

**TECHNICAL MANUAL**

**INTERMEDIATE DIRECT SUPPORT AND  
INTERMEDIATE GENERAL SUPPORT MAINTENANCE  
REPAIR PARTS AND SPECIAL TOOLS LIST**

**TRUCK, FIRE FIGHTING,  
1000 GPM MULTIPURPOSE,  
MODEL 2500L  
NSN 4210-01-193-3621**

**Approved for public release. Distribution is unlimited.**

|                                                                                             |
|---------------------------------------------------------------------------------------------|
| <p><b>This copy is a reprint which includes<br/>current pages from Changes 1 and 2.</b></p> |
|---------------------------------------------------------------------------------------------|

TECHNICAL MANUAL

No. 5-4210-220-34P

HEADQUARTERS  
DEPARTMENT OF THE ARMY  
WASHINGTON, D.C., 20 November 1987Intermediate Direct Support and  
Intermediate General Support Maintenance  
Repair Parts and Special Tools ListTRUCK, FIREFIGHTING 1000 GPM MULTIPURPOSE  
MODEL 2500L NSN 4210-01-193-3621

Current as of 30 September 1996

DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited

**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 these procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual directly to: Commander, US Army Aviation and Troop Command, ATTN: AMSAT-I-MP, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798. You may also submit your recommended changes by E-mail directly to <mpmt%avma28@st-louis-emh7.army.mil>. A reply will be furnished directly to you. Instructions for sending an electronic 2028 may be found at the back of this manual immediately preceding the hard copy 2028.

**TABLE OF CONTENTS**

|                                                      | Page | Illus<br>Figure |
|------------------------------------------------------|------|-----------------|
| SECTION I INTRODUCTION .....                         | 1    |                 |
| SECTION II REPAIR PARTS LIST .....                   | 1-1  |                 |
| Group 00 Truck, Firefighting, 1000 GPM, Multipurpose |      |                 |
| Group 01 Front Bumper .....                          | 1-1  | 1               |
| Group 02 Rear Step .....                             | 2-1  | 2               |
| Group 03 Heat Shields .....                          | 3-1  | 3               |
| Group 04 Cab .....                                   | 4-1  |                 |
| Windshield Wiper and Washer .....                    | 4-1  | 4               |
| Engine Covers, Guards and Trim .....                 | 5-1  | 5               |
| Cab Mirrors .....                                    | 5-1  | 5               |
| Cab Spotlights .....                                 | 5-1  | 5               |
| Siren and Glove Box .....                            | 5-1  | 5               |
| Cab Door (Mounting) .....                            | 6-1  | 6               |
| Cab Door (Outer) .....                               | 6-1  | 6               |
| Cab Door (Inner) .....                               | 6-1  | 6               |
| Cab Windows .....                                    | 7-1  | 7               |
| Cab Seats .....                                      | 8-1  | 8               |
| Cab Heater .....                                     | 9-1  | 9               |
| Cab Heater Water Lines and Ducting .....             | 10-1 | 10              |
| Battery Housing .....                                | 11-1 | 11              |

## TABLE OF CONTENTS (Continued)

|          |                                                | Page | Illus<br>Figure |
|----------|------------------------------------------------|------|-----------------|
| Group 05 | Pump Body .....                                | 12-1 |                 |
|          | Pump Body Assembly .....                       | 12-1 | 12              |
|          | Pump Panel Control Levers .....                | 13-1 | 13              |
|          | Pump Panel Instruments .....                   | 14-1 | 14              |
| Group 06 | Hose Reel Assembly .....                       | 15-1 | 15              |
|          | Wiring Harness Hose Reel .....                 | 15-1 | 15              |
| Group 07 | Auxiliary Power Unit (APU) .....               | 16-1 |                 |
|          | APU Assembly .....                             | 16-1 | 16              |
|          | APU Alternator .....                           | 17-1 | 17              |
|          | Engine Starter and Flywheel Housing .....      | 18-1 | 18              |
|          | Engine Injector, Governor and Sump .....       | 19-1 | 19              |
|          | Engine Cylinder Head .....                     | 20-1 | 20              |
|          | Engine Crankshaft .....                        | 21-1 | 21              |
| Group 08 | Hose Body .....                                | 22-1 |                 |
|          | Hose Body Trim (Rear) .....                    | 22-1 | 22              |
|          | Hose Body Trim (Sides) .....                   | 22-1 | 22              |
|          | Hose Body Matting .....                        | 23-1 | 23              |
|          | Compartment Lights .....                       | 24-1 | 24              |
|          | Hose Body Doors (Left) .....                   | 25-1 | 25              |
|          | Hose Body Doors (Right) .....                  | 25-1 | 25              |
|          | Hose Beds .....                                | 26-1 | 26              |
|          | Hose Body Front Panel .....                    | 27-1 | 27              |
|          | Hose Body Rear Panel .....                     | 28-1 | 28              |
|          | Hose Bed Left Hand Compartment Assembly .....  | 29-1 | 29              |
|          | Hose Bed Right Hand Compartment Assembly ..... | 30-1 | 30              |
| Group 09 | Pump Drive .....                               | 31-1 |                 |
|          | Pump Drive Hoses .....                         | 31-1 | 31              |
|          | Pump Drive (PTO Assembly) .....                | 31-1 | 31              |
|          | Pump Drive Shafts .....                        | 32-1 | 32              |
|          | Pump Drive Gearbox .....                       | 33-1 | 33              |
| Group 10 | Fire Pump, Water and Foam Piping .....         | 34-1 |                 |
|          | Fire Pump Volute Body .....                    | 34-1 | 34              |
|          | Fire Pump Priming Valve .....                  | 35-1 | 35              |
|          | Fire Pump Priming Pump .....                   | 36-1 | 36              |
|          | Fire Pump Primer Connections .....             | 37-1 | 37              |
|          | Fire Pump Primer Disengaging Unit .....        | 38-1 | 38              |
|          | Fire Pump Impeller .....                       | 39-1 | 39              |
|          | Fire Pump Bearing Housing .....                | 40-1 | 40              |
|          | Water Tank Valve .....                         | 41-1 | 41              |
|          | Water Piping .....                             | 42-1 | 42              |
|          | Water Piping .....                             | 43-1 | 43              |
|          | Water Piping .....                             | 44-1 | 44              |
|          | Roof Turret .....                              | 45-1 | 45              |
|          | Roof Turret (Nozzle Assembly) .....            | 45-1 | 45              |
|          | Bumper Turret .....                            | 46-1 | 46              |
|          | Bumper Turret (Nozzle Assembly) .....          | 46-1 | 46              |
|          | Foam Piping .....                              | 47-1 | 47              |
|          | Foam Valve Actuators .....                     | 48-1 | 48              |

## TABLE OF CONTENTS (Continued)

|       |    |                                             | Page | Illus<br>Figure |
|-------|----|---------------------------------------------|------|-----------------|
| Group | 11 | Water and Foam Tank .....                   | 49-1 | 49              |
| and   | 12 |                                             |      |                 |
| Group | 13 | Winterization System .....                  | 50-1 |                 |
|       |    | Winterization Fuel and Exhaust System ..... | 50-1 | 50              |
|       |    | Winterization Water Piping .....            | 51-1 | 51              |
|       |    | Winterization Electrical System .....       | 52-1 | 52              |
|       |    | Pump Body Heater .....                      | 53-1 | 53              |
|       |    | Winterization Heater .....                  | 54-1 | 54              |
|       |    | Winterization Heater (Blower) .....         | 54-1 | 54              |
| Group | 14 | Radiator .....                              | 55-1 |                 |
|       |    | Radiator Assembly .....                     | 55-1 | 55              |
|       |    | Radiator Fan Drive Assembly .....           | 56-1 | 56              |
|       |    | Radiator Hoses .....                        | 57-1 | 57              |
| Group | 15 | Exhaust System .....                        | 58-1 |                 |
|       |    | Exhaust Muffler .....                       | 58-1 | 58              |
|       |    | Exhaust System .....                        | 59-1 | 59              |
| Group | 16 | Air System .....                            | 60-1 |                 |
|       |    | Air Compressor Governor .....               | 60-1 | 60              |
|       |    | Air Drier .....                             | 61-1 | 61              |
|       |    | Foot Throttle .....                         | 62-1 | 62              |
|       |    | Brake Pedal Plate .....                     | 63-1 | 63              |
|       |    | Brake Pedal Assembly .....                  | 64-1 | 64              |
|       |    | Air Horn .....                              | 65-1 | 65              |
|       |    | Pressure Protection Valves .....            | 66-1 | 66              |
|       |    | Quick Release Valve .....                   | 67-1 | 67              |
|       |    | Spring Brake Valve .....                    | 68-1 | 68              |
|       |    | Relay Valve .....                           | 69-1 | 69              |
|       |    | Air Schematic (Chassis) .....               | 70-1 | 70              |
|       |    | Air Schematic (Pump Body) .....             | 70-1 | 70              |
|       |    | Air Schematic (Engine) .....                | 70-1 | 70              |
|       |    | Air Schematic (Cab) .....                   | 70-1 | 70              |
| Group | 17 | Fuel System .....                           | 71-1 |                 |
|       |    | Fuel Tank and Lines .....                   | 71-1 | 71              |
|       |    | Fuel Tank and Lines (Engine) .....          | 71-1 | 71              |
|       |    | Fuel Priming Pump .....                     | 72-1 | 72              |
|       |    | Water/Fuel Separator .....                  | 73-1 | 73              |
|       |    | Engine Fuel Pump .....                      | 74-1 | 74              |
|       |    | Air Filter .....                            | 75-1 | 75              |
| Group | 18 | Electrical System .....                     | 76-1 |                 |
|       |    | 12 Vdc Alternator .....                     | 76-1 | 76              |
|       |    | Engine Starter Motor .....                  | 77-1 | 77              |
|       |    | Engine Starter Motor .....                  | 77-1 | 77              |
|       |    | Electrical Components .....                 | 78-1 | 78              |
|       |    | Cab Lights (Upper) .....                    | 79-1 | 79              |
|       |    | Cab Lights (Lower) .....                    | 80-1 | 80              |
|       |    | Hose Body Lights .....                      | 81-1 | 81              |
|       |    | Hose Body Lights .....                      | 82-1 | 82              |

## TABLE OF CONTENTS (Continued)

|       |                                                                                   | Page  | Illus<br>Figure |
|-------|-----------------------------------------------------------------------------------|-------|-----------------|
|       | Engine Sender Units .....                                                         | 83-1  | 83              |
|       | Engine and Transmission Sender Units.....                                         | 84-1  | 84              |
|       | Cab Instrument Dash Panel .....                                                   | 85-1  | 85              |
|       | Cab Instrument Air Panel .....                                                    | 86-1  | 86              |
|       | Cab Instrument Fold-Down Panel.....                                               | 87-1  | 87              |
|       | Cab Instrument Flashers and Relays.....                                           | 88-1  | 88              |
|       | 110-VAC Alternator.....                                                           | 89-1  | 89              |
|       | Wiring Harness, 12-Vdc (Pump Body).....                                           | 90-1  | 90              |
|       | Wiring Harness, 12-Vdc (Hose Body).....                                           | 90-1  | 90              |
|       | Wiring Harness, 1 2-Vdc (Cab Junction, Fire Package,<br>PTO and Tank Valve) ..... | 90-1  | 90              |
|       | Wiring Harness, 12-Vdc(Engine).....                                               | 90-1  | 90              |
|       | Wiring Harness, 12-Vdc(Battery).....                                              | 90-1  | 90              |
|       | Wiring Harness, 12-Vdc (Air Panel).....                                           | 90-1  | 90              |
|       | Wiring Harness, 12-Vdc (Lower Cab) .....                                          | 90-1  | 90              |
|       | Wiring Harness, 12-Vdc(Upper Cab) .....                                           | 90-1  | 90              |
|       | Wiring Harness, 12-Vdc (Cab Power).....                                           | 90-1  | 90              |
|       | Wiring Harness, 1 2-Vdc (LH (Dash) Panel) .....                                   | 90-1  | 90              |
|       | Wiring Harness, 110-VAC .....                                                     | 91-1  | 91              |
| Group | 19 Steering .....                                                                 | 92-1  |                 |
|       | Steering Column and Shafts .....                                                  | 92-1  | 92              |
|       | Steering Hoses .....                                                              | 93-1  | 93              |
|       | Steering Pump.....                                                                | 94-1  | 94              |
|       | Steering Reservoir .....                                                          | 95-1  | 95              |
|       | Drag Link .....                                                                   | 96-1  | 96              |
|       | Steering Gear .....                                                               | 97-1  | 97              |
| Group | 20 Drive Lines .....                                                              | 98-1  |                 |
|       | Drive Lines .....                                                                 | 98-1  | 98              |
|       | Drive Line Center Bearing.....                                                    | 99-1  | 99              |
| Group | 21 Transmission .....                                                             | 100-1 |                 |
|       | Transmission Shifter, Oil Sampling and Dipstick .....                             | 100-1 | 100             |
|       | Dipstick.....                                                                     | 100-1 | 100             |
|       | Transmission Cooling and Filter Installation .....                                | 101-1 | 101             |
|       | Lock-Up Clutch and Torque Converter .....                                         | 102-1 | 102             |
|       | Power Take Off and Oil Pumps .....                                                | 103-1 | 103             |
|       | Torque Converter Housing .....                                                    | 104-1 | 104             |
|       | Front Support and Main Valve .....                                                | 105-1 | 105             |
|       | Input Shaft, Forward and Fourth Clutch .....                                      | 106-1 | 106             |
|       | Second and Third Clutch.....                                                      | 107-1 | 107             |
|       | Gear Unit and Main Shaft .....                                                    | 108-1 | 108             |
|       | Oil Filter and Pan .....                                                          | 109-1 | 109             |
|       | Transmission Housing .....                                                        | 110-1 | 110             |
|       | First, and Low, Reverse Clutch and Adapter Housing.....                           | 111-1 | 113             |
|       | Transmission Output Shaft.....                                                    | 112-1 | 112             |
|       | Control Valves .....                                                              | 113-1 | 113             |
|       | Control Valves (Front Valves) .....                                               | 113-1 | 113             |

## TABLE OF CONTENTS (Continued)

|       |                                              | Page  | Illus<br>Figure |
|-------|----------------------------------------------|-------|-----------------|
|       | Control Valves (Rear Valves).....            | 113-1 | 113             |
|       | Lock-up Cutoff Control Valve and Low Trimmer |       |                 |
|       | Valve Assembly .....                         | 114-1 | 114             |
| Group | 22 Engine .....                              | 115-1 |                 |
|       | Front Engine Mount .....                     | 115-1 | 115             |
|       | Engine/Transmission Flexplate .....          | 116-1 | 116             |
|       | Engine Lift Brackets.....                    | 117-1 | 117             |
|       | Starter Motor Mounting .....                 | 118-1 | 118             |
|       | Air Box Drains.....                          | 119-1 | 119             |
|       | Engine Oil Filter .....                      | 120-1 | 120             |
|       | Engine Oil Cooler.....                       | 121-1 | 121             |
|       | Air Compressor (Hoses).....                  | 122-1 | 122             |
|       | Air Compressor.....                          | 122-1 | 122             |
|       | Engine Thermostats.....                      | 123-1 | 123             |
|       | Exhaust Manifold and Engine Breather .....   | 124-1 | 124             |
|       | Alternator and Steering Pump Drive.....      | 125-1 | 125             |
|       | Rocker Cover and Oil Pan .....               | 126-1 | 126             |
|       | Engine Valve Train .....                     | 127-1 | 127             |
|       | Injector Fuel Pipes .....                    | 128-1 | 128             |
|       | Injectors.....                               | 129-1 | 129             |
|       | Injector Controls.....                       | 130-1 | 130             |
|       | Cylinder Head .....                          | 131-1 | 131             |
|       | Water Pump and Oil Pump .....                | 132-1 | 132             |
|       | Oil Relief Valves and Distribution.....      | 133-1 | 133             |
|       | Throttle and Pump Governor.....              | 134-1 | 134             |
|       | Stop Solenoid .....                          | 134-1 | 134             |
|       | Mechanical Governor (Mounting) .....         | 135-1 | 135             |
|       | Mechanical Governor (Top Plate) .....        | 135-1 | 135             |
|       | Mechanical Governor (Actuating Levers) ..... | 135-1 | 135             |
|       | Mechanical Governor (Weights).....           | 135-1 | 135             |
|       | Turbocharger (Mounting) .....                | 136-1 | 136             |
|       | Turbocharger (Components) .....              | 136-1 | 136             |
|       | Engine Air Inlet .....                       | 137-1 | 137             |
|       | Blower (Rear Plate and Drive).....           | 138-1 | 138             |
|       | Blower (Rotors) .....                        | 138-1 | 138             |
|       | Engine Intercooler .....                     | 139-1 | 139             |
|       | Balance Weight Cover .....                   | 140-1 | 140             |
|       | Flywheel Housing .....                       | 141-1 | 141             |
|       | Idler Gears.....                             | 142-1 | 142             |
|       | Camshafts .....                              | 143-1 | 143             |
|       | Piston and Liner Assembly .....              | 144-1 | 144             |
|       | Engine Crankshaft .....                      | 145-1 | 145             |
|       | Cylinder Block (Gaskets and Plates) .....    | 146-1 | 146             |
|       | Cylinder Block (Plugs and Draincocks).....   | 146-1 | 146             |
| Group | 23 Wheel and Tire .....                      | 147-1 | 147             |
| Group | 24 Rear Axle.....                            | 148-1 | 148             |
|       | Rear Axle Housing and Shafts .....           | 148-1 | 148             |

## TABLE OF CONTENTS (Continued)

|         |      |                                        | Page   | Illus<br>Figure |
|---------|------|----------------------------------------|--------|-----------------|
|         |      | Rear Axle Brake Assembly .....         | 149-1  | 149             |
|         |      | 4-Wheel Drive Shaft Unit .....         | 150-1  | 150             |
|         |      | Differential Lock-Up Shift Unit .....  | 151-1  | 151             |
|         |      | Differential Carrier .....             | 152-1  | 152             |
|         |      | Differential Ring Gear and Pinion..... | 153-1  | 153             |
|         |      | Rear Axle Power Divider.....           | 154-1  | 154             |
| Group   | 25   | Rear Suspension.....                   | 155-1  | 155             |
| Group   | 26   | Front Axle .....                       | 156-1  |                 |
|         |      | Front Axle Housing .....               | 156-1  | 156             |
|         |      | Front Axle Hub Assembly.....           | 157-1  | 157             |
|         |      | Front Axle Brake Assembly.....         | 158-1  | 158             |
|         |      | Differential Lock-Up Shift Unit.....   | 159-1  | 159             |
|         |      | Differential Carrier .....             | 160-1  | 160             |
|         |      | Differential Ring Gear and Pinion..... | 161-1  | 161             |
| Group   | 27   | Front Suspension.....                  | 162-1  | 162             |
| Group   | 28   | Frame Assembly.....                    | 163-1  |                 |
|         |      | Frame Assembly (Front) .....           | 163-1  | 163             |
|         |      | Frame Assembly (Rear) .....            | 163-1  | 163             |
| Group   | 29   | Bulk Material.....                     | Bulk-1 |                 |
| SECTION | III. | SPECIAL TOOLS LIST .....               | 164-1  | 164             |
| SECTION | IV.  | CROSS-REFERENCE INDEXES .....          | I-1    |                 |
|         |      | National Stock Number Index .....      | I-1    |                 |
|         |      | Part Number Index.....                 | I-17   |                 |
|         |      | Figure and Item Number Index .....     | I-122  |                 |

## INTERMEDIATE DIRECT SUPPORT AND INTERMEDIATE GENERAL SUPPORT MAINTENANCE

## SECTION I. INTRODUCTION

**1. SCOPE.** This RPSTL lists and authorizes spares and repair parts; special tools; special test, measurement, and diagnostic equipment (TMDE); and other special support equipment required for performance of Intermediate Direct Support and Intermediate General Support maintenance of the Model 2500L Firefighting Truck. It authorizes the requisitioning, issue, and disposition of spares, repair parts and special tools as indicated by the source, maintenance and recoverability (SMR) codes.

**2. GENERAL.** In addition to this section, Introduction, this Repair Parts and Special Tools List is divided into the following sections:

**a. Section II. Repair Parts List.** A list of spares and repair parts authorized by this RPSTL 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 ascending alphanumeric sequence, with the parts in each group listed in ascending figure and item number sequence. Bulk materials are listed in item name sequence. Repair parts kits are listed separately in their own functional group within Section II. Repair parts for repairable special tools are also listed in this section. Items listed are shown on the associated illustration(s)/figure(s).

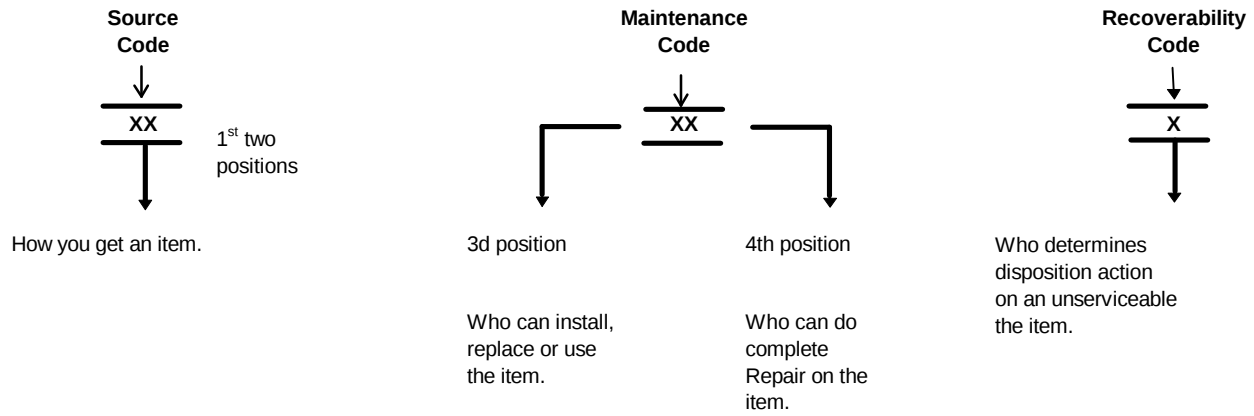
**b. Section III. Special Tools List.** A list of special tools, special TMDE, and other special support equipment authorized by this RPSTL (as indicated by Basis of Issue (BOI) information in DESCRIPTION AND USABLE ON CODE column) for the performance of maintenance.

**c. Section IV. Cross-references Indexes.** A list, in National Item Identification Number (NIIN) sequence, of all National stock numbered items appearing in the listing, followed by a list in alphanumeric 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. The figure and item number index lists figure and item number in alphanumeric sequence and cross-references NSN, FSCM and part number.

**3. EXPLANATION OF COLUMNS (SECTIONS II AND III).**

**a. ITEM NO. (Column (1)).** Indicates the number used to identify items called out in the illustration.

**b. SMR Code (Column (2)).** The Source, Maintenance, and Recoverability (SMR) code is a 5-position code containing supply/requisitioning information, maintenance category authorization criteria, and disposition instruction, as shown in the following breakout:



\*Complete Repair: Maintenance capacity, capability, and authority to perform all corrective maintenance tasks of the “Repair” function in a use/user environment in order to restore serviceability to a failed item.

**(1) Source Code.** The source code tells you how to get an item needed for maintenance, repair, or overhaul of an end item/equipment. Explanations of source codes follows:

| Code                                                                                                                                                           | Explanation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PA<br>PB<br>PC**<br>PD<br>PE<br>PF<br>PG                                                                                                                       | Stocked items; use the applicable NSN to request/requisition items with these source codes. They are authorized to the category indicated by the code entered in the 3d position of the SMR code.                                                                                                                                                                                                                                                                                                            |
| KD<br>KF<br>KB                                                                                                                                                 | <b>**NOTE:</b> Items coded PC are subject to deterioration.<br><br>Items with these codes are not to be requested/requisitioned individually. They are part of a kit which is authorized to the maintenance category indicated in the 3d position of the SMR code. The complete kit must be requisitioned and applied.                                                                                                                                                                                       |
| MO--(Made at org. AVUM Level<br>MF--(Made at DS/ AVUM Level<br>MH--(Made at GS Level)<br>ML--Made at Specialized Repair Activity (SRA))<br>MD--(Made at Depot) | <b>Explanation</b><br><br>Items with these codes are not to be requested/requisitioned individually. They must be made from bulk material which is identified by the part number in the DESCRIPTION and USABLE ON CODE (UOC) column and listed in the Bulk Material group of the repair parts list in this RPSTL. If the item is authorized to you by the 3d position code of the SMR code, but the source code indicates it is made at a higher level, order the item from the higher level of maintenance. |