TECHNICAL MANUAL

ARMY DATA SHEETS FOR CARTRIDGES, CARTRIDGE ACTUATED DEVICES AND PROPELLANT ACTUATED DEVICES FSC 1377

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HEADQUARTERS, DEPARTMENT OF THE ARMY

DECEMBER 1991

WARNING

THE SQUIB SHALL NOT BE EXPOSED TO SOLVENTS OR ACIDS. THEY SHALL NOT BE SUBJECTED TO SEVERE SHOCK OR JAR WHICH MIGHT BREAK THE BRIDGE WIRE RENDERING THE SQUIB INOPERATIVE.

TO PREVENT DISCONNECTED SQUIBS FROM FIRING BARE ENDS OF LEAD WIRES SHALL BE TWISTED TOGETHER SO THAT THEY ARE IN FIRM CONTACT WITH ONE ANOTHER.

THIS ELECTRIC SQUIB SHALL NOT BE RESISTANCE CHECKED EITHER PRIOR TO OR AFTER INSTALLATION IN THE DEVICE OF INTENDED APPLICATION.

Change)
)
No. 2)

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 30 June 1994

TECHNICAL MANUAL

ARMY DATA SHEETS FOR CARTRIDGES, CARTRIDGE ACTUATED DEVICES AND PROPELLANT ACTUATED DEVICES (FSC 1377)

TM 43-0001-39, 20 December 1991, is changed as follows:

1. Remove old pages and insert new pages as indicated below. New or changed material is indicated by a vertical bar in the margin of the page. Added or revised illustrations are indicated by a vertical bar adjacent to the identification number.

Remove pages	Insert pages
A and B	A and B
i thru iv	i thru iv
5-99 thru 5-102	5-99 thru 5-102

2. File this change sheet in front of the publication for reference purposes,

By Order of the Secretary of the Army:

GORDON R. SULLIVAN
General, United States Army
Chief of Staff

Official:

MILTON H. HAMILTON
Administrative Assistant to the Secretary of the Army
06338

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To be distributed in accordance with DA Form 12-34-E, Block 0933, Requirements for TM 43-0001-39.

Change)
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HEADQUARTERS
DEPARTMENT OF THE ARMY
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TECHNICAL MANUAL

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Remove pages	Insert pages
A	A and B
i and ii	i and ii
3-3 and 3-4	3-3 and 3-4
none	3-4.1 and 3-4.2

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LIST OF EFFECTIVE PAGES

When applicable, insert latest change pages and dispose of superseded pages in accordance with applicable regulations.

TOTAL NUMBER OF PAGES IN THIS PUBLICATION IS 231
CONSISTING OF THE FOLLOWING:

Page No.	**Change No.*	*Page No.*	**Change No.*
Cover	0	6-3 thru 6-15	0
Inside cover	0	6-16 blank	0
A	2	6-17 thru 6-28	0
B	1	7-1	0
i	2	7-2 blank	0
ii	0	7-3 thru 7-6	0
lll	2	8-1	0
iv	0	8-2 blank	0
1-1 and 1-2	0	8-3 and 8-4	0
2-1	0	9-1	0
2-2 blank	0	9-2 blank	0
2-3 thru 2-12	0	9-3 thru 9-8	0
3-1	0	10-1	0
3-2 blank	0	10-2 blank	0
3-3 and 3-4	1	10-3 thru 10-8	0
3-4.1 and 3-4.2	1	A-1 and A-2	0
3-5 thru 3-12	0	B-1 thru B-6	0
4-1	0	C-1 and C-2	0
4-2 blank	0	D-1 and D-2	0
4-3 thru 4-8	0	E-1 thru E-3	0
5-1 thru 5-98	0	E-4 blank	0
5-99 thru 5-102	2	F-1 and F-2	0
5-103 thru 5-109	0	G-1 thru G-3	0
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6-1	0	H-1 and H-2	0
6-2 blank	0	Authentication page	0

* Zero indicates an original page.

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Technical Manual)
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No. 43-0001-39)

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 20 December 1991

ARMY DATA SHEETS FOR CARTRIDGES, CARTRIDGE ACTUATED DEVICES AND PROPELLANT ACTUATED DEVICES

REPORTING OF ERRORS

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) to Commander, US. Army Armament Research, Development and Engineering Center, ATTN: SMCAR-LSB, Picatinny Arsenal, NJ 07806-5000. A reply will be furnished directly to you. Comment or questions concerning individual items must be addressed to the cognizant field activity at Naval Ordnance Station, ATTN: Code 5320C, Indian Head, MD, 20640-5000. Also see Chapter 1, para 1-1.d.

*This manual supersedes TM 43-0001-39, 28 November 1985, including all changes.

CHAPTER 1

INTRODUCTION

1-1. Purpose

a. This manual is a reference handbook published as an aid in planning, training, and identification of Cartridges/Cartridge Actuated Devices (CADS) and Propellant Actuated Devices (PADs). It is not to be used as authorization for requisitioning, stockage, maintenance, or issue of this materiel.

b. The CADs/PADs data sheets in this manual are arranged by chapters according to their characteristics. Each data sheet uses the item nomenclature as its title, In most cases, a DODIC (in parentheses) will follow the item name, References and cross-references are located in Appendix A thru Appendix H.

c. Throughout this manual, the term CAD shall be synonymous with and collectively represent FSC 1377 cartridges, cartridge actuated devices, and explosive detonating cords used in aircraft/helicopter emergency escape systems, fire extinguisher systems, and equipment/ stores jettison and separation systems. The term PAD shall be synonymous with and collectively represent FSC 1377 rocket catapults and rocket motors used in aircraft escape systems.

d. The Naval Ordance Station (NAVORDSTA), Indian Head, MD 20640-5000 (Code 5320C) has been designated as the Cognizant Field Activity (CFA) for CADS and PADs. Any questions concerning the CADs/PADs described in this publication should be directed to this station, Code 5320C.

1-2. Scope

a. This manual contains descriptive and technical data for 1377 class CADS and PADs used by the Army For each CAD/PAD, there are illustrations, descriptions, and technical data related to the CAD/PAD use, characteristics, shipping and storage, and function, plus a list of reference publications,

b. Service life is the period of time a CAD/PAD can be issued and used with an ensured high degree of reliability, Performance of CADs/PADs is influenced by the environment to which they are exposed (e.g., temperature, humidity vibration, shock). For current data on Service life (Shelf & Installed), refer to Appendix B of TB 9-1300-385. Updates to the TB are issued quarterly.

c. Shelf life is the period of time, beginning from date of manufacture, that a CAD/PAD can remain in its hermetically-sealed container and still be serviceable. Shelf life is always computed from date of manufacture available from the lot number.

d. Installed life is the period of time a CAD/PAD is allowed to be used after its hermetically-sealed container is opened, The installed life expiration date shall never exceed the shelf life expiration date as established from the date of manufacture,

e. The shelf life and installed life are the maximum approved limits established for Army use. TB 9-1300-385 shall be consulted prior to installing any CAD/PAD and for periodic inspections of installed CADs/PADs to ensure the lots installed in operational Army aircraft/helicopters/equipment have not been suspended or restricted from use.

f. In the event of differences concerning the shelf lives and installed lives, TB 9-1300-385 shall take precedence,

g. CAD/PAD shelf lives and installed lives are not to be combined. A CAD/PAD is over age is either of these limits is exceeded.

h. Information concerning supply operation, safe handling, and maintenance of these devices can be found in TM 9-1377-200-20&P.

i. Included for the devices in this manual are the Type Classification and Logistics Control Code (LCC). Devices with the following type classifications are included:

(1) Standard (LCC-A, LCC-B)

(2) Contingency (CON)

(3) Limited Procurement

(4) Reclassified Obsolete (OBS) for regular Army use, but used by National Guard or Reserve Limits.

(5) Reclassified OBS for all Army use but used by Marine Corps, Air Force, or Navy.

(6) Reclassified OBS, no uses, but US stocks remain.

(7) Reclassified OBS for all US use; no US stocks remain (foreign use or stock may remain).

j. Numerical values, such as weights, dimensions, etc., are nominal values except when specified as minimum or maximum limits. Actual values may vary slightly from these values due to established tolerance limits. Allowable tolerance limits can be obtained from the drawings indicated in the data sheets.

k. The FSCM is now replaced by CAGE (Commercial and Government Entity) Code in the Tabulated Data section of data sheets.

1.3. DOT Shipping Class and Designation

The DOT classification changed effective 21 December 1990. Users of this manual must consult the Joint Hazard Classification System (JHCS) for Ammunition and Explosives (updated quarterly) for DOT Hazardous Materials Description (Proper Shipping Name) and Identification Number (United Nations Serial Number) for each item herein. This data is advisory only for shipments between Depots, user storage, and user facilities. Data in the latest issue of the JHCS will always take precedence unless written authorization to the contrary is obtained from the PICA (AMCCOM Attn: DRSMC-DSD-AS (R), Rock Island, IL 61299). Additional data on this matter is currently being developed and will be incorporated in future changes to this manual as it becomes official.

1-4. Disposal

Disposal of CADs/PADs determined to be in a hazardous, damaged, or overaged condition is the responsibility of Explosive Ordnance Disposal (EOD) personnel, A CAD/PAD may only be disassembled by EOD personnel in order to render the unit safe. No other disassembly is authorized, When a unit has been rendered safe by EOD personnel, it shall then be disposed of in accordance with TM 9-1300-206, DARCOM Reg 385-100, or applicable Depot Maintenance Work Requirement (DMWR).

1-5. Reference Publications

Refer to Appendix A for reference publications.

CHAPTER 2

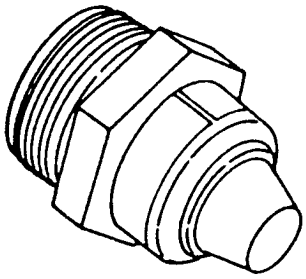
CARTRIDGES
AIRCRAFT FIRE EXTINGUISHER

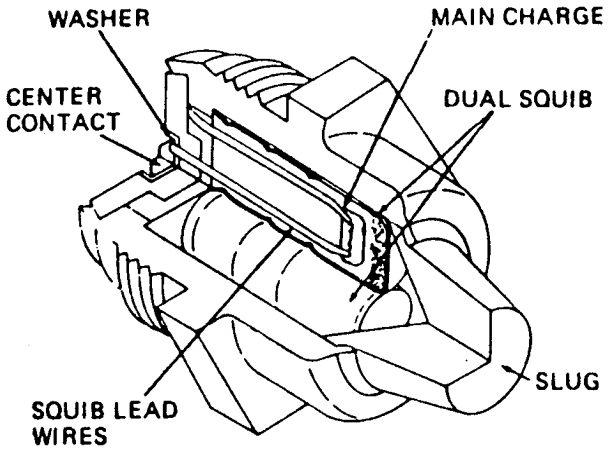
2-1. General

a. This chapter contains descriptive and technical data pertaining to the aircraft fire extinguisher cartridges used in Army aircraft/helicopter fire extinguishing systems.

b. The cartridges described in this chapter are electrically initiated, These cartridges shall not be resistance-checked either prior to or after installation in the device of intended application. Prior to installation of these cartridges, all circuits of the actuating system shall be open.

CARTRIDGE, AIRCRAFT FIRE EXTINGUISHER (M182)





U
AR 4253

Type Classification:

Refer to associated aircraft subsystem.

Use:

To release fire extinguishing fluid into the area surrounding an aircraft engine in the event of a fire.

Description:

The cartridge consists of a machined brass casing with a hexagonal midsection and a threaded end enclosing a pair of electrically-fired DuPont E-92 type squibs, placed side by side. The output end of the cartridge is crimped over a brass slug,

Each squib is a self-contained unit contained in a thin shell of bronze alloy, 0.272-inch in diameter, and with an integrally-formed convex head.

In the assembly one lead wire of each squib is brought through a phenolic insulator and soldered to a common center contact, The insulator is sealed in place by crimping the casing over its edge, The other wire of each squib is brought into electrical contact with the cartridge casing. Joined in parallel to common electrical contacts, both squibs fire simultaneously.

Each squib creates sufficient force to rupture the frangible disc in the valve body of the container.

The cartridge is seated in the firing head of the valve body fixed to the underside of the extinguishing fluid container, This equipment is secured within an access pocket in the wing adjacent to the engine area it is to protect.

Functioning

An insulated plug, attached to the firing head of the container, connects with the aircraft electric supply and to a firing switch in the pilot's compartment. When the firing switch is actuated, electric current causes the squibs to fire, creating gas pressure which propels the slug toward the seal disc, The slug pierces the segmented frangible seal disc in the exit valve body. The fluid (CF_2Br_2 or CF_3Br), which has been held under gas pressure (nitrogen) in the container, is thereby released, and flows from the fluid container in the wing access pocket to the distributing nozzles in the engine area.

Gas, developed by the extinguishing agent, reduces the oxygen content in the engine area to a point where combustion cannot be supported, thus quenching the fire.

Recommended firing current is 8 amperes.

Tabulated Data

NSN ---------- 1377-00-756-1384
DODIC ---------- M182
Drawing number ---------- 2518519
Vendor CAGE Code and
part number ---------- (33525) 895188
replaces 841155
Item weight ---------- 0.17 lb (0,08 kg)
Diameter ---------- 1 in. (2.54 cm)
Length ---------- 1.38 in. (3.5 cm)
Method of actuation --------- Electrical
Body material ---------- Brass
Propellant/explosive material:
Type ---------- Lead azide, Type II
Weight ---------- 0.00029 lb (2.03 grains)

Performance:

Packaging:

Inner Container:
Reference ---------- MIL-C-10464
Type ---------- Hermetically-sealed metal container
Dimensions ---------- 3 in. dia x 2
Items per package ---------- 2 (es)
Weight ---------- 1.25 lb

Outer Container:
Reference ---------- SPI (AM) P-1377-M182
Type ---------- PPP-B-1672-Type II, Style D
Dimensions ---------- 18 in. x 12 in. x 4.5 in.
Weight ---------- 2.5 lb
Cube ---------- 0.56 cu ft

Temperature Limits:

Upper ---------- +160°F (71°C)
Lower ---------- -65°F (-54°C)

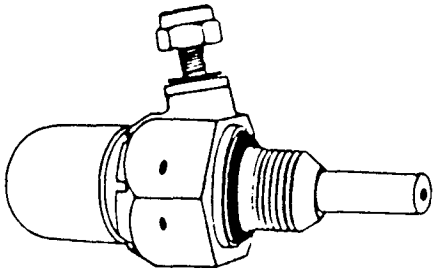
Shipping and Storage Data:

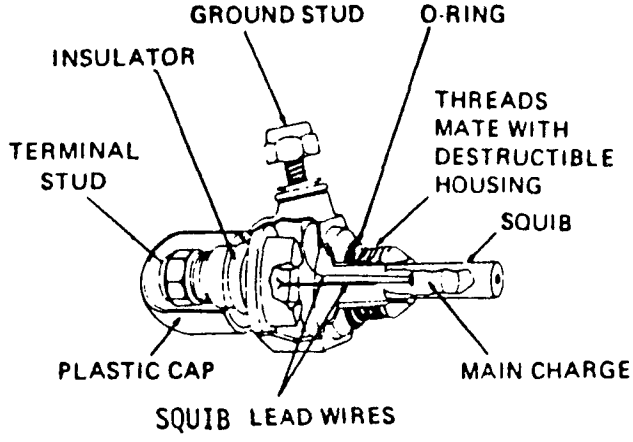
Quantity distance class ----- 1.4
Storage compatibility
group ---------- s
DOT shipping class ---------- c
DOT designation ---------- ACTUATING CARTRIDGES, EXPLOSIVE, FIRE EXTINGUISHER, HANDLE CAREFULLY

References:

TM 9-1377-200-20&P
TM 55-1520-209-23
TM 55-1520-227-23
TM 55-1520-240-23
TM 55-1015-204-23
TM 55-1510-213-23
TB 9-1300-385, App B

CARTRIDGE, AIRCRAFT FIRE EXTINGUISHER: (M193)





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AR 4254

Type Classification:

Refer to aircraft subsystem.

Use:

To release fire extinguishing agent into the area surrounding an aircraft engine in the event of a fire.

NOTE

To be replaced by MH92.

Description:

The aircraft fire extinguisher cartridge which is electrically initiated, consists of an aluminum hexagonal midsection with a threaded end, enclosing an electrically fired squib explosive. Two threaded electrical connectors, one of which is insulated from the body of the cartridge, provides the means for completing the electrical circuit through a grounded bridgewire to the aircraft electrical system.

The aircraft fire extinguisher cartridge is threaded into the discharge valve body of the fire extinguishing agent container, This equipment is secured within an access area above and between the engines.

Functioning

When the fire control switch is operated, electric current causes the squib to fire, creating gas pressure which separates the split sleeve from the housing. When the split sleeve separates, pressure from the fire extinguisher agent then is released and flows from the container to the distributing nozzles in the engine area.

Gas developed by the extinguishing agent reduces the oxygen content in the engine area to a point where combustion cannot be supported, thus quenching the fire.

Tabulated Data

NSN ---------- 1377-00-930-9390
DODIC ---------- M193
Drawing number ---------- 2519614
Vendor (CAGE code) and
part number ---------- (05167) 13083-5
Item weight ---------- 0.06 lb (0.03 kg)
Diameter ---------- 0.906 in. (2.54 cm)
Length ---------- 2.5 in. (6.4 cm)
Method of actuation --------- Electrical
Body material ---------- Aluminum
Propellant/explosive material:
Type ---------- Lead Azide, Type II
Weight ---------- 0.4409 lb. (3086.3 grains)

Performance:

Bridgewire resistance ------- .90 ohm to 1.40 ohm
Minimum pressure:
-65°F (-54°C) ---------- 475 psi in 6 ms
+70°F (+21°C) ---------- 600 psi in 4 ms
+ 160°F (+71°C) ---------- 670 psi in 4 ms

Packaging

Inner Container:
Reference ---------- PPP-C-96
Type ---------- Hermetically sealed metal container
Dimensions ---------- 2-1/2 in. x 7/8 in. dia
Items per package ---------- 4
Weight ---------- .75 lb
Outer Container:
Reference ---------- PPP-B-1672
Type ---------- Wood box
Dimensions ---------- .66 x .66x 1.00 ft
Weight ---------- 2.5 lb
Cube ---------- .440 ft

Temperature Limits:

Upper ---------- +160°F(+71°C)
Lower ---------- -65°F (-54°C)

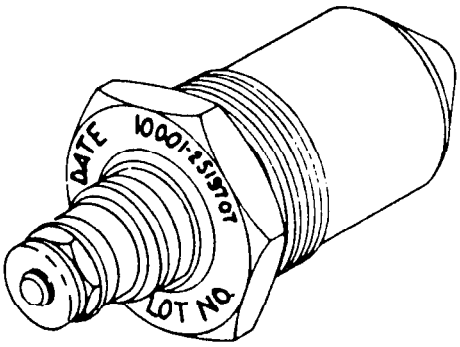
Shipping and Storage Data:

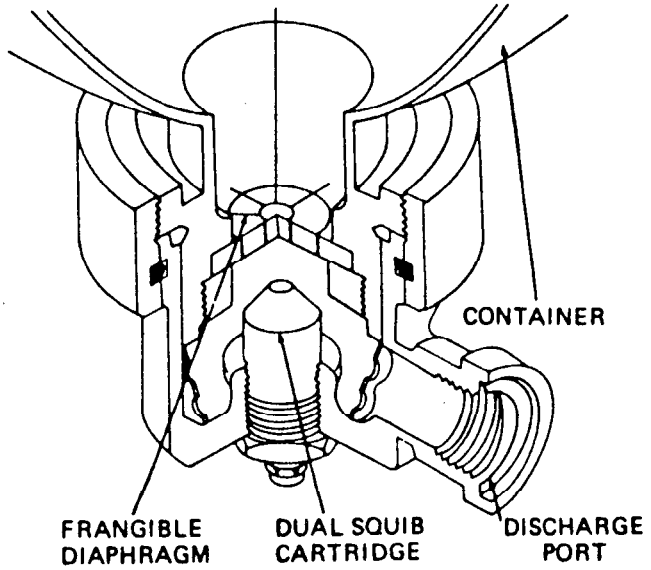
Quantity distance class ----- 1.4
Storage compatibility
group ---------- S
DOT shipping class ---------- C
DOT designation ---------- ACTUATING CARTRIDGES, EXPLOSIVE, FIRE EXTINGUISHER, HANDLE CAREFULLY

References:

TM 9-1377 -200 -20&P
TM 55-1520-204-23
TM 55-1520-213-23
TM 55-1520-209-23
TM 55-1510-227-23
TM 55-1510-240-23
TB 9-1300-385, Appendix B

CARTRIDGE, AIRCRAFT FIRE EXTINGUISHER: (M232)





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AR 4255

Type Classification

Refer to aircraft subsystem.

Use:

To release fire extinguishing fluid into the area surrounding an aircraft engine in the event of a fire.

Description:

The cartridge consists of a hexheaded aluminum casing, and a threaded end, enclosing a pair of electrically-fired Dupont E-92 type squibs, placed side by side. The output end of the cartridge is crimped over a brass slug. One lead wire of each squib is brought through a phenolic insulator and soldered to a common center contact. The insulator is sealed in place by crimping the casing over its edge. The other wire of each squib is brought into electrical contact with the cartridge case, Both squibs fire simultaneously.

Functioning

An insulated plug, attached to the firing head of the container, connects with the aircraft electric supply and to a firing switch in the pilot's compartment. When the firing switch is actuated, electric current causes the squibs to fire, creating gas pressure which propels the slug toward the seal disc, The slug pierces the segmented frangible seal disc in the exit valve body. The fluid (CF2Brs or CF3Br), which has been held under gas pressure (nitrogen) is released. The fluid flows from the container in the wing access pocket to the distributing nozzles in the engine area.

Gas, developed by the extinguishing agent, reduces the oxygen content in the engine area to a point where combustion cannot be supported, thus quenching the fire.

Tabulated Data:

NSN	1377-01-257-1359
NSN	1377-00-087-7103
NSN	1377-00-824-5858
DODIC	M232
Drawing number	2519707/ 1660AS200
Vendor (CAGE code) and part number	873364
Item weight	0.034 lb (0.0154 kg)
Diameter	1 in. (2.54 cm)
Length	2.560 in. (6.50 cm)
Method of actuation	Electrically fired 8 amperes
Body material	Aluminum
Propellant/explosive material:	
Type	Lead Azide
Weight	0.00037 lb (2.6 grains)

NOTE

M232 P/N 1660AS200 is a replacement for M232 P/N 2519707, NSN 1377-00-824-5858/1377-00-087-7103, The external physical characteristics are identical except for the identification markings. Continued use of M232 P/N 2519707 is authorized until stocks are exhausted.

Performance:

Bridgewire resistance is 0.025 ohms minimum and 0.100 maximum, The cartridge shall provide sufficient energy to extrude the lead crusher to a minimum length of 0.224 inches.

Firing Temperature Limits:	
Upper	+160°F (+71°C)
Lower	-65°F (-54°C)

Packaging

Inner Container:	
Reference	MIL-C-10464
Type	Hermetically sealed metal container
Dimensions	
Items per package	2
Outer Container:	
Reference	PPP-B-621 Class 2 Style 4
Type	Wood box
Dimensions	4.75 x 3.5x 3.5 in. (12.07 X 8.89X 8.89 cm)
Weight	0.3 lb (0.136 kg)
Cube	0.0337 cu ft

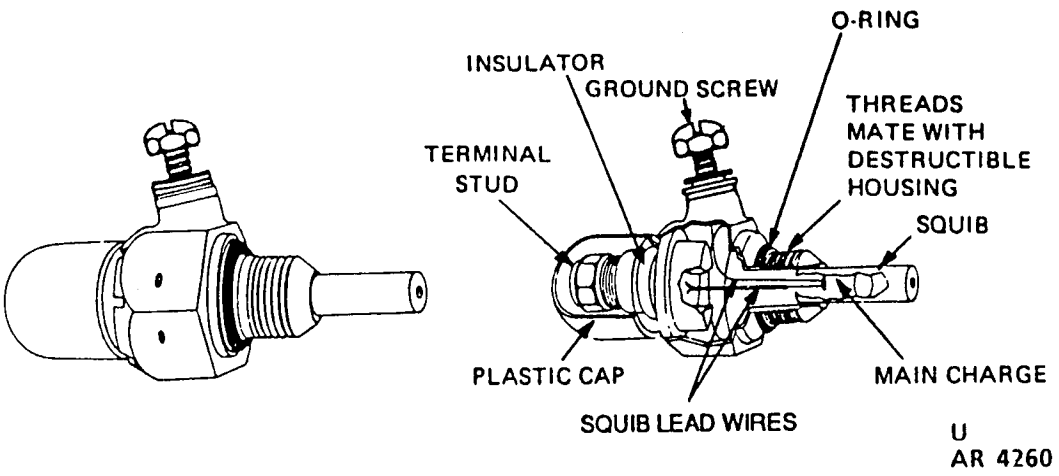
Shipping and Storage Data:

Quantity distance class	1.4
Storage compatibility group	S
DOT shipping class	C
DOT designation-	ACTUATING CARTRIDGES, EXPLOSIVE FIRE EXTINGUISHER, HANDLE CAREFULLY

References:

TM 9-1377-200-20&P
TM 55-1520-227-23
TM 55-1520-240-23
TB 9-1300-385, Appendix B

CARTRIDGE, AIRCRAFT FIRE EXTINGUISHER CCU-90/A (MH92)



Type Classification:

Refer to aircraft subsystem

Use:

To release fire extinguishing agent into the engine compartment on the UH-60 helicopter in the event of a fire.

Description:

The aircraft fire extinguisher cartridge is electrically initiated. It consists of an aluminum hexagonal mid-section with a threaded end enclosing an electrically fired squib.There are two threaded electrical connectors, one is insulated from the body of the cartridge and provides a path for completing the electrical circuit. The other connection is connected to ground.

Functioning

The aircraft fire extinguisher cartridge is threaded into the discharge valve body of the fire extinguishing agent container. Switches for completing the electrical circuit are located in the aircraft cockpit. Placing the switch in the fire position completes the electrical circuit, thus firing the squib and releasing the fire extinguishing agent.

Tabulated Data

NSN 1377-01-185-2622
DODIC ---------- MH92
Drawing number ---------- 1512AS105
Vendor (CAGE code) and
part number ---------- (30003) 39040020
Item weight ---------- 0.066 lb (0.03 kg)
Diameter ---------- 0.875 in, (2.22, cm)
Length ---------- 2.500 in. (6.35 cm)
Method of actuation --------- Electrically fired
Body material ---------- Aluminum
Propellant/explosive material:
Type ---------- RDX
Weight ---------- 0.000441 lb (3,0865 grains)

Performance:

Bridgewire resistance is 0.90 ohms minimum and 1.40 ohms maximum. Pressure ranges from 475 psi at -65°F to 670 psi at + 160°F. Ignition delay shall not exceed 25 milliseconds.

Firing Temperature Limits:
Upper ---------- +160°F (+71°C)
Lower ---------- -65°F (-54°C)

Packaging

Inner Container:
Reference ---------- MIL-C-10464
Type ---------- Hermetically sealed metal container
Dimensions ---------- 6 x 2-5/8 dia
Items per package ---------- 4
Weight ---------- .50
Outer Container:
Reference ---------- PPP-B-636
Type ---------- Fiberboard box
Dimensions ---------- 1.54 X 1.04X .27 ft
Weight ---------- 2.5 lb
Cube ---------- .560 ft

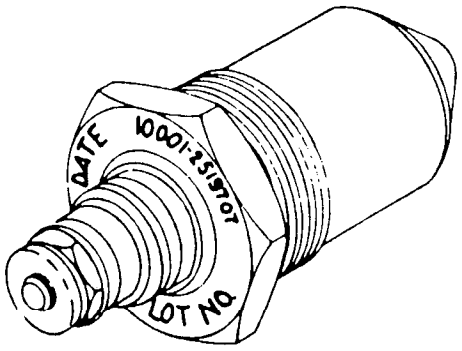
Shipping and Storage Data:

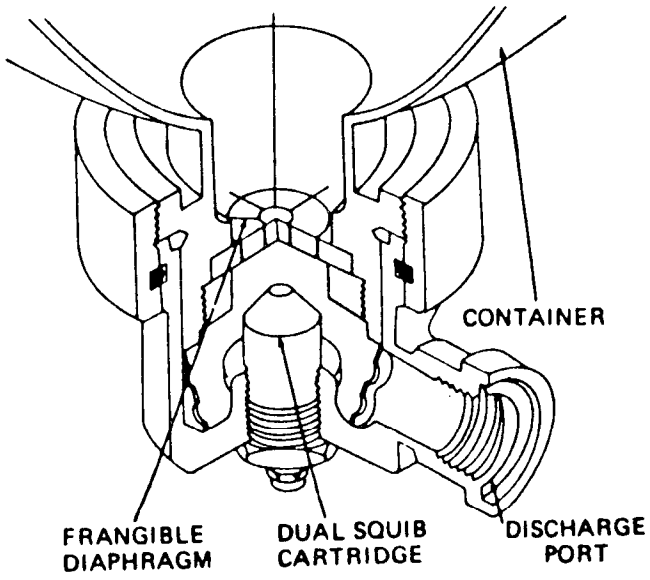
Quantity distance class ----- 1.4
Storage compatibility
group ---------- s
DOT shipping class ---------- C
DOT designation ---------- Actuating Cartridge, Explosive Fire Extinguisher, Handle Carefully

References:

TM 9-1377-200-20&P
TM 55-1520-209-23
TM 55-1520-227-23
TM 55-1520-240-23
TM 55-1015-204-23
TM 55-1510-213-23
TB 9-1300-385, Appendix B

CARTRIDGE, AIRCRAFT FIRE EXTINGUISHER (MT20)





U
AR 4255

Type Classification:

Refer to aircraft subsystem.

Use:

To release fire extinguishing fluid into the area surrounding an aircraft engine in the event of a fire in the UH-60 helicopter.

Description:

The cartridge consists of a hexheaded aluminum casing, and a threaded end, enclosing a pair of electrically-fired Dupont E-92 type squibs, placed side by side, The output end of the cartridge is crimped over a brass slug. One lead wire of each squib is brought through a phenolic insulator and soldered to a common center contact. The insulator is sealed in place by crimping the casing over its edge, The other wire of each squib is brought into electrical contact with the cartridge case. Both squibs fire simultaneously.

Functioning

An insulated plug, attached to the firing head of the container, connects with the aircraft electric supply and to a firing switch in the pilot's compartment. When the firing switch is actuated, electric current causes the squibs to fire, creating gas pressure which propels the slug toward the seal disc. The slug pierces the segmented frangible seal disc in the exit valve body. The fluid (CF2Brs or CF3Br), which has been held under gas pressure (nitrogen) is released. The fluid flows from the container in the wing access pocket to the distributing nozzles in the engine area.

Gas, developed by the extinguishing agent, reduces the oxygen content in the engine area to a point where combustion cannot be supported, thus quenching the fire.

Tabulated Data:

NSN 1377-01-263-3627
DODIC ---------- MT20
Drawing number ---------- 1512AS105
Vendor (CAGE code) and
part number ---------- 897899
Item weight ---------- 0.034 lb (0.0154 kg)
Diameter ---------- 1 in. (2.54 cm)
Length ---------- 2.560 in. (6.50 cm)
Method of actuation --------- Electrically fired 8 amperes
Body material ---------- Aluminum
Propellant/explosive material:
Type ---------- Lead Azide
Weight ---------- 0.00037 lb (2.6 grains)

Performance:

Bridgewire resistance is 0.025 ohms minimum and 0.100 ohms maximum. The cartridge shall provide sufficient energy to extrude the lead crusher to a minimum length of 0.224 inches.

Firing Temperature Limits:
Upper ---------- + 160°F (+71°C)
Lower ---------- -65°F (-54°C)

Packaging

Inner Container:
Reference ---------- MIL-C-10464
Type ---------- Hermetically sealed metal container
Dimensions ----------
Items per package ---------- 2
Outer Container:
Reference ---------- PPP-B-621 Class 2 Style 4
Type ---------- Wood box
Dimensions ---------- 4.75 x 3.5 x 3.5 in (12.07 X 8.89X 8.89 cm)
Weight ---------- 0.3 lb (0.136 kg)
Cube ---------- 0.0337 cu ft

Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility group ---------- S
DOT shipping class ---------- C
DOT designation ---------- ACTUATING CARTRIDGE, EXPLOSIVE FIRE EXTINGUISHER, HANDLE CAREFULLY

References:

TM 9-1377-200-20&P
TM 55-1520-227-23
TM 55-1520-240-23
TB 9-1300-385, Appendix B

CHAPTER 3

CUTTERS

3-1. General

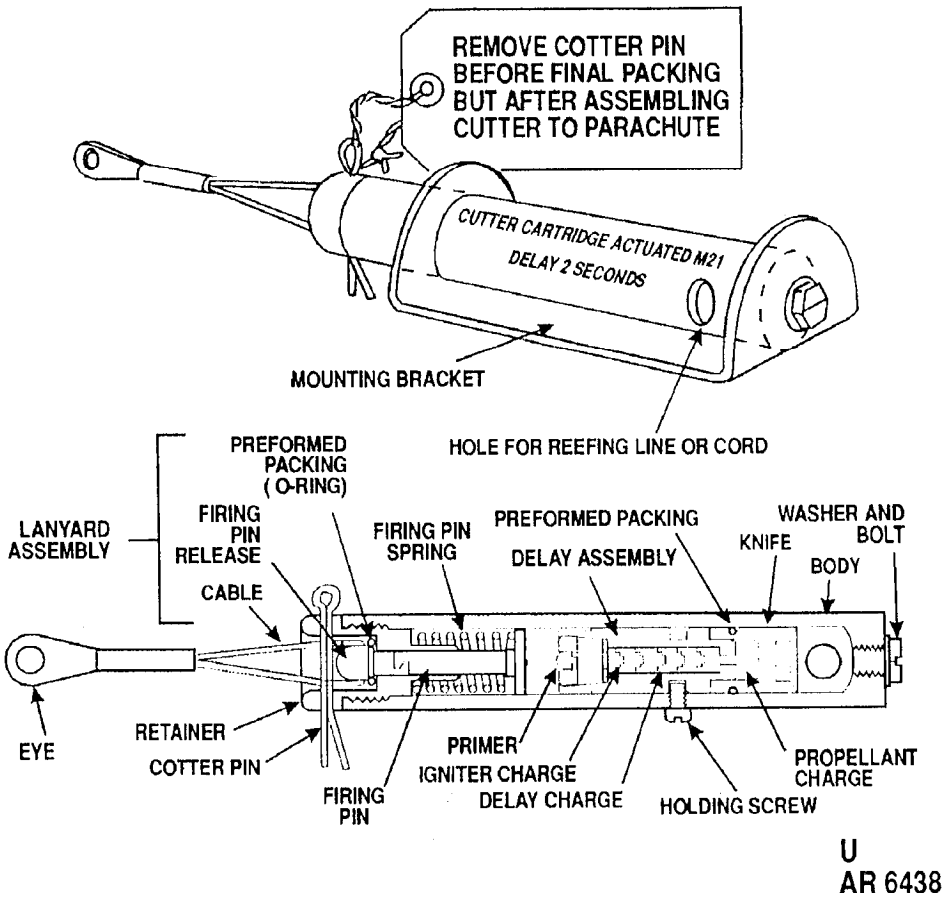
A cutter is a cartridge or propellant actuated device that is used in aerial delivery systems for cargo, helicopter cargo and rescue hoist cable systems and drone recovery systems. Cutters are classified in accordance with the following characteristics: (1) Method of Actuation - mechanical or electrical, (2) Function Time - nondelay or delay.

3-2. Operation

a. Actuation of the mechanical cutter is accomplished by applying a pull force to the cable or lanyard with sear attached, The lanyard sear is engaged in the firing pin; therefore, the pull of the lanyard applies a load to the firing pin spring. Compression of the firing pin spring and the release of the firing pin are accomplished with one motion when the firing pin moves rearward. The sear moves outward to the cutter body section having an enlarged internal diameter, which then permits the sear to move sideward to release the firing pin. The firing pin is propelled forward under the action of the spring force and strikes the primer, which ignites the delay element, if applicable, then the propellant. Under the force of the propellant gas pressure, the cutter blade is propelled onto the anvil severing the wires or cable.

b. Function of electrically or mechanically initiated cutters is basically the same. The cutters have a specific nondelay or delay time and shall be used only for their designed application.

CUTTER, CARTRIDGE ACTUATED: M21 (M500)



Type Classification:

ATC-S LCC-A

To sever a nylon reefing line which allows the parachute to fully deploy The cutter is installed in a mounting bracket which is attached to the parachute.

Description:

The M21 reefing line cutter is a cartridge actuated, one shot, disposable mechanical unit with the cartridge sealed internally, Major components consist of case, firing pin assembly, lanyard, knife assembly delay assembly and cotter pin.

Functioning:

A drogue chute is used to pull the load out of the delivery aircraft and to deploy the main chute, which inflates in a reefed configuration The deployment of the main chute applies a tensile force to the lanyard assembly, which is attached to the firing pin. Compression of the firing pin spring and release of the firing pin are accomplished with the same motion. The potential energy stored in the spring propels the firing pin forward, striking the primer. The flash of the primer ignites the 2-second pyrotechnic delay mix which, in turn, sets off the propellant charge behind the cutter blade assembly.

Under the force of the propellant gas pressure, the cutter blade separates from the knife-delay assembly and is propelled forward in the bore of the housing The impact of the blade on the anvil severs the nylon reefing line inserted in the cutter, allowing full deployment of the main parachute.

Tabulated Data:

NSN	1377-00-060-0885
DODIC	M500
Drawing number	8875978
Vendor (CAGE code) and part number	(19200) 8875978
Item weight	
Diameter	0.75 in. (1.905 cm)
Length	6.0 in. (15.24 cm)
Method of actuation	Manual percussion primer
Body material	Aluminum alloy/ carbon steel blade
Propellant/Explosive Material:	
Type	Bullseye black powder
Weight	0.0040 lb (28 grains)
Printer	Percussion Primer, M42

Performance:

Delay Time:	
-65°F	3.0 sec maximum
+70°F	1.6 sec minimum 2.4 sec maximum
+160°F	1.2 sec minimum

Packaging:

Inner Container:	
Reference	MIL-P-25732/8863435
Type	Fiberboard box
Dimensions	PPP.B-636
Items per package	80
Weight	40 lb
Outer Container:	
Reference	8863436
Type	Wirebound wood box Type II Class 2 MIL-B-2472
Dimensions	12-11/16 x 11-3/8 x 7 in.
Weight	50 lb
Cube	0.6 cu ft

Temperature Limits:

Upper	+160°F (+71°C)
Lower	-65°F (-54°C)

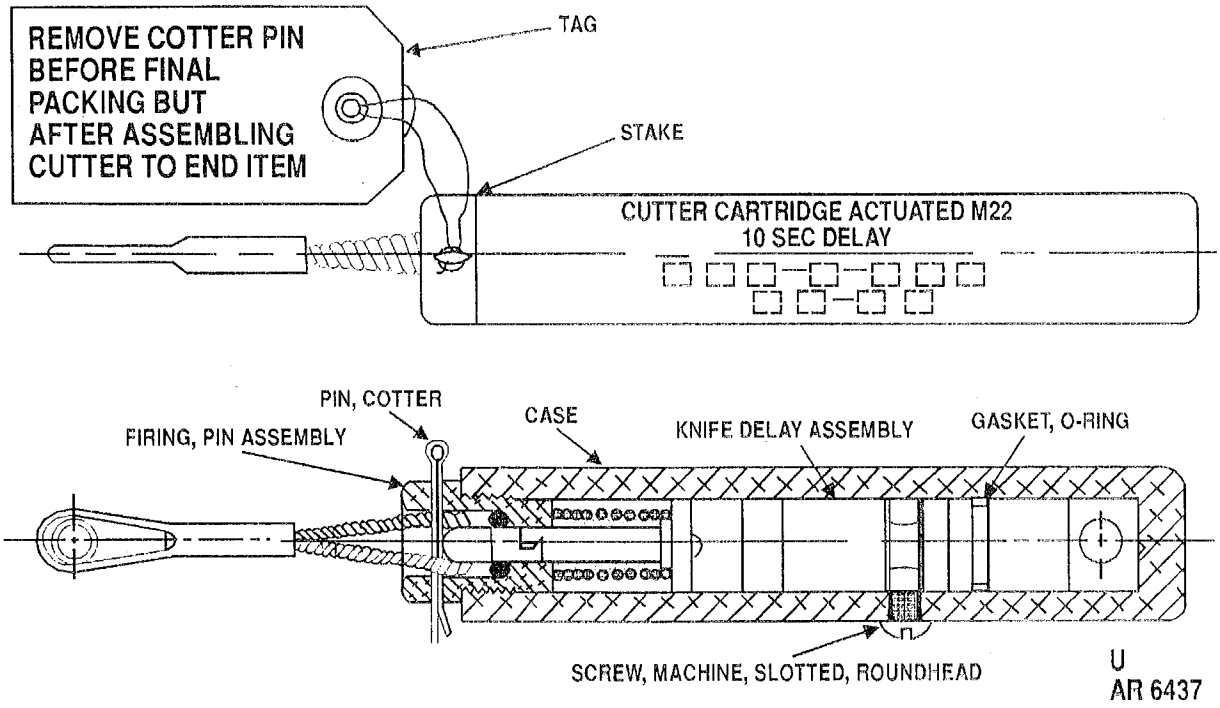
Shipping and Storage Data:

Quantity distance class	1.4
Storage compatibility group	S
DOT shipping class	C
DOT designation	EXPLOSIVE CABLE CUTTER, HANDLE CAREFULLY KEEP FIRE AWAY
UN Code	0070
UN Proper shipping name	Cutter, Cable, Explosive

References:

TM 9-1377-200-20&P
TM 10-1670-215-23
TB 9-1300-385, App B

CUTTER, CARTERIDGE ACTURATED: M22 (M504)



Type Classification:

ATC-S LCC-A

Use:

To sever a nylon reefing line which allows the parachute to fully deploy, The cutter is installed in a mounting bracket which is attached to the parachute.

Description:

The M22 reefing line cutter is a cartridge actuated, one shot, disposable mechanical unit with the cartridge sealed internally Major components consist of case, firing pin assembly, lanyard, knife assembly delay assembly, and cotter pin.

Functioning:

A drogue chute is used to pull the load out of the delivery aircraft and to deploy the main chute, which inflates in a reefed configuration. The deployment of the main chute applies a tensile force to the lanyard assembly, which is attached to the firing pin. Compression of the firing pin spring and release of the firing pin are accomplished with the same motion. The potential energy stored in the spring propels the firing pin forward, striking the primer. The flash of the primer ignites the 10-second pyrotechnic delay mix which, in turn, sets off the propellant charge behind the cutter blade assembly.

Under the force of the propellant gas pressure, the cutter blade separates from the knife-delay assembly and is propelled forward in the bore of the housing. The impact of the blade on the anvil severs the nylon reefing line inserted in the cutter, allowing full deployment of the main parachute.

Tabulated Data:

NSN	1377-00-060-0886
DODIC	M504
Drawing number	8875979
Vendor (CAGE code) and part number	(19203)
Item weight	
Diameter	0.75 in. (1.905 cm)
Width	1.07 in.
Height	8.85 in.
Length	5.1 in,
Method of actuation	Manual percussion primer
Body material	Aluminum alloy/ carbon steel blade
Propellant/Explosive Material:	
'hype	Bullseye black powder
Weight	0.00043 lb (3 grains)
Net explosive wt (incl. delay elements)	0.0064 lb
Primer	Percussion Primer, M42

Performance:

Delay Time:	
-65°F	15 sec maximum
+70°F	10 sec nom,
+160°F	8 sec minimum

Packaging:

Inner Container:	
Reference	754020103653
Type	Fiberboard box
Dimensions	6 x 4.75 in.
Items per package	1
Weight	3 lb
Outer Container:	
Reference	8863436
Type	Wirebound wood box Type II Class 2 MIL-B-2427
Dimensions	12-11/16 X 11-3/8 x 7 in.
Weight	50 lb
Cube	0.6 cu ft

Temperature Limits:

Upper	+160°F (+71°C)
Lower	-65°F (-54°C)

Shipping and Storage Data:

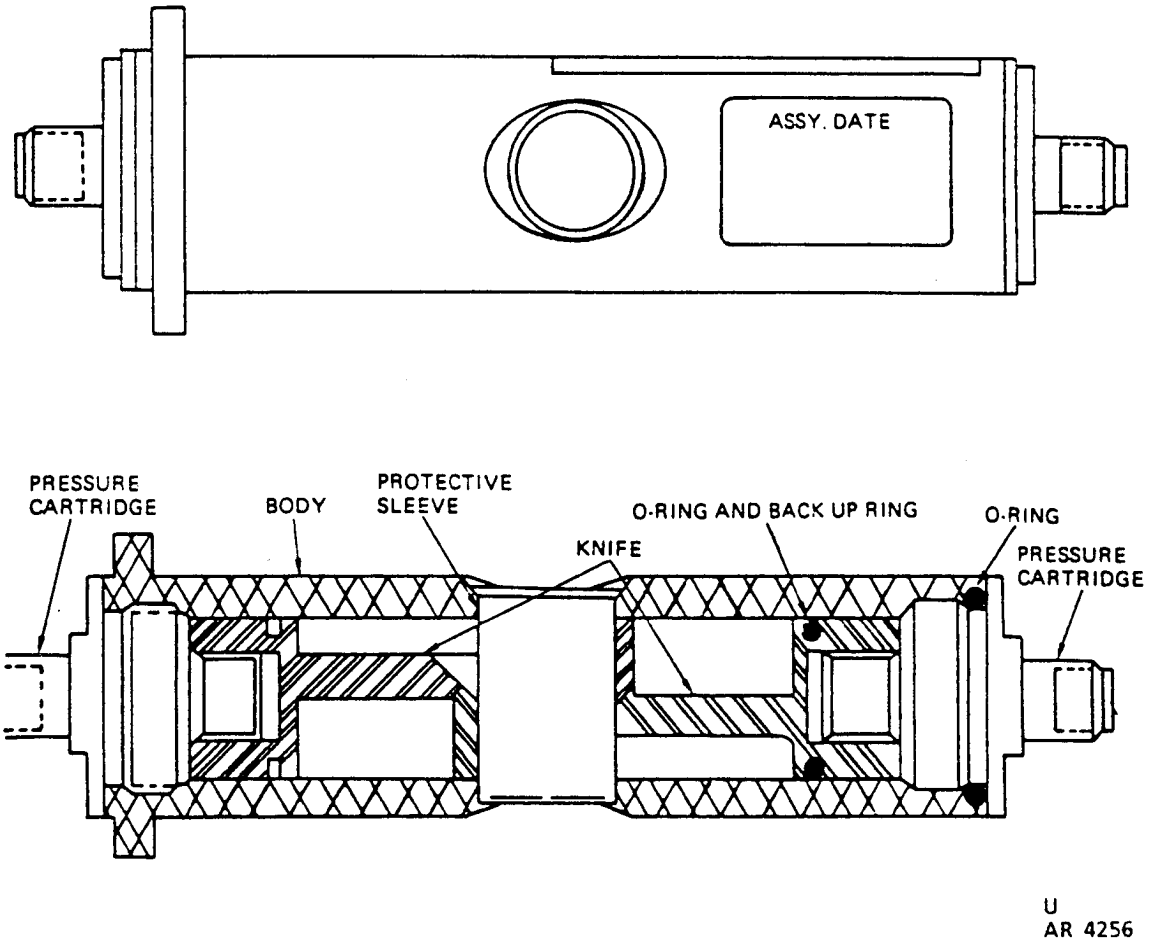
Quantity distance class	1.4
Storage compatibility group	S
DOT shipping class	C
DOT designation	EXPLOSIVE CABLE CUTTER, HANDLE CAREFULLY. KEEP FIRE AWAY
UN Code	0070
UN Proper shipping name	Cutter, Cable, Explosive

References:

TM 9-1377-200-20&P
TM 10-500/TO 13C7-1-5
TB 9-1300-206/TO11A-1-37

*U.S. G.P.O.:1994-546-043:80739

CUTTER, CARTRIDGE ACTUATED: (M554)



Type Classification:

Refer to aircraft subsystem.

Use:

To sever stainless steel cable that has a breaking strength of 25,000 lbs minimum.

Description:

The cable cutter consists of an aluminum body two steel knives, two Holex 8830-2 cartridges, a protective sleeve, a cartridge O-ring, and a knife O-ring with a backup ring.

Functioning

Firing of the electrically initiated cartridges produces gas pressure within the cutter body which drives two knives onto the cable, cutting the cable.

Tabulated Data:

NSN ---------- 1377-00-412-4377
DODIC ---------- M554
Drawing number ---------- 14195-1
Vendor (CAGE code) and
part number ---------- (96603) 14195-1
Item weight ---------- 1.26 lb (0.6 kg)
Diameter ---------- 2.0 in, (5.08 cm)
Length ---------- 7.0 in, (17.78 cm)
Method of actuation --------- Electrically fired
Body material ---------- Aluminum
Propellant/explosive material:
Type ---------- HI TEMP
Weight ---------- 0.00195 lb (13.658 grains)

Performance:

No-Fire ---------- 1.0 amp max for 5 minutes
Bridgewire resistance ------- 1.05 + 0.05 ohms
Insulation resistance -------- 2 megohms min at 500 Vdc
Firing current ---------- 4.5 amps min

Firing Temperature Limits:

Upper ---------- +125°F (+52°C)
Lower ---------- -65°F (-54°C)

Packaging

Inner Container:
Reference ---------- MIL-B-117
Type ---------- Bag
Dimensions ---------- 4 x 12
Items per package ---------- 1
Weight ---------- 1.25 lb
Outer Container:
Reference ---------- PPP-B-1672
Type ---------- Fiberboard box
Dimensions ---------- .70 x .70 x 1.04 ft
Weight ---------- 2.5 lb
Cube ---------- .509 cu ft

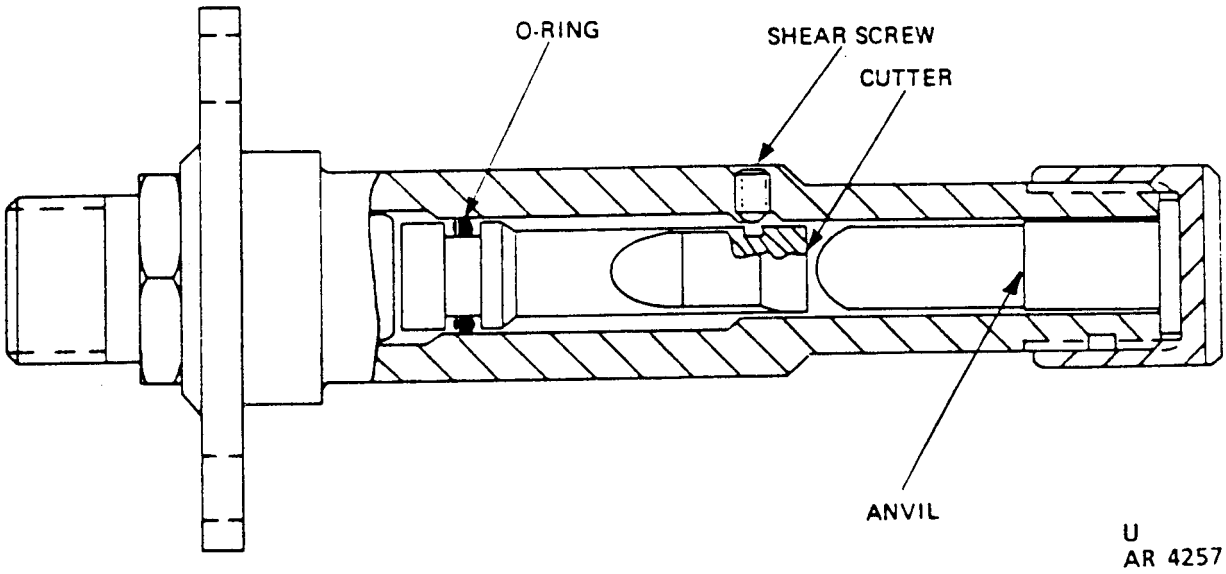
Shipping and Storage Data

Quantity distance class ----- 1.4
Storage compatibility
group ---------- S
DOT shipping class ---------- C
DOT designation ---------- EXPLOSIVE CABLE CUTTER, HANDLE CAREFULLY, KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TM 55-1520-217-XX-1-23
TM 55-1520-217-XX-2-23
TB 9-1300-385, App B.

CUTTER, CARTRIDGE ACTUATED: P/N 303104-1 (MU02)



Type Classification:

Standard.

Use:

UH-1 HELICOPTER or as otherwise applied.

Description:

The cutter contains an electrically fired cartridge, shear screw, cutter, body, and anvil.

Functioning:

Firing of the electrically initiated pressure cartridge produces sufficient gas pressure to overcome the shear screw. The cutter blade is driven onto the anvil cutting the cable that passes through the cutter body.

Tabulated Data:

NSN 1377-01-087-5166
DODIC ---------- MU02
Drawing number ----------
Vendor (CAGE code) and
part number ---------- (22567) 303104-1
(82402) 42277E182
Item weight ---------- 0.25 lb (0.1134 kg)
Diameter ---------- 0.625 in. (1.59 cm)
Length ---------- 2.99 in. (7.59 cm)
Method of actuation --------- Electrically fired
Bode material ---------- Steel
Propellant/explosive material:
Type ---------- Bullseye black powder
Weight ---------- 0.000243 lb (1.7 grains)

Performance:

Bridgewire resistance ------- .9 to 1.1 ohm

Firing Temperature Limits:

Upper ---------- +165°F (+74°C)
Lower ---------- -65°F (-54°C)

Packaging:

Inner Container:
Reference ---------- MIL-C-10464
Type ---------- Type I hermetically sealed metal container
Dimensions ---------- 2.25 x 2.25 x 4.50 in.
Items per package ---------- 1
Weight ---------- .25 lb

Outer Container:

Reference ---------- PPP-B-1672
Type ---------- II
Dimensions ---------- 1.54 x 1.04x .35 ft
Weight ---------- 2.50 lb
Cube ---------- .560 cu ft

Shipping and Storage Data:

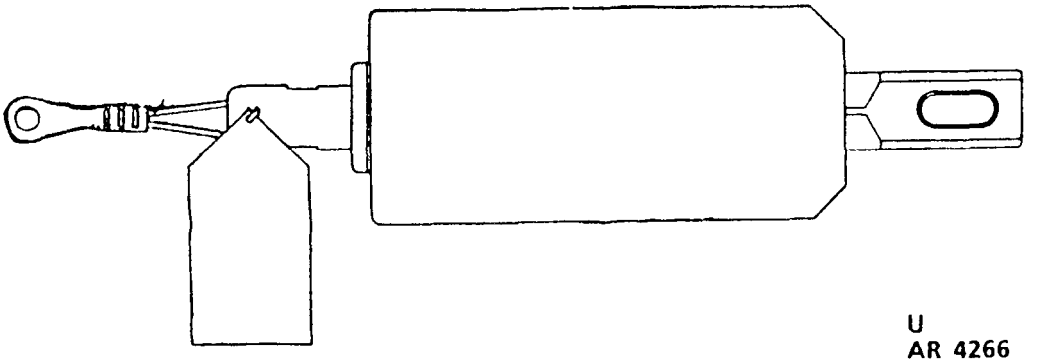
Quantity distance class ----- 1.4
Storage compatibility
group ---------- S
DOT shipping class ---------- C

DOT designation ---------- EXPLOSIVE CABLE CUTTER, HANDLE CAREFULLY, KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TM 55-1520-210-23 (Series)
TM 55-1520-237-23
TB 9-1300-385, App B

CUTTER, ASSEMBLY P/N FTL 3648-2 (MU03)



U
AR 4266

Type Classification:

Refer to aircraft subsystem.

Use:

Designed for interim high altitude parachute delivery systems.

Description:

The cutter contains a thermal battery electrically initiated cartridge, a mechanical firing pin, steel cutter, and aluminum body.

Functioning:

When the ASPSU is dropped from the aircraft, a mechanical firing pin mechanism is actuated by a pull from a static line attached to the aircraft. This action cocks and releases a firing pin, which impacts the percussion primer of the thermal battery. The thermal battery fires and produces 19 volts within 0.500 second and maintains a voltage between 19 and 35 volts for a minimum of 120 seconds, with a 28-milliampere current drain. This energy is stored in capacitors within the cutter and altitude sensor modules until the preselected altitude is reached. At that time the firing circuit is triggered, and an electric current pulse of at least 7.65 amperes is applied to the cartridge-actuated cutter. The cutter then fires, severing the 9,000-pound (40.03kN)-test woven nylon line. The G-12 main parachute is then allowed to open.

Tabulated Data

NSN ---------- 1377-01-064-4927
DODIC ---------- MU03
Drawing number ---------- 11-1-3043
Vendor (CAGE code) and
part number ---------- (26687) FTL 3648-2
Item weight ---------- 1.81 lb (0.82 kg)
Diameter ----------
Length ----------
Method of actuation --------- Electric
Body material ---------- Steel
Propellant/explosive material:
Type ---------- HI TEMP
Weight ---------- 0.0004 lb (2.8 grains)

Packaging:

Inner Container:
Reference ---------- MIL-B-81705
Type ---------- Hermetically sealed antistatic plastic bag
Dimensions ---------- 11 x 3.5 x 3.5 in. (27.9 x 8.9 x 8.9 cm)
Items per package --------- 1
Weight ---------- 4.688 lb
Outer Container:
Reference ---------- PPP-B-621
Type ---------- Wood Box
Dimensions ----------
Weight ----------
Cube ----------

Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility
group ---------- S
DOT shipping class ---------- C
DOT designation ---------- EXPLOSIVE CABLE CUTTER, HANDLE CAREFULLY, KEEP FIRE AWAY

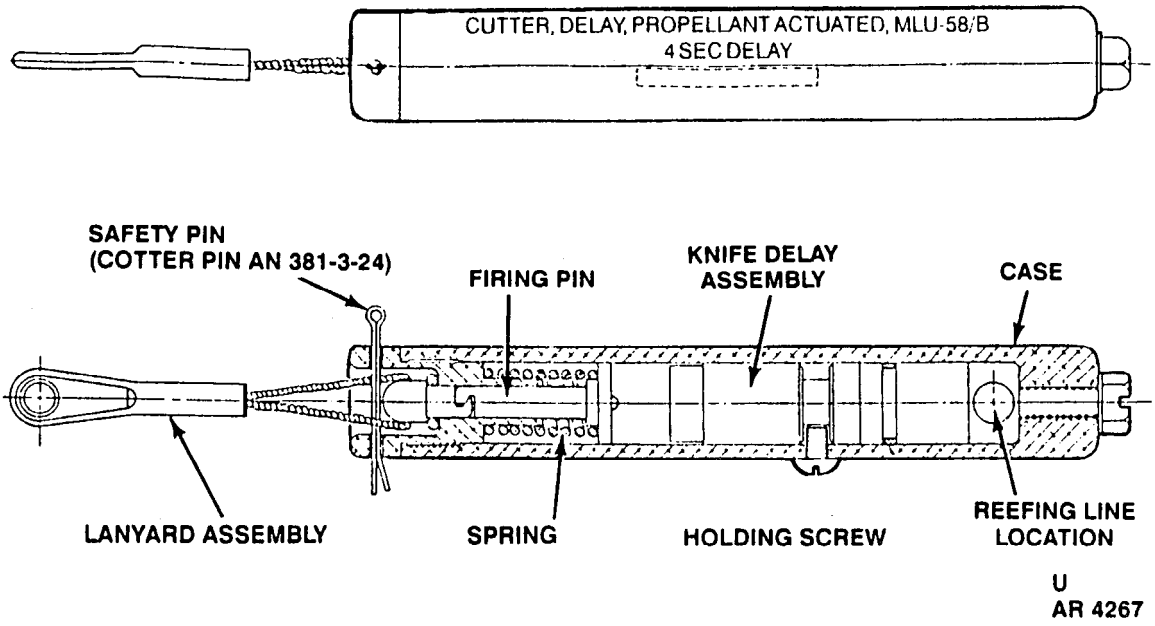
Temperature Limits:

Upper ---------- +160°F (+71°C)
Lower ---------- -65°F (-54°C)

References:

TM 9-1377-200-20&P
TB 9-1300-385, App B

CUTTER, DELAY, PROPELLANT ACTUATED: (MU11)



Type Classification:

Refer to aircraft subsystem.

Use:

To sever a nylon reefing line which allows the parachute to fully deploy The cutter is installed in a mounting bracket which is attached to the parachute.

Description:

The MU11 reefing line cutter is a cartridge actuated, one shot, disposable mechanical unit with the cartridge sealed internally. Major components consist of case, firing pin assembly, lanyard, knife assembly, delay assembly and cotter pin.

Functioning:

A drogue chute is used to pull the load out of the delivery aircraft and to deploy the main chute, which inflates in a reefed configuration. The deployment of the main chute applies a tensile force to the lanyard assembly which is attached to the firing pin. Compression of the firing pin spring and release of the firing pin are accomplished with the same motion. The potential energy stored in the spring propels the firing pin forward, striking the primer. The flash of the primer ignites the four-second pyrotechnic delay mix which, in turn, sets off the propellant charge behind the cutter blade assembly.

Under the force of the propellant gas pressure, the cutter blade separates from the knife-delay assembly and is propelled forward in the bore of the housing. The impact of the blade on the anvil severs the nylon reefing line inserted in the cutter, allowing full deployment of the main parachute.

Tabulated Data:

NSN	1377-01-288-0418
DODIC	MU11
Drawing number	6261278
Vendor (CAGE code) and part number	11862
Item weight	.7 lb
Diameter	0.75 in. (1.905 cm)
Length	6.0 in. (15.24 cm)
Method of actuation	Manual percussion primer
Body material	Aluminum alloy/carbon steel blade

Propellant/explosive material:
- Type ---------- Bullseye black powder
- Weight ---------- 0.0040 lb (28 grains)

Performance:

Delay Times:
- -65°F ---------- 3.0 sec mm
- +70°F ---------- 1.6 sec min 2.4 sec max
- + 160°F ---------- 1.2 sec min

Packaging:

Inner Container:
- Reference ---------- PPP-B-636
- Type ---------- Fiberboard box
- Dimensions ----------
- Items per package ---------- 80
- Weight ---------- 43 lb

Outer Container:
- Reference ---------- MIL-B-2427
- Type ---------- Wood box
- Dimensions ---------- 15-13/16 x 12-15/16 in.
- Weight ---------- 50 lb
- Cube ----------

Temperature Limits:

Upper ---------- +160°F (+71°C)
Lower ---------- -65°F (-54°C)

Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility group ---------- S
DOT shipping class ---------- C
DOT designation ---------- EXPLOSIVE CABLE CUTTER, HANDLE CAREFULLY, KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TM 10-1670-215-23
TB 9-1300-385, App B

CHAPTER 4

TIME DELAY CARTRIDGES

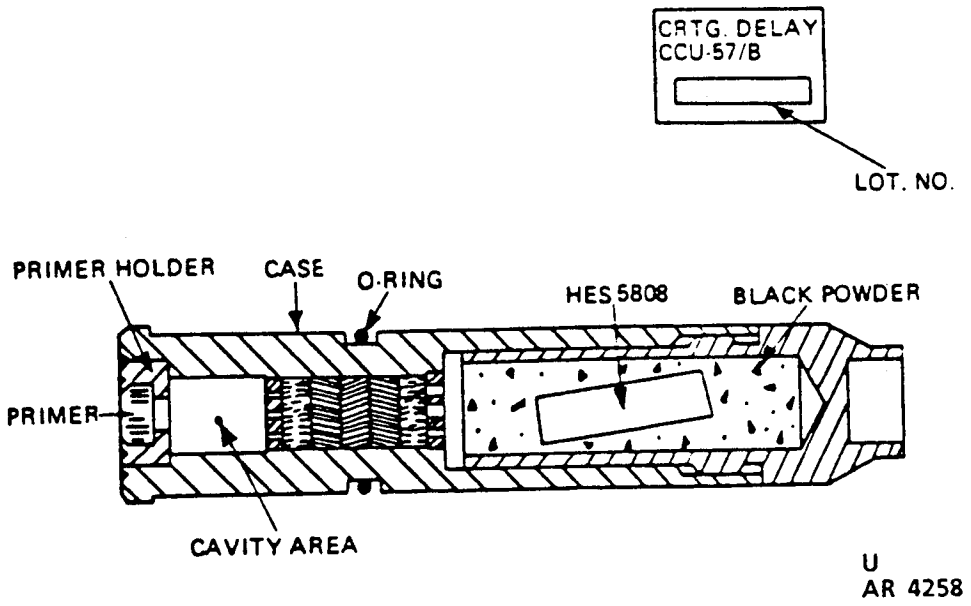
4-1. General

a. Delay cartridges consist of a body a primer seat, a primer, a time delay charge, an output charge, and a closure disc. The composition and the measure of the delay element (charge) determine the length of the delay.

b. Time delay cartridges are designed to function at specific delay times and shall only be used for designed application.

c. This chapter contains technical data for the time delay cartridges used by the Army.

CARTRIDGE, DELAY CCU-57/B (MF35)



Type Classification:

ATC-S LCC-A

Use:

The CCU-57/B (MF35) delay cartridge is sealed in the TCU-1B thruster. The TCU-1B thruster is part of a high speed aerial delivery system.

Description:

Major components consist of aluminum case, primer, O-ring, delay charge and main output charge.

Functioning:

Firing of the M42 primer ignites the 0.4 second delay train which in turn fires the main output charge that provides gas pressure for the thruster.

Tabulated Data:

NSN	1377-01-084-6046
DODIC	MF35
Drawing number	5184858
Vendor (CAGE code) and part number	(53711) 5184858
Item weight	
Diameter	0.375 in. (0.9525 cm)
Length	2 in. (5.08 cm)
Method of actuation	Percussion primer M43
Body material	Aluminum alloy
Propellant/explosive material:	
Type	Black powder and HES 5808
Weight	0.0025 lb (17.5 grains)

Performance:

Delay time	0.4 + 0.1 second
Thrust (upper limit)	2000 lb (900 kg) max
Minimum stroke	1.5 in. (3.8 cm)

Firing Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65°F (-54°C)

Packaging:

This item cannot be procured or packaged separately. It is installed in the TCU-1B thruster as a sealed-in-device.

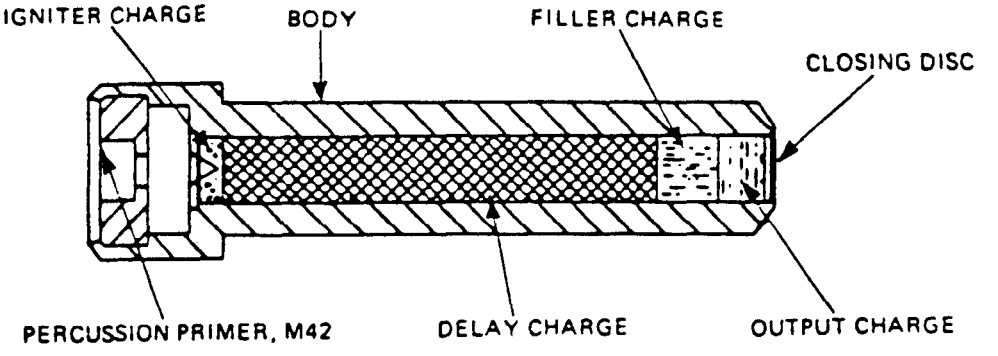
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility group ---------- S
DOT shipping class ---------- C
DOT designation ---------- SMALL ARMS AMMUNITION, CLASS C, HANDLE CAREFULLY KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TM 9-1300-385, App B.

CARTRIDGE, DELAY CCU-89/B: (MH88)



Type Classification:

Refer to aircraft subsystem.

Use:

The MH88 activates the release mechanism used in the parachute harness of cargo dropped from aircraft. The release mechanism allows the parachute to detach from the cargo after landing. This prevents the parachute from dragging the cargo and causing damage.

Description:

The cartridge consists of a cylindrical aluminum body primer (ignition device), washer, ignition charge, delay charge, filler charge, output charge, and metal closure charge.

Functioning:

Primer initiation ignites a composition igniter charge adjacent to the delay column. Upon the elapse of approximately 20 seconds the delay mix ignites the filler and output charge.

CARTRIDGE, DELAY CCU-89/B: MH88

Tabulated Data:

NSN 1377-01-178-6691
DODIC ---------- MH88
Drawing number ---------- 5185107
Vendor (CAGE code) and
part number ---------- (30003) 5185107
Item weight ----------
Diameter ---------- 0.506 in. (1.29 cm)
Length ---------- 2.0 in. (5.08 cm)
Method of actuation --------- Percussion (M42)
Body material ---------- Aluminum
Propellant/explosive material:
Type ---------- Tungsten delay composition
Weight ---------- 0.00616 (42 grains)

Performance:

20 second delay.

Packaging:

Inner Container:
Reference ----------
Type ----------
Dimensions ----------
Items per package ---------- 10
Weight ----------

Outer Container:
Reference ----------
Type ---------- Wood box
Dimensions ---------- 8.38 x 8.38 x 14.63 in.
Weight ----------
Cube ---------- 0.6 cu ft

Temperature Limits:

Upper ---------- +160°F (+71°C)
Lower ---------- -65°F (-54°C)

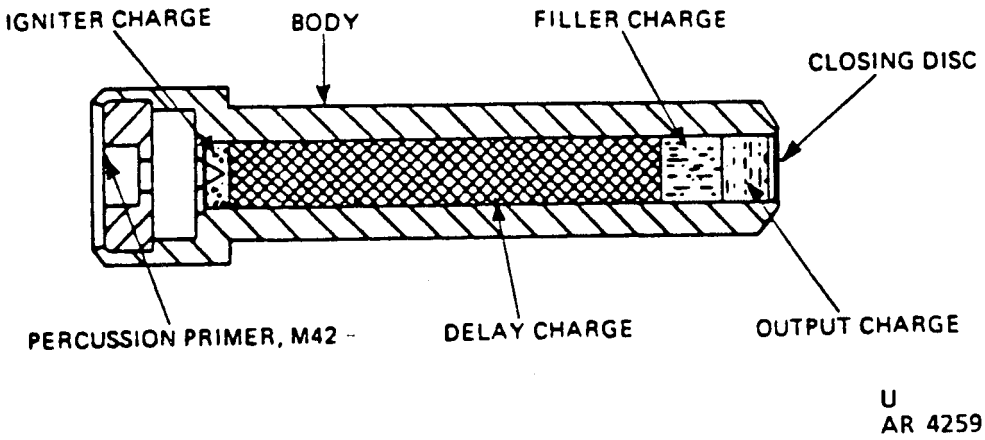
Shipping and Storage Data

Quantity distance class ----- 1.4
Storage compatibility
group ---------- S
DOT shipping class ---------- C
DOT designation ---------- SMALL ARMS AMMUNITION, HANDLE CAREFULLY, KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TM 10-1670-215-23
TB 9-1300-385, App B.

CARTRIDGE, DELAY: (M308)



Type Classification:

ATC-S LCC-A

Use:

Power device for the 5,000 lb. capacity cargo parachute release.

NOTE

Replacement is MH88.

Description:

The M252 delay cartridge is cylindrical in shape, It consists of the body a primer seat, washer, M42 primer, A1A igniter charge, delay charge, output charge, and closing disc.

Functioning:

Its function is to allow a nominal 20-second delay, during which cargo descent is stabilized, before tripping a spinner mechanism which allows the parachute to release upon landing.

When the cargo is jettisoned from the aircraft, parachute deployment activates the firing mechanism. This compresses a spring behind the firing pin. The stored energy of the compressed spring drives the firing pin into the M42 percussion primer of the M252 cartridge.

Primer initiation ignites an A1A composition igniter charge adjacent to the delay column. Upon the elapse of approximately 20 seconds, the delay mix ignites the filler and output charge; the resulting gases rotate the spinner on the release mechanism which releases the ground disconnect pin attached to the catch. Upon ground contact (no load on the release), the rotated spinner allows the latch holding the cargo to release. Thus, the parachute is prevented from dragging or causing the cargo to tumble along the ground.

Tabulated Data:

NSN 1377-00-958-1048
DODIC ---------- M308
Drawing number ---------- 8886478 (19203)
Vendor (CAGE code) and
part number ---------- (81337) 11-1-329 (26687)
Item weight ---------- 0.007 lb (0.0032 kg)
Diameter ---------- 0.375 in. (0.9525 cm)
Length ---------- 2 in. (5.08 cm)
Method of actuation --------- Percussion primer M42
Body material ---------- Steel
Propellant/explosive material:
Type ---------- Lead azide
Weight ---------- 0.006 lb (42 grains)

Performance:

Delay time ---------- 20 seconds

Firing Temperature Limits:

Upper ---------- +160°F (+71°C)
Lower ---------- -65°F (-54°C)

Packaging:

Inner Container: 1
Reference ---------- PPP-B-636
Type ---------- Fiberboard box
Dimensions ----------
Items per package ---------- 100
Weight ---------- 0.70 lb (0.32 kg)
Inner Container: 11
Reference ---------- MIL-B-117
Type ---------- Barrier bag
Dimensions ----------
Items per package ---------- 1
Weight ---------- 1.5 lb (0.68 kg)

Outer container:
Reference ---------- PPP-631
Type ---------- Class 2/Style 4
Dimensions ---------- Wood box
Weight ---------- 30 lb (13.6 kg)
Cube ----------

Skipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility
group ---------- S
DOT shipping class ---------- C
DOT designation ---------- SMALL ARMS AMMUNITION, HANDLE CAREFULLY, KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TM 10-1670-215-23
TB 9-1300-385, App B.

CHAPTER 5

EMERGENCY ESCAPE SYSTEMS FOR HELICOPTERS, AH-64

Section I. AH-1 (COBRA)

5-1. General (for Army AH-1 (Cobra) Helicopter)

a. Section I of this chapter contains descriptive and technical data pertaining to systems used for the Army AH1E-F/P/S (MOD) Helicopter Personnel Emergency Escape Systems. Each system is used to explosively cut the windows of the canopy and doors from the canopy support structure to provide a rapid means of escape/access to/from the crew compartment.

b. The system consists of four linear explosive window cutting assemblies (WCA) which are installed around the rim of the canopy and door windows of the crew compartment (fig. 5-1), three armed/firing mechanisms, and interconnecting flexible confined detonating cords (FCED) and rigid shielded mild detonating cord (SMDC) lines (fig. 5-2). One armed/firing mechanism is located in the pilot's instrument panel to the left of the glare shield, another is located in the gunner/copilot's right console, and the third is in the nose of the helicopter located to provide external access by rescue personnel, Any one of the three armed/firing mechanisms can be used to actuate the linear explosive escape system.

c. The detonating cord set consists of eight SMDC assemblies, two FCDC assemblies and four WCA assemblies. Each type assembly is described in this section. Individual detonating cord lines are listed in table 5-1. Table 5-2 lists these components and their location and function. Table 5-3 lists detonating cord assemblies used in AH-1 series Army helicopters.

d. Section I also contains descriptive information pertaining to the inert connectors used in the helicopter canopy removal system.

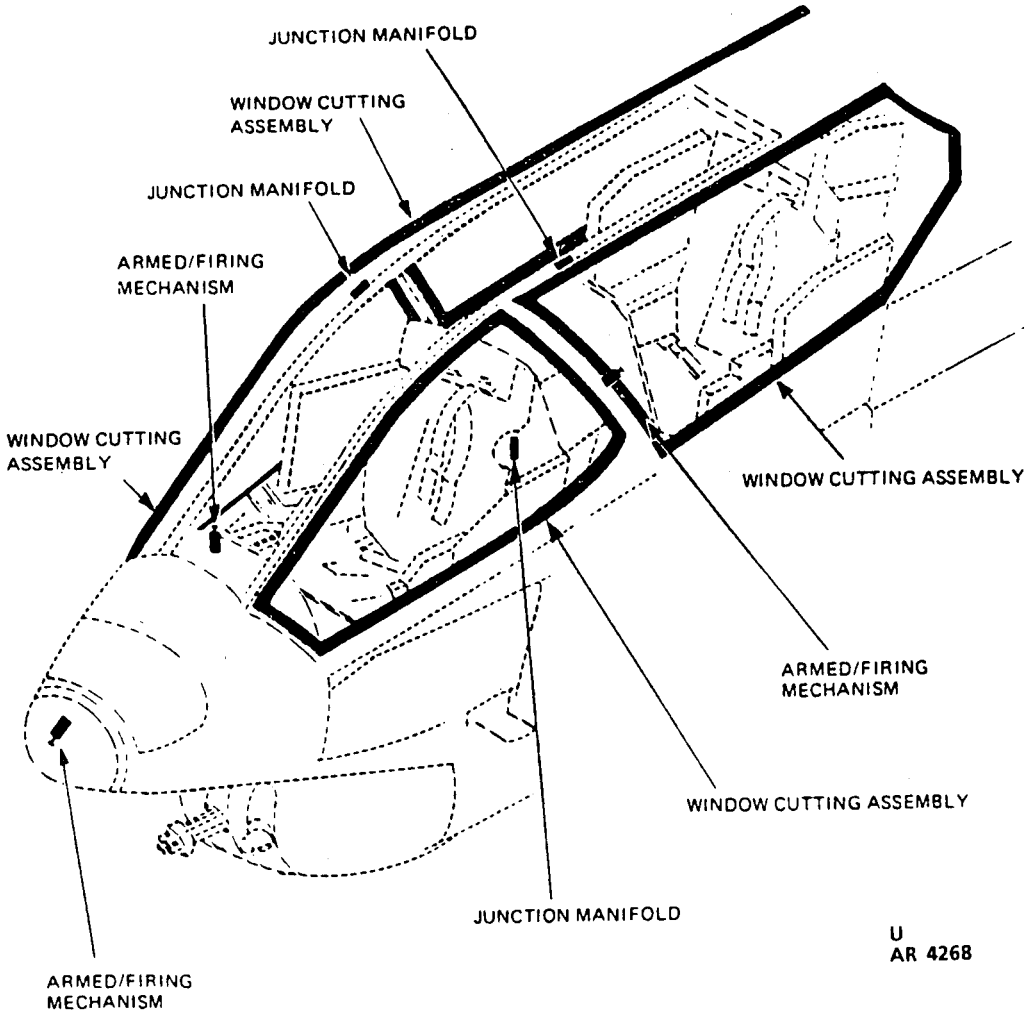


Figure 5-1. Attack Helicopter, Model AH-1, All Modifications, Emergency Canopy Jettison Elements.

Table 5-1. Explosive Components Technical Data and Cross-Reference

AH-1 Series

DODIC	Assembly	*T-McC-S P/N	**Bell P/N	NSN 1377-oo-	Length (IN.)	Explosive Weight (LB)
MD15	FCDC	813592-6	209-030-711-11	410-8271	67,5	0,01115
MD16	FCDC	813592-5	209-030-711-13	409-1099	22.4	0,00787
MD17	SMDC	813475-19	209-030-711-19	410-8297	6.5	0.00065
MD18	SMDC	813475-27	209-030-711-27	409-1098	6.6	0.00063
MD33	WCA	814280-15	209-030-711-105	409-1096	150,0	0.00461
MD34	WCA	814280-9 or 814280-13	209-030-711-99	409-1095	110.0	0.00390
MD35	WCA	814280-102 or 814280-11	209-030-711-37	106-7773	110,0	0.00375
MD36	WCA	814280-101 or 814280-9	209-030-711-103	409-1097	150.0	0.00466
ME83	***CORD SET, DETONATING	.....	.....	01-060-8531	.....	0.03268
	ARMED/ FIRING MECHANISM	813633-4	209-030-711-61	410-8265	6.5	0.00019

*CAGE Code 06331
**CAGE Code 97499
***Contains one each of of all items except the armed/firing mechanism

Table 5-2. Summary of Devices in AH-1 Series Canopy Release System

DODIC	Nomenclature	Quantity/Location	*Function
MD15	Flexible Confined Detonating Cord (FCDC) 857AS500-2	1- Between left junction manifold and WCA gunner's door	Provides flexible explosive media between junction manifold and
MD16	FCDC - 857AS500-1	1- Between right junction manifold and WCA pilot's door	Provides flexible explosive media between junction manifold and WCA
MD17	Shielded Mild Detonating Cord (SMDC) - 857AS400-1	1- Between left junction manifold and WCA pilot's window	Provides explosive media between junction manifold and WCA
MD18	SMDC - 857AS400-2	1- Between right junction manifold and WCA gunner's window	Provides explosive media between junction manifold and WCA
MD33	Window Cutting Assembly (WCA) - 857AS300-4 or 857AS300-15	1- Pilot's canopy window	Explosively cuts (removes) and ejects glass from pilot's canopy window
MD34	WCA - 857AS300-3 or 857AS300-13	1- Gunner's canopy window	Explosively cuts (removes) and ejects glass from gunner's canopy window
MD35	WCA - 857AS300-2 or 857AS300-11	1- Gunner's door window	Explosively cuts (removes) and ejects glass from gunner's door window
MD36	WCA - 857AS300-1 or 857AS300-9	1- Pilot's door window	Explosively cuts (removes) and ejects glass from pilot's door window
ME83	Cord Set, Detonating, Canopy Removal System 857AS600	.....	System procurement
—	Armed/Firing Mechanism	3- One each at pilot's and gunner's stations and one in fuselage nose	Initiates detonation wave to actuate window cutting assemblies

*Service life at end of table.

Table 5-2. Summary of Devices in AH-1 Series Canopy Release System (Continued)

DODIC	Nomenclature	Quantity/Location	**Function
INERT	In-line connector 857AS103-1	1- Forward bulkhead section	Detonation transfer media
INERT	Tee Connector 857AS101-1	1- Behind gunner's seat	Detonation transfer media
INERT	Cross Connector 857AS102-1	2- Upper right canopy structure and upper left canopy structure	Detonation transfer media

***Service Life: (Explosive Devices)**

Service life listed in this TM is nominal. Specific service life data is listed in TB 9-1300-385, App B. Updates to the TB are issued quarterly

****Service Life: (Inert Connectors)**

Item is an assembly of metal parts only. Replacement is determined by "On Condition" (OC), after inspection for visible wear or defect,

Table 5-3. Detonating Cord Assemblies and Elements Used in Army Helicopters: AH-1 Series

NSN	DODIC	Nomenclature	*(CAGE) P/N
1377-00-409-1100	MS50	Cord, Detonating (SMDC)	(97499) 209-030-711-25 (06331) 813475-25
1377-00-410-8222	MS49	Cord, Detonating (SMDC)	(97499) 209-030-711-21 (06331) 813475-21
1377-00-410-8228	....	Manifold, Junction (Inert)	(97499) 209-030 -711-9 (06331) 813487-2
1377-00-410-8266	MS47	Cord, Detonating (SMDC)	(97499) 209-030-711-15 (06331) 813475-15
1377-00-410-8289	MS48	Cord, Detonating (SMDC)	(97499) 209-030-711-17 (06331) 813475-17
1377-01-032-1047	MS76	Cord, Detonating (LSC)	(97499) 209-033-009-1 (06331) 816986-1
1377-01-032-1048	MS77	Cord, Detonating (LSC)	(97499) 209-033-009-3 (06331) 816986-3
1377-01-032-1049	MS78	Cord, Detonating Window Cutting Assy	(97499) 209-033-010-103 (06331) 816987-103
1377-01-032-1050	MS79	Cord, Detonating Window Cutting Assy	(97499) 209-033-010-105 (06331) 816987-105
1377-01-032-3279	MS60	Cord, Detonating (SMDC)	(97499) 209-033-011-123 (06331) 813475-123
1377-01-032-3280	MS61	Cord, Detonating (SMDC)	(97499) 209-033-011-23 (97499) 209-033-011-49
1377-01-100-1718	MS62	Cord, Detonating (SMDC)	(30003) 813-475-127
1377-01-032-3283	MS59	Cord, Detonating (SMDC)	(97499) 209-033-011-125 (06331) 813475-125
1377-01-032-3286	MS58	Cord, Detonating (SMDC)	(97499) 209-033-011-119 (06331) 813475-119
1377-01-033-5088	---	Arm, Fire Initiator	(97499) 209-033-008-101 (06331) 814033-101
1377-01-035-4124	MS51	Cord, Detonating (SMDC)	(97499) 209-033-011-105 (06331) 813475-105
1377-01-037-4090	MS53	Cord, Detonating (SMDC)	(97499) 209-033-011-109 (06331) 813475-109

***Coxmnercial And Government Entity (CAGE) (Formerly FSCM Code).**

Table 5-3. Detonating Cord Assemblies and Elements Used in Army Helicopter AH-1 Series (Continued)

NSN	DODIC	Nomenclature	*(CAGE) P/N
1377-01-037-4091	....	Pin Puller, Explosive	(97499) 209-033-006-101 (06331) 816984-107
1377-01-037-4092	....	Manifold, Junction (Inert)	(97499) 209-033-011-101 (06331) 817295-101
1377-01-037-4093	MS57	Cord, Detonating (SMDC)	(97499) 209-033-011-117 (06331) 813475-117
1377-01-037-4094	MS56	Cord, Detonating (SMDC)	(97499) 209-033-011-115 (06331) 813475-115
1377-01-037-4095	MS55	Cord, Detonating (SMDC)	(97499) 209-033-011-113 (06331) 813475-113
1377-01-037-4096	MS54	Cord, Detonating (SMDC)	(97499) 209-033-011-111 (06331) 813475-111
1377-01-037-9237	MS52	Cord, Detonating (SMDC)	(97499) 209-033-011-107 (06331) 813475-107
1377-01-062-4195	....	Connector, In-line (Inert)	(97499) 209-033-011-103 (06331) 819347-103

***Coxmnercial And Government Entity (CAGE) (Formerly FSCM Code Number).**

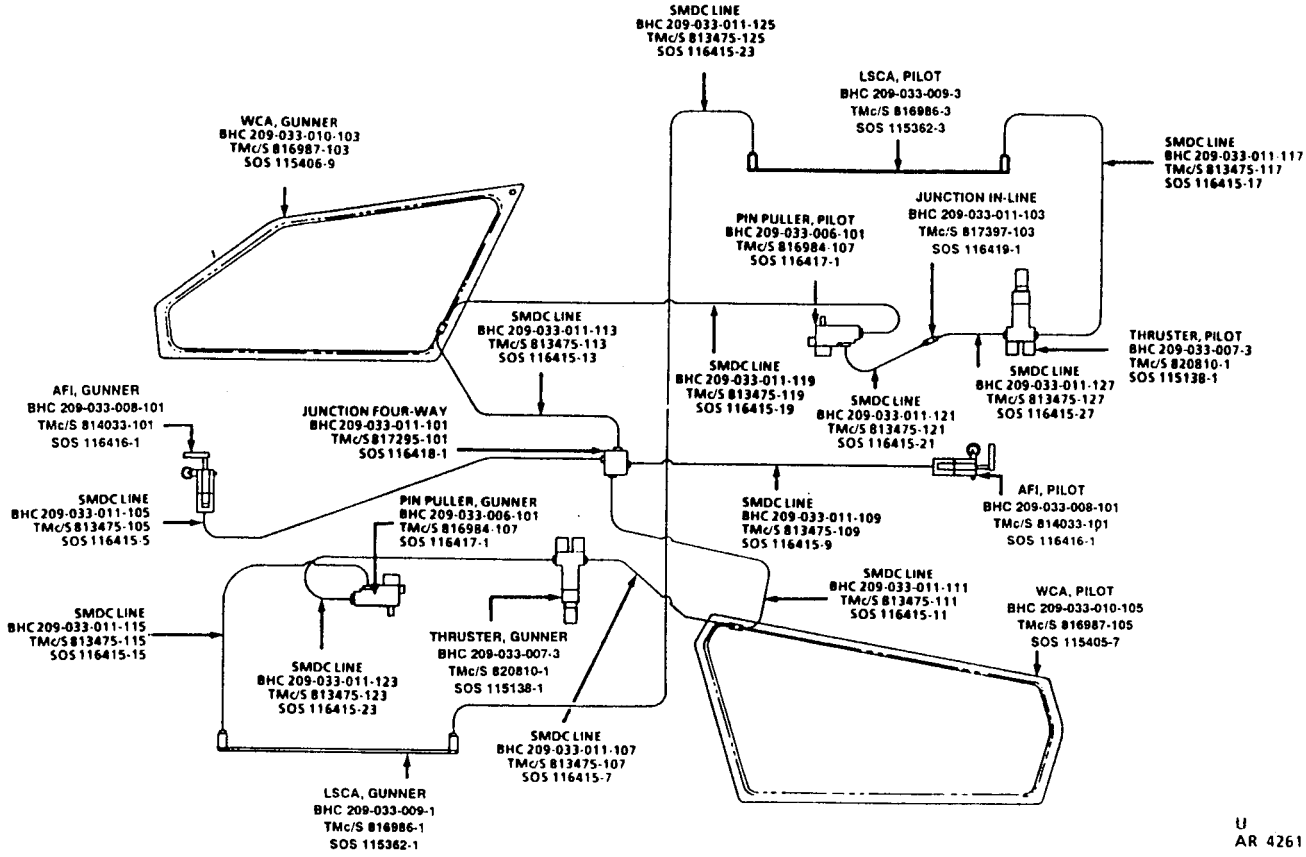
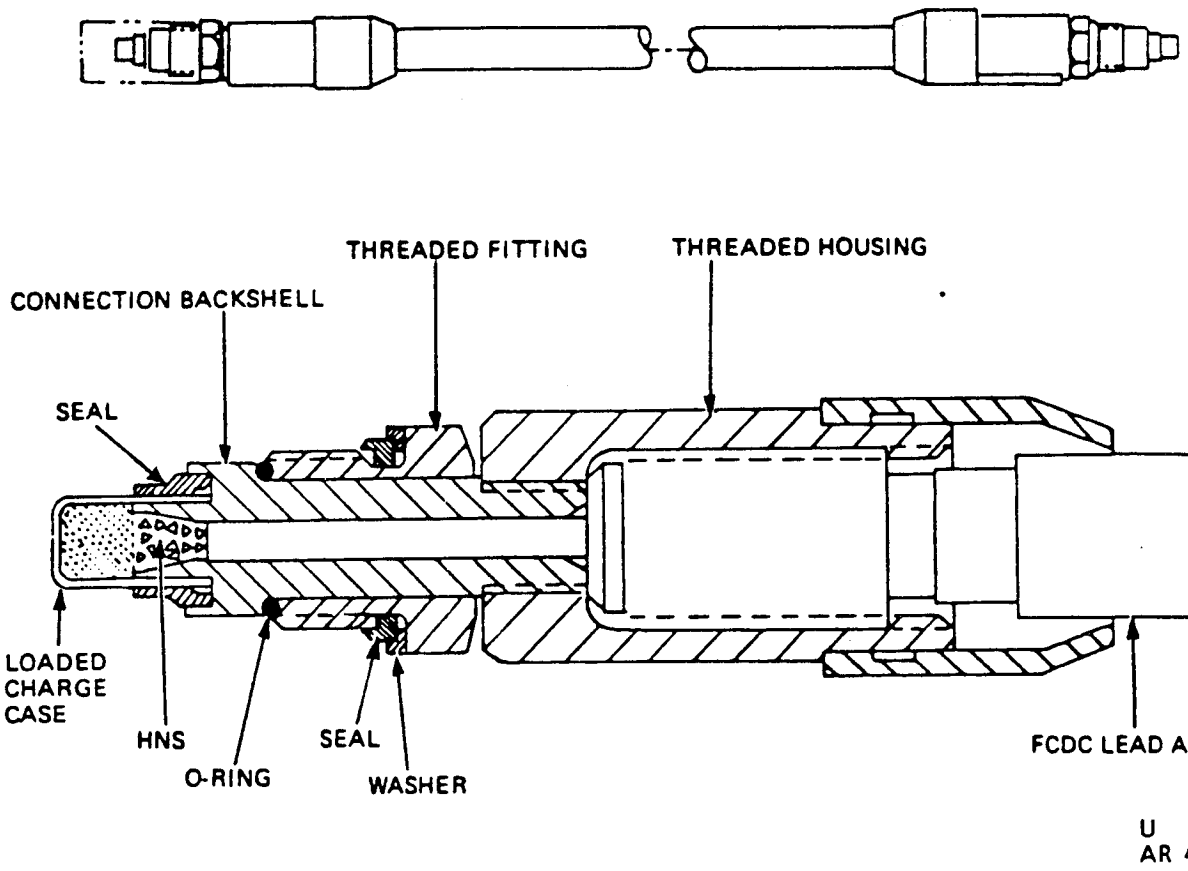


Figure 5-2. Canopy Jettison Removal System (Schematic) for the AH-1 Series.

CORD, DETONATING, ASSEMBLY, FLEXIBLE CONFINED (FCDC) (GUNNER): (MD15)



Type Classification:

Refer to aircraft subsystem.

Use:

To provide and interconnecting explosive media to the Window Cutting Assembly (WCA) of the gunner's canopy door used in the Emergency Canopy Removal System of the AH-1 series Helicopter.

Description:

Major components of the FCDC assembly are housing, threaded fittings, seals, loaded charge case, lead sheath assembly, and prescribed amounts of Hexanitrostilbene (HNS). This FCDC lead sheathed assembly is located in the canopy between the left junction manifold and the adapter to the WCA in the gunner's canopy door.

NOTE

The MD15 is identical in design and physical appearance to the MD16, The difference is in length and amount of explosive,

Functioning

When any one of the three armed/firing mechanisms is actuated, the FCDC line receives a detonating stimulus via a junction manifold and transmits it to the WCA in the gunner's canopy door.

Tabulated Data:

NSN ---------- 1377-00-410-8271
DODIC ---------- MD15
Drawing number ---------- 857AS500-2
Vendor (CAGE code) and
part number ---------- (97499) 209-030-711-11 (06331) 813592-6
Item weight ----------
Diameter ---------- 0,5 in, (1.27 cm)
Length ---------- 67,5 in, (171,45 cm)
Method of actuation --------- High order detonation wave
Body Material ---------- Lead 6% antimony alloy sheathed
Propellant/explosive material:
Types ---------- HNS, Type I Grade A
Weight ---------- 0.01115 lb. (78.05 grains)

Performance:

Minimum detonation
velocity ---------- 6050 meters/see at -65° (-54°C)

Firing Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65°F (-54°C)

Packaging:

Inner container:
Reference ---------- MIL-B-817051 857AS500-2
Type ---------- Sealed bag
Dimensions ---------- 68' long x 1“ dia (172.7 cm long x 2.5 cm dia)
Items per package ---------- 1
Weight ---------- 0.5 lb (0.23 kg)

Outer Container:
Reference ---------- Commercially packed
Type ---------- II
Dimensions ---------- 1.54 x 1.04x .27
Weight ---------- 1.50 (lb)
Cube ---------- .464 cu ft

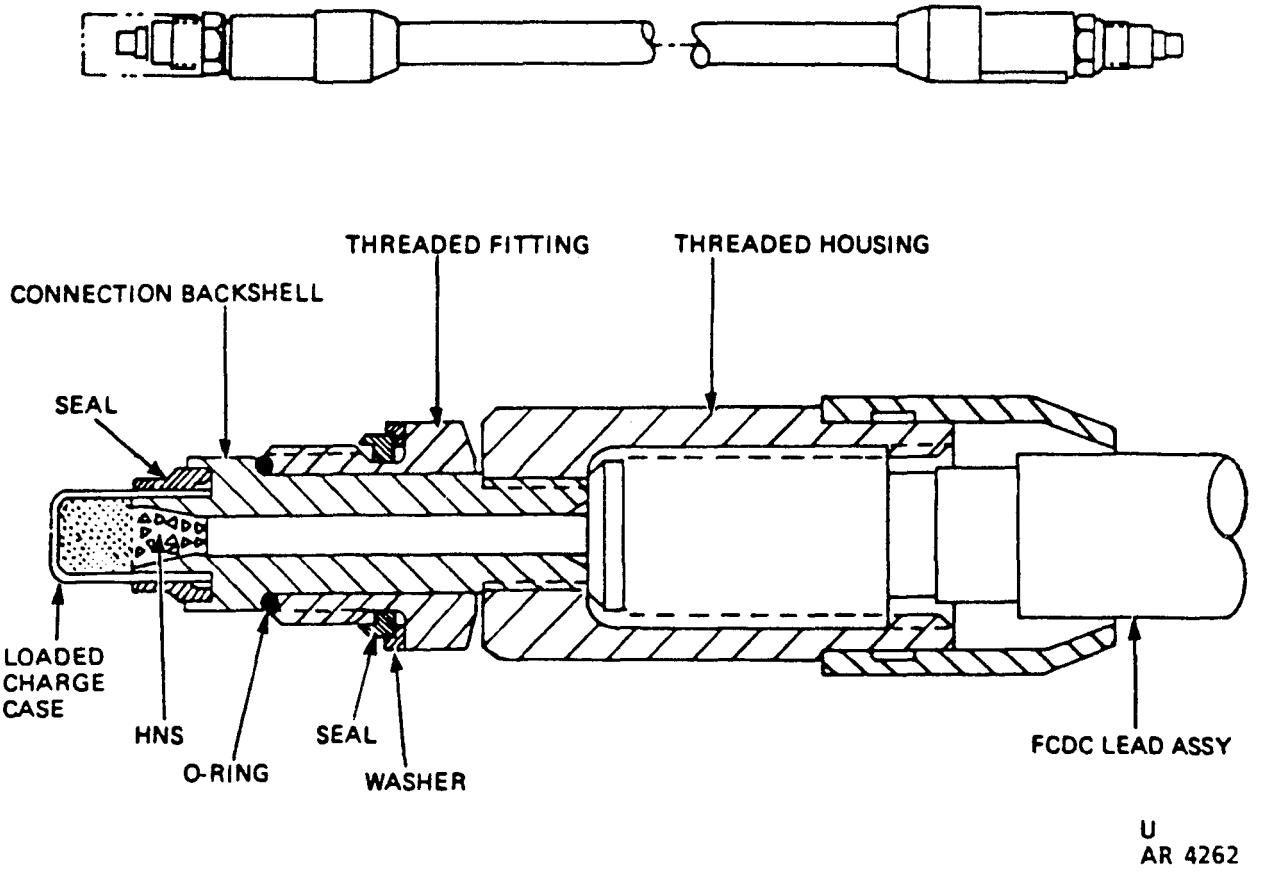
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility
group ---------- S
DOT shipping class ---------- C
DOT designation ---------- Flexible Linear Shaped Charge, Handle Carefully Keep Fire Away

Reference:

TM 9-1377-200-20&P
TM 55-1520-221-23
TM 55-1520-234-23
TM 9-1300-385, App B.

CORD, DETONATING, ASSEMBLY, FLEXIBLE CONFINED (FCDC) (PILOT): (MD16)



Type Classification:

Refer to aircraft subsystem.

Use:

To provide and interconnecting explosive media to the Window Cutting Assembly (WCA) of the pilot's canopy door used in the Emergency Canopy Removal System of the AH-1 series Helicopter,

Description:

Major components of the FCDC Assembly are housing, threaded fittings, seals charge case, Hexanitrostilbene (HNS), lead sheathed assembly This FCDC lead sheathed assembly is located in the canopy between the left junction manifold and the adapter to the WCA in the pilot's canopy door,

NOTE

The MD16 is identical in design and physical appearance to the MD 15. The difference is in length and amount of explosive.

Functioning:

When any one of the three armed/firing mechanisms is actuated, the FCDC line receives a detonating stimulus via a junction manifold and transmits it to the WCA in the pilot's canopy door.

Tabulated Data:

NSN 1377-00-409-1099
DODIC ---------- MD16
Drawing number ---------- 857AS500-1
Vendor (CAGE Code) and
part number ---------- (97499) 209-030-711-13 (0633.1) 813592-5
Item Weight ----------
Diameter ---------- 0.5 in. (1.27 cm)
Length ---------- 22.4 in. (58.9 cm)
Method of actuation --------- High order detonation wave
Body Material ---------- Lead 6% antimony alloy sheathed
Propellant/explosive material:
Type ---------- HNS, Type I, grade A
Weight ---------- 0.00187 lb (55.09 grains)

Performance:

Minimum detonation
velocity ---------- 6050 meter/see at -65°F (-54°C)

Firing Temperature Limits:

Upper ---------- +200°F (+93° C)
Lower ---------- -65°F (-54° C)

Packaging:

Inner Container:
Reference ---------- MIL-C-10464
Type ---------- Type I, Hermetically sealed metal container
Dimensions ---------- 62-1/2 x 1/2 in.
Items per package ---------- 1
Weight ---------- 0.2 lb (0.09 kg)

Outer Container:
Reference ---------- Commercially packed
Type ---------- II
Dimensions ---------- 1.54 X 1.04X .27 ft
Weight ---------- 2 lb
Cube ---------- .464 ft

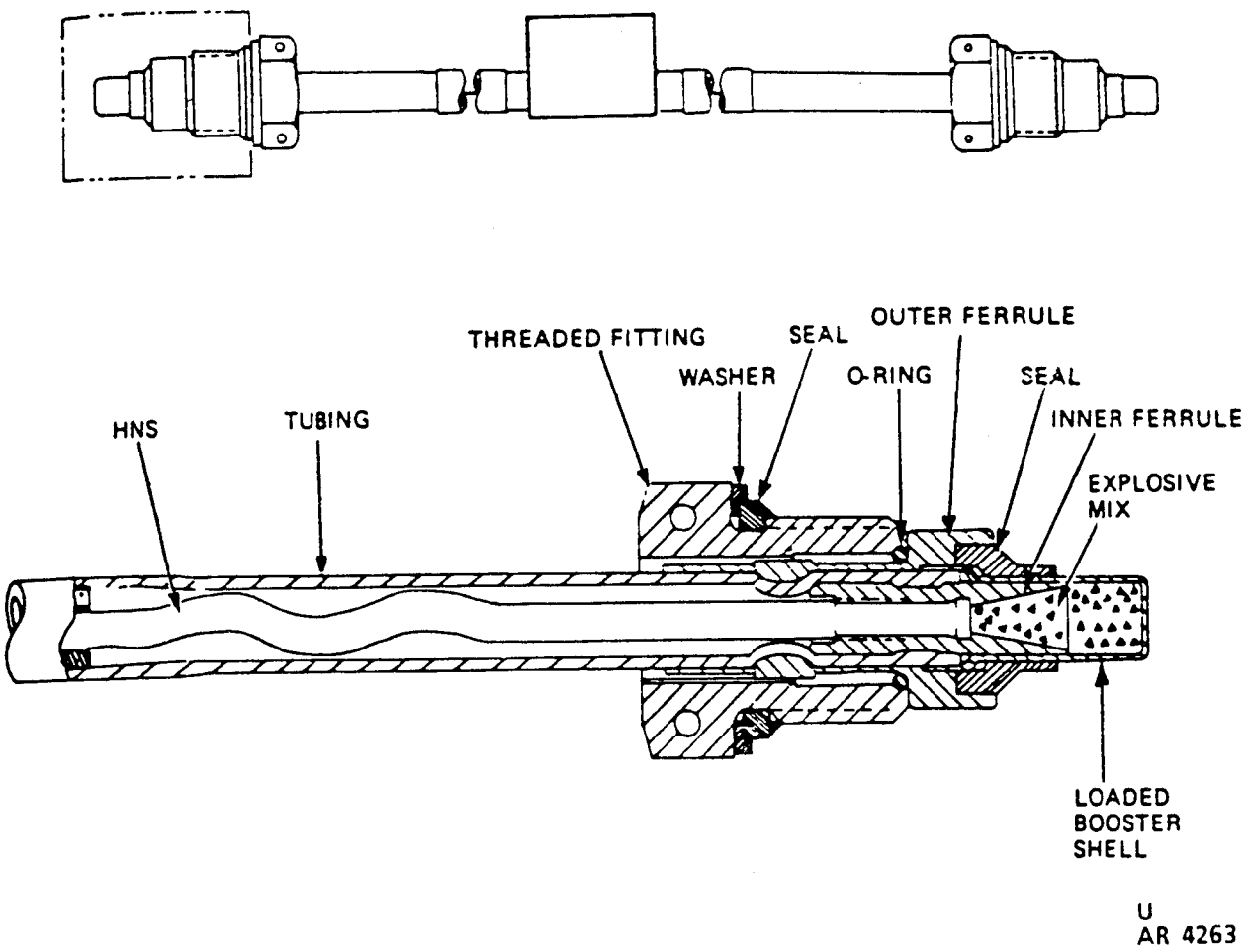
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility
group ---------- S
DOT shipping class ---------- C
DOT designation ---------- FLEXIBLE LINEAR SHAPED CHARGE, METAL CLAD, HANDLE CAREFULLY KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TM 55-1520-221-23
TM 55-1520-234-23
TB 9-1300-385, App B.

CORD, DETONATING, ASSEMBLY, SHIELDED MILD (SMDC): (MD17)



Type Classification:

Refer to aircraft subsystem.

Use:

To provide an interconnecting explosive media to the Window Cutting Assembly (WCA) of the pilot's canopy door used in the Emergency Canopy Removal System of the AH-1 series Helicopter,

Description:

Major components of the FCDC Assembly are (MD17) are threaded fittings, seals washers, inner and outer ferrules, loaded booster shell, and silver sheathed mild detonating cord. This assembly is located between the left junction manifold and the WCA in the pilot's canopy door.

Functioning:

Upon actuation of the system by arming and firing any one of the three armed/firing mechanisms, a detonation wave is received via the left junction manifold and is boosted by the loaded booster shell. The stimuli from the booster actuates the HNS within the SMDC assembly to the adapter of the pilot's canopy WCA.

Tabulated Data:

NSN 1377-00-410-8297
DODIC ---------- MD17
Drawing number ---------- 857AS400-1
Vendor (CAGE Code) and
part number ---------- (97499) 209-030-711-19 (06331) 813475-19
Item Weight ----------
Diameter ---------- 0.23 in. (0.58 cm)
Length ---------- 6.45 in. (16.4 cm)
Method of actuation --------- High order detonation wave
Body Material ---------- Silver sheathed, high fine silver 99.95%
Propellant/explosive material:
Type ---------- HNS, Type I, grade A
Weight ---------- 0.00065 lb (4.55 grains)

Performance:

Minimum detonation
velocity ---------- 6050 meter/see at -65°F (-54°C)

Firing Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65°F (-54°C)

Packaging

Inner Container:
Reference ---------- MIL-B-81795
Type ---------- Type II, heat sealed, anti-static plastic bag
Dimensions ---------- 12 in. long x 1. in. dia (30.4 cm long x 2,54 cm dia)
Items per package ---------- 1
Weight ---------- 0.2 lb (0.091 kg)

Outer Container:
Reference ---------- PP-B-621
Type ---------- Class II style 4 Wood Box
Dimensions ---------- 1.54 X 1.04X .27 ft
Weight ---------- 2 lb
Cube ---------- .464 ft

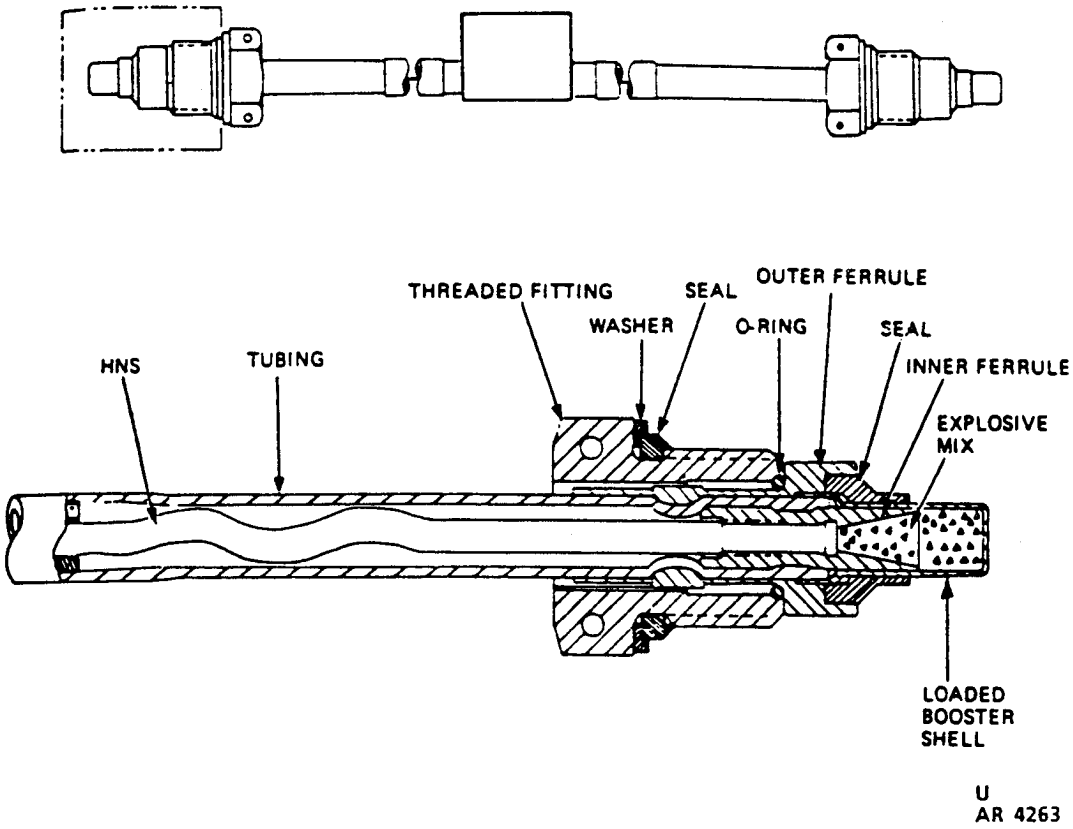
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility
group ---------- S
DOT shipping class ---------- C
DOT designation ---------- LINEAR SHAPED CHARGE, METAL CLAD, HANDLE CAREFULLY KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TM 55-1520-221-23
TM 55-1520-234-23
TB 9-1300-385, App B

CORD, DETONATING, ASSEMBLY, SHIELDED, MILD (SMDC): (MD18)



Type Classification:

Refer to aircraft subsystem.

Use:

To provide an interconnecting explosive media to the Window Cutting Assembly (WCA) of the gunner's canopy window used in the Emergency Canopy Removal System of the AH-1 series Helicopter.

Description:

Major components of the SMDC Assembly (MD18) are threaded fitting seals, washers, inner and outer ferrules, loaded booster shell, and silver sheathed mild detonating cord,

This assembly is located between the right junction manifold and the WCA of the gunner's canopy window.

Functioning:

Upon actuation of the system by arming and firing any one of the three armed/firing mechanisms, a detonation wave is received via the left junction manifold and is boosted by the loaded booster shell. The stimuli from the booster actuates the HNS within the SMDC assembly to the adapter of the gunner's canopy WCA.

NOTE

The MD18 is identical to the MD17 in physical appearance and design, The difference is in length and amount of explosive,

Tabulated Data:

NSN 1377-00-409-1098
DODIC ---------- MD18
Drawing number ---------- 857AS400-2
Vendor (CAGE Code) and
part number ---------- (97499) 209-030-711-27 (06331) 813475-27
Item Weight ----------
Diameter ---------- 0.23 in. (0,58 cm)
Length ---------- 6.0 in. (15.24 cm)
Method of actuation --------- High order detonation wave
Body Material ---------- Silver sheathed, high fine silver 99.95%
Propellant/explosive material:
Type ---------- HNS, Type I Grade A
Weight ---------- 0.00063 lb (4,41 grains)

Performance:

Minimum detonation
velocity ---------- 6050 meter/see at -65°F (-54°C)

Firing Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65° F (-54°C)

Packaging:

Inner Container:
Reference ---------- MIL-B-81705
Type ---------- Type II, heat sealed anti-static plastic bag
Dimensions ---------- 12 in. long x 1. in. dia (30.48 cm long x 2.54 cm dia)
Items per package ---------- 1
Weight ---------- 0.2 lb (0.91 kg)

Outer Container:
Reference ---------- PPP-C-1672
Type ---------- Class II style 4 Wood Box
Weight ---------- 2 lb
Cube ---------- .464 ft

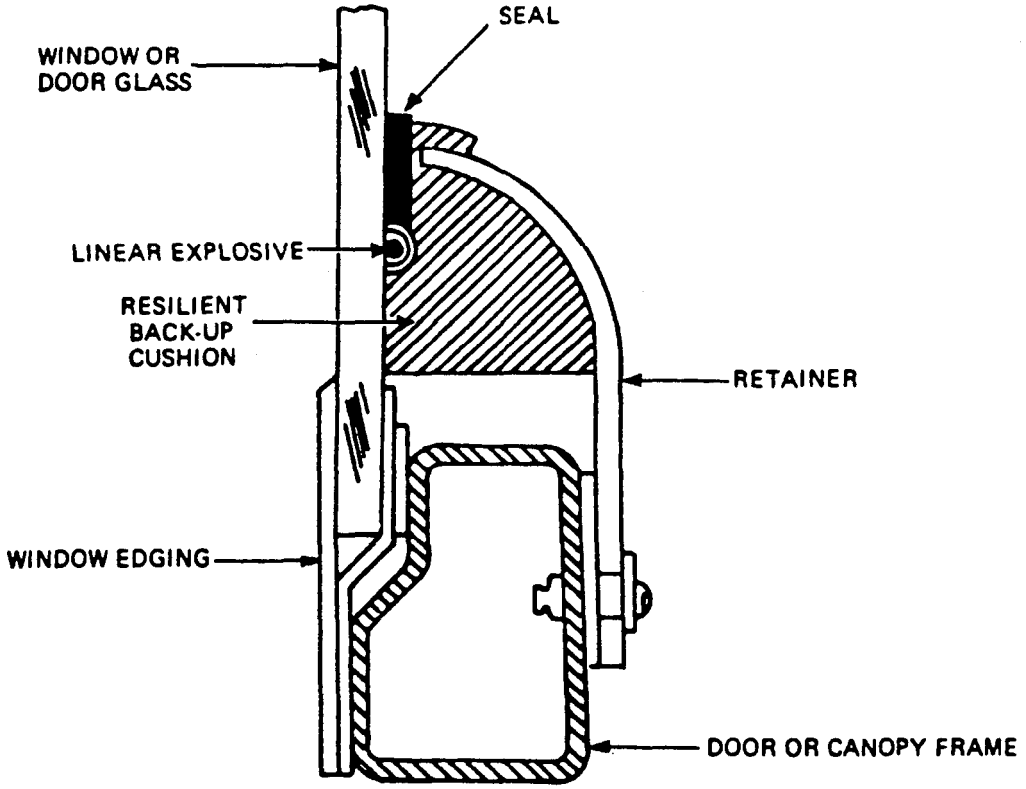
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility
group ---------- S
DOT shipping class ---------- C
DOT designation ---------- LINEAR SHAPED CHARGE, METAL CLAD, HANDLE CAREFULLY, KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TM 55-1520-221-23
TM 55-1520-234-23
TB 9-1300-385, App B

CUTTING ASSEMBLY, WINDOW (WCA): (MD33)



Type Classification:

Refer to aircraft subsystem.

Use:

An explosive device used in the AH-IS (MOD) Helicopter Emergency Canopy Removal System to assure exit from or access to the crew compartment of the aircraft in an emergency.

Description:

Major components of the WCA are: manifold release assemblies and window cutting retainer subassemblies for doors and windows, linear explosive, resilient back-up cushion, retainer, and seal,

The assemblies are located on the periphery of the four windows in the crew compartment.

Functioning

Upon actuation of the system by arming and firing any one of the three armed/firing mechanisms, a detonation wave is received via the interconnecting FCDC and SMDC lines to the linear explosive of the WCA. The explosive force is outward, simultaneously cutting out the four plastic window glasses of the crew compartment,

Tabulated Data:

NSN 1377-00-409-1096
DODIC ---------- MD33
Drawing number ---------- 857AS300-4
Vendor (CAGE Code) and
part number ---------- (97499) 209-030-711-35 (06331) 813475-104
Item Weight ---------- 5 lb (2.27 kg)
Width ---------- 32 in. (81.3 cm)
Height ---------- 5 in. (12.7 cm)
Length ---------- 62 in. (157,5 cm)
Method of actuation --------- High order detonation wave
Body Material ---------- Lead 6% antimony alloy sheathed
Propellant/explosive material:
Type ---------- HNS, type II, grade B
Weight ---------- 0.004608 lb (32.3 grains)

Performance:

Minimum detonation
velocity ---------- 6050 meter/see at -65°F (-54°C)

Packaging:

Inner Container:
Reference ---------- MIL-B-81705
Type ---------- Type II, heat sealed anti-static plastic bag
Dimensions ---------- 72x 32x 5 in,
Items per package ---------- 1
Weight ---------- 3 lb

Outer Container:
Reference ---------- PPP-B-636
Type ---------- Fiber board box
Dimensions ---------- 6,63 x 3.29x 1.05 ft
Weight ---------- 52 lb
Cube ---------- 23.108 ft

Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65°F (-54°C)

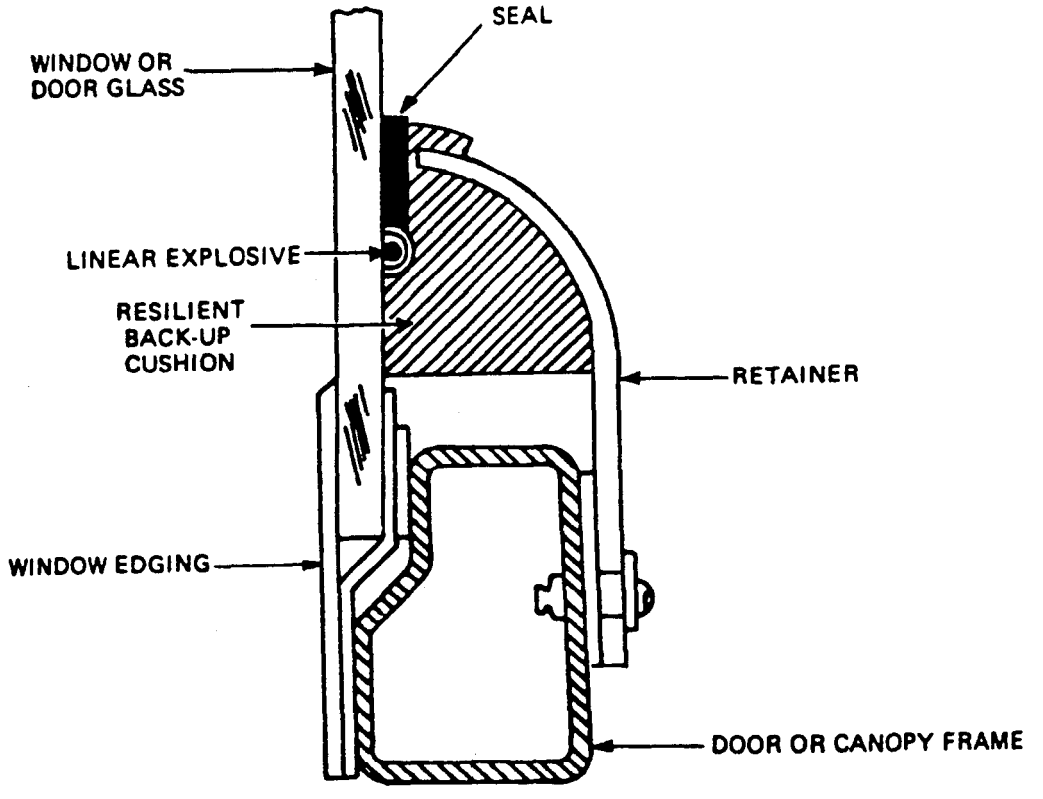
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility
group ---------- S
DOT shipping class ---------- C
DOT designation ---------- CLASS C EXPLOSIVE, HANDLE CAREFULLY KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TM 55-1520-221-23
TM 55-1520-234-23
TB 9-1300-385, App B

CUTTING ASSEMBLY, WINDOW (WCA): (MD34)



Type Classification:

Refer to aircraft subsystem.

Use:

An explosive device used in the AH-1 S (MOD) Helicopter Emergency Canopy Removal System to assure exit from or access to the crew compartment of the aircraft in an emergency

Description:

Major components of the WCA are: manifold release assemblies and window cutting retainer sub-assemblies for doors and window, linear explosive, resilient back-up cushion, retainer, and seal.

The assemblies are located on the outer edge of the four windows in the crew compartment.

Functioning:

Upon actuation of the system by arming and firing any one of the three armed/firing mechanisms, a detonation wave is received via the interconnecting FCDC and SMDC lines to the linear explosive of the WCA. The explosive force is outward, simultaneously cutting out the four plastic window glasses of the crew compartment.

Tabulated Data:

NSN	1377-00-409-1095
DODIC	MD34
Drawing number	857AS300-3
Vendor (CAGE Code) and part number	(97499) 209-030-711-29 (06331) 813475-9
Item Weight	5 lb (2.27 kg)
Width	32 in. (81.3 cm)
Height	5 in. (12.7 cm)
Length	62 in. (157.5 cm)
Method of actuation	High order detonation wave
Body Material	Lead 6% antimony alloy sheathed
Propellant/explosive material:	
Type	HNS, type II, grade B
Weight	0.003902 lb (27.3 grains)

Performance:

Minimum detonation velocity	6050 meter/sec at -65°F (-54°C)

Packaging:

Inner Container:	
Reference	MIL-B-81705
Type	Type II, heat sealed anti-static plastic bag
Dimensions	40x 70 in.
Items per package	1
Weight	5.00 lb
Outer Container:	
Reference	PPP-B-636
Type	Fiber board box
Dimensions	5.60 X 3.42x 1.08 ft
Weight	47 lb
Cube	20.728 ft

Temperature Limits:

Upper	+200°F (+93°C)
Lower	-65°F (-54°C)

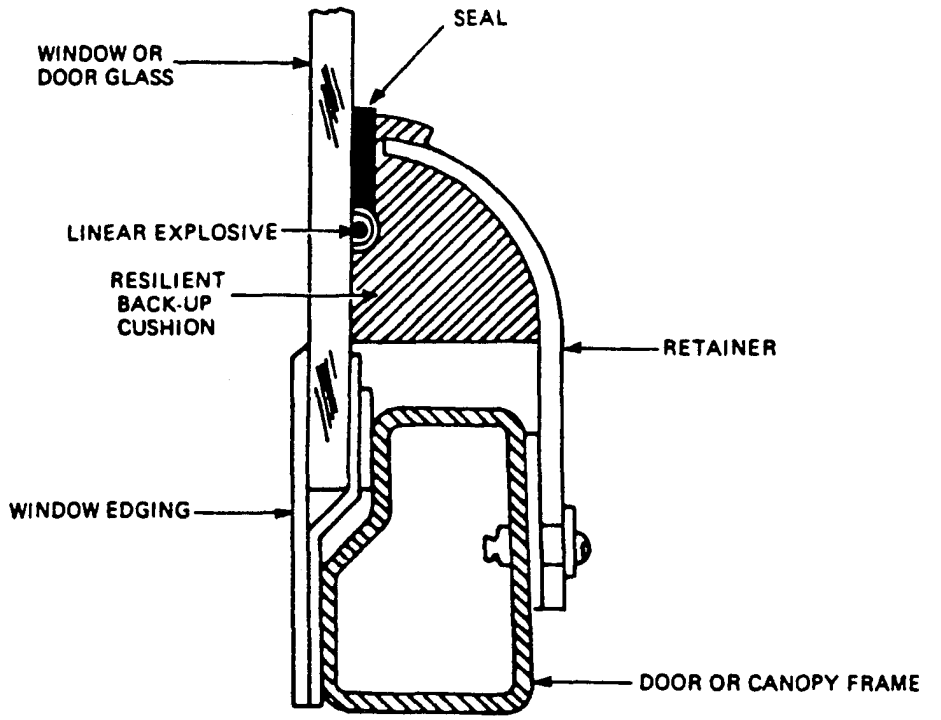
Shipping and Storage Data:

Quantity distance class	1.4
Storage compatibility group	S
DOT shipping class	C
DOT designation	CLASS C EXPLOSIVE, HANDLE CAREFULLY, KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TM 55-1520-221-23
TM 55-1520-234-23
TB 9-1300-385, App B

CUTTING ASSEMBLY, WINDOW (WCA): (MD35)



Type Classification:

Refer to aircraft subsystem.

Use:

An explosive device used in the AH-1 S (MOD) Helicopter Emergency Canopy Removal System to assure exit from or access to the crew compartment of the aircraft in an emergency.

Description:

Major components of the WCA are: manifold release assemblies and window cutting retainer sub-assemblies for doors and window, linear explosive, resilient back-up cushion, retainer, and seal.

The assemblies are located on the outer edge of the four windows in the crew compartment.

Functioning:

Upon actuation of the system by arming and firing any one of the three armed/firing mechanisms, a detonation wave is received via the interconnecting FCDC and SMDC lines to the linear explosive of the WCA. The explosive force is outward, simultaneously cutting out the four plastic window glasses of the crew compartment.

Tabulated Data:

NSN 1377-00-106-7773
DODIC ---------- MD35
Drawing number ---------- 857AS300-2
Vendor (CAGE Code) and
part number ---------- (97499) 209-030-711-29 (06331) 813475-102
Item Weight ---------- 5 lb (2.27 kg)
Width ---------- 32 in. (81.3 cm)
Height ---------- 5 in. (12.7 cm)
Length ---------- 62 in. (157.5 cm)
Method of actuation --------- High order detonation wave
Body Material ---------- Lead 6% antimony alloy sheathed
Propellant/explosive material:
Type ---------- HNS, type II, grade B
Weight ---------- 0.003902 lb (24,7 grains)

Performance:

Minimum detonation
velocity ---------- 6050 meter/sec at -65°F (-54°C)

Packaging:

Inner Container:
Reference ---------- MIL-B-81705
Type ---------- Type II, heat sealed anti-static plastic bag
Dimensions ---------- 38x 65 in.
Items per package ---------- 1
Weight ---------- 3 lb

Outer Container:
Reference ---------- PPP-B-636
Type ---------- Fiber board box
Dimensions ---------- 15-1/2 X 40-1/2X 65-1/2 in.
Weight ---------- 46 lb
Cube ---------- 23.949 ft

Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65°F (-54°C)

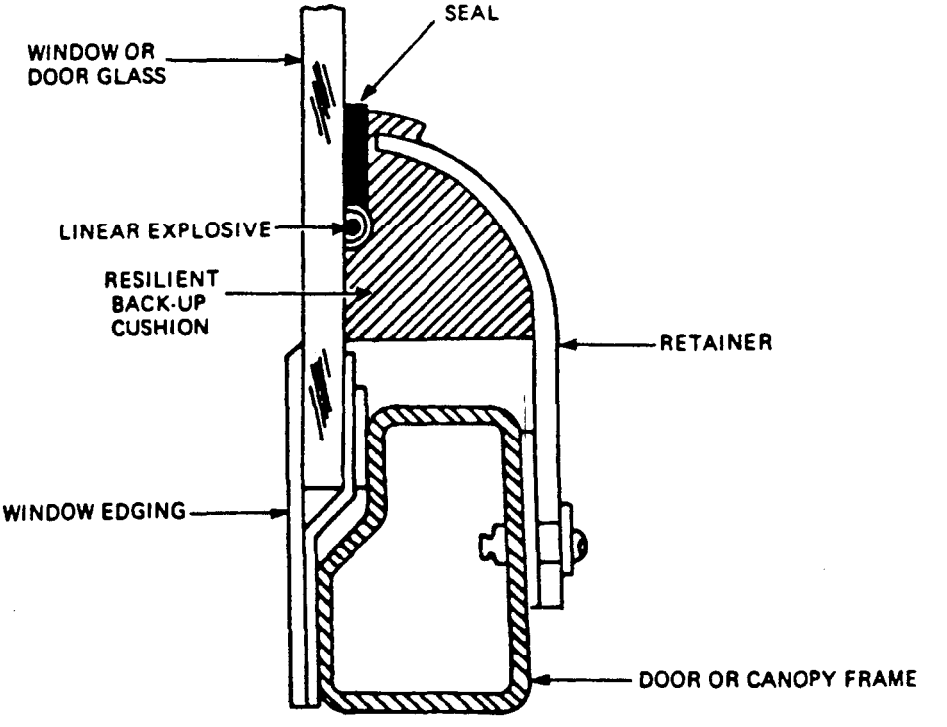
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility
group ---------- S
DOT shipping class ---------- C
DOT designation ---------- CLASS C EXPLOSIVE, HANDLE CAREFULLY KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TM 55-1520-221-23
TM 55-1520-234-23
TB 9-1300-385, App B

CUTTING ASSEMBLY, WINDOW (WCA): (MD36)



Type Classification:

Refer to aircraft subsystem.

Use:

An explosive device used in the AH-1 S (MOD) Helicopter Emergency Canopy Removal System to assure exit from or access to the crew compartment of the aircraft in an emergency.

Description:

Major components of the WCA are: manifold release assemblies and window cutting retainer sub-assemblies for doors and window, linear explosive, resilient back-up cushion, retainer, and seal.

The assemblies are located on the outer edge of the four windows in the crew compartment.

Functioning:

Upon actuation of the system by arming and firing any one of the three armed/firing mechanism, a detonation wave is received via the interconnecting FCDC and SMDC lines to the linear explosive of the WCA. The explosive force is outward, simultaneously cutting out the four plastic window glasses of the crew compartment.

Tabulated Data:

NSN ---------- 1377-00-106-1097
DODIC ---------- MD36
Drawing number ---------- 857AS300-1
Vendor (CAGE Code) and
part number ---------- (97499) 209-030-711-29 (06331) 813475-101
Item Weight ---------- 5 lb (2.27 kg)
Width ---------- 32 in. (81.3 cm)
Height ---------- 5 in. (12.7 cm)
Length ---------- 62 in. (157.5 cm)
Method of actuation --------- High order detonation wave
Body Material ---------- Lead 6% antimony alloy sheathed
Propellant/explosive material:
Type ---------- HNS, type II, grade B
Weight ---------- 0.004365 lb (30.6 grains)

Performance:

Minimum detonation
velocity ---------- 6050 meter/see at -65°F (-54°C)

Packaging:

Inner Container:
Reference ---------- MIL-B-81705
Type ---------- Type II, heat sealed anti-static plastic bag
Dimensions ---------- 29,5 x 7 x 75.5 in.
Items per package ---------- 1
Weight ---------- 3 lb

Outer Container:
Reference ---------- PPP-C-636
Type ---------- Fiber board box
Dimensions ---------- 6.54 x 2.83x .98 ft
Weight ---------- 50 lb
Cube ---------- 18.138 ft

Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65° F (-54°C)

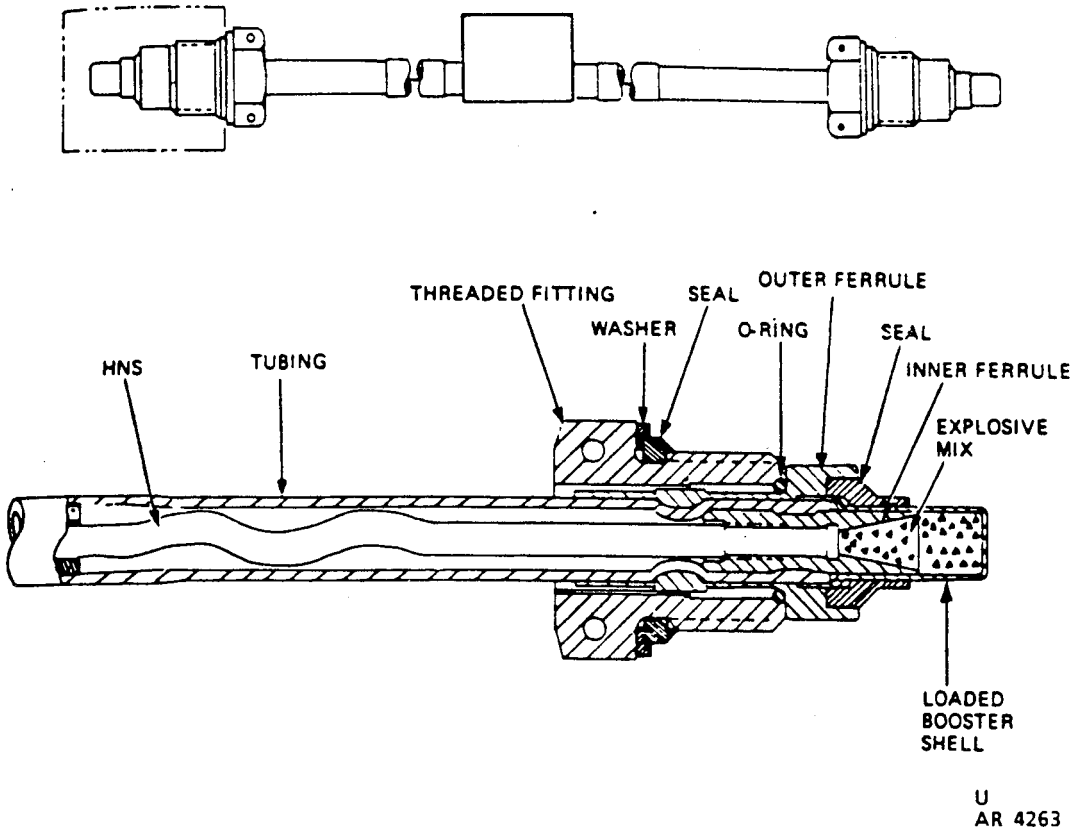
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility
group ---------- S
DOT shipping class ---------- C
DOT designation ---------- CLASS C EXPLOSIVE, HANDLE CAREFULLY, KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TM 55-1520-221-23
TM 55-1520-234-23
TB 9-1300-385, App B

CORD, DETONATING, ASSEMBLY, SHIELDED, MILD (SMDC): (MS47)



Type Classification:

Refer to aircraft subsystem,

Use:

To provide an interconnecting explosive media to the Window Cutting Assembly (WCA) of the gunner's canopy window used in the Emergency Canopy Removal System of the AH-1 series Helicopter.

Description:

Major components of the SMDC Assembly are threaded fitting, seals, washers, inner and outer ferrules, loaded booster shell, and silver sheathed mild detonating cord.

Functioning:

Upon actuation of the system by arming and firing any one of the three armed/firing mechanisms, a detonation wave is received via the junction manifold and is boosted by the loaded booster shell. The stimuli from the booster actuates the HNS within the SMDC assembly,

NOTE

The MS47 thru MS62 are identical in physical appearance and design, The difference is in length and amount of explosive.

Tabulated Data:

NSN ---------- 1377-00-410-8266
DODIC ---------- MS47
Drawing number ---------- 857AS400-15
Vendor (CAGE Code) and
part number ---------- (30003) 813475-15
209-030-711-15
Item Weight ---------- 0.268 lb
Diameter ---------- 0,18 in.
Length ---------- 32,0 in.
Method of actuation --------- High order detonation wave
Body Material ---------- Silver sheathed, high fine silver 99.95%
Propellant/explosive material:
Type ---------- HNS, type II, grade A
Weight ---------- 0,001860 lb

Performance:

Minimum detonation
velocity ---------- 6050 meter/see at -65°F (-54°C)

Firing Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65°F (-54°C)

Packaging:

Inner Container:
Reference ---------- MIL-B-117
Type ---------- Bag, sealed
Dimensions ---------- 6 x 55 in.
Items per package ---------- 1
Weight ---------- 0.50 lb

Outer Container:
Reference ---------- PPP-B-636
Type ---------- Fiber board box
Dimensions ---------- 3.20 x 1.60x 1.08 ft
Weight ---------- 15 lb
Cube ---------- 5.530 ft

Temperature Limits:

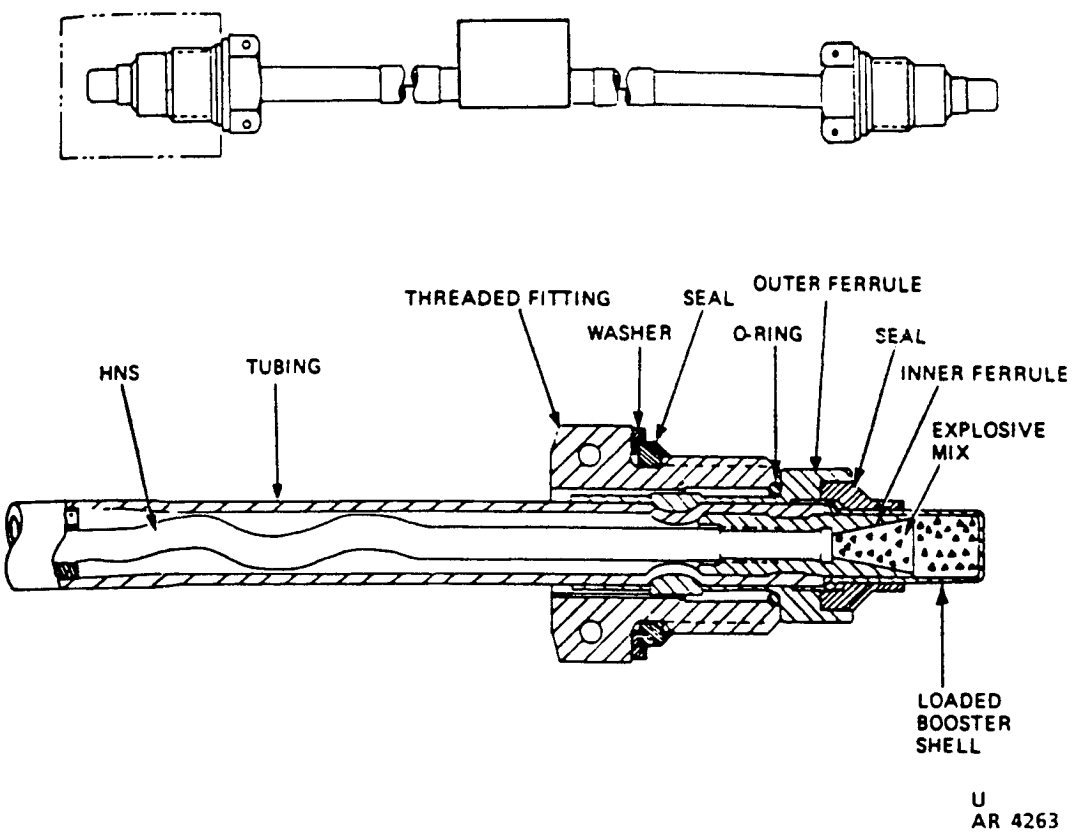
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility
group ---------- S
DOT shipping class ---------- C
DOT designation ---------- LINEAR SHAPED CHARGE, METAL CLAD, HANDLE CAREFULLY KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TM 55-1520-221-23
TM 55-1520-234-23
TB 9-1300-385, App B

CORD, DETONATING, ASSEMBLY, SHIELDED, MILD (SMDC): (MS48)



Type Classification:

Refer to aircraft subsystem.

Use:

To provide an interconnecting explosive media to the Window Cutting Assembly (WCA) of the gunner's canopy window used in the Emergency Canopy Removal System of the AH-1 series Helicopter.

Description:

Major components of the SMDC Assembly are threaded fitting, seals, washers, inner and outer ferrules, loaded booster shell, and silver sheathed mild detonating cord.

Functioning:

Upon actuation of the system by arming and firing any one of the three armed/firing mechanisms, a detonation wave is received via the junction manifold and is boosted by the loaded booster shell. The stimuli from the booster actuates the HNS within the SMDC assembly.

NOTE

The MS47 thru MS62 are identical in physical appearance and design. The difference is in length and amount of explosive.

Tabulated Data:

NSN ---------- 1377-00-410-8289
DODIC ---------- MS48
Drawing number ---------- 857AS400-17
Vendor (CAGE Code) and
part number ---------- (30003) 813475-15
209-030-711-17
Item Weight ---------- 0.227 lb
Diameter ---------- .18 in,
Length ---------- 30 in.
Method of actuation --------- High order detonation wave
Body Material ---------- Silver sheathed, high fine silver 99.95%
Propellant/explosive material:
Type ---------- HNS, type II, grade A
Weight ---------- 0,001561 lb

Performance:

Minimum detonation
velocity ---------- 6050 meter/see at -65°F (-54°C)

Firing Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65°F (-54°C)

Packaging:

Inner Container:
Reference ---------- MIL-B-117
Type ---------- Bag, sealed
Dimensions ---------- 4 x 40 in.
Items per package ---------- 1
Weight ---------- 0.501 lb

Outer Container:
Reference ---------- PPP-B-636
Type ---------- Fiber board box
Dimensions ---------- 3.06 x 1.25 x .93 ft
Weight ---------- 15 lb
Cube ---------- 3.568 ft

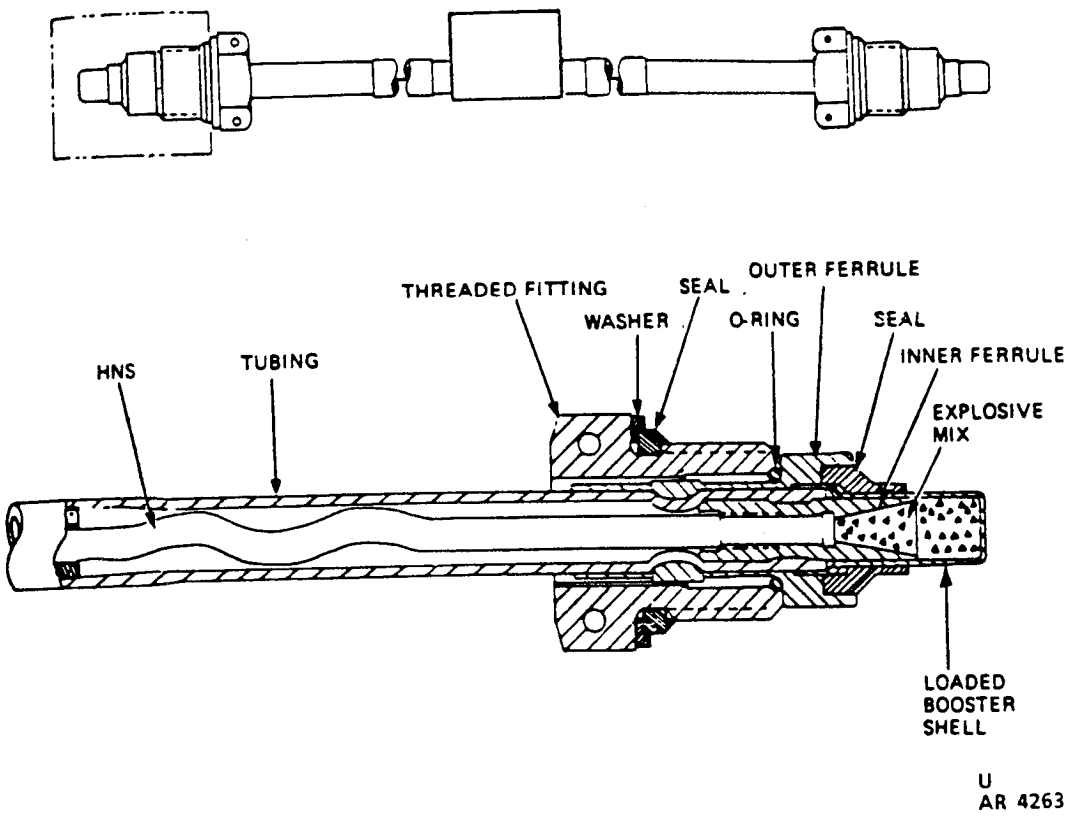
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility
group ---------- S
DOT shipping class ---------- C
DOT designation ---------- LINEAR SHAPED CHARGE, METAL CLAD, HANDLE CAREFULLY, KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TM 55-1520-221-23
TM 55-1520-234-23
TB 9-1300-385, App B

CORD, DETONATING, ASSEMBLY, SHIELDED, MILD (SMDC): (MS49)



Type Classification:

Refer to aircraft subsystem,

Use:

To provide an interconnecting explosive media to the Window Cutting Assembly (WCA) of the gunner's canopy window used in the Emergency Canopy Removal System of the AH-1 series Helicopter.

Description:

Major components of the SMDC Assembly are threaded fitting, seals, washers, inner and outer ferrules, loaded booster shell, and silver sheathed mild detonating cord.

Functioning

Upon actuation of the system by arming and firing any one of the three armed/firing mechanisms, a detonation wave is received via the junction manifold and is boosted by the loaded booster shell. The stimuli from the booster actuates the HNS within the SMDC assembly.

NOTE

The MS47 thru MS62 are identical in physical appearance and design, The difference is in length and amount of explosive.

Tabulated Data:

NSN	1377-00-410-8222
DODIC	MS49
Drawing number	857AS400-21
Vendor (CAGE Code) and part number	(30003) 813475-21 209-030-711-21
Item Weight	0.389 lb
Diameter	0.18 in.
Length	34 in.
Method of actuation	High order detonation wave
Body Material	Silver sheathed, high fine silver 99.95%
Propellant/explosive material:	
Type	HNS, type II, grade A
Weight	0.002685 lb

Performance:

Minimum detonation velocity	6050 meter/see at -65°F (-54°C)

Firing Temperature Limits:

Upper	+200°F (+93°C)
Lower	-65°F (-54°C)

Packaging:

Inner Container:	
Reference	MIL-B-117
Type	Bag, sealed
Dimensions	6 x 47 in.
Items per package	1
Weight	0.50 lb
Outer Container:	
Reference	PPP-B-636
Type	Fiber board box
Dimensions	3.62 X 3.29 × 1.33 ft
Weight	20 lb
Cube	11.464 cu ft

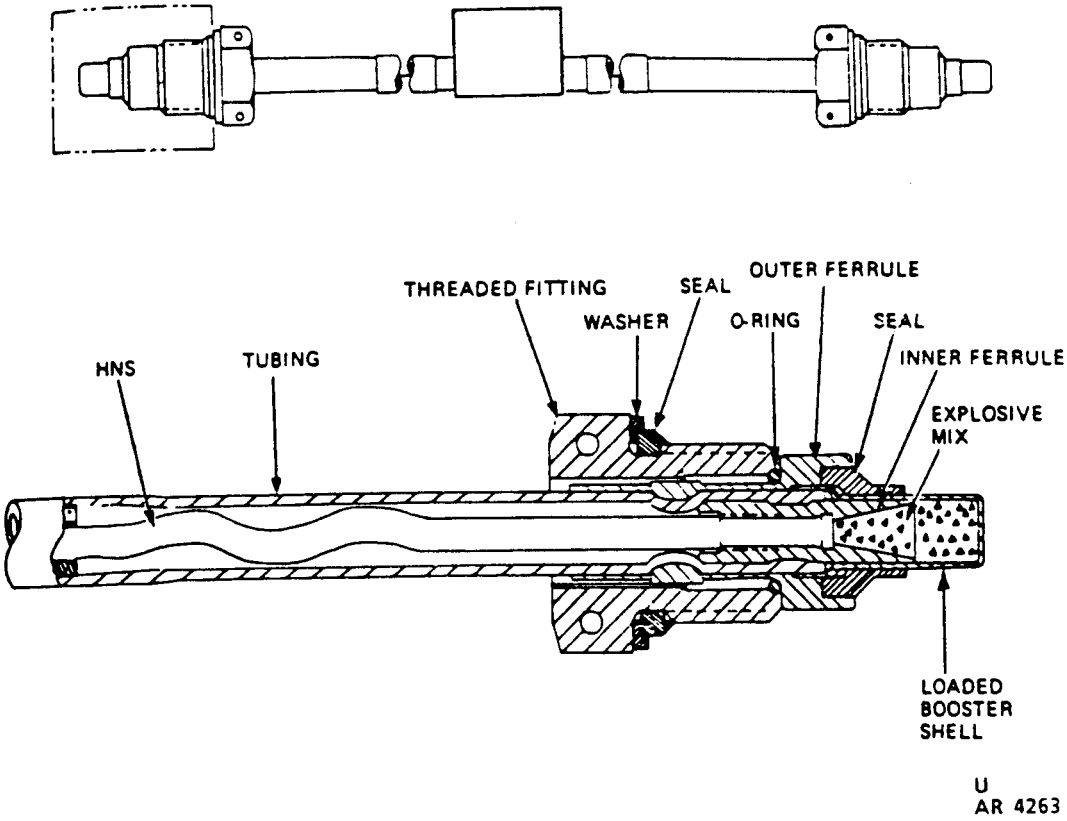
Shipping and Storage Data:

Quantity distance class	1.4
Storage compatibility group	S
DOT shipping class	C
DOT designation	LINEAR SHAPED CHARGE, METAL CLAD, HANDLE CAREFULLY KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TM 55-1520-221-23
TM 55-1520-234-23
TB 9-1300-385, App B

CORD, DETONATING, ASSEMBLY, SHIELDED, MILD (SMDC): (MS50)



Type Classification:

Refer to aircraft subsystem.

Use:

To provide an interconnecting explosive media to the Window Cutting Assembly (WCA) of the gunner's canopy window used in the Emergency Canopy Removal System of the AH-1 series Helicopter.

Description (General all sizes)

Major components of the SMDC Assembly are threaded fitting, seals, washers, inner and outer ferrules, loaded booster shell, and silver sheathed mild detonating cord.

Functioning

Upon actuation of the system by arming and firing any one of the three armed/firing mechanisms, a detonation wave is received via the junction manifold and is boosted by the loaded booster shell. The stimuli from the booster actuates the HNS within the SMDC assembly.

NOTE

The MS47 thru MS62 are identical in physical appearance and design. The difference is in length and amount of explosive.

Tabulated Data:

NSN ---------- 1377-00-409-1100
DODIC ---------- MS50
Drawing number ---------- 857AS400-25
Vendor (CAGE Code) and
part number ---------- (30003) 813475-25
209-030-711-25
Item Weight ---------- 0.543 lb
Diameter ---------- 0.18 in.
Length ---------- 52 in.
Method of actuation --------- High order detonation wave
Body Material ---------- Silver sheathed, high fine silver 99.95%
Propellant/explosive material:
Type ---------- HNS, type II, grade A
Weight ---------- 0.003856 lb

Performance:

Minimum detonation
velocity ---------- 6050 meter/see at -65°F (-54°C)

Firing Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65°F (-54°C)

Packaging:

Inner Container:
Reference ---------- MIL-B-117
Type ---------- Bag, sealed
Dimensions ---------- 6 x 100 in.
Items per package ---------- 1
Weight ---------- 0.75 lb

Outer Container:
Reference ---------- PPP-B-636
Type ---------- Fiber board box
Dimensions ---------- 3.50 x 4.75 x 1.37 ft
Weight ---------- 17 lb
Cube ---------- 22.776 cu ft

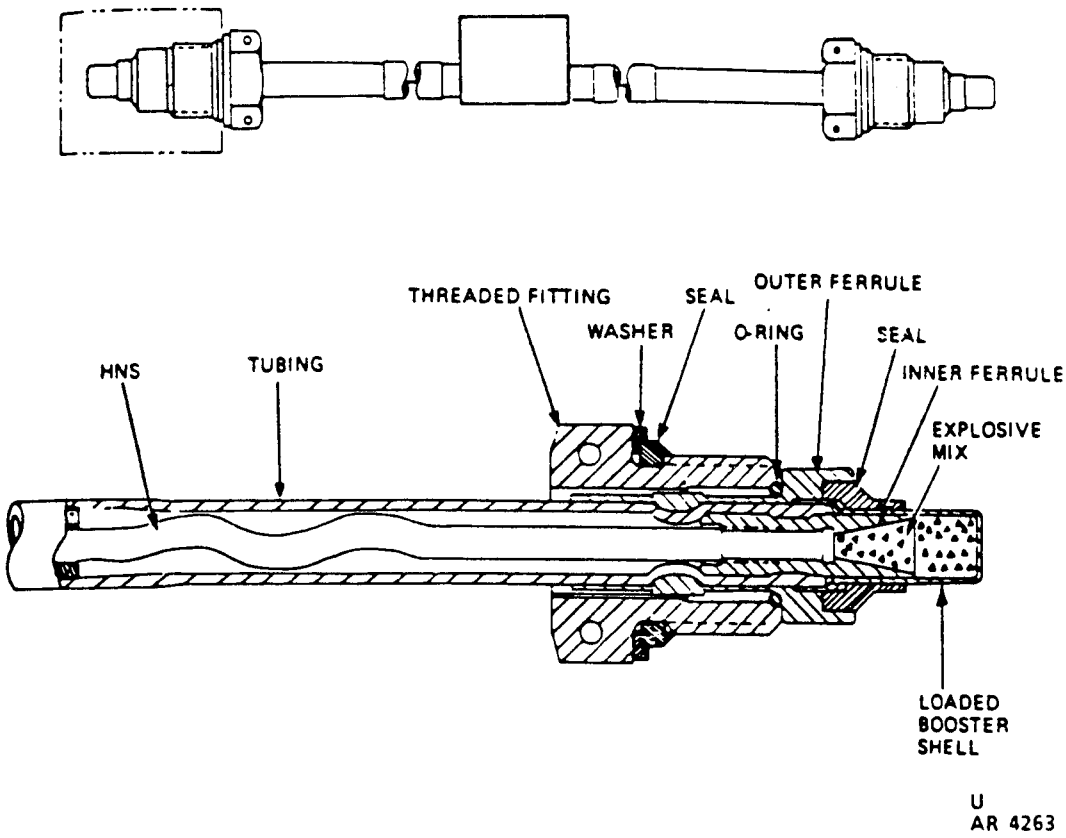
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility
group ---------- S
DOT shipping class ---------- C
DOT designation ---------- LINEAR SHAPED CHARGE, METAL CLAD, HANDLE CAREFULLY, KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TM 55-1520-221-23
TM 55-1520-234-23
TB 9-1300-385, App B

CORD, DETONATING, ASSEMBLY, SHIELDED, MILD (SMDC): (MS51)



Type Classification:

Refer to aircraft subsystem.

Use:

To provide an interconnecting explosive media to the Window Cutting Assembly (WCA) of the gunner's canopy window used in the Emergency Canopy Removal System of the AH-1 series Helicopter.

Description: (General all sizes)

Major components of the SMDC Assembly are threaded fitting, seals, washers, inner and outer ferrules, loaded booster shell, and silver sheathed mild detonating cord.

Functioning

Upon actuation of the system by arming and firing any one of the three armed/firing mechanisms, a detonation wave is received via the junction manifold and is boosted by the loaded booster shell. The stimuli from the booster actuates the HNS within the SMDC assembly.

NOTE

The MS47 thru MS62 are identical in physical appearance and design. The difference is in length and amount of explosive.

Tabulated Data:

NSN ---------- 1377-01-035-4124
DODIC ---------- MS51
Drawing number ---------- 857AS400-105
Vendor (CAGE Code) and
part number ---------- (30003) 813475-105
209-033-011-105
Item Weight ---------- 0.400 lb
Diameter ---------- 0.18 in.
Length ---------- 40 in.
Method of actuation --------- High order detonation wave
Body Material ---------- Silver sheathed, high fine silver 99.95%
Propellant/explosive material:
Type ---------- HNS, type II, grade A
Weight ---------- 0,002872 lb

Performance:

Minimum detonation
velocity ---------- 6050 meter/sec at -65°F (-54°C)

Firing Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65°F (-54°C)

Packaging:

Inner Container:
Reference ---------- MIL-B-636
Type ---------- Bag, sealed
Dimensions ---------- 6 x 79 in.
Items per package ---------- 1
Weight ---------- 2.50 lb

Outer Container:
Reference ---------- PPP-B-636
Type ---------- Fiber board box
Dimensions ---------- 4.02 x 2.33x 2.54 ft
Weight ---------- 20 lb
Cube ---------- 23.791 cu ft

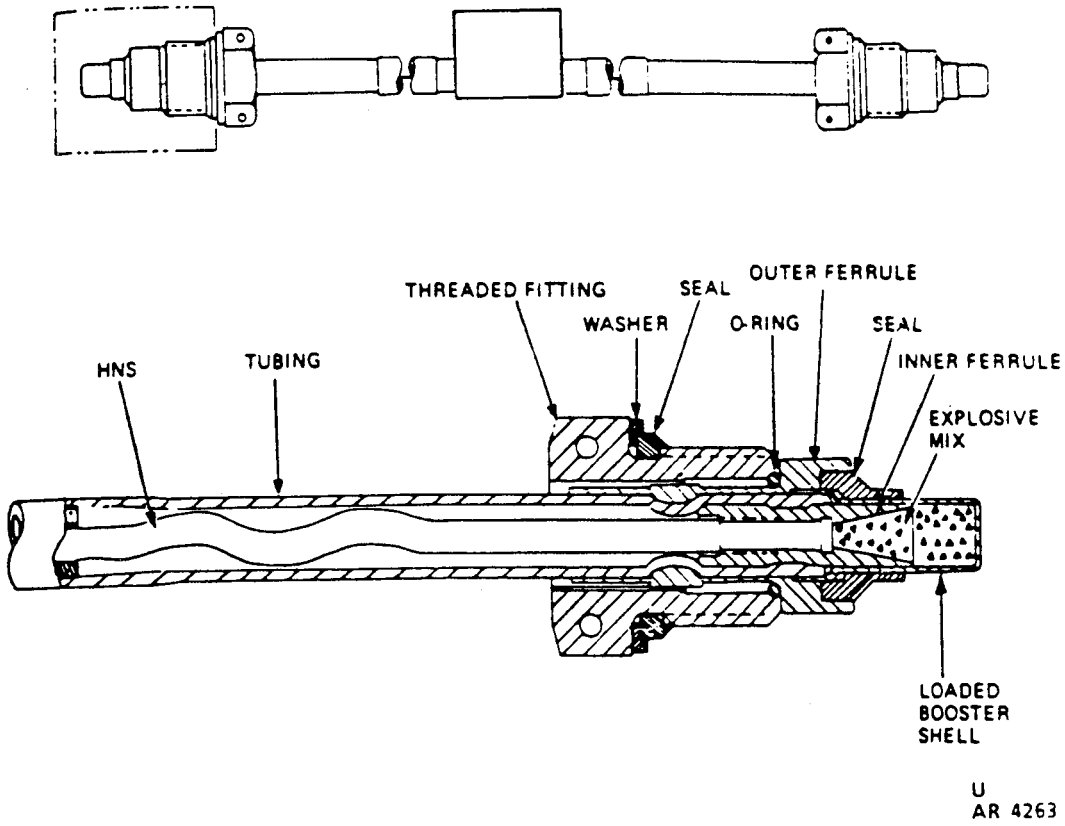
Shipping and Storage Data

Quantity distance class ----- 1.4
Storage compatibility
group ---------- S
DOT shipping class ---------- C
DOT designation ---------- LINEAR SHAPED CHARGE, METAL CLAD, HANDLE CAREFULLY KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TM 55-1520-221-23
TM 55-1520-234-23
TB 9-1300-385, App B

CORD, DETONATING, ASSEMBLY, SHIELDED, MILD (SMDC): (MS52)



Type Classification:

Refer to aircraft subsystem.

Use:

To provide an interconnecting explosive media to the Window Cutting Assembly (WCA) of the gunner's canopy window used in the Emergency Canopy Removal System of the AH-1 series Helicopter.

Description (General all sizes)

Major components of the SMDC Assembly are threaded fitting, seals, washers, inner and outer ferrules, loaded booster shell, and silver sheathed mild detonating cord.

Functioning

Upon actuation of the system by arming and firing any one of the three armed/firing mechanisms, a detonation wave is received via the junction manifold and is boosted by the loaded booster shell. The stimuli from the booster actuates the HNS within the SMDC assembly.

NOTE

The MS47 thru MS62 are identical in physical appearance and design, The difference is in length and amount of explosive.

Tabulated Data:

NSN 1377-01-037-9237
DODIC ---------- MS52
Drawing number ---------- 857AS400-107
Vendor (CAGE Code) and
part number ---------- (30003) 813475-107
116415-7
Item Weight ---------- 0.183 lb
Diameter ---------- 0.18 in.
Length ---------- 22 in.
Method of actuation --------- High order detonation wave
Body Material ---------- Silver sheathed, high fine silver 99.95%
Propellant/explosive material:
Type ---------- HNS, type II, grade A
Weight ---------- 0.001455 lb

Performance:

Minimum detonation
velocity ---------- 6050 meter/see at -65°F (-54°C)

Firing Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65°F (-54°C)

Packaging:

Inner Container:
Reference ---------- MIL-B-117
Type ---------- Bag, sealed
Dimensions ---------- 4 x 32 in.
Items per package ---------- 1
Weight ---------- 0.25 lb

Outer Container:
Reference ---------- PPP-B-566
Type ---------- Fiber board box
Dimensions ---------- 3.0 x 1.18 x .98 ft
Weight ---------- 15 lb
Cube ---------- 3.461 cu ft

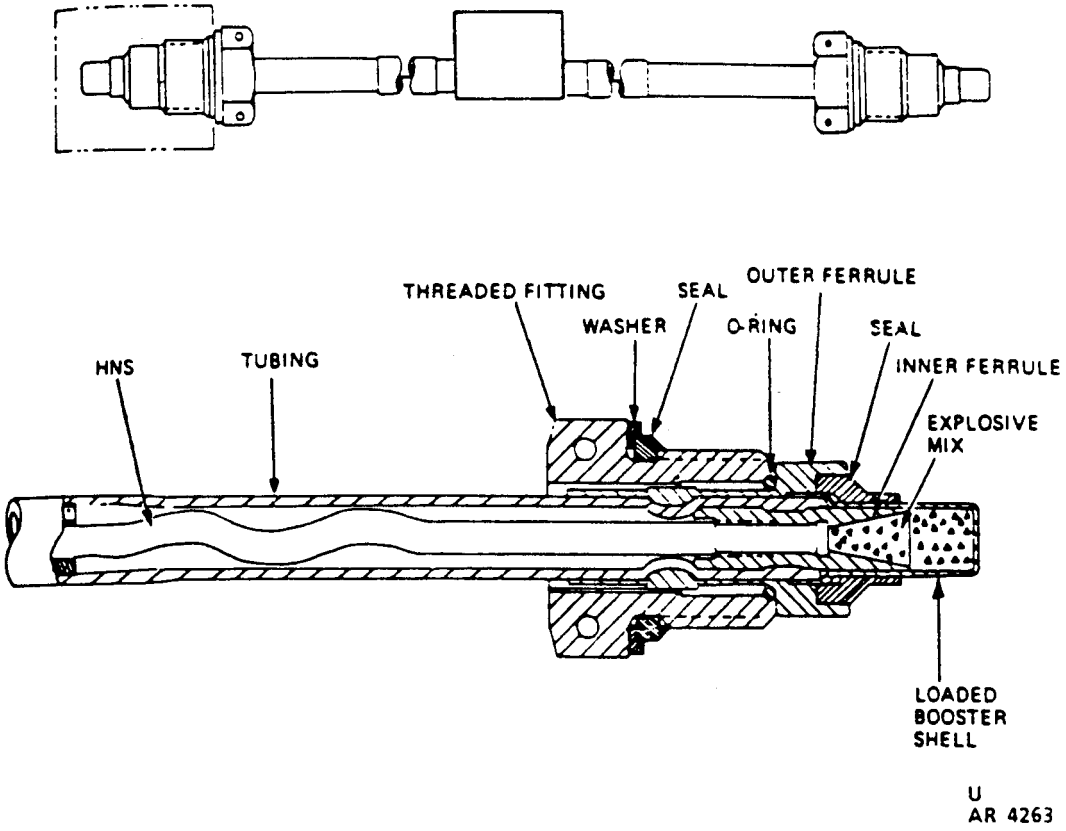
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility
group ---------- S
DOT shipping class ---------- C
DOT designation ---------- LINEAR SHAPED CHARGE, METAL CLAD, HANDLE CAREFULLY, KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TM 55-1520-221-23
TM 55-1520-234-23
TB 9-1300-385, App B

CORD, DETONATING, ASSEMBLY, SHIELDED, MILD (SMDC): (MS53)



Type Classification:

Refer to aircraft subsystem.

Use:

To provide an interconnecting explosive media to the Window Cutting Assembly (WCA) of the gunner's canopy window used in the Emergency Canopy Removal System of the AH-1 series Helicopter.

Description: (General all sizes)

Major components of the SMDC Assembly are threaded fitting, seals, washers, inner and outer ferrules, loaded booster shell, and silver sheathed mild detonating cord.

Functioning

Upon actuation of the system by arming and firing any one of the three armed/firing mechanisms, a detonation wave is received via the junction manifold and is boosted by the loaded booster shell. The stimuli from the booster actuates the HNS within the SMDC assembly.

NOTE

The MS47 thru MS62 are identical in physical appearance and design, The difference is in length and amount of explosive,

Tabulated Data:

NSN ---------- 1377-01-037-4090
DODIC ---------- MS53
Drawing number ---------- 857AS400-109
Vendor (CAGE Code) and
part number ---------- (30003) 813475-109
116415-9
Item Weight ---------- 0.132 lb
Diameter ---------- 0.18 in.
Length ---------- 18 in.
Method of actuation --------- High order detonation wave
Body Material ---------- Lead 6% antimony alloy sheathed
Propellant/explosive material:
Type ---------- HNS. type II. grade A
Weight ---------- 0.001463 lb

Performance:

Minimum detonation
velocity ---------- 6050 meter/sec at -65°F (-54°C)

Firing Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65°F (-54°C)

Packaging:

Inner Container:
Reference ---------- MIL-B-117
Type ---------- Bag. sealed
Dimensions ---------- 24x 4 in.
Items per package ---------- 1
Weight ----------

Outer Container:
Reference ---------- PPP-B-1672
Type ---------- Fiber board box
Dimensions ---------- 1.67 x 1.13x 0.58 ft
Weight ---------- 12 lb
Cube ---------- 1.907 cu ft

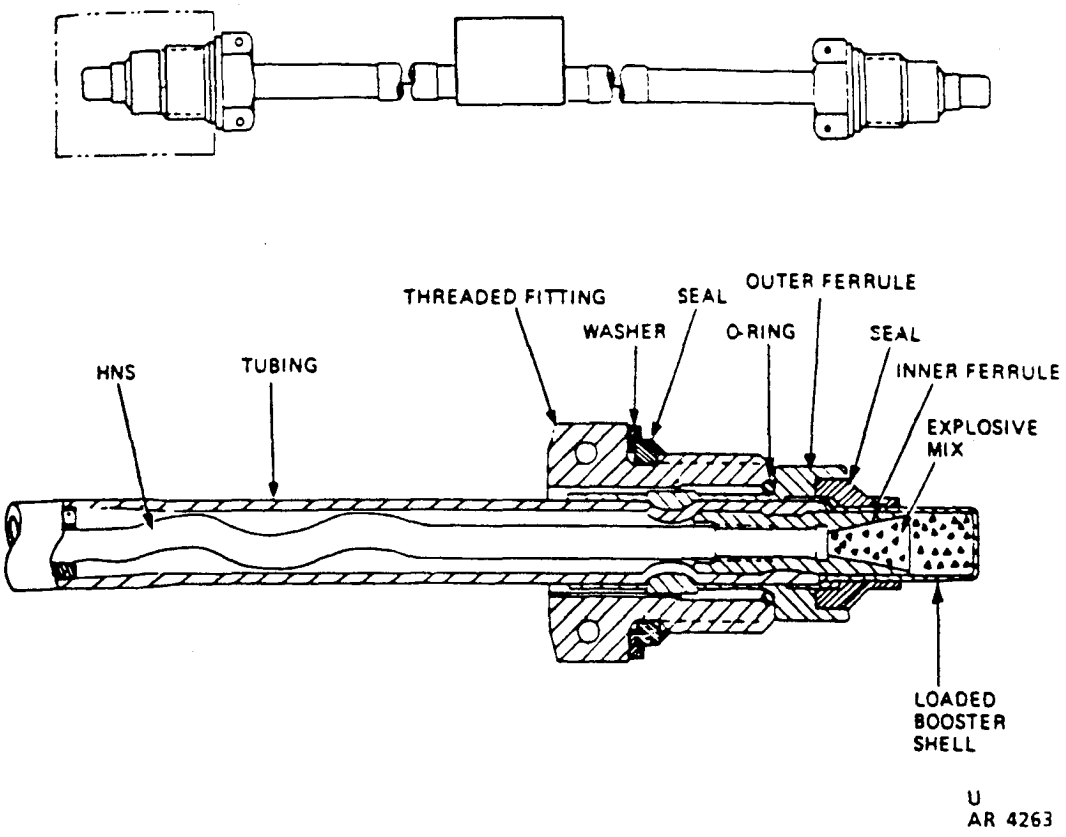
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility
group ---------- S
DOT shipping class ---------- C
DOT designation ---------- FLEXIBLE LINEAR SHAPED CHARGE, HANDLE CAREFULLY) KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TM 55-1520-221-23
TM 55-1520-234-23
TB 9-1300-385. App B

CORD, DETONATING, ASSEMBLY, SHIELDED, MILD (SMDC): (MS54)



Type Classification:

Refer to aircraft subsystem.

Use:

To provide an interconnecting explosive media to the Window Cutting Assembly (WCA) of the gunner's canopy window used in the Emergency Canopy Removal System of the AH-1 series Helicopter.

Description (General all sizes)

Major components of the SMDC Assembly are threaded fitting, seals, washers, inner and outer ferrules, loaded booster shell, and silver sheathed mild detonating cord.

Functioning

Upon actuation of the system by arming and firing any one of the three armed/firing mechanisms, a detonation wave is received via the junction manifold and is boosted by the loaded booster shell. The stimuli from the booster actuates the HNS within the SMDC assembly.

NOTE

The MS47 thru MS62 are identical in physical appearance and design. The difference is in length and amount of explosive.

Tabulated Data

NSN 1377-01-037-4096
DODIC ---------- MS54
Drawing number ---------- 857AS400-111
Vendor (CAGE Code) and
part number ---------- (30003) 813475-111
116415-11
Item Weight ---------- 0.114 lb
Diameter ---------- 0.18 in.
Length ---------- 13 in.
Method of actuation --------- High order detonation wave
Body Material ---------- Lead 6% antimony alloy sheathed
Propellant/explosive material:
Type ---------- HNS, type II, grade A
Weight ---------- 0.001036 lb

Performance:

Minimum detonation
velocity ---------- 6050 meter/see at -65°F (-54°C)

Firing Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65°F (-54°C)

Packaging:

Inner Container:
Reference ---------- MIL-B-117
Type ---------- Bag, sealed
Dimensions ---------- 6 x 19 in.
Items per package ---------- 1
Weight ----------

Outer Container:
Reference ---------- PPP-B-1672
Type ---------- Fiber board box
Dimensions ---------- 1.75 x 1.08x 0.88 ft
Weight ---------- 12 lb
Cube ---------- 1.675 cu ft

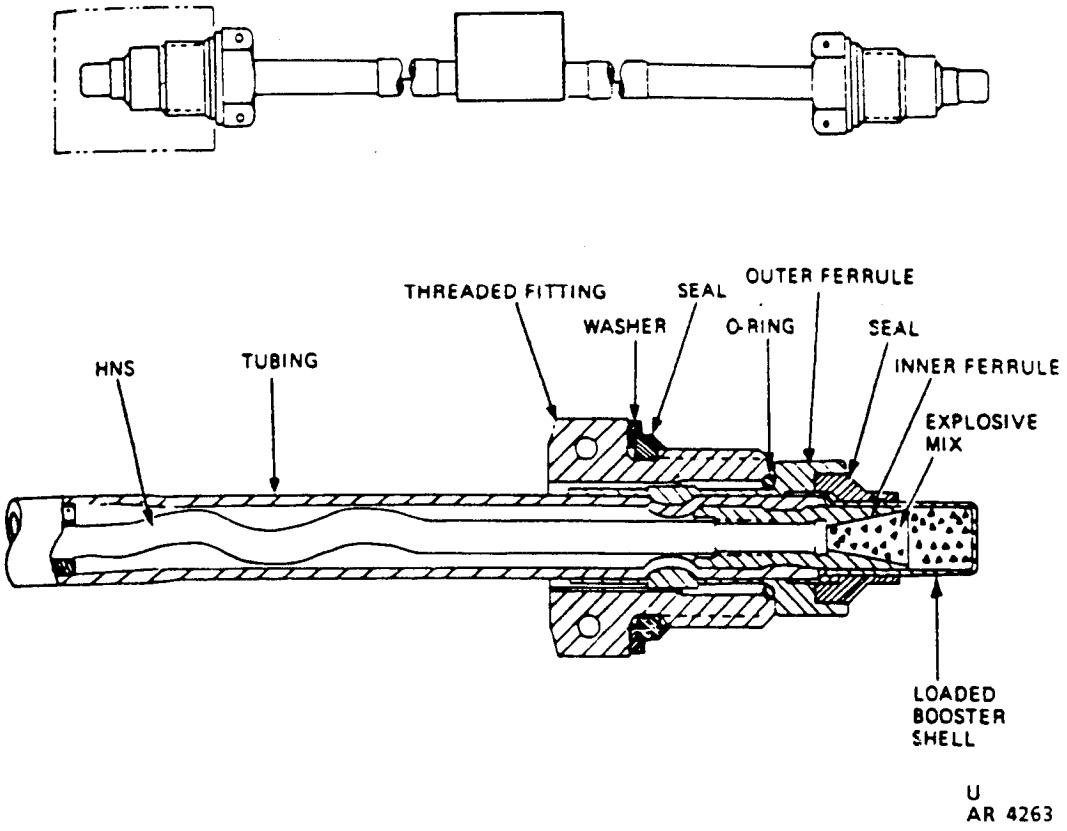
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility
group ---------- S
DOT shipping class ---------- C
DOT designation ---------- FLEXIBLE LINEAR SHAPED CHARGE, HANDLE CAREFULLY, KEEP FIRE AWAY

References:

TM 9-1377-200-208zP
TM 55-1520-221-23
TM 55-1520-234-23
TB 9-1300-385, App B

CORD, DETONATING, ASSEMBLY, SHIELDED, MILD (SMDC):(MS55)



Type Classification:

Refer to aircraft subsystem.

Use:

To provide an interconnecting explosive media to the Window Cutting Assembly (WCA) of the gunner's canopy window used in the Emergency Canopy Removal System of the AH-1 series Helicopter.

Description:

Major components of the SMDC Assembly are threaded fitting, seals, washers, inner and outer ferrules, loaded booster shell, and silver sheathed mild detonating cord.

Functioning:

Upon actuation of the system by arming and firing any one of the three armed/firing mechanisms, a detonation wave is received via the junction manifold and is boosted by the loaded booster shell. The stimuli from the booster actuates the HNS within the SMDC assembly.

NOTE

The MS47 thru MS62 are identical in physical appearance and design. The difference is in length and amount of explosive.

Tabulated Data:

NSN ---------- 1377-01-037-4095
DODIC ---------- MS55
Drawing number ---------- 857AS400-113
Vendor (CAGE Code) and
part number ---------- (30003) 813475-113
116415-13
Item Weight ---------- 0.209 lb
Diameter ---------- 0.18 in.
Length ---------- 26 in.
Method of actuation --------- High order detonation wave
Body Material ---------- Lead 6% antimony alloy sheathed
Propellant/explosive material:
Type ---------- HNS, type II, grade A
Weight ---------- 0.001632 lb

Performance:

Minimum detonation
velocity ---------- 6050 meter/see at -65°F (-54°C)

Firing Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65°F (-54°C)

Packaging:

Inner Container:
Reference ---------- MIL-B-117
Type ---------- Bag, sealed
Dimensions ---------- 6 x 48 in.
Items per package ---------- 1
Weight ---------- 0.50 lb

Outer Container:
Reference ---------- PPP-B-566
Type ---------- Fiber board box
Dimensions ---------- 2.83 x 1.67 x 0.83 ft
Weight ---------- 15 lb
Cube ---------- 3.923 cu ft

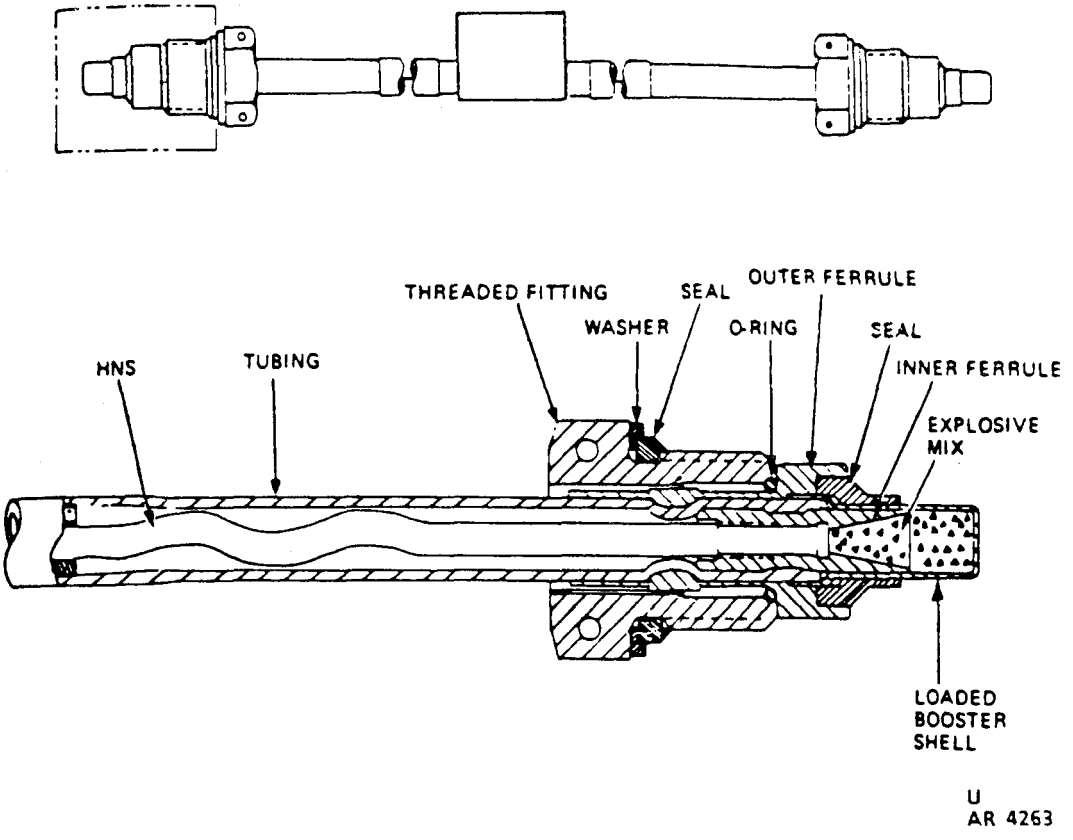
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility
group ---------- S
DOT shipping class ---------- C
DOT designation ---------- FLEXIBLE LINEAR SHAPED CHARGE, HANDLE CAREFULLY KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TM 55-1520-221-23
TM 55-1520-234-23
TB 9-1300-385, App B

CORD, DETONATING, ASSEMBLY, SHIELDED, MILD (SMDC): (MS66)



Type Classification:

Refer to aircraft subsystem.

Use:

To provide an interconnecting explosive media to the Window Cutting Assembly (WCA) of the gunner's canopy window used in the Emergency Canopy Removal System of the AH-1 series Helicopter.

Description:

Major components of the SMDC Assembly are threaded fitting, seals, washers, inner and outer ferrules, loaded booster shell, and silver sheathed mild detonating cord.

Functioning:

Upon actuation of the system by arming and firing any one of the three armed/firing mechanisms, a detonation wave is received via the junction manifold and is boosted by the loaded booster shell. The stimuli from the booster actuates the HNS within the SMDC assembly.

NOTE

The MS47 thru MS62 are identical in physical appearance and design. The difference is in length and amount of explosive.

Tabulated Data

NSN ---------- 1377-01-037-4094
DODIC ---------- MS56
Drawing number ---------- 857AS400-115
Vendor (CAGE Code) and
part number ---------- (30003) 813475-115
116415-15
Item Weight ---------- 0.248 lb
Diameter ---------- 0.18 in.
Length ---------- 33 in.
Method of actuation --------- High order detonation wave
Body Material ---------- Silver sheathed, high fine silver 99.95%
Propellant/explosive material:
Type ---------- HNS, type II, grade A
Weight ---------- 0.001852 lb

Performance:

Minimum detonation
velocity ---------- 6050 meter/see at -65°F (-54°C)

Firing Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65°F (-54°C)

Packaging:

Inner Container:
Reference ---------- MIL-B-117
Type ---------- Plastic bag
Dimensions ---------- 6 x 46 in.
Items per package ---------- 1
Weight ---------- 0.25 lb

Outer Container:
Reference ---------- PPP-B-636
Type ---------- Fiber board box
Dimensions ---------- 3.48 x 1.58x 0.96 ft
Weight ---------- 15 lb
Cube ---------- 5.278 cu ft

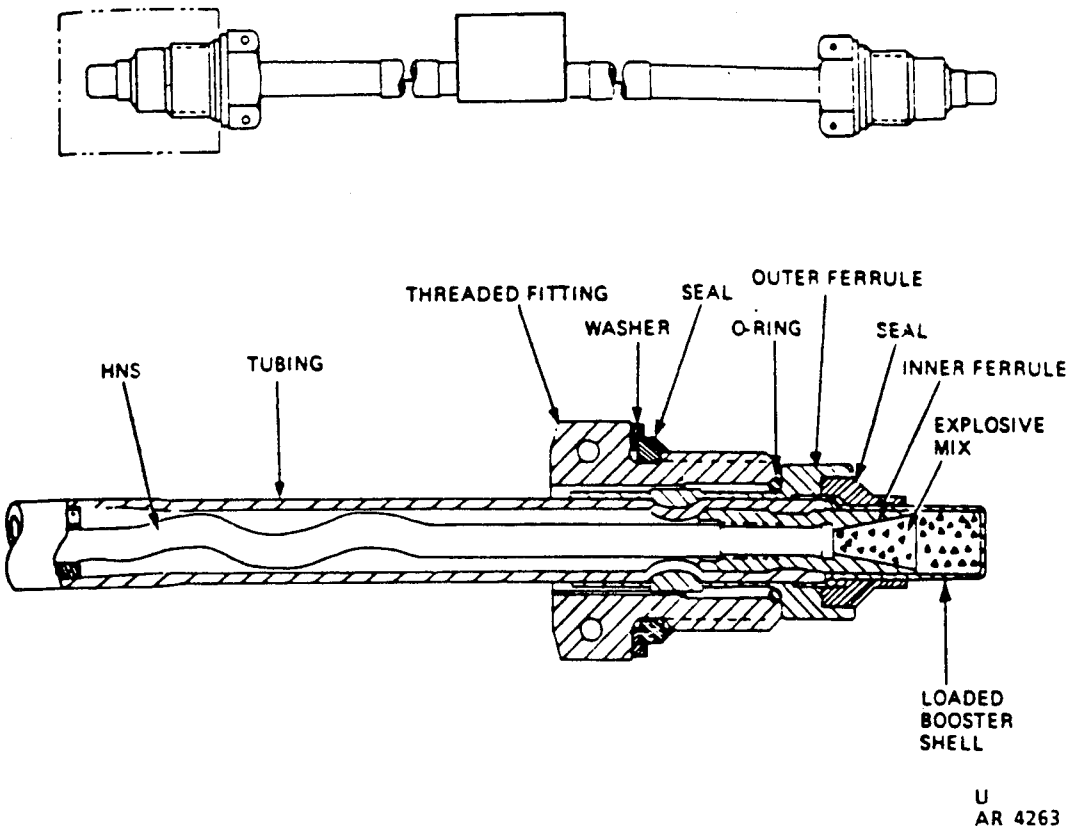
Shipping and Storage Data

Quantity distance class ----- 1.4
Storage compatibility
group ---------- S
DOT shipping class ---------- C
DOT designation ---------- LINEAR SHAPED CHARGE, METAL CLAD, HANDLE CAREFULLY, KEEP FIRE AWAY

References:

TM 9-1377-200-208zP
TM 55-1520-221-23
TM 55-1520-234-23
TB 9-1300-385, App B

CORD, DETONATING, ASSEMBLY, SHIELDED, MILD (SMDC): (MS57)



Type Classification:

Refer to aircraft subsystem.

Use:

To provide an interconnecting explosive media to the Window Cutting Assembly (WCA) of the gunner's canopy window used in the Emergency Canopy Removal System of the AH-1 series Helicopter.

Description:

Major components of the SMDC Assembly are threaded fitting, seals, washers, inner and outer ferrules, loaded booster shell, and silver sheathed mild detonating cord.

Functioning

Upon actuation of the system by arming and firing any one of the three armed/firing mechanisms, a detonation wave is received via the junction manifold and is boosted by the loaded booster shell. The stimuli from the booster actuates the HNS within the SMDC assembly.

NOTE

The MS47 thru MS62 are identical in physical appearance and design. The difference is in length and amount of explosive.

Tabulated Data:

NSN ---------- 1377-01-037-4093
DODIC ---------- MS57
Drawing number ---------- 857AS400-117
Vendor (CAGE Code) and
part number ---------- (30003) 116415-15
813475-115
Item Weight ---------- 0.312 lb
Diameter ---------- 0.18 in.
Length ---------- 39 in.
Method of actuation --------- High order detonation wave
Body Material ---------- Silver sheathed, high fine silver 99.95%
Propellant/explosive material:
Type ---------- HNS, type II, grade A
Weight ---------- 0.002270 lb

Performance:

Minimum detonation
velocity ---------- 6050 meter/see at -65°F (-54°C)

Firing Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65°F (-54°C)

Packaging:

Inner Container:
Reference ---------- MIL-B-117
Type ---------- Bag, heat sealed
Dimensions ---------- 6 x 65 in.
Items per package ---------- 1
Weight ---------- 0.50 lb

Outer Container:
Reference ---------- PPP-B-636
Type ---------- Fiber board box
Dimensions ---------- 4.04 x 2.21 x 0.92 ft
Weight ---------- 20 lb
Cube ---------- 8.214 cu ft

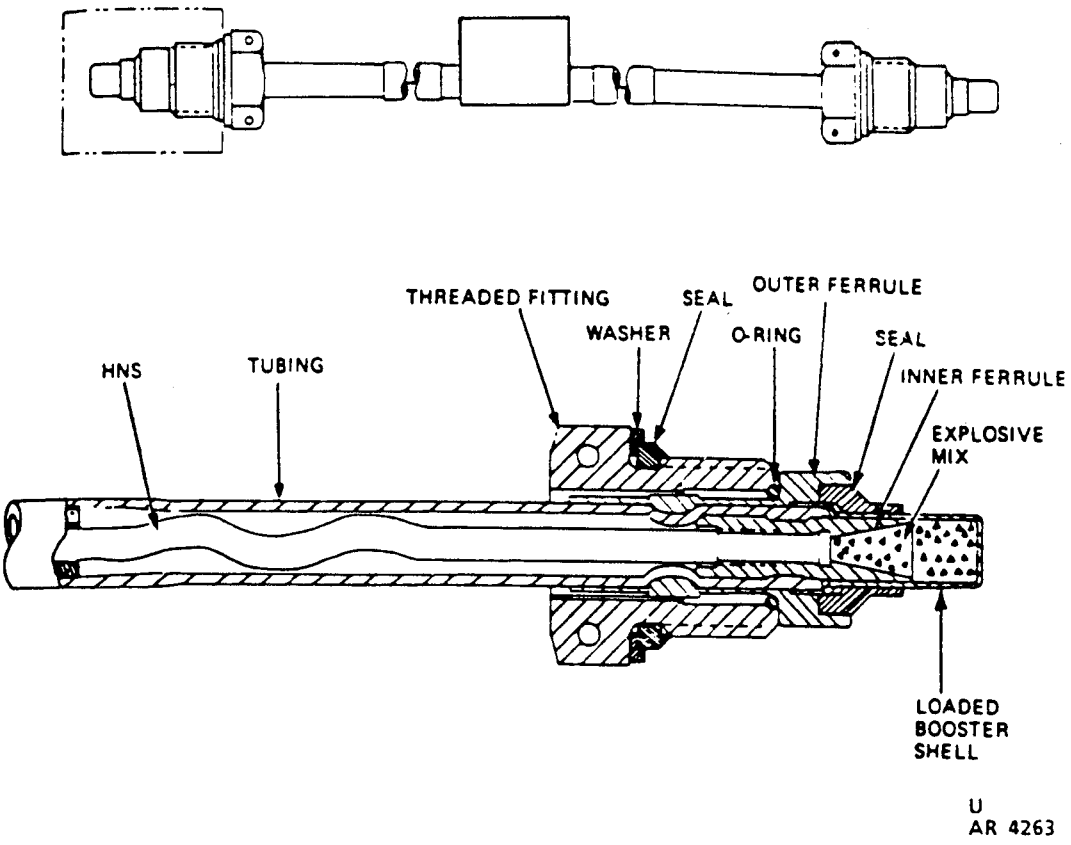
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility
group ---------- S
DOT shipping class ---------- C
DOT designation ---------- LINEAR SHAPED CHARGE, METAL CLAD, HANDLE CAREFULLY KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TM 55-1520-221-23
TM 55-1520-234-23
TB 9-1300-385, App B

CORD, DETONATING, ASSEMBLY, SHIELDED, MILD (SMDC): (MS58)



Type Classification:

Refer to aircraft subsystem.

Use:

To provide an interconnecting explosive media to the Window Cutting Assembly (WCA) of the gunner's canopy window used in the Emergency Canopy Removal System of the AH-1 series Helicopter.

Description:

Major components of the SMDC Assembly are threaded fitting, seals, washers, inner and outer ferrules, loaded booster shell, and silver sheathed mild detonating cord.

Functioning:

Upon actuation of the system by arming and firing any one of the three armed/firing mechanisms, a detonation wave is received via the junction manifold and is boosted by the loaded booster shell. The stimuli from the booster actuates the HNS within the SMDC assembly.

NOTE

The MS47 thru MS62 are identical in physical appearance and design. The difference is in length and amount of explosive.

Tabulated Data:

NSN 1377-01-032-3286
DODIC ---------- MS58
Drawing number ---------- 857AS400-119
Vendor (CAGE Code) and
part number ---------- (30003) 116415-19
813475-119
Item Weight ---------- 0.1151b
Diameter ---------- 0.18 in.
Length ---------- 20 in.
Method of actuation --------- High order detonation wave
Body Material ---------- Silver sheathed, high fine silver 99.95%
Propellant/explosive material:
Type ---------- HNS, type II, grade A
Weight ---------- 0.001036 lb

Performance:

Minimum detonation
velocity ---------- 6050 meter/see at -65°F (-54°C)

Firing Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65°F (-54°C)

Packaging:

Inner Container:
Reference ---------- MIL-B-117
Type ---------- Bag, heat sealed
Dimensions ---------- 4 x 22 in.
Items per package ---------- 1
Weight ---------- 0.25 lb

Outer Container:
Reference ---------- PPP-C-1672
Type ---------- Fiber board box
Dimensions ---------- 1.54 x 1.04x 0.27 ft
Weight ---------- 2.0 lb
Cube ---------- 0.464 cu ft

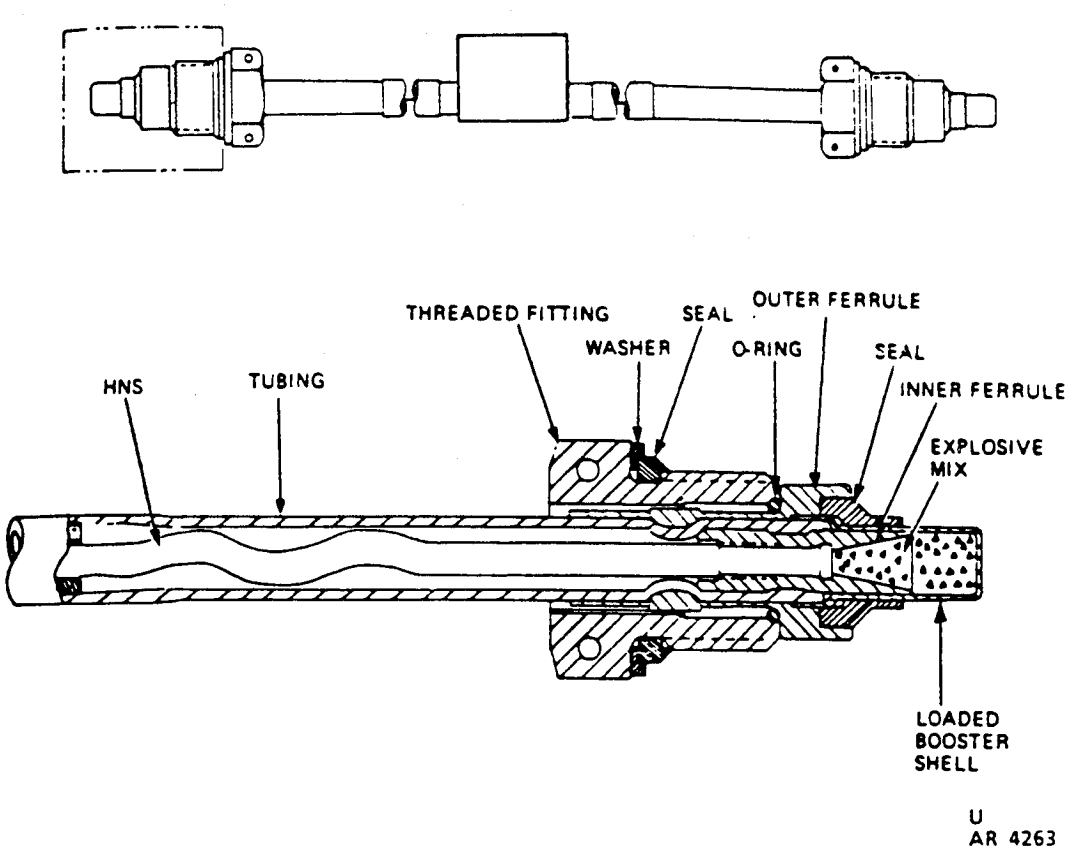
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility
group ---------- S
DOT shipping class ---------- C
DOT designation ---------- LINEAR SHAPED CHARGE, METAL CLAD, HANDLE CAREFULLY KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TM 55-1520-221-23
TM 55-1520-234-23
TB 9-1300-385, App B

CORD, DETONATING, ASSEMBLY, SHIELDED, MILD (SMDC): (MS59)



Type Classification:

Refer to aircraft subsystem.

Use:

To provide an interconnecting explosive media to the Window Cutting Assembly (WCA) of the gunner's canopy window used in the Emergency Canopy Removal System of the AH-1 series Helicopter.

Description:

Major components of the SMDC Assembly are threaded fitting, seals, washers, inner and outer ferrules, loaded booster shell, and silver sheathed mild detonating cord.

Functioning:

Upon actuation of the system by arming and firing any one of the three armed/firing mechanisms, a detonation wave is received via the junction manifold and is boosted by the loaded booster shell. The stimuli from the booster actuates the HNS within the SMDC assembly.

NOTE

The MS47 thru MS62 are identical in physical appearance and design, The difference is in length and amount of explosive.

Tabulated Data

NSN 1377-01-032-3283
DODIC ---------- MS59
Drawing number ---------- 857AS400-125
Vendor (CAGE Code) and
part number ---------- (30003) 116415-25
813475-125
Item Weight ---------- 0,0197 lb
Diameter ---------- 0.18 in,
Length ---------- 27 in.
Method of actuation --------- High order detonation wave
Body Material ---------- Silver sheathed, high fine silver 99.95%
Propellant/explosive material:
Type ---------- HNS, type II, grade A
Weight ---------- 0.0017631b

Performance:

Minimum detonation
velocity ---------- 6050 meter/see at -65°F (-54°C)

Firing Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65°F (-54°C)

Packaging:

Inner Container:
Reference ---------- MIL-B-117
Type ---------- Bag, heat sealed
Dimensions ---------- 4 x 43 in.
Items per package ---------- 1
Weight ---------- 0,25 lb

Outer Container:
Reference ---------- PPP-B-636
Type ---------- Fiber board box
Dimensions ---------- 3.33 x 1.75x 0.73 ft
Weight ---------- 15 lb
Cube ---------- 4.254 cu ft

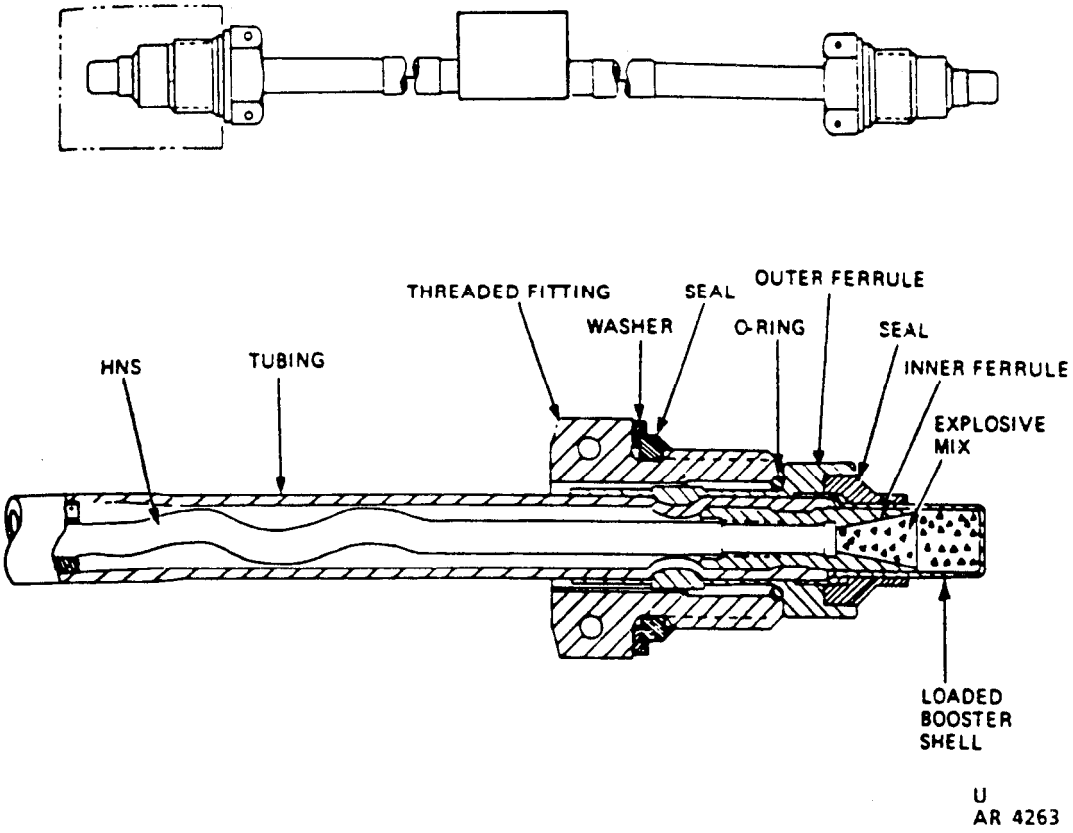
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility
group ---------- S
DOT shipping class ---------- C
DOT designation ---------- LINEAR SHAPED CHARGE, METAL CLAD, HANDLE CAREFULLY, KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TM 55-1520-221-23
TM 55-1520-234-23
TB 9-1300-385, App B

CORD, DETONATING, ASSEMBLY, SHIELDED, MILD (SMDC): (MS60)



Type Classification:

Refer to aircraft subsystem.

Use:

To provide an interconnecting explosive media to the Window Cutting Assembly (WCA) of the gunner's canopy window used in the Emergency Canopy Removal System of the AH-1 series Helicopter.

Description:

Major components of the SMDC Assembly are threaded fitting, seals, washers, inner and outer ferrules, loaded booster shell, and silver sheathed mild detonating cord.

Functioning:

Upon actuation of the system by arming and firing any one of the three armed/firing mechanisms, a detonation wave is received via the junction manifold and is boosted by the loaded booster shell. The stimuli from the booster actuates the HNS within the SMDC assembly.

NOTE

The MS47 thru MS62 are identical in physical appearance and design, The difference is in length and amount of explosive.

Tabulated Data:

NSN ---------- 1377-01-032-3279
DODIC ---------- MS60
Drawing number ---------- 857AS400-123
Vendor (CAGE Code) and
part number ---------- (30003) 116415-23
813475-123
Item Weight ---------- 0.208 lb
Diameter ---------- 0.18 in.
Length ---------- 36 in.
Method of actuation --------- High order detonation wave
Body Material ---------- Silver sheathed, high fine silver 99.95%
Propellant/explosive material:
Type ---------- HNS, type II, grade A
Weight ---------- 0.001609 lb

Performance:

Minimum detonation
velocity ---------- 6050 meter/see at -65°F (-54°C)

Firing Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65° F (-54°C)

Packaging:

Inner Container:
Reference ---------- MIL-B-117
Type ---------- Bag. heat sealed
Dimensions ---------- 6 x 53 in.
Items per package ---------- 1
Weight ---------- 0.25 lb

Outer Container:
Reference ---------- PPP-B-636
Type ---------- Fiber board box
Dimensions ---------- 3.64 x 1.33x 0.64 ft
Weight ---------- 15.0 lb
Cube ---------- 3.098 cu ft

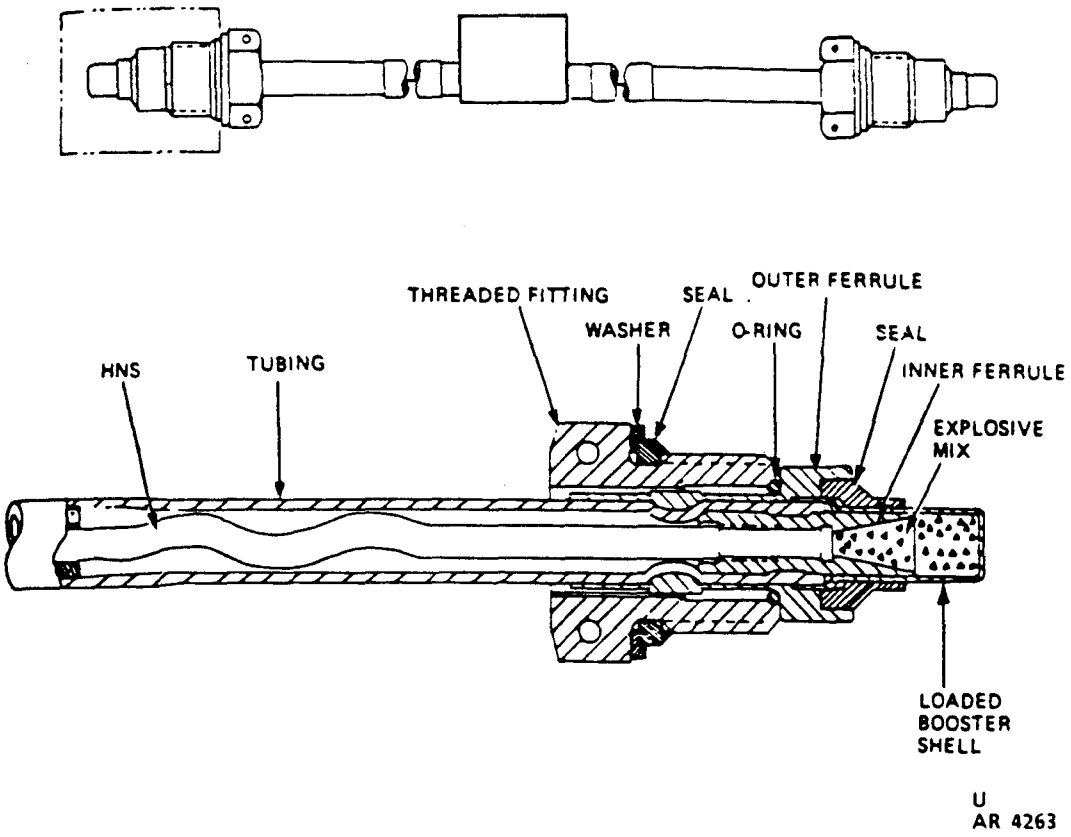
Shipping and Storage Data

Quantity distance class ----- 1.4
Storage compatibility
group ---------- S
DOT shipping class ---------- C
DOT designation ---------- LINEAR SHAPED CHARGE, METAL CLAD, HANDLE CAREFULLY KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TM 55-1520-221-23
TM 55-1520-234-23
TB 9-1300-385, App B

CORD, DETONATING, ASSEMBLY, SHIELDED, MILD (SMDC): (MS61)



Type Classification:

Refer to aircraft subsystem.

Use:

To provide an interconnecting explosive media to the Window Cutting Assembly (WCA) of the gunner's canopy window used in the Emergency Canopy Removal System of the AH-1 series Helicopter.

Description:

Major components of the SMDC Assembly are threaded fitting, seals, washers, inner and outer ferrules, loaded booster shell, and silver sheathed mild detonating cord.

Functioning:

Upon actuation of the system by arming and firing any one of the three armed/firing mechanisms, a detonation wave is received via the junction manifold and is boosted by the loaded booster shell. The stimuli from the booster actuates the HNS within the SMDC assembly.

NOTE

The MS47 thru MS62 are identical in physical appearance and design. The difference is in length and amount of explosive.

Tabulated Data:

NSN 1377-01-032-3280
DODIC ---------- MS61
Drawing number ---------- 857AS400-121
Vendor (CAGE Code) and
part number ---------- (30003) 116415-21
813475-121
Item Weight ---------- 0.226 lb
Diameter ---------- 0.18 in,
Length ---------- 31 in.
Method of actuation --------- High order detonation wave
Body Material ---------- Silver sheathed, high fine silver 99.95%
Propellant/explosive material:
Type ---------- HNS, type II, grade A
Weight ---------- 0.001543 lb

Performance:

Minimum detonation
velocity ---------- 6050 meter/see at -65°F (-54°C)

Firing Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65°F (-54°C)

Packaging:

Inner Container:
Reference ---------- MIL-B-117
Type ---------- Bag, heat sealed
Dimensions ---------- 6 x 37 in.
Items per package ---------- 1
Weight ---------- 0.25 lb

Outer Container:
Reference ---------- PPP-B-636
Type ---------- Fiber board box
Dimensions ---------- 2.96 X 1.25X 0.93 ft
Weight ---------- 12.0 lb
Cube ---------- 3.441 cu ft

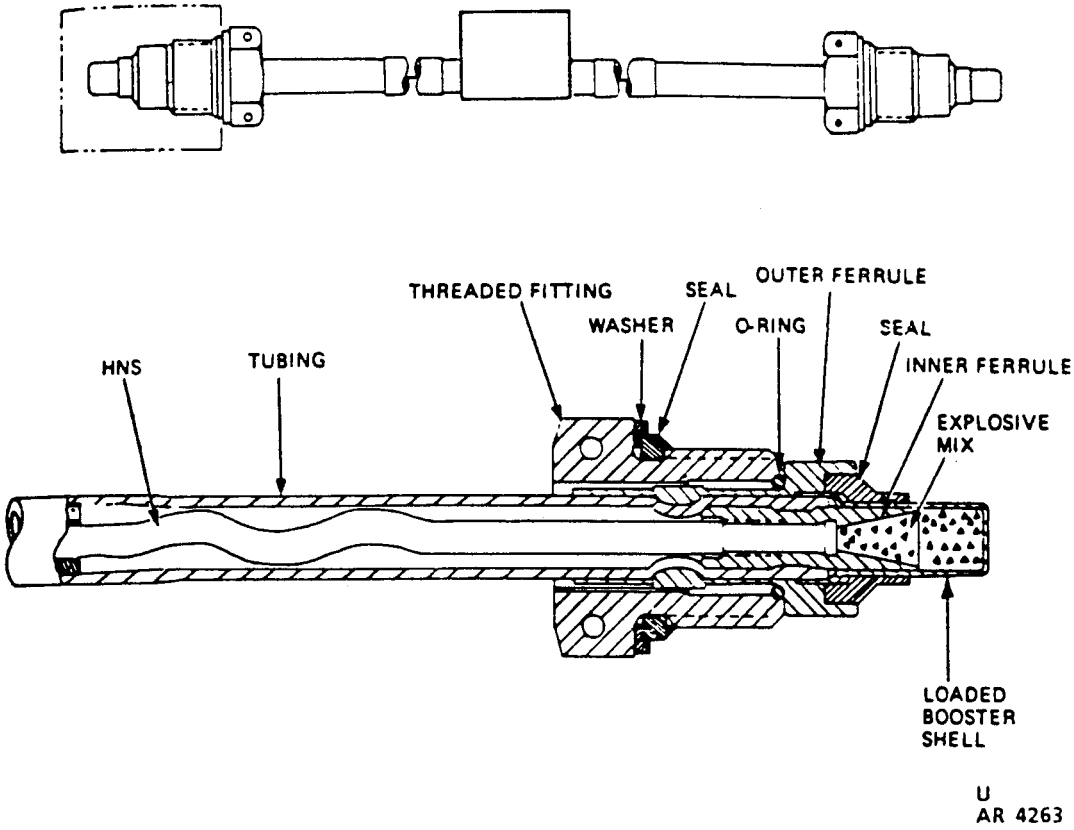
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility
group ---------- s
DOT shipping class ---------- c
DOT designation ---------- LINEAR SHAPED CHARGE, METAL CLAD, HANDLE CAREFULLY, KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TM 55-1520-221-23
TM 55-1520-234-23
TB 9-1300-385, App B

CORD, DETONATING, ASSEMBLY, SHIELDED, MILD (SMDC): (MS62)



Type Classification:

Refer to aircraft subsystem.

Use:

To provide an interconnecting explosive media to the Window Cutting Assembly (WCA) of the gunner's canopy window used in the Emergency Canopy Removal System of the AH-1 series Helicopter.

Description:

Major components of the SMDC Assembly are threaded fitting, seals, washers, inner and outer ferrules, loaded booster shell, and silver sheathed mild detonating cord.

Functioning:

Upon actuation of the system by arming and firing any one of the three armed/firing mechanisms, a detonation wave is received via the junction manifold and is boosted by the loaded booster shell. The stimuli from the booster actuates the HNS within the SMDC assembly.

NOTE

The MS47 thru MS62 are identical in physical appearance and design, The difference is in length and amount of explosive.

Tabulated Data:

NSN 1377-01-100-1718
DODIC ---------- MS62
Drawing number ---------- 857AS400-127
Vendor (CAGE Code) and
part number ---------- (30003) 116415-27
813475-127
Item Weight ---------- 0.065 lb
Diameter ---------- 0.18 in,
Length ---------- 8 in.
Method of actuation --------- High order detonation wave
Body Material ---------- Silver sheathed, high fine silver 99.95%
Propellant/explosive material:
Type ---------- HNS, type II, grade A
Weight ---------- 0.000727 lb

Performance:

Minimum detonation
velocity ---------- 6050 meter/see at -65°F (-54°C)

Firing Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65°F (-54°C)

Packaging:

Inner Container:
Reference ---------- MIL-B-117
Type ---------- Bag, heat sealed
Dimensions ---------- 4 x 16 in,
Items per package ---------- 1
Weight ---------- 0.25 lb

Outer Container:
Reference ---------- PPP-B-1672
Type ---------- Fiber board box
Dimensions ---------- 1.54 x 1.04x 0.27 ft
Weight ---------- 2.50 lb
Cube ---------- 0.432 cu ft

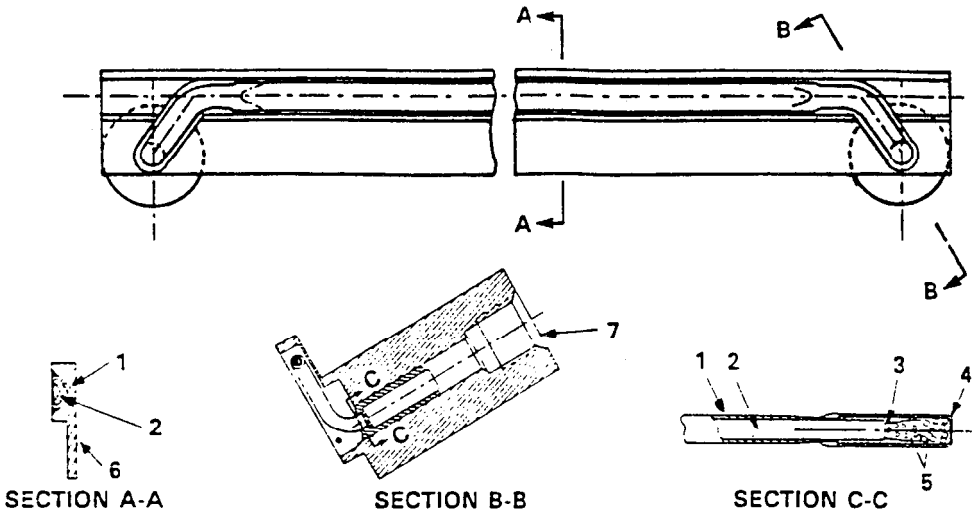
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility
group ---------- S
DOT shipping class ---------- C
DOT designation ---------- LINEAR SHAPED CHARGE, METAL CLAD, HANDLE CAREFULLY, KEEP FIRE AWAY

Reference:

TM 9-1377-200-20&P
TM 55-1520-221-23
TM 55-1520-234-23
TB 9-1300-385, App B

LINEAR EXPLOSIVE ASSEMBLY (LEA): (MS76)



LEGEND

1 THERMOFIT HEAT SHRINKABLE TUBING
2 FLEXIBLE LINEAR EXPLOSIVE ASSEMBLY SHAPED CHARGE
3 PRELOADED FERRULE ADAPTER
4 LOADED SHELL
5 HNS
6 HOLDER SUBASSEMBLY
7 SMDC PORT

U
AR 4291

Type Classification:

Refer to aircraft subsystem

Use:

The Linear-Explosive Assembly is used in the AH-1 E/F/P helicopter to explosively sever the canopy door hinge in an emergency.

Functioning:

NOTE

The MS76 and MS77 are identical in physical appearance to the M79, The difference is in length and amount of explosive.

Tabulated Data:

NSN 1377-01-032-1047
DODIC ---------- MS76
Drawing number ---------- 6261062
Vendor (CAGE Code) and
part number ---------- 115362-1816986-1
Item Weight ---------- 0.344 lb
Diameter ---------- N/A
Length ---------- 30.70 in.
Method of actuation --------- High order detonation wave
Body Material ---------- Lead 6% antimony alloy sheathed
Propellant/explosive material:
Type ---------- HNS, type II, grade A
Weight ----------

Performance:

Minimum detonation
velocity ---------- 6050 meter/see at -65°F (-54°C)

Firing Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65°F (-54°C)

Packaging:

Inner Container:
Reference ---------- MIL-B-117
Type ---------- Bag, heat sealed
Dimensions ---------- 4 x 37 in.
Items per package ---------- 1
Weight ---------- 0.25 lb

Outer Container:
Reference ---------- PPP-B-636
Type ---------- Fiber board box
Dimensions ---------- 3.25 x 0.79x 0.71 ft
Weight ---------- 10.00 lb
Cube ---------- 1.823 cu ft

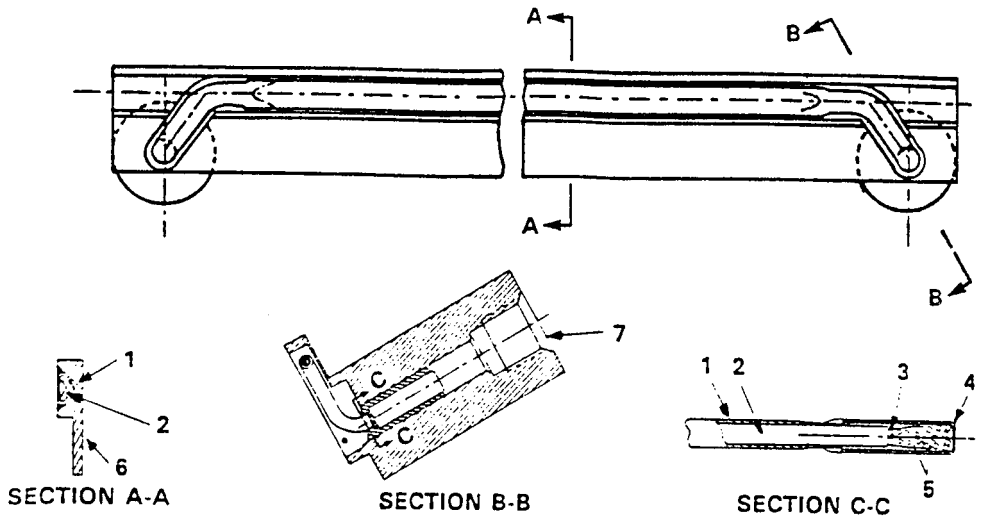
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility
group ---------- S
DOT shipping class ---------- C
DOT designation ---------- FLEXIBLE LINEAR SHAPED CHARGE, METAL CLAD, HANDLE CAREFULLY, KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TM 55-1520-221-23
TM 55-1520-234-23
TB 9-1300-385, App B

LINEAR EXPLOSIVE ASSEMBLY (LEA): (MS77)



LEGEND

1 THERMOFIT HEAT SHRINKABLE TUBING
2 FLEXIBLE LINEAR EXPLOSIVE ASSEMBLY SHAPED CHARGE
3 PRELOADED FERRULE ADAPTER
4 LOADED SHELL
5 HNS
6 HOLDER SUBASSEMBLY
7 SMDC PORT

U
AR 4291

Type Classification:

Refer to aircraft subsystem

Use:

The Linear-Explosive Assembly is used in the AH-1 E/F/P helicopter to explosively sever the canopy door hinge in an emergency.

Functioning:

NOTE

The MS76 and MS77 are identical in physical appearance to the M79, The difference is in length and amount of explosive.

Tabulated Data:

NSN ---------- 1377-01-032-1048
DODIC ---------- MS77
Drawing number ---------- 6261062
Vendor (CAGE Code) and
pmt. number ---------- 115362 -3816986-3
Item Weight ---------- 0.0408 lb
Diameter ---------- N/A
Length ---------- 38.95 in.
Method of actuation --------- High order detonation wave
Body Material ---------- Lead 6% antimony alloy sheathed
Propellant/explosive material:
Type ---------- HNS, type II, grade A
Weight ---------- 0.006216 lb

Performance:

Minimum detonation
velocity ---------- 6050 meter/see at -65°F (-54°C)

Firing Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65°F (-54°C)

Packaging:

Inner Container:
Reference ---------- MIL-B-117
Type ---------- Bag, heat sealed
Dimensions ---------- 4 x 44 in.
Items per package ---------- 1
Weight ---------- 0.50 lb

Outer Container:
Reference ---------- PPP-B-636
Type ---------- Fiber board box
Dimensions ---------- 4.00 x 0.81 x 0.73 ft
Weight ---------- 12.00 lb
Cube ---------- 2.365 cu ft

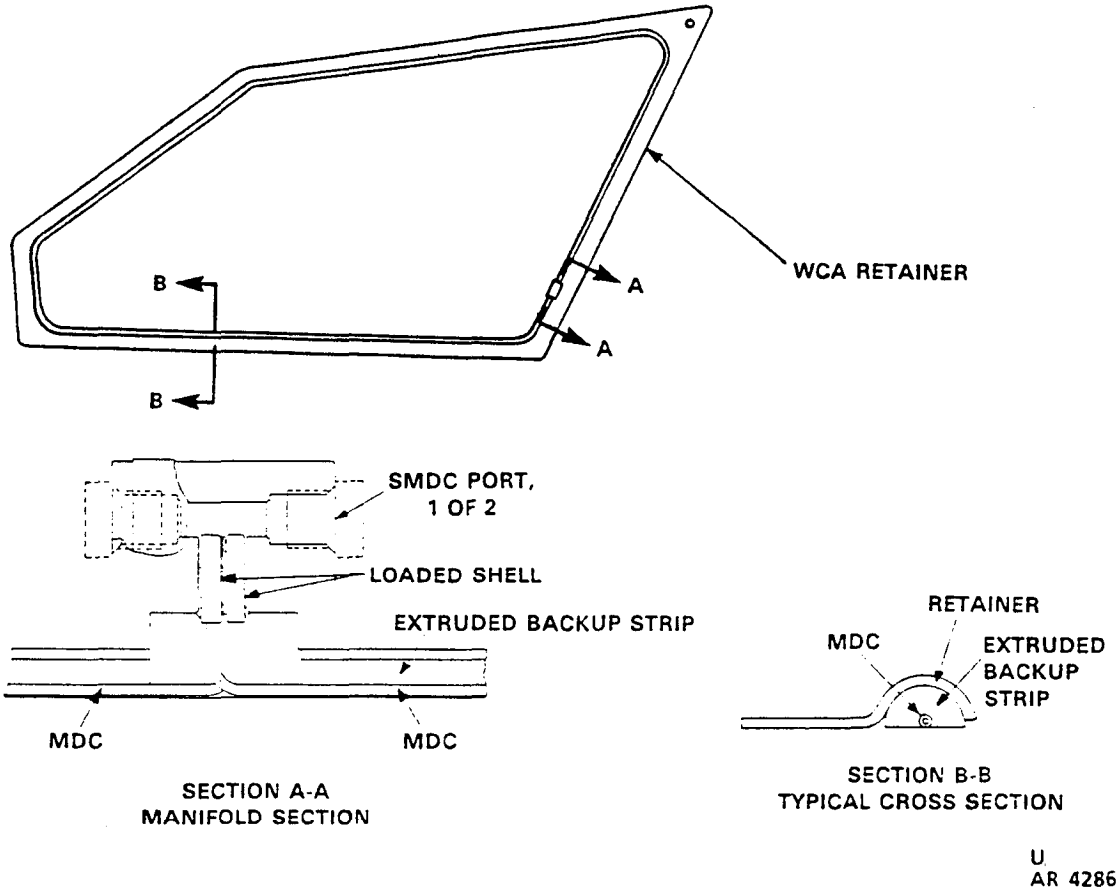
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility
group ---------- S
DOT shipping class ---------- C
DOT designation ---------- FLEXIBLE LINEAR SHAPED CHARGE, METAL CLAD, HANDLE CAREFULLY, KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TM 55-1520-221-23
TM 55-1520-234-23
TB 9-1300-385, App B

LINEAR EXPLOSIVE ASSEMBLY, WINDOW (WCA): (MS78)



Type Classification:

Refer to aircraft subsystem

An explosive device used in the AH-1 E/F/P Helicopter Emergency Canopy Removal System to assure exit from or access to the crew compartment of the aircraft in an emergency.

Major components of the WCA are: manifold release assemblies and window cutting retainer subassemblies for doors and windows, linear explosive, extruded back-up cushion, retainer, and seal.

The assemblies are located on the periphery of the four windows in the crew compartment.

Functioning:

Upon actuation of the system by arming and firing any one of the three armed/firing mechanisms, a detonation wave is received via the interconnecting LEA and SMDC lines to the linear explosive of the WCA. The explosive force is outward? simultaneously cutting out the four plastic window glasses of the crew compartment.

NOTE

The MS76 and MS77 are identical in physical appearance to the M79. The difference is in length and amount of explosive,

Tabulated Data:

NSN ---------- 1377-01-032-1049
DODIC ---------- MS78
Drawing number ---------- 6261063
Vendor (CAGE Code) and
part number ---------- 816987-103 115406-9
Item Weight ----------
Diameter ----------
Length ---------- 55.25 in.
Method of actuation --------- High order detonation wave
Body Material ---------- Lead 6% antimony alloy sheathed
Propellant/explosive material:
Type ---------- HNS, type II, grade A
Weight ---------- 0.005070 lb

Performance:

Minimum detonation
velocity ---------- 6050 meter/see at -65°F (-54°C)

Firing Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65°F (-54°C)

Packaging:

Inner Container:
Reference ---------- MIL-B-117
Type ---------- Bag, heat sealed
Dimensions ----------
Items per package ---------- 1
Weight ----------

Outer Container:
Reference ---------- PPP-B-636
Type ---------- Fiber board box
Dimensions ---------- 5.27 x 3.00x 0.75 ft
Weight ---------- 30.00 lb
Cube ---------- 11.850 cu ft

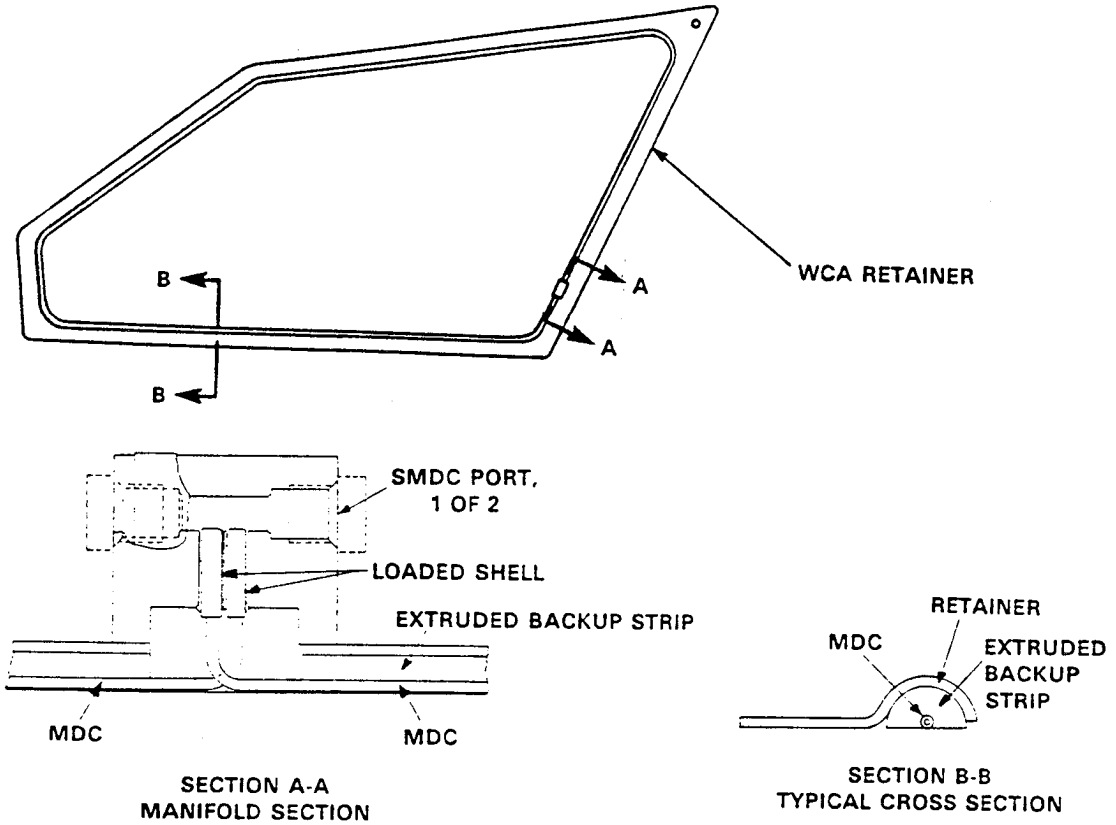
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility
group ---------- S
DOT shipping class ---------- C
DOT designation ---------- MILD DETONATING FUSE, METAL CLAD, HANDLE CAREFULLY, KEEP FIRE AWAY

References:

TM 9-1377-200 -20&P
TM 55-1520-221-23
TM 55-1520-234-23
TB 9-1300-385, App B

LINEAR-EXPLOSIVE ASSEMBLY, WINDOW (WCA): (MS79)



Type Classification:

Refer to aircraft subsystem

Use:

An explosive device used in the AH-1 E/F/P Helicopter Emergency Canopy Removal System to assure exit from or access to the crew compartment of the aircraft in an emergency.

Description:

Major components of the WCA are: manifold release assemblies and window cutting retainer subassemblies for doors and windows, linear explosive, extruded back-up cushion, retainer, and seal.

The assemblies are located on the outer edge of the four windows in the crew compartment.

Functioning:

Upon actuation of the system by arming and firing any one of the three armed/firing mechanisms, a detonation wave is received via the interconnecting LEA and SMDC lines to the linear explosive of the WCA, The explosive force is outward? simultaneously cutting out the four plastic window glasses of the crew compartment.

NOTE

The MS78 is identical in design and physical appearance to the MS79. The difference is in length and amount of explosive.

Tabulated Data:

NSN 1377-01-032-1050
DODIC ---------- MS79
Drawing number ---------- 6261063
Vendor (CAGE Code) and
part number ---------- 816987-105
115405-7
Item Weight ----------
Diameter ----------
Length ---------- 55.50 in.
Method of actuation --------- High order detonation wave
Body Material ---------- Lead 6% antimony alloy sheathed
Propellant/explosive material:
Type ---------- HNS, type II, grade A
Weight ---------- 0.005488 lb

Performance:

Minimum detonation
velocity ---------- 6050 meter/see at -65°F (-54°C)

Firing Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65°F (-54°C)

Packaging:

Inner Container:
Reference ---------- MIL-B-117
Type ---------- Bag, heat sealed
Dimensions ---------- 66x 35.5 in.
Items per package ---------- 1
Weight ---------- 3 lb

Outer Container:
Reference ---------- PPP-B-636
Type ---------- Fiber board box
Dimensions ---------- 5.29 x 3.02 x 0.77 ft
Weight ---------- 30.00 lb
Cube ---------- 12.301 cu ft

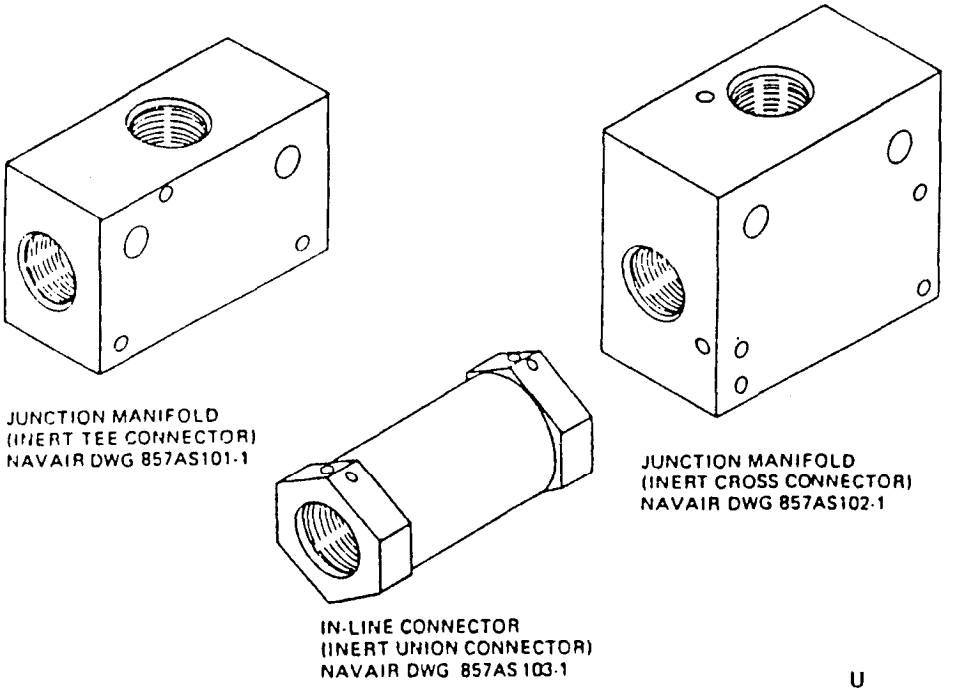
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility
group ---------- S
DOT shipping class ---------- C
DOT designation ---------- HANDLE CAREFULLY, KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TM 55-1520-221-23
TM 55-1520-234-23
TB 9-1300-385, App B

INERT CONNECTORS



Type Classification:

Refer to helicopter subsystem.

Use:

Used in the AH-1 series helicopter canopy release system as detonation transfer media between detonating cord sequencing system assemblies, and as a means to secure the assemblies to the aircraft structure.

Description:

Three types of inert connectors are used as detonation transfers in the ballistic sequencing system: the tee, cross, and in-line (union).

There is one tee connector, mounted behind the gunner's seat which serves as a junction manifold for the crossover lines between the right and left junction manifolds and the interconnecting line assemblies from the nose (external) armed/firing mechanism.

The system has two cross connectors, one mounted in the upper right canopy structure and the other mounted in the upper left canopy structure. The cross connector mounted on the left serves as a junction manifold for ballistic sequencing assemblies between the pilot's armed/firing mechanism, the WCA for the gunner's door, and the tee connector behind the gunner's seat, The cross connector mounted on the right serves as a junction manifold for ballistic sequencing assemblies between the gunner's armed/firing mechanism, the WCA for the pilot's door, and the tee connector behind the gunner's seat.

There is one in-line connector mounted at the forward bulkhead in the nose section which serves as a connector union between the SMDC assemblies interconnecting the nose (external) armed/firing mechanism, and the junction manifold mounted behind the gunner's seat.

Tabulated Data:

Tee Connector:

NSN ---------- 1377-00-410-8228
Drawing number ---------- 857AS101-2
Vendor (CAGE Code) and
part number ---------- 813487-2 (30003)
209-030 -711-9
Weight ---------- 0.112 lb
Length ---------- 1.680 in.
Width ..... .0.760 in.
Depth ..... 1.050 in.

Cross Connector:

NSN ---------- 1377-00-409-1101
Drawing number ---------- 857AS102-1
Vendor (CAGE Code) and
part number ---------- 813488-1 (30003)
209-030-711-7
Weight ---------- 0.196 lb
Length ---------- 1.680 in.
Width ..... 0.875 in.
Depth ---------- 1.480

In-Line Connector:

NSN ---------- 1377-01-062-4195
Drawing number ----------
Vendor (CAGE Code) and
part number ---------- 819397-103
Weight ---------- 0.062 lb
Length ---------- 1.650 in.
Diameter ---------- 0.060 in.
Diameter (hex end
fittings) ---------- 0.075 in.

Service Life:

There is no specific service life for inert connectors because they consist of metal parts, (Refer to TB 9-1300-385, App B). However, due to installation torques and possible damage during SMDC line removal, all connectors should be checked for visible wear and tear and, if damaged, replaced.

Table 5-3 shows the detonating cord assemblies, inert connectors, and detonators used in AH-1E/F/P/S (MOD) Army helicopters.

References:

TB 9-1300-385, Appendix B

CHAPTER 5

EMERGENCY ESCAPE SYSTEMS FOR HELICOPTERS, AH-64

Section II. AH-64 (APACHE)

5-2. General (for Army AH-64 (Apache) Helicopters).

a. Section 2 of this chapter contains descriptive and technical data pertaining to the systems used for the Army AH-64 Helicopter. The system is used to explosively cut and eject the windows of the canopy and doors from the canopy and door framing structure to provide a rapid means of escape and/or access from/to the crew compartment.

b. The AH-64 emergency canopy jettison system consists of four linear explosive canopy severance assemblies which are installed around the rim of the canopy windows and door windows of the crew compartment. Also, three armed/firing initiators (fig. 5-4) and interconnecting flexible confined detonating cord (FCDC) and shielded mild detonating cord (SMDC) lines. One arxned/firing initiator is located in the pilot's instrument panel to the left of the glare shield, another is located in the gunner/copilots right console, and the third is in the nose of the helicopter which is located to provide external access by rescue personnel. Any one of the three armed/firing initiators can be used to actuate the linear explosive escape system.

c. The detonating cord set consists of nine SMDC lines; five FCDC lines and four canopy severance assemblies. This chapter describes each assembly. Assemblies differ only in length and explosive weight. Table 5-4 is a list of the individual detonating cord lines, canopy severance assemblies and arming/firing initiators. Each explosive item includes the Department of Defense Identification Code (DODIC), Hughes Helicopter P/N, National Stock Number (NSN), Vendor Part Number, Nomenclature, Drawing number, and explosive weight.

d. This Section also contains descriptive information pertaining to the inert connectors in the AH-64 Helicopter canopy severance system. Table 5-5 has inert items with the National Stock Number, Vendor Part Number (CAGE Code), Nomenclature, Drawing Number and Quantity per helicopter.

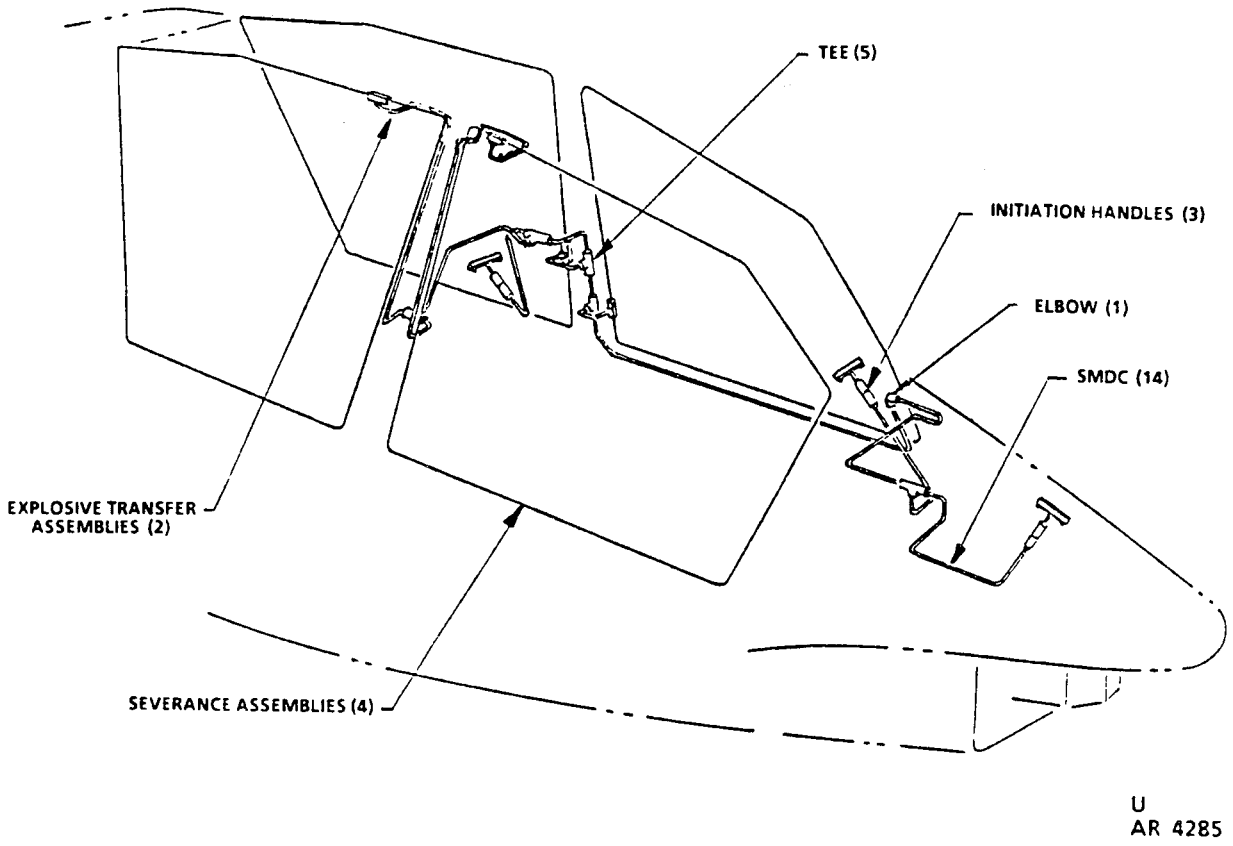


Figure 5-3. AH-64 Emergency Canopy Jettison System Elements

TABLE 5-4. AH-64 HELICOPTER CANOPY SEVERANCE SYSTEM (EXPLOSIVE ITEMS)

DODIC	*HUGHES PART NO.	NSN 1377-01-	**EXPLOSIVE TECHNOLOGY PART NO.	NOMENCLATURE	DRAWING NO.	EXPLOSIVE WEIGHT (LB)	LENGTH (INCHES)
MS80	7-311112017-17	170-5244	51134-47	CORD, DETONATING (SMDC)	841AS425-47	0.002028	51.0
MS81	7-311112017-15	170-5245	51134-53	CORD, DETONATING (SMDC)	841AS425-53	0.000529	4.0
MS82	7311112017-13	170-5246	51134-51	CORD, DETONATING (SMDC)	841AS425-51	0.001587	29.0
MS83	7-311112017-27	170-5261	51134-45	CORD, DETONATING (SMDC)	841AS425-45	0.002601	59.0
MS84	7-311112017-25	170-5262	51134-57	CORD, DETONATING (SMDC)	841AS425-57	0.001829	36.0
MS85	7-311112017-23	170-5263	51134-55	CORD, DETONATING (SMDC)	841AS425-55	0.000816	9.0
MS86	7-311112017-21	170-5264	51134-23	CORD, DETONATING (SMDC)	841AS425-23	0.000529	4.0
MS87	7-311112017-19	170-5265	51134-49	CORD, DETONATING (SMDC)	841AS425-49	0.000772	8.0
MS88	7-311112017-29	186-9898	51134-35	CORD, DETONATING (SMDC)	841AS425-35	0.000506	3.0
MS89	7-311112017-43	170-5260	51135-5	CORD, DETONATING (FCDC)	6260906-5	0.003024	9.45
MS90	7-31111-2017-31	186-9899	51135-1	CORD, DETONATING (FCDC)	6260906-1	0.004800	15.0
MS91	7-311112017-33	186.9900	51135-2	CORD, DETONATING (FCDC)	6260906-2	0.007040	22.0
MS92	7-311112017-35	186-9901	51135-7	CORD, DETONATING (FCDC)	6260906-7	0.005104	15.95
MS93	7-311112017-37	186-9902	51135-4	CORD, DETONATING (FCDC)	6206906-4	0.004800	15.0
MS94	7-311112017-5	184-6112	51188-1	CUTTING ASSEMBLY GUNNERS WINDOW	6206965-1	0.004321	71X24.5X1.5
MS95	7-311112017-7	185-6113	51390-1	CUTTING ASSEMBLY PILOT'S WINDOW	6260965-3	0.004079	47X34.5X1.5
MS96	7-311112017-11	185-8908	51391-1	CUTTING ASSEMBLY PILOT'S DOOR	6260965-4	0.003814	44X33X1.5
MS97	7-311112017-9	187-4477	41389-1	CUTTING ASSEMBLY GUNNERS DOOR	6260965-2	0.003946	66X23.5X1.5
MT06	7-311112017-39	2696496	51207.3	INITIATOR, MECH ACTUATED JUA-59/A	6260964	0.000269	5.4X2.75X1.9

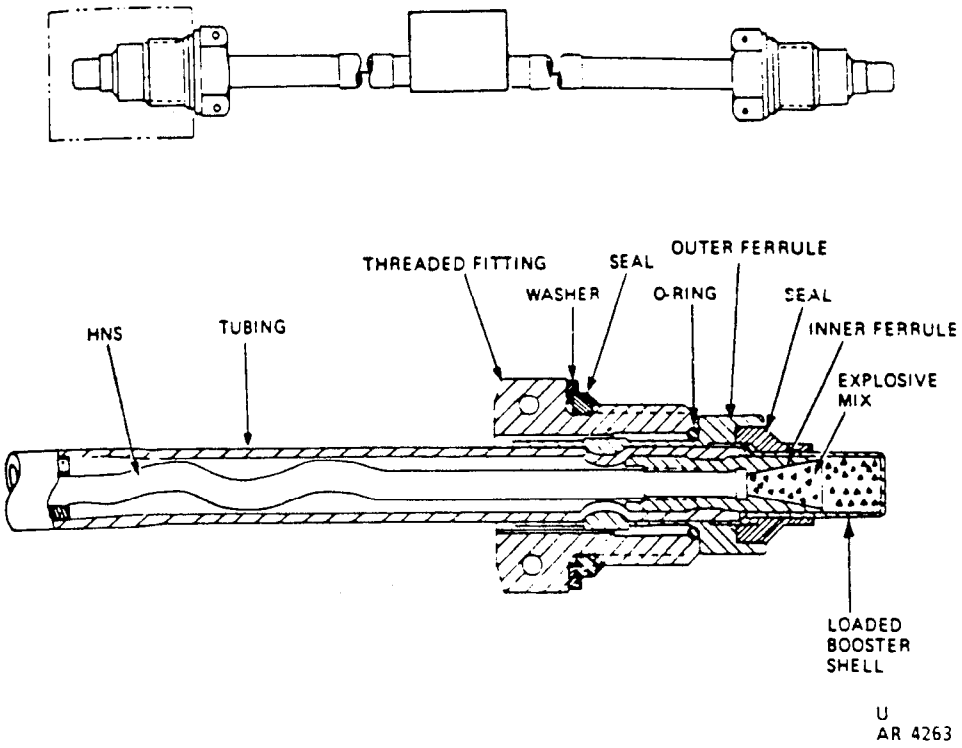
* CAGE Code element
** CAGE Code element

TABLE 5-5. AH-64 HELICOPTER CANOPY SEVERANCE SYSTEM (INSERT CONNECTORS)

*HUGHES PART NO.	NSN 1377-01	**EXPLOSIVE TECHNOLOGY PART NO.	NOMENCLATURE	DRAWING NO.	QTY PER A/C
7-311112017-3	170-5319	21738-3	CONNECTOR, TEE	6261072	5
7-311112017-41	170-5321	21602-2	CONNECTOR, 180 DEGREE UNION	6261071	2
7-311112017-45	170-4493	23869-2	CONNECTOR ELBOW	6261073	1

* CAGE Code element
** CAGE Code element

CORD, DETONATING, ASSEMBLY, SHIELDED, MILD (SMDC): (MS80)



Type Classification:

Standard.
Refer to aircraft subsystem.

Use:

To provide an interconnecting explosive media to the canopy severance assemblies of the crew compartments in the Emergency Canopy Removal System of the AH-64 series helicopter.

Description:

Major components of the SMDC Assembly are threaded fittings, seals, washers, inner and outer ferrules, loaded booster shell, and silver sheathed mild detonating cord.

Functioning:

Upon actuation of the system by arming and firing any one of the three armed/firing initiators, a detonation wave is received via the junction manifold and is boosted by the loaded booster shell. The stimuli from the booster actuates the HNS within the SMDC assembly to the adapter of the canopy severance assemblies.

Tabulated Data:

NSN	1377-01-170-5244
DODIC	MS80
Drawing number	841AS42547
CAGE Code and part number	7-311112017-17 51134-47
Item Weight	
Dimensions	
Diameter	
Length	51.0 in.
Method of actuation	High order detonation wave
Body Material	Silver sheathed, high fine silver 99.95%
Propellant/explosive material:	
Type	HNS, type I, grade A
Weight	0.002028 lb

Performance:

Minimum detonation velocity ---------- 6050 meter/see at -65°F (-54°C)

Packaging:

Inner Container:
- Reference ---------- MIL-B-117
- Type ---------- Bag, sealed
- Dimensions ---------- 6 x 65 in,
- Items per package ---------- 1 ea
- Weight ---------- 0.31 lb

Outer Container:
- Reference ---------- PPP-B-636
- Type ---------- Fiber board box
- Dimensions ---------- 4.85 x 1.77 x 0.90 ft
- Weight ---------- 20.0 lb
- Cube ---------- 7.73 cu ft

Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65°F (-54°C)

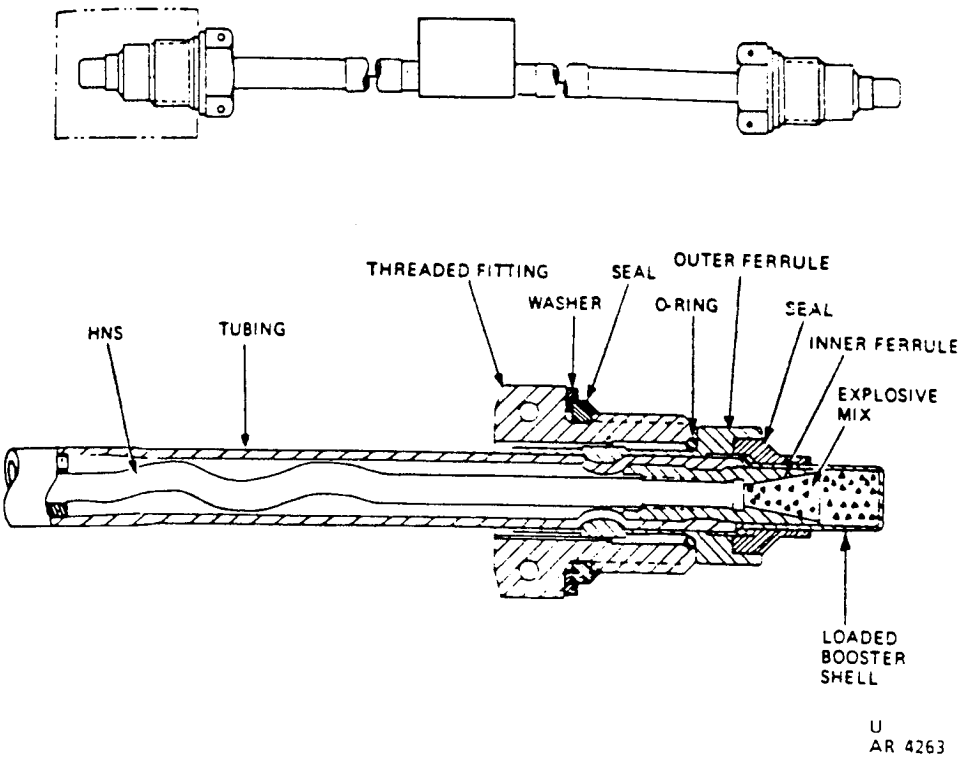
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility group ---------- S
DOT shipping class ---------- C
DOT designation ---------- CLASS C EXPLOSIVE, HANDLE CAREFULLY, KEEP AWAY FROM FIRE,

References:

TM 9-1377-200-20&P
TM 55-1520-238-23
TB 9-1300-385, App B

CORD, DETONATING, ASSEMBLY, SHIELDED, MILD (SMDC): (MS81)



Type Classification:

Standard.
Refer to aircraft subsystem.

Use:

To provide an interconnecting explosive media to the canopy severance assemblies of the crew compartments in the Emergency Canopy Removal System of the AH-64 series helicopter.

Description:

Major components of the SMDC Assembly are threaded fittings, seals, washers, inner and outer ferrules, loaded booster shell, and silver sheathed mild detonating cord.

Functioning:

Upon actuation of the system by arming and firing any one of the three armed/firing initiators, a detonation wave is received via the junction manifold and is boosted by the loaded booster shell. The stimuli from the booster actu-

Tabulated Data:

NSN	1377-01-170-5245
DODIC	MS81
Drawing number	841AS425-53
CAGE Code and part number	7-311112017-15 51134-53
Item Weight	
Dimensions	
Diameter	
Length	
Method of actuation	High order detonation wave
Body Material	Silver sheathed, high fine silver 99.95%
Propellant/explosive material:	
Type	HNS, type I, grade A
Weight	0.000529 lb

Performance:

Minimum detonation velocity ---------- 6050 meter/see at -65°F (-54°C)

Packaging:

Inner Container:
- Reference ---------- MIL-B-117
- Type ---------- Bag, sealed
- Dimensions ---------- 6 x 6 in,
- Items per package ---------- 1 ea
- Weight ---------- 0.04 lb

Outer Container:
- Reference ---------- PPP-B-636
- Type ---------- Fiber board box
- Dimensions ---------- 0.9 x 0.65x 0.65 in,
- Weight ---------- 3.0 lb
- Cube ---------- 0.38 cu ft

Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65° F (-54°C)

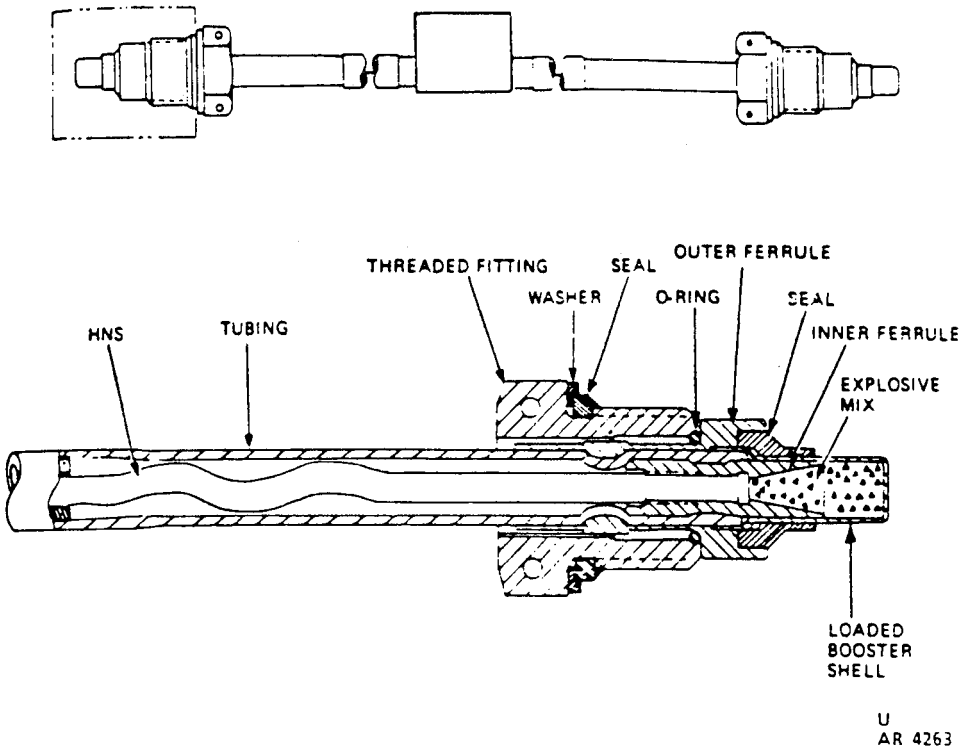
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility group ---------- S
DOT shipping class ---------- C
DOT designation ---------- CLASS C EXPLOSIVE. HANDLE CAREFULLY, KEEP AWAY FROM FIRE,

References:

TM 9-1377-200-20&P
TM 55-1520-238-23
TB 9-1300-385, App B.

CORD, DETONATING, ASSEMBLY, SHIELDED, MILD (SMDC): (MS82)



Type Classification:

Standard,
Refer to aircraft subsystem.

Use:

To provide an interconnecting explosive media to the canopy severance assemblies of the crew compartments in the Emergency Canopy Removal System of the AH-64 series helicopter.

Description:

Major components of the SMDC Assembly are threaded fittings, seals, washers, inner and outer ferrules, loaded booster shell, and silver sheathed mild detonating cord.

Functioning:

Upon actuation of the system by arming and firing any one of the three armed/firing initiators, a detonation wave is received via the junction manifold and is boosted by the loaded booster shell, The stimuli from the booster actuates the HNS within the SMDC assembly to the adapter of the canopy severance assemblies,

Tabulated Data:

NSN	1377-01-170-5246
DODIC	MS82
Drawing number	841AS425-51
CAGE Code and part number	7-311112017-13 51134-51
Item Weight	
Dimensions	
Diameter	
Length	29.0
Method of actuation	High order detonation wave
Body Material	Silver sheathed, high fine silver 99.95%
Propellant/explosive material:	
Type	HNS, type I, grade A
Weight	0.001587 lb

Performance:

Minimum detonation
velocity ---------- 6050 meter/see at -65°F (-54°C)

Packaging:

Inner Container:
Reference ---------- MIL-B-117
Type ---------- Bag, sealed
Dimensions ---------- 6 x 45 in.
Items per package ---------- 1 ea
Weight ---------- 0.24 lb

Outer Container:
Reference ---------- PPP-B-636
Type ---------- Fiber board box
Dimensions ---------- 2.98 x 0.98x 0.81 ft
Weight ---------- 15.0 lb
Cube ---------- 2.37 cu ft

Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65° F (-54°C)

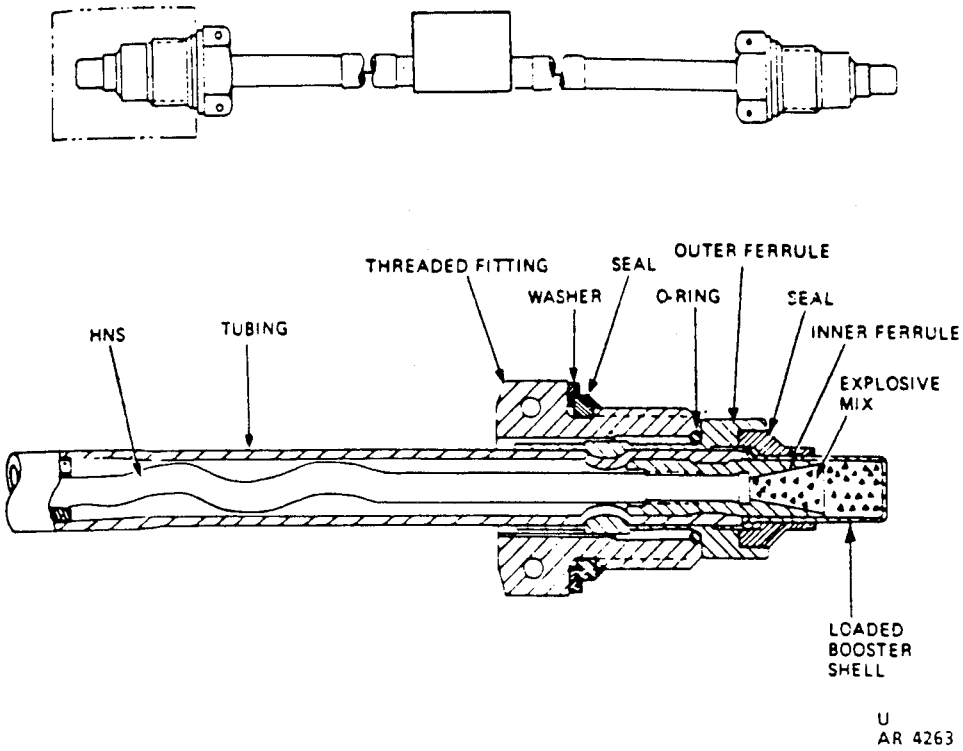
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility
group ---------- S
DOT shipping class ---------- C
DOT designation ---------- CLASS C EXPLOSIVE. HANDLE CAREFULLY. KEEP AWAY FROM FIRE.

References:

TM 9-1377-200-20&P
TM 55-1520-238-23
TB 9-1300-385, App B.

CORD, DETONATING, ASSEMBLY, SHIELDED, MILD (SMDC): (MS83)



Type Classification:

Standard.
Refer to aircraft subsystem.

Use:

To provide an interconnecting explosive media to the canopy severance assemblies of the crew compartments in the Emergency Canopy Removal System of the AH-64 series helicopter,

Description:

Major components of the SMDC Assembly are threaded fittings, seals, washers, inner and outer ferrules, loaded booster shell, and silver sheathed mild detonating cord,

Functioning:

Upon actuation of the system by arming and firing any one of the three armed/firing initiators, a detonation wave is received via the junction manifold and is boosted by the loaded booster shell. The stimuli from the booster actuates the HNS within the SMDC assembly to the adapter of the canopy severance assemblies.

Tabulated Data:

NSN	1377-01-170-5261
DODIC	MS83
Drawing number	841AS425-45
CAGE Code and part number	7-311112017-27 51134-45
Item Weight	
Dimensions	
Diameter	
Length	59.0
Method of actuation	High order detonation wave
Body Material	Silver sheathed, high fine silver 99.95%
Propellant/explosive material:	
Type	HNS, type I, grade A
Weight	0.002601

Performance:

Minimum detonation velocity ---------- 6050 meter/sec at -65°F (-54°C)

Packaging:

Inner Container:
- Reference ---------- MIL-B-117
- Type ---------- Bag, sealed
- Dimensions ---------- 6 x 80 in,
- Items per package ---------- 1 ea
- Weight ---------- 0.43 lb

Outer Container:
- Reference ---------- PPP-B-636
- Type ---------- Fiber board box
- Dimensions ---------- 5.48 x 1.65 x 0.65 ft
- Weight ---------- 15.0 lb
- Cube ---------- 5.84 cu ft

Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65°F (-54°C)

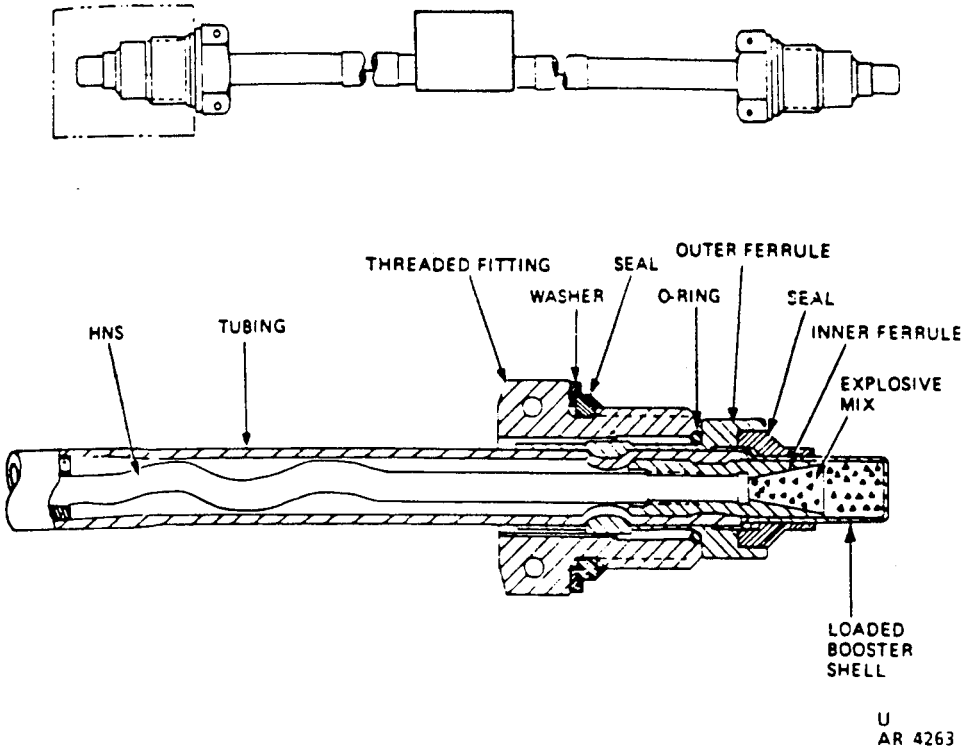
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility group ---------- S
DOT shipping class ---------- C
DOT designation ---------- CLASS C EXPLOSIVE. HANDLE CAREFULLY. KEEP AWAY FROM FIRE.

References:

TM 9-1377-200-20&P
TM 55-1520-238-23
TB 9-1300-385, App B.

CORD, DETONATING, ASSEMBLY, SHIELDED, MILD (SMDC): (MS84)



Type Classification:

Standard.
Refer to aircraft subsystem.

Use:

To provide an interconnecting explosive media to the canopy severance assemblies of the crew compartments in the Emergency Canopy Removal System of the AH-64 series helicopter.

Description:

Major components of the SMDC Assembly are threaded fittings, seals, washers, inner and outer ferrules, loaded booster shell, and silver sheathed mild detonating cord.

Functioning:

Upon actuation of the system by arming and firing any one of the three armed/firing initiators, a detonation wave is received via the junction manifold and is boosted by the loaded booster shell. The stimuli from the booster actuates the HNS within the SMDC assembly to the adapter of the canopy severance assemblies.

Tabulated Data:

NSN	1377-01-170-5262
DODIC	MS84
Drawing number	841AS425-57
CAGE Code and part number	7-311112017-25 51134-57
Item Weight	
Dimensions	
Diameter	
Length	36.0
Method of actuation	High order detonation wave
Body Material	Silver sheathed, high fine silver 99.95%
Propellant/explosive material:	
Type	HNS, type I, grade A
Weight	0.001829 lb

Performance:

Minimum detonation
velocity ---------- 6050 meter/sec at -65°F (-54°C)

Packaging:

Inner Container:
Reference ---------- MIL-B-117
Type ---------- Bag, sealed
Dimensions ---------- 6 x 55 in,
Items per package ---------- 1 ea
Weight ---------- 0.28 lb

Outer Container:
Reference ---------- PPP-B-636
Type ---------- Fiber board box
Dimensions ---------- 3.56 x 1.90x .98 ft
Weight ---------- 17.0 lb
Cube ---------- 6.63 cu ft

Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65° F (-54° C)

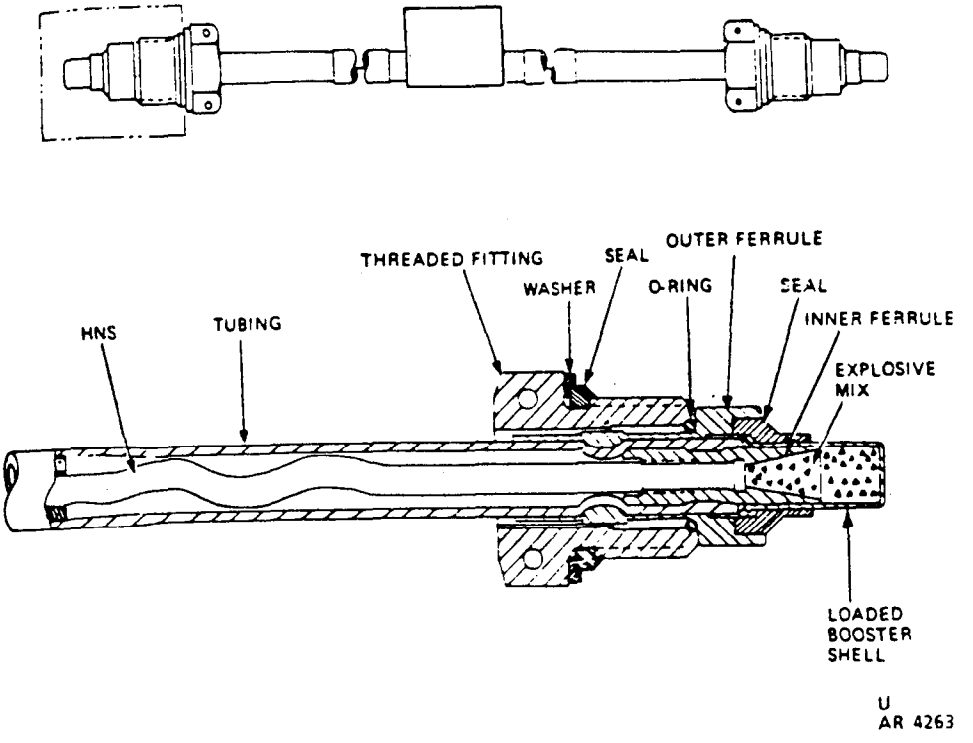
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility
group ---------- S
DOT shipping class ---------- C
DOT designation ---------- CLASS C EXPLOSIVE, HANDLE CAREFULLY. KEEP AWAY FROM FIRE.

References:

TM 9-1377-200-20&P
TM 55-1520-238-23
TB 9-1300-385, App B.

CORD, DETONATING, ASSEMBLY, SHIELDED, MILD (SMDC): (MS85)



Type Classification:

Standard.
Refer to aircraft subsystem.

Use:

To provide an interconnecting explosive media to the canopy severance assemblies of the crew compartments in the Emergent Canopy Removal System of the AH-64 series helicopter.

Description:

Major components of the SMDC Assembly are threaded fittings, seals, washers, inner and outer ferrules, loaded booster shell, and silver sheathed mild detonating cord.

Functioning:

Upon actuation of the system by arming and firing any one of the three armed/firing initiators, a detonation wave is received via the junction manifold and is boosted by the loaded booster shell. The stimuli from the booster actuates the HNS within the SMDC assembly to the adapter of the canopy severance assemblies.

Tabulated Data:

NSN	1377-01-170-5263
DODIC	MS85
Drawing number	841AS425-55
CAGE Code and part number	7-311112017-23 51134-55
Item Weight	
Dimensions	
Diameter	
Length	9.0
Method of actuation	High order detonation wave
Body Material	Silver sheathed, high fine silver 99.95%
Propellant/explosive material:	
Type	HNS, type I, grade A
Weight	0.000816 lb

Performance:

Minimum detonation
velocity ---------- 6050 meter/see at -65°F (-54°C)

Packaging:

Inner Container:
Reference ---------- MIL-B-117
Type ---------- Bag, sealed
Dimensions ---------- 6 x 20 in.
Items per package ---------- 1 ea
Weight ---------- 0.10 lb

Outer Container:
Reference ---------- PPP-B-636
Type ---------- Fiber board box
Dimensions ---------- 1.31 x 0.90x 0.81 ft
Weight ---------- 9.0 lb
Cube ---------- 0.96 cu ft

Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65°F (-54°C

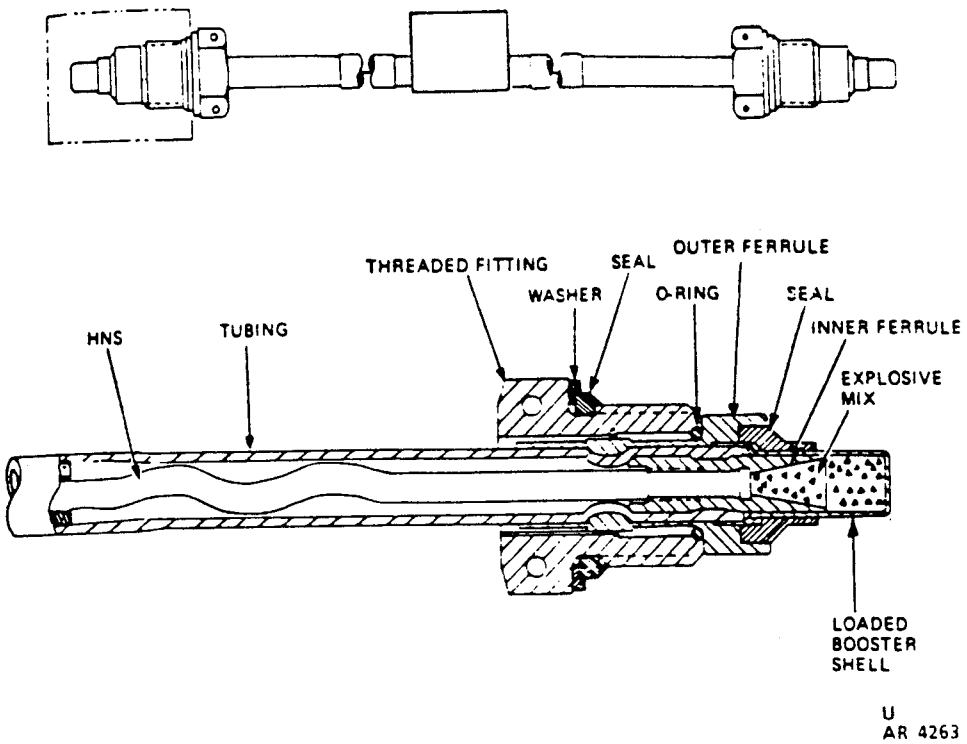
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility
group ---------- S
DOT shipping class ---------- C
DOT designation ---------- CLASS C EXPLOSIVE. HANDLE CAREFULLY. KEEP AWAY FROM FIRE.

References:

TM 9-1377-200-20&P
TM 55-1520-238-23
TB 9-1300-385, App B.

CORD, DETONATING, ASSEMBLY, SHIELDED, MILD (SMDC): (MS86)



Type Classification:

Standard.
Refer to aircraft subsystem.

Use:

To provide an interconnecting explosive media to the canopy severance assemblies of the crew compartments in the Emergency Canopy Removal System of the AH-64 series helicopter.

Description:

Major components of the SMDC Assembly are threaded fittings, seals, washers, inner and outer ferrules, loaded booster shell, and silver sheathed mild detonating cord.

Functioning:

Upon actuation of the system by arming and firing any one of the three armed/firing initiators, a detonation wave is received via the junction manifold and is boosted by the loaded booster shell. The stimuli from the booster actuates the HNS within the SMDC assembly to the adapter of the canopy severance assemblies.

Tabulated Data:

NSN	1377~01-170-5264
DODIC	MS86
Drawing number	841AS425-23
CAGE Code and part number	7-311112017-21 51134-23
Item Weight	
Dimensions	
Diameter	
Length	4.0
Method of actuation	High order detonation wave
Body Material	Silver sheathed, high fine silver 99.95%
Propellant/explosive material:	
Type	HNS, type I, grade A
Weight	0.000529 lb

Performance:

Minimum detonation velocity ---------- 6050 meter/sec at -65°F (-54°C)

Packaging:

Inner Container:
- Reference ---------- MIL-B-117
- Type ---------- Bag, sealed
- Dimensions ---------- 6 x 8 in.
- Items per package ---------- 1 ea
- Weight ---------- 0.07 lb

Outer Container:
- Reference ---------- PPP-B-636
- Type ---------- Fiber board box
- Dimensions ---------- 0.90 x 0.65 x 0.65 ft
- Weight ---------- 3.0 lb
- Cube ---------- 0.38 cu ft

Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65°F (-54°C)

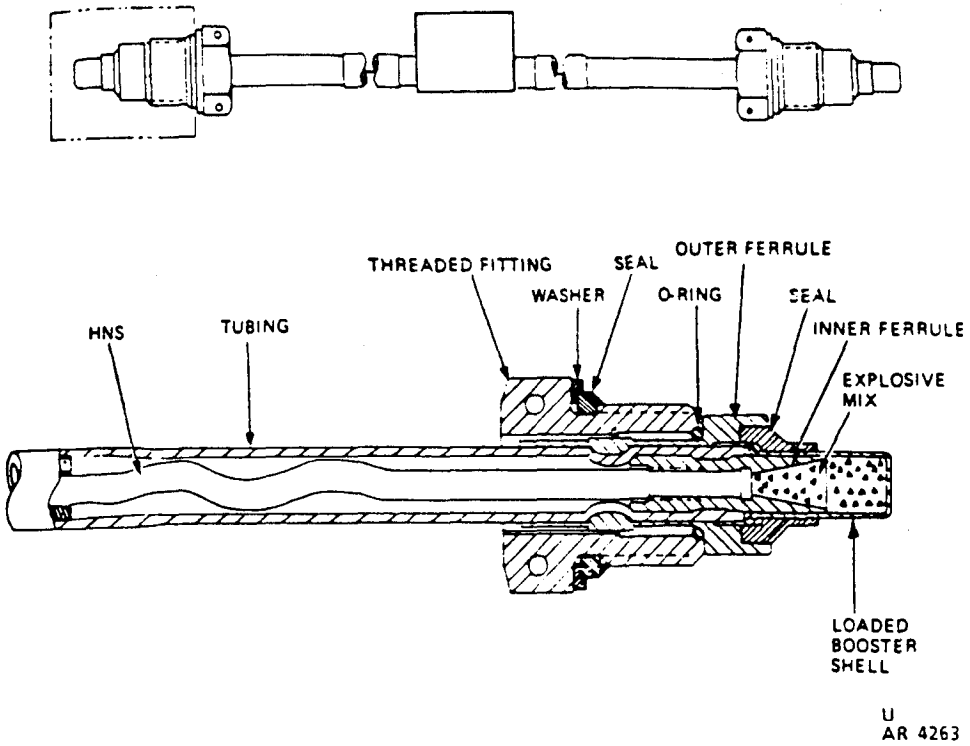
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility group ---------- S
DOT shipping class ---------- C
DOT designation ---------- CLASS C EXPLOSIVE. HANDLE CAREFULLY. KEEP AWAY FROM FIRE.

References:

TM 9-1377-200-20&P
TM 55-1520-238-23
TB 9-1300-385, App B.

CORD, DETONATING, ASSEMBLY, SHIELDED, MILD (SMDC): (MS87)



Type Classification:

Standard.
Refer to aircraft subsystem.

Use:

To provide an interconnecting explosive media to the canopy severance assemblies of the crew compartments in the Emergency Canopy Removal System of the AH-64 series helicopter.

Description:

Major components of the SMDC Assembly are threaded fittings, seals, washers, inner and outer ferrules, loaded booster shell, and silver sheathed mild detonating cord.

Functioning:

Upon actuation of the system by arming and firing any one of the three armed/firing initiators, a detonation wave is received via the junction manifold and is boosted by the loaded booster shell, The stimuli from the booster actuates the HNS within the SMDC assembly to the adapter of the canopy severance assemblies.

Tabulated Data:

NSN	1377-01-170-5265
DODIC	MS87
Drawing number	841AS425-49
CAGE Code and part number	7-311112017-19 51134-49
Item Weight	
Dimensions	
Diameter	
Length	8.0
Method of actuation	High order detonation wave
Body Material	Silver sheathed, high fine silver 99.95%
Propellant/explosive material:	
Type	HNS, type I, grade A
Weight	0.000772 lb

Performance:

Minimum detonation velocity ---------- 6050 meter/see at -65°F (-54°C)

Packaging:

Inner Container:
- Reference ---------- MIL-B-117
- Type ---------- Bag, sealed
- Dimensions ---------- 6 x 12 in.
- Items per package ---------- 1 ea
- Weight ---------- 0.09 lb

Outer Container:
- Reference ---------- PPP-B-636
- Type ---------- Fiber board box
- Dimensions ---------- 1.23 x 0.04x 0.90 ft
- Weight ---------- 10.0 lb
- Cube ---------- 1.04 cu ft

Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65°F (-54°C)

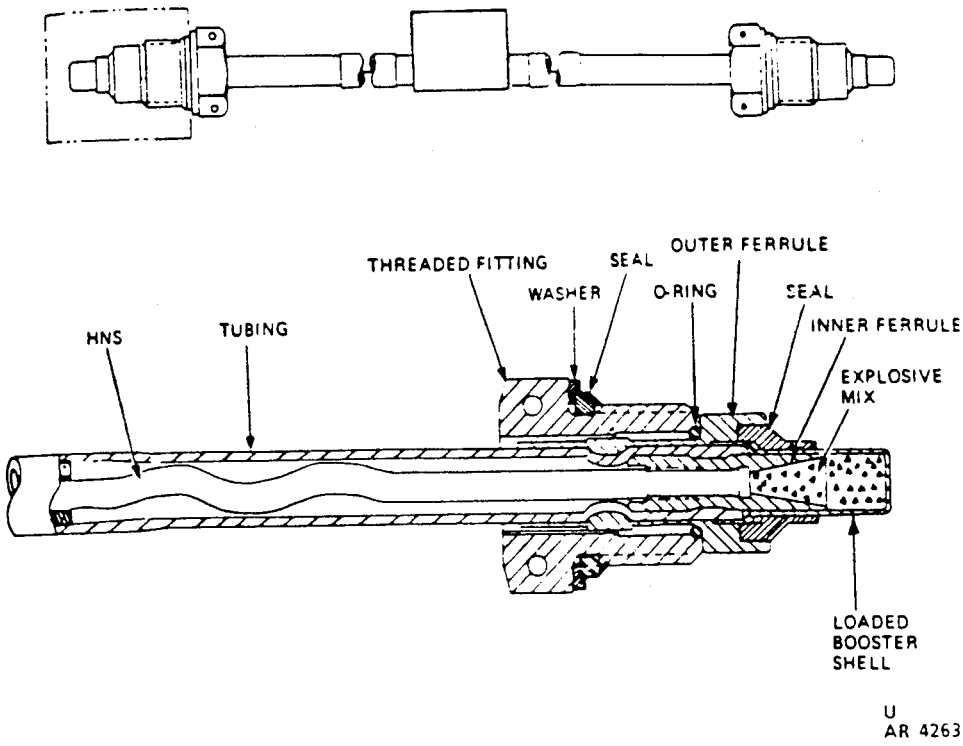
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility group ---------- S
DOT shipping class ---------- C
DOT designation ---------- CLASS C EXPLOSIVE, HANDLE CAREFULLY. KEEP AWAY FROM FIRE.

References:

TM 9-1377-200-20&P
TM 55-1520-238-23
TB 9-1300-385, App B.

CORD, DETONATING, ASSEMBLY, SHIELDED, MILD (SMDC): (MS88)



Type Classification:

Standard.
Refer to aircraft subsystem.

Use:

To provide an interconnecting explosive media to the canopy severance assemblies of the crew compartments in the Emergency Canopy Removal System of the AH-64 series helicopter.

Description:

Major components of the SMDC Assembly are threaded fittings, seals, washers, inner and outer ferrules, loaded booster shell, and silver sheathed mild detonating cord.

Functioning:

Upon actuation of the system by arming and firing any one of the three armed/firing initiators, a detonation wave is received via the junction manifold and is boosted by the loaded booster shell. The stimuli from the booster actuates the HNS within the SMDC assembly to the adapter of the canopy severance assemblies.

Tabulated Data:

NSN	1377-01-186-9898
DODIC	MS88
Drawing number	841AS425-35
CAGE Code and part number	7-311112017-29 51134-35
Item Weight	
Dimensions	
Diameter	
Length	3.0
Method of actuation	High order detonation wave
Body Material	Silver sheathed, high fine silver 99.95%
Propellant/explosive material:	
Type	HNS, type I, grade A
Weight	0.000506 lb

Performance:

Minimum detonation velocity ---------- 6050 meter/see at -65°F (-54°C)

Packaging:

Inner Container:
- Reference ---------- MIL-B-117
- Type ---------- Bag, sealed
- Dimensions ---------- 6 x 8 in.
- Items per package ---------- 1 ea
- Weight ---------- 0.04 lb

Outer Container:
- Reference ---------- PPP-B-636
- Type ---------- Fiber board box
- Dimensions ---------- 0.90 x 0.65 x 0.65 ft
- Weight ---------- 3.0 lb
- Cube ---------- 0.38 cu ft

Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65°F (-54°C)

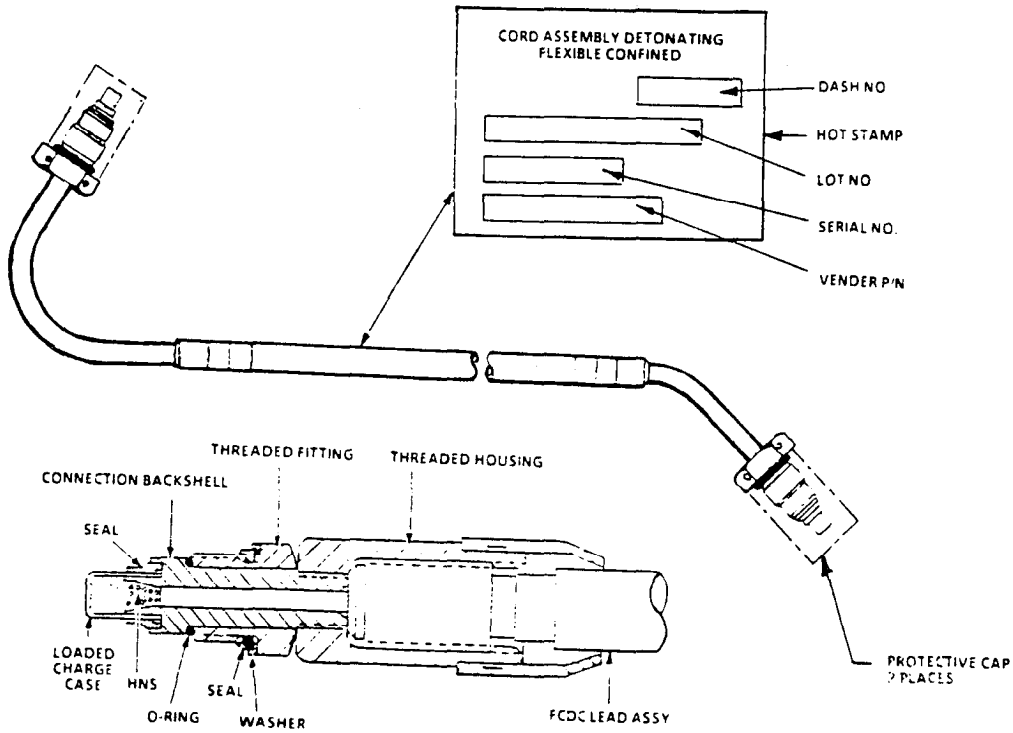
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility group ---------- S
DOT shipping class ---------- C
DOT designation ---------- CLASS C EXPLOSIVE. HANDLE CAREFULLY. KEEP AWAY FROM FIRE.

References:

TM 9-1377-200-20&P
TM 55-1520-238-23
TM 9-1300-385, App B.

CORD, ASSEMBLY, DETONATING, FLEXIBLE CONFINED (FCDC): (MS89)



U
AR 4287

Type Classification:

Refer to aircraft subsystem.

Use:

To provide an interconnecting explosive media to the canopy severance assemblies of the crew compartment doors and windows,

Description:

Major components of the flexible confined detonating cord (FCDC) are housing, threaded fittings, seals, charge case, Hexanitrostibene (HNS), lead sheathed assembly

Functioning:

When the armed/firing initiators are actuated, the FCDC lines receive a detonating stimulus via a junction manifold and transmits it to the canopy severance assemblies in the crew compartments.

Tabulated Data:

NSN	1377-01-170-5260
DODIC	MS89
Drawing number	6260906-5
CAGE Code and part number	7-311112017-43 51135-35
Item Weight	
Dimensions	
Diameter	
Length	9.45 in.
Method of actuation	High order detonation wave
Body Material	Lead 6% antimony alloy sheathed
Propellant/explosive material:	
Type	HNS, type I, grade B
Weight	0.003024 lb

Performance:

When initiated, the energy output of the FCDC shall be substantial enought to cause 0.020 inch minimum diametrical swelling of the witness cap threaded onto the remote end of the FCDC assembly.

Packaging:

Inner Container:
- Reference ---------- MIL-B-117
- Type ---------- Bag, sealed
- Dimensions ---------- 6 x 12 in.
- Items per package ---------- 1 ea
- Weight ---------- 0.12 lb

Outer Container:
- Reference ---------- PPP-B-1672
- Type ---------- Fiber board box
- Dimensions ---------- 1.0 x .66x .21 ft
- Weight ---------- 2.0 lb
- Cube ---------- 0.3 cu ft

Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65°F (-54°C)

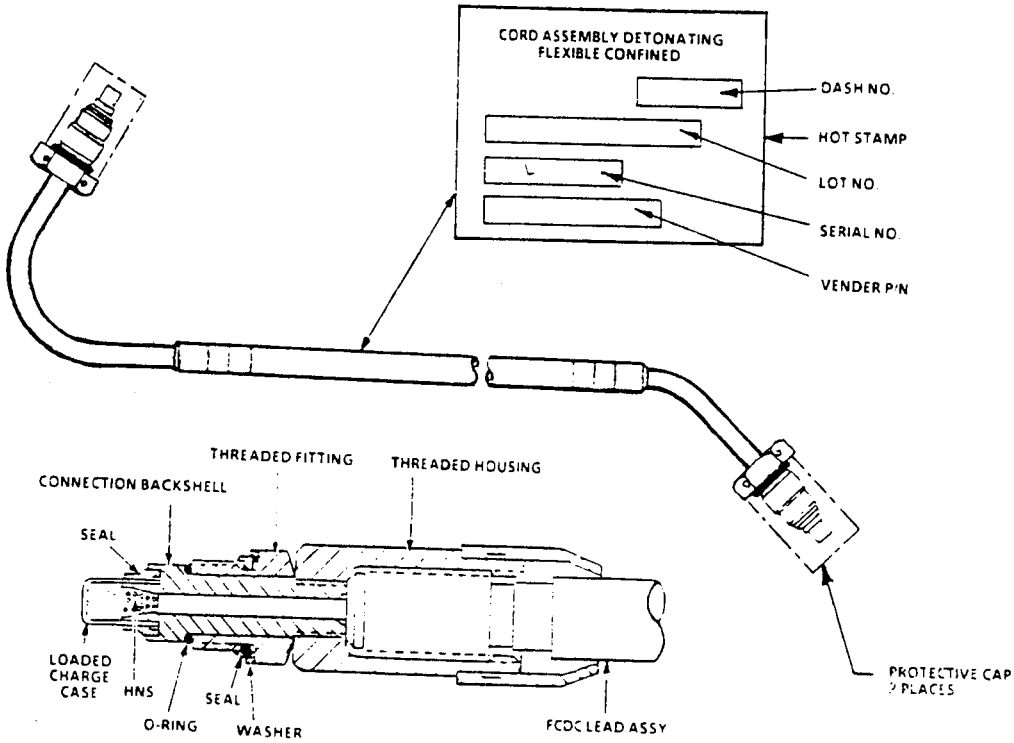
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility group ---------- S
DOT shipping class ---------- C
DOT designation ---------- CLASS C EXPLOSIVE. HANDLE CAREFULLY. KEEP AWAY FROM FIRE.

References:

TM 9-1377-200-20&P
TM 55-1520-238-23
TB 9-1300-385, App B.

CORD, ASSEMBLY, DETONATING, FLEXIBLE CONFINED (FCDC): (MS90)



U
AR 428

Type Classification:

Refer to aircraft subsystem.

Use:

To provide an interconnecting explosive media to the canopy severance assemblies of the crew compartment doors and windows,

Description:

Major components of the flexible confined detonating cord (FCDC) are housing, threaded fittings, seals, charge case, Hexanitrostilbene (HNS), lead sheathed assembly.

Functioning:

When the armed/firing initiators are actuated, the FCDC lines receive a detonating stimulus via a junction manifold and transmits it to the canopy severance assemblies in the crew compartments.

Tabulated Data:

NSN	1377-01-186-9899
DODIC	MS90
Drawing number	6260906-1
CAGE Code and part number	7-311112017-31 51135-1
Item Weight	
Dimensions	
Diameter	
Length	15.0
Method of actuation	High order detonation wave
Body Material	Lead 6% antimony alloy sheathed
Propellant/explosive material:	
Type	HNS, type I, grade B
Weight	0.004800 lb

Performance:

When initiated, the energy output of the FCDC shall be substantial enough to cause 0.020 inch minimum diametrical swelling of the witness cap threaded onto the remote end of the FCDC assembly.

Packaging:

Inner Container:
- Reference ---------- MIL-B-117
- Type ---------- Bag, sealed
- Dimensions ---------- 16 x 12 in.
- Items per package ---------- 1 ea
- Weight ---------- 0.14 lb

Outer Container:
- Reference ---------- PPP-B-1672
- Type ---------- Fiber board box
- Dimensions ---------- 1.5 x 1.0x 0.21 ft
- Weight ---------- 2.0 lb
- Cube ---------- 0.4 cu ft

Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65° F (-54°C)

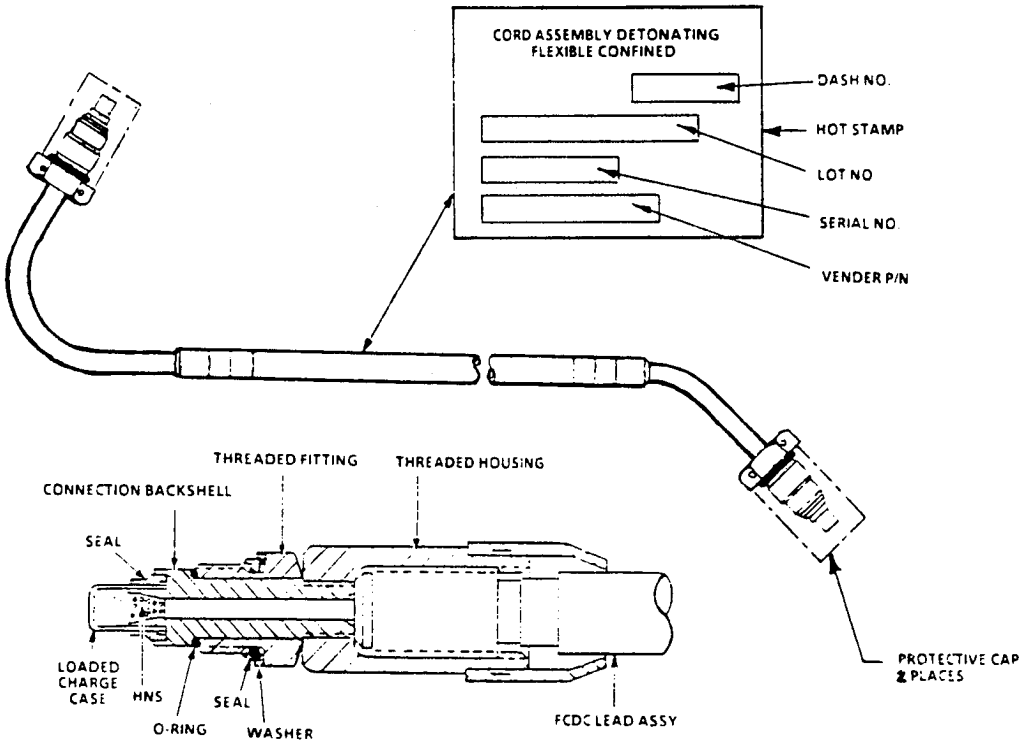
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility group ---------- S
DOT shipping class ---------- C
DOT designation ---------- CLASS C EXPLOSIVE, HANDLE CAREFULLY. KEEP AWAY FROM FIRE.

References:

TM 9-1377-200-20&P
TM 55-1520-238-23
TB 9-1300-385, App B.

CORD, ASSEMBLY, DETONATING, FLEXIBLE CONFINED (FCDC): (MS91)



Type Classification:

Refer to aircraft subsystem.

Use:

To provide an interconnecting explosive media to the canopy severance assemblies of the crew compartment doors and windows.

Description:

Major components of the flexible confined detonating cord (FCDC) are housing, threaded fittings, seals, charge case, Hexanitrostilbene (HNS), lead sheathed assembly.

Functioning:

When the armed/firing initiators are actuated, the FCDC lines receive a detonating stimulus via a junction manifold and transmits it to the canopy severance assemblies in the crew compartments.

Tabulated Data:

NSN	1377-01-186-9900
DODIC	MS91
Drawing number	6260906-2
CAGE Code and part number	7-311112017-33 51135-2
Item Weight	
Dimensions	
Diameter	
Length	22.0
Method of actuation	High order detonation wave
Body Material	Lead 6% antimony alloy sheathed
Propellant/explosive material:	
Type	HNS, type I, grade B
Weight	0.007040 lb

Performance:

When initiated, the energy output of the FCDC shall be substantial enough to cause 0.020 inch minimum diametrical swelling of the witness cap threaded onto the remote end of the FCDC assembly.

Packaging:

Inner Container:
- Reference ---------- MIL-B-117
- Type ---------- Bag, sealed
- Dimensions ---------- 24x 12 in.
- Items per package ---------- 1 ea
- Weight ---------- 0.18 lb

Outer Container:
- Reference ---------- PPP-B-1672
- Type ---------- Fiber board box
- Dimensions ---------- 1.1 x 1,1 x 0.30 ft
- Weight ---------- 3.0 lb
- Cube ---------- 0.5 cu ft

Temperature Limits:

Upper ---------- +200°F (+93° C)
Lower ---------- -65°F (-54°C)

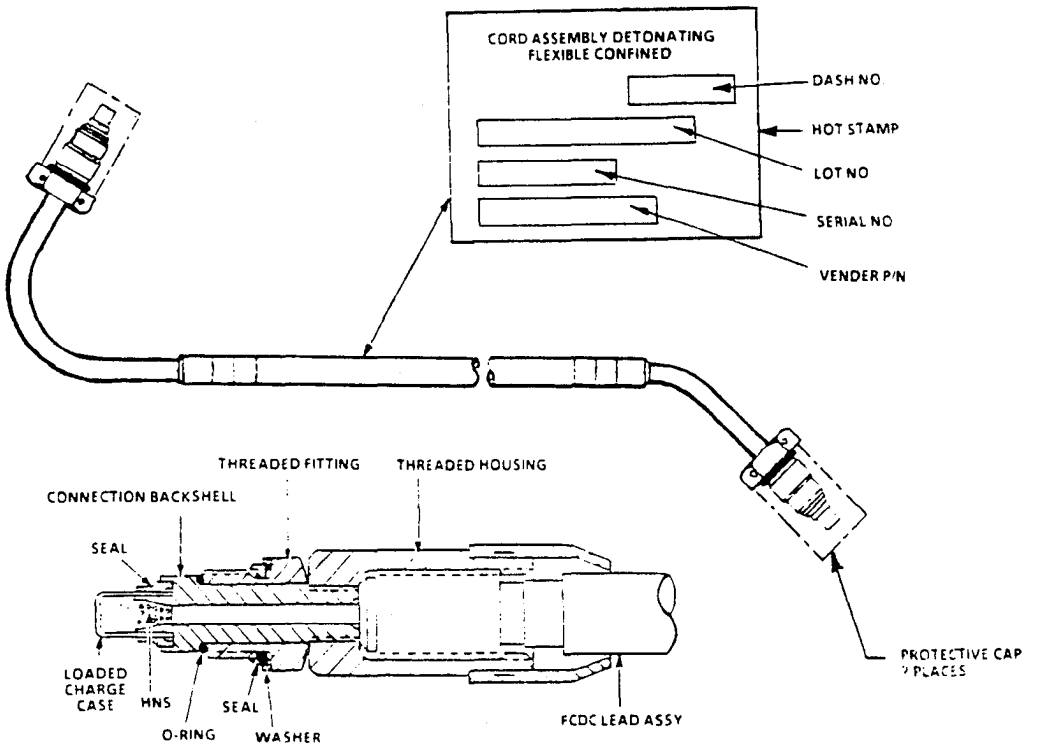
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility group ---------- S
DOT shipping class ---------- C
DOT designation ---------- CLASS C EXPLOSIVE. HANDLE CAREFULLY. KEEP AWAY FROM FIRE.

References:

TM 9-1377-200-20&P
TM 55-1520-238-23
TB 9-1300-385, App B.

CORD, ASSEMBLY, DETONATING, FLEXIBLE CONFINED (FCDC): (MS92)



Type Classification:

Refer to aircraft subsystem.

Use:

To provide an interconnecting explosive media to the canopy severance assemblies of the crew compartment doors and windows.

Description:

Major components of the flexible confined detonating cord (FCDC) are housing, threaded fitting, seals, charge case, Hexanitrostilbene (HNS), lead sheathed assembly.

Functioning:

When the armed/firing initiators are actuated, the FCDC lines receive a detonating stimulus via a junction manifold and transmits it to the canopy severance assemblies in the crew compartments.

Tabulated Data:

NSN	1377-01-186-9901
DODIC	MS92
Drawing number	6260906-7
CAGE Code and part number	7-311112017-35 51135-7
Item Weight	
Dimensions	
Diameter	
Length	15,95
Method of actuation	High order detonation wave
Body Material	Lead 6% antimony alloy sheathed
Propellant/explosive material:	
Type	HNS, type I, grade B
Weight	0.005104 lb

Performance:

When initiated, the energy output of the FCDC shall be substantial enough to cause 0.020 inch minimum diametrical swelling of the witness cap threaded onto the remote end of the FCDC assembly.

Packaging:

Inner Container:
- Reference ---------- MIL.B.117
- Type ---------- Bag, sealed
- Dimensions ---------- 16x 12 in,
- Items per package ---------- 1 ea
- Weight ---------- 0.15 lb

Outer Container:
- Reference ---------- PPP-B-1672
- Type ---------- Fiber board box
- Dimensions ---------- 1.5 x 1.0x 0.21 ft
- Weight ---------- 3.0 lb
- Cube ---------- 0.4 cu ft

Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65°F (-54°C)

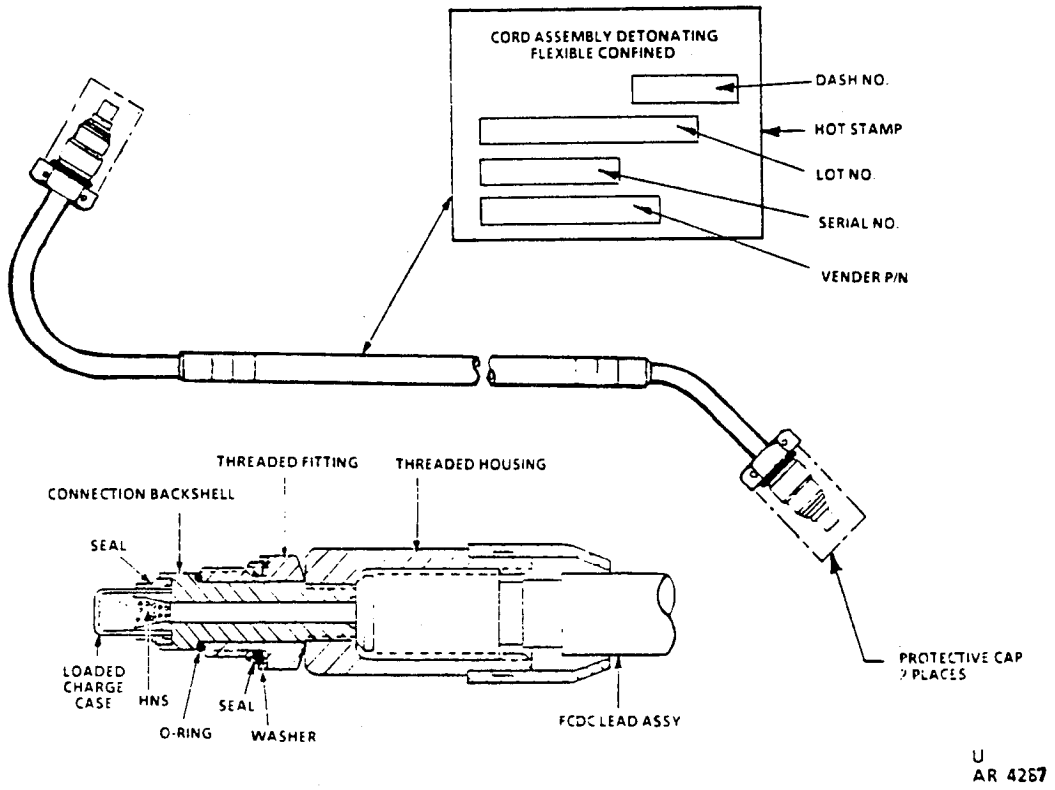
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility group ---------- S
DOT shipping class ---------- C
DOT designation ---------- CLASS C EXPLOSIVE. HANDLE CAREFULLY. KEEP AWAY FROM FIRE.

References:

TM 9-1377-200-20&P
TM 55-1520-238-23
TB 9-1300-385, App B.

CORD, ASSEMBLY, DETONATING, FLEXIBLE CONFINED (FCDC): (MS93)



Type Classification:

Refer to aircraft subsystem.

Use:

To provide an interconnecting explosive media to the canopy severance assemblies of the crew compartment doors and windows.

Description:

Major components of the flexible confined detonating cord (FCDC) are housing, threaded fittings, seals, charge case, Hexamtrostilbene (HNS), lead sheathed assembly.

Functioning:

When the armed/firing initiators are actuated, the FCDC lines receive a detonating stimulus via a junction manifold and transmits it to the canopy severance assemblies in the crew compartments.

Tabulated Data:

NSN	1377-01-186-9902
DODIC	MS93
Drawing number	6260906-4
CAGE Code and part number	7-311112017-37 51135-4
Item Weight	
Dimensions	
Diameter	
Length	15.0
Method of actuation	High order detonation wave
Body Material	Lead 6'% antimony alloy sheathed
Propellant/explosive material:	
Type	HNS, type I, grade B
Weight	0.004800 lb

Performance:

When initiated, the energy output of the FCDC shall be substantial enough to cause 0.020 inch minimum diametrical swelling of the witness cap threaded onto the remote end of the FCDC assembly.

Packaging:

Inner Container:
- Reference ---------- MIL-B-117
- Type ---------- Bag, sealed
- Dimensions ---------- 16x 12 in.
- Items per package ---------- 1 ea
- Weight ---------- 0.14 lb

Outer Container:
- Reference ---------- PPP-B-1672
- Type ---------- Fiber board box
- Dimensions ---------- 1.5 x 1,0x 0.21 ft
- Weight ---------- 3.0 lb
- Cube ---------- 0.3 cu ft

Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65° F (-54°C)

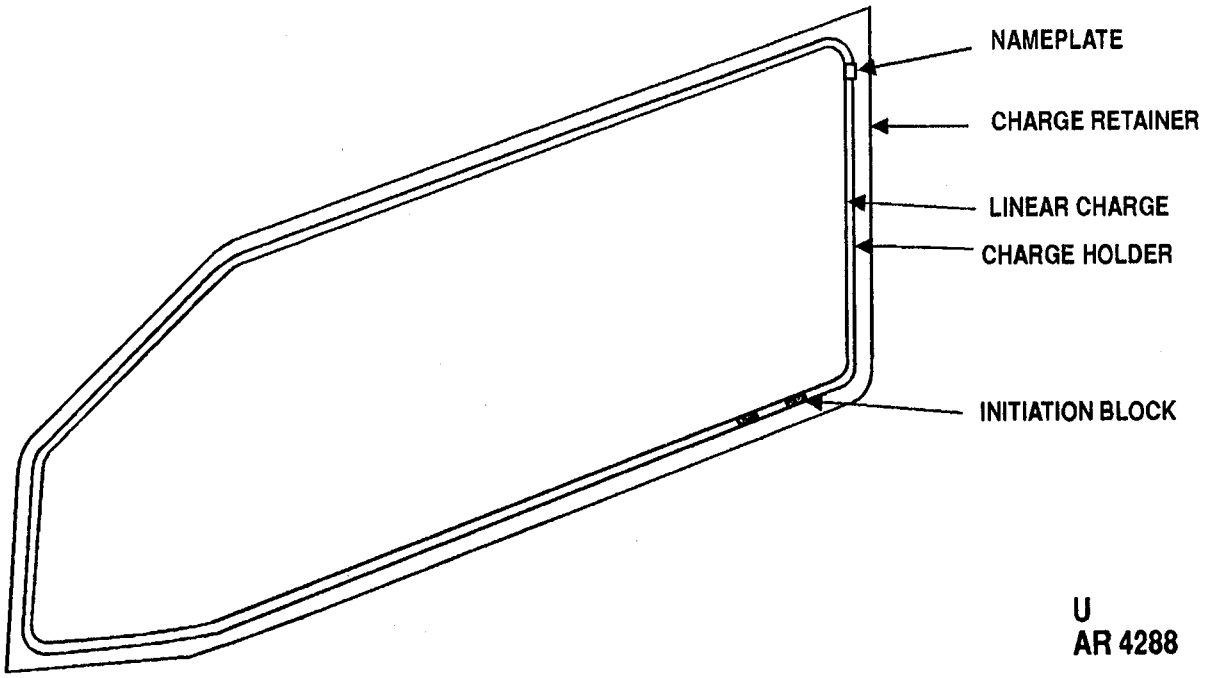
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility group ---------- S
DOT shipping class ---------- C
DOT designation ---------- CLASS C EXPLOSIVE. HANDLE CAREFULLY. KEEP AWAY FROM FIRE.

References:

TM 9-1377-200-20&P
TM 55-1520-238-23
TB 9-1300-385, App B.

CANOPY SEVERANCE ASSEMBLY FORWARD PANEL: (MS94)



Type Classification:

Refer to aircraft subsystem.

Use:

An explosive device used in the AH-64 helicopter emergency canopy severance system to provide quick exit from, or access to the crew compartments of the aircraft in an emergency

Description:

Major components of the canopy severance assembly are charge retainer, charge holder, sleeve booster, initiation block, linear explosive and nameplate.

Functioning:

Upon actuation of the system by any one of the armed/firing initiators, a detonation wave is received via the interconnecting FCDC and SMDC lines to the canopy severance assemblies. The explosive force of the linear explosive charge is outward, thus severing the plastic panels of the crew compartments.

Tabulated Data:

NSN	1377-01-184-6112
DODIC	MS94
Drawing number	6260965-1
CAGE Code and part number	7-311112017-5 51188-1
Item weight	
Dimensions	
Diameter	
Length	
Method of actuation	High order detonation wave
Body Material	Lead 6% antimony alloy sheathed

Propellant/Explosive
Material:
Type ---------- HNS, type II, grade

Weight ---------- 0.000269 lb

Performance:

Minimum detonation
velocity ---------- 6050 meters/sec at -65°F (-54°C)

Packaging:

Inner Container:
Reference ---------- MIL-B-117
Type ---------- Bag, sealed
Dimensions ---------- 85 x 45 m.
Items per package ---------- 1 ea
Weight ---------- 1.83 lb

Outer Container:
Reference ---------- PPP-B-636
Type ---------- Fiberboard box
Dimensions ---------- 6.65 x 2.56x 0.98 ft
Weight ---------- 50.0 lb
Cube ---------- 16.67 cu ft

Temperature Limits:

Upper ---------- +200°F (+93°C
Lower ---------- -65°F (-54°C)

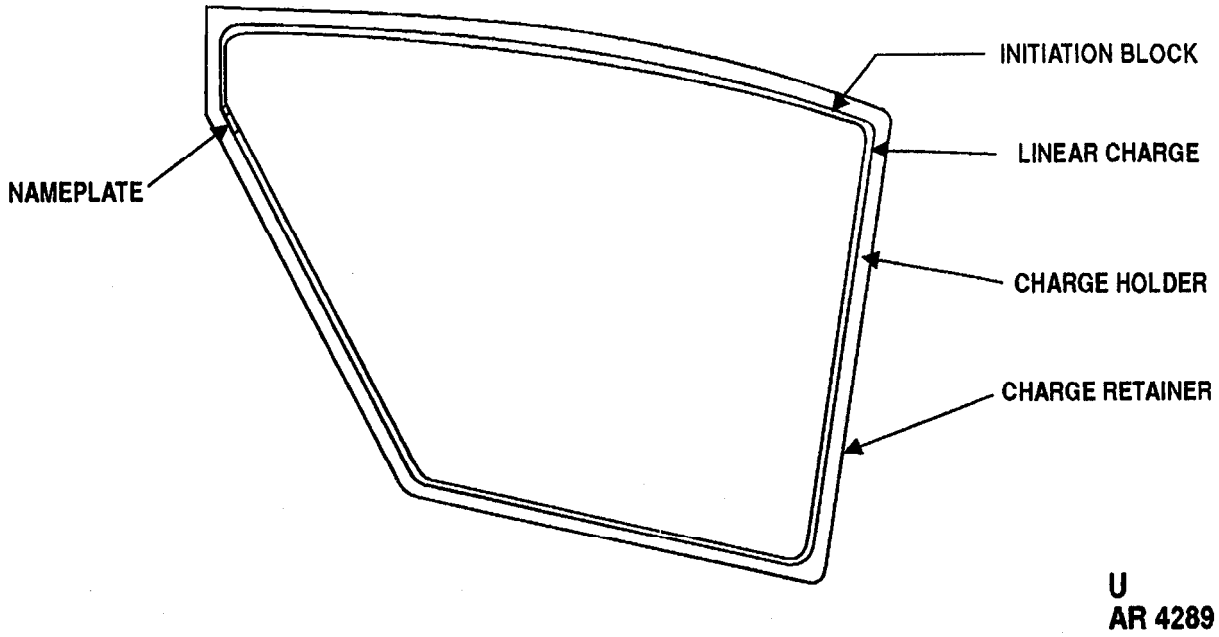
Shipping and Storage Data:

Quantity distance class ------ 1.4
Storage compatibility group ..... S
DOT shipping class ---------- C
DOT designation ---------- CLASS C EXPLOSIVE, HANDLE CAREFULLY, KEEP AWAY FROM FIRE

References:

TM 9-1377-200-20&P
TM 55-1520-238-23
TB 9-1300-385, App B

CANOPY SEVERANCE ASSEMBLY REAR (AFT) PANEL: (MS95)



Type Classification:

Refer to aircraft subsystem.

Use:

An explosive device used in the AH-64 helicopter emergency canopy severance system to provide quick exit from, or access to the crew compartments of the aircraft in an emergency.

Description:

Major components of the canopy severance assembly are charge retainer, charge holder, sleeve booster, initiation block, linear explosive and nameplate.

Functioning:

Upon actuation of the system by any one of the armed/firing initiators, a detonation wave is received via the interconnecting FCDC and SMDC lines to the canopy severance assemblies. The explosive force of the linear explosive charge is outward, thus severing the plastic panels of the crew compartments.

Tabulated Data:

NSN	1377-01-184-6113
DODIC	MS95
Drawing number	6260965-3
CAGE Code and part number	7-311112017-7 51390-1
Item weight	
Dimensions	
Diameter	
Length	
Method of actuation	High order detonation wave
Body Material	Lead 6% antimony alloy sheathed

Propellant/Explosive
Material:
Type ---------- ENS, type II, grade

Weight ---------- 0.004079 lb

Performance:

Minimum detonation
velocity ---------- 6050 meters/see at -65°F (-54°C)

Packaging:

Inner Container:
Reference ---------- MIL-B-117
Type ---------- Bag, sealed
Dimensions ---------- 60 x 45 in.
Items per package ---------- 1 ea
Weight ---------- 1.66 lb

Outer Container:
Reference ---------- PPP-B-636
Type ---------- Fiberboard box
Dimensions ---------- 4.65 x 3.4x 0.94 ft
Weight ---------- 50.0 lb
---------- 14.85 cu ft

Temperature Limits:

Upper ---------- +200°F (+93°C
Lower ---------- -65°F (-54°C)

Shipping and Storage Data:

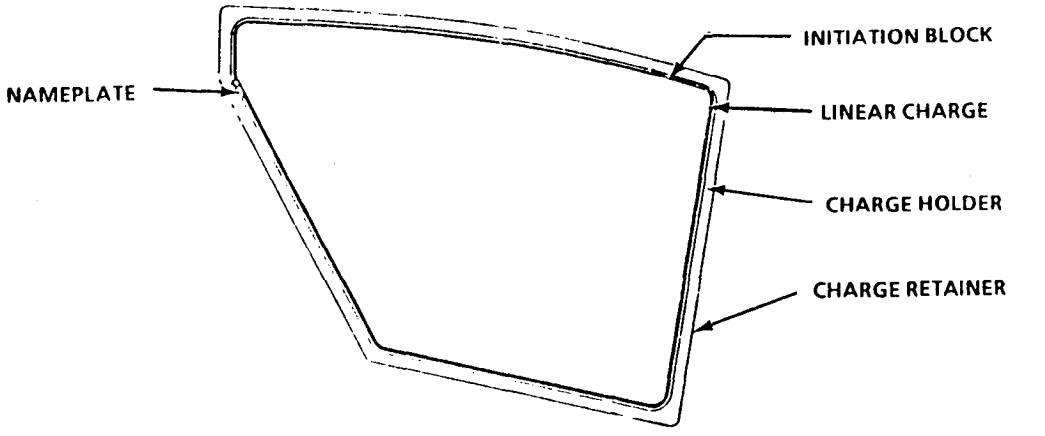
Quantity distance class ------ 1.4
Storage compatibility
group ---------- S
DOT shipping class ---------- C
DOT designation ---------- CLASS C EXPLOSIVE, HANDLE CAREFULLY, KEEP AWAY FROM FIRE

References:

TM 9-1377 -200-20&P
TM 55-1520-238-23
TB 9-1300-385, App B

*U.S. GOVERNMENT PRINTING OFFICE: 1994- 546.043/00706

CANOPY SEVERANCE ASSEMBLY REAR (AFT) PANEL: (MS96)



Type Classification:

Refer to aircraft subsystem.

Use:

An explosive device used in the AH-64 helicopter emergency canopy severance system to provide quick exit from, or access to the crew compartments of the aircraft in an emergency.

Description:

Major components of the canopy severance assembly are: charge retainer, charge holder, sleeve booster, initiation block, linear explosive and nameplate.

Functioning:

Upon actuation of the system by any one of the armed/firing initiators, a detonation wave is received via the interconnecting FCDC and SMDC lines to the canopy severance assemblies, The explosive force of the linear explosive charge is outward, thus severing the plastic panels of the crew compartments.

Tabulated Data:

NSN	1377-01-185-8908
DODIC	MS96
Drawing number	626095-4
CAGE Code and part number	7-311112017-11 51391-1
Item Weight	
Dimensions	
Diameter	
Length	
Method of actuation	High order detonation wave
Body Material	Lead 6% antimony alloy sheathed
Propellant/explosive material:	
Type	HNS, type II grade B
Weight	0.003814 lb

Performance:

Minimum detonation velocity ---------- 6050 meters/sec at -65°F (-54°C)

Packaging:

Inner Container:
- Reference ---------- MIL-B-117
- Type ---------- Bag, sealed
- Dimensions ---------- 60 x 45 in.
- Items per package ---------- 1 ea
- Weight ---------- 1.50 lb

Outer Container:
- Reference ---------- PPP-B-636
- Type ---------- Fiber board box
- Dimensions ---------- 4.35 x 3.27 x .94 ft
- Weight ---------- 50.0 lb
- Cube ---------- 13.4 cu ft

Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65°F (-54°C)

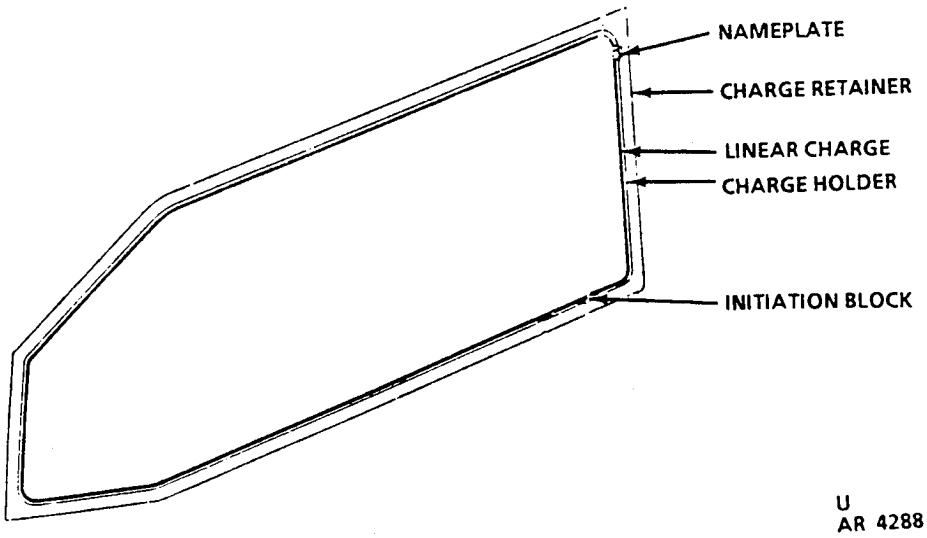
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility group ---------- S
DOT shipping class ---------- C
DOT designation ---------- CLASS C EXPLOSIVE. HANDLE CAREFULLY. KEEP AWAY FROM FIRE.

References:

TM 9-1377-200-20&P
TM 55-1520-238-23
TB 9-1300-385, App B.

CANOPY SEVERANCE ASSEMBLY FORWARD PANEL: (MS97)



Type Classification:

Refer to aircraft subsystem.

Use:

An explosive device used in the AH-64 helicopter emergency canopy severance system to provide quick exit from, or access to the crew compartments of the aircraft in an emergency.

Description:

Major components of the canopy severance assembly are: charge retainer, charge holder, sleeve booster, initiation block, linear explosive and nameplate.

Functioning:

Upon actuation of the system by any one of the armed/firing initiators, a detonation wave is received via the interconnecting FCDC and SMDC lines to the canopy severance assemblies. The explosive force of the linear explosive charge is outward, thus severing the plastic panels of the crew compartments.

Tabulated Data:

NSN	1377-01-187-4477
DODIC	MS97
Drawing number	6260965-2
CAGE Code and part number	7-311112017-9 51389-1
Item Weight	
Dimensions	
Diameter	
Length	
Method of actuation	High order detonation wave
Body Material	Lead 6% antimony alloy sheathed
Propellant/explosive material:	
Type	HNS, type II, grade B
Weight	0.000269 lb

Performance:

Minimum detonation velocity ---------- 6050 meters/sec at -65°F (-54°C)

Packaging:

Inner Container:
- Reference ---------- MIL-B-117
- Type ---------- Bag, sealed
- Dimensions ---------- 80 x 35 in.
- Items per package ---------- 1 ea
- Weight ---------- 1.75 lb

Outer Container:
- Reference ---------- PPP-B-636
- Type ---------- Fiber board box
- Dimensions ---------- 6.19 x 2.48 x .94 ft
- Weight ---------- 50.0 lb
- Cube ---------- 14.4 cu ft

Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65°F (-54°C)

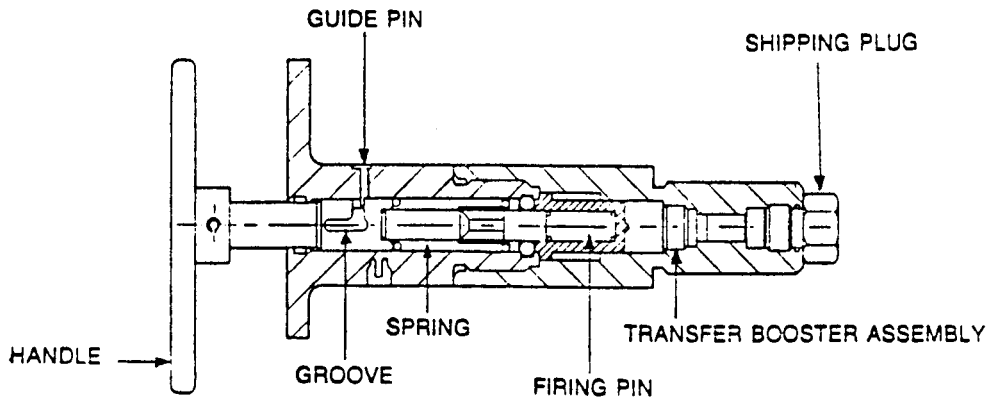
Shipping and Storage Data

Quantity distance class ----- 1.4
Storage compatibility group ---------- S
DOT shipping class ---------- C
DOT designation ---------- CLASS C EXPLOSIVE, HANDLE CAREFULLY. KEEP AWAY FROM FIRE.

References:

TM 9-1377-200-20&P
TM 55-1520-238-23
TB 9-1300-385, App B.

ARMING/FIRING INITIATOR JUA-59: (MT06)



U
AR 4290

Type Classification:

Refer to aircraft subsystem.

Use:

A mechanically actuated detonator-type initiator used to actuate the emergency canopy severance system on the AH-64 helicopter.

Description:

The arming/firing initiator is a mechanically actuated percussion-type detonator consisting of a body handle assembly, firing pin, M42 primer, a demolition transfer charge assembly, seals and a fitting port.

Functioning:

The initiator handles are turned and pushed to actuate the initiators. The handles can be rotated in either direction 90° to arm the initiator. As the handle is pushed, the spring behind the firing pin is compressed. At 0.3 in. (0.76 cm) fo travel, lock balls release the firing pin, and it strikes the primer. The primer ignites the lead azide transfer charge, which in turn ignites the main charge of HNS.

Tabulated Data:

NSN ---------- 1377-01-269-6496
DODIC ---------- MT06
Drawing number ---------- 6260964
CAGE Code and
part number ---------- 17610/51207-3
Item Weight ----------
Dimensions ---------- 1.875 in.
Diameter ---------- 5.4 in.
Length ----------
Method of actuation --------- Mechanical
Body Material ---------- Steel
Propellant/explosive material:
Type ---------- HNS, type I, grade A
Weight ---------- 0.000269 lb

Performance:

Minimum detonation velocity ---------- 6050 meters/sec at -65°F (-54°C)

Packaging:

Inner Container:
- Reference ---------- MIL-B-117
- Type ---------- Bag, sealed
- Dimensions ---------- 8 x 12 in.
- Items per package ---------- 1 ea
- Weight ---------- 0.443 lb

Outer Container:
- Reference ---------- PPP-B-1672
- Type ---------- Fiber board box
- Dimensions ---------- 1.5 x 1.0 x 0.3 ft
- Weight ---------- 3.0 lb
- Cube ---------- 0.5 cu ft

Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65°F (-54°C)

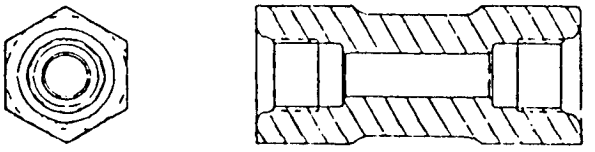
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility group ---------- S
DOT shipping class ---------- C
DOT designation ---------- CLASS C EXPLOSIVE. HANDLE CAREFULLY. KEEP AWAY FROM FIRE.

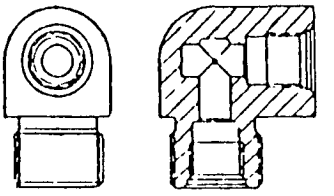
References:

TM 9-1377-200-20&P
TM 55-1520-238-23
TB 9-1300-385, App B.

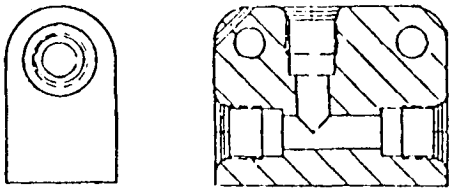
INERT CONNECTORS



CONNECTOR, IN-LINE, UNION



CONNECTOR, ELBOW



CONNECTOR, TEE

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AR 4352

Type Classification:

Use:

Used in the AH-64 series helicopter canopy release system as detonation transfer media between between system assemblies, and as a means to secure the assemblies to the aircraft structure.

Description:

Three types of inert connectors are used as detonation transfers in the system: the tee, the elbow, and the union.

Tabulated Data:

CONNECTOR, IN-LINE, UNION

NSN	1377-01-170-5321
Drawing no.	6261071
CAGE Code and part no.	7-311112017-41 21601-2
Quantity per aircraft	2

CONNECTOR, ELBOW

NSN	1377-01-170-5319
Drawing no.	6261073
CAGE code and part no.	7-311112017-45 23869-2
Quantity per Aircraft	1

CONNECTOR, TEE

NSN	1377-01-170-5319
Drawing no.	6261072
CAGE Code and part no.	7-311112017-3 21738-3
Quantity per aircraft	5

Service Life:

INERT - Item is assembly of metal part only. Replacement is determined by "On Condition" (OC), after inspection for visible wear or defect.

CHAPTER 6

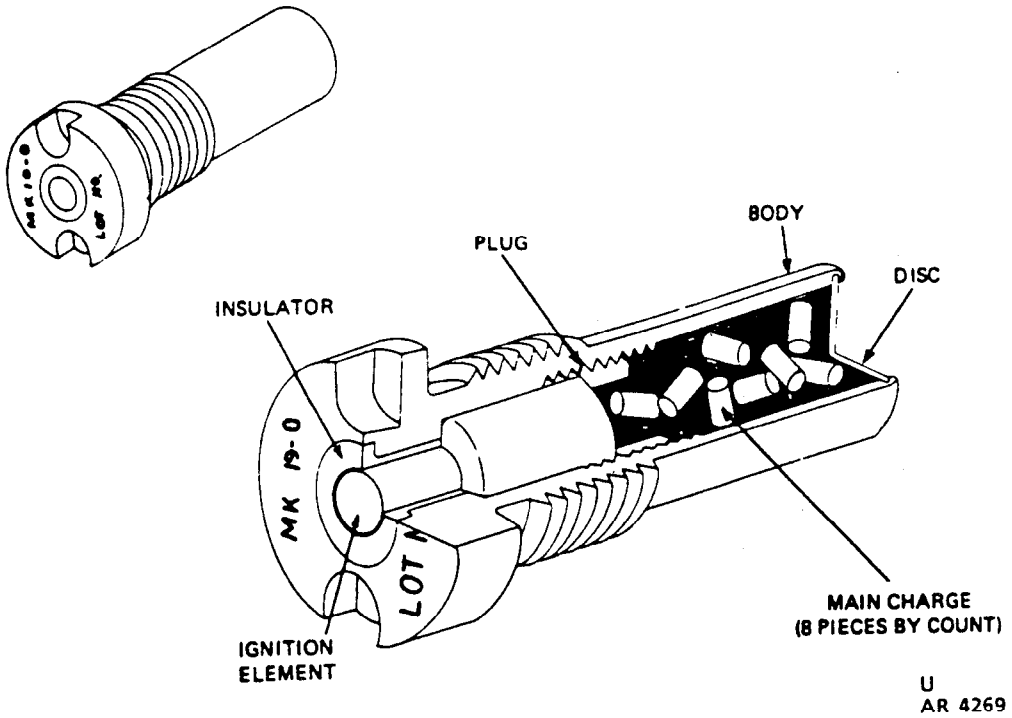
IMPULSE CARTRIDGES

6-1 General

a. The Impulse Cartridges described in this chapter have a wide range of application, characteristics, and physical appearances. These cartridges shall be used only for their designated application.

b. The Impulse Cartridges listed in this chapter are grouped by their method of initiation; (1) electrical and (2) percussion.

CARTRIDGE, IMPULSE, MARK 19 Mod 0: (MO12)



Type Classification

Refer to Aircraft Subsystem.

Use:

Used as the power source in stores release/ejector systems on aircraft.

Description:

This is an electrically initiated, case-grounded, screw-in type cartridge, consisting of a body, Mark 11 Mod 0 ignition element, hollow metal plug and main charge, The open end is crimped over a sealing disc. The electrode of the ignition element is separated from the body by an insulator. A hollow metal plug is threaded inside the body, between the igniter assembly and the propellant. The cartridge is located in the firing breech of the mechanism it is to operate.

Functioning:

When the cartridge is fired, the resulting gas pressure operates the store release/ejector mechanism.

Tabulated Data:

NSN	1377-00-793-9926
DODIC	MO12
Drawing number	2164465
Vendor (CAGE Code) and part number	(10001) LD419700
Item weight	0.038 lb (0.017 kg)
Diameter	0.805 in. (2.045 cm)
Length	1.471 in. (3.736 cm)
Method of actuation	Electrical 5 amperes

Body material ---------- Aluminum alloy
Propellant/explosive material:
  Type ---------- Smokeless powder, HPSK 5250.95
  Weight ---------- 0.0021 lb (14.77 grains)

Performance:

600 Explosive Power Rating

Firing Temperature Limits:

Upper ---------- +160°F (+71°C)
Lower ---------- -65°F (-54°C)

Packaging:

Inner Container:
  Reference ---------- PPP-P-291
  Type ---------- Bag, heat sealed
  Dimension ---------- 2.25 wide x 2.062 depth in. (6.41 wide x 5.24 depth)
  Items per package ---------- 2
  Weight ---------- 0.25 lb
Outer Container:
  Reference ---------- PPP-C-1672
  Type ---------- Fiberboard box
  Dimension ---------- 1.54 x 1.04 x 0.27 ft
  Weight ---------- 2.00 lb
  Cube ---------- .464 cu ft

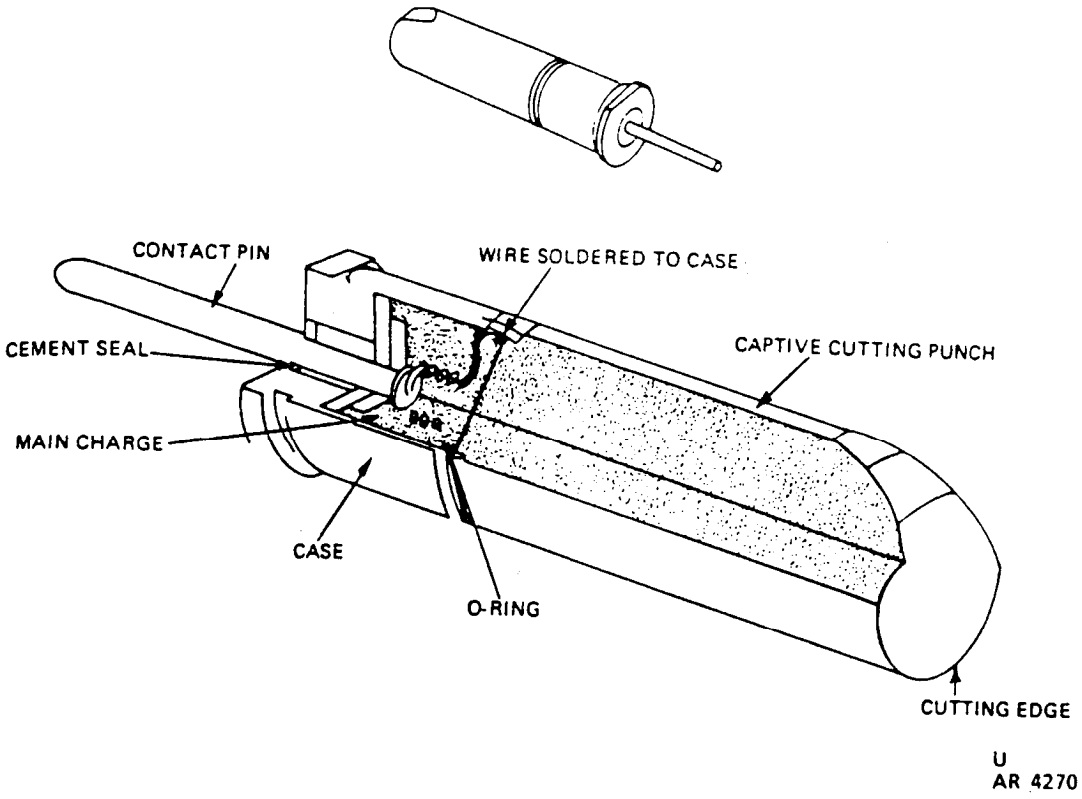
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility group ---------- S
DOT shipping class ---------- C
DOT designation ---------- Small Arms Ammunition, Handle Carefully, Keep Fire Away

References:

TM 9-1377-200-20&P
TM 55-1510-204-23
TM 55-1510-213-23
TB 9-1300-385, App B

CARTRIDGE, IMPULSE: (M162)



Type Classification:

Refer to Aircraft Subsystem.

Use:

To actuate a helicopter hoist cable cutter to cut and release a steel hoist cable and its load, in an emergency (CH-47).

Description:

The impulse cartridge is an electrically initiated cartridge. The contact pin which extends from the firing end of the cartridge case is connected to a wire within the powder chamber. The other end of the wire is connected to the cartridge case adjacent to the steel cutting punch. The design and contour of the cutting edge of the captive cutting punch is such that the punch cuts and wedges the severed ends of the reeved portion of the hoist cable in the cutter to prevent whiplash.

The cartridge is oriented to the correct position in the cable cutter by a flat surface on the rim of the cartridge case. This flat surface ensures that the captive cutting punch strikes the anvil of the cable cutter and wedges the reeved end of the hoist cable.

Functioning:

When the cable cutter switch is operated, electrical current initiates the cartridge in the cable cutter. The expanding gas from the cartridge forces the punch against one side of the cable as the other side of the hoist cable is forced against the anvil in the cable cutter. The cutting edge of the punch severs and releases the cable and its load from the hoist. The cutting punch also secures the reeved end of the hoist cable in the cable cutter, thus preventing whiplash.

Tabulated Data:

NSN	1377-00-999-7463
DODIC	M162
Drawing number	2518426
Vendor (CAGE Code) and part number	(40912) MSA96713
Item weight	0.04 lb (0.02 kg)
Diameter	0.500 in. (1.27 cm)
Length	2.109 in. (5.36 cm)
Method of actuation	Electrical 5 amperes
Body material	Brass
Propellant/explosive material:	
Type	Double base
Weight	0.0003 lb (2.10 grains)

Performance:

Firing Temperature Limits:

Upper	+160°F (+71°C)
Lower	-65°F (-54°C)

Packaging:

Inner Container:	
Reference	MIL-C-10464
Type	Type 1 hermetically sealed metal container
Dimensions	2.625 x 2.625 × 1.5 in.
Items per package	2
Outer Container:	
Reference	PPP-C-1672
Type	Fiberboard box
Dimensions	17 x 12 x 9 in. (43.18 x 30.48 x 22.86 cm)
Weight	2 lb
Cube	0.464 cu ft

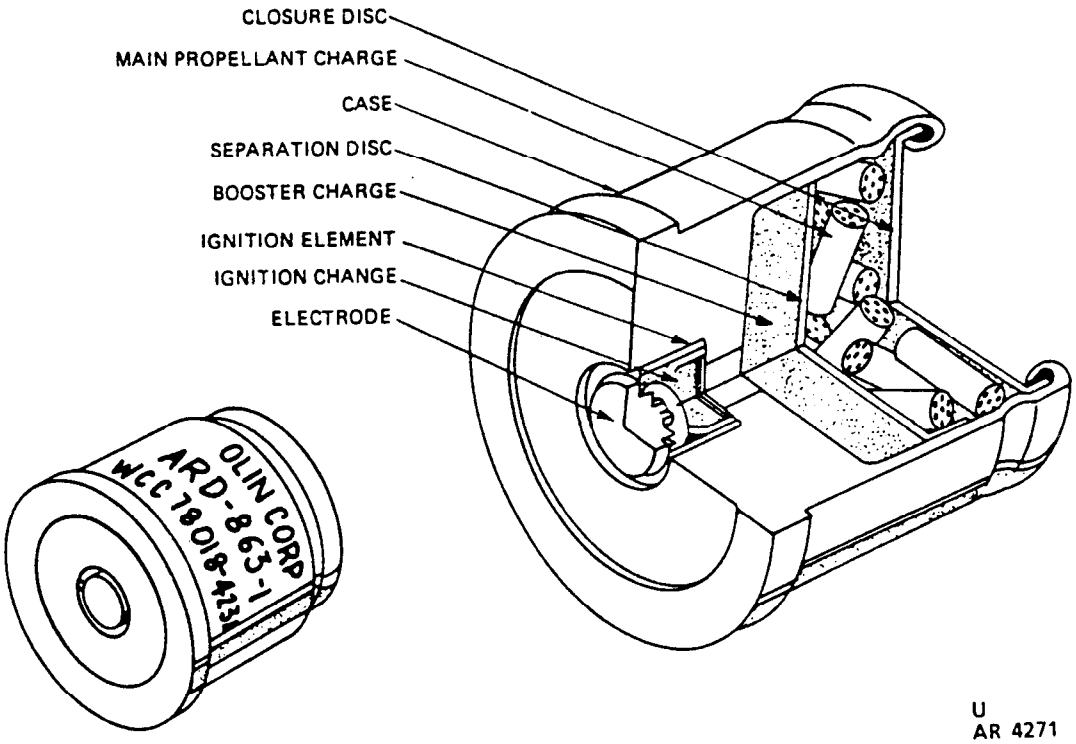
Shipping and Storage Data:

Quantity distance class	1.4
Storage compatibility group	S
DOT shipping class	C
DOT designation	Small Arms Ammunition, Class C Explosive, Handle Carefully, Keep Fire Away

References:

TM 9-1377-200-20&P
TM 55-1520-209-23
TM 55-1520-227-23
TB 9-1300-385, App B

CARTRIDGE, IMPULSE: ARD-863-1 (M189)



Type Classification:

Refer to Aircraft Subsystem.

Use:

For external stores ejection on the AH-1 series helicopter.

Description:

The ARD-863-1 Impulse Cartridge is a standardized store ejection and release cartridge and consists of a cylindrical aluminum alloy case and ignition element (electrode, bridgewire, and ignition charge) and a separation disc. The CCU-44/B Impulse Cartridge NSN-1377-01-033-2622 (MD66) is a suitable substitute for the ARD-863-1 (M189).

Functioning:

Upon receipt of an electrical signal the ignition element is fired and the resulting gas pressure ignites the main charge. When sufficient pressure is developed, the closure disc ruptures and the released gas pressure actuates the release/ejector mechanism.

Tabulated Data:

NSN ---------- 1377-01-057-0686
DODIC ---------- M189
Drawing number ---------- N/A
Vendor (CAGE Code) and
part number ---------- (80236) ARD-863-1
(79495) P7911-2
Item weight ----------
Diameter ---------- 1.075 in.
(2.731 cm)
Length ---------- 1.03 in. (2.616 cm)
Method of actuation --------- Electrical 5
amperes
Body material ---------- Aluminum
Propellant/explosive material:
Type ---------- Double base, 2.75
gm Booster
Charge, 1.15 gm
Weight ---------- 0.0090 lb (63
grains)

Performance:

Firing Temperature Limits:

Upper ---------- +160°F (+71°C)
Lower ---------- -65°F (-54°C)

Packaging:

Inner Container:
Reference ---------- MIL-C-10464
Type ---------- Type 1 hermeti-
cally sealed metal
container
Dimensions ---------- 3.5 x 3 (dia)
Items per package ---------- 8
Weight ---------- 0.188 lb
(0.0853 kg)
Outer Container:
Reference ---------- PPP-B-636
Type ---------- Fiberboard box
Dimensions ---------- 8.25 x 8.25 x 14.5
in. (21 x 21 x
36.82 cm)
Weight ---------- 2 lb (0.9072 kg)
Cube ---------- 0.57 cu ft

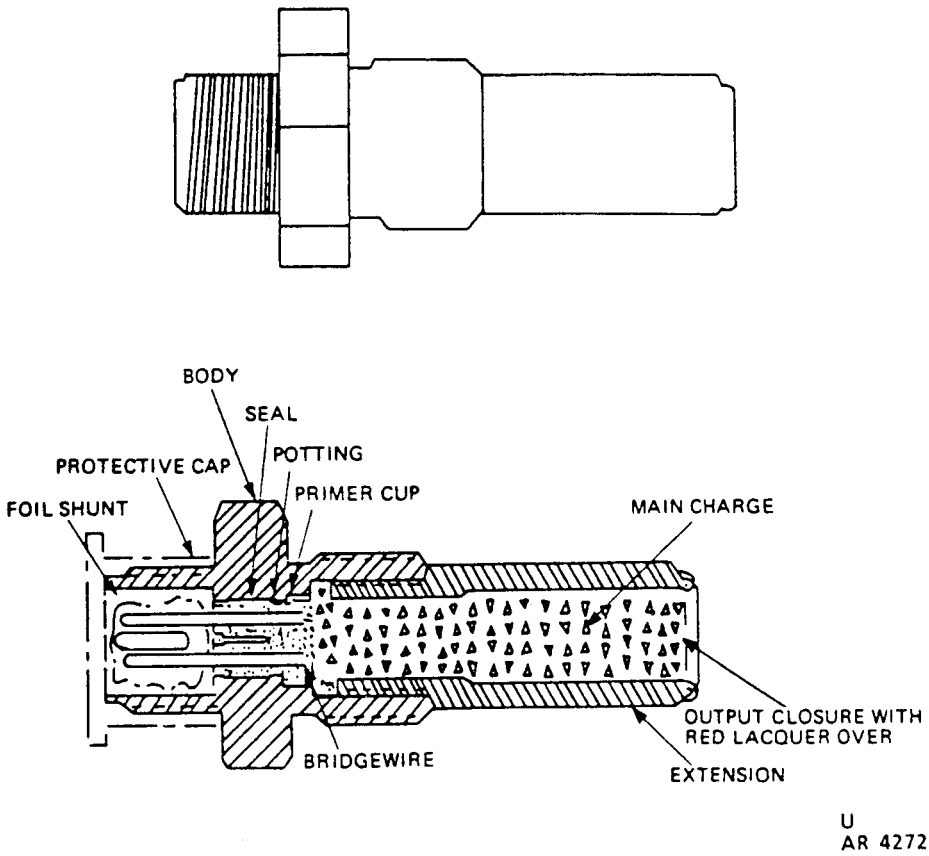
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility
group ---------- C
DOT shipping class ---------- C
DOT designation ---------- Small Arms
Ammunition, Class
C Explosive,
Handle Carefully,
Keep Fire Away

References:

TM 9-1377-200-20&P
TM 55-1520-221-23
TM 55-1520-237-23
TM 55-1520-236-23
TB 9-1300-385, App B

CARTRIDGE, IMPULSE: (M253)



Type Classification:

Refer to Aircraft Subsystem.

Use:

Used in the Holex cable cutter on the Army CH-54A helicopter cargo hoist cable system.

Description:

The M253 Impulse Cartridge consists of a steel case, two electrodes, bridgewire, ignition element, main charge, and closure assembly. The M253 is sometimes referred to as the explosive bolt.

Functioning:

Upon receiving an electric current, the bridgewire attached to the electrical pins heats and ignites the primer. The primer in turn ignites the main charge. The pressure developed by the main charge propels the cutter blade with sufficient force to sever the main hoist cable, a 7/8-inch (2.22 cm) special steel cable.

Tabulated Data:

NSN ---------- 1377-00-878-6510
DODIC ---------- M253
Drawing number ----------
Vendor (CAGE Code) and
part number ---------- (10640) R 4181-1
Item weight ----------
Diameter ---------- 1 in. (2.54 cm)
Length ---------- 2.62 in. (6.67 cm)
Method of actuation --------- Electrical
Body material ---------- Steel
Propellant/explosive material:
Type ---------- HI TEMP
Weight ---------- 0.004206 lb (29.442 grains)

Performance:

Firing Temperature Limits:

Upper ---------- +160°F (+71°C)
Lower ---------- -65°F (-54°C)

Packaging:

Inner Container:
Reference ---------- MIL-B-117
Type ---------- Barrier bag
Dimensions ---------- 8 x 5 in.
Items per package ---------- 1
Weight ---------- 0.25 lb
Outer Container:
Reference ---------- PPP-B-636
Type ---------- Fiberboard box
Dimensions ---------- 1.6 x 1.05 x 0.30 ft
Weight ---------- 2 lb
Cube ---------- 0.464 cu ft

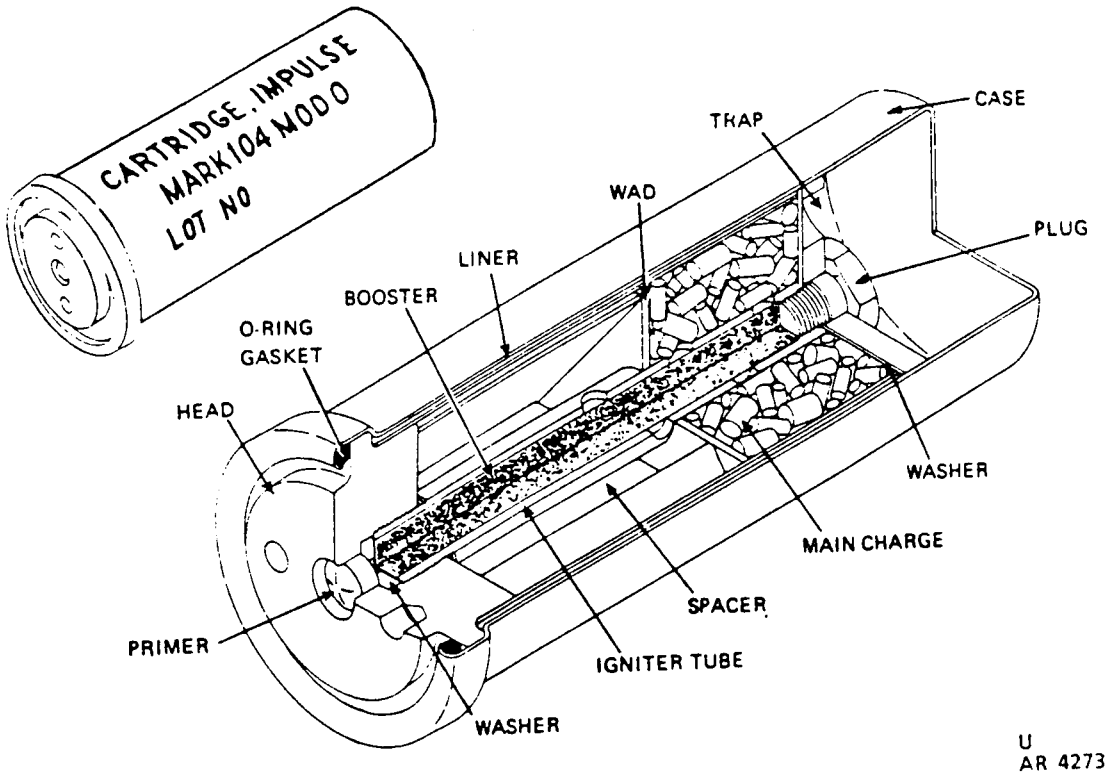
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility
group ---------- S
DOT shipping class ---------- C
DOT designation ---------- Explosive Release Device, Class C Explosive, Handle Carefully, Keep Fire Away

References:

TM 9-1377 -200 -20&P
TM 55-1520-209-23
TM 55-1520-227-23
TB 9-1300-385, App B

CARTRIDGE, IMPULSE, MARK 104 Mod 0: (M291)



Type Classification:

ATC-S LCC-A.
Refer to Aircraft subsystem.

Use:

To actuate a telescoped catapult Ejection Seat Trainer Device. The device is used to train pilots and crew members on procedures to be followed when ejecting from an aircraft during an emergency.

NOTE

Impulse cartridges Mark 103 Mod 0, Mark 104 Mod 0 and Mark 3 Mod 1 are identical in general appearance, diameter, and length. Each of these three types of cartridges is designed for a different purpose and contains a different quantity of propellant. Impulse cartridge Mark 104 Mod 0 shall be used only in the catapult of the ejection seat trainer device for which it was designed.

Description

The M291 Mark 104 Mod 0 Impulse Cartridge case has a cup-type case crimped over a head with an O-ring gasket for sealing. A lacquer sealed 50M percussion primer is recessed in the head. The steel igniter tube is screwed into the head and separated from the primer by a brass washer. A steel plug is screwed into one end of the igniter tube and is staked to a disc-shaped aluminum trap having holes for the escape of the propellant gases.

Functioning

To operate the catapult, the trainee, seated in the ejection seat of the training device, reaches up with both hands and pulls the handle of the face curtain at the top of the seat. Movement of the curtain pulls a cable which releases a spring-loaded firing pin at the top of the catapult. Firing of the cartridge builds up pressure in the catapult, thrusting the seat and occupant upward along the rails with a minimum of 6 g's, simulating the effect of ejecting from an aircraft. The seat decelerates to a stop at a height of less than 20 feet and before reaching the top of the tower.

Tabulated Data:

NSN	1377-00-707-0590
DODIC	M291
Drawing number	1863079
Vendor (CAGE Code) and part number	(10001) LD491831
Item weight	
Diameter	2.06 in. (5.232 cm)
Length	5.42 in. (13.77 cm)
Method of actuation	Percussion primer
Body material	Aluminum
Propellant/explosive material:	
Type	Black powder, HES 5250
Weight	0.0705 lb (493.5 grains)

Performance:

18900 ft-lb Explosive Power Rating

Firing Temperature Limits:

Upper	+160°F (+71°C)
Lower	-65°F (-54°C)

Packaging

Inner Container:	
Reference	MIL-C-10464
Type	Type I hermetically-sealed metal container
Dimensions	6.0 x 2.532 in dia (15.24 x 6.432 cm dia)
Items per package	1
Outer Container:	
Reference	PPP-B-621
Type	Wood box
Dimensions	13.375 x 9.0 x 7.25 in. (33.97 x 22.86 x 18.42 cm)
Weight	13 lb (5.897 kg)
Cube	0.5 cu ft

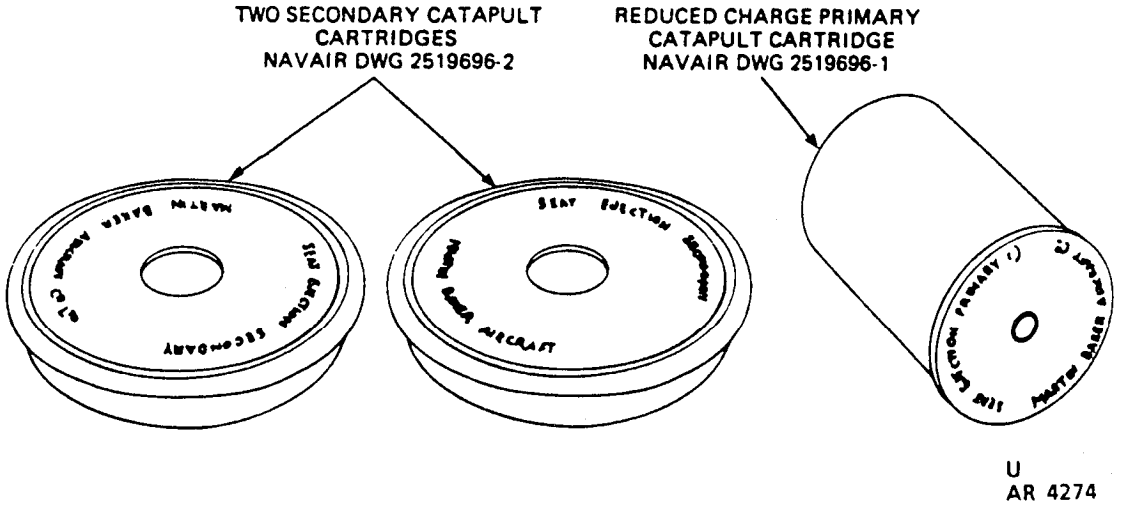
Shipping and Storage Data:

Quantity distance class	1.4
Storage compatibility group	C
DOT shipping class	C
DOT designation	Small Arms Ammunition, Handle Carefully, Keep Fire Away

References:

TM 9-1377-200-20&P
TB 9-1300-385, App B

CARTRIDGE SET, IMPULSE, REDUCED CHARGE, PRIMARY: (M397)



Type Classification:

Refer to Aircraft Subsystem.

Use:

The reduced charge cartridge set is in the Martin-Baker ejection seat and consists of one reduced charge primary catapult cartridge and two secondary catapult cartridges which, when fired in sequence, provide recoil forces and ballistic gases sufficient to eject the seat and its occupant from the aircraft in an emergency.

Description:

Components of the reduced charge primary catapult cartridge are copper disc, and brass and rubber washers, metal case, and a percussion cap primer. Components of each of the two secondary catapult cartridges are brass cover with a 0.75-inch hole covered with a 0.003-inch thick copper disc, rubber sealing ring, and brass case. The secondary cartridges require no primer or booster.

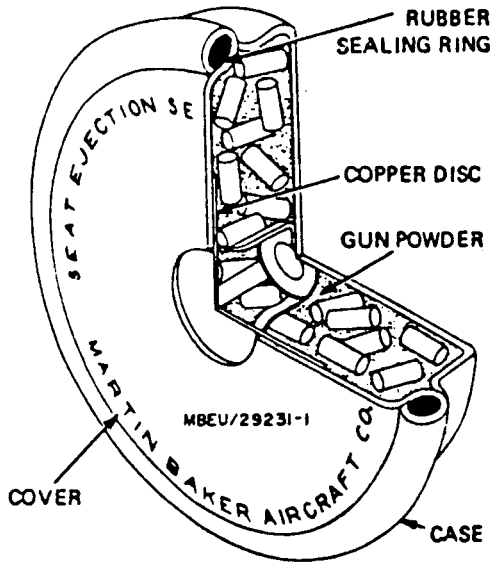
Functioning:

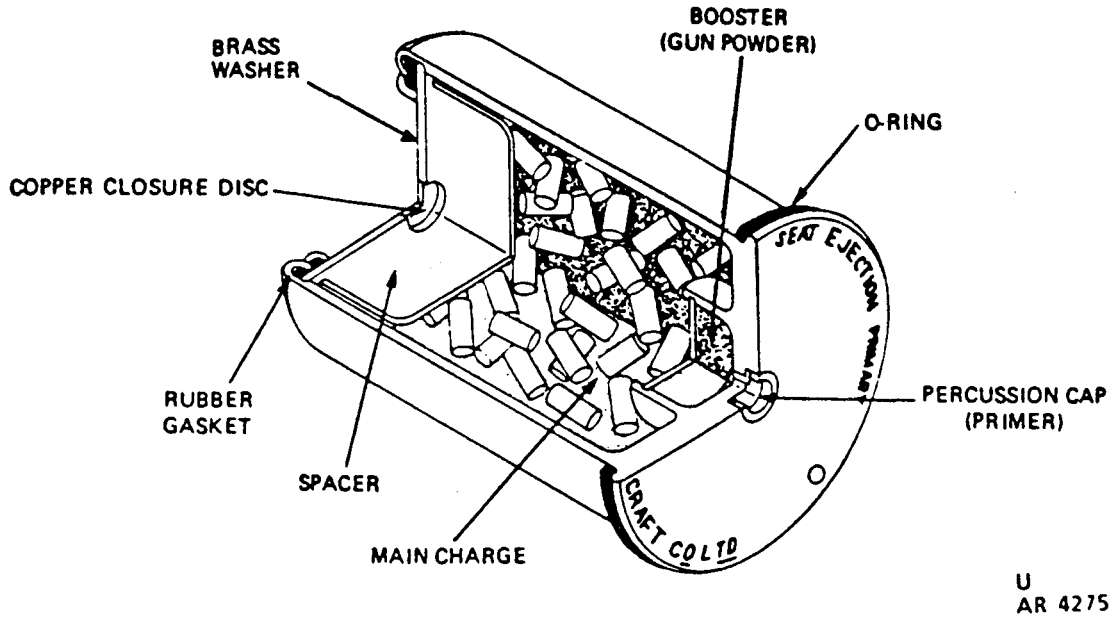
The ejection process is actuated when the occupant of the ejection seat pulls a fabric blind, to which a cable is attached, down over his face. This action causes the cable to withdraw a sear from the firing mechanism of the ejection gun which releases a spring-loaded firing pin. Movement of the firing pin initiates the percussion primer of the primary catapult cartridge; flame then passes through two vent openings, igniting the booster, which ignites the main charge of the primary catapult cartridge.

When the reduced charge primary catapult cartridge fires, recoil pressure forces the inner tube to cam the springloaded plunger out of the seat locking latch window. This latch retains the ejection seat in the aircraft.

Inner and intermediate tubes of the ejection gun rise together, raising the ejection seat away from the floor of the cockpit. After 14 inches of movement, a port in the outer tube is uncovered, exposing the lower secondary catapult cartridge at the upper half of the barrel. After a total movement of 39.35 inches, the intermediate tube is stopped by a flange. These firings eject the top unit of the barrel (together with the seat and occupant) from the cockpit; the two extended telescoping units remain attached to the floor of the aircraft.

CARTRIDGE SET, IMPULSE, REDUCED CHARGE, PRIMARY: M397





Tabulated Data

NSN	1377-00-845-5242
DODIC	M397
Drawing number	2519696
Vendor (CAGE Code and part number	(MBEU) 26434-1 (1 ea) (MBEU) 29434-2 (2 ea)
Item weight	0.03164 lb (0.01435 kg)
Diameter	Primary 1.843 in. (4.681 cm) Secondary 3.27 in. (8.306 cm)
Length	Primary 2.574 in. (6.538 cm) Secondary 0.610 in. (1.549 cm)
Method of actuation	Primary - percussion primer; Secondary - pressure and heat from primary
Body material	Brass
Propellant/explosive material:	
Type	Nitrocellulose, black powder
Weight	0.0815 lb (570.5 grains)

Performance:

Firing Temperature Limits:

Upper	+160°F (+71°C)
Lower	-65°F (-54°C)

Packaging:

Inner Container:	
Reference	MIL-P-116
Type	Type I Hermetically sealed metal container
Dimensions	3.27 x 3.27 x 3 in. (8.306 x 8.306 x 7.62 cm)
Items per package	1 set
Weight	0.5 lb (0.227 kg)

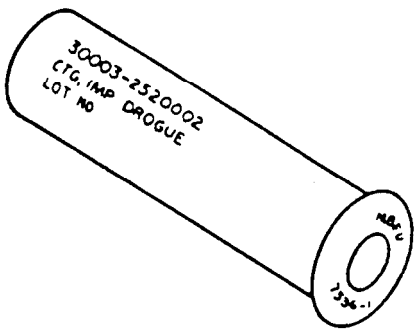
Shipping and Storage Data:

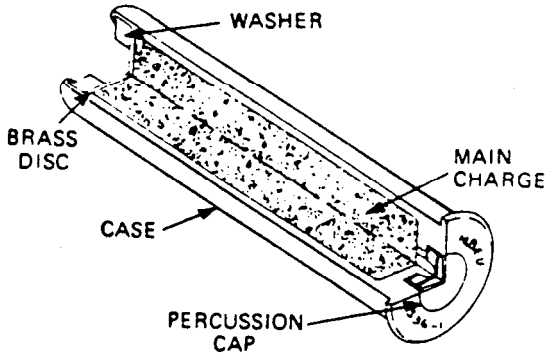
Quantity distance class	1.4
Storage compatibility group	S
DOT shipping class	C
DOT designation	EXPLOSIVE POWER DEVICE, CLASS C, HANDLE CAREFULLY, KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TM 55-1510-204-23
TM 55-1510-213-23
TB 9-1300-385, App B

CARTRIDGE, IMPULSE DROGUE: (M507)





U
AR 4276

Type Classification:

Refer to Aircraft Subsystem.

Use:

Used in a drogue gun on the Martin-Baker ejection seat to automatically operate the gun which releases two drogue parachutes after the seat and occupant are ejected from the aircraft in an emergency escape.

Description:

Components of the drogue impulse cartridge are: metal case, percussion cap primer, brass disc, and neoprene washer. The primer is encased in tinfoil and requires no anvil. An anvil is machined into the primer cavity of the case.

Functioning:

When the ejection catapult ejects the seat and occupant free of the aircraft, a trip rod attached to the bulkhead removes a sear pin from the drogue gun.

When the sear has been pulled, and a mechanically induced delay time (determined by sear series) has expired, the percussion cap in the cartridge is fired by a blow from the firing pin actuated by a compression spring. When the percussion cap fires, the gaseous flame is forced through two vents leading to the powder chamber, igniting the main charge. The resultant gases expand and force a piston member out of the top of the drogue gun. As the piston leaves the gun, a shackle attached to the top of the piston and to a drogue withdrawal line, pulls out an 18-inch controller drogue (parachute) and a 60-inch stabilizer drogue from a stowage compartment at the top of the seat.

Tabulated Data:

NSN	1377-00-883-8997 1377-00-960-0453
DODIC	M507
Drawing number	2520002
Vendor (CAGE Code and part number	(MBEU) 7536-1
Item weight	0.0922 lb (0.042 kg)

Diameter ---------- 0.705 in. (1.791 cm)
Length ---------- 2.420 in. (6.147 cm)
Method of actuation --------- Percussion primer
Body material ---------- Brass
Propellant/explosive material:
  Type ----------
  Weight ----------

Performance:

Firing Temperature Limits:

Upper ---------- +160°F (+71°C)
Lower ---------- -65°F (-54°C)

Packaging:

Inner Container:
  Reference ---------- MIL-C-10464
  Type ---------- Type I Hermetically sealed metal container
  Dimensions ---------- 2.062 x 2.2 in. dia
  Items per package ---------- 4
  Weight ---------- 0.167 lb (0.076 kg)
Outer Container:
  Reference ---------- PPP-B-621
  Type ---------- Wood box
  Dimensions ---------- 9.75 x 5.688 x 3.313 in (24,765 x 14.46 x 8.415 cm)
  Weight ---------- 3 lb (31.361 kg)
  Cube ---------- 0.1 cu ft

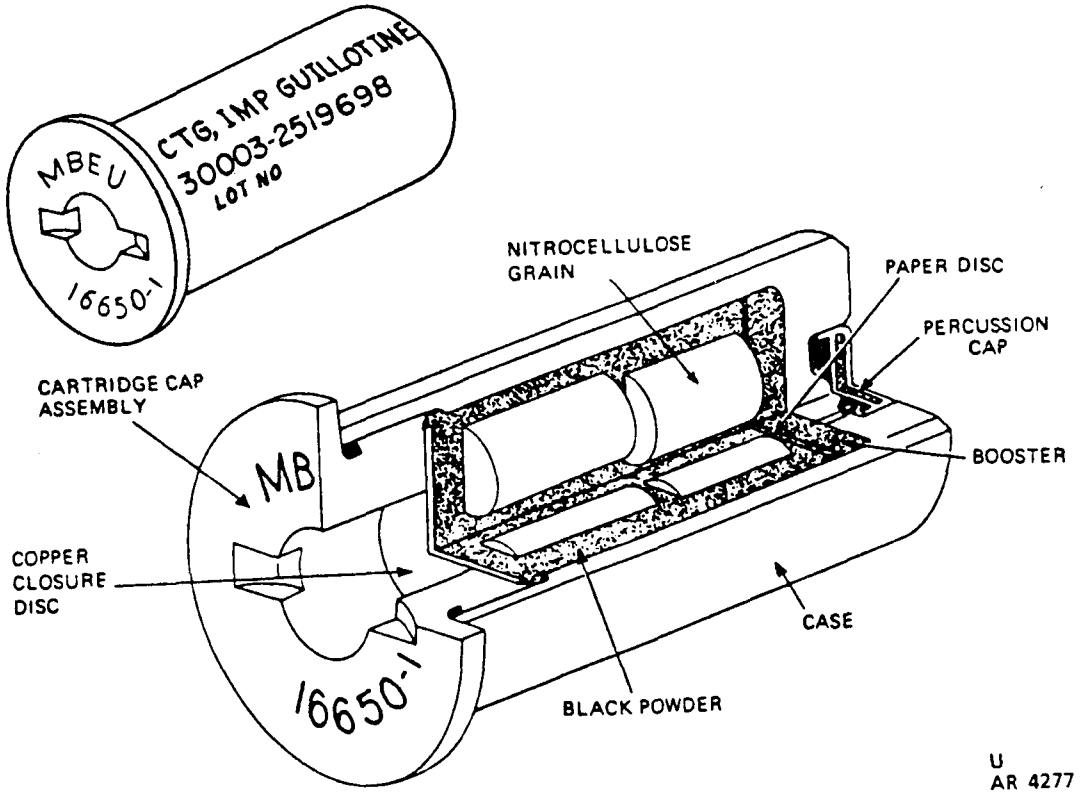
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility group ---------- C
DOT shipping class ---------- C
DOT designation ---------- SMALL ARMS AMMUNITION, CLASS C EXPLOSIVE, HANDLE CAREFULLY, KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TM 55-1510-204-23
TM 55-1510-213-23
TB 9-1300-385, App B

CARTRIDGE, IMPULSE, GUILLOTINE: (M520)



Type Classification:

Refer to Aircraft Subsystem.

Use:

Used in the guillotine firing unit on some Martin-Baker Mark 5 series and some Mark 6 series ejection seats to furnish gas pressure for actuation of the parachute withdrawal line guillotine.

Description:

Components of the guillotine cartridge are: metal case, guillotine cartridge cap and disc, a paper disc, and percussion cap primer.

The primer is encased in tin foil and requires no anvil. An anvil is machined into the primer cavity of the case. The primer is force-fitted into the cartridge case to ensure contact between the tin foil and the anvil point. The percussion cap is sealed in the head of the case with dark purple lacquer.

Functioning:

When the manual override lever of the ejection seat is operated, the sear is withdrawn from the guillotine firing unit and the firing pin moves under strong spring pressure to strike the percussion cap of the cartridge. The gas generated from the fired cartridge is fed via a stainless steel pipe and flexible hose to the guillotine. When actuated, the guillotine severs the nylon parachute withdrawal line.

Tabulated Data:

NSN ---------- 1377-00-883-8998
DODIC ---------- M520
Drawing number ---------- 2519698
Vendor (CAGE Code and part number ---------- (U1604) 16650-1
Item weight ---------- 0.135 lb (0.062 kg)
Diameter ---------- 0.800 in. (2.03 cm)
Length ---------- 1.600 in. (4.1 cm)
Method of actuation --------- Percussion primer
Body material ---------- Aluminum
Propellant/explosive material:
- Type ---------- Nitrocellulose, gun powder
- Weight ---------- 0.00352 lb (24.64 grains)

Performance:

1410 ft-lb Explosive Power Rating

Firing Temperature Limits:

Upper ---------- +160°F (+71°C)
Lower ---------- -65°F (-54°C)

Packaging:

Inner Container:
- Reference ---------- MIL-C-10464
- Type ---------- Type I Hermetically sealed metal container
- Dimensions ---------- 2.63 x 2.63 x 3 in.
- Items per package ---------- 2
- Weight ---------- 0.30 lb

Outer Container:
- Reference ---------- PPP-B-1672
- Type ---------- Fiberboard box
- Dimensions ---------- 1.54 x 1.04 x 0.35 ft
- Weight ---------- 3 lb (1.361 kg)
- Cube ---------- 0.11 cu ft

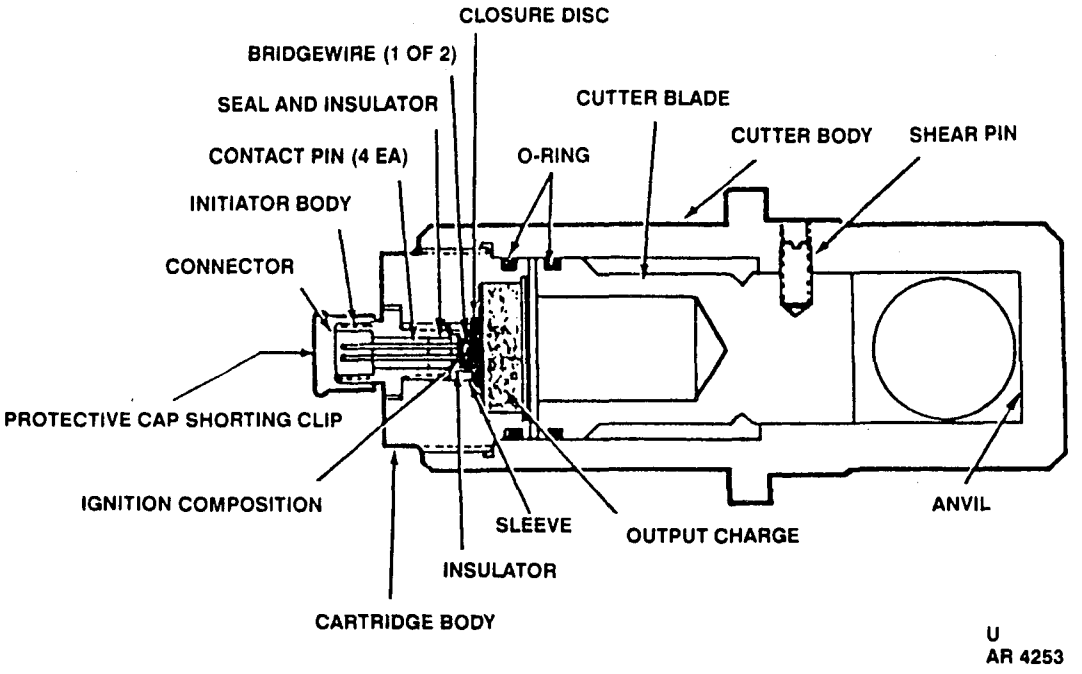
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility group ---------- C
DOT shipping class ---------- C
DOT designation ---------- Small Arms Ammunition, Handle Carefully, Keep Fire Away

References:

TM 9-1377-200-20&P
TM 55-1510-204-23
TM 55-1510-213-23
TB 9-1300-385, App B

CARTRIDGE, IMPULSE: (M657)



Type Classification:

Refer to Aircraft Subsystem.

Use:

Used in the CH-54B helicopter to sever a 7/8-inch (2.22 cm) diameter stainless steel hoist cable.

Description:

The M657 is used in the cable cutter NSN: 1377-00-178-8416. Two cutters are used in the CH-54B helicopter. The cartridge consists of an ignition element, body, and output charge. The ignition element has an initiator body four-pin electrical connector, two bridgewires and a sleeve with a closure disc. The cartridge body houses the ignition element and output charge. A closure disc hermetically seals the output charge within the cavity of the cartridge body.

Functioning:

Firing of the electrically initiated cartridge produces gas pressure to overcome the sheer pin. The cutter blade is driven onto the anvil cutting the cable that passes through the cutter body.

Tabulated Data:

NSN	1377-00-168-5802
DODIC	M657
Drawing number	
Vendor (CAGE Code) and part number	(22567) 300051-1
Item weight	
Diameter	2 in. (5.08 cm)
Length	1.65 in. (4.17 cm)
Method of actuation	Electrical
Body material	Steel

Propellant/explosive material:
Type ---------- High Temperature Smokeless Powder
Weight ---------- 0.0038 lb

Performance:

Temperature Limits:

Upper ---------- +165°F (+74°C)
Lower ---------- -65°F (-54°C)

Packaging:

Inner Container:
Reference ---------- MIL-C-10464
Type ---------- Type I hermetically sealed metal container
Dimensions ---------- 8 x 6 in.
Items per package ---------- 1
Weight ---------- 1 lb

Outer Container:
Reference ---------- PPP-B-636
Type ---------- Fiberboard box
Dimensions ----------
Weight ---------- 2.50 lb
Cube ---------- 0.560 cu ft

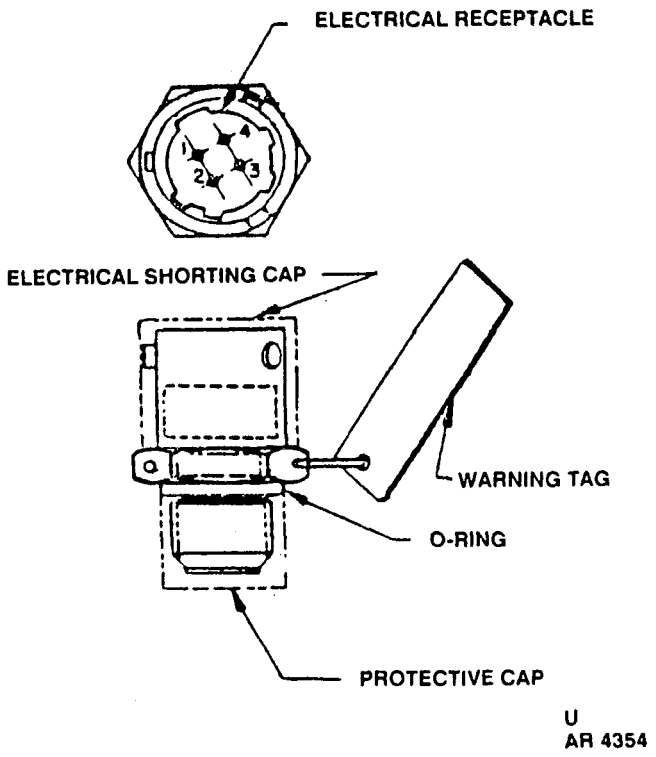
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility group ---------- S
DOT shipping class ---------- C
DOT designation ---------- CLASS C EXPLOSIVE, HANDLE CAREFULLY, KEEP FIRE AWAY

References:

TB 9-1300-385, App B.

CARTRIDGE, IMPULSE, CCU-92/A: (MJ21)



Type Classification:

Refer to Aircraft Subsystem.

Use:

CCU-92/A is used as the power source for the TCU-3/A Thruster.

Description:

The impulse cartridge CCU-92/A is electrically initiated and consists of cylindrical aluminum body loaded phenolic spacer, main charge, aluminum closure disc. Four insulated contact pins complete the internal electrical circuit through two separate bridgewires.

Functioning:

Upon receipt of firing current the bridgewires are fired which in turn fires the main charge that supplies the gas pressure for the TCU-3/A Thruster.

Tabulated Data:

NSN	1377-01-211-7211
DODIC	MJ21
Drawing number	1512AS121
Vendor (CAGE Code) and part number	(01276) FE7590-95
Item weight	
Diameter	0.572 in. (1.45 cm)
Length	0.88 in. (2.24 cm)
Method of actuation	Electrical
Body material	Aluminum
Propellant/explosive material:	
Type	Black powder
Weight	0.00052 lb (3.64 grains)

Performance:

Temperature Limits:

Upper ---------- +200°F (+93.4°C)
Lower ---------- -65°F (-54°C)

Packaging:

Inner Container:
Reference ---------- MIL-C-10464
Type ---------- Type I heretically sealed metal container
Dimensions ----------
Items per package ---------- 1
Weight ----------

Outer Container:
Reference ---------- PPP-B-636
Type ---------- Fiberboard box
Dimensions ----------

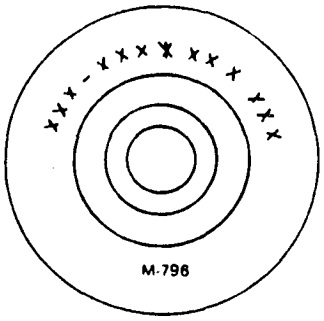
Shipping and Storage Data:

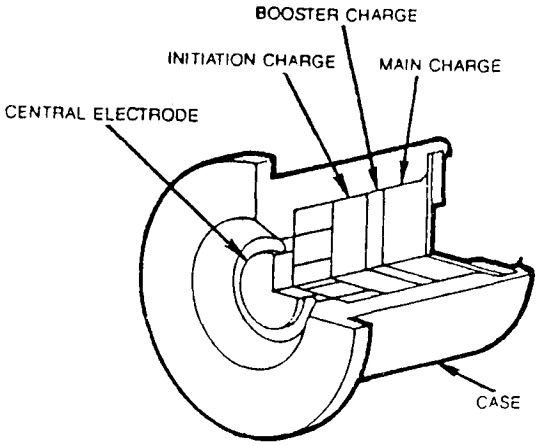
Quantity distance class ----- 1.4
Storage compatibility group ---------- C
DOT shipping class ---------- C
DOT designation ---------- Class C Explosive, Handle Carefully, Keep Fire Away

References:

TB 9-1300-385, App B.

CARTRIDGE, IMPULSE, M796: (MD73)





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AR 4279

Type Classification:

ATC-S LCC-A.
Refer to Aircraft Subsystem.

Use:

Power source for the M1 chaff cartridge of the M206 flare cartridge on a one to one match which is used in the M130 dispenser pod on various aircraft.

Description:

The M796 cartridge consists of an aluminum case, header assembly, igniter charge, booster charge, output charge, closure disc and closure washer.

Functioning:

The impulse cartridge is fired electrically. The resulting hot ballistic gases developed by the impulse cartridge ignite the flare pellet causing the piston to expel the flare pellet from the case.

Tabulated Data:

NSN	1377-01-049-6365
DODIC	MD73
Drawing number	9311660
Vendor (CAGE Code) and part number	(14083) 9311660
Item weight	0.278 lb (0.126 kg)
Diameter	0.625 in. (1.59 cm)
Length	0.50 in. (1.40 cm)
Method of actuation	Electrical
Body material	Aluminum
Propellant/explosive material:	
Type	HPC 1, M1911
Weight	0.0088 lb (61.6 grains)

Performance:

Firing Temperature Limits:

Upper	+160°F (+71°C)
Lower	-65°F (-54°C)

Packaging:

Inner Container:
- Reference ---------- MIL-C-10464
- Type ---------- Type I, Hermetically sealed metal container
- Dimensions ----------
- Items per package ---------- 60
- Weight ---------- 1.67 lb (0.758 kg)

Outer Container:
- Reference ---------- PPP-B-636
- Type ---------- Fiberboard box
- Dimensions ----------
- Weight ---------- 60 lb (27.22 kg)

Shipping and Storage Data:

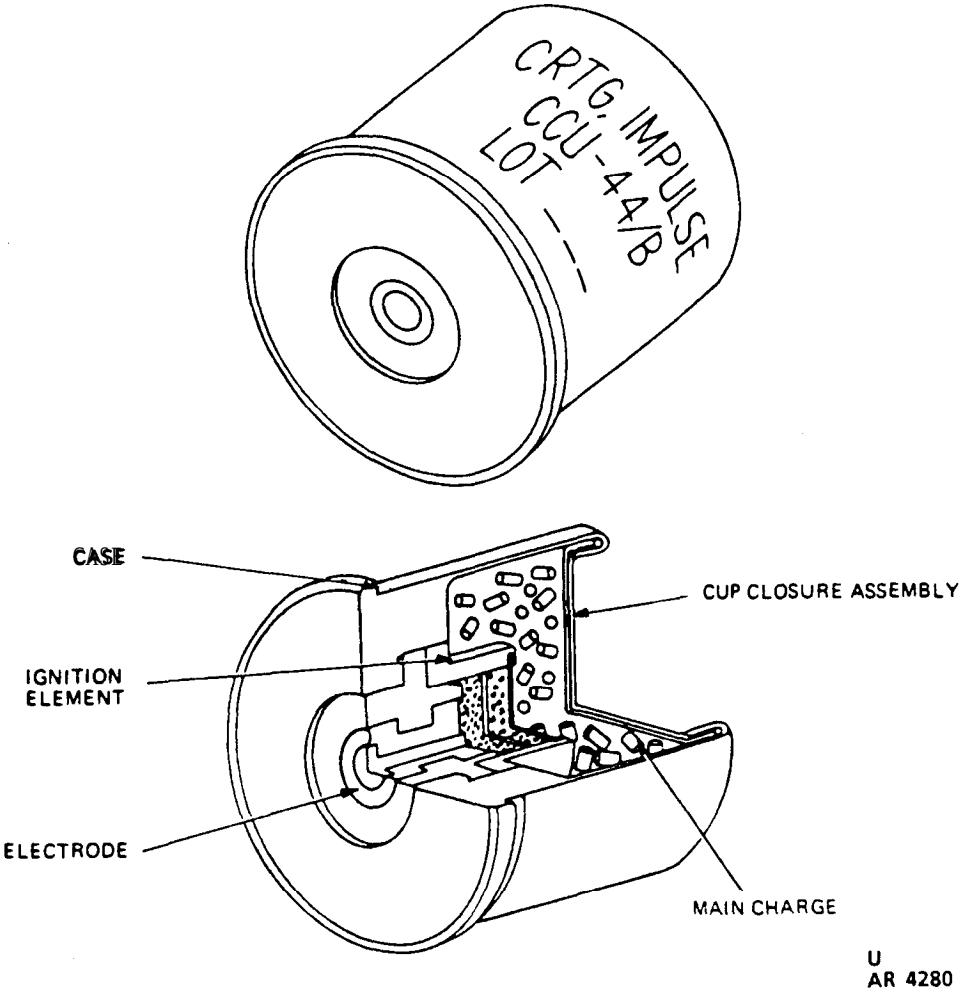
Quantity distance class ----- 1.4

Storage compatibility group ---------- S
DOT shipping class ---------- C
DOT designation ---------- ELECTRICAL SQUIB, CLASS C EXPLOSIVE, HANDLE CAREFULLY, KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TM 9-1095-206-13&P
TB 9-1300-385, App B.

CARTRIDGE, IMPULSE, CCU-44/B: (MD66)



Type Classification:

Refer to Aircraft Subsystem.

Use:

Utilized as a power source for the ejection of stores from aircraft/helicopter missile launchers and bomb racks. This cartridge is a suitable substitute for the ARD-863-1, M189.

Description:

The CCU-44/B cartridge is an electrically initiated cartridge installed in the firing chamber of the ejection mechanism of a missile launcher or bomb rack. The cartridge consists of a case, electrode, ignition element, main charge, and cap closure assembly.

Functioning:

Upon receipt of firing current the ignition element is fired and the resulting gas pressure ignites the main charge. When sufficient pressure is developed, the cup closure assembly ruptures and the released gas pressure actuates the release/ejector mechanism.

Tabulated Data:

NSN	1377-01-063-3161 1377-01-063-3164 1377-01-063-3165
DODIC	MD66
Drawing Number	(53711)
Vendor (CAGE Code) and part number	5184850
Item weight	0.086 lb (0.04 kg)
Diameter	1.555 in. (2.934 cm)
Length	1.155 in. (2.934 cm)
Method of actuation	Electrical 10 amperes
Body material	Aluminum alloy
Propellant/explosive material:	
Type	Double Base Nitro Cellulose
Weight	0.01014 lb (70.98 grains)

Performance:

Firing Temperature Limits:

Upper	+225°F (+107°C)
Lower	-65°F (-54°C)

Packaging:

Inner Container:	
Reference	MIL-C-10464
Type	Type I hermetically sealed metal container
Dimensions	4.13 x 6.19 in. dia (10.49 x 15.723 cm dia)
Items per package	NSN 1377-01-063-3161 = 60 NSN 1377-01-063-3164 = 80 NSN 1377-01-063-3165 = 10
Outer Container:	
Reference	PP-B-1672
Type	Class II STYLE D
Dimensions	2 x 1.33 x 0.35 ft
Weight	10 lb
Cube	0.78 cu ft

Shipping and Storage Data:

Quantity distance class	1.4
Storage compatibility group	C
DOT shipping class	C
DOT designation	SMALL ARMS AMMUNITION, CLASS C EXPLOSIVE, HANDLE CAREFULLY, KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TB 9-1300-385, App B

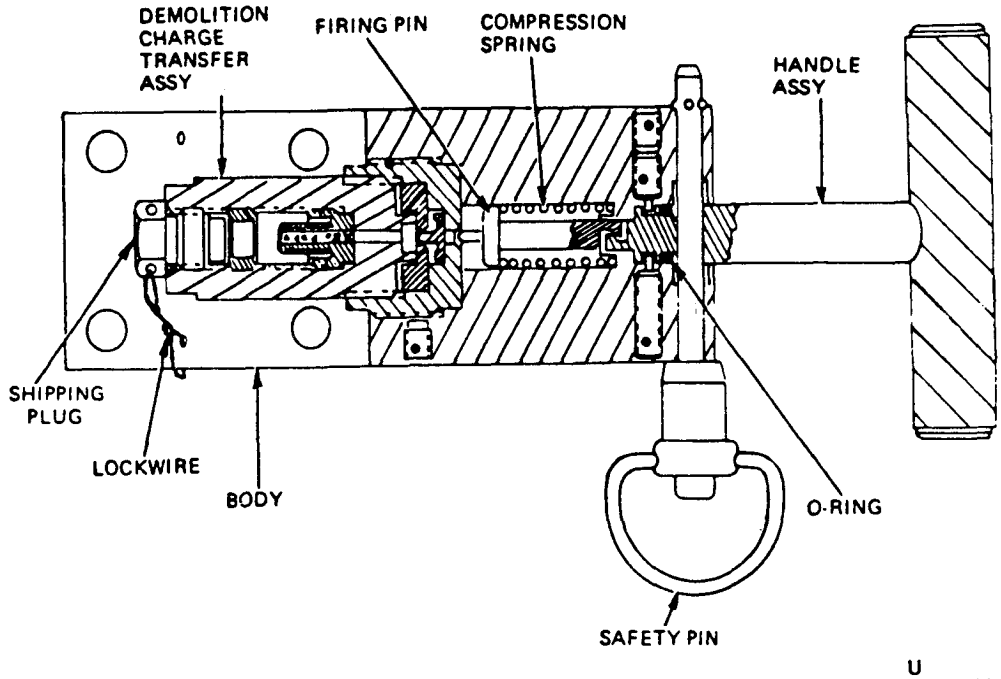
CHAPTER 7

INITIATORS/DETONATORS (ARMING/FIRING MECHANISMS)

7-1. General

Initiators are explosive devices that use ballistic gas pressure or high order detonation waves to start a chain of events or functions within a system.

ARMING/FIRING MECHANISM: P/N 813633-4



Type Classification:

Refer to Aircraft Subsystem.

Use:

A detonator-type mechanism used in the AH-1 series helicopter to actuate the canopy removal system.

NOTE

Arming/Firing Mechanism PN 813633-4 to be replaced by 3W84, 1377-01-234-0667.

Description:

The armed/firing mechanism is a manually operated percussion-type detonator assembly consisting of a body, handle assembly, firing pin, compression spring, a demolition transfer/charge assembly quick release pin, seals, fittings, and attaching hardware.

There are three armed/firing mechanisms in the system, one each at the pilot's and gunner's stations and one in the fuselage nose for external access by rescue personnel.

Functioning:

To actuate the system, the handle of the armed/firing mechanism is rotated 90 degrees counterclockwise to arm and pulled to fire a primer charge initiating a detonation wave which is transmitted through the system to detonate all four window cutting assemblies.

Tabulated Data:

NSN	1377-00-410-8265
DODIC	
Drawing number	813633-4
Vendor (CAGE Code) and part number	(97499) 209-030-711-37 (06331) 813633-4
Item weight	2.5 lb (1.134 kg)
Width	17 in. (17.8 cm)
Height	5 in. (12.7 cm)
Length	12 in. (30.5 cm)
Method of actuation	Manually operated
Body material	Aluminum alloy
Propellant/explosive material:	
Type	HNS, Type I, grade B
Weight	0.000190 lb (1.33 grains)
Body material	Steel

Performance:

Firing Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65°F (-54°C

Packaging:

Inner Container:
- Reference ---------- MIL-C-10464
- Type ---------- Type I hermetically sealed metal container
- Dimensions ---------- 6 x 11.5 in.
- Items per package ---------- 1
- Weight ---------- 1lb

Outer Container:
- Reference ---------- PPP-B-621
- Type ---------- Wood box
- Dimensions ---------- 1.6 x 1.1 ft
- Weight ---------- 2.5 lb
- Cube ---------- 0.562 cu ft

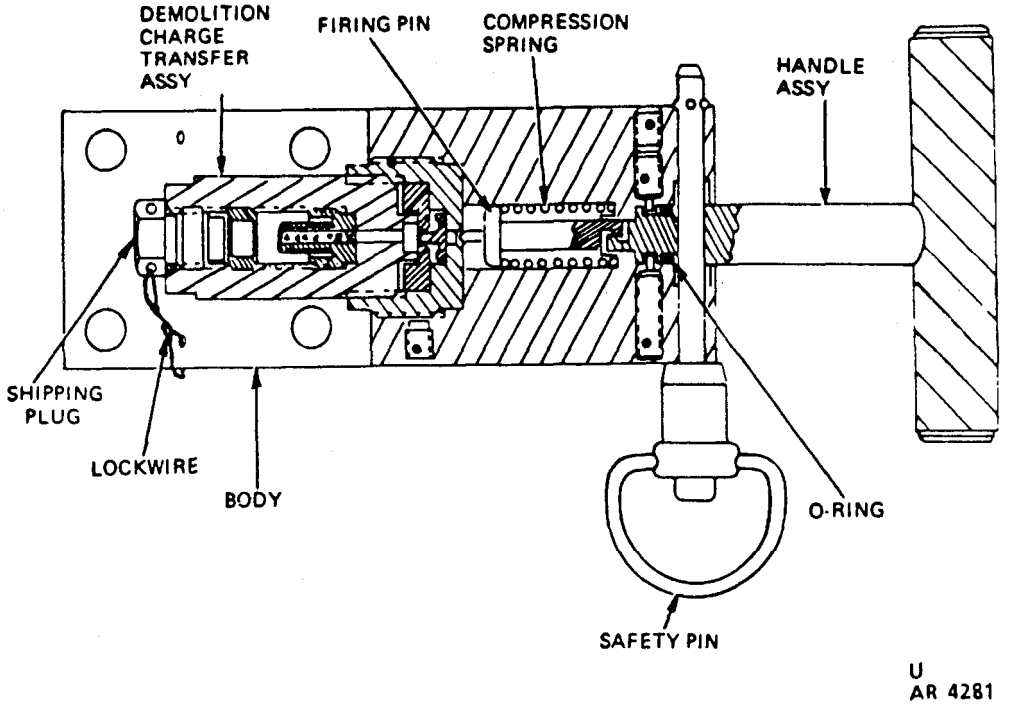
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility group ---------- S
DOT shipping class ---------- C
DOT designation ---------- CLASS C EXPLOSIVE, HANDLE CAREFULLY, KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TM 55-1520-221-23
TM 55-1520-234-23
TM 55-1520-236-23
TM 55-1520-239-23
TB 9-1300-385, App B

ARMING/FIRING MECHANISM: P/N 814033-101



Type Classification:

Refer to Aircraft Subsystem.

Use:

A detonator-type mechanism used in the AH-1 series helicopter to actuate the canopy removal system.

NOTE

Arming/Firing Mechanism PN 814033-101 to be replaced by 3W84, 1377-01-234-0667.

Description:

The armed/firing mechanism is a manually operated percussion-type detonator assembly consisting of a body, handle assembly firing pin, compression spring, a demolition transfer/charge assembly quick release pin, seals, fittings, and attaching hardware.

There are three armed/firing mechanisms in the system, one each at the pilot's and gunner's stations and one in the fuselage nose for external access by rescue personnel.

Functioning:

To actuate the system, the handle of the armed/firing mechanism is rotated 90 degrees counterclockwise to arm and pulled to fire a primer charge initiating a detonation wave which is transmitted through the system to detonate all four window cutting assemblies.

Tabulated Data:

NSN	1377-01-033-5088
DODIC	N/A
Drawing number	814033-101
Vendor (CAGE Code) and part number	116-416-1 209-033-008-101
Item weight	
Diameter	2.7 in. (6.86 cm)
Length	7.9 in. (20.07 cm)
Method of actuation	Manual
Body material	Steel
Propellant/explosive material:	
Type	HNS
Weight	0.000190 lb (1.33 grains)

Performance:

Firing Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65°F (-54°C)

Packaging:

Inner Container:
- Reference ---------- MIL-C-10464
- Type ---------- Type I hermetically sealed metal container
- Items per package ---------- 1
- Weight ---------- 1 lb

Outer Container:
- Reference ---------- PPP-621
- Type ---------- Wood box
- Dimensions ---------- 1.6 x 1.1 x 0.4 ft
- Weight ---------- 2.5 lb
- Cube ---------- 0.562 cu ft

Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility group ---------- S
DOT shipping class ---------- C
DOT designation ---------- CLASS C EXPLOSIVE, HANDLE CAREFULLY, KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TM 55-1520-221-23
TM 55-1520-234-23
TM 55-1520-236-23
TM 55-1520-239-23
TB 9-1300-385, App B

CHAPTER 8

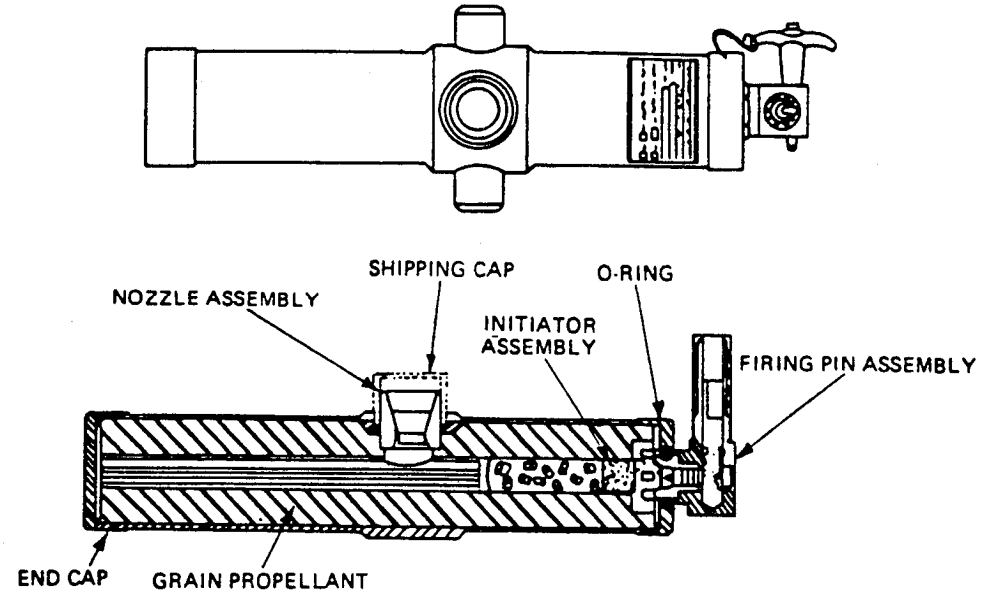
ROCKET MOTORS/CATAPULTS

8-1. General

a. Rocket Motors and Rocket Catapults are explosive devices used in various aircraft egress systems to assist or propel the ejection seat and its occupant from the aircraft in an emergency situation.

b. This chapter contains technical data, use, and description of rocket motors/rocket catapults.

ROCKET MOTOR: (M447)



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AR 4282

Type Classification:

Refer to Aircraft Subsystem.

Use:

To provide stabilization and improved trajectories of the seat escape system.

Description:

The M119 tip-off compensation rocket motor is designed for use in the Grumman OV-1 Mohawk airplane on the MD-S5 seat system. The unit provides sufficient energy to stabilize the ejection seat in the correct attitude to insure drogue chute deployment in the optimum direction.

Functioning:

The M119 rocket motor is trunnion mounted under the seat. The nozzle is oriented in a down position. A steel wire lanyard is threaded into the firing mechanism and attached to the cable dispenser which is attached to the aircraft bulkhead.

After the lanyard is connected, the safety pin is removed from the firing mechanism. Once the escape system is actuated, the lanyard automatically triggers the firing mechanism and initiates the igniter assembly which, in turn, ignites the propellant grain which provides the additional propulsion to the seat.

Performance:

Rocket Motor Performance

Parameter	-65 to -70°F		+65 to +75°F		+160 to +165°F	
	Min	Max	Min	Max	Min	Max
Peak Thrust (lb)	1200	1800	1500	2300	1700	2700
Total Impulse (lb-sec)	370	430	370	430	370	430
Action Time (sec)	0.280	0.420	0.230	0.350	0.180	0.320
Burning Time (sec)	0.220	0.310	0.180	0.270	0.140	0.250
Ignition Delay Time (sec)	0.000	0.015	0.000	0.015	0.000	0.015

Firing Temperature Limits:

Upper ---------- +160°F (+71°C)
Lower ---------- -65°F (-54°C)

Tabulated Data:

NSN ---------- 1377-00-244-1578
DODIC ---------- M447
Drawing number ---------- 11740301
Vendor (CAGE Code)
and part number ---------- (51998) 1044-2
Item weight ---------- 6.36 lb (2.9 kg)
Diameter ---------- 4.202 in. (10.67 cm)
Length ---------- 13.3 in. (33.78 cm)
Method of actuation --------- Mechanical
Body material ---------- 4130 steel and aluminum alloy
Propellant/explosive material:
Type ---------- High-density carboxy terminated polybutadiene, N-53 (U) MIL-P-82676
Weight ---------- 2.56 lb (17920 grains)

Packaging:

Inner Container:
Reference ---------- PPP-B-636
Type ---------- Fiberboard
Dimensions ---------- (34.1 x 13.2 x 8.1 cm)
Items per package ---------- 1 ea
Weight ---------- 8 lb
Outer container:
Reference ---------- PPP-B-621
Type ---------- Wood box
Dimensions ---------- 17 x 12-1/16 x 4-11/16 in. ((43.2 x 30.6 x 12 cm)
Weight ---------- 13 lb
Cube ---------- 1.639 cu ft

Shipping and Storage Data:

Quantity distance class ----- 1.3
Storage compatibility
group ---------- F
DOT shipping class ---------- B
DOT designation ---------- CLASS B EXPLOSIVE, HANDLE CAREFULLY, KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TM 55-1510-204-23
TM 55-1510-213-23
TB 9-1300-385, App B

CHAPTER 9

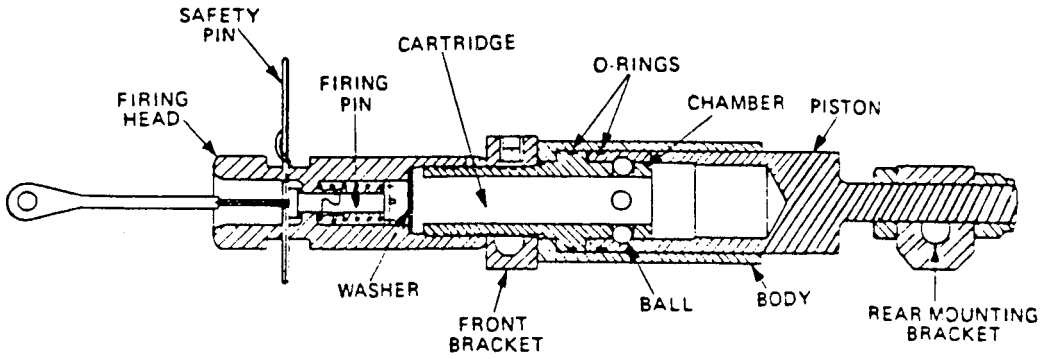
THRUSTERS

9-1. General

a. A thruster is a component part of an aircraft escape system or aerial delivery system, which is used to accomplish a certain task prior to implementing the final phases of escape, for crewmen from a disable aircraft, or separation of the components of an aerial delivery system.

b. The basic parts of a thruster consist of a firing mechanism, cartridge, chamber and piston. The main purpose of a thruster is to impart a thrust to a known load or oppose a force through a given travel (stroke).

THRUSTER, CARTRIDGE ACTUATED, TCU-1/B: (MF24)



Type Classification:

Type III A Release by Navy.

STD LCCA

Use:

Used on the high speed aerial delivery system and receives its ballistic power from the CCU-57/B Delay Cartridge.

Note

TCU-1/B replaces XM5 thruster.

Description:

The TCU-1/B thruster consists of a cartridge (CCU-57/B), firing mechanism, body piston assembly, front and rear brackets and safety pin.

Functioning:

When the CTU-2/A container is released from the aircraft, an attached lanyard from the aircraft initiates the CCU-57/B cartridge. After the 0.4 second time delay, the TCU-1/B thruster releases a tail cone which houses a recovery parachute. The aerodynamic load on the tail cone thus serves to deploy the parachute.

Tabulated Data:

NSN ---------- 1377-01-075-6433
DODIC ---------- MF24
Drawing number ---------- 5184910
Vendor (CAGE Code) and
part number ---------- 5184910
Item weight ---------- 1.36 lb (0.62 kg)
Diameter ----------
Length ---------- 9.0 in. (22.86 cm)
Method of actuation --------- Manual
Body material ---------- Steel
Propellant/explosive material:
Type ---------- Black powder and HES 5808
Weight ---------- 0.0025 lb (17.5 grains)

Performance:

Delay time ---------- 0.4 sec +0.1
Minimum stroke 1.5 in. (3.81 cm)

Firing Temperature Limits:

Upper ---------- +200°F (+93°C)
Lower ---------- -65F°(-54°C)

Packaging:

Inner Container:
- Reference ---------- PPP-B-636
- Type ---------- Fiberboard box
- Dimensions ---------- 10-3/16 x 2-1/2 x 2-1/2 in. (25.9 x 6.4 x 6.4 cm)
- Items per package ---------- 1
- Weight ---------- 1.6 lb (0.73 kg)

Outer Container:
- Reference ---------- PPP-B-621
- Type ---------- Wood Box
- Dimensions ---------- 19 x 12-3/16 x 11-7/8 in. (48.3 x 30.46 x 30.16 cm)
- Weight ----------
- Cube ---------- 1.6 cu ft

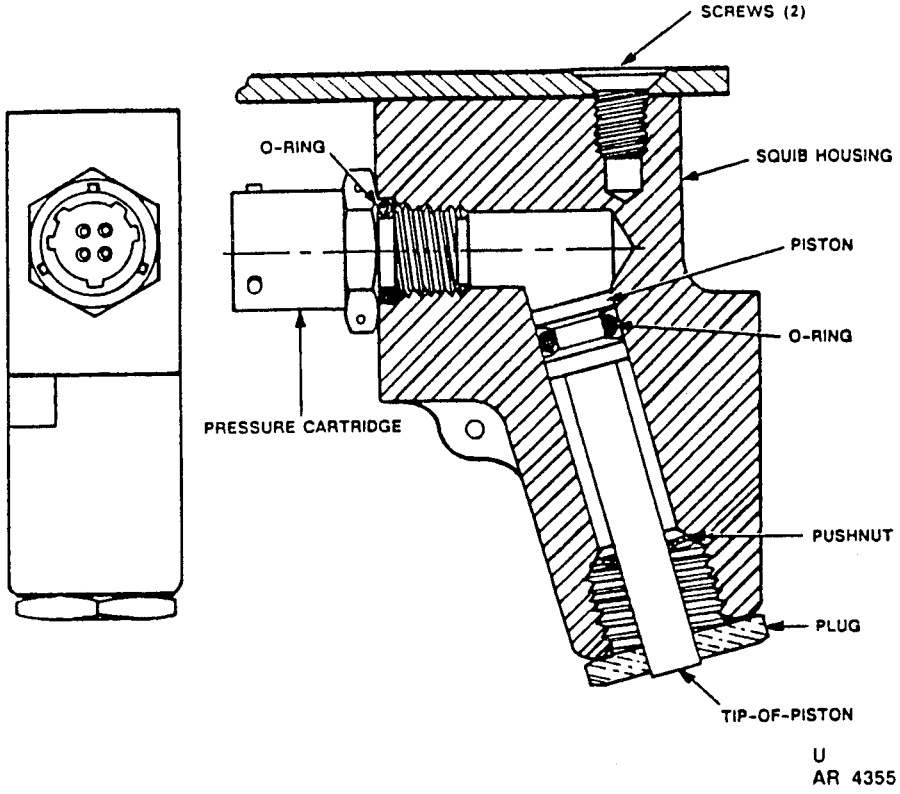
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility group ---------- S
DOT shipping class ---------- C
DOT designation ---------- EXPLOSIVE POWER DEVICE, CLASS C EXPLOSIVE, HANDLE CAREFULLY, KEEP FIRE AWAY

References:

FM 10-547
TM 9-1377-200-20&P
TB 9-1300-385, App B

THRUSTER, CARTRIDGE ACTUATED, TCU-3/A: (MJ20)



Type Classification:

Refer to Aircraft Subsystem.

Use:

UH-60 cargo hook release mechanism, Provides a power source to release the load applied to the 6,000 lb cargo hoist hook in the event of an emergency.

Description:

The cartridge assembly for the cargo hook consists of an aluminum body, a pressure cartridge, piston, plug, washer, piston retaining ring and O-rings.

Functioning:

The cargo hook cartridge assembly is fired electrically by placing a switch in the crew compartment to the release position. Ballistic gas pressure from the cartridge forces the piston out of the body assembly thus mechanically operating the release mechanism on the cargo hook.

Tabulated Data:

NSN ---------- 1377-01-211-7212
DODIC ---------- MJ20
Drawing number ---------- 1512AS120

Vendor (CAGE Code) and part number ---------- (01270) FE 7590-98
Item weight ---------- 0.21 lb
Diameter ---------- 0.735 in. (1.867 cm)
Length ---------- 253 in. (6.426 cm)
Method of actuation --------- Electrical
Body material ---------- Aluminum
Propellant/explosive material:
  Type ---------- SP
  Weight ---------- 0.00052 lb (3.64 grains)

Performance:

Firing Temperature Limits:

Upper ---------- +200°F (+93.4°C)
Lower ---------- -65°C (-54°C)

Packaging:

Inner Container:
  Reference ---------- MIL-C-10464
  Type ---------- Hermetically sealed metal container
  Dimensions ----------
  Item per package ---------- 1
  Weight ----------
Outer Container:
  Reference ---------- PPP-B-636
  Type ---------- Fiberboard box
  Dimensions ----------
  Weight ----------
  Cube ----------

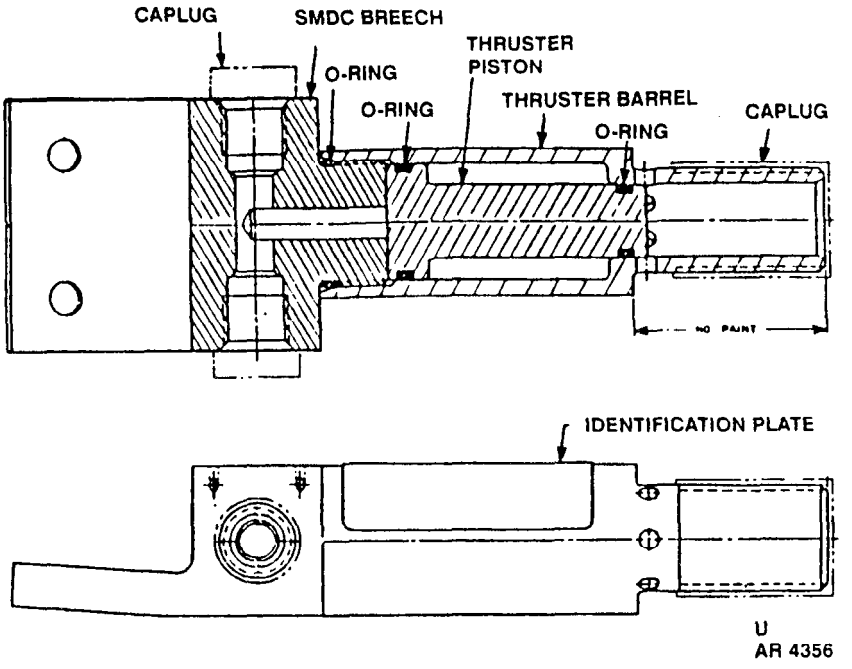
Shipping and Storage Data

Quantity distance class ----- 1.4
Storage compatibility group ---------- S
DOT shipping class ---------- C
DOT designation ---------- EXPLOSIVE POWER DEVICE, CLASS C EXPLOSIVE, HANDLE CAREFULLY, KEEP FIRE AWAY

References:

TM 9-1377-200-20&P
TM 55-1520-237-23
TB 9-1300-385, App B

THRUSTER, EXPLOSIVE ACTUATED: P/N 209-033-007-3



Type Classification:

Refer to Aircraft Subsystem.

Use:

Used on the AH-E/F/P Helicopter.

Description:

The thruster is a steel manifold that transmits an explosive force from shielded mild detonating cord (SMDC) to a thruster piston. (Detonating cord provided at installation.)

Functioning:

Upon detonation of the SMDC the explosive force is applied to the piston driving it forward.

Tabulated Data:

NSN	1377-01-062-4196
DODIC	
Drawing number	820810
Vendor (CAGE Code) and part number	(97499) 209-033-007-3
Item weight	0.37 lb
Diameter	0.88 in.
Length	4.78 in.
Method of actuation	Explosively Initiated

Propellant/explosive material: None/Inert

Type	N/A
Weight	N/A

Performance:

Firing Temperature Limits:

Upper ---------- +200°F (+93.4°C)
Lower ---------- -65°C (-54°C)

Packaging:

Reference ---------- MIL-B-117
Type ---------- Heat sealed
Dimensions ---------- 9 x 6 in.
Weight ---------- 0.6 lb
Cube ---------- 0.30 cu ft

Shipping and Storage Data:

Quantity distance class -----

Storage compatibility
group ----------
DOT shipping class ----------
DOT designation ----------

References:

TB 9-1300-385, App B

CHAPTER 10

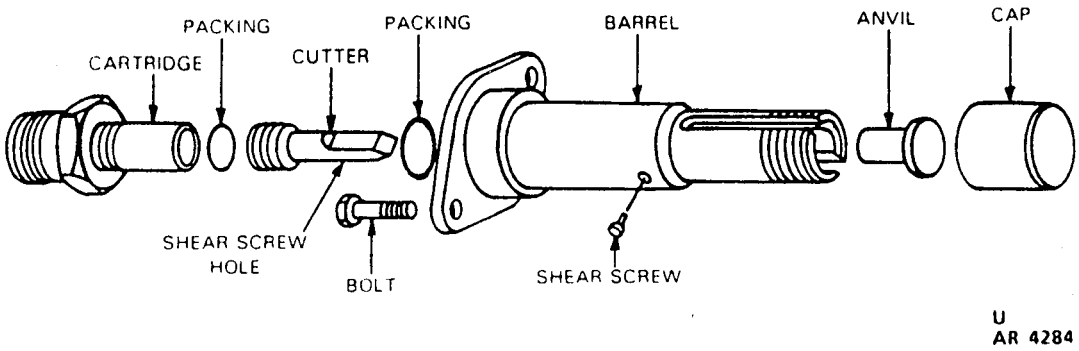
MISCELLANEOUS ITEMS

10-1. General

a. The items listed in this chapter have characteristics which set them apart from the Cartridges, Cartridge Actuated Devices (CADs) and Propellant Actuated Devices (PADs) described in the other chapters of this manual.

b. Some of the items described in this chapter are part of a kit or component and will refer to the data sheet on such items.

REFIRE KIT: 073-3831



Type Classification:

Refer to Aircraft Subsystem.

Use:

The refire kit is used to rebuild the cable cutter on UH-1 and UH-60.

Description:

The refire kit consists of a cartridge assembly, shear pin, anvil, cutter, and two O-rings.

Functioning:

The Refire Kit is used to reload the UH-1 and UH-60 Cable Cutter.

Tabulated Data:

NSN	1377-01-073-3831
DODIC	
Drawing number	
Vendor (CAGE Code) and part number	(22567) K303104-1 (82402) 42277E182
Item weight	
Diameter	4.0 in. (10.16 cm)
Length	6.0 in. (15.24 cm)
Method of actuation	Electrical
Body material	Aluminum
Propellant/explosive material:	
Type	Dupont bullseye black powder
Weight	0.000243 lb (1,7 grains)

Performance:

Firing Temperature Limits:

Upper	+ 165°F (+74° C)
Lower	-65°F (-54°C)

Packaging:

Inner Container:
- Reference ---------- PPP-B-636
- Type ---------- Fiberboard box
- Dimensions ----------
- Items per package
- Weight ---------- 0.3 lb

Outer Container:
- Reference ---------- PPP-B-621
- Type ---------- Wood box
- Dimensions ---------- 1.6 x 1.1 x 0.4 ft
- Weight ---------- 2.5 lb
- Cube ---------- 0.560 cu ft

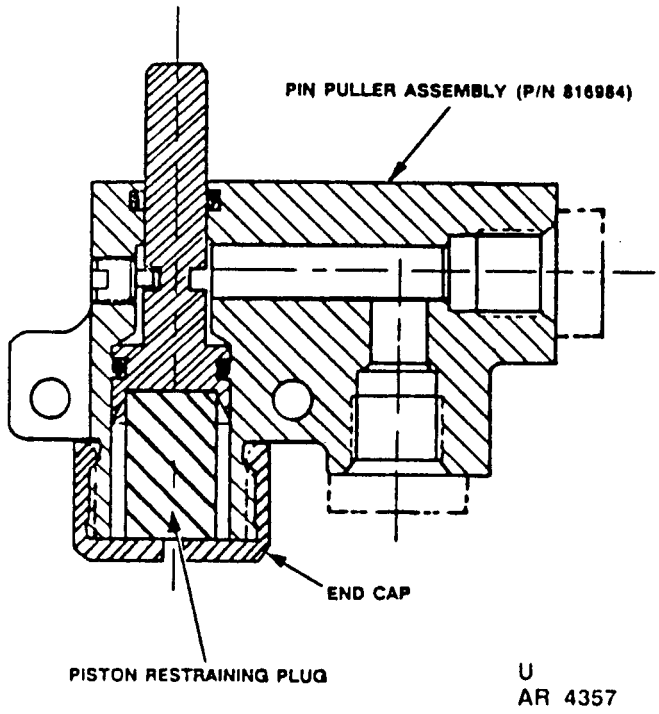
Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility group ---------- S
DOT shipping class ---------- C
DOT designation ---------- EXPLOSIVE POWER DEVICE, HANDLE CAREFULLY, KEEP FIRE AWAY

References:

TB 9-1300-385, App B.

PIN PULLER, EXPLOSIVE ACTUATED P/N 816984



Type Classification:

Refer to Aircraft Subsystem.

Use:

The pin puller is used in the AH-1 canopy removal system(s).

Description

The Pin Puller is a steel manifold that transmits an Explosive Force from shielded mild detonating cord (SMDC) to a puller position.

Functioning:

Upon detonation of the SMDC, the explosive force is applied to the piston. Movement of the piston pulls the pin that retains the canopy.

Tabulated Data:

NSN ---------- 1377-01-037-4091
DODIC ----------
Drawing number ---------- 816984
Vendor (CAGE Code) and part number ---------- (06331) 816984
Item weight ----------
Diameter ---------- 1.5 in. (3.81 cm)
Length ---------- 2.25 in. (5.72 cm)
Method of actuation --------- Explosively actuated
Body Material ---------- Steel
Propellant/explosive material ---------- Not loaded - inert.

Performance:

Firing Temperature Limits:

Upper ---------- +200°F (+93.4°C)
Lower ---------- -65°F (-54°C)

PIN PULLER, EXPLOSIVE ACTUATED: P/N 816984

Packaging:

Inner Container:
- Reference ---------- MIL-B-117
- Type ---------- Type I, class B
- Dimensions ---------- 4 x 6 in.
- Items per package ---------- 1
- Weight ---------- 0.5 lb

Outer Container:
- Reference ---------- SPI (AMOP-01-037-4091)
- Type ----------
- Dimensions ---------- 0.6 x 0.5x 0.2 ft
- Weight ---------- 0.5 lb
- Cube ---------- 0.046 cu ft

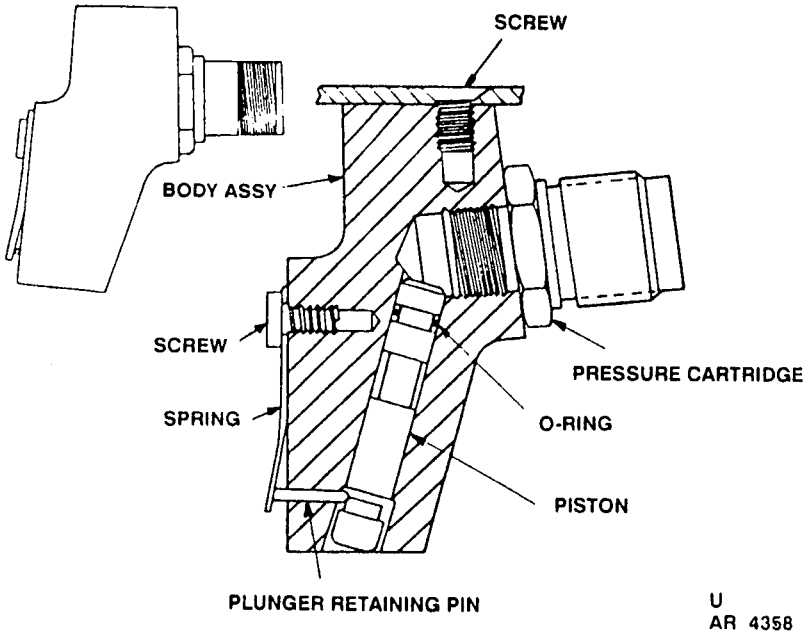
Shipping and Storage Data:

Quantity distance class ----- N/A
Storage compatibility group ---------- N/A
DOT shipping class ---------- N/A
DOT designation ---------- N/A

References:

TM 9-1377-200-20&P
TM 55-1520-236-23
TB 9-1300-385, App B.

CARTRIDGE ASSEMBLY, CARGO HOOK: PY58



Type Classification:

Refer to Aircraft Subsystem.

Use:

UH-60 cargo hook release mechanism. Provides a power source to release the load applied to the 8,000 lb cargo hoist hook in the event of an emergency.

NOTE

To be replaced by CCU-921A Impulse Cartridge MJ21 1377-01-211-7212

Description:

The cartridge assembly for the cargo hook consists of an aluminum body, a pressure cartridge, piston, plug, washer piston retaining ring and O-rings.

Functioning:

The cargo hook cartridge assembly is fired electrically by actuating a switch in the crew compartment to the release position. Ballistic gas pressure from the cartridge forces the piston out of the body assembly thus mechanically operating the release mechanism on the cargo hook.

Tabulated Data:

NSN ---------- 1377-01-149-5917
DODIC ---------- PY58
Drawing number ---------- FE7590-65
Vendor (CAGE Code) and
part number ---------- (01276) FE7590-65
Item weight ----------
Diameter ---------- 0.75 in. (1.91 cm)
Length ---------- 2.36 in. (5.99 cm)
Method of actuation --------- Electrical
Body material ---------- Aluminum
Propellant/explosive material:
Type ----------
Weight ----------

Performance:

Firing Temperature Limits:

Upper ---------- N/A
Lower ---------- N/A

Packaging:

Inner Container:
  Reference ----------
  Type ----------
  Dimensions ----------
  Items per package ----------
  Weight ----------
Outer Container:
  Reference ----------
  Type ----------
  Dimensions ----------
  Weight ----------
  Cube ----------

Shipping and Storage Data:

Quantity distance class ----- 1.4
Storage compatibility
  group ---------- C
DOT shipping class ---------- C
DOT designation ---------- Explosive Power Device, Class C Explosive, Handle Carefully Keep Fire Away.

References:

TM 9-1377-200-20&P
TM 55-1520-237-23
TB 9-1300-385, App B

APPENDIX A

REFERENCE PUBLICATIONS

A-1. Army Regulations

Army Safety Program ..... AR 385.10
System Safety Engineering and Management ..... AR 385-16
Accident Reporting and Records ..... AR 385-40
Ammunition and Explosive Safety Standards ..... AR 385-64
Identification of Inert Ammunition and Ammunition Components ..... AR 385-65
Reporting of Transportation Discrepancies in Shipments ..... AR 55-38
Worldwide Ammunition Reporting System (WARS) ..... AR 700-22
Ammunition Stockpile Reliability Program ..... AR 702-6
Type Classification/Reclassification of Army Material ..... AR 71-6
Report of Item and Packaging Discrepancies ..... AR 735-11-2
Malfunctions Involving Ammunition and Explosives ..... AR 75-1
Hazardous Item Contracts ..... DARCOM-R 385-17
Determination and Assignment of Ammunition and Explosives
Hazard (classifications ..... DARCOM-R 385-21
Safety Manual ..... DARCOM 385
Safety Manual ..... DARCOM 385-100

A-2. Technical Manuals

The Army Maintenance Management System ..... DA PAM 738-750
Operator's Aviation Unit Maintenance and Aviation Intermediate Maintenance Manual Repair Parts and Special Tools List (Incl RPSTL) Dispenser, General Purpose Aircraft: M130 ..... TM 9-1095-206-13&P
Ammunition, General ..... TM 9-1300-200
Ammunition and Explosive Standards ..... TM 9-1300-206
Ammunition Maintenance ..... TM 9-1300-250
Organizational and Maintenance Manual (Incl RPSTL) Cartridges, Cartridge Actuated Devices and Propellant Actuated Devices. TM 9-1377-200-20&P
Aviation Unit and Intermediate Maintenance Manual:
Army Models OV-1B/OV-1C Aircraft. ..... TM 55-1510-204-23
Aviation Unit and Intermediate Maintenance Manual:
Army Models OV-1D/RV-1D Aircraft ..... TM 55-1510-213-23
Aviation Unit and Aviation Intermediate Maintenance Manual:
Army Model CH-47A Helicopter ..... TM 55-1520-209-23
Aviation Unit and Intermediate Maintenance Instructions:
Army Model UH-1D/H/V/EH-1H Helicopters ..... TM 55-1520-210-23
Aviation Unit and Intermediate Maintenance Instructions:
CH-54A Helicopter ..... TM 55-1520-217-23
Aviation Unit and Intermediate Maintenance Instructions:
Army Model UH-1C/M Helicopters ..... TM 55-1520-220-23

]Aviation Unit and Aviation Intermediate Maintenance Manual:
Army Model AH-1G and AH-1Q Helicopters ..... TM 55-1520-221-23
Aviation Unit and Aviation Intermediate Maintenance Manual:
Army Model CH-47B and CH-47C Helicopters ..... TM 55-1520-227-23
Avum and Avim Maintenance Manual: AH-1S (MOD) ..... TM 55-1520-234-23
Aviation Unit and Intermediate Maintenance Manual:
Army Model AH-IS (PROD), AH-IS (ECAS) and AH-1S
(Modernized COBRA) Helicopters ..... TM 55-1520-236-23
Aviation Unit and Intermediate Maintenance Wiring Data
Manual for UH-60A Helicopter ..... TM 55-1520-237-23
Aviation Unit and Intermediate Maintenance Repair Parts and
Special Tools List (Incl Depot Maintenance RPSTL) for
Helicopter, Attack, AH-1S (Modernized COBRA) ..... TM 55-1520-239-23
Aviation Unit and Aviation Intermediate Maintenance Manual:
CH-47D Helicopter ..... TM 55-1520-240-23

A-3. Technical Bulletins

Department of Defense Explosive Hazard Classification Procedures. . . . . TB 700-2
Munitions Suspended or Restricted ..... TB 9-1300-385-1
Munition Permanently Suspended or Restricted ..... TB 9-1300-385-2

A-4. Supply Catalogs

DOD Consolidated Ammunition Catalog. . . . . SB 708-4

A-5. Blank Forms

Recommended Changes to Publications and Blank Forms ..... DA Form 2028
Ammunition Condition Report ..... DA Form 2415
Accident Report ..... DA form 285
Discrepancy in Shipment Report . . . . . SF 361
Packaging and Improvement Report ..... SF 364

A-6. Navy Publications

Ordnance Safety Precautions, Their Origin and Necessity. . . . . .OP 1014
Index to Navy Ammunition Stocks, Cartridges and Cartridge
Actuated Devices. TW010-AA-ORD-010
Navy Transportation Safety Handbook. . . . . OP 2165
United States Navy Ordnance Safety Precautions ..... OP 3347
Ammunition Afloat ..... .OP 4
Ammunition and Explosives Ashore ..... OP 5

APPENDIX B

CAD/PAD AIRCRAFT/HELICOPTER/EQUIPMENT CROSS REFERENCE

CAD/PAD	NSN	APPLICATION
Arm-Fire Initiator	1377-01-033-5088	AH-E/F/P (Cobra)
Cartridge, Aricraft Fire Extinguisher	1377-00-087-7103	
Cartridge, Aircraft Fire Extinguisher	1377-00-756-1384	CH-47 (Chinook)
Cartridge, Aircraft Fire Extinguisher	1377-00-824-5858	
Cartridge, Aircraft Fire Extinguisher	1377-00-930-9390	OV-1 (Mohawk) CH-47 (Chinook)
Cartridge, Aircraft Fire Extinguisher	1377-01-113-8530	AH-1 (Cobra)
	1377-01-263-3627	UH-60A (Blackhawk)
Cartridge, Aircraft Fire Extinguisher	1377-01-185-2622	
Cartridge, Assembly Cargo Hook	1377-01-115-3711	UH-60A (Blackhawk)
Cartridge, Assembly Cargo Hook	1377-01-149-5917	UH-60A (Blackhawk)
Cartridge, Delay	1377-00-774-7259	
Cartridge, Delay	1377-00-958-1048	20 sec delay Cargo Parachute
Cartridge, Delay	1377-01-084-6064	TCU-1/B Thruster
Cartridge, Impulse	1377-00-168-5802	CH 54B
Cartridge, Impulse	1377-00-253-4436	
Cartridge, Impulse	1377-00-585-9291	AH-S(MOD) E/F/P (Cobra) AH-1S/MOD E AH-1S/MOD F AH-1S/MOD P
Cartridge, Impulse	1377-00-707-0590	
Cartridge, Impulse	1377-00-793-9926	OV-1A (Mohawk)
Cartridge, Impulse	1377-00-805-9281	
Cartridge, Impulse	1377-00-878-6510	
Cartridge, Impulse	1377-00-883-8997	OV-1 (Mohawk)
Cartridge, Impulse	1377-00-883-8998	OV-1 (Mohawk)
Cartridge, Impulse	1377-00-999-7463	
Cartridge, Impulse	1377-01-049-6365	
Cartridge, Impulse	1377-01-057-0686	UH-60A (Blackhawk)
Cartridge, Impulse	1377-01-063-3161	UH-60A (Blackhawk)
Cartridge, Impulse	1377-01-063-3164	UH-60A (Blackhawk)
Cartridge, Impulse	1377-01-063-3165	UH-60A (Blackhawk)
Cartridge, Set, Impulse	1377-01-211-7211	TCU-3/A Thruster
Cartridge, Impulse	1377-00-845-5242	OV-1 (Mohawk)
Connector, Inline (Inert)	1377-00-062-4195	AH-1E/F/P (Cobra) AH-1S/MOD E AH-1S/MOD F AH-1S/MOD P
Cord, Detonating	1377-00-409-1098	AH-1S (MOD)
Cord, Detonating	1377-00-409-1099	AH-1S (MOD)
Cord, Detonating	1377-00-409-1100	AH-1S (MOD)
Cord, Detonating	1377-00-410-8266	AH-1S (MOD)
Cord, Detonating	1377-00-410-8271	AH-1S (MOD)
Cord, Detonating	1377-00-410-8289	AH-1S (MOD)
Cord, Detonating	1377-00-410-8297	AH-1S (MOD)
Cord, Detonating	1377-01-032-1047	AH-1 E/F/P (Cobra)
Cord, Detonating	1377-01-032-1048	AH-1 E/F/P (Cobra)
Cord, Detonating	1377-01-032-1049	AH-1 E/F/P (Cobra)

CAD/PAD	NSN	APPLICATION
Cord, Detonating	1377-01-032-1050	AH-1 E/F/P (Cobra)
Cord, Detonating	1377-01-032-3279	AH-1 E/F/P (Cobra)
Cord, Detonating	1377-01-032-3280	AH-1 E/F/P (Cobra)
Cord, Detonating	1377-01-032-3283	AH-1 E/F/P (Cobra)
Cord, Detonating	1377-01-032-3286	AH-1 E/F/P (Cobra)
Cord, Detonating	1377-01-035-4124	AH-1 E/F/P (Cobra)
Cord, Detonating	1377-01-037-4090	AH-1 E/F/P (Cobra)
Cord, Detonating	1377-01-037-4093	AH-1 E/F/P (Cobra)
Cord, Detonating	1377-01-037-4094	AH-1 E/F/P (Cobra)
Cord, Detonating	1377-01-037-4095	AH-1 E/F/P (Cobra)
Cord, Detonating	1377-01-037-4096	AH-1 E/F/P (Cobra)
Cord, Detonating	1377-01-037-9237	AH-1 E/F/P (Cobra)
Cutter Assembly	1377-01-064-4927	UH-1 (Iroquois)
Cutter, Cartridge Actuated	1377-00-412-4377	CH-54 (Tarhe)
Cutter, Cartridge Actuated	1377-01-087-5166	
Cutter, Reef Line	1377-00-060-0885	High Speed Aerial Deliver, CTU-2A
Cutting Assembly	1377-00-106-7773	AH-1S (MOD) (Cobra)
Cutting Assembly	1377-00-409-1095	AH-1S (MOD) (Cobra)
Cutting Assembly	1377-00-409-1096	AH-1S (MOD) E/F/P (Cobra)
Cutting Assembly	1377-00-409-1097	AH-1S (MOD) (Cobra)
Firing Mechanism	1377-00-410-8265	AH-1S (MOD) E/F/P (Cobra)
Interconnecting Line	1377-01-100-1718	AH-1S (MOD) (Cobra)
Junction Manifold (Inert)	1377-00-409-1101	AH-1S (MOD) (Cobra)
Junction Manifold (Inert)	1377-00-410-8228	AH-1S (MOD) (Cobra)
Junction Manifold (Inert)	1377-01-037-4092	AH-1 E/F/P (Cobra)
Pin Puller, Explosive	1377-01-037-4091	AH-1 E/F/P (Cobra)
Refire Kit	1377-01-073-3831	UH-1 (Iroquois)
Rocket Motor	1377-00-244-1578	OV-1 (Mohawk)
Thruster, Cartridge Actuated	1377-01-075-6433	High Speed Aerial Delivery, CTU-2A
Thruster, Cartridge Actuated	1377-01-211-7212	UH-60A (Blackhawk)
Thruster, Explosive	1377-01-062-4196	AH-1E/F/P (Cobra)

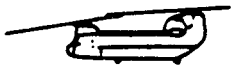
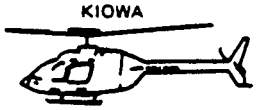
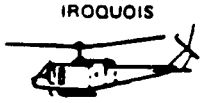
PRE-FERRED	POPULAR NAME AND TYPE	COMBAT ACCEPT SUBST	FOLLOW-ON AIRCRAFT
AH-1 E/F/P	COBRA  ATTACK HELICOPTER	UH-1B UH-1C UH-1M	AH-64A
CH-47A/B/C	CHINOOK  CARGO TRANSPORT HELICOPTER		CH-47D
CH-54A/B	TARHE  CARGO TRANSPORT HELICOPTER		
OH-6A	CAYUSE 		
OH-58A/C	KIOWA  LIGHT OBSERVATION HELICOPTER		
UH-1H UH-1V	IROQUOIS  UTILITY HELICOPTER	UH-1B	UH-60A
TH-55A	OSAGE  TRAINER HELICOPTER		OFF-THE-SHELF

Figure B-1. Designation of Rotary Wing Army Aircraft (sheet 1 of 2).

PRE-FERRED	POPULAR NAME AND TYPE	COMBAT ACCEPT SUBST	FOLLOW-ON AIRCRAFT
UH-60A	BLACKHAWK  UTILITY HELICOPTER	UH-1H	
AH-64A	AAH  ATTACK HELICOPTER		
UH-1C/M	IROQUOIS  UTILITY HELICOPTER		
AH-1 S (MOD)	COBRA  ATTACK HELICOPTER	UH-1B UH-1C UH-1M	AH-64A

Figure B-1. Designation of Rotary Wing Army Aircraft (sheet 2 0f 2).

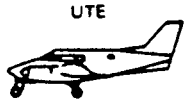
PRE-FERRED	POPULAR NAME AND TYPE	COMBAT ACCEPT SUBST	FOLLOW-ON AIRCRAFT
U-8F	SEMINOLE  UTILITY AIRCRAFT		
U-10A	COURIER  UTILITY AIRCRAFT		
U-21 A/G RU-21A D/H	UTE  UTILITY AIRCRAFT		
OV-1B/C/D RV-1D	MOHAWK  OBSERVATIONS/SURVEIL-LANCE AIRCRAFT		
T-41B	MESCALERO  TRAINER AIRCRAFT		OFF-THE-SHELF
T-42A	COCHISE  TRAINER AIRCRAFT		OFF-THE-SHELF

Figure B-2. Designation of Fixed Wing Army Aircraft (sheet 1 of 2).

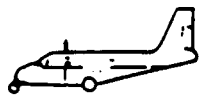
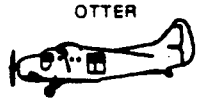
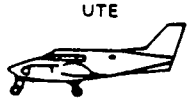
PRE-FERRED	POPULAR NAME AND TYPE	COMBAT ACCEPT SUBST	FOLLOW-ON AIRCRAFT
U-9C	AERO COMMANDER  UTILITY AIRCRAFT		
C-12A/C RU-21J	HURON  CARGO AIRCRAFT		C-12D
UV-18A	TWIN OTTER  UTILITY STOL AIRCRAFT		
U-1A	OTTER  UTILITY AIRCRAFT		
U-21F RU-21B, C	UTE  UTILITY AIRCRAFT		

Figure B-2. Designation of Fixed Wing Army Aircraft (sheet 2 of 2).

APPENDIX C

AIRCRAFT/HELICOPTER/EQUIPMENT TO CAD/PAD CROSS-REFERENCE

Type - Aircraft Equipment	CAD/PAD	NSN	DODIC
AH-IS (MOD)	Cartridge, Impulse	1377-00-585-9291	M189
	Cord, Detonating	1377-00-409-1098	MD18
	Cord, Detonating	1377-00-409-1099	MD16
	Cord, Detonating	1377-00-409-1100	MS50
	Cord, Detonating	1377-00-410-8222	
	Cord, Detonating	1377-00-410-8266	MS47
	Cord, Detonating	1377-00-410-8271	MD15
	Cord, Detonating	1377-00-410-8289	MS48
	Cord, Detonating	1377-00-410-8297	MD17
	Cutting, Assembly	1377-00-106-7773	MD35
	Cutting, Assembly	1377-00-409-1095	MD34
	Cutting, Assembly	1377-00-409-1096	MD33
	Cutting, Assembly	1377-00-409-1097	MD36
	Firing Mechanism	1377-00-410-8265	—
	Junction Manifold (Inert) Cross	1377-00-409-1101	—
	Junction Manifold (Inert) Tee	1377-00-410-8228	—
AH-1 E/F/P	Cartridge, Impulse	1377-00-585-9291	M189
	Connector, Inline	1377-01-062-4195	
	Cord, Detonating	1377-01-032-1047	MS76
	Cord, Detonating	1377-01-032-1048	MS77
	Cord, Detonating	1377-01-032-1049	MS78
	Cord, Detonating	1377-01-032-1050	MS79
	Cord, Detonating	1377-01-032-3279	MS60
	Cord, Detonating	1377-01-032-3280	MS61
	Cord, Detonating	1377-01-032-3283	MS59
	Cord, Detonating	1377-01-032-3286	MS58
	Cord, Detonating	1377-01-035-4124	MS51
	Cord, Detonating	1377-01-037-4090	MS53
	Cord, Detonating	1377-01-037-4093	MS57
	Cord, Detonating	1377-01-037-4094	MS56
	Cord, Detonating	1377-01-037-4095	MS55
	Cord, Detonating	1377-01-037-4096	MS54
	Cord, Detonating	1377-01-037-9237	MS52
	Junction, Manifold (Inert) Inline	1377-01-037-4092	—
	Pin Puller, Explosive	1377-01-037-4091	—
	Thruster, Explosive	1377-01-062-4196	—
AH-1 E/F/P	Cord, Detonating	1377-01-100-1718	MS62
	Initiator, Arm-Fire	1377-01-033-5088	—
AH-64	Connector, Elbow	1377-01-170-4493	—
	Connector, Union	1377-01-170-5321	—
	Connector, Tee	1377-01-170-5319	
	Cord, Detonating	1377-01-186-9899	MS90
	Cord, Detonating	1377-01-186-9900	MS91
	Cord, Detonating	1377-01-186-9901	MS92
	Cord, Detonating	1377-01-186-9902	MS93

Type - Aircraft Equipment	CAD/PAD	NSN	DODIC
	Cord, Detonating	1377-01-170-5260	MS89
	Cord, Detonating	1377-01-170-5245	MS81
	Cord, Detonating	1377-01-170-5246	MS82
	Cord, Detonating	1377-01-170-5244	MS80
	Cord, Detonating	1377-01-170-5265	MS87
	Cord, Detonating	1377-01-170-5264	MS86
	Cord, Detonating	1377-01-170-5263	MS85
	Cord, Detonating	1377-01-170-5262	MS84
	Cord, Detonating	1377-01-170-5261	MS83
	Cord, Detonating	1377-01-186-9898	MS88
	Cutting Assembly	1377-01-184-6112	MS94
	Cutting Assembly	1377-01-184-6113	MS95
	Cutting Assembly	1377-01-187-4477	MS97
	Cutting Assembly	1377-01-185-8908	MS96
	Initiator, Mechanical	1377-01-269-6496	MT06
Cargo Parachute	Cartridge, Delay	1377-00-958-1048	M308
CH-46, CH-47	Cartridge, Aircraft Fire Extinguisher	1377-00-756-1384	M182
CH-47	Cartridge, Aircraft Fire Extinguisher	1377-00-930-9390	M193
	Cartridge, Impulse	1377-00-999-7463	M162
CH-54	Cartridge, Impulse	1377-00-168-5802	M657
	Cutter, Cartridge Actuated	1377-00-412-4377	M554
CTU-2/A, TCU-1/B	Cartridge, Delay	1377-01-084-6046	MF35
	Cutter, Reef Line	1377-00-060-0885	M500
	Thruster, Cartridge Actuated	1377-01-075-6433	MF24
OV-1	Cartridge, Aircraft Fire Extinguisher	1377-00-930-9390	—
	Cartridge, Impulse	1377-00-793-9926	M012
	Cartridge, Impulse	1377-00-883-8997	M507
	Cartridge, Impulse	1377-00-883-8998	M520
	Cartridge Set, Impulse	1377-00-845-5242	M397
	Rocket Motor	1377-00-244-1578	M447
	Parts Kit, Cutter	1377-00-011-9082	—
UH-1	Parts Kit, Cutter	1377-00-011-9082	—
	Refire Kit	1377-01-073-3831	—
UH-60	Cartridge, Aircraft Fire Extinguisher	1377-01-113-8530	—
	Cartridge, Pressure Cargo Hook	1377-01-115-3711	
	Cartridge, Impulse ARD 863-1	1377-01-057-0686	M189
	Cartridge, Aircraft Fire Extinguisher	1377-01-263-3627	MT20
	Cartridge, Impulse CCU-44/B	1377-01-063-3164	MD66

APPENDIX D

CAD/PAD INDEX BY DODIC

DODIC	NOMENCLATURE	PAGE
MS47	Cord, Detonating (SMDC)	5-25
MS48	Cord, Detonating (SMDC)	5-27
MS49	Cord, Detonating (SMDC)	5-29
MS50	Cord, Detonating (SMDC)	5-31
MS51	Cord, Detonating (SMDC)	5-33
MS52	Cord, Detonating (SMDC)	5-35
MS53	Cord, Detonating (SMDC)	5-37
MS54	Cord, Detonating (SMDC)	5-39
MS55	Cord, Detonating (SMDC)	5-41
MS56	Cord, Detonating (SMDC)	5-43
MS57	Cord, Detonating (SMDC)	5-45
MS58	Cord, Detonating (SMDC)	5-47
MS59	Cord, Detonating (SMDC)	5-49
MS60	Cord, Detonating (SMDC)	5-51
MS61	Cord, Detonating (SMDC)	5-53
MS62	Cord, Detonating (SMDC)	5-55
MS76	Linear Explosive Assembly (LEA)	5-57
MS77	Linear Explosive Assembly (LEA)	5-59
MS78	Linear Explosive Assembly Window (WCA)	5-61
MS79	Linear Explosive Assembly Window (WCA)	5-63
MS80	Cord, Detonating (SMDC)	5-71
MS81	Cord, Detonating (SMDC)	5-73
MS82	Cord, Detonating (SMDC)	5-75
MS83	Cord, Detonating (SMDC)	5-77
MS84	Cord, Detonating (SMDC)	5-79
MS85	Cord, Detonating (SMDC)	5-81
MS86	Cord, Detonating (SMDC)	5-83
MS87	Cord, Detonating (SMDC)	5-85
MS88	Cord, Detonating (SMDC)	5-87
MS89	Cord, Detonating (FCDC)	5-89
MS90	Cord, Detonating (FCDC)	5-91
MS91	Cord, Detonating (FCDC)	5-93
MS92	Cord, Detonating (FCDC)	5-95
MS93	Cord, Detonating (FCDC)	5-97
MS94	Canopy Severance Assembly Forward Panel	5-99
MS95	Canopy Severance Assembly Rear Panel	5-101
MS96	Canopy Severance Assembly Rear Panel	5-103
MS97	Canopy Severance Assembly Forward Panel	5-105
MT06	Arming/Firing Initiator	5-107
MT20	Cartridge, Aircraft Fire Extinguisher	2-11
MU02	Cutter, Cartridge Actuated	3-7
MU03	Cutter, Assembly	3-9
MU11	Cutter, Delay, Propellant Actuated MLU-58/B	3-11
PY58	Cartridge Assembly Cargo Hook	10-7

APPENDIX E

CAD/PAD INDEX BY NSN

NSN 1377-	NOMENCLATURE	DODIC
00-087-5326	Cutter Propellant Actuated Mk 20 Mod 0	M648
00-060-0885	Cutter, Reef Line M21	M500
00-087-7103	Cartridge Aircraft Fire Extinguisher	M232
00-106-7773	Cutting Assembly Gunner's Door Window	MD35
00-168-5802	Cartridge, Impulse	M657
00-244-1578	Rocket Motor	M447
00-253-5536	Cartridge, Impulse	MF90
00-328-8080	Firing Mechanism	
00-409-1095	Cutting Assembly Gunner's Canopy Window	MD34
00-409-1096	Cutting Assembly Pilot's Canopy Window	MD33
00-409-1097	Cutting Assembly Pilot's Door Window	MD36
00-409-1098	Cord, Detonating (SMDC)	MD18
00-409-1099	Cord, Detonating (FCDC)	MD16
00-409-1100	Cord, Detonating (SMDC)	MS50
00-409-1101	Junction, Manifold (Inert)	—
00-410-8222	Cord, Detonating (SMDC)	MS49
00-410-8228	Junction, Manifold (Inert)	—
00-410-8265	Armed/Firing Mechanism	—
00-410-8266	Cord, Detonating (SMDC)	MS47
00-410-8271	Cord, Detonating (FCDC)	MD15
00-410-8289	Cord, Detonating (SMDC)	MS48
00-410-8297	Cord, Detonating (SMDC)	MD17
00-412-4377	Cutter, Cartridge Actuated	M554
00-508-2464	Cutter, Reef Line M21	M500
00-585-9291	Cartridge, Impulse ARD-863-1	M189
00-707-0590	Cartridge, Impulse MK 104 Mod 0	M291
00-756-1384	Cartridge, Aircraft Fire Extinguisher	M182
00-774-7259	Cartridge, Delay	
00-793-9926	Cartridge, Impulse MK 19 Mod 0	MO12
00-805-9281	Cartridge, Impulse	MF92
00-824-5858	Cartridge, Aircraft Fire Extinguisher	M232
00-845-5242	Cartridge Set, Impulse Reduced Charge	M397
00-878-6510	Cartridge, Impulse	M253
00-883-8997	Cartridge, Impulse Drogue	M507
00-883-8998	Cartridge, Impulse Guillotine	M520
00-930-9390	Cartridge, Aircraft Fire Extinguisher	M193
00-958-1048	Cartridge, Delay	M308
00-978-7644	Cutter, Cartridge Actuated	MDO1
00-999-7463	Cartridge, Impulse	
00-999-7465	Cartridge, Impulse	M162
01-032-1047	Cord, Detonating (LSC)	MS76
01-032-1048	Cord, Detonating (LSC)	MS77
01-032-1049	Cord, Detonating Window Cutting Assembly	MS78
01-032-1050	Cord, Detonating Window Cutting Assembly	MS79
01-032-3279	Cord, Detonating (SMDC)	MS60
01-032-3280	Cord, Detonating (SMDC)	MS61

NSN 1377-	NOMENCLATURE	DODIC
01-032-3283	Cord, Detonating (SMDC)	MS59
01-032-3286	Cord, Detonating (SMDC)	MS58
01-032-5088	Armed/Firing Mechanism P/N 814033-101	
01-035-4124	Cord, Detonating (SMDC)	MS51
01-037-4090	Cord, Detonating (SMDC)	MS53
01-037-4091	Pin Puller Explosive	
01-037-4092	Junction, Manifold (INERT)	—
01-037-4093	Cord, Detonating (SMDC)	MS57
01-037-4094	Cord, Detonating (SMDC)	MS56
01-037-4095	Cord, Detonating (SMDC)	MS55
01-037-4096	Cord, Detonating (SMDC)	MS54
01-037-9237	Cord, Detonating (SMDC)	MS52
01-049-6365	Cartridge, Impulse	MD73
01-057-0686	Cartridge, Impulse ARD 863-1	M189
01-060-8531	Cord, Set Detonating	ME83
01-062-4195	Connector, Inline (INERT)	—
01-062-4196	Thruster, Explosive P/N 209-033 -007-3	
01-063-3161	Cartridge, Impulse, CCU-44/B	MD66
01-063-3164	Cartridge, Impulse, CCU-44/B	MD66
01-063-3165	Cartridge, Impulse, CCU-44/B	MD66
01-064-4927	Cutter, Assembly; P/N FTL 3648-2	MU03
01-073-3831	Refire Kit	
01-075-6433	Thruster, TCU-1B	MF24
01-084-6046	Cartridge, Delay CCU-57/B	MF35
01-087-5166	Cutter, Cartridge Actuated P/N 303104-1	MU02
01-100-1718	Cord, Detonating (SMDC)	MS 62
01-113-8530	Cartridge, Aircraft Fire Extinguisher	
01-115-3711	Cartridge Assembly Cargo Hook	
01-141-9028	Cutter, Cartridge Actuated	MG51
01-149-5917	Cartridge Assembly Cargo Hook	
01-185-2622	Cartridge Aircraft Fire Extinguisher	MH92
01-211-7211	Cartridge, Impulse CCU-92/A	MJ21
01-170-4493	Connector, Elbow (Inert)	—
01-170-5244	Cord, Detonating (SMDC)	MS80
01-170-5245	Cord, Detonating (SMDC)	MS81
01-170-5246	Cord, Detonating (SMDC)	MS82
01-170-5260	Cord, Detonating (SMDC)	MS89
01-170-5261	Cord, Detonating (SMDC)	MS83
01-170-5262	Cord, Detonating (SMDC)	MS84
01-170-5263	Cord, Detonating (SMDC)	MS85
01-170-5264	Cord, Detonating (SMDC)	MS86
01-170-5265	Cord, Detonating (SMDC)	MS87
01-170-5319	Connector, Tee (Inert)	—
01-184-6112	Cutting Assembly Gunner's Window	MS94
01-184-6113	Cutting Assembly Pilot's Window	MS95
01-185-8908	Cutting Assembly Pilot's Door	MS96
01-186-9898	Cord, Detonating (SMDC)	MS88
01-186-9899	Cord, Detonating (FCDC)	MS90

NSN 1377-	NOMENCLATURE	DODIC
01-186-9900	Cord, Detonating (FCDC)	MS91
01-186-9901	Cord, Detonating (FCDC)	MS92
01-186-9902	Cord, Detonating (FCDC)	MS93
01-187-4477	Cutting Assembly Gunner's Door	MS97
01-263-3627	Cartridge, Aircraft Fire Extinguisher	MT20
01-269-6496	Initiator, Mechanical Actuated	MT06
01-288-0418	Cutter, Delay Propellant Actuated	MU11

APPENDIX F

CAD/PAD INDEX BY GOVERNMENT SOURCE DRAWING NUMBER

DWG NO.	NOMENCLATURE	PAGE
6260965-4	Canopy Severance Assembly, Rear Panel, MS96	5-103
6260965-5	Canopy Severance Assembly Forward Panel, MS94	5-99
6260965-7	Canopy Severance Assembly Rear Panel, MS95	5-101
6261062-1	Linear Explosive Assembly (LEA), MS76	5-57
6261062-3	Linear Explosive Assembly (LEA), MS77	5-59
6261062-7	Linear Explosive Assembly (LEA), Window MS79	5-63
6261063-9	Linear Explosive Assembly (LEA), Window MS78	5-61
6261071	Connector, Union	5-109
6261072	Connector, Tee	5-109
6261073	Connector, Elbow	5-109
6261278	Cutter, Delay, Propellant Actuated MU11	3-11
757AS400-17	Cord, Detonating (SMDC) MS48	5-27
841AS425-23	Cord, Detonating (SMDC) MS86	5-83
841AS425-35	Cord, Detonating (SMDC) MS88	5-87
841AS425-45	Cord, Detonating (SMDC) MS83	5-77
841AS425-47	Cord, Detonating (SMDC) MS80	5-71
841AS425-49	Cord, Detonating (SMDC) MS87	5-85
841AS425-51	Cord, Detonating (SMDC) MS82	5-75
841AS425-53	Cord, Detonating (SMDC) MS81	5-73
841AS425-55	Cord, Detonating (SMDC) MS85	5-81
841AS425-57	Cord, Detonating (SMDC) MS84	5-79
857AS101-1	Connector, Tee (Inert)	5-65
857AS102-1	Connector, Cross Manifold (Inert)	5-65
857AS103-1	Connector, In-Line (Inert)	5-65
857AS400-15	Cord, Detonating (SMDC) MS47	5-25
857AS400-21	Cord, Detonating (SMDC) MS49	5-29
857AS400-25	Cord, Detonating (SMDC) MS50	5-31
857AS400-105	Cord, Detonating (SMDC) MS51	5-33
857AS400-107	Cord, Detonating (SMDC) MS52	5-35
857AS400-109	Cord, Detonating (SMDC) MS53	5-37
857AS400-111	Cord, Detonating (SMDC) MS54	5-39
857AS400-113	Cord, Detonating (SMDC) MS55	5-41
857AS400-115	Cord, Detonating (SMDC) MS56	5-43
857AS400-117	Cord, Detonating (SMDC) MS57	5-45
857AS400-119	Cord, Detonating (SMDC) MS58	5-47
857AS400-121	Cord, Detonating (SMDC) MS61	5-53
857AS400-123	Cord, Detonating (SMDC) MS60	5-51
857AS400-125	Cord, Detonating (SMDC) MS59	5-49
857AS400-127	Cord, Detonating (SMDC) MS62	5-55
1512AS105	CTG, Aircraft Fire Extinguisher, MH92	2-9
1512AS120	Thruster, CTG Actuated, TCU-3/A, MJ20	9-5
1512AS121	Cartridge, Impulse CCU-92/A, MJ21	6-23
1660AS200	CTG, Aircraft Fire Extinguisher, M232	2-7
1660AS300	CTG, Aircraft Fire Extinguisher, M182	2-3

APPENDIX G

CAD/PAD INDEX BY MANUFACTURER'S PART NUMBER

P/N	NOMENCLATURE	DODIC	PAGE
ARD 863-1	Cartridge, Impulse	M189	6-7
5184850	Cartridge, Impulse CCU-44/B	MD66	6-27
5184858	Cartridge, Delay CCU-57/B	MF35	4-3
FLT 3648-2	Cutter Assembly	MU03	3-9
K303104-1	Refire Kit		10-3
P7911-2	Cartridge, Impulse	M189	6-7
R4181-1	Cartridge, Impulse	M253	6-9
MSA 96713	Cartridge, Impulse	M162	6-5
11-1-329	Cartridge, Delay M252	M308	4-7
14195-1	Cutter, Cartridge Actuated	M554	3-5
14398-1	Cartridge, Assembly Cargo Hook	PY58	10-7
155468-9	Cord, Detonating		
1863079	Cartridge, Impulse Mk 104 Mod 0	M291	6-11
816986-3	Linear Explosive Assembly (LEA)	MS77	5-59
816987-103	Linear Explosive Assembly Window, (WCA)	MS78	5-61
		MS79	5-63
51134-47	Cord, Detonating (SMDC)	MS80	5-71
51134-53	Cord, Detonating (SMDC)	MS81	5-73
51134-51	Cord, Detonating (SMDC)	MS82	5-75
51134-45	Cord, Detonating (SMDC)	MS83	5-77
51134-57	Cord, Detonating (SMDC)	MS84	5-79
51134-55	Cord, Detonating (SMDC)	MS85	5-81
51134-23	Cord, Detonating (SMDC)	MS86	5-83
51134-49	Cord, Detonating (SMDC)	MS87	5-85
51134-35	Cord, Detonating (SMDC)	MS88	5-87
2519696	Cartridge Set Impulse	M397	6-13
303104-1	Cutter, Cartridge Actuated	MU02	3-7
30903824	Cartridge, Aircraft Fire Extinguisher	MH92	2-9
42277E336	Cutter, Cartridge Actuated		3-7
5184910	Thruster, Cartridge Actuated	MF24	9-3
7536-1	Cartridge, Impulse Drogue	M507	6-17
813475-101	Cutting Assembly	MD36	5-23
813475-102	Cutting Assembly	MD35	5-21
813475-103	Cutting Assembly (WCA)	MD34	5-19
813475-104	Cutting Assembly (WCA)	MD33	5-17
813475-105	Cord, Detonating (SMDC)	MS51	5-33
813475-107	Cord, Detonating (SMDC)	MS52	5-35
813475-109	Cord, Detonating (SMDC)	MS53	5-37
813475-111	Cord, Detonating (SMDC)	MS54	5-39

P/N	NOMENCLATURE	DODIC	PAGE
813475-113	Cord, Detonating (SMDC)	MS55	5-41
813475-115	Cord, Detonating (SMDC)	MS56	5-43
813475-117	Cord, Detonating (SMDC)	MS57	5-45
813475-119	Cord, Detonating (SMDC)	MS58	5-47
813475-123	Cord, Detonating (SMDC)	MS60	5-51
813475-125	Cord, Detonating (SMDC)	MS59	5-49
813475-15	Cord, Detonating (SMDC)	MS47	5-25
813475-17	Cord, Detonating (SMDC)	MS48	5-27
813475-19	Cord, Detonating (SMDC)	MD17	5-13
813475-21	Cord, Detonating (SMDC)	MS49	5-29
813475-25	Cord, Detonating (SMDC)	MS50	5-31
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