TECHNICAL MANUAL

ARMY AMMUNITION DATA SHEETS

FOR

DEMOLITION MATERIALS

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FOR

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FOR
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TECHNICAL MANUAL

No. 43-0001-38

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DEPARTMENT OF THE ARMY
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Army Ammunition Data Sheets for DEMOLITION MATERIAL

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter or DA Form 2028-2 (Recommended Changes to Equipment Technical Publications) located in the back of this manual directly to Commander, U.S. Army TACOM, Armament Research, Development and Engineering Center, ATTN: AMSTA-AR-WEL-S, Picatinny Arsenal, NJ 07806-5000. You may also send in your recommended changes via electronic mail or by fax. Our e-mail address is LSB@PICA.ARMY.MIL. Our fax number is DSN 880-4633, Commercial (973) 724-4633. A reply will be furnished to you.

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CHAPTER 1
INTRODUCTION

1-1. Purpose

This manual is a reference handbook published as an aid in planning, training, familiarization, and identification of demolition items.

1-2. Scope

a. For each item of materiel, there are illustrations and descriptions together with characteristics and related data, Included in the related data are weights, dimensions, performance data, packing, shipping and storage data, Classification, and logistics control codes (LCC).

b. Information concerning supply operation, and maintenance of the items will be found in the publications referenced for those items, A complete listing of these publications is maintained in DA Pam 310 series indexes.

c Within this manual, items with the following type-classifications are included:

(1) Standard (LCC-A), (LCC-B),
(2) Contingency (CON).
(3) Limited Procurement (LP).
(4) Reclassified obsolete (OBS) for regular Army use, but used by National Guard or Reserve units.
(5) Reclassified OBS for all Army use, but used by Marine Corps, Air Force or Navy Items with the following type-classification are not included: Reclassified OBS for all US. use, No U.S. stocks remain. (Foreign use or stock may remain).

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

1-3. Metric Conversion Chart

For approximate conversions to/from metric measures see table 1-1.

1-4. Quantity-Distance Classes and Storage Compatibility Groups

Quantity-Distance (QD) classes and Storage Compatibility Groups (SCG) listed in this manual are changed, For conversion to new system see table 1-2.

Table 1-1. Metric Conversion Chart

Approximate Conversions to Metric Measures

Symbol	When You Know	Multiply By	To Find	symbol
		LENGTH		
in.	inches	2.5	centimeters	cm
ft.	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
		AREA		
$in.^2$	square inches	6.5	sq centimeter	cm^2
ft^2	square feet	0.09	sq meters	m^2
yd^2	square yards	0.8	sq meters	m^2
mil	sq miles	2.6	sq kilometers	km^2
	acres	0.4	hectares	ha
		WEIGHT		
oz	ounces	28	gram	g
lb	pounds	0.45	kilogram	kg
	short tons (2000 lb)	0.9	tonnes	t
		VOLUME		
tsp	teaspoons	5	milliliters	ml
Tbsp	tablespoon	15	milliliters	ml
fl oz	fluid ounce	30	milliliters	ml
c	cups	0.24	liters	l
pt	pints	0.47	liters	l
qt	quarts	0.95	liters	l
gel	gallons	3.8	liters	l
ft^3	cubic feet	0.03	cubic meters	m_3
yd^3	cubic yards	0.76	cubic meters	m_3
		TEMPERATURE		
Symbol	When You Know	Subtract	Multiply by	To Find Symbol
°F	Fahrenheit	32	0.55	Celcius

Approximate Conversions from Metric Measures

		LENGTH		
mm	millimeter	0.04	inches	in.
cm	centimeters	0.4	inches	in.
m	meters	3.3	feet	ft
m	meters	1.1	yards	yd
km	kilometers	0.6	mile	mi
		AREA		
cm^2	square centi-meters	0.16	square inches	in^2
m^2	square meters	1.2	square yards	yd^2
km^2	square kilo-meters	0.4	square miles	mi^2
ha	hectares (10,000m^2)	2.5	acres	
		WEIGHT		
	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	tonnes	1.1	short tons	
		VOLUME		
ml	milliliters	0.03	fluid ounces	fl oz
l	Liters	2.1	pints	pt
l	Liters	1.06	quarts	qt
l	Liters	0.26	gallons	gal
m^3	cubic meters	35	cubic feet	ft^3
m^3	cubic meters	1.3	cubic yards	yd^3
		TEMPERATURE		
Symbol	When You Know	Multiply by	Add	To Find Symbol
°C	Calcius	1.8	32	Fahrenheit F

Table 1-2. Quantity-Distance Classes and Storage Compatibility Groups

Quantity-distance hazard class 1/		Storage compatibility group 1/3/
Old	New 2/	Typical - New
8	6.1	D
7	1.1	E
6	1.2 (18)	
5	1.2 (12)	F
4	1.2 (08)	G
3	1.2 (04)	C
2	1.3	S
1	1.4	

Footnotes:

1/ New QD and SCG'S are compatible with classes used by NATO nations.

2/ Numbers in parenthesis are minimum distance x 100 feet to protect against specific fragment hazards and vary with items and types of ammunition. (Refer to TM 9-1300-206.)

3/ There is no simple conversion from old SCG'S to new system. The SCG groups listed in this column are typical for the majority of items in the corresponding listed QD class but do not apply to every individual item in the class. For SCG of individual items refer to TM 9-1300-206.

CHAPTER 2

INITIATING AND PRIMING DEVICES

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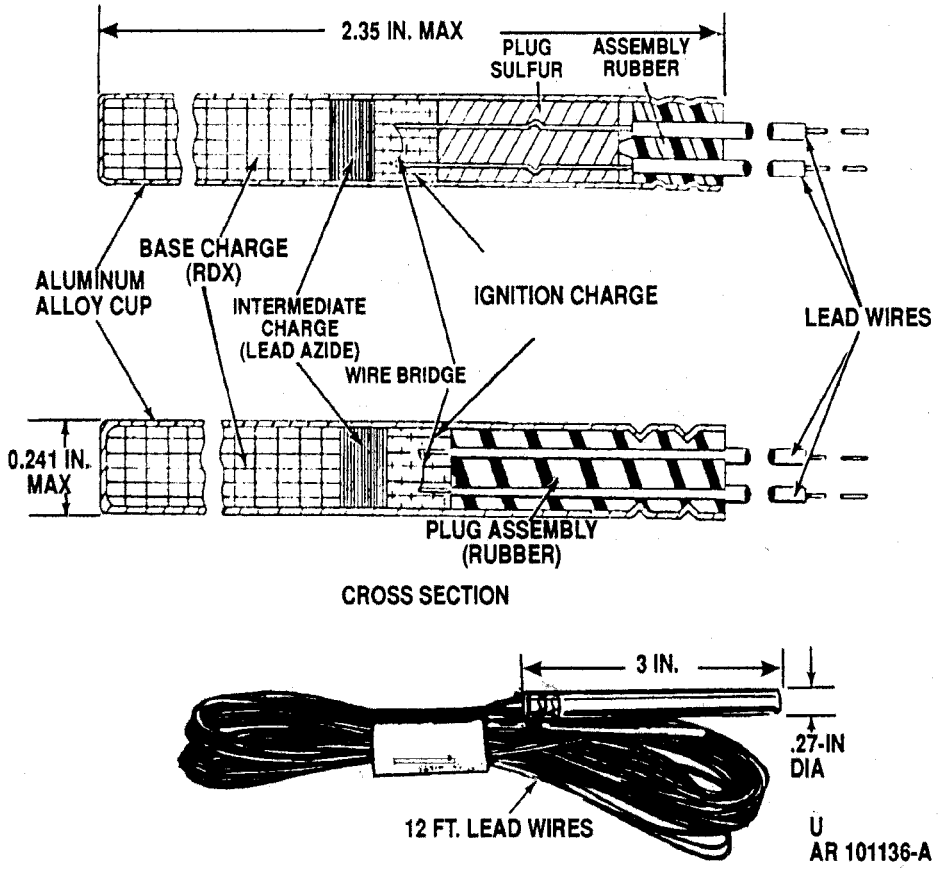
CAP, BLASTING, ELECTRIC: M6



Type Classification:

Std A OTCM 37041, dtd 26 May 1960.

Use:

Electric Blasting Cap M6 is used to initiate high explosives with a blasting machine or other suitable source of electric power. It is capable of detonating all standard military explosives.

Description:

Blasting Cap M6 consists of a base charge of RDX, an intermediate charge of lead azide and an ignition charge of smokeless powder, potassium chlorate and lead salt of dinitro cresol in an aluminum alloy cup. Two 12-foot lead wires, connected by a bridge wire in the ignition charge, extend through a rubber (or rubber and sulfur) plug assembly in the open end of the cup. Two circumferential crimps secure the plug assembly in the cup.

Functioning:

To function the cap, its leads are connected to a blasting machine. The blasting machine is actuated to produce electrical current which flows through the cap's bridge wire producing heat. If sufficient current is put through the bridge wire, the head ignites the ignition charge which initiates the intermediate charge which, in turn, causes detonation of the base charge.

Tabulated Data:

Container material ---------- Aluminum alloy
---------- Unpainted
Dimensions ---------- 2.35 in. x 0.24 in.
Filler:
Base charge ---------- RDX
Intermediate charge --------- Lead azide
Ignition charge ---------- Special mix (e.g. Smokeless Powder)
Method of actuation --------- Electric current

Shipping and Storage Data:

Quantity-distance class ------- 1.1
Storage compatibility ---------- B
DOT shipping classification- Explosive A
DOT designation ---------- DETONATORS-HANDLE CAREFULLY
UNO serial number ---------- 0030
UNO proper shipping name- Detonator, electric
DODIC ---------- M130
Specification ---------- MIL-C-14003 A
Packaging ---------- 6 per carton, 1 carton per barrier bag, 25 bags per fiberboard container, 6 containers (900 caps) per wooden box (or as required)

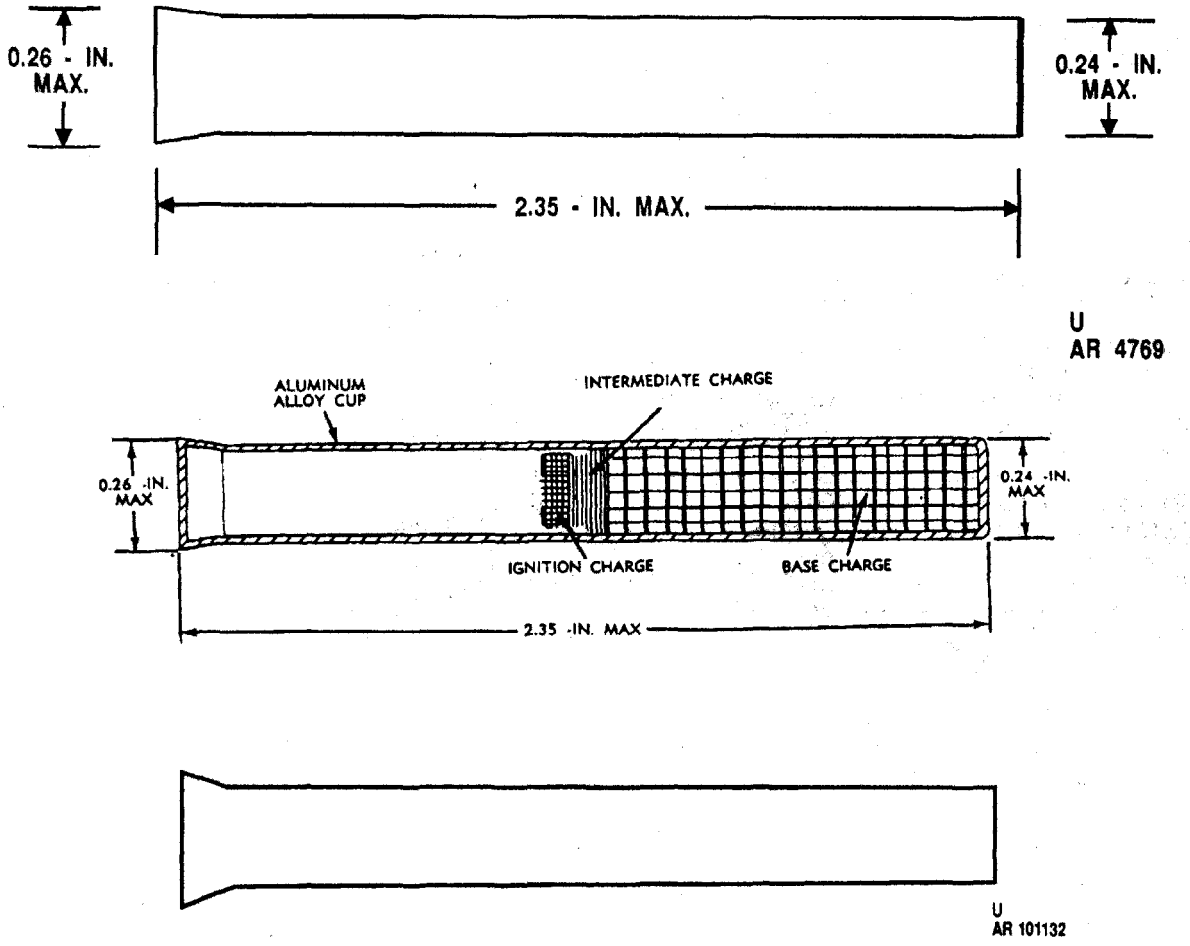
*Packing box:
Weight (w/contents) --------- 113 lb
Dimensions ---------- 23-1/8 x 19-1/2x 21 in.
Cube ---------- 5.48 cu ft

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

References:

FM 5-250
TM 9-1375-213-12
TM 9-1375-213-34

CAP, BLASTING, NONELECTRIC: M7



Type Classification:

Std A OTCM 37041, dtd 26 May 1960.

Use:

Nonelectric Blasting Cap M7 is used to detonate all military explosives.

Description

This nonelectric blasting cap consists of an aluminum alloy cup containing an ignition charge of lead styphnate, an intermediate charge of lead azide, and a base charge of RDX. The cup is flared at the mouth to mate with the matching shape of the nipple of a firing device Base Coupling and the flared end facilitates insertion of time-blasting fuse or detonating cord.

Functioning:

On initiation by time-blasting fuse, primer or detonating cord the ignition charge detonates the intermediate charge which detonated the base charge, in turn. Detonation of the base charge initiates the explosive charge.

Tabulated Data:

Container material ---------- Aluminum alloy
Color..... Unpainted
Dimensions:
Length ---------- 2.35 in
Diameter ---------- 0.24 in. (base); 0.26 in. (mouth)

Filler:
- Base charge ---------- REX
- Intermediate charge --------- Lead azide
- Ignition charge ---------- Lead styphnate
- Method of actuation --------- Flame or impact (Time-blasting fuse or detonating cord or Firing Device Coupling Base)

Shipping and Storage Data:

Quantity-distance class ------- 1.1
Storage compatibilitv ---------- B
DOT shippiig classification - Explosive A
DOT designation ---------- DETONATORS - HANDLE CAREFULLY
UNO serial number ---------- 0029
UNO proper shipping name - Detonators, non-electric
DODIC ---------- M131
Drawing No. ---------- 8830948

Packaging ---------- 6 per carton, 1 carton per vapor-proof bag, 50 bags per fiberboard container, 12 containers (3600 caps) per water-proof lined wooden box 10/50/10 = 5000

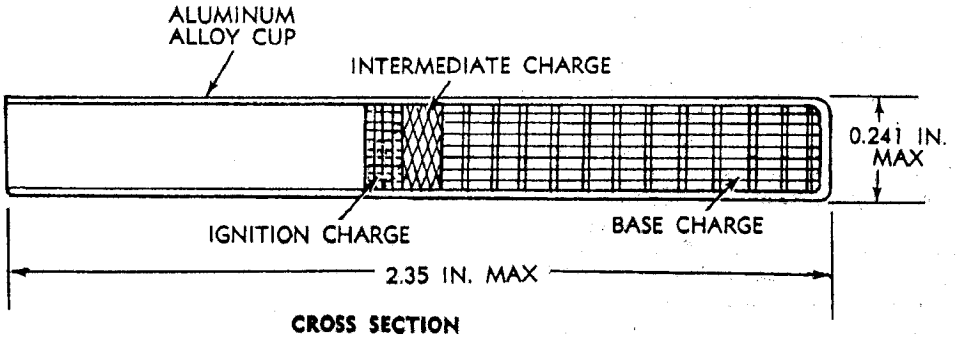
*Packing box:
- Weight (w/contents) --------- 114 lb
- Dimensions ---------- 23-1/8 x 19-1/2x 21 in.
- Cube ---------- 5.48 cu ft

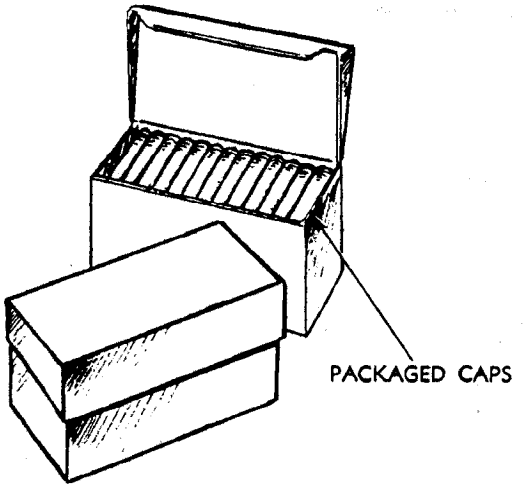
*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

References:

FM 5-250
TM 9-1375-213-12
TM 9-1375-213-34

CAP, BLASTING: SPECIAL, NONELECTRIC, J-1 (TYPE I)





U
AR 101135

Type Classification:

Std OTCM 36841, dtd 1958.

Nonelectric Blasting Cap J-1 is used to prime all standard military explosives.

Description:

This nonelectric blasting cap consists of a tube-shaped aluminum alloy cup, containing an ignition charge of lead styphnate and lead azide, and a base charge of RDX or PETN. The charges are pressed in place. The open end of the cup is designed to accommodate time blasting fuse, detonating cord or the nipple end of a firing device coupling base.

Functioning:

On initiation by a flame or impact, the ignition charge detonates the ignition charge which activates the intermediate charge which activates the base charge, in turn. Detonation of the base charge initiates the explosive charge.

Tabulated Data:

Container material ---------- Aluminum alloy
Dimensions ---------- 2.35 in. x 0.24 in.
Filler:
  Base charge ---------- RDX or PETN
  Intermediate charge --------- Lead azide
  Ignition charge ---------- Lead styphnate and lead azide
Method of actuation --------- Flame or impact

Shipping and Storage Data:

Quantity-distance class ------- 1.1
Storage compatibility group- B
DOT shipping classification - Explosive A
DOT designation ---------- DETONATORS-HANDLE CAREFULLY
UNO serial number ---------- 0029
UNO proper shipping name - Detonators, non-electric
DODIC M131
Specification ---------- MIL-C-14003
Packaging ---------- 50 per can, 20 cans per fiberboard carton, 5 cartons (5000 caps) per waterproof wooden box

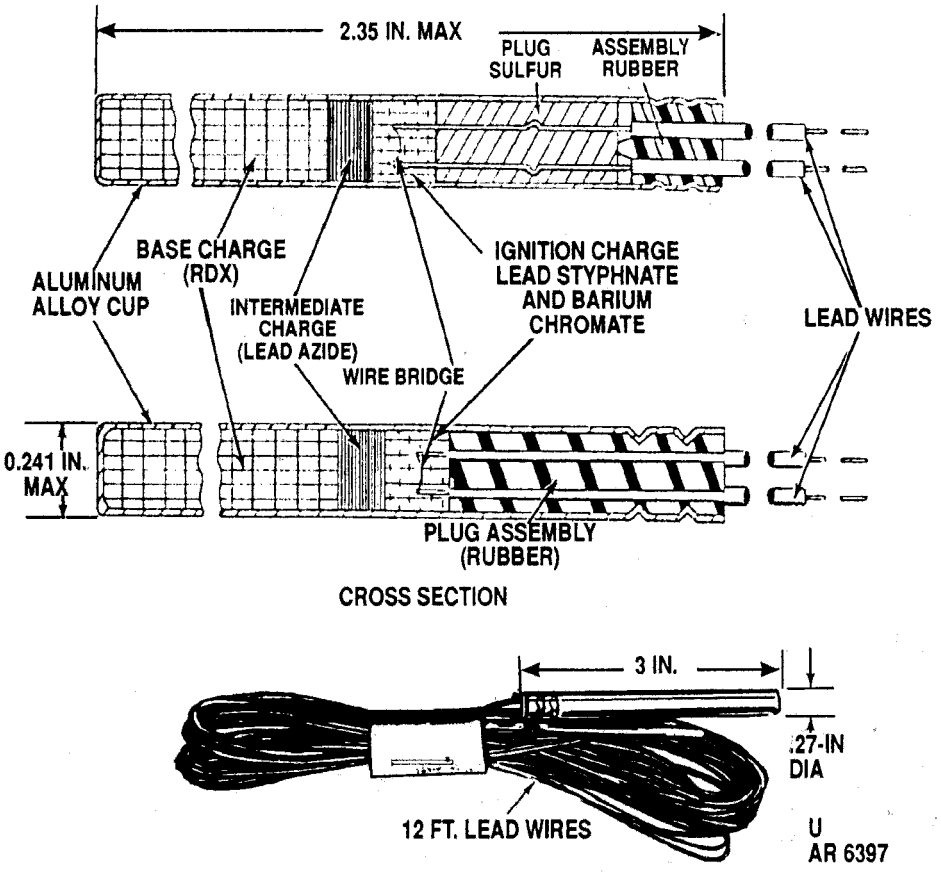
*] Packing box:
Weight (w/contents) --------- 66 lb
Dimensions ---------- 23-3/4 x 17-1/8 x 14 in.
cube ---------- 3.1 cu ft

*: NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

References:

FM5-250
TM9-1375-213-12
TM9-1375-213-34

CAP, BLASTING: ELECTRIC, SPECIAL, J-2, TYPE II



Type Classification:

Std OTCM 36841, dtd 1958.

Use:

Blasting caps are initiating devices used to detonate high explosives.

Description:

Blasting Cap J2 consists of an aluminum cup filled with a base charge of PETN or RDX, an intermediate charge, usually of lead azide, and an ignition charge usually of a lead styphnate base. Two 12-foot long electrical lead wires, connetted by a bridge wire in the ignition charge, extend from the open end of the cup. The wires are sealed in place by a plug assembly made of sulphur and rubber or rubber only. The base ends of the two wires are fastened together by a short-circuiting tab or shunt. Blasting Cap J2, Type II is used with electric blasting machines to detonate military explosives.

Functioning:

When electric current (from a blasting machine) of 1/2 amp or more is passed through the cap's lead wires, the bridge wire is heated to the point that it initiates the sensitive igniter mix surrounding it. This, in turn, initiates the intermediate charge which detonates the base charge of high explosive.

Tabulated Data:

Container material ---------- Aluminum alloy
Color ---------- Unpainted
Dimensions (length) ---------- 2.35 in. x 0.24 in.

Filler:
Base charge ---------- PETN or RDX
Intermediate charge --------- Lead azide
Ignition charge ---------- Igniter mix
Method of actuation --------- Blasting machine

Shipping and Storage Data:

Quantity-distance class ------- 1.1
Storage compatibility group- B
DOT shipping classification - Explosive A
DOT designation ---------- DETONATORS-
CAREFULLY
UNO serial number ---------- 0030
UNO proper shipping name - Detonator, electric
DODIC ---------- Not available
Drawing ---------- 393652
Packing ---------- 1 cap per carton, 1 carton per barrier bag, 50 bags per carton, 10 cartons (500 caps) per wooden box

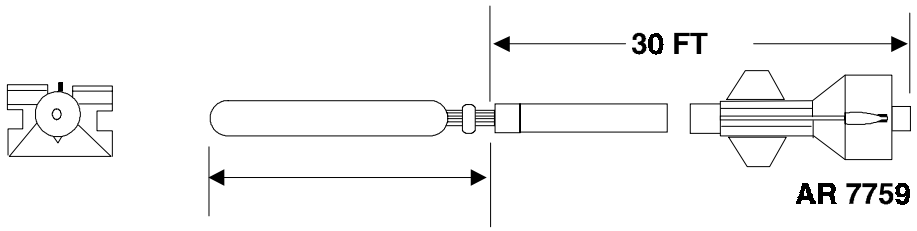
*] Packing box:
Drawing ---------- D 4046-lB
Weight ---------- As required
Dimensions ---------- As required
Cube ---------- As required

*] NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

References:

FM 5-250
TM 9-1375-213-12
TM 9-1375-213-34

CAP, BLASTING: NONELECTRIC, 30 FOOT SHOCK TUBE, M11



Type Classification:

Std A MSR 05963001.

Use:

Nonelectric Blasting Cap M11 is used to detonate all standard military explosives or initiate shock tube blasting caps.

Description:

The M11 is a small aluminum tube filled with explosives (detonator) factory-crimped to a 30-foot length of shock tube. Shock tube is a thin plastic tube with a thin layer of special explosive material deposited on its interior surface. A special plastic connector (called a "J" hook) is attached to the sealed end of the shock tube which is sealed with a small cover. The "J" hook facilitates quick and easy attachment onto a detonating cord (e.g., a ring main). Since the M11 is commercially used in boreholes, two brightly colored plastic flags are attached to the shock tube near the detonator end. A red flag is attached 1 meter from the detonator and a yellow flag is attached 2 meters from the detonator as a safety precaution. These flags indicate that caps are nearby.

Functioning:

The M11 functions by transmitting an initiating shock (or small detonation) through its shock tube into its detonator. The shock wave coming through the shock tube initiates a small amount of a fairly sensitive explosive in the aluminum tube detonator. This explosive then initiates a larger amount of a less sensitive, more powerful explosive which actuates the external charge or device to which the cap is attached. The shock tube itself must be initiated by an M81 igniter or a blasting cap.

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NOTE

The explosion of the shock tube is totally contained within the plastic tubing, but the explosion of the detonator is just like any other military strength blasting cap.

Tabulated Data:

Aluminum Tube:

Length	2.35 in.
Diameter	0.241 in.

Shock Tube:
- Material ..... Various plastics
- Length ..... 30 ft
- Diameter. ..... 0.118 in.

Filler:
- Aluminum tube ..... lead azide, molybdenum chromate, RDX or PETN
- Shock tube ..... HMX/Aluminum
- Method of actuation ..... Shock from detonation of a blasting cap or initiation of M81 igniter

Shipping and Storage Data:

DOD hazard class QD/DIV/
- SCG ..... 1.4 S

DOT hazard class: ..... 1.4 S
DOT label: ..... EXPLOSIVE: 1.4 S
DOT Container Marking:
- Proper shipping name ..... Detonator assemblies, nonelectric for blasting
- UN serial number 0349, 0500
- NSN 1375-01-415-1232
- DODAC 1375-ML47
- CAGE Code 19200

P/N 112972627
Net explosive weight (per cap) .... 1.33 g (0.0029 lb)
Specification QAA-1423
Packaging ..... 60 units/fiberboard box/wood crate; 16 crates/pallet

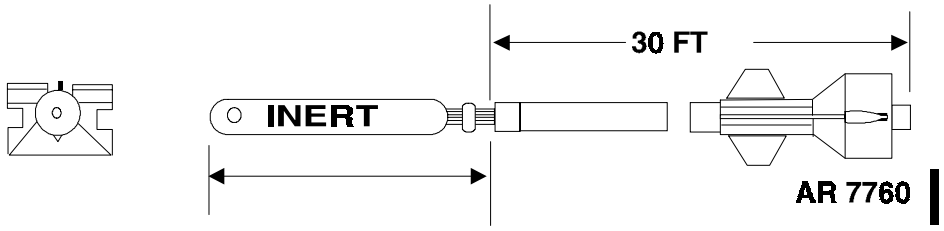
Packing Box:
- Dimensions ..... 20.5 in. x 13 in. x 25.75 in.
- Cube ..... 2.8 cu ft

Net explosive weight ..... 0.16 lb
Gross weight ..... 57 lb

References:

FM 5-250
TM 9-1375-213-12
TM 9-1375-213-34&P
DOD Consolidated Ammunition Supply Catalog

CAP, BLASTING: NONELECTRIC, 30 FOOT SHOCK TUBE, M11 (INERT)



Type Classification:

Std A MSR 05963001.

Use:

This inert item is used for demonstration and for training in demolition work requiring nonelectric shock tube blasting cap.

Description:

The inert blasting cap consists of a 30 foot length of inert shock tube, environmentally sealed at one end, and a military M7 dimensioned, inert detonator attached at the other end. The inert shock tube is made of thin plastic tubing. The cap is aluminum with two 1/8-in. holes drilled at 90 degree intervals on one end and labeled "DUMMY" or "INERT".

Functioning:

This item does not function. Its only purpose is for demonstration and to give the operator the feel and training in the use of shock tube blasting caps.

Tabulated Data:

Shock Tube:
- Material ..... Plastic
- Color ..... Bronze

Dimensions:
- Length ..... 30 ft
- Diameter ..... 0.118 in.

Filler ..... None
Method of actuation ..... None
Cap:
- Material ..... Aluminum w/ black markings

Dimensions:
- Length ..... 2.235 in. max
- Diameter ..... 0.241 in. max

Filler ..... None
Method of actuation ..... None

Shipping and Storage Data:

Quantity-distance class ..... N/A
Storage compatibility group ..... N/A
NSN 1375-01-412-0160
P/N 12972435-2
DODAC 1375-MN36
Specification QAA-1423
CAGE Code 19200
Packaging ..... As required
Packing box ..... N/A
Gross weight ..... 57 lb

References:

FM 5-25
TM 9-1375-213-12
TM 9-1375-213-34&P

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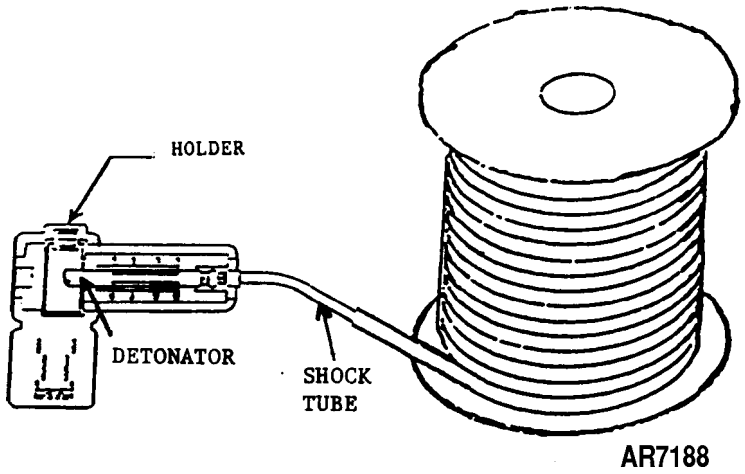
CAP, BLASTING: NONELECTRIC, 500 FOOT SHOCK TUBE, M12



Type Classification:

Std A MSR 05963001.

Use:

Nonelectric Blasting Cap M12 is used to relay a shock tube detonation impulse from an M81 initiator (or another relay cap) to another relay cap or to a high strength shock tube blasting cap (e.g., the M11) which initiates standard military explosives. The M12 is used only as a relay device. It does not have sufficient output to initiate most military explosives.

Description:

The M12 is a small aluminum tube filled with explosives (detonator) factory-crimped to a 500-foot length of shock tube. Shock tube is a thin plastic tube with a thin layer of special explosive material deposited on its interior surface. Splicing material is supplied with the spool to make at least five splices. A special plastic clamp is attached to the detonator to facilitate quick and easy attachment to the shock tube of up to five other blasting cap components.

Functioning:

The M12 functions in transmitting an initiating shock (or small detonation) through its shock tube into its detonator. The shock wave coming through the shock tube initiates a small amount of sensitive explosive in the detonator. This explosive then initiates a small amount of a less sensitive, more powerful explosive which actuates up to five shock tubes held by the plastic connector. The M12's shock tube must be initiated by a blasting cap or by a special Time Blasting Fuse Igniter, the M81.

NOTE

The older model igniter, the M60 will NOT secure or reliably initiate shock tube.

Tabulated Data:

Aluminum Tube Detonator:	
Length	2.7 in.
Diameter	.0.296 in.
Shock Tube:	
Material	Various plastics
Length	500 ft
Diameter	0.118 in.
Filler:	
Detonator	Lead azide, PETN
Shock tube	HMX/Aluminum
Method of actuation	Shock from detonation of blasting cap or the primer in an M81 Igniter

Shipping and Storage Data:

DOD hazard class (QD/DIV/SC) 1.4S
DOT hazard class: 1.4S
DOT label: ..... EXPLOSIVE: 1.4S
DOT Container Marking:
- Proper shipping name ..... Detonators, assemblies, nonelectric
- UN serial no. 0349, 0500
- NSN 1375-01-415-1230
- DODAC 1375-MN02

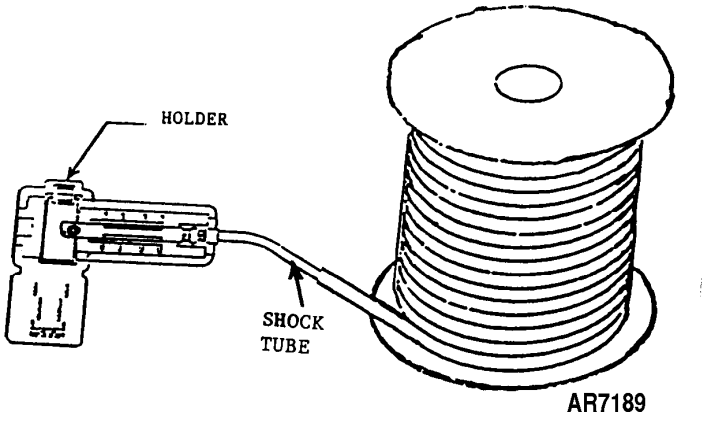
CAGE Code 19200
Net explosive weight (per cap) ..... 2.71 g (0.00596 lb)
Drawing 12972628
Specification QAA-1459
Packaging ..... 8 fiberboard box; 6 box (48)/wooden crate; 2 wood crates/pallet
Packing Box:
- Dimensions ..... 40 in. x 20 in. x 37 in.
- Cube ..... 17.13 cu ft

Net explosive weight ..... 0.286 lb
Gross weight ..... 1.1 lb

References:

FM 5-250
TM 9-1375-213-12
TM 9-1375-213-34&P
DOD Consolidated Ammunition Supply Catalog

CAP, BLASTING: NONELECTRIC, 500 FOOT SHOCK TUBE, M12 (INERT)



Type Classification:

Std A MSR 05963001.

Use:

This inert item is used for demonstration and for training in demolition work requiring nonelectric shock tube blasting cap.

Description:

The inert blasting cap consists of a 500 foot length of inert shock tube sealed at one end and with an inert blasting cap attached at the other end. The shock tube is wound around a spool. A holder for connecting the blasting cap with shock tube branch lines is attached to the cap. Splicing material is supplied with the spool to make at least five splices. The inert shock tube is made of plastic. The inert cap is aluminum with two 1/8-in. holes drilled at 90 degree intervals on one end and labeled "DUMMY" or "INERT".

Functioning:

This item does not function. Its only purpose is for demonstration and to give the operator the feel and training in the use of shock tube blasting caps.

Tabulated Data:

Shock Tube:
- Material ..... Plastic
- Color ..... Bronze

Dimensions:
- Length ..... 500 ft
- Diameter ..... 0.118 in.

Filler ..... None
Method of actuation ..... None

Inert Detonator:
- Material ..... Aluminum w/ black markings

Dimensions:
- Length ..... 2.7 in.
- Diameter ..... 0.296 in.

Filler ..... None
Method of actuation ..... None

Shipping and Storage Data:

Quantity-distance class ..... N/A
Storage compatibility group ..... N/A
NSN 1375-01-412-8813
DODAC 1375-MN35
Specification QAA-1459
Packaging ..... As required
Gross weight ..... 1.1 lb

References:

FM 5-250
TM 9-1375-213-12
TM 9-1375-213-34&P

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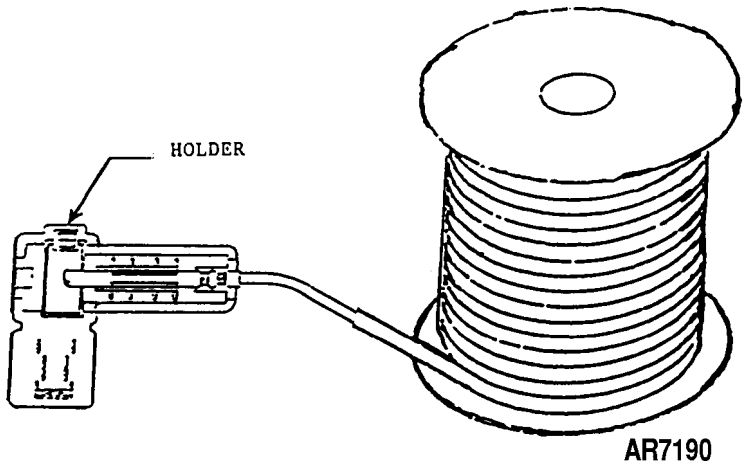
CAP, BLASTING: NONELECTRIC, 1000 FOOT SHOCK TUBE, M13



Type Classification:

Std A MSR 05963001.

Use:

Nonelectric Blasting Cap M13 is used to relay a shock tube detonation impulse from an M81 initiator (or another relay cap) to another relay cap or to a high strength shock tube blasting cap (e.g., the M11) which initiates standard military explosives. The M13 is used only as a relay device. It does not have sufficient output to initiate most military explosives.

Description:

The M13 is a small aluminum tube filled with explosives (detonator) factory-crimped to a 1000-foot length of shock tube. Shock tube is a thin plastic tube with a thin layer of special explosive material deposited on its interior surface. Splicing material is supplied with the spool to make at least five splices. A special plastic clamp is attached to the detonator to facilitate quick and easy attachment to the shock tube of up to five other blasting caps.

Functioning:

The M13 functions in transmitting an initiating shock (or small detonation) through its shock tube into its detonator. The shock wave coming through the shock tube initiates a small amount of sensitive explosive in the detonator. This explosive, in turn, initiates a small amount of a less sensitive, more powerful explosive which actuates up to five shock tubes held by the plastic connector. The M13's shock tube must itself be initiated by a blasting cap or by a special Time Blasting Fuse Igniter, the M81.

NOTE

The M60. the older model igniter, will NOT secure or reliably initiate shock tube.

Tabulated Data:

Aluminum Tube Detonator:
- Length ..... 2.7 in.
- Diameter..... 0.296 in.

Shock Tube:
- Material ..... Various plastics
- Length ..... 1000 ft
- Diameter..... 0.118 in.

Filler:
- Detonator..... Lead azide, PETN
- Shock tube..... HMX/Aluminum

Method of actuation..... Shock from detonation of blasting cap or the primer in an M81 Igniter

Shipping and Storage Data:

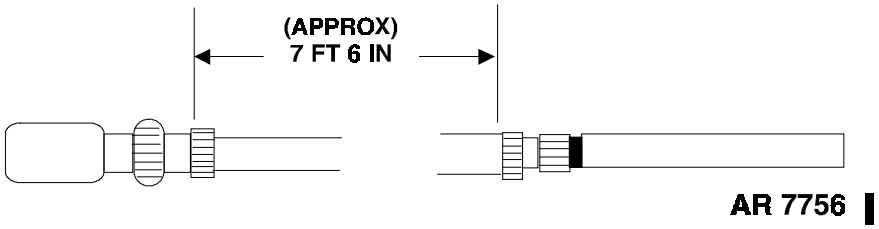
DOD Hazard class QD/DIV/
SCG 1.4S
DOT Hazard class:..... 1.4S
DOT Label:..... EXPLOSIVE: 1.4S
DOT Container Marking:
Proper Shipping Name..... Detonators, assemblies, nonelectric
UN serial no.... 0455, 0500
NSN 1375-01-415-1231
DODAC 1375-MN03
Net explosive weight (per cap 5.06g

Drawing..... 12972629
Specification QAA-1459
Packaging..... 4 units/fiberboard box; 6 fiberboard boxes/wood crate; 2 wood crates/pallet
Packing Box:
Dimensions..... 40 in. x 20 in. x 37 in.
Cube ..... 17.13 cu ft
Net explosive weight..... 0.245lb/crate
Gross weight ..... 198.64 kg palletized

Reference:

FM 5-250
TM 9-1375-213-12
TM 9-1375-213-34&P
DOD Consolidated Ammunition Supply Catalog

CAP, BLASTING: NONELECTRIC, DELAY, M14



Type Classification:

Std A MSR 05963001.

Use:

Nonelectric Blasting Cap M14 is used to detonate all standard military explosives or to initiate shock tube blasting caps approximately 5 minutes (manufacturer calibrated) after it is ignited by the user.

Description:

The M14 is a small aluminum tube filled with explosives (detonator) factory-crimped to an approximately 7-1/2 foot length of time blasting fuse. Instead of the usual yellow band every 18 inches, a marker band and the nominal burning time in minutes (from the band to the detonator) is marked on the fuse. The free end of the fuse is sealed so only a small piece must be cut off when it is prepared for ignition. The fuse is factory calibrated to a 5-minute burn time marked at 1 minute increments.

Functioning:

The M14 functions in transmitting an initiating flame (from a time blasting fuse igniter or a match) slowly burning through its length of time blasting fuse into its detonator. The flame coming through the fuse initiates a small amount of a fairly sensitive explosive in the detonator. This explosive, in turn, initiates a larger amount of a less sensitive, more powerful explosive which actuates the external charge or device to which the cap is attached by the user. The M14 is designed to allow a nominal 5-minute delay under almost all weather and altitude conditions.

Tabulated Data:

Aluminum Tube:
- Length ..... 2.35 in.
- Diameter..... 0.241 in.

Time Blasting Fuse:
- Material ..... Plastic covered fiber
- Length ..... Approx 7-1/2 ft
- Diameter..... 0.25 in.

Filler:
- Detonator..... Lead Styphenate, lead azide,
  ..... PETN
- Method of actuation ..... Flame from time blasting fuse igniter or a match

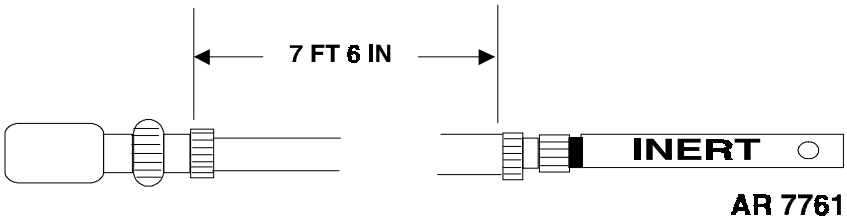
Shipping and Storage Data:

DOD hazard class QD/DIV/
SCG 1.4S
DOT hazard class..... 1.4S
DOT label: ..... EXPLOSIVE: 1.4S
DOT Container Marking:
Proper shipping name ..... Detonators, non-electric
UN serial no..... 0349,0455, 0500
NSN 1375-01-415-1233
DODAC 1375-MN06
CAGE Code 19200
Net explosive weight (per cap) ..... 15.90 g (0.03498 lb)
Drawing 12972630
Specification QAA-1424
Packaging ..... 60/wood box
Packing Box:
Dimensions..... 21 in. x 20 in. x 12 in.
Cube ..... 2.92 cu ft
Net explosive weight..... 2.099 lb/crate
Gross weight ..... 35 lb

Reference:

FM 5-250
TM 9-1375-213-12
TM 9-1375-213-34&P
DOD Consolidated Ammunition Supply Catalog

CAP, BLASTING: NONELECTRIC, DELAY, M14 (INERT)



Type Classification:

Std A MSR 05963001.

Use:

This inert item is used for demonstration and for training in demolition work requiring nonelectric delay blasting cap.

Description:

The inert delay blasting cap consist of a 7-1/2 foot length of inert time delay fuse, sealed at on end and with a military M7 dimensioned, inert blasting cap crimped at the end. The inert time fuse is the same as described in this manual. The inert cap is aluminum with two 1/8 in. holes drilled at 90 degree intervals on one end and labeled "DUMMY" or "INERT".

Functioning:

This item does not function. Its only purpose is for demonstration and to give the operator the feel and training in the use of delay blasting caps.

Tabulated Data:

Time Fuse:
(See FUSE, BLASTING TIME, INERT in this manual for material and color).

Dimensions:
Length ..... 7-1/2 ft
Diameter..... 0.2 in.
Method of actuation ..... None
Cap:
Material ..... Aluminum w/ black markings
Dimensions:
Length ..... 2.235 in. max
Diameter..... 0.241 in. max
Filler ..... None
Method of actuation ..... None

Shipping and Storage Data:

Quantity-distance class ..... N/A
Storage compatibility group..... N/A
NSN 1375-01-411-6346
P/N 12972434-2
DODAC..... 1375-MN37
Specification QAA-1424
Packaging..... As required
Gross weight ..... 57 lb

References:

FM 5-250
TM 9-1375-213-12
TM 9-1375-213-34&P

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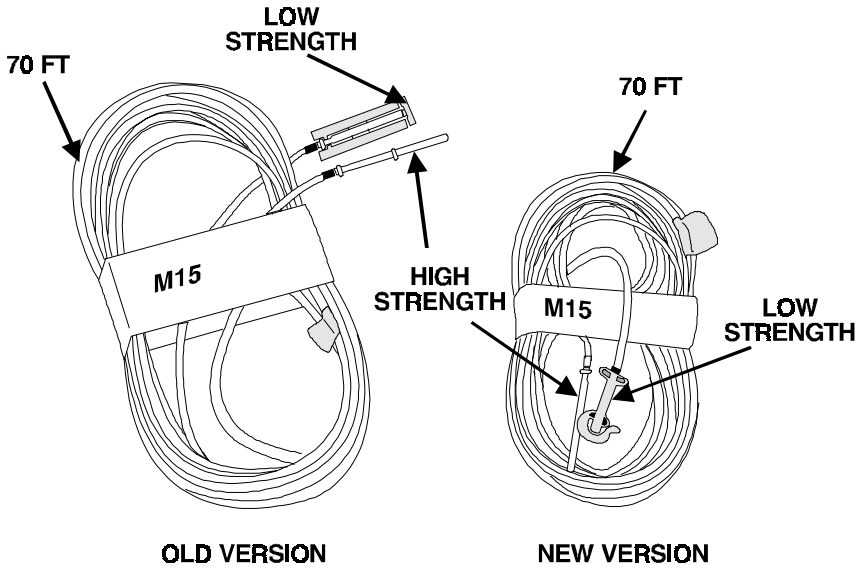
CAP, BLASTING: NONELECTRIC, DELAY, M15



M15 AR 7720

Type Classification:

Std A MSR 05963001.

Use:

Nonelectric Blasting Cap M15 is used to provide a delay element in a shock tube blasting cap priming system to obtain staged detonations such as are needed in quarrying operations. Normally several M15s would be used in tandem to obtain a multi-stage detonation with a slight delay between each stage to allow the outer layer of rock to start moving before the next layer's detonation occurs. The M15 has two different delay times available to the user.

Description:

The M15 consists of two small aluminum tubes (detonators) filled with explosives and factory-crimped to each end of a 70 foot length of shock tube. Shock tube is a thin plastic tube with a thin layer of special explosive material deposited on its interior surface. The detonators are of slightly different size and contain different delay elements. The shorter detonator is designed to initiate other pieces of shock tube in the priming system while the longer detonator is designed to initiate explosives. A plastic holder is attached to the shorter detonator to facilitate connection to other shock tubes. Since the high strength detonator of the M15 is commercially used in boreholes, two brightly colored plastic flags are attached to the shock tube near this detonator. A red flag is attached one meter from the longer, high-strength detonator and a yellow one is attached two meters from the detonator.

Functioning:

The M15 functions in transmitting an initiating shock (or small detonation) through its shock tube into its detonators which contain pyrotechnic delay elements. The shock wave coming through the shock tube initiates burning of the pyrotechnic delay element which then initiates a small amount of a sensitive explosive in the detonator. This explosive, in turn, initiates a small amount of a less sensitive, more powerful explosive which actuates an attached length of shock tube or an explosive device. The delay time in the two detonators is different - one is 25 milliseconds (low strength, shorter end) and the other is 200 milliseconds (high strength, longer end). Both detonators are slightly larger in diameter than a standard blasting cap and will NOT fit in a standard capwell. The M15's shock tube must itself be initiated by a blasting cap.

Tabulated Data:

Aluminum Tubes:
- Length (low strength) ..... 2.5 in.
- Length (high strength) ..... 3.5 in.
- Diameter (low strength)..... 0.296 in.
- Diameter (high strength)..... 0.296 in.
- Net Explosive Weight (complete cap with both detonators)..... 1.63 g

Shock Tube:
- Material..... Various plastics
- Length..... 70 ft
- Diameter ..... 0.118 in.

Filler:
- Aluminum tubes ..... Lead azide, PETN
- Shock tube ..... HMX/aluminum

Method of actuation..... Shock from detonation of blasting cap

Shipping and Storage Data:

DOD hazard class QD/DIV/ SCG 1.4S

DOT hazard class: 1.4S

DOT Container Marking:
- Proper shipping name ..... Detonators, non-electric, for blasting
- UN serial no.(s)..... 0367, 0500
- NSN 1375-01-415-1234
- DODAC..... 1375-MN07
- CAGE Code 19200

Drawing..... 12972631

Specification QAA-1425

Packaging..... 60/wood box, 240 boxes (240 items)/ packing box

Packing Box:
- Dimensions..... 46 in. x 21 in. x 21 in.
- Cube ..... 11.74 cu ft

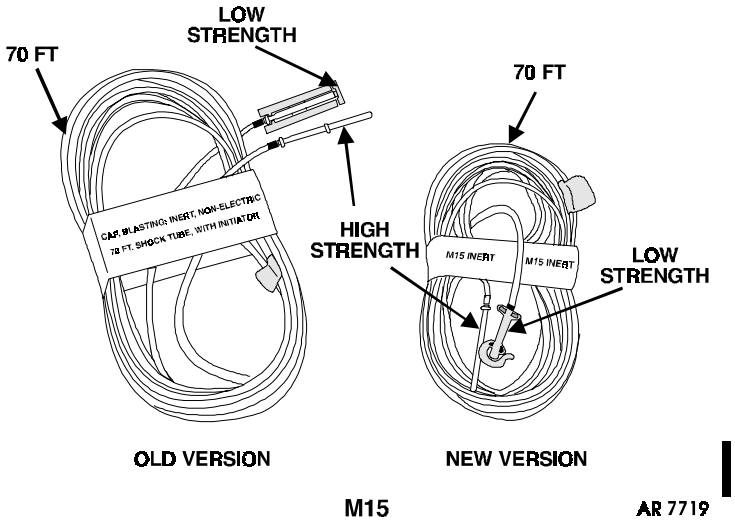
Net explosive weight..... 0.4 lb

Gross weight ..... 118 lb

References:

FM 5-250
TM 9-1375-213-12
TM 9-1375-213-34&P
DOD Consolidated Ammunition Supply Catalog

CAP, BLASTING: NONELECTRIC, 70 FOOT SHOCK TUBE WITH INITIATOR, M15 (INERT)



Type Classification:

Std A MSR 05963001.

Use:

This inert item is used for demonstration and for training in demolition work requiring nonelectric shock tube blasting cap.

Description:

The inert blasting cap consists of a 70 foot length of inert shock tube. One end has an attached inert blasting cap packaged into a plastic holder that has the capability of holding four additional inert shock tube lines. The other end of the 70 foot shock tube will also have a longer blasting cap attached. The inert shock tube is made of thin plastic tubing colored bronze. The inert caps are made of aluminum with two 1/8 in. holes drilled at 90 degree intervals on one end and labeled "DUMMY" or "INERT". A red flag is attached one meter from the longer cap and a yellow flag is attached two meters from the longer cap.

Functioning:

This item does not function. Its only purpose is for demonstration and to give the operator the feel and training in the use of shock tube blasting caps.

Tabulated Data:

Shock Tube:
- Material ..... Plastic
- Color..... Bronze

Dimensions:
- Length ..... 70 ft
- Diameter..... 0.118 in.

Filler ..... None
Method of actuation ..... None
Cap:
- Material ..... Aluminum w/black markings

Dimensions:
- Lengths (low strength) ..... 2.500 in.
- (high strength)..... 3.500 in.
- Diameter..... 0.296 in.

Filler ..... None
Method of actuation ..... None

Shipping and Storage Data:

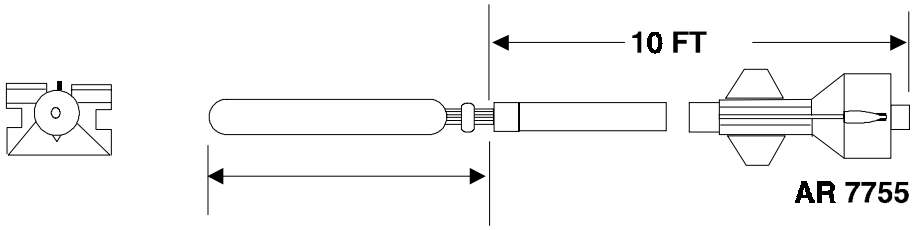
Quantity-distance class ..... N/A
Storage compatibility group..... N/A
NSN 1375-01-411-6345
P/N 12972433-2

CAGE Code.....19200
DODAC 1375-MN38
Specification QAA-1425
Packaging .....As required
Gross weight..... 118 lb

References:

FM 5-250
TM 9-1375-213-12
TM 9-1375-213-34&P

CAP BLASTING: NONELECTRIC, 10 FOOT SHOCK TUBE, M16



Type Classification:

Std A MSR 05963001.

Use:

Nonelectric Blasting Cap M16 is used to detonate all standard military explosives or initiate shock tube blasting caps.

Description:

The M16 is a small aluminum tube filled with explosives (detonator) factory-crimped to a 10-foot length of shock tube. Shock tube is a thin plastic tube with a thin layer of special explosive material deposited on its interior surface. A special plastic connector (called a "J" hook) is attached to the sealed end of the shock tube which is sealed with a small cover. The "J" hook facilitates quick and easy attachment onto a detonating cord (e.g., a ring main). Since the M16 is commercially used in boreholes, two brightly colored plastic flags are attached to the shock tube near the detonator end. A red flag is attached one meter from the detonator and a yellow flag is attached two meters from the detonator as a safety precaution. These flags indicate that buried caps are nearby.

Functioning:

The M16 functions by transmitting an initiating shock (or small detonation) through its shock tube into its detonator. The shock wave coming through the shock tube initiates a small amount of a fairly sensitive explosive in the aluminum tube detonator. This explosive then initiates a larger amount of a less sensitive, more powerful explosive which actuates the external charge or device to which the cap is attached. The shock tube itself must be initiated by a blasting cap.

NOTE

The explosion of the shock tube is totally contained within the plastic tubing, but the explosion of the detonator is just like any other military strength blasting cap.

Tabulated Data:

Aluminum Tube:
- Length ..... 2.35 in.
- Diameter..... 0.241 in.

Shock Tube:
- Material ..... Polyethylene
- Length ..... 10 ft
- Diameter..... 0.118 in.

Filler:
- Aluminum tube ..... Lead azide, RDX
- Shock tube ..... HMX/Aluminum
- Method of actuation ..... Shock from detonation of a blasting cap

Shipping and Storage Data:

DOD hazard class QD/DIV/
- SCG ..... 1.4 S

DOT hazard class: ..... 1.4 S
DOT label ..... EXPLOSIVE: 1.4 S
DOT Container Marking:
- Proper shipping name ..... Detonators, non-electric for blasting
- UN serial no. 0500
- NSN 1375-01-449-9601
- DODAC 1375-MN39
- P/N 112982927
- CAGE code 19200

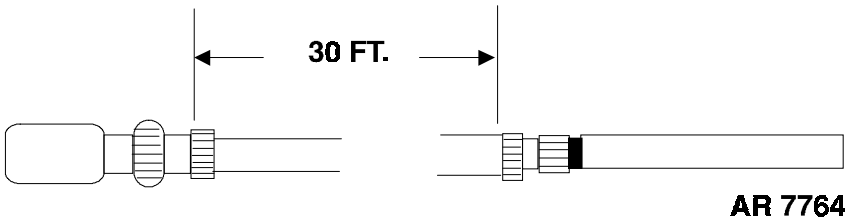
Net Explosive weight (per cap) .... 1.175 gr (.0026 lb)
Specification QAA-1423B
Packaging ..... 6 units/pack, 10 packs (60 caps)/ packing box, 12 boxes/pallet
Packing Box:
- Dimensions ..... 24.5 in. x 18 in. x 11 in.
- Cube ..... 2.8 cu ft

Net explosive weight ..... 0.16 lb
Gross weight ..... 57 lb

References:

FM 5-250
TM 9-1375-213-12
TM 9-1375-213-34&P
DOD Consolidated Ammunition Supply Catalog

CAP, BLASTING: NONELECTRIC, DELAY, M18



Type Classification:

Std MSR 05963001.

Use:

Nonelectric Blasting Cap M18 is used to detonate all standard military explosives or to initiate shock tube blasting caps approximately 20 minutes after it is ignited by the user.

Description:

The M18 is a small aluminum tube filled with explosives (detonator) factory-crimped to an approximately 30 foot length of time blasting fuse. Instead of the usual yellow band every 18 inches, a marker band and the nominal burning time in minutes (from the band to the detonator) is marked on the fuse. The free end of the fuse is sealed so only a small piece must be cut off when it is prepared for ignition. The fuse is factory calibrated to a 20 minute burn time marked at 5 minute increments.

Functioning:

The M18 functions in transmitting an initiating flame (from a time blasting fuse igniter or a match) slowly burning through its length of time blasting fuse into its detonator. The flame coming through the fuse initiates a small amount of a fairly sensitive explosive in the detonator. This explosive, in turn, initiates a larger amount of a less sensitive, more powerful explosive which actuates the external charge or device to which the cap is attached by the user. The M18 is designed to allow a nominal 20-minute delay under almost all weather and altitude conditions.

Tabulated Data:

Aluminum Tube:	
Length	2.35 in.
Diameter	0.241 in.
Time Blasting Fuse:	
Material	Plastic covered fiber
Length	30 ft
Diameter	0.25 in.
Filler:	
Detonator	Lead Styphenate, lead azide, PETN
Method of actuation	Flame from time blasting fuse igniter or a match

Shipping and Storage Data:

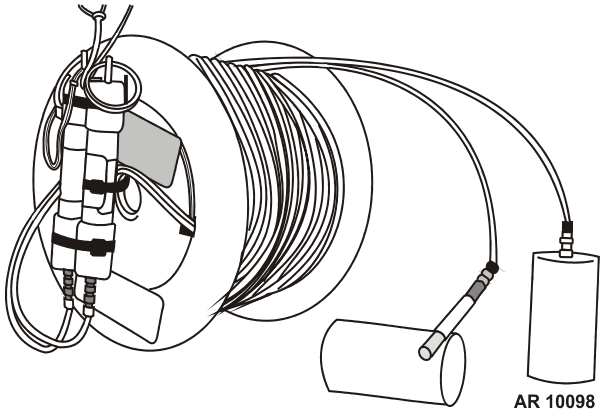
DOD hazard class QD/DIV/
SCG 1.4S
DOT Hazard Class 1.4S
DOT Label: ..... EXPLOSIVE: 1.4S
DOT Container Marking:
Proper shipping name ..... Detonators, non-electric, for blasting
UN serial no. 0345, 0500
NSN 1375-01-449-9602
DODAC 1375-MN41
P/N 12982929
CAGE Code 19200

Net explosive weight (per cap) .... 11.73 g
Specification QAA-1424B
Packaging ..... 60/wood box
Packing Box:
Dimensions ..... 26 in. x 18 in. x 11 in.
Cube ..... 2.8 cu ft
Net explosive weight ..... 1.55 lb
Gross weight ..... 57 lb

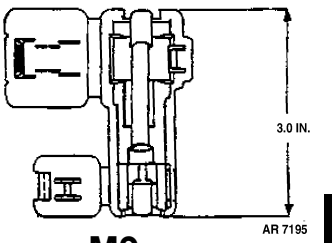
Reference:

FM 5-250
TM 9-1375-213-12
TM 9-1375-213-34&P
DOD Consolidated Ammunition Supply Catalog

CAP, BLASTING: DUAL IN-LINE INITIATOR, NON-ELECTRIC, 200 FOOT MINITUBE, M19



M19



M9

TYPE CLASSIFICATION:

23 September 2002.

USE:

The M19 initiates standard military explosives and demolition charges by inserting the blasting cap(s) directly into an explosive, or the cap well of demolition charges. The M19 is particularly suited for urban terrain missions when very high reliability is required.

DESCRIPTION:

The M19 consists of a 200-foot length of dual minitube with an M42C1 in-line primer built into one end of each of the two minitubes and a non-electric, non-delay blasting cap attached to the other end of each minitube. The minitube is a plastic conduit with a thin layer of special explosive material deposited on its interior surface. The firing assembly of the M81 igniter is attached to each in-line primer. Each blasting cap is inserted into a foam cup protector.

M9 plastic holders will be provided in the packaging for each M19 to facilitate quick and easy attachment to the minitube of additional blasting cap components.

FUNCTIONING:

The M19's minitube must be initiated by a blasting cap or by activating the firing assembly of the M81 igniter. To actuate the M81, remove the cotter pin, then pull the pull ring to the limit of its travel. The pull ring rod then releases the firing pin. The firing assembly of the M81 igniter strikes the M42C1 primer. The small detonation impulse (shock wave) from the primer is transmitted through the minitube into a less sensitive explosive contained within its blasting cap. The blasting cap can actuate an additional number of components held by the M9 plastic holder, or can directly initiate explosive charges or demolition devices.

TABULATED DATA:

Dual Minitube:	
Material	Plastic
Color	Green
Dimensions (Dual Minitube):	
Length	200 ft
Diameter	0.210 in. max x 0.015 in. max
Filler	HMX/AL 2.743 +/- 0.914 mg/ft
Method of actuation	Blasting Cap/Firing Assembly

Blasting Cap (Detonator):

Material	Aluminum
Dimensions:	
Length	2.25 - 2.35 in.
Diameter	0.230 - 0.241 in.
Filler	RDX/ Lead Azide
Method of actuation	Impulse from attached minitube
Initiating charge	M42C1 Primer
Method of actuation	Firing assembly
Item weight	1.6 lb (0.73 kg)

DRAWINGS:

Drawing No.	12999557

PACKING DATA:

Packing Box:

Dimensions (wood box)	44 in. x 16 in. x 21.5 in.
Cube	15136 cu in. (8.76 cu ft)
Fiberboard box weight	20 lb
Wood box weight	125 lb
Quantity per box	40; 8/fiberboard box; 5 fiberboard boxes/ wood box
Net explosive weight	0.31 lb (0.14 kg)

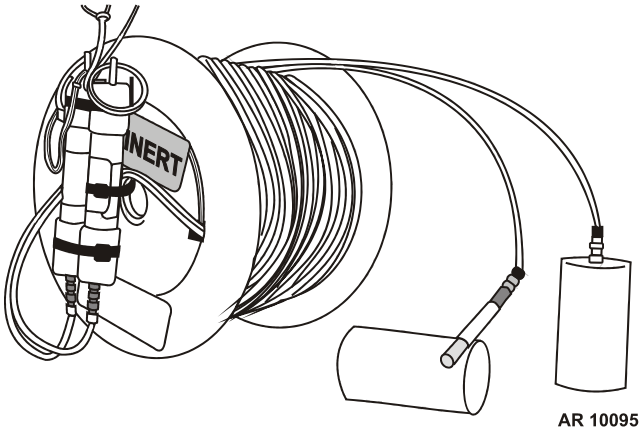
SHIPPING AND STORAGE DATA:

Quantity-distance class	1.4
Storage compatibility group	S
DOD hazard class	1.4S
DOT hazard class	1.4S
DOT label	Explosive: 1.4S
DOT Container Marking:	
Proper shipping name	Detonating assemblies, nonelectric
UN No.	0500
NSN	1375-01-494-6939
DODAC	1375-MN86
CAGE code	19200
Net explosive weight	0.0077 lb (0.0035 kg)
Specification	QAA-1431

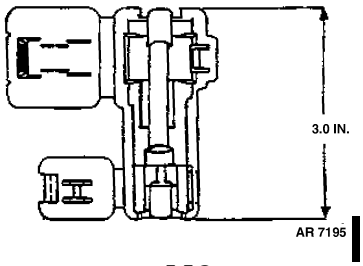
REFERENCES:

FM 5-250
TM 9-1375-213-12
TM 9-1375-213-34&P
DOD Consolidated Ammunition Supply Catalog

CAP, BLASTING, PRACTICE: DUAL IN-LINE INITIATOR, NON-ELECTRIC, 200 FOOT MINITUBE, M20 (INERT)



M20



M9

TYPE CLASSIFICATION:

23 September 2002.

USE:

The M20 is the inert version of the M19. It is used for demonstration and training in demolition work requiring a non-electric blasting cap.

DESCRIPTION:

The M20 consists of a 200-foot length of bronze colored dual minitube with an inert in-line primer built into one end of each of the two minitubes and an inert blasting cap attached to the other end. The plastic dual minitube is wound around a spool. The inert blasting cap has four holes, 90 degrees apart drilled on its circumference for an unobstructed view through the cap, and the word "inert" is marked on 2 sides opposite each other.

M9 plastic holders will be provided in the packaging for each M20 to facilitate training in practicing quick and easy attachment to the minitube of additional blasting cap components.

FUNCTIONING:

The M20 does not function. Its only purpose is for demonstration and to give the operator the feel, familiarity, and training necessary in the use and appearance of M19 non-electric blasting caps and minitube.

TABULATED DATA:

Dual Minitube:	
Material	Plastic
Color	Bronze
Dimensions:	
Length	200 ft
Diameter	0.210 in. max x 0.105 in. max
Blasting Cap (Detonator):	
Material	Aluminum
Dimensions:	
Length	2.25 - 2.35 in.
Diameter	0.230 - 0.241 in.
Item weight	1.6 lb (0.73 kg)

DRAWINGS:

Drawing No.	12999553

PACKING DATA:

Packing Box:

Dimensions (wood box)	26 1/2 in. x 13 3/4 in. x 22 in.
Cube	7,754.115 cu in. (4.487 cu ft)
Fiberboard box weight	54 lb
Quantity per box	40

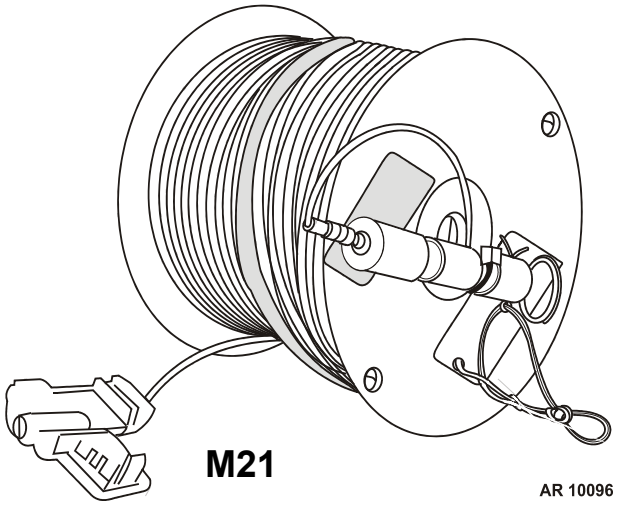
SHIPPING AND STORAGE DATA:

NSN	1375-01-494-6929
DODAC	1375-MN87
CAGE code	19200
Specification	QAA-1431

REFERENCES:

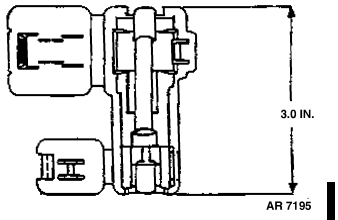
FM 5-250

CAP, BLASTING: IN-LINE INITIATOR, NON-ELECTRIC, 500 FOOT MINITUBE, M21



M21

AR 10096



M9

TYPE CLASSIFICATION:

23 September 2002.

USE:

The M21 initiates standard military explosives and demolition charges by inserting the blasting cap directly into an explosive, or the cap well of demolition charges. The M21 will replace the M12 which is being phased out.

DESCRIPTION:

The M21 consists of a 500-foot length of minitube with an M42C1 in-line primer built into one end of the minitube and a non-electric, non-delay blasting cap attached to the other end. The minitube is a plastic conduit with a thin layer of special explosive material deposited on its interior surface. The firing assembly of the M81 igniter is attached to each in-line primer. The M9 holder attached to the cap is used as a cap protector and for connection to other detonator assemblies.

FUNCTIONING:

The M21's minitube must be initiated by a blasting cap or by activating the firing assembly of the M81 igniter. To actuate the M81, remove the cotter pin, then pull the pull ring to the limit of its travel. The pull ring rod then releases the firing pin. The firing assembly of the M81 igniter strikes the M42C1 primer. The small detonation impulse (shock wave) from the primer is transmitted through the minitube into a less sensitive explosive contained within its blasting cap. The blasting cap can actuate an additional number of components held by the M9 plastic holder, or can directly initiate explosive charges or demolition devices.

TABULATED DATA:

Minitube:	
Material	Plastic
Color	Green
Dimensions:	
Length	500 ft
Diameter	0.090 in. max
Filler	HMX/AL - 3.05 mg/ft
Method of actuation	Blasting Cap/Firing Assembly
Blasting Cap (Detonator):	
Material	Metal
Dimensions:	
Length	2.25 - 2.35 in.
Diameter	0.230 - 0.241 in.
Filler	PETN/Lead Azide
Item weight	1.6 lb (0.73 kg)
Method of actuation	Minitube
Initiating charge	M42C1 Primer
Method of actuation	Firing Assembly

DRAWINGS:

Drawing No.	12999559

PACKING DATA:

Packing Box:

Dimensions (wood box)	44 in. x 16.38 in. x 17.38 in.
Cube	9078 cu in. (5.25 cu ft)
Fiberboard box weight	20 lb
Wood box weight	125 lb
Quantity per box	40; 8/fiberboard box; 5 fiberboard boxes/ wooden box
Net explosive weight	0.28 lb (0.13 kg)

SHIPPING AND STORAGE DATA:

Quantity-distance class	1.4
Storage compatibility group	S
DOD hazard class	1.4S
DOT hazard class	1.4S
DOT label	Explosive: 1.4S

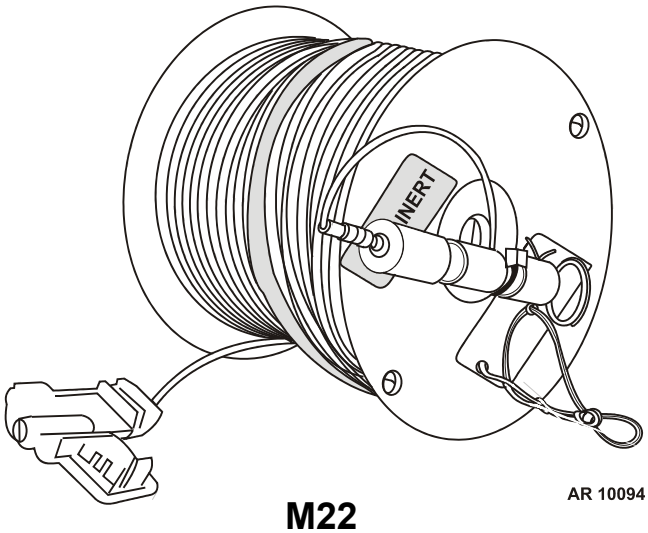
DOT Container Marking:

Proper shipping name	Detonating assemblies, nonelectric
UN No.	0500
NSN	1375-01-494-6945
DODAC	1375-MN88
CAGE code	19200
Net explosive weight	0.06 lb
Specification	QAA-1430

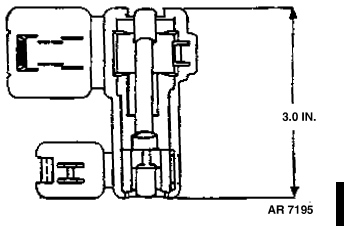
REFERENCES:

FM 5-250
TM 9-1375-213-12
TM 9-1375-213-34&P
DOD Consolidated Ammunition Supply Catalog

CAP, BLASTING, PRACTICE: IN-LINE INITIATOR, NON-ELECTRIC, 500 FOOT MINITUBE, M22 (INERT)



M22



M9

TYPE CLASSIFICATION:

23 September 2002.

USE:

The M22, an inert trainer for the M21 and M23, is used for demonstration and training in demolition work requiring a nonelectric blasting cap.

DESCRIPTION:

The M22 consists of a 500-foot length of bronze colored inert minitube sealed at one end with an inert in-line primer built into one end of each of the minitube and an inert blasting cap attached to the other end. The plastic minitube is wound around a spool and is inserted into an M9 holder for minitube branch lines. The inert blasting cap has four holes, 90 degrees apart drilled on its circumference for an unobstructed view through the cap, and the word "inert" is marked on 2 sides opposite each other.

FUNCTIONING:

The M22 does not function. Its only purpose is for demonstration and to give the operator the feel, familiarity, and training necessary in the use and appearance of M21 and M23 nonelectric blasting caps and minitube.

TABULATED DATA:

Minitube:	
Material	Plastic
Color	Bronze
Dimensions:	
Length	500 ft
Diameter	0.090 in. max
Blasting Cap (Detonator):	
Material	Aluminum
Dimensions:	
Length	2.25 - 2.35 in.
Diameter	0.230 - 0.241 in.
Item weight	1.6 lb (0.73 kg)

DRAWINGS:

Drawing No.	12999560

PACKING DATA:

Packing box:	
Dimensions (wood box)	23 in. x 16.5 in. x 15 3/4 in.
Cube	5977.13 cu in. (3.46 cu ft)
Fiberboard box weight	74 lb
Quantity per box	40

Weight	TBD
Quantity per box	40
Gross weight	TBD

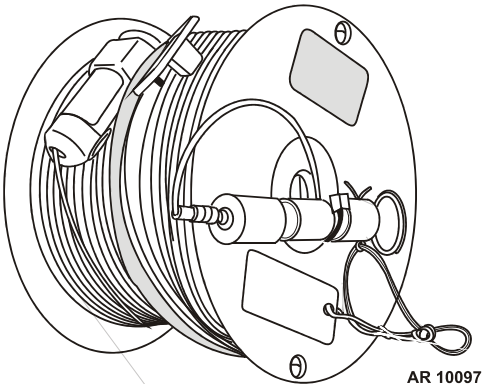
SHIPPING AND STORAGE DATA:

NSN	1375-01-494-6934
DODAC	1375-MN89
CAGE Code	19200
Specification	QAA-1430

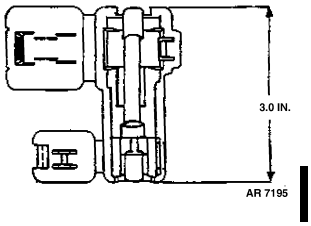
REFERENCES:

FM 5-250

CAP, BLASTING: IN-LINE INITIATOR, NON-ELECTRIC, 1000 FOOT MINITUBE, M23



M23



M9

TYPE CLASSIFICATION:

23 September 2002.

USE:

The M23 initiates standard military explosives and demolition charges by inserting the blasting cap directly into an explosive, or the cap well of a demolition charge. The M23 will replace the M13 which is being phased out.

DESCRIPTION:

The M23 consists of a 1000-foot length of minitube with an M42C1 in-line primer built into one end of the minitube and a non-electric, non-delay blasting cap attached to the other end. The minitube is a plastic conduit with a thin layer of special explosive material deposited on its interior surface. The firing assembly of the M81 igniter is attached to each in-line primer. The M9 holder attached to the cap is used as a cap protector and for connection to other detonator assemblies.

FUNCTIONING:

The M23's minitube must be initiated by a blasting cap or by activating the firing assembly of the M81 igniter. To actuate the M81, remove the cotter pin, then pull the pull ring to the limit of its travel. The pull ring rod then releases the firing pin. The firing assembly of the M81 igniter strikes the M42C1 primer. The small detonation impulse (shock wave) from the primer is transmitted through the minitube into a less sensitive explosive contained within its blasting cap. The blasting cap can actuate an additional number of components held by the M9 plastic holder, or can directly initiate explosive charges or demolition devices.

TABULATED DATA:

Minitube:	
Material	Plastic
Color	Green
Dimensions:	
Length	1000 ft
Diameter	0.090 in. max
Filler	HMX/AL 2.286 - 5.029 mg/ft
Method of actuation	Blasting Cap/Firing Assembly
Blasting Cap (Detonator):	
Material	Aluminum
Dimensions:	
Length	2.25 - 2.35 in.
Diameter	0.230 - 0.241 in.
Filler	PETN/Lead Azide
Item weight	2.7 lb (1.23 kg)
Method of actuation	Impulse from attached minitube
Initiating charge	M42C1 Primer
Method of actuation	Firing assembly

DRAWINGS:

Drawing No.	12999561

PACKING DATA:

Packing Box:	
Dimensions (wood box)	44 in. x 16.38 in. x 17.38 in.
Cube	9078 cu in. (5.25 cu ft)
Fiberboard box weight	17 lb
Wood box weight	108 lb
Quantity per box	20; 4/fiberboard box; 5 fiberboard boxes/ wood box
Net explosive weight	0.22 lb (0.10 kg)

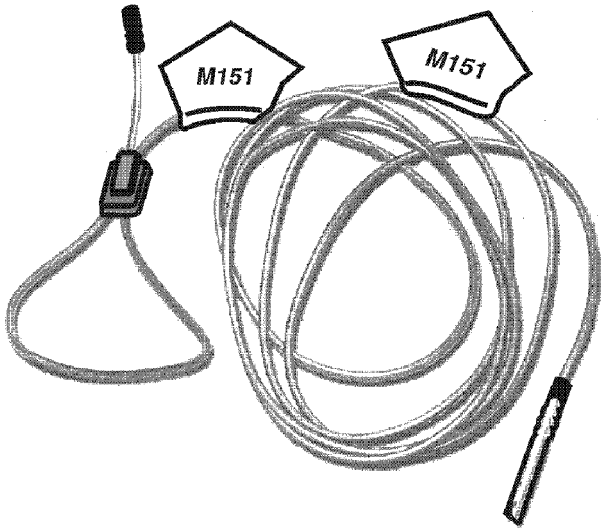
SHIPPING AND STORAGE DATA:

Quantity-distance class	1.4
Storage compatibility group	S
DOD hazard class	1.4S
DOT hazard class	1.4S
DOT label	Explosive: 1.4S
DOT Container Marking:	
Proper shipping name	Detonating assemblies, nonelectric
UN No.	0500
NSN	1375-01-494-6941
DODAC	1375-MN90
CAGE code	19200
Net explosive weight	0.04 lb (0.02 kg)
Specification	QAA-1430

REFERENCES:

FM 5-250
TM 9-1375-213-12
TM 9-1375-213-34&P
DOD Consolidated Ammunition Supply Catalog

BOOSTER, DEMOLITION CHARGE: M151



AR 8174

TYPE CLASSIFICATION:

Std A MSR 05963001.

DESCRIPTION:

The M151 is a no delay, non-electric insensitive initiation system with a length of 10 feet. It has a solid core detonating cord and a secondary explosive booster. The detonating cords have a high velocity detonation rate equivalent to the standard military detonating cord (Type I or Type II). The booster contains no primary explosive, but has a secondary explosive. The initiation output is equivalent to the No. 12 commercial cap. The M151 has no initiation delay, making it suited for situations requiring simultaneous initiation and detonation. It is an explosive sensitivity comparable to detonating cord, which allows for usage involving cap burial and pre-priming of the explosive charge.

FUNCTIONING:

The M151 has no initiation delay, making it suited for situations requiring simultaneous initiation and detonation. It is an explosive sensitivity comparable to detonating cord, which allows for usage involving cap burial and pre-priming of the explosive charge.

TABULATED DATA:

NSN	1375-01-467-8646
P/N	D10451-1
DODAC	1375-MN68
Length	10 ft
Color	Black w/environmental seal
Marking	Green diamond shaped ID tag on both ends of assembly, marked M151
Item weight	0.08 lb (0.036 kg)

PACKING DATA:

Packing Box:	
Dimensions (wood box)	40.75 in. x 12.5 in. x 8.12 in.
Cube	4136 cu in. (2.39 cu ft)
Fiberboard box weight	6.06 lb
Wood box weight	46 lb
Quantity per box	120; 20/fiberboard box; 6 fiberboard boxes/wood box

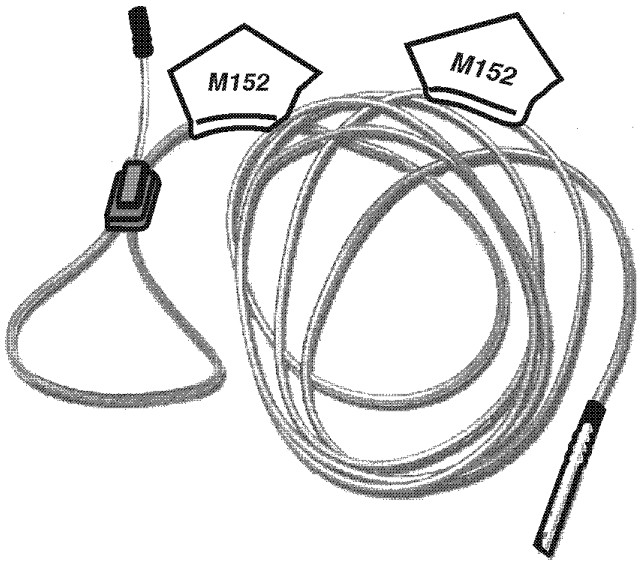
SHIPPING AND STORAGE DATA:

DOD hazard class QD/DIV/SCG	1.1B
DOT hazard class	1.1B
DOT label	EXPLOSIVE: 1.1B
DOT Container Marking:	
Proper shipping name	Detonator assemblies, non-electric
UN serial No.	0360
Specification	PRF 14000035
Booster filler	800 mg PETN
Net explosive weight	0.00973 lb

REFERENCES:

FM 5-250
TM 9-1375-213-12
TM 9-1375-213-34&P
DOD Consolidated Ammunition Supply Catalog

BOOSTER, DEMOLITION CHARGE: M152



AR 8175

TYPE CLASSIFICATION:

Std MSR 05963001.

DESCRIPTION:

The M152 is a no delay, non-electric insensitive initiation system with a length of 30 feet. It has a solid core, low strength (about 10% of standard military det cord) detonating cord and a secondary explosive booster. The detonating cords have a high velocity detonation rate equivalent to the standard military detonating cord (Type I or Type II). The booster contains no primary explosive, but has a secondary explosive. The initiation output is equivalent to the No. 12 commercial cap. The M152 has no initiation delay, making it suited for situations requiring simultaneous initiation and detonation. It is an explosive sensitivity comparable to detonating cord, which allows for usage involving cap burial and pre-priming of the explosive charge. The M152 is suitable as branch lines. It cannot be used as a main line or ring main.

M19, M21 and M23 Blasting Cap Initiators come with the M81 igniter pre-attached. No other step is required prior to functioning. Function the M81 to initiate the transmission line and branch lines.

FUNCTIONING:

The M152 is connected to a transmission line (M12/M13/M19/M21/M23) using the M9 plastic holder which is packed with the non-electric in-line blasting cap initiators. The M12 or M13 shock tube is inserted in the M81 igniter.

TABULATED DATA:

NSN	1375-01-467-8685
P/N	D10451-2
DODAC	1375-MN69
Length	30 ft
Color	Black w/environmental seal
Marking	White ID tag on both ends of assembly, marked M152
Item weight	0.183 lb (0.08 kg)

PACKING DATA:

Packing Box:	
Dimensions (wood box)	40.75 in. x 12.5 in. x 8.12 in.
Cube	4136 cu in. (2.39 cu ft)
Fiberboard box weight	6.06 lb
Wood box weight	46 lb

Quantity per box	60; 20/fiberboard box; 3 fiberboard boxes/wood box

SHIPPING AND STORAGE DATA:

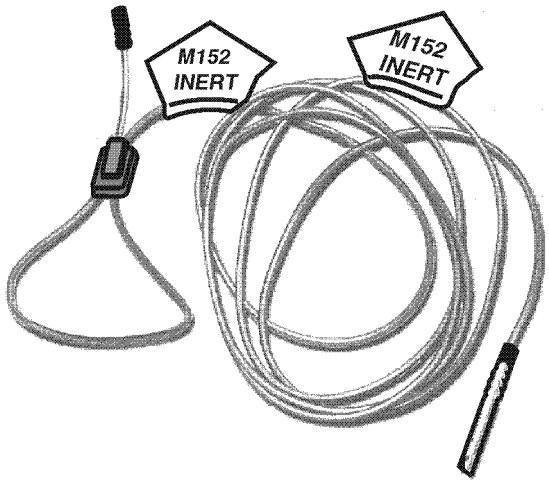
DOD hazard class DIV/SCG	1B
DOT hazard class	1.1B
DOT label	EXPLOSIVE: 1.1B
DOT Container Marking:	
Proper shipping name	Detonator assemblies, non-electric
UN serial No.	0360

Specification	PRF 14000035
Booster filler	800 mg PETN
Net explosive weight	0.02545 lb

REFERENCES:

FM 5-250
TM 9-1375-213-12
TM 9-1375-213-34&P
DOD Consolidated Ammunition Supply Catalog

BOOSTER, DEMOLITION CHARGE, PRACTICE: M152 (INERT)



AR 8173

TYPE CLASSIFICATION:

Std A MSR 05963001.

DESCRIPTION:

The inert trainer M152 has the same physical dimensions as the live M151 and M152 demolition charge boosters. The trainer has see-through holes in the booster assemblies to indicate that it is inert. The trainer is bronze in color and will not contain any pyrotechnic or explosive components. To simulate use, the M152 inert can be used as a branch line but it should not be used to simulate a main line or ring main.

FUNCTIONING:

The M152 inert trainer does not function. For training purposes, connect the M152 (Inert) to an inert transmission line (M12 Inert/M15 Inert/M20/M22) using the M9 plastic holder. Simulate inserting inert M12, M15, M20, M22 shock tube (minitube) into an inert M81 igniter.

M20 and M22 blasting cap initiators come with the inert M81 igniter pre-attached to indicate that no other step is required prior to the practice functioning.

TABULATED DATA:

NSN	1375-01-470-2399
P/N	D10451-2-99 (Inert)
DODAC	1375-MN75
Specification	PRF 14000035
Shock Tube:	
Material	Plastic
Color	Bronze
Length	30 ft
Diameter	0.0135 in. max
Booster:	
Material	PETN
Length	2.25 to 2.35 in.
Diameter	0.230 to 0.241 in.

REFERENCES:

FM 5-250
TM 9-1375-213-12
TM 9-1375-213-34&P
DOD Consolidated Ammunition Supply Catalog

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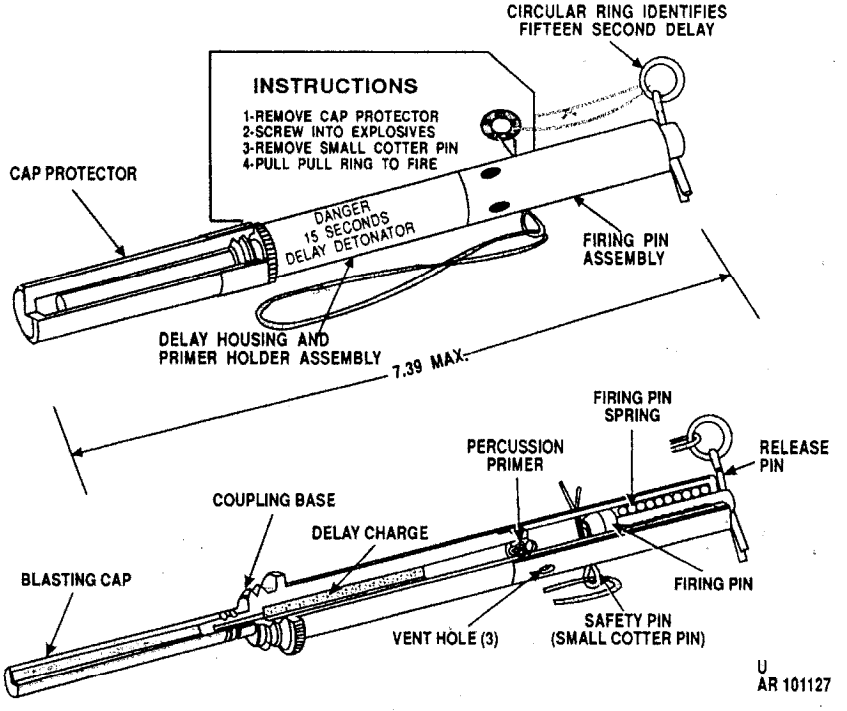
DETONATOR, PERCUSSION: M1A2, 15-SECOND DELAY



Type Classification:

Std A OTCM 37119, dtd 1959.

Use:

Percussion Detonator M1A2 is a device used to initiate demolition charges after a 15-second delay. This type of detonator can be used under water and is particularly effective during assault demolition.

Description:

The detonator consists of a firing pin assembly, a delay housing and primer holder assemble and a special blasting cap. The firing pin and spring, comprising the main components of the firing pin assembly, are held in position by a safety pin and a release pin. The primer holder is fitted with a percussion primer, and the delay housing contains a delay train of a pyrotechnical mixture. The blasting cap is crimped to a coupling base which is an integral part of the delay housing. The blasting cap is covered, during shipment and storage, by a cap protector. The special blasting cap is similar to the M7 Blasting Cap. The main difference is that the igniter compound is adjusted to maintain a certain dimension at the open end of the cap. The 15-second delay percussion detonator may be distinguished from the 8-second delay percussion detonator by the markings on the surface of the delay housings and by the shapes of the release pull rings. The 15-second delay percussion detonator has a circular pull ring, while the pull ring on the 8-second delay detonator is shaped like a T.

Functioning:

After the safety pin is removed and the release pin is pulled, the firing pin strikes the primer, which ignites the pyrotechnic delay train. At the end of the delay train, the burning powder ignites the igniter mix in the blasting cap and consequently the blasting cap detonates other explosives. It should be noted that, above 60ºF the actual delay time will be less than normal while below 60ºF the delay time will be greater.

Tabulated Data:

Container material	Metal
Color	Olive drab w/yellow markings
Weight	3 oz
Dimensions:	
Length	7-1/3 in.
Diameter	7/16 in.
Filler	Delay mix, primer-mix, RDX
Method of actuation	Release pin

Shipping and Storage Data:

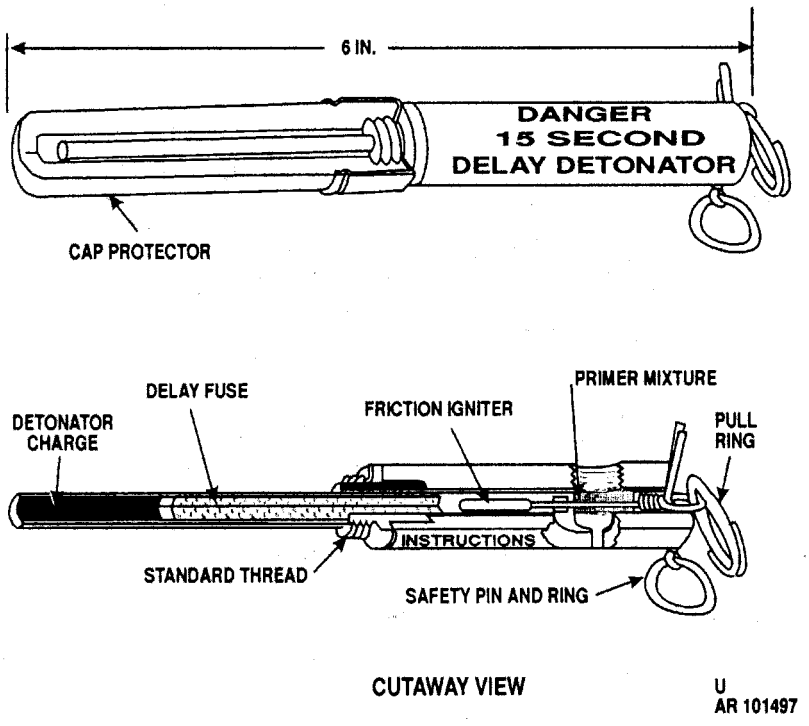
Quantity-distance class	A 1.1
Storage compatibility Group	B
DOTshipping classification	Class A
DOT designation	TIME FUZES - HANDLE CAREFULLY
UNO serial number	0257
UNO proper shipping name -	Fuzes, detonating
DODIC	M450
NSN	1375-00-729-4378
Drawing	89903
Packaging	One detonator per tube assembly 10 tube assemblies per paperboard-carton, 1 carton per barrier bag, 5 bags per fiberboard outer carton, each outer carton in outer barrier bag, 4 outer barrier bags (200 detonators) per wooden box
*Packing box:	
Weight	62 lb
Dimensions	21-1/2 in. x 17-11/16 in. x 18-15/32 in.
Cube	4.05 cu ft

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

References:

FM 5-25
TM 9-1375-213-12
TM 9-1375-213-34

DETONATOR, FRICTION: 15-SECOND DELAY, M1 OR M1A1



Type C1assiflcation:

OBS AMCTCM 6418, dtd 1968.

Use:

The 15-Second Friction Delay Detonator is a device used to initiate demolition charges after a 15-second delay. This delay detonator is effective during assault operations and may be used under water.

Description:

This Delay Detonator consists of a cylindrical-shaped plastic housing containing a pull-wire coated with a friction material. The pull-wire is set in a flash compound. A tube set in the lower end of the housing is a combination delay and blasting cap. There is a 15-second delay-mix facing the friction lighter side followed by an igniter charge and then a primer charge and, finally, a blasting cap mix. There is a protective cap covering the blasting cap end and a safety cotter pin with a ring for extracting which is positioned through the pull-wire to block its premature movement.

This detonator is identical to the 8-Second Delay Friction Detonator M2. The 15-Second Delay Detonator has a pull ring on the friction wire, while the 8-Second Delay has a "T handle. Each delay detonator is appropriately marked.

Functioning:

With the safety pin removed, the pull wire handle (ring) is pulled to draw the friction-coated portion of the pull wire through the flash charge. This ignites the delay column. At the end of 15 seconds, the flame reaches the end of the delay mix and ignites the igniter mix. This in turn initiates the primer charge which then detonates the blasting cap portion. The detonation in turn sets off the demolition charge.

Tabulated Data:

Container material	Plastic
Color	Olive drab
Weight	8 oz (approx)
Dimensions:	
Length	6 in. (approx)
Diameter	3/4 in. (approx)
Filler	Friction powder delay mix, and RDX
Method of actuation	Pull wire

Shipping and Storage Data:

Quantity-distance class ------- 1.1
Storage compatibility group- B
DOT shipping classification- A
DOT designation ---------- TIME FUZES-HANDLE CAREFULLY
UNO serial number ---------- 0029
UNO proper shipping name- Detonators, non-electric
DODIC ---------- M542
NSN---------- Not available
Drawing ---------- F 73-9-11O
Packaging ---------- 10 detonators per cardboard box; 6 boxes in an inner packing; 4 inner packs (200 detonators) per wooden box

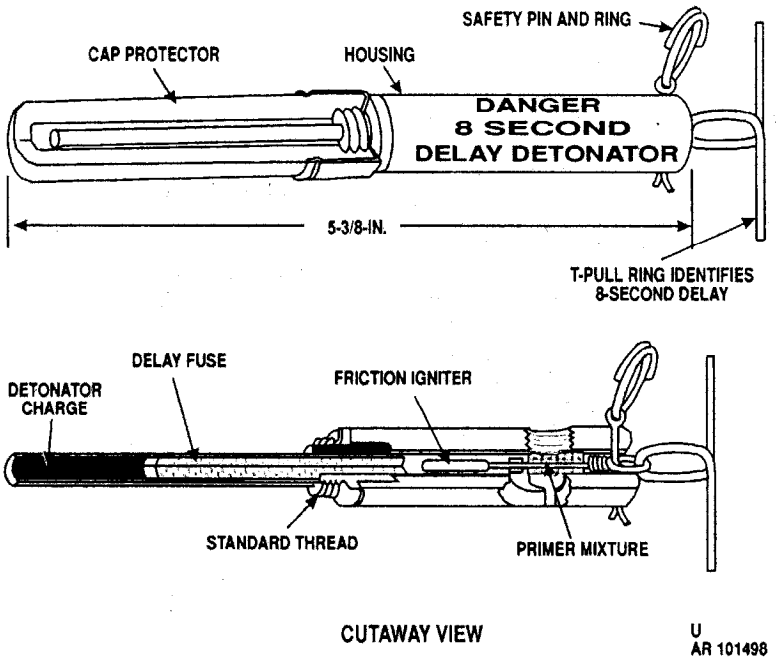
*] Packing box:
Weight ---------- 53 lb
Dimensions ---------- 21-1/2 in, x 17-11/16 in. x 18-18/32 in. (approx)
Cube ---------- 4.05 cu ft

*] NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

References:

FM 5-250
TM 9-1375-213-12
TM 9-1375-213-34

DETONATOR, FRICTION: 8-SECOND DELAY, M2



Type Classification:

OBS AMCTCM 6418, dtd 1968.

Use:

The 8-Second Friction Delay Detonator is a device used to initiate demolition charges after 8-seconds delay. This delay detonator is effective during assault operations and may be used under water.

Description:

This delay detonator consists of a cylindrical-shaped plastic housing containing a pull wire coated with a friction material. The pull wire is set in a flash compound. A tube set in the lower end of the housing is a combination delay and blasting cap. There is a 15-second delay-mix facing the friction lighter side, followed by an igniter charge, and then a primer charge and, finally, a blasting cap mix. There is a protective cap covering the blasting cap end and a safety cotter pin with a ring for extracting which is positioned through the pull wire to block its premature movement.

This detonator is identical to the 8-Second Delay Friction Detonator M2. The 15-Second Delay Detonator has a pull ring on the friction wire, while the 8-Second Delay has a "T handle. Each delay detonator is appropriately marked.

Functioning:

With the safety pin removed, the pull wire handle (ring) is pulled to draw the friction-coated portion of the pull wire through the flash charge. This ignites the delay column. At the end of 15 seconds, the flame reaches the end of the delay mix and ignites the igniter mix. This in turn initiates the primer charge which then detonates the blasting cap portion. The detonation in turn sets off the demolition charge.

Tabulated Data:

Container material	Plastic
Color	Olive drab
Weight	8 oz (approx)
Dimensions:	
Length	6 in. (approx)
Diameter	3/4 in. (approx)
Filler	Friction powder delay mix, and RDX
Method of actuation	Pull wire

Shipping and Storage Data:

Quantity-distance class -------	1.1
Storage compatibility group -	B
DOT shipping classification -	A
DOT designation ----------	TIME FUZES - HANDLE CAREFULLY
UNO serial number ----------	0029
UNO proper shipping name -	Detonators, non-electric
DODIC ----------	M541
NSN----------	Not available
Drawing ----------	F 73-9-110
Packaging ----------	10 detonators per cardboard box; 6 boxes in an inner packing 4 inner packs (240 detonators) per wooden box

*Packing box:

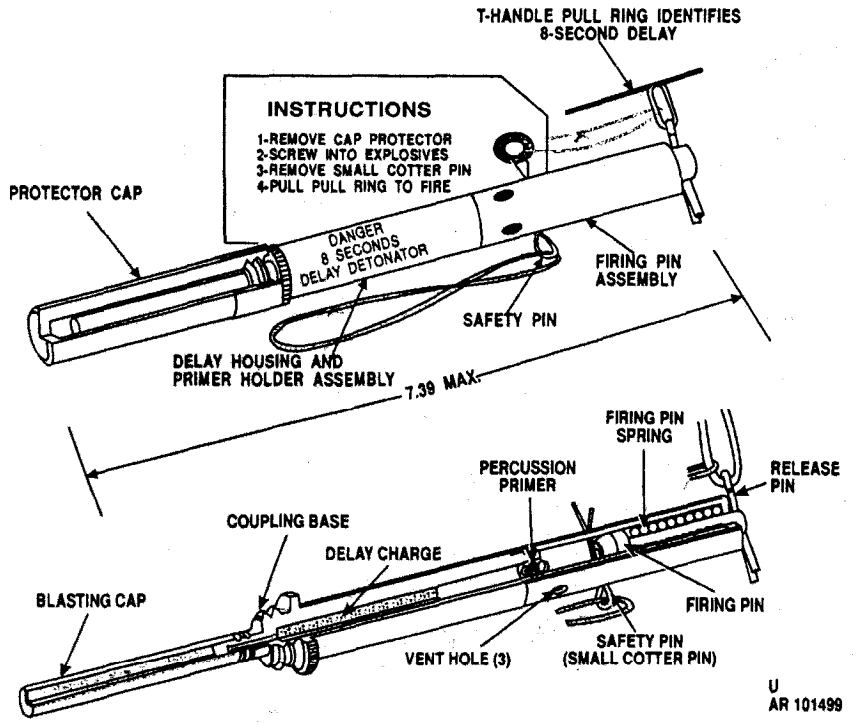
Weight ----------	53 lb
Dimensions ----------	21-1/2 in. x 17-11/16 in. x 18-18/32 in. (approx)
cube ----------	4,05 cu ft

*NOTE: See DOD Consolidated Ammuntion Catalog for complete packing data including NSN'S.

References:

FM 5-250
TM 9-1375-213-12
TM 9-1375-213-34

DETONATOR, PERCUSSION: M2A1, 8-SECOND DELAY



Type Classification:

C & T Material Status record 11756003.

Use:

Percussion Detonator M2A1 is a device used to initiate demolition charges after an 8-second delay. This type of detonator can be used under water, and is particularly effective during assault demolition.

Description:

The detonator consists of a firing pin assembly, a delay housing and primer holder assembly and a special blasting cap. The firing pin and spring, comprising the main component of the firing pin assembly are held in position by a safety pin and a release pin. The primer holder is fitted with a percussion primer, and the delay housing contains a delay train of a pyrotechnical mixture, The blasting cap is similar to the M7 blasting cap. The main difference is that the igniter compound is adjusted to maintain a certain dimension at the open end of the cup. The 15-second delay percussion detonator mav be distinguished from the 8-second delav percussion detonator by the markings on the surface of the delay housings and by the shapes of the release pull rings. The 15-second delay percussion detonator has a circular pull ring. While the pull on 8-second delay detonator is shaped like a T.

Functioning

After the safety pin is removed and the release pin is pulled, the firing pin strikes the primer which ignites the pyrotechnic delay train. At the end of the delay train, the burning powder ignites the igniter mix in the blasting cap and, consequently, the blasting cap detonates other explosives. It should be noted that above 60°F the actual delay time will be less than nominal and below 60°F the delay time will be greater.

Tabulated Data:

Container material	Metal
Color	Olive drab w/yellow markings
Weight	3 oz
Dimensions:	
Length	7-1/3 in.
Diameter	7/16 in.
Filler	Delay mix, primer-mix and RDX
Method of actuation	Release pin

Shipping and Storage Data:

Quantity-distance class	1.1
Storage compatibility group	B
DOT shipping classification	Class A
UNO serial number	0257
UNO proper shipping name	Fuzes, detonating
DODIC	M448
DOT designation	TIME FUZES - HANDLE CAREFULLY
NSN	1375-00-729-4375
Drawing	8799903
Packaging	One detonator per tube assembly 10 tube assemblies per paperboard carton, one carton per barrier bag, 5 bags per fiberboard outer carton, each outer carton in outer barrier bag, 4 outer barrier bags per wooden box.

*Packing box:

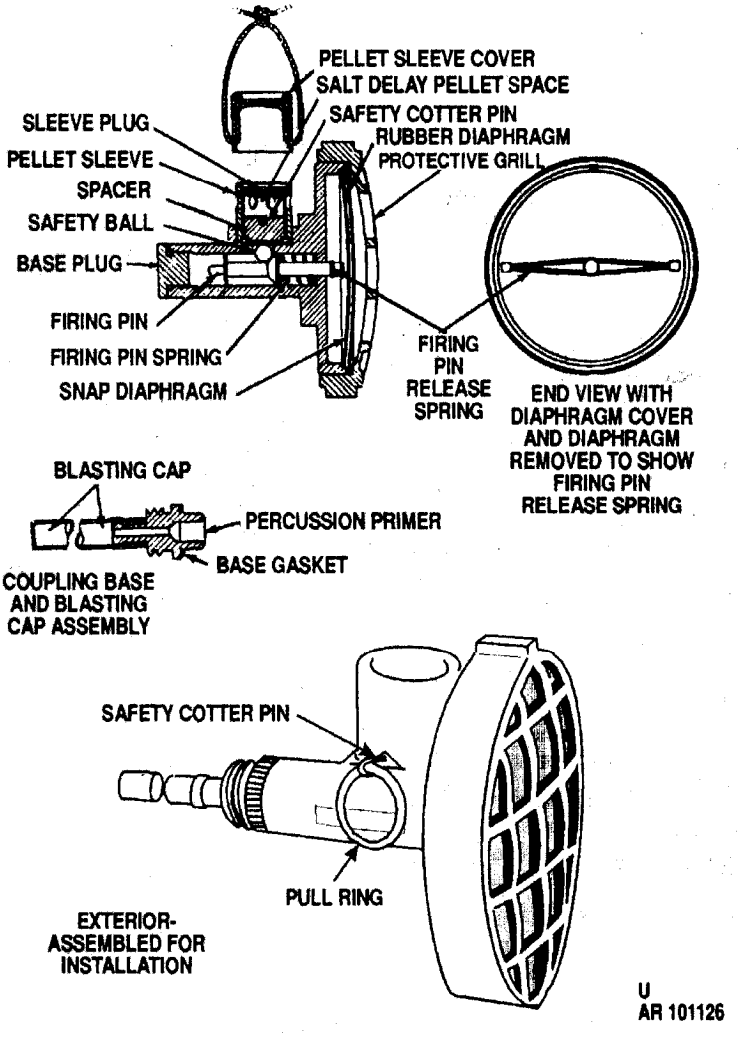
Weight (w/contents)	62 lb
Dimensions	21-1/2 in. x 17-11/16 in, x 18-15/32 in.
Cube	4.05 cu ft

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

References:

FM 5-250
TM 9-1375-213-12
TM 9-1375-213-34

DETONATOR KIT, CONCUSSION: M1



Type Classification:

Std OTCM 36841, dtd 1958.

Use:

Concussion Detonator Kit Ml is a mechanical device used to simultaneously detonate a number of demolition charges, underwater or above ground. It is distinguish by the fact that simultaneus detonation occurs without connecting demolition charges by detonating cord or other firing systems. The concussion detonator is actuated when it receives a detonation wave or an impulse through water or air.

Description:

Each kit contains a firing mechanism, a coupling base and blasting cap assembly and two salt delay pellets. Their details are as follows:

The firing mechanism has a convex, snap-type, bronze diaphragm faced with a sheet-rubber diaphragm and a protective grill. The

bronze diaphragm is positioned directly above a split firing pin release spring which, together with a steel safety ball and a cotter pin, holds the firing pin spring in the SAFE position. A perforated pellet sleeve mounted above the firing pin houses a metal spacer and a salt pellet. A removable paper pellet-sleeve cover prevents the salt pellet from dissolving prematurely. For shipping and storage, the firing mechanism is fitted with a base plug.

The coupling base and blasting cap assembly consists of threaded coupling base assembled with a primer and a blasting cap.

The two salt delay pellets, used in underwater installation only, are color coded to indicate delay times. The blue pellet takes approximately 3-112 minutes to dissolve; the yellow pellet, approximately 7 minutes.

Functioning:

Underwater. When the safety pin is pulled and the pellet sleeve cover removed, water flows through the holes in the pellet sleeve, dissolving the salt pellet. With the salt pellet dissolved, the metal spacer and safety ball are free to move up in the pellet sleeve, leaving the firing pin release spring as the only restraint on the firing pin. Detonation is initiated by a shock wave from a detonating charge nearby. When the shock wave strikes the diaphragm, it snaps back against the firing release spring, driving the firing pin into the primer. The primer initiates the blasting cap which detonated the demolition charge. Do not use this concussion detonator in depths of more than 15 feet. The hydrostatic pressure at greater depths may function the device.

In air. The salt pellet and pellet sleeve cover are not used in above ground installations. The detonator functions above ground the same as underwater except that there is no delay in arming after the safety cotter pin is removed.

Tabulated Data:

Container material	Metal
	Olive drab w/yellow markings
Weight	11 oz
Dimensions:	
Length	5 in.
Diameter	3 in. (max)
Explosive components	Primer, blasting cap
Method of actuation	Shock wave

Shipping and Storage Data:

Quantity-distance class	(04) 1.2
Storage compatibility group	B
DOT shipping classification	class c
DOT designation	DETONATING FUZES
UNO serial number	0107
UNO proper shipping name	Fuzes, detonating
DODIC	M540
NSN	1375-00-028-5173
Drawing	73-9-104
Packaging	One kit per metal container, hermetically sealed; 50 containers per wooden box

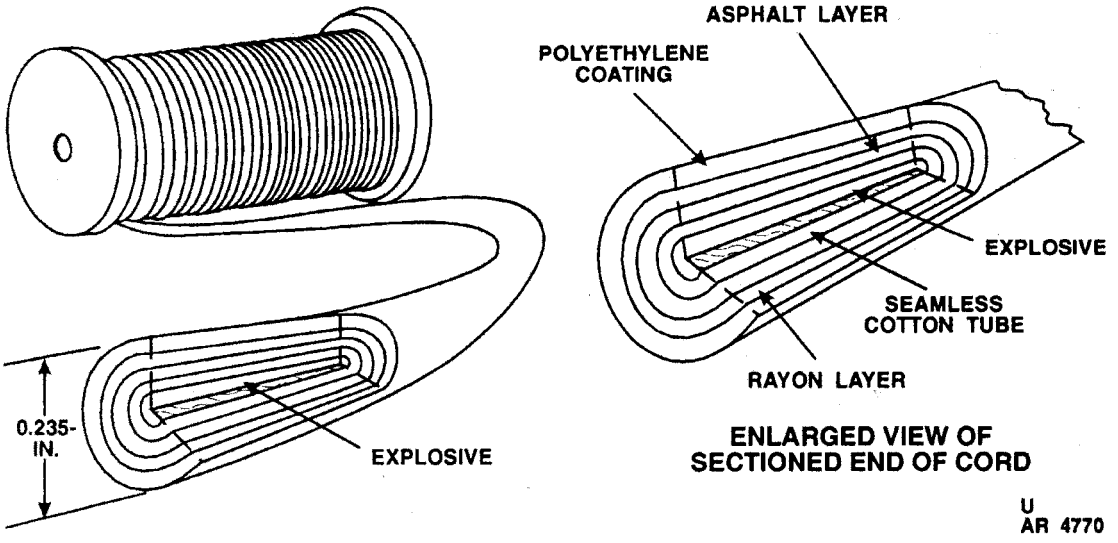
*Packing box:	
Weight (w/contents)	59 lb
Dimensions	20-3/8 in. x 18-3/16 in. x 11-1/32 in.
Cube	2.4 cu ft

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

References:

FM 5-250
TM 9-1375-213-12
TM 9-1375-213-34

CORD, DETONATING



Type Classification:

Std A OTCM 36841, dtd 1958.

Use:

Detonating Cord is used to prime and detonate other explosive charges.

Description:

Although specification MIL-C-17124 lists 12 different detonating cords, this data sheet addresses Type I, Class E only because it is the only detonating cord standard for U.S. Army use. This type of detonating cord consists of a core of high velocity explosive in a seamless textile tube. The tube is covered with a thin layer of asphalt, and sheathed in an outer cover of plastic coated textile. The plastic outer cover is smooth and colored olive drab. It has a detonating velocity of not less than 5,900 meters per second.

Functioning:

When the explosive core of the detonating cord is detonated by a blasting cap, the detonating wave travels along the cord to other blasting caps or explosive charges attached to it.

Tabulated Data:

Color	Olive drab
Filler	PETN
Weight (per 1000 ft):	
Class E	22 lb
Diameter:	
Type I Class E	0.235 in.
Method of actuation	Blasting cap

Shipping and Storage Data:

Quantity-distance class	1.1
Storage compatibility group	D-2
DOT shipping classification	Class C
DOT designation	CORD DETONATING FUSE-HANDLE CAREFULLY
UNO serial number	0065
UNO proper shipping name	Cord, detonating
DODIC	M456
Packaging	100 to 1000 foot/spool; up to 8000 foot/wooden box

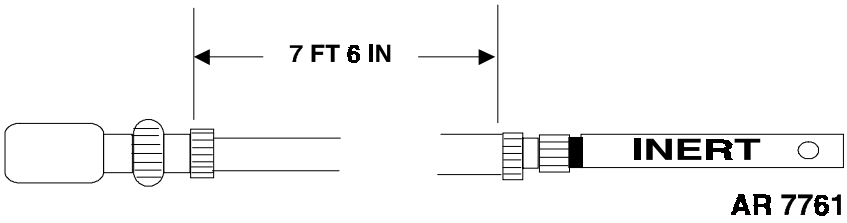
*Packing box:
Weight ---------- As required
Dimensions ---------- As required
Cube ---------- As required

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

References:

FM 5-250
TM 9-1375-213-12
TM 9-1375-213-34

CAP, BLASTING: NONELECTRIC, DELAY, M14 (INERT)



Type Classification:

Std A MSR 05963001.

Use:

This inert item is used for demonstration and for training in demolition work requiring nonelectric delay blasting cap.

Description:

The inert delay blasting cap consist of a 7-1/2 foot length of inert time delay fuse, sealed at on end and with a military M7 dimensioned, inert blasting cap crimped at the end. The inert time fuse is the same as described in this manual. The inert cap is aluminum with two 1/8 in. holes drilled at 90 degree intervals on one end and labeled "DUMMY" or "INERT".

Functioning:

This item does not function. Its only purpose is for demonstration and to give the operator the feel and training in the use of delay blasting caps.

Tabulated Data:

Time Fuse:
(See FUSE, BLASTING TIME, INERT in this manual for material and color).

Dimensions:
Length ..... 7-1/2 ft
Diameter..... 0.2 in.
Method of actuation ..... None
Cap:
Material ..... Aluminum w/ black markings
Dimensions:
Length ..... 2.235 in. max
Diameter..... 0.241 in. max
Filler ..... None
Method of actuation ..... None

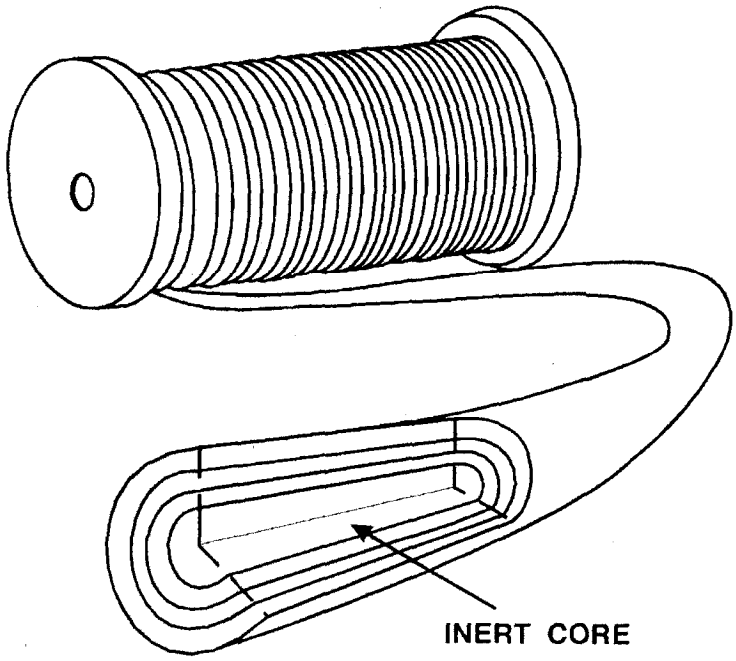
Shipping and Storage Data:

Quantity-distance class ..... N/A
Storage compatibility group..... N/A
NSN 1375-01-411-6346
P/N 12972434-2
DODAC..... 1375-MN37
Specification QAA-1424
Packaging..... As required
Gross weight ..... 57 lb

References:

FM 5-250
TM 9-1375-213-12
TM 9-1375-213-34&P

CORD, DETONATING: INERT-REINFORCED, DUMMY



U
AR 101137

Type Classification:

Std A OTCM 36841, dtd 1958.

Use:

Inert detonating cord is used in training demolition personnel in the proper procedures for priming demolition charges.

Description:

This inert detonating cord, similar to Type I, Class E in construction and external appearance, consists of an asphalt-coated cotton tube sheathed in an outer cover of smooth plastic coated rayon. The inert cord differs from the service cord in that the cord of the training item is inert loaded with poly-vinyl chloride (PVC) filler and the plastic outer coat is blue.

Functioning:

The inert detonating cord is used in demonstration and training for demolition and its does not perform any ballistic function.

Tabulated Data:

Color	Blue
Weight (per 1000 ft)	22 lb
Diameter	Approx 0.235 in.
Filler	PVC

Shipping and Storage Data:

Quantity-distance class	N/A
Storage compatibility group	N/A
DOT shipping classification	N/A
DOT designation	N/A
DODIC	M458
Specification	MIL-C-17124
Packaging	As required

References:

FM 5-250
TM 9-1375-213-12
TM 9-1375-213-34

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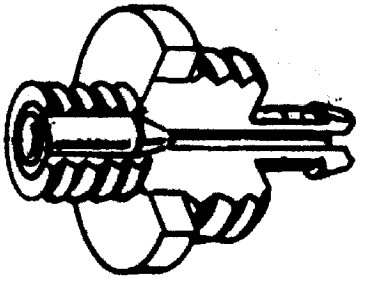
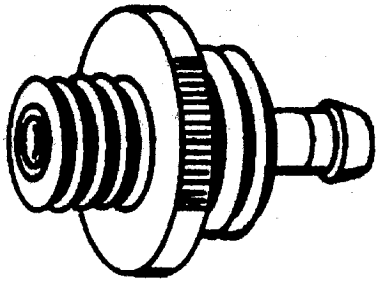
COUPLING BASE, FIRING DEVICE



INTERNAL



EXTERNAL

U
AR 6060

Type Classification:

Std A AMCTCM 3802, dtd 1965.

Use:

The coupling base provides the means for holding a primer and positioning it in a firing device so that the firing pin of the firing device will strike it properly to function the primer, It is designed for assembly to any military standard nonelectric blasting cap. Firing devices are supplied with base couplings. Base couplings are stocked for use in renovation and for use in replacement of base couplings expended in training.

Description:

The base is fitted with an M27 primer on one end and the other end is fitted with a protective shipping cap. The coupling base has two sets of external threads. One end permits assembly into the firing devices and the other end can be threaded into the explosive's capwell, The rubber seal in the nipple seals the coupling into the blasting cap. The blasting cap user crimps the blasting cap onto the nipple.

The coupling base is cylindrical in shape and is made of metal.

Functioning:

When the firing device functions, its firing pin strikes the primer. The primer ignites and, m turn, initiates the blasting cap. The blasting cap functions the explosive charge.

Tabulated Data:

Item material	Zinc based casting alloy
Color	Olive drab
Dimensions:	
Length	1 in.
Diameter	3/4 in.
Explosive component	M27 (old) or M39A1 (new) primer or commercial equivalent

Shipping and Storage Data:

Quantity-distance class	1.4
Storage compatibility group	S
DOT shipping classification	C
DOT designation	PERCUSSION FUZES
UNO serial number	0044
UNO proper shipping name	Primers, cap type
DODIC	M327
Specification	MIL-B-1596
Packaging	50 per waterproof carton, 10 cartons (500 bases) per wooden box

*Packing box:

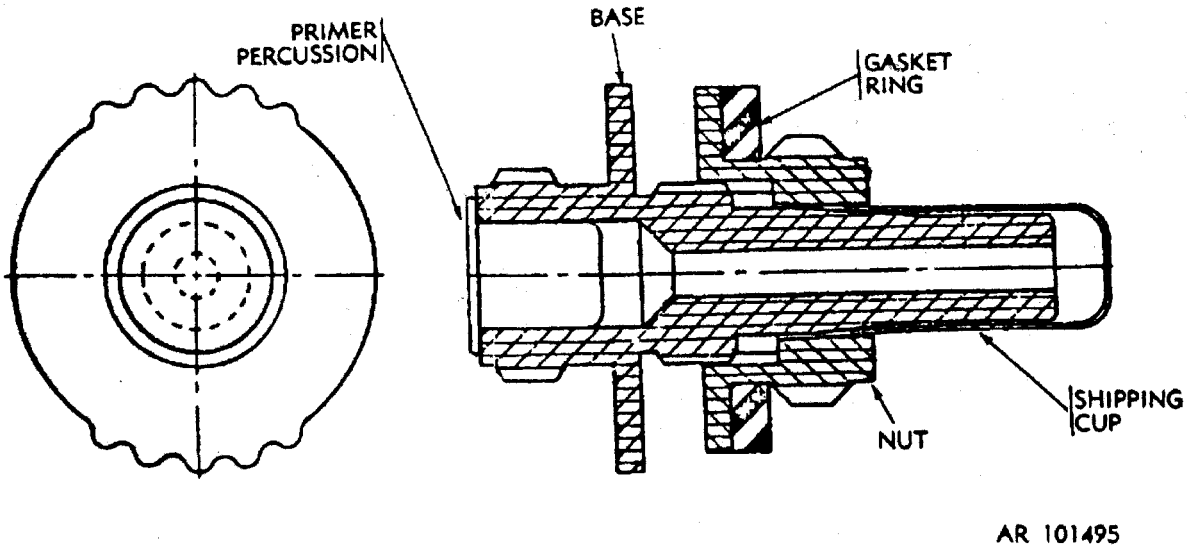
Weight (w/contents)	48 lb
Dimensions	19-13/16 in. x 17-3/4 in. x 12-7/32 in.
Cube	2.5 cu ft

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN's.

References:

MIL-B-1596

COUPLING BASE, FIRING DEVICE: NON-METALLIC, M2



Type Classification:

Std A AMCTCM 3802, dtd 1965.

Use:

The coupling base provides the means for holding a primer and positioning it in a firing device so that the firing pin of the firing device will strike it properly to function the primer. It is especially designed for assembly to an M7 blasting cap. Firing devices are supplied with base couplings. Those currently stocked have metallic ones; new procurements will contain this base coupling, Base couplings are stocked for use in renovation and for use in replacement of base couplings expended in training.

Description:

This item is comprised of three main plastic pieces:

A base fitted with an M39A1 primer on one end and the other end covered with a protective shipping cap. The base has two sets of external threads. The primer side has threads to permit the assembly to firing devices and the other end has threads to accommodate a nut, such that it will jam the flared end of an M7 blasting cap against the protrusion and make a watertight seal (similar in part to a tubing compression fitting).

A nut which has internal threads to mate with the base and external threads to mate with demolition charges. The nut is so constructed that its internal conical shape mates with the conical shape of the base (blasting cap end).

A gasket is positioned on the nut to assure a watertight fit between the nut and the explosive item.

Functioning:

When the firing device functions, its firing pin strikes the primer, The primer ignites and, in turn, initiates the blasting cap. The blasting cap functions the explosive charge.

Tabulated Data:

Item material ---------- Plastic
Color ---------- Black, olive drab
Dimensions:
  Length ---------- 1 in.
  Diameter ---------- 3/4 in.
Explosive component ---------- M39A1 primer

Shipping and Storage Data:

Quantity-distance class	1.4
Storage compatibility group	S
DOT shipping classification	C
DOT designation	PERCUSSION FUZES
UNO serial number	0044
UNO proper shipping name	Primers, cap type
DODIC	M327
Drawing	8837262
Packaging	250 per carton, 6 cartons (1500 boxes) wooden

*Packing box:

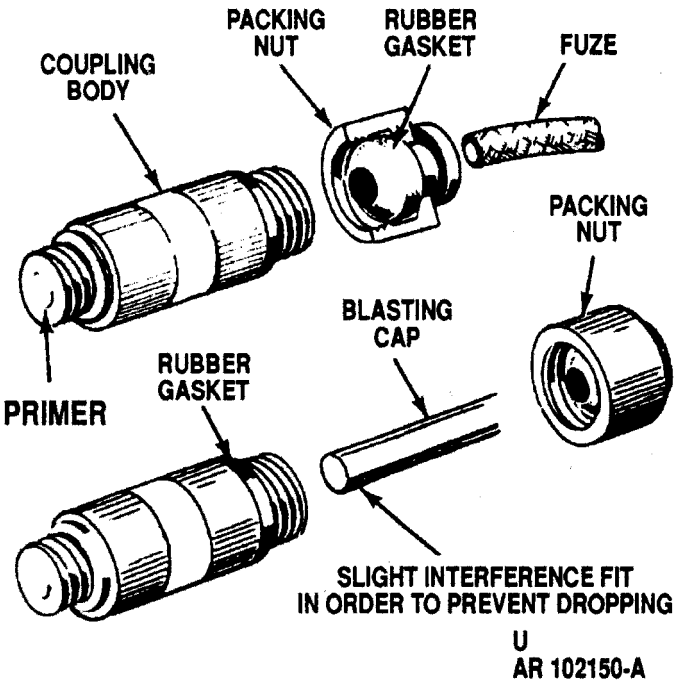
Weight (w/contents)	60 lb
Dimensions	19-13/16 in. x 17-3/4 in. x 12-7/32 in.
Cube	2.5 cu ft
50/waterproof carton	10 carton (500 case/wooden box)

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

References:

MLB-11596
FM 5-250
TM 911375-213-12
TM 9-1375-213-34

COUPLING BODY



Type Classification:

Std A.

Use:

The coupling body provides the means for holding a primer and positioning it in a firing device so that the firing pin of the firing device will strike it properly to function the primer. It also provides the means of securing a blasting cap to the firing device so that it will be be initiated by firing of the primer. The coupling body is functionally interchangeable with the coupling bases used with older firing devices in this mode of operation and has the additional alternate capability of lighting time blasting fuse for short delay type boobytraps. The coupling body is currently (1980) issue only as a component of the M142 Firing device.

Description:

The coupling body is a cylindrical plastic assembly that contains the explosive initiating element, an M42 primer, and a screw-on cap assembly that will secure either a nonelectric blasting cap or a time blasting fuse into the body. The primer end is threaded to fit into the body of a mechanical firing device. The other end is threaded to mate with the capwells of older explosive charges or (by threading on the packing nut) to provide a waterproof seal around the blasting cap or time blasting fuse.

Functioning:

When the firing device functions, its firing pin strikes the primer. The primer ignites and, in turn, initiates the blasting cap or lights the time blasting fuse.

Tabulated Data:

Item material ---------- Plastic
Color ---------- Black, olive drab
Dimensions:
  Length ---------- 1-9/16 in.
  Diameter ---------- 9/16 in.
Explosive component ---------- M42 primer

Shipping and Storage Data:

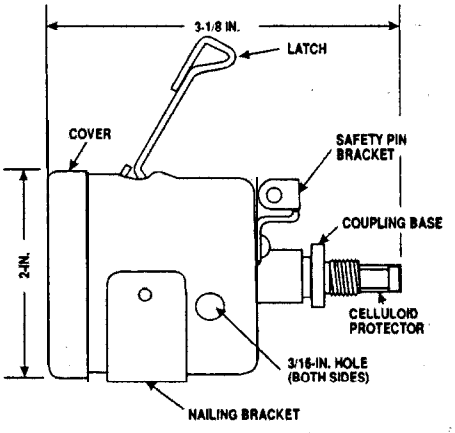
Quantity-distance class ------- 1.4
Storage compatibility group - S
DOT shipping classification - C
DOT designation ---------- PERCUSSSION FUZES

UNO serial number ---------- 0044
UNO proper shipping name - Primer, cap type
DODIC ---------- Not available

References:

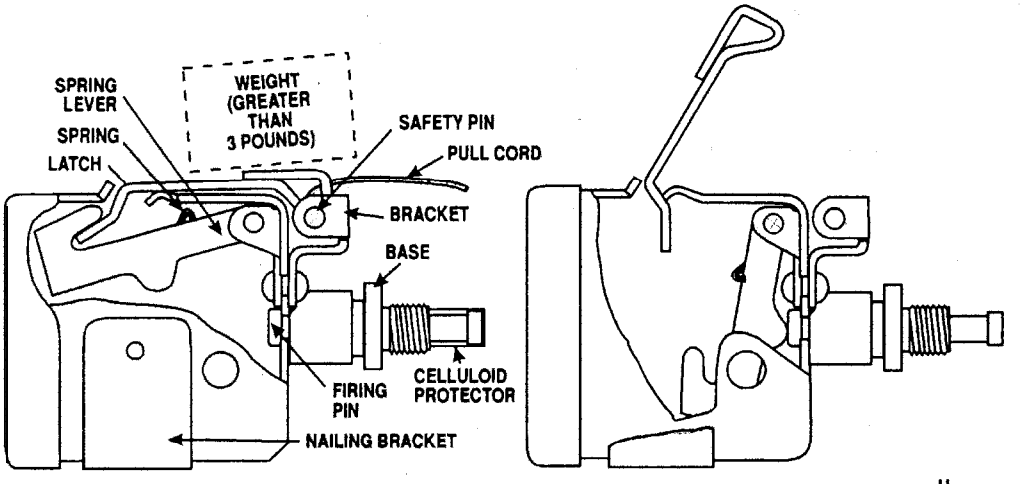
MIL-B-11596
FM 5-250
TM 9-1375-213-12
TM 9-1375-213-34

FIRING DEVICE, DEMOLITION: M1, RELEASE TYPE



FIRED POSITION

U
AR4785



SET POSITION

SPRUNG POSITION

U
AR101128

Type Classification:

C&T MSRS 1176003.

Use:

Firing Device M1, a release-type device, actuated by the removal of a restraining weight, is used in setting up boobytraps.

Description:

This firing device has a cube-shaped bodv with a primed coupling base extending from one side. The opposite side is fitted with a detachable cover. The body houses the firing mechanism which includes a firing pin, a spring, a spring lever and a latch. The latch engages a lip on the lever and extends through an opening in the top of the body to a bracket mounted above the coupling device. The latch is held in safe position y a safety pin inserted through the bracket. Holes on opposite sides of the body permit the insertion of a nail or heavy-gauge wire for added safety . A nailing bracket is welded to the base of the device for use in installation. The coupling base, fitted with a celluloid protector used during shipping and storage is threaded externally for assembly with the boobytrap. A restraining weight of 3 pounds or more is needed on the spring latch when the device is installed.

Functioning:

Upon removal of the restraining weight, the latch releases the spring lever which springs forward in a 75 degree arc to strike the firing pin. This initiates the primer in the coupling base. which in turn ignites the coupled blasting cap and the resulting detonating lasting cap sets off the explosive device.

Tabulated Data:

Container material	Steel
Color	Olive drab or plated steel (silver or cadmium gold)
Demensions (w/coupling base)	2 in. x 2 in. x 3 in.
Filler	Primer mixture
Method of actuation	Removal of restraining load

Shipping and Storage Data:

Quantity-distance class	1.4
Storage compatibility group	S
DOT shipping classification	Class C
DOT designation	PERCUSSION FUZE
UNO serial number	0349
UNO proper shipping name	Articles, explosive, n.o.s
DODIC	M631
Drawing	D39661-1
Packaging	4 per chipboard box, 20 boxes (80 devices) per wooden box

*Packing box:

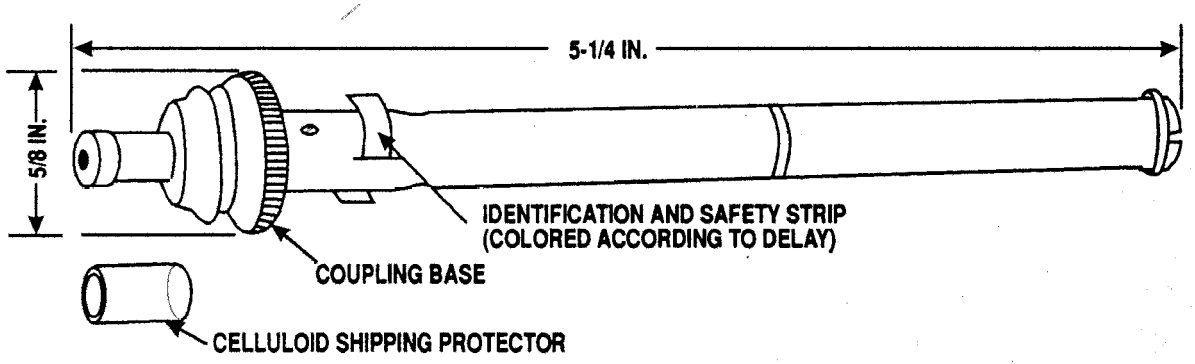
Weight (w/contents)	44.1 lb
Dimensions	26-1/4 in. x 10-1/2 in. x 8-1/2 in.
Cube	1.35 cu ft

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

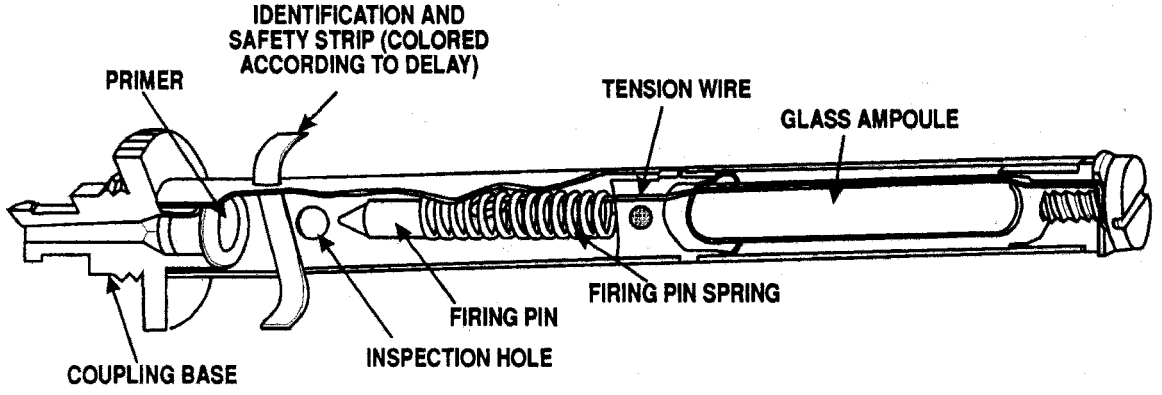
References:

FM 5-250
TM 9-1375-213-12
TM 9-1375-213-34
FM 20-32

FIRING DEVICE, DEMOLITION: M1, DELAY



EXTERIOR



CROSS SECTION

U
AR 101145

Type Classification:

Contingency MSRS 11756003.

Use:

Firing Device M1 is a chemically timed device used for delayed action firing of mines and demolition charges.

Description:

The device consists of a two-piece tubular body The two tubes are joined together by a plug. One half of the body is brass; the other half very thin copper. The copper half contains a sealed glass ampoule filled with a corrosion chemical. The brass half houses a firing pin and spring and is fitted with a primed base coupling. A restraining wire, attached to the copper end of the body extends through the entire length of the body to the firing pin. It holds the firing pin in a cocked position so that the firing pin spring is compressed and the wire is under tension. A safety strip, color coded for identification, is positioned through a hole in the firing pin housing to block the firing pin from striking the primer prematurely. The six different colors of the safety strip denote the six different time delays.

Functioning:

The copper portion holding the glass ampoule is squeezed, the glass ampoule breaks, releasing its chemical filler. The chemical reacts with the restraining wire at a predetermined rate. When the wire is eaten through, the firing pin is released and is driven by the spring into the primer in the coupling base. The resulting flame of the primer ignites the blasting cap, which is attached to base coupling, and consequently detonates the mine or demolition charge. It should be noted that the length of delay time is affected by extremes in temperature to the extent that it increases at low temperatures and decreases at high temperatures.

Tabulated Data:

Body material ---------- Brass and copper
Color of firing device ---------- Olive drab w/yellow markings
Color coding of safety strips:
  6 to 14 minute delay --------- Black
  12 to 32 minute delay ------- Red
  45 to 115 minute delay ----- White
  100 to 280 minute delay ---- Green
  210 to 570 minute delay ---- Yellow
  610 to 1130 minute delay -- Blue
Weight ---------- 1.5 oz
Dimensions:
  Length ---------- 5-1/4 in.
  Diameter ---------- 5/8 in.
Filler ---------- Primer mixture
Method of actuation ---------- Pressure

Shipping and Storage Data:

Quantity-distance class ------- 1.4
Storage compatibility group - S
DOT shipping classification - Class C
DOT designation ---------- PERCUSSION FUZES
UNO serial number ---------- 0349
UNO proper shipping name - Articles, explosive, n.o.s.
DODIC:
  Color Code:
    Black ---------- M616
    (Mixed Pack) Red, White, Green, Yellow, Blue ---------- M617
    Red ---------- M619
    White ---------- M620
    Green ---------- M621
    Yellow ---------- M622
    Blue ---------- M623
Drawing ---------- 8846784
*Packing ---------- 10 per setup box, 1 box per vapor barrier bag, 15 bagged boxes per carton, 1 carton per bag, 3 bagged cartons (450 devices) per wire-bound wooden box

**Packing box:
  Weight (w/contents) --------- 56 lb
  Dimensions ---------- 16-2/16 in. x 14-1/2 in. x 8-27/32 in.
Cube ---------- 1.2 cu ft

*Packaged as described herein except as noted below.

Yellow and Green packed 10/carton, 12 cartons/waterproof lined wooden box.

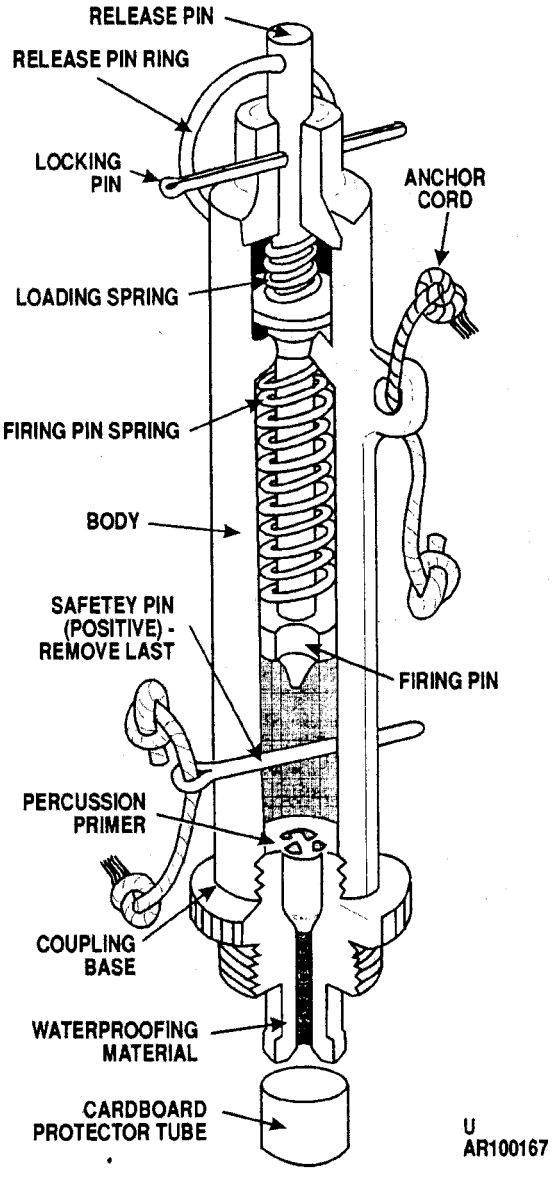
Mixed packed in sets of 10 red, 3 white, 3 green, one yellow and one blue per fiberboard box, and 5 boxes per wooden carton.

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250
FM 20-32

FIRING DEVICE, DEMOLITION: M1, PULL TYPE



Type Classification:

Std A AMCTCM, dtd 1968.

Use:

Pull-type firing Device M1, activated only by a pull on a trip wire, is used in setting up booby-traps, boobytrapping mines, and as an actuator for improvised antipersonnel mines.

Description:

This tiring device consists of a cylindrical case (body), head and coupling base. The head, which is permanently joined to the case, contains a release pin, release pin ring, a loading spring and a safety pin. The case, which contains the firing mechanism consisting of the firing pin and compression spring, also contains a positive safety pin. The coupling base, which is

screwed into the case, contains the primer. The outer end of the coupling base is threaded to fit activators and demolition charge capwells. A blasting cap may be assembled to the nipple. The pull-ring end of the tiring pin, which is slotted axially to form four jaws, passes through a cylindrical opening in the case. The end of the release pin, fitting into an axial hole in the slotted end of the firing pin, causes it to engage on the upper surface of the opening, thereby restraining downward movement of the firing in. The safety pin, which passes through a Role in the head and a hole in the release pin, prevents accidental movement of the release pin during shipment and handling. The positive safety pin, which passes through a hole in the case between firing pin and primer, prevents the firing pin from striking the primer should the firing pin be accidentally released. An anchor cord on the case is used to anchor the firing device firmly during installation.

Functioning:

A direct pull of 3 to 5 pounds in the tripwire moves the release pin out of position, releasing the compression spring which drives the firing pin into the primer. The primer ignites which, in turn, initiates the blasting cap attached to the base coupling. The blasting cap detonation sets off the explosive device to which it is attached.

Tabulated Data:

Body material ---------- Metal
Color of firing device ---------- Olive drab w/yellow markings
Weight ---------- 2 oz
Dimensions:
Length ---------- 3-7/8 in.
Diameter ---------- 7/8 in.
Filler ---------- Primer mixture
Method of actuation ---------- Pull on trip wire

Shipping and Storage Data:

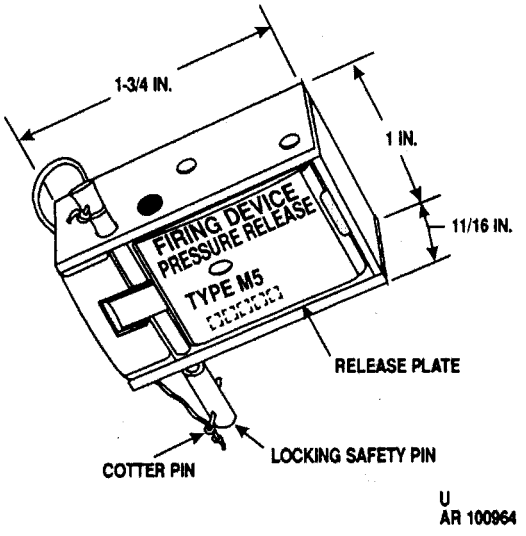
Quantity-distance class ------- 1.4
Storage compatibility group - S
DOT shipping classification - Class C
DOT designation ---------- PERCUSSION FUZES
UNO serial number ---------- 0349
UNO proper shipping name - Articles, explosive, n.o.s.
DODIC ---------- M630
Drawing ---------- 9227596, 879612
Packing ---------- 5 firing devices and 2 spools tripwire per fiberboard container, one container per barrier bag, 40 bags (200 tiring devices) per wooden box

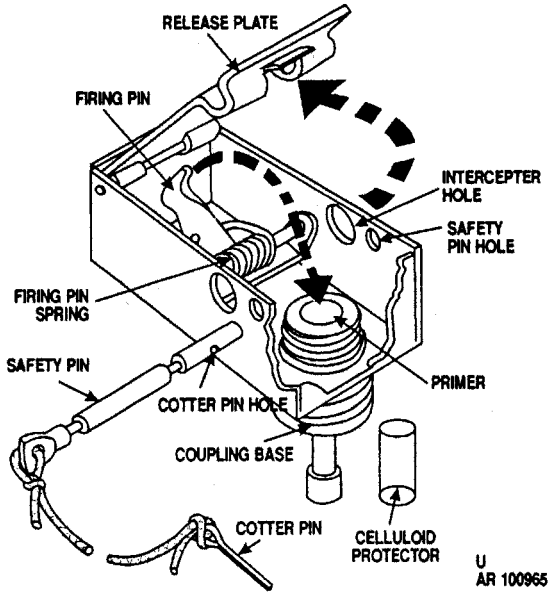
*Packing box:
Weight (w/contents) --------- 49 lb
Dimensions ---------- 21-5/8 in. x 13 in x 11 in.
Cube ---------- 1.9 cu ft

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250
FM 20-32

FIRING DEVICE, DEMOLITION: M5, PRESSURE RELEASE





Type Classification:

Use:

Pressure Release Firing Device M5 is used in boobytrap installations to activate mines and demolition charges.

Description:

This device consists of a rectangular body containing the firing mechanism, and a primed coupling base. The firing mechanism consists of a spring-loaded firing pin, a release plate, and a safety pin. The coupling base, primed with a percussion primer, is threaded to fit in the capwell of a mine activator or demolition charge.

Functioning:

A restraining load of approximately 5 pounds is placed on the firing device at the time of installation. When the restraining load is removed, the release plate moves out of line releasing the firing pin. The springloaded firing pin strikes the primer. The resulting flame from the primer ignites the blasting cap which, in turn, detonates the charge.

Tabulated Data:

Body material ---------- Pressed steel
Color of firing device ---------- Olive drab w/yellow markings
Older items are plated steel (cadmium-gold colored) w/black markings
Weight ---------- 2 oz
Dimensions ---------- l-3/4 in. x 1 in. x

Filler ---------- Primer mixture
Method of actuation ---------- Pressure release

Shipping and Storage Data:

Quantity-distance class ------- 1.4
Storage compatibility group - S
DOT shipping classification - Class C
DOT designation ---------- PERCUSSION FUZES
UNO serial number ---------- 0349
UNO proper shipping name - Articles, explosive, n.o.s.
DODIC ---------- M627
Drawing---------- 9249244
Packing ---------- 4 firing devices per paperboard carton, one carton per barrier bag, 5 bags per fiberboard carton, 10 carton (200 firing devices) per wooden box

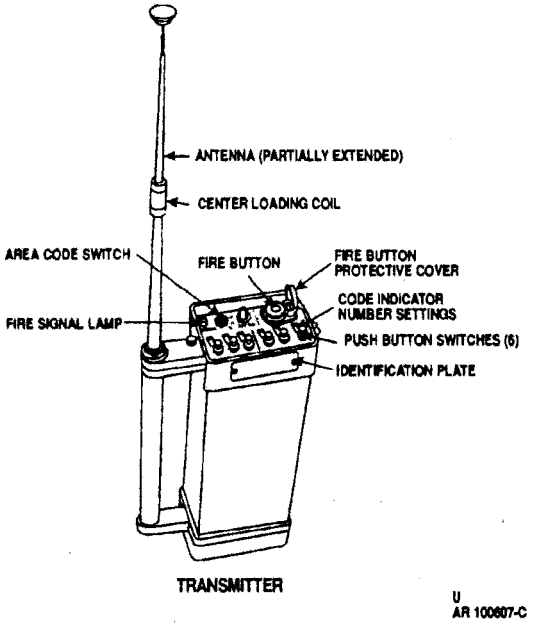
*Packing box:
Weight (w/contents) --------- 46.2 lb
Dimensions ---------- 21-9/16 in. x 13-1/2 in x 11 in.
Cube ---------- 1.6 cu ft

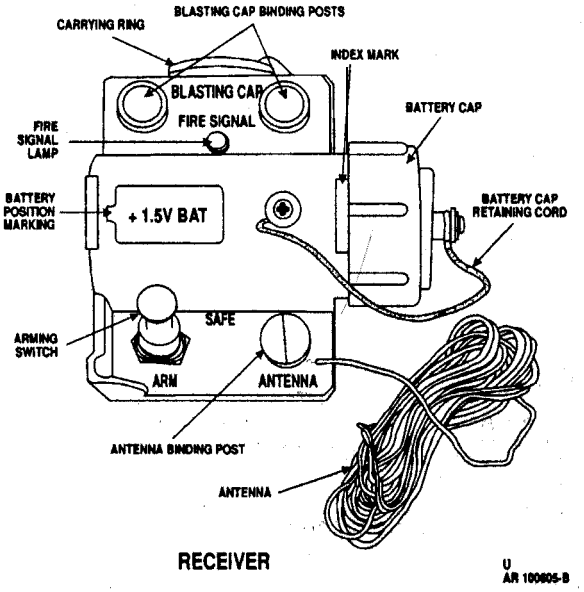
*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250
FM 20-32

FIRING DEVICE, DEMOLITION: M122





Tape Classification:

STD MSR 05816017.

Use:

The Demolition Firing Device M122 is used to detonate explosives from a remote location.

Description:

The Demolition Firing Device M122 consists of a separate transmitter and ten receivers. The transmitter transmits coded radio signals to activate a specfic receiver and is a one piece, self-contained unit similar in appearance to a walky-talky. The fully transistorized unit, which is powered by a battery pack, can generate, encode and transmit a radio signal to activate a receiver. Over a million different codes may be selected for transmission; therefore, many receivers may be activated from one transmitter in a short period of time.

The receiver, placed in the vicinity of the explosive, initiates the explosive upon receipt of the properly coded radio signal. It is a small box with an integral cylindrical battery compartment on top. It contains the electric circuitry to fire the attached blasting caps upon receiving the properly encoded command signal from a transmitter. Special circuitry allows the receiver to be actuated only by receipt of a coded radio signal unique to the particular receiver. Each and every receiver has its own individual code. Power for the operation of the

receiver and for the firing of the blasting caps is a single D cell.

Functioning:

When actuated by the transmitter, the receiver acts as a low capacity electric blasting machine. The full functioning sequence is as follows:

Charges, mines, etc. are emplaced and electrically primed in the normal manner.

The receiver is emplaced and its antenna is positioned vertically.

Firing leads of the blasting cap circuit are connected to the receiver's blasting cap binding posts.

The receiver's delay-arming switch is moved to the ARM position and the operating personnel withdraw to the remote firing location.

After the arming delay period has passed, the transmitter, (set to the proper code) is functioned when desired and the receiver fires the blasting caps. The receiver can remain on duty awaiting its actuation signal for a long time (a nominal 20 days can be expected, depending upon environment and battery).

Tabulated Data:

Packing Data:
Shipping Box (with contents):

Length	25.5 in. (64.8 cm)
Width	24.5 in. (62.2 cm)
Height	11.5 in. (29.2 cm)
Weight (as shipped)	75.0 lb (34.0 kg)
Cube	4.2 cu ft (0.2 cum)

Carrying case (w/contents, including batteries):
Size:

Length	23.75 in. (60.3 cm)
Width	22.75 in. (57.8 cm)
Height	8.8 in. (22.4 cm)
Weight	35 lb (16.6 kg)
	2.8 cu ft (0.08 cum)

Transmitter:

NSN	1375-01-021-0606

Size (antenna collapsed):

Length	11.00 in. (28 cm)
Width	2.63 in. (6.37 cm)
Height	6.25 in. (15.87 cm)

Weight:

Without battery pack	2.25 lb (1.25 kg)
With battery pack	4.25 lb (2.13 kg)
Operating temperature	25°F to ±25°F (-32°C to +52C)

Effective Range:

Nominal	0.6 mile (1.0 km)

Estimated:

Through dense foliage	0.6 mile (1.0 km) or less
Through dense jungle	0.5 mile (0.8 km) or less
Over land (clear line-of-sight)	2.0 miles (3.3 km)
Over water	3.0 miles (5.0 km)
Over frozen tundra	0.5 mile (0.8 km) or less
From aircraft (clear line-of-sight)	6.0 miles (10.0 km)

Receiver:

Length	4 in. (10 cm)
Width	4 in. (10 cm)
Height	4 in. (10 cm)

Weight:

Without battery	1.1 lb (0.5 kg)
With battery	1.4 lb (0.6 kg)

Capacity
Nominal (see Table 2-1 for details) — Five M6 electric blasting caps in series

Operating temperature w/alkaline battery — 25°F to ±25°F (-32°C to +52°C)

Transmitter Battery Pack:

Type	Alkaline
Voltage	18 V
BA Type	N/A
NSN	6135-01-110-3516

Size:

Length	5.1 in. (12.9 cm)
Width	3.3 in. (8.4 cm)
Height	2.3 in. (5.8 cm)
Weight	2.0 lb (0.9 kg)

Marking (initial production only):

Battery, Dry
9296723

Contract No.

Date

18 volts

Manufacturer's name, Plant location

Receiver battery:

Type	Alkaline
Voltage	1.5 V
BA type	BA 3030/u
NSN	6135-00-930-0030
Operating temperature range	25°F to ±125°F (-32°C to +52°C)
On-duty life Nominal	20 days
Expected receiver on-duty life using fresh battery at various temperatures	-25°F --- 20 days; +70°F--- 50 days; +125°F--30 days
Type	Alkaline
Voltage	1.5V
BA type	BA 3202/u (being replaced by BA 3030/u, but still available in some areas)
NSN	6135-00-935-8738
Use	General and low temperatures
Operating temperature range	-25°F to +125°F (-32°C to +52°C)
On-duty life nominal	20 days
Expected receiver on-duty life using fresh battery at various temperatures	-25°F --- 25 days; +70°F--- 50 days; +125°F--30 days

Alternate Receiver Batteries:

Type	Zinc Carbon
Voltage	1.5 V
BA type	BA 30/u
NSN	6135-00-120-1020
Use	Limited-Moderate temperatures only
Operating temperature range	+60°F to +100°F (+18°C to +38°C)
Expected receiver on-duty life using fresh battery at various temperatures	0°F -- 8 hours; +60°F--- 20 days; +100°F--15 days
Type	Mercury*
Voltage	1.35V
BA type	BA 1030/u
NSN	6135-00-125-5265
Use	High temperature
Operating temperature range	+70°F to +125°F (+21°C to +52°C)
Expected receiver on-duty life using fresh battery at various temperatures	50°F --- 1 day +70°F--- 20 days; +125°F--30 days

*The BA 1030/u mercury battery does not have the protruding positive contact of alkaline and . zinc carbon batteries. Because of this:

Always carefully check polarity of a mercury battery when installing.

Rotate the mercury battery two full turns within battery compartment after inserting it.

Always assure the receiver's contacts are making proper contact by conducting a check-out of any receiver being used with a mercury battery.

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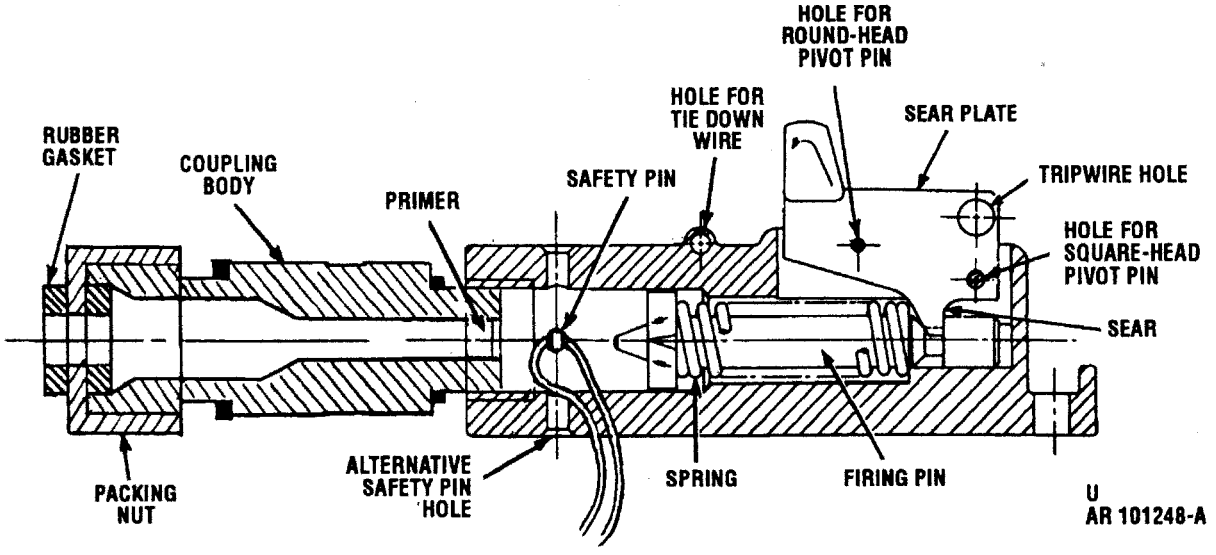
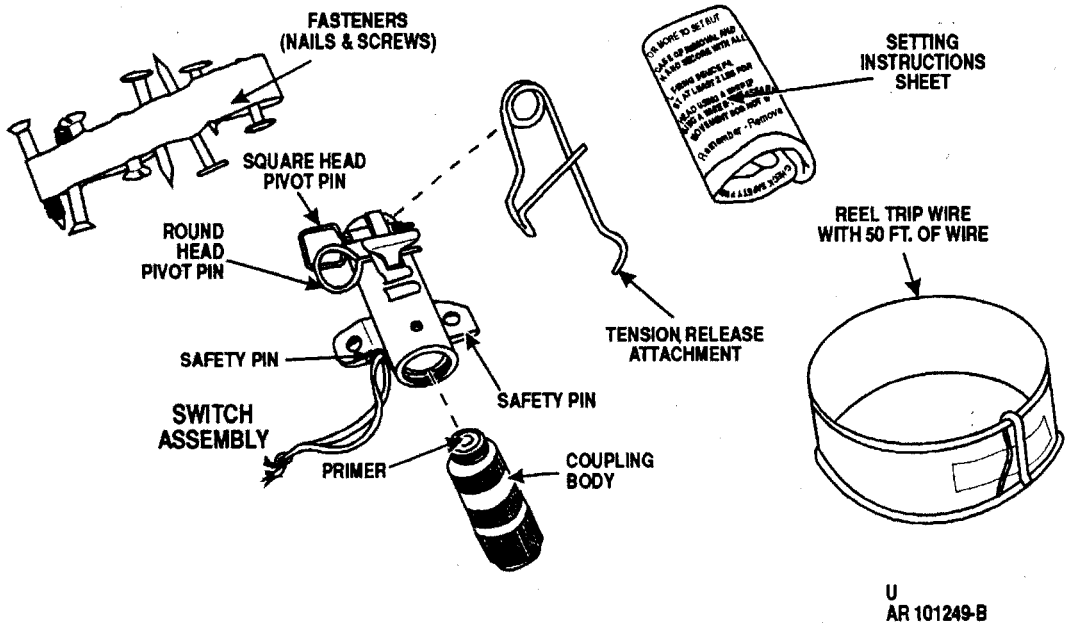
FIRING DEVICE, DEMOLITION: M142, MULTIPURPOSE (PRESSURE, PULL, PRESSURE RELEASE, OR TENSION RELEASE TYPE)





Type Classification:

S (LCCA) Mar 77.

Use:

The M142 is a mechanical firing device intended for use with anti-personnel mines and when setting up boobytraps using demolition charges. It provides in a single item a simple means of mechanical initiation of a boobytrap by release, pull, pressure release, or tension release.

Description:

a. The basic component of the device is a mechanical switch designed for mechanical actuation (to initiate the explosive) by pressure, pull, pressure release or tension release. In addition to its four mode capability the M142 can be used to i ignite either a blasting cap (as in other firing devices) or a time blasting fuse for setting a short delay type boobytrap.
device is weather sealed and will also function under water.

b. The firing device consists of a number of different components to facilitate operation in four modes. These components which make up firing device are:

(1) The switch that incorporates two pivot pins, a sear plate, a spring and a firing pin. A safety pin is also incorporated in the switch to prevent accidental initiation. It is positioned in front of the firing pin and is only removed after the desired operating mode is set up.

(2) A tripwire -- 50 feet of copper wire wound on a cardboard spool. An olive drab coat of paint over the wire prevents it from accidentally unwinding and aids concealment. It is used in the tension release mode and in the pull mode.

(3) A tension release attachment special formed stainless steel wire that has a spring type action. In the tension release mode, the attachment holds the tripwire under tension that, in turn, maintains the firing device in a constant armed position. Actuation is initiated when the taut tripwire us cut which permits the sear plate to release the firing pin.

(4) A coupling body -- a cylindrical plastic assembly that contains the explosive initiating element, an M42 primer, but no blasting cap. (The cap must be installed by the user.)

(5) An Instruction Sheet giving abbreviated setup instructions is provided with each device.

(6) Fasteners -- a set of nails and screws, for securing the switch are included with each device.

c. The olive drab plastic switch and coupling body are unpainted. They are unmarked except for a yellow band painted on the coupling body. The brass safety pin and steel pivot pins are unpainted.

d. The M142 firing device components, including the instruction sheet, screws and nails are packed in a cylindrical metal container 3-1/8 in. diameter and 1-1/4 in. high. Fifty-six containers are packed in four M19A1 ammunition boxes (14 per box) which are in turn packed in a wirebound wooden box.

Functioning:

a. The switch contains a spring loaded firing pin held in position by a moveable sear plate that can be set to release the firing pin in any one of the four operating modes.

(1) The operating mode is determined by selective removal of one of the two pivot pins in the switch which permits the sear plate to rotate about the other pivot pin. When both pins are in place the sear plate is locked in position. The two pivot pins, the round head pivot pin and square head pivot pin are of different diameters and are not interchangeable.

(2) When the switch is set for pull or pressure, (removal of the square headed pin) a pull of more than 4 pounds or a pressure of more than 9 pounds makes the sear plate pivot on the round-headed pin, releasing the spring loaded firing pin.

(3) When the switch is set for pressure-release (by removal of the round-headed pin) the sear plate is held down by a load of at least 2 pounds. Removal of the 2-pound load makes the sear plate pivot on the square-headed pin, releasing the spring loaded firing pin.

(4) When the switch is set for tension release (by removal of the round-headed pin), the sear plate is held under tension by a taut tripwire. Cutting of the tripwire makes the sear plate pivot on the square-headed pin, releasing the spring loaded firing pin.

b. The coupling body is interchangeable with the standard coupling base in functioning attached blasting caps and, in addition, has the alternate capability of lighting a time blasting fuse. The coupling body has another advantage over the standard coupling base in that it is not necessary to crimp the blasting cap to attach it.

Tabulated Data:

Actuating force:	
Pressure	more than 9 pounds
Pull	more than 4 pounds
Pressure release	2 pounds or more to set, but not more than 150 pounds
Tension release	Release of tension
Model	M142
Weight	1.2 oz
Length	4.0 in.
Width	1.6 in.
Height	1.1 in.
Material	Plastic, steel, brass and stainless steel
Primer	M42
Metal Container:	
Dimensions	Approx 3-1/8 od x
Color	Olive drab with white lettering

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Shipping and Storage Data:

Quantity-distance class ------- 1.4
Storage compatibility group - S
DOT shipping classification - Class C
DOT designation ---------- PERCUSSION FUZES
UNO serial number ---------- 0349
UNO proper shipping name- Articles, explosive, n.o.s.
DODIC ML03
NSN 1375-01-040-1526
Drawing 9296865
Packing ---------- 56 devices packed in 4 boxes each containing 14 firing devices

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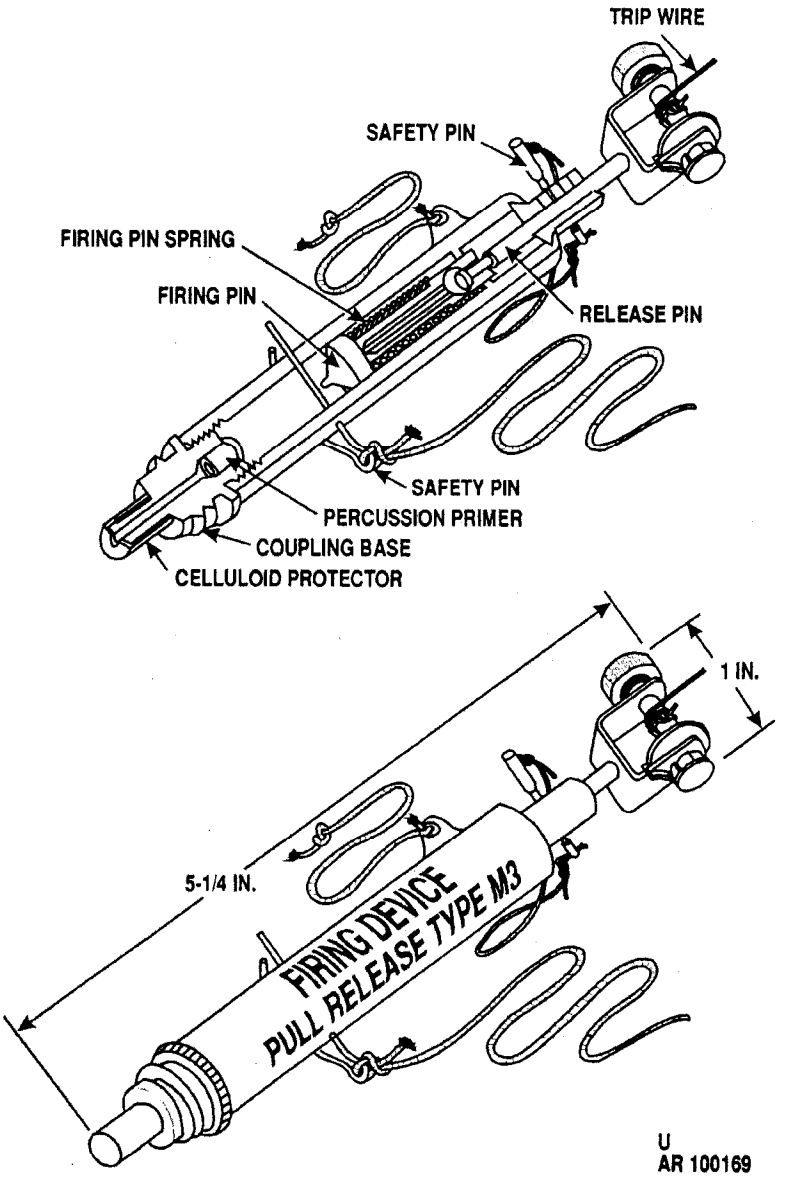


Type Classification:

Std A AMCTCM 6384, dtd 1968.

Use:

This firing device is a mechanical device designed for actuation by either an increase (pull) or decrease (release) of the tension of a taut tripwire and is intended for use with anti-personnel mine M3, or in setting up boobytraps with mines or demolition charges.

Description:

The firing device consists of a head, body coupling base, firing pin, release pin, safety pin, and winch assembly. The head, which is crimped to the body acts as a guide for the release pin, The body contains a spring-loaded firing pin, in which the knob end of the release pin is installed. The coupling base, which screws into the body, contains the primer, The outer end of the coupling base is threaded to fit mine activators and Demolition Charge capwells and has a nipple. A blasting cap may be assembled to the the nipple.

The outer end of the firing pin is slotted longitudinally to form four jaws, and grooved internally to receive a knob in the inner end of the release pin. The slotted end of the firing pin passes through a cylindrical opening in the body. It is held in this position by the knob of the release pin when the release pin is in its normal axial position and the safety pin in place. The safety in passes through an elongated opening in the head and a hole in the release pin. A small cotter pin, which passes through a hole in the end of the safety pin, prevents accidental movement of the safety pin during shipment. The safety pin, when in position, prevents forward or backward movement of the release in (beyond the slight movement permitted by the elongated slot in the head), thus preventing release of the firing pin. The winch consists of a bracket, spool with a knurled knob, and a pawl, and is attached to the outer end of the release pin.

A positive safety pin, one leg of which passes through a hole in the body between the firing pin and the primer, prevents the firing pin from striking the primer should the firing pin be accidentally released. The other leg of the safety pin is bent around the body to keep it in place during shipment and handling. An anchor cord (12 inches long), attached to the eyelet on the body is used to anchor the firing device firmly during installation.

Functioning:

a. Pull Operation. A direct pull of 6 to 10 pounds on the tripwire causes the release pin to be pulled outward until the jaw end of the firing pin passes beyond the constricted opening in the body . In this position, the jaws spread, thereby releasing the firing pin from the knob of the release pin. The jaws then close, releasing the firing pin which, driven by its spring, fires the primer.

b. Tension-Release Operation. Release of tension, such as cutting or detaching the tripwire, permits the release pin and spring-loaded firing pin from the release pin. The released firing pin, driven by its spring, fires the primer.

Tabulated Data:

Material	Zinc die casting alloy
Color	Olive drab w/yellow markings
Weight	Not available
Dimensions:	
Length	5-1/4 in
Diameter	1 in.
Explosive charge (filler)	Primer mixture
Method of actuation	Pull or release of tripwire

Shipping and Storage Data:

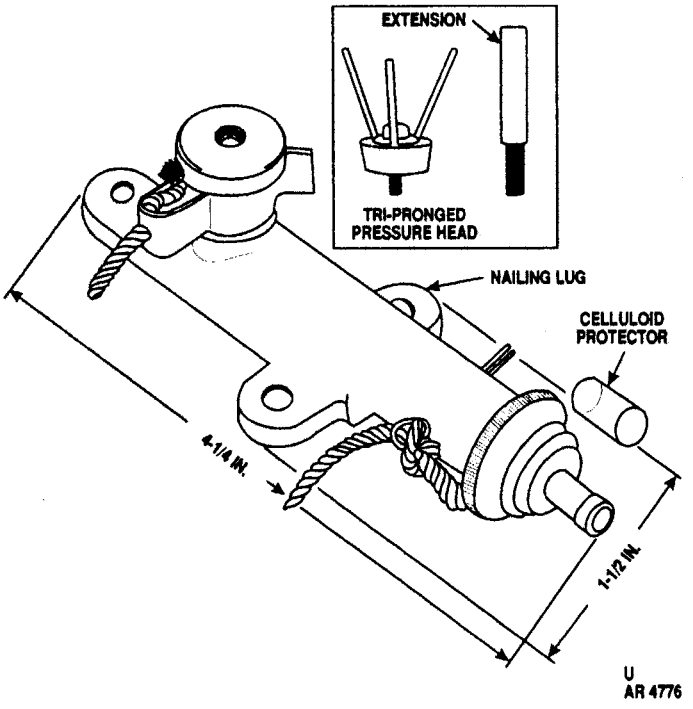
Quantity-distance class	1.4
Storage compatibility group	S
DOT shipping classification	Class C
DOT designation	PERCUSSION FUZES
UNO serial number	0349
UNO proper shipping name	Articles, explosive, n.o.s.
DODIC	M629
Drawing	73-9-87/8837267
Packaging	5 devices and 2 80-ft spools of tripwire per pkg, 5 pkgs per inner pkg, 6 inner pkgs (150 devices and 60 spools) per wooden box
*Packing box:	
Weight (w/contents)	49.9 lb
Dimensions	15-3/8 in. x 11-3/8 in. x 10-3/4 in.
Cube	1.18 cu ft

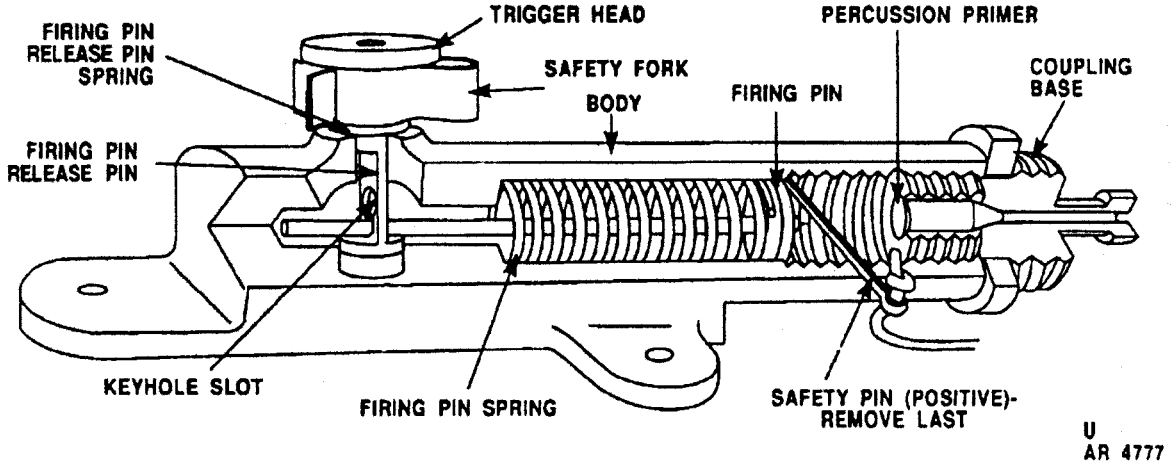
*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250
FM 20-32

FIRING DEVICE, DEMOLITION: M1 AND M1A1, PRESSURE TYPE





Type Classification:

C&T, T MSRS 11756003.

Use:

Firing Devices M1 and M1A1, Pressure Type, are pressure-activated devices used to detonate boobytraps and mines.

Description:

The firing device consists of a head, case, and coupling base. The case that contains the firing mechanism has three lugs, each with a hole for use in anchoring the device. The firing mechanism consists of a spring-loaded firing pin held in the cocked position by a firing pin release pin, which is attached to the pressure cap. This is accomplished by a keyhole-shaped opening in the trigger pin. The smaller part of this opening fits into a groove in the firing pin (cocked position); the larger part of the opening permits the free movement of the firing pin upon release. The head, an integral part of the case, contains the firing pin release pin mechanism, which terminates in a pressure cap. A tapped hole in the center of the pressure cap is provided for use of an extension. The coupling base, which screws into the case, contains the primer. A removable fork, located under the pressure cap, prevents movement of the firing pin release pin. The safety pin, which passes through a hole in the case between the firing pin from striking the primer should the firing pin be accidentally released.

Functioning:

A pressure of 20 pounds on the pressure cap compresses the firing pin release pin spring and pushes the release spring downward. When the enlarged portion of the keyhole-shaped opening in the release pin is in the line with the spindle, the firing pin is released. The spring-loaded firing pin then fires the primer. The flame from the primer ignites the blasting cap which, in turn, detonates the charge.

Tabulated Data:

Housing material ---------- Metal
Color ---------- Olive drab w/yellow markings
Weight ---------- 0.228 lb
Dimensions:
  Length ---------- 4-1/2 in.
  Diameter ---------- 1/2 in.
Method of actuation ---------- Pressure
Filler ---------- Primer mix

Shipping and Storage Data:

Quantity-distance class ------- 1.4
Storage compatibility group - S
DOT shipping classification - Class C
DOT designation ---------- PERCUSSION FUZES
UNO serial number ---------- 0349
UNO proper shipping name - Articles, explosive, n.o.s.
DODIC ---------- M626
Draving
  ---------- 73-9-70
  M1A1 ---------- 73-9 -70-1
*Packaging ---------- 5 per box, 50 boxes (250 devices) per wooden box

**Packing box:
  Weight (w/contents) --------- 80 lb
  Dimensions ---------- 27-1/4 in. x 12-3/4 in, x 10-1/4 in.
  Cube ---------- 2.06 cu ft

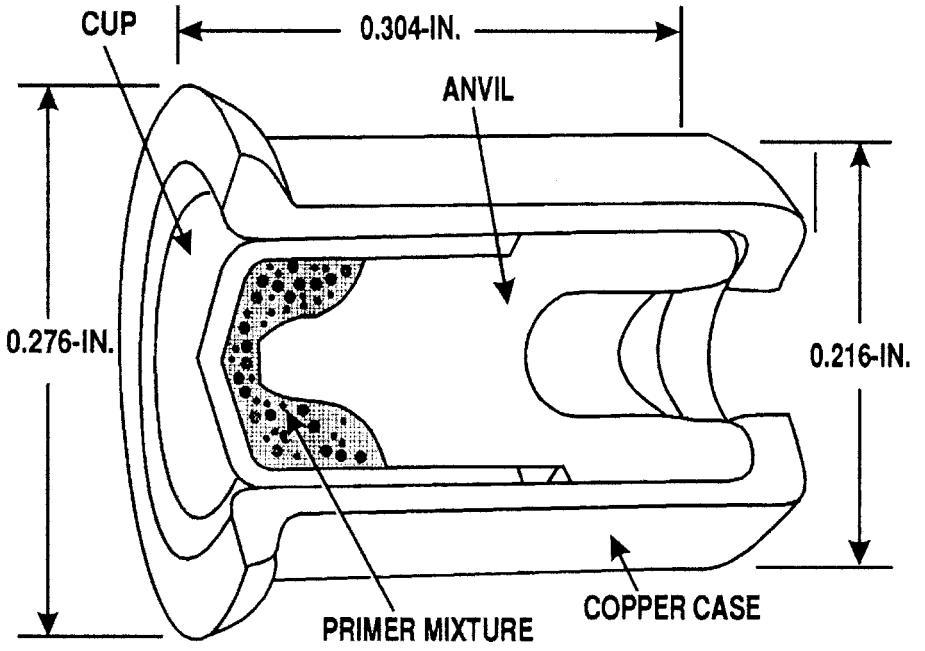
* This pack is for Firing Device, Demolition Pressure Type M1A1. The M1 is packed 30 per cardboard box, 30 boxes per wooden box. The total weight is 78 lb.

**NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN's.

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250

PRIMER , PERCUSSION: CAP, M2



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AR 101133

Type **Classification:**

Std OTCM 36841, dtd 10 July 1958.

Use:

Percussion Primer M2 is a component of a coupling base. It is issued separately for reprimming firing devices used with practice mines and boobytraps.

Description:

This primer consists of a vented copper housing fitted with an open cup containing primer mixture and an anvil. The housing is designed for pressfitting in the chamber of the coupling base.

Functioning

When the primer is struck by a firing pin, the anvil strikes the primer mixture which ignites and emits a small but intense flame.

Tabulated Data:

Housing material ---------- Copper
Dimensions:
  Length ---------- 0.304 in.
  Diameter ---------- 0.216 in.
Filler ---------- Primer mixture
Method of actuation ---------- Percussion

Shipping and Storage Data:

Quantity-distance class ------- 1.4
Storage compatibility group - B
DOT shipping classification - Explosive C
DOT designation ---------- SMALL ARMS PRIMER--HANDLE CAREFULLY
UNO serial number ---------- 0044
UNO proper shipping name - Primers, cap type
DODIC ---------- M180
Drawing ---------- B4760-1 ENG
Packaging ---------- 100 per cardboard box, 50 boxes (5000 primers) per wooden box
*Packing box:
  Weight (w/contents) --------- 24 lb
  Dimensions ---------- 18-318 in. x 9-3/4 in, x 7-1/2 in.
  Cube ---------- 0.8 cu ft

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

References:

TM 9-1375-213-12
TM 9-1376-213-34

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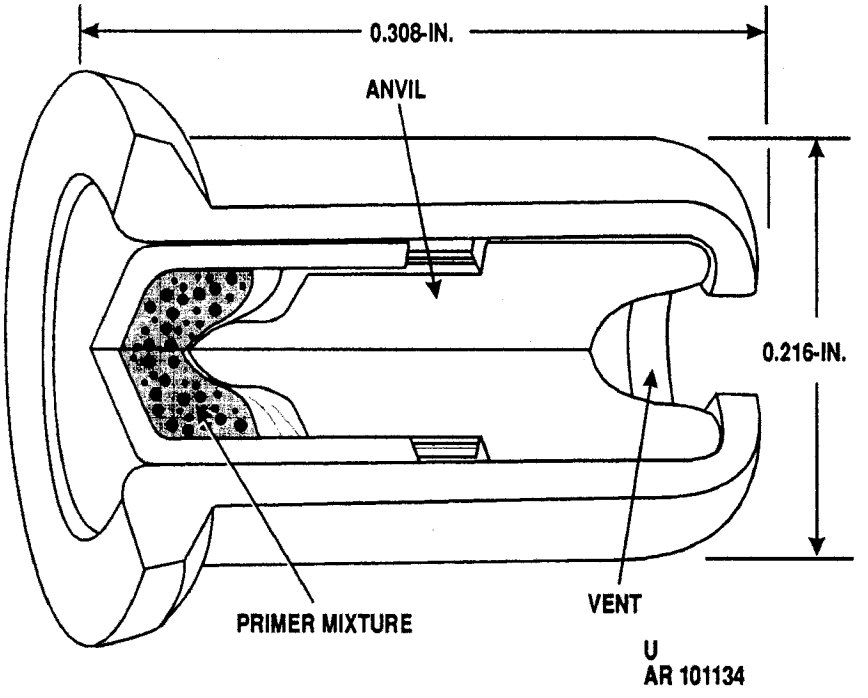
PRIMER, PERCUSSION: CAP, M27



Type Classification:

Std A OTCM 36841, dtd 10 .

Use:

The Percussion Cap Primer M27 is a component of a coupling base. It is issued separately for repriming firing devices used with practice mines and boobytraps.

Description:

This primer, similar in construction to Percussion Primer M2, consists of a vented copper housing containing a cup of primer mixture and an anvil. The housing is designed for press fitting in the chamber of the coupling base.

Functioning:

When the primer is struck by a firing pin, the anvil strikes the primer mixture which ignites and emits a small but intense flame.

Tabulated Data:

Housing material ---------- Copper
Dimensions:
  Length ---------- 0.308 in.
  Diameter ---------- 0.216 in.
Filler ---------- Primer mixture
Method of actuation ---------- Percussion

Shipping and Storage Data:

Quantity-distance class ------- 1.4
Storage compatibility group - B
DOT shipping classification - Explosive C
DOT designation ---------- SMALL ARMS PRIMERS - HANDLE CAREFULLY
UNO serial number ---------- 0044
UNO proper shipping name - Primers, cap type
DODIC ---------- M81O
Drawing 8837810
Packaging ---------- As required
Packing box ----------

References:

TM 9-1375-213-12
TM 9-1375-213-34

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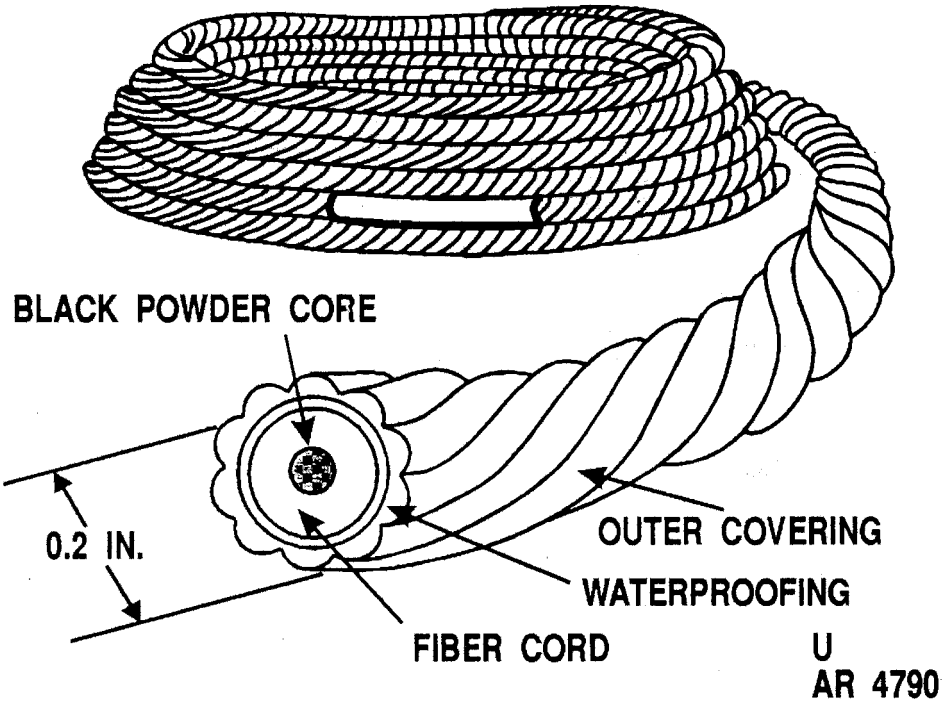
FUSE, BLASTING, TIME: (SAFETY FUSE)



Type Classification:

Std B OTGM 36841, dtd 1958.

Use:

Time blasting fuse (safety fuse) is used in military demolitions to ignite nonelectric blasting caps, above ground or underwater. The fuze is designed to permit the operator to ignite it and reach cover before detonation occurs.

Description:

Time blasting fuse consists of a waterproofed fiber cord with a core of black powder. The outer surface of the cord is corrugated, and is usually orange in color.

NOTE

Because of its corrugated surface, safety fuse does NOT form a waterproof seal when a blasting cap is crimped onto it. Sealing compound must be used to waterproof the installation.

Functioning:

On ignition, the flame travels through the core of black powder at a uniform rate towards the blasting cap and detonating it on contact. The burning rate varies between rolls, and sometimes within a single roll, from approximately 30 seconds per foot to 45 seconds or more. The burning rate may be affected by climatic conditions, and it increases significantly underwater.

Tabulated Data:

Container material	Fiber
Color	Usually orange
Dimensions:	
Length	50 ft coil
Diameter	0.2 in.
Filler	Black powder
Method of actuation	Flame or fuse igniter

Shipping and Storage Data:

Quantity-distance class	1.4
Storage compatibility group	s
DOT shipping classification	Explosive C
DOT designation	SAFETY FUSE
UNO serial number	0105
UNO proper shipping name	Fuse, safety
DODIC	M670
Specification	MIL-F-20412, MIL-E-15160

Packaging ---------- 50 ft per coil, 2 cods per package, 5 packages per metal can, 8 cans per wooden box (4000 ft)

*Packing box:
Weight (w/contents) --------- 93.6 lb
Dimensions ---------- 30 in. x 14-5/8 in. x 14-5/8 in.

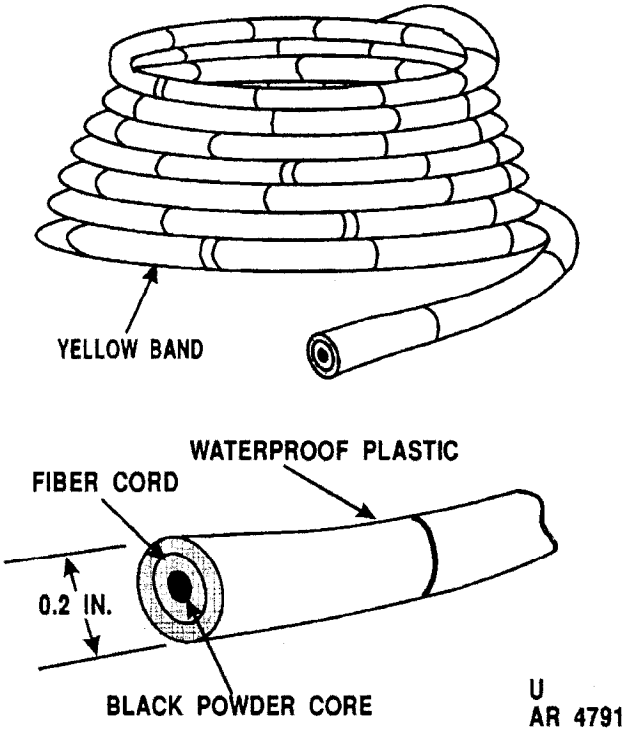
Cube ---------- 3.9 cu ft

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250

FUSE, BLASTING: TIME, M700



Type Classification:

Std A OTCM 36841, dtd 1958.

Use:

Time Blasting Fuse M700 is used in military demolitions to ignite nonelectric blasting caps, The burning rate of the fuse permits the operator to ignite the fuse and reach cover before detonation. This fuse is similar to and interchangeable with standard safety fuse.

Description:

The fuse consists of a continuous delay of black powder, tightly wrapped and inclosed by an inner cover of jute yarn counterwound with cotton yarn, and covered by a thin cover of bitumen which in turn is covered on the outside by an extruded plastic sheath. The fuse is olive drab with a yellow single band 1/4 inches wide every 18 inches and a double yellow band every 90 inches. The burning rate is 36 to 44 seconds per foot.

Functioning

When the fuse is ignited, the flame travels through the core of black powder towards the blasting cap and detonates it on contact. The burning rate may be affected by humidity temperature and if used under water. Under arctic conditions, the plastic covering may become brittle and crack easily.

Tabulated Data:

Covering material	Fiber cord
Color	Olive drab w/yellow markings
Dimensions:	
Length	50 ft coil
Diameter	0.2 in.
Filler	Black powder
Method of actuation	Flame or fuse igniter

Shipping and Storage Data:

Quantity-distance class	1.4
Storage compatibility group	S
DOT shipping classification	Explosive C
DOT designation	SAFETY FUSE
UNO serial number	**0105**
UNO proper shipping name-DODIC	Fuse, safety M670
Specification	MIL-F-45144
Packaging	50 ft per coil, 2 coils per package, 5 packages per metal can, 8 cans (4000 ft) per wooden box

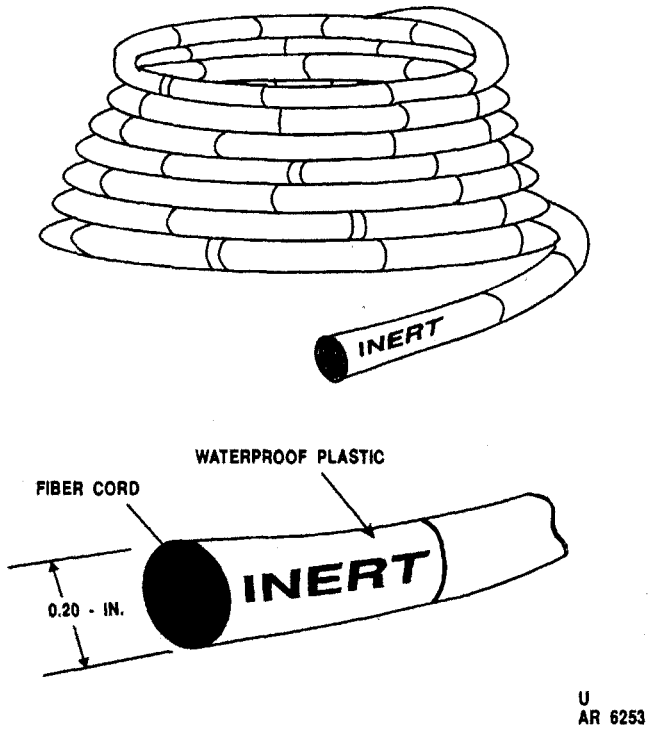
*Packing box:
Weight (w/contents) --------- 107 lb
Dimensions ---------- 30 1/2 in. x 15-5/16 in. x 17-7/32 in.

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250

FUSE, BLASTING TIME, INERT



Type Classification:

Std A OTCM 36841, dtd 1958.

Use:

This inert fuse is used for demonstration and for training in demolition work requiring time blasting fuse.

Description:

The fuse consists of a continuous inert mix simulating the black powder core of the live fuse. It is tightly wrapped and inclosed by an inner cover of jute yarn counterwound with cotton yarn and covered by a thin coat of bitumen which in turn is covered on the outside by an extruded plastic sheath. The fuse is blue in color and bears 1/8 in. black marking "INERT on each end of the 50 foot roll.

Functioning

This item does not function, Its only purpose is for demonstration and to give the operator the feel and practice in the use of time blasting fuse.

Tabulated Data:

Covering Material ---------- Plastic
----------Blue w/black markings
Dimensions:
Length ---------- 50 % coil
Diameter ---------- 0.2 in.
Filler ---------- Inert material
Method of actuation ---------- None

Shipping and Storage Data

Quantity-distance class ------- N/A
Storage compatibility group - N/A
DOT shipping classification - N/A
DOT marking ---------- None
DODIC ---------- M671
Specification ---------- MIL-F-45144
Packaging ---------- As required
Packing box ---------- N/A

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250

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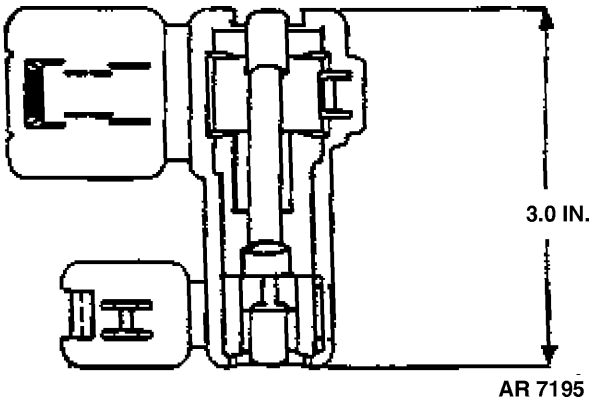
HOLDER: BLASTING CAP AND SHOCK TUBE, M9



Type Classification

Std A MSR 05963001.

Description:

The M9 is a black plastic clamping device designed to hold the shock tube ends of shock tube blasting caps securely in close proximity to the detonator end of another high strength shock tube cap or a conventional blasting cap. The M9 can accommodate and assure proper proximity for initiation of up to five shock tubes from the one detonator. The device is a one-piece molding with two hinged, snap-together flaps to hold the detonator and shock tubes securely.

Functioning:

The M9 is designed to hold the shock tube ends of shock tube blasting caps securely in close proximity to the detonator end of another blasting cap. The M9 can accommodate and assure proper proximity for initiation of up to five shock tubes from the one detonator. The detonator is inserted and secured by folding closed the smaller hinged flap. The ends of the shock tubes are then inserted through the channels in the holder and are then secured next to the detonator by snapping closed the larger flap of the holder.

Tabulated Data:

Dimensions (closed):

Length	3.0 in.
Width	1.3 in.
Thickness	0.7 in.
Accommodation	One detonator/5 shock tubes or standard det cord
Material	Various plastics
Color	Black

Shipping and Storage Data:

NSN	1375-01-415-1229
DODAC	1375-ML45
Drawing	12972626
Specification	QAA-1423
Gross weight (per item)	1 oz
Quantity	500/box

Limitations:

Because this item is designed for one-time use, continued use in training will wear out the hinges very quickly.

References:

FM 5-250
TM 9-1375-213-12
TM 9-1375-213-34&P

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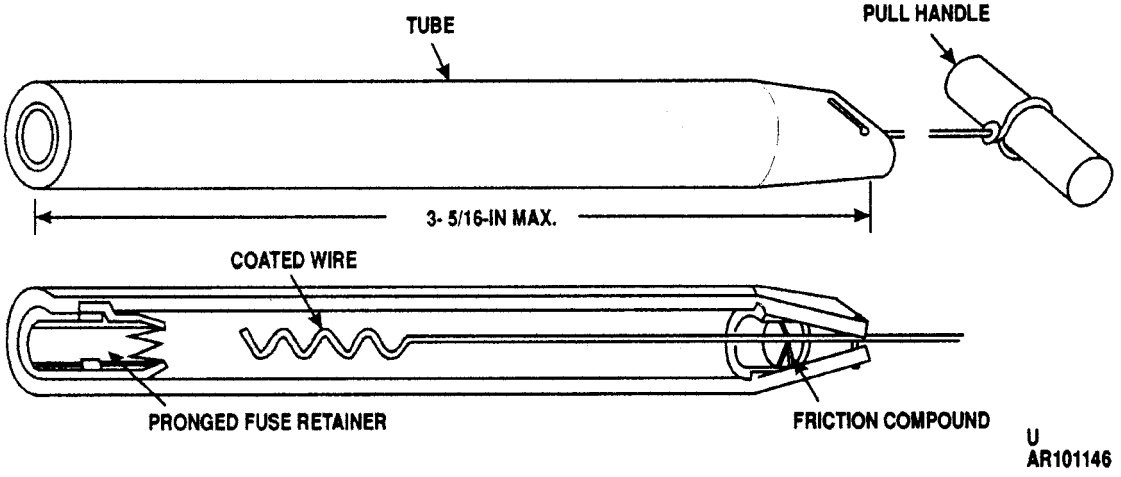
IGNITER, TIME BLASTING FUSE: M1, FRICTION



Type Classification:

Obsolete Material Status Record 11756003.

Use:

Time Blasting Fuse Igniter M1 is a friction-actuated device used to initiate time blasting fuse.

Description:

Igniter Ml consists of a paper tube fitted with a pronged fuse retainer at one end and a pull handle at the other. The pull handle is assembled to a coated wire which extends through a small cup of friction compound in the forward end of the tube.

Functioning:

When the pull handle is pulled, the movement of the wire through the tube ignites the friction compound which, in turn, ignites the time blasting fuse held in the fuse retainer.

Tabulated Data:

Covering material ---------- Paper
Color ---------- Grey, Brown or Olive drab
Dimensions:
Length ---------- 3-1/3 in.
Diameter ---------- 0.34 in.
Filler ---------- Friction powder
Method of actuation ---------- Pull wire handle

Shipping and Storage Data:

Quantity-distance class ------- 1.4
Storage compatibility group - S
DOT shipping classification - Explosive C
DOT designation ---------- FUSE IGNITERS
UNO serial number ---------- 0131
UNO proper shipping name- Lighters, fuse
DODIC ---------- M765
Specification ---------- MIL-I-125
Packaging ---------- 10 cylindrical cardboard containers of 250 each (2500 ig - niters in each wooden box)

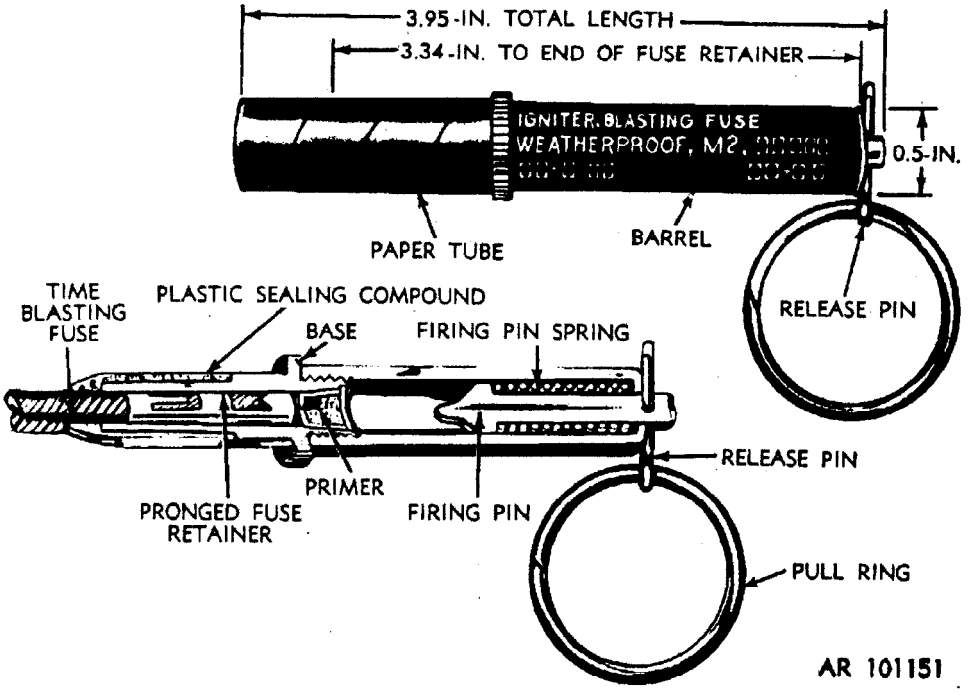
*Packing box:
Weight (w/contents) --------- As required
Dimensions ---------- As required
Cube ---------- As required

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250
DWG 78-0-136

IGNITER, TIME BLASTING FUSE: M2, WEATHERPROOF



Type Classification:

C&T OTCM 37290, dtd 1959.

Use:

Weatherproof Fuse Igniter M2 is used to ignite time blasting fuse. It is especially useful for adverse weather conditions. It may also be used under water.

Description:

Igniter M2 is a two-piece assembly of a barrel and a coupling base. The barrel is fitted with a firing mechanism which consists of a firing pin, a firing pin spring and a release pin. The release pin is attached to a pull ring. The coupling base contains a percussion primer and a pronged fuse retainer. The base is protected, during shipment and storage, by a removable paper tube, Included in the package is plastic sealing compound.

Functioning

When the release pin is pulled, the firing pin strikes the percussion cap which then ignites, in turn, the fuse. the igniter will ignite the fuse under all weather conditions, even under water if properly waterproofed.

Tabulated Data:

Body Material	Metal
Color	Olive drab or black w/yellow markings
Dimensions:	
Length	3.95 in.
Diameter	0.5 in.

Shipping and Storage Data:

Quantity-distance class	1.4
Storage compatibility group	S
DOT shipping classification	Class C
DOT designation	FUSE IGNITERS
UNO serial number	0131
	Lighters, fuse
DODIC	M766
Drawing	8796313
Packaging	5/carton, 30 cartons (150 igniters) per wooden box)

*Packing box:
Weight (w/contents) --------- As required
Dimensions ---------- As required
---------- As required

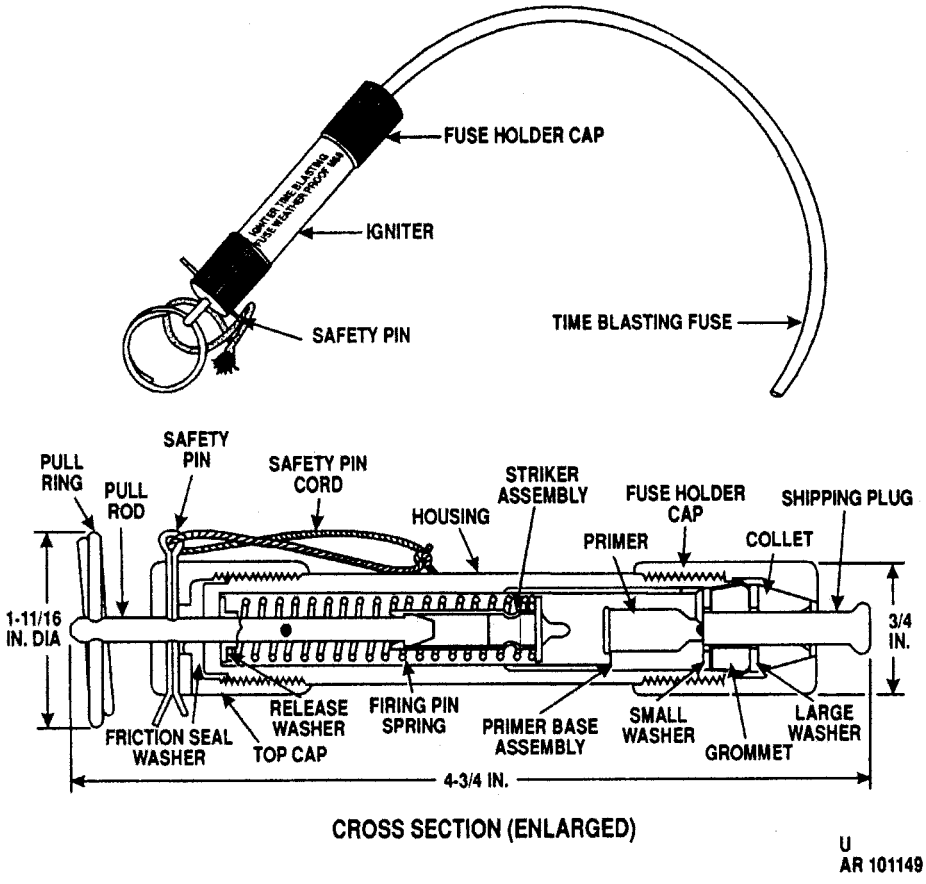
*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

References:

TM 9-1375-213-12
TM 9-1375-213-34

MIL-I-3948

IGNITER, TIME BLASTING FUSE: M60, WEATHERPROOF



Type Classification:

Std OTCM 37290, dtd 1959.

Use:

The weatherproof time blasting fuse igniter M60 is a pull-type assembly and is used to initiate time blasting fuse. It maybe used under all weather conditions and even underwater. A watertight seal is formed only with the smooth-surfaced time blasting fuse M700.

Description:

The igniter consists of three major assemblies: a firing mechanism, a fuse holder and a primer base.

The firing mechanism has a housing with a threaded cap on one end. A firing pin, pull rod, release washer, and firing-pin spring are situated inside the housing. One end of the pull rod protrudes through the top cap and accepts the pull-ring and safety pin. The pull rod has a venting passage which is opened only during firing when the pull rod is drawn out of the igniter body. A rubber friction seal washer, located between the top cap and the housing, seals the forward end of the housing. The fuse holder is assembled to the base.

The fuse holder assembly consists of a threaded cap with a split, tapered collet inside. A tapered grommet is fitted inside the collet. The shipping plug fits in the cap and is held in lace by the grommet and the collet. The rubber grommet also seals the fuse end of the igniter.

The primer base assembly located inside the housing, consists of a base and a percussion primer.

Functioning:

After the fuse is inserted in the igniter and secured, the safety cotter pin is removed. A 10 to 30 pound pull on the pull ring brings the spring-loaded firing pin back to the release washer, which spreads the firing pin's jaws. This releases the firing pin from the knobbed end of the pull rod. Once released, the firing

pin is driven by the compressed spring into the primer which fires and ignites the adjacent fuse.

High pressure gasses generated by the burning primer and fuse are vented to the atmosphere through the vent passage, eliminating a buildup of pressure which could rupture the igniter.

Tabulated Data:

Body	Nylon
Material	Metal
Color	Olive drab w/yellow markings
Dimensions:	
Length	4.8 in.
Diameter	1.2 in.
Filler	Primer mixture
Method of actuation	Pull rod

Shipping and Storage Data:

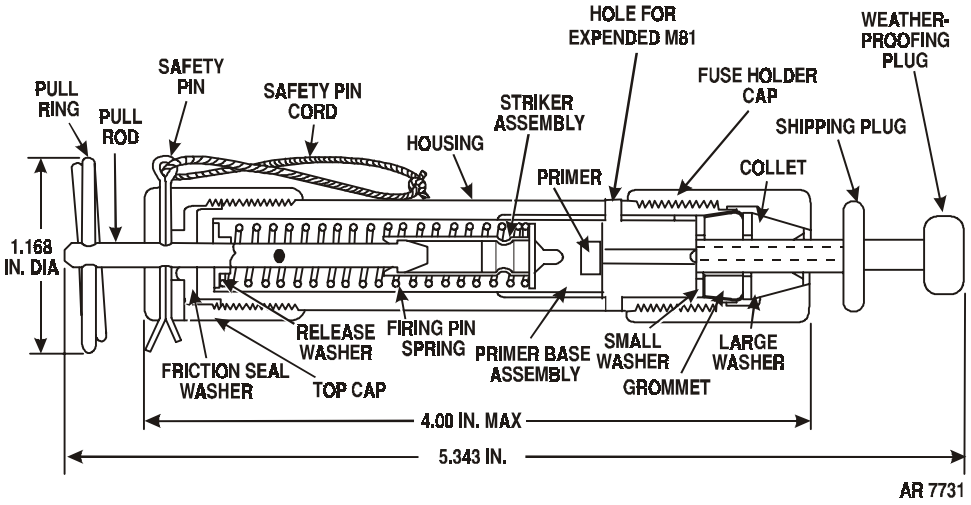
Quantity-distance class	1.4
Storage compatibility group	S
DOT shipping classification	Class C
DOT designation	FUSE IGNITERS
UNO serial number	0131
UNO proper shipping name	Lighters, fuse
DODIC	M766
Drawing	8822497
Packaging	5 igniters per paperboard box, one box per barrier bag, 6 bags (300 igniters) per wooden box
*Packing box:	
Weight (w/contents)	36.5 lb
Dimensions	17-9/16 in, x 10-11/16 in. x 19-17/32 in.
Cube	2.04 cu ft

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250
MIL-I-3948

IGNITER, TIME BLASTING FUSE: M81, W/SHOCK TUBE CAPABILITY



Type Classification:

Std A MSR 05963001.

Use:

The M81 Igniter is used to ignite time blasting fuse or to initiate the shock tube of the new shock tube nonelectric blasting caps.

Description:

The M81 is a small plastic tube with a pull ring on a thin rod projecting from one end, a safety (cotter) pin that goes laterally through the tube and a screw cap that secures a holding mechanism for the fuse or shock tube on the other end. A two-piece plastic plug comes secured into the hole in the screw end cap that will be used to accommodate the shock tube or time blasting fuse. The two-piece design of the shipping plug allows proper securing of shock tube (with just inner piece removed) or time blasting fuse (with both pieces removed). To further differentiate the M81 from the almost identical M60 Igniter, the plug and the screw end cap are colored black on the M81 while the similar parts are olive drab on the M60. The bodies and upper screw caps of both igniters are olive drab and the nomenclature on both items is stenciled in yellow.

NOTE

Shock tube is a thin plastic tube with a thin layer of special explosive material deposited on its interior surface.

Functioning:

The M81 is manually actuated by the operator. The sequence is as follows: The operator loosens the screw cap and removes just the inner piece of the shipping if shock tube is to be used. If time blasting fuse is to be used, both pieces of the shipping plug are removed. The freshly cut off end of the shock tube or time blasting fuse is inserted in the hole from which the plug was removed. The screw cap is tightened to secure the fuse or shock tube; the safety (cotter) pin is removed; the operator pulls the pull ring; the rod on the pull ring pulls the firing pin against the force of a spring. When the limit of travel is reached, the pull ring rod releases the firing pin which is forced by the spring into the M42 primer which fires with a flame and an explosive shock which ignites the fuse or initiates the shock tube.

NOTE

The standard M60 Igniter (which has an almost identical appearance to the M81) will NOT secure or reliably initiate shock tube.

Tabulated Data:

Length.....4.0 in.
Diameter:
  Pull ring .....1.2 in.
  Body.....0.75 in.
Filler:
  M42 primer .....Primer mix
Net explosive weight (per igniter) .....0.0001 lb (0.05 gr)
Method of actuation.....Impact of spring-loaded firing pin on primer effected by operator pulling pull ring

Shipping and Storage Data:

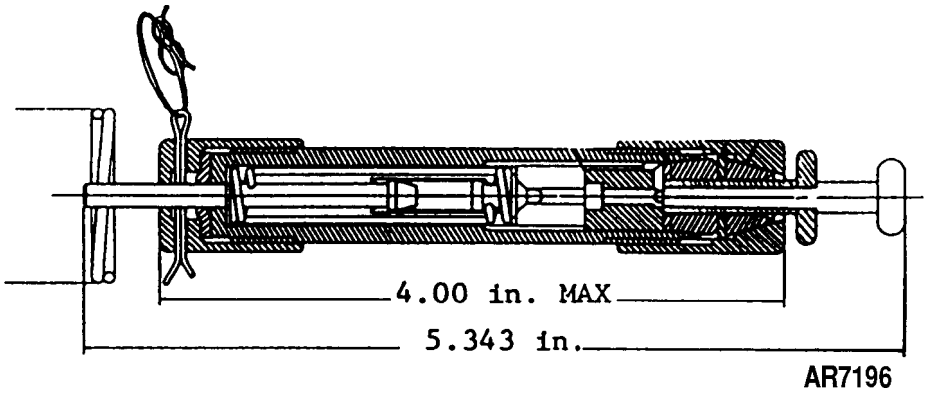
DOD Hazard class QD/DIV/ SCG 1.4S
DOT Hazard class.....1.4S
Dot Label: ..... EXPLOSIVE: 1.4S

DOT Container Marking:
  Proper shipping name..... Lighters, fuse
  UN serial no. 0131, 0500
  NSN..... 1375-01-415-1235
  DODAC..... 1375-MN08
  CAGE Code 19200
Drawing..... 12977193
Specification QAA-1442
Packaging..... 5 igniters /paperboard box, one box to barrier bag, 60 bags (300 igniters)/wooden box
Packing box:
  Dimensions..... 21.5 in. x 12 in. x 14.5 in.
  Cube ..... 2.16 cu ft
  Net explosive weight..... 0.03 lb
  Gross Weight (w/contents)..... 65lb

References:

FM 5-250
TM 9-1375-213-12
TM 9-1375-213-34&P
DOD Consolidated Ammunition Supply Catalog

IGNITER, TIME BLASTING FUSE: M81 W/SHOCK TUBE CAPABILITY (INERT)



Type Classification:

Std A MSR 05963001.

Use:

This inert item is used for demonstration and for training in demolition work requiring the M81 Time Blasting Fuse Igniter.

NOTE

The Inert M81 is not a stocked issued item. It is made locally by converting expended M81 Igniters.

Description:

The M81 is a small plastic tube with a pull ring on a thin rod projecting from one end, a safety (cotter) pin that goes laterally through the tube and a screw cap that secures a holding mechanism for the fuse or shock tube on the other end. A two-piece plastic plug comes secured into the hole in the screw end cap that will be used to accommodate the shock tube or time blasting fuse. The two-piece design of the shipping plug allows proper securing of shock tube (with just inner piece removed). The body of the igniter is painted bronze. The nomenclature on the item is stenciled in black and labeled “INERT”. Two 1/8 inch holes 90 degrees apart are drilled through the case of the igniter to indicate that it is inert.

Functioning:

This item does not fire. Its only purpose is for demonstration and to give the operator the feel and training in the use of the M81 Time Blasting Fuse Igniter.

NOTE

The standard M60 Igniter (which has an almost identical appearance to the M81) will NOT secure or reliably initiate shock tube.

Tabulated Data:

Length.....4.0 in.
Diameter:
  Pull ring .....1.2 in.
  Body.....0.75 in.

Filler:
  M42 primer.....None (expended)
Method of actuation.....None

Shipping and Storage Data:

DOD Hazard class QD/DIV/
  SCG .....N/A
DOT Hazard class.....N/A
NSN .....None
Gross weight.....0.10 lb
Packaging .....As required
Packaging..... As required
Specification ..... Item is a converted expended M81 Igniter

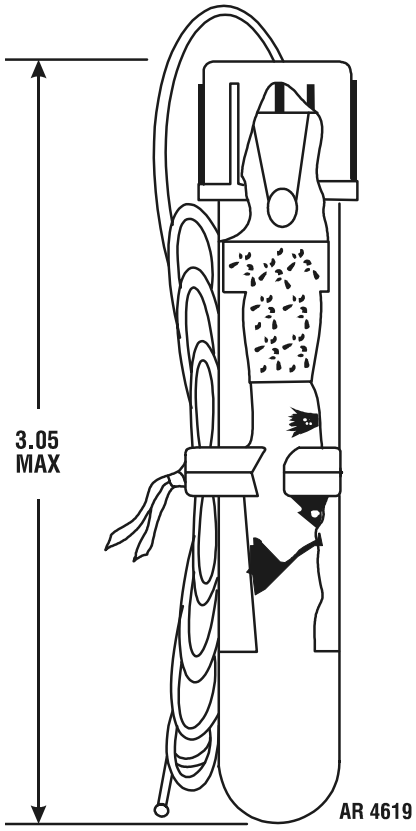
NOTE

Dummy DODIC YN08 can be assigned to the inert M81 Igniter.

References:

FM 5-250
TM 9-1375-213-12
TM 9-1375-213-34&P

IGNITER, ELECTRIC MATCH: M79



Type Classification:

Std

Use:

The electric match igniter is used to remotely initiate pyrotechnic items such as the antitank guided missile signature simulator, fire simulators, smoke canisters, and other devices.

Description:

The electric match igniter consists of a 3-inch long polypropylene tube and cap assembly containing igniter composition and starter composition. There is an electric match within the cap. The igniter is initiated by a 12-volt amp source.

Functioning:

The electric source initiates the electric match which initiates the starter composition and, likewise, initiates the igniter composition. The igniter composition then ignites the pyrotechnic device.

Tabulated Data:

NSN	1375-01-353-1038
Weight loaded	0.02 lb
Length	3.05 in.
Diameter (overall)	0.60 in.
Method of activation	Electrical
Body material	Polypropylene
Color	None
Initiating charge:	
Type	Black Powder, 60% Igniter Comp, 40%
Weight	1.5 g
Igniting charge:	
Type	Barium Nitrate, 36% Magnesium, 27%
Weight	4.2 g
Performance:	
Delay	None
Burning time	Instantaneous
Packing	350 per box
Packing box:	
Weight	31 lb
Dimensions	19-3/4 x 10-1/2 x 8-1/4 in.
Cube	1.0 cu ft

Shipping and Storage Data:

Quantity-Distance class	1.3
Storage compatibility group	G
DOT designation	IGNITER
DODAC	1375-MN60
UNO code	0315
Drawing number.	9390399
Packing drawing number	9392395

References:

TM 9-1375-213-12
TM 9-1375-213-34&P

CHAPTER 3

ELECTRICAL BLASTING EQUIPMENT

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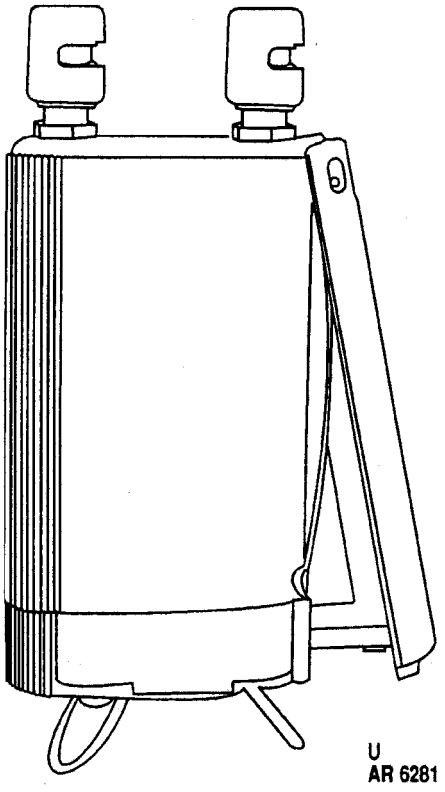
BLASTING MACHINE M32/M34



Type Classification:

M34 - Std MSR-12156009.
M32 - Std B AMCTC 8605, dtd Aug 1971.

Use:

These almost identical small, lightweight blasting machines are designed to replace the larger, heavier machines. The M32 is capable of initiating 10 M6 blasting caps, the M34 is capable of initiating 50 M6 blasting caps. ese machines are capable of firing their rated number of blasting caps via a 500-foot length of WD-1 cable.

Description:

The impact-resistant plastic housing completely seals the machines against sand, dust, dirt, mud and even total immersion in three feet of water. The terminals, spring-loaded Signal Corps type, allow rapid and positive connection of the firing lead conductors. These machines derive their power from an alternator using a capacitor discharge circuit.

Functioning:

These machines use a small alternator which is gear driven by the handle-actuated plunger. Electrical output from the alternator is rectified and fed into capacitors. When sufficient energy is available in the capacitors, the internal switching circuit discharges the electrical energy to the output terminals, and thus to the blasting circuit. If there is no blasting circuit attached to the terminals, this energy will be discharged through an internal bypass circuit.

Tabulated Data:

Machine Blasting M32:

Dimension (handle depressed):
Length ---------- 2-1/2 in.
Width ---------- 1-1/8 in.
Height ---------- 4-1/8 in.
Weight ---------- 11 oz
Electrical output (rein)
(as required by spec) ------- 1.5 amps into a 48-ohm load for 1.5 mil sec

Machine Blasting M34:

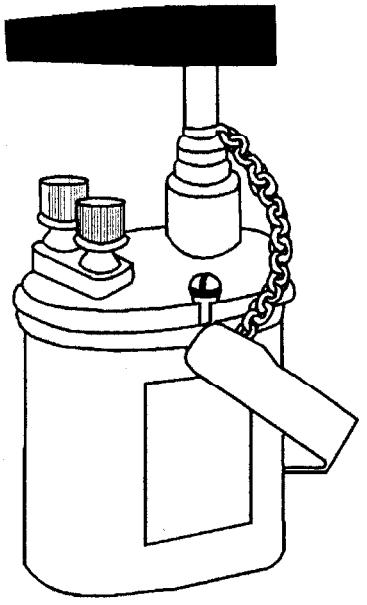
Dimensions (handle depressed):
- Length ---------- 1-1/4 in.
- Width ---------- 2-5/8 in.
- Height ---------- 5-1/4 in.
- Weight ---------- 13 oz

Electrical output (rein)
(as required by spec) ------- 1.5 amps into a 150-ohm load for 1.5 mil sec

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250
SC 1375-95-CL-F02

BLASTING MACHINE, 10-CAP (DIXSON) (MOST RECENT MODEL OF THIS TYPE)



U
AR 101962

Type Classification:

Commercial

Use:

Blasting machines provide the electric current necessary to initiate electric blasting caps. The 10-cap machine is one of the most often used and derives its power directly from a shunt-wound DC generator.

Description (l0-Cap):

This machine is a large, hand-held, metal-cased, rounded edged box with a removable twist handle and two screw type terminals on top. Each machine has a brass nameplate containing pertinent data and a leather strap for ease in handling.

Functioning:

The electric output of the Dixson machine is much higher than older machines, and it has a built-in safety circuit. Twisting the handle of the 10-cap machine gear drives a shunt wound CD generator. No current reaches the output terminals unless the machine has been actuated with enough force to produce sufficient energy to tire all ten caps in a series circuit.

Tabulated Data:

Specification	MIL-B-60401
Case	Metal
Color	Olive drab
Dimensions (handle not included):	
Height	6-1/8 in.
Width	4-5/8 in.
Depth	3-5/8 in.
Weight (total)	6 lb
Electrical output (rein as required by spec)	1.5 amps into a 35-ohm load for 10 mil sec
Twist angle of handle	150 deg

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250
SC 1375-95-CL-P02

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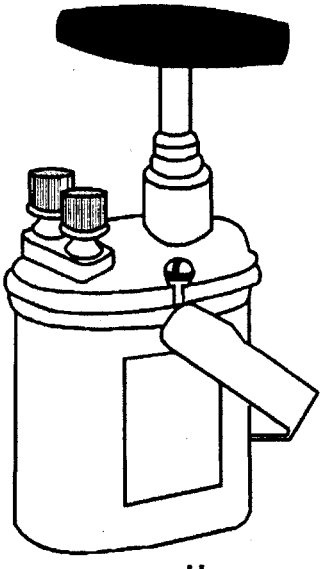
BLASTING MACHINE. 10-CAP FIDELITY TYPE OR WHITE RODGERS TYPE



U
AR 101958

Use:

Blasting machines provide the electric necessary to initiate electric blasting caps.

Description:

This machine is a large hand-held metal-case, rounded edge box with a removable twist handle and two screw-type terminals on top. Each machine has a brass nameplate containing pertinent data and a leather strap for ease in handling.

This older 10-cap machine is known as the Fidelity-type machine since it was primarily manufactured by Fidelity Electric Company.

Functioning

Twisting the handle of the 10-cap machine gear drives a shunt wound DC generator. No current reaches the output terminals until the end of the twist-stroke when a switch is closed. This assures that the generator is at a high level of output before the output is put into the blasting circuit.

Tabulated Data:

Specification ---------- WB-411
Dimensions (handle not inserted):
Height ---------- 5-5/8 in.
Width ---------- 4-1/8 in.
Depth ---------- 3-5/8 in.
Weight (total) ---------- 4.1/2 lb
Electrical output (rein) ------ 1.5 amps into a 32-ohm load for 10 mil sec
Twist angle of handle -------- 150 deg

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250
SC 1375-95-CL-P02

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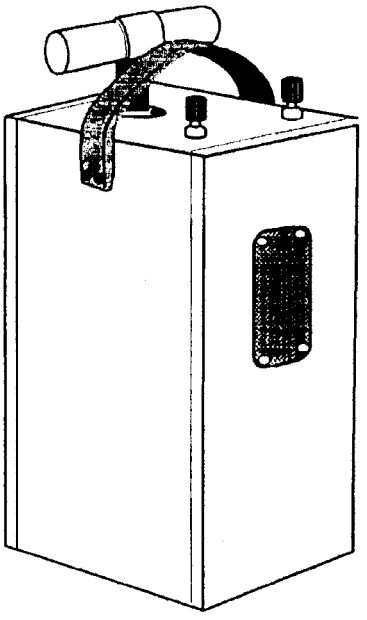
BLASTING MACHINE, 50-CAP (MOST RECENTLY ISSUED TYPE)



U
AR 101963

Use:

This blasting machine provides the electric current necessary to initiate 50 electric blasting caps.

Description (50-Cap):

This blasting machine is a large wooden cased box with a handle-actuated plunger and two screw-type terminals on top. Each machine has a nameplate containing pertinent data. A small indicator lamp is located on the top surface between the terminals.

Functioning:

When the handle actuates the plunger the gear drives a shunt wound DC generator. This blasting machine contains a built-in safety circuit. The safety circuit does not allow any current to reach the output terminals until the machine's plunger has been actuated with sufficient energy for maximum output. An indicator lamp lights when the machine is delivering electrical energy to its output terminals. This assures that the generator is at a high level of output before output is switched into the blasting circuit.

Tabulated Data:

Dimensions (Plunger depressed):
Height ---------- 15-1/2 in.
Width ---------- 8 in.
Depth ---------- 6-1/2 in.
Weight ---------- 20 lb
Electrical output (rein) ------ 1.5 amps into a 240-ohm load for 10 mil sec
Stroke length of plunger ----8 in.
---------- 1375-00-141-9495
Specification ---------- PA-PD-2753

References:

TM 9-1375-213-12
TM9-1375-213-34
FM 5-250

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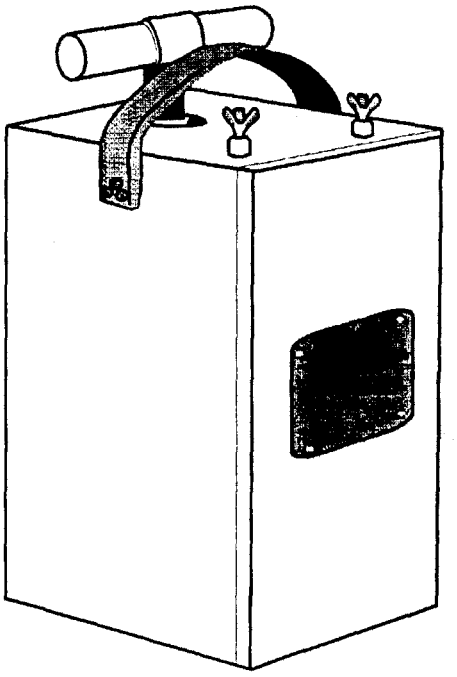
BLASTING MACHINE, 30-CAP (GENERATOR TYPE)



U
AR 101959

Use:

This blasting machine provides the electric current necessary to initiate 30 electric blasting caps.

Description:

This blasting machine is a large rectangular wooden box with a handle-actuated plunger and two screw-type terminals on top. Each machine has a nameplate containing pertinent data.

Functioning:

When the handle actuates the plunger, the gear drives a shunt wound DC generator, No current reaches the output terminal until the end of the plunger drive closes a switch, This assures that the generator is at a high level of output before output is switched into the blasting circuit.

Tabulated Data:

Specification	WB-411
Dimensions (Plunger depressed):	
Height	16 in.
Width	8 in.
Depth	8 in.
Weight	Up to 25 lb
Electrical output (rein)	1.5 amps into a 90-ohm load for 10 mil sec

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250

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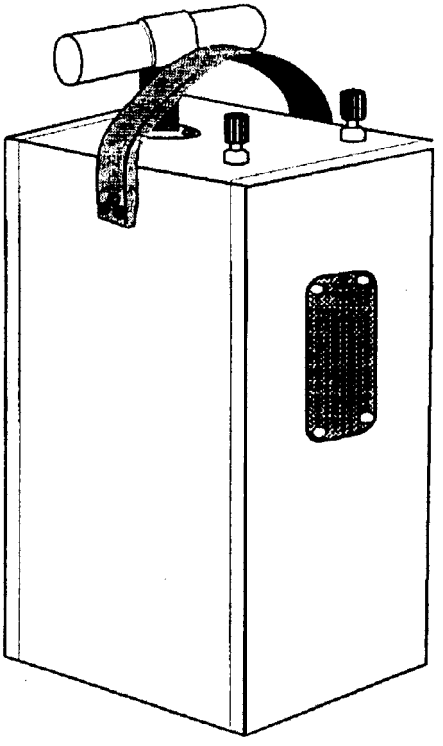
BLASTING MACHINE, 50-CAP (GENERATOR TYPE)



U
AR 101963

Use:

This blasting machine provides the electric current necessary to initiate 50 electric blasting caps.

Description (50-Cap):

This blasting machine is a large rectangular wooden box with a handle-actuated plunger and two screw-type terminals on top. Each machine has a nameplate containing pertinent data.

Functioning:

When the handle actuates the plunger, the gear drives a shunt wound DC generator. No current reaches the output terminal until the end of the plunger drive closes a switch. This assures that the generator is at a high level of output before output is switched into the blasting circuit.

Tabulated Data:

Specification ---------- WB-411
Dimensions (Plunger depressed):
  Height ---------- 17 in.
  Width ---------- 8 in.
  Depth ---------- 8 in.
Weight ---------- Up to 28 lb
Electrical output (rein) (as
  required by spec)---------- 1.5 amps into a
  160-ohm load for
  10 milsec
Stroke length of plunger ---- 8 in.

References:

TM 9-1375-213-12
TM 9-1375-213-34

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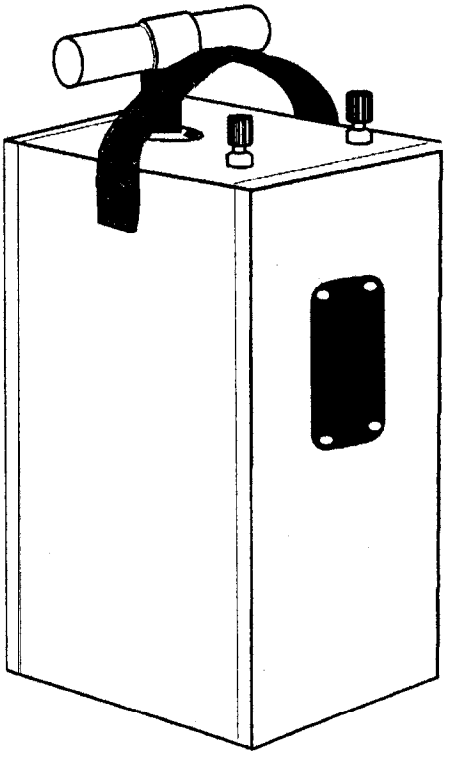
BLASTING MACHINE, 100-CAP (GENERATOR TYPE)



U
AR 101963

Use:

This blasting machine provides the electric current necessary to initiate 100 electric blasting caps.

Description (100-Cap):

This blasting machine is a large rectangular wooden box with a handle-actuated plunger and two screw-type terminals on top. Each machine has a nameplate containing pertinent data.

Functioning:

When the handle actuates the plunger, the gear drives a shunt wound DC generator. No current reaches the output terminal until the end of the plunger drive closes a switch. This assures that the generator is at a high level of output before output is switched into the blasting circuit.

Tabulated Data:

Dimensions (Plunger depressed):	
Height	18 in.
Width	8 in.
Depth	10 in.
Weight	Up to 32 lb
Electrical output (rein) (as required by spec)	1.5 amps into a 160-ohm load for 10 milsec
Stroke length of plunger	5 to 8 in.

References

TM 9-1375-213-12
TM 9-1375-213-34

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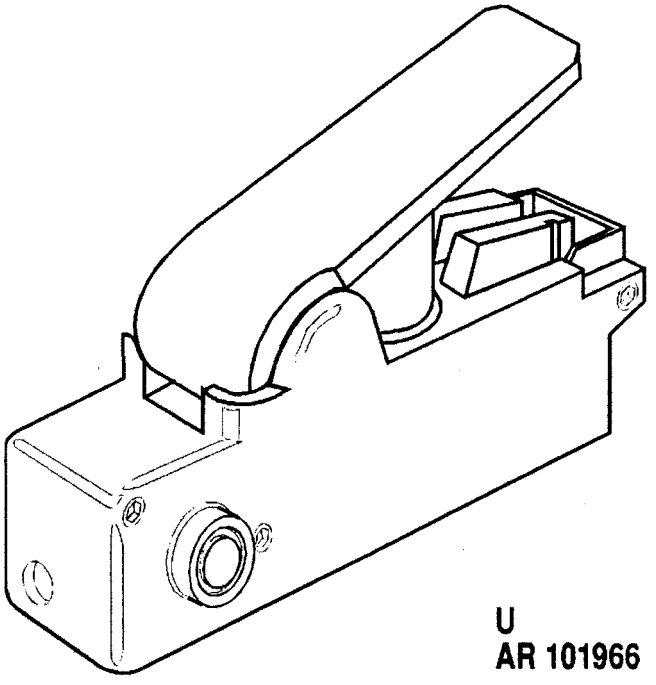
TEST SET, BLASTING CAP: M51



Type Classification:

Std A AMCTC-4638, dtd June 1966.

Use:

This test set was developed as a replacement of the blasting galvanometers to test continuity of electrical blasting circuits.

NOTE

The M51 will replace the Blasting Galvanometers on an attrition basis only

Description:

The M51 is a hand-held, plastic-bodied rectangular prismoid with a protruding squeeze handle. There are two screw-type contact terminals, one on either side of the instrument and a test light near one corner of the instrument body. Test set M51 contains a magneto-type electrical impulse generator. The test set is replacing the blasting galvanometer.

Functioning:

When the handle of the test set is depressed, a minute amount of current flows from the impulse generator, through the blasting circuit, and through a switching circuit. If the blasting circuit is continuous and has less than 200 ohms resistance, the current can flow through the blasting circuit and actuate the switching circuit, which lights the indicator lamp. If the blasting circuit is open or contains a high resistance, no current (or a very small amount) flows and the switching circuit is not actuated.

Tabulated Data:

Dimensions (handle up):
- Length ---------- 4-3/4 in.
- Width ---------- 1-15/16 in.
- Height ---------- 3-5/8 in.
- Weight ---------- 15-1/2 oz

Specification ---------- MIL-T-48134A

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250

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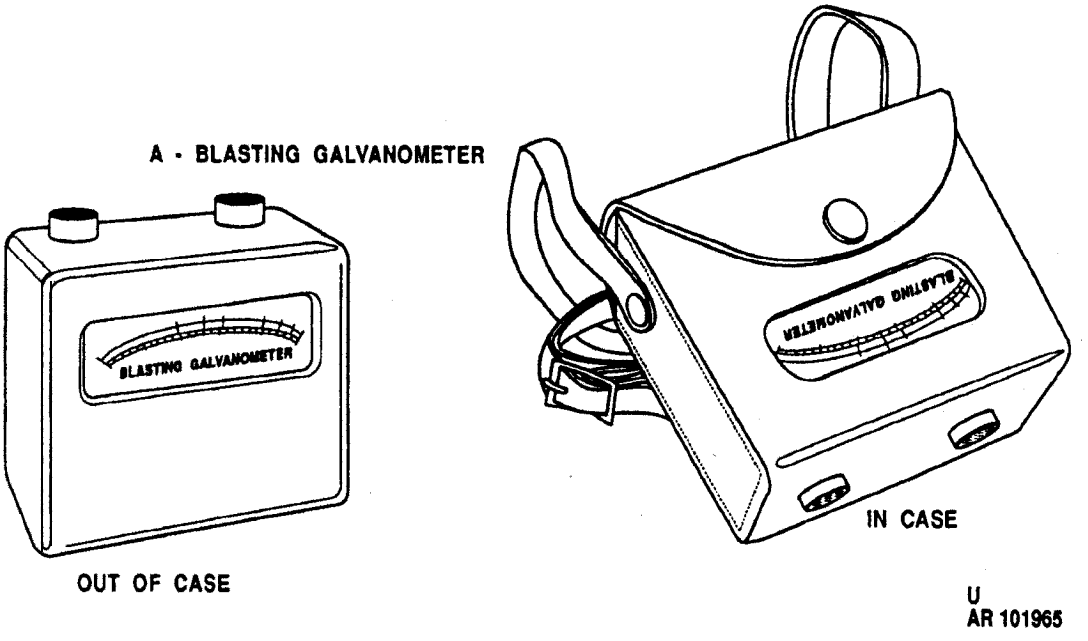
GALVANOMETER, BLASTING



Type Classification:

Not available.

Use:

This small instrument checks the continuity and determines the approximate resistance of electrical blasting circuits.

Description:

This is a small rectangular box-shaped device with a meter on one face and two protruding, round electrical contacts on tip. The galvanometers is one of ONLY two instruments generally authorized for checking out blasting circuits, It is furnished in a leather shoulder carrying case with a window for reading the meter.

Functioning:

This blasting galvanometers works by sending a minute amount of current from a silver chloride battery through the blasting circuit and through a D'Arsonnal meter. The meter's needle responds on proportion to the amount of resistance the current encounters in the blasting circuit.

Tabulated Data:

Specification	WB-411
Dimensions (approx dimensions vary with manufacturer):	
Length	4-1/4 in.
Width	3-1/4 in.
Height	1-7/8 in.
Weight (less battery)	16 oz.
Scale range:	
All models	1 to 25
Some models	0 to 00 ohms
No. of batteries	One
Type of batteries authorized:	
Normal temperatures	(O to 125°F)- low temperatures (-20 to O°F)
Silver chloride drycell, MIL-B-131368	Type BA-245/u silver chloride dry cell MIL-B-131368, Type BA-2245/u

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250

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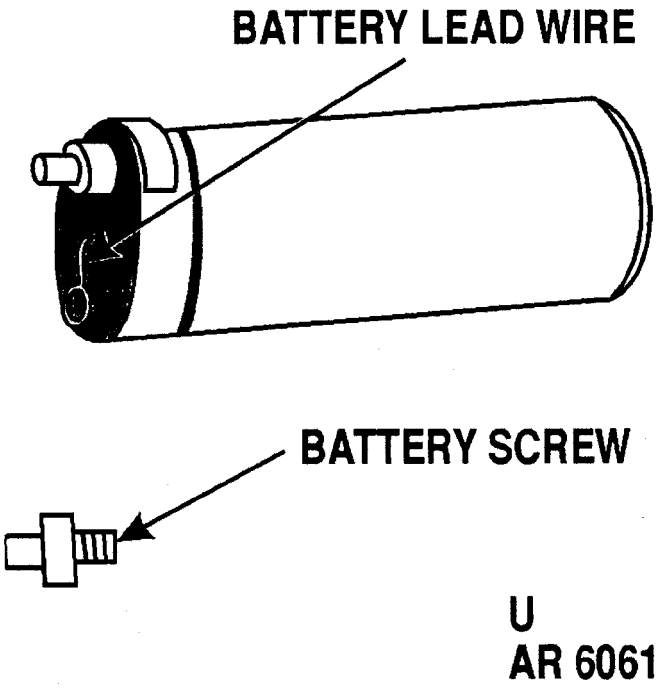
BATTERY, STANDARD GALVANOMETER TYPE BA-245/u



Use:

This standard galvanometers battery is used in the blasting galvanometers.

Description:

This battery is small and cylindrical with two screw terminals on top. Markings will vary with manufacturer. This is a special silver-chloride dry cell battery used only in Blasting Galvanometers.

Functioning:

The galvanometers battery is a special type that allows only a very small current to flow even when shorted.

NOTE

This battery will deteriorate slowly at average room temperature, therefore, it should be stored in a refrigerator if it is to be unused for a month or more.

Tabulated Data:

0.9 volt cylindrical shape, 2-terminal stud and nut type.

Diameter ---------- 3/4 in.
Length ---------- 2-3/8 in.

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250

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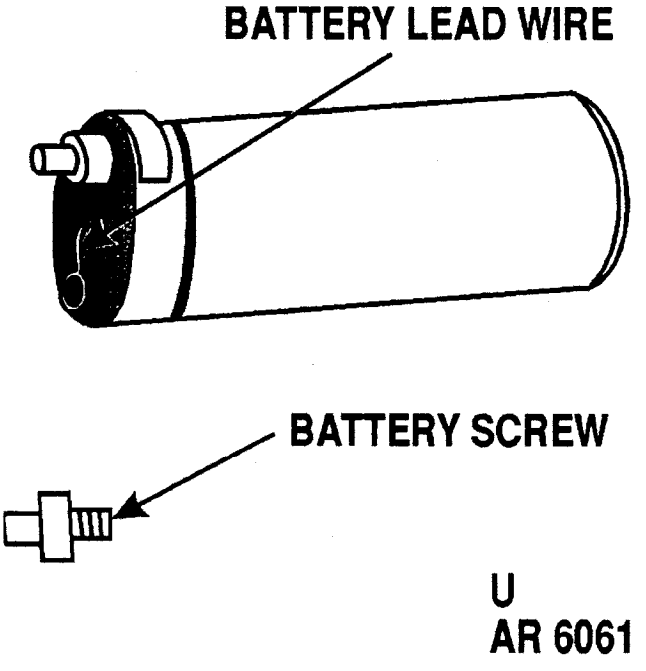
BATTERY, LOW TEMPERATURE GALVANOMETER



Use:

This battery is used in the blasting galvanometers in a low temperature environment only.

Description:

This battery is small and cylindrical with two screw terminals on top. Markings will vary with manufacturer. This is a special silver-chloride dry cell battery formulated for low temperature.

Functioning:

The galvanometers battery is a special type that allows only a very small current to flow even when shorted.

NOTE

Prolonged exposure to temperatures no higher than ordinary room temperature will greatly shorten the shelf and useful life of this special low-temperature galvanometers battery. Therefore, this battery should be removed from the galvanometers and stored in a refrigerator anytime the galvanometers is not in use.

Tabulated Data:

0.9 volt cylindrical shape, 2-terminal stud and nut type, corrosion-resistant.

Diameter ---------- 3/4 in.
Length ---------- 2-3/8 in.

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250

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CHAPTER 4

CHARGES

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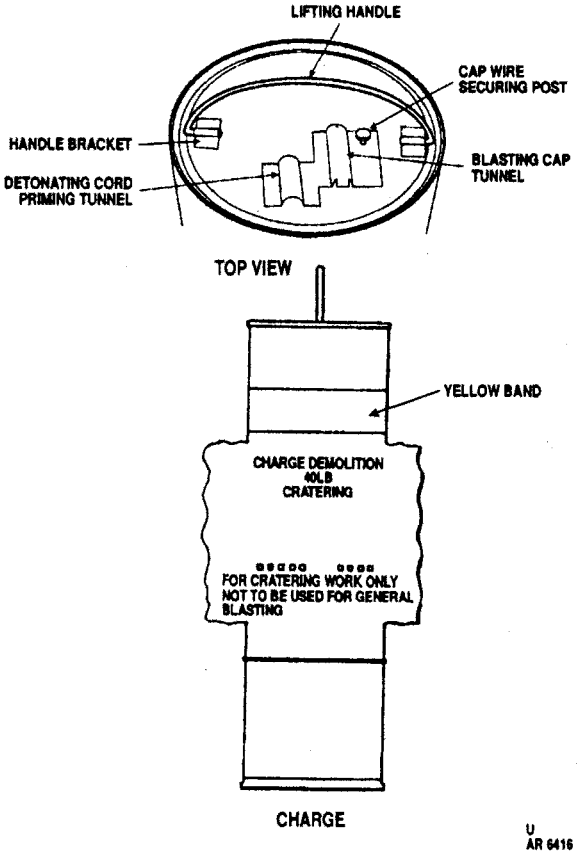
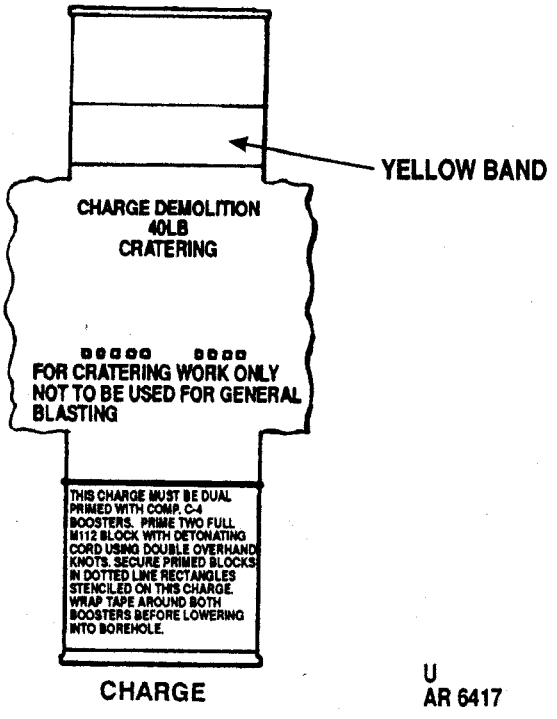
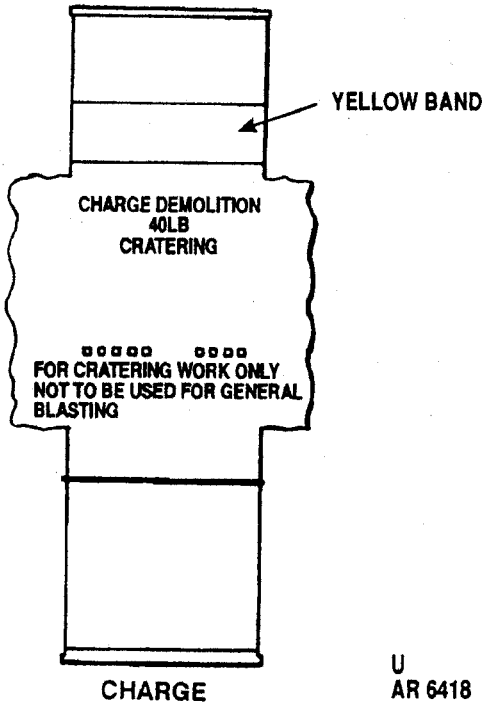
CHARGE, DEMOLITION: CRATERING, 40-POUND (THREE GENERATIONS)



First Generation.



Second Generation.



Third Generation.

Type Classification:

Std MSR 03684158.

Use:

The 40-pound cratering demolition charges are the new version of the standard cratering charge. The H-6 explosive has a relatively low detonating velocity and is therefore unsuitable for cutting and breaching operations. However, the blast effect, which is related to pressure of gases produced, gives it a pushing or heaving effect which makes it suited for cratering and ditching operations. Because of the large amount of explosive in convenient form, they may also be used in destroying buildings and fortifications and overturning bridge abutments.

Description:

The 40-pound cratering demolition charges are watertight cylindrical metal containers with approximate 39 pounds of H-6 explosive. A semicircular angle is located on the top of the container for handling the charge or lowering it into a hole.

The **first generation** charge has a booster charge of 0.43 pounds of composition A-5 positioned at the top of the main charge to facilitate priming from the top, Two priming tunnels are therefore located on the top surface of the charge along with a steel lifting handle and a blasting cap wire-securing post.

The **second generation** charge is an interim design that may or may not have a booster and priming tunnels similar to the first generation charge. Due to a technical irregularity in production, it must be treated as if it has no internal booster and must be primed with external booster charges.

The **third generation** charge is designed to be easily initiated with detonating cord. Dual detonating cord tunnels are on the top surface above a special (internal) booster. (Final configuration not available at this time).

Differences:

The first generation requires priming on top with a military blasting cap or 10-turn Uli knot of detonating cord.

The second generation requires dual, side priming with demolition charges. Markings tell how and where to prime.

The third generation requires only top priming with a single pass of detonating cord and an overhand knot and has two detonating cord tunnels for dual priming.

Functioning:

On initiation by blasting cap or detonating cord, the booster (internal or external) detonates the explosive charge H-6 which destroys the target by a pushing and heaving action, a characteristic of low velocity explosives.

Tabulated Data:

Container material	Steel
Color	Olive drab w/yellow markings
Weight	43 lb
Dimensions:	
Length	20 in. x 6.7 in. dia
Filler	Composition H-6
Booster	195 gm, A-5
Method of actuation	Military blasting caps (electric or nonelectric) or detonating cord

Shipping and Storage Data:

Quantity-distance class	1.1
Storage compatibility group	D
UNO identification number	0048
UNO proper shipping name	Charges, demolition
DODIC	M039
NSNS:	
1st generation	1375-01-250-6029 (Primarily NAVY/MARINE Corps issue)
2nd generation	1375-01-379-9669 (Primarily Army issue)
3rd generation	TBD (All services in 1994 or later)

Drawing ---------- 9395714
Packaging ---------- 1 per M18A2 (Propelling charge) metal container

*Packing box:
Weight (w/contents) ---------- 58 lb
Dimensions ---------- 26.3 in. x 8.4 in.

Cube ---------- 0.84 cu ft

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

Advantages:

The new charges have the advantage of less moisture sensitivity over their predecessors while retaining their size, shape and heavy explosive content which tailor them for cratering operations.

Limitations:

The new charges should be dual primed like any other charge used underground. The new charges are a bit more sensitive to damage than the old one. The new charge should be kept in its protective metal shipping container until it is as close to the point of deployment as practicable. The first generation charge requires a Uli knot be used in detonating cord riming rather than an overhand knot in the detonating cord passed through the detonating cord tunnel(s). The second generation charge requires priming with external booster charges.

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250

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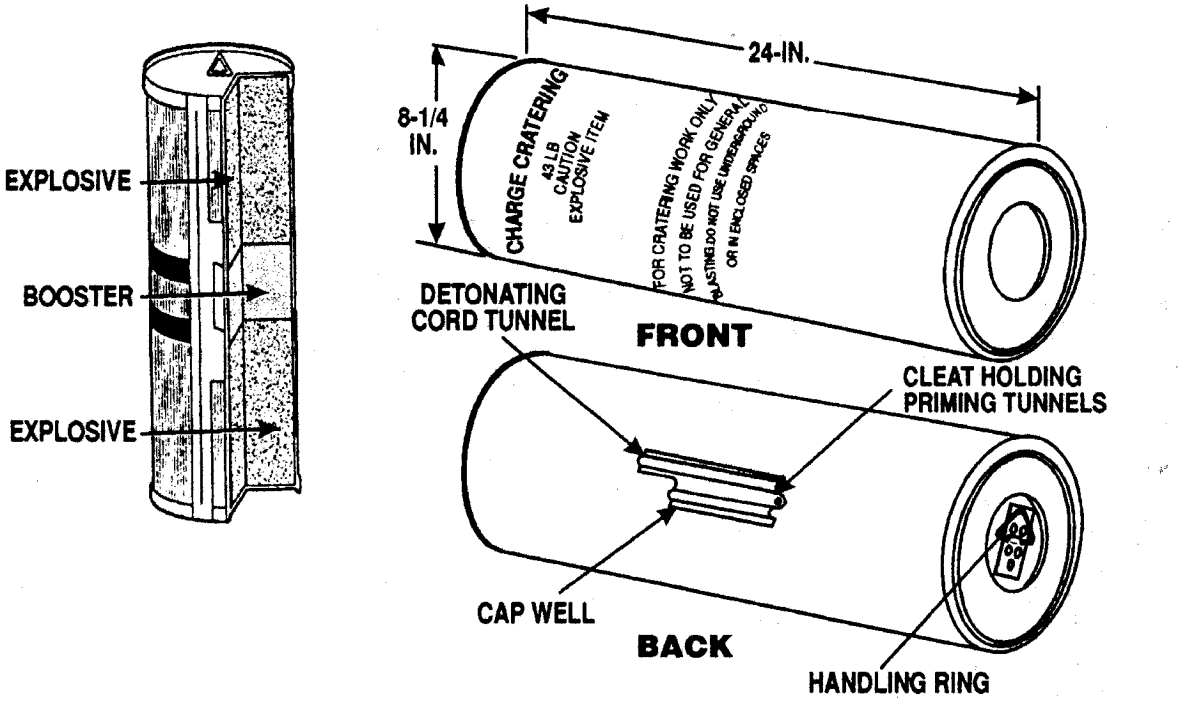
CHARGE, DEMOLITION: CRATERING, 43-POUND



U
AR 101168-A

Type Classification:

Std OTCM 36841, dtd 1958.

Use:

The 43-pound cratering demolition charge is the standard cratering charge. Because of the large amount of explosive in convenient forms, it ma also be used in destroying buildings and fortications and overturning bridge abutments. The ammonium nitrate base explosive has a relatively low detonating velocity and is therefore unsuitable for cutting and breaching operations. However, the low velocity blast effect gives it a pushing or heaving effect which makes it suited or cratering and ditching operations.

Description:

The 43- pound cratering demolition charge is a watertight cylindrical metal/container with approximately 30 pounds of an ammonium nitrate base explosive and a TNT booster of approximately 10 pounds in the center portion next to the priming tunnels. Two priming tunnels are attached to the outside of the container, midway between the ends One tunnel serves as a cap well for priming the demolition charge with an electric or nonelectric military blasting cap. The other tunnel is for priming with detonating cord passed through the tunnel and knotted at the end. A cleat between the tunnels secures time blasting fuse, electrical firing wire or detonating cord in place. A metal ring is provided on the to of the container for lowering the charge into a hole.

Functioning:

On initiation by blasting cap or detonating cord, the TNT in the booster detonates the explosive charge of ammonium nitrate which destroys the target by a pushing and heaving action, a characteristic of low velocity explosives.

Tabulated Data:

Container material ---------- Steel
Color ---------- Olive drab w/yellow markings
Weight ----------

Dimensions:
Length ---------- 24 in. x 7 in. dia
Filler ---------- Ammonium nitrate based explosive
Booster ---------- TNT
Method of actuation ---------- Military blasting caps (electric or nonelectric) or detonating cord

Shipping and Storage Data:

Quantity-distance class ------- 1.1
Storage compatibility group - D
DOT shipping classification - Class A
DOT designation ---------- HIGH EXPLOSIVE - DANGEROUS
UNO serial number ---------- 0048
UNO proper shipping name - Charges, demolition
DODIC ---------- M039
Drawing ---------- 8837975
Packaging ..... 1 per wooden box
*Packing box:
Weight (w/contents) ---------- 70 lb
Dimensions ---------- 27-1/8 in. x 8-5/8 in. x 9-318 in.
Cube ---------- 1.27 cu ft

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

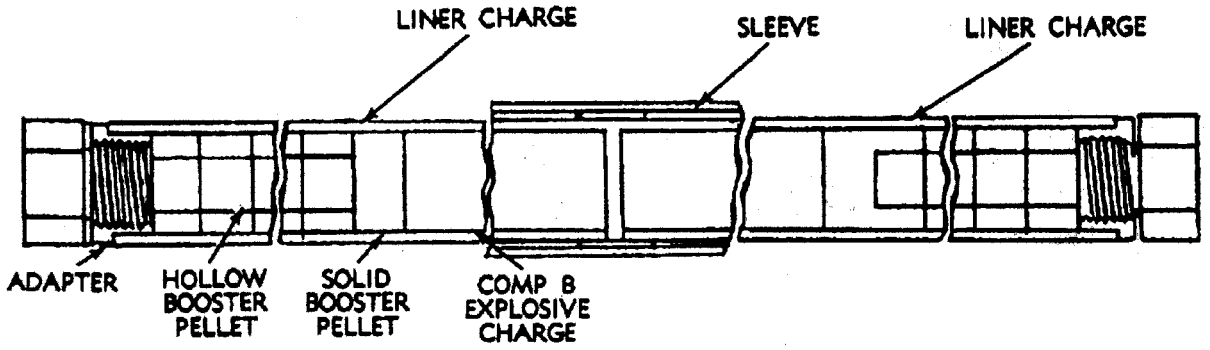
Limitations:

Ammonium nitrate readily absorbs moisture, thereby it becomes more difficult to initiate and less effective. It is not possible to detonate wet ammonium nitrate. To insure detonation, the metal containers must be inspected for any evidence of water damage, an all charges placed in wet or damp boreholders should be detonated as soon as possible. Ammonium nitrate cratering charges should be dual primed.

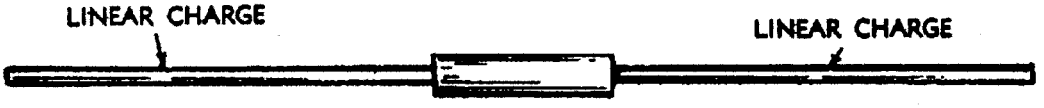
References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250

CHARGE, EXPLOSIVE, SPRINGING (FOR ROD, EARTH, BLAST DRIVEN, M13)



CROSS SECTION (ENLARGED)



AR 101139

Type Classification:

Obsolete - Material Status Record 11756003.

Use:

The charge, sometimes referred to as a rigid Linear Demolition Charge, is a separate item issue used with the Kit, Rod, Earth, Blast Driven Set: M13. This charge is used for enlarging the hole produced by the Rod, Propelling M13. It produces a hole in the ground of about 12 inches in diameter. This hole is suitable for emplacing cratering charges in order to create obstacles. These holes can also be used for emplacing Classes 6, 7, and 9 telephone poles. The Kit is not a replacement for the earth auger, rather, it is a supplement to the earth auger in that it is used in situations which prohibit the use of the auger.

Description:

This item consists of two charge tube assemblies; each approximately 3/4 inches in diameter and three feet long. Each tube contains approximately 0.6 lb Comp B and nine RDX booster pellets, one of which is solid and the remaining eight are hollow. The hollow end contains a threaded adapter capable of accepting a base coupling. The item includes a sleeve which enables the operator to join two tubes together to form a springing charge assembly of approximately 6 feet in length.

Functioning:

After the Earth Rod, Blast Driven: M13 has been extracted, the springing char e is inserted and readied for functioning with a suitable primer (blasting cap, electric, nonelectric, delay detonator, etc.). The primer initiates the booster which, in turn, detonates the main Comp B charge. The resulting explosion enlarges the hole in the ground.

Tabulated Data:

Container material	Plastic
Color	Natural phenolic
Weight	0.9 lb/per loading assembly
Dimensions:	
Length	3 ft approx./per loading assembly
Diameter	3/4 in. approx.
Filler	Comp B (Main charge)

Booster ---------- RDX pellets
Method of actuation ---------- Blasting cap, std firing device, or detonators

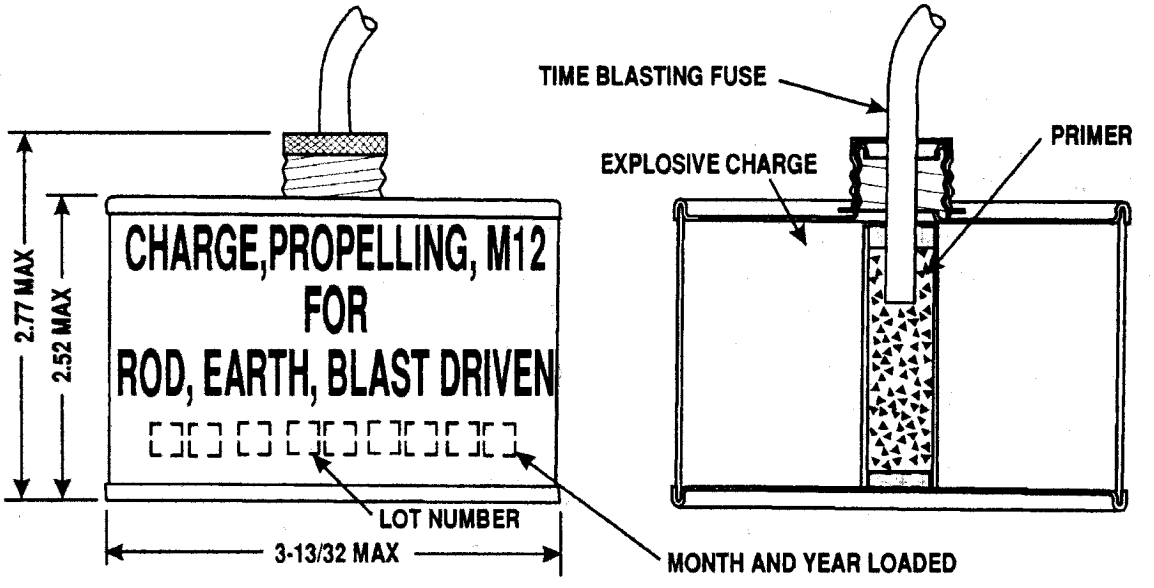
Shipping and Storage Data:

Quantity-distance class ------- 1.1
Storage compatibility group - D-2
DOT shipping classification - Class A
DOT designation ---------- HIGH EXPLOSIVE
UNO serial number ---------- 0048
UNO proper shipping name - Charges, demolition
DODIC ---------- M440
Drawing ---------- 82-13-23
Packaging ---------- Two 3 ft sections + 1 connecting sleeve, each packed 20 per wooden box

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250

CHARGE, PROPELLING, EARTH ROD: M12



Type Classification:

Std A OTCM 36841, dtd 1958.

Use:

This charge is a separate item of issue, and is a component of Demolition Kit, Earth Rod, Blast Driven Set No. 1. It is used for propelling a steel rod into the ground 6 feet; depending upon the type of soil present. After the rod is extracted from the ground, the hole is enlarged with charge, explosive, springing, for Rod, Earth, Blast, Driven, M13 (linear demolition charge). The holes, about 12 inches in diameter, can be used for emplacing Classes 6, 7, and 9 telephone poles. The kit is not a replacement for the earth auger; rather, it is used in situations which prohibit the use of the auger.

Description:

This charge has an outer cylindrical metal container holding 270 grams of Smokeless Powder M2 and M44 Primer consisting of a two-inch long x 1/2 inch diameter plastic container. The plastic container holds approximately 3-1/2 grams Glazed Black Powder and 12 inches of Time Blasting Fuse which is permanently attached. The primer is centrally located in the propelling charge.

Functioning:

The item, after being assembled with the primer, is placed into the bottom of the firing chamber of the Earth Rod. Then mud or clay is firmly packed onto the charge to fill the firing chamber. The Time Blasting Fuse is protruding through the mud. The fuse is initiated with a fuse igniter or other convenient means (the operator takes cover). The burning fuse ignites the black powder in the primer. he black powder ignites the propellant. The burning propelling powder drives the rod down into the ground.

Tabulated Data:

Container material ---------- Metal
Color ---------- Olive drab
Weight ---------- 3/4 lb
Dimensions:
Length ---------- 2-3/4in. x 3-13/16 in. dia

Filler	Smokeless powder
Primer (M44)	Black powder
Method of actuation	Time blasting fuse lighter igniter

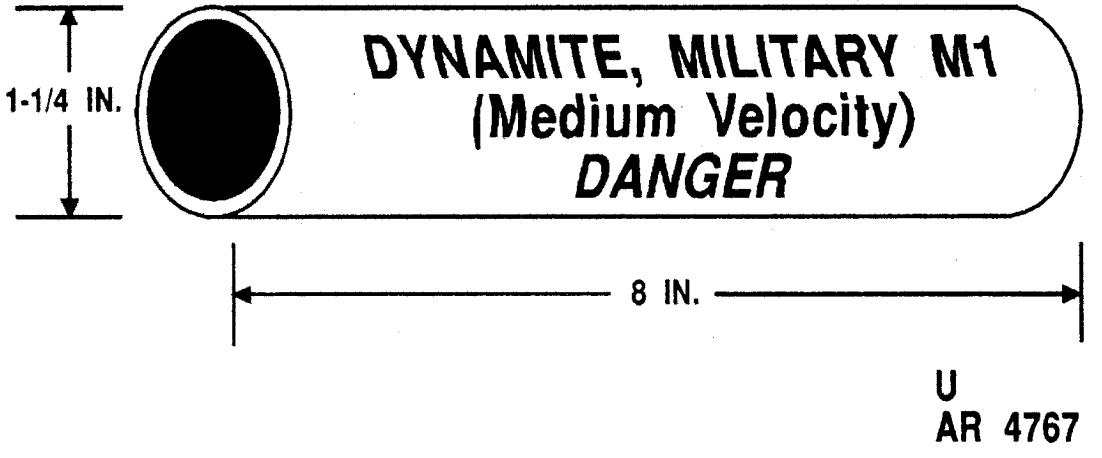
Shipping and Storage Data:

Quantity-distance class	1.3
Storage compatibility group	C
DOT shipping classification	Class B
DOT designation	PROPELLANT EXPLOSIVES, CLASS B
UNO serial number	0275
UNO proper shipping name	Cartridges, power device
DODIC	M405
Drawing	71-9-237
Packaging	Wooden box contains 20 charges placed between separator and 2 cartons each containing 10 primers.

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250

DYNAMITE: MILITARY, M1



Type Classification:

Std OTCM 37119, dtd 1959.

Use:

Military dynamite M1 is a medium-velocity blasting explosive used in military construction, quarrrying and demolition.

Description:

Military dynamite consists of a mixture of RDX, petroleum based binder and guar gum packed in cylindrical paraffin coated paper cartridges. Each cartridge is 1-1/4 inches in diameter and 8 inches long.

Functioning:

When the charge is detonated, the explosive is converted into compressed gas. The gas exerts pressure in the form of a shock wave which demolishes the target by cutting, breaching, or cratering. The type of demolition achieved depends on the placement of the charge in relation to the target.

Tabulated Data:

Container material	Paper
Color	Tan w/black markings
Dimensions:	
Length	8 in.
Diameter	1-1/4 in.
Filler	RDX, binder and guar gum
Primer (M44)	Black powder
Method of actuation	Blasting cap or detonating cord

Shipping and Storage Data:

Quantity-distance class	1.1
Storage compatibility group	D-2
DOT shipping classification	Class A
DOT designation	HIGH EXPLOSIVES - DANGEROUS
UNO serial number	0082
UNO proper shipping name	Explosive, blasting type B
DODIC	M591
Drawing	MIL-D-45413

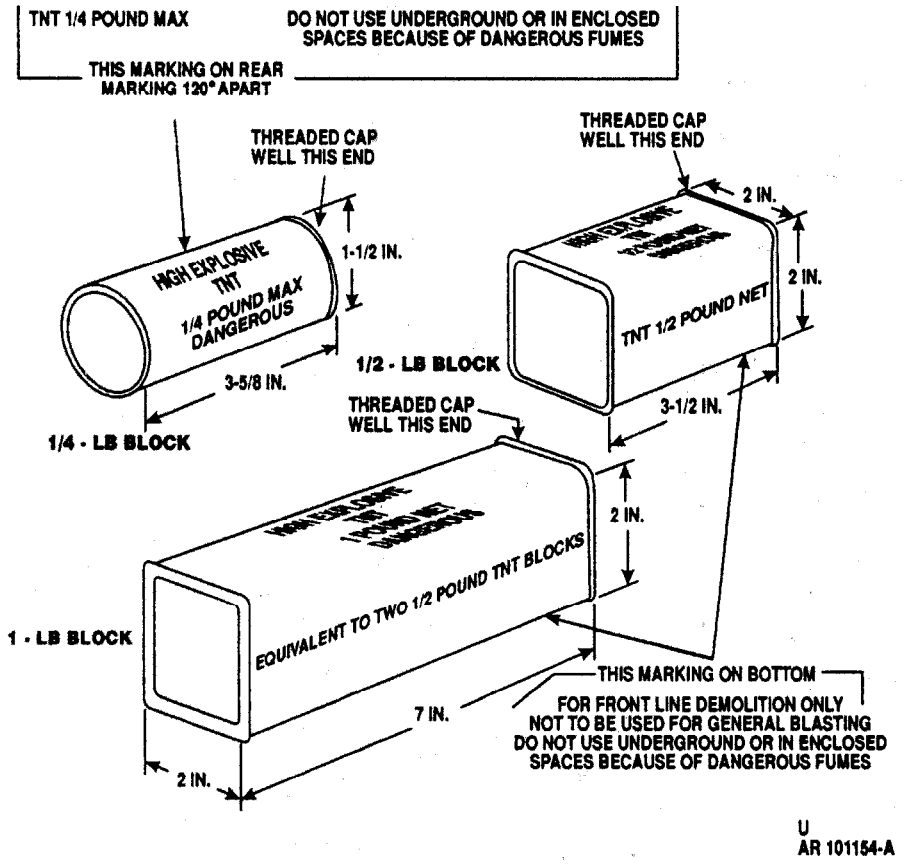
Packaging	50 cartridges per waterproof bag, 2 bags (100 cartridges) per wooden box
*Packing box:	
Weight	62 lb
Dimensions	19-7/8 in. x 11-7/8 in. x 11-7/8 in.
Cube	1.57 cu

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250

TNT BLOCK DEMOLITION CHARGES
CHARGE, DEMOLITION: BLOCK (1/4-, 1/2, 1-POUND) TNT



Type Classification:

Std OTCM 36841, dtd 1958.
Std AMCTC 6039, dtd 1968.

Use:

TNT block demolition charges are standard demolition charges and are used for all types of demolition work. However, the 1/4-pound charge is used primarily for training purposes.

Description:

TNT block demolition charges are issued in three sizes. The 1/4-pound lock demolition charge is in a cylindrical waterproof cardboard container, and the 1/2-pound and 1-pound block demolition charges are in rectangular waterproof cardboard containers. All three have metal ends with a threaded cap well in one end. TNT (trinitrotoluene) charges have a high detonating velocity and thus TNT is particularly well suited to cutting or breaching hard surfacing materials.

Functioning:

When the charge is detonated, the explosive is converted into compressed gas. The gas exerts pressure in the form of a shock wave which demolishes the target by cutting, breaching, or cratering. The type of demolition achieved depends on the placement of the charge in relation to the target.

Tabulated Data:

Container material	Cardboard
Color	Olive drab w/yellow markings
Weight	1/4 lb, 1/2 lb, or 1 lb
Dimensions:	
1/4-lb block	3-5/8 in. (length) x 1-1/2 in. (dia)
1/2-lb block	3-1/2 in. x 2 in. x 2 in.
1-lb block	7in. x 2in. x 2in.

Filler ---------- TNT
Method of actuation ---------- Military blasting caps or detonating cord

Shipping and Storage Data:

Quantity-distance class ------- 1.1
Storage compatibility group - D-1
DOT shipping classification - Class A
DOT designation ---------- HIGH EXPLOSIVE - DANGEROUS
UNO serial number ---------- 0048
UNO proper shipping name - Charges, demolition
DODIC:
1/4-lb block ---------- M030
1/2-lb block ---------- M031
1-lb block ---------- M032
Ordnance Part Number:
1/4-lb block ---------- 8797113
1/2-lb block ---------- 8885245
1-lb block ---------- 8885249
Packaging:
1/4-1 lb block ---------- 192 blocks w/4 bags of 12 (ea)priming adapters per wooden box*
1/2-lb block ---------- 96 blocks w/2 bags of 12 (es) priming adapters per wooden box*
1-lb block ---------- 48 blocks w/bag of 12 priming adapters per wooden box*

**Packing box:
Weight (w/contents):
1/4-lb block ---------- 84 lb
1/2- & 1-lb blocks ---------- 71.5 lb
Dimensions (Outside):
1/4-lb blocks ---------- 18-1/8 in. x 16-5/8 in. x 9-7/8 in.
1/2- & 1-lb blocks --------- 22-1/2 in. x 11-1/4 in. x 9-5/8 in.
Cube:
1/4-lb blocks ---------- 1.7 cu ft
1/2- & 1-lb blocks ---------- 1.4 cu ft

*Priming Adapter M144, Ordnance Part Number 8800913, is also available as a separate item of issue.

**NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

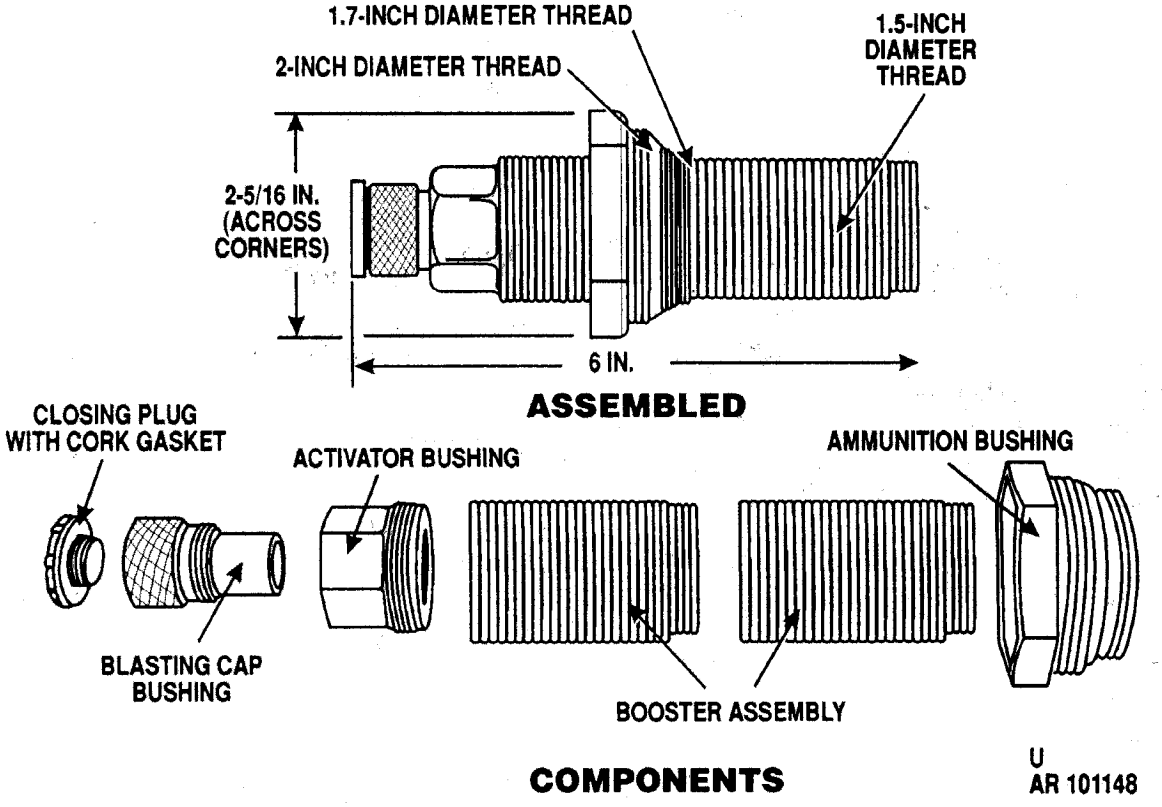
Limitations:

TNT block demolition charges cannot be molded and are difficult to use on an irregular shaped target. TNT is not recommended for use in closed spaces because its explosion produces explosive gases.

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250

DESTRUCTOR, EXPLOSIVE: UNIVERSAL, M10



Type Classification:

Std OTCM 36841, dtd 1958.

Use:

Universal Destructor M10 is used primarily to covert high explosive bombs and artillery projectiles into improvised demolition charges. It is also used to destroy deteriorated and abandoned ammunition. The destructor is designed to accommodate any ammunition with 1,5-, 1,7-, or 2-inch fuze wells.

Description:

Destructor M10 is essentially an adapter-booster assembly consisting of an ammunition bushing, a booster assembly, an activator bushing, and a blasting cap bushing. The ammunition bushing is threaded externally to fit 1.7- or 2-inch diameter fuze wells. Internally, it is threaded to mate with the booster assembly, which consists of two booster cups filled with tetryl pellets. The booster cups, threaded together to form an assembly are attached at the forward end to an activator bushing. The tetryl pellets in the forward cup have-center holes designed to accommodate a blasting cap or activator, The 1.5-inch external thread which accepts the activator can also be threaded into a 1.5-inch fuze cavity. The activator bushing, threaded to accept an M1 activator, is assembled at the forward end to a blasting cap bushing which will accept any standard firing device. During shipment and storage, the blasting cap bushing is sealed with a closing plug and cork gasket.

Functioning:

On activation by blasting cap or mine activator, the tetryl pellets in the booster explode, The resulting detonating wave initiates the explosive filled target.

Tabulated Data:

Container material	Rolled sheet steel
Color	Unpainted w/black markings
Weight	9 oz

Dimensions:
Length ..... 6 in. x 2 in. dia
*Filler ---------- Tetryl
Method of actuation ---------- Military blasting cap or mine activator

Shipping and Storage Data:

Quantity-distance class ------ 1.1
Storage compatibility group - D-2
DOT shipping classification - Class A
DOT designation ---------- BOOSTERS (EXPLOSIVE)-HANDLE CAREFULLY
UNO serial number -------- 0042
UNO proper shipping name - Boosters, without detonator
DODIC ---------- M241
Drawing ---------- 9216189
Packaging ---------- One destructor per fiber container; 50 containers per wooden box
**Packing box:
Weight (w/contents) ---------- 64 lb
Dimensions ---------- 16-7/8 in. x 15-1/16 in. x 16-1/8 in.
Cube ---------- 2.3 cu ft

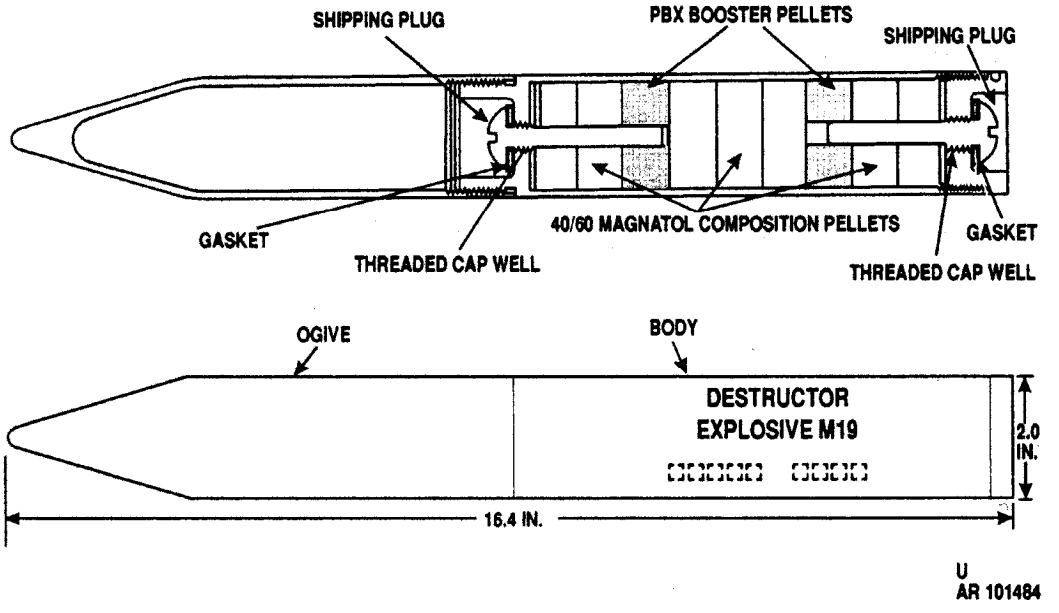
*Tetryl has been replaced by Comp A-3 for production after 7 Dec. 1973.

**NOTE. See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250

DESTRUCTOR, EXPLOSIVE: M19



Type Classification:

Obsolete Material Status Report 11756003.

Use:

This device is particularly suitable for use as a dust initiator in an enclosed space (boxcar or unventilated warehouse) containing powdered dust such as coal, flour, soap, aluminum, or magnesium powders.

Description:

This destructor consists of a cylindrical, explosive-filled body with a removable ogive. Threaded cap wells at each end of the body are designed to accept coupling bases of firing devices or priming adapters. The explosive filler is a special material capable of detonating a high concentration of combustible dust, such as that found in a granary.

Functioning:

The M19 destructor was specially designed to initiate dust explosions. The primed item is inserted into a barrel of flour or other material capable of making a flammable dust or mist. Upon initiation with a suitable primer, the PBX initiates the magnatol. The resulting explosion of PBX and magnatol causes the dust to be thrown into the air and suspended there long enough for the burning magnesium and aluminum powder in the magnatol to ignite the dust. The dust explosion causes such an increase in gas pressure that the structure usually is demolished.

Tabulated Data:

Container material	Metal
Color	Olive drab w/yellow markings
Weight	2-1/2 lb
Dimensions:	
Length	16.4 in. long x 2 in. dia
Filler	PBX and 40/60 magnatol
Method of actuation	Military blasting cap

Shipping and Storage Data:

Quantity-distance class ------- 1.1
Storage compatibility group - D-2
DOT shipping classification - Class A
DOT designation ---------- EXPLOSIVE MINES
UNO serial number ---------- 0042
UNO proper shipping name - Boosters, without detonator
DODIC ---------- M235
Drawing ---------- 8846687
Packaging ---------- One destructor per fiber container; 6 containers per wooden box

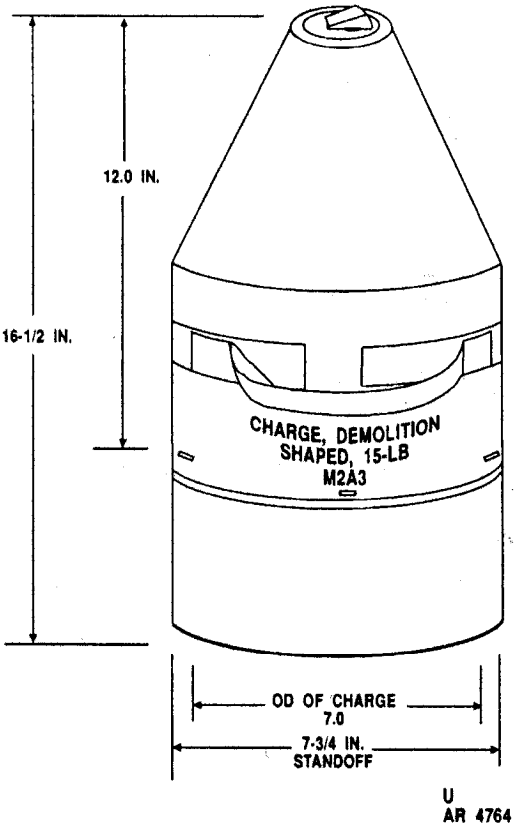
*Packing box:
Weight (w/contents) ---------- 26.5 lb
Dimensions ---------- 19-31/32 in. x 10-13/16 in. x 6-3/4 in.
Cube ---------- 0.8 cu ft

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250
MIL-C-20331-71-9-237

CHARGE, DEMOLITION: SHAPED, M2A3 AND M2A4 15-POUND



Type Classification:

Std AMCTCM 5026, dtd 1967.

Use:

Shaped charges are primarily used to bore holes in earth, metal, masonry, concrete, and paved and unpaved roads. This particular shaped charge has been especially designed for use against reinforced concrete.

Description:

Shaped demolition charges used in military demolition operations are tapered top cylindrical blocks of high explosives having a lined, conical cavity in one end which directs the coned liner material into a narrow jet for penetrating metal, concrete, earth or other materials. Maximum penetration is obtained when the charge is exploded at a specific distance from the target, called standoff. A standoff distance is provided by a fiber sleeve supporting the charge, A carrying handle is attached to each charge. The two 15-pound shaped charges described here are identical except for the explosive content:

Charge, Demolition: Shaped (15-pound) M2A3. Shaped demolition charge M2A3 contains approximately 9-1/2 pounds of comp B with a 50-50 pentolite booster weighing approximately 2 pounds in a moisture-resistant molded fiber container. Older models are completely pentolite loaded. A cylindrical fiber base slips on end of charge to provide a standoff distance, A cone of glass is used as a cavity liner in this charge.

Charge, Demolition: Shaped (15-Pound) M2A4. Shaped demolition charge M2A4 is less sensitive to gunfire than charge M2A3. Charge M2A4 is identical to charge M2A3 in performance, the 50-50 pentolite booster has been replaced by 50 grams of comp A3. Also, the main charge of comp B has been increased to maintain same total weight as charge M2A3.

Functioning:

When the charge is detonated, the explosive is converted into compressed gas. The gas exerts pressure in the form of a shock wave. The shape of the liner forces the shock wave to a point. This concentrated shock wave converts the liner into a high speed jet of liner material which penetrates the target.

Tabulated Data:

Container material	Molded fiber w/glass liner
Color	Olive drab w/yellow markings
Weight	15 lb
Dimensions (w/standoff):	
Length	15 in.
Diameter	7 in.
Filler:	
Shaped charge	Comp B or pentolite (older M2A3's only)
Boosts:	
M2A3	50/50 pentolite
M2A4	50 grams Comp A3
Method of actuation	Military blasting-cap

Shipping and Storage Data:

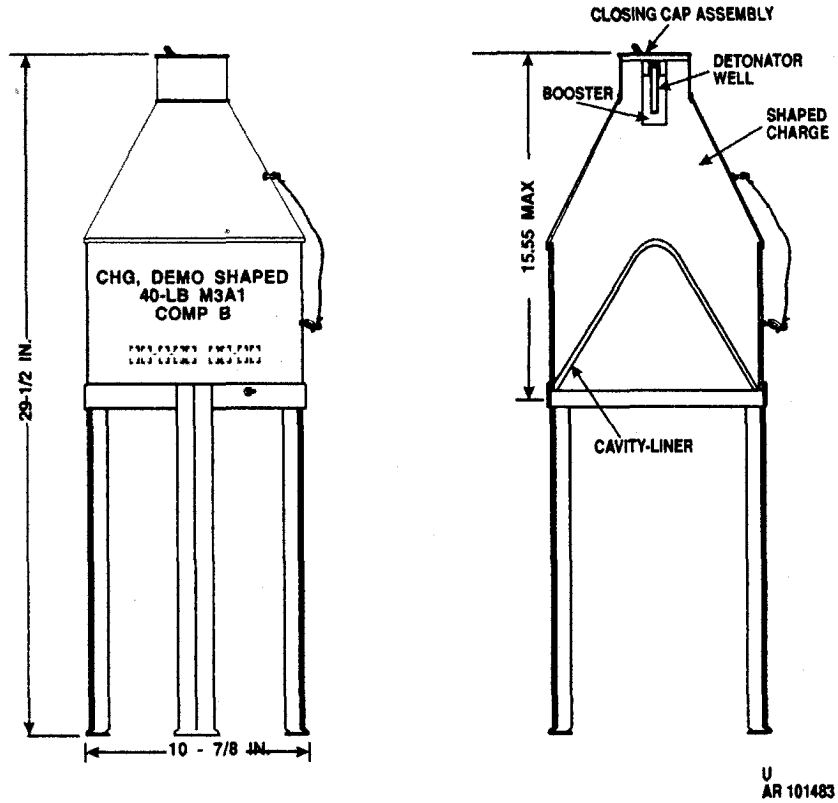
Quantity-distance class ------- 1.1
Storage compatibility group - D-2
DOT shipping classification - Class A
DOT designation ---------- HIGH EXPLOSIVES - DANGEROUS
UNO serial number ---------- 0048
UNO proper shipping name - Charges, demolition
DODIC ---------- M420
Drawing ---------- 8861565
Packaging ---------- 3 charge/barrier bag, 1 bag/ wooden box
*Packing box:
Drawing ---------- 8861208
Weight (w/contents) ---------- 45 lb
Dimensions ---------- As required
Cube ---------- As required

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250

CHARGE, DEMOLITION: SHAPED, M3 AND M3A1 40-POUND



Type Classification:

Std AMCTCM 5027, dtd 1967.

Use:

Shaped charges are primarily used to bore holes in earth, metal, masonry, concrete, and paved and unpaved roads. This particular shaped charge is especially useful for use against thick reinforced concrete pavements laid on dense high-strength base courses.

Description:

Shaped demolition charges used in military demolition operations are tapered top cylindrical blocks of high explosives having a lined, conical cavity in one end which directs the cone liner material into a narrow jet for penetrating metal, concrete, earth or other materials. Maximum penetration is obtained when the charge is exploded at a specific distance from the target, called standoff. A standoff distance is provided by a metal tripod for supporting this charge. A carrying handle is attached to each char . The two 40-pound shaped charges described here are identical except for the explosive content:

Charge, Demolition: Shaped (40-pound) M3. Shaped demolitioncharge M3 contains approximately 28.3 pounds of comp B with a 1.7-pound booster of 50-50 pentolite in a metal container. Older models are completely pentolite loaded. A cylindrical fiber base slips on end of charge to provide a standoff distance. A cone of glass is used as a cavity liner in this charge.

Charge, Demolition: Shaped (40-Pound) M3A1. shaped demolition charge M3A1 is less sensitive to gunfire than charge M3. Charge M3A1 is identical to charge M3 in performance, the 50-50 pentolite booster has been replaced by a booster of 50 grams of comp A3. Also, the main charge of comp B has been increased to maintain the same total weight as charge M3.

Functioning:

When the charge is detonated, the explosive is converted into compressed gas. The gas exerts pressure in the form of a shock wave, The shape of the liner forces the shock wave to a point. This concentrated shock wave converts the liner into a high speed jet of liner material which penetrates the target.

Tabulated Data:

Container material	Metal
Color	Olive drab w/yellow markings
Weight	40 lb
Dimensions (w/o standoff):	
Length	15-1/2in.
Diameter	9-1/2 in.
Filler:	
Shaped charge	Comp B
Booster:	
M3	50/50 pentolite
M3A1	Comp A3
Method of actuation	Military blasting-cap

Shipping and Storage Data:

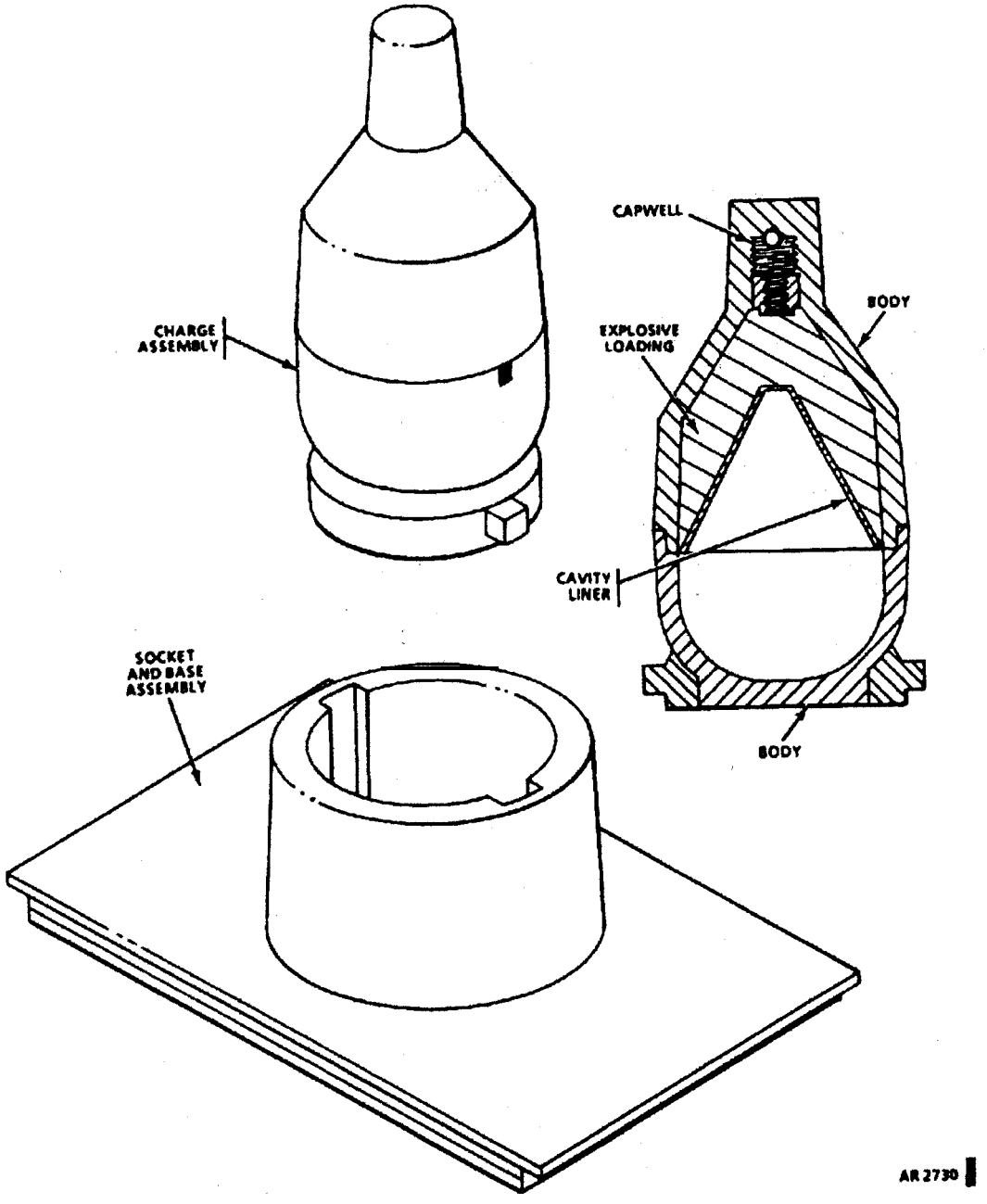
Quantity-distance class	111
Storage compatibility group	D-2
DOT shipping classification	Class A
DOT designation	HIGH EXPLOSIVES - DANGEROUS
UNO serial number	0048
UNO proper shipping name	Charges, demolition
DODIC	M421
Drawing	8858390
Packaging	One charge and one standoff frame per wooden box
*Packing box:	
Weight (w/contents)	65 lb
Dimensions	20-9/16 in. x 11/16 in. x 13-9/32 in.
Cube	1.8 cu ft

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250

CHARGE, DEMOLITION, SHAPED: MK 74, MOD 1



Type Classification:

Std MSR 04806011, Apr 1986.

Use:

The MK74 is used primarily for the emergency destruction of nuclear weapons in Army application.

Description:

This shaped demolition charge is a small device which consists of the plastic-cased, cylindrical-shaped charge itself and a plastic "socket" base which may be affixed to the target in advance. The tapered top of the charge case contains an initiator hole perpendicular to the axis of the charge for inserting the initiator (a blasting cap detonating cord strand). The base of the charge case has two small square lugs extending from it to secure the charge into the

mating socket base. Within the case, the charge contains a small booster charge at the top. Beneath the booster charge is a plastic "wave shaper" atop the cone-shaped main charge. A cone-shaped metal liner lies beneath the explosive. The socket/base consists of a hollow, plastic, cylindrical socket to accommodate the charge. The socket has a hook-and-pile (Velcro) fastener secured to its bottom. The socket/base and the empty bottom of the charge container provide the standoff distance necessary for proper operation of the shaped charge.

Functioning:

A standard Military Blasting Cap (M6 or M7) initiated within the cap hole detonates the small booster charge. The wave shaper smoothes out the resulting detonation wave so it evenly initiates the adjacent main charge. The detonation wave of the main charge is concentrated toward the center of the charge by its conical shape. The detonation wave forms the metal liner into a high-energy semi-molten slug which is capable of penetrating several inches of steel or other high density material.

Three installation modes are available as follows:

(1) The socket box may be simply taped to the target using an adhesive-backed tape such as PPP-T-60 Duct Tape.

(2) The bottom section of the hook and loop fastener may be glued to the target (using glue such as MMM-A-1617). This facilitates quick emplacement at a later time.

(3) The socket base itself may be glued to the target.

Tabulated Data:

Container material ---------- Glass-filled phenolic plastic
Liner Material ---------- Copper

Container ---------- Olive drab w/yellow markings
Shaped charge ---------- Olive drab w/yellow stripe near top w/black lettering

Weight:
Without base/socket --------- 1.4 lb
With base socket ---------- 1.5 lb

Dimensions (w/o base) --------- 3.0 in. dia x 5.9

Base dimensions ---------- 7.0 in. x 4.25 in. plate w/approximately 3.75 in. od, 3.0 in. id tapered cylindrical socket

Filler:
Shaped charge ---------- CH-6
Booster ---------- CH-6
Weight ---------- 140 gr

Method of actuation ---------- Military blasting cap or detonating cord

Shipping and Storage Data:

Quantity-distance class ------- 1.1
Storage compatibility group - D-2
DOT shipping classification - Class A
DOT designation ---------- HIGH EXPLOSIVES DANGEROUS
UNO serial number ---------- 0048
UNO proper shipping name - Charges, demolition
DODIC ---------- M
Drawing ---------- (Code Ident. 10001)NAVORD 2128318
Specification ---------- US Navy Weapons Specification 3018C
Packaging ---------- 2 charges and base/sockets per metal ammo can (M2A1); 2 cans (4 charges) per wirebound wooden box

*Packing box:
Type ---------- Wirebound
Weight (w/contents) ---------- 25-1/4 lb
Dimensions ---------- 12.3 in. x 14.4 in. x 8.12 in.
Cube ---------- 0.85 cu ft

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

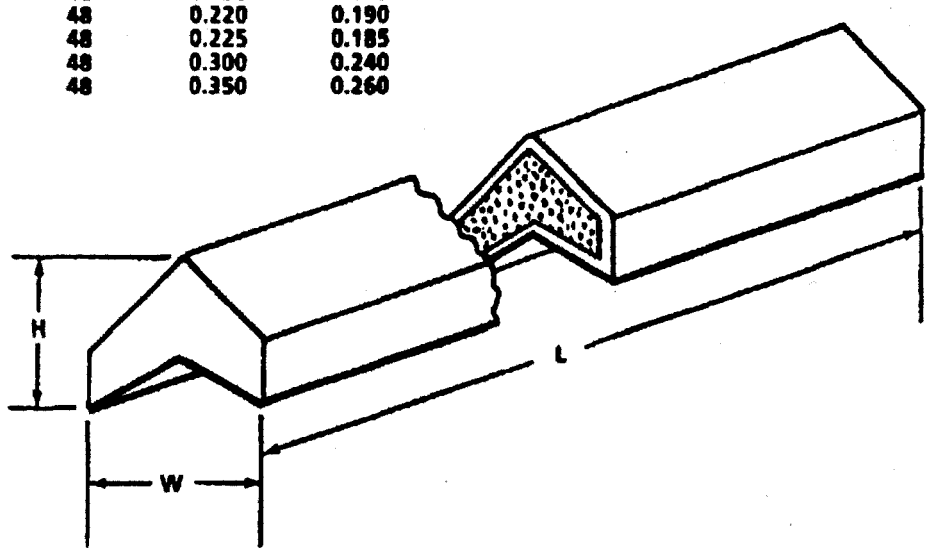
References:

TM 39-50-8

CHARGE, DEMOLITION, SHAPED, LINEAR, FLEXIBLE: 20, 30, 40, 60, 75 GRAINS PER FOOT

LEGEND

GRAINS PER FOOT	L (LENGTH) (IN.)	W (WIDTH) (IN.)	H (HEIGHT) (IN.)
20	48	0.190	0.160
30	48	0.220	0.190
40	48	0.225	0.185
60	48	0.300	0.240
75	48	0.350	0.260



ARD 2629

Type Classification:

Std MSR 01816004.

Use:

This family of "Flexilinear" shaped charges (FLSC'S) is used by Explosive Ordnance Disposal (EOD) personnel to remotely low order initiate (blow apart rather than detonate) or cut open explosive ordnance devices in order to render them safe to handle or transport. The FLSC can be cut to provide the length of charge required for the job at hand.

Description:

The FLSC is a long, thin metal-sheathed rod of explosive with a special cross-section shape (see illustration) that concentrates the explosive's energy in a line to provide a cutting edge. The lead alloy sheath provides a great deal of flexibility so that the charge can be bent around a round target item as small as two inches in diameter. The ends of the charge sheath are capped with a soft rubbery elastomeric flexible epoxy to provide a moisture seal until the charge is cut to size for use. Cutting is done by scoring the sheath with a knife and breaking it along the score. The different charges all come in four foot lengths and differ in cross section dimensions and the amount of explosive load. The are designated by the amount of explosive per foot contained.

Functioning:

After the proper charge is cut to the sizes specified in the appropriate Render Safe Procedure (RSP), it is primed with a military blasting cap and secured to (or adjacent to) the spot specified in the RSI. Initiation of the blasting cap detonates the charge's explosive load. The V-shaped notch in the metal sheath and the charge itself concentrates a large proportion of the detonation's energy into an intense "cutting edge" detonation wave allows application of a large amount of energy to a small area of the target.

Tabulated Data:

Dimensions:
  20 grains per foot:
    48 in. x 0.190 in. x 0.160 in.
  30 grains per foot:
    48 in. x 0.220 in. x 0.190 in.
  40 grains per foot:
    48 in. x 0.255 in. x 0.185 in.
  60 grains per foot:
    48 in. x 0.300 in. x 0.240 in.
  75 grains per foot:
    48 in. x 0.350 in. x 0.260 in.
Filler:
  Explosive charge ---------- CH-6
  Initiator required ---------- Military blasting cap

Shipping and Storage Data:

UNO serial number ---------- 0048
UNO proper shipping name - Charges, demolition
DODIC ---------- ML09, ML1O, ML1l, ML12, ML13
Quantity-distance class ------- 1.1
Storage compatibility group - D
DOT shipping classification - Class A - High Explosive
DOT designation ---------- HIGH EXPLOSIVE - DANGEROUS
NSN ---------- 1375-01-083-2820, 1375-01-082-9919, 1375-01-082-9920, 1375-01-083-2822, 1375-01-082-9921
Drawing ---------- 9331218, 9331219, 9331220, 9331221, 9331222
Packaging:
  Quantity required ---------- 6
Shipping container:
  Container material ---------- Wood
  Color ---------- Natural
  Package Gross Wt., lb (calc.)---------- 12.8, 13.6, 14.0, 14.6, 15.5
  Dimensions ---------- 50-1/4 x 5-1/2 x 2-

  Cube ---------- 0.33 cu ft (calc.)

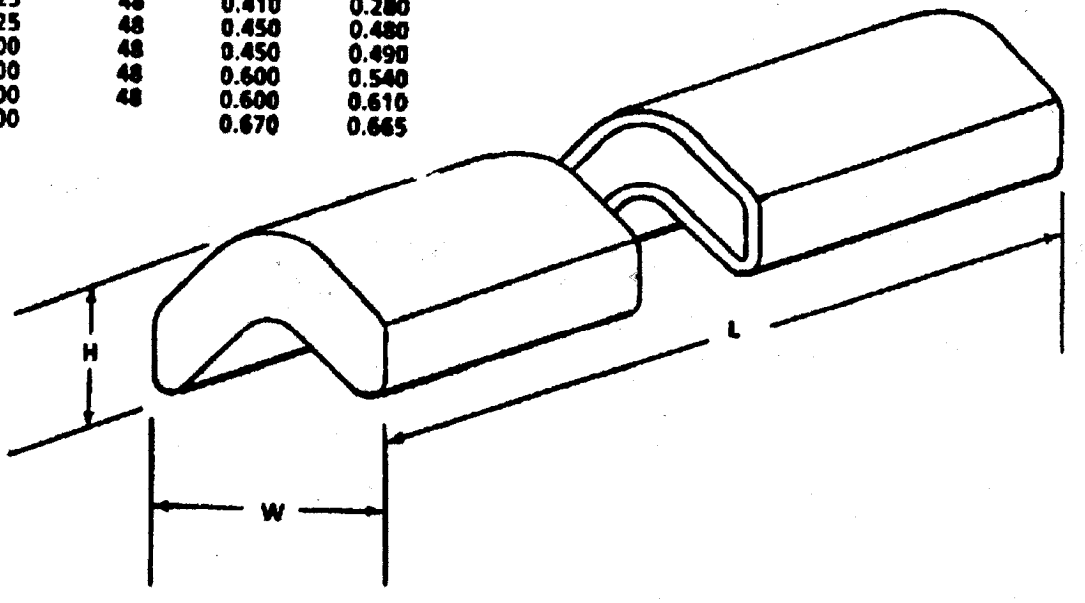
References:

SC 1375-95-CL-A03

CHARGE, DEMOLITION, SHAPED, LINEAR, FLEXIBLE 125, 225, 300, 400, 500 AND 600 GRAINS PER FOOT

LEGEND

GRAINS PER FOOT	L (LENGTH) (IN.)	W (WIDTH) (IN.)	H (HEIGHT) (IN.)
125	48	0.410	0.280
225	48	0.450	0.480
300	48	0.450	0.490
400	48	0.600	0.540
500	48	0.600	0.610
600		0.670	0.665



ARD 2630

Type Classification:

Std MSR 01816004.

Use:

This family of "Flexilinear" shaped charges (FLSC'S) is used by Explosive Ordnance Disposal (EOD) personnel to remotely low order initiate (blow apart rather than detonate) or cut open explosive ordnance devices in order to render them safe to handle or transport. The FLSC can be cut to provide the length of charge required for the job at hand.

Description:

The FLSC is a long, thin metal-sheathed rod of explosive with a special cross-section shape (see illustration) that concentrates the explosive's energy in a line to provide a cutting edge. The lead alloy sheath provides a great deal of flexibility so the charge can be bent around a round target item as small as two inches in diameter. The ends of the charge sheath are capped with a soft rubbery elastomeric flexible epoxy to provide a moisture seal until the charge is cut to size for use. Cutting is done by scoring the sheath with a knife and breaking it along the score. The different charges all come in four foot lengths and differ in cross section dimensions and the amount of explosive load. They are designated by the amount of explosive per foot contained.

Functioning:

After the proper charge is cut to the sizes specified in the appropriate Render Safe Procedure (RSP), it is primed with a military blasting cap and secured to (or adjacent to) the spot specified in the RSF. Intiation of the blasting cap detonates the charge's explosive load. The V-shaped notch in the metal sheath and the charge itself concentrates a large proportion of the detonation's energy into an intense "cutting edge" detonation wave. This concentrated detonation wave allows application of a large mount of energy to a small area of the target.

Tabulated Data:

Dimensions:
125 grains per foot:
48 in. x 0.410 in. x 0.280 in.
225 grains per foot:
48 in. x 0.450 in. x 0.480 in.
300 grains per foot:
48 in. x 0.450 in. x 0,490 in.
400 grains per foot:
48 in. x 0.600 in. x 0.540 in.
500 grains per foot:
48 in. x 0.600 in. x 0.610 in.
600 grains per foot:
48 in. x 0.670 in. x 0.665 in.
Filler:
Explosive charge ---------- CH-6
Method of actuation ---------- Military blasting cap

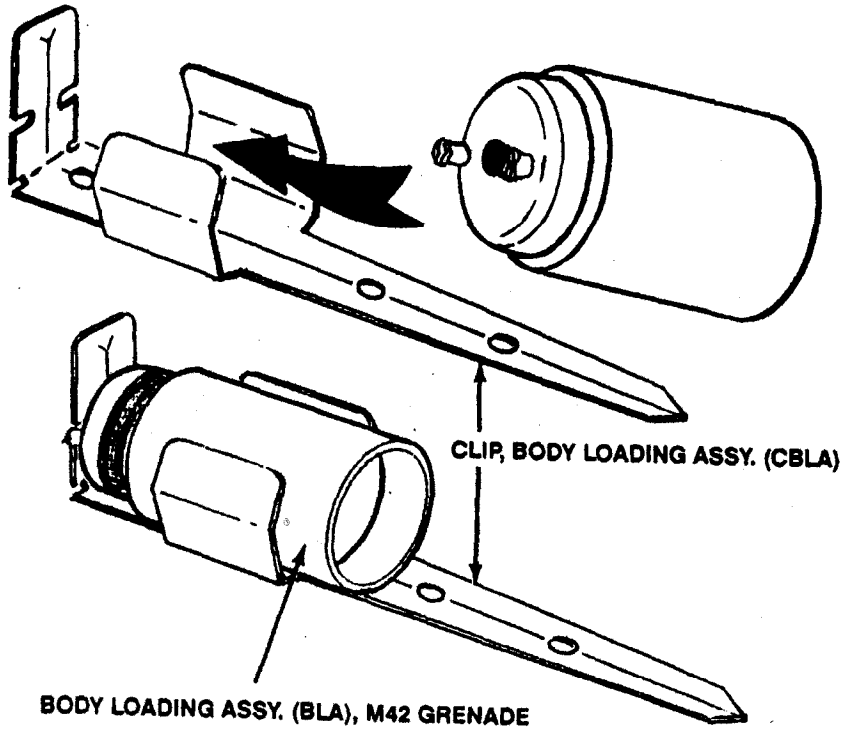
Shipping and Storage Data:

DODIC ---------- ML14, ML15, ML16, ML17, ML18, ML19
Quantity-distance class ------- 1.1
Storage compatibility group- D
DOT shipping classification - Class A - High explosive
DOT designation ---------- HIGH EXPLOSIVE - DANGEROUS
UNO serial number ---------- 0048
UNO proper shipping name - Charges, demolition
NSN ---------- 1375-01-082-9922, 1375-01-082-9923, 1375-01-082-9924, 1375-01-083-6325, 1375-01 - 082-9925, 1375-01-083-2821
Drawing ---------- 9331223, 9331224; 9331225, 9331226, 9331227, 9331228
Packaging
Quantity required for 125, 225, and 300 grains/ft--- 5
Quantity required for 400, 500 and 600 grains/ft ---- 3
Shipping Container:
Container material ---------- Wood
Color - - - - - - - - - - - - - - - - - - -
Package gross wt., lb (calc) --- 15.4
20.9
21.2
18.1
19.9
20.1

References:

SC 1375-95-CL-A03

CHARGE, DEMOLITION: SHAPED, CLIPPED, XM221



U
AR 4324

Type Classification:

Limited Production-Urgent (LP-U).

Use:

The XM221 is used in the disposal of many different types of explosive loaded munitions and bulk explosive. It is an easy-to-use alternate to comp C4 and is capable of being initiated by electric/nonelectric blasting caps or detonating cord. This item is primarily for use by the Explosive Ordnance Disposal (EOD) and Explosive Ordnance Reconaissane Agents (EORA's).

Description:

The Charge, Demolition: Shaped, Clipped, XM221 (CDSC) is a lightweight, easily emplaced, two piece assembly, consisting of an M42 Body Loading Assembly (BLA) (NSN 1320-01-110-5490) and a Clip, Body Loading Assembly (CBL4) (Drawing number 9390432). The clip is stamped from mild steel and is formed in such a manner as to snap on the M42 BLA and to hold detonating cord or blasting cap in contact with the explosive lead. The clip is also used to position the charge relative to the item to be destroyed. The M42 grenade BLA consists of a body, cone, explosive charge (shaped), rivets and a lead cup assembly. The explosive charge is comp A5 and the lead contains RDX. The M42 BL4 is a standard submunition that can be manufactured, without the fuze, from existing facilities.

Functioning:

The CDSC is positioned for standoff and aimed at the high-explosive loaded ordnance target (for disposal/neutralization). The clip leg can be bent to different angles and/or pushed into the ground, nailed to a board, taped to a munition, or slipped between items in a stack of munition/targets for destruction. The V-shaped finger at the top of the clip assures tight contact between the detonating cord or blasting cap and the lead-cup assembly of the M42 BLA, which is necessary for reliable initiation. When using a blasting cap, that portion of the cap containing the explosives should be positioned over the lead cup assembly. When detonating cord is used as the initiator, a 152mm (6-inch) piece is placed through the large hole in the top of the clip so that it extends over the top of the lead cup assembly. The main line of detonating cord is placed in the finger notches of the V-shaped finger and on top of the short piece of detonating cord so as to form a cross directly

over the lead cup assembly. The BLA is then slid toward the top of the clip to hold the cap or detonating cord firmly in place.

When the charge is initiated, a shaped charge jet is formed which penetrates the target causing a high-order detonation of the target explosive. The shaped charge can penetrate in excess of 76.2 mm (3-inches) of steel.

Tabulated Data:

NSN ---------- 1375-01-325-6826
Material:
- Clip ---------- 0.79 mm (0.031 in.) mild steel
- M42 BLA ---------- 4140 steel

Color ---------- Olive drab w/yellow markings
Weight (XM221) . . . . . 213.2 grams (0.47 lb)
Dimensions (without clip):
- BLA length ---------- 61.7 mm (2.43 in.)
- BLA diameter (O.D.)- . . . . . 38.6 mm (1.52 in.)
- Clip length (with top finger bent) ---------- 173 mm (6.81 in.) approx

Filler:
- Shaped charge ---------- 30.5 g (1.08 oz) Comp A5
- Lead ---------- RDX type I or II

Method of actuation ---------- Blasting cap or detonating cord

Shipping and Storage Data:

Interim hazard classification:
- DOD hazard lass ---------- 1.1
- DOD storage compatibility group ---------- D
- DOT shipping class ---------- Explosive A
- DOT designation ---------- EXPLOSIVE BOMB
- UNO serial number ---------- 0034
- UNO proper shipping name ---------- Bombs, with bursting charge

Explosive weight for QD---- 0.0675 lb (0.0306 kg)
Drawings:
- Combination of Adopted Items---------- 9395611
- Charge, Demolition: Shaped, Clipped, XM221- 9392509
- M42 Body Loading Assembly ---------- 9215342
- Clip, Body Loading Assembly ---------- 9390432
- Box, Ammunition, M2A1 (NSN 8140-00-960-1699- 7553296
- Packing and Marking -------- 9392512
- Box, Wirebound (NSN 8140-00-078-8969) --------- 9396199
- Packing and Marking ------- 9392513

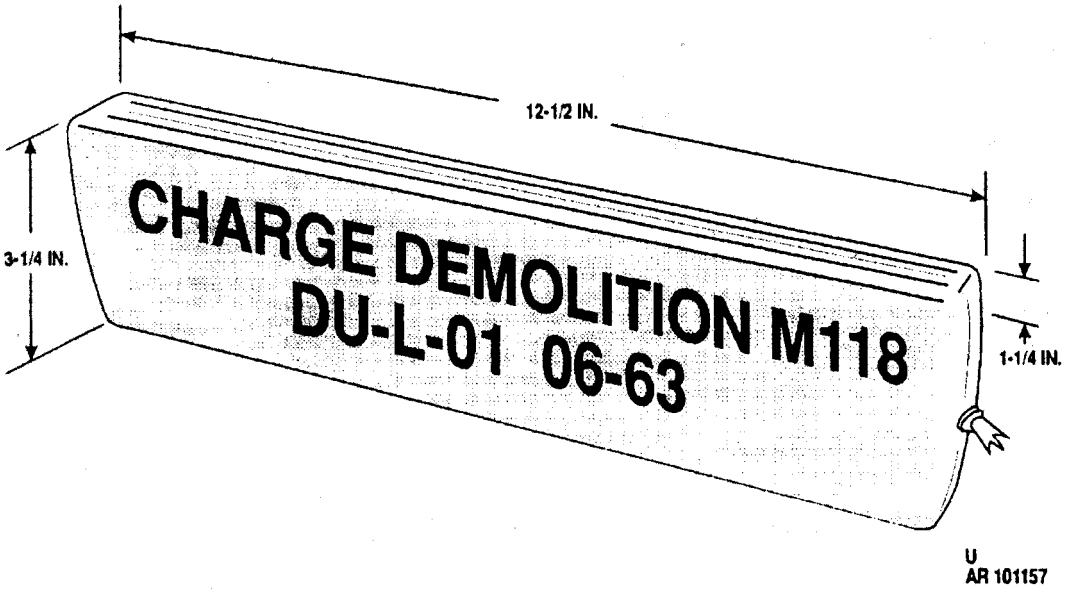
Packaging:
(36 charges per box, M2A1; 2 boxes, M2A1, 72 charges per box, wirebound)
- M2A1 metal box:
  - Weight w/contents --------- 23.5 lb
  - Dimensions ---------- 12.0 in. x 6.0 in. x 7.5 in.
  - Cube ---------- 0.31 cu ft
- Overpack (2 metal boxes per wood wirebound box):
  - Weight (w/contents) ------- 52 lb
  - Dimensions ---------- 14.5 in. x 12.75 in. x 8.375 in.
  - Cube ---------- 0.9 cu ft

Explosive Weights:
- Demolition charge ---------- 1.08 oz
- M2A1 container ---------- 2.43 lb
- Wirebound box ---------- 4.86 lb

References:

TM 60 series

CHARGE, DEMOLITION: BLOCK M118
(FLEX-X SHEET EXPLOSIVE)



Type Classification:

Std AMCTC 2818, dtd 1964.

Use:

Demolition charge M118 is designed for use as a cutting charge, and especially for use against steel targets. The sheets of explosive may be quickly applied to irregular and curved surfaces, and are easily cut to any desired dimensions. Demolition charge M118 may be used for small breaching charges but should not be used as a bulk explosive charge because of its high cost.

Description:

Demolition charge M118 (commonly called Flex-x or Sheet Explosive) consists of four 1/2-pound sheet of flexible explosive packed in plastic envelope. *Each sheet is approximately 3 in. x 12 in. x 1/4 in. thick. Included in each box of 20 charges M118 is a package of 80 blasting cap holders M8. *Each sheet of explosive has a pressure-sensitive adhesive tape attached to one surface. A piece of release paper protects the adhesive surface. Its relative effectiveness is 1.14.

NOTE

Exact explosive contained in charges M118 will vary with manufacturer. At present. Some manufacturers use PETN as the basis explosive while others use RDX. Charges of future manufacture may include still other explosives.

*Blasting cap holder M8 is also available as a separate item of issue.

Functioning:

When the charge is detonated, the explosive is converted into compressed gas. The gas exerts pressure in the form of a shock wave which demolishes the target by cutting, breaching, or cratering. The type of demolition achieved depends on the placement of the charge in relation to the target.

Tabulated Data:

Covering material	Plastic (Mylar)
Color	Olive drab w/yellow and black markings
Weight	2-1/4 lb
Dimensions (max)	12-1/2 in. x 3-1/4 in. x 1-1/4 in.
Filler	PETN or RDX
Method of actuation	Military blasting caps or detonating cord

Shipping and Storage Data:

Quantity-distance class	1.1
Storage compatibility group	D-2
DOT shipping classification	Class A
DOT designation	HIGH EXPLOSIVES - DANGEROUS
UNO serial number	0048
UNO proper shipping name	Charges, demolition
DODIC	M024
Drawing	9204247
Packaging	20 charges w/one bag of 80 blasting cap holders per wooden box
**Packing box:	
Weight (w/contents)	52.5 lb
Dimensions	17-3/4 in. x 13-1/2 in. x 8 in.
Cube	1.2 cu ft

**NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

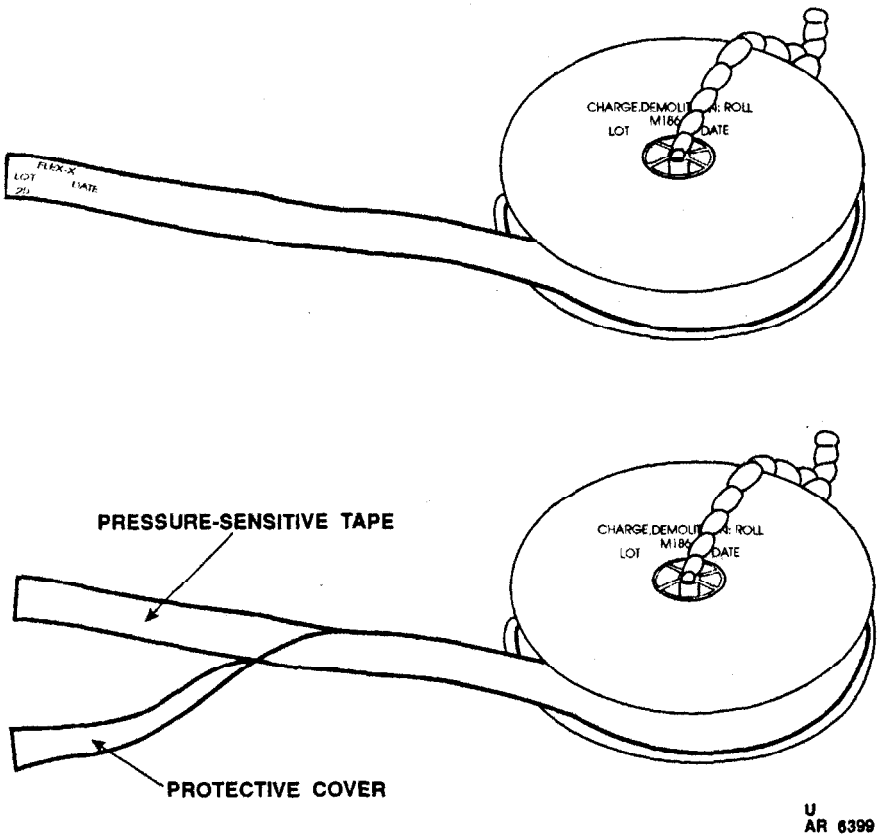
Limitations:

Adhesive tape will not adhere to wet or frozen surfaces. A supplementary adhesive must be used for such applications.

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250

CHARGE, DEMOLITION, ROLL: M186 (FLEX-X SHEET EXPLOSIVE)



Type Classification:

Std AMCTC 5790, dtd 1968.

Use:

Roll Demolition Charge M186 is used in the same manner as Sheet Demolition Charge M118. Charge M186 is especially adaptable for demolishing targets which require use of flexible explosive in long lengths particularly where several feet are required. It is especially useful in cutting steel, trees and targets of irregular shape. This explosive should not be used as a bulk explosive when others are available for the mission because it is expensive.

Description:

M186 is a rolled up sheet of explosive approximately 3 in. wide x 1/4 in. deep with a layer of foam backed adhesive tape attached. The adhesive is covered with a release paper. Roll demolition charge M186 is identical to charge M118 except that the explosive is in the form of a 50-foot roll on a plastic spool, rather than in sheet form. Each foot of the roll provides approximately 1/2 pound of explosive. It is marked in order to show how much is left on the roll. Included with each roll are 15 blasting cap holders M8* and a canvas bag with carrying strap. The exact explosive contained in this charge will vary with the manufacturer. Some manufacturers use PETN while others use RDX as the basic explosive. In the future, other explosives may be used in the manufacture of this item. However, its performance will be identical to the charge demolition M186 described herein.

*Blasting cap holder M8 is also available as a separate item of issue.

Functioning:

When the charge is detonated, the explosive is converted into compressed gas. The gas exerts pressure in the form of a shock wave which demolishes the target by cutting, breaching, or cratering. The type of demolition achieved depends on the placement of the charge in relation to the target.

Tabulated Data:

Container material	Plastic spool, OD color
Color	Olive drab w/yellow and black markings
Weight	25 lb
Dimensions	50 ft x 3 in. x 1/4 in.
Filler	PETN or RDX
Method of actuation	Military blasting caps or detonating cord

Shipping and Storage Data:

Quantity-distance class	1.1
Storage compatibility group	D-2
DOT shipping classification	Class A
DOT decimation	HIGH EXPLOSIVES - DANGEROUS
UNO serial number	0048
UNO proper shipping name	Charges, demolition
DODIC	M060
Drawing	9297231
Packaging	One roll w/15 blasting cap holders per canvas bag, 3 bags per wirebound box
*Packing box:	
Weight (w/contents)	115 lb
Dimensions	19-7/8 in. x 19-9/16 in. x 14-1/32 in.
Cube	3.8 cu ft

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

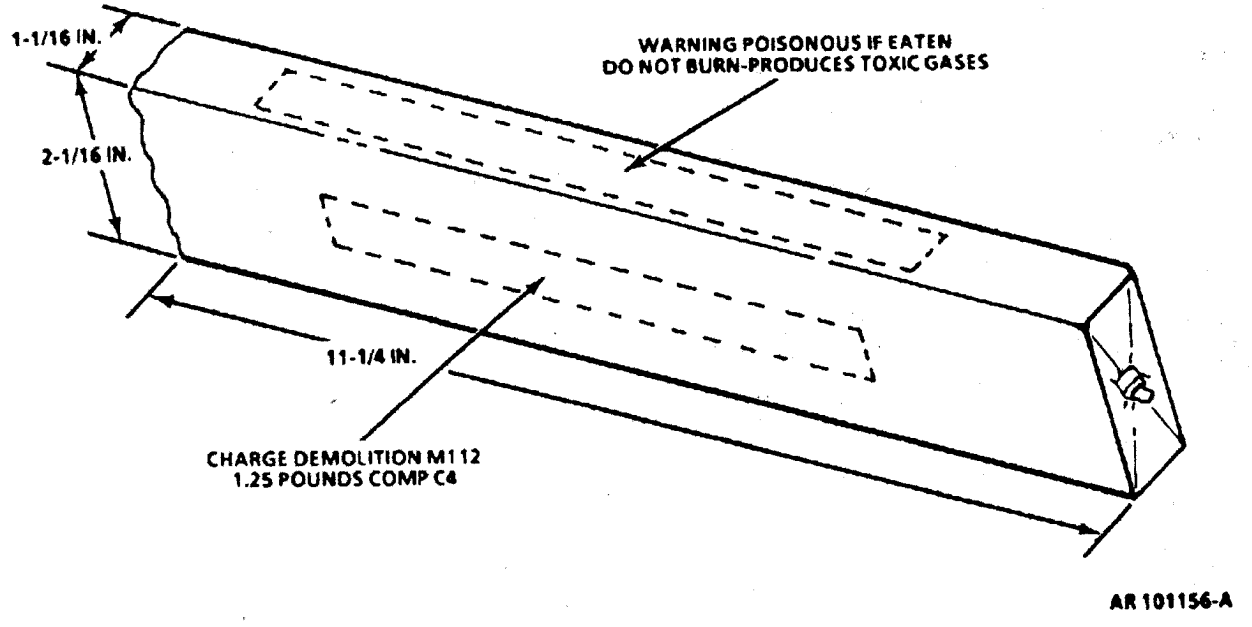
Limitations:

Adhesive tape will not adhere to wet or frozen surfaces. A supplementary adhesive must be used for such targets.

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250

CHARGE, DEMOLITION: BLOCK M112



Type Classification:

Std AMCTH 2818, dtd 1964.

Use:

Block Demolition Charge M112 is plastic explosive and used in the same manner as Block Demolition Charge M5A1. This charge is ideally suited for cutting charges as the adhesive backing allows the charge to be attached to any relatively flat, dry surface above freezing (32°F, 0°C). The explosive may also be cut and/or removed from the mylar wrapper and hand formed as desired to suit the target.

Description:

Charge M112 consists of 1-1/4 pounds of Comp C4 packed in a mylar-film bag with pressure-sensitive adhesive tape on one surface for quick emplacement. The tape is protected by a peelable paper cover, Comp C4 in some block demolition charges is colored dull gray in a clear mylar-film bag. In charges of recent manufacture, Comp C4 is white and packed in an olive drab mylar-film bag. Its relative effectiveness is 1.34.

Functioning:

When the charge is detonated, the explosive is converted into compressed gas, The gas exerts pressure in the form of a shock wave which demolishes the target by cutting, breaching, or cratering. The type of demolition achieved depends on the placement of the charge in relation to the target.

Tabulated Data:

Covering material	Mylar film
Color	Gray or olive drab w/yellow markings
Weight	1-1/4 lb
Dimensions	2-1/16 in. x 1-1/16 in. x 11-1/4 in.

Tabulated Data: (cont)

Filler ---------- Comp C4
Method of actuation -------- Detonating cord or blasting caps

Shipping and Storage Data:

Quantity-distance class ------- 1.1
Storage compatibility group - D-2
DOT shipping classification - Class A
DOT designation ---------- HIGH EXPLOSIVES - DANGEROUS
UNO serial number ---------- 0048
UNO proper shipping name - Charges, demolition
DODIC ---------- M023
Drawing ---------- 9204282
Packaging ---------- 30 charges per wirebound wooden box

*Packing box:
Weight (w/contents) ---------- 47 lb
Dimensions ---------- 13-3/4 in. x 11-1/2 in. x 8-19/32 in.
Cube ---------- 0.8 cu ft

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

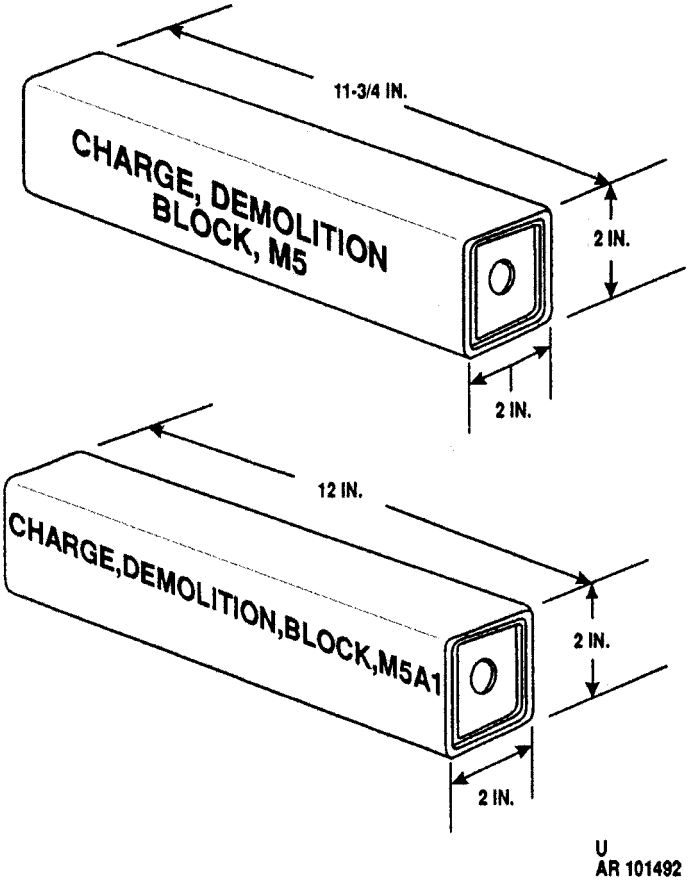
Limitations:

Adhesive tape will not adhere to wet or frozen surfaces. A supplementary adhesive must be used for such targets.

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250
SC 1375-95-CL-P02

CHARGE, DEMOLITION: BLOCK M5 AND M5A1



Type Classification:

M5A1 - Std B OTCM 2818, dtd 1964.

Use:

Block demolition charge M5 or M5A1 is plastic explosive and is used in almost all types of demolition work, primarily for cutting and breaching. Because of its moldability and high brisance, the explosive is ideally suited for steel cutting charges and for cutting irregular shaped targets. It is insoluble in water and may be used for underwater demolitions.

Description:

Block demolition charge M5 contains Comp C3 and the M5A1 contains Comp C4. The charge is encased in a clear plastic container with a threaded cap well in each end (M5). Bulk explosive is obtained by cutting open the plastic container.

Functioning:

When the charge is detonated, the explosive is converted into compressed gas. The gas exerts pressure in the form of a shock wave which demolishes the target by cutting, breaching , or cratering. The type of demolition achieved depends on the placement of the charge in relation to the target.

Tabulated Data:

Cover material	Plastic
Color	White or gray w/yellow markings
Weight	2-1/2 lb
Dimensions	2 in. x 2 in. x 11-3/4 in.
Filler:	
M5	Comp C4
M5A1	Comp C3
Method of actuation	Military blasting caps or detonating cord

Shipping and Storage Data:

Quantity-distance class ------- 1.1
Storage compatibility group- D-2
DOT shipping classification - Class A
DOT designation ---------- HIGH EXPLOSIVES - DANGEROUS
UNO serial number ---------- 0048
UNO proper shipping name - Charges, demolition
DODIC ---------- M038

Drawing
M5 ---------- 82-13-9
M5A1 ---------- 8833395
Packaging ---------- One charge per polyethylene bag, 24 bags per wooden box
*Packing box:
Weight (w/contents) ---------- 75 lb
Dimensions ---------- 17-5/15 in. x 13-5/16 in. x 11-29/32 in.
Cube ---------- 1.6 cu ft

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

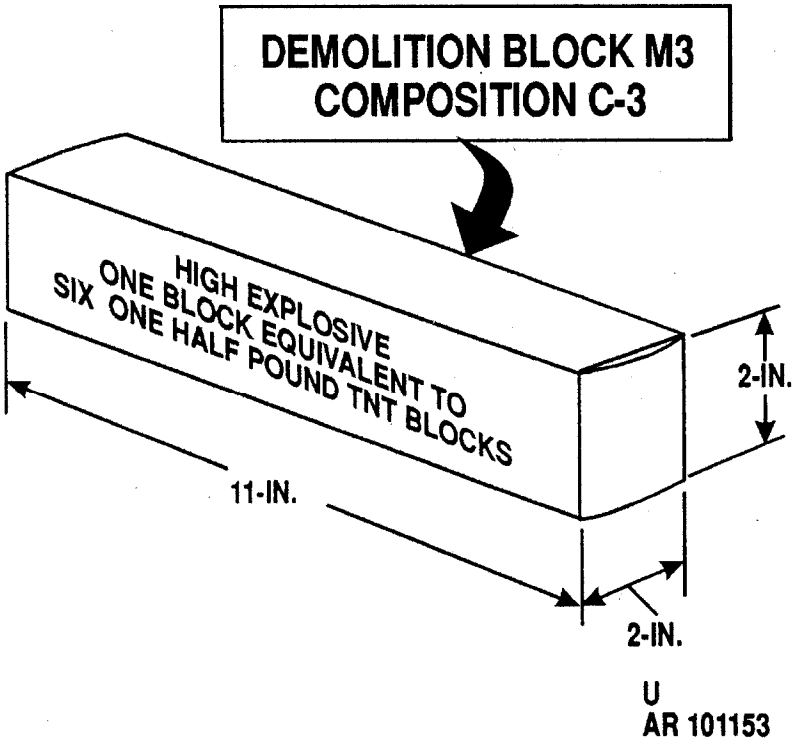
Limitations:

The white color of Comp C4 in block demolition charge M5A1 is difficult to camouflage. Running water will erode Comp C3 if not protected. Below -20°F Comp C3 becomes brittle and above + 125°F exudes some oils and becomes buttery. Comp C3 emits gases which will cause sickening headaches.

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250

CHARGE, DEMOLITION: BLOCK M3



Type Classification:

Obsolete Material Status Record 11756003.

Use:

Comps C2 or C3 are more powerful than TNT and of about the same sensitivity. Because of them plastic nature and hugh power, these explosives are suitable for cutting steel or irregular shaped targets, since they may be molded to fit the shape of the target and thus can achieve better contact with resulting high demolition efficiency. Being insoluble in water, block demolition charge of Comp C2 or C3 are suitable for underwater demolition, if enclosed in a container or wrapping to prevent erosion by running water.

Description:

Block demolition charge M3 is available in either Corn C2 or C3. It is enclosed in glazed paper which is perforated around the middle for ease in breaking open. The charge does not have a cap well. Comp C2 or C3 is pliable and may be molded at temperatures between - 20°F and + 125°F.

Functioning:

When the charge is detonated, the explosive is converted into compressed gas. The gas exerts pressure in the form of a shock wave which demolishes the target by cutting, breaching, or cratering. The type of demolition achieved depends on the placement of the charge in relation to the target.

Tabulated Data:

Container material	Pasteboard
Color	Olive drab w/ black markings
Weight	2-1/4 lb
Dimensions	11 in. x 2 in. x 2 in.
Filler	Comp C2 or C3
Method of actuation	Detonating cord or military blasting cap

Shipping and storage data:

Quantity-distance class -------	1.1
Storage compatibility group -	D-2
DOT shipping classification -	Class A
DOT designation ----------	HIGH EXPLOSIVES - DANGEROUS
UNO serial number ----------	0048
UNO proper shipping name -	Charges, demolition
DODIC ----------	M037
Drawing ----------	76-1-1260
Packaging ----------	8 per haversack; 2 haversacks (16 ea) per wooden box
*Packing box:	
Weight (w/contents) --------	58.1 lb
Dimensions ----------	21-1/8 in. x 14-3/8 in. x 7-3/8 in.
Cube ----------	1.82 cu ft

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

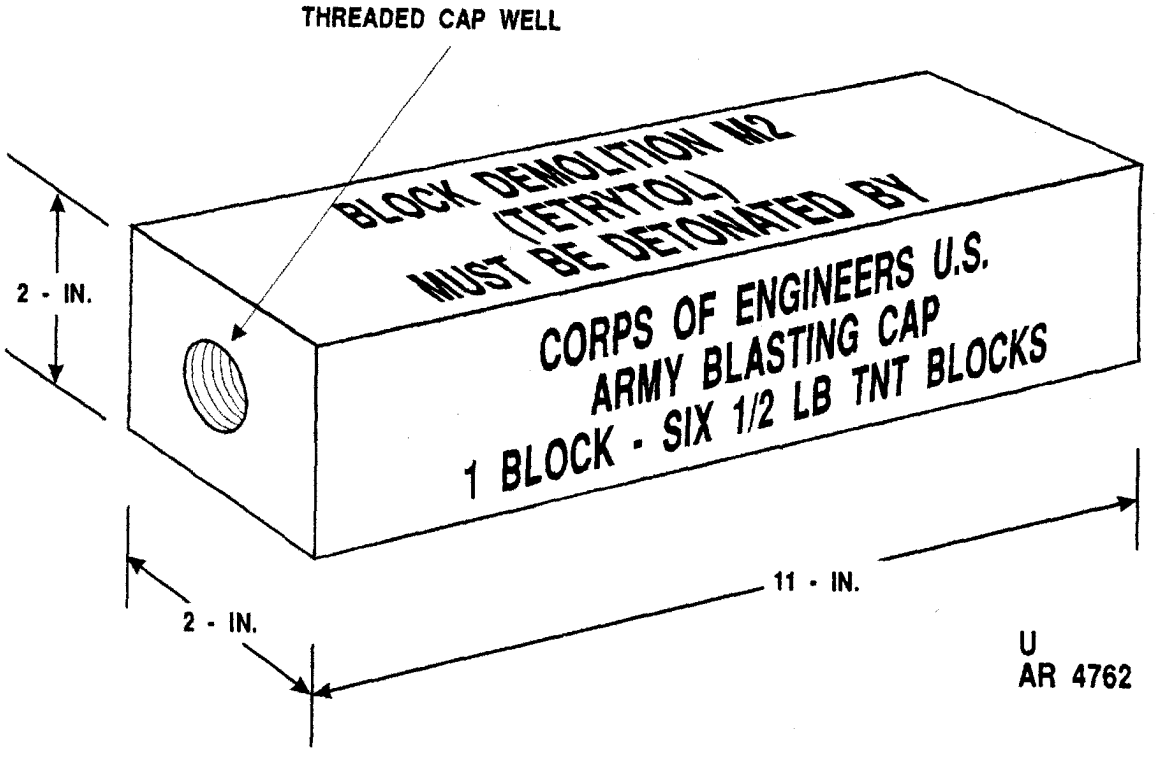
Limitations:

Below -20°F Comp C3 becomes brittle and above + 125°F exudes some oils and becomes buttery. Corn C3 emits gases which will cause sickening headaches.

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250

CHARGE, DEMOLITION: BLOCK M2, TETRYTOL



Type Classification:

Obsolete Material Status Record 11756003.

Use:

Tetrytol is more powerful and more brisant than TNT and is effective as a cutting or breaching charge. It may be used as an alternate to TNT in general demolition work. Its relative effectiveness factor is 1.2.

Description:

This charge is a block of 75-25 tetrytol with a tetryl booster pellet and a threaded metal cap well cast in each end. Each block is wrapped in olive-drab, asphalt-impregnated paper.

Functioning:

When the charge is detonated, the explosive is converted into compressed gas. The gas exerts pressure in the form of a shock wave which demolishes the target by cutting, breaching, or cratering. The type of demolition achieved depends on the placement of the charge in relation to the target.

Tabulated Data:

Container material	Asphalt-impregnated paper
Color	Olive drab w/yellow markings
Weight	2-1/2 lb.
Dimensions	11 in. x 2 in. x 2 in.
Filler	75-25 tetrytol
Method of actuation	Detonating cord or blasting caps

Shipping and Storage Data:

Quantity-distance class -------	1.1
Storage compatibility group -	D-2
DOT shipping classification -	Class A
DOT designation ----------	HIGH EXPLOSIVES - DANGEROUS
UNO serial number ----------	0048
UNO proper shipping name -	Charges, demolition
DODIC ----------	M036
Drawing ----------	75-14-41OC
Packaging ----------	8 per haversack; 2 haversacks (16 charges per wooden box)
*Packing box:	
Weight (w/contents) ----------	62.1 lb
Dimensions ----------	21-1/8 in. x 4-3/8 in. x 7-3/8 in.
Cube ----------	1.28 cu ft

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

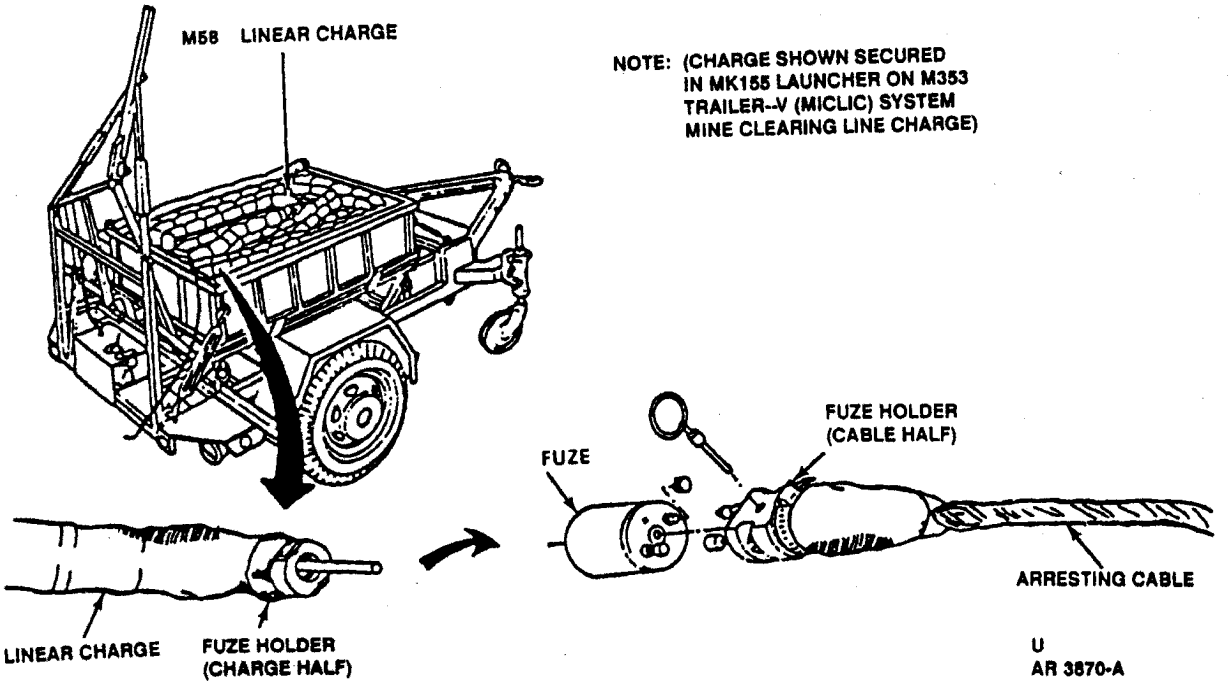
Limitations:

Tetrytol block charges must have the pure tetryl booster to insure detonation and can therefore be broken into only two pieces. The tetryl booster is more sensitive to impact than tetrytol or TNT and may be detonated by small arms fire. Block demolition charge M2 of tetrytol is brittle and shatters easily if dropped.

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250

CHARGE, DEMOLITION, LINEAR, HE, M58, M58A1, M58A2, M58A3, M58A4, AND M58A5



Type Classification:

Std AMC T 511 (For/U.S. Marine Corps).

Std MSR 09887019 (M58A4).

Use:

This charge is a mine clearing device used to clear a path for tanks, vehicles, and personnel through minefield or other obstacles.

Description:

The M58 series charges all consist of a 350 foot sausage-like, flexible explosive charge packed in a special container (pallet) along with a steel towing cable assembly, a nylon arresting cable, and an electrically operated fuze. The charge is designated to be towed out over the target minefield by a rocket motor where it drops onto the ground and is then detonated on command by means of an electrical cable. The charge can be ground launched (wherein it is used as part of the M125 Demolition Kit)*, launched from a landing craft, or launched from a vehicle-towed trailer. In the trailer-launched configuration, the latest versions of the M58 are used as part of the Army's MICLIC system.

The major components of the M58 series charges are:

Pallet - The pallet serves as a protective storage and transportation container. The basic M58, M58A1, and M58A2 are packed in a steel pallet approximately 93 inches long, 53 inches wide, and 24 inches high. The steel pallet has a 3/4-inch plywood pallet approximately 4 feet long, 4 feet wide, and 6 feet high. The pallets for the M58A3, M58A4, and M58A5 are similar to those used with the earlier charges but have a vertical front panel instead of the forward-inclined front panel used on the earlier versions. All versions incorporate electrical connections and safety switch for the charge. The M58A5 also includes electrical connection for the cartridge-actuated arresting cable cutter used in this version.

*See associated items.

Charge - The M58 series linear demolition charges are approximately 350 feet long and consist of three 100-foot and one 50-foot section joined together. Each section is constructed on a core of 3/4-inch nylon rope and three or two (M58A3 and later versions) strands of 100-grams per foot PETN Detonating Cord. The main charge consists of approximately five pounds per linear foot of Comp C4 in the form of paired pellets (5-1/2 x 1-1/2 x 3-1/2 inches) taped around the core. The pellets are covered with a pair of reverse-knitte nylon sleeves the length of each charge section. The sausage effect is obtained by tying a nylon cord around the sleeve between each pair of pellets. This keeps the pellets in place on the core and allows the needed flexibility. A rocket harness cable assembly is attached to the front of the assembled charge and fuze holder is secured to the rear end of the charge.

Arresting cable - This cable consists of a 205-foot length of 3/4-inch diameter three-strand nylon rope with an electrical lead running through the center of each of the three strands. The arresting cable is in the bottom of the pallet.

Fuze - The M1134 series fuzes have a diameter of approximately 3-1/2 inches, and overall length of approximately 4-3/4 inches, and weighs approximately 4 pounds. M1134 series fuzes contain six explosive elements - two electro-explosive initiators and four lead cups, two which contact the detonating cord booster of the line charge and two in the rotor. The rotor is a rotatable metal disc that separates each explosive initiator from the adjacent one. When the fuze is armed by the line charge's arresting cable being pulled taut, cups in the rotatable disc allow exposure of the explosive elements and closing of a switch to connect the electro-explosive devices to the wires in the arresting cable. The M1134 series fuzes are also used with the Army's M173 projected charge demolition kit. One fuze is enclosed in a packing box and is stored and shipped in the pallet.

The version of the fuze used in the Army's MICLIC system is the M1134A1E1 or the identical M1134A2 which have safety improvements over the earlier versions.* This version of the fuze is also being retrofitted to Marine Corps M58's and possibly to Army M173 demolition kits.

Differences Between Models:

The M58 series charges are similar in performance but vary mainly in their packing (as mentioned above) and the included accessories: The original M58's came with M1134 fuzes and were later retrofitted with the M1134 fuze which incorporated an RF trap making it less susceptible to accidents/premature detonation from radio waves. The M58A1 came with the M134A1 fuze and other minor improvements. The M58A2 and M58A3 incorporated further detail improvements and were either equipped with or retrofitted with the safety-imp roved M1134A1E1/M1134A2 fuze. The original Army version (for use with MICLIC) was designated M58A4 and incorporated the M1134A1E1 fuze and a new bracket to secure the fuze into the pallet prior to firing. The next version (1989) will be the M58A5 and will include a cartridge-actuated arresting cable cutter.

Associated items --

Firing Kit, Demolition M1147. This kit contains all the cables, connectors, and a selector switch needed to fire all versions of the M58 charge using a standard blasting machine as power source. Any 10-cap, M32 or M34 blasting machine may be used.

Rocket Motor. Various versions of the MK22, 5-inch rocket are used to tow the M58 series linear charges.

M125 Demolition Kit. This kit was the first use of the M58 charge. It consists of an M58 charge, an M147 firing kit, and MK22 rocket, and a simple launcher rail that attaches to the charge's pallet. It is meant for launching the charge from the ground.

M68 Inert Linear Charge. This is an inert, reusable, training version of the M58 charge. It is loaded with rubber rather than explosive pellets and is equipped with an inert fuze (Model M1147). The M68 is launched with a live rocket motor in the same manner as the M58.

Launcher, Mine Clearance MK155 Mod 0 and Mod 1. These launchers are used to hold the M58 series charge and launch the towing rocket. They are used by both the Marine Corps (MK 2 Mod 0 Mine Clearance System) and the Army (MICLIC system). The Mod 0 launcher mounts only to the M353A1 trailer while the Mod 1 can be fitted to either the M353A1 or the M200A1 trailer. A new (1989) version of the launcher will incorporate an improved hydraulic system for raising the rocket launch rail and hold a remote control disconnect device for the trailer.

*The M1134 is the newest Army version of the fuze. It is externally and functionally identical to the M1134A2 but incorporated some internal changes of configuration.

Functioning:

Once the demolition charge has been positioned and readied for firing, the operator rotates the M1147 kit's firing control switch indicator to the "ROCKET" position and hand actuates the 10-cap (or M34) blasting machine smartly. This propels the rocket motor and demolition charge across the selected area. The M1134 fuze is mechanically and electrically armed by a pull of its arming device by the arresting cable becoming taut when the charge is fully deployed. The operator then rotates the firing control switch indicator to the "CHARGE" position and actuates the blasting machine again. This causes detonation of the fuze's electric initiators, the adjacent lead cups, the detonating card, and finally the C-4 pellets. Explosion of the charge clears a path several feet wide through the target minefield.

Tabulated Data:

NOTE

Dimensions and weights are all approximate.

Packaging Charge (complete assembly):
- Length ---------- 93 in. (236 cm)
- Weight ---------- 54 in. (137 cm)
- Height ---------- 28 in. (71 cm)
- Weight ---------- 3000 lb (1360 kg)
- Weight (A4) ---------- 3200 lb (1454 kg)*

Linear charge:
- Length ---------- 350 ft (107 meters)
- Weight---------- 2042 lb (926 meters)
- Weight (A4) ---------- 2242 lb (1017 kg)
- Explosive weight ---------- 1750 lb (794 kg)
- Explosive weight (A4) ----- 1950 lb (886 kg)*
- Method of initiation ------ Electrical (10 cap or higher capacity blasting machine)

*Higher explosive weight in A4 and later versions due to manufacturing techniques.

Shipping and Storage Data:

Quantity-distance class ------- 1.1
Storage compatibility group - D
DOT shipping classification - Class A
DOT designation ---------- OLD EXPLOSIVE BOMB; NEW BURSTING CHARGE
UNO serial number ---------- 0048
UNO proper shipping name - Charges, demolition

DODIC:

Model	NSN	DODIC	Drawing
M58A1	1375-00-008-8895	M913	8845322
M58A2	1375-01-190-0065	M913	8845322-1
M58A3	1375-01-133-4189	M913	DL2128451
M58A4	1375-01-237-5933	M913	8845322-1
M58A5	1375-01 (to be assigned)	M913	8845322-1

Packaging ---------- BUSHIPS 1289930

References

MIL-C-46558
USMC Adaptive Line Charge Launch Kit Manual, July 1981 (w/change 1)
USMC TM 1375-10/1
USMC TM 08982A-14/2
TM 9-1375-215-14&P

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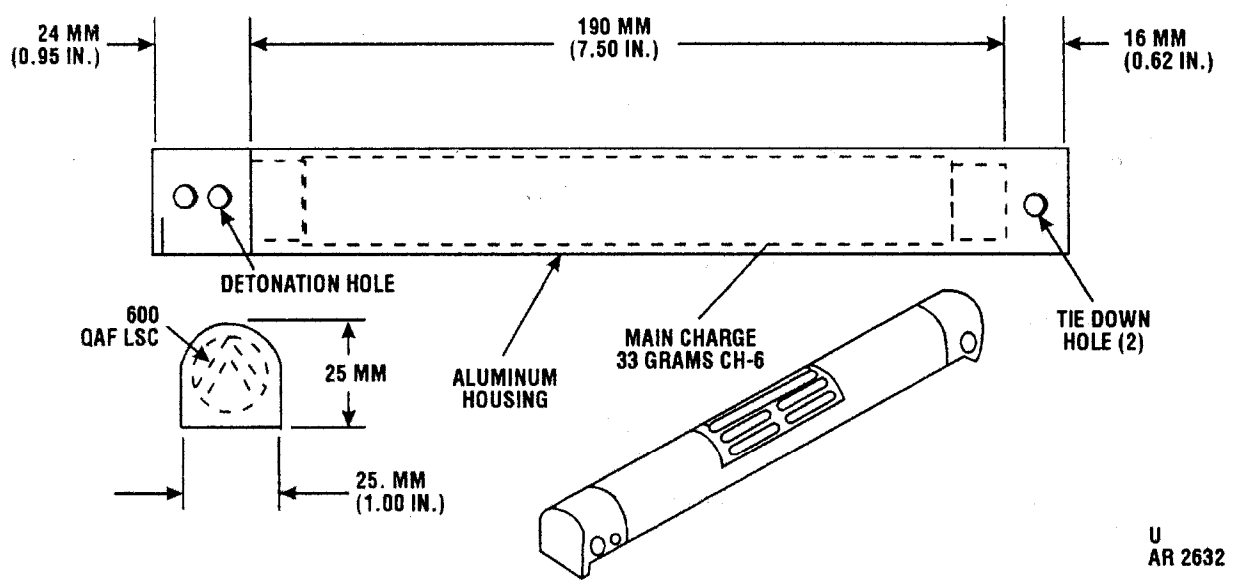
CHARGE, DEMOLITION, EOD, MK 86, MOD 0



Type Classification

Std A - MSR 01816004.

Use:

This shaped charge is used in EOD Operations to cut open, render safe to handle or disrupt the functioning of mines or other explosive ordnance devices. It is especially designed of underwater operations and is non-magnetic so that it can be used on a variety of targets.

Description:

This charge consists of a short length of flexible linear shaped charge sealed in an aluminum housing which provides the proper stand-off for the shaped charge as well as a rigid mount that can be easily attached to the target and hold the initiating/blasting cap in place.

Functioning:

This item is initiated by detonation of a military blasting cap or detonator in its detonating hole (capwell). This detonation causes detonation of the explosive charge in the linear shaped charge which, in turn, produces a higher intensity detonation wave downward which forms into a "cutting edge" jet of energy which cuts or impacts the target to accomplish the desired effect. This charge will cut 0.3 inches (8mm) of mild steel.

Tabulated Data:

Explosive filler ---------- CH 6
Method of actuation ---------- Electric or Nonelectric blasting cap

Shipping and Storage Data:

Quantity-distance class ------- 1.1
Storage compatibility group - D
DOT shipping classification - Class A Explosive

DOT designation ---------- HIGH EXPLOSIVE - DANGEROUS
UNO serial number ---------- 0048

UNO proper shipping name - Charges, demolition
DODIC M995
NSN ---------- 1375-01-068-3985
Drawing 5206201

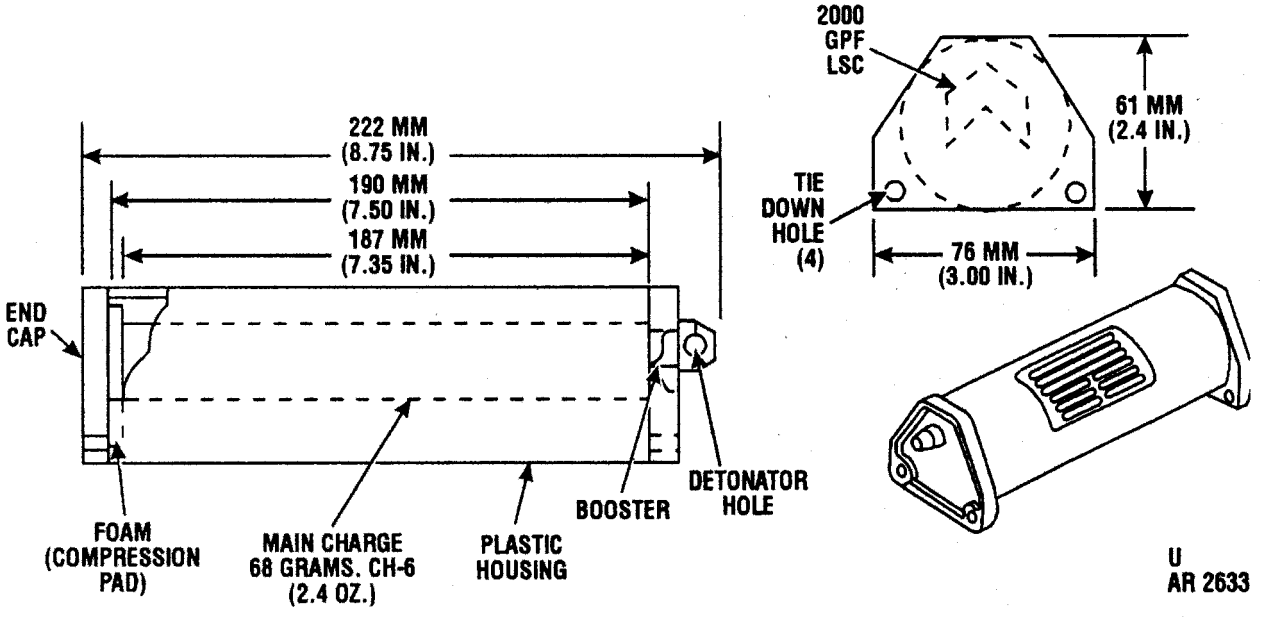
*Packing box:
Dimensions ---------- 11 x 5-5/16 x 6-25/32 in.

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

References:

SC 1375-95-CL-A03

CHARGE, DEMOLITION, EOD, MK 87, MOD 0



Type Classification:

Std A - MSR 01816004.

This shaped charge is used in EOD Operations to cut open, render safe to handle or disrupt the functioning of mines or other explosive ordnance devices. It is especially designed for underwater operations and is non-magnetic so that it maybe used on a variety of targets.

Description:

This charge consists of a short length of flexible linear shaped charge sealed in a plastic housing which provides the proper standoff for the shaped charge as well as a rigid mount that can be easily attached to the target and hold the initiating detonator/blasting cap in place.

Functioning

This item is initiated bv detonation of a military blasting cap or detonator in its detonator hole (capwell). This detonation causes detonation of the explosive charge in the linear shaped charge which, in turn, produces a higher intensity detonation wave downward which forms into a "cutting edge" jet of energy which cuts or impacts the target to accomplish the desired effect. This charge will cut an inch (25mm) of mild steel.

Tabulated Data:

Explosive filler	CH-6
Method of actuation	Electric or Nonelectric blasting cap

Shipping and Storage Data:

Quantity-distance class ------- 1.1
Storage compatibility group - D
DOT shipping classification - Class A Explosive

DOT designation ---------- HIGH EXPLOSIVE - DANGEROUS
UNO serial number ---------- 0048
UNO proper shipping name - Charges, demolition
DODIC ---------- M996
NSN ---------- 1375-01-069-6671

Packaging ---------- 5206202
Drawing ---------- 5206202

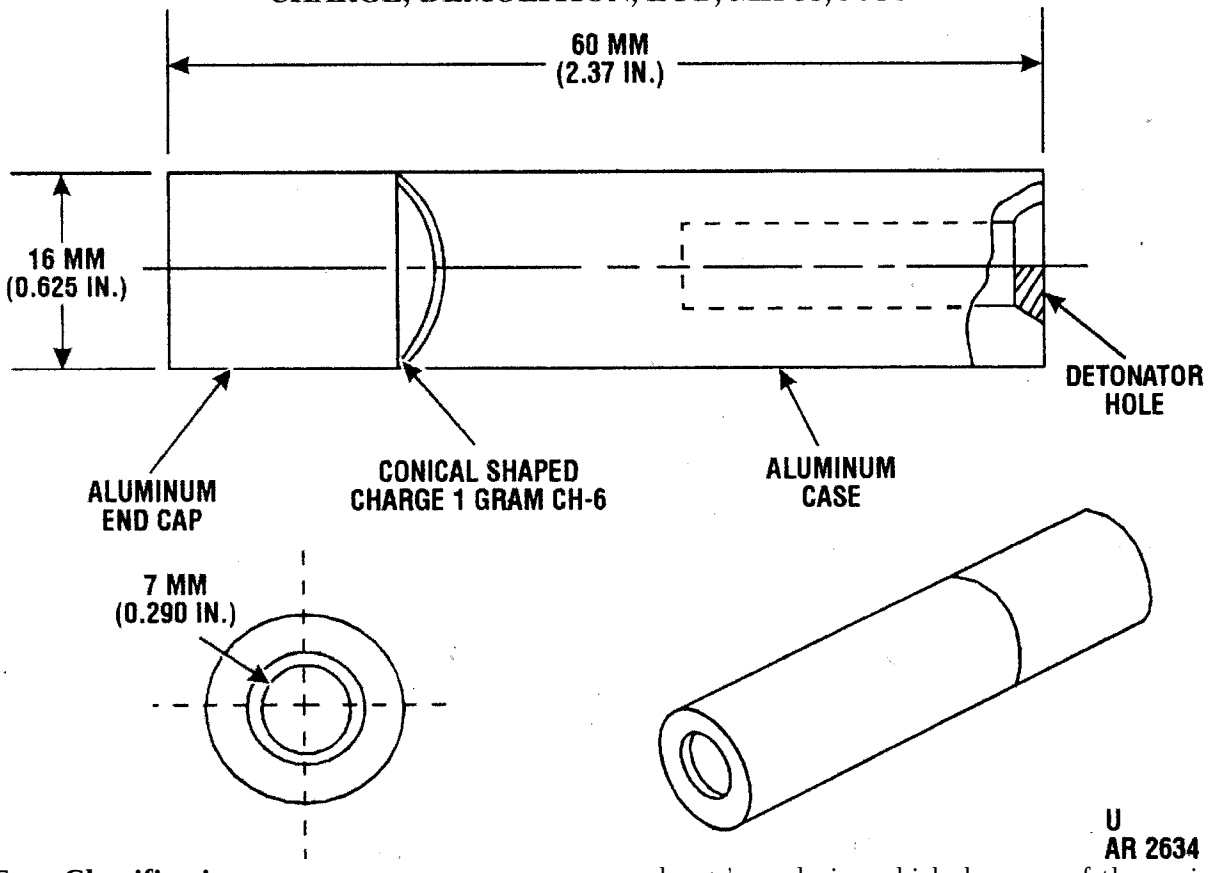
*Packing box:
Dimensions ---------- 8.656 ± 0.0624 x 13.803 x 17.281 in.

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

References:

SC 1375-95-CL-A03

CHARGE, DEMOLITION, EOD, MK 88, MOD 0



Type Classification:

Std A - MSR 0186004.

Use:

This charge is designed for EOD Render Safe Procedures on munitions.

Description:

This aluminum-cased cylindrical charge contains a small explosive charge formed around a copper cone. A detonator hole (capwell) is on one end of the sealed housing and there is a void in the other end to allow the proper stand-off for the shaped charge in the center of the housing.

Functioning:

This shaped charge is initiated by detonation of a military blasting cap in its capwell. The cap's detonation sets off the shaped charge's explosive which, because of the conical indentation, forms a high intensity energy jet downward among the charge's axis. The MK 88 will penetrate half an inch of mild steel.

Tabulated Data:

Explosive filler ---------- CH-6
Method of actuation ---------- Electric or Nonelectric blasting caps

Shipping and Storage Data:

Quantity-distance class ------- 1.1
Storage compatibility group - D
DOT shipping classification - Class A Explosive

DOT designation ---------- HIGH EXPLOSIVE - DANGEROUS
UNO serial number ---------- 0048
UNO proper shipping name - Charges, demolition

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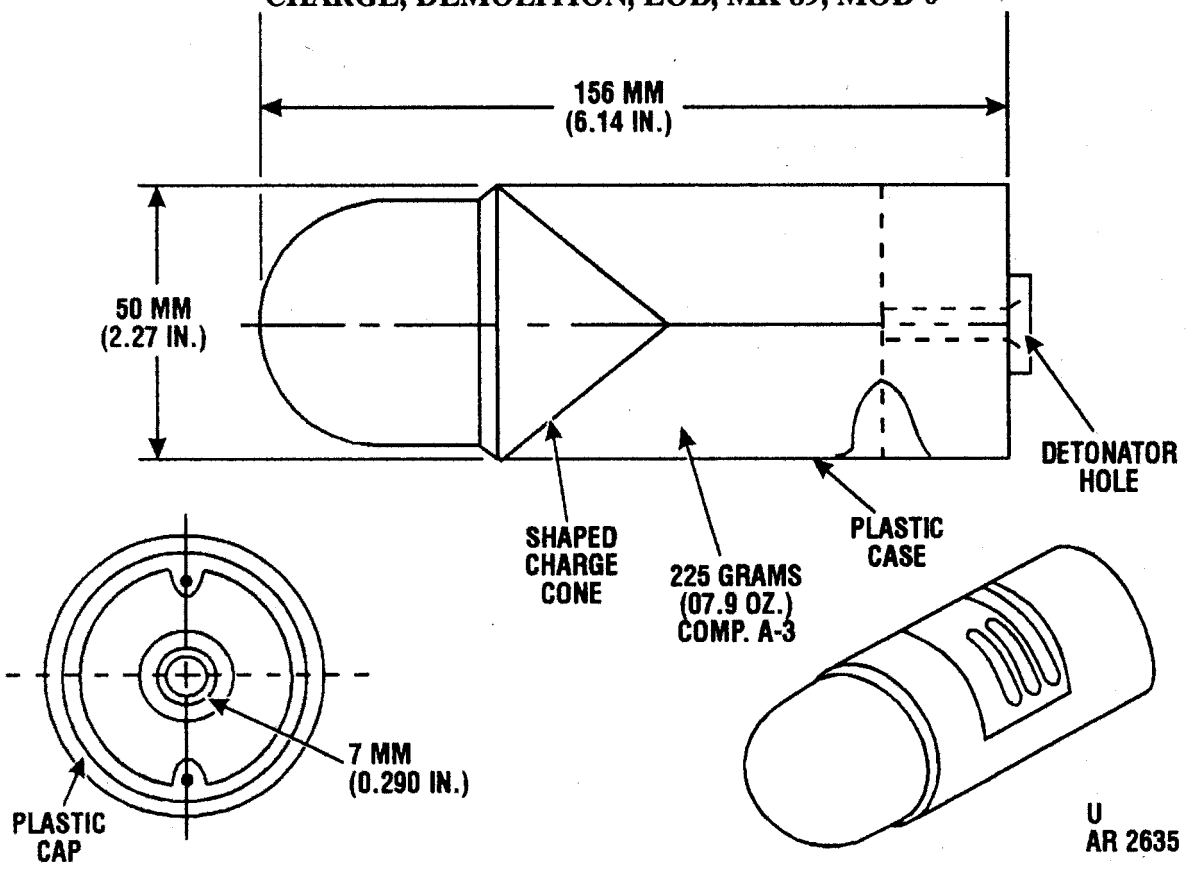
CHARGE, DEMOLITION, EOD, MK 89, MOD 0



Type Classification:

Use:

This charge is designed for EOD Render Safe Procedures on munitions.

Description:

This sealed, bullet-shaped, plastic-cased charge contains an explosive charge formed around a plastic case. A detonator hole (cap-well) occupies the flat end of the container and there is a void in the rounded end to provide the standoff for the shaped charge.

Functioning:

The copper core of the MK 89 is formed into a slug of molten metal within the energy jet for added penetrating ability. The concentrated energy jet performs the desired effect on the target. The MK 89 will penetrate five inches of mild steel.

Tabulated Data:

Explosive filler ---------- Comp A-3
Method of actuation ---------- Electric or Nonelectric blasting caps

Shipping and Storage Data:

Quantity-distance class ------- 1.1
Storage compatibility group - D
DOT shipping classification - Class A Explosive

DOT designation ---------- HIGH EXPLOSIVE - DANGEROUS
UNO serial number ---------- 0048
UNO proper shipping name - Charges, demolition
DODIC ---------- M998
NSN ----------1375-01-069-6672
Drawing 5205204

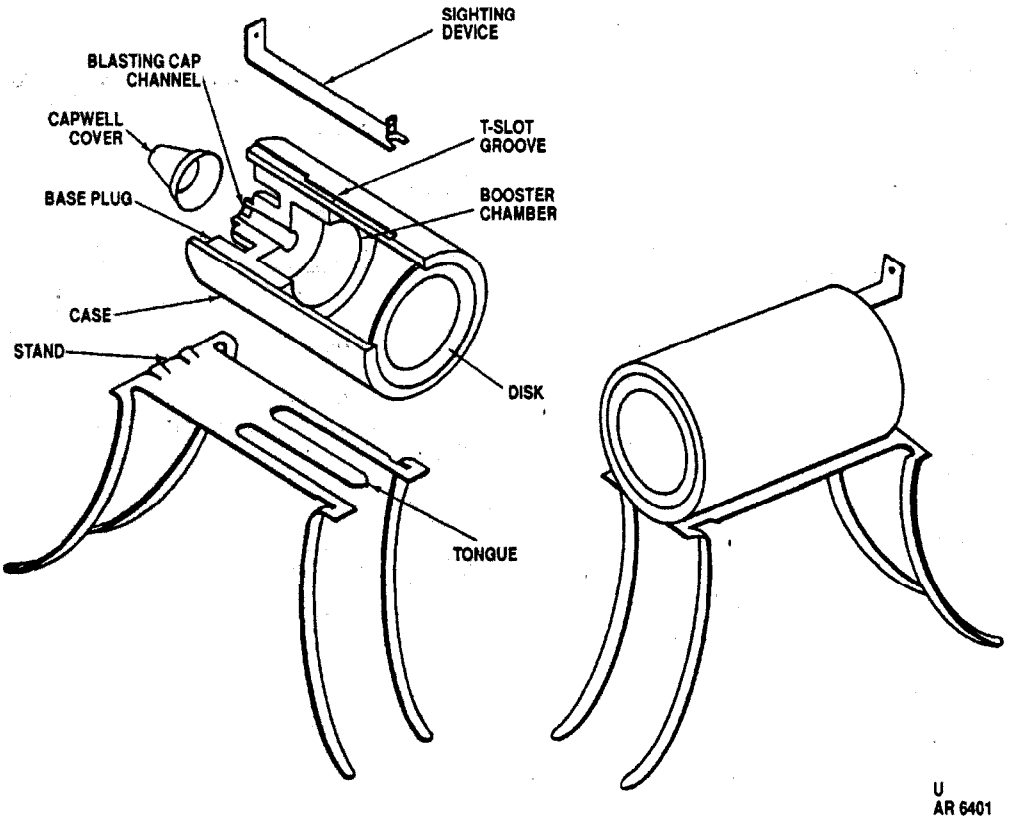
*Packing box:
Dimensions ---------- 8.656 ± 0.62 x 13.803 X 17.291 in.

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

References:

SC 1375-95-CL-A03
Appendix C

CUTTERS, POWDER ACTUATED: MK 23 MOD 0 and MK 24 MOD 0 (EXROD)



Type Classification:

MSR 01816004.

These powder actuated cutters are used by EOD personnel to remotely render safe bombs or projectiles by forceful removal of either the fuze, the fuze base plate containing the fuze, or by striking the item at a strategic location with an explosively propelled ballistic disc. These devices thus allow the target items to be rendered safe without causing high order detonation.

Description:

These cutters consist of small cylindrical impulse cartridges, specially made bendable metal stands, and sighting devices that connect onto the cartridges. The plastic-cased impulse cartridges each contain a booster and a main explosive charge and a specially shaped metal disc.

Functioning:

The cutter is manually positioned by the operator in accordance with the appropriate Render Safe Procedure using the metal stand and/or tape. A military blasting cap is secured in the blasting cap channel (capwell) by being pushed into the rubber grommet at the base of the channel. Firing of the cap detonates the main charge. When the detonator wave strikes the convex metal plate it forms it into a non-molten slug of metal which is moving at hypersonic speed when it strikes the target. The high impulse of the metal slug at high speed impacts the target. The cutter may be used singly or in groups depending upon the target.

Tabulated Data:

Container material ---------- Plastic
Color ..... Olive drab
Dimensions:
Length:
MK23---------- 4.38in.
MK24---------- 5.75in.
Diameter:
MK 23 ---------- 1.89in.
MK24---------- 2.80in.
Base Plug Contents:
l-inch cylindrical CH-6 Booster encased in an aluminum cap and a blasting cap well.
70/30 OJTOL main charge:
MK 23 ---------- 4.0 oz.
MK 24 ---------- 1.1 lb
Method of actuation -------- Military blasting cap

Shipping and Storage Data:

Quantity-distance class ------- 1.1
Storage compatibility group - D
DOT shipping classification - Class A Explosive
DOT designation ---------- HIGH EXPLOSIVE - DANGEROUS
UNO serial number ---------- 0081
UNO proper shipping name - Explosive, blast-in , type A
DODIC ---------- ML04, ML05
Specification ---------- WS19935E
WS19336 (Navy)
NSN ---------- 1375-01-037-5428
1375-01-037-5429
Packaging ----------
*Packing box:
Contains 6 MK 23's or 2 MK 24's
Material ---------- Wood
Weight (w/contents) ------- 20.0 lb
Dimensions ---------- 12-1/2 in. x 6-1/4 in. x 7-1/2 in.
Cube ---------- 0.3

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

References:

EODB/TM/TO/60A-2-l-50
SC 1375-95-CL-A03

CHAPTER 5

DEMOLITION KITS AND ASSEMBLIES

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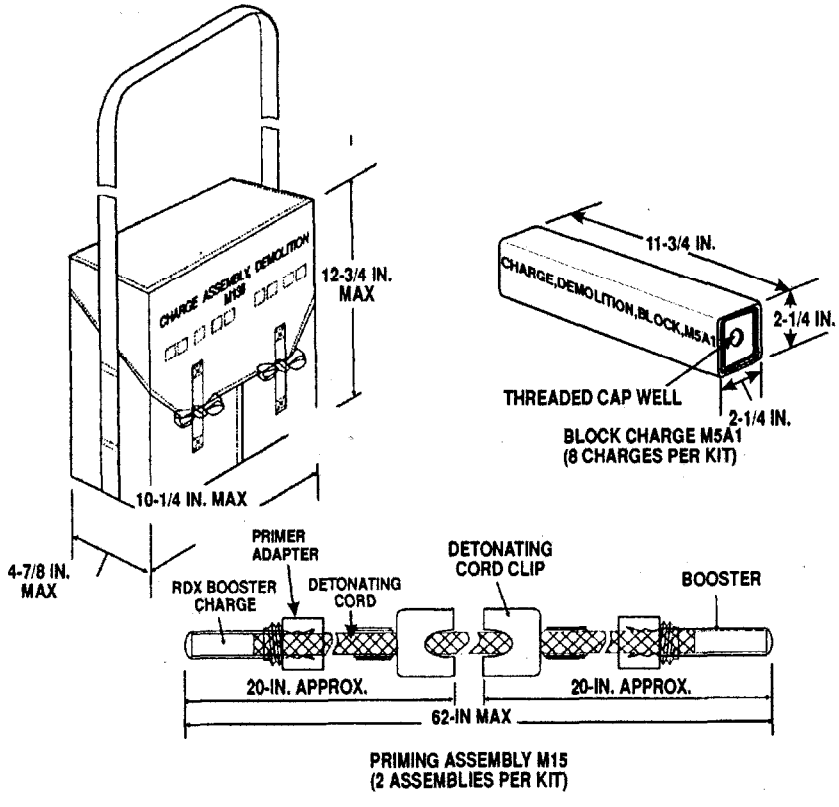
CHARGE, DEMOLITION: ASSEMBLY M37



Type Classification:

Std AMCTCM 5263 dtd 1967.

Use:

Demolition charge M37 is used primarily in breaching obstacles or demolition of large structures where large charges are required (Satchel Charge).

Description:

The charge demolition assembly M37 consists of a canvas bag (identified as carrying case M85) which contains 20 pounds of explosive (Comp C4) in the form of eight M5A1 demolition blocks and two M15 priming assemblies. The demolition blocks are packed four to a bag along with four plastic hook assemblies, each with a 72 inch string attached. Each bag is in its own compartment of the carrying bag, The carrying bag has two ties for tying the bag to a target.

The M5A1 charge is a rectangular block of Comp C4, 2 inches by 2 inches by 12 inches long, contained in a polyethylene container which has a threaded well cap at each end.

The priming assembly M15 is a piece of detonating cord approximately 60 inches long with a tetyrl or PETN-filled booster at each end. Assembled to the detonating cord are two priming adapters M1A4 and two-clips, detonating cord: M1.

Functioning:

When the charge is detonated, the explosive is converted into compressed gas. The gas exerts pressure in the form of a shock wave which demolishes the target by cutting, breaching, or cratering. The type of demolition achieved depends on the placement of the charge in relation to the target.

Tabulated Data:

Container material ---------- Canvas
Color ..... Olive drab w/yellow markings
Weight (complete assembly) ---------- 23 lb
Dimensions (packed carrying case) ---------- 10-1/4 in. x 4-7/8 in. x 12-3/4 in.
Filler ..... Comp C4
Method of actuation ---------- Military blasting cap, detonating cord

Shipping and Storage Data:

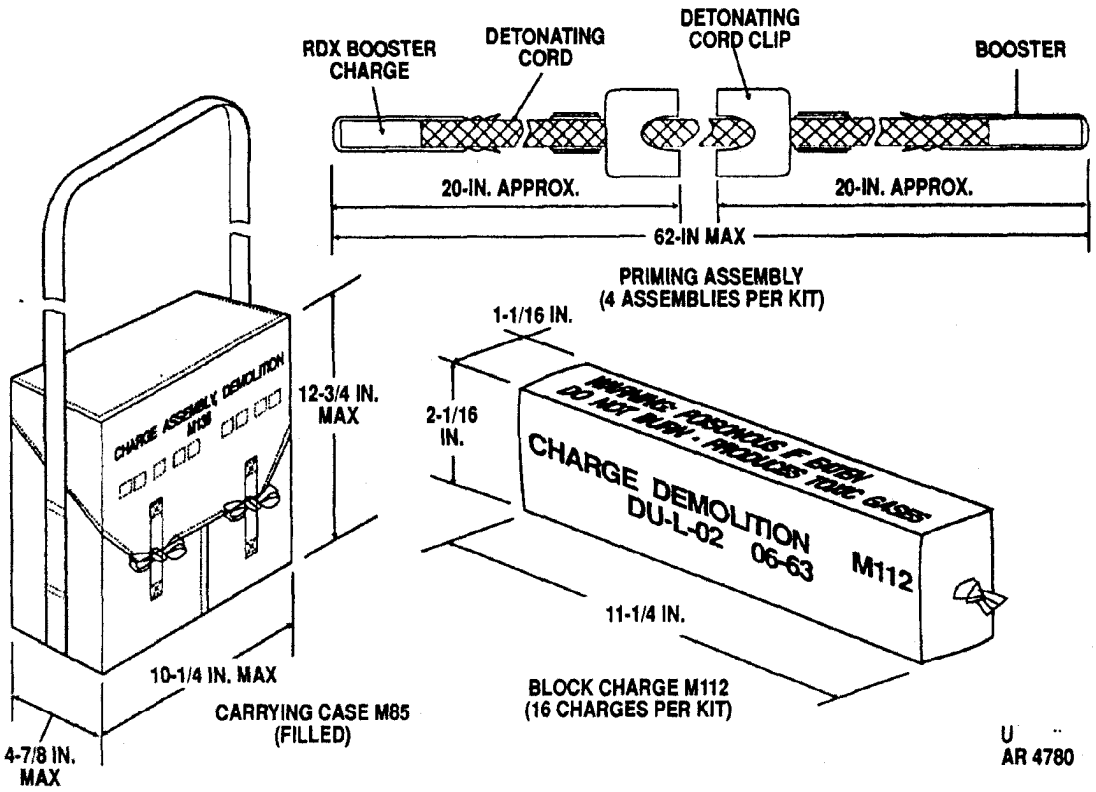
Quantity-distance class --------- 1.1
Storage compatibility group -- D-2
DOT shipping classification--- Class A --- HIGH EXPLOSIVES - DANGEROUS
UNO serial number ---------0048
UNO proper shipping name -- Charges, demolition
DODIC ---------- M756
Drawing ---------- 8861107
Packaging---------- One assembly per canvas carrying case, 2 cases per wooden box
*Packing box:
Weight ---------- 57 lb
Dimensions ---------- 17-3/16 in, x 13-1/4 in. x 11-13/16 in.
Cube ---------- 1.5 cu ft

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250

CHARGE, DEMOLITION: ASSEMBLY M183



Type Classification:

Std AMCTCM 5263, dtd 1967.

Use:

Demolition charge M183 is used primarily in breaching obstacles or demolition of large structures where large charges are required (Satchel Charge). This charge assembly replaces the charge assembly M37 when its supply is exhausted.

Description:

Charge assembly M183 consists of 16 block demolition charges M112, four priming assemblies and carrying case M85. Each riming assembly consists of a five-foot length of detonating cord assembled with two detonating cord clips and capped at each end with a booster. Each booster contains 13.5 grains of RDX or PETN. The components of the assembly are issued in the carrying case.

The demolition charge M112 is a rectangular block of Comp C4 approximately 2 inches by 1-1/2 inches and 11 inches long, weighing 1-1/4 lb. The block is in a mylar bag with a piece of double backed adhesive tape attached.

The carrying case is a canvas bag with shoulder strap and ties.

Functioning:

When the charge is detonated, the explosive is converted into compressed gas. The gas exerts pressure in the form of a shock wave which demolishes the target by cutting, breaching, or cratering. The type of demolition achieved depends on the placement of the charge in relation to the target.

Tabulated Data:

Container material ---------- Canvas
Color ---------- Olive drab w/yellow markings
Weight (complete assembly) ---------- 23 lb
Dimensions (assembled case)- 10-1/4 in. x 4-7/8 in. x 12-3/4 in.
Filler ---------- Comp C4
Method of actuation ---------- Military blasting cap/detonating cord

Shipping and Storage Data:

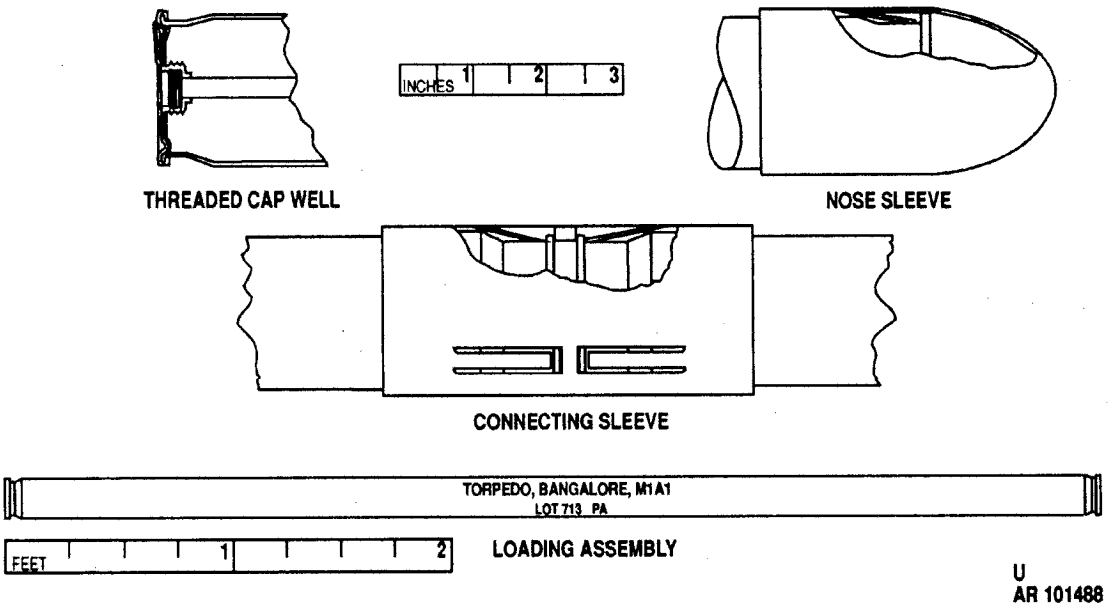
Quantity-distance class ------- 1.1
Storage compatibility group -- D-2
DOT shipping classification--- Class A
DOT designation ---------- HIGH EXPLOSIVES - DANGEROUS
UNO serial number ----------0048
UNO proper shipping name -- Charges, demolition
DODIC ---------- M757
Drawing---------- 9216416
Packaging ---------- One assembly per canvas carrying case, 2 cases per wooden box
*Packing box:
Weight ---------- 57 lb
Dimensions ---------- 16-5/8 in. x 11-5/16 in. x 12 in.
cube ---------- 1.5 cu ft

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250

DEMOLITION KIT, BANGALORE TORPEDO: M1A1 AND M1A2



Type Classification:

Std OTCM 36841, dtd 1958.

Use:

The bangalore torpedo demolition kit is used to clear paths through barbed wire entanglements and minefields. It clears a path 3 to 4 meters wide through barbed wire entanglements. In minefield breaching, it will explode all antipersonnel mines and most of the antitank mines in a narrow foot path. Many of the mines at the sides however maybe shocked into a sensitive state, which makes extreme care necessary in any further mine-clearing. Bangalore torpedoes have also been used successfully for clearing heavy undergrowth of bamboo It may also be used as a cratering charge, especially in connection with shaped charges against reinforced concrete targets.

Description:

Each kit contains 10 five foot long torpedoes (steel tubes filled with high explosive), 10 connetting sleeves, and a nose sleeve. Each end of the torpedo tube contains a threaded can well. The nose sleeve, rounded at the end to facilitate pushing the torpedo through obstacles, is secured to the tube by a clip. The connecting sleeves are short, cylindrical couplings used to secure two or more torpedoes together, end to end. The M1A1 torpedoes have a main filler of approximately 9 lb amatol with a TNT booster surrounding the capwells at each end. The M1A2 torpedoes have a main filler of approximately 10-1/2 lb Comp B with a Comp A3 booster at each end.

Functioning:

When the charge is detonated, the explosive is converted into compressed gas. The gas exerts pressure in the form of a shock wave. The resultant blast from the shock wave clears a narrow path through a minefield or barbed wire entanglement.

Tabulated Data:

Container material --------- Steel
Color ---------- Olive drab w/yellow markings
Weight (one tube) ---------- 14.5 lb
Dimensions:
Length (one tube) ---------- 5 ft
Diameter ---------- 2-1/8 in.
Filler:
M1A1 ---------- Amatol and TNT
M1A2 ..... Comp B and Comp A3
Method of actuation ---------- Military blasting cap

Shipping and Storage Data:

Quantity-distance class --------- 1.1
Storage compatibility group -- D-2
DOT shipping classification--- Class A
DOT designation ---------- EXPLOSIVE BOMBS
UNO serial number ----------0034
UNO proper shipping name -- Bombs, with bursting charge
DODIC ---------- M028
Drawing* ---------- 8863369
Packaging ---------- One kit per wooden box
**Packing box:
Weight ---------- 198 lb
Dimensions ---------- 65-5/8 in. x 15-5/16 in. x 7 in
cube ---------- 4.1 cu ft

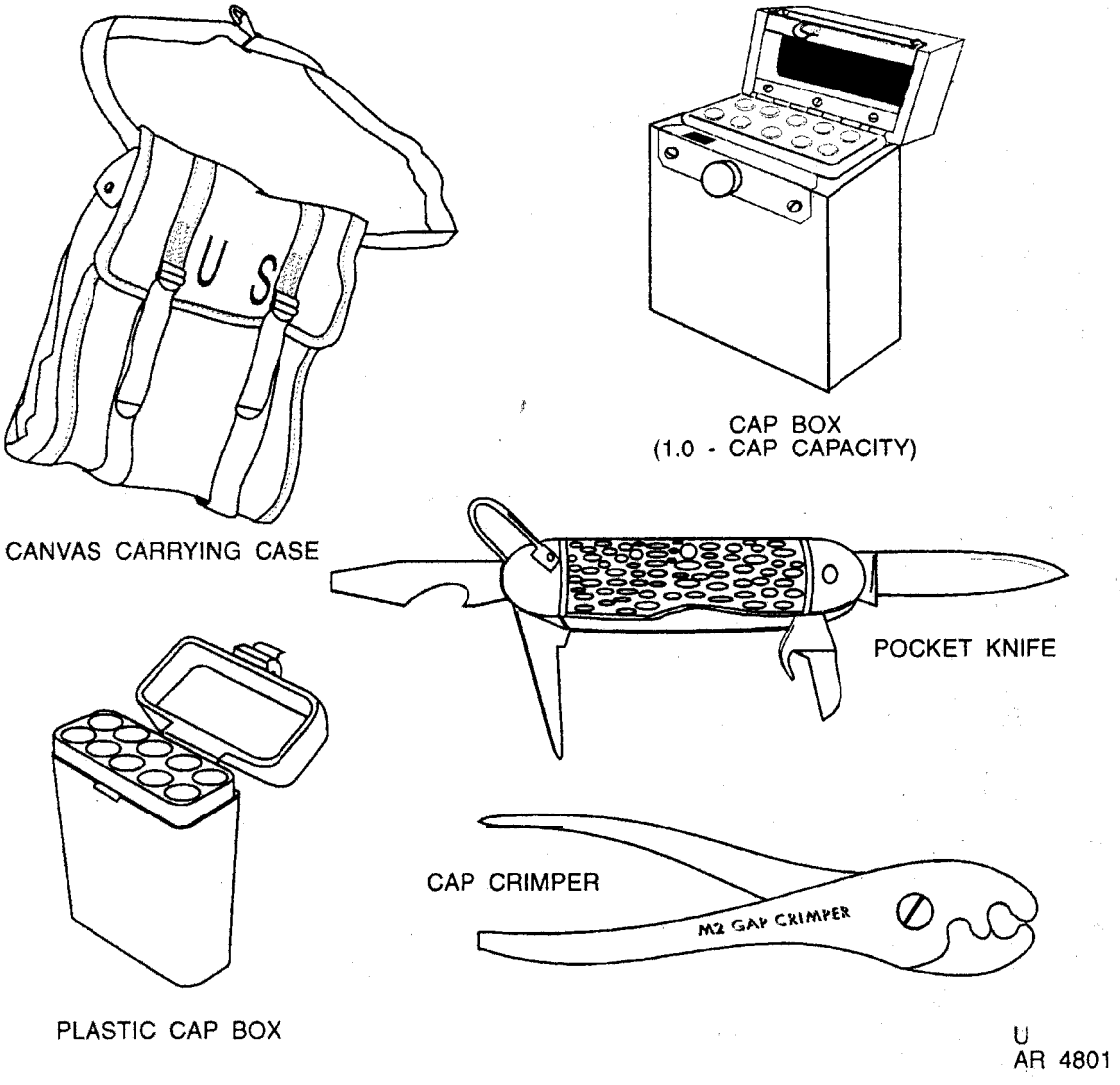
*Demolition Kit Bangalore Torpedo M1A2 only.

**NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250
FM 20-32

DEMOLITION EQUIPMENT SET: EXPLOSIVE INITIATING, NONELECTRIC



Type Classification:

The kit is STD for use by Army. There is no one committee action to classify the entire set. Rather, each component has been separately acted upon. The contents of the set are reviewed periodically by the user and items may be added or deleted as a result of the review.

Use:

This explosive initiation demolition equipment set is used for general demolition projects requiring nonelectric initiation.

Description:

The nonelectric explosive-initiating demolition equipment set is composed of the components listed in tables 1 through 3 inclusive. Items listed in 1 are supplied as a kit on an initial issue basis only. Items in 2 and 3, used in conjunction with the items in the basic kit, are required but requisitioned separately. Items in all categories are requisitioned separately for replacement purposes.

Table 1. Components Issued in Basic Kit (NSN 1375-00-047-3751)

Quantity	Item	NSN
2	Bag, Canvas, Carrying demolition kit	1375-00-212-4597
2	Box, Blasting Cap: plastic 10 cap capacity	8140-00-168c-6881
2	Crimper, Cap: M2 (w/fuze cutter)	5120-00-029-0683
2	Knife, Pocket	5110-00-162-2205
2	Pliers: linesman's (w/side cutter), length 8 in.	5120-00-239-8251
2	Tape, Measuring self supporting, S, English and Metric graduation, 78.75 in.	5110-00-245-0301
1	Tape, Measuring: 5/8 in. w, non-metallic, 100 ft lg.	5110-00-554-7092

Table 2. Nonexplosive Components Required, but Issued Separately as Needed, Quantities are nominal estimates.

Quantity	Item	NSN
25	Adapter, Priming M1A4	1375-00-565-4141
2	Adhesive, Charge Demolition	1375-00-935-9171
2	Adhesive, 3 oz package	8040-00-118-2695
100	Clip, Cord: M1, detonating	1375-00-212-4602
50	Holder, Blasting Cap: M8	1375-00-926-4105
2	Insulation Tape, Electrical: adhesive, 3/4 in. wide, 85 ft roll	5970-00-644-3167

NOTE

Adhesive is authorized as an alternate material for waterproofing (sealing compound).

2	Sealing compound: blasting cap, waterproof 1/2 pt can	1375-00-212-4603
2	Tape, Pressure-Sensitive Adhesive: 2 in. wide, 72 yd roll w/adhesive on both sides	7510-00-057-0096
2	Twine: fibrous No. 18, 1-lb ball	4020-00-241-8892

Table 3. Explosive Components Required, but Issued Separately as Needed

Quantity	Item	NSN
50	Cap, Blasting non-electric M7	1375-00-756-1864 (M131)
80	Charge, Demolition: block, M112	1375-00-724-7040 (M023)
5	Cord, Detonating: fuse, primacord, l00-ft spool	1375-00-028-5161 (M455)
3	Cord, Detonating PETN, olive drab, 1000 ft roll	1375-00-180-9356 (M456)
2	Fuse, Blasting, Time: M700, 50 ft	1375-00-028-5246 (M670)
50	Igniter, Blasting Fuse: M60 weatherproof	1375-00-691-1671 (M766)

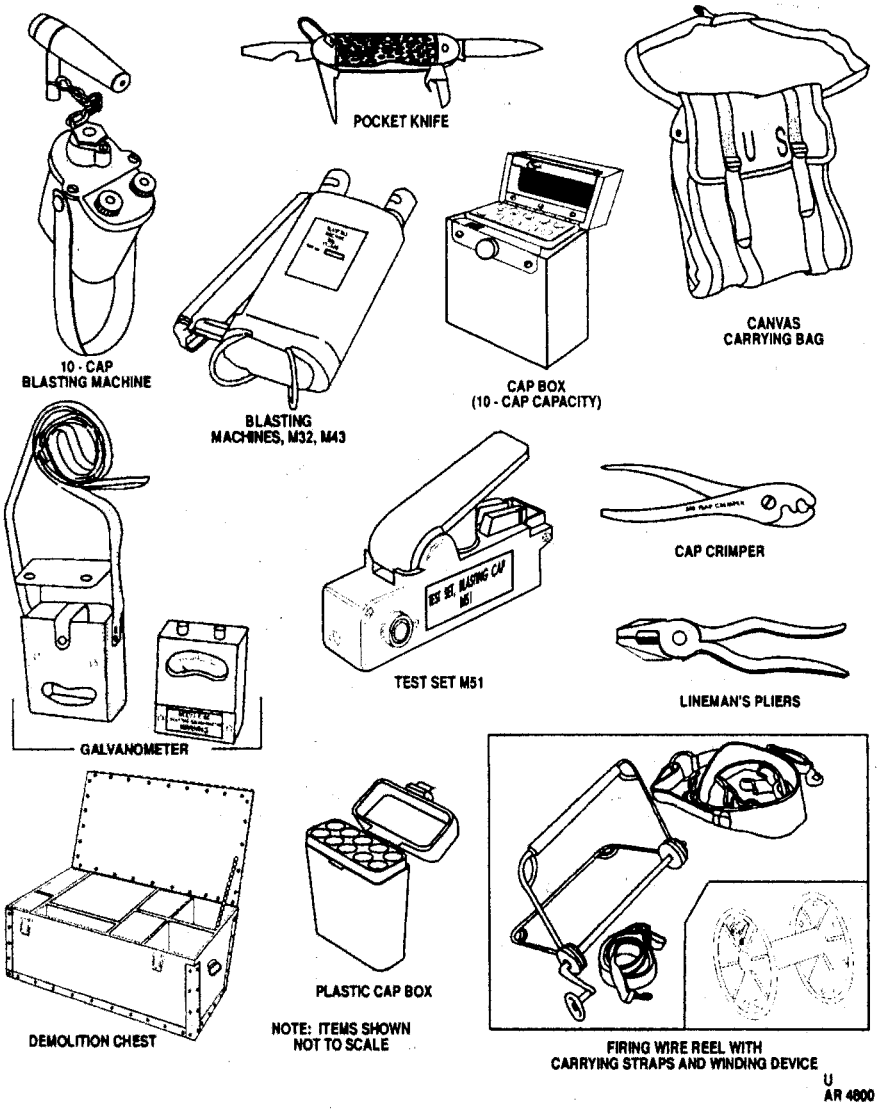
Tabulated Data:

NSN ---------- 1375-00-047-3751
Total weight ---------- 6.29 lb
Total volume ---------- 0.24 cu ft

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250

DEMOLITION EQUIPMENT SET: EXPLOSIVE INITIATING, ELECTRIC AND NONELECTRIC



Type Classification:

The kit is STD for use by Army. There is no one committee action to classify the entire set. Rather, each component has been separately acted upon. The contents of the set are reviewed periodically by the user and items may be added or deleted as a result of the review.

Use:

This explosive initiation demolition equipment set is used for general demolition projects requiring either electric or nonelectric initiation.

Description:

The electric and nonelectric explosive-initiating demolition equipment set is composed of the components listed in tables 1 through 4 inclusive. Items listed in 1 are supplied as a kit on an initial issue basis only. Items in 2 and 3, used in conjunction with the items in the basic kit, are required but requisitioned separately. Items in table 4 are explosive items required by Ordnance Disposal Detachments and Controls. They are not supplied as a

set, kit or outfit, but requisitioned separately. Items in all categories are requisitioned separately for replacement purposes.

Table 1. Components Issued in Basic Kit (NSN 1375-00-047-3751)

Quantity	Item	NSN
2	Bag, Canvas, Carrying: demolition kit	1375-00-212-4597
1	Blasting Machine: ten-cap capacity	1375-00-782-5541*
5	Box, Blasting Cap: plastic 10 cap capacity	8140-00-168-6881
1	Chest, Demolition: engineer platoon, M1931	1375-00-212-4600
2	Crimper, Cap: M2 (w/fuze cutter)	5120-00-029-0683
2	Knife, Pocket	5110-00-162-2205
2	Pliers: linesman's (w/side cutter), length 8 in.	5120-00-239-8251
4	Reel, cable (firing, 500 ft)	8130-00-407-7859
1	Reeling Machine, Cable, Hand (w/ carrying straps, w/winding device, w/spool, w/o wire	3895-00-498-8843
2	Tape, Measuring self supporting, S, English and Metric graduation, 78.75 in., GGGT106 (81348)	5120-00-245-0301
1	Tape, Measuring: 5/8 in. w, non-metallic, 100 ft lg. GGGT106 (81348)	5120-00-554-7092
1	Test Set, Blasting Cap: M51	6625-00-999-3454

NSN 1375-00-935-9173 is issued. Blasting machine 50-cap, M34, NSN 1375-00-567-0223 will replace the M32 Blasting machine when its supply is exhausted.
*When supply is exhausted, Blasting Machine M32** also listed as Test Set, Blasting Cap: M51, NSN 4925-00-999-3454. The test set replaces Galvanometer, NSN 6625-00-212-4605, when supplies are exhausted.

Table 2. Nonexplosive Components Required, but Issued Separately as Needed. Quantities are Nominal Estimates Only.

Quantity	Item	NSN
2	Adhesive, Charge Demolition	1375-00-935-9171
2	Adhesive, 3 oz package	8040-00-118-2695
100	Adapter, Priming M1A4	1375-00-565-4141
1	Battery Dry, Silver Chloride (for galvanometers)	6135-00-128-1632
1	Battery Dry, Silver Chloride (Low Temperature Type) (for galvanometer)	6135-00-833-9909
4	polymer insulation two conductor, No. 18 AWG stranded; 500 ft roll	
100	Clip, Cord: M1, detonating	1375-00-212-4602 (M165)
50	Holder, Blasting Cap: M8	1375-00-926-4105 (M166)
	Holder, Blasting Cap: used w/electric and nonelectric blasting caps; plastic and sheet explosives, 447344	1375-00-093-0140 (M165)
6	Insulation Tape, Electrical: black adhesive, 3/4 in. wide, 85 ft roll	5970-00-644-3167

NOTE

Adhesive is authorized as an alternate material for waterproofing (sealing compound).

Table 2. Nonexplosive Components Required, but Issued Separately as Needed. Quantities are Nominal Estimates Only (Cont)

Quantity	Item	NSN
2	Sealing compound: blasting cap, waterproof, 1/2 pt can	1375-00-212-4603
2	Tape, Pressure-Sensitive Adhesive: 2 in. wide, 72 yd roll w/adhesive on both sides	7610-00-057-0096
2	Twine: fibrous No. 18, l-lb ball	4020-00-241-8892
2	Wire, Electrical: Vinyl polymer, nylon jacket insulation, solid single tinned copper, No. 20 AWG, 200-ft coil	6125-00-542-3968

Table 3. Explosive Components Required, but Issued Separately as Needed

Quantity	Item	NSN
50	Cap, Blasting: non-electric M6	1375-00-028-5224 (M130)
50	Cap, Blasting: non-electric M7	1375-00-756-1864 (M131)
50	Charge, Demolition: block, 1-lb (TNT)	1375-00-028-5142 (M032)
80	Charge, Demolition: block, M112	1375-00-724-7040 (M023)
20	Charge, Demolition: block, M118	1375-00-728-5941 (M024)
3	Charge, Demolition: Roll, M186, 25-lb, (PETN), 9211459 (19203). Used when NSN 1375-00-728-5941 is exhausted.	1375-00-926-4108 (M060)
5	Cord, Detonating: fuse, primacord, 100 ft spool	1375-00-028-5161 (M455)
3	Cord, Detonating: PETN, olive drab, 1000 ft roll	1375-00-180-9356 (M456)
5	Destructor, Explosive: universal, M10	1375-00-028-5171 (M241)
2	Fuse, Blasting, Time: M700, 50 ft	1375-00-028-5246 (M670)
100	Igniting Blasting Fuze: M60 weatherproof	1375-00-691-1671 (M766)

Table 4, Expendable Explosive Items Required by EOD Only, but Issued Separately as Needed.

Quantity	Item	NSN
200	Cartridge, Caliber, 50: M33	1305-00-028-6574
50	Cartridge, impulse w/o integral cutting punch	1378-00-896-3694 (M174)
20	Charge Demolition, Block TNT 1/4 lb	1375-00-580-1377 (M030)
6	Cutter, Powder Actuated: MK23 Mod 0, 5012844 (53771)	1375-01-037-5428
6	Cutter, Powder Actuated: MK24 Mod 0, 5012845 (53771)	1375-01-037-5429

Tabulated Data:

NSN ---------- 1375-00-047-3750
Total weight ---------- 68.0 lb
Total volume ---------- 4.5 cu ft

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250

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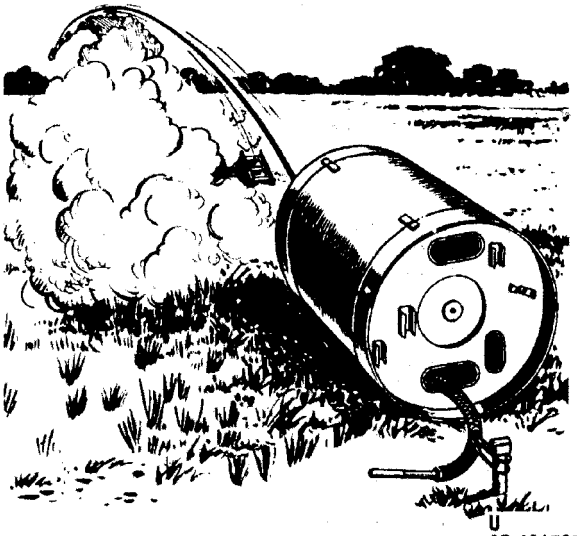
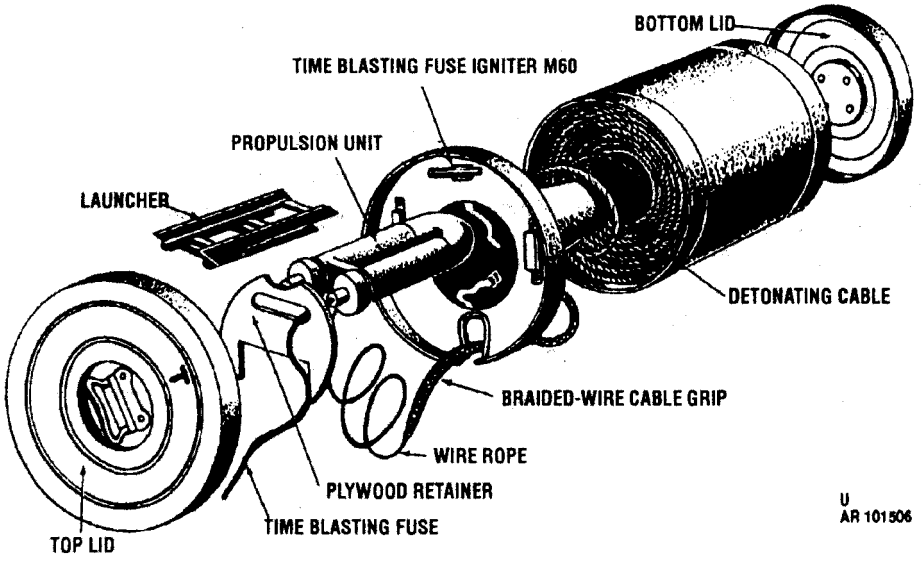
DEMOLITION KIT, PROJECTED CHARGE: M1 AND M1A1 (M1E1)





Type Classification:

Obsolete Material Status Record 11756003.

Use:

Projected charge demolition kits M1 and M1A1 are used to clear an 8-foot lane through minefield planted with antipersonnel mines.

Description:

Each demolition kit consists of a cylindrical carrying case, a 170-foot detonating cable, rocket motor M4 with launcher, time blasting fuse igniter, 15-second delay detonator and a tent stake. The entire demolition kit is contained in the waterproof aluminum carrying case which is closed at each end with a removable lid. A pressfitted aluminum disk serves as a spacer securing the components inside the carrying case. The detonating cable, coiled around a cone in the case, is fitted at one end with a sleeve containing a booster charge and a cap. well assembled with the delay detonator. This end of the cable also has a braided wire cable grip with two wire loops for anchoring the cable to the tent stake. The rocket motor (positioned in the launcher) and a length of time blasting fuse are attached to the cable by a wire rope. Additionally the M1A1 kit contains a lanyard

and extra stakes for functioning the detonator remotely.

M1 and M1A1 (M1E1) projected charge demolition kits are identical in all respects except for the delay detonators and the time blasting fuse igniters issued with them. The M1A1 (M1E1) has the M60 weatherproof time blasting fuse igniter and the 15-second delay M1A2 percussion detonator, while the M1 has the M2 weatherproof time blasting fuze igniter and the 15-second delay M1 or M1A1 friction detonator.

Functioning:

Functioning occurs in the following sequence:

Fuse igniter is functioned in the usual manner by pulling the pull ring. The flame issued from the primer ignites the time blasting fuse.

The time blasting fuse ignites the M4 rocket which then becomes airborne and drags the detonating cable out of its container over the mine field . The cable falls to the ground and flight is arrested because the braided wire cable group is anchored to the ground by the tent peg.

The 15-second delay detonator (functioned manually) ignites the booster which in turn functions the detonating cable.

Tabulated Data:

Container material ---------- Aluminum
Color ---------- Olive drab w/yellow markings
Weight (complete kit) ----------92 lb
Dimensions:
Length ---------- 20 in.
Diameter ---------- 16-1/2 in.
Explosive components ---------- Detonating cable
Method of actuation ---------- Delay detonator

Shipping and Storage Data:

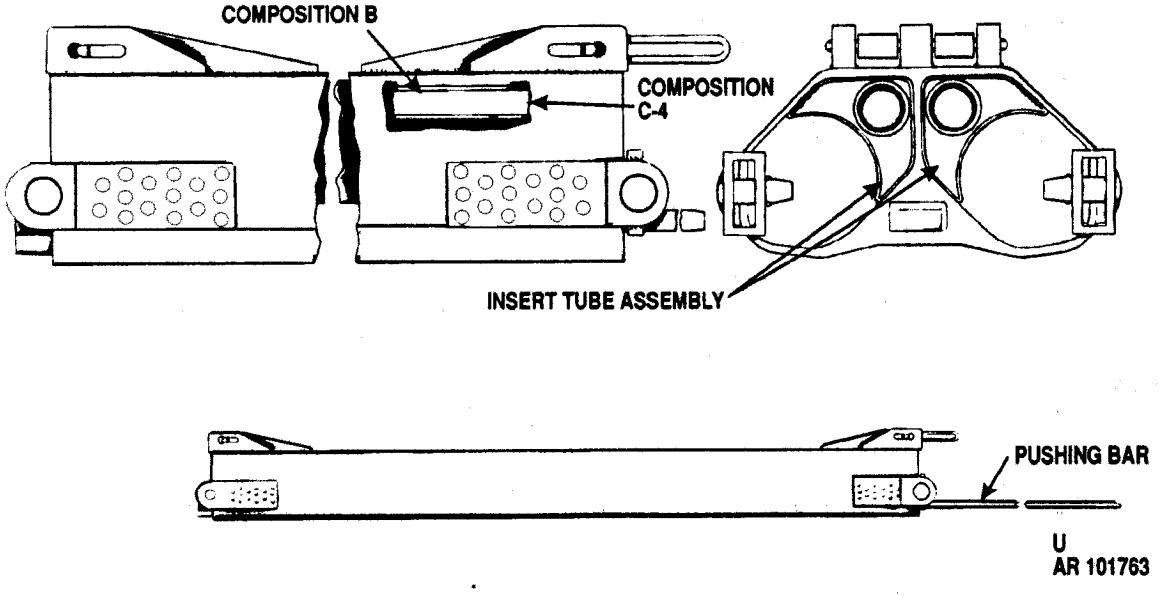
Quantity-distance class --------- 1.1
Storage compatibility group -- D-2
DOT shipping classification--- Class A
DOT designation ---------- HIGH EXPLOSIVE-DANGEROUS
UNO serial number ----------0048
UNO proper shipping name -- Charges, demolition
DODIC ---------- M445
Drawing ---------- 8796266
Packaging ---------- One kit per carrying case, one case per cardboard lined wooden box
*Packing box:
Drawing ---------- 8797610
Weight (w/contents) ----------121 lb
Dimensions ---------- 25-7/16 in. x 18-3/8 in. x 19-7/32 in.
Cube ---------- 5.20 cu ft

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250
FM 20-32

DEMOLITION KIT, PROJECTED CHARGE: M157



Type Classification:

STD A OTCM 37415 dated 5/26/60.

Projected Charge Demolition Kit M157 is designed to clear a wide path for personnel and vehicles through minefield, planted with single-impulse pressure-type antitank mines. Although the primary use of the kit is the breaching of minefields, it can be used effectively in breaching or cratering band of 10 posts, steel rails, ditches and relatively small concrete obstacles.

Description:

This demolition kit consists of 79 irregular hexagonal tubes (section assemblies) approximately 11 inches wide, 7 inches high, which, when assembled together, are 400 feet in length and the weight is approximately 10,000 pounds, including approximately 1,420 pounds of Comp B and approximately 27 pounds of Comp C4. The components of the kit and tank accessories used for deploying the kit are listed in Table 1.

Table 1. Tank Accessories and Component Parts for Assembly of 400-foot (Approximately) Projected Charge Demolition Kit M157.

Item	Quantity
Kit parts:	
Nose section assembly	1
Body section assembly	13
Center loading section assembly	62
Impact fuze section assembly	2
Tail section assembly	1
Fuzing:	
Fuze, mine, M602	2
Fuze explosive container loading assembly	2

Table 1. Tank Accessories and Component Parts for Assembly of 400-foot (Approximately) Projected Charge Demolition Kit M157 (Cont)

Item	Quantity
Kit parts:	
Nose section assembly	1
Body section assembly	13
Center loading section assembly	62
Impact fuze section assembly	2
Tail section assemblv	1
Fuzing:	
Fuze, mine, M602	2
Fuze explosive container loading assembly	2
Tank accessories (Accessories will fit M48A1 and M60 Tank):	
Cable, assembly No. 1	1*
Cable, assembly No, 2	1*
Chain, assembly No. 1	1
Chain, assembly No. 2	1
Clevis in assembly	2
Drag plate assembly	1
Extension bar assembly	2
Gear box assembly	1
Multiple sheave assembly	1
Pulley support post assembly	1
Safety snap book	3**
Shoulder screw (stripper bolts)	2
Single sheave assembly	1
Spring assembly	1
Bracket	1
Support	1
Nut (MS35690-1202)	2
Nut (MS35690-602)	2
Screw (MS90728-191)	4
Flat washer (MS27183-15)	2
Flat washer (MS27183-23)	2
Lockwasher (MS 35337-27)	6
Lockwasher (MS35338-70)	4
Spare parts:	
Cotter pin (MS24665-134)	6
Cotter pin (MS24665-208)	6
Cotter pin (MS24665-495)	6
Cotter pin (MS24665-623)	6

*Cable assemblies - normally cone assembled to the gear box assembly.

**One size 2 is assembled with Cable No. 1; two size 1 are assembled with spring assembly.

The entire kit is listed under DODIC M444, However, certain parts are separately listed for the convenience of the user. Accordingly the tabulated data is arranged to reflect the major packaged assemblies and a brief description of each follows:

Each section contains a pushing bar and is provided with joints at both ends; male on one end and female on the other, so that the sections can be linked together. The joints not only provide for attachment of one section to another, but assure flexibility of the assembled charge. The pushing bars, which run through tunnels in each section provide rigidity during emplacement and take stress or pushing. In addition to these common features, each section is designed to serve a particular function: The nose and tail sections are assembled with hook assemblies, hinges and plates which serve as contact points for the tank during emplacement. The body sections are empty and are primarily buffers assembled between the explosive-loaded sections and the nose and tail. The center loading sections and the impact fuze sections are explosive-loaded. Each contains two insert tubes loaded with Comp B and Comp C4. (The tubes are welded in place and cannot be disassembled for use as individual charges.) The insert tubes are specially shaped and positioned to obtain a shaped charge effect.

The impact fuze section also contains a fuze housing assembly which accommodates the bullet impact fuze assembly and the fuze explosive container loading assembly.

Mine Fuze M603 is an impact type fuze fitted with an M120 booster. One fuze and one booster are assembled in the fuze well of each bullet impact fuze assembly.

The Fuze Explosive Container Loading Assembly consists of a cone-shaped charge of Comp B in a metal container.

Accessory Kit consists of a number of metal parts which, when assembled to a tank, enables the tank to push or pull the demolition kit.

Functioning:

After assembly of the kit, a tank pulls it to the edge of the minefield. The tank then pushes the kit into the minefield. Detonation of the charge is initiated by the impact of a .30 or .50 caliber bullet. When the bullet strikes the bullet impact fuze assembly it detonates the fuze. The fuze sets off the booster. The booster, in turn, detonates the Comp B shaped charge in the fuze explosive container loading assembly. The detonation of the shaped charge creates a narrow, concentrated jet of energy which penetrates the insert tubes in the impact fuze section assembly and detonates the filler. Detonation of the impact fuze section assembly results in a chain reaction which, sequentially detonates the remaining explosive loaded sections. The resulting blast craters the area, creating a path approximately 320 feet long, 12 to 16 feet wide, and 3 to 5 feet deep.

Tabulated Data:

Complete Assembly (less accessories).

Container material ---------- Aluminum alloy
Color ---------- Olive drab w/yellow markings (on center section)
Weight ---------- 10,000 lb
Diameter (cross section) -------7 in. x 12 in.
Length ---------- 400 ft
Method of actuation ---------- Bullet impact

Shipping and Storage Data:

Quantity-distance class --------- 1.1
Storage compatibility group -- D-2
DOT shipping classification--- Class A
DOT designation ---------- EXPLOSIVE BOMB
DODIC ---------- M444

Nose Section.

Container material ---------- Aluminum
Color ..... Olive drab w/bIack marking
Weight ---------- 155 lb
Length ---------- 90 in.
Width ---------- 11 in.
Height ---------- l-l/4 in.
Fillers .....

Shipping and Storage Data:

Quantity-distance class --------- N/A
Storage compatibility group -- N/A
DOT shipping classification--- AMMUNITION NON-EXPLOSIVE
Drawing ---------- F8838124
Packaging ..... One section per wooden box
Packed assembly:
Weight w/contents ---------- 247 lb
Dimensions ---------- 96-7/16 in. x 14-7/16 in. x 19-31/32 in.
Cube ---------- ..... 15.8 cu ft

Body Section.

Container ---------- Aluminum
Color ---------- Olive drab w/black markings
Weight ..... 89 lb
Dimensions:
Length ---------- 60 in. approx
Width ---------- 12 in. approx
Height ---------- 7-1/4 in.
Filler ---------- None

Shipping and Storage Data:

Quantity-distance class --------- N/A
Storage compatibility group -- N/A
DOT shipping classification--- Class N/A
DOT designation ---------- AMMUNITION-NON-EXPLOSIVE
Drawing ---------- 8838126
Packaging ---------- One section per two wooden end protectors
Packed assemblv:
Weight w/contents ----------115 lb
Dimensions (each end protector) ---------- 10 in. x 14-3/8 in. x 8-13/16 in. (overall length approx 5 ft 6 in.)
cube ---------- 4.8 cu ft

Center Loading Section.

Container ..... Aluminum
Color ---------- Olive drab w/ yellow marking
Weight ---------- 135 lb
Dimensions:
Length ..... 60 in. approx
Width ..... 12 in. approx
Height ..... 7-1/4 in. approx
Filler:
Composition B ----------44 lb
Composition C4 ----------0.84 lb

Shipping and Storage Data:

Quantity-distance class --------- 1.1
Storage compatibility group -- D-2
DOT shipping classification--- EXPLOSIVE BOMB
UNO serial number ----------0048
UNO proper shipping name -- Charges, demolition
Drawing ---------- 8836946
Packaging ---------- One section per two wooden end protectors
Packed assembly
Weight w/contents ---------- 161 lb
Dimensions ---------- 10 in. x 14-3/8 in. x 8-13/16 in. (overall length approx 5 ft 6 in.)
Cube ---------- 4.8 cu ft

Explosive Fuze Container Loading Assembly.

Container ---------- Sheet steel
Color ---------- Olive drab w/yellow markings
Weight ---------- 5-1/2 lb (approx)
Dimensions:
Length ---------- 6-1/4 in.
Width ---------- 3-1/4 in.
Height ---------- 6-1/4 in.
Filler (each item):
Fuze Container - Comp B ---------- 5 lb
M120 Booster (F8835171)
Comp A4 ---------- 11 grams
M603 Fuze w/M45 Detonator:
RDX ---------- 1.85 grams
Lead oxide ---------- 401 grams
Primer mix---------- 1.69 grams

Shipping and Storage Data:

Quantity-distance class --------- 1.1
Storage compatibility group -- D-2
DOT shipping classification--- Class A
DOT designation ---------- EXPLOSIVE BOMB
UNO serial number ---------- 0048
UNO proper shipping name -- Charges, demolition
Drawings:
Fuze explosive container (loading) ---------- 1375-00-987-4961
M603 fuze ---------- 73-9-55
M120 booster ---------- 8835171
Packaging ---------- One fuze per metal container. 2 containers (2 fuzes) and 2 explosive container loading assemblies per wooden box
Packed assembly:
Weight w/contents ---------- 18,3 lb
Dimensions ---------- 13-3/4 in. x 8 in. x 8-27/32 in.
Cube ---------- 0.5 cu ft

Tail Section.

Container ---------- Aluminum
Color ---------- Olive drab w/black markings
Weight ---------- 157 lb
Dimensions:
Length ---------- 90 in. approx
Width ---------- 12 in. approx
Height ---------- 18 in.
Filler ---------- None

Shipping and Storage Data:

Quantity-distance class --------- N/A
Storage compatibility group -- N/A
DOT shipping classification--- N/A
DOT designation ---------- AMMUNITION NON-EXPLOSIVE
UNO serial number ----------0048
UNO proper shipping name -- Charges, demolition
Drawing ---------- 8838152
Packaging ..... One section per wooden box
Packed assembly:
Weight w/contents ----------247 lb
Dimensions ---------- 112 in. x 14-3/8 in. x 19-17/32 in.
Cube ---------- 18.2 cu ft

Impact Fuze Section.

Container ---------- Aluminum
Color ----------Olive drab w/yellow markings
Weight ---------- 148 lb
Dimensions:
Length ---------- 60 in. approx
Width ---------- 12 in. approx
Height ---------- 14 in. approx (at highest point)
Filler:
Comp B ---------- 22 lb
Comp C4---------- 0.42 lb

Shipping and Storage Data:

Quantity-distance class --------- 1.1
Storage compatibility group -- D-2
DOT shipping classification--- Class A
DOT designation ---------- EXPLOSIVE BOMB
UNO serial number ---------- 0048
UNO proper shipping name -- Charges, demolition
Drawing ---------- 8836944
Packaging ---------- One assembly per wooden box
Packaged assembly:
Weight w/contents ---------- 214 lb
Dimensions ---------- 67-518 in. x 14-7/16 in. x 20-17/32 in.
Cube ---------- ll.6 cu ft

Accessory Kit (tools and push attachments).

The accessories come packed in three boxes. The size, shape and gross weights are not specified for boxes No. 1 and No. 2. Available data for box No. 3 is listed below.

*Box No. 1 contains:

	Part Number
2 Extension bars	8799635
1 Chain assembly No. 1	8799665
1 Chain assembly No. 2	8799667

*Box No. 2 contains:

1 Drag plate assembly	8799639
1 Pulley support post	8799657
1 Multiple sheave assembly	8799642
2 Chevis pin assembly	8799690
1 Spring assembly	8799673
1 Single sheave assembly	8799651
1 Bracket	9211241
1 Support	9211242

Component parts package containing:

2 Nuts - MS35690-1202 --------2 flat washers - MS27183-15
2 Nuts - MS3-5690-602 ----------2 flat washers- MS27183-23
4 Screws - MS90728-60--------- 6 lockwashers - MS35337-27
6 Screws - MS90728-191 ------4 lockwashers - MS35338-70

*Box No. 3 contains:

Gearbox assembly - Cable assembly No. 1 w/attachments - Cable assembly No. 2 w/attachments.

6 cotter pins - MS24665-134 --6 cotter pins - MS24666-495
6 cotter pins - MS24665-208 --6 cotter pins- MS24665-623

*packaged assembly - Box No. 3:

Weight	54 lb
Dimensions	19-15/16 in. x 11-1/16 in. x 10-3/32 in.
Cube	1.4 cu ft

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

References:

TM 9-1375-204-10
FM 5-250
FM 20-32

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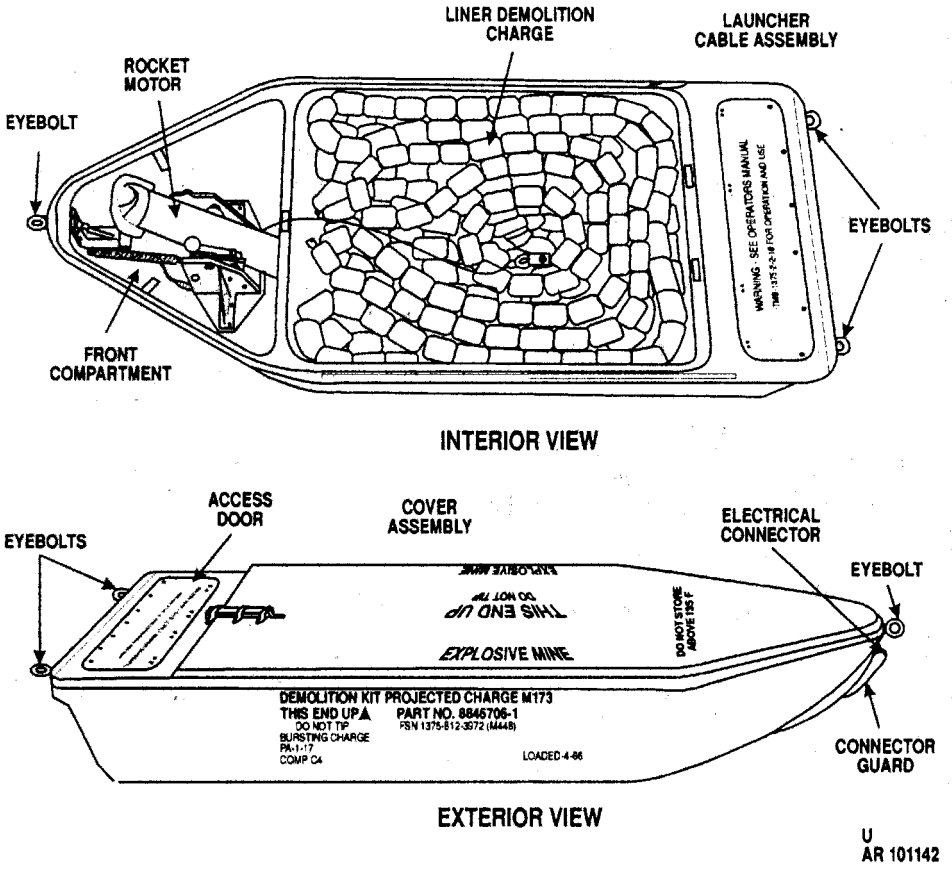
DEMOLITION KIT, PROJECTED CHARGE: M173



Type Classification:

C&T AMCTCM 8886 dated January 1972.

Use:

Projected Charge Demolition Kit, M173 is a minefield clearing device used specifically in areas planted with a single-impulse, pressure-type, antitank mines. The kit can be towed over land or water and fired by an appropriate size vehicle fitted with a 24-volt, direct-current, bayonet-type receptacle.

Description:

Demolition Kit M173 consists, basically of a waterproof skid, a linear demolition charge, a linear charge propulsion system, a fuze and the accessories required to tow and fire the kit. The fiberglass hull (body) of the boat-shaped skid is divided into three compartments. The front compartment houses the linear charge propulsion system; the Rocket Motor M95, and its launcher. The center compartment contains Linear Demolition Charge M96 and the arresting cable. The rear compartment contains Propellant Actuated Thruster M24. Demolition Kit Fuze M134, the tow cable and its explosive release mechanism, as well as a tow bar, reel of electrical wire, and a firing switch. The linear charge is 300 feet long and consists of a central core of nylon rope and two strands of detonating cord, surrounded by 400 pairs of split cylindrical charges spaced evenly along the core. A nylon cloth sheath covers all the charges and is tied between each pair to create a sausage-like construction. Explosive boosters are crimped onto the ends of the detonating cord strands. The boosters extend through the fuze holder and butt up against the fuze's detonators. The linear charge is connected to the rocket motor by a launcher cable assembly and to the fuze by a two-section fuze holder. A one-piece cover assembly covers the front and center compartment of the skid. The rear compartment is covered by an access door. An electrical connector with connector guard is attached to the front of the skid. Both front and rear are fitted with eyebolts for towing.

Functioning:

The kit is readied for deployment by using the accessories stored in the accessory compartment by:

a. Attaching tow cable between vehicle and skid and tow cable release.

b. Attaching the electrical cable (umbilical) between the fire control switch in the vehicle and the skid.

c. Installation of fuze into fuze holder.

d. Installing the M24 Propellant Thruster to the main cover.

After the kit is towed to the proper location, it is electro-explosively released from its mechanical coupling with the vehicle. The operator moves vehicle to a safe distance from which he fires the kit by remote control. This is accomplished by use of the fire control switch. The various positions on the firing control switch provides for sequential operations for functioning the item:

a. Tow. This position releases the towing vehicle from the item to permit it to retire to a safe position.

b. Cover. This position functions the M24 thruster to remove cover. When the cover flies off, it exposes the line charge and causes the rocket-launcher to come into firing position.

c. Rocket. This position fires the M95 Rocket to project the line charge over minefield and to arm the fuze.

d. Fire. When the line charge comes to rest on the ground, the switch is placed in this position to function the fuze. In turn, the fuze initiates detonating cord which then detonates the line charge, to clear the path in the minefield.

Tabulated Data:

Container (skid) material	Fiberglass
Color	Olive drab w/yellow markings
Weight	3.100 lb
Dimensions	145in. x 56-1/2 in. x 24 in.
Filler (linear charge)	Comp C4
Linear Demolition Charge M96:	
Length	300 ft
Weight (total)	1,720 lb
Weight of Comp C4 Explosive (M96)	1,500 lb
Number of Explosive Charges on Line	1,200 (600 pair)
Electric Power Supply	24 V dc
Method of actuation	24 V dc

Shipping and Storage Data:

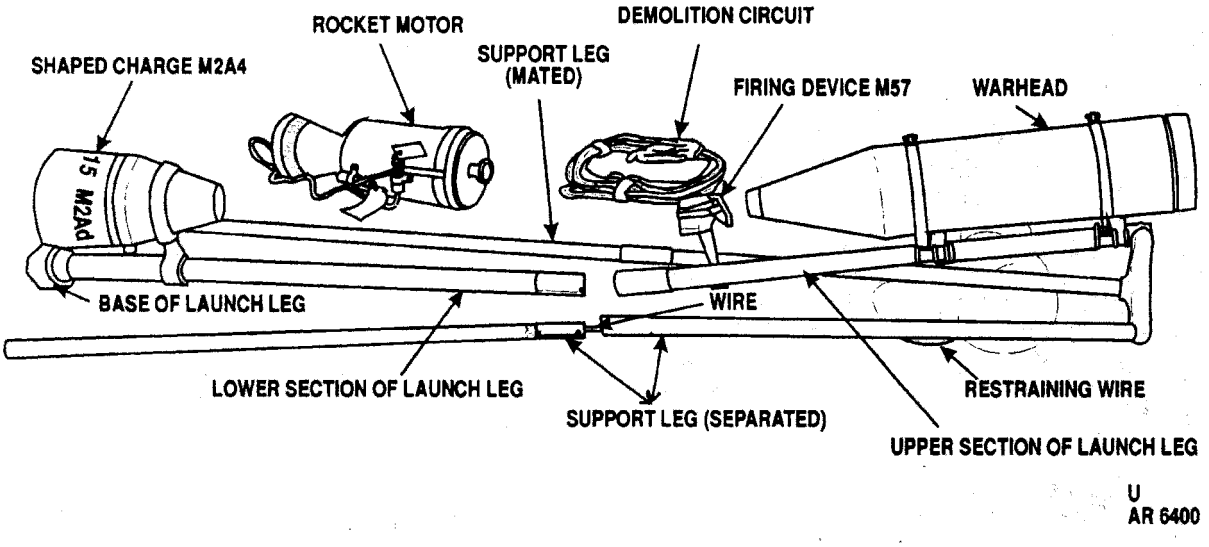
Quantity-distance class	1.1
Storage compatibility group	D-2
DOT shipping classification	Class A
DOT designation	SP5409 EXPLOSIVE MINE*
UNO serial number	0048
UNO proper shipping name	Charges, demolition
DODIC	M443
NSN	1375-00-812-3972
Drawing	8846706
Packaging	Plywood crate on pallet w/skids (12 ft 8 in. x 5 ft 4 in. x 2 ft 11 in.)

*For practice items, DMC Kit Projectile Charge M174 w/inert fuze, DOT designation is "SP5409 Jet Thrust Unit, Class B Explosive".

References:

TM 9-1375-202-10
TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250
FM 20-32

DEMOLITION KIT, CRATERING M180
DEMOLITION KIT, CRATERING, TRAINING: M270



Type Classification:

Std (LCC-A), DEVA correspondence review dated 3 July 1974 with approval by General John C. Raaen on 1 July 1974.

Use:

The M180 demolition kit quickly makes an effective crater in earth, dirt and lightly paved roads, and airfields that obstruct the movement of wheeled and tracked vehicles, It can also be used for packing airfields, The M270 is an inert trainer.

Description:

a. Tactical Demolition Kit. Cratering Demolition Kit M180 consists of a Shaped Charge M2A4, an Electrical Firing Device M57, which has been modified, a warhead, a rocket motor, a tripod, and a demolition circuit. The shaped charge, firing device and warhead are permanently attached to the launch leg of the tripod; the rocket motor and the demolition circuit (packaged in a wooden subpack) are shipped unattached and are connected to the other components at time of use.

b. Training Demolition Kit. Cratering training demolition kit M270 consists of an' inert, shaped charge (M2A3), warhead, rocket motor, demolition circuit and tiring device (M57) assembled onto a tripod in the same manner as the M180.

c. Color and Marking. The M270 demolition kit is identical in appearance to M180 demolition kit except for color and markings. The major components of the training kits are blue with white markings. The M270 training demolition kit is totally inert.

d. Tripod Assembly. The tripod consists of three legs approximately 6 feet long, joined together by a yoke (called apex fitting). Two of the legs are one inch in diameter and the remaining one, the load-carrying leg, is l-l/2-inches in diameter. They are packed partially disassembled in 3 foot lengths. The load-carrying leg contains brackets to hold the rocket and warhead, A 15-lb shaped charge, and an M57 firing device are permanently mounted on load-carrying leg.

e. Demolition Circuit. The demolition circuit consists of several electrical and nonelectrical components which form a continuous firing train connecting the firing device to the shaped charge. The components are:

(1) A 10-foot length of No, 18, two-conductor wire with an electrical connector on one end and an M6 electric blasting cap at the other end.

(2) A 9-foot length of detonating cord with a priming adapter M1A4 and an M7 nonelectrical blasting cap at one end.

The M6 cap is connected to the free end of the detonating cord by a plastic sleeve to assure close contact between the detonating cord and the blasting cap and good propagation of the detonation. The demolition circuit is shipped in a plastic bag which is enclosed in a wooden box. The box top is secured by two nylon straps.

f. Charge Demolition, Shaped 15-pound, M2A4. The shaped charge contains approximately 11 pounds of Comp B, with a 50 gram booster (approximately 1.8 ounces) of Comp A-3, in a moisture resistant molded fiber container. A cone of glass is used as a cavity liner and a threaded cap well is located at the top of the charge.

Functioning:

After the item is unpacked, assembled, and set in place, it is functioned as follows:

A 50-cap blasting machine is used to fire the kit. Current generated by the machine simultaneously ignites the M2 squibs and the delay-type electric blasting cap in the rocket. The squibs ignite the propellent grain which causes the rocket motor to build thrust until the shear strength of the attaching hardware is exceeded. When this occurs, the entire assembly, rocket motor and warhead, moves toward the firing device. On impact, the firing device handle is crushed, and current is generated by the firing device which causes initiation of the following demolition circuit components in sequence: M6 electric blasting cap, detonating cord and M7 nonelectric blasting cap. The M7 nonelectric cap initiates the shaped charge which blasts a pilot hole in the surface. As the hole is being created, the rocket motor propels the warhead through the hole. The delay-type blasting cap initiates the tetryl lead which detonates the booster that detonates the charge Detonation of the warhead completes the cratering action of the kit.

Tabulated Data:

Container material:	
Warhead	Fiberglass wound plastic
Rocket motor	Steel
Shaped charge	Fiberboard
Demolition circuit	Wood subpack
Color	olive drab with yellow marking
Weight:	
Bird:	
Rocket motor	27.6 lb
Warhead assembly	47.0 lb
Coupling clamp	1.0
Total bird weight	75.6 lb
Tripod assembly	27.0
Dimensions:	
Kit (folded, crated and strapped for shipment):	
Length	39 in.
Width	11 in.
Height	16 in.
Rocket motor:	
Length	18 in.
Diameter	6.42 in.
Warhead:	
Length	29.28 in.
Diameter	6.46 in.
Firing Device:	
Length	4.25 in.
Width	1.25 in.
Height	3.5 in.
Filler (M180 oak):	
Rocket motor	M7 propellant (MIL-P-14737 type II)
Warhead	Composition H-6
Shaped charge	Comp B + Comp A3 booster

Shipping and Storage Data (M180):

Quantity-distance class	1.1
Storage compatibility group	E
DOT shipping classification	EXPLOSIVE A
DOT marking	ROCKET AMMUNITION W/EXPLOSIVE PROJECTILE
UNO serial number	0181
UNO proper shipping name	Rockets, with bursting charge
DOCIC	M965
	1375-00-148-7159
Drawing	9244400
Packaging	One per wire-bound crate

*Packing box:
Weight ---------- 165 lb
Dimensions ---------- 46 in. x 13-1/16 in. 22-3/32 in.
Cubic displacement ---------- 7.2 cu ft

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

Shipping and Storage Data (M270):

Quantity-distance class --------- N/A
DODIC ---------- None
NSN 6920-01-087-0038
Drawing 9331717
Packaging ---------- One per wooden box
Weight ..... 180 lb
Dimensions ---------- 46-1/8 in, x 13-5/8 in. x 21-7/8 in,
Cube ..... 8.0 cu ft

References:

TM 9-1375-213-12
TM 9-1375-213-12-1
TM 9-1375-213-34
TM 9-1300-206
TM 38-250
R.M. Graziano Tariff No. 30
Supplements and/or Revisions to Code of Federal Regulations 49CFR 100-199
Motor Carriers Explosives and Dangerous Articles Tariff Number 14 Supplements to Coast Guard Regulations 108

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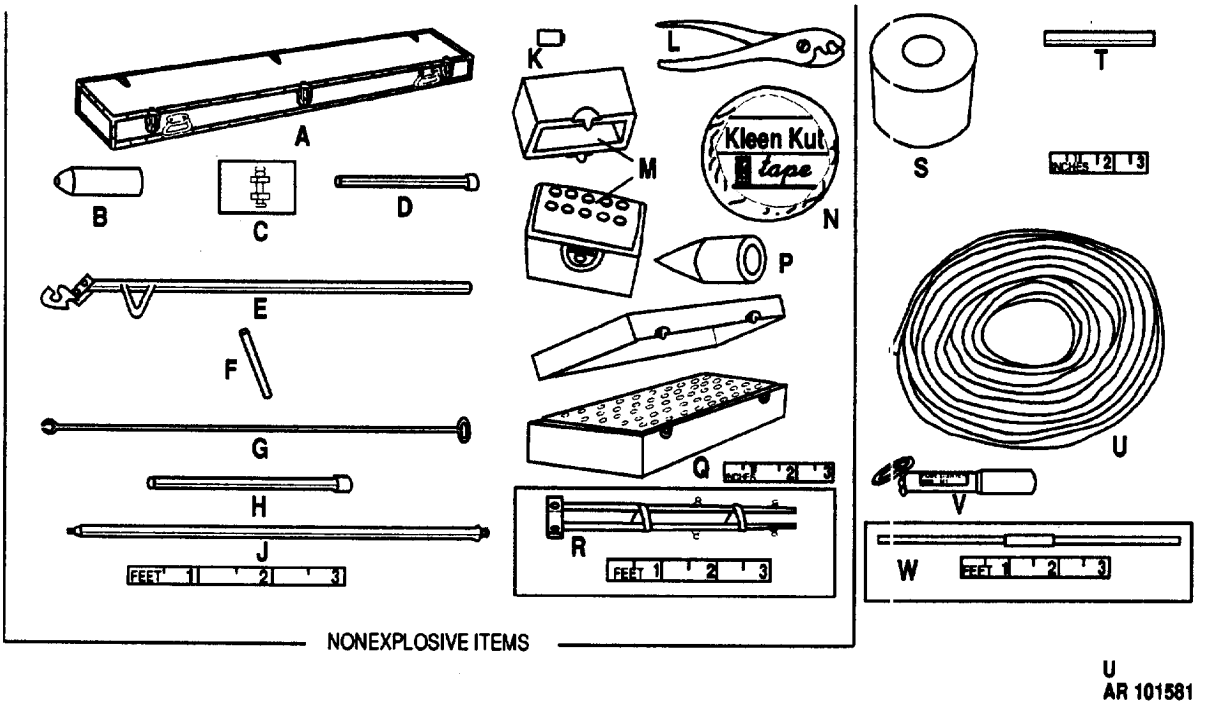
EXPLOSIVE KIT, EARTH ROD: SET NO. 1



Type Classification:

Obsolete MSRS 11756003.

Use:

The Earth Rod Explosive Kit is used in demolition and construction projects to make small diameter holes about six feet deep in earth and soft shale. The diameter of the hole, usually several inches in size, can be enlarged by the use of linear or improvised charges, The holes, about 12 inches in diameter, can be used for emplacing cratering explosives, log obstacles, and classes 6, 7, and 9 telephone poles. The kit is not a replacement for the earth auger; rather, it is used in situations which prohibit the use of the earth auger.

Description:

Earth Rod Explosive Kit, Set No, 1, comprised of the explosive and nonexplosive items listed below, is assembled by the operator immediately prior to use. The assembled device consists of a 6-foot steel rod (earth rod M13) fitted with a point at one end and a firing chamber at the other. The cylindrical chamber holds the propelling charge and its primer. An extractor rod, which fits through holes in the chamber facilitates lifting the rod out of the hole. The extension rod is also used to lengthen the 6-foot rod. Tripod M23 can be used to stabilize the rod prior to and during firing, if necessary. A linear charge, M3 is included in the kit for use, as necessary, to enlarge the hole made by the earth rod. In addition, bundles of detonating cord can be used as improvised charges. A forked insertion rod is included in the kit for handling improvised charges. Time blasting fuse and a fuse igniter are used to fire the propelling charge's primer. Additional igniters, blasting fuse and blasting caps are supplied to detonate the linear charge or' then improvised charges.

Functioning:

The propelling charge, after being assembled with the primer, is placed into the bottom of the firing chamber of the earth rod. Then, mud or clay is firmly packed onto the charge to fill the firing chamber. The time blasting fuse is protruding through the mud. The fuse is initiated with a fuse igniter or other convenient means (the operator takes cover). The burning fuse lights the black powder in the primer. The burning powders emit large quantities of gas which cause the mud slug to be propelled. The recoil, a force equal and opposite to the force propelling the mud, drives the rod down into the ground. The Earth Rod Explosive Kit is not effective in rock or other hard material. After the rod is extracted, the hole is enlarged to suit the mission.

Tabulated Data:

NSN ---------- 1375-00-028-5234
DODIC ---------- M820
Nonexplosive Items:

Quantity	Item
1	Chest
1	Chamber: Firing
1	Plate: Base, extractor, assy
1	Rod, extension
1	Extractor: Rod
1	Rod: Handles and starting
1	Rod: Inserting
2	Rod: Intermediate
2	Rod: Main, long
100	Adapter, priming Explosive M1A3 or M1A4
1	Crimper, Cap: M2 (w/fuse cutter)
1	Box, Cap: 10-cap capacity, infantry
2	Insulation Tape, Electrical: Black adhesive cotton, 3/4-inch wide
100	Point
2	Box, Cap: 50-cap capacity, engineer
1	Tripod

Explosive Items:

Quantity	Item	DODIC
100	Charge, Propelling, Earth Rod: M12 (w/primer, M44)	M405
100	Cap, blasting: Special non-electric (type I, J-1, PETN)	M131
2	Fuse, Blasting, Time: 50 ft coils	M670
200	Igniter, Time Blasting Fuse: M2 (weatherproof	M766
100	Charge, Demolition: Linear (two-3 in. sections and one connecting sleeve)	M440

Packaging:

One complete kit, composed of the quantity of items listed above, is issued in a 73 inch x 11-1/5 inch x 5-5/58 inch plywood chest as a basic issue item.

Explosive items can be requisitioned by DODIC M820 (or by the individual DODIC indicated above), packed as required.

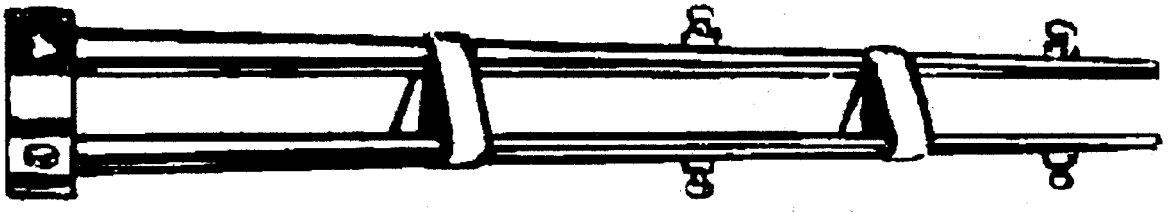
NOTE

The propelling charge and linear demolition charge are described separately in Chapter 4. The tripod is the next item in this chapter and is available as a replacement item.

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250

TRIPOD M23 ASSEMBLY FOR BLAST DRIVEN EARTH ROD M13



AR 101737

Type Classification:

Obsolete material status record 11756003.

Use:

This item, a separate item of issue, is used for holding the Earth Rod M13 in a vertical position when the terrain is such that the rod cannot be started manually. It is part of a system for creating bore holes in the ground of about 12 inches in diameter. The hole is suitable for accommodating Classes 6, 7, and 9 telephone poles and for emplacing cratering charges. The system is not a replacement for the earth auger. Rather it is a supplement, in that it is used in situations which prohibit the use of the auger.

Description:

This item is a tripod whose legs are approximately 60 inches long. The upper ring, which holds the three legs together has an inside diameter of 4-3/4 inches. This is sufficient to support the rod and permit clearance for the firing chamber to pass through.

Functioning:

This item only serves as a support for the earth rod for firing into the ground . Once the rod is in the ground the tripod is removed and returned to storage.

Tabulated Data:

Container material	Wood
Color	Olive drab
Weight	15 lb (approx)
DODIC	None
NSN	Not available
Drawing	82-13-20
Packaging	Wood chest, 62-1/4 in. x 4-1/8 in. x 9-1/4 in. See Dwg D72654781 Springfield Armory

References:

TM 9-1375-213-12
TM 9-1375-213-34
FM 5-250

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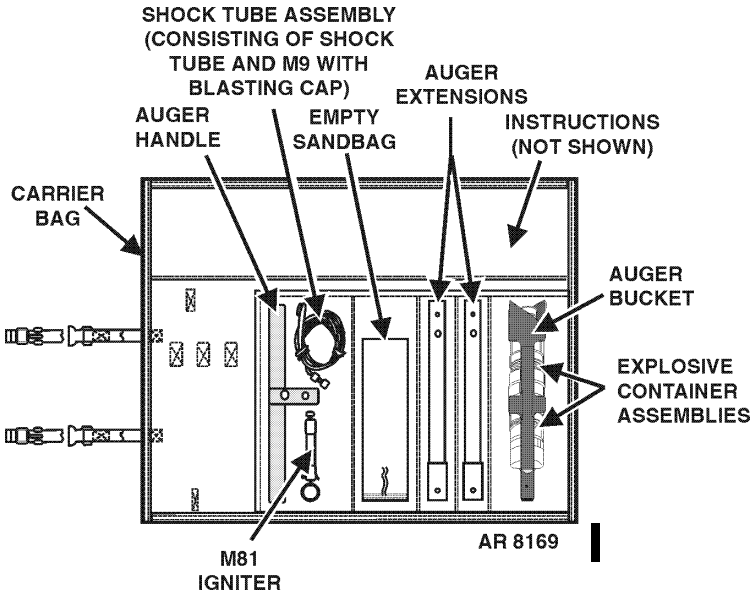
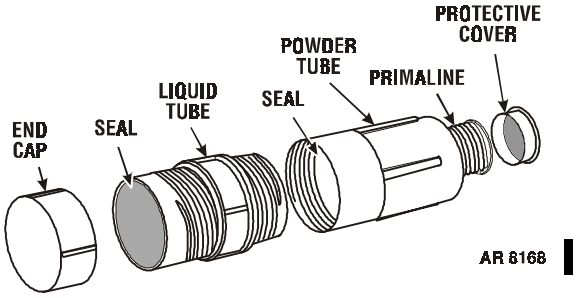
DEMOLITION KIT, BLASTING: FIGHTING POSITION EXCAVATOR, M300



Demolition Kit, Blasting: Fighting Position Excavator, M300.



Explosive Container Assembly.

Type Classification:

Std, dtd 30 Aug 1996.

Use:

The M300 Fighting Position Excavator (FPE) is used to rapidly loosen a variety of soils to improve the soldier's ability to dig fighting positions.

Description:

The M300 FPE consists of a manpacked carrier bag which contains an auger (consisting of a handle, two extensions and a bucket), two explosive container assemblies, a shock tube assembly (consisting of a blasting cap in an M9 and the shock tube), an M81 ignitor, and an empty sandbag.

The explosive container assembly consists of a powder tube with a seal, a yellow liquid tube (plastic on one end and with a seal on the other end), a primaline, a black protective cover (to protect the primaline), and an end cap (to protect the seal on the liquid tube).

The M300 FPE weighs approximately 8.5 pounds and is man portable. When rolled in the carrier bag, it has an overall length of less than 18 inches. The M300 FPE can be used either day or night and during all weather conditions.

Functioning:

After the auger is assembled, two bore holes are dug using the auger. The binary explosive ingredients in each of the two plastic containers are mixed. One explosive container is lowered into a hole and

the hole is filled with dirt. The other explosive container is lowered into the other hole and the hole is filled with dirt. The primaline is attached to the blasting cap using an M9 holder. A sandbag is placed over the M9 holder to reduce signature and missile hazard. After laying the shock tube to the firing point (approx 25 m away), the M81 is connected to the end of the shock tube. The explosive is initiated by pulling the ring on the M81 igniter. The loosen dirt is removed with an entrenching tool and the fighting position is shaped.

Tabulated Data:

NSN 1375-01-429-3510
DODIC MN26
PN 12956881
CAGEC.....19200
Weight.....3.9 kg (8.5 lb) (approx)
Diameter .....15 cm (6 in.) (approx)
Length.....45 cm (18 in.) (approx)
Method of actuation.....Nonelectric
Body material .....Plastic
Shelf life .....20 yrs

Shipping and Storage Data:

Interim Hazard Classification:
- DOD hazard class division storage compatibility group 1.4B
- DOT label .....Explosive 1.4B
- DOT hazard class.....1.4B
- Proper shipping name .....Fuzes, Detonating
- DOT container marking.....Fuzes, Detonating
- UNO code.....0257

Interim Hazard Classification - Continued:
- Explosive weight per manpack..... 8.32 g (0.2912 oz)
- Explosive weight for quantity distance..... 0.01675 kg (0.0369316 lb)
- Explosive weight when liquid and powder tubes are mixed to form a blasting agent (per bottle)... 200 g (0.441 lb)

Container, Metal: PA103A1:
- PN..... 12960798
- CAGEC 19200
- Weight (empty)..... 8.8 kg (19.5 lb)
- Weight (loaded)..... 17.8 kg (39.5 lb) (approx)
- Outside dimensions..... 94.98 x 18.73 cm (37.99 x 7.49 in.)
- Inside dimensions..... 87.65 x 16.25 cm (35.06 x 6.50 in.)
- Drawing number 28059248

Packaging..... 2 manpacked M300 FPEs per container

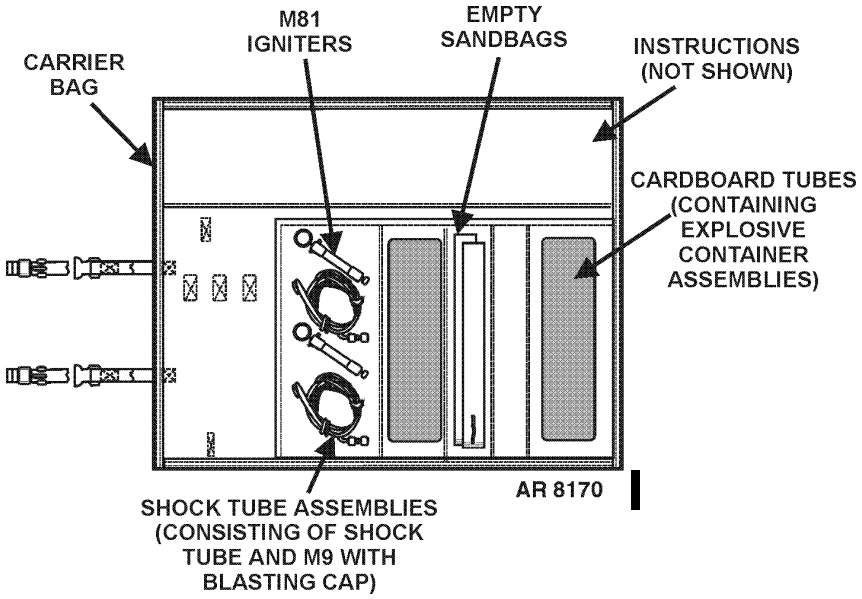
Limitations:

Temperature Limits:
- Operating:
  - Lower limit ..... -31°C (-25°F)
  - Upper limit ..... +48°C (+120°F)
- Storage:
  - Lower limit ..... -33°C (-28°F)
  - Upper limit ..... +70°C (+160°F)

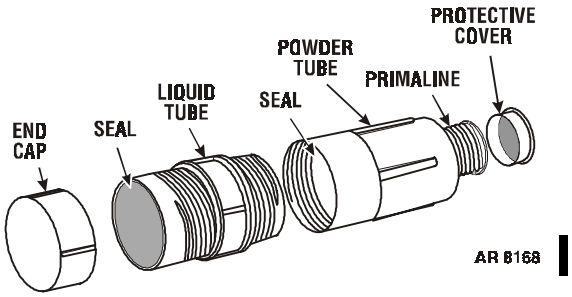
References:

TM 9-1375-224-12
FM 5-250

DEMOLITION KIT, BLASTING: FIGHTING POSITION EXCAVATOR, RELOAD KIT, M301



Demolition Kit, Blasting: Fighting Position Excavator, Reload Kit, M301.



Explosive Container Assembly.

Type Classification:

Std, dtd 30 Aug 1996.

Use:

The Fighting Position Excavator (FPE) is used to rapidly loosen a variety of soils to improve the soldier's ability to dig fighting positions. The M301 FPE Reload Kit is used to provide the soldier with the ability to dig additional fighting positions.

Description:

The M301 FPE Reload Kit consists of a man-packed carrier bag which contains four explosive container assemblies, two shock tube assemblies (consisting of a blasting cap in an M9 and the shock tube), two M81 igniters, and two empty sandbags.

The explosive container assembly consists of a powder tube with a seal, a yellow liquid tube (plastic on one end and with a seal on the other end), a primaline, a black protective cover (to protect the primaline), and an end cap (to protect the seal on the liquid tube).

The M301 FPE Reload Kit provides enough explosive charges for two additional fighting positions. The Reload Kit weighs approximately 6 pounds and is man portable. When rolled in the carrier bag, it has an overall length of less than 18 inches. The auger from the M300 FPE must be used

with the M301 FPE Reload Kit. The Reload Kit can be used either day or night and during all weather conditions.

Functioning:

To dig one additional fighting position, the auger from the M300 FPE is assembled and two bore holes are dug using the auger. The binary explosive ingredients in each of two plastic containers are mixed. One explosive container is lowered into a hole and the hole is filled with dirt. The other explosive container is lowered into the other hole and the hole is filled with dirt. The primaline is attached to the blasting cap using an M9 holder. A sandbag is placed over the M9 holder to reduce signature and missile hazard. After laying the shock tube to the firing point (approx 25 m away), the M81 is connected to the end of the shock tube. The explosive is initiated by pulling the ring on the M81 igniter. The loosen dirt is removed with an entrenching tool and the fighting position is shaped.

Tabulated Data:

NSN 1375-01-429-3509
DODIC MN27
PN 12956925
CAGEC.....19200
Weight.....2.7 kg (6 lb) (approx)
Diameter .....15 cm (6 in.) (approx)
Length.....45 cm (18 in.) (approx)
Method of actuation.....Nonelectric
Body material .....Plastic
Shelf life .....20 yrs

Shipping and Storage Data:

Interim Hazard Classification:
DOD hazard class division storage compatibility group 1.4B

Interim Hazard Classification - Continued:
DOT label..... Explosive 1.4B
DOT hazard class 1.4B
Proper shipping name..... Fuzes, Detonating
DOT container marking ..... Fuzes, Detonating
UNO code 0257
Explosive weight per manpack..... 16.64 g (0.5824 oz)
Explosive weight for quantity distance..... 0.0335 kg (0.07386 lb)
Explosive weight when liquid and powder tubes are mixed to form a blasting agent (per bottle)... 200 g (0.441 lb)
Container, Metal: PA103A1:
PN..... 12960798
CAGEC 19200
Weight (empty)..... 8.8 kg (19.5 lb)
Weight (loaded)..... 17.8 kg (39.5 lb) (approx)
Outside dimensions..... 94.98 x 18.73 cm (37.99 x 7.49 in.)
Inside dimensions..... 87.65 x 16.25 cm (35.06 x 6.50 in.)
Drawing number 28059248
Packaging..... 2 manpacked M301 FPE Reload Kits per container

Limitations:

Temperature Limits:
Operating:
Lower limit ..... -31°C (-25°F)
Upper limit ..... +48°C (+120°F)
Storage:
Lower limit ..... -33°C (-28°F)
Upper limit ..... +70°C (+160°F)

References:

TM 9-1375-224-12
FM 5-250

CHAPTER 6

INCENDIARY DEVICES

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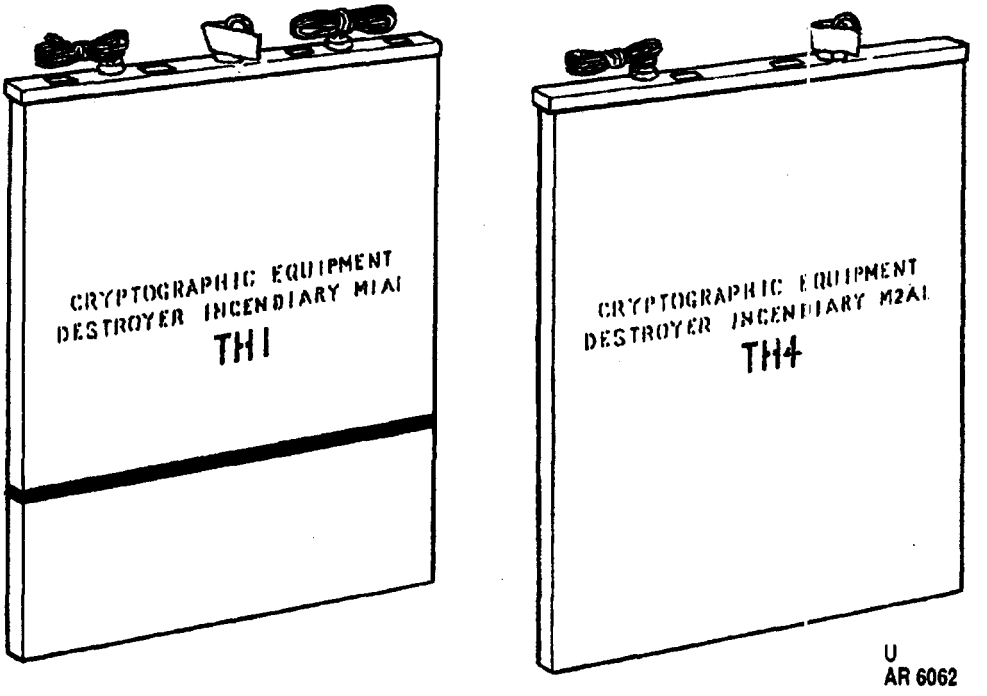
CRYPTOGRAPHIC DOCUMENT DESTROYER, INCENDIARY (TYPICAL): M1A1, M1A2, AND M2A1



Type Classification:

STD CCTC 3799.

The incendiary cryptographic equipment destroyers are designed to destroy specific cryptographic devices stored in CH-76 safes. The M1A2 cryptographic destroyer is to be used for destruction of tape on metal reels.

Description:

The Incendiary Cryptographic Equipment Destroyer is a sheet metal box filled with an incendiary mixture, fitted with a manual pyrotechnic delay ignition fuze and an electric fuze or a pair of electric initiation squibs. A cellulose acetate cup, filled with first-fire mixture, is embedded in the filling directly beneath each fuze. Three metal hangers, nuts bolts, and washers are packed with each destroyer for installation. An instruction card is also packed with each destroyer.

Differences Between Models:

The M1A1 Incendiary Cryptographic Equipment Destroyer is 21 inches long by 15 inches wide by 1-1/4 inches deep, filled with approximately 28 pounds of TH1 incendiary mixture. It has two electric squibs and an M201A1 manual ignition fuze with a shortened safety lever, as described in TB CML 109.

The M1A2 TH1 Incendiary Cryptographic Equipment Destroyer is similar to the M1A1 TH1 destroyer except that it is fitted with two M209 electric fuzes and an M210 manual ignition fuze, as described in TB CML 109.

The M1A2 TH4 Incendiary Cryptographic Equipment Destroyor is 21 inches long by 15 inches wide by 1-1/4 inches deep, filled with approximately 28 pounds of TH4 incendiary mixture. It has two M209 electric fuzes and M210 manual ignition fuze, as described in MIL-C-10244.

Functioning:

All of the Cryptographic Equipment Destroyers offer the option of electric or nonelectric initiation.

In the electric mode, the destroyer is emplaced atop the equipment to be destroyed; the wires from the electric initiator(s) are connected to a blasting machine. When the blasting machine is functioned, the electrical pulse it generates, fires the squibs or mine activator(s) which ignites the first-fire mixture which, in turn, ignites the thermite. Once ignited, thermite is practically unextinquishable and will burn with a flame hot enough to melt or ignite almost any material in contact with it.

In the manual initiation mode, the destroyer is emplaced and the operator moves the safety pin and pulls the fuze's pull ring. This fires a primer or ignites friction powder which lights a pyrotechnic delay element. After seconds, the delay element burns through to a small booster which ignites the first-fire mixture. The remainder of the functioning sequence. is as above.

Tabulated Data:

Fuzes:
- Model M1A1 TH1:
  - Electric (2 ea) ---------- M2 squib
  - Manual (1 ea) ---------- M201A1
- Model M1A2 TH1 and M1A2 TH4:
  - Electric (2 ea) ---------- M209
  - Manual (1 ea) ---------- M210
- Model M2A1 TH4:
  - Electric (2 ea) ---------- M209
  - Manual (1 ea) ---------- M210

Color:
- Model M1A1 TH1 and M1A2 TH1 ---------- Grey w/purple band
- Model M1A2 TH1 and M2A1 TH4 ---------- Red w/black band

Weight (approx):
- Ml series ---------- 36 lb (16.4 kg)
- M2 series ---------- 11 lb (5 kg)

Filler ---------- Thermite 1 or Thermite 4

Filler weight:
- Ml series ---------- 28 lb (12.7 kg)
- M2 series ---------- 8-1/2 lb (3.8 kg)

Method of actuation ---------- Manual pull ring or blasting machine

Shipping and Storage Data:

Quantity-distance class -------- 1.3
Storage compatibility group -- **G**
DOT shipping classification -- Class B explosive
DOT designation ---------- SPECIAL FIREWORKS - HANDLE CAREFULLY - KEEP FIRE AWAY
UNO serial number ---------- 0010
UNO proper shipping name -- Ammunition, incendiary
DODIC ---------- M598 (M1 series); M600 (M2 series)

Specifications:
- M1A1 (TH1)---------- MIL-I-10243
- Drawing ---------- C4-4-17
- M1A2 (THE) ---------- MIL-C-12469J
- Drawing ---------- D4-4-46
- M1A2 (THE) ---------- MIL-L-12469J
- Drawing ---------- D4-4-46
- M2A1 (TH4)---------- MIL-I-10244H
- Drawing ---------- C4-4-27

Packaging:
- Weight (w/contents) ---------- 55 lb (25 kg)
- Dimensions ---------- 30-3/8 x 28-1/2 x
- Cube ---------- 1.08 cu ft

*Packing box (M1 series):
- Weight (w/contents) ---------- 28 lb (12.7 kg)
- Dimensions ---------- 20-1/2 x 11 x 6-1/2 in.
- Cube ---------- 0.85 cu ft

Shipping Container:
Outer container - wooden box

(M1A2 TH4 only):
- Length (inside) ---------- 25-1/8 in. (63.82 cm)
- Width (inside) ---------- 18-1/8 in. (46.04 cm)
- Height (inside) ---------- 2-1/8 in. (5.40 cm)

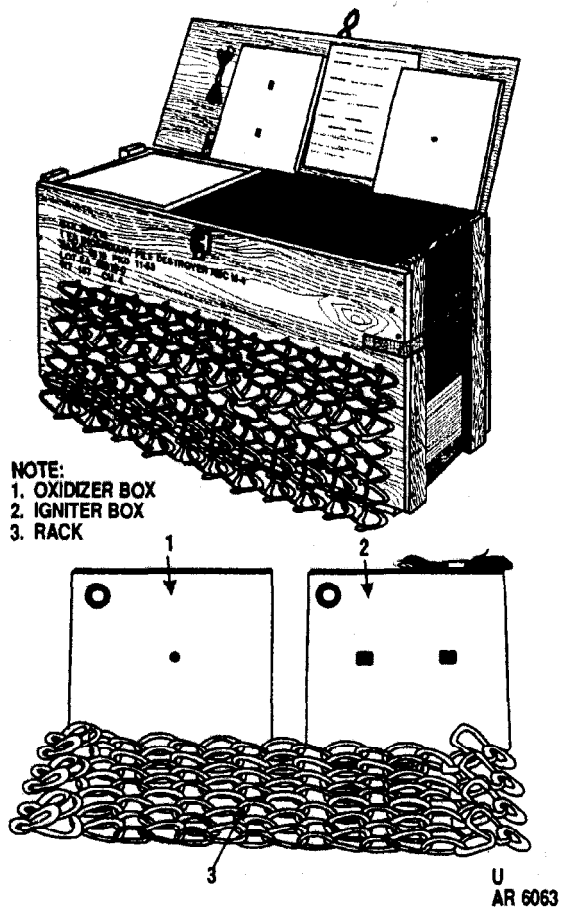
Container weight loaded ------- 55 lb (25 kg)

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

References:

TB CML-109
TM 3-250

FILE DESTROYER, INCENDIARY, ABC-M4



Type Classification:

STD CCTC 2699.

Use:

The ABC-M4 file destroyer is used primarily to destroy classified material in filing cabinets. It is intended for use outside CONUS. It is designed to effect maximum destruction of classified material with minimum damage to the premises where the filing cabinets are kept. One ABC-M4 file destroyer provides sufficient material to completely destroy the contents of a normal four-drawer file cabinet. Combustible material other than files can be destroyed with this incendiary if the installation procedures are varied to suit the circumstances. The ABC-M4 file destroyer is requisitioned and issued in accordance with SB 725-1300-1.

Description:

The ABC-M4 incendiary file destroyer consists of 44 oxidizer boxes, 4 igniter boxes and 4 racks. The oxidizer boxes furnish oxygen to permit papers to be burned in a closed file drawer. The igniter boxes set fire to the papers and oxidizer boxes. The racks compress the papers and oxidizer boxes while the papers are burning. Forty-four pounds of paper can be destroyed with this incendiary.

Oxidizer Boxes - The oxidizer boxes are made of cellulose nitrate. They measure 10-1/2 inches long by 8-1/4 inches wide by l/2-inch deep and are filled with approximately 26-1/2 ounces of sodium nitrate.

Igniter Boxes - The igniter boxes are also make of cellulose nitrate, the same size as the oxidizer boxes, and are filled with approximately 12 ounces of a mixture of sodium nitrate and finely powdered wood (wood flour). Each igniter box contains two squibs connected in parallel to a pair of igniter wires that are used to connect the squibs to a power source.

Racks - The racks are flexible mats made of interlocking links of heavy wore formed into a rectangle measuring 12 inches by 29 inches and weighing 6-1/2 pounds. The flexible construction of the racks allows them to follow the con-

tours of the tops of the papers compressed while they are burning.

Functioning:

One oxidizer box is installed in the front of each file drawer and one behind each 1/2-inch thickness of paper in the drawer until all papers in the drawer are sandwiched between oxidizer boxes.

An igniter box is placed ahead of the first oxidizer box in each file drawer.

The squib wires from each drawer are brought out of the drawer such that they will not be cut or broken when the drawer is closed. The wires are brought together so they may be easily connected to the firing line.

A rack is placed on top of the papers and boxes in each drawer so that it will remain in contact with the contents of the file as burning progresses.

The drawers are closed.

The squib wires are connected in parallel to a firing lead.

A blasting machine or other source of electricity is used to fire the squibs which set fire to the wood-flour-and-sodium nitrate mixture. The sodium nitrate furnishes oxygen to support combustion in the closed file. Paper adjacent to the igniter box ignite and the sodium nitrate in the next oxidizer box furnishes the necessary oxygen for combustion. Combustion progresses in this way until the entire contents of the drawer are burning.

The weight of the rack keeps the contents of the file compressed, thereby providing maximum contact between the paper and the sodium nitrate and maximum effectiveness of the incendiary. A file destroyed by an ABC-M4 incendiary emits large volumes of acrid black smoke while burning.

Tabulated Data:

Container material ---------- Cellulose Nitrate
Color ---------- Clear

Weight:
- Igniter box ---------- 1 lb (0.45 kg)
- Oxidizer box---------- 2 lb (0.9 kg)

Dimensions ---------- 10-1/2 x 8-1/4x 1/2 in.

Filler:
- Igniter box ---------- 12 oz sodium nitrate and wood flour
- Oxidizer box---------- 26-1/2 oz sodium nitrate

Method of actuation ---------- Electricity (one ampere per igniter box)

Shipping and Storage Data:

Quantity-distance class -------- 1.3
Storage compatibility group -- G
DOT shipping classification -- Class B Explosive
DOT designation ---------- PROPELLANT EXPLOSIVE (SOLID) CLASS B
UNO serial number ----------0010
UNO proper shipping name -- Ammunition, incendiary
DODIC ---------- M610
Drawing ---------- D4-11-103
Packaging ---------- 4 igniter boxes, 4 oxidizer boxes and 4 racks per wooden box

*Packing box:
- Weight (w/contents) ---------- 117 lb
- Dimensions ---------- As required
- Cube ---------- 3,5 cu ft

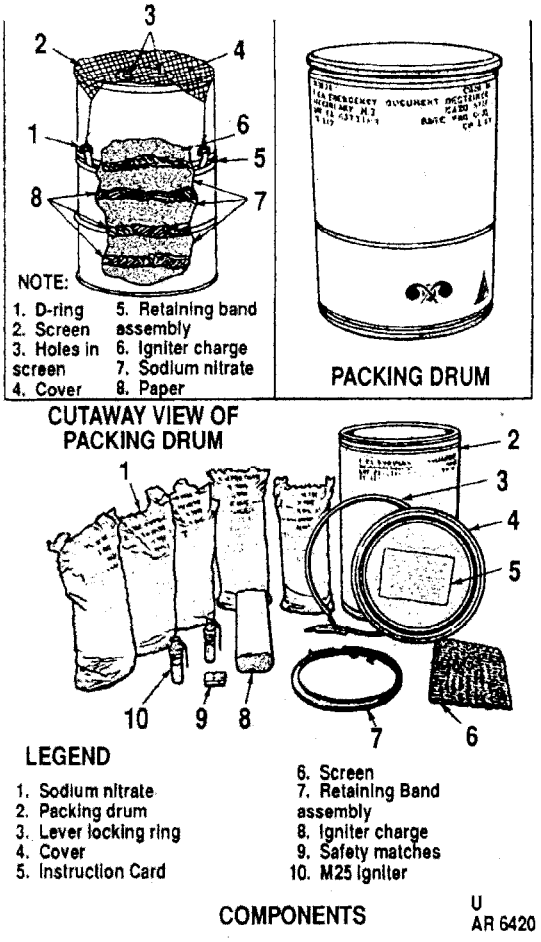
Specification ---------- MIL-F-13549

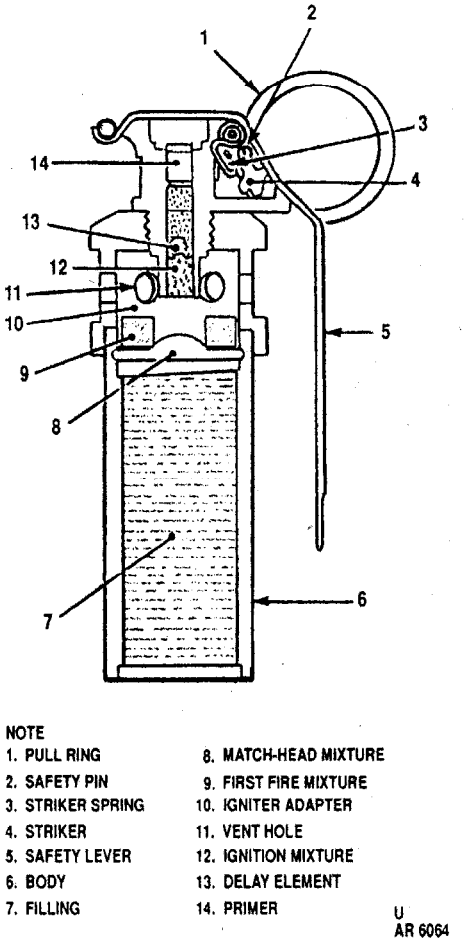
*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

References:

TM 3-250
TB CML-110

FILE DESTROYER, EMERGENCY, INCENDIARY: M3





Type Classification:

OBS MSR 04766021.

The M3 incendiary emergency document destroyer is used to accomplish the rapid destruction of a maximum of 70 pounds of paper or cardboard by burning. The paper may be bound in folders, or it may consist of loose sheets. The M3 incendiary emergency document destroyer is designed primarily for the destruction of paper and paper products; however, other combustible materials, such as photographic film or cryptographic devices made of plastic and magnesium or aluminum, can be destroyed.

Description:

The M3 incendiary emergency document destroyer consists of five packages of sodium nitrate (l), an igniter charge (8), a screen (6), a retaining band assembly (7), two M25 igniters (10), and a box of safety matches (9) packed in a fiberboard drum (2). Some incendiaries are furnished without M25 igniters when so specified by the using agency. An instruction card (5) is attached inside the cover (4) of the drum in which the incendiary is packed. Descriptions of the components follow.

Sodium Nitrate - The sodium nitrate is packaged in five plastic-lined paper sacks containing 19 pounds each. The sodium nitrate furnishes oxygen to support combustion. Each package is labeled for identification.

Igniter Charge - The igniter charge consists of a mixture of 2 pounds of sodium nitrate, 2 pounds of sugar, and 4 ounces of charcoal in a plastic-lined paper sack. This mixture ignites readily and burns with a hot flame. The package is labeled for identification.

Screen - The screen is a 2-foot square of 2 mesh 1/16-inch galvanized steel wire cloth. Two square or circular 2-1/2-inch holes, spaced 8 inches apart, are located near the center of the screen. Four securing wires, 12 inches long, are attached to the corners of the screen.

Retaining Band Assembly - The retaining band assembly consists of a steel retaining band 3/4-inch wide and 78 inches long, with a D-ring at one end. Four additional D-rings are fastened at right angles to the retaining band by steel strapping.

M25 Igniter - The M25 igniter consists of a cellulose nitrate body 1/5/16 inches in diameter and 3-1/8 inches long, filled with thickened kerosene (7) and fitted with an igniter adapter (10) made of cellulose nitrate. An M201A1 grenade igniting fuze (TM 3-300) is screwed into the top of the igniter adapter, and a first-fire mixture (9) and a match-head mixture (8) are located under the igniter adapter. Vent holes (11) in the side of the igniter adapter are covered by moistureproof tape. The nomenclature of the igniter is marked on the body.

Safety Matches - a box of wood safety matches is packed with the document destroyer for use when the M25 igniter is not used. Any field expedient can be used to ignite the igniter charge.

Additional Equipment - The user must obtain an empty 55-gallon metal drum for use with the document destroyer. The drum is used as an incinerator in which the material is burned. A metal cover with a 6-inch to 8-inch diameter hole must be provided for the 55-gallon drum to maintain sufficient pressure inside the drum to insure complete combustion. The drum and cover must be obtained in advance and kept available for emergency use in the same location as the document destroyer.

Functioning:

The device must be properly prepared for functioning by (a) emptying one bag of sodium nitrate into the bottom of the incinerator drum, (b) sandwiching the material to be destroyed between layer of sodium nitrate (c) placing the igniter charge over the top layer of sodium nitrate along with several loose sheets of paper (d) emplacing the perforated drum lid and (e) securing the screen atop the drum lid.

Actual functioning of the destroyer is accomplished by (a) normal actuation of the M25 igniter whose functioning sequence is: (1) the tape is removed from the igniter adapter (2) the safety lever is released (as the igniter is dropped into the incinerator drum) which (5) ignites a delay element with a 1.2-to 2-second delay time. (6) Upon expiration of the delay time, the delay element ignites the ignition mixture (7) and the first-fire mixture (8) which in turn ignites the match-head mixture (9) and (10) the filling of the igniter.

Flame from the burning igniter lights the ignition charge which ignites the paper. The sodium furnishes oxygen for combustion. The paper in the drum is completely consumed in approximately 20 minutes.

When the incendiary is shipped without igniters, the safety matches are used for ignition. In this case, light a piece of paper and drop it through the hole in the screen and into the drum. The burning paper will ignite the ignition charge.

Limitations:

When materials containing metal are to be destroyed with the emergency document destroyer, utmost care must be exercised in preparing the materials for destruction. The amount of material containing metal must not be greater than 10 pounds and must be combined with 60 pounds of paper for a total char e of 70 pounds. Five pounds of the metal should be mixed in each of the second and third layer of paper to assure destruction. The combined weight of paper and other material must not exceed 70 pounds, or the material may not be completely destroyed. Paper with high clay content (coated paper stock similar to that used in some magazines) will not burn completely, and the ash of this type of paper often retains legible printing. The ash should be destroyed by vigorous stirring of the residue.

Tabulated Data:

Container material	Fiberboard with steel tip anti bottom
Color	Grey with purple strip
Weight	117 lb
Dimensions:	
Height	19-3/4 in.
Diameter	15-1/3 in.
Cube	2.8 cu ft
Explosive components	Sodium, nitrate, igniter mixes
Method of actuation	Manual

Shipping and Storage Data:

Quantity-distance class -------- 1.3
Storage compatibility group -- G
DOT shipping classification -- Class B Explosive
DOT designation ---------- SPECIAL FIREWORKS - HANDLE CAREFULLY - KEEP FIRE AWAY
UNO serial number ----------0010
UNO proper shipping name -- Ammunition, incendiary
DODIC ..... M605 (M25 igniter carries DODIC M615 for separate issue)
NSN:
W/igniters ---------- 1375-00-529-$004
W/o igniters ---------- 1375-00-542-0090
Igniter M25---------- 1375-00-602-2213
Drawing ---------- C4-11-11
Specification ---------- MIL-D-14360
Packaging ..... C4-11-11 and C4-11-12

*Packing box:
Weight (w/contents) ---------- 117 lb
Dimensions ---------- 19-3/4 high x 15-112 in. dia
Cube ---------- 2.8 cu ft

*NOTE: See DOD Consolidated Ammunition Catalog for complete packing data including NSN'S.

References

TB 3-300-1

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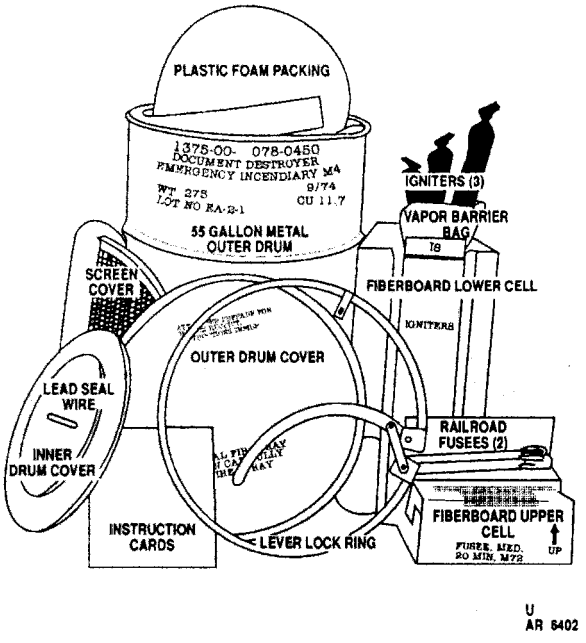
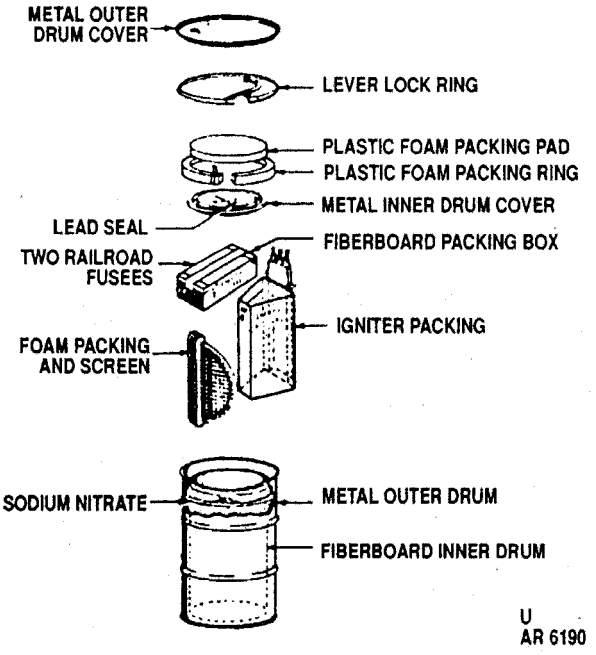
DOCUMENT DESTROYER, EMERGENCY, INCENDIARY: M4





Type Classification:

MSR 04766021.

Use:

WARNING

DESTRUCTION OF MATERIAL CONTAINING ALUMINUM, MAGNESIUM, OR OTHER COMBUSTIBLE METALS IS PROHIBITED.

NOTE

Refer to TB-CML-109 for information regarding the destruction of tape on metal reels.

Document Destroyer, Emergency Incendiary, M4 is used for the rapid destruction of up to 120 pounds of paper (paper products), photographic film, recording tap, reels, and cryptographic devices (printed circuit boards) made of plastic.

Description:

The M4 Document Destroyer is a self-contained incendiary kit. It consists of a 55-gallon steel drum containing a centrally positioned fiberboard inner drum which forms a 2-inch wide annulus for approximately 190 pounds of prilled sodium nitrate oxidizer. The steel drum is fitted with a full drum cover and lever locking ring. Packed inside the fiberboard drum are a folded wire screen cover, three igniters and two 20-minute railroad fuzes. Details on each of the components are given below.

55-Gallon Metal Outer Drum - The 55-gallon metal outer drum, with removable cover, is used as an incinerator into which up to 120 pounds of documents can be burned. The drum also serves as the shipping and storage container. The drum is shipped with a drum cover/gasket and lever lock ring secured in place with a wire lead seal. Operating instructions are attached to the underside of drum cover.

Outer Drum Cover - The outer drum cover is of one piece formed steel with an outer lip. When installed on the metal outer drum, it fits over the bead of the open end of the steel drum body. When the lever lock ring is installed, the drum is sealed.

Lever Lock Ring - The lever lock ring is a half-round metal ring, which tilts over the outer lip of the cover, and is equipped with a lever that draws or loosens the ring. The lever rests in a catch to hold it closed.

Gasket - The gasket is a round, synthetic rubber ring approximately 23-1/2 inches in diameter, The gasket is cemented to the outer drum cover.

Screen Cover - The screen cover consists of a disk of a 2-mesh 1/16-inch stainless steel wire cloth welded to a steel cover band. The screen cover is folded so that it fits inside the fiberboard inner drum.

Fiberboard Inner Drum - The fiberboard inner drum is a cylindrical packing drum with a metal drum cover. The six plastic foam spacers position the fiberboard inner drum inside the metal outer drum. The metal inner drum cover is provided to close the fiberboard inner drum.

Oxidizing Agent - The oxidizing agent is either sodium nitrate coated with calcium phosphate or prilled sodium nitrate. The oxidizing agent fills the space between the fiberboard inner drum and the metal outer drum. It provides the oxidizer required to support combustion of the documents being destroyed.

Igniters - The igniter is contained in a black plastic bag. The igniter consists of a mixture of sodium nitrate, sugar, and charcoal. The sugar and charcoal provide the fuel and the sodium nitrate provides oxygen. Three igniters approximately 3 inches diameter by 22 inches long are packed in a vapor barrier bag. The vapor barrier bag is packed in fiberboard box which is attached to the lower cell.

Railroad Fusees - Two railroad warning fusees are provided in each document destroyer. They are packaged in the fiberboard upper cell. The fusees have been modified by the addition of a hook which allows them to be hung on the edge of the inner drum after they are unpacked.

Instruction Cards - Two instruction, cards, one for preparation of the document destroyer and one for operation of it, are contained in a plastic envelope under the outer drum cover. In addition, a second instruction card for operation of the document destroyer is cemented to the underside of the outer drum cover.

Miscellaneous Packing Material - Miscellaneous packing materials such as corrugated fiberboard are used to fill the void spaces and to retain the parts in place during shipping and storage of the document destroyer.

Functioning:

The destroyer is usually prepared well in advance so it can be used on very short notice, Preparation consists mainly of unpacking the screen, fusees, and igniters, and discarding all of the inner packing materials from the drum. The components are positioned within the drum and the drum is resealed if immediate use is not anticipated. The screen is secured to the drum lid for quick access. When the destroyer is to be used, the lid is removed, the fusees are removed, the material to be destroyed is placed in the inner drum and the screen is secured to the top of the drum. Actual functioning of the destroyer is effected by lighting one of the fusees and using it to light one of the igniters. The first igniter lights the others and the three of them ignite the paper and sodium nitrate which are the fuel and oxidizer needed to sustain combustion of the entire contents of the drum.

Tabulated Data:

Container material	Steel
Color	Light gray w/black markings
Weight	275 lb (124.7 kg)
Dimensions:	
Height	35-9/16 in. (90.33 cm)
Diameter	23-3/4 in. (60.3 cm)
Cube	11.7 cu ft
Active components:	
Oxidizer	190 lb (86.2 kg) prilled sodium nitrate
Igniters (3 ea)	2-1/2 lb (1.1 kg) powdered sodium nitrate, sugar and charcoal
Fusees (2 ea)	See fusee, railroad: M72 in TM 43-0001-37
Method of actuation	Hand striking of fusee

Shipping and Storage Data:

Quantity-distance class -------- 1.3
Storage compatibility group -- G
DOT shipping classification -- Class B Explosive
DOT designation ---------- SPECIAL FIREWORKS - HANDLE CAREFULLY - KEEP FIRE AWAY
UNO serial number ----------0010
UNO proper shipping name -- Ammunition, incendiary
DODIC ---------- M814
NSN ---------- 137-00-078-0450
Drawing D4-11-47
Packaging ..... D4-11-47 (item is self-packed)

Summary Destruction Capability:

Maximum destruction ---------- 120 lb (54.4 kg)

Limitations on materials to be destroyed (max % allowable for assured destruction):
Cellulose papers (documents) ----------65 to 100% (21 to 32 in.) (53.3 to 81.3 cm)
Glossy Paper ---------- 5% (1-1/2 in.) (2.5 to 3.8 cm)
Plastics(printed circuit ---------- 0.20% (6-1/2 in.) 6.5 cm)
Film and tape on metal reels or nonmetallic reels- 15% (5 in.) (12.7 cm)

References:

TM 3-1375-201-10
TM 9-1300-200
TM 9-1300-206
TM 38-250
TM 43-0139

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By Order of the Secretary of the Army

GORDON R. SULLIVAN
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Chief of Staff

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07177

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