

TECHNICAL MANUAL

ORGANIZATIONAL MAINTENANCE REPAIR PARTS

AND SPECIAL TOOLS LISTS

FOR

HOWITZER, HEAVY, SELF-PROPELLED: 8-INCH, M110A2

(NSN 2350-01-041-4590)

PART I

HULL AND RELATED COMPONENTS

PART II

ARMAMENT AND TURRET COMPONENTS

**This copy is a reprint which includes current pages from
Changes 1 through 6.**

**ORGANIZATIONAL MAINTENANCE
REPAIR PARTS AND SPECIAL TOOLS LIST
FOR
HOWITZER, HEAVY, SELF-PROPELLED:
8-INCH, M110A2
(2350-01-041-4590)**

REPORTING OF ERRORS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 directly to COMMANDER, U. S. Army Armament Materiel Readiness Command, Attn: DRSAR-MAS, Rock Island, IL 61299. A reply will be furnished to you.

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Section I. INTRODUCTION

1. Scope.

This manual lists spares and repair parts; special tools; special test, measurement, and diagnostic equipment (TMDE), and other special support equipment required for performance of organizational, direct support, and general support maintenance of the 8-inch howitzer M 11 A2. It authorizes the requisitioning and issue of spares and repair parts as indicated by the source and maintenance codes.

2. General.

This repair parts list, special tools list and NSN/ Part Number Index is divided into Parts I and II.

Part I is for: Hull and related components

Part II is for: Armament and turret components

a. *Section II. Repair Parts List.* A list of spares and repair parts authorized for use in the performance of maintenance. The list also includes parts which must be removed for replacement of the authorized parts. Parts lists are composed of functional groups in numeric sequence, with the parts in each group listed in figure and item number sequence. Bulk materials are listed in NSN sequence

b. *Section III, Special Tools Lists.* A list of special tools, special TMDE, and other special support equipment authorized for the performance of maintenance at the organizational level.

c. *Section IV, National Stock Number and Part Number Index.* A list, in ascending National Item Identification Number (NIIN) (last nine numerals) sequence, of all national stock numbers appearing in the listings followed by a list, in alpha-numeric sequence, of all part numbers appearing in the listings. National stock numbers and part numbers are cross-referenced to each illustration figure and item number appearance.

3. Explanation of Columns.

The following provides an explanation of columns found in the tabular listings:

a. *Illustration.* This column is divided as follows:

(1) *Figure number.* Indicates the figure number of the illustration in which the item is shown.

(2) *Item number.* The number used to identify each item called out in the illustration.

b. *Source, Maintenance, and Recoverability (SMR, Codes).*

(1) *Source code.* Source codes are assigned to support items to indicate the manner of acquiring support items for maintenance, repair, or overhaul of end items. Source codes are entered in the first and second positions of the Uniform SMR Code format as follows:

Code	Definition
PA-Item procured and stocked for anticipated or known	

usage.

PB-Item procured and stocked for insurance purpose because essentiality dictates that a minimum quantity be available in the supply system.

PC-Item procured and stocked and which otherwise would be coded PA except that it is deteriorative in nature.

PD-Support item, excluding support equipment, procured for initial issue or outfitting and stocked only for subsequent or additional issue or outfittings. Not subject to automatic replenishment.

PE-Support equipment procured and stocked for initial issue or outfitting to specified maintenance repair activities.

PF-Support equipment which will not be stocked but which will be centrally procured on demand.

PG-Item procured and stocked to provide for sustained support for the life of the equipment. It is applied to an item peculiar to the equipment which, because of probable discontinuance or shutdown of production facilities, would prove uneconomical to reproduce at a later time.

KD-An item of a depot overhaul/repair kit and not purchased separately. Depot kit defined as a kit that provides items required at the time of overhaul or repair.

KF-An item of a maintenance kit and not purchased separately. Maintenance kit defined as a kit that provides an item that can be replaced at organizational or intermediate levels of maintenance.

KB-Item included in both a depot overhaul/repair kit and a maintenance kit.

MO-Item to be manufactured or fabricated at organizational level.

MF-Item to be manufactured or fabricated at the direct support maintenance level.

MH-Item to be manufactured or fabricated at the general support maintenance level.

MD-Item to be manufactured or fabricated at the depot maintenance level.

AO-Item to be assembled at organizational level.

AF-Item to be assembled at direct support maintenance level.

AH-Item to be assembled at general support maintenance level.

AD-Item to be assembled at depot maintenance level.

XA-Item is not procured or stocked because the requirements for the item will result in the replacement of the next higher assembly.

XB-Item is not procured or stocked. If not available through salvage, requisition.

XC-Installation drawing, diagram, instruction sheet, field service drawing that is identified by manufacturer's part number.

XD-A support item that is not stocked. When required, item will be procured through normal supply channels.

NOTE

Cannibalization or salvage may be used as a source of supply for any items coded above except those coded XA and aircraft support items as restricted by AR 700-42.

(2) *Maintenance code.* Maintenance codes are assigned to indicate the levels of maintenance authorized to USE and REPAIR support items. The maintenance codes are entered in the third and fourth positions of the Uniform SMR Code format as follows:

(a) The maintenance code entered in the third position will indicate the lowest maintenance level authorized to remove, replace, and use the support item. The maintenance code entered in the fourth position will indicate one of the following levels of maintenance:

Code	Application/Explanation
C	Crew or operator maintenance performed within organizational maintenance.
O	Support item is removed, replaced, used at the organizational level.
F	Support item is removed, replaced, used at the direct support level.
H	Support item is removed, replaced, used at the general support level.
D	Support items that are removed, replaced, used at depot mobile depot, specialized repair activity only.

(b) The maintenance code entered in the fourth position indicates whether the item is to be repaired and identifies the lowest maintenance level with the capability to perform complete repair (i.e., all authorized maintenance functions). This position will contain one of the following maintenance codes:

Code	Application/Explanation
O	The lowest maintenance level capable of complete repair of the support item is the organizational level.
F	The lowest maintenance level capable of complete repair of the support item is the direct support level.
H	The lowest maintenance level capable of complete repair of the support item in the general support level.
D	The lowest maintenance level capable of complete repair of the support item is the depot level, performed by depot, mobile depot or specialized repair activity.
L	Repair restricted to designated specialized repair activity.
Z	Nonreparable item. No repair is authorized.
B	No repair is authorized. The item may be reconditioned by adjusting, lubricating, etc., at the user level. No parts or special tools are procured for the maintenance of this item.

(3) *Recoverability code.* Recoverability codes are assigned to support items to indicate the disposition action on unserviceable items. The recoverability code is entered in the fifth position of the Uniform SMR Code format as follows:

Recoverability Codes	Definition
Z	Nonreparable item. When unserviceable condemn and dispose at the level indicated in position 3.
O	Reparable item. When uneconomically reparable, condemn and dispose at organizational level.
F	Reparable item. When uneconomically reparable, condemned dispose at the direct support level.
L	Reparable item. Repair, condemnation and disposal not authorized below depot/specialized repair activity level.
A	Item requires special handling or condemnation procedures

because of specific reasons (i.e., precious metal content, high dollar value, critical material or hazardous material). Refer to appropriate manuals/directives for specific instructions.

H-Reparable item. When uneconomically reparable, condemn and dispose at the general support level.

D-Reparable item. When beyond lower level repair capability, return to depot. Condemnation and disposal not authorized below depot level.

c. *National Stock Number.* Indicates the national stock number assigned to the item and will be used for requisitioning purposes.

d. *Part Number.* Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications standards, and inspection requirements, to identify an item or range of items.

NOTE

When a stock numbered item is requisitioned, the item received may have a different part number than the part being replaced.

e. *Federal Supply Code for Manufacturer (, .* The FSCM is a 5-digit numeric code listed in SB 708-42 which is used to identify the manufacturer, distributor, or Government agency, etc.

f. *Description.* Indicates the federal item name and, if required, a minimum description to identify the item. Items that are included in kits and sets are listed below the name of the kit or set with the quantity of each item in the kit or set indicated in the quantity incorporated in unit column. In the Special Tools List, the initial basis of issue (BOI) appears as the last line in the entry for each special tool, special TMI)E, and other special support equipment.

g. *Unit of Measure (U/M).* Indicates the standard of the basic quantity of the listed item as used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., in, pr, etc.). When the unit of measure differs from the unit of issue, the lowest unit of issue that will satisfy the required units of measure will be requisitioned.

h. *Quantity Incorporated in Unit.* Indicates the quantity of the item used in the breakout shown on the illustration figure, which is prepared for a functional group, subfunctional group, or an assembly. A "V" appearing in this column in lieu of a quantity indicates that no specific quantity is applicable, (e.g., shims, spacers, etc.).

4. Special Information

a. Usable on codes are shown in the description column. Vehicle items not updated by PIP Kit 5 and other product improvement changes are identified in the RPSTL as "O" items. Those that have been updated by PIP Kit 5 and other product improvement changes are identified as "N" items. Uncoded items are common to both improved and unimproved vehicles.

b. Usable on codes are shown in the description column. Vehicle items not updated by Modification Kits 11784130 and 11784074 and other product improvement changes are identified in the RPSTL as "O-N" items. Those that have been updated by the above modification kits and product improvement changes are identified as "N-A" items. Uncoded items are common to all vehicles.

c. Detailed manufacturing instructions for items source coded to be manufactured or fabricated are found in TM 9-2350-304-20 maintenance manual. Bulk materials required to manufacture items are listed in the Bulk Material Group of this manual.

d. Detailed assembly instructions for items source coded to be assembled are found in TM 9-2350-304-20 maintenance manual. Assembly components are listed immediately following the item to be assembled.

e. Repair parts kits and gasket sets appear as the last entries in the repair parts listing for the figure in which its parts are listed as repair parts.

Note

"P" source coded items with missing National stock numbers are items which are not recorded in the Army master data file (AMDF) cannot be requisitioned from the supply system. When these stock numbers are broadcast in the AMDF, they will be provided by a change to the manual. If justified, these items may be requisitioned on an exception basis using the Army part number or manufacturer's part number and code.

f. The following publications pertain to M110A2 vehicle and its components.

- LO 9-2350-304-12
Lubrication Order
- TM 9-2350-304-10
Operator's Manual
- TM 9-2350-304-20
Organizational Maintenance Manual
- TM 9-2350-304-34-1

Direct and General Support Maintenance Manual:
Hull and Related Components

TM 9-2350-304-34-2

Direct and General Support Maintenance Manual:
Armament and Turret Components

TM 9-2350-304-34P- 1

Direct Support and General Support Maintenance
Repair Parts and Special Tools Lists (Included
Depot Maintenance Repair Parts and Special
Tools): Hull and Related Components

TM 9-2350-304-34P-2

Direct Support and General Support Maintenance
Repair Parts and Special Tools Lists (Including
Depot Maintenance Repair Parts and Special
Tools): Armament and Turret Components

TM 9-2520-234-34P

Direct Support and General Support Maintenance
Repair Parts and Special Tools List (Including Depot
Maintenance Allowances) for Power Train Assembly
(8351100) (Allison Model XTG-411-2A)

TM 9-2520-234-35

Field and Depot Maintenance Manual for Power
Train Assembly (8351100) (Allison Model XTG-411-
2A)

TM 9-1815-202-34 and P

Direct Support and General Support Maintenance
Manual Including Repair Parts and Special Tools
Lists (Including Depot Maintenance Allowances)
for Engine, Diesel, Turbocharged, Fuel Injected,
Liquid Cooled, "V" Type, 8-Cylinder, W/Container,
Assembly Detroit Diesel GMC Series 8V71T Model
7083-7398, 7083-7395, 7083-7399, and 7083-7396

TM 9-2920-224-35

Field and Depot Maintenance Manual (Including
Field and Depot Maintenance Repair Parts Lists):
Generator, Engine Assembly (300-Amp)

g. The illustrations in this manual are identical to those published in the higher level of maintenance manuals, e.g. -34P and -35P. Only those parts assigned the third position SMR maintenance code "C" or "O" are listed in the tabular listing; therefore, there may be a break in the item number sequence. Only illustrations containing organizational authorized items appear in this manual.

5. How to Locate Repair Parts.

a. When National Stock Number or Part Number is Unknown:

(1) *First.* Determine if repair part is a component of the Hull (Part I) or a component of Armament or Turret (Part II). Then, using the

table of contents, determine the functional subgroup within which the repair part belongs. This is necessary since illustrations are prepared for functional subgroups, and listings are divided into the same groups.

(2) *Second.* Find the illustration covering the subgroup to which the repair part belongs.

(3) *Third.* Identify the repair part on the illustration and note the illustration figure and item number of the repair part.

(4) *Fourth.* Using the Repair Parts Listing, find the figure and item number noted on the illustration.

b. When National Stock Number Part is Known:

(1) *First.* Determine if part is a Hull component (Part I) or an Armament and Turret component (Part II). Using the Index of National Stock Numbers and Part Numbers, find the pertinent national stock number or part number. This index is in ascending NIIN (last nine numerals) sequence, followed by a list of part numbers in ascending alpha-numeric sequence, cross-referenced to the illustration figure number and item number.

(2) *Second.* After finding the figure and item number, locate the figure and item number in the repair parts list. Hull components are in Part I and Armament and Turret components are in Part II.

6. Abbreviations.

The abbreviations used in this publication are common in trade practice and MIL-STD-12, Military standard abbreviations for use on drawings, specifications, standards and in technical documents.

Abbreviation/Explanation

ADPTR	Adapter	NF	National Fine
ARR	Arrangement	NO	Number
BRG	Bearing	NOM	Nominal
CKT BKR	Circuit Breaker	NPT	National Taper
CONN	Connector		Pipe
CONT	Contact	NPTF	Tight Joints
CTSK	Countersunk	OD	Outside Diameter
CU FT	Cubic Foot	NPN	No Part Number
DBL	Double	OVE	On-Vehicle
DEG	Degree		Equipment
DIA	Diameter	P/N	Part Number
ELEC	Electrical	PKG	Package
EXT	External	PSI	Pounds Per Square
FIL	Fillister		Inch
FILH	Fillister H6ad	QTY	Quantity
FL	Flat	RBR	Rubber
FLH	Flat Head	RD	Round
FT	Foot	RH	Right Hand
FWD	Forward	RLR	Roller
GA	Gage	RLVD	Relieved
GAL	Gallons	RND	Round
GND	Ground	SAE	Society of American
GR	Grade		Engineers
HD	Head	SCH	Socket Head
HDLS	Headless	SKT	Socket
HEX	Hexagon	SLTD	Slotted
HEX HD	Hexagonal Head	SLVG	Sleeving
ID	Inside Diameter	SQ	Square
IN	Inch	STD	Standard
INT	Internal	STL	Steel
INTL	Internal	STR	Straight
IPS	International Pipe	SYN	Synthetic
	Standard	THD	Thread
IPS	Iron Pipe Size	THK	Thick
IPT	Iron Pipe Thread	TM	Technical Manual
LG	Length	TRH	Truss Head
LKWR	Lock Wire	UN	Unified
LUB	Lubricate	UNC	Unified Coarse
MACH	Machine		Thread
MFD	Manufactured	UNF	Unified Fine
MIL	Military		Thread
MS	Military Standard	V	Voltage
MTG	Mounting	VDC	Direct-Current Volts
NC	National Coarse	WG	Wire Gage
NDL	Needle	XMSN	Transmission

M110A2

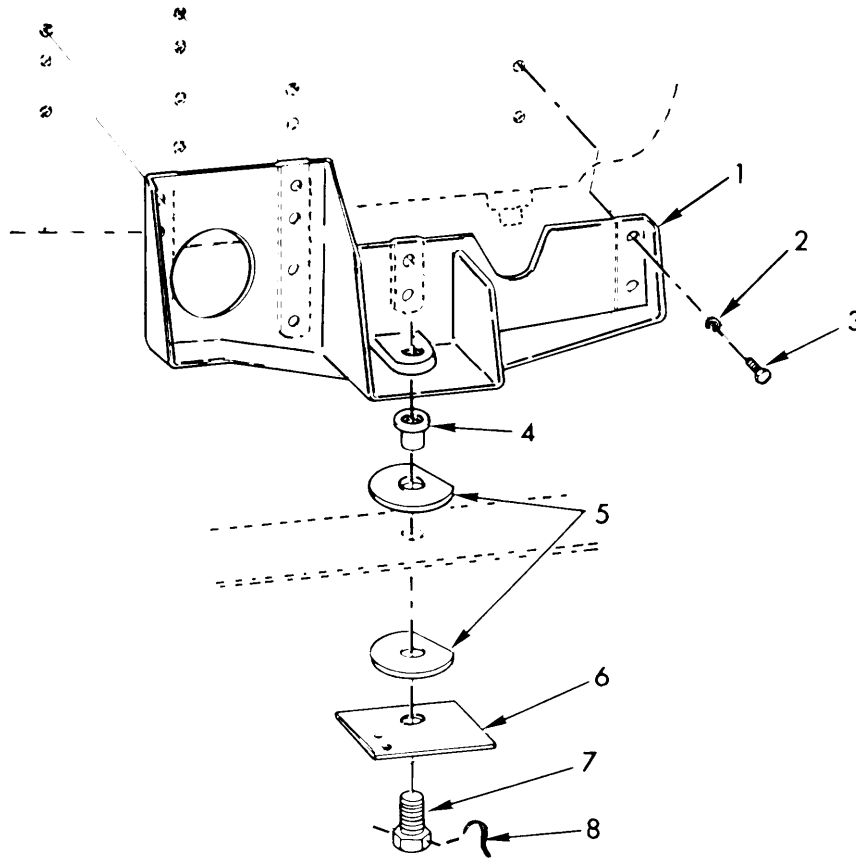
TM 9-2350-304-20P

PART I

HULL AND RELATED COMPONENTS

5

Section II. REPAIR PARTS LIST (PART I)

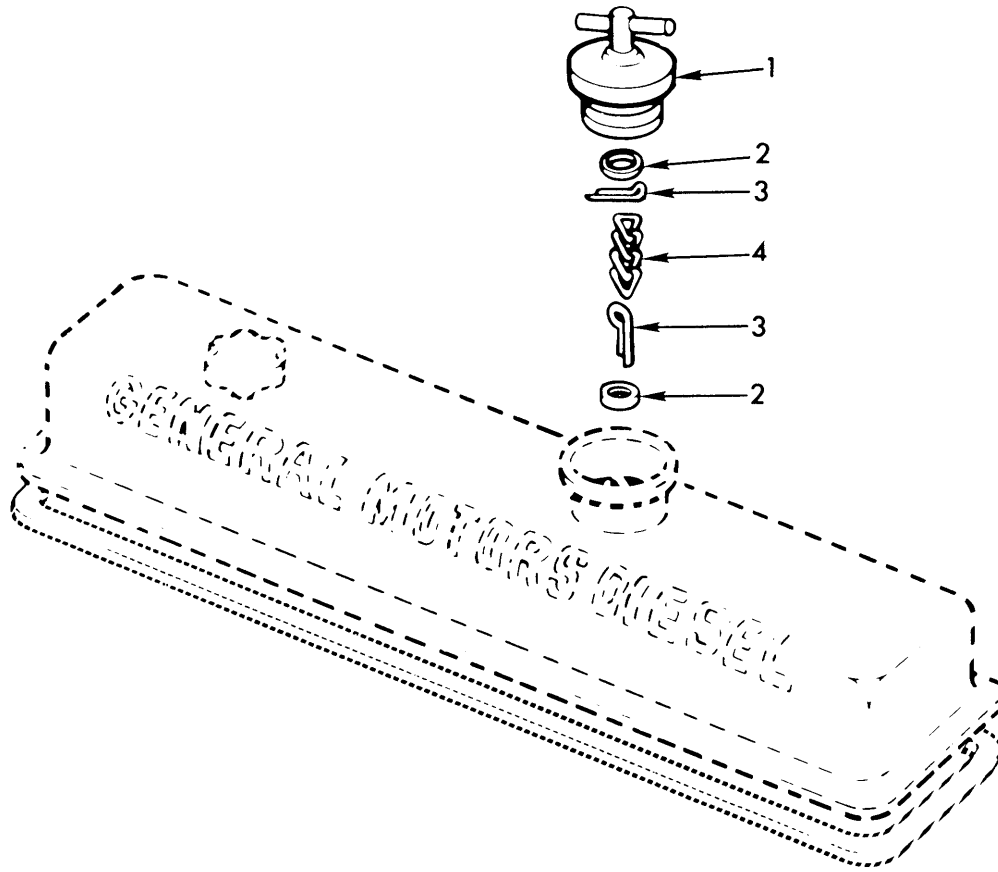


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Figure 1. Engine mount.

(1) ILLUSTRATION	(2) (a) FIG NO.	(3) (b) ITEM NO.	(4) SMR CODE	(5) NATIONAL STOCK NUMBER	(6) FSCM	(7) PART NUMBER	(8) DESCRIPTION	USABLE ON CODE	U/M	QTY INC IN UNIT
							GROUP 0100 ENGINE MOUNT			
1	1	1	PAOZZ	2805-00-420-5043	19207	11631501	MOUNT, ENGINE		EA	1
1	2	2	PAOZZ	5310-00-637-9541	96906	MS35338-46	WASHER, LOCK 3/8 NOM SIZE		EA	12
1	3	3	PAOZZ	5305-00-068-0511	96906	MS90728-62	SCREW, CAP, HEX HD 3/8-16UNC X 1.250		EA	12
1	4	4	PAOZZ	2815-00-937-1322	19207	10898445	TUBE, SPACER		EA	1
1	5	5	PAOZZ	2990-00-980-1737	19207	10882021	PAD, SHOCK, ENGINE MOUNT.....		EA	2
1	6	6	PAOZZ	2805-00-221-9182	19207	10882022	WASHER, LOCK WIRE PLATE		EA	1
1	7	7	PAOZZ	5305-00-904-4003	96906	MS51096-513	SCREW, CAP, HEX HD 1.0-12UNF X 3.00.....		EA	1
1	8	8	MOOZZ		96906	MS20995F91AR	WIRE, NONELECTRICAL, MFD FROM 9505-00-825-7579		FT	V

Section II. REPAIR PARTS LIST (PART I)

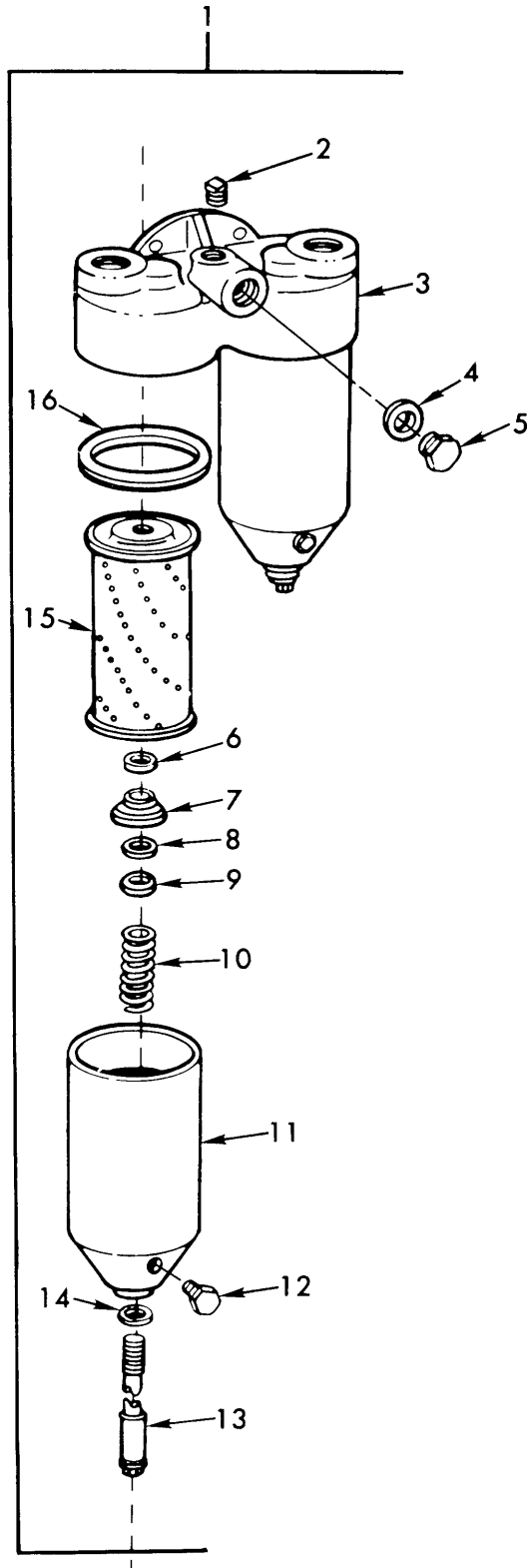


TA071736

Figure 2. Rocker cover.

(1) ILLUSTRATION		(2)	(3)	(4)	(5)	(6)	(7)	(8)
(a) FIG NO.	(b) ITEM NO.	SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION USABLE ON CODE	U/M	QTY INC IN UNIT
						GROUP 0105 ROCKER COVER		
2	1	PAOZZ	2815-00-735-4292	5117362	72582	CAP, OIL FILLER, ENGINE	EA	1
2	2	PAOZZ	5310-00-950-1310	218322	21450	WASHER, FLAT 1.8 ID X 5/16	EA	2
2	3	PAOZZ	5315-00-187-9370	MS24665-172	96906	PIN, COTTER, 1/16 DIA X 3/4 LG	EA	2
2	4	PAOZZ	2815-00-900-2577	5117365	72582	CHAIN, OIL FILLER CAP	EA	1

Section II. REPAIR PARTS LIST (PART I)

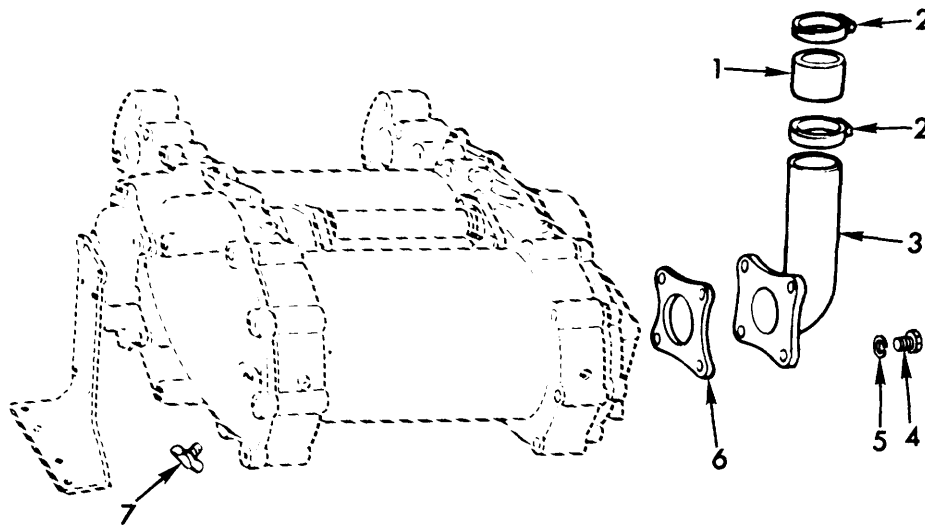


TA071737

Figure 3. Oil filter assembly - 5126546.

(1) ILLUSTRATION		(2)	(3)	(4)	(5)	(6)	(7)	(8)
(a) FIG NO.	(b) ITEM NO.	SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION USABLE ON CODE	U/M	QTY INC IN UNIT
						GROUP 0106 OIL FILTER ASSEMBLY-5126546		
3	1	PAOOZ	2940-00-852-9675	5126546		72582 FILTER ASSEMBLY, FLUID, PRESSURE	EA	1
3	2	PAOZZ	4730-00-187-4207	103878		72582 PLUG, OIL FILTER ASSEMBLY	EA	2
3	3	XAOZZ		5124138	72582	ADAPTER, OIL FILTER ASSEMBLY	EA	1
3	4	PAOZZ	5330-00-736-3508	5575086	72582	WASHER, NON-METALLIC, OIL FILTER	EA	1
3	5	PAOZZ	5365-00-886-5967	5126686	72582	PLUG, MACH THREAD	EA	1
3	6	PBOZZ	5365-00-579-5983	5120602	72582	RING, RETAINER	EA	1
3	7	PBOZZ	5330-00-629-6340	5187309	72582	RETAINER, LUB OIL	EA	1
3	8	PBOZZ	5365-00-262-4701	5154538	72582	SPACER, RING	EA	1
3	9	KFOZZ		5573801	70040	WASHER, OIL FILTER PART OF SET P/N 5574130	EA	1
3	9	PCOZZ	5310-00-297-6078	853269	21450	WASHER, OIL FILTER PART OF SET P/N 5574130	EA	1
3	10	PAOZZ	5360-00-801-8731	5187308	72582	SPRING, HELICAL, COMPRESSED	EA	2
3	11	PAOZZ	2940-00-019-4775	5574008	72582	SHELL, OIL FILTER	EA	2
3	12	PAOZZ	4820-00-360-8299	5570480	72582	VALVE, PLUG, DRAIN	EA	1
3	13	PAOZZ	5306-00-870-6222	5120740	72582	BOLT, SHOULDER, OIL FILTER	EA	2
3	14	PAOZZ	5330-00-604-8094	5187310	72582	PACKING, PREFORMED, OIL FILTER BOLT	EA	2
3	15	PAOZZ	2940-00-580-6283	MS35802-3	96906	FILTER ELEMENT, FLUID PRESSURE, FULL FLOW W/GASKET	EA	2
3	16	PAOZZ	5330-00-290-7860	5571024	70040	WASHER, NON-METALLIC, FILTER ADAPTER	EA	2
3		PCOZZ	5330-00-841-5964	5574130	72582	WASHER SET, ENGINE OIL FILTER	EA	1
3						WASHER	EA	1
3						WASHER	EA	1

Section II. REPAIR PARTS LIST (PART I)

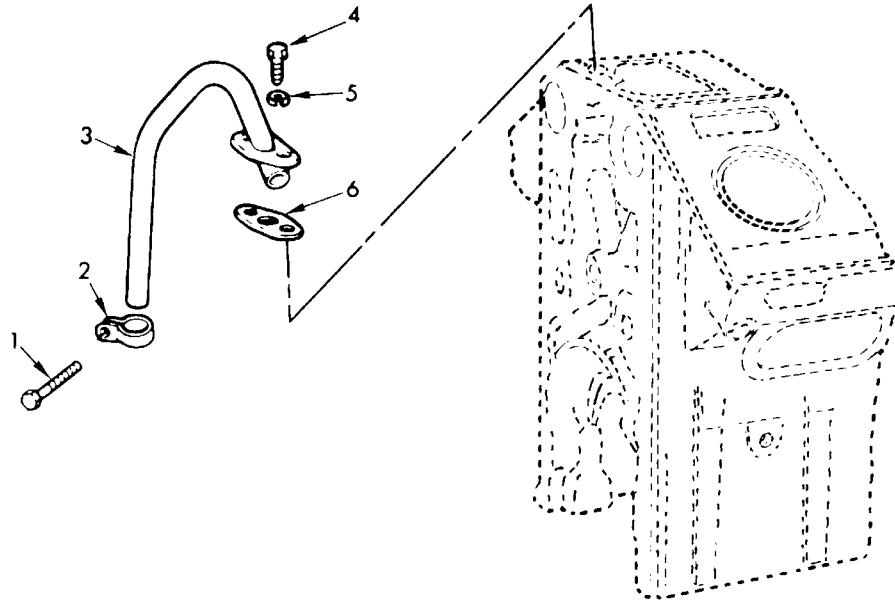


TA071738

Figure 4. Oil cooler.

(1) ILLUSTRATION		(2)	(3)	(4)	(5)	(6)	(7)	(8)
(a) FIG NO.	(b) ITEM NO.	SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION USABLE ON CODE	U/M	QTY INC IN UNIT
4	1	PAOZZ	4720-00-080-6582	11594525	19207	GROUP 0106 OIL COOLER		
4	2	PAOZZ	4730-00-277-7133	7612732	19207	HOSE, NONMETALIC, OIL COOLER TO COOLANT PUMP	EA	1
4	3	PAOZZ	2815-00-933-7636	5127904	72582	CLASP. HOSE, INLET COOLANT HOSE, OIL COOLER	EA	2
4	4	PAOZZ	5305-00-018-6619	7418028	72582	ELBOW, ENGINE OL	EA	1
4	5	PAOZZ	5310-00-637-9541	MS35338-46	96906	SCREW, CAP, HEX HD, ENGINE OIL ELBOW	EA	4
4	6	PAOZZ	5330-00-844-2903	5124822	72582	WASHER, LOCK 3/8 NO SIZE	EA	4
4	7	PAOZZ	4820-00-849-1220	MS35782-5	96906	GASKET, COOLANT INLET, ELBOW TO OIL COOLER	EA	1
						COCK, DRAIN	EA	1

Section II. REPAIR PARTS LIST (PART I)



TA071739

Figure 5. Crankcase engine breather.

(1) ILLUSTRATION		(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) FSCM	(5) PART NUMBER	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
(a) FIG NO.	(b) ITEM NO.							
						GROUP 0106CRANKCASE ENGINE BREATHER		
5	1	XBOZZ		21450	119092	SCREW, CAP, HEX HD 3/8-24UNF X 4.75.....	EA	3
5	2	XBOZZ	5340-00-325-4965	72582	5184291	CLIP, BREATHER PIPE	EA	2
5	3	XBOZZ		72582	5108452	PIPE, BREATHER.....	EA	1
5	4	PAOZZ	5305-00-942-2196	96906	MS18154-60	SCREW, CAP, HEX HD 3/8-16UNC X 1.00.....	EA	2
5	5	PAOZZ	5310-00-637-9541	96906	MS35338-46	WASHER, LOCK 3/8 NOM SIZE.....	EA	2
5	6	PAOZZ	5330-00-276-1842	72582	5121894	GASKET, BREATHER PIPE.....	EA	1