

Report Date: 25 Sep 2013

Summary Report for Individual Task
061-271-1475
Perform Maintenance on an M198 Valve Selector Speed Shift and Valve Wheels (U6)
Status: Approved

DISTRIBUTION RESTRICTION: Approved for public release; distribution is unlimited.

DESTRUCTION NOTICE: None

Condition: Given an M198 howitzer scheduled for maintenance, in a maintenance facility, an artillery mechanic's tool kit, torque wrench, rags, oil (hydraulic fluid), and lock wire.

Standard: Perform maintenance on the selector valve, speed shift and wheels, so that all damaged parts are replaced and missing parts repaired IAW the technical guidance listed in TM 9-1025-211-10.

Special Condition: None

Safety Level: Low

MOPP:

Task Statements

Cue: Howitzer is scheduled for maintenance

DANGER

None

WARNING

None

CAUTION

None

Remarks: None

Notes: None

Performance Steps

1. Service the manifold assembly.

Note:

Ensure both selector valves are in OFF position prior to checking oil level.

- a. Unscrew and remove dipstick and preformed packing from manifold reservoir.
- b. Check oil level.
- c. If below ADD mark , add hydraulic fluid to mark on dipstick.
- d. Repair by replacing damaged parts.
- e. Install dipstick and new preformed packing in manifold reservoir.

2. Remove the selector valves.

Note:

Move WHEEL and SPEED shift selector levers back and forth on either side of the OFF mark to relieve pressure on the hydraulic system. If the pressure is not completely relieved when removing the selector valves, oil may squirt out and cause injury to eyes.

- a. Remove two nuts and two washers.
- b. Remove two handles.
- c. Remove four screws and four lockwashers.
- d. Remove identification plate.
- e. Remove lock wire, four bolts and four lockwashers.
- f. Remove manifold assembly shield.
- g. Remove lock wire and eight bolts.
- h. Remove two selector valves.
- i. Remove eight preformed packings.

3. Disassemble the selector valves.

Note: Selector valve does not need to be removed to perform this task.

- a. Remove bushing.
- b. Remove three pins from bushing.
- c. Remove spring.
- d. Remove spring clip.
Note: Replace if damaged.
- e. Remove spacer.

Note: Replace if damaged.

f. Remove pin.

g. Remove spring.

4. Service the selector valves.

a. Check for broken, missing, or damaged parts.

b. Repair is by replacement of authorized parts.

5. Reassemble the selector valves.

a. Install spring.

b. Install pin.

c. Hold spacer, flush on body, and install spring clip.

d. Install spring.

e. Install three pins and bushing.

6. Install the selector valves.

a. Align pressure side of two selector valves to the word PRESSURE on block, and install two selector valves with eight preformed packings.

b. Install eight bolts and torque to 25 to 30 ft-lb (33.75 to 40 .50 N-m). Add lock wire.

c. Install manifold assembly shield.

d. Install four lockwashers and four bolts. Tighten screws and install lock wire.

e. Set identification plate on manifold assembly shield.

f. Align holes and install four lockwashers and four screws.

g. Install two handles and two washers and two nuts.

7. Maintain the HyPAK Filter Assembly and Access Cover.

Note:

SPEED SHIFT and WHEELS handles must be in OFF position to ensure pressure is off the hydraulic lines.

- Tag or mark hoses when disconnecting to aid at installation.
- Place suitable container under opening to catch oil that leaks during removal of hoses.
- Place clean wiping rags over hose ends and fittings to prevent contamination of the hydraulic system.

a. Remove assembly.

(1) Remove twelve capscrews securing access cover to underside of bottom carriage.

(2) Remove access cover and gasket. Discard gasket.

(3) Remove fluid filter element from filter head and discard.

(4) Remove two capscrews, two lockwashers, and two nuts securing mounting bracket to bottom of carriage. Discard lockwashers.

(5) Pull mounting bracket and filter head, with hose assemblies attached, out through rectangular access opening.

(6) Disconnect 50 in. (127cm) hose assembly from elbow at pump side of filter head.

(7) Disconnect 20 in. (50.8cm) hose assembly from elbow at cover assembly side of filter head.

(8) Remove two elbows from filter head.

(9) Remove two capscrews securing filter head to mounting bracket.

b. Inspect / Repair assembly.

(1) Check for broken, damaged, or missing parts.

(2) Repair is by replacement of authorized parts.

8. Maintain the HyPAK Hydraulic Pump and Access Cover.

Note:

SPEED SHIFT and WHEELS handles must be in OFF position to ensure pressure is off the hydraulic lines.

- Tag or mark hoses when disconnecting to aid at installation.
- Place suitable container under opening to catch oil that leaks during removal of hoses.
- Place clean wiping rags over hose ends and fittings to prevent contamination of the hydraulic system.
- Access cover 12965262, for mounting hydraulic pump, is steel and three other access covers 12008770 are aluminum.

a. Maintain pump.

(1) Scribe a timing mark on access cover and bottom carriage for proper orientation of installation.

(2) Remove four machine bolts and four washers securing hydraulic pump to access cover.

(3) Remove six capscrews and six lockwashers securing access cover to underside of bottom carriage. Remove access cover. Discard lockwashers.

(4) Remove cushioning pad.

(5) Remove gasket from access cover. Discard gasket

(6) Remove hydraulic pump through access opening by tilting pump with hose end up.

(7) Disconnect cable assembly from electrical connector on hydraulic pump.

(8) Disconnect 50 in. (127cm) hose assembly from hydraulic pump.

(9) Disconnect 63 in. (160cm.) hose assembly from hydraulic pump.

(10) Remove four self-locking nuts, four washers, and four capscrews from counterbored holes securing mounting plate to hydraulic pump. Discard self-locking nuts.

(11) If damaged, remove four screw thread inserts from mounting plate.

b. Service the pump.

(1) Check for broken, damaged, or missing parts.

(2) Repair is by replacement of authorized parts.

Safety: In a training environment, leaders must perform a risk assessment in accordance with FM 5-19, Composite Risk Management. Leaders will complete a DA Form 7566 COMPOSITE RISK MANAGEMENT WORKSHEET during the planning and completion of each task and sub-task by assessing mission, enemy, terrain and weather, troops and support available-time available and civil considerations, (METT-TC). Note: During MOPP training, leaders must ensure personnel are monitored for potential heat injury. Local policies and procedures must be followed during times of increased heat category in order to avoid heat related injury. Consider the MOPP work/rest cycles and water replacement guidelines IAW FM 3-11.4, Multiservice Tactics, Techniques, and Procedures for Nuclear, Biological, and Chemical (NBC) Protection, FM 3-11.5, Multiservice Tactics, Techniques, and Procedures for Chemical, Biological, Radiological, and Nuclear Decontamination.

Safety goggles must be worn for all drilling and tapping operations.

c. Install pump.

(1) Install access cover on bottom carriage with two capscrews and place an " F " on the front of access cover for relocation purposes.

(2) Scribe lines through center of access cover connecting existing scribed lines on bottom carriage. If scribed lines on carriage are not visible or do not exist, scribe line at approximately 45 degrees to axles through center of access cover and extend onto carriage on each side of access cover.

(3) Remove access cover.

(4) Scribe another line 6-8 in. (15.24-20.32 cm) long in center of access cover at 90 degrees to first scribed line.

(5) Layout and drill access cover as shown in Figure E-10, Appendix E, using drilling template 12965263-PPH.

(6) Remove burrs and sharp edges from drilled holes.

(7) If removed, install four new screw thread inserts in mounting plate.

(8) With base of hydraulic pump facing installer and hose connections pointed to right, orient mounting plate to pump base so that mounting plate extends upward.

(9) Assemble mounting plate to hydraulic pump with four washers, four capscrews, and four new self-locking nuts. Ensure screw heads are recessed in counterbores and washers are under nuts.

(10) Connect 63 in. (160 cm) hose assembly to hydraulic pump.

(11) Connect 50 in. (127 cm) hose to hydraulic pump.

(12) Tighten hose connectors to 20-30-ft-lb (27.12-40.68 N -m).

(13) Connect cable assembly to electrical connector of hydraulic pump. Guide cable connector onto key and turn in a clockwise direction until it seats.

(14) Tilt hydraulic pump on end with hose end up and guide it, along with cable assembly, through access opening into right rear cavity. Push pump into cavity in vertical position. Reach through left rear cavity access opening and guide pump so it can rest in a horizontal position inside right rear cavity with hose end toward rear center of howitzer and mounting down through access opening.

(15) Apply light film of WTR to new gasket. Align holes in access cover.

(16) Place cushioning pad between mounting plate and access cover. Align holes in mounting plate, cushioning pad, and access cover and assemble with four washers and four machine bolts.

(17) Keeping scribed timing marks in line, hydraulic pump positioned at approximately 45 degrees to axles, and hose assemblies facing carriage rear center, assemble access cover and gasket to bottom carriage with six new lockwashers and six capscrews.

(18) Tighten machine bolts to approximately 30 ft-lb (40.68 N-m).

(Asterisks indicates a leader performance step.)

Evaluation Preparation: Setup: Ensure that all information, references, and equipment required to perform the task are available. Use the performance measures and the references to score the Soldier's performance. Brief the Soldier. Tell the Soldier what he is required to IAW the task conditions and standards.

PERFORMANCE MEASURES	GO	NO-GO	N/A
1. Serviced Manifold Assembly.			
2. Removed the selector valves.			
3. Disassembled the selector valves.			
4. Repaired the selector valves.			
5. Reassembled the selector valves.			
6. Installed the selector valves.			
7. Maintained HyPak Assembly and Access Cover.			
8. Maintained HyPak Hydraulic Pump and Access.			

Supporting Reference(s):

Step Number	Reference ID	Reference Name	Required	Primary
	PAM 750-8	The Army Maintenance Management System (TAMMS) Users Manual.	No	No
	TM 9-1025-211-10	Operators Manual (Crew) for Howitzer, Medium, Towed: 155-MM, M198 (NSN 1025-01-026-6648) (EIC: 3EL) {TM 08198A-10/1} (Reprinted W/Basic Incl C1-4)	No	No

Environment: Environmental protection is not just the law but the right thing to do. It is a continual process and starts with deliberate planning. Always be alert to ways to protect our environment during training and missions. In doing so, you will contribute to the sustainment of our training resources while protecting people and the environment from harmful effects. Refer to FM 3-34.5 Environmental Considerations and GTA 05-08-002 ENVIRONMENTAL-RELATED RISK ASSESSMENT. Environmental protection is not just the law but also the right thing to do. It is a continual process and starts with deliberate planning. Always be alert to ways to protect our environment during training and missions. In doing so, you will contribute to the sustainment of our training resources while protecting people and the environment from harmful effects.

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IAW FM 3-11.4, Multiservice Tactics, Techniques, and Procedures for Nuclear, Biological, and Chemical (NBC) Protection, FM 3-11.5, Multiservice Tactics, Techniques, and Procedures for Chemical, Biological, Radiological, and Nuclear Decontamination. 1. Task may involve personal exposure to hazardous substances.
2. Brief personnel IAW OSHA HAZCOM requirements.

Prerequisite Individual Tasks : None

Supporting Individual Tasks : None

Supported Individual Tasks : None

Supported Collective Tasks : None