

INCH-POUND

MIL-C-45360F(AT)

22 June 1989

SUPERSEDING

MIL-C-45360E(AT)

28 June 1978

MILITARY SPECIFICATION

CARRIERS, PERSONNEL, FULL-TRACKED: ARMORED, M113, M113A1, M113A2, M113A2/EFT, AND M113A3; MORTARS, SELF-PROPELLED: 107MM, M106, M106A1, AND M106A2, AND 81MM, M125A1 AND M125A2; AND SMOKE GENERATOR: M1059; PROCESSING FOR STORAGE AND SHIPMENT OF

This specification is approved for use by the US Army Tank-Automotive Command, Department of the Army, and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers the processing for storage and shipment of the M113, M113A1, M113A2, M113A2/EFT, and M113A3 Armored, Full-Track, Personnel Carriers; the 107mm, M106, M106A1, and M106A2, and 81mm M125A1 and M125A2 Self-Propelled Mortars; and the M1059 Smoke Generator (see 1.2 and 6.1).

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: US Army Tank-Automotive Command, ATTN: AMSTA-GDS, Warren, MI 48397-5000, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document, or by letter.

AMSC N/A

FSC 2350

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

MIL-C-45360F(AT)

1.2 Classification. Processing shall be of the following levels, as specified (see 6.2):

Level A - Maximum military protection.

Level A is the processing required for the protection of vehicle during shipment, handling, and storage exceeding 90 days from date of actual processing. This level does not provide for driveaway capability. It does provide for domestic or overseas shipment, including open deck loading.

Level B - Minimum military protection.

Level B is the limited processing required for the protection of vehicle during shipment, handling, and storage not to exceed 90 days from date of actual processing. This level provides for driveaway capability, when specified, and domestic or overseas shipment (excluding open deck loading).

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications and standards. The following specifications and standards form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of these documents shall be those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation.

SPECIFICATIONS

FEDERAL

A-A-208	- Ink, Marking, Stencil, Opaque (Porous and Nonporous Surfaces).
A-A-883	- Tape, Pressure Sensitive Adhesive, Masking.
O-I-490	- Inhibitor, Corrosion, Liquid Cooling System.
O-S-576	- Sodium Bicarbonate, Technical.
O-S-801	- Sulfuric Acid Electrolyte; for Storage Batteries.
P-D-220	- Detergent, General Purpose.
GG-T-250	- Tester, Antifreeze Solutions.
NN-P-530	- Plywood, Flat Panel.
QQ-S-781	- Strapping, Steel, and Seals.
QQ-W-470	- Wire, Steel, Carbon, Spring, Music.
RR-W-360	- Wire Fabric, Industrial.
TT-E-529	- Enamel, Alkyd, Semigloss.
TT-V-121	- Varnish, Spar, Water-resisting.
UU-P-268	- Paper, Kraft, Wrapping.
UU-T-81	- Tags, Shipping and Stock.

MIL-C-45360F(AT)

- VV-L-800 - Lubricating Oil, General Purpose, Preservative (Water-displacing, Low Temperature).
- ZZ-T-416 - Tire, Pneumatic: Retread and Repair Materials.
- MMM-A-178 - Adhesive, Paper Label, Water-resistant.
- PPP-B-566 - Box, Folding, Paperboard.
- PPP-B-601 - Boxes, Wood, Cleated Plywood.
- PPP-B-621 - Box, Wood, Nailed, and Lock Corner.
- PPP-B-636 - Box, Shipping, Fiberboard.
- PPP-C-1752 - Cushioning Material, Packaging Unicellular, Polyethylene Foam, Flexible.
- PPP-P-291 - Paperboard, Wrapping and Cushioning.
- PPP-T-60 - Tape: Packaging, Waterproof.
- PPP-T-97 - Tape, Packaging/Industrial, Filament Reinforced.

MILITARY

- MIL-P-116 - Preservation, Method of.
- MIL-B-117 - Bag, Sleeve and Tubing - Interior Packaging.
- MIL-B-121 - Barrier Material, Greaseproofed, Waterproofed, Flexible.
- MIL-C-450 - Coating Compound, Bituminous Solvent Type, Black (for Ammunition).
- MIL-G-3056 - Gasoline, Automotive, Combat.
- MIL-C-5501 - Cap and Plug, Protective, Dust and Moisture Seal.
- MIL-H-6083 - Hydraulic Fluid, Petroleum Base, for Preservation and Operation.
- MIL-G-10924 - Grease, Automotive and Artillery.
- MIL-B-11188 - Battery, Storage: Lead Acid.
- MIL-A-11755 - Antifreeze, Arctic-type.
- MIL-B-12841 - Basic Issue Items for Military Vehicles, Carriages and Equipment; Preparation for Shipment and Storage of.
- MIL-P-13983 - Paint, Temporary, Lusterless, Gasoline Removable.
- MIL-C-16173 - Corrosion Preventive Compound, Solvent Cutback, Cold-Application.
- MIL-D-16791 - Detergent, General Purpose (Liquid, Nonionic).
- MIL-L-21260 - Lubricating Oil, Internal Combustion Engine, Preservative and Break-in.
- MIL-T-22085 - Tape, Pressure-Sensitive, Adhesive, Preservation and Sealing.
- MIL-B-22191 - Barrier Materials, Transparent, Flexible, Heat-Sealable
- MIL-P-46002 - Preservation Oil, Contact and Volatile Corrosion-Inhibited.

MIL-C-45360F(AT)

- MIL-A-46153 - Antifreeze, Ethylene Glycol, Inhibited, Heavy Duty, Single Package.
- MIL-T-50036 - Talc, Technical, T1 and T3.
- MIL-H-52079 - Hose, Preformed, Semi-Flexible, Reinforced.
- MIL-D-81298 - Dye, Liquid, for the Detection of Leaks in Aircraft Fuel Systems.

STANDARDS

MILITARY

- MIL-STD-129 - Marking for Shipment and Storage.
- MIL-STD-2073-1 - DOD Materiel Procedures for Development and Application of Packaging Requirements.
- MS35842 - Clamp, Hose, Low Pressure, Type "F".

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Naval Publications and Forms Center, (ATTN: NPODS), 5801 Tabor Avenue, Philadelphia, PA 19120-5099.)

2.1.2 Other Government documents, drawings, and publications. The following Government documents, drawings, and publications form a part of this specification to the extent specified herein. Unless otherwise specified, the issues shall be those in effect on the date of the solicitation.

DOCUMENTS

DEPARTMENT OF TRANSPORTATION

Federal Motor Carrier Safety Regulations

(Application for copies should be addressed to the Department of Transportation, Bureau of Motor Carrier Safety, Washington DC 20590.)

Hazardous Materials Regulations.

(Application for copies should be addressed to the Department of Transportation, Hazardous Materials Regulations Board, Washington, DC 20590.)

DRAWING

ARMY

- 12269128 - Closure Kit, Vehicle Protective.

PUBLICATION

- TB ORD 392 - Tank Automotive, Gasoline Engines, Lubrication Before Use.

MIL-C-45360F(AT)

(Copies of drawings, publications, and other Government documents required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of the documents which are DOD adopted shall be those listed in the issue of the DODISS specified in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS shall be the issue of the nongovernment documents which is current on the date of the solicitation.

ASSOCIATION OF AMERICAN RAILROADS PUBLICATIONS

Section No. 1 - General Rules Governing Loading of Commodities on Open Top Cars.

Section No. 6 - Rules Governing the Loading of Department of Defense Material on Open Top Cars.

(Application for copies should be addressed to the Association of American Railroads, 59 East Van Buren, Chicago, Illinois 60605.)

(Nongovernment publications are normally available from the organizations which prepare or which distribute the documents. These documents also may be available in or through libraries or other informational services.)

2.3 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein (except for associated detail specifications, specification sheets or MS standards), the text of this specification shall take precedence. Nothing in this specification, however, shall supersede applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Level A.

3.1.1 First article. Unless otherwise specified (see 6.2), one of the first ten production processed vehicles shall be subjected to the first article inspection specified in 4.2. Approval of this vehicle shall not relieve the contractor of his obligation to process all vehicles in accordance with this specification. Unless otherwise specified by the acquisition activity, any change to materials or design after approval shall require additional vehicles be inspected as specified in 4.2. The Government representative shall select the vehicle to be inspected.

MIL-C-45360F(AT)

3.1.2 Government furnished equipment (GFE). Unless previously accomplished, GFE (other than installed) shall be packaged, packed, and marked in accordance with the individual document for the specific item. GFE shall be stowed with basic issue items (BII).

3.1.3 Preservatives and atomized spray equipment. When atomized spraying of preservative oils is specified, equipment shown in figures 1 and 2, or equivalent, shall be used. Compressed air supply lines shall be equipped with moisture separators every 50 feet or fraction thereof.

3.1.4 Processing records. Records of vehicle processing shall be maintained and shall be readily available for review by Government representatives.

3.1.5 Disassembly. Projecting parts whose removal will accomplish desired cube reduction and parts susceptible to damage and pilferage shall be removed from the vehicle. Removed bolts, nuts, screws, pins, and washers shall be placed in one of the mating parts and secured. Removed parts shall be preserved, packaged, and packed. Packed parts shall be identified and stowed securely within the vehicle.

3.1.5.1 Matchmarking. Parts removed from the vehicle shall be matchmarked when necessary to facilitate reassembly. Matchmarking information shall be put on cloth shipping tags conforming to type A of UU-T-81, or on metal tags using waterproof ink or paint, and attached to mating parts. The marked cloth shipping tags shall be waterproofed with varnish conforming to TT-V-121 or adhesive conforming to MMM-A-178.

3.1.6 Record forms. Two copies of DD Form 2258 shall be completed with information that includes preservation accomplished and depreservation instructions. The Equipment Log Book Binder and one copy of DD Form 2258 (see 6.4) shall be placed in a bag conforming to type I, class B, style 2, 6 mil of MIL-B-117; the bag shall be closed by heat sealing and securely attached in the driver's compartment of vehicle. The other copy of DD Form 2258 shall be waterproofed with adhesive conforming to MMM-A-178, or sealed in a plastic bag, and securely attached in a conspicuous location on the exterior of the vehicle.

3.1.7 Cleaning and drying (see 4.5.2.1).

3.1.7.1 Interior of vehicle. Interior surfaces of vehicle shall be cleaned with solution of detergent conforming to P-D-220, or type I of MIL-D-16791, and water. Solution temperature shall not exceed 210 degrees Fahrenheit (°F), and pressure shall not exceed 5 pounds per square inch (psi) measured 4 inches from the nozzle. After cleaning, cleaned surfaces shall be rinsed with clean water and dried. Care shall be taken during

MIL-C-45360F(AT)

cleaning and rinsing operations to assure that no solution or water enters instruments, connections, or other components susceptible to water damage. Solution or water shall not accumulate and remain in cavities that cannot be drained. Vehicles with decals, markers, straps, and floor plates installed shall only be hand cleaned with solution of P-D-220, or type I of MIL-D-16791, and water to prevent damage to these components. Cleaned surfaces shall be hand rinsed and dried.

3.1.7.1.1 Cleaning and drying of battery supports and retainers.

Battery supports and retainers shall be cleaned with a solution of one-half pound of sodium bicarbonate conforming to O-S-576 per gallon of water. After cleaning, cleaned surfaces shall be flushed with clean water, then thoroughly dried. Dried surfaces shall then be preserved in accordance with 3.1.8.2.

3.1.7.1.2 Cleaning and drying of backrests and seats. The backrest and seat cushions shall be cleaned with a solution of detergent conforming to P-D-220, or type 1 of MIL-D-16791, in warm water. After cleaning, the cushions shall be wiped with cloths saturated with clean water to remove cleaning solution. Care shall be taken not to saturate the cushions with cleaning solution or water. After rinsing, the cushions shall be dried, then protected in accordance with 3.1.9.3.

3.1.7.2 Exterior of vehicle. The exterior of vehicle shall be cleaned using a solution of detergent conforming to P-D-220, or type 1 of MIL-D-16791, in warm water or steam. Cleaning shall remove all foreign matter. After cleaning, cleaned surfaces shall be rinsed with clean water or steam and thoroughly dried. Care shall be taken to avoid entry of water or steam into the driver's or engine compartments.

3.1.8 Preservation.

3.1.8.1 Relubrication. If the vehicle has been operated more than 75 miles since lubrication, or after the vehicle has been cleaned in accordance with 3.1.7.2, the vehicle shall be relubricated using materials conforming to drawings, specifications, or lubrication order applicable to the vehicle. All exposed oil can points such as, but not limited to, levers, locking levers, locking bars, locking pins, pintle pins, hinge pins, hinges strikers, wing nuts, door locks, hand-operated locking knobs, latches, linkage, and threaded ends of yokes and related clevis pins shall be coated with lubricant conforming to VV-L-800. Excess lubricant shall be removed after coating.

3.1.8.2 Preservation of battery supports and retainers. Top battery supports and retainers shall be preserved with compound conforming to MIL-C-450.

MIL-C-45360F(AT)

3.1.8.3 Transmission, transfer assembly, control differential, and final drives. The transmission shall contain lubricating oil conforming to type 1, grade 10 of MIL-L-21260 filled to operating level. The transfer assembly, control differential, and final drives shall contain lubricating oil conforming to type 1, grade 10 or 30, as annotated with type and grade of lubricant used (see 3.1.6).

3.1.8.4 Cooling system. The cooling system shall be protected by one of the following procedures (see 6.2):

- a. For shipment to, and storage in, areas where the temperature drops below minus 40°F, systems shall be protected as specified in 3.1.8.4.3.
- b. For shipment and storage within the bounds of 30 degrees north latitude and 20 degrees south latitude, except continental United States, systems shall be protected as specified in 3.1.8.4.2.
- c. For all other shipments, cooling systems shall be protected as specified in 3.1.8.4.1.

NOTE: DD Form 2258 (see 3.1.6) shall be completed to indicated coolant used.

3.1.8.4.1 Water and antifreeze procedure. The cooling system shall be filled to operating level with a clean solution consisting of equal parts by volume of antifreeze (ethylene glycol) conforming to MIL-A-46153, and water. The engine shall be operated until a temperature has been reached that causes the thermostat to open, to assure complete mixing and even distribution of the antifreeze solution. A warning tag, bearing the information "COOLING SYSTEM FILLED WITH WATER AND ANTIFREEZE SOLUTION (ETHYLENE GLYCOL) IN EQUAL PARTS BY VOLUME - DO NOT DRAIN", shall be securely attached to the radiator filler neck.

3.1.8.4.2 Water and corrosion inhibitor procedure. The cooling system shall be filled with clear water up to, but not including the radiator upper tank. A corrosion inhibitor conforming to O-I-490 shall be added in the proportion of 5 ounces of the inhibitor for each 10 quarts of water. The inhibitor shall be dissolved in 2 quarts of warm water and poured into the radiator while the engine is idling. More water shall be added, if necessary, to fill the radiator to operating level. A warning tag, bearing the information "COOLING SYSTEM DOES NOT CONTAIN ANTIFREEZE - FILLED WITH WATER AND INHIBITOR", shall be securely attached to the radiator filler neck.

MIL-C-45360F(AT)

3.1.8.4.3 Antifreeze compound procedure. The cooling system shall be filled to operating level with antifreeze compound conforming to MIL-A-11755. The compound shall be used without dilution. A warning tag, bearing the information "COOLING SYSTEM FILLED WITH ANTIFREEZE (ARCTIC-TYPE) - DO NOT DRAIN", shall be securely attached to the radiator filler neck.

3.1.8.5 Engine crankcase preservation. The crankcase of compression or spark ignition engines shall be filled to operating level with lubricating oil conforming to type 1 of MIL-L-21260 of the seasonal grade specified in the applicable drawing, specification, or lubrication order. DD Form 2258 shall be annotated with type and grade of lubricant used.

3.1.8.6 Spark ignition engine. Spark ignition engine preservation shall be in accordance with 3.1.8.6.2 and 3.1.8.6.3 in an uninterrupted sequence, except for the cooling period specified in 3.1.8.6.3.

3.1.8.6.1 Spark plugs. Spark plugs shall be removed, individually packaged in accordance with method IA-8 of MIL-P-116, and packed together in a box conforming to style II, type D, class A of PPP-B-566. The box shall be closed with tape conforming to type III, class 1 of PPP-T-60, identified as to contents, and securely stowed in a conspicuous location within the engine compartment. Slave spark plugs shall be installed. The engine shall be preserved in accordance with 3.1.8.6.2 and 3.1.8.6.3.

3.1.8.6.2 Preservation through fuel system and carburetor. One compartment of a two-compartment container shall be filled with lubricating oil conforming to type I, grade 10 of MIL-L-21260, and the other with gasoline conforming to MIL-G-3056. The container shown in figure 3 has proven satisfactory for engine preservation. The container shall be positioned to provide gravity feed. The fuel line shall be disconnected from the fuel tank side of the fuel filter sediment bowl and the line from the auxiliary container shall be connected to the filter. The container selector valve shall be turned to fuel position. The engine shall be started and operated at 1200 revolutions per minute (rpm), without load, until running smoothly, but for not more than 4 minutes, then accelerated to 2500 rpm for 2 minutes. Then the container selector valve shall be turned to oil position. The instant the engine begins to misfire, the ignition switch shall be turned off. The line from the auxiliary container shall be disconnected, and the vehicle fuel line shall be reconnected. The fuel filter shall then be drained.

3.1.8.6.3 Preservation through spark plug openings. After preservation in accordance with 3.1.8.6.2, the engine shall be cooled until the cylinder head temperature does not exceed 100°F measured at spark plug gasket surface of all cylinders. Cooling shall be accomplished by forced air currents, by circulation of engine coolant, or by waiting the period of time necessary for the cylinder heads to cool to 100°F. When ambient temperature exceeds 100°F, the engine shall be cooled to ambient temperature. Slave spark plugs shall be removed. While the engine is being

MIL-C-45360F(AT)

turned over with the starter, a quantity of lubricating oil conforming to type I, grade 10 of MIL-L-21260 shall be atomized through each spark plug opening to assure complete coverage of all surfaces within the combustion chamber. The amount of oil to be used per cylinder per application shall not exceed 1 ounce unless a greater quantity is necessary to obtain the required coverage. After completion of the first application, a second application shall be made to each cylinder without cranking the engine. The equipment shown in figures 1 and 2 has proven satisfactory for engine preservation.

NOTE: If the 3-7/8 inch nozzle extension shown in figure 1 is too short to enter spark plug openings, a longer extension may be used.

Female threads of spark plug ports shall be coated with lubricating oil conforming to type I, grade 10 of MIL-L-21260, and each port shall be sealed immediately with a plastic plug conforming to MIL-C-5501. A red warning tag, bearing the information "ENGINE PRESERVED FOR STORAGE: DO NOT CRANK - FOR DEPRESERVATION WITH OR WITHOUT PRE-OILING, INSTALL SLAVE PLUGS AND OPERATE ENGINE TO BURN OFF EXCESS OIL. AFTER BURN OFF, REMOVE SLAVE PLUGS AND INSTALL PLUGS STOWED IN ENGINE COMPARTMENT", shall be attached securely in a conspicuous location within driver's compartment. DD Form 2258 shall be annotated with the type and grade of lubricating oil used.

3.1.8.7 Compression ignition engine. Compression ignition engine preservation shall be in accordance with 3.1.8.7.1 through 3.1.8.7.5 in an uninterrupted sequence and the following two exceptions:

- a. Engines without turbochargers, process per all paragraphs with the exception of 3.1.8.7.4.
- b. Engines with turbochargers, process per all paragraphs with the exception of 3.1.8.7.3.

3.1.8.7.1 Initial conditions. Prior to processing, engine shall be cooled to assure that the cylinder head temperature, measured at the injector nozzle flange surface of all cylinders, is not more than 100°F. Cooling shall be accomplished by induced air currents, circulation of engine coolant, or by waiting the period of time required to arrive at the above specified temperature. When the ambient temperature exceeds 100°F, the engine shall be cooled to ambient temperature.

3.1.8.7.2 Fuel system and combustion chamber preservation. A portable auxiliary container with a filtering device and regulator valve (see figure 3), shall be filled with preservative oil conforming to grade 1 of MIL-P-46002 to which has been added an oil-soluble red dye conforming to MIL-D-81298, in a concentration sufficient to impart a marked coloring to the oil. Position container to allow gravity feed to the engine. Fuel supply system from the fuel tank shall be shut off. Disconnect the fuel pump supply line between the primary fuel filter and the fuel pump at the filter end. Connect this line to the auxiliary container containing preservative oil.

MIL-C-45360F(AT)

Disconnect vehicle fuel return line at quick disconnect coupling. Connect a transparent plastic fuel line to the engine end of the disconnected fuel return line. Place the other end of transparent fuel line into a recovery container to collect the return oil.

Disconnect the air cleaner hose between the air cleaner and engine intake at the air cleaner outlet. Place an air restrictor boot over the engine intake to completely shut off the supply of air to the engine. (The air restrictor boot shown in figure 4 has proven satisfactory for engine preservation.)

Place the engine fuel control to the "ON" position. Open the regulator valve on the auxiliary container. Crank the engine with the starter (NOTE: Engine may fire for approximately 5 seconds) for not less than 30 seconds and not greater than 45 seconds. If the red-colored preservative oil is not observed within the 30- to 45-second period, rest the starter for a period of 3 minutes and repeat the cranking procedure.

CAUTION: Special precautions shall be taken to assure that the time limits specified are not exceeded. Damage to the starter solenoid or hydrostatic lock may result.

Close the regulator valve on the auxiliary container and disconnect it from the fuel pump supply line and reconnect the fuel pump supply line to the primary filter. Remove the transparent fuel line, and reconnect the vehicle fuel return line at the quick disconnect coupling. Turn on the vehicle fuel supply system. Remove the air restrictor boot and reinstall the hose to the air cleaner (see 4.5.2.4).

3.1.8.7.3 Preservation through air intake and exhaust system, without turbocharger. Atomize 1 ounce of preservative oil conforming to grade 1 of MIL-P-46002 into the exhaust opening. Seal the opening with tape conforming to type IV of MIL-T-22085. Disconnect the hose at the air intake and atomize 1 ounce of preservative oil conforming to grade 1 of MIL-P-46002 into the intake manifold. Seal the opening with tape conforming to type IV of MIL-T-22085 (see 4.5.2.4).

3.1.8.7.4 Preservation through air intake and exhaust system, with turbocharger. Atomize 1 ounce of preservative oil conforming to grade 1 of MIL-P-46002 into the external exhaust opening. Seal the opening with tape conforming to type IV of MIL-T-22085. Remove the exhaust tube between the turbocharger and left exhaust manifold. Atomize 1 ounce of preservative oil conforming to grade 1 of MIL-P-46002 into the left exhaust manifold, then atomize 2 ounces of grade 1 of MIL-P-46002 into the right exhaust manifold and the bottom of turbocharger through the left opening in the bottom of turbocharger, and replace the left exhaust tube. Disconnect the air cleaner hose at the turbocharger inlet, and atomize 1 ounce of grade 1 of MIL-P-46002 into the turbocharger. Seal the opening with tape conforming to type IV of MIL-T-22085 (see 4.5.2.4).

MIL-C-45360F(AT)

3.1.8.7.5 Preservation through oil level gage rod opening. Remove the oil level gage rod and atomize 6 ounces of preservation oil conforming to grade 1 of MIL-P-46002 into the crankcase through the gage rod opening. An extension of sufficient length to permit the nozzle to be within the crankcase (but not submerged in the crankcase oil) shall be used. Reinstall the gage rod.

All openings to engine interior, oil gage rod, oil filter cap, and crankcase breathers shall be sealed with tape conforming to type IV of MIL-T-22085.

WARNING TAG:

A red warning tag, bearing the information "ENGINE PRESERVED WITH VCI - DO NOT CRANK" and "BEFORE CRANKING, REMOVE TAPE FROM ALL SEALED AREAS (EXHAUST, AIR INTAKE or TURBOCHARGER INLET, OIL GAGE ROD, OIL FILLER CAP AND CRANKCASE BREATHERS)" shall be placed in a conspicuous location within the driver's compartment.

DD Form 2258 shall be annotated to show the engine is preserved with grade 1 of MIL-P-46002 (see 4.5.2.4).

3.1.8.7.6 Preservation through flywheel housing. Two ounces of preservative oil conforming to grade 1 of MIL-P-46002 shall be atomized into the flywheel housing (see 4.5.2.4).

3.1.8.8 Personnel and engine compartment heaters and lines. Personnel and engine heaters shall have the fuel supply shut off valve located at the inlet side of fuel filters turned to the off position. The main fuel line supplying fuel to the heaters shall be disconnected at a point closest to shut off valves. Fuel from the fuel lines shall be allowed to drain. Seal ends of disconnected fuel lines and shut off valves with plastic plugs/caps conforming to MIL-C-5501, with tape conforming to type II of MIL-T-22085. The external exhaust stack shall have the opening sealed with tape conforming to type II of MIL-T-22085. A plastic plug/cap conforming to MIL-C-5501 may be used. Four warning tags, each bearing the information "HEATER FUEL LINES DISCONNECTED AND SEALED. PRIOR TO PLACING PERSONNEL OR ENGINE HEATERS IN OPERATION, REMOVE PLUGS/CAPS OR TAPE FROM FUEL LINES, EXHAUST STACK AND SHUT OFF VALVES. OPERATE HEATER FUEL PUMP AND DRAIN A MINIMUM OF ONE QUART OF FUEL THROUGH THE FUEL LINES INTO A PORTABLE CONTAINER. RECONNECT HEATER FUEL LINES.", shall be prepared. One tag each shall be secured to the personnel and engine heater operating switches and one each to the personnel and engine heaters.

3.1.8.9 Fuel tank preservation. The fuel tank shall be drained to the maximum extent possible. The fuel tank cap and filler screen shall be removed and coated with lubricating oil conforming to type 1, grade 30 of MIL-L-21260. One quart of lubricating oil conforming to type 1, grade 10 of MIL-L-21260 shall be added to each 5 gallons or portion thereof of residual fuel. The container shall maintain a written procedure used to ascertain the amount of residual fuel. The tank cap and filler screen shall be reinstalled (see 4.5.2.2).

MIL-C-45360F(AT)

3.1.8.9.1 Fuel tank security. After processing the fuel tank as specified in 3.1.8.9, the armored fuel cap shall be secured with the combat lock.

3.1.8.10 Ramp winch assembly. All unpainted metal surfaces of the ramp winch assembly, excluding cylinder rod, shall be coated with preservative conforming to grade 4 of MIL-C-16173.

3.1.8.10.1 Ramp hydraulic reservoir. The ramp hydraulic reservoir shall be filled with hydraulic fluid conforming to MIL-H-6083.

3.1.8.11 Machine gun pintle mount. The machine gun pintle mount shall be removed and mounting bolts and washers reinstalled. Bare metal surfaces of the pintle shall be preserved with grease conforming to MIL-G-10924 and wrapped with barrier material conforming to type II, grade A, class 2 of MIL-B-121. The wrap shall be secured with tape conforming to type IV, class 1 of PPP-T-60. The preserved mount shall be identified and securely stowed within the vehicle.

3.1.8.12 Hatches and doors. Rubber seals around hatches and doors shall be coated with powdered talc conforming to type IV, class C of ZZ-T-416 or talc, technical, MIL-T-50036. For shipment, hatches and doors shall be closed and locked from the inside, except the driver's hatch. The driver's hatch shall be closed and secured from the outside with a bolt having a nut drawn up tight and exposed threads peened over to prevent easy removal, or a bolt having a nut drawn up tight with the nut tack welded to the bolt, or with a Government-issued padlock. For storage, hatches and doors shall be locked from the inside, except that the ramp door shall be secured in the open position for ventilation.

3.1.8.13 Ventilation.

3.1.8.13.1 Engine compartment access plate and drain plugs. The engine compartment access plate, gasket, and attaching hardware shall be removed for ventilation. A screen conforming to figure 5 shall be installed in access plate openings, and secured with four of the existing mounting screws and washers. The two forward MS drain plugs and the rear bilge drain plug shall be removed for drainage. A screen conforming to figure 6 shall be installed in rear bilge opening, and held in place with retainer spring conforming to figure 7. Bare metal surfaces of drain plugs shall be preserved with compound conforming to grade 4 of MIL-C-16173. The plate, gasket, preserved drain plugs, and four access plate mounting screws and washers shall be packaged as specified in 3.1.9.9.

The information "REMOVE SCREENS, INSTALL ACCESS PLATE AND GASKET. FRONT AND REAR DRAIN PLUGS BEFORE VEHICLE OPERATION" shall be stenciled on the exterior of the vehicle using white or yellow paint conforming to MIL-P-13983. Stenciling shall be in characters not less than 3/4-inch high.

MIL-C-45360F(AT)

3.1.8.13.2 Engine compartment access panels. One engine compartment panel in the crew compartment shall be removed, and stowed securely in the crew compartment. A warning tag, bearing the information "ENGINE COMPARTMENT PANEL REMOVED: LOWER RAMP OR OPEN HATCHES WHEN OPERATING ENGINE", shall be attached in a conspicuous location within the driver's compartment.

3.1.8.14 Miscellaneous preservation. Except as otherwise specified herein, all exposed, unpainted, metal surfaces on the exterior of the vehicle, except the track shoes, shall be coated with compound conforming to grade 1 of MIL-C-16173. All exposed, unpainted, unplated, metal surfaces on the interior of the vehicle shall be coated with compound conforming to grade 4 of MIL-C-16173.

3.1.8.15 Smoke generator preservation (M1059).

3.1.8.15.1 Fog oil tank. The fog oil tank shall be drained to the maximum extent possible. The fog tank cap and filler screen shall be removed and coated with lubricating oil conforming to WV-L-800. The interior of tank shall be coated by fogging with preservation oil conforming to WV-L-800. The excess preservative oil shall be drained off. The tank cap and filler screen shall be reinstalled.

3.1.8.15.2 Gasoline cans. The fuel lines shall be disconnected at the quick-disconnect couplings and the gasoline cans shall be removed from the vehicle. Using preservative oil conforming to WV-L-800, the interior of cans shall be flushed or fog-sprayed, assuring complete coverage, and drained. The filler caps shall be replaced and the gasoline cans shall be reinstalled to their stowed positions.

3.1.8.15.3 Smoke generators. All port openings to both smoke generators shall be sealed with tape conforming to type IV of MIL-T-22085.

3.1.9 Packaging.

3.1.9.1 Dry charged batteries and cables. Dry charged batteries shall be installed and secured in the vehicle battery carrier. Battery cables shall be secured to the battery carrier with 3/4-inch tape conforming to type IV of PPP-T-97. Battery filler cap openings shall be sealed by placing a 2-inch wide by 3-mil thick piece of film conforming to type II of MIL-B-22191 over each filler cap opening with the cap removed. The sheet shall be of sufficient length to allow it to be depressed into the opening to the same depth as the filler plug. Filler caps shall be screwed or inserted into openings to form a complete seal without damaging the sheet. If batteries have been processed in accordance with MIL-B-11188, they need not be reprocessed as above.

MIL-C-45360F(AT)

3.1.9.2 Electrolyte. Electrolyte shall be packaged and packed in accordance with O-S-801, except that the exterior container shall conform to PPP-B-621, class 2, or PPP-B-601, overseas type. Marking shall conform to O-S-801. The packed electrolyte shall be stowed in the same location as the BII and secured independently to permit separate removal.

3.1.9.3 Packaging of backrests and seats. Cushions of backrests and seats (see 3.1.7.1.2) shall be covered with paper conforming to grade B of UU-P-268 with a basic weight of not less than 60 pounds. The paper shall be secured with tape conforming to type I of A-A-883.

3.1.9.4 Periscopes. If installed, periscopes shall be removed from the vehicle, cleaned, dried, and immediately packaged and packed in accordance with level A requirements of MIL-P-116 and MIL-STD-2073-1, then securely stowed with the personnel compartment.

3.1.9.5 Fire extinguishers. Fire extinguishers shall contain 90 percent of rated full charge. All seals shall be intact. DA Form 253 shall be completed and attached securely to each extinguisher (see 6.3).

3.1.9.6 Mortar mount (M106, M106A1, M106A2, M125A1, M125A2, only). Mortar mount handling brackets and hardware shall be removed and packaged in a type CF, class Weather-Resistant box conforming to PPP-B-636. The box shall be closed with tape conforming to type III, class 1 of PPP-T-60, identified as to contents, and securely stowed within the personnel compartment.

3.1.9.7 Bipod cover (M125A1, M125A2, only). The Bipod cover shall be removed for shipment, identified, and stowed and secured with BII packs within the vehicle. Cushioning conforming to type III, style 1 of PPP-P-291 shall be placed between strapping and shall be covered at points of contact.

3.1.9.8 BII. Unless otherwise specified (see 6.2), BII shall be processed, packaged, and packed in accordance with MIL-B-12841. BII shall be stowed and secured in accordance with 3.1.9.8.1 and 3.1.9.8.2.

3.1.9.8.1 Stowage and securement of BII. BII and items removed for shipment shall be identified to the pertinent vehicle by serial number. BII shall be stored inside buildings, except during shipment. Packed BII and removed items shall be placed within the personnel compartment of the vehicle. Large wooden boxes shall be placed on the vehicle floor and shall be secured with 1-1/4-inch-wide strapping conforming to type I, class 1, finish A of QQ-S-781. Strapping shall be secured to holding devices within the compartment. Smaller wooden boxes shall be secured to the larger boxes with 3/4-inch-wide strapping conforming to type I, class 1, finish A of QQ-S-781. All boxes shall be secured in such a manner as to prevent any movement during transit and to prevent damage to containers or vehicle interiors. Corner protectors shall be used under all strapping.

MIL-C-45360F(AT)

3.1.9.8.2 Stowage and securement of BII (M1059). BII and items removed for shipment shall be identified to the pertinent vehicle by serial number. BII shall be stored inside buildings, except during shipment. Packed BII shall be placed on a saddle similar to the one shown on figure 8. The saddle shall be installed over the trim vane. Track shroud bolts that have been removed and replaced by longer bolts shall be coated with preservative conforming to MIL-C-16173, grade 4. Removed bolts shall be wrapped with barrier material conforming to type II, grade A, class 2 of MIL-B-121 and placed in a cloth bag identified with a tag. The tag shall contain the following information: "TRACK SHROUD BOLTS: REINSTALL WHEN BII SADDLE IS REMOVED FROM VEHICLE". The bag shall be secured in a conspicuous location within the driver's compartment. BII containers shall be placed on the saddle in a position which will not increase the overall cube of the vehicle. Smaller wooden boxes shall be secured to the larger boxes with 3/4-inch-wide strapping conforming to type I, class 1, finish A of QQ-S-781. BII shall then be secured to the saddle in each direction with two 1-1/4-inch-wide strapping conforming to type I, class 1, finish A of QQ-S-781. Corner protectors shall be used under all strapping.

3.1.9.9 Access plate, gasket, and drain plugs. The access plate, gasket, and preserved drain plugs (see 3.1.8.13.1) shall be packaged in a box conforming to type CF, class Weather-Resistant of PPP-B-636. The box shall be closed with tape conforming to type III, class 1 of PPP-T-60, identified as to contents, and securely stowed within the personnel compartment.

3.1.9.10 Packaging of tow hooks. Tow hooks and related hardware shall be removed for shipment and packaged in a type CF, class Weather-Resistant box conforming to PPP-B-636. The box shall be closed with tape conforming to type III, class 1 of PPP-T-60, identified as to contents, and securely stowed within the personnel compartment.

3.1.10 Vehicle closure.

3.1.10.1 Closure kit. Unless otherwise specified (see 6.2), each vehicle, except the M1059 vehicle, shall be provided with a vehicle protective closure kit. The closure kit shall be fabricated, assembled, and installed in accordance with Drawing 12269128. M1059 vehicle shall not be provided with a vehicle protective closure kit.

3.1.10.1.1 Depot BII box marking. The information "DO NOT DESTROY - USE FOR RETURN SHIPMENT OF VEHICLE CLOSURE KIT" shall be stenciled on the depot BII box in lettering not less than 3/4 inch high with a contrasting color of enamel conforming to TT-E-529. Do not mark BII box if it is ascertained the container will not accommodate the closure kit.

3.2 Level B. Vehicles shall be processed in the same manner as specified for Level A, with the following exceptions:

MIL-C-45360F(AT)

3.2.1 Transmission, transfer assembly, control differential, and final drives. The transmission, transfer assembly, control differential, and final drives shall contain operational lubricant as specified on applicable drawings, specifications, or lubrication order, filled to operating level. If, however, these units contain lubricating oil conforming to type I, grade 10 or 30 of MIL-L-21260, an additional amount of the same oil shall be added to attain operating level. Operating lubricants shall not be mixed with MIL-L-21260 except in an emergency. DD Form 2258 shall be annotated to indicate the grade of operational lubricant or preservative oil used.

3.2.2 Engine crankcase. The engine crankcase shall contain normal operational lubricant as specified in the lubrication order, filled to operational level. DD Form 2258 shall be annotated to indicate the grade of lubricant used.

3.2.3 Engine preservation. The engine shall require no preservation for Level B shipment and storage.

3.2.4 Personnel heater and fuel pump. The personnel heater and fuel pump shall be in ready-to-use condition. The heater exhaust opening shall be closed with a plastic plug conforming to MIL-C-5501/7 (see figure 9). A warning tag, bearing the information "HEATER EXHAUST OPENINGS CLOSED, REMOVE PLUG BEFORE OPERATING", shall be attached to the heater controls.

3.2.5 Residual fuel. Unless otherwise specified (see 6.2), the vehicle shall be shipped without draining residual fuel from the fuel tank.

3.2.6 Backrests and seats. Cushions of backrests and seats shall not be covered. If cushions are received packaged, they shall be stowed as received in the crew compartment.

3.2.7 Vehicle closure. Vehicle closure kits shall not be provided for Level B shipment and storage.

3.2.8 Tow hooks. Tow hooks shall be removed for overseas shipment only (see 3.1.9.10).

3.2.9 Vision block openings. Plugs conforming to PPP-C-1752, type I, class 2, 2 inches thick, shall be installed in the vision block openings (see figures 9 and 10).

3.2.10 Engine compartment access panels. Engine compartment access panels in the crew compartment shall not be removed.

3.2.11 Bilge pump outlets. Bilge pump outlets shall be closed with plastic plugs conforming to MIL-C-5501/7 (see figure 9). A warning tag, bearing the information "BILGE PUMP OUTLETS CLOSED PRIOR TO OPERATING BILGE PUMP, REMOVE PLUGS FROM OUTLETS", shall be secured to the bilge pump operating switch.

MIL-C-45360F(AT)

3.3 Materials. Materials shall be as specified herein and in referenced specifications and drawings. Material shall be free from all defects and imperfections that might affect the serviceability and appearance of the finished product (see 4.5.1).

3.3.1 Recycled, virgin and reclaimed materials. There are no requirements for the exclusive use of virgin materials. The use of recycled or reclaimed (recovered) materials is acceptable provided that all other requirements of this specification are met (see 4.5.1).

3.4 Loading.

3.4.1 Loading flat cars. Loading of vehicles on open top railroad cars shall be in accordance with the applicable requirements of Section 1, General Rules Governing the Loading of Commodities on Open Top Cars, and figure 87 or 87A, section 6, Rules Governing the Loading of Department of Defense Material on Open Top Cars, publication of the Association of American Railroads.

3.4.2 Highway shipment. Loading of vehicles for shipment by haulaway and rules for shipment by driveaway or towaway shall be in accordance with Interstate Commerce Commission publication "Federal Motor Carrier Safety Regulations", and applicable military publications.

3.4.3 Reprocessing engine after loading.

3.4.3.1 Level A. If the engine is operated in connection with the moving of vehicle to the loading area or during the loading itself, the engine shall be reprocessed as specified in 3.1.8.6 through 3.1.8.6.3 and 3.1.8.7 through 3.1.8.7.6 as applicable. The vehicle cover shall be rolled clear of the engine intake and exhaust to provide air circulation and to prevent damage to the cover. After reprocessing of engine, the vehicle cover shall be replaced in its original position.

3.4.3.2 Level B. If the engine is operated in connection with movement of vehicle for loading or unloading, there shall be no additional processing of engine.

3.5 Marking. In addition to any special marking required in the contract (see 6.2), the vehicle shall be marked in accordance with MIL-STD-129.

3.5.1 Lifting points. The information "LIFT HERE" with an arrow pointing to the lifting eye shall be stenciled adjacent to each lifting eye using black ink conforming to A-A-208.

3.5.2 Preserved gasoline engine - Level A. Two red warning tags, bearing the information "DO NOT OPERATE ENGINE UNTIL PROVISIONS OF TB ORD 392 HAVE BEEN COMPLIED WITH", shall be provided for each preserved gasoline engine. One tag shall be attached securely to the preserved gasoline engine and the other shall be attached in a conspicuous location within the driver's compartment.

MIL-C-45360F(AT)

3.5.3 Preserved gasoline engine - Level B. The provisions of 3.5.2 do not apply.

3.6 Drive-on/drive-off capability. When the vehicle is to be operated for loading or unloading (see 6.2), the following provisions shall apply:

3.6.1 Additional fuel. When specified (see 6.2), additional fuel shall be added, as required, to accomplish movement of the vehicle.

3.6.2 Batteries and electrolyte. Batteries shall be filled with electrolyte, fully charged, and battery cables connected. After vehicle self-movement for loading or placement in storage, the ground cable at the battery shall be disconnected and then secured to the battery carrier with 3/4-inch tape conforming to type IV of PPP-T-97. A warning tag, bearing the information "VEHICLE PRESERVED FOR DRIVE-AWAY CONDITION. BEFORE CRANKING, CONNECT GROUND CABLE TO BATTERY TERMINAL. ENGINE AND FUEL TANKS NOT PRESERVED.", shall be attached in a conspicuous location within the driver's compartment.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order (see 6.2), the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform or witness any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items shall meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of assuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations is an acceptable practice to ascertain conformance to requirements, however this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to acceptance of defective material.

4.1.2 Inspection records. The contractor shall maintain records of all inspections performed and such records shall be readily available for review by the Government representative.

MIL-C-45360F(AT)

4.2 First article inspection. Unless otherwise specified (see 6.2), 1 of the first 10 production processed vehicles (see 3.1.1) shall be subjected to the inspections specified in 4.5.

4.3 Production processed vehicles. Unless otherwise specified (see 6.2), all production processed vehicles shall be subjected to the inspections specified in 4.5.2 through 4.5.2.3.

4.4 Failure. Failure of the first article, or any production processed vehicle, to conform to the applicable requirements of this specification shall be cause for rejection of the vehicles by the Government. No vehicles shall be accepted until objective evidence that the contractor has corrected the condition causing the failure has been provided to the Government.

4.5 Quality conformance inspections.

4.5.1 Materials. Except for materials that have been inspected by the Government at source, all materials to be used in processing of vehicles shall be inspected in accordance with the material specification; or certified inspection and laboratory test reports shall be provided which show that furnished materials conform to the applicable material specification (see 6.5.1). When materials are listed on a Qualified Products List, they shall be obtained from one of the approved sources indicated.

4.5.2 Processing. Except as otherwise specified herein, vehicle processing shall be inspected to determine conformance to this specification. Inspection of processing shall include all items specified in table I and 4.5.2.1 through 4.5.2.4.

TABLE I. Processing inspection.
(See indicated paragraphs for Levels A & B requirements.)

Component	Cleaning		Preservation		Packaging/Stowage	
	Levels A & B	Level A	Level B	Level A	Level B	
Processing records				3.1.4	3.1.4	
Disassembly				3.1.5	3.1.5	
Matchmarking				3.1.5.1	3.1.5.1	
Interior of vehicle	3.1.7.1					
Battery supports & retainers	3.1.7.1.1	3.1.8.2	3.1.8.2			
Backrests & seats	3.1.7.1.2			3.1.9.3	3.2.6	
Exterior of vehicle	3.1.7.2					
Relubrication		3.1.8.1	3.1.8.1			
Transmission, transfer assembly, control differential, and final drives 1/		3.1.8.3	3.2.1			

MIL-C-45360F(AT)

TABLE I. Processing inspection - Continued.
 (See indicated paragraphs for Levels A & B requirement)

Component	Cleaning	Preservation		Packaging/Stowage	
	Levels A & B	Level A	Level B	Level A	Level B
Engine crankcase 1/ Spark ignition engine		3.1.8.5	3.2.2		
Spark plugs		3.1.8.6	3.2.3	3.1.8.6.1	
Preservation thru fuel system and carburetor		3.1.8.6.2	3.2.3		
Preservation thru spark plug openings 1/		3.1.8.6.3	3.2.3		
Compression ignition engine		3.1.8.7	3.2.3		
Preservation thru fuel system and combustion chamber		3.1.8.7.2	3.2.3		
Preservation thru air intake and exhaust system, without turbocharger		3.1.8.7.3	3.2.3	3.1.8.7.3	
Preservation thru air intake and exhaust system, with turbocharger		3.1.8.7.4	3.2.3	3.1.8.7.4	
Preservation thru oil level gage rod opening		3.1.8.7.5	3.2.3	3.1.8.7.5	
Preservation thru fly- wheel housing		3.1.8.7.6			
Personnel & engine compartment heaters & lines		3.1.8.8	3.2.4		
Fuel tank		3.1.8.9	3.2.5		
Cooling system 1/ Water & antifreeze procedure		3.1.8.4	3.1.8.4		
Arctic antifreeze procedure		3.1.8.4.1	3.1.8.4.1		
Water & corrosion inhibitor procedure		3.1.8.4.3	3.1.8.4.3		
		3.1.8.4.2	3.1.8.4.2		

MIL-C-45360F(AT)

TABLE I. Processing inspection - Continued.
(See indicated paragraphs for Levels A & B requirements.)

Component	Cleaning	Preservation		Packaging/Stowage	
	Levels A & B	Level A	Level B	Level A	Level B
Ramp winch assembly		3.1.8.10	3.1.8.10		
Ramp hydraulic reservoir		3.1.8.10.1	3.1.8.10.1		
Machine gun pintle mount		3.1.8.11	3.1.8.11		
Hatches & doors		3.1.8.12	3.1.8.12		
Ventilation & screen		3.1.8.13.1	3.1.8.13.1	3.1.9.9	3.1.9.9
Bipod cover				3.1.9.7	3.1.9.7
Engine compartment access panels				3.1.8.13.2	3.2.10
Mortar mount				3.1.9.6	3.1.9.6
Miscellaneous preservation		3.1.8.14	3.1.8.14		
Dry charged batteries & cables		3.1.9.1	3.1.9.1	3.1.9.1	3.1.9.1
Electrolyte				3.1.9.2	3.1.9.2
Periscopes				3.1.9.4	3.1.9.4
Fire extinguishers				3.1.9.5	3.1.9.5
Record forms				3.1.6	3.1.6
Tow hooks				3.1.9.10	3.2.8
Basic issue items				3.1.9.8	3.1.9.8
Strapping				3.1.9.8.1	3.1.9.8.1
Stowage and securement of BII (M1059)				3.1.9.8.2	3.1.9.8.2
Vehicle closure kit				3.1.10.1	3.2.7
Fuel tank security				3.1.8.9.1	
Loading on flat cars				3.4.1	3.4.1
Highway shipment				3.4.2	3.4.2
Reprocessing engine after loading				3.4.3.1	3.4.3.2
Marking				3.5	3.5
Lifting points				3.5.1	3.5.1
Depot BII box marking				3.1.10.1.1	
Preserved gasoline engine				3.5.2	3.5.3

1/ Inspect DD Form 2258

MIL-C-45360F(AT)

4.5.2.1 Cleaning. To determine conformance to 3.1.7.1, the interior of vehicle shall be examined for cleanliness. One vehicle each day shall be tested for cleanliness in accordance with the applicable provisions of MIL-P-116. To determine conformance with 3.1.7.2, the exterior of vehicle shall be examined for cleanliness. Surfaces on which tape is to be applied shall be examined for cleanliness before application.

4.5.2.2 Fuel tank. To determine conformance to 3.1.8.9, visual inspection of preservative application shall be accomplished to assure addition of the correct amount of oil, based upon a known amount of residual fuel.

4.5.2.3 Cooling system. To determine conformance to 3.1.8.4, one processed vehicle shall be selected at random from each day's production. The engine coolant shall be tested using a hydrometer-thermometer type tester, with a range of minus 60 to plus 160°F, conforming to GG-T-250.

4.5.2.4 Engine. To determine conformance to 3.1.8.6.1 through 3.1.8.6.3 or 3.1.8.7.1 through 3.1.8.7.6, as applicable, the interior of engine from 1 of the first 10 production processed vehicles shall be examined for surface coverage. The engine shall be disassembled to the extent necessary to permit visual examination of all surfaces within the combustion chamber. (NOTE: The combustion chamber shall be considered as all surfaces within the cylinder, from and including the crown of the piston, to and including the surfaces of the head within the cylinder.) All surfaces within the combustion chamber shall have a "wet" coating of preservative oil such as is obtained when the item is dipped or flushed with the oil.

5. PACKAGING

This section is not applicable to this specification.

6. NOTES

(This section contains information of a general or explanatory nature, that may be helpful, but is not mandatory.)

6.1 Intended use. Vehicle processing covered by this specification is intended to protect the vehicles for storage outside of buildings, for immediate use shipment, and for domestic or overseas shipment, including carloading.

6.2 Ordering data. Procurement documents must specify the following:

- a. Title, number, and date of this specification.
- b. Issues of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1.1).
- c. Applicable level of processing (see 1.2).
- d. If first article inspection is not required (see 3.1.1).
- e. Applicable procedure for protection of cooling system (see 3.1.8.4).
- f. If BII should be processed, packed, or stored other than as specified (see 3.1.9.8).

MIL-C-45360F(AT)

- g. If vehicle closure kit is not required (see 3.1.10.1).
- h. If residual fuel shall be drained from the fuel tank prior to shipping (see 3.2.5).
- i. If special marking is required (see 3.5).
- j. If vehicle drive-on and drive-off capability is required (see 3.6).
- k. If additional fuel shall be supplied (see 3.6.1).
- l. If responsibility for inspection shall be other than as specified (see 4.1).
- m. If first article sample size shall be other than as specified (see 4.2).
- n. If production processed vehicles shall be subjected to inspections other than as specified (see 4.3).

6.3 Safety precautions. Caution should be exercised in handling carbon dioxide (CO₂) fire extinguisher cylinders. Cylinders should not be dropped, permitted to strike each other, or handled roughly. Extreme care should be exercised during the reinstallation operation to avoid tripping the fire extinguisher control trigger (see 3.1.9.5).

6.4 Forms. A copy of the "Equipment Log Book" and all required forms (see 3.1.6) will be furnished to the contractor by the Government at least 30 days before shipment of the vehicles required by the contract delivery schedule.

6.5 Definitions.

6.5.1 Recovered materials. "Recovered materials" means materials that have been collected or recovered from solid waste (see 6.5.2).

6.5.2 Solid waste. "Solid waste" means (a) any garbage, refuse, or sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility; and (b) other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities. It does not include solid or dissolved material in domestic sewage, or solid or dissolved material in irrigation return flows or industrial discharges which are point sources subject to permits under section 402 of the Clean Water Act, (33 U.S.C. 1342 et seq.), or source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 U.S.C. 2011 et seq.) (Source: Federal Acquisition Regulations, section 23.402).

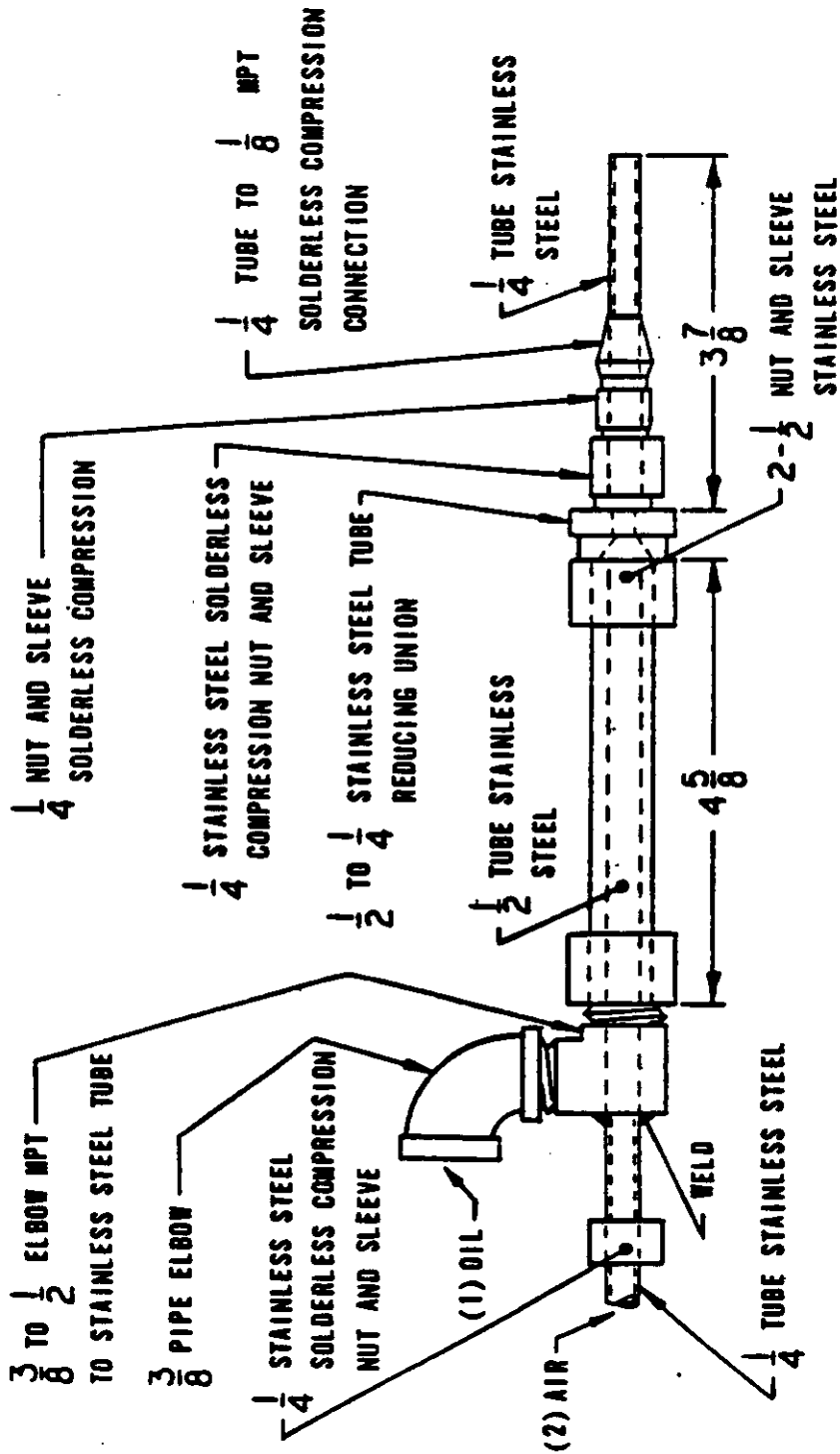
6.6 Subject term (key word) listing.

Government furnished equipment
 Hatches and doors
 Loading
 Preservatives and atomized spray equipment
 Ramp winch assembly
 Relubrication
 Vehicle closure
 Ventilation

MIL-C-45360F(AT)

6.7 Changes from previous issue. Asterisks are not used in this revision to identify changes with respect to the previous issue, due to the extensiveness of the changes.

MIL-C-45360F(AT)

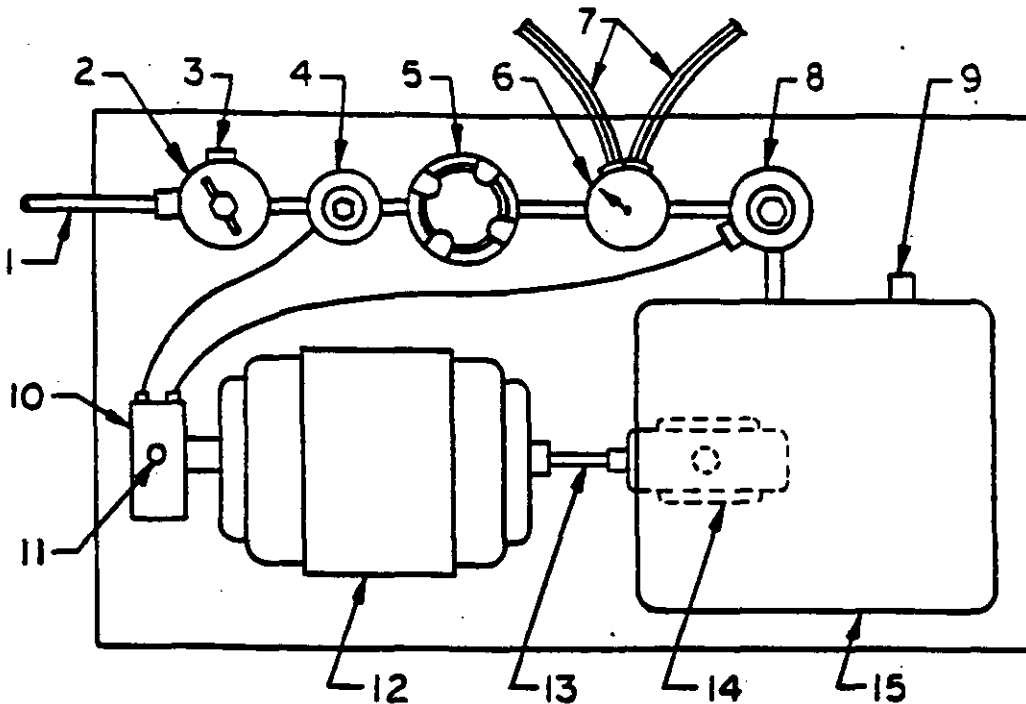


NOTE: (1) AND (2) CONNECT TO CORRESPONDING LINES ON FIGURE 2

FABRICATION DETAILS FOR OIL SPRAY ATOMIZING NOZZLE

FIGURE 1. Atomizing device.

MIL-C-45380F(AT)



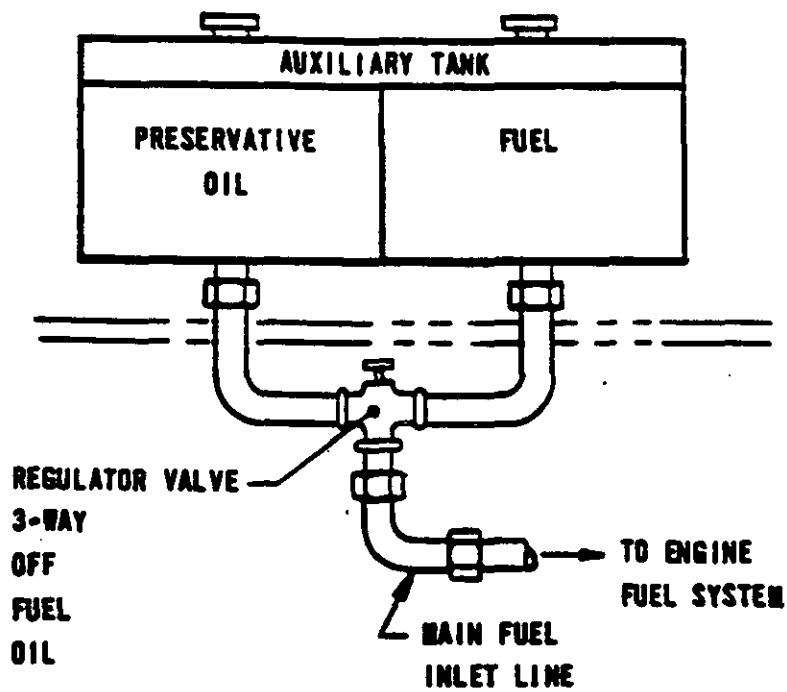
- | | |
|---------------------------|---------------------------------------|
| 1. AIR LINE | 9. OIL TANK LEVEL GAGE |
| 2. AIR PRESSURE REGULATOR | 10. ELECTRIC JUNCTION BOX |
| 3. AIR PRESSURE GAGE | 11. ELECTRIC LINE |
| 4. SOLENOID VALVE | 12. MOTOR 1/4 H P |
| 5. MOISTURE SEPARATOR | 13. SHAFT |
| 6. OIL PRESSURE GAGE | 14. POSITIVE DISPLACEMENT
OIL PUMP |
| 7. TWO DOUBLE TAPED LINES | 15. OIL TANK |
| 8. SOLENOID VALVE | |

NOTE:

THIS EQUIPMENT HAS PROVEN SATISFACTORY FOR ATOMIZED SPRAYING OF PRESERVATIVE OIL IN CONJUNCTION WITH FIGURE 1.

FIGURE 2. Pressure pump.

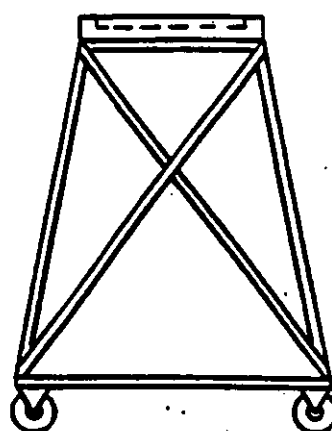
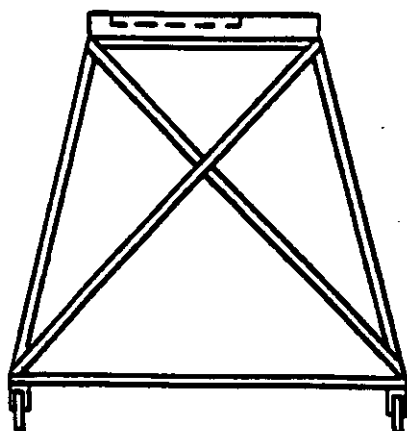
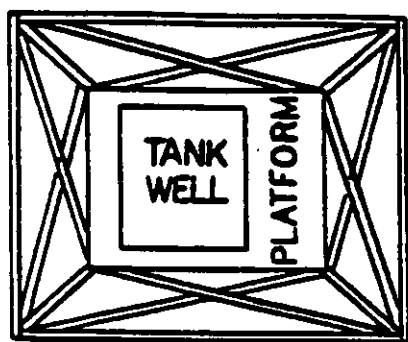
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SHEET 1 OF 2

FIGURE 3. Auxilliary fuel container.

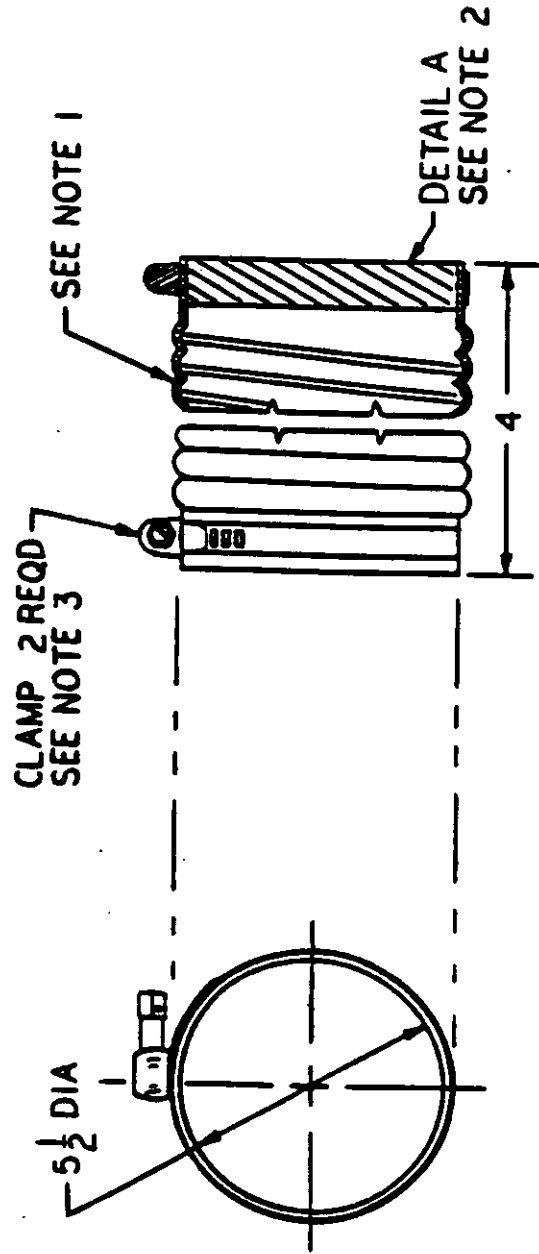
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SHEET 2 OF 2

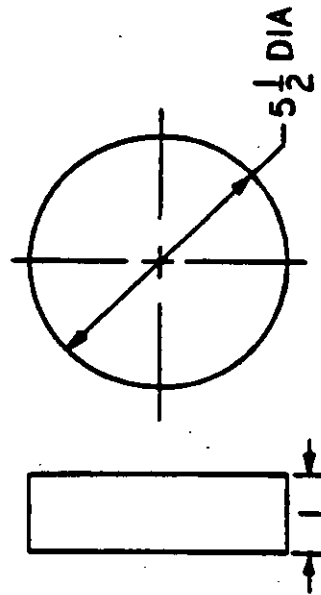
FIGURE 3. Auxilliary fuel container - Continued.

MIL-C-45360F(AT)



NOTES:

1. HOSE FLEXIBLE TO BE MADE FROM MATERIAL CONFORMING TO MIL-H-52079 OR EQUIVALENT.
2. PLUG TO BE MADE FROM 1 INCH PLYWOOD, NN-P-530, STD INT. WITH EXT. GLUE.
3. USE MS35842-16 OR EQUIVALENT CLAMPS.



DETAIL A-1 REQD

FIGURE 4. Boot, air restrictor.

MIL-C-45360F(AT)

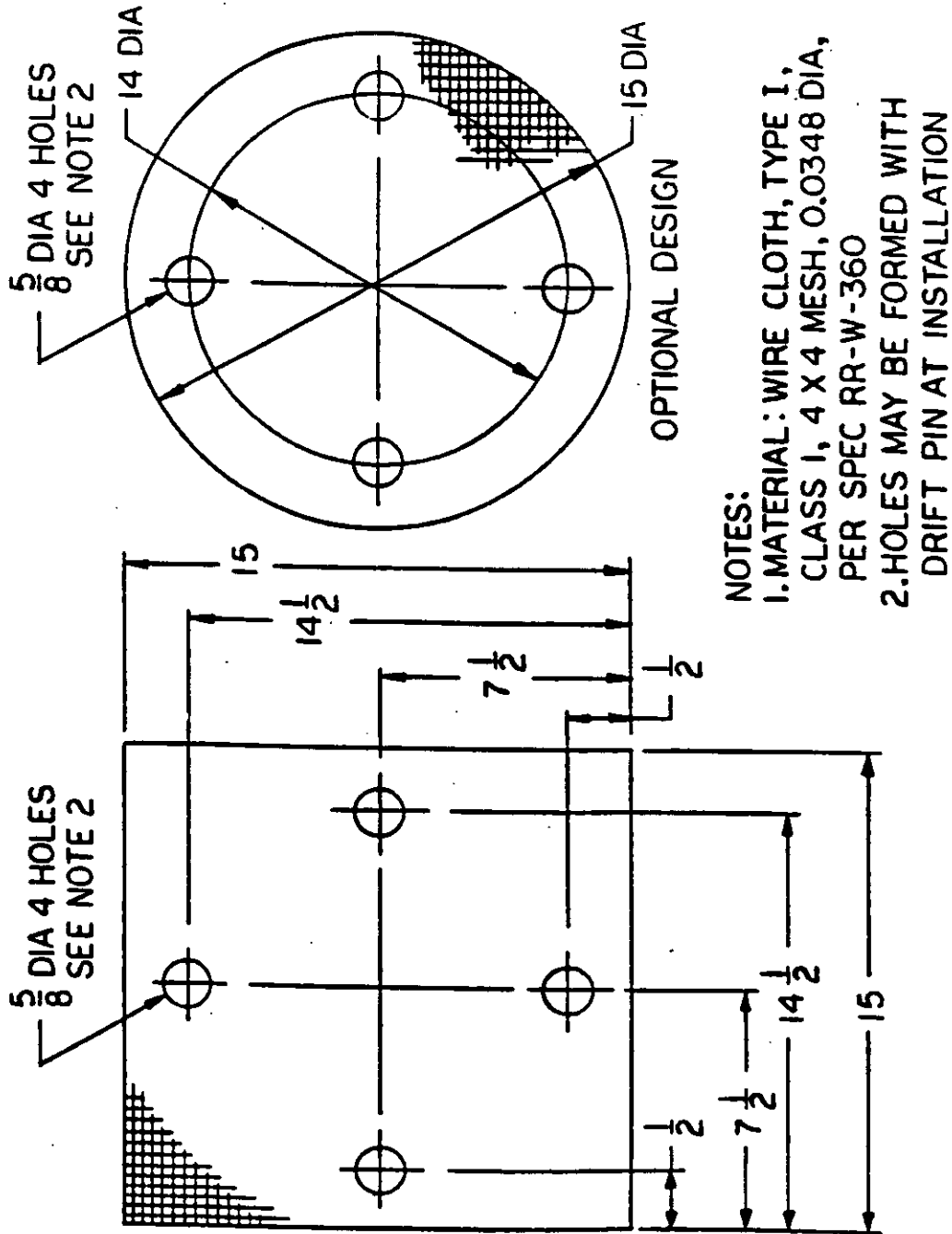
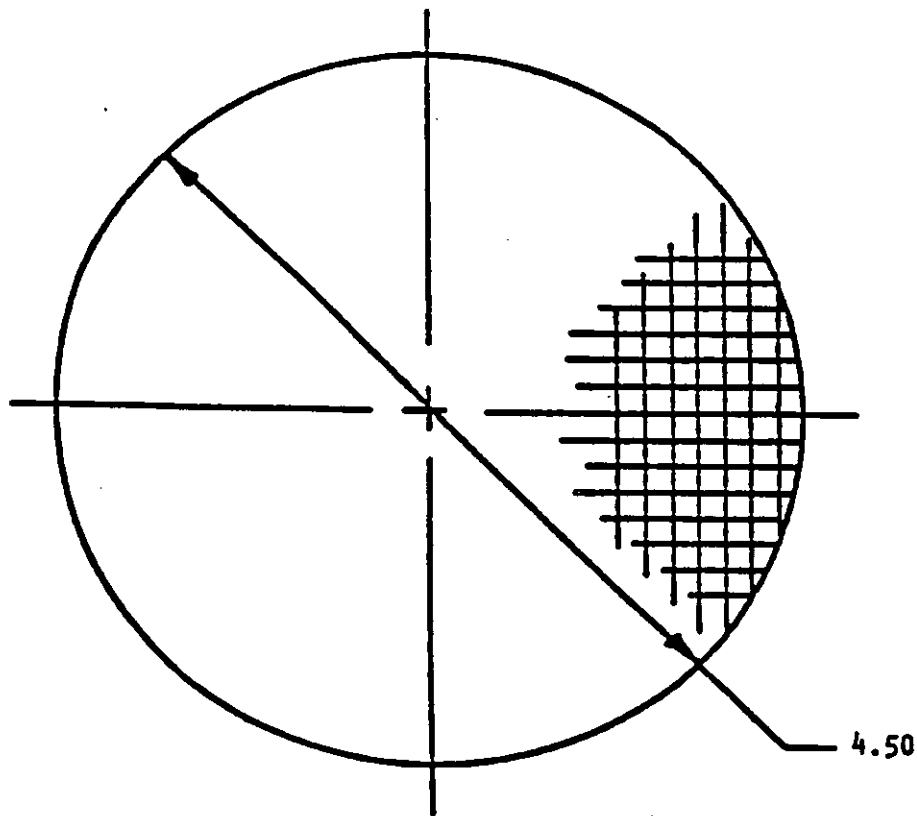


FIGURE 5. Screen.

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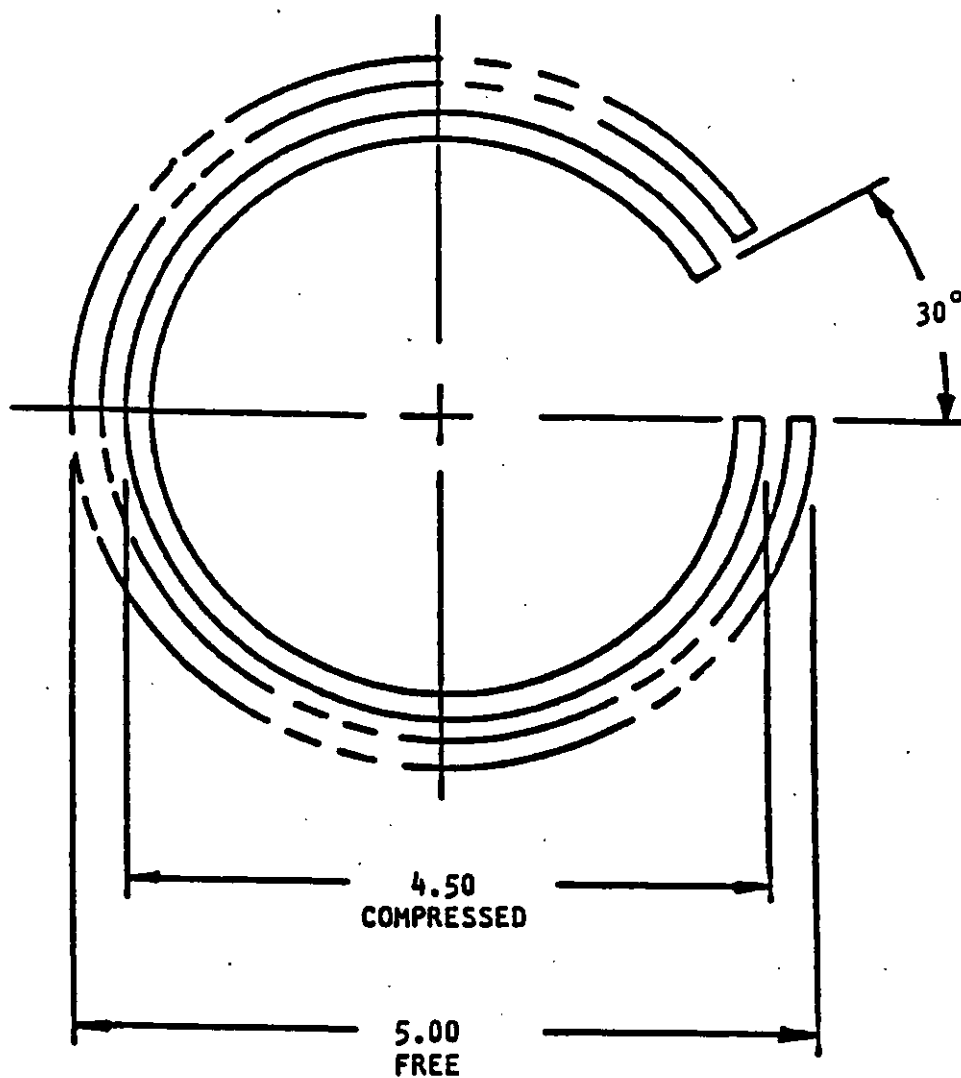


NOTES:

1. MATERIAL: WIRE CLOTH, TYPE 1, CLASS 1,
4 x 4 MESH, 0.0348 DIAMETER, SPEC RR-W-360.
2. DIMENSIONS ARE IN INCHES.

FIGURE 6. Screen.

MIL-C-45360F(AT)

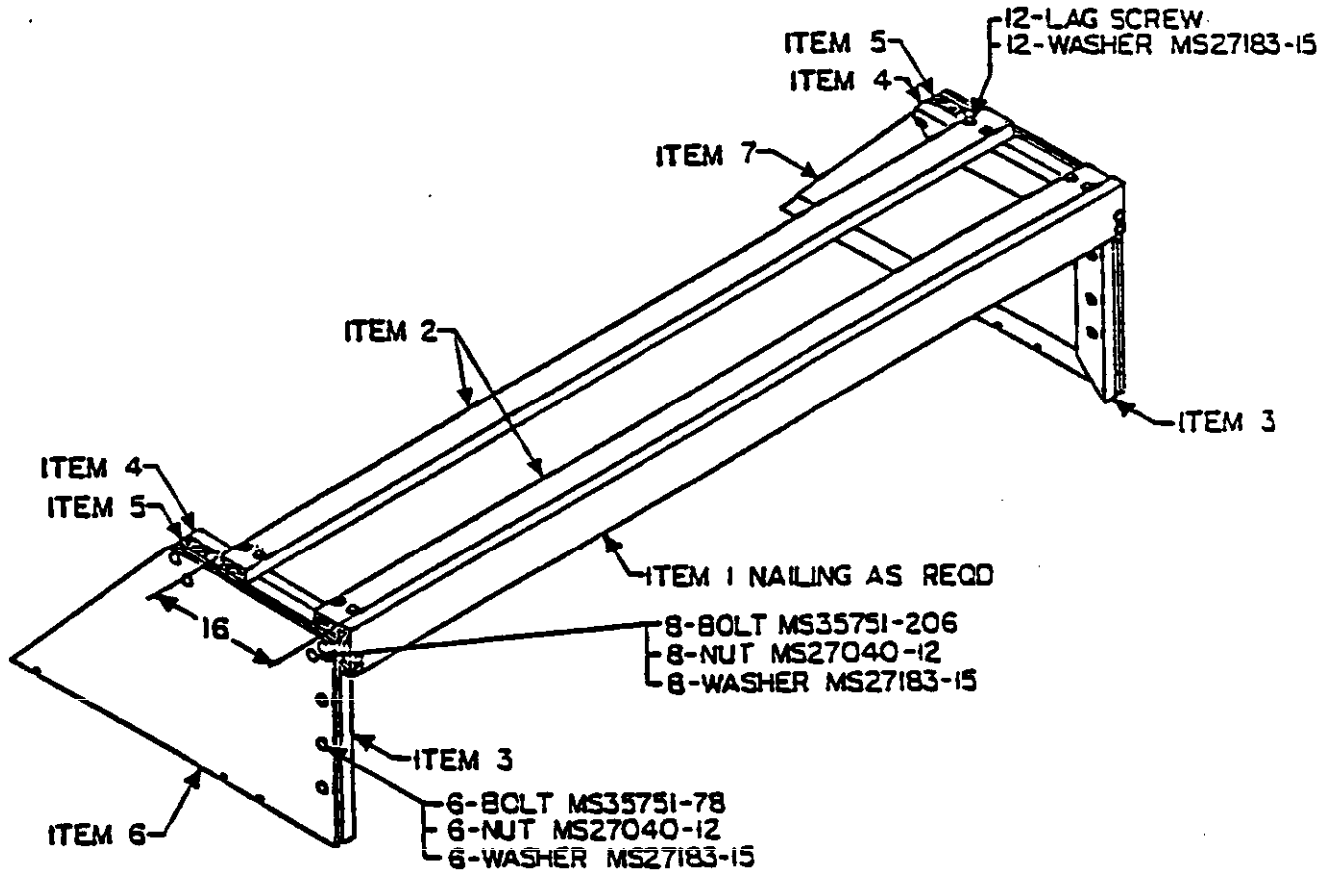


NOTES:

1. MATERIAL: WIRE, STEEL, MUSIC, 0.156 DIAMETER, SPEC QQ-W-470.
2. DIMENSIONS ARE IN INCHES.

FIGURE 7. Spring retainer.

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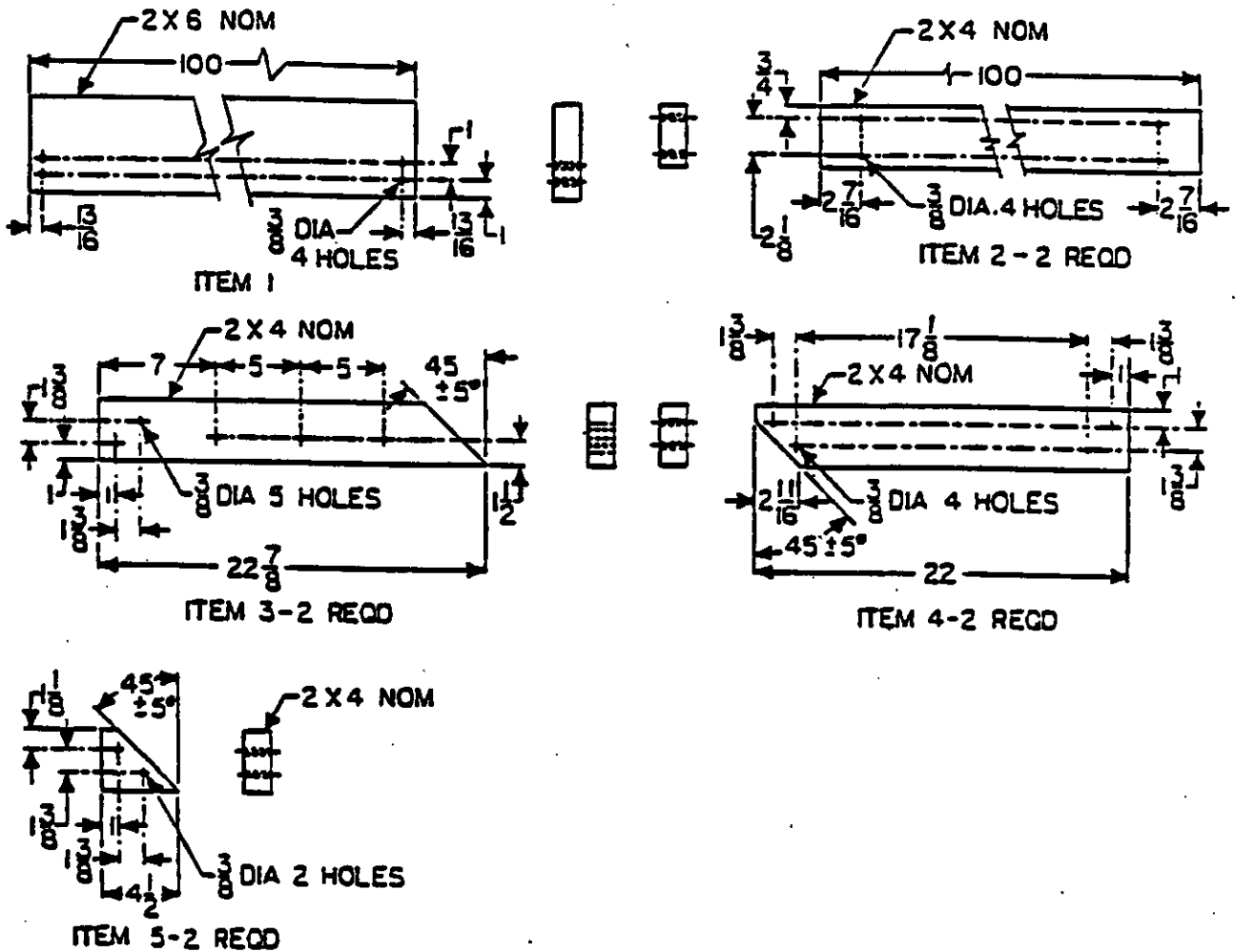
Notes:

See figures 8A and 8B for details of items 1 through 7.
Dim. in inches - Tol. unless otherwise specified $\pm 1/16$.

SHEET 1 OF 3

FIGURE 8. Saddle BII stowage.

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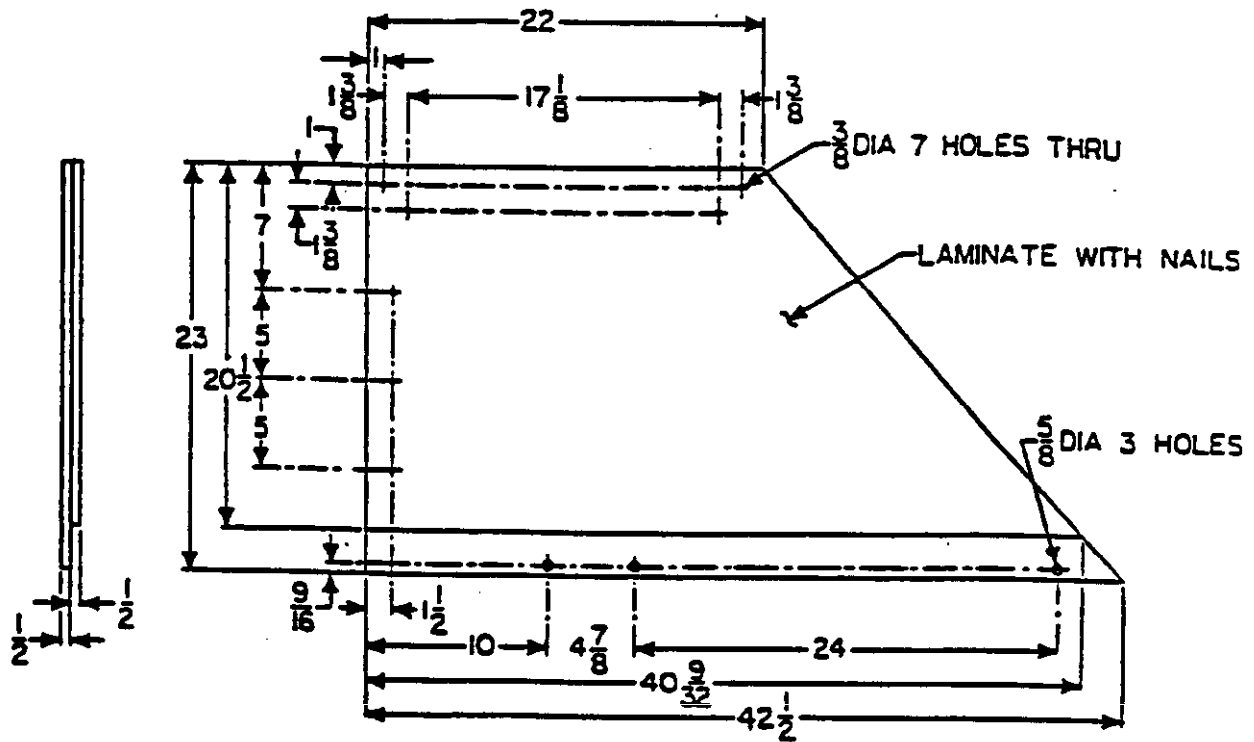
Notes:

Material: Lumber, MIL-STD-731, GROUP I OR II.
Dim. in inches - Tol. unless otherwise
specified ± 1/16.

SHEET 2 OF 3

FIGURE 8A. Saddle BII stowage.

MIL-C-45360F(AT)



ITEM 6 SHOWN
ITEM 7 OPPOSITE

Notes:

Material: Plywood, NN-P-530, STD INT W/EXT GLUE.
Dim. in inches - Tol. unless otherwise
specified $\pm 1/16$

SHEET 3 OF 3

FIGURE 8B. Saddle BII stowage.

MIL-C-45360F(AT)

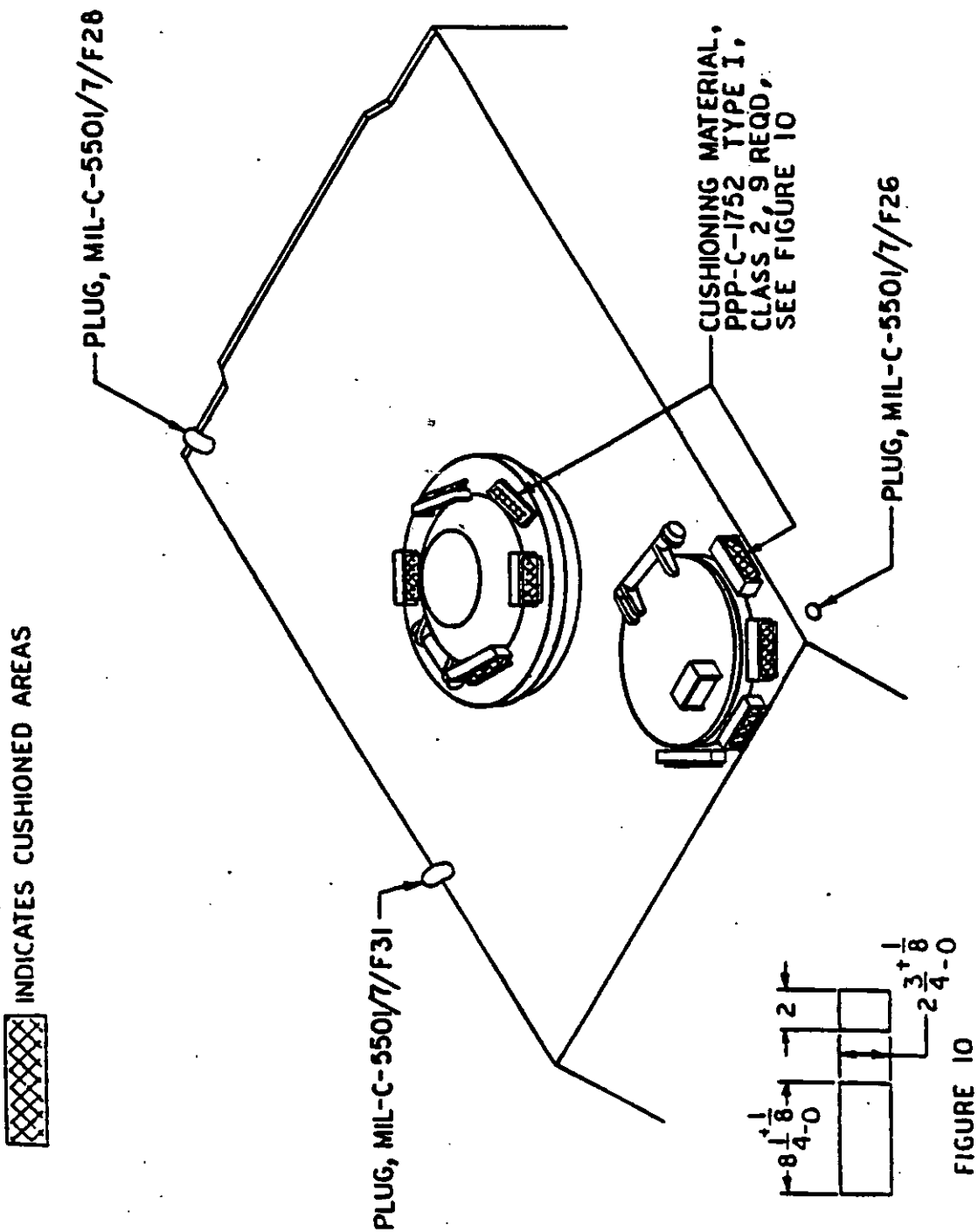


FIGURE 9. Level "B" closures.

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Custodian:
Army - AT

Preparing activity:
Army - AT

(Project 2350-A396)

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