
- f. A single (one) corroded area (6) is allowed after repair provided the area does not exceed 4 inches in length and 0.070 inch in depth.
- g. If limits in preceding steps a. thru e. are exceeded, forward engine to overhaul facility.

## FOLLOW-ON MAINTENANCE:

None



END OF TASK



## 2-66 REPAIR AIR INLET HOUSING ASSEMBLY

2-66

**INITIAL SETUP****Applicable Configurations:**

All

**Tools:**

Technical Inspection Tool Kit,  
NSN 5180-00-323-5114  
Stainless Steel Wire Brush

**Materials:**

Clear Synthetic Sealant (E12)  
Engine Gray Enamel (E22)

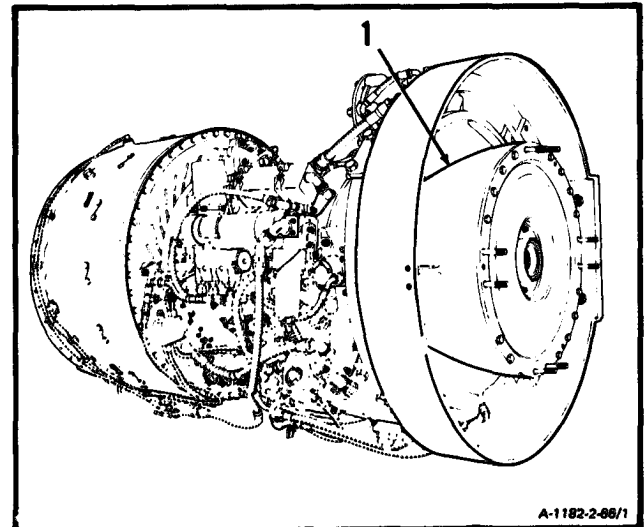
**Personnel Required:**

68B10 Aircraft Powerplant Repairer  
68B30 Aircraft Powerplant Inspector

**References:**

Task 1-119

1. **Remove corrosion** using stainless steel wire brush.
2. **Repair damaged paint** on air inlet housing assembly (1) as follows:
  - a. Touch up spray painted surfaces, using engine gray enamel (E22) (Ref. Task 1-119).
  - b. Touch up clear synthetesine painted surfaces, using clear synthetic sealant (E12) (Ref. Task 1-119).

**INSPECT****FOLLOW-ON MAINTENANCE:**

None

**END OF TASK**



**Section XIII. NO. 3 BEARING PACKAGE – MAINTENANCE PROCEDURES**

**2-67 REMOVE NO. 3 BEARING PACKAGE (AVIM)**

**2-67**

**INITIAL SETUP**

**Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Handling Tool (T16) (3)

**Materials:**

Wiping Rag (E58)

**Personnel Required:**

68B10 Aircraft Powerplant Repairer

**Equipment Condition:**

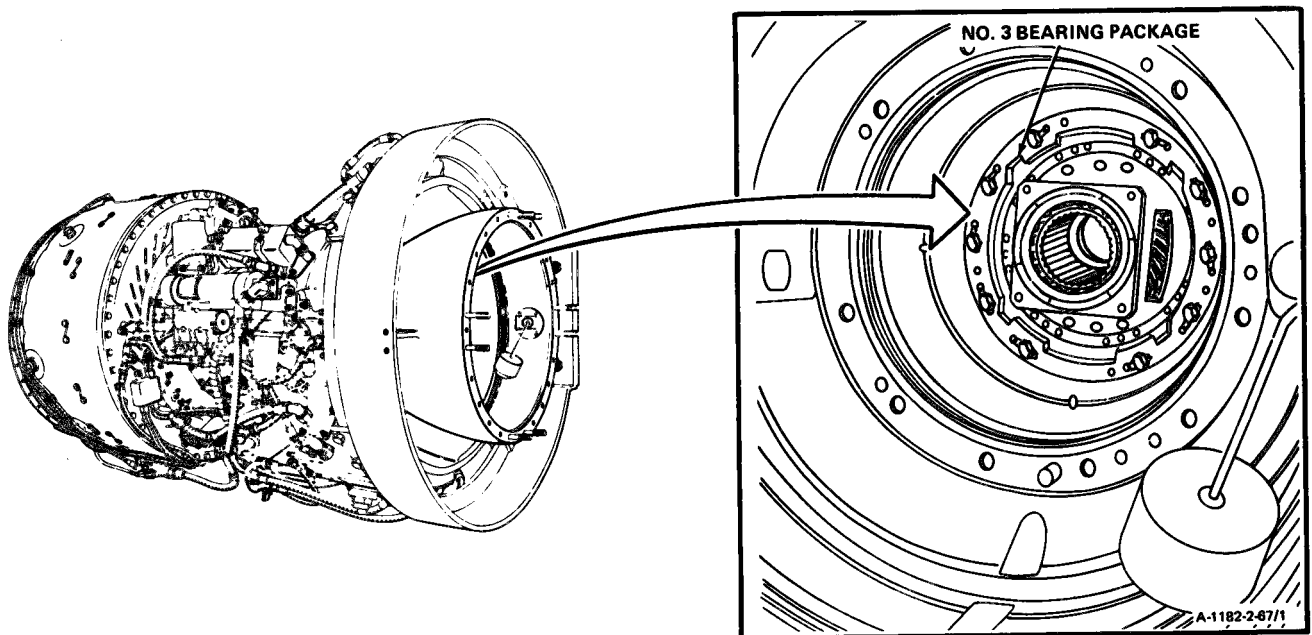
Engine Oil System Drained (Task 1-75)  
Fuel Boost Pump Removed (Task 6-9)  
Starter Drive Assembly Removed (Task 5-12)  
Output Shaft Seal and Housing Removed  
(Task 2-48)  
Output Shaft Removed (Task 9-6)  
Inlet Housing Cover Assembly Removed  
(Task 2-53)  
Tube Assembly Removed (Inlet Housing to  
Main Oil Pump) (Task 8-50)

Overspeed Drive and Outlet Cover Assembly  
Removed (Task 5-17)  
Output Shaft Support Housing Removed  
(Task 2-58)  
Torquemeter Junction Box Removed (Task 9-1)  
Torquemeter Head Assembly Removed (Task 9-11)  
Accessory Gear Assembly Removed (Task 5-8)

**General Safety Instructions:**

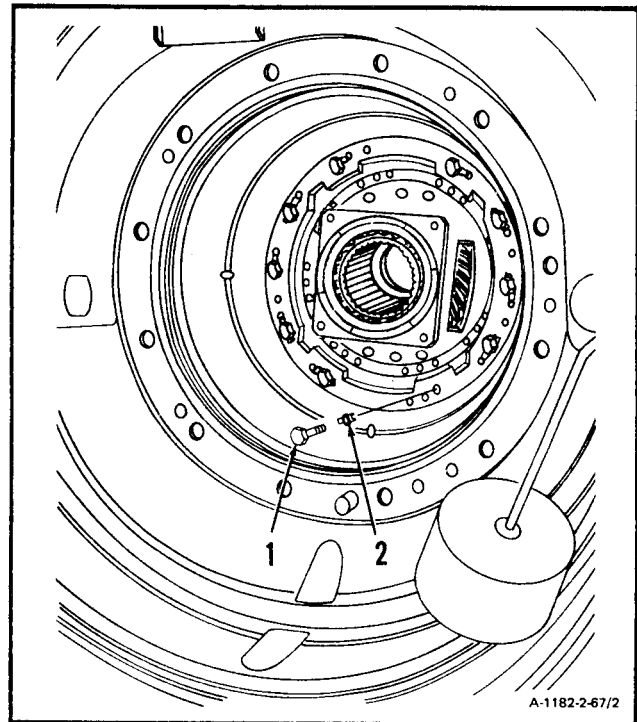
**WARNING**

Lubricating oils (E32 and E33) cause paralysis if swallowed. Prolonged contact with them may irritate the skin. Handle only in well-ventilated areas away from heat and flame. Drain and store in approved metal safety containers. Avoid prolonged or repeated contact with skin and do not take internally. Wash contacted areas of skin thoroughly after handling. If irritation of skin results, get medical attention. Get medical attention for eyes.

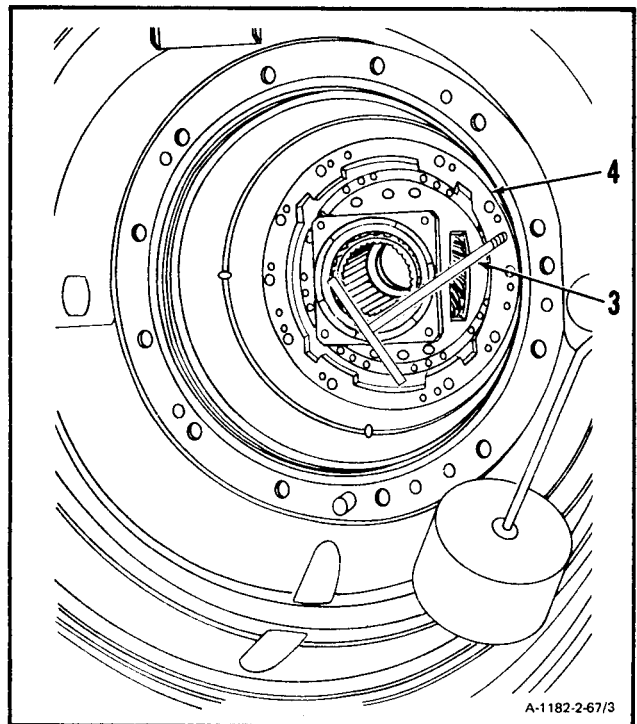


**GO TO NEXT PAGE**

1. Remove ten bolts (1) and key washers (2).



2. Thread first handling tool (T16) (3) into No. 3 bearing support (4) threaded hole at 2-o'clock position.



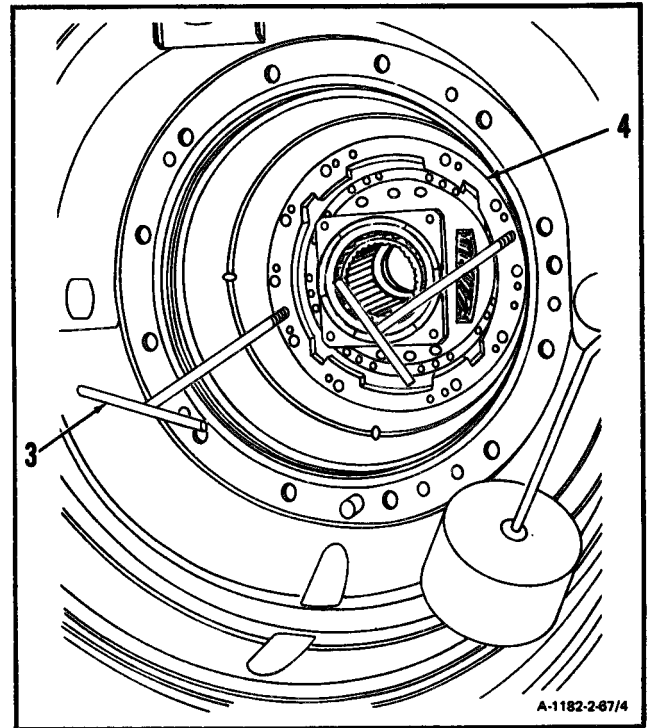
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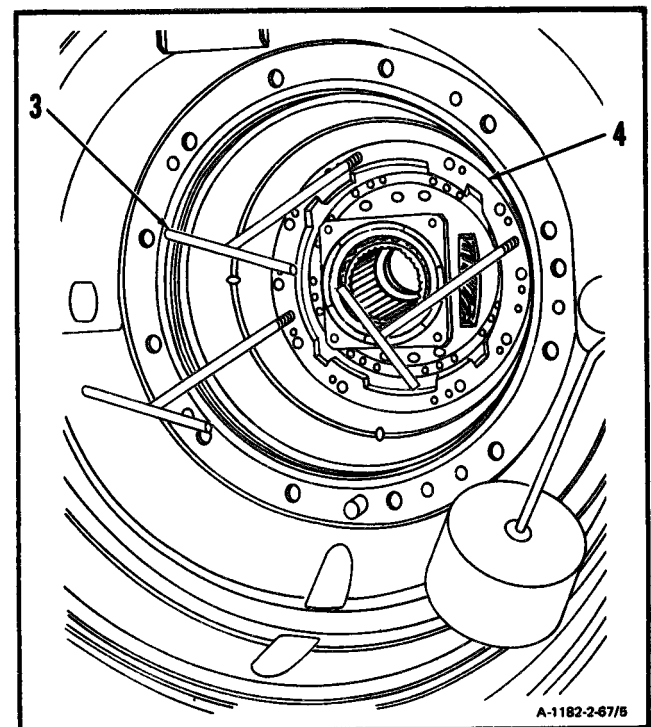
## 2-67 REMOVE NO. 3 BEARING PACKAGE (AVIM) (Continued)

2-67

3. Thread second handling tool (T16) (3) into No. 3 bearing support (4) threaded hole at 8-o'clock position.



4. Thread third handling tool (T16) (3) into No. 3 bearing support (4) threaded hole at 11-o'clock position.

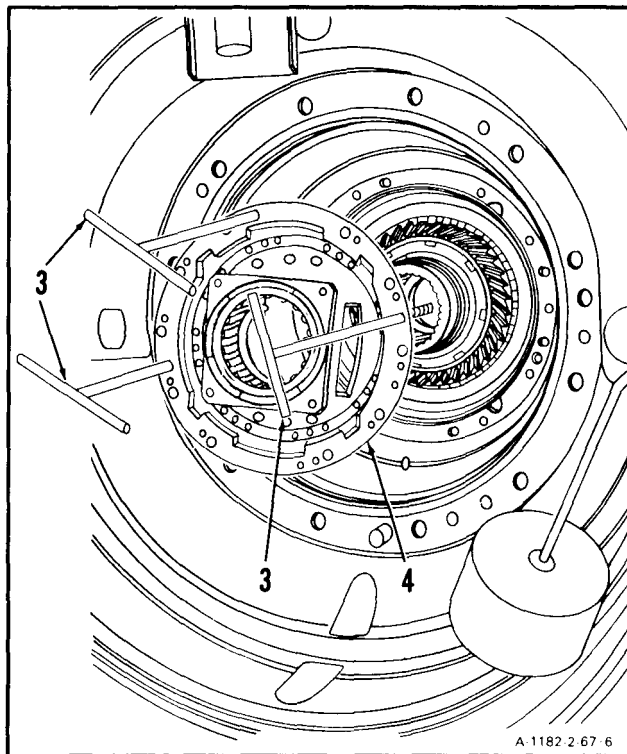


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**CAUTION**

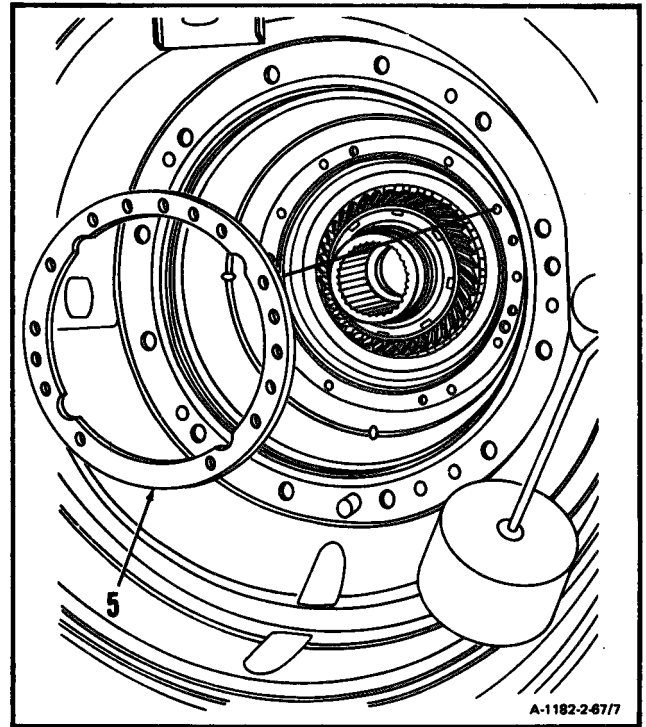
No. 3 bearing support contains the inter-shaft seal with multiple carbon seal elements. Use care during removal procedure to prevent damaging the seal elements.

5. Remove No. 3 bearing support (4) using handling tools (T16) (3). Remove three handling tools.



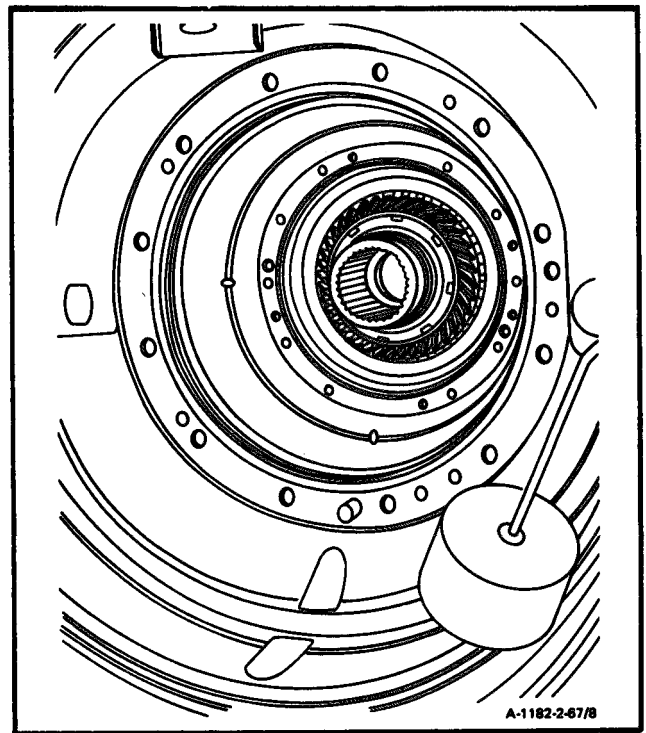
**GO TO NEXT PAGE**

6. Remove shim (5).



FOLLOW-ON MAINTENANCE:

None



END OF TASK

**INITIAL SETUP****Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Sleeve Bushing (Appendix E)  
Removal Tool (Appendix E)  
Arbor Press

**Materials:**

Lint-Free Cloth (E26)

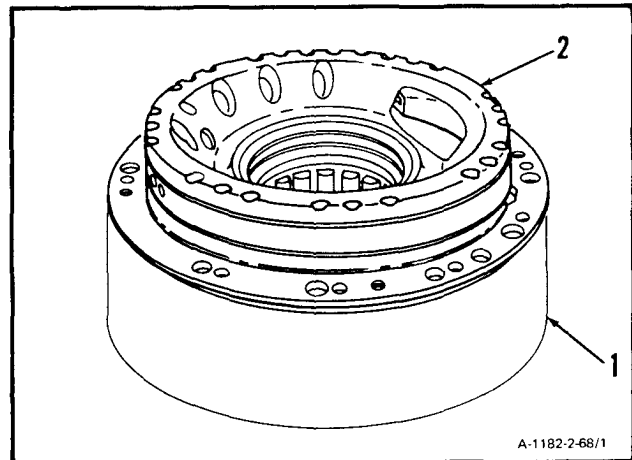
**Personnel Required:**

68B10 Aircraft Powerplant Repairer

**Equipment Condition:**

Engine Oil System Drained (Task 1-75)  
Fuel Boost Pump Removed (Task 6-9)  
Starter Drive Assembly Removed (Task 5-12)  
Output Shaft Seal and Housing Removed  
(Task 2-48)  
Output Shaft Removed (Task 9-6)  
Inlet Housing Cover Assembly Removed  
(Task 2-53)  
Tube Assembly Removed (Inlet Housing to  
Main Oil Pump) (Task 8-50)  
Overspeed Drive and Outlet Cover Assembly  
Removed (Task 5-17)  
Output Shaft Support Housing Removed  
(Task 2-58)  
Torquemeter Junction Box Removed (Task 9-1)  
Torquemeter Head Assembly Removed (Task 9-11)  
Accessory Gear Assembly Removed (Task 5-8)  
No. 3 Bearing Package Removed (Task 2-67)

1. Place sleeve bushing (Appendix E) (1) on a suitable work bench.
2. Place No. 3 bearing support housing (2.) on sleeve bushing (Appendix E) (1).

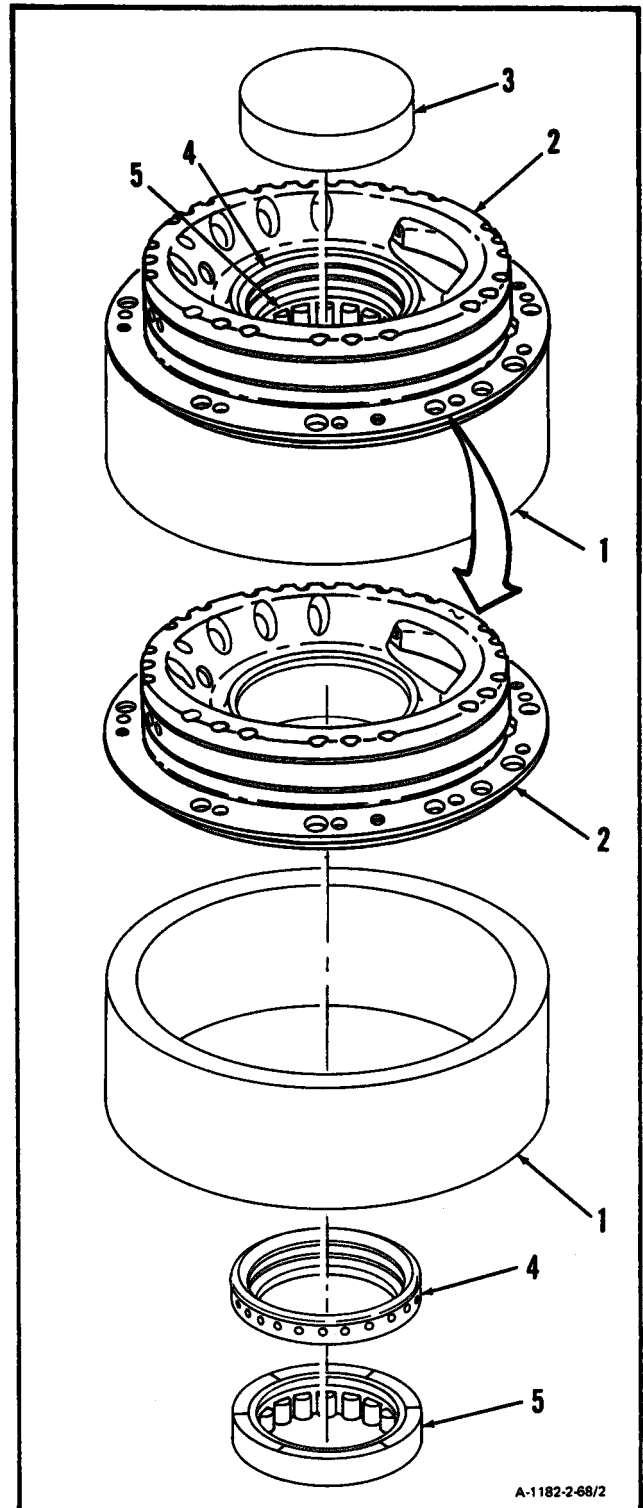
**GO TO NEXT PAGE**

3. Place removal tool (Appendix E) (3) on seal (4). Press seal (4) and bearing (5) out of No. 3 bearing support housing (2).

**CAUTION**

Protect bearings from damage. Handle only in clean area. Use clean, lint-free cloth (E26). Damaged bearings can cause engine failure.

4. Remove No. 3 bearing support housing (2) from sleeve bushing (Appendix E) (1).



**FOLLOW-ON MAINTENANCE:**

None

**END OF TASK**

**INITIAL SETUP****Applicable Configuration:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944

Goggles

Compressed Air Source

Fiber Brush

**Materials:**

Dry Cleaning Solvent (E17)

Gloves (E20)

Lint-Free Cloth (E26)

Lubricating Oil (E32)

**Personnel Required:**

68B10 Aircraft Powerplant Repairer

**Equipment Condition:**

Engine Oil System Drained (Task 1-75)

Fuel Boost Pump Assembly Removed (Task 6-9)

Starter Drive Assembly Removed (Task 5-12)

Output Shaft Seal and Housing Assembly  
Removed (Task 2-48)

Output Shaft Removed (Task 9-6)

Inlet Housing Cover Assembly Removed  
(Task 2-53)Tube Assembly Removed (Inlet Housing to  
Main Oil Pump (Task 8-50)Overspeed Drive and Outlet Cover  
Assembly Removed (Task 5-1 7)Output Shaft Support Housing Removed  
(Task 2-58)

Torquemeter Junction Box Removed (Task 9-1)

Torquemeter Head Assembly Removed (Task 9-11)

Accessory Gear Assembly Removed (Task 5-8)

No. 3 Bearing Package Removed (Task 2-67)

No. 3 Bearing Package Disassembled (Task 2-68)

**General Safety Instructions:****WARNING**

Dry cleaning solvent (E17) is flammable and toxic. It can irritate skin and cause burns. Use only in well-ventilated area, away from heat and open flame. In case of contact, immediately flush skin or eyes with water for at least 15 minutes. Get medical attention for eyes.

**WARNING**

When using compressed air for cleaning, use approved protective equipment for eyes and face. Do not use more than 30 psig air pressure. Do not direct air toward yourself or another person. Failure to comply could result in injury to eyes or skin. In case of injury, get medical attention.

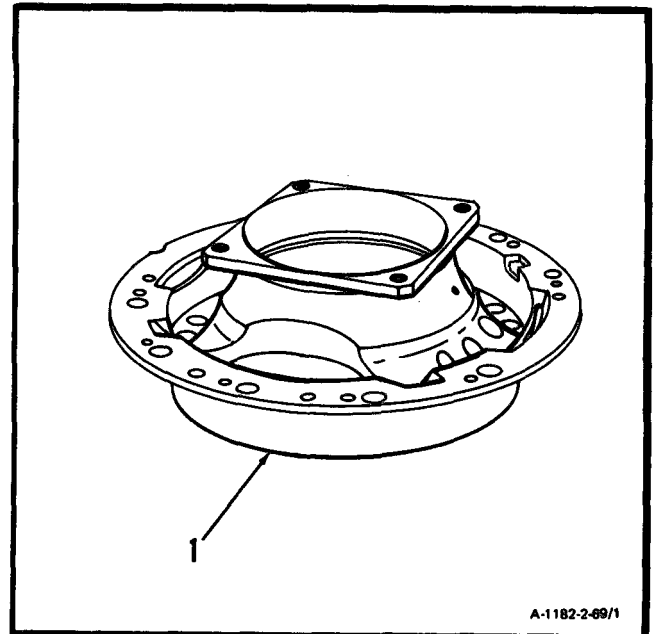
**GO TO NEXT PAGE**

1. Clean No. 3 bearing support (1) as follows:

- a. Wear gloves (E20). Immerse No. 3 bearing support (1) in dry cleaning solvent (E17).
- b. Remove contaminants by scrubbing with a fiber brush.
- c. Wear goggles. Blow dry support (1) using clean, dry compressed air.

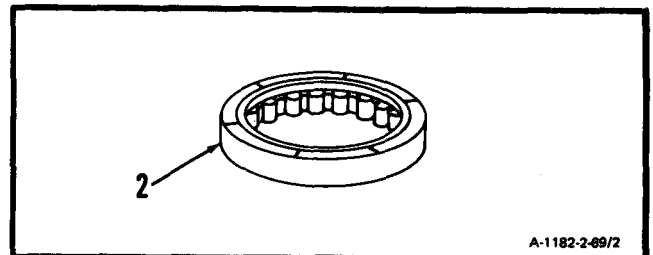
**CAUTION**

Protect bearings from damage. Handle only in clean area. Use clean, lint-free cloth (E26). Damaged bearings can cause engine failure.



2. Clean bearing (2).

- a. Immerse bearing (2) in clean dry-cleaning solvent (E17) and agitate. Rinse in clean dry-cleaning solvent (E17).
- b. Wipe dry. Use clean, dry lint-free cloth (E26).
- c. Blow **dry**. Use clean, dry compressed air.



**WARNING**

Lubricating oils (E32 and E33) cause paralysis if swallowed. Prolonged contact with them may irritate the skin. Handle only in well-ventilated areas away from heat and flame. Drain and store in approved metal safety containers. Avoid prolonged or repeated contact with skin and do not take internally. Wash contacted areas of skin thoroughly after handling. If irritation of skin results, get medical attention. Get medical attention for eyes.

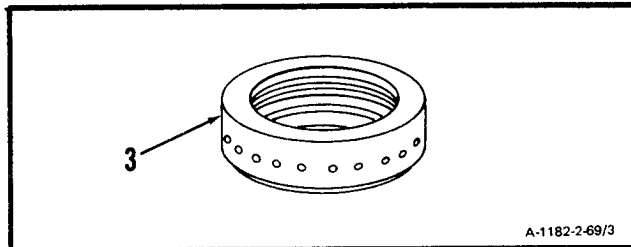
- d. Coat bearing (2) with lubricating oil (E32) and wrap in clean, lint-free cloth (E26).

**CAUTION**

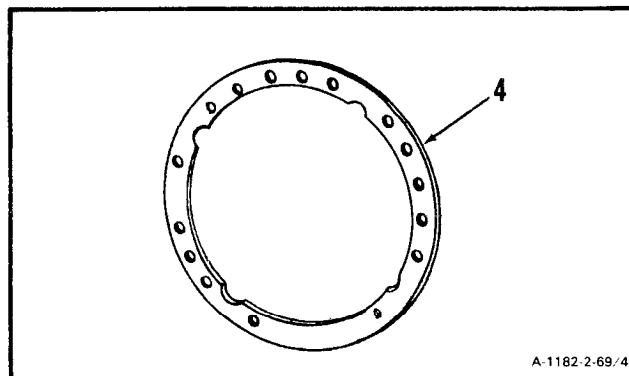
Protect seals from damage. Handle only in clean area. Use clean, lint-free cloth (E26). Damaged seals can cause engine failure.

**3. Clean seal (3).**

- a. **Immerse seal (3) in dry-cleaning solvent (E17)** and agitate. Rinse in clean dry-cleaning solvent (E17).
- b. Wipe dry. Use clean, dry lint-free cloth (E26).
- c. **Blow dry seal (3).** Use clean, dry compressed air.
- d. Wrap in clean, lint-free cloth (E26).

**4. Clean shim (4).**

- a. Wear gloves (E20). **Immerse shim in dry-cleaning solvent (E17) and agitate.** Rinse in dry-cleaning solvent.
- b. Wipe dry. Use clean, dry lint-free cloth (E26).

**FOLLOW-ON MAINTENANCE:**

Inspect No. 3 Bearing Package (Task 2-70)

**END OF TASK**



## 2-70 INSPECT NO. 3 BEARING PACKAGE (AVIM)

2-70

**INITIAL SETUP****Applicable Configurations:**

All

**Tools:**Technical Inspection Tool Kit,  
NSN 5180-00-323-5114**Materials:**

None

**Personnel Required:**

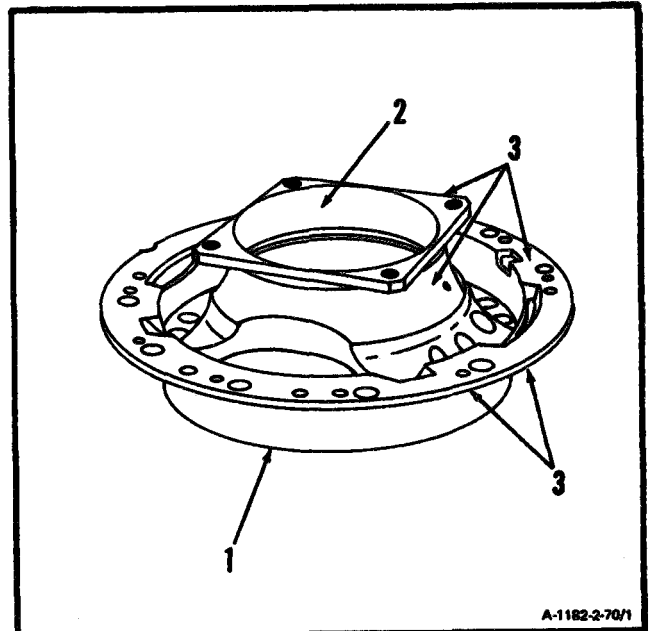
68B30 Aircraft Powerplant Inspector

**Equipment Condition:**

Off Engine Task

**1. Inspect bearing support (1) as follows:**

- a. There shall be no cracks.
- b. There shall be no scoring deeper than 0.010 inch in bore (2).
- c. There shall be no nicks or scratches deeper than 0.020 inch on remainder of housing (3).



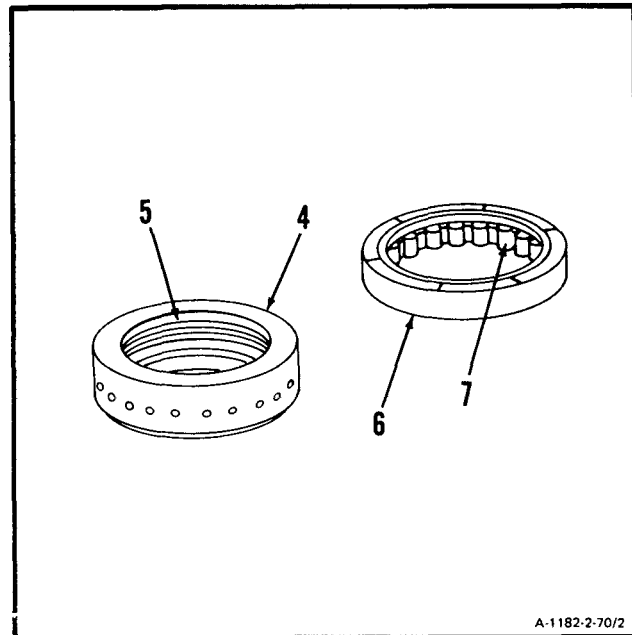
A-1182-2-70/1

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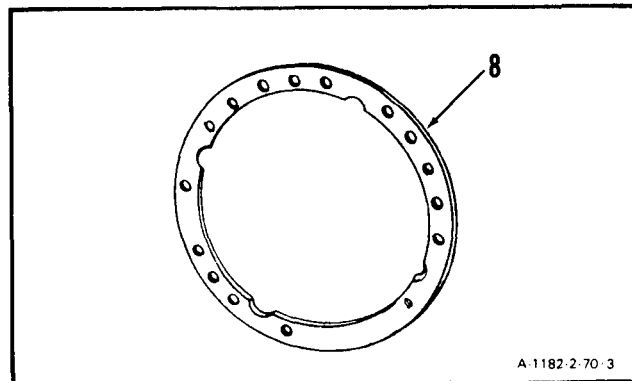
**2. Inspect seal (4).** There shall be no chipping or scoring of carbon elements (5).

**3. Inspect bearing (6)** as follows:

- a. There shall be no rust or broken parts.
- b. There shall be no pitting or spalling on the rolling surfaces (7) deeper than 0.002 inch.
- c. There shall be no foreign matter clogging the bearing which would obstruct free rotation.
- d. There shall be no purple, red-purple or blue discoloration.



**4. Inspect shim (8).** There shall be no cracks.



FOLLOW-ON MAINTENANCE:

None

**END OF TASK**

## 2-71 ASSEMBLE NO. 3 BEARING PACKAGE (AVIM)

2-71

## INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-3234944  
Technical Inspection Tool Kit,  
NSN 5180-00-323-5114  
Sleeve Bushing (Appendix E)  
Installation Tool (Appendix E)  
Arbor Press

**Materials:**

Lint-Free Cloth (E26)

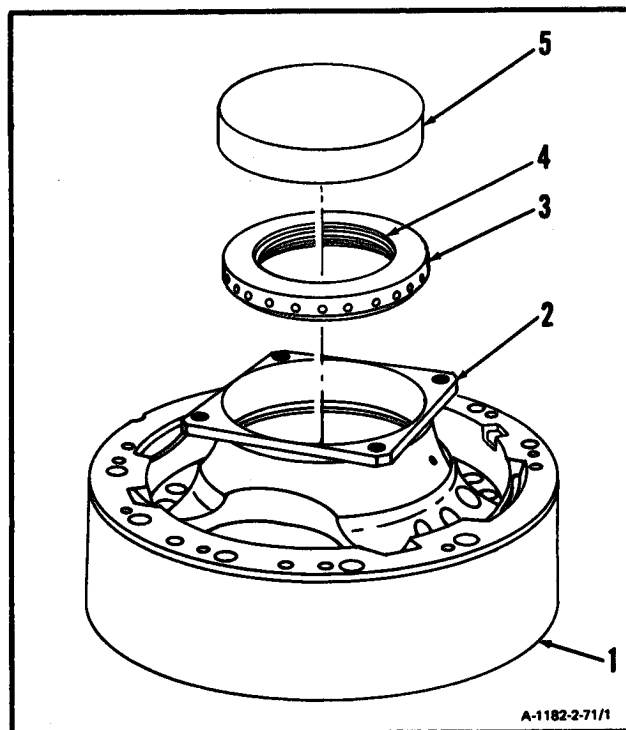
**Personnel Required:**

68B10 Aircraft Powerplant Repairer  
68B30 Aircraft Powerplant Inspector

**Equipment Condition:**

Off Engine Task

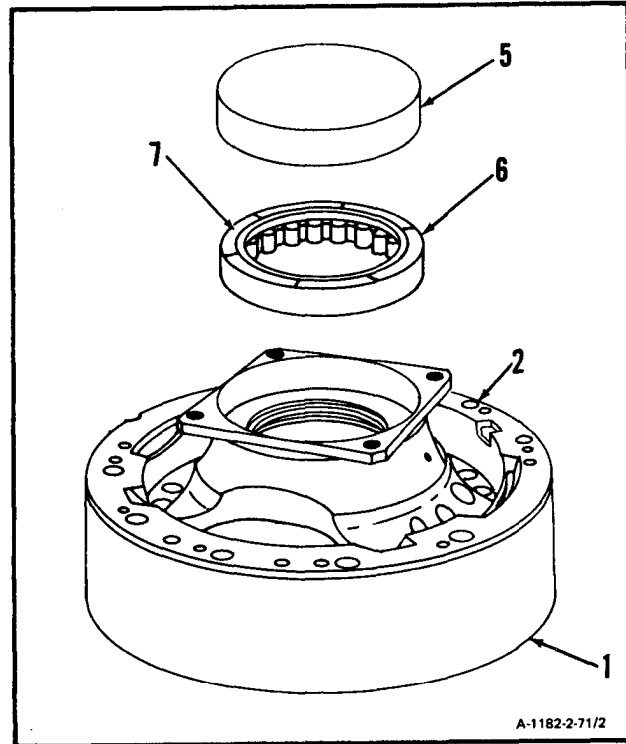
1. Place sleeve bushing (Appendix E) (1) on a suitable work bench.
2. Place No. 3 bearing support housing (2) on sleeve bushing (Appendix E) (1).
3. Place seal (3) on No. 3 bearing support housing (2) with small inside diameter (4) facing up.
4. Place installation tool (Appendix E) (5) on seal (3). **Press seal into No. 3 bearing support housing (2).**

**GO TO NEXT PAGE**

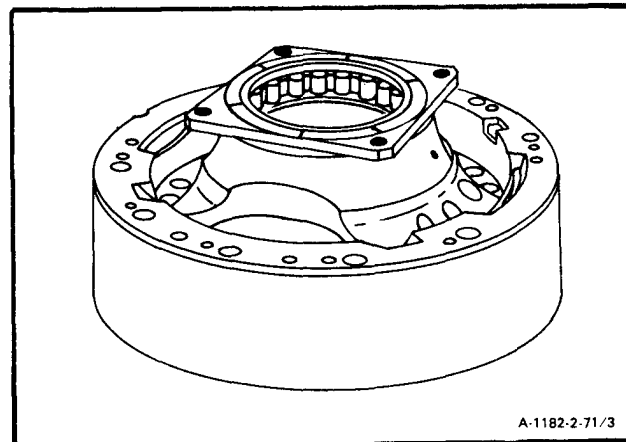
**CAUTION**

Protect bearings from damage. Handle only in clean area. Use clean, lint-free cloth (E26). Damaged bearings can cause engine failure.

5. Place bearing (6) on No. 3 bearing support housing (2) with part number (7) facing up.
6. Place installation tool (Appendix E) (5) on bearing (6). **Press bearing (6) into bearing support housing (2)** until bearing (6) is seated.

**INSPECT****FOLLOW-ON MAINTENANCE:**

None

**END OF TASK**

## 2-72 INSTALL NO. 3 BEARING PACKAGE (AVIM)

2-72

**INITIAL SETUP****Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Technical Inspection Tool Kit,  
NSN 5180-00-323-5114  
Alignment Pin (T2) (2)  
Phenolic Drift (Appendix E)  
Micrometer Depth Gage  
Outside Micrometer Caliper Set  
Slave Bolt (MS9490-16) (2)  
Slave Washer (AN960C416L) (2)  
Rawhide Mallet

**Materials:**

Shortening Compound (E46)

**Parts:**

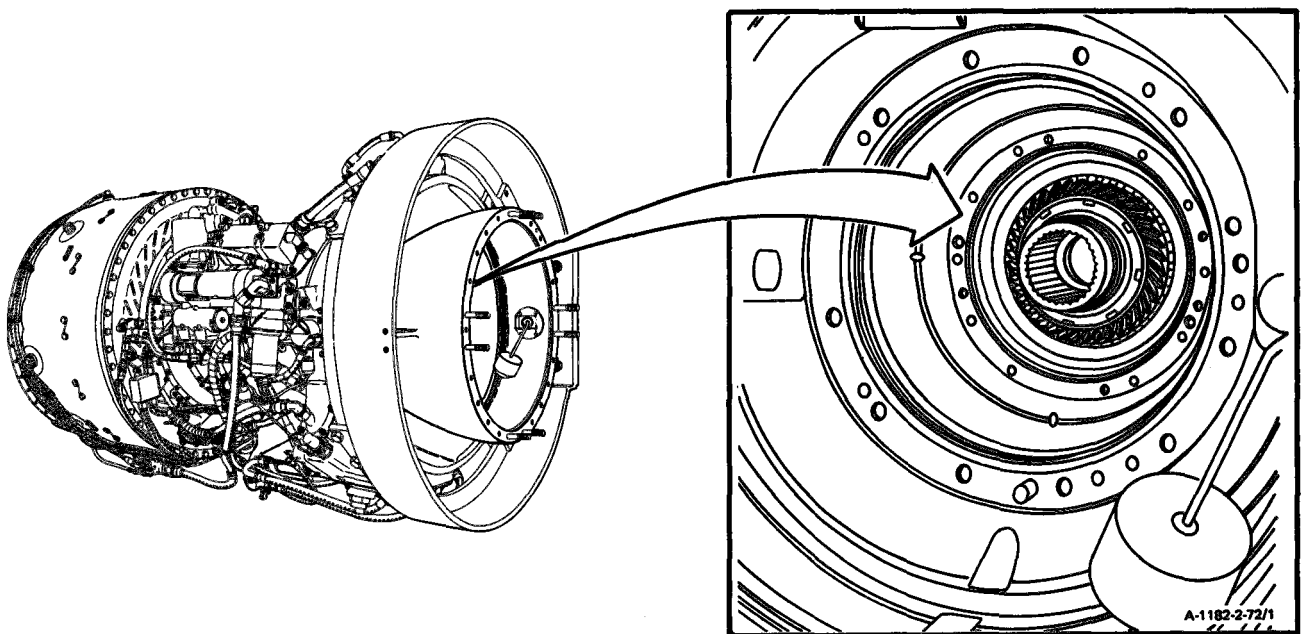
Shim  
Key Washers

**Personnel Required:**

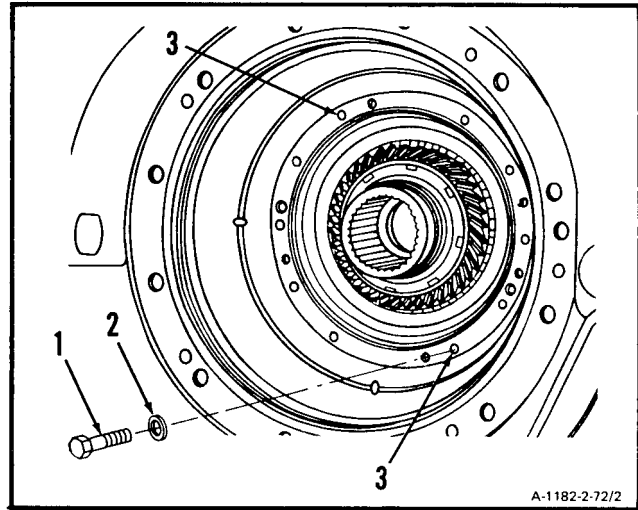
68B10 Aircraft Powerplant Repairer  
68B30 Aircraft Powerplant Inspector

**References:**

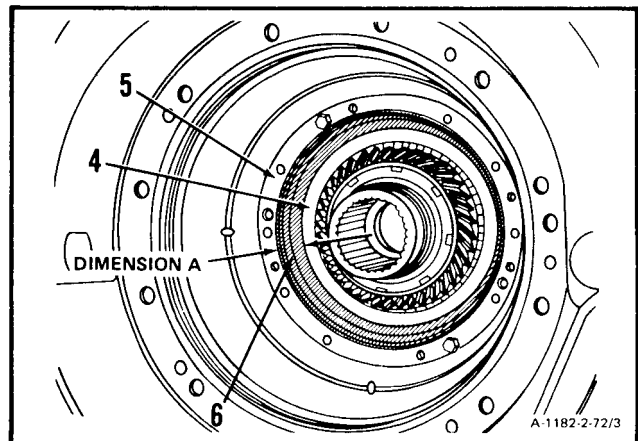
TM 55-2840-254-23P

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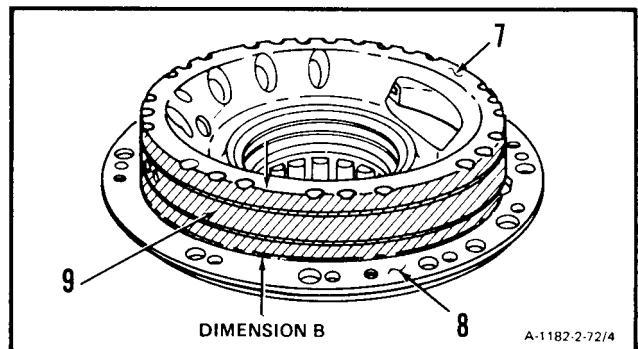
1. Temporarily install two slave bolts (1) and two slave washers (2) in holes (3) at 5-o'clock and 11-o'clock positions.



2. Push No. 1 bearing outer race (4) aft. Measure from inner bolt circle mounting flange surface of inlet housing (5) to No. 1 bearing outer race (4). Record as Dimension A (6).



3. Measure from aft rim surface of No. 3 bearing support housing (7) to No. 3 bearing support housing flange mounting surface (8). Record as Dimension B (9).



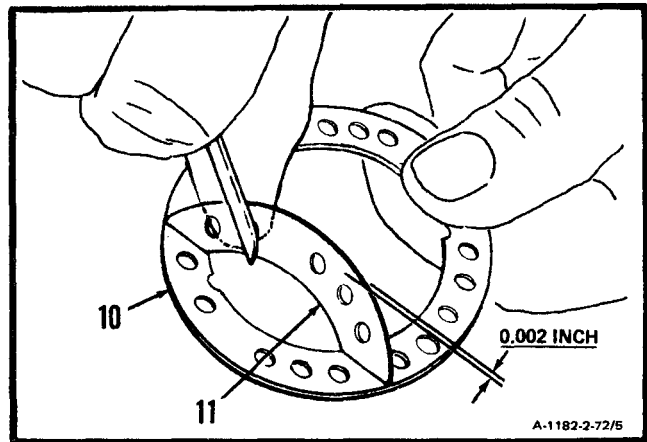
4. Subtract Dimension A measurement recorded in step 2 from Dimension B measurement recorded in step 3. Record result.
5. Find result recorded in step 4. in shim selection table and read across to determine shim thickness you will need.

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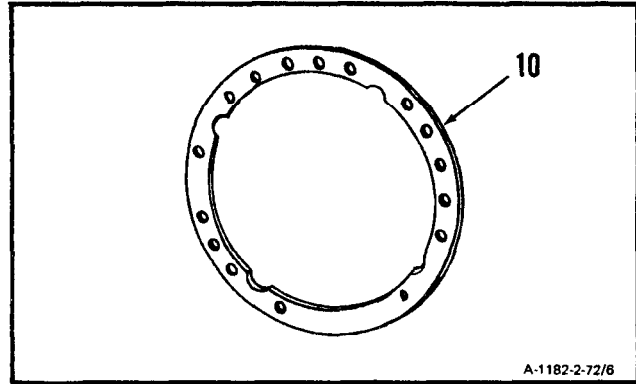
SHIM SELECTION TABLE	
IF RESULT IS (INCHES)	SHIM THICKNESS NEEDED (INCHES)
0.005	NONE
0.006	NONE
0.007	0.002
0.008	0.002
0.009	0.004
0.010	0.004
0.011	0.006
0.012	0.006
0.013	0.008
0.014	0.008
0.015	0.010
0.016	0.010
0.017	0.012
0.018	0.012
0.019	0.014
0.020	0.014
0.021	0.016
0.022	0.016
0.023	0.018
0.024	0.018
0.025	0.020
0.026	0.020
0.027	0.022
0.028	0.022
0.029	0.024
0.030	0.024
0.031	0.026
0.032	0.026
0.033	0.028
0.034	0.028
0.035	0.030
0.036	0.030
0.037	0.032
0.038	0.032

**GO TO NEXT PAGE**

6. Prepare shim (10). Peel off layers (11) as required.



7. Measure thickness of shim (10) with outside micrometer caliper, and check against shim selection table.



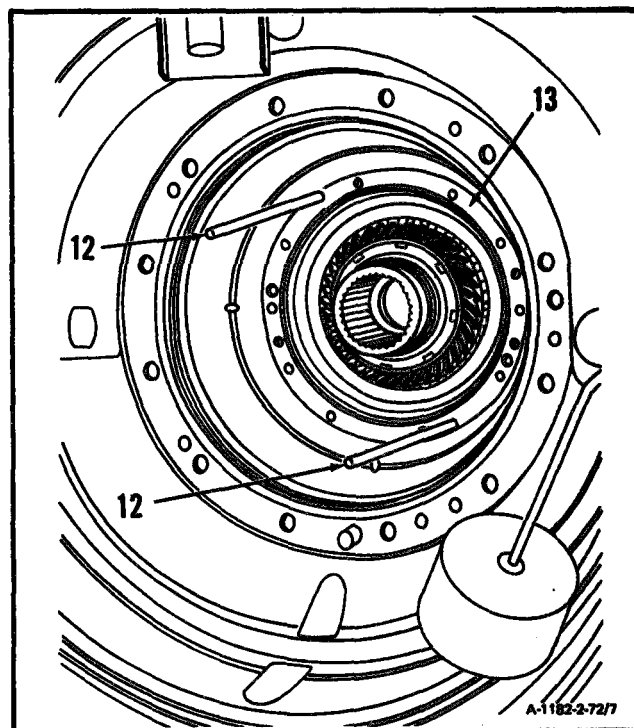
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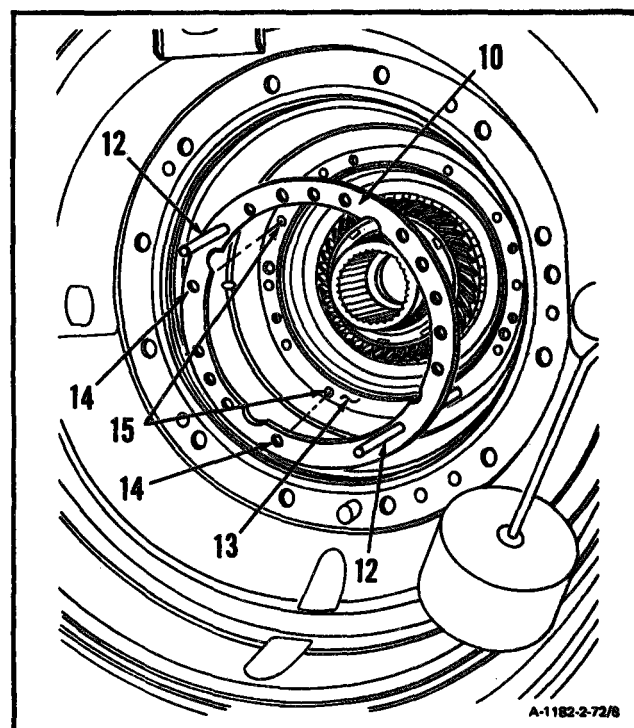
## 2-72 INSTALL NO. 3 BEARING PACKAGE (AVIM) (Continued)

2-72

8. Remove two slave bolts and washers.
9. **Install first alignment pin (T2) (12)** into bolt hole through inlet housing inner flange (13) and compressor rotor front bearing housing at the 11-o'clock position.
10. **Install second alignment pin (T2) (12)** at the 5-o'clock position.

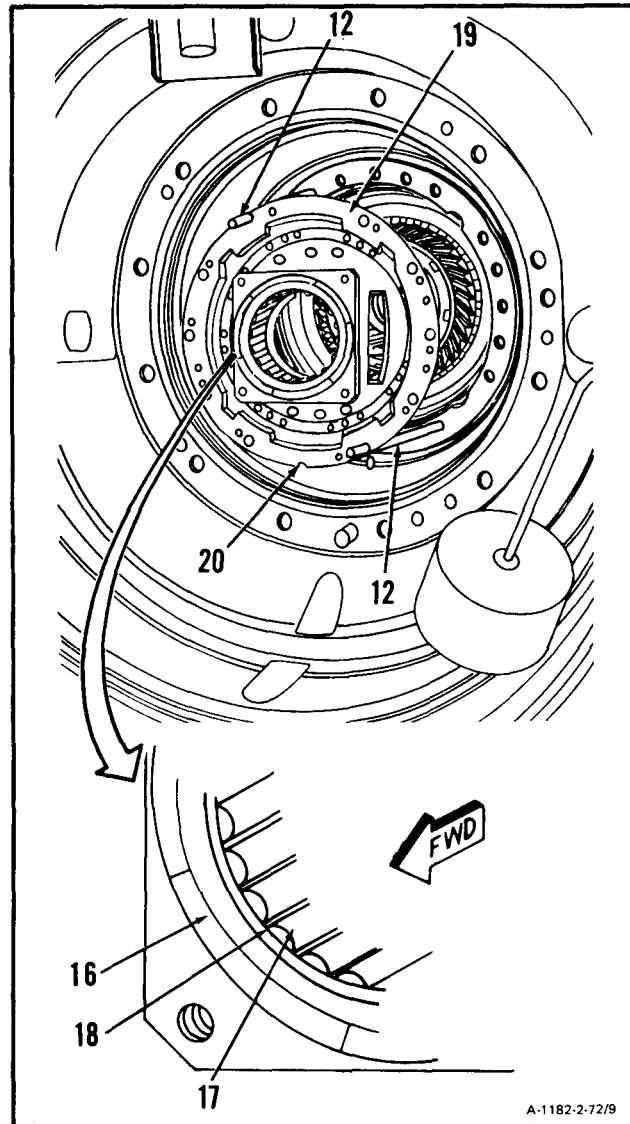


11. Position shim (10) with two widely spaced holes (14) at 7-o'clock and 10-o'clock location. Align holes (14) with two widely spaced holes (15) on inlet housing inner flange (13).
12. **Install shim (10)** over alignment pins (T2) (12).



**GO TO NEXT PAGE**

13. Pack bearing (16) with shortening compound (E46) and press rollers (17) forward into retainer (18).
14. **Position No. 3 bearing package (19)** over alignment pins (T2) (12). Make sure that notch (20) is at the 6-o'clock position.

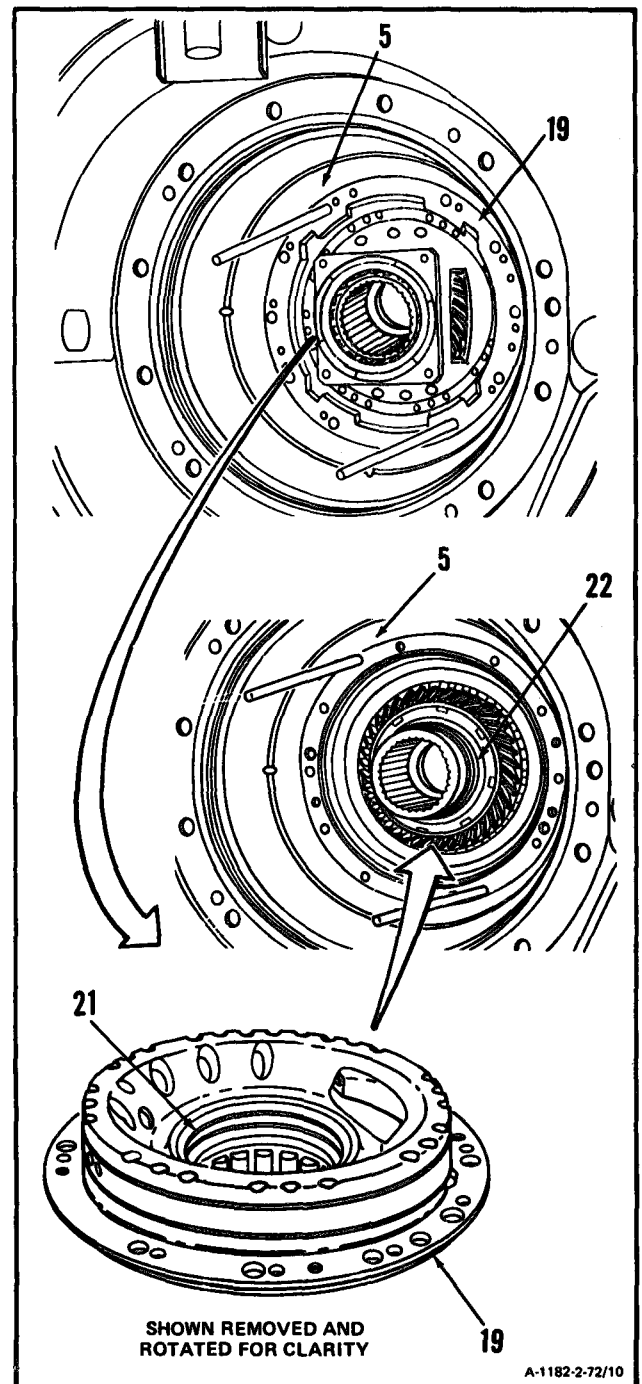


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**CAUTION**

In following step 15., be sure bearing rollers are recessed into retainer before installing bearing package. Bearing could easily be damaged. This would cause engine failure.

15. Install No. 3 bearing package (19) into inlet housing (5) until aft carbon seal (21) is seated on compressor shaft (22).

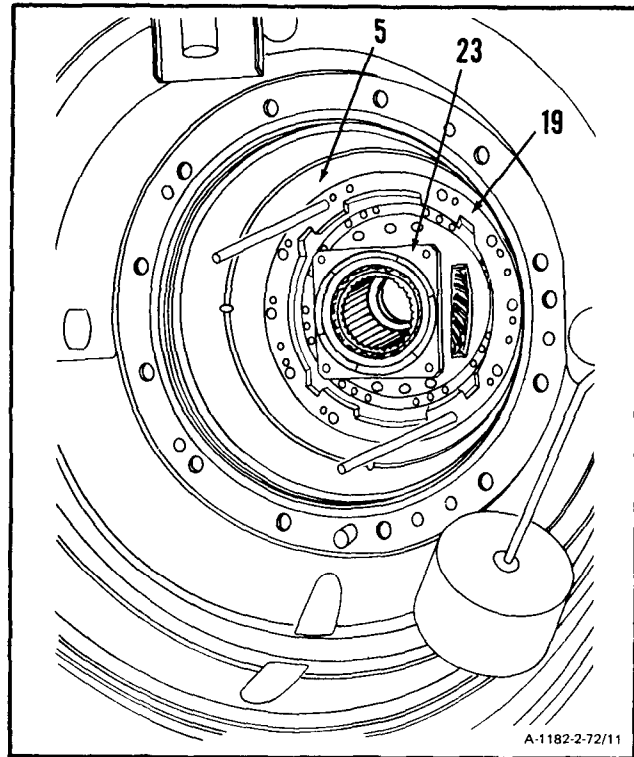


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**CAUTION**

In following step 16. to prevent damage to carbon seals, tap No. 3 bearing support lightly. Do not cock No. 3 bearing support while tapping. Carbon elements could easily be broken. This would result in oil leakage and damage to engine.

16. Using a rawhide mallet and a phenolic drift (Appendix E), **carefully tap No. 3 bearing package (19) on square flange (23)** to seat against inlet housing (5).

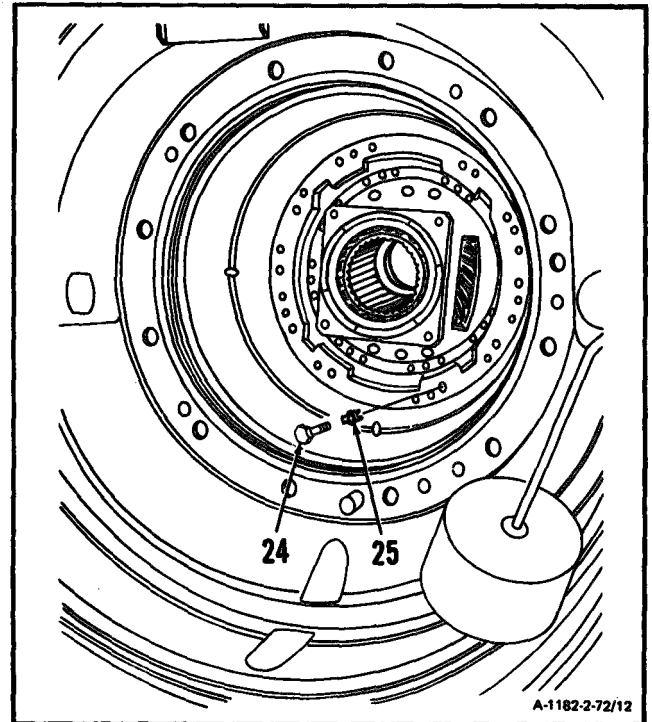


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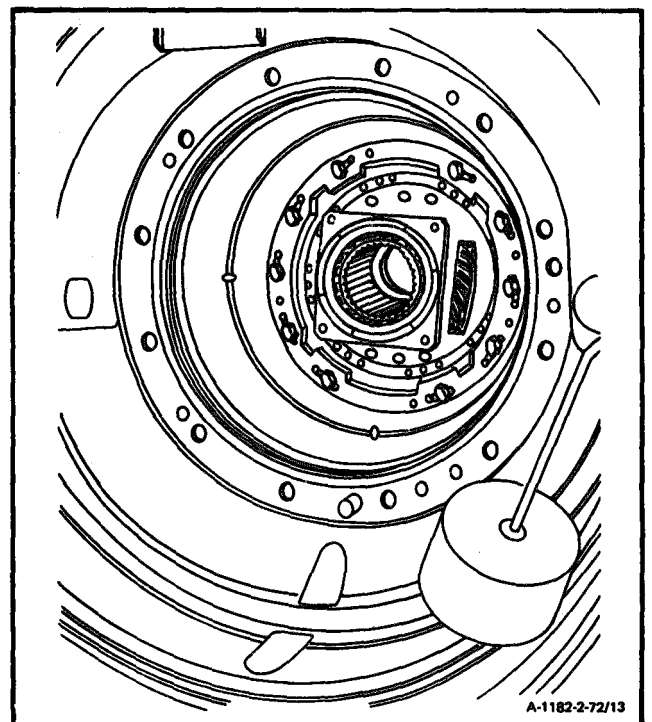
## 2-72 INSTALL NO. 3 BEARING PACKAGE (AVIM) (Continued)

2-72

17. Remove alignment pins (T2).
18. **Install ten bolts (24) and key washers (25) in mounting holes of No. 3 bearing support.**
19. Tighten bolts (24) in opposite pairs. Lock bolts (24) by bending tabs of key washers (25).

**INSPECT****FOLLOW-ON MAINTENANCE:**

- Install Accessory Gear Assembly (Task 5-11)
- Install Torquemeter Head Assembly (Task 9-14).
- Install Torquemeter Junction Box (Task 9-5).
- Install Output Shaft Support Housing (Task 2-63).
- Install Overspeed Drive and Outlet Cover Assembly (Task 5-23).
- Install Tube Assembly (Inlet Housing to Main Oil Pump) (Task 8-51)
- Install Inlet Housing Cover Assembly (Task 2-57).
- Install Output Shaft (Task 9-10).
- Install Output Shaft Seal and Housing Assembly (Task 2-52).
- Install Starter Drive Assembly (Task 5-16).
- Install Fuel Boost Pump Assembly (Task 6-13).
- Service Engine Oil System (Task 1-74).

**END OF TASK**



Section XIV. AIR LINES - MAINTENANCE PROCEDURES

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2-73 REMOVE HOSE ASSEMBLY (INTERSTAGE AIR-BLEED ACTUATOR TO FUEL CONTROL)

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2-73

INITIAL SETUP

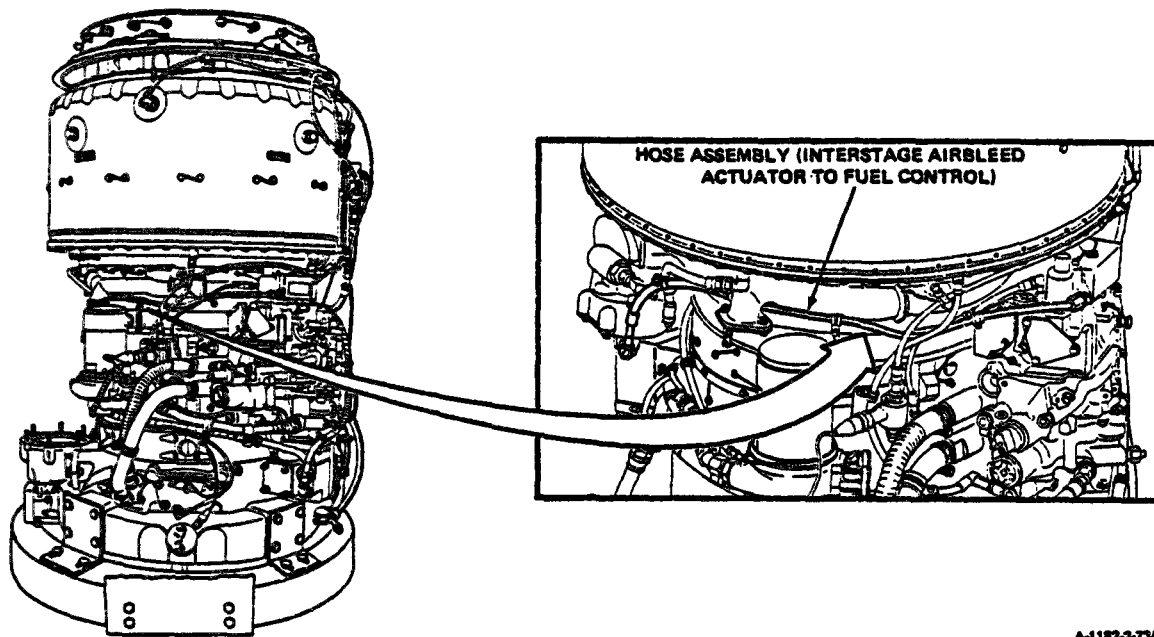
**Materials:**  
None

**Applicable Configurations:**  
All

**Personnel Required:**  
68B10 Aircraft Powerplant

**Tools:**  
Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944

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4 x 2

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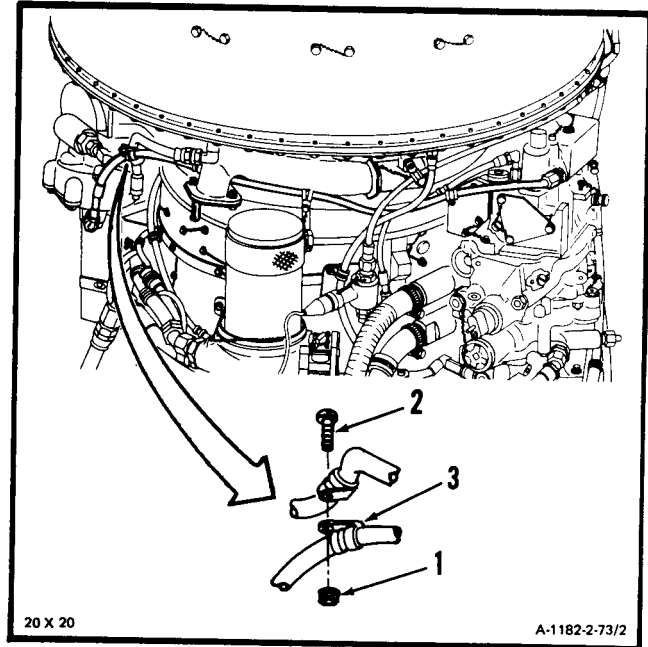
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2-73 REMOVE HOSE ASSEMBLY (INTERSTAGE AIR-BLEED ACTUATOR TO FUEL CONTROL) (Continued)

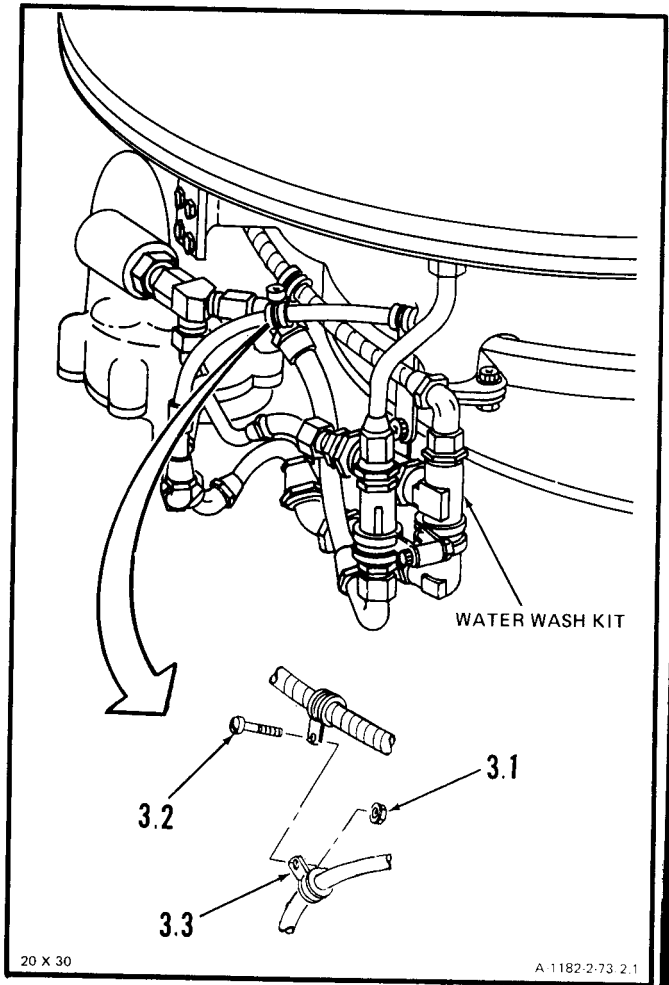
NOTE

For hose assembly without water wash kit P/N 2-200-271-54 installed perform step 1. and omit step 1.1. For hose assembly with water wash kit installed omit step 1. and perform step 1.1.

1. Remove nut (1), screw (2), and clamp (3).



1.1. Remove nut (3.1), screw (3.2) and clamp (3.3).



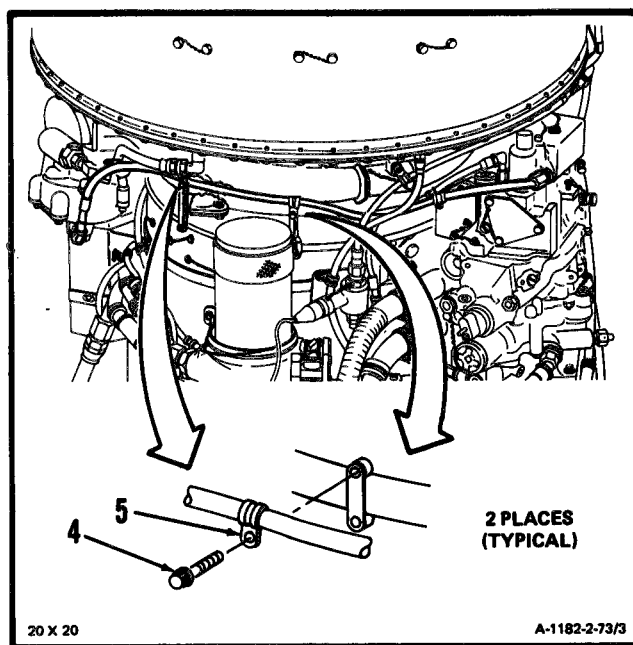
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**2-73 REMOVE HOSE ASSEMBLY (INTERSTAGE AIR-BLEED ACTUATOR TO FUEL CONTROL (Continued)**

2-73

2. Remove lockwire, two bolts (4), and clamps (5).



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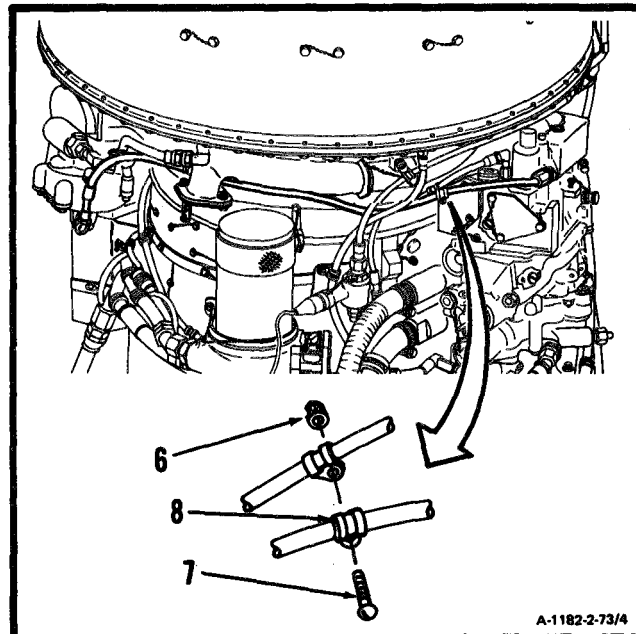
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 2-73 REMOVE HOSE ASSEMBLY (INTERSTAGE AIR-BLEED ACTUATOR TO FUEL CONTROL) (Continued)
 

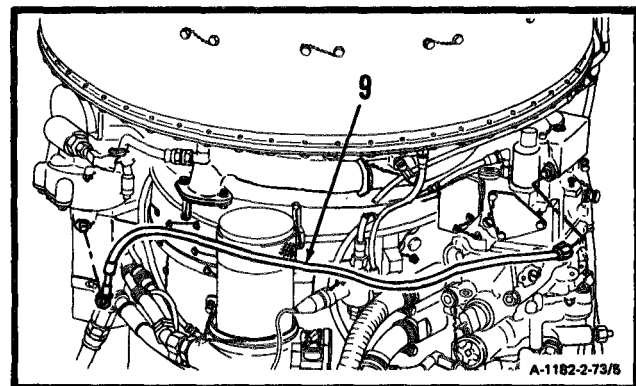
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2-73

3. Remove nut (6), screw (7), and clamp (8).

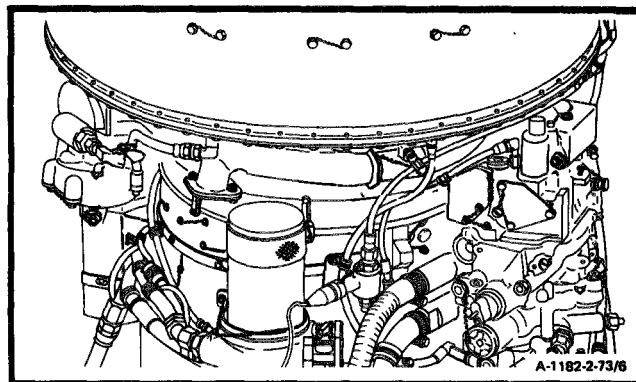


4. Disconnect and remove hose assembly (9).



FOLLOW-ON MAINTENANCE:

None



END OF TASK

---

2-74 INSTALL HOSE ASSEMBLY (INTERSTAGE AIR-BLEED ACTUATOR TO FUEL CONTROL)

---

2-74

INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944

Technical Inspection Tool Kit,  
NSN 5180-00-323-5114

**Materials:**

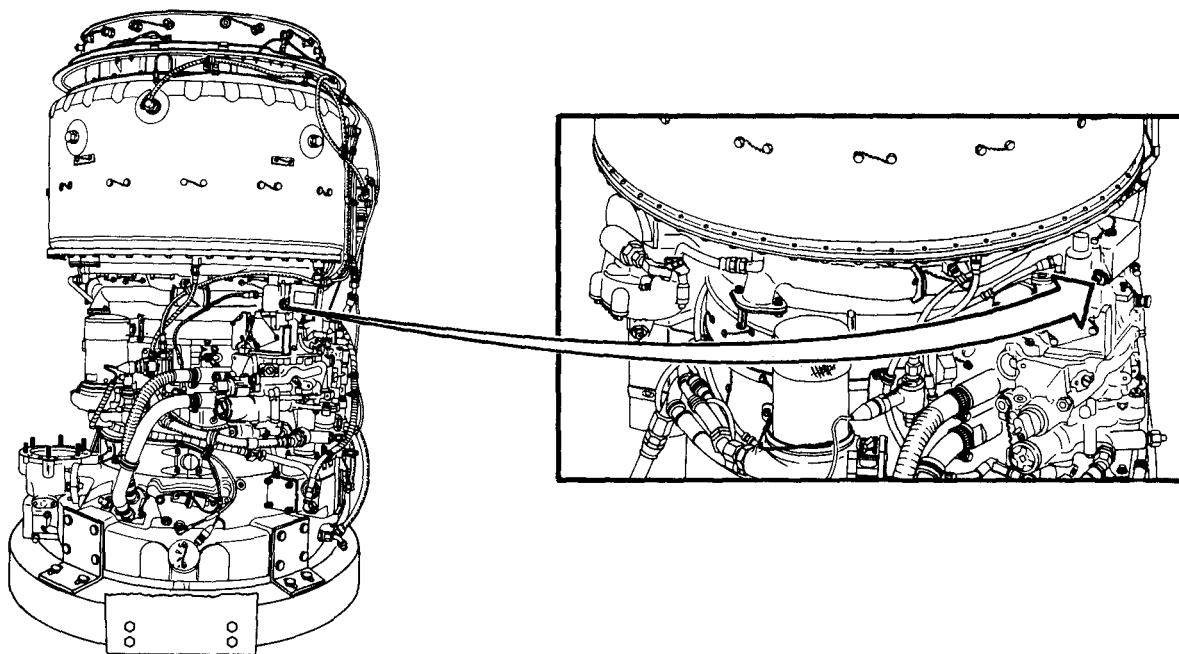
Lockwire (E29)

**Personnel Required:**

68B10 Aircraft Powerplant Repairer

68B30 Aircraft Powerplant Inspector

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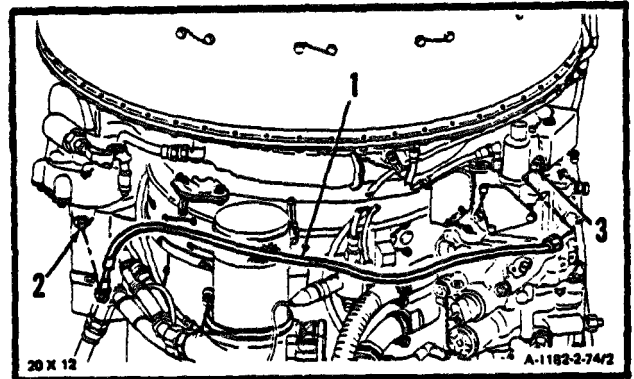
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**2-74 INSTALL HOSE ASSEMBLY (INTERSTAGE AIR-BLEED ACTUATOR TO FUEL CONTROL) (Continued)**

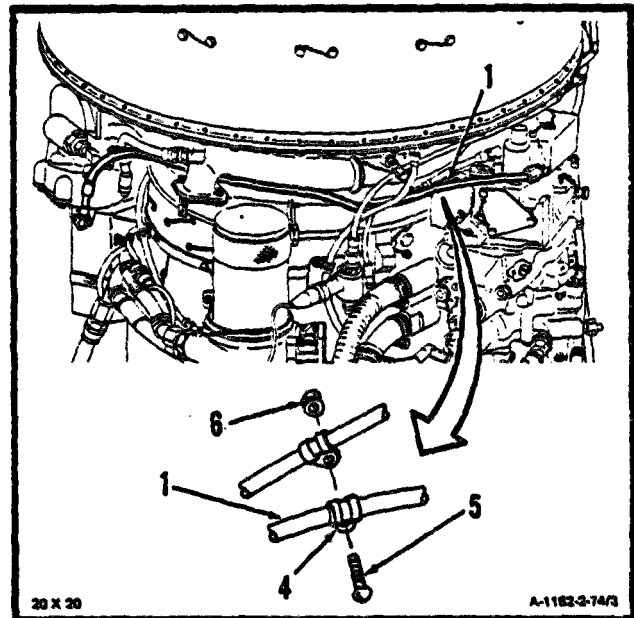
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2-74

1. Install hose assembly (1) on nipples (2 and 3).



2. Install clamp (4) on hose assembly (1), and install screw (5) and nut (6).

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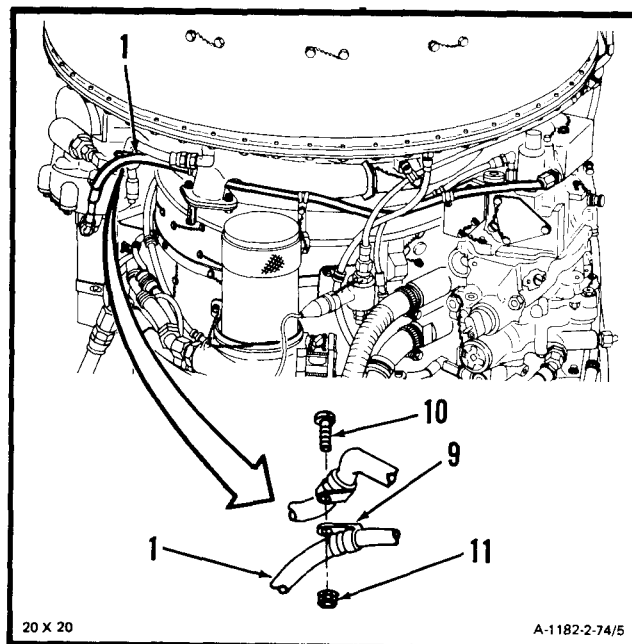
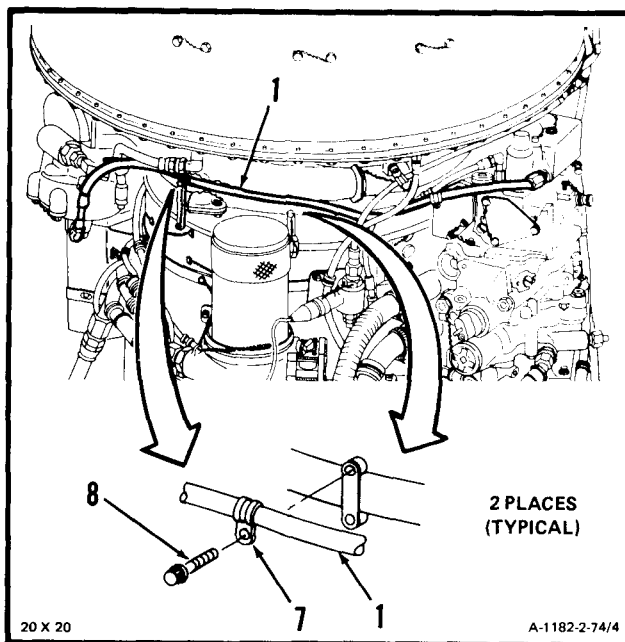
2-74 INSTALL HOSE ASSEMBLY (INTERSTAGE AIR-BLEED ACTUATOR TO FUEL CONTROL) (Continued)

3. **Install two clamps (7)** on hose assembly (1), and install two bolts (8). Lockwire bolts (8). Use lockwire (E29).

**NOTE**

For hose assembly without water wash kit P/N 2-200-371-54 perform step 4. and omit step 5.  
 For hose assembly with water wash kit installed omit step 4. and perform step 5.

4. **Install clamp (9)** on hose assembly (1), and install screw (10) and nut (11).

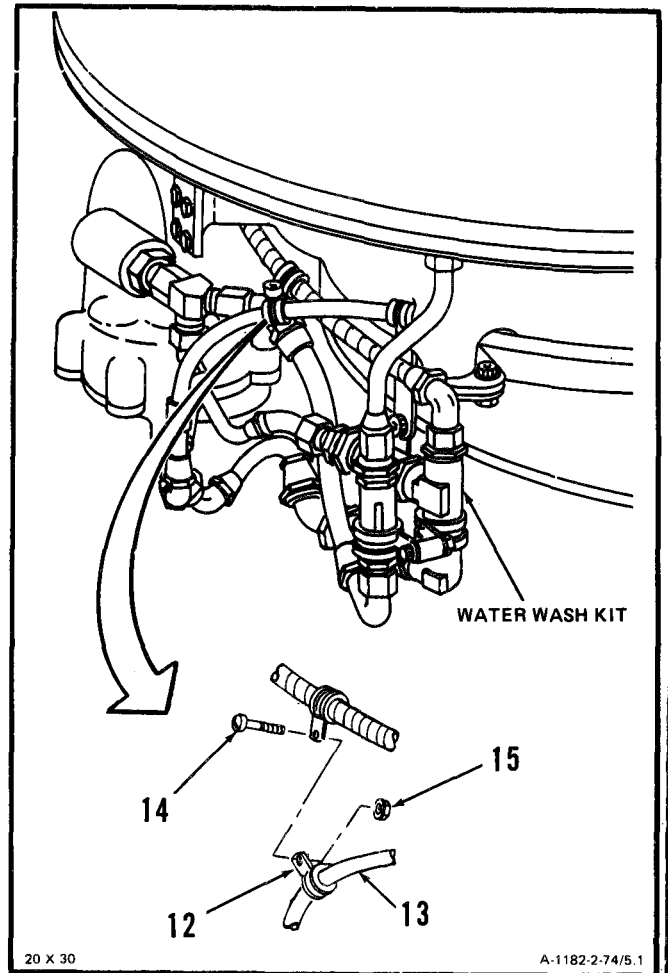


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2-74 INSTALL HOSE ASSEMBLY (INTERSTAGE AIR-BLEED ACTUATOR TO FUEL CONTROL) (Continued)

2-74

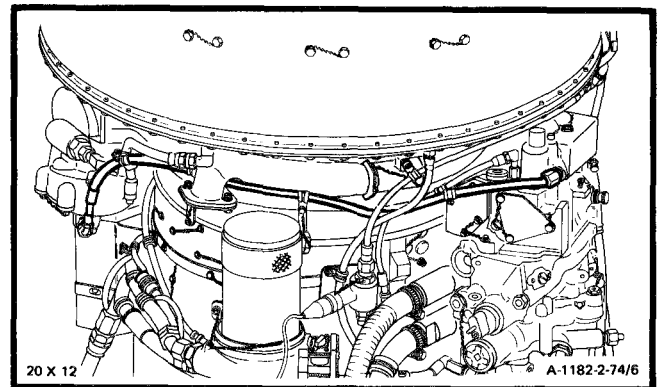
5. Install clamp (12) on hose assembly (13) and install screw (14) and nut (15).



INSPECT

FOLLOW-ON MAINTENANCE:

None



END OF TASK

---

2-75 REMOVE HOSE ASSEMBLY (INTERSTAGE AIR-BLEED ACTUATOR TO AIR DIFFUSER ASSEMBLY)

---

2-75

INITIAL SETUP

**Materials:**

None

**Applicable Configurations:**

All

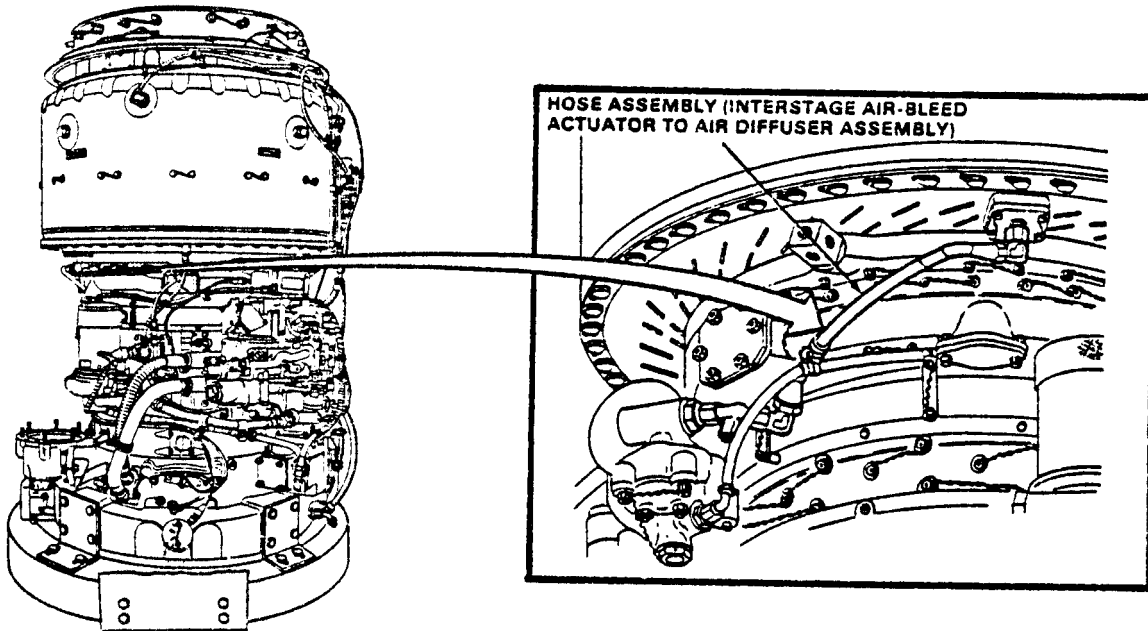
**Personnel Required:**

68B10 Aircraft Powerplant

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944

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42 x 24

A-1182-2-75/1

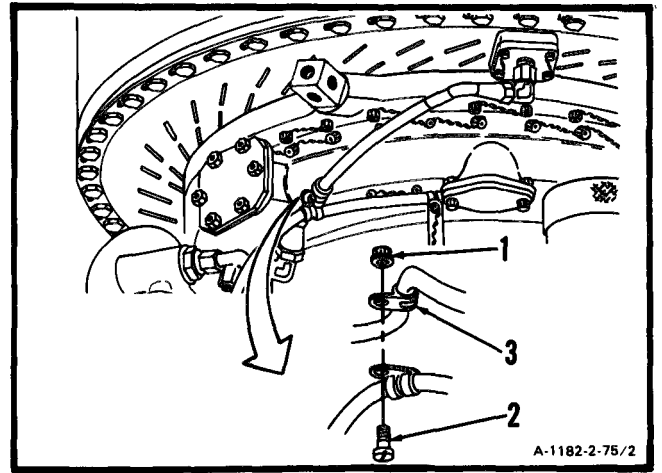
**GO TO NEXT PAGE**



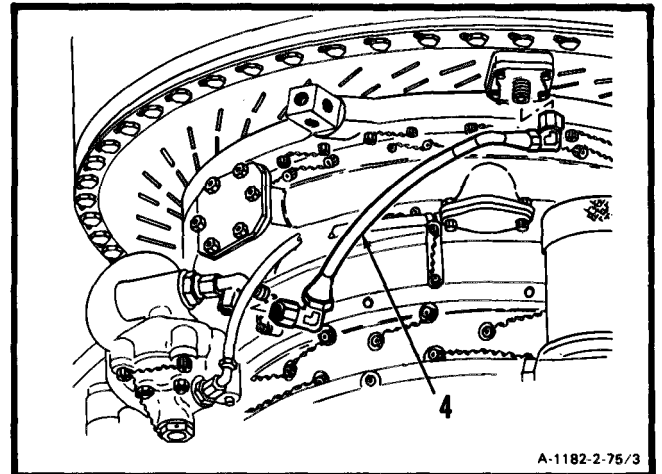
2-75 REMOVE HOSE ASSEMBLY (INTERSTAGE AIR-BLEED ACTUATOR TO AIR DIFFUSER ASSEMBLY) (Continued)

2-75

1. Remove nut (1), screw (2), and clamp (3).

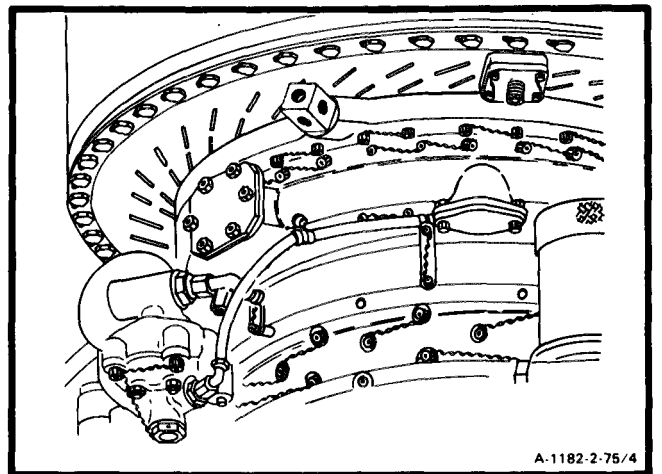


2. Disconnect and remove hose assembly (4).



FOLLOW-ON MAINTENANCE:

None



END OF TASK

---

2-76 INSTALL HOSE ASSEMBLY (INTERSTAGE AIR-BLEED ACTUATOR  
TO AIR DIFFUSER ASSEMBLY)

---

2-76

INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**

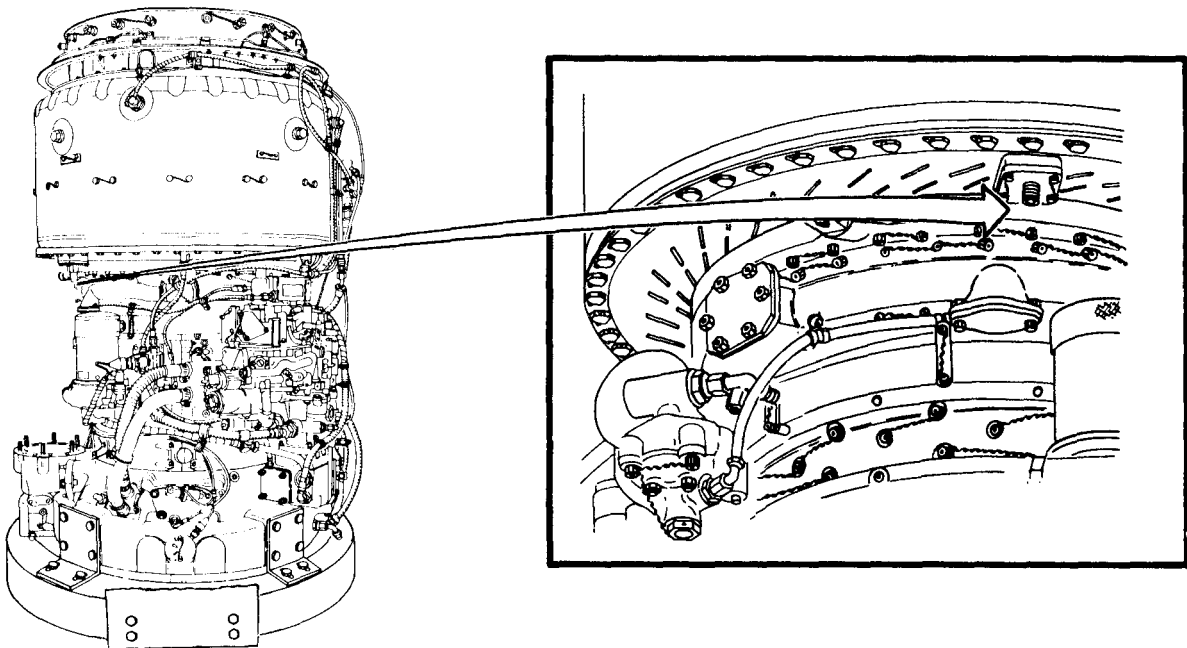
Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Technical Inspection Tool Kit,  
NSN 5180-00-323-5114

**Materials:**

None

**Personnel Required:**

68610 Aircraft Powerplant Repairer  
68630 Aircraft Powerplant Inspector



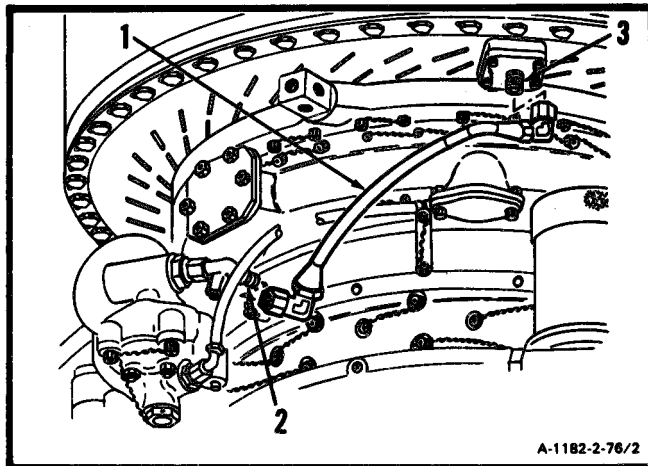
A-1182-2-76/1

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2-76 INSTALL HOSE ASSEMBLY (INTERSTAGE AIR-BLEED ACTUATOR TO AIR DIFFUSER ASSEMBLY) (Continued)

2-76

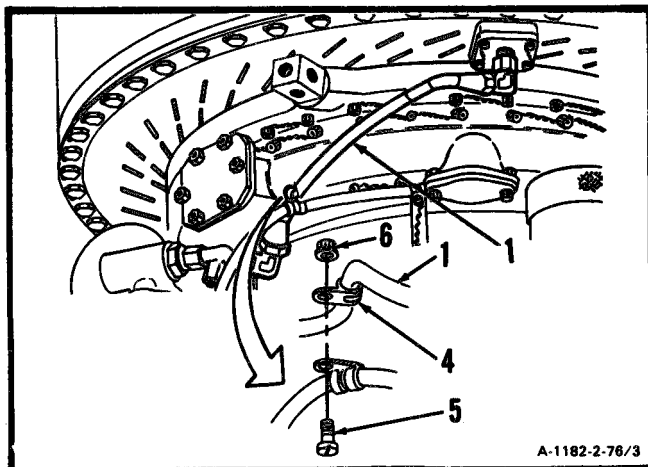
1. Install hose assembly (1) on tee (2) and adapter (3).



A-1182-2-76/2

2. Install damp (4) on hose assembly (1) and install screw (5) and nut (6).

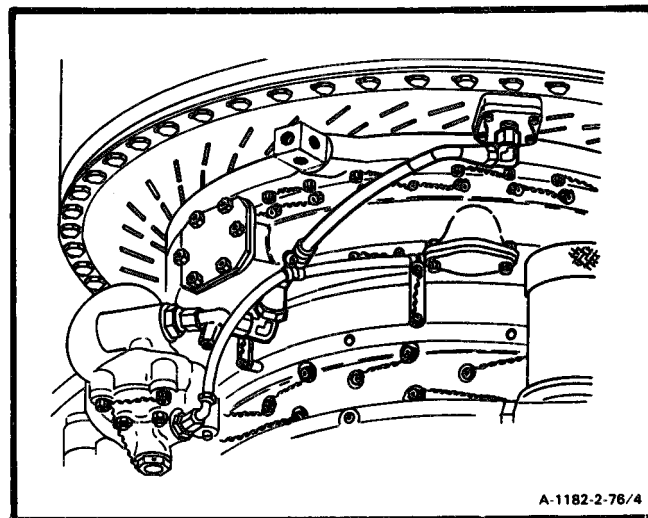
**INSPECT**



A-1182-2-76/3

FOLLOW-ON MAINTENANCE:

None



A-1182-2-76/4

**END OF TASK**

---

2-77 REMOVE HOSE ASSEMBLY (COMPRESSOR HOUSING TO  
INLET HOUSING)

---

2-77

INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944

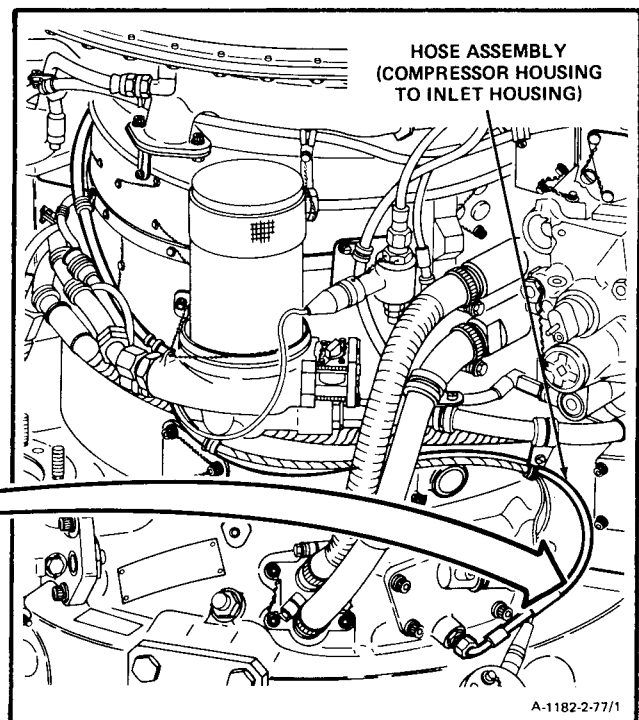
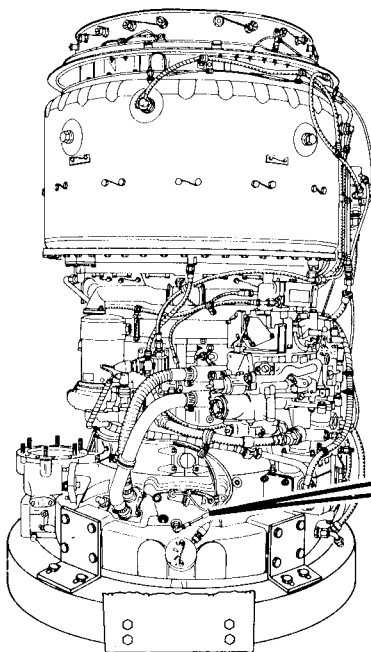
**Materials:**

None

**Personnel Required:**

68B10 Aircraft Powerplant Repairer

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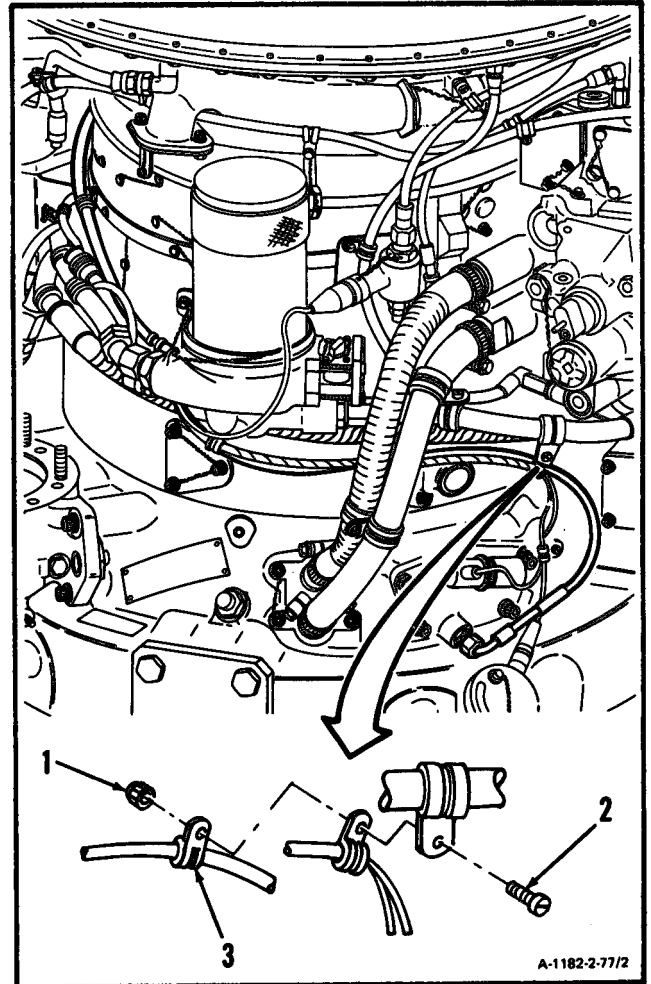
---

**2-77 REMOVE HOSE ASSEMBLY (COMPRESSOR HOUSING TO  
INLET HOUSING) (Continued)**

---

2-77

1. Remove nut (1), screw (2), and clamp (3).



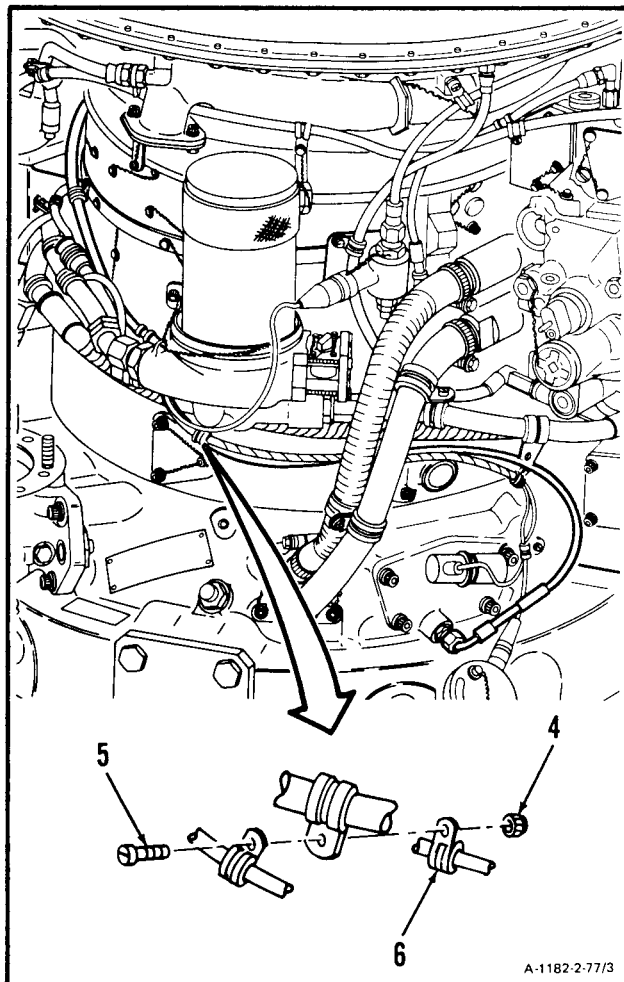
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2-77 REMOVE HOSE ASSEMBLY (COMPRESSOR HOUSING TO  
INLET HOUSING) (Continued)

---

2. **Remove** nut (4), screw (5), and **clamp** (6).



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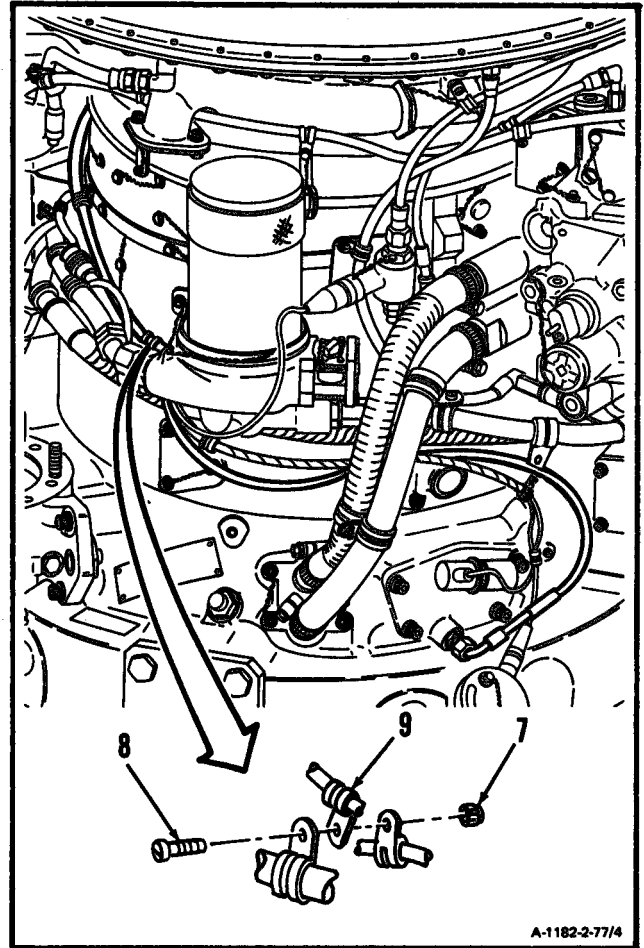
---

**2-77 REMOVE HOSE ASSEMBLY (COMPRESSORHOUSING TO INLET HOUSING) (Continued)**

---

2-77

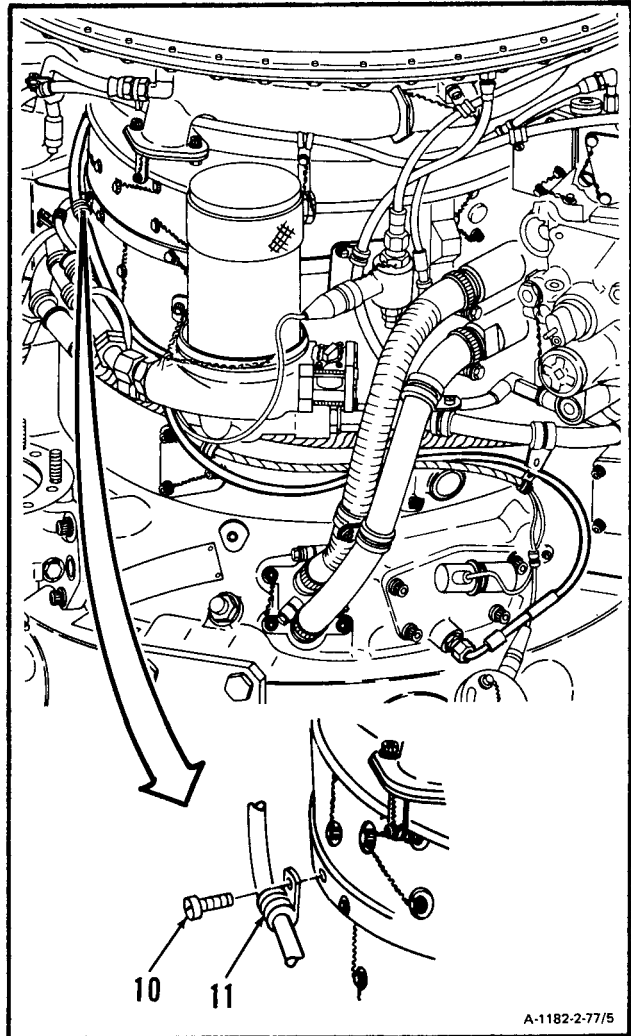
3. Remove nut (7), screw (8), and clamp (9).



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2-77 REMOVE HOSE ASSEMBLY (COMPRESSOR HOUSING TO INLET HOUSING) (Continued)

4. Remove lockwire, screw (10) and clamp (11).



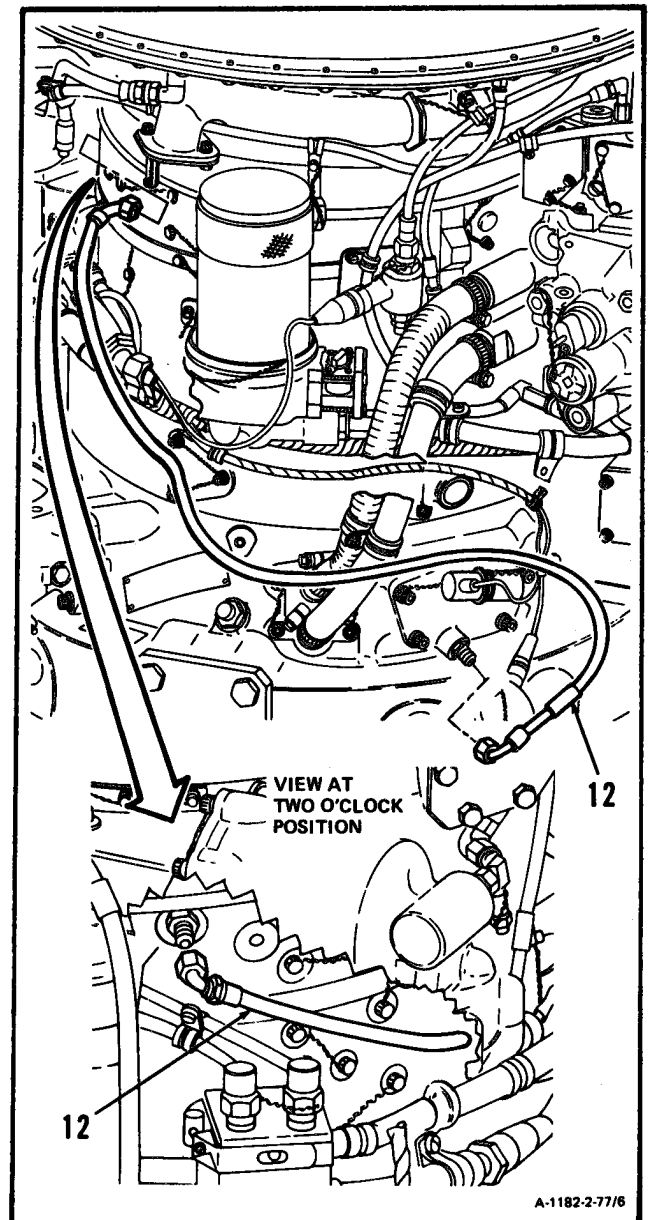
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2-77 REMOVE HOSE ASSEMBLY (COMPRESSOR HOUSING TO INLET HOUSING) (Continued)

2-77

5. Disconnect and remove hose assembly (12).



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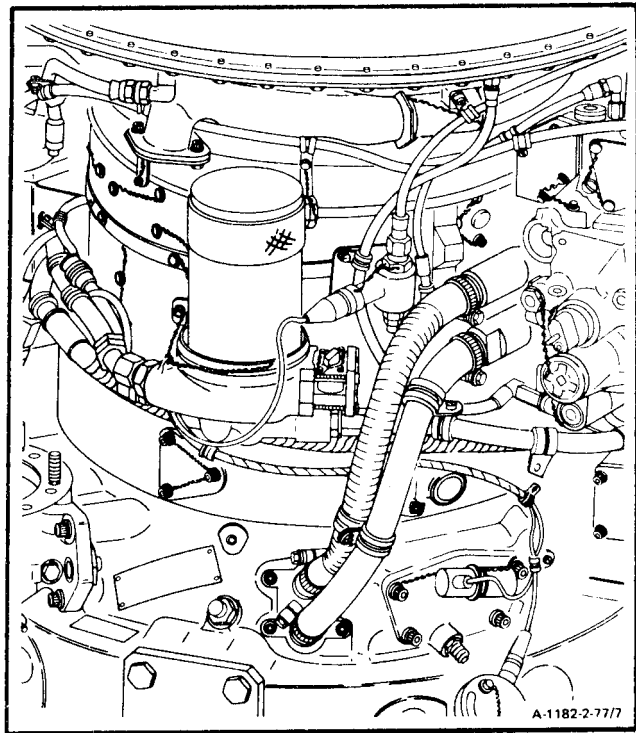
2-77 REMOVE HOSE ASSEMBLY (COMPRESSOR HOUSING TO  
INLET HOUSING) (Continued)

---

2-77

**FOLLOW-ON MAINTENANCE:**

None



**END OF TASK**

---

**2-78 INSTALL HOSE ASSEMBLY (COMPRESSOR HOUSING TO  
INLET HOUSING)**

---

2-78

**INITIAL SETUP****Applicable Configurations:**

All

**Tools:**

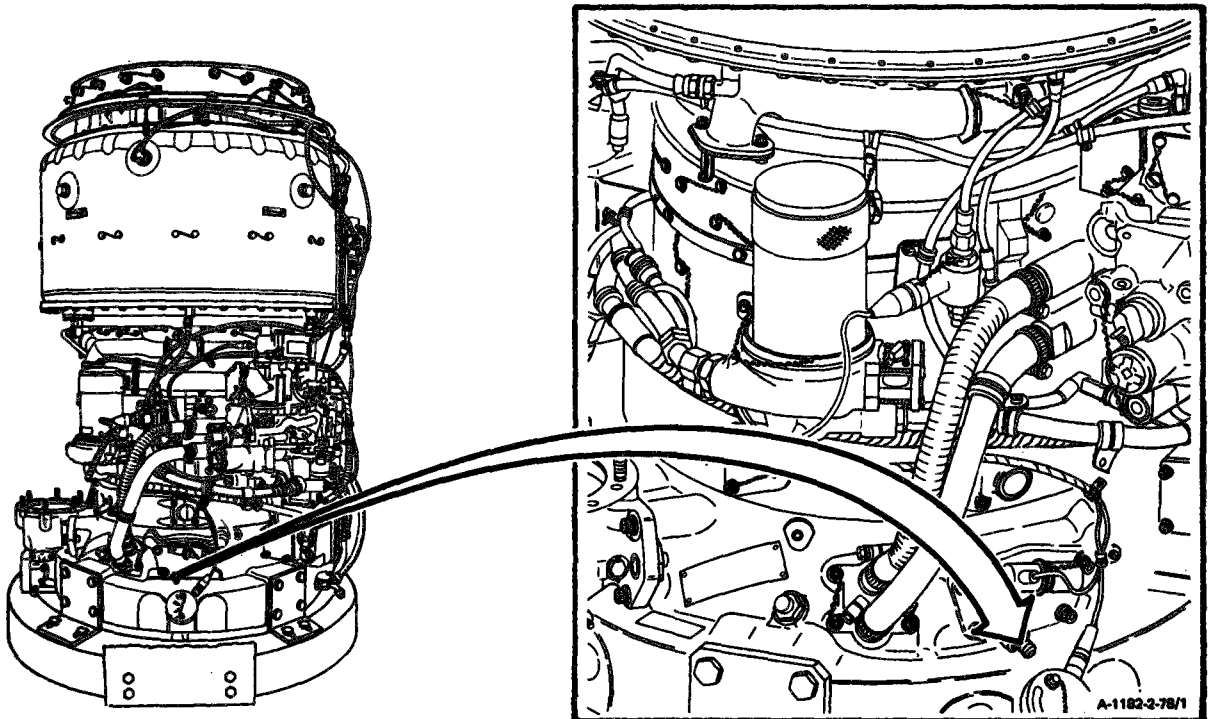
Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Technical inspection Tool Kit,  
NSN 5180-00-323-5114

**Materials:**

Lockwire (E29)

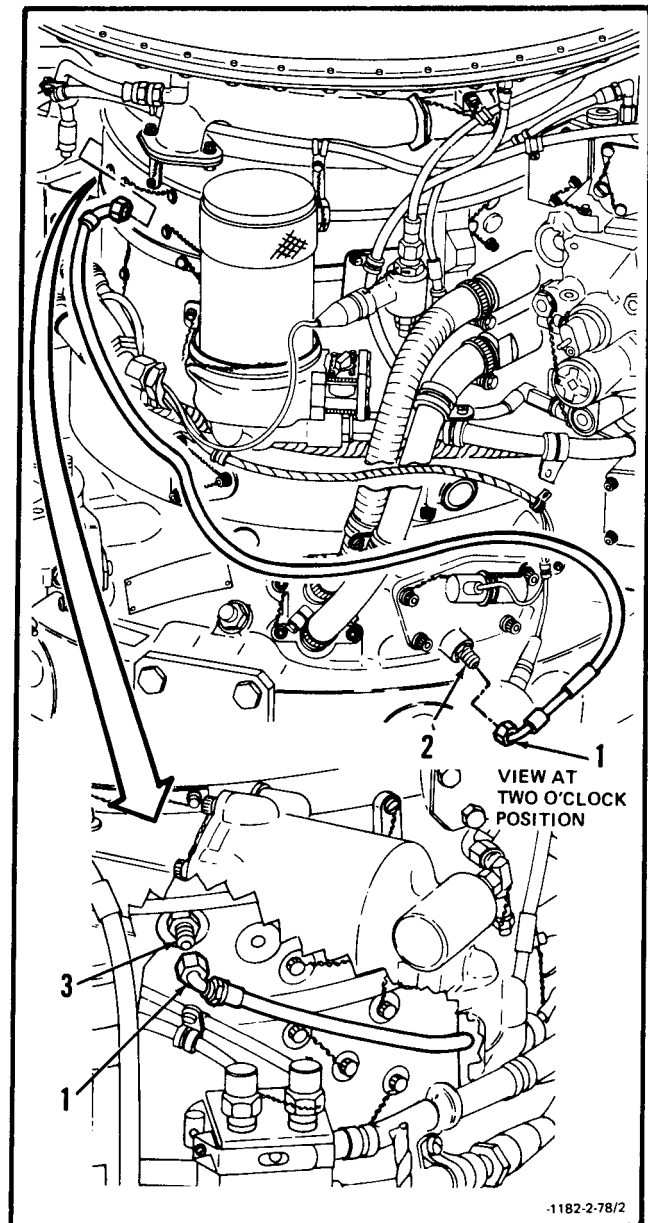
**Personnel Required:**

68610 Aircraft Powerplant Repairer  
68B30 Aircraft Powerplant Inspector

**GO TO NEXT PAGE**

2-78 INSTALL HOSE ASSEMBLY (COMPRESSOR HOUSING TO  
INLET HOUSING) (Continued)

1. Install hose assembly (1) on nipples (2 and 3).



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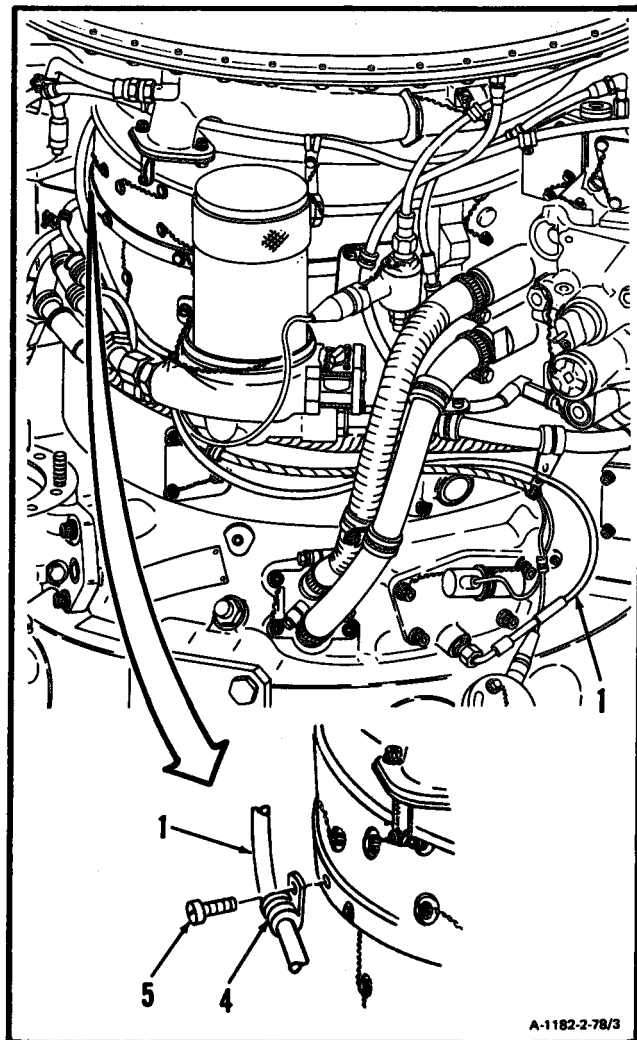
---

**2-78 INSTALL HOSE ASSEMBLY (COMPRESSOR HOUSING TO INLET HOUSING) (Continued)**

---

2-78

2. **Install clamp (4)** on hose assembly (1), and install screw (5). Lockwire screw (5). Use lockwire (E29).

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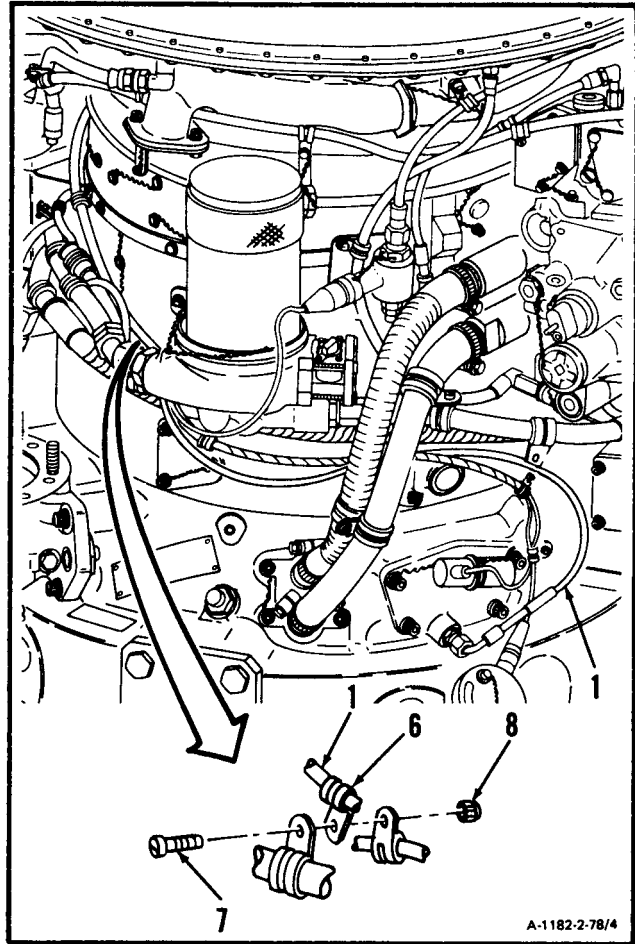
---

**2-78 INSTALL HOSE ASSEMBLY (COMPRESSOR HOUSING TO  
INLET HOUSING) (Continued)**

---

2-78

3. **Install clamp (6)** on hose assembly (1), and install screw (7) and nut (8).



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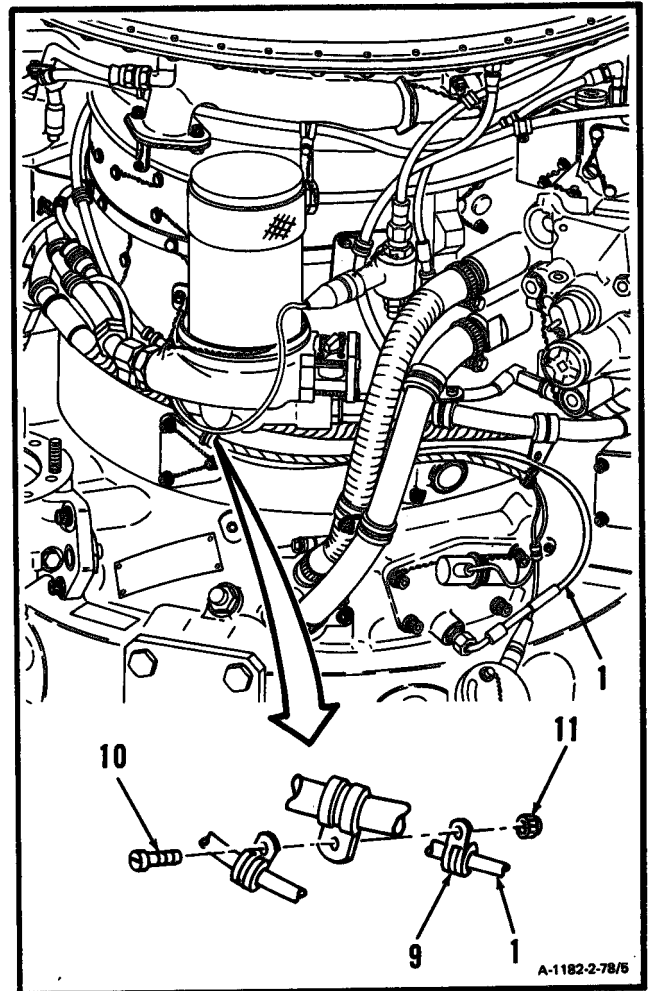
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**2-78 INSTALL HOSE ASSEMBLY (COMPRESSOR HOUSING TO INLET HOUSING) (Continued)**

---

2-78

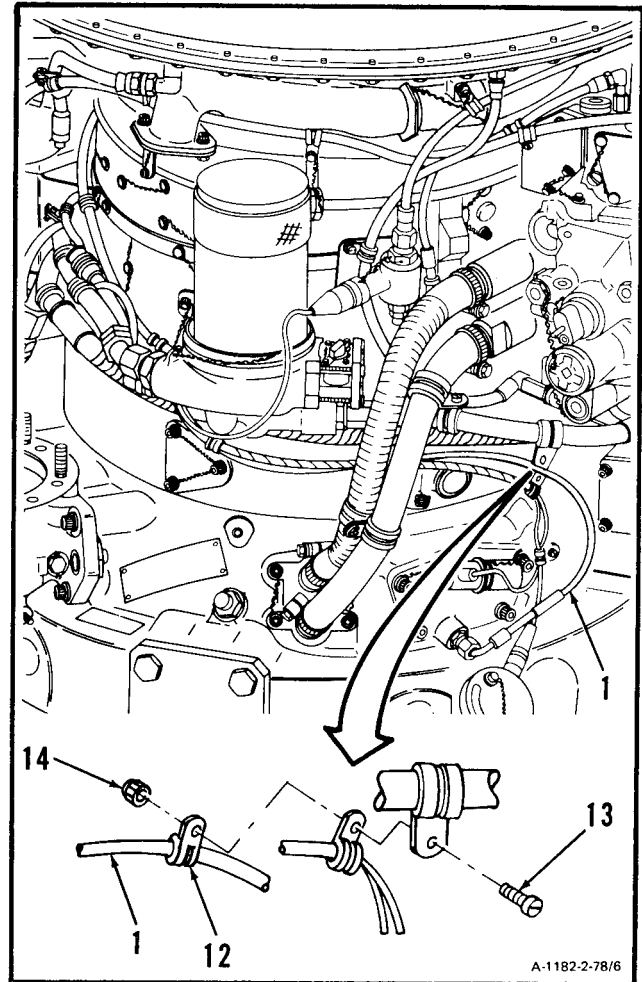
4. **Install clamp (9)** on hose assembly (1), and install screw (10) and nut (11).



**GO TO NEXT PAGE**

2-78 INSTALL HOSE ASSEMBLY (COMPRESSOR HOUSING TO INLET HOUSING) (Continued)

5. **Install clamp (12)** on hose assembly (1), and install screw (13) and nut (14).



**INSPECT**

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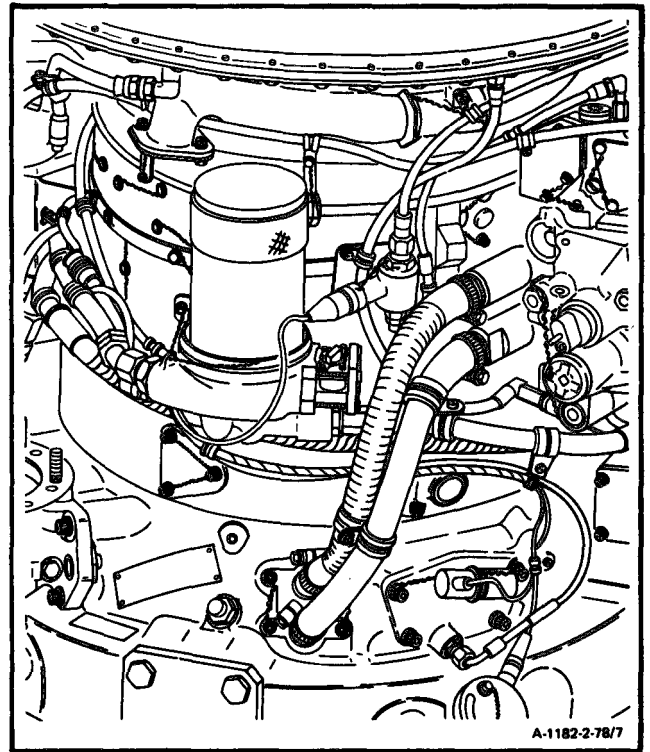
**2-78 INSTALL HOSE ASSEMBLY (COMPRESSOR HOUSING TO INLET HOUSING) (Continued)**

---

2-7%

**FOLLOW-ON MAINTENANCE:**

None

**END OF TASK**

---

2-79 REMOVE HOSE ASSEMBLY (AIR DIFFUSER ASSEMBLY TO FUEL CONTROL)

---

2-79

INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944

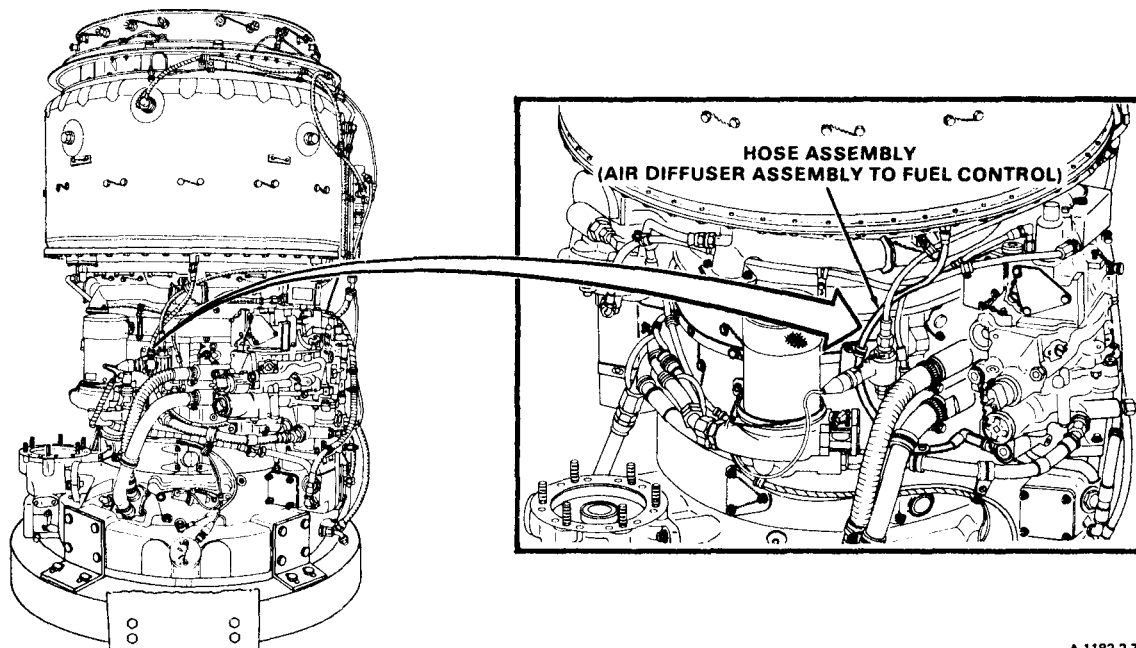
**Materials:**

None

**Personnel Required:**

68B10 Aircraft Powerplant Repairer

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A-1182-2-79/1

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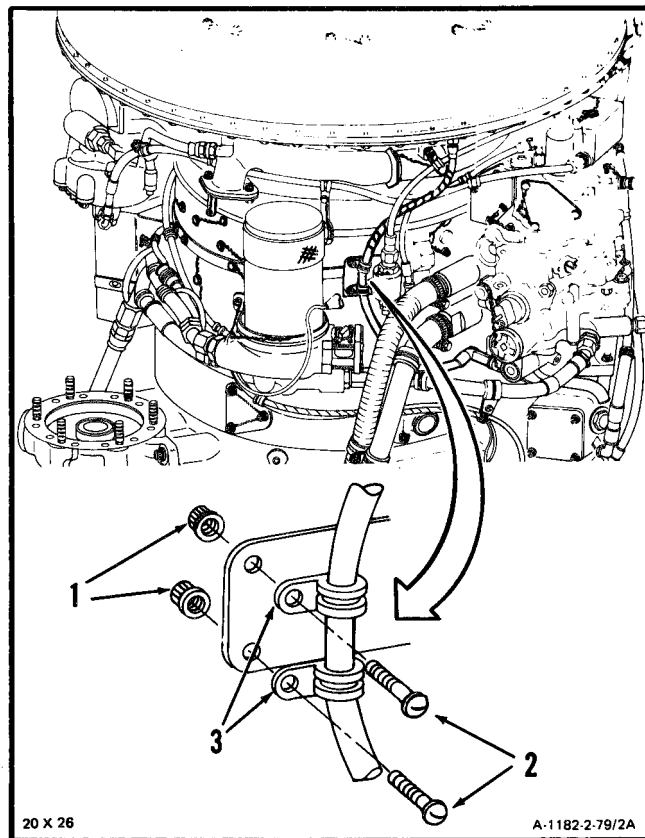
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 2-79 REMOVE HOSE ASSEMBLY (AIR DIFFUSER ASSEMBLY TO FUEL CONTROL) (Continued)
 

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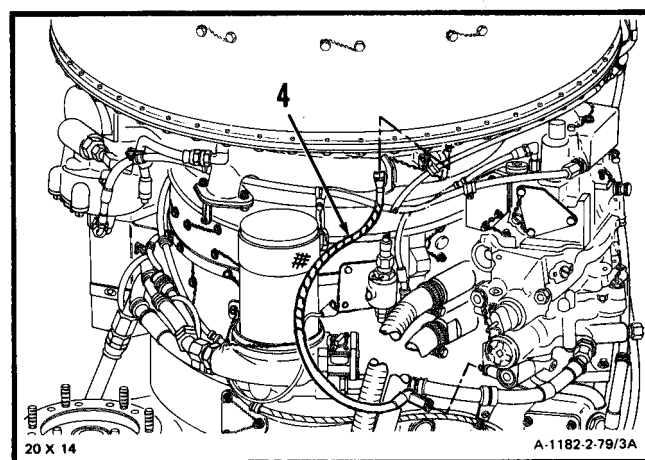
2-79

1. **Remove** nuts (1), screws (2), and **clamps** (3).

**NOTE**

If lockwire securing bolts on union is disturbed when disconnecting hose in following step, remove lockwire.

2. **Disconnect and remove** hose assembly (4).



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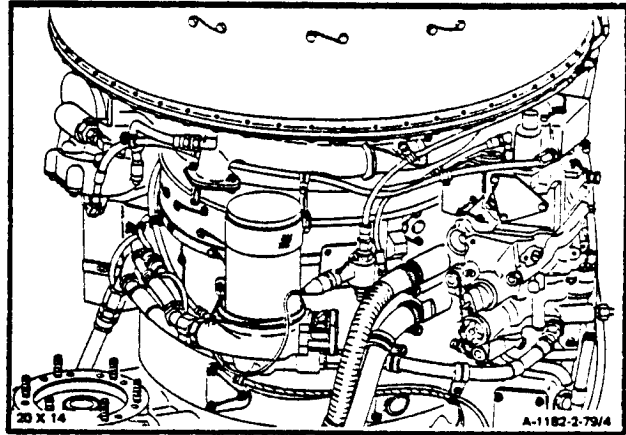
2-79 REMOVE HOSE ASSEMBLY (AIR DIFFUSER ASSEMBLY TO FUEL CONTROL) (Continued)

---

2-79

FOLLOW-ON MAINTENANCE:

None



**END OF TASK**

---

**2-80 INSTALL HOSE ASSEMBLY (AIR DIFFUSER ASSEMBLY TO FUEL CONTROL)**

---

2-80

**INITIAL SETUP****Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Technical Inspection Tool Kit,  
NSN 5180-00-323-5114

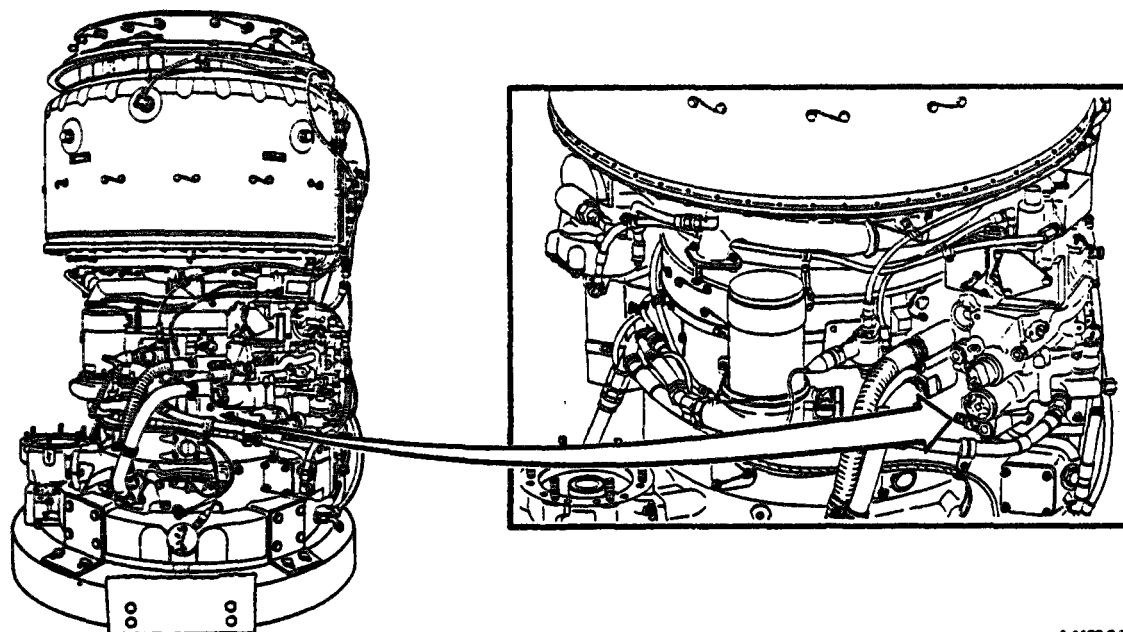
**Materials:**

None

**Personnel Required:**

68B10 Aircraft Powerplant Repairer  
68B30 Aircraft Powerplant Inspector

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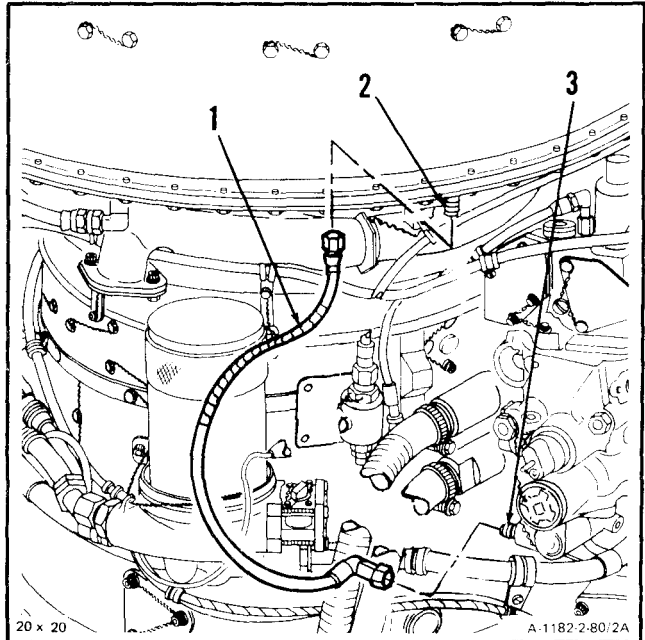
## 2-80 INSTALL HOSE ASSEMBLY (AIR DIFFUSER ASSEMBLY TO FUEL CONTROL) (Continued)

2-80

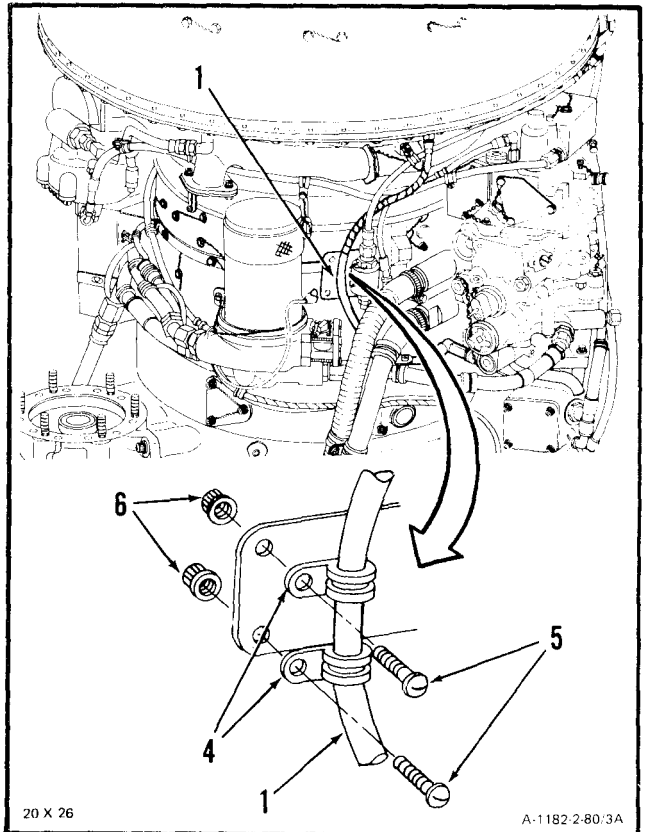
### NOTE

If required, install lockwire on bolts securing union after connecting hose in following step. Use lockwire (E29).

1. **Install hose assembly (1)** on union (2) and nipple (3).



2. **Install clamps (4)** on hose assembly (1) and install screws (5) and nuts (6).



### INSPECT

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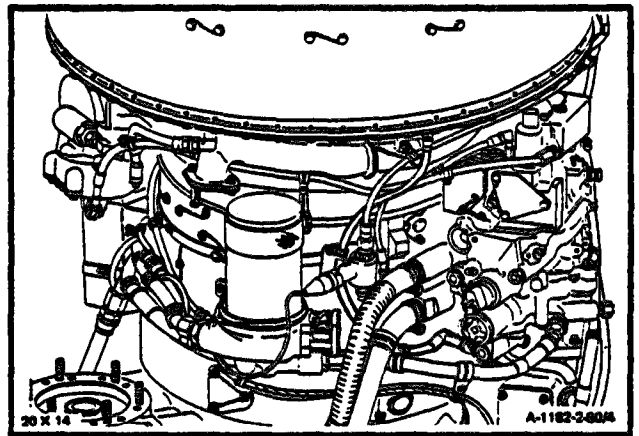
**2-80 INSTALL HOSE ASSEMBLY (AIR DIFFUSER ASSEMBLY TO FUEL CONTROL) (Continued)**

---

2-80

**FOLLOW-ON MAINTENANCE:**

None

**END OF TASK**

2-80.1 REMOVE TUBE ASSEMBLY (AIR DIFFUSER ASSEMBLY TO WATER WASH CHECK VALVE)

2-80.1

INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**

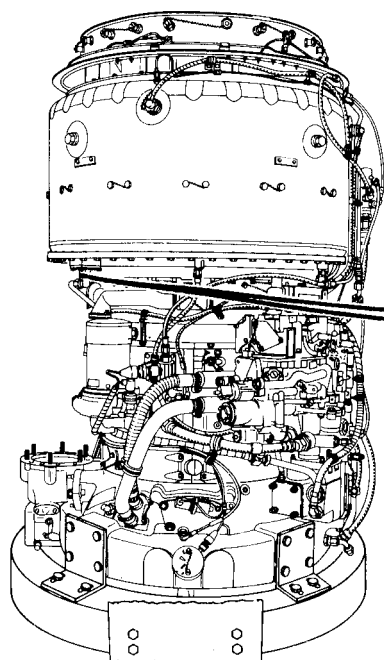
Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944

**Materials:**

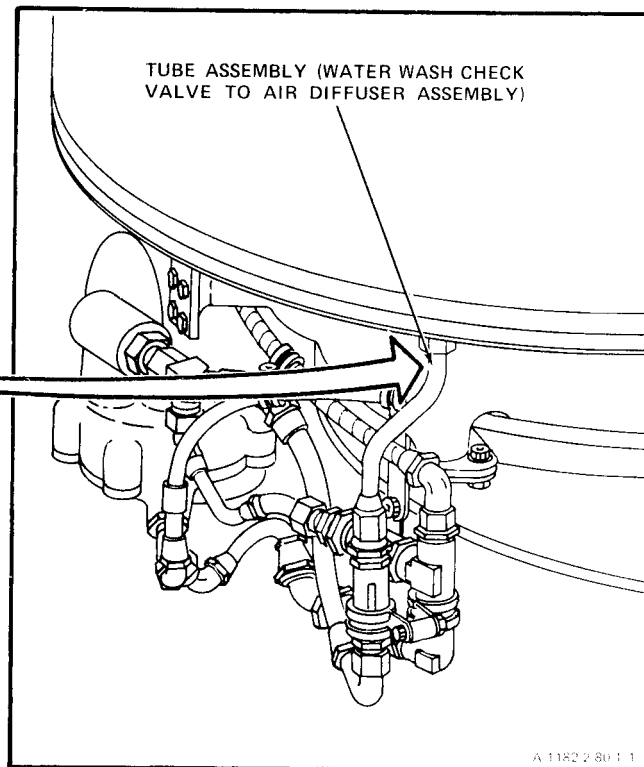
None

**Personnel Required:**

68B30 Aircraft Powerplant Repairer



42 X 24



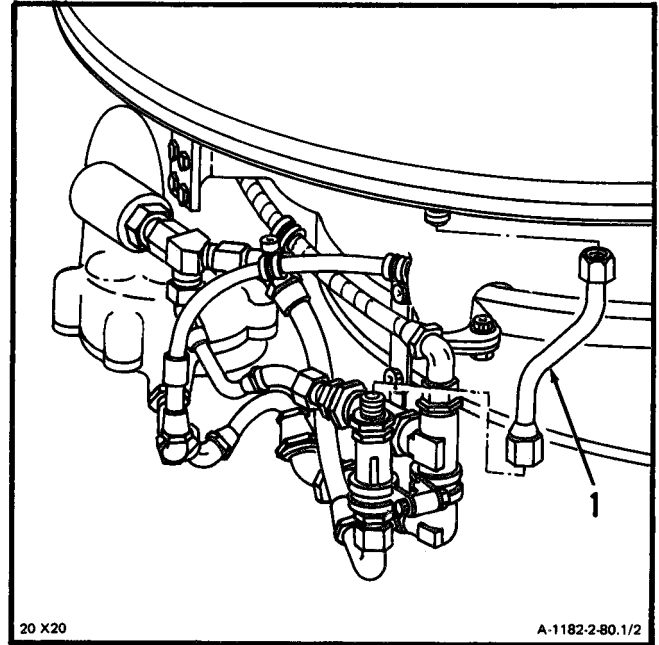
A 1182 2 80 1 1

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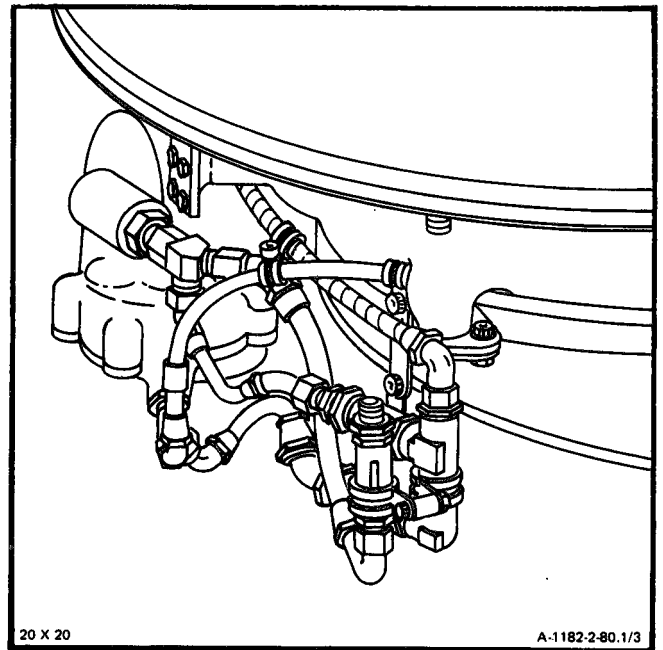
2-80.1 REMOVE TUBE ASSEMBLY (AIR DIFFUSER ASSEMBLY TO WATER WASH 2-80.1 CHECK VALVE) (Continued)

1. Disconnect and remove hose assembly (1).



FOLLOW-ON MAINTENANCE:

None



END OF TASK

2-80.2 INSTALL TUBE ASSEMBLY (AIR DIFFUSER ASSEMBLY TO WATER WASH CHECK VALVE)

2-80.2

INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**

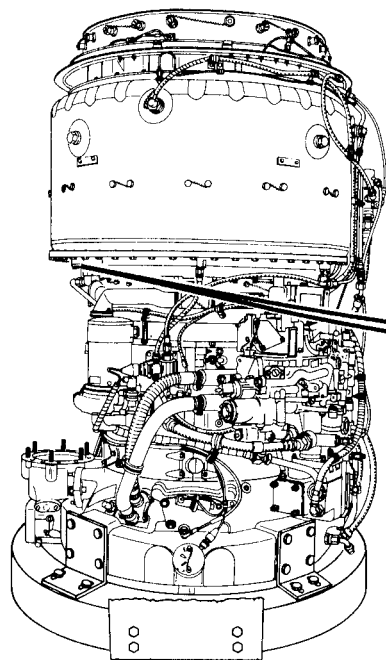
Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Technical Inspection Tool Kit,  
NSN 5180-00-323-5114

**Materials:**

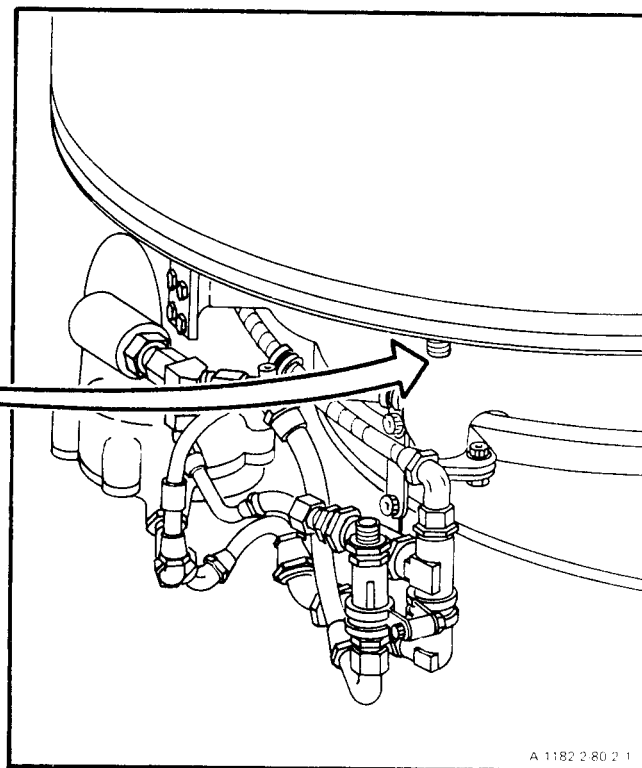
None

**Personnel Required:**

68B10 Aircraft Powerplant Repairer  
68B13 Aircraft Powerplant Inspector



40 X 24



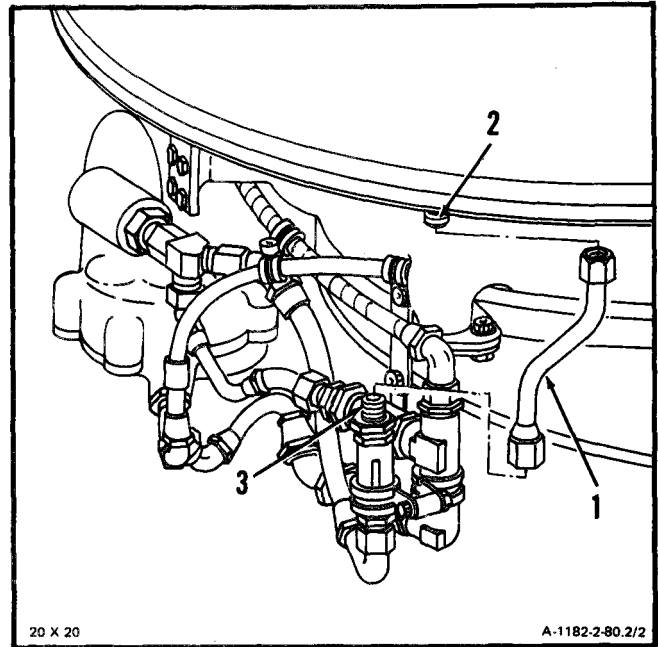
A 1182 2.80 2 1

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2-80.2 INSTALL TUBE ASSEMBLY (AIR DIFFUSER ASSEMBLY TO WATER WASH CHECK VALVE) (Continued)

2.80.1

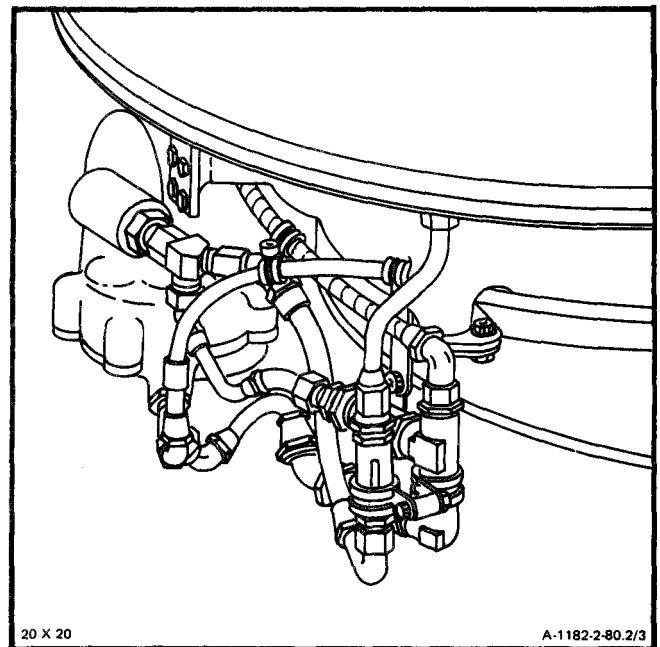
1. Install hose assembly (1) on air diffuser P3 adapter (2) and nipple (3).



INSPECT

FOLLOW-ON MAINTENANCE:

None



END OF TASK

2-80.3 REMOVE HOSE ASSEMBLY (WATER WASH CHECK VALVE TO INTERSTAGE AIR-BLEED ACTUATOR P3 INLET)

2-80.3

INITIAL SETUP

**Materials:**

None

**Applicable Configurations:**

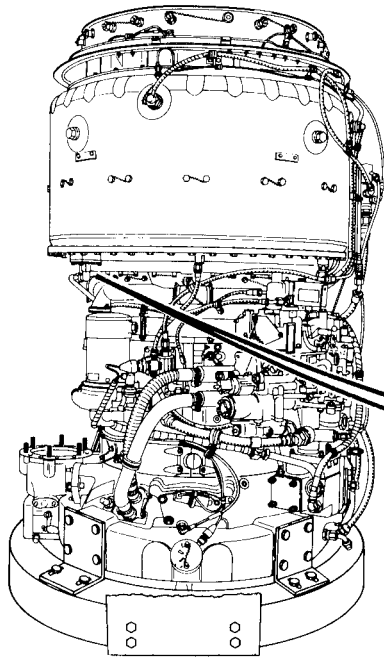
All

**Personnel Required:**

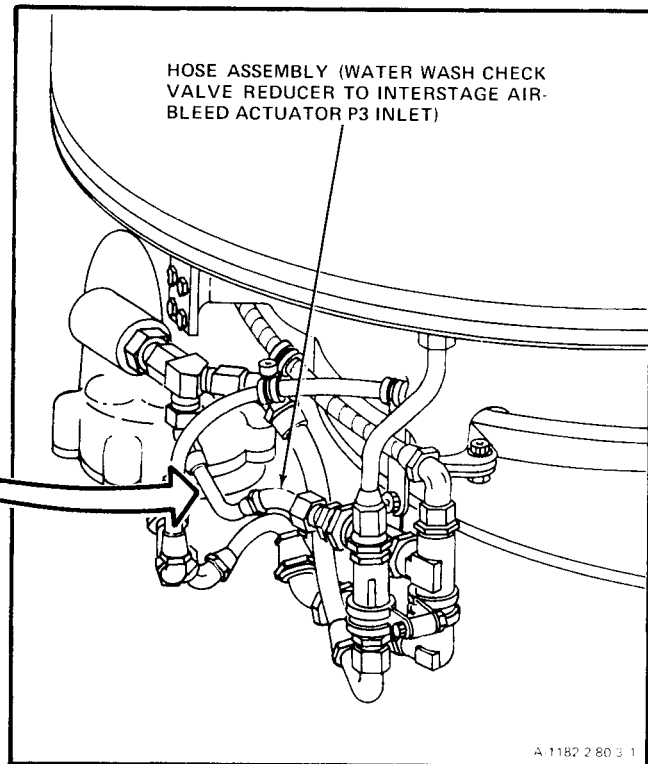
68B10 Aircraft Powerplant Repairer

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944



38 X 24

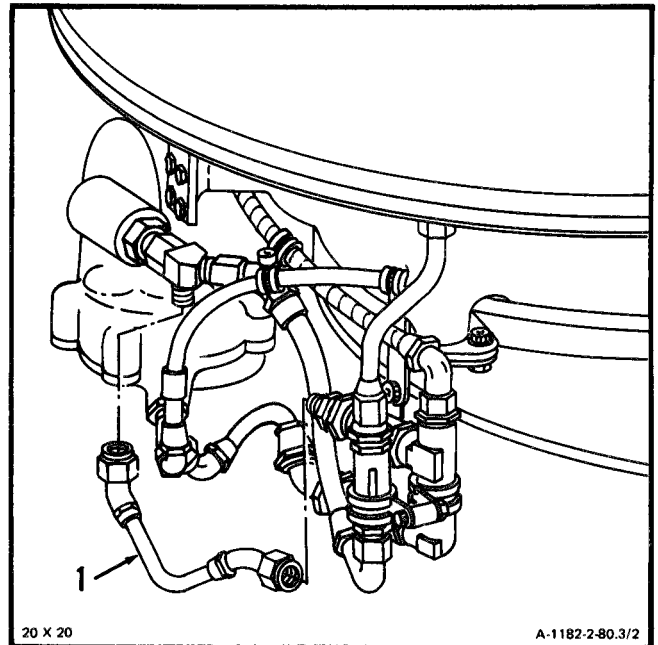


A 1182 2 80 3 1

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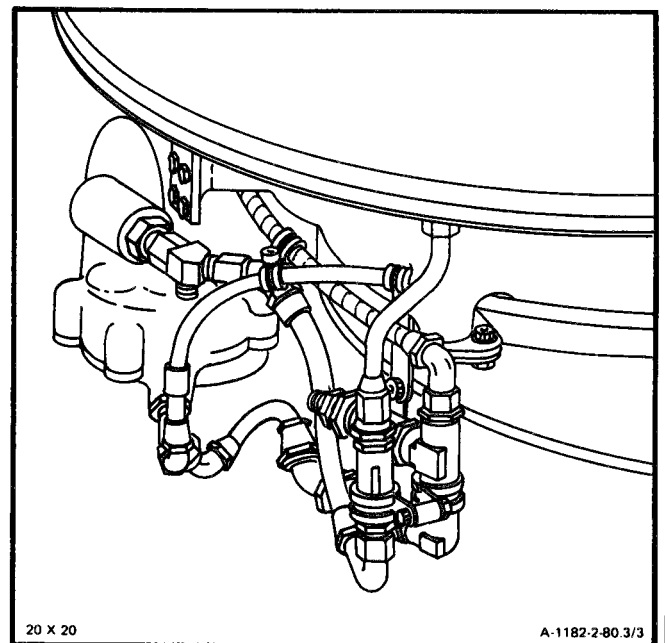
2-80.3 REMOVE HOSE ASSEMBLY (WATER WASH CHECK VALVE TO INTERSTAGE 2-80.3 AIR-BLEED ACTUATOR P3 INLET) (Continued)

1. Disconnect and remove hose assembly (1).



FOLLOW-ON MAINTENANCE:

None



END OF TASK

2-80.4 INSTALL HOSE ASSEMBLY (WATER WASH CHECK VALVE TO INTERSTAGE 2-80.4 AIR-BLEED ACTUATOR P3 INLET)

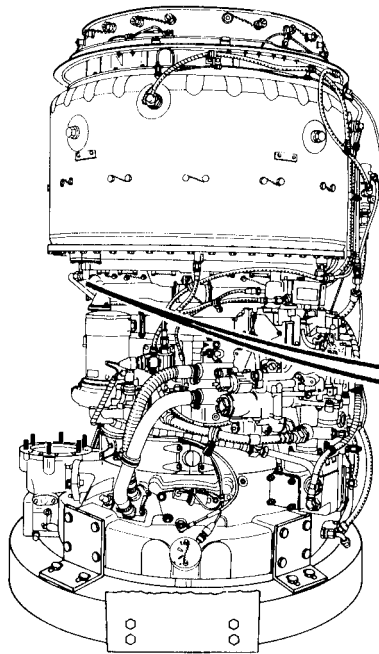
INITIAL SETUP

Applicable Configurations:  
All

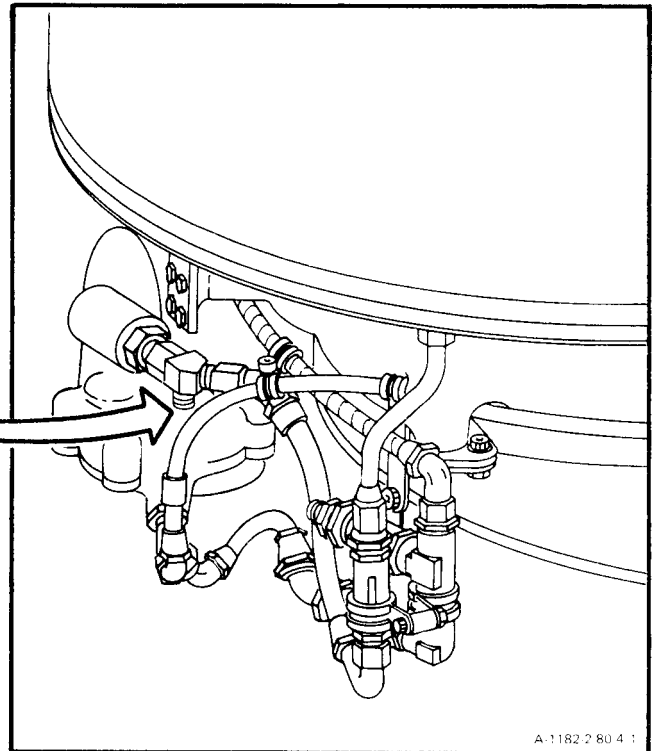
Tools:  
Powerplant Mechanic's Tool Kit,  
NSN 518000323-4944  
Technical Inspection Tool Kit,  
NSN 5180-00323-5114

Materials:  
None

Personnel Required:  
68B1 O Aircraft Powerplant Repairer  
68B13 Aircraft Powerplant Inspector



35 X 24

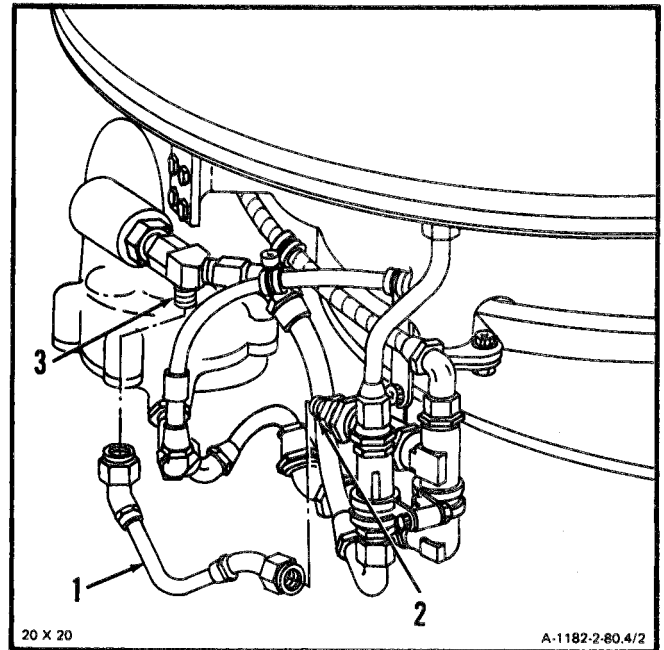


A-1182 2 80 4 1

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2-80.4 INSTALL HOSE ASSEMBLY (WATER WASH CHECK VALVE TO INTERSTAGE 2-80.4 AIR-BLEED ACTUATOR P3 INLET) (Continued)

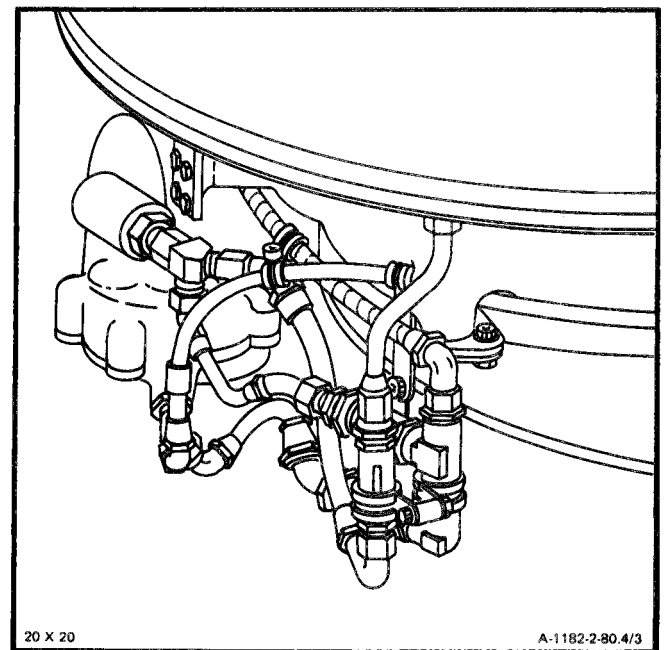
1. Install hose assembly (1) on reducer (2) and air-bleed actuator P3 tee (3).



INSPECT

FOLLOW-ON MAINTENANCE:

None



END OF TASK

2-80.5 REMOVE HOSE ASSEMBLY (WATER WASH TEE CHECK VALVE TO INTERSTAGE AIR-BLEED ACTUATOR P3 INLET)

2-80.5

INITIAL SETUP

**Materials:**

None

**Applicable Configurations:**

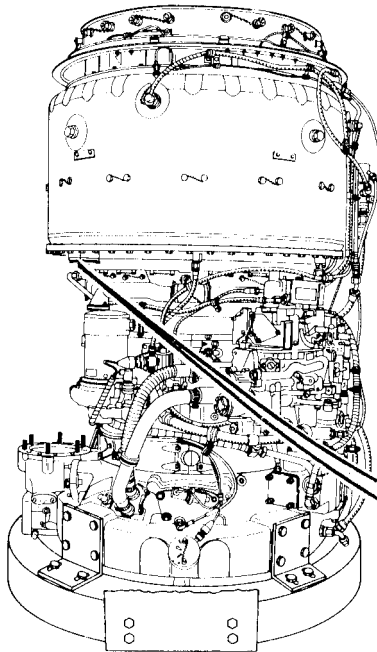
All

**Personnel Required:**

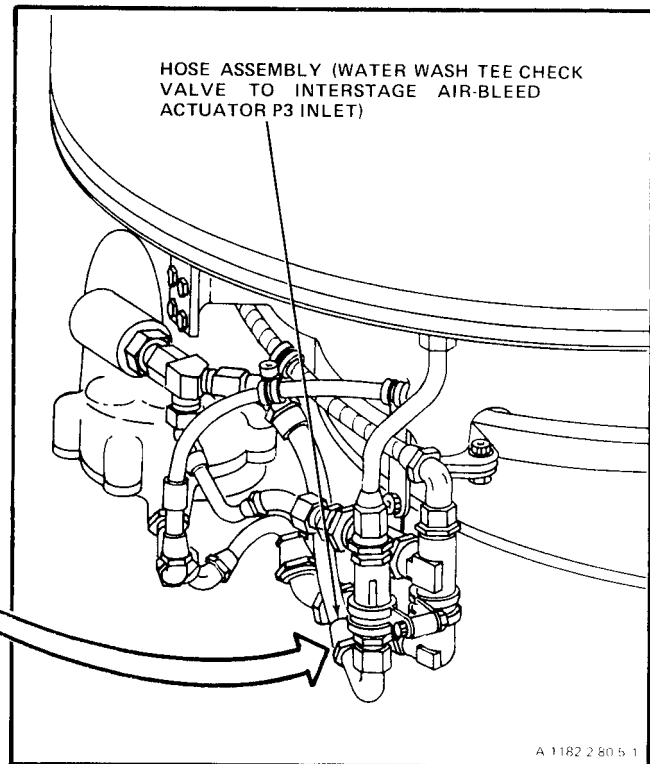
68B10 Aircraft Powerplant Repairer

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944



35 X 24



A 1182 2 80 5 1

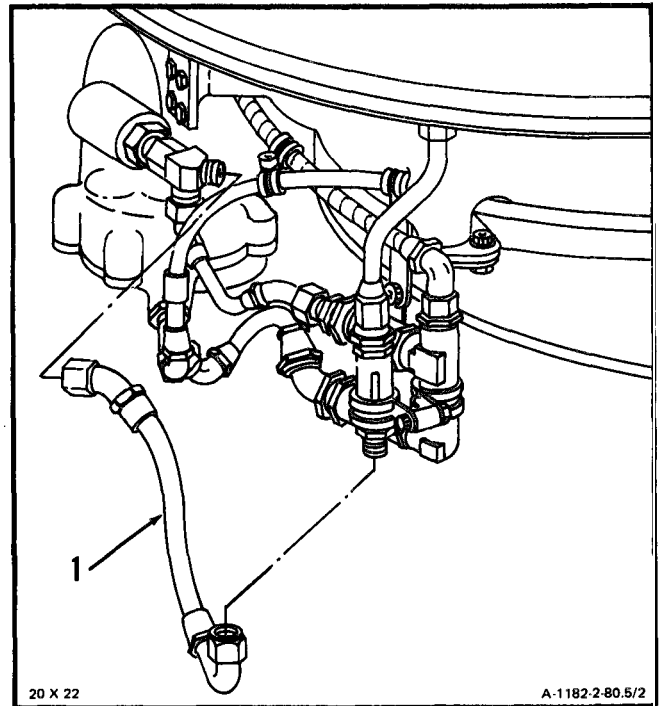
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2-80.5 REMOVE HOSE ASSEMBLY (WATER WASH TEE CHECK VALVE TO INTERSTAGE AIR-BLEED ACTUATOR P3 INLET) (Continued)

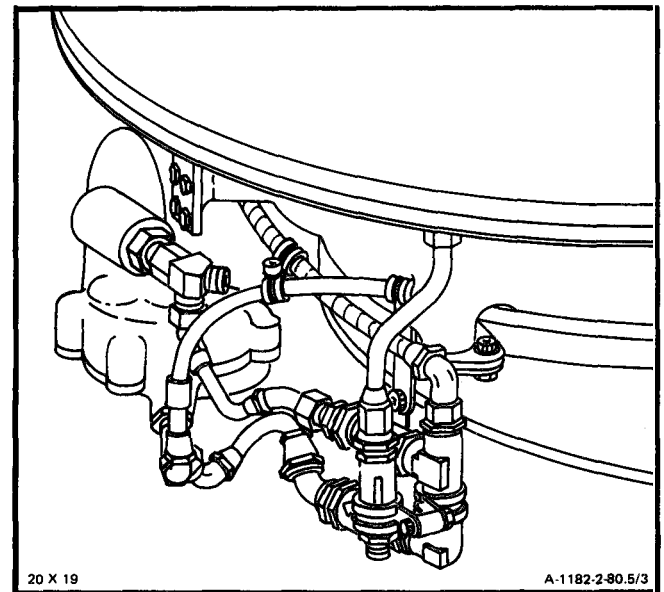
2-80.5

1. Disconnect and remove hose assembly (1).



FOLLOW-ON MAINTENANCE:

None



END OF TASK

2-80.6 INSTALL HOSE ASSEMBLY (WATER WASH TEE CHECK VALVE TO INTERSTAGE AIR-BLEED ACTUATOR P3 INLET)

2-80.6

INITIAL SETUP

**Materials:**

None

**Applicable Configurations:**

All

**Personnel Required:**

68610 Aircraft Powerplant Repairer

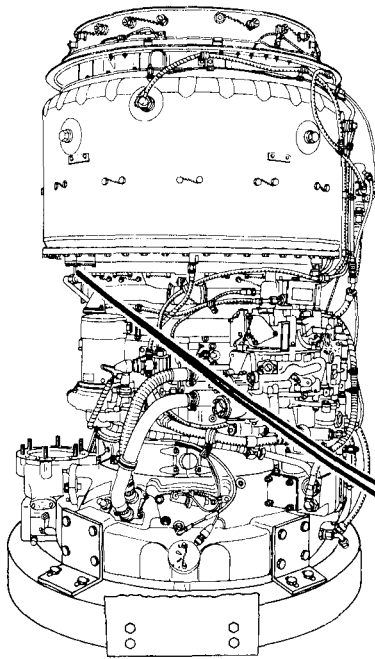
**Tools:**

Powerplant Mechanic's Tool Kit,

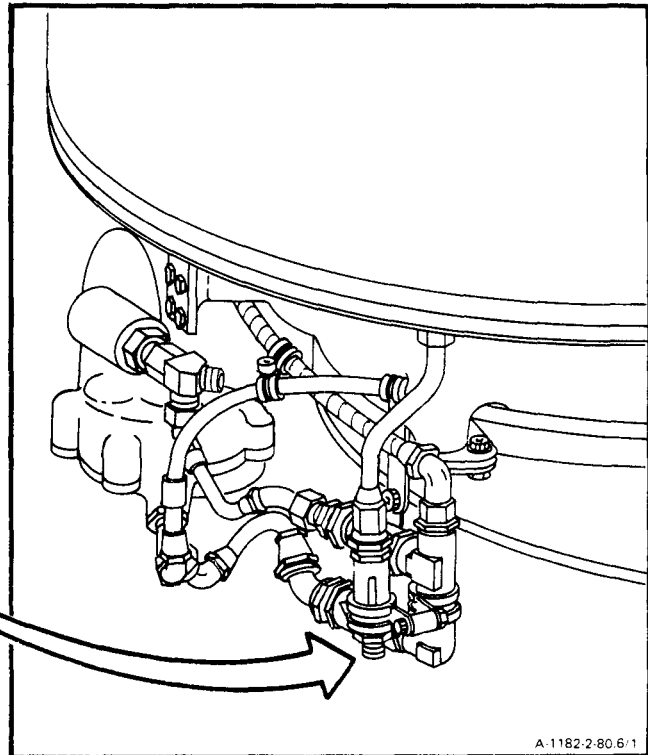
NSN 518000-323-4944

Technical Inspection Tool Kit,

NSN 5180-003235114



37 X 24



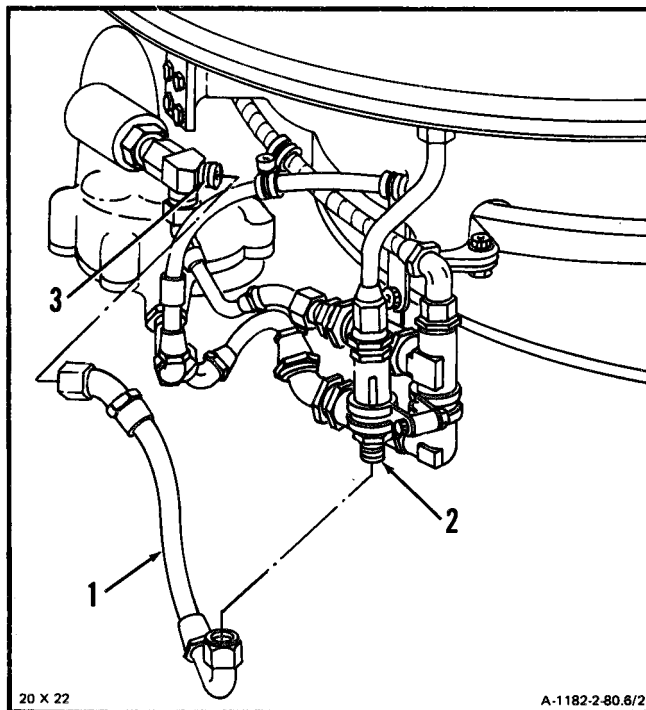
A-1182-2-80.6-1

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2-80.6 INSTALL HOSE ASSEMBLY (WATER WASH TEE VALVE TO INTERSTAGE AIR-BLEED ACTUATOR P3 INLET) (Continued)

2-80.6

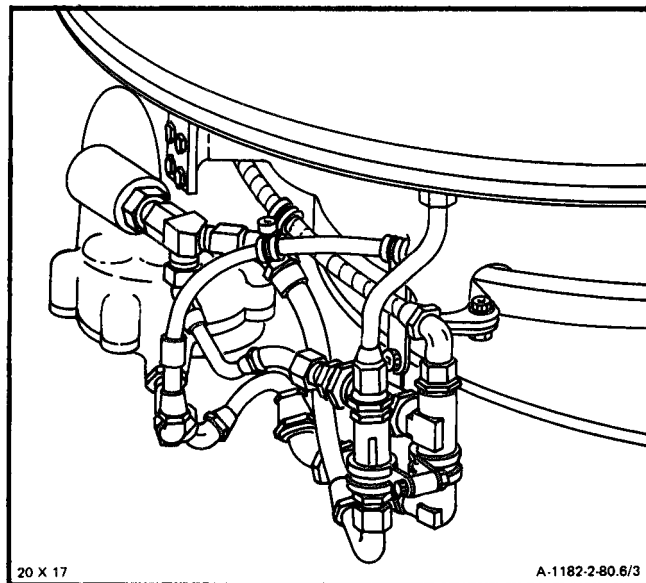
1. Install hose assembly (1) on check valve (2) and air-bleed actuator P3 tee (3).



INSPECT

FOLLOW-ON MAINTENANCE:

None



END OF TASK

2-80.7 REMOVE HOSE ASSEMBLY (WATER WASH CHECK VALVE ELBOW TO INTERSTAGE AIR-BLEED ACTUATOR FUEL CONTROL INLET)

2-80.7

INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**

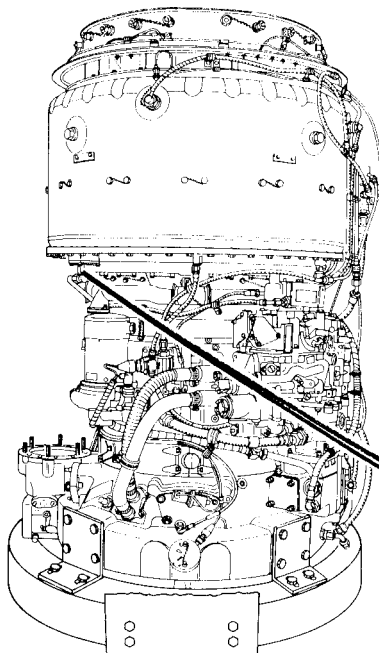
Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944

**Materials:**

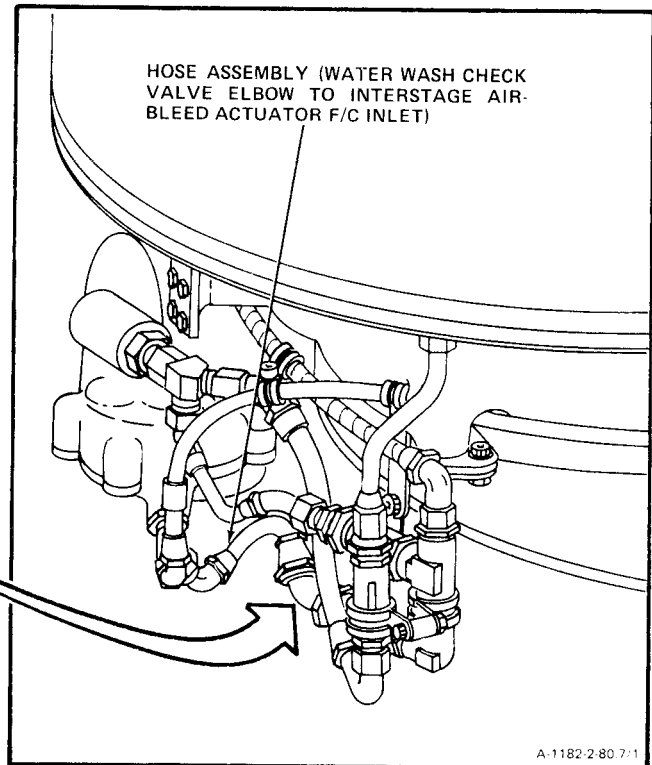
None

**Personnel Required:**

68B10 Aircraft Powerplant Repairer



34 X 24



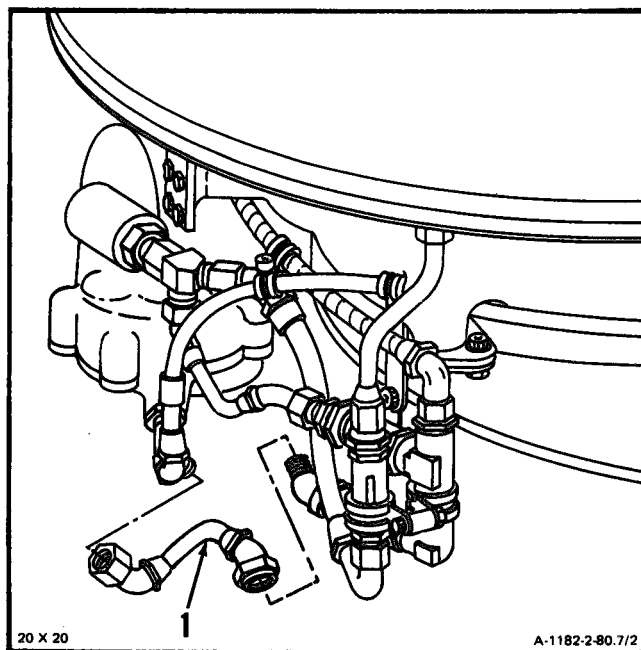
A-1182-2-80.7:1

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2-80.7 REMOVE HOSE ASSEMBLY (WATER WASH CHECK VALVE ELBOW TO INTERSTAGE AIR-BLEED ACTUATOR FUEL CONTROL INLET) (Continued)

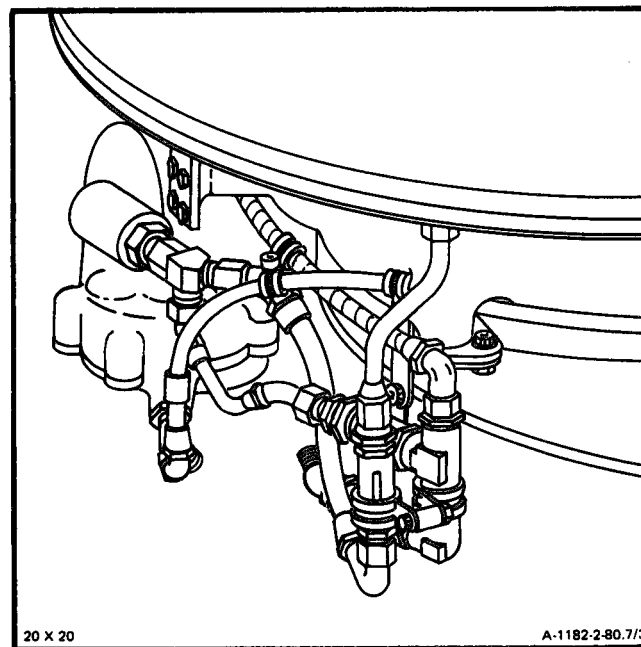
2-80.7

1. Disconnect and remove hose assembly (1).



FOLLOW-ON MAINTENANCE:

None



END OF TASK

2-80.8 INSTALL HOSE ASSEMBLY (WATER WASH CHECK VALVE ELBOW TO INTERSTAGE AIR-BLEED ACTUATOR FUEL CONTROL INLET)

2-80.8

INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**

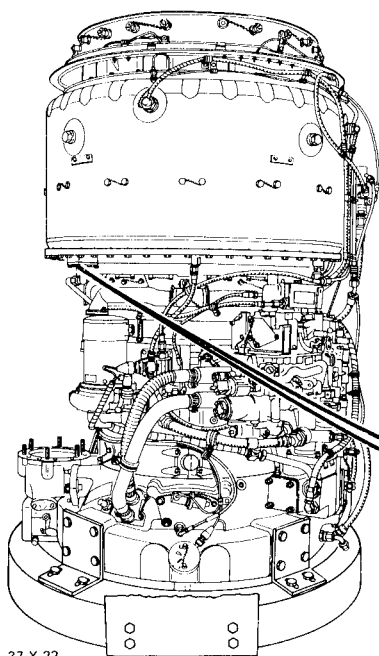
Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Technical Inspection Tool Kit,  
NSN 5180-00-323-114

**Materials:**

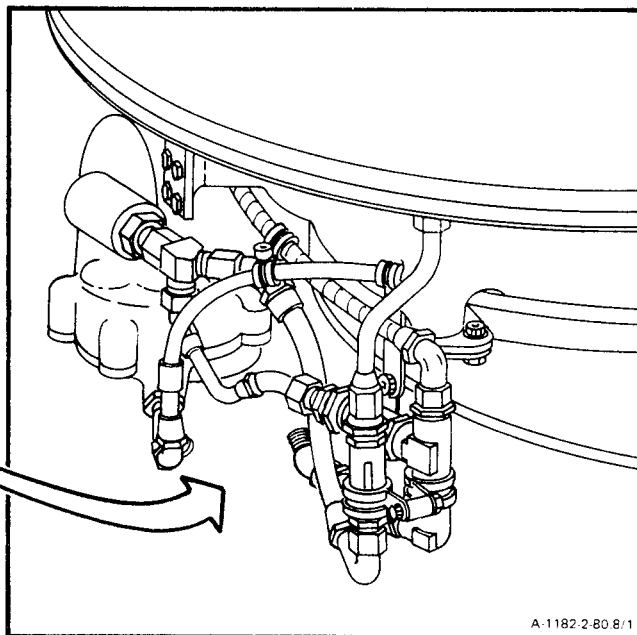
None

**Personnel Required:**

68B10 Aircraft Powerplant Repairer  
68B13 Aircraft Powerplant Inspector



37 X 22



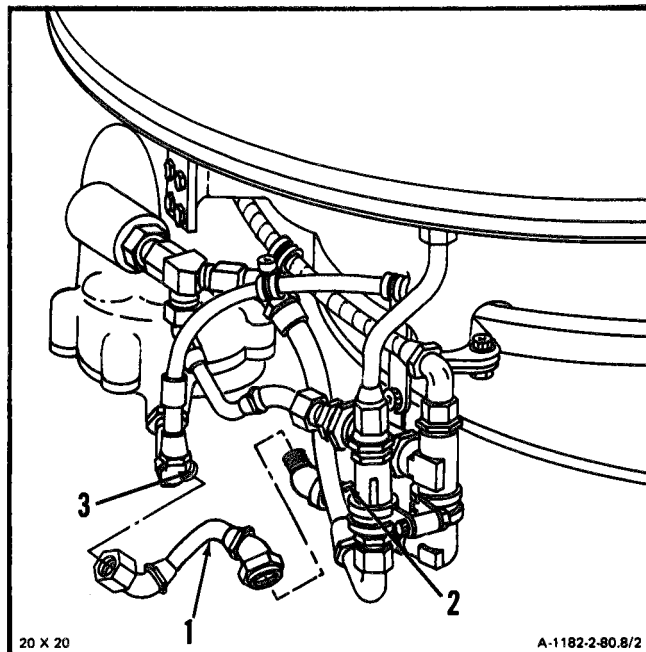
A-1182-2-80.8/1

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2-80.8 INSTALL HOSE ASSEMBLY (WATER WASH CHECK VALVE ELBOW TO INTERSTAGE AIR-BLEED ACTUATOR FUEL CONTROL INLET) (Continued)

2-80.8

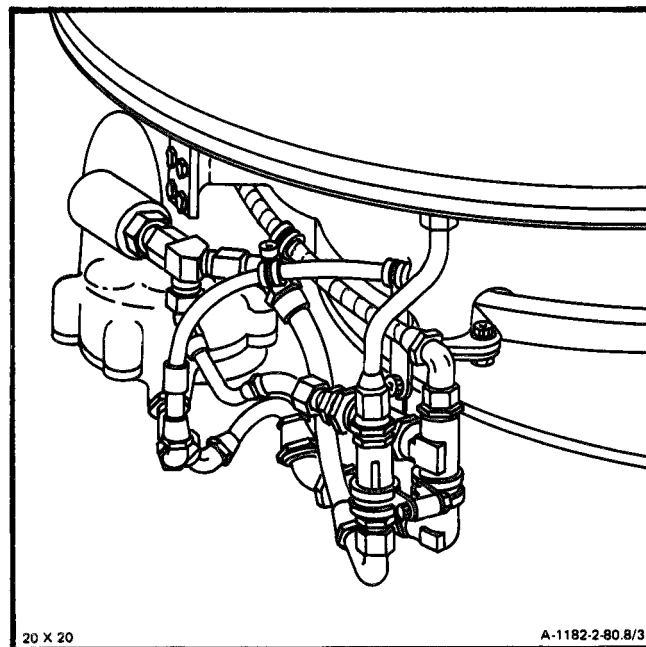
1. Install hose assembly (1) on check valve elbow (2) and air-bleed actuator Pm inlet tee (3).



INSPECT

FOLLOW-ON MAINTENANCE:

None



END OF TASK

2-80.9 REMOVE HOSE ASSEMBLY (WATER WASH KIT INSTALLATION TO AIRFRAME QUICK DISCONNECT SHELF)

2-80.9

INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**

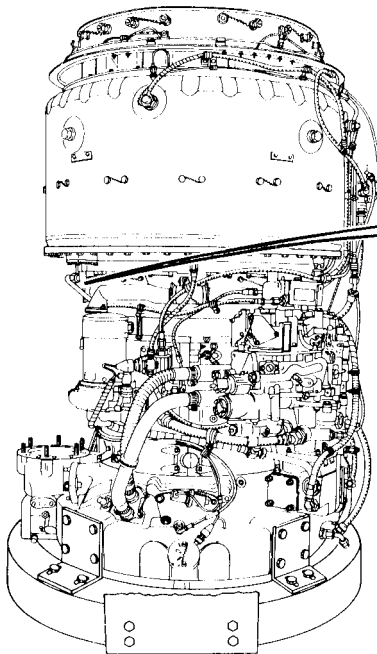
Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944

**Materials:**

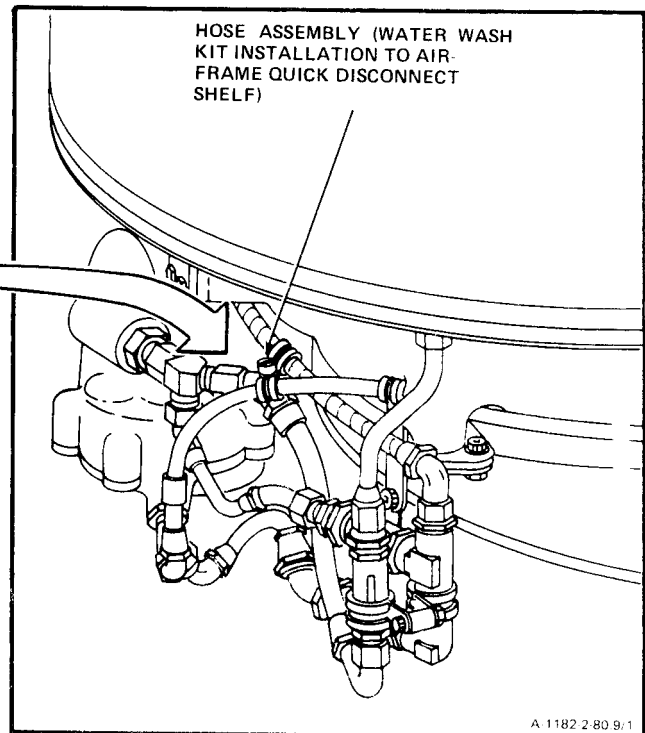
None

**Personnel Required:**

68B10 Aircraft Powerplant Repairer



42 X 24



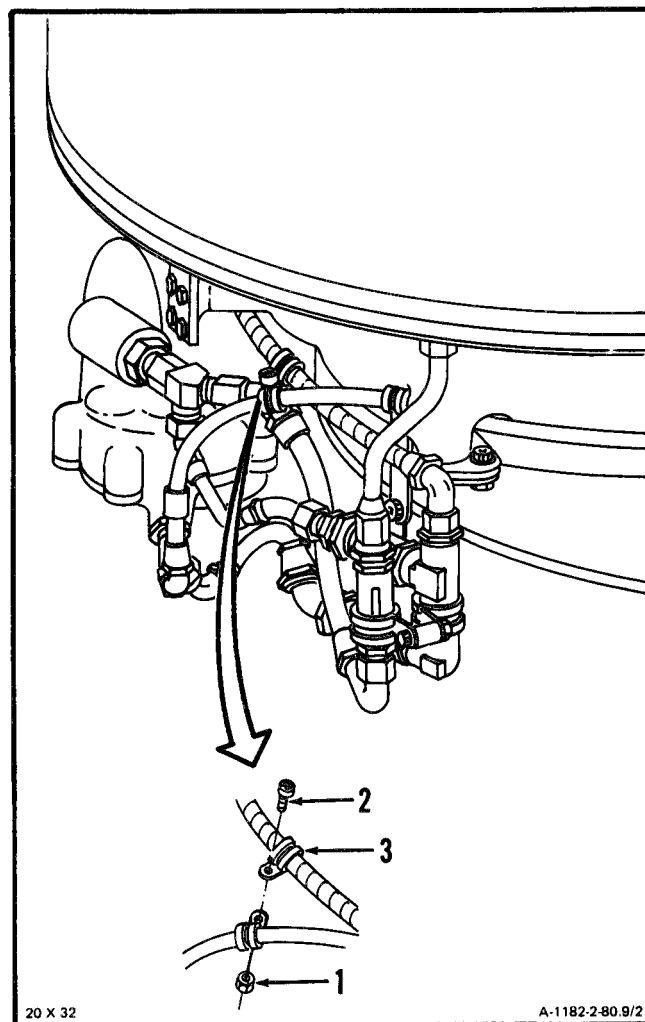
A 1182 2-80 9/1

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**2-80.9 REMOVE HOSE ASSEMBLY (WATER WASH KIT INSTALLATION TO AIRFRAME QUICK DISCONNECT SHELF) (Continued)**

1. **Remove** nut (1), screw (2) and **clamp** (3).

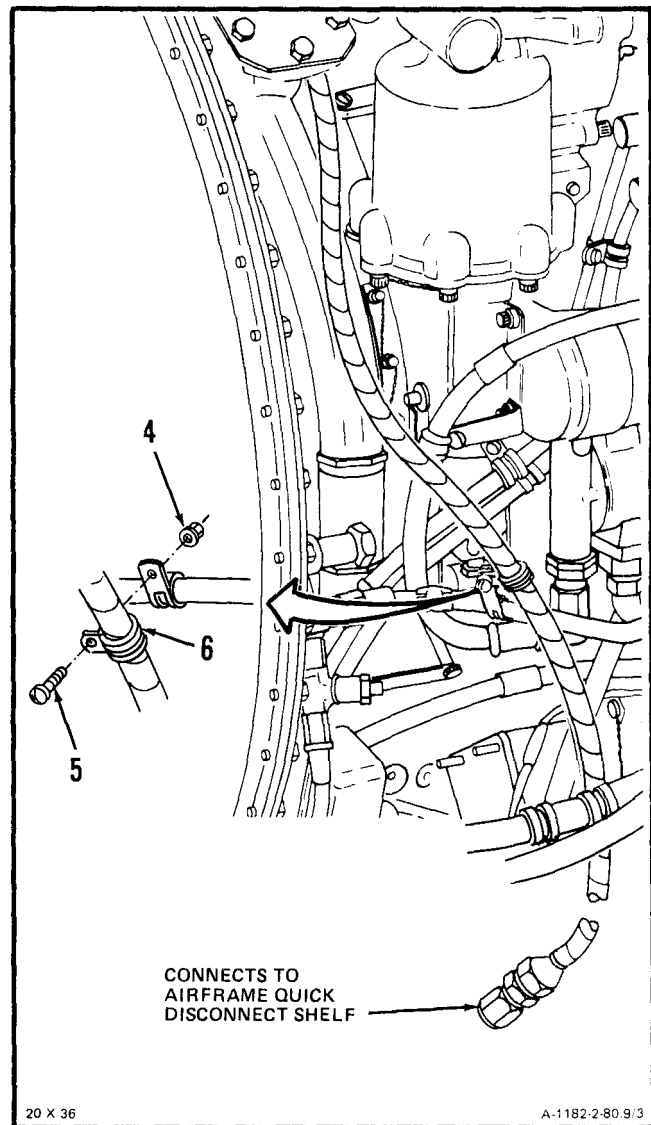


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2-80.9 REMOVE HOSE ASSEMBLY (WATER WASH KIT INSTALLATION TO AIRFRAME QUICK DISCONNECT SHELF) (Continued)

2-80.9

2. Remove nut (4), screws (5) and clamp (6).

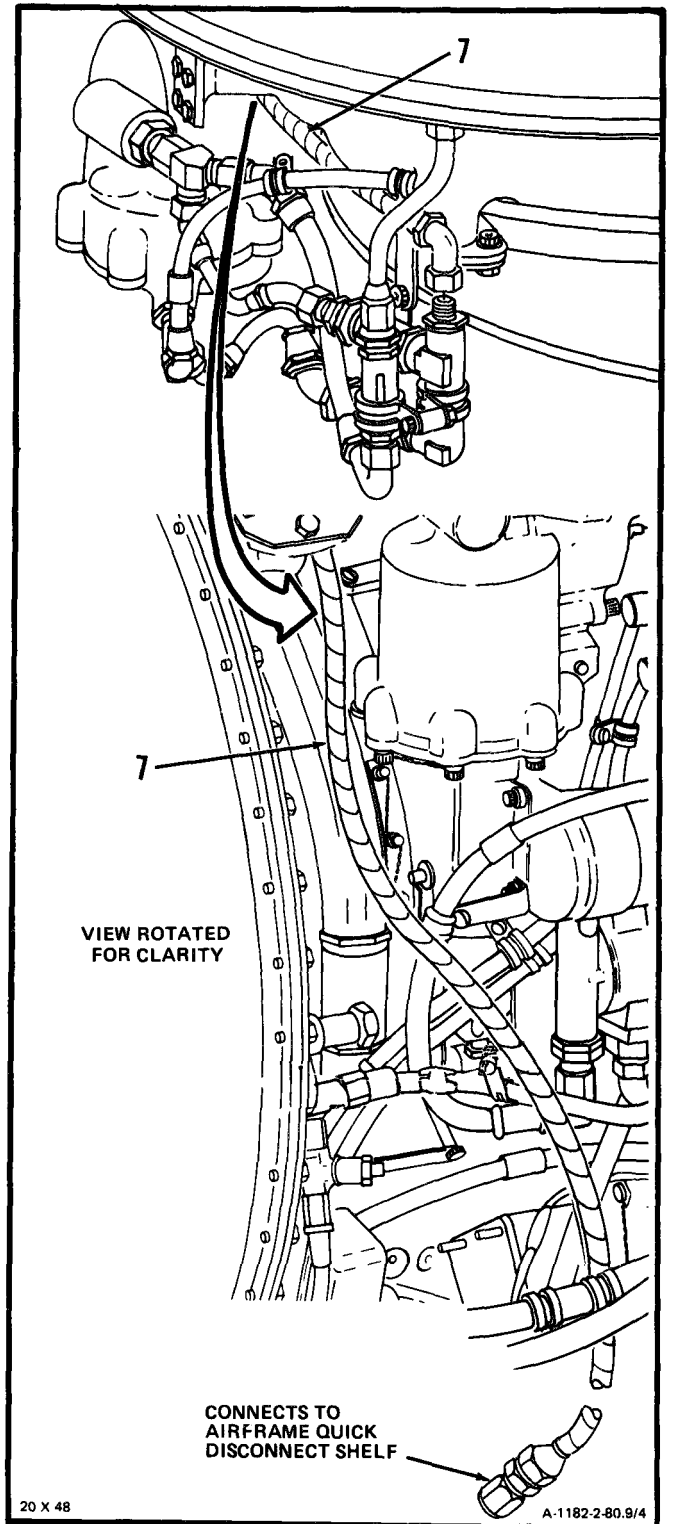


**GO TO NEXT PAGE**

2-80.9 REMOVE HOSE ASSEMBLY (WATER WASH KIT INSTALLATION TO AIRFRAME QUICK DISCONNECT SHELF) (Continued)

2-80.9

3. Disconnect and remove hose assembly (7).



**INSPECT**

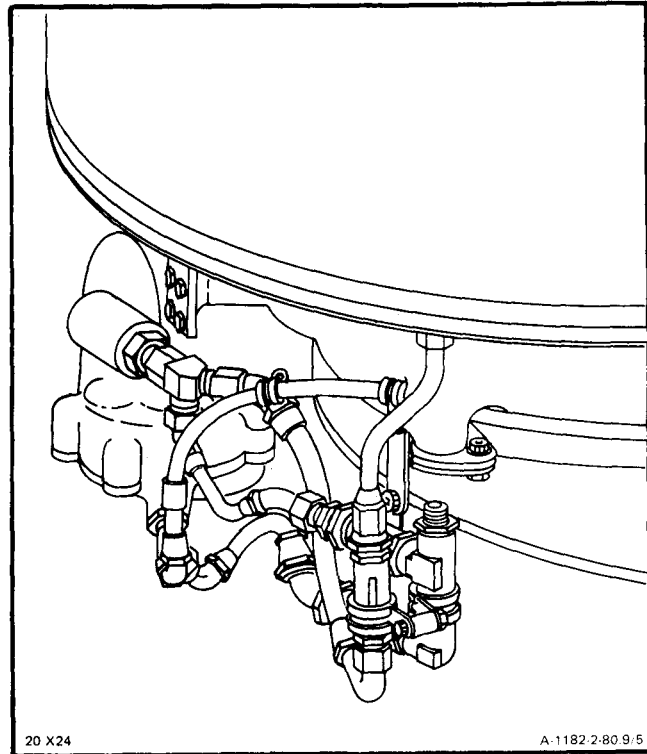
**GO TO NEXT PAGE**

2-80.9 REMOVE HOSE ASSEMBLY (WATER WASH KIT INSTALLATION TO AIRFRAME QUICK DISCONNECT SHELF) (Continued)

2-80.9

FOLLOW-ON MAINTENANCE:

None



**END OF TASK**

2-80.10 INSTALL HOSE ASSEMBLY (WATER WASH KIT INSTALLATION TO AIRFRAME QUICK DISCONNECT SHELF)

2-80.10

INITIAL SETUP

**Applicable Configurations**

All

**Tools:**

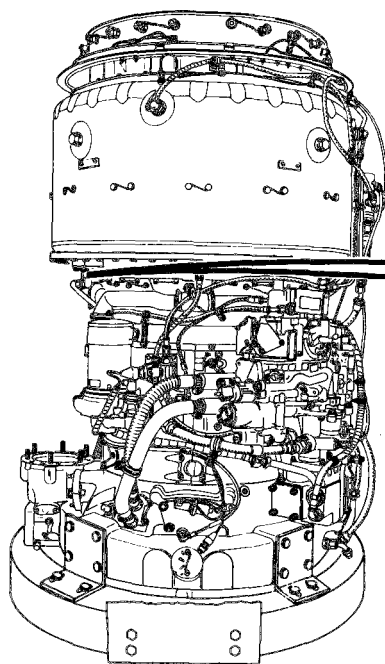
Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Technical Inspection Tool Kit,  
NSN 5180-00-323-5114

**Materials:**

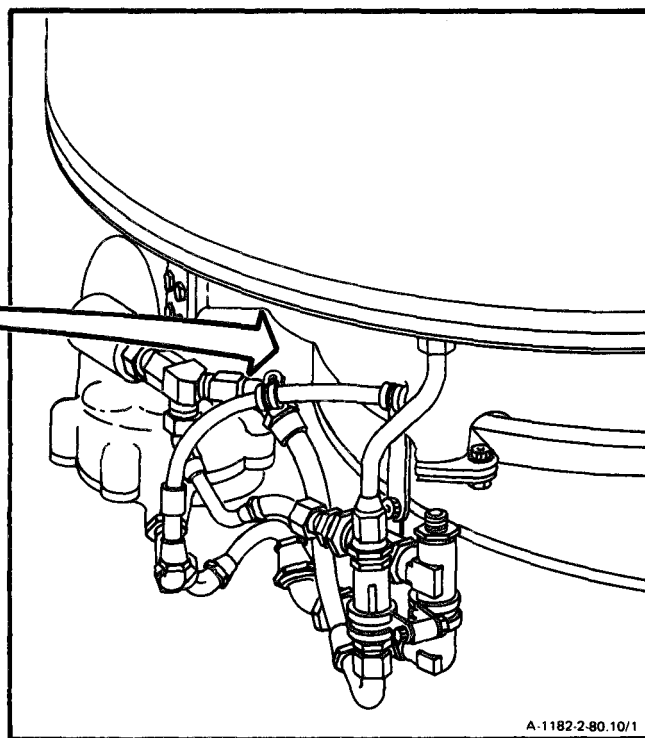
None

**Personnel Required:**

68B10 Aircraft Powerplant Repairer  
68B30 Aircraft Powerplant Inspector



36 X 24



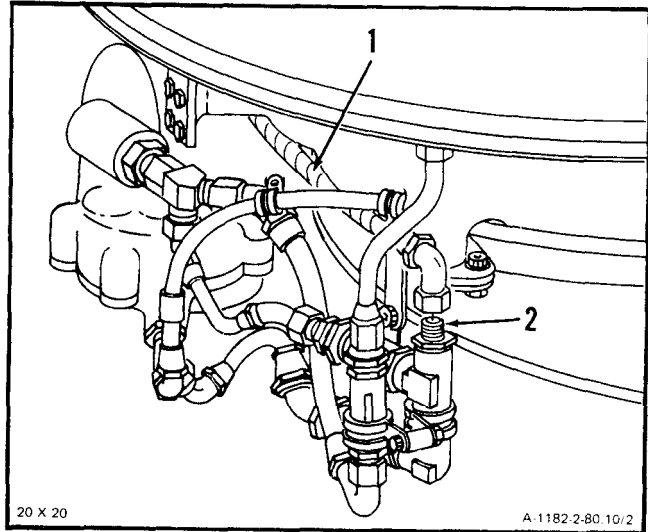
A-1182-2-80.10/1

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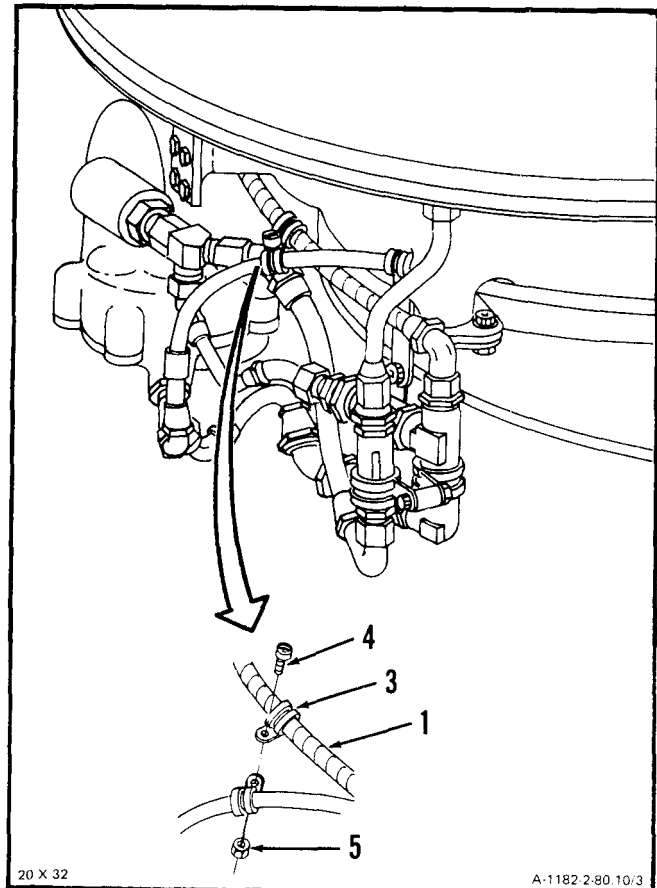
2-80.10 INSTALL HOSE ASSEMBLY (WATER WASH KIT INSTALLATION TO AIRFRAME QUICK DISCONNECT SHELF) (Continued)

2-80.10

1. **Install hose assembly (1) on check valve (2),** and position hose assembly across top of compressor housing parallel to the bleed band and down right side of engine.



2. **Install clamp (3) on hose assembly (1) and** install screw (4) and nuts (5).

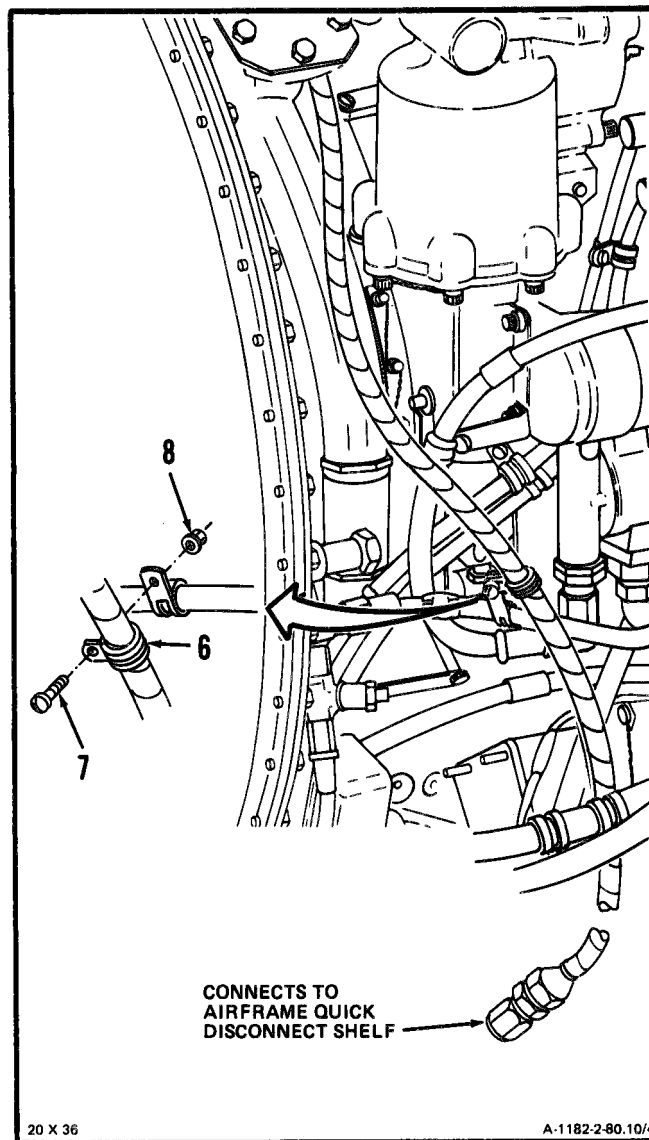


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## 2-80.10 INSTALL HOSE ASSEMBLY (WATER WASH KIT INSTALLATION TO AIRFRAME QUICK DISCONNECT SHELF) (Continued)

2-80.10

3. Install clamp (6) on hose assembly (1) and install screw (7) and nut (8).

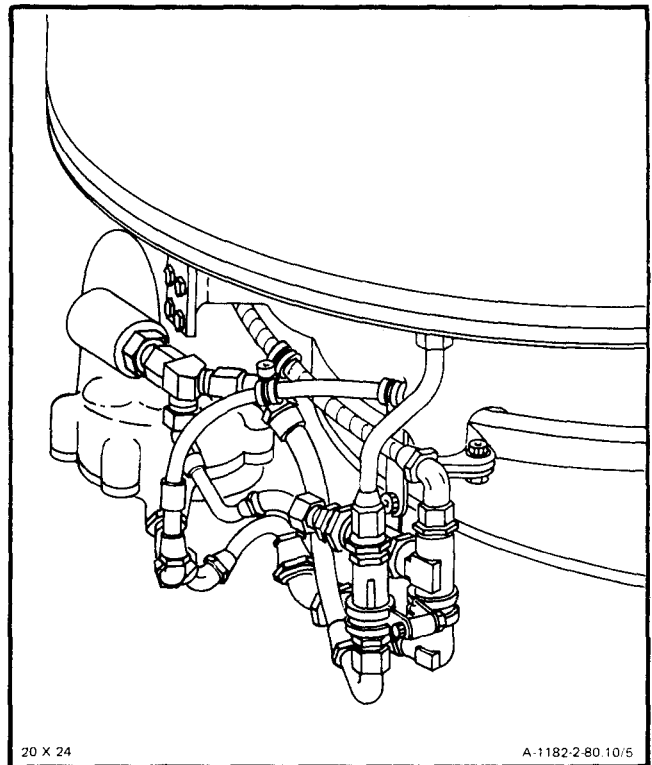
**INSPECT****GO TO NEXT PAGE**

2-80.10 INSTALL HOSE ASSEMBLY (WATER WASH KIT INSTALLATION TO AIRFRAME QUICK DISCONNECT SHELF) (Continued)

2-80.10

FOLLOW-ON MAINTENANCE:

None



**END OF TASK**



**2-80.11 REMOVE CHECK VALVE (AIR DIFFUSER TO INTERSTAGE AIR-BLEED ACTUATOR)**

**2-80.11**

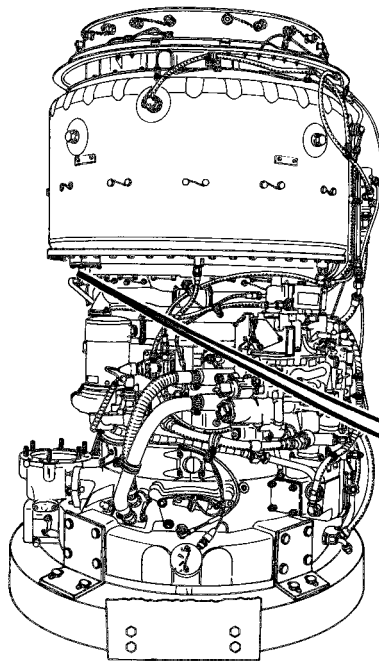
INITIAL SETUP

**Materials:**  
Packings

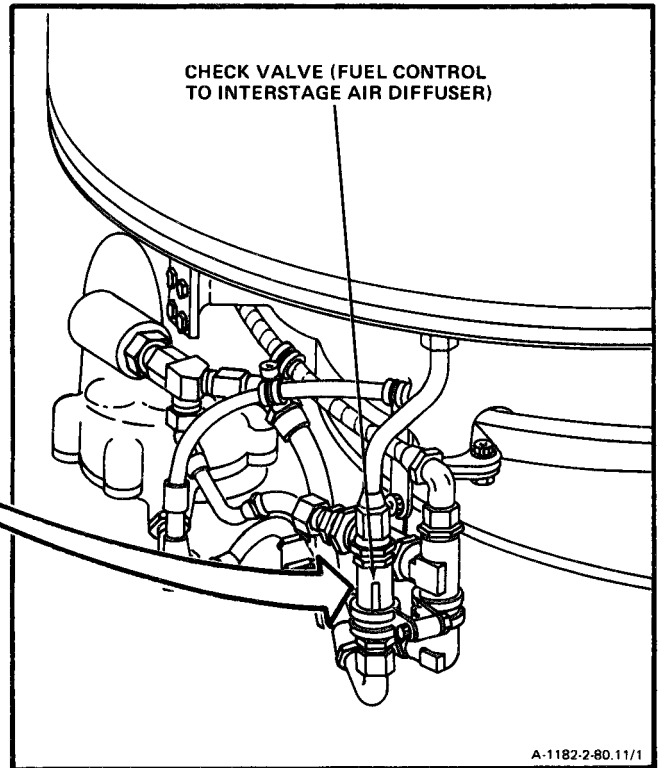
**Applicable Configurations:**  
All

**Personnel Required:**  
68B10 Aircraft Powerplant Repairer

**Tools:**  
Powerplant Mechanic's Tool Kit,



36 X 24



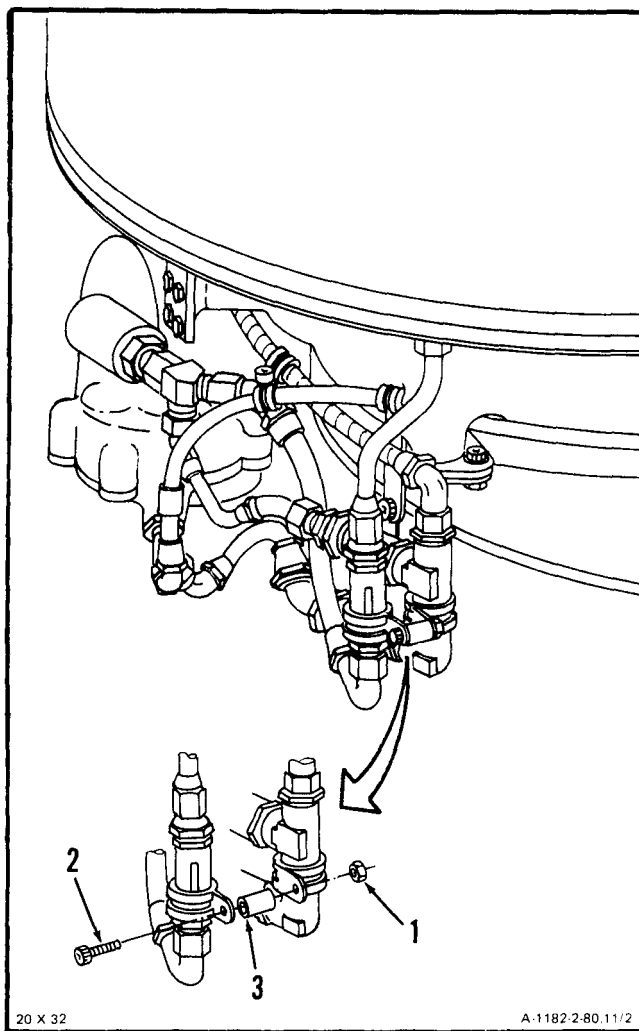
A-1182-2-80.11/1

**GO TO NEXT PAGE**

2-80.11 REMOVE CHECK VALVE (AIR DIFFUSER TO INTERSTAGE AIR-BLEED ACTUATOR) (Continued)

2-80.11

1. Remove nut (1), screw (2) and spacer (3).



20 X 32

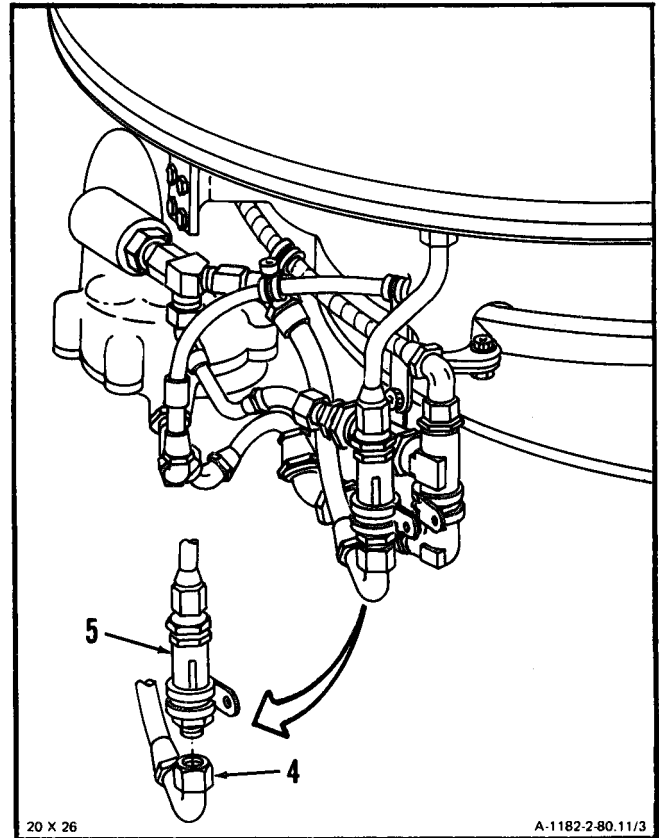
A-1182-2-80.11/2

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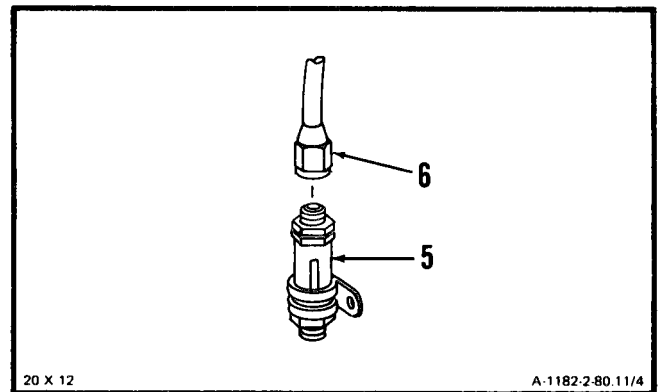
2-80.11 REMOVE CHECK VALVE (AIR DIFFUSER TO INTERSTAGE AIR-BLEED ACTUATOR) (Continued)

2-80.11

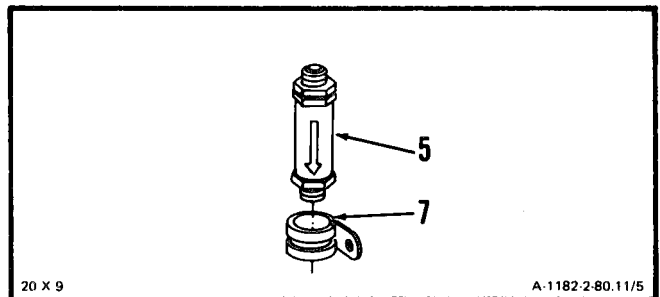
2. Disconnect hose assembly (4) from check valve (5).



3. Remove check valve (5) from tube assembly (6).



4. Remove clamp (7) from check valve (5).



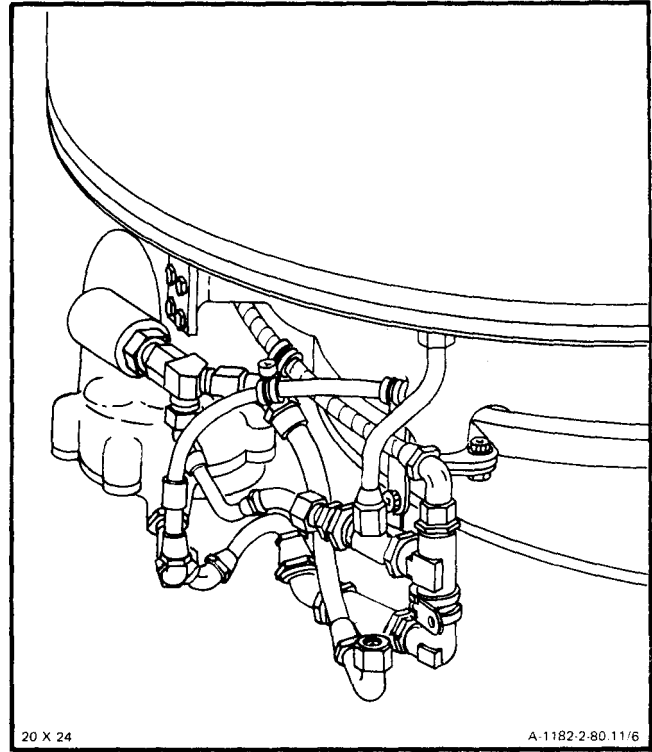
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2-80.11 REMOVE CHECK VALVE (AIR DIFFUSER TO INTERSTAGE AIR-BLEED ACTUATOR) (Continued)

2-80.11

FOLLOW-ON MAINTENANCE:

None



**END OF TASK**

2-80.12 CLEAN CHECK VALVE (AIR DIFFUSER TO INTERSTAGE AIRBLEED ACTUATOR)

2-80.12

## INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944

**Goggles**

Compressed Air Source

**Materials:**

Dry Cleaning Solvent (E17)  
Gloves (E20)  
Lint-Free Cloth (E26)

**Equipment Condition:**

Off Engine Task  
Check Valve (Air diffuser to  
interstage air-bleed actuator  
removal (Task 2-80.11)

**General Safety Instructions:****WARNING**

Dry cleaning solvent (E17) is flammable and toxic. It can irritate skin and cause burns. Use only in well-ventilated area, away from heat and open flame. In case of contact immediately flush skin or eyes with water for at least 15 minutes. Get medical attention for eyes.

1. Wear gloves (E20). **Clean check valve (1)** and nipple (2) using dry cleaning solvent (E17) and brush.

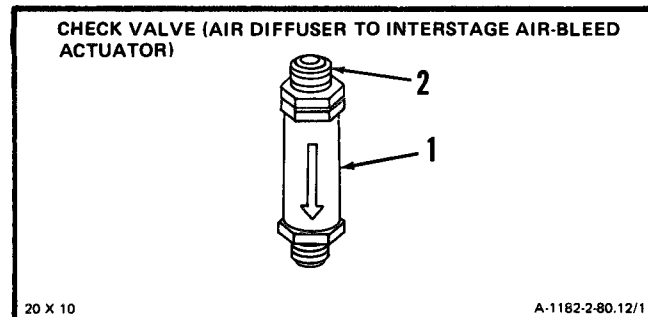
**WARNING**

When using compressed air for cleaning, use approved protective equipment for eyes and face. Do not use more than 30 psig air pressure. Do not direct air toward yourself or another person. Failure to comply could result in injury to eyes or skin. In case of injury, get medical attention.

2. Wear goggles. **Blow dry check valve (1)** and nipple (2) using clean, dry compressed air.

## FOLLOW-ON MAINTENANCE:

None



END OF TASK

**22-80.13 INSTALL CHECK VALVE (AIR DIFFUSER TO INTERSTAGE  
AIR-BLEED ACTUATOR)**

2-80.13

INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**

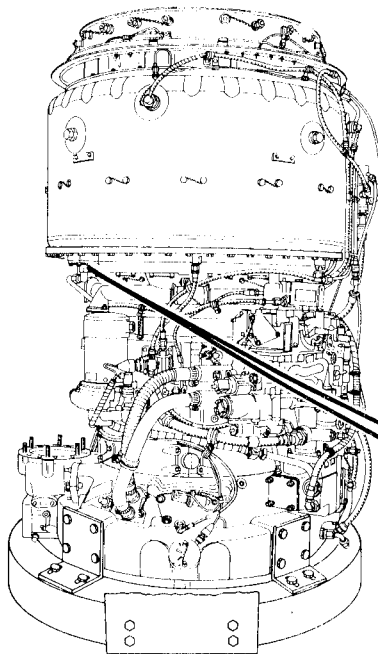
Powerplant Mechanic's Tool Kit,  
NSN 5180-00323-4944  
Technical Inspection Tool Kit,  
NSN 5180-00-323-5114

**Materials:**

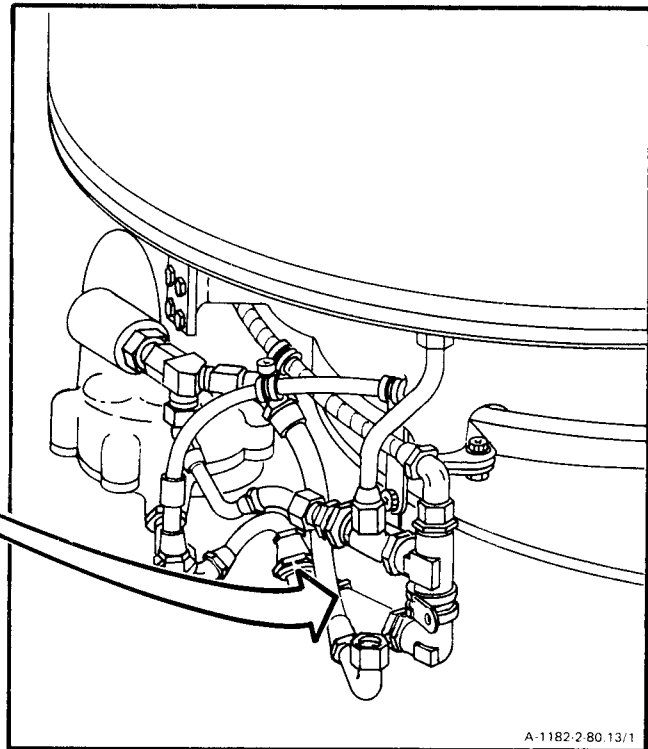
None

**Personnel Required:**

68B10 Aircraft Powerplant Repairer



36 X 24



A-1182-2-80.13/1

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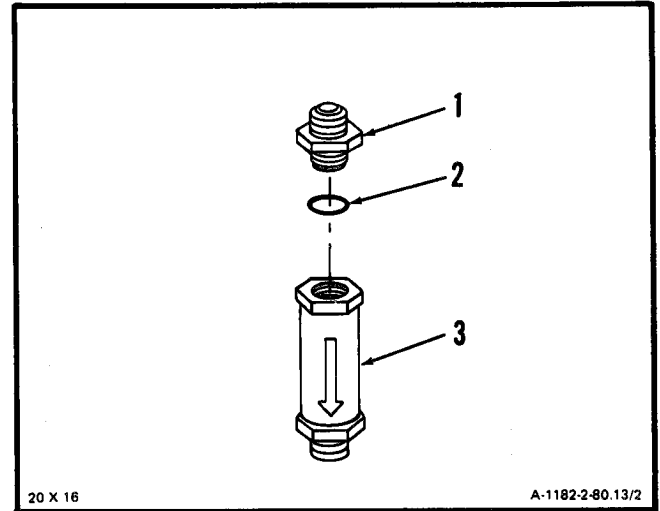
2-80.13 INSTALL CHECK VALVE (AIR DIFFUSER TO INTERSTAGE  
AIR-BLEED ACTUATOR) (Continued)

2-80.13

**NOTE**

If check valve is a replacement do steps 1. and 2. If same check valve that was removed is to be installed, omit steps 1. and 2. and proceed to step 3.

1. **Remove nipple (1) and packing (2) from removed check valve (3).**
2. **Install packing (2) and nipple (1) in serviceable check valve (3).**



20 X 16

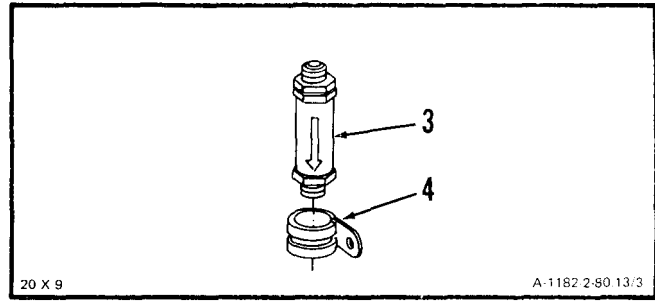
A-1182-2-80.13/2

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**2-80.13 INSTALL CHECK VALVE (AIR DIFFUSER TO INTERSTAGE  
AIR-BLEED ACTUATOR) (Continued)**

**2-80.13**

**3. Install clamp (4) on check valve (3).**



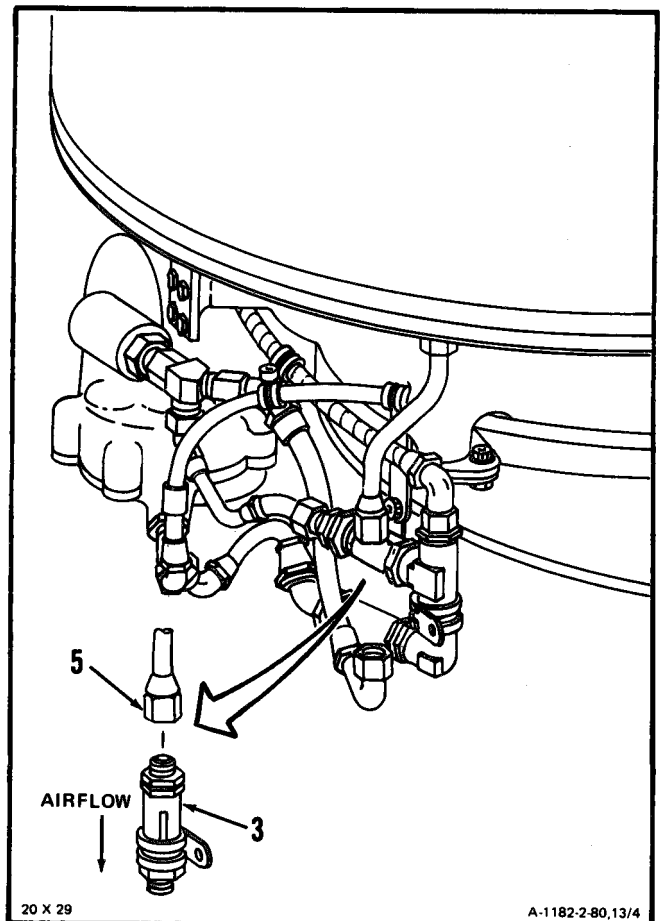
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**2-80.13 INSTALL CHECK VALVE (AIR DIFFUSER TO INTERSTAGE  
AIR-BLEED ACTUATOR) (Continued)****2-80.13****CAUTION**

In following step, when installing check valve, ensure arrow on check valve indicates proper direction of air flow is positioned as shown in figure.

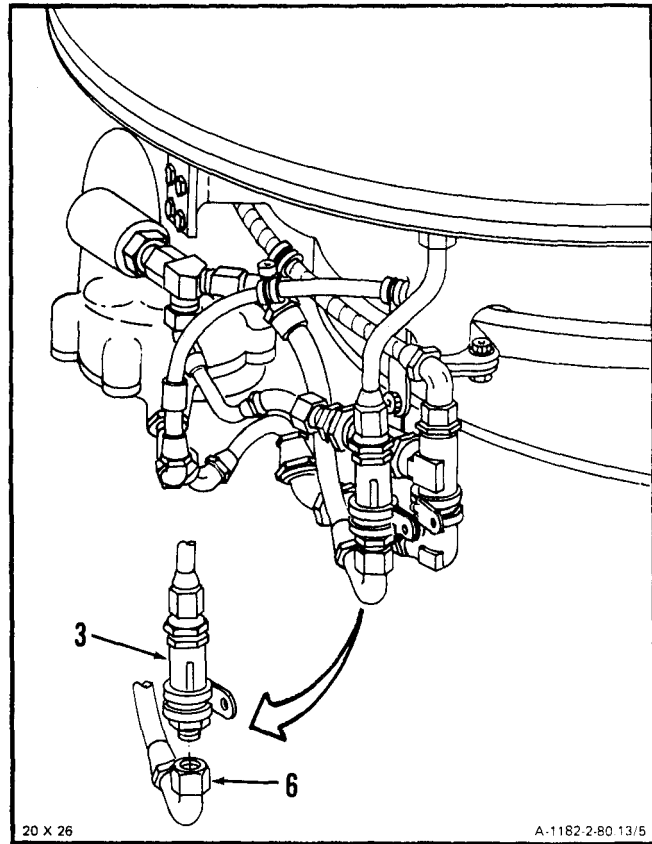
4. Install check valve (3) on tube assembly (5).

**GO TO NEXT PAGE**

**2-80.13 INSTALL CHECK VALVE (AIR DIFFUSER To INTERSTAGE  
AIR-BLEED ACTUATOR) (Continued)**

2-80.13

5. Install hose assembly (6) on check valve (3).

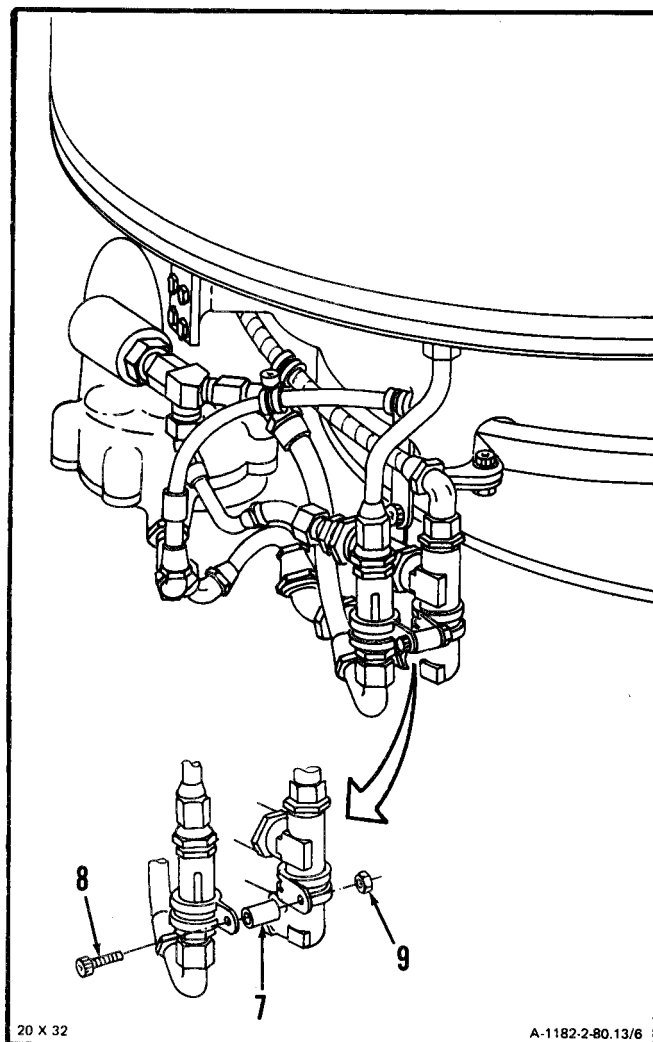


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**2-80.13 INSTALL CHECK VALVE (AIR DIFFUSER TO INTERSTAGE  
AIR-BLEED ACTUATOR) (Continued)**

2-80.1

6. Install spacer (7), screw (8) and nut (9).



**INSPECT**

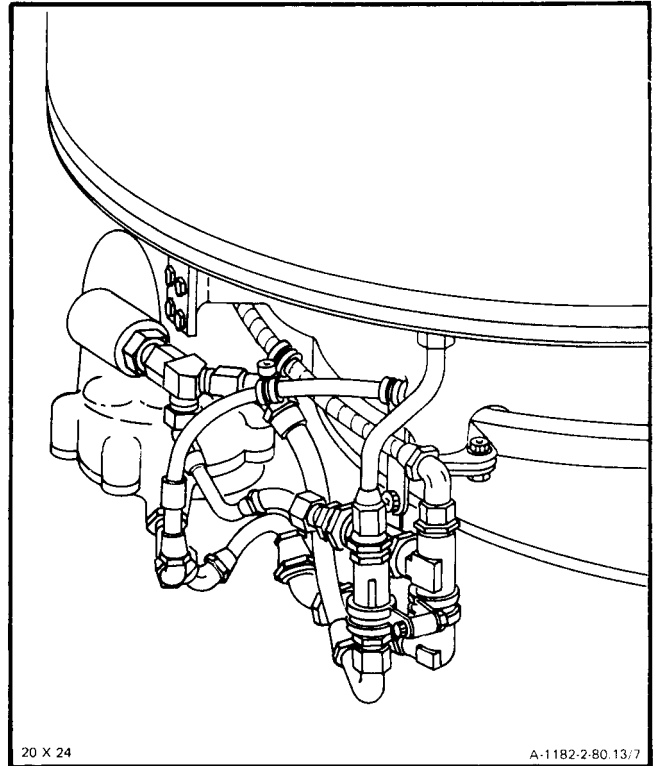
**GO TO NEXT PAGE**

**2-80.13 INSTALL CHECK VALVE (AIR DIFFUSER TO INTERSTAGE  
AIR-BLEED ACTUATOR) (Continued)**

2-80.13

FOLLOW-ON MAINTENANCE:

None



**END OF TASK**

**2-80.14 REMOVE CHECK VALVE (WATER WASH TEE TO INTERSTAGE  
AR-BLEED ACTUATOR P3 INLET)**

2-80.14

INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**

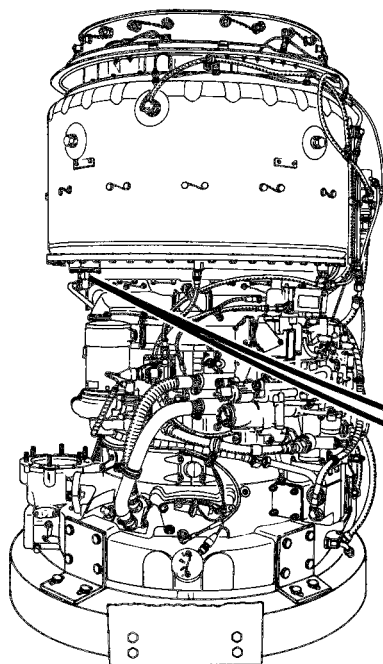
Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944

**Materials:**

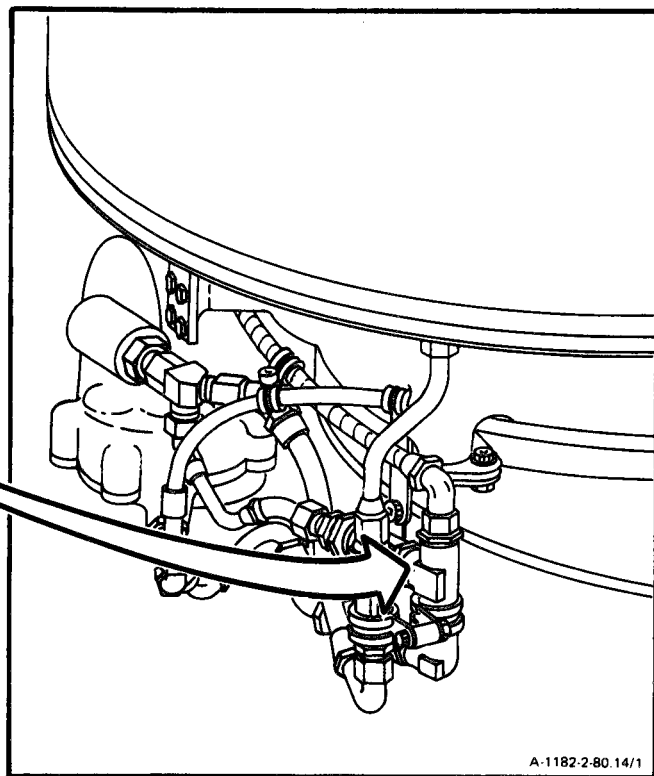
None

**Personnel Required:**

68B10 Aircraft Powerplant Repairer



36 X 24



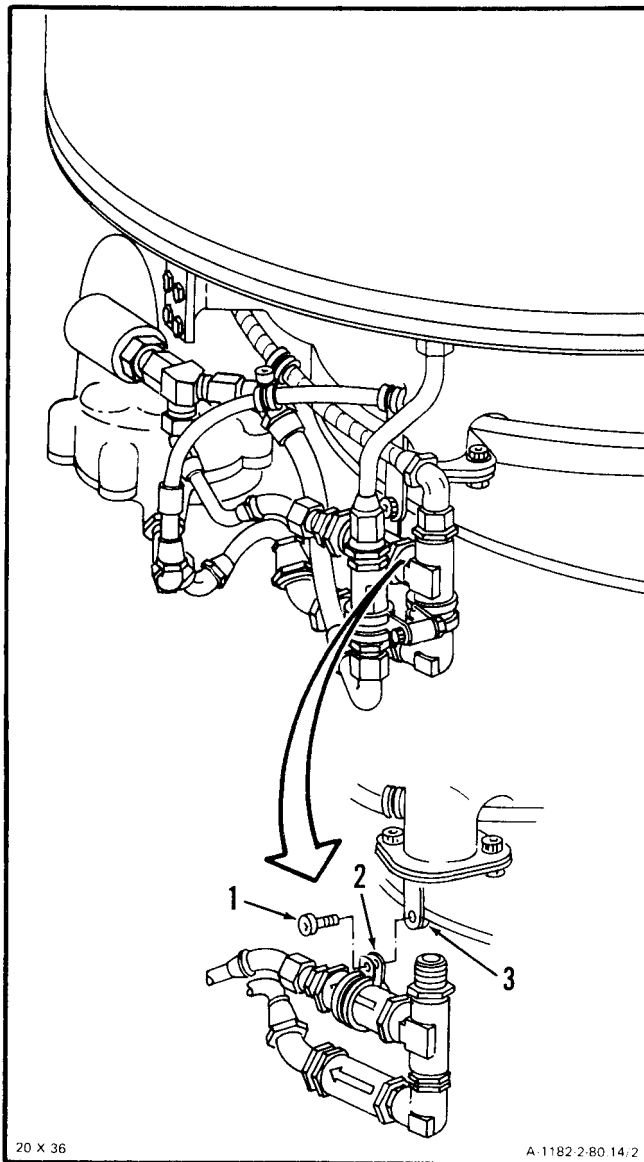
A-1182-2-80.14/1

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**2-80.14 REMOVE CHECK VALVE (WATER WASH TEE TO INTERSTAGE AIR-BLEED ACTUATOR P3 INLET) (Continued)**

2-80.14

1. **Remove** lockwire, and **bolt (1)** from clamp (2) and bleed band retainer (3).

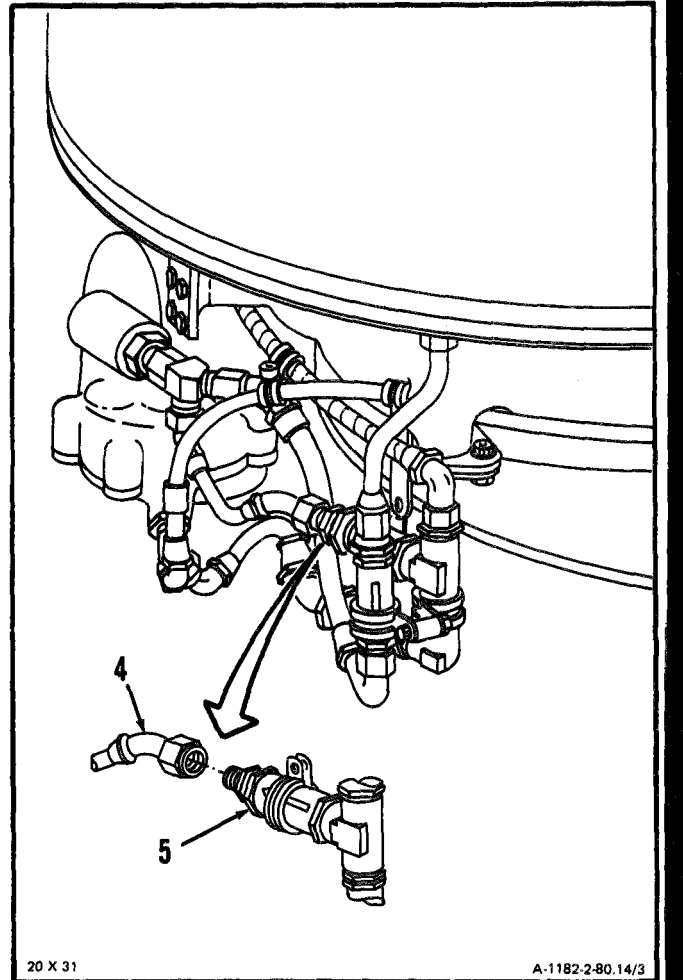


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**2-80.14 REMOVE CHECK VALVE (WATER WASH TEE TO INTERSTAGE  
AIR-BLEED ACTUATOR P3 INLET) (Continued)**

2-80.14

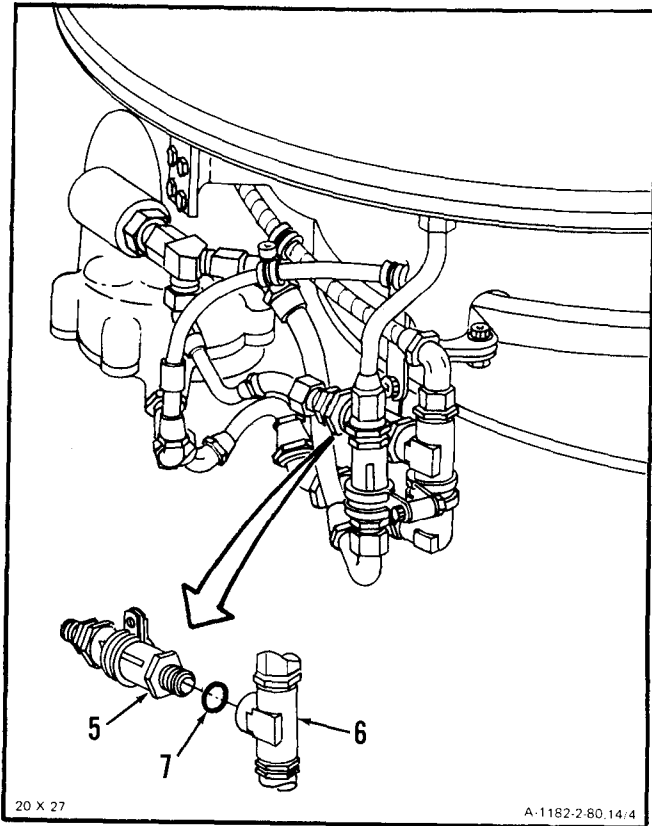
2. Disconnect hose assembly (4) from check valve (5).

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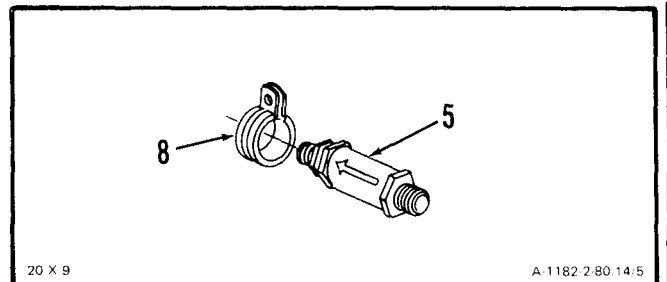
**2-80.14 REMOVE CHECK VALVE (WATER WASH TEE TO INTERSTAGE AIR-BLEED ACTUATOR P3 INLET) (Continued)**

2-80.14

3. Remove check valve (5) from tee (6), and remove packing (7) from check valve (5).



4. Remove clamp (8) from check valve (5).



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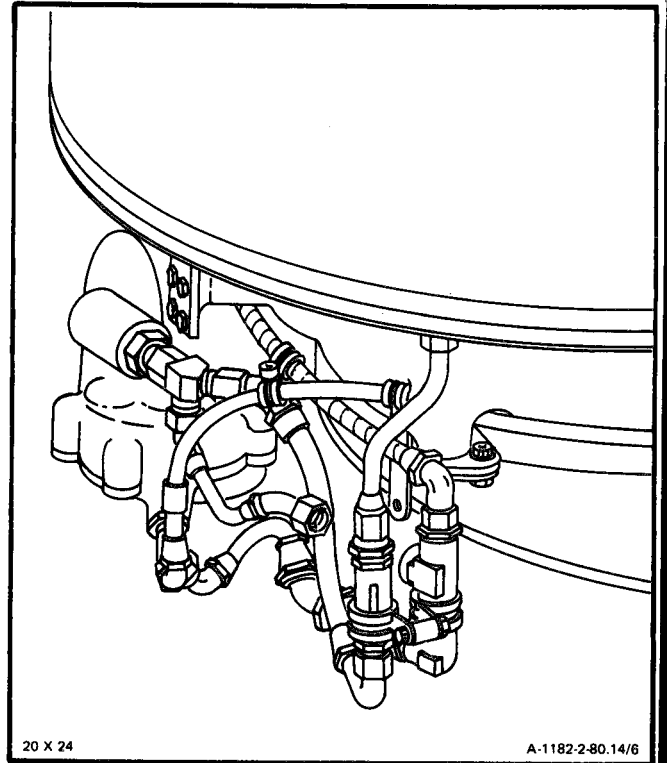


**2-80.14 REMOVE CHECK VALVE (WATER WASH TEE TO INTERSTAGE  
AIR-BLEED ACTUATOR P3 INLET) (Continued)**

2-80.14

FOLLOW-ON MAINTENANCE:

None

**END OF TASK**

2-80.15 CLEAN CHECK VALVE (WATER WASH TEE TO INTERSTAGE AIR-BLEED ACTUATOR P3 INLET)

2-80.15

INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**

- Powerplant Mechanic's Tool Kit,  
NSN 5180-00-3234944
- Goggles
- Compressed Air Source

**Materials:**

- Dry Cleaning Solvent (E17)
- Gloves (E20)

**Personnel Required:**

68B10 Aircraft Powerplant Repairer

**Equipment Condition:**

- Off Engine Task
- Check Valve (Air diffuser to interstage air-bleed actuator P3 inlet) (Task 2-80.14)

**General Safety Instructions:**

**WARNING**

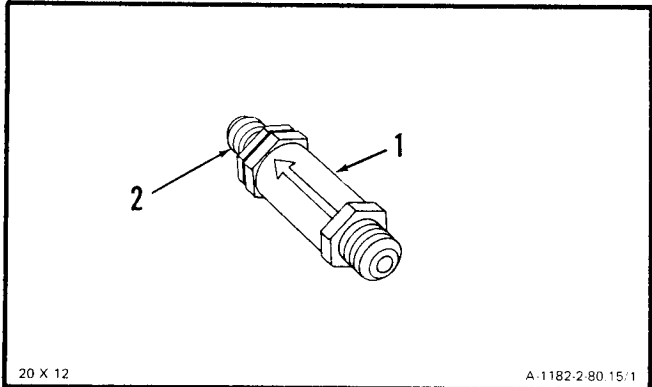
Dry cleaning solvent (E17) is flammable and toxic. It can irritate skin and cause burns. Use only in well-ventilated area, away from heat and open flame. In case of contact, immediately flush skin or eyes with water for at least 15 minutes. Get medical attention for eyes.

1. Wear gloves (E20). **Clean check valve (1) and reducer (2)** using dry cleaning solvent (E17) and brush.

**WARNING**

When using compressed air for cleaning, use approved protective equipment for eyes and face. Do not use more than 30 psig air pressure. Do not direct air toward yourself or another person. Failure to comply could result in injury to eyes or skin. In case of injury, get medical attention.

2. Wear goggles. **Blow dry check valve (1) and reducer (2)**, using clean, dry compressed air.



20 X 12

A-1182-2-80.15/1

FOLLOW-ON MAINTENANCE:

None

END OF TASK

## 2-80.16 INSTALL CHECK VALVE (WATER WASH TEE TO INTERSTAGE AIR-BLEED ACTUATOR P3 INLET)

2-80.16

### INITIAL SETUP

#### Applicable Configurations:

All

#### Tools:

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944

Technical Inspection Tool Kit,  
NSN 5180-00-323-5114

Torque Wrench, 30-150 Inch-Pounds

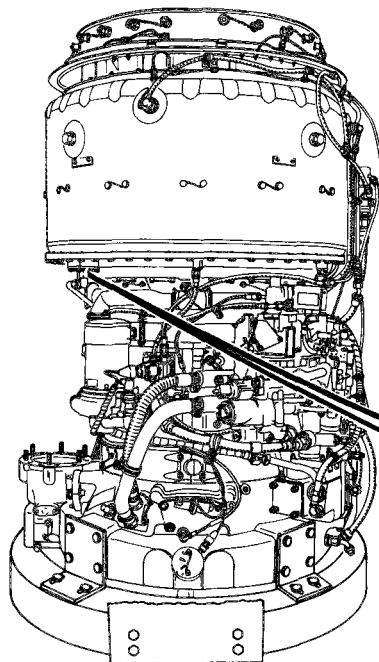
#### Materials:

Lockwire (E29)

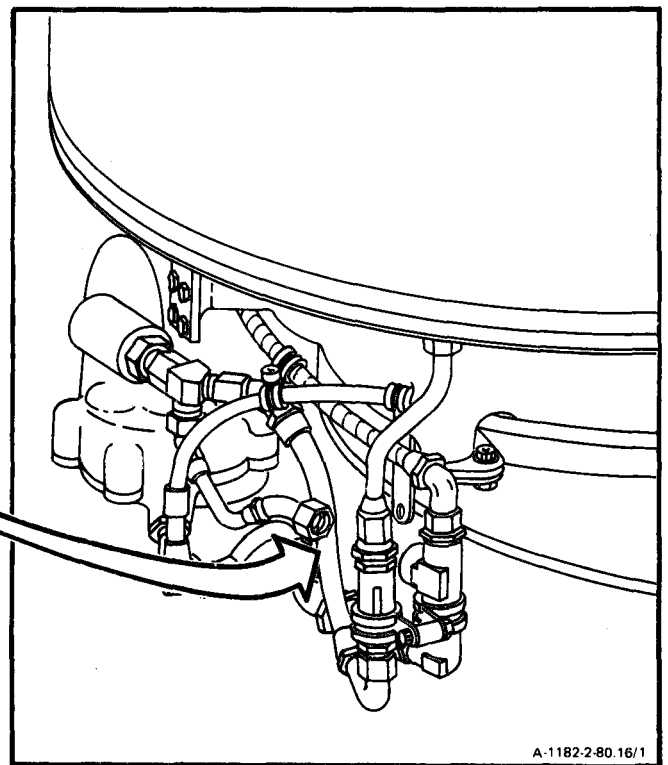
#### Personnel Required:

68B10 Aircraft Powerplant Repairer

68B30 Aircraft Powerplant Inspector



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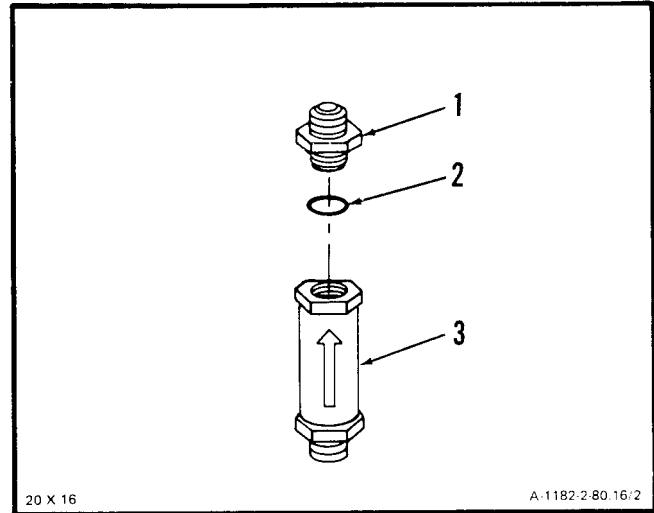
**2-80.16 INSTALL CHECK VALVE (WATER WASH TEE TO INTERSTAGE  
AIR-BLEED ACTUATOR P3 INLET (Continued)**

2-80.16

**NOTE**

If check valve is a replacement do steps 1. and 2. If same check valve that was removed is to be installed, omit steps 1. and 2. and proceed to step 3.

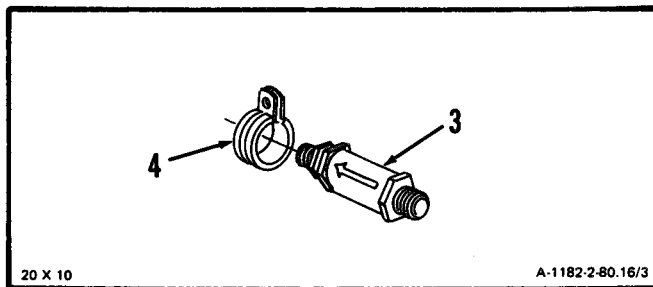
1. **Remove reducer (1) and packing (2) from removed check valve (3).**
2. **Install packing (2) and reducer (1) in serviceable check valve (3).**

**GO TO NEXT PAGE**

**2-80.16 INSTALL CHECK VALVE (WATER WASH TEE TO INTERSTAGE AIR-BLEED ACTUATOR P3 INLET) (Continued)**

2-80.16

3. Install damp (4) on check valve (3).

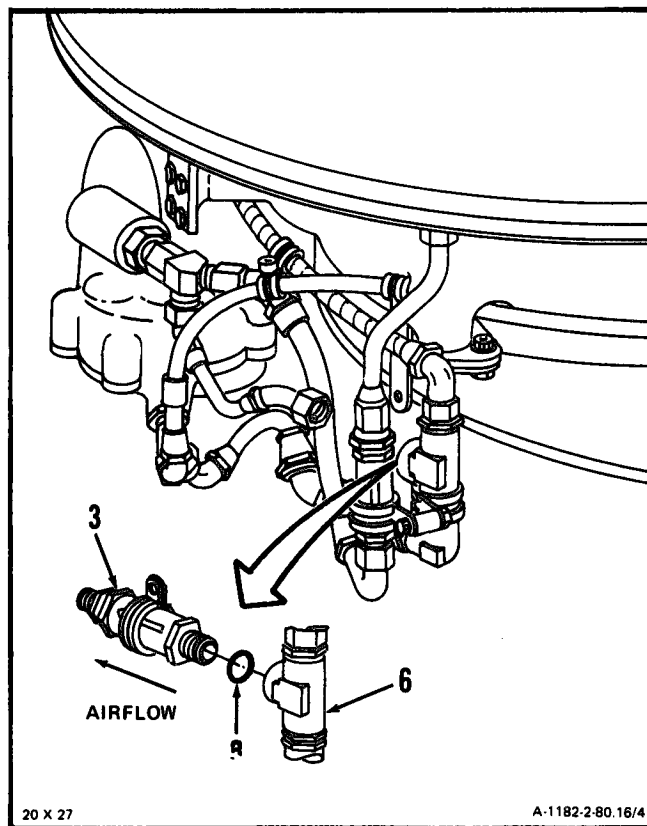


4. Install packing (5) on check valve (3).

**CAUTION**

In following step, when installing check valve, ensure arrow on check valve which indicates proper direction of airflow is positioned as shown in figure.

5. Install check valve (3) on tee (6).

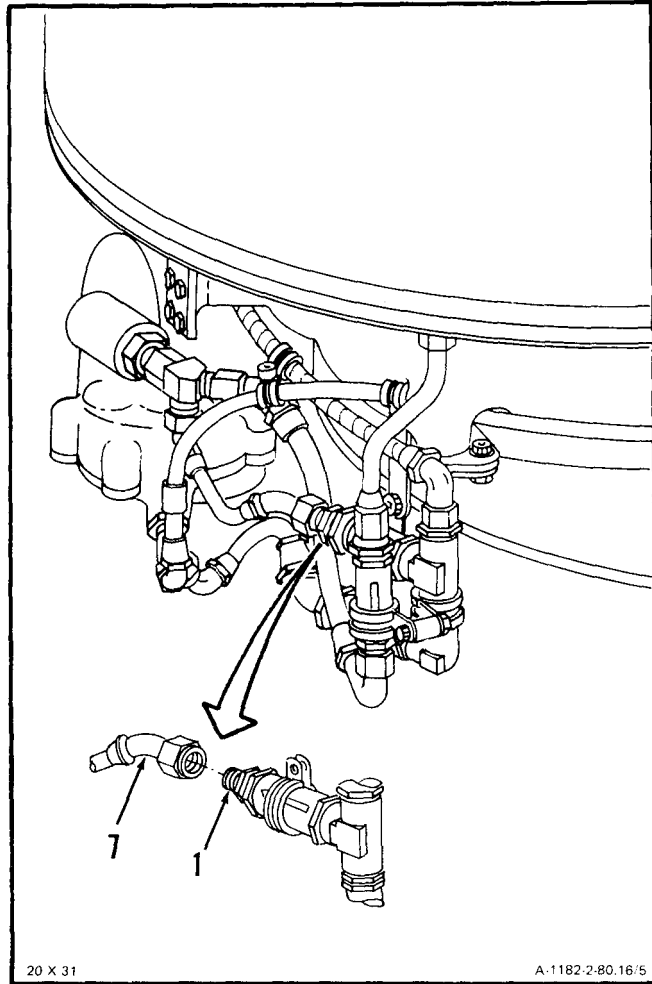


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**2-80.16 INSTALL CHECK VALVE (WATER WASH TEE TO INTERSTAGE  
AIR-BLEED ACTUATOR P3 INLET) (Continued)**

2-80.16

6. Install hose assembly (7) on reducer (1).



20 X 31

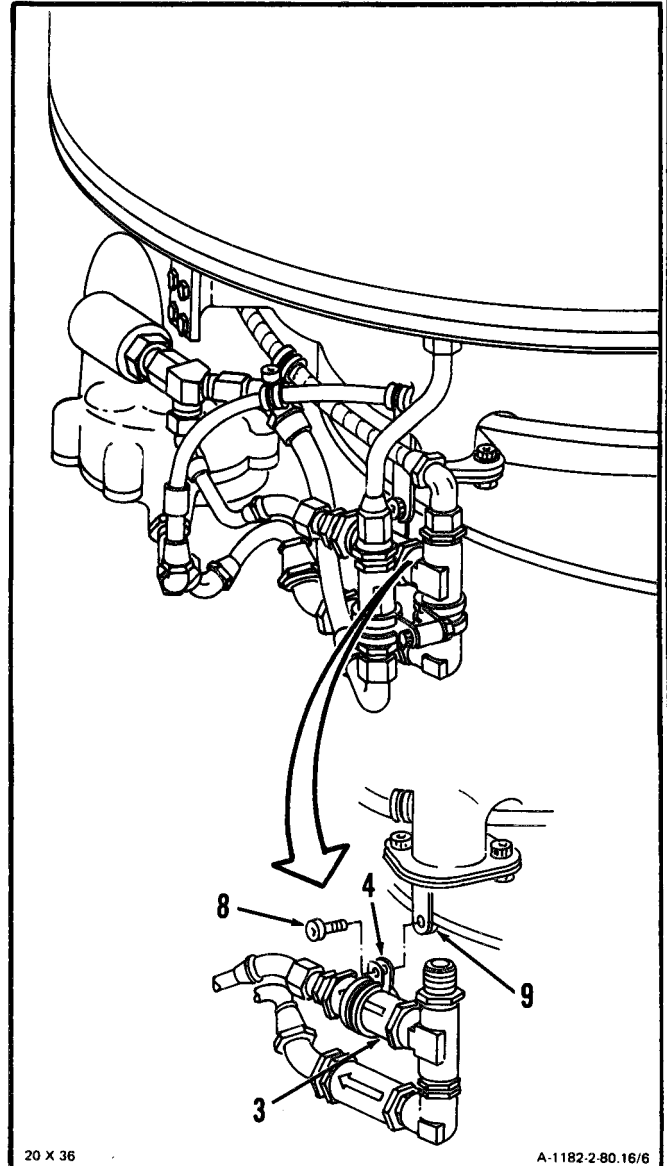
A-1182-2-80.16/5

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**2-80.16 INSTALL CHECK VALVE (WATER WASH TEE TO INTERSTAGE  
AIR-BLEED ACTUATOR P3 INLET) (Continued)**

2-80.16

7. Install bolt (8) on clamp (4).
8. Using bolt (8), secure check valve (3) to bleed band retainer (9).
9. Torque tilt (8) to 65 inchpounds. Lockwire bolts. Use lockwire (E29).

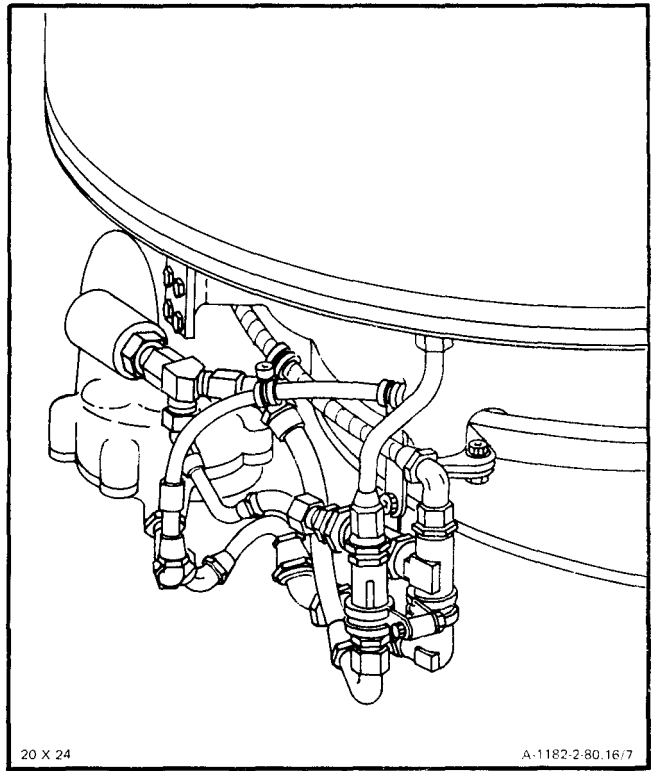
**INSPECT****GO TO NEXT PAGE**

**2-80.16 INSTALL CHECK VALVE (WATER WASH TEE TO INTERSTAGE  
AIR-BLEED ACTUATOR P3 INLET) (Continued)**

**2-80.16**

**FOLLOW-ON MAINTENANCE:**

None



**END OF TASK**



**2-80.17 REMOVE CHECK VALVE (WATER WASH TEE TO INTERSTAGE AIR-BLEED ACTUATOR FUEL CONTROL INLET)**

2-80.17

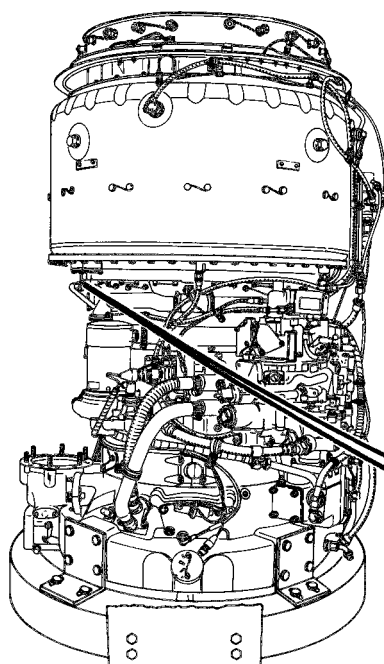
INITIAL SETUP

**Materials:**  
None

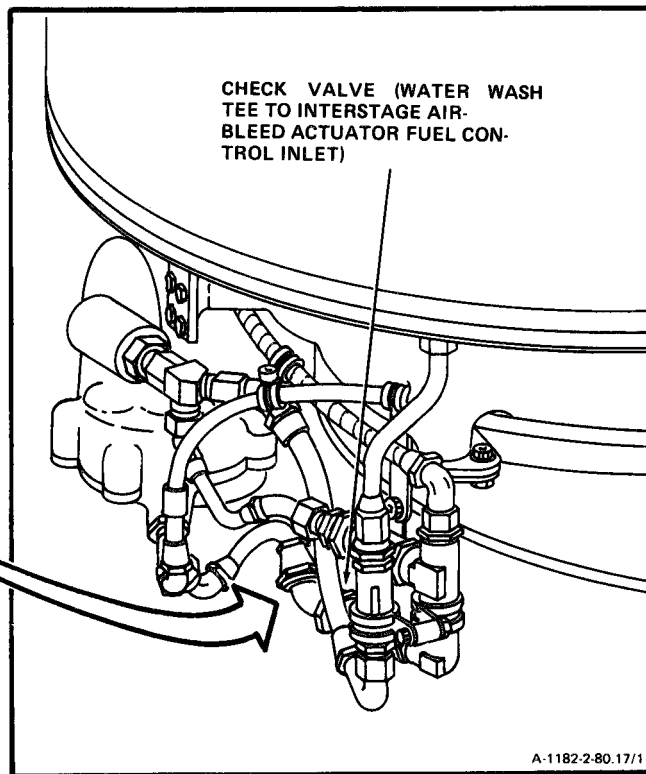
**Applicable Configurations:**  
All

**Personnel Required:**  
68B10 Aircraft Powerplant Repairer

**Tools:**  
Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944



36 X 24



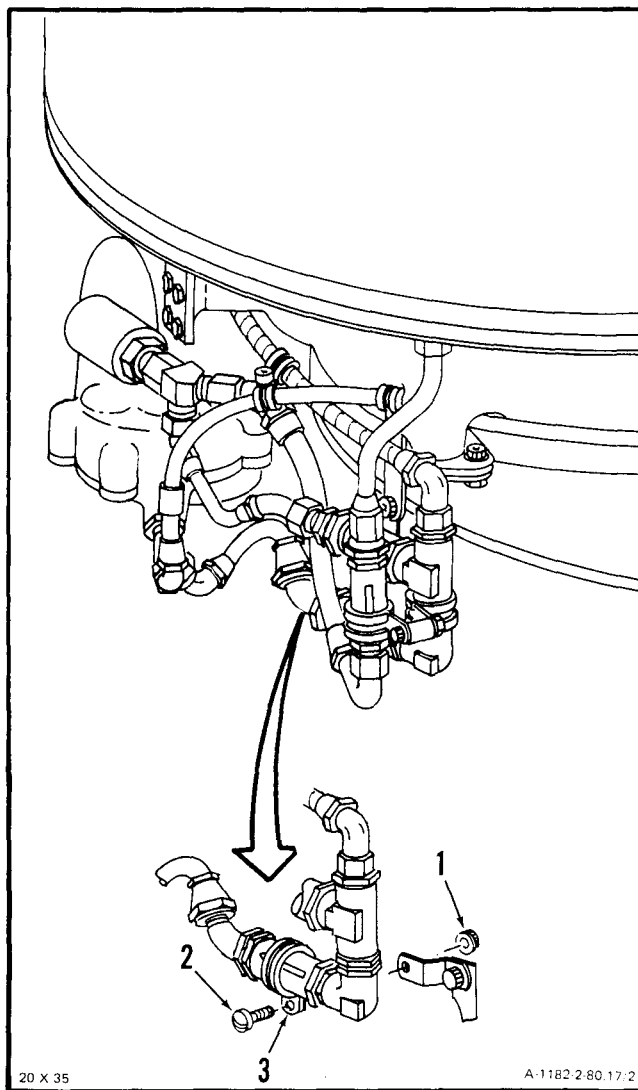
A-1182-2-80.17/1

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**2-80.17 REMOVE CHECK VALVE (WATER WASH TEE TO INTERSTAGE  
AIR-BLEED ACTUATOR FUEL CONTROL INLET) (Continued)**

**2-80.17**

1. Remove nut (1), screw (2), and clamp (3).



20 X 35

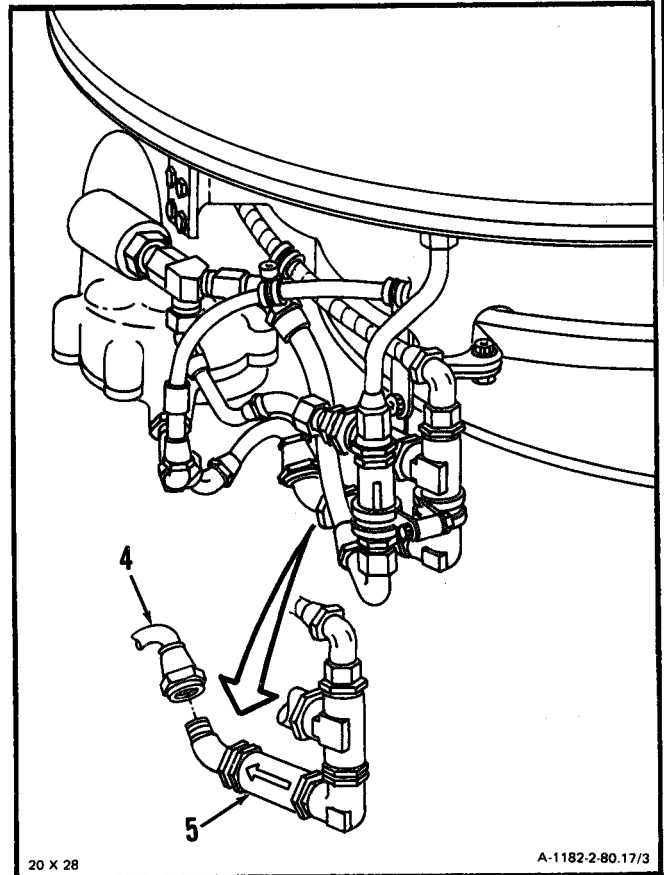
A-1182 2-80.17/2

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**2-80.17 REMOVE CHECK VALVE (WATER WASH TEE TO INTERSTAGE  
AIR-BLEED ACTUATOR FUEL CONTROL INLET) (continued)**

2-80.17

2. Remove hose assembly (4) from check valve (5).



20 X 28

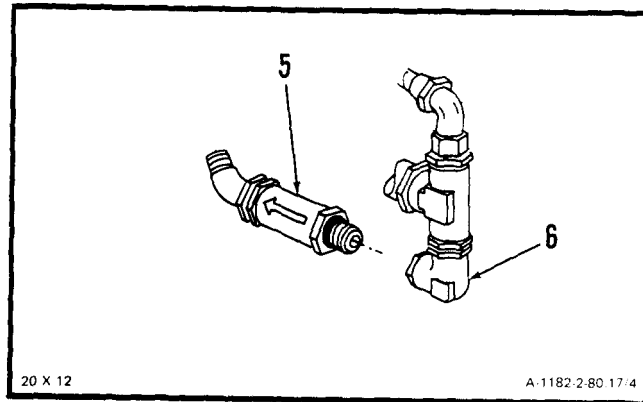
A-1182-2-80.17/3

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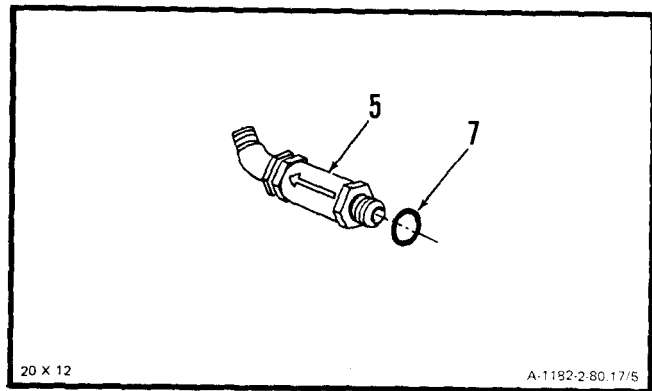
**2-80.17 REMOVE CHECK VALVE (WATER WASH TEE TO INTERSTAGE  
AIR-BLEED ACTUATOR FUEL CONTROL INLET) (Continued)**

**2-80.17**

**3.** Remove check valve (5) from elbow (6).



**4.** Remove packing (7) from check valve (5).



**INSPECT**

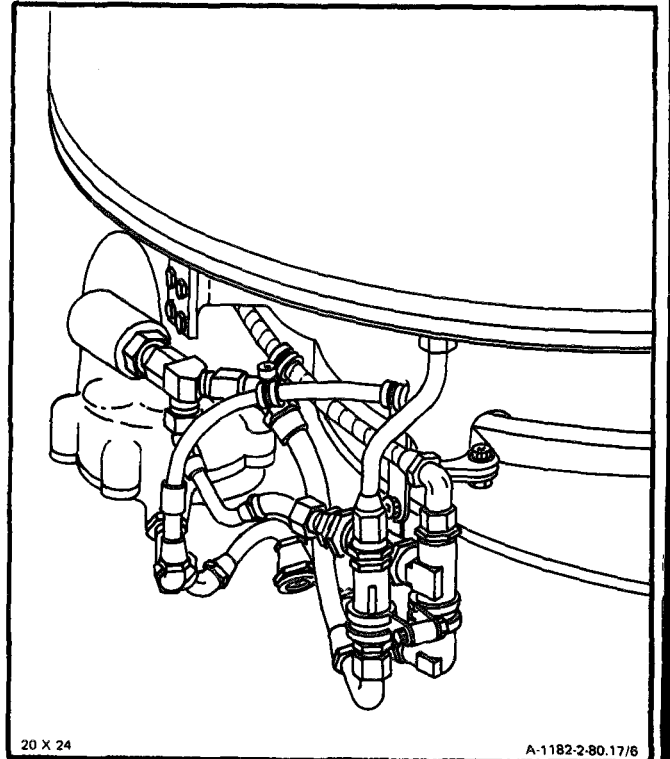
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**2-80.17 REMOVE CHECK VALVE (WATER WASH TEE TO INTERSTAGE  
AIR-BLEED ACTUATOR FUEL CONTROL INLET) (Continued)**

2-80.17

FOLLOW-ON MAINTENANCE:

None



**END OF TASK**

## 2-80.18 CLEAN CHECK VALVE (WATER WASH TEE TO INTERSTAGE AIR-BLEED ACTUATOR FUEL CONTROL INLET) 2-80.18

### INITIAL SETUP

#### Applicable Configurations:

All

#### Tools:

Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Goggles  
Compressed Air Source

#### Materials:

Dry Cleaning Solvent (E17)  
Gloves (E20)  
Lint-Free Cloth (E26)

#### Personnel Required:

68B10 Aircraft Powerplant Repairer

1. Wear gloves (E20). **Clean check valve (1) and elbow (2)** using dry cleaning solvent (E17) and brush.

### WARNING

When using compressed air for cleaning, use approved protective equipment for eyes and face. Do not use more than **30 psig** air pressure. Do not direct air toward yourself or another person. Failure to comply could result in injury to eyes or skin. In case of injury, get medical attention.

2. Wear goggles. **Blow dry check valve (1) and elbow (2)** using clean, dry compressed air.

#### FOLLOW-ON MAINTENANCE:

None

### END OF TASK

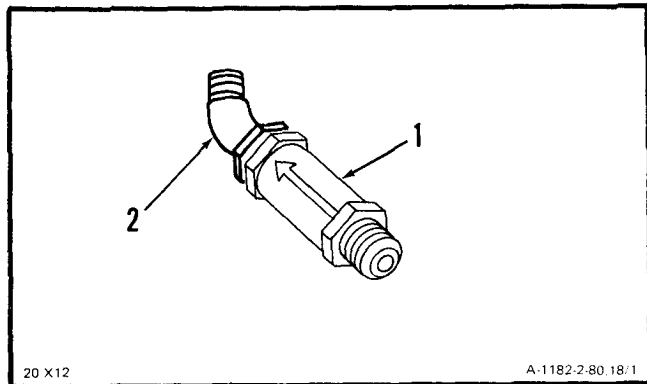
#### Equipment Condition:

Off Engine Task  
Check Valve (water wash tee to interstage air-bleed actuator fuel control inlet) removed (Task 2-80.17)

#### General Safety Instructions:

### WARNING

Dry cleaning solvent (E17) is flammable and toxic. It can irritate skin and cause burns. Use only in well-ventilated area, away from heat and open flame. In case of contact, immediately flush skin or eyes with water for at least **15 minutes**. Get medical attention for eyes.



**2-80.19 INSTALL CHECK VALVE (WATER WASH TEE TO INTERSTAGE  
AIR-BLEED ACTUATOR FUEL CONTROL INLET)**

**2-80.19**

INITIAL SETUP

**Applicable Configurations:**

All

**Tools:**

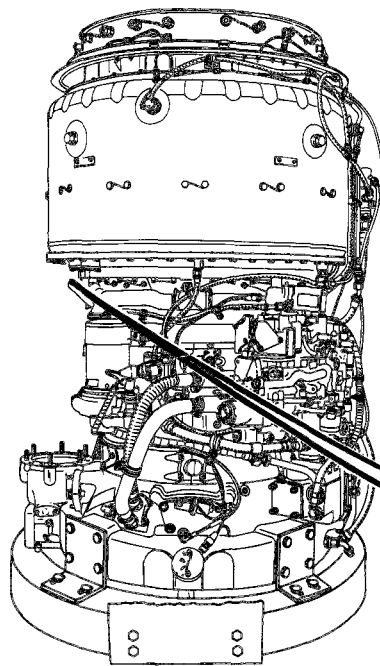
Powerplant Mechanic's Tool Kit,  
NSN 5180-00-323-4944  
Technical Inspection Tool Kit,  
NSN 5180-00-323-5114

**Materials:**

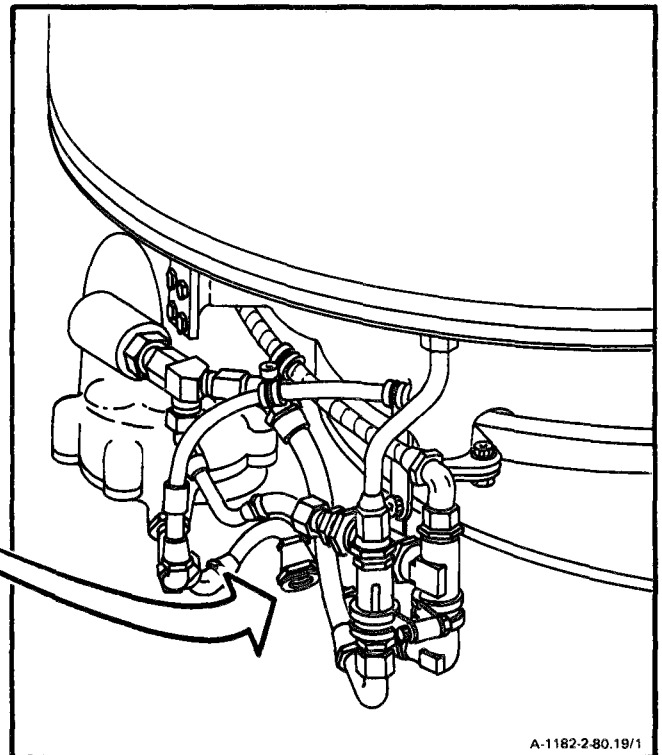
None

**Personnel Required:**

68B10 Aircraft Powerplant Repairer  
68B13 Aircraft Powerplant Inspector



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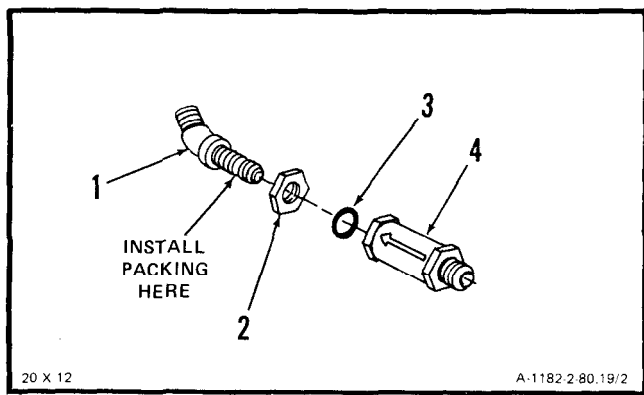
**2-80.19 INSTALL CHECK VALVE (WATER WASH TEE TO INTERSTAGE  
AIR BLEED ACTUATOR FUEL CONTROL INLET) (Continued)**

2-80.19

**N O T E**

If check valve is a replacement do steps 1. and 2. If same check valve that was removed is to be installed, omit steps 1. and 2. and proceed to step 3.

1. **Remove elbow (1), nut (2), and packing (3) from removed check valve (4).**
2. **Loosely install nut (2) and packing (3) on elbow (1).** Position nut (2) to ensure packing (3) is in groove between two sets of threads on elbow (1).

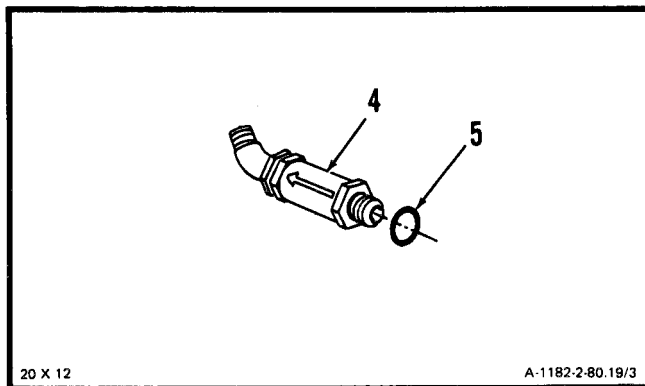
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**2-80.19 INSTALL CHECK VALVE (WATER WASH TEE TO INTERSTAGE  
AIR-BLEED ACTUATOR FUEL CONTROL INLET) (Continued)**

2-80.19

3. Install packing (5) on check valve (4).

**CAUTION**

In following step, when installing check valve, ensure arrow on check valve which indicates airflow is positioned as shown in figure.

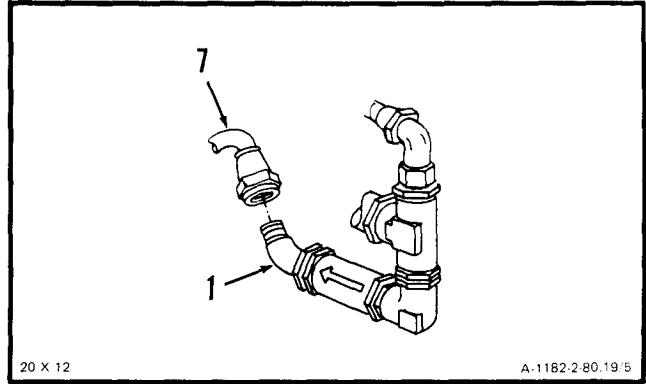
4. Install check valve (4) on elbow (6).

**GO TO NEXT PAGE**

**2-80.19 INSTALL CHECK VALVE (WATER WASH TEE TO INTERSTAGE  
AIR-BLEED ACTUATOR FUEL CONTROL INLET) (Continued)**

**2-80.19**

**6. Install hose assembly (7) on elbow (1).**

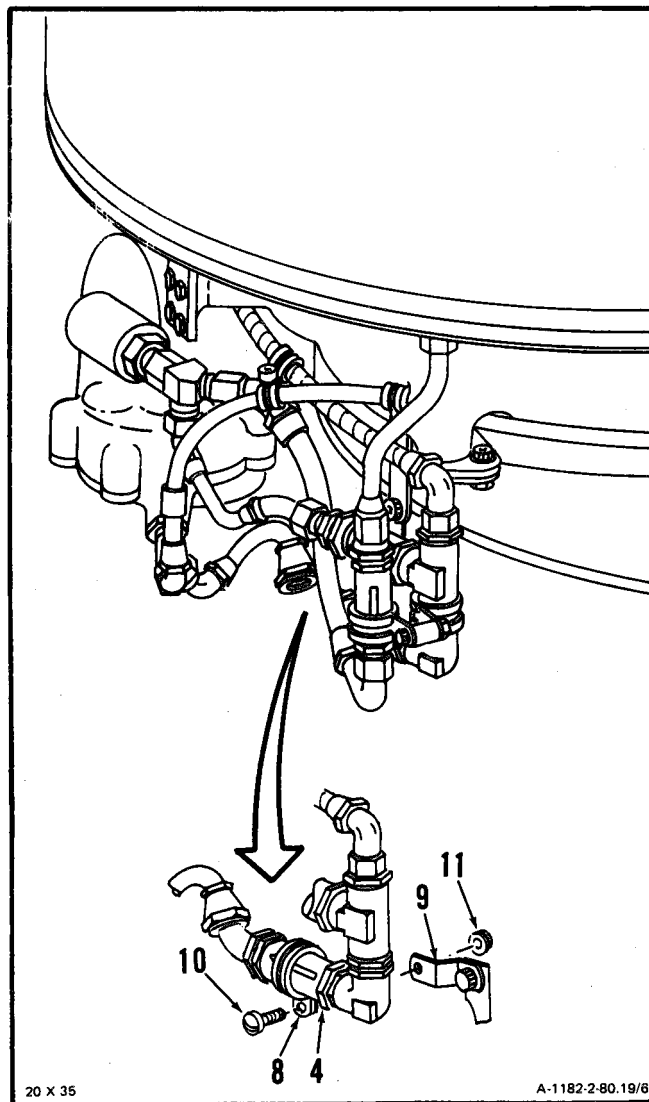


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**2-80.19 INSTALL CHECK VALVE (WATER WASH TEE TO INTERSTAGE  
AIR-BLEED ACTUATOR FUEL CONTROL INLET) (Continued)**

2-80.19

7. Install clamp (8) on check valve (4), bracket (9), and install screw (10) and nut (11).



INSPECT

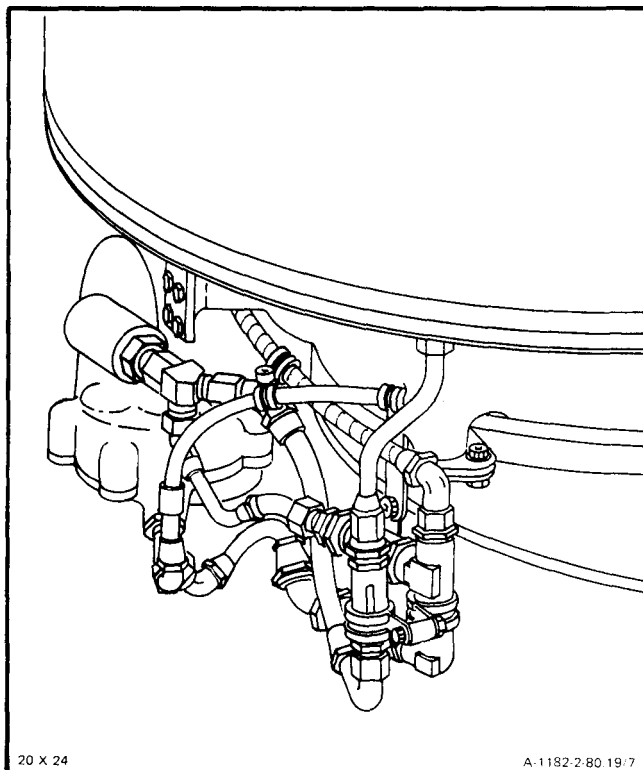
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**2-80.19 INSTALL CHECK VALVE (WATER WASH TEE TO INTERSTAGE  
AIR-BLEED ACTUATOR FUEL CONTROL INLET) (Continued)**

2-80.19

FOLLOW-ON MAINTENANCE:

None



**END OF TASK**

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**By Order of the Secretary of the Army:**

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9-19		9-5	
21-2	step 1C	21-2	

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

"B" Ready Relay K11 is shown with two #9 contacts. That contact which is wired to pin 8 of relay K16 should be changed to contact #10.

Reads: Multimeter B indicates 600 K ohms to 9000 K ohms.

Change to read: Multimeter B indicates 600 K ohms minimum.

Reason: Circuit being checked could measure infinity. Multimeter can read above 9000 K ohms and still be correct.

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TEAR ALONG PERFORATED LINE

# The Metric System and Equivalents

## Linear Measure

1 centimeter = 10 millimeters = .39 inch  
 1 decimeter = 10 centimeters = 3.94 inches  
 1 meter = 10 decimeters = 39.37 inches  
 1 dekameter = 10 meters = 32.8 feet  
 1 hectometer = 10 dekameters = 328.08 feet  
 1 kilometer = 10 hectometers = 3,280.8 feet

## Weights

1 centigram = 10 milligrams = .15 grain  
 1 decigram = 10 centigrams = 1.54 grains  
 1 gram = 10 decigrams = .035 ounce  
 1 dekagram = 10 grams = .35 ounce  
 1 hectogram = 10 dekagrams = 3.52 ounces  
 1 kilogram = 10 hectograms = 2.2 pounds  
 1 quintal = 100 kilograms = 220.46 pounds  
 1 metric ton = 10 quintals = 1.1 short tons

## Liquid Measure

1 centiliter = 10 milliliters = .34 fl. ounce  
 1 deciliter = 10 centiliters = 3.38 fl. ounces  
 1 liter = 10 deciliters = 33.81 fl. ounces  
 1 dekaliter = 10 liters = 2.64 gallons  
 1 hectoliter = 10 dekaliters = 26.42 gallons  
 1 kiloliter = 10 hectoliters = 264.18 gallons

## Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch  
 1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches  
 1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet  
 1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet  
 1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres  
 1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

## Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch  
 1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches  
 1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

## Approximate Conversion Factors

To change	To	Multiply by	To change	To	Multiply by
inches	centimeters	2.540	ounce-inches	newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29.573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	newton-meters	1.356	metric tons	short tons	1.102
pound-inches	newton-meters	.11296			

## Temperature (Exact)

°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C
----	------------------------	----------------------------	---------------------	----

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