

TM 9-1375-224-12

TECHNICAL MANUAL
OPERATOR'S AND UNIT
MAINTENANCE MANUAL
FOR
DEMOLITION KIT, BLASTING:
FIGHTING POSITION EXCAVATOR, M300
(NSN 1375-01-429-3510);
DEMOLITION KIT, BLASTING:
FIGHTING POSITION EXCAVATOR,
RELOAD KIT, M301
(NSN 1375-01-429-3509);
AND
TRAINING KIT, DEMOLITION:
FIGHTING POSITION EXCAVATOR
(NSN 6920-01-430-5297)



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HEADQUARTERS, DEPARTMENT OF THE ARMY

15 SEPTEMBER 1999

WARNINGS

Handle containers carefully. Serious injury can occur if container is dropped on a foot.

Bucket auger teeth are sharp and can cause injury.

If dropped, explosive containers should be carefully inspected for cracks. If a crack is discovered during peacetime operations, the container should not be used and local disposal procedures should be followed. If a crack is discovered during wartime operations, extreme caution must be exercised to ensure that leakage of powder or liquid is minimized.

During functioning, ejection of hazardous debris will be contained within 20 meters of blast area. Personnel should not be within 20 meters of blast area during functioning. If explosive containers are buried at depth less than 36 inches, debris hazard may extend beyond 20 meters, and therefore personnel should take cover.

Once the liquid tube and powder tube are seated, the mixture in the explosive container becomes an active explosive. Do not unscrew explosive container after tubes are seated.

Leakage of liquid solution can be minimized by making sure the liquid is always on bottom when tubes are assembled.

Be careful not to cross-thread liquid and powder tubes during assembly.

Ensure that hole is not partially filled with water. This could result in container being buried at less than the desired depth.

Do not place more than one explosive container in the same hole.

Hearing protection is required for all personnel within 32 meters of a detonating M300 FPE.

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TECHNICAL MANUAL

No. 9-1375-224-12

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 15 September 1999

**Operator's and Unit Maintenance Manual
for
Demolition Kit, Blasting: Fighting Position Excavator, M300
(NSN 1375-01-429-3510);
Demolition Kit, Blasting: Fighting Position Excavator, Reload Kit, M301
(NSN 1375-01-429-3509);
and
Training Kit, Demolition: Fighting Position Excavator
(NSN 6920-01-430-5297)**

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 (Recommended Changes to Publications and Blank Forms), direct 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 or Commercial 973-724-4633. A reply will be furnished to you.

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CHAPTER 1 INTRODUCTION

SECTION I. GENERAL

1.1 SCOPE.

These instructions are for use by operator and unit maintenance personnel. They apply to the M300 Fighting Position Excavator, M301 Fighting Position Excavator Reload Kit, and the Training Kit for the Fighting Position Excavator.

1.2 FORMS, RECORDS, AND REPORTS.

1.2.1 Department of the Army maintenance forms and reporting procedures are prescribed in DA Pam 738-750, Functional Users Manual for The Army Maintenance Management System (TAMMS). Accidents involving injury to personnel or damage to materiel will be reporting on DA Form 285 (U.S. Army Accident Report) in accordance with AR 385-40 (Accident Reporting and Records). Explosive ammunition malfunctions will be reported in accordance with AR 75-1 (Malfunctions Involving Ammunition and Explosives).

1.2.2 Report of Packaging and Handling Deficiencies. Fill out and forward SF Form 364 (Report of Discrepancy (ROD)) as prescribed in AR 735-11-2.

1.3 NOMENCLATURE CROSS-REFERENCE LIST.

<u>Common Name</u>	<u>Official Nomenclature</u>
M300 FPE	Demolition Kit, Blasting: Fighting Position Excavator, M300
M301 FPE Reload Kit	Demolition Kit, Blasting: Fighting Position Excavator, Reload Kit, M301
TFPE	Training Kit, Demolition: Fighting Position Excavator
M81	Igniter, Time Blasting Fuse: M81, w/Shock Tube Capability
M9	Holder, Blasting Cap: Shock Tube, M9

SECTION II. DESCRIPTION AND DATA

1.4 PURPOSE, USE, CAPABILITIES AND FEATURES.

1.4.1 M300 FPE. The M300 FPE provides a capability to rapidly loosen a variety of soils to improve the soldier's ability to dig fighting positions. The M300 FPE weighs approximately 8.5 pounds and is man portable. When rolled in the carrier bag (manpacked), 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. Two M300 FPEs are packaged in the PA103A1 Container.

1.4.2 M301 FPE Reload Kit. The M301 FPE Reload Kit provides enough explosive charges for two additional fighting positions. The auger from the M300 FPE must be used with the M301 Reload Kit. The M301 FPE Reload Kit, weighing approximately 6 pounds, is packed in the same type carrier bag as the M300 FPE and two carrier bags are packaged in the PA103A1 Container (same container as the M300 FPE).

1.4.3 TFPE. The TFPE is provided for soldiers to be trained on how to operate the M300 FPE. The TFPE is identical in size and shape to the M300 FPE and is packed and packaged the same as the M300 FPE. The TFPE is totally inert.

1.5 DESCRIPTION OF MAJOR COMPONENTS.

1.5.1 M300 FPE. The M300 FPE consists of the following:

Carrier bag (shown rolled (1a) and open (1b)), with instructions (2) (not shown)

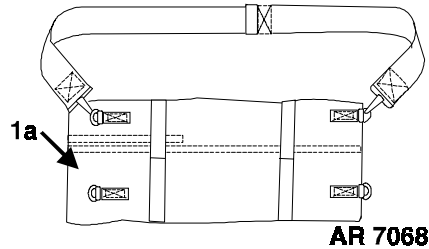
Auger, consisting of the handle (3), two extensions (4), and the bucket (5)

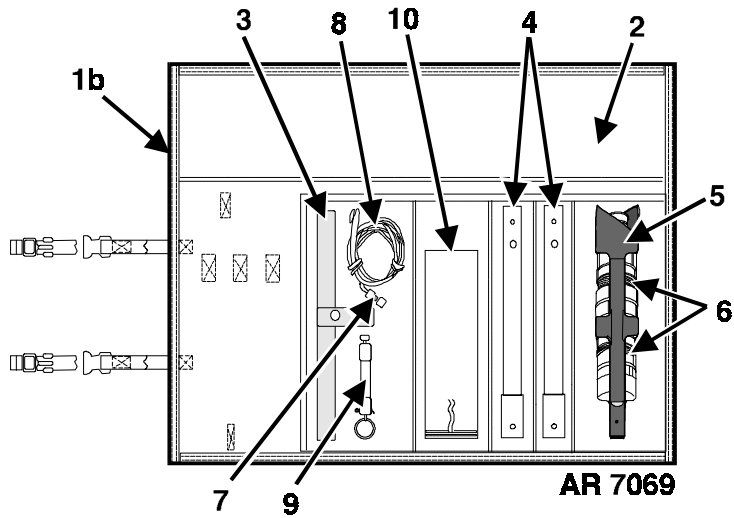
Two explosive container assemblies (6), packaged in foam (not shown)

Shock tube assembly, consisting of a blasting cap in an M9 (7) and the shock tube (8)

M81 igniter (9)

Sandbag (empty) (10)





1.5.2 Explosive Container Assemblies. The explosive container assemblies consist of the following:

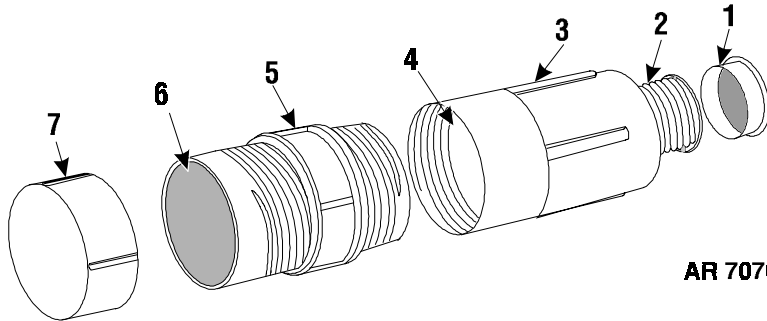
Black protective cover (1)

Primaline (2), with end held in place by shipping tape

Powder tube (3), with a seal (4)

Yellow liquid tube (5), plastic on one end (not shown) and with a seal (6) on the other end

End cap (7)



1.5.3 M301 FPE Reload Kit. Each M301 FPE Reload Kit, using the auger from the M300 FPE, makes two additional fighting positions. The components in the M301 FPE Reload Kit are identical to the consumable components which they replace in the M300 FPE. Each M301 FPE Reload Kit consists of the following:

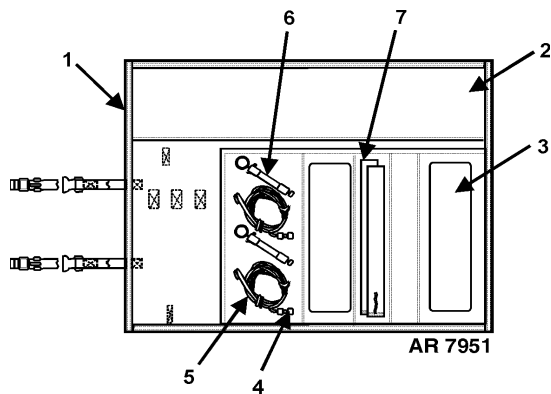
Carrier bag (1), with instructions (2) (not shown)

Four explosive container assemblies packaged inside cardboard tubes (3) (two assemblies in each tube)

Two shock tube assemblies, consisting of a blasting cap in an M9 (4) and the shock tube (5)

Two M81 igniters (6)

Two sandbags (empty) (7)



NOTE

Foam is provided in the M301 FPE Reload Kit to use, if needed, for repacking explosive container assemblies in auger from M300 FPE.

1.5.4 TFPE. The TFPE has the same hardware components as the M300 FPE (see illustrations on pages 1-4 thru 1-6) with the following exceptions:

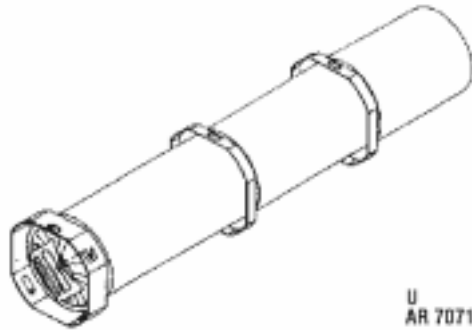
- a. The TFPE is totally inert and is labeled as such. All energetic components have been removed and replaced with inert substitutes. These include the primaline, the shock tube, the blasting cap, the M81, and the powder and liquid components of the explosive container.
- b. The seal cutter is omitted from inside the powder tube of the explosive container.
- c. The powder tube of the tactical explosive container is green; the powder tube for the TFPE is green and has a bronze band. The liquid tube of the tactical explosive container is yellow; the liquid tube for the TFPE is green. The shock tube and primaline are green for the M300 FPE and blue for the TFPE.

1.6 DIFFERENCES BETWEEN MODELS.

The M300 FPE and TFPE are identical in size and shape. Refer to paragraph 1.5.4 for differences between models.

1.7 PACKING AND MARKING.

1.7.1 Packing. The PA103A1 Container (see illustration) holds two manpacked M300 FPEs, two manpacked M301 FPE Reload Kits or two manpacked TFPEs. Three cushions provide inside packaging protection: one cushion is placed on each end of the container and a third cushion separates the two manpacked M300 FPEs, M301 FPE Reload Kits, or TFPEs.



1.7.2 Marking.

The markings on the PA103A1 Container for the M300 FPE, M301 FPE Reload Kit, and TFPE are as indicated in the following table.

DESCRIPTIVE NOMENCLATURE	NSN/DODIC	PROPER SHIPPING NAME/ID NUMBER	HAZARD CLASS	STORAGE COMPATIBILITY	UNIT WEIGHT (PACKED PA103A1, AMMO, METAL CONTAINER) (LB)
2 -DEMOLIITON KIT, BLASTING: FIGHTING POSITION EXCAVATOR, M300	1375-01-429-3510 MN26	FUZES, DETONATING UN0257	1,4	B	39.3
2 -DEMOLITION KIT, BLASTING: FIGHTING POSITION EXCAVATOR, RELOAD KIT, M301	1375-01-429-3509 MN27	FUZES, DETONATING UN0257	1,4	B	34.3
2 -TRAINING KIT, DEMOLITION: FIGHTING POSITION EXCAVATOR	6920-01-430-5297	TRAINING KIT, DEMOLITION	N/A	N/A	39.3

1.8 TABULATED DATA.

1.8.1 Demolition Kit, Blasting: Fighting Position Excavator, M300.

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)

Length45 cm (18 in.) (approx)
 Method of actuationNonelectric
 Body material.....Plastic
 Shelf life.....20 yrs
 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)
 Interim Hazard Classification:
 DOD hazard class division storage compatibility group ...1.4B
 DOT label.....Explosive 1.4B
 DOT hazard class1.4B
 Proper shipping nameFuzes, Detonating
 DOT container markingFuzes, Detonating
 UNO code0257
 Explosive weight per manpack8.32 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)

1.8.2 Demolition Kit, Blasting: Fighting Position Excavator, Reload Kit, M301.

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
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)
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
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)

1.8.3 Training Kit, Demolition: Fighting Position Excavator.

NSN	6920-01-430-5297
PN	12956920
CAGEC	19200
Weight	3.9 kg (8.5 lb) (approx)
Diameter	15 cm (6 in.) (approx)
Length	45 cm (18 in.) (approx)
Body material	Plastic

1.8.4 PA103A1 Shipping and Storage Container.

Packaging:

M300 FPE	2 manpacked M300 FPEs per container
M301 FPE Reload Kit	2 manpacked M301 FPE Reload Kits per container
TFPE	2 manpacked TFPEs per container

Shipping and Storage Container, Metal: PA103A1:

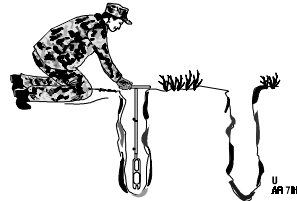
PN	12960798
CAGEC	19200
Weight (empty)	8.8 kg (19.5 lb)
Weight (loaded).....	17.8 kg (39.5 lb) (approx)
Outside dimensions.....	94.98 cm x 18.73 cm (37.99 in. x 7.49 in.)
Inside dimensions	87.65 cm x 16.25 cm (35.06 in. x 6.50 in.)
Drawing number	28059248

SECTION III. SAFETY, CARE, AND HANDLING

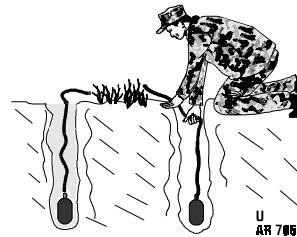
Use only in accordance with instructions. Do not modify munitions.

SECTION IV. PRINCIPLES OF OPERATION

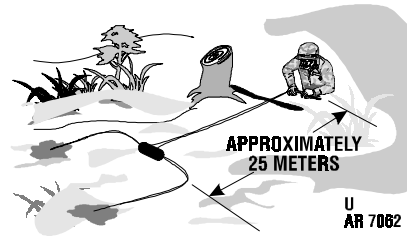
1. The contents are inventoried and the auger in the M300 FPE is assembled.
2. Two bore holes are dug using the auger.



3. The binary explosive ingredients in each of the two plastic containers are mixed.
4. One explosive container is lowered into a hole and the hole is filled with dirt.
5. The other explosive container is lowered into the other hole and the hole is filled with dirt.



6. The primaline is attached to the blasting cap using an M9 holder.
7. A sandbag is placed over the M9 holder to reduce signature and missile hazard.
8. After laying the shock tube to the firing point (approx 25 m away), the M81 is connected to the end of the shock tube.
9. The explosive is initiated by pulling the ring on the M81 igniter.



10. The loosened dirt is removed with an entrenching tool and the fighting position is shaped.



CHAPTER 2 OPERATING INSTRUCTIONS

SECTION I. PROCEDURES FOR THE PA103A1 CONTAINER

2.1 INSPECT PA103A1 CONTAINER.

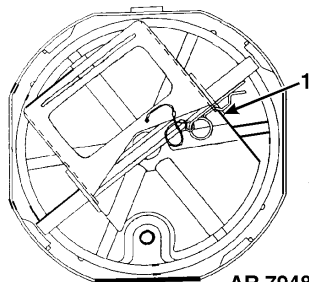
WARNING

Handle containers carefully. Serious injury can occur if container is dropped on a foot.

NOTE

Do not damage containers. Return all containers to issue point.

- a. Check security seal (1). If seal (1) is missing return containers in accordance with local procedures.



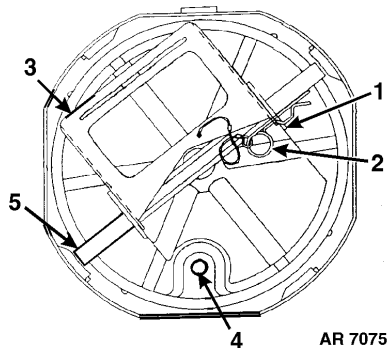
2.2 OPEN PA103A1 CONTAINER.

- a. Break, remove, and discard security seal (1).
- b. Pull ring (2) from handle (3) and rotate handle (3) 180° (up). If handle (3) is hard to rotate and container will not open, turn pressure relief screw (4).

NOTE

The pressure relief screw does not have to be turned to open container.

- c. Rotate container lid shaft (5) counterclockwise until shaft (5) is clear of bayonet slots in rim.
- d. Lift and remove lid.
- e. Remove top cushion and extract manpacked M300 FPE or M301 FPE Reload Kit from container.
- f. Remove second cushion and extract second manpacked M300 FPE or M301 FPE Reload Kit from container.
- g. Replace both cushions in container and secure lid. Save container for repacking unused kits.



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2.3 REPACK UNUSED M300 FPEs OR M301 FPE RELOAD KITS.

- a. Check container.
 - (1) Remove lid in accordance with paragraph 2.2, steps b thru d.
 - (2) Remove all cushions from container.
 - (3) Make sure inside of container is clean and free of loose debris.
 - (4) Make sure container body, gasket and container lid are clean, dry and show no signs of damage.
- b. Repack M300 FPEs or M301 FPE Reload Kits in container.
 - (1) Install bottom cushion then first M300 FPE or M301 FPE Reload Kit into container.

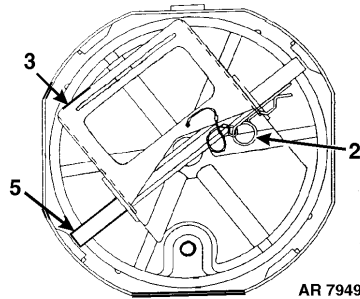
NOTE

If repacking only one M300 FPE or M301 FPE Reload Kit, use any available clean, dry materials (i.e., fiberboard, cloth, foam) to fill voids in container.

- (2) Install second cushion then second M300 FPE, M301 FPE Reload Kit or filler materials into container.
- (3) Install top cushion into container.

c. Close container.

- (1) Put container lid on container body and rotate lid clockwise so that ends of shaft (5) engage bayonet slots formed in rim.
- (2) Rotate handle (3) 180° (down) and install ring (2).



- d. If returning containers with only one M300 FPE or M301 FPE Reload Kit, mark container as a "Light Container" by any suitable means.
- e. Return all containers with M300 FPEs or M301 FPE Reload Kits in accordance with local procedures.

SECTION II. PROCEDURES FOR THE M300 FPE

2.4 UNPACK M300 FPE CONTENTS.

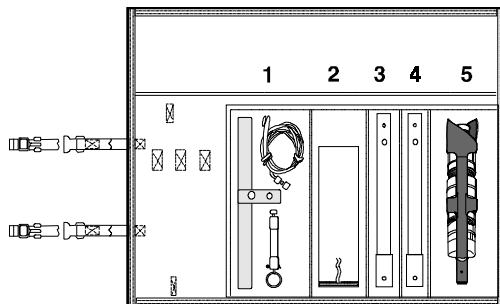
- a. Loosen straps, release clips, and unroll carrier bag.

WARNING

Bucket auger teeth are sharp and can cause injury.

- b. Unpack and inventory the following contents from carrier bag (see illustration):

- (1) Auger handle, M81 igniter, shock tube assembly
- (2) Sandbag (empty)
- (3) - (4) Handle extensions
- (5) Bucket auger holding two explosive container assemblies (packaged in foam)



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WARNING

If dropped, explosive containers should be carefully inspected for cracks. If a crack is discovered during peacetime operations, container should not be used and local disposal procedures should be followed. If a crack is discovered during wartime operations, extreme caution must be exercised to ensure that leakage of powder or liquid is minimized.

- c. Unroll foam packaging around explosive containers from side openings of bucket auger.
- d. Remove explosive containers from side openings of bucket auger.

NOTE

If any contents are missing, mark PA103A1 Container and then return and acquire another M300 FPE.

2.5 ASSEMBLE AUGER.

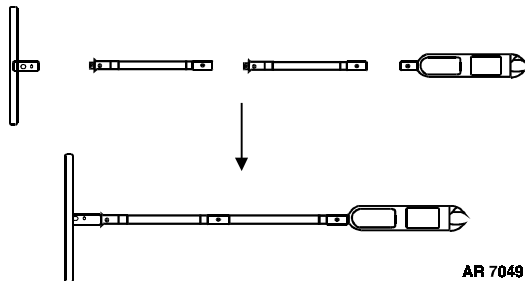
WARNING

Bucket auger teeth are sharp and can cause injury.

NOTE

Auger handle and handle extensions can be separately inserted into bucket auger to assemble and use auger at different lengths.

- a. Push auger pieces together by locking pins into place using any orientation (see illustration).
- b. Once assembled, pull on auger to ensure each piece is properly locked in place.



2.6 DIG BORE HOLES.

WARNING

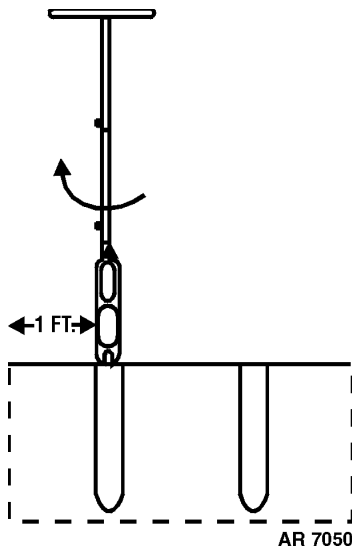
During functioning, ejection of hazardous debris will be contained within 20 meters of blast area. Personnel should not be within 20 meters of blast area during functioning. If explosive containers are buried at depth less than 36 inches, debris hazard may extend beyond 20 meters, and therefore personnel should take cover.

- a. Place point of auger approximately 1 foot in from one end of desired fighting position location (see illustration).

NOTE

If a rock is encountered at any time that cannot be picked up by auger or removed by hand, start new hole on either side of hole that was started.

- b. Turn auger clockwise (see illustration) while pushing down with moderate pressure.
- c. Continue turning auger into ground until it stops advancing.



2.7 PREPARE EXPLOSIVE CONTAINERS AND PLACE INTO HOLES.

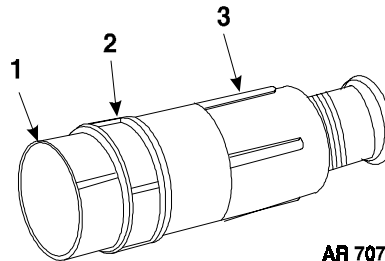
WARNING

If dropped, explosive containers should be carefully inspected for cracks. If a crack is discovered during peacetime operations, explosive container should not be used and local disposal procedures should be followed. If a crack is discovered during wartime operations, extreme caution must be exercised to ensure that leakage of powder or liquid is minimized.

- a. Unscrew end cap (1) and discard.
- b. Unscrew liquid tube (2) from powder tube (3) and set liquid tube (2) aside.

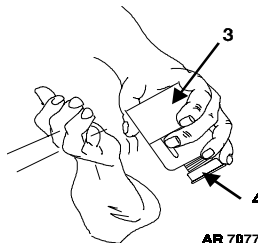
NOTE

Do not remove black protective cover or unravel primaline at this time.



AR 7072

- c. Hold powder tube (3) so that black protective cover (4) is pointing towards the ground, and tap powder tube (3) with palm of hand to loosen powder.
- d. Check and clean male and female threads of liquid tube (2) and powder tube (3) so that tubes can be completely screwed together.



WARNING

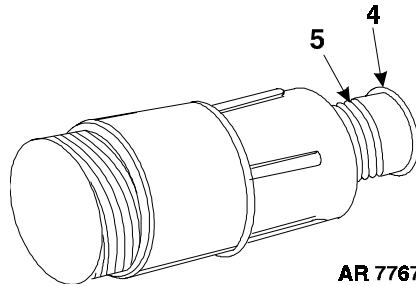
Once the liquid tube and powder tube are seated, the mixture in the explosive container becomes an active explosive. Do not unscrew explosive container after tubes are seated.

Leakage of liquid solution can be minimized by making sure the liquid is always on bottom when tubes are assembled.

Be careful not to cross-thread liquid and powder tubes during assembly.

- e. Hold liquid tube (2) with seal pointed upward and screw powder tube (3) down onto liquid tube (2). Screw tubes together until fully seated against rubber o-ring, no threads are showing and firm resistance is met. Fully seated is required to completely rupture liquid barrier seal.

- f. Shake explosive container **VIGOROUSLY AT LEAST 60 SECONDS** to mix powder and liquid before placing explosive container in hole.
- g. Remove and discard black protective cover (4) and shipping tape from primaline (5).



CAUTION

Do not kink, cut or mutilate primaline. Malfunction of system will occur.

- h. Unwind primaline (5) from around the neck of the powder tube.

WARNING

Ensure that hole is not partially filled with water. This could result in explosive container being buried at less than the desired depth.

- i. Verify hole depth using auger.

WARNING

Do not place more than one explosive container in the same hole.

CAUTION

Lower, *do not drop*, explosive container down hole.

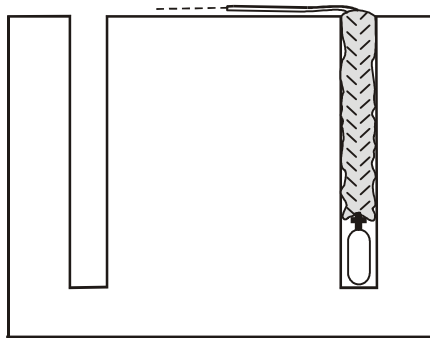
Do not drop free end of primaline down hole.

- j. Lower explosive container to bottom of hole while holding on to free end of primaline.

CAUTION

Do not tamp primaline with auger, shovel or entrenching tool.

- k. While holding primaline, fill hole with loose dirt and tamp down dirt with hand.



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- l. Repeat steps a thru k for other explosive container.

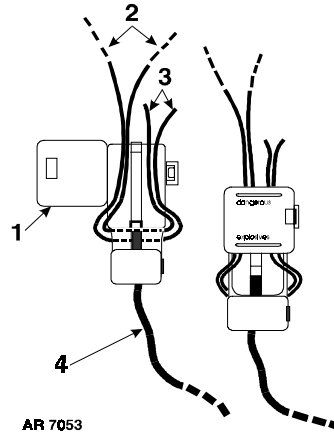
2.8 ATTACH PRIMALINES TO M9 HOLDER.

- a. Fill sandbag fully with loose dirt or sand and tie sandbag.
- b. Open M9 flap (1).
- c. Place both primalines (2) into M9 by wrapping primaline ends (3) behind M9, ensuring primaline ends (3) leaving M9 lie next to incoming primalines (2).
- d. Close flap (1) and push down to lock primalines (2) in place.

CAUTION

If primaline ends overlap primalines, they may interrupt initiation system rather than setting off buried explosive charges.

- e. Place sandbag on top of M9, ensuring primaline ends (3) do not cross primalines (2).
- f. Unwind shock tube (4) as you move to firing position with length of shock tube (4) (about 24 m) and with remaining equipment. Upwind firing positions are preferable to reduce debris fall out.



NOTE

At night, cover both primalines with loose leaves, dirt or grass to help suppress flash.

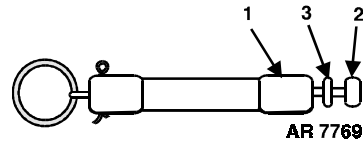
2.9 ATTACH M81 IGNITER AND FIRE.

- a. Make sure blast area is clear of personnel and equipment.

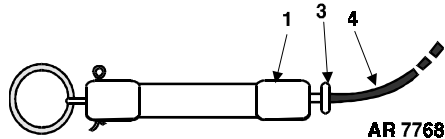
NOTE

If shipping plug is removed, shock tube will not properly seat in M81.

- b. Loosen (do not remove) fuse holder cap (1) counterclockwise on M81 and remove weather-proofing plug (2). Do not remove shipping plug (3).



- c. Using a knife, cut off 1 inch from sealed end of shock tube (4).
- d. Insert shock tube (4) in hole of shipping plug (3). Push in shock tube (4) as far as it will go.



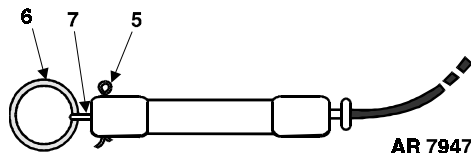
- e. Tighten fuse holder cap (1) clockwise to secure shock tube (4). Hold M81 securely and pull lightly on shock tube (4) to assure it is secure.

- f. Make sure a 20 meter blasting area is clear of personnel and equipment.
- g. Remove safety pin (5).

WARNING

Hearing protection is required for all personnel within 32 meters of a detonating M300 FPE.

- h. Announce shot.
- i. Hold M81 firmly in one hand with pull ring (6) fully accessible to other hand.
- j. Grasp pull ring (6) and pull back as far as it will go.
- k. If M81 does not fire, recock and fire again. To do this, hold M81 firmly in one hand and push the pull rod (7) back into M81 until a click is heard or felt, then again grasp pull ring (6) and pull back as far as it will go.



NOTE

If M81 does not fire after three attempts, a misfire has occurred. See page 2-18 for misfire procedures.

2.10 MISFIRES.

A misfire may occur due to faulty M81, shock tube, or primaline. If a misfire occurs, perform the following procedures:

- a. If M81 fails to fire after three attempts, replace with new M81 from M301 FPE Reload Kit.
- b. If M81 functions but blasting cap on end of shock tube fails to function, check shock tube.
 - (1) If shock tube has been expelled from M81 cut 3 feet from end of shock tube, replace it with new M81 from M301 FPE Reload Kit and repeat firing procedure.
 - (2) If M81 fires but blasting cap in M9 fails to fire, cut 6 inches off shock tube and discard. Cut a 1-foot piece off shock tube and, holding one end over palm of hand, blow gently through other end.
 - (a) If a fine powder is present, shock tube has not been fired. Replace M81 and repeat firing procedure.
 - (b) If powder is not present, wait 30 minutes before approaching sandbag. Cut primaline just forward of sandbag. Obtain and establish new ignition system using new shock tube, M9 and M81 from M301 FPE Reload Kit.

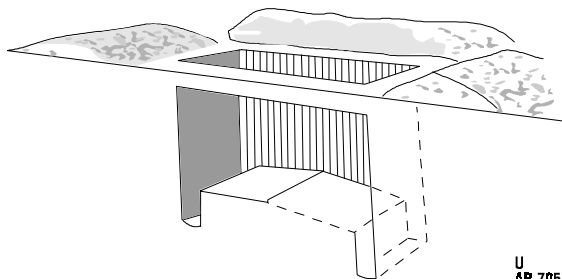
WARNING

Do not disturb area around unexploded container.

- c. If primaline fails on one container, wait 30 minutes to assure no possible misfire condition exists. Then approach and mark location of container as “Unexploded FPE Container.”
- d. If primaline fails on both containers, wait 30 minutes to assure no possible misfire condition exists. Then approach and mark location of containers as “2 Unexploded FPE Containers.” Move to a new position and use M301 FPE Reload Kit and auger from M300 FPE to create a new fighting position. If creating a new fighting position within 30 minutes of first failed attempt, stay at least 20 meters away from first position.

2.11 COMPLETE FIGHTING POSITION.

- a. Check area to ensure a successful firing has occurred. Make sure both canisters have initiated by checking circumference of both holes for ground disturbance. Refer to FM 5-250 for safety check. See page 2-18 for misfire procedures.
- b. Use entrenching tool and mattock to remove loosened dirt. Refer to FM 5-103 for digging fighting positions.
- c. Retain auger in carrier bag so it can be used with M301 FPE Reload Kit.

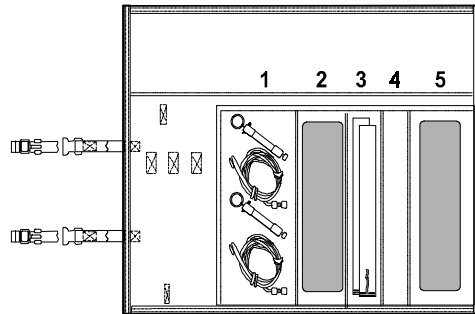


2.12 M301 FPE RELOAD KIT.

NOTE

Use M301 FPE Reload Kit only if additional fighting positions are needed. M301 FPE Reload Kit contains explosives for two fighting positions and requires auger from M300 FPE.

- a. Remove the following contents from carrier bag (see illustration):
- (1) Two M81 igniters and two shock tube assemblies
 - (2) Two explosive container assemblies (packaged inside cardboard tube)
 - (3) Two sandbags (empty)
 - (4) Empty pocket
 - (5) Two explosive container assemblies (packaged inside cardboard tube)



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NOTE

Foam is provided in the M301 FPE Reload Kit to use, if needed, for repacking explosive container assemblies in auger from M300 FPE.

- b. For additional fighting positions using M301 FPE Reload Kit, follow procedures for operating M300 FPE (pages 2-7 through 2-20).

SECTION III. PROCEDURES FOR THE TFPE

2.13 UNPACK TFPE CONTENTS.

The procedures for unpacking the TFPE are the same as the procedures for unpacking the M300 FPE (see page 2-5) except that the foam packaging around the explosive containers will be saved for repacking.

2.14 OPERATE TFPE.

The procedures for operating the TFPE are the same as the M300 FPE (see pages 2-7 thru 2-20) except:

- a. The following components will be recovered for reuse instead of discarding:
 - (1) The black protective cover and the end cap on the inert explosive containers.
 - (2) The shipping tape securing the inert primaline around the inert explosive containers.
 - (3) The inert M81 and the weather-proofing plug on the inert M81.
- b. When using the TFPE, the inert primaline may be damaged during recovery. It is not necessary to cover inert explosive container with dirt after placing it in hole. If holes are to be filled, first tie a strong cord (at least 6 feet in length) around neck of container to assist in recovering the container. When lowering inert explosive container to bottom of dug hole, hold on to free end of inert primaline and free end of cord.

2.15 RECOVER AND DISASSEMBLE TFPE FOR REPACKING.

NOTE

During disassembly and repacking operations, dirt or foreign materials on any components should be cleaned off before placing them in carrier bag. Ensure all components are thoroughly dry before placing them in carrier bag. Air drying or wiping with a cloth should be sufficient.

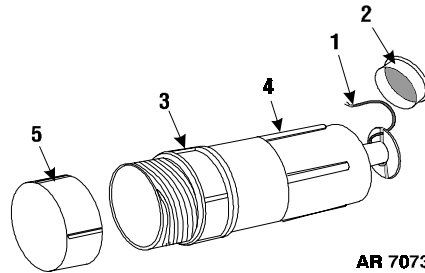
- a. Remove inert shock tube from inert M81.
- b. Clean and install weather-proofing plug and safety pin into inert M81.
- c. Rewind inert shock tube while returning to dug holes.
- d. Remove sandbag from M9 and empty sandbag.
- e. Remove inert primalines from M9 by opening M9 flap.

NOTE

Do not pull on inert primaline to remove inert explosive containers from hole if containers are covered in dirt. The inert primaline or inert explosive container may be damaged.

- f. Separately remove inert explosive containers from holes by carefully pulling up on inert primaline or cord.

- g. Clean and inspect inert primaline (1). If inert primaline (1) has a cut, repair with cloth adhesive tape.
- h. Rewind inert primaline (1) around neck of inert explosive container and secure inert primaline (1) with shipping tape and black protective cover (2).
- i. Unscrew liquid tube (3) from powder tube (4). Clean liquid tube (3) and powder tube (4) using a suitable brush or soap and water if needed.
- j. Screw plastic end of liquid tube (3) to powder tube (4) until it is fully seated.
- k. Install end cap (5) onto liquid tube (3).
- l. Repeat steps g thru k for second inert explosive container.

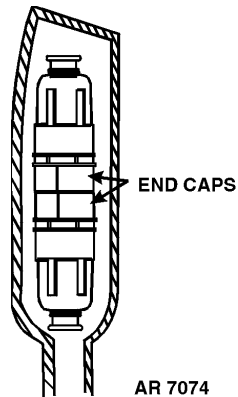


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WARNING

Bucket auger teeth are sharp and can cause injury.

- m. Disassemble auger assembly by pressing locking pins to separate auger parts.
- n. Clean auger components using a suitable brush or soap and water if needed.
- o. Install two inert explosive containers in bucket auger, end caps together (see illustration), by carefully pushing one container and then the other through the side openings of bucket auger.
- p. Replace protective foam packaging around explosive containers by sliding foam through side openings of bucket auger and twisting foam around inert explosive containers.



- q. Place bucket auger with inert explosive containers in carrier bag, stem first.
- r. Place auger handle and handle extensions in TFPE carrier bag.
- s. Place inert M81 and inert shock tube assembly in TFPE carrier bag.
- t. Fold sandbag and put it in carrier bag. If sandbag is torn or unserviceable, replace it (any sandbag from Army inventory is acceptable for use).
- u. To close carrier bag, fold flap on carrier bag, roll bag from bucket auger end, close clips and tighten straps.
- v. After training, refill holes.

CHAPTER 3 MAINTENANCE INSTRUCTIONS

SECTION I. INSTRUCTIONS FOR THE M300 FPE AND THE M301 FPE RELOAD KIT

3.1 GENERAL.

The M300 FPE is a one-shot device. Operator and unit maintenance will be minimal. Used in the field, the device will not require maintenance beyond the current capabilities of assigned unit maintenance assets.

3.2 PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS).

Preventive Maintenance Checks and Services (PMCS) are limited to a visual inspection at the time of issue to assure all components are present and that there is no evidence of leakage from explosive containers.

3.3 INSPECT.

When the M300 FPEs and M301 FPE Reload Kits are received, make a visual inspection to ensure all components are present.

3.4 CLEAN.

Clean auger prior to reuse with the M301 FPE Reload Kit.

SECTION II. INSTRUCTIONS FOR THE TFPE

3.5 INSPECT.

After operating TFPE, visually inspect the TFPE components during disassembly for repackaging.

3.6 CLEAN.

Clean the TFPE using a suitable brush or soap and water if needed, or wipe clean with a cloth. Air drying or wiping dry with a cloth is sufficient.

3.7 TOUCH-UP.

Touch-up or repaint the auger as necessary using olive drab or black paint.

3.8 REPAIR.

Any cut in the TFPE inert primaline or inert shock tube may be repaired using a cloth adhesive tape. Wind the tape around the cut at least one turn.

3.9 REPLACE.

Replace the M9 as needed. Replace the sandbag with any sandbag in the Army inventory. If the available sandbag is longer than the original sandbag, fill the longer sandbag with sand to appropriate length and tighten the sandbag.

SECTION III. INSTRUCTIONS FOR THE PA103A1 CONTAINER

3.10 GENERAL.

Refer to TM 9-1300-250 for maintenance on the PA103A1 Container and the container packing.

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APPENDIX A REFERENCES

A.1 ARMY REGULATIONS.

Accident Reporting and Records	AR 385-40
Malfunctions Involving Ammunition and Explosives	AR 75-1
Reporting of Item and Packaging Discrepancies	AR 735-11-2

A.2 FIELD MANUALS.

Explosives and Demolitions	FM 5-250
Survivability	FM 5-103

A.3 FORMS.

Recommended Changes to Publications and Blank Forms	DA Form 2028
Report of Discrepancy (ROD)	SF Form 364
U.S. Army Accident Report.....	DA Form 285

A.4 PAMPHLETS.

Functional Users Manual for The Army Maintenance Management
System (TAMMS).....PAM 738-750

A.5 TECHNICAL PUBLICATIONS.

Ammunition Maintenance TM 9-1300-250

A.6 OTHER.

Expendable Items (Except Medical, Class V, Repair Parts, and Heraldic
Items)CTA 50-970

APPENDIX B MAINTENANCE ALLOCATION CHART (MAC)

SECTION I. INTRODUCTION

B.1 THE ARMY MAINTENANCE SYSTEM MAC.

- a. This introduction (section I) provides a general explanation of all maintenance and repair functions authorized at various maintenance levels under the standard Army Maintenance System concept.
- b. The Maintenance Allocation Chart (MAC) in sections II, III and IV designates overall authority and responsibility for the performance of maintenance functions on the identified end item or component. The application of the maintenance functions to the end item or component will be consistent with the capacities and capabilities of the designated maintenance levels, which are shown on the MAC in column (4) as:

Unit - includes two subcolumns, C (operator/crew) and O (unit) maintenance.

Direct Support - includes an F subcolumn.

General Support - includes an H subcolumn.

Depot - includes a D subcolumn.

- c. Section V contains supplemental instructions and explanatory notes for a particular maintenance function.

B.2 MAINTENANCE FUNCTIONS.

Maintenance functions are limited to and defined as follows:

- a. Inspect. To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination (e.g., by sight, sound, or feel).
- b. Service. Operations required periodically to keep an item in proper operating condition.
 - (1) Clean. To rid the item of contamination.
 - (2) Touch up. To spot paint scratched or blistered surfaces.
 - (3) Mark. To restore obliterated identification.
- c. Renovate. To restore item to serviceable condition.
 - (1) Repair. To restore serviceability to an item by correcting specific damage, fault, malfunction, or failure through the application of maintenance services or other maintenance actions.
 - (2) Replace. To remove an unserviceable item and install a serviceable counterpart in its place.

B.3 EXPLANATIONS OF COLUMNS IN THE MAC, SECTIONS II, III AND IV.

- a. Column (1) - Group Number. Column 1 lists functional group code numbers, the purpose of which is to identify maintenance significant components, assemblies, subassemblies, and modules with the next higher assembly.
- b. Column (2) - Component/Assembly. Column 2 contains the item names of components, assemblies, subassemblies, and modules for which maintenance is authorized.
- c. Column (3) - Maintenance Function. Column 3 lists the functions to be performed on the item listed in column 2. (For detailed explanation of these functions, see paragraph B.2.)
- d. Column (4) - Maintenance Level. Column 4 specifies each level of maintenance authorized to perform each function listed in column 3. An "X" indicates the level at which maintenance will be done. Ammunition maintenance does not require specific time allocations for tactical items. The symbol designations for the various maintenance levels are as follows:

- C - Operator or crew maintenance
- O - Unit maintenance
- F - Direct support maintenance
- H - General support maintenance
- D - Depot maintenance

- e. Column (5) - Tools and Equipment Reference Code. Column 5 specifies those common tools sets (not individual tools), common TMDE, and special tools, special TMDE, and special support equipment required to perform the designated function.
- f. Column (6) - Remarks Code. When applicable, this column contains a letter code, in alphabetical order, which is keyed to the remarks contained in section V.

B.4 EXPLANATION OF COLUMNS IN REMARKS, SECTION V.

- a. Column (1) - Remarks Code. The code recorded in column 6, sections II, III and IV.
- b. Column (2) - Remarks. This column, along with the related codes, should be used to clarify maintenance and inspection functions by different MOS' involved in maintaining some components.

**SECTION II. MAINTENANCE ALLOCATION CHART (MAC)
FOR
DEMOLITION KIT, BLASTING:
FIGHTING POSITION EXCAVATOR, M300**

(1) Group Number	(2) Component/ Assembly	(3) Maintenance Function	(4) Maintenance Level					(5) Tools and Equipment Ref Code	(6) Remarks Code
			Unit		Direct Support	General Support	Depot		
			C	O	F	H	D		
00	M300 FPE	INSPECT CLEAN TOUCH-UP MARK	X X				X X X X		A B B

**SECTION III. MAINTENANCE ALLOCATION CHART (MAC)
FOR
DEMOLITION KIT, BLASTING:
FIGHTING POSITION EXCAVATOR, RELOAD KIT, M301**

(1) Group Number	(2) Component/ Assembly	(3) Maintenance Function	(4) Maintenance Level					(5) Tools and Equipment Ref Code	(6) Remarks Code
			Unit		Direct Support	General Support	Depot		
			C	O	F	H	D		
00	M301 FPE RELOAD KIT	INSPECT TOUCH-UP MARK	X					X X X	B B

**SECTION IV. MAINTENANCE ALLOCATION CHART (MAC)
FOR
TRAINING KIT, DEMOLITION: FIGHTING POSITION EXCAVATOR**

(1) Group Number	(2) Component/ Assembly	(3) Maintenance Function	(4) Maintenance Level					(5) Tools and Equipment Ref Code	(6) Remarks Code
			Unit		Direct Support	General Support	Depot		
			C	O	F	H	D		
	CARRIER BAG	INSPECT	0.1						
	INERT EXPLO- SIVE CONTAINER ASSEMBLY	INSPECT CLEAN REPAIR	0.1 0.2	0.2					C D
	AUGER (HANDLE/ EXTENSIONS/ BUCKET)	INSPECT CLEAN TOUCH-UP	0.1 0.2	0.2					C E
	INERT SHOCK TUBE ASSEMBLY	INSPECT CLEAN REPAIR	0.1 0.2	0.2					D

(1) Group Number	(2) Component/ Assembly	(3) Maintenance Function	(4) Maintenance Level					(5) Tools and Equipment Ref Code	(6) Remarks Code
			Unit		Direct Support	General Support	Depot		
			C	O	F	H	D		
	INERT SHOCK TUBE INITIATOR	INSPECT	0.1						
	M81	INSPECT	0.1						
	SANDBAG	INSPECT CLEAN REPLACE	0.1 0.1	0.1					F
	M9	INSPECT REPLACE	0.1	0.2					G

**SECTION V. REMARKS
FOR
M300 FPE, M301 FPE RELOAD KIT, AND TFPE**

Remarks Code	Remarks
A	CLEAN AUGER PRIOR TO REUSE WITH M301 FPE RELOAD KIT.
B	TOUCH-UP AND MARKING IS LIMITED TO PA103A1 CONTAINER ONLY.
C	CLEAN AUGER AND INERT EXPLOSIVE CONTAINER ASSEMBLIES WITH SOAP AND WATER IF NEEDED.
D	REPAIR CUT IN INERT PRIMALINE OR INERT SHOCK TUBE.
E	TOUCH-UP OR REPAINT AUGER AS NECESSARY (OLIVE DRAB OR BLACK).
F	REPLACE WITH ANY SANDBAG IF UNSERVICEABLE.
G	REPLACE M9 IF UNSERVICEABLE.

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APPENDIX C EXPENDABLE AND DURABLE ITEMS LIST

SECTION I. INTRODUCTION

C.1 SCOPE.

This appendix lists expendable and durable items you will need to maintain the TFPE. This listing is for information purposes only and is not authority to requisition the listed item. These items are authorized to you by CTA 50-970, Expendable Items (Except Medical, Class V, Repair Parts, and Heraldic Items).

C.2 EXPLANATIONS OF COLUMNS.

- a. Column (1) - Item Number. This number is assigned to the entry in the listing for reference when required.
- b. Column (2) - Level. The column identifies the lowest level of maintenance that requires the listed item.

C - Operator/Crew
O - Unit Maintenance
F - Direct Support Maintenance
H - General Support Maintenance

- c. Column (3) - National Stock Number. This is the national stock number assigned to the item; use it to request or requisition the item.
- d. Column (4) - Description. Indicates the federal item name and, if required, a description to identify the item. The last line of each item indicates the Commercial and Government Entity Code (CAGEC) in parenthesis followed by the part number.
- e. Column (5) - Unit of Measure (U/M)/Unit of Issue U/I. This measure is expressed by a two-character alphabetical abbreviation (e.g., EA, IN, PR). If the unit of measure differs from the unit of issue as shown in the Army Master Data File (AMDF), requisition the lowest unit of issue that will satisfy your requirements.

SECTION II. EXPENDABLE AND DURABLE ITEMS LIST

(1) Item Number	(2) Level	(3) National Stock Number	(4) Description	(5) (U/M)/ (U/I)
1	O	1375-01-415-1229	HOLDER, BLASTING CAP: shock tube, M9	EA

APPENDIX D
COMPONENT LISTING FOR THE M300 FPE AND THE TFPE

Table D-1. Component Listing for the M300 FPE and the TFPE .

M300 FPE Component	Recommended TFPE Component	Comment
Carrier, Part No. 28056911 Sling, Part No. SS-10	Same as tactical	
Handle Assembly, Part No. 28206657	Same as tactical	
Extension Assembly (2), Part No. 28206658	Same as tactical	
Auger, Part No. 28206651	Same as tactical	

NOTE: The Part Numbers in table D-1 are the contractor's Part Numbers.

Table D-1. Component Listing for the M300 FPE and the TFPE - Continued.

M300 FPE Component	Recommended TFPE Component	Comment
Shock Tube Assembly, Part No. D9M5099	Shock Tube Assembly, Inert, Part No. D9M5098	TFPE shock tube assembly is of same material as M300 FPE, but contains no energetics. TFPE is identified by label and markings as INERT. The shock tube is blue. Replacement of M9 for TFPE is NSN 1375-01-415-1229.
M81, NSN 1375-01-415-1235	Expended M81 converted to Inert M81	The M81 Igniters, when expended and containing no explosive, were recovered and converted to Inert M81 Igniters. Holes were drilled through the igniter body and they were painted bronze with blue end cap.
Sandbag, Part No. 28058502	Same as tactical	

NOTE: The Part Numbers in table D-1 are the contractor's Part Numbers.

Table D-1. Component Listing for the M300 FPE and the TFPE - Continued.

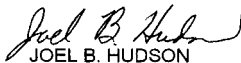
M300 FPE Component	Recommended TFPE Component	Comment
Explosive Container Assembly (2), Part No. 28058500	Explosive Container Assembly (2), Inert, Part No. 28058676	TFPE is identical to M300 FPE with the following exceptions: <ol style="list-style-type: none"> 1. Cutter ring (Part No. 28058735) is omitted. 2. Liquid and powder explosive components (BinexTM) are replaced by inert surrogates of same weight. The powder tube has a bronze band. The liquid tube is green. 3. TFPE is identified by label and markings as INERT. 4. Primaline is similar to M300 FPE, but the color is blue and it contains no energetics.

NOTE: The Part Numbers in table D-1 are the contractor's Part Numbers.

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By Order of the Secretary of the Army:

Official:



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

9927302

ERIC K. SHINSEKI
*General, United States Army
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