DEPARTMENT OF THE ARMY TECHNICAL MANUAL

Operator, Organizational, Direct Support, General Support, and Depot Maintenance Manual (Including Repair Parts List) For

BULLDOZER, EARTH MOVING: TANK MOUNTING, M8A3 (2590-944-4903)

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Technical Manual

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OPERATOR, ORGANIZATIONAL, DIRECT SUPPORT, GENERAL SUPPORT, AND DEPOT MAINTENANCE MANUAL (INCLUDING REPAIR PARTS LIST) FOR BULLDOZER, EARTH MOVING: TANK MOUNTING M8A3 2590-944-4903

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Section I. General

1-1. Scope

1-2. This technical manual contains instruction for operation, organizational, direct, general and depot maintenance including repair parts list for the Tank Mounting, Earth Moving Bulldozer] M8A3 u installed on an M48A3 Tank. The M8A3 bulldozer was developed in two stage of production, and therefore component difference of items occur. The early model M8A3 bulldozer are in the serial number range of 1 through 59. All bulldozers built after this are current model M8A3 bulldozers Hereafter, the bulldozers are referred to as early M8A3 bulldozers or current M8A3 bulldozers. Many maintenance procedures are common to both early and current M8A3 bulldozers although slight differences in configuration exist. Unless otherwise specified the information, data and procedures contained in this manual are applicable to both the early M8A3 and the current M8A3 bulldozers.

1-3. Appendix A contains a list of current references including supply manual, technical manuals, forms and other available publications applicable to this material.

1-4. Appendix B contains the maintenance allocation chart.

1-5. Appendix C lists the Basic Issue Items that are required for stockage for crew maintenance, and includes accessories, attachments, components assemblies and sub assemblies with quantities thereof, which constitute the major end item of equipment. The list includes the crew maintenance accessories, tool, supplies and repair part assemblies accompanying the equipment; all of which constitute the major end item for issue to users.

1-6. Appendix D contains a listing of repair parts for current model M8A3 bulldozer and common repair parts for early M8A3 bulldozer Required for stockage by organizational, direct, general and depot maintenance.

1-7. Appendix E contains instructions for operation and maintenance of peculiar components including peculiar repair parts list for the early model M8A3 bulldozers. The early model M8A3 bulldozers are in the serial number range of 1 through 59.

1-8. Any errors or omissions will be entered on DA Form 2028 and forwarded directly to the Commanding General, U. S. Army Tank Automotive Command, Warren, Michigan, 18090, Attn: AMSTA-MCP.

1-9. Maintenance Allocation

1-10. The prescribed maintenance responsibilities will apply as reflected in the maintenance allocation chart (Appendix B). In all cases, where the nature of the repair, modification, or adjustment is beyond the scope or facilities of organizational maintenance, the supporting unit should be informed in order that trained personnel with suitable tools and equipment may be provided or other instructions issued.

1-11. Forms, Records, and Reports

1-12. General

The forms generally pliable to units maintaining this equipment are listed in Appendix A. No forms other than those approved for the Department of the Army will be used. For a current and complete listing of all forms, refer to DA Pam 310-2. For instructions on use of these forms, refer to TM 38-750.

1-13. Field Report of Accidents Whenever injury to personnel or damage to material occurs, the reports necessary to comply with requirements of the Army safety program are prescribed in AR 385-40, and TM 38-750.

1-14. Equipment Improvement Recommendations.

Equipment faults detected in the equipment or materials should be reported using the equipment improvement recommendations section of DA Form 2407 in accordance with TM 38-750.

1-1

1-15. Description

1-16. General

The Tank-Mounting, Earth Moving Bulldozer M8A3 is a hydraulically operated unit for mounting on the M48A3 Tank. (figure 1-1). The bulldozer consists of the following:

- (a) A moldboard, with push beams and tilt arms.
- (b) Electromagnetic clutch and controls.
- (c) Moldboard control handle and linkage.
- (d) Carrying hooks and handle.
- (e) Hydraulic control system consisting of a mount assembly, an oil reservoir, a control valve manifold, and hydraulic cylinders, tubing and hoses.
- (f) Armor guards.

1-17. Moldboard

The moldboard is the earth-moving portion d the bulldozer. The unit is supported by a linkage consisting of two push beams and four tilt arms.

1-18. Electromagnetic Clutch and Control

The electromagnetic clutch is controlled by actuating a switch mounted on the driver's instrument panel. The switch is turned "on" to engage the clutch and turned "off" to disengage the clutch.

1-19. Moldboard Control Linkage

A control handle in the driver's compartment, and a linkage connected to the control valve manifold, controls the operation of the moldboard.



Figure 1-1. Bulldozer, earth moving, tank mounting, M8A3, mounted on tank, combat, full tracked, 90-mr. gun, M48A3.

1-20. Carrying Hooks

Two carrying hooks hold the moldboard in raised position for tank travel. The hoods are manually operated from outside the driver's compartment by pulling on the handle to disengage the hooks and by pushing on the handle to engage the hooks.

1-21. Hydraulic System

The hydraulic system uses oil under pressure to actuate two hydraulic cylinders which raise and lower the moldboard. The mount assembly, which attaches to the power take-off shaft at the rear of the transmission, consists 'of an integral right angle drive, clutch, and pump. The flow of oil to the cylinders is directed by a control valve manifold. The oil reservoir is located at the left rear of the tank. Tubing and hoses connect the hydraulic components.

1-22. Armor Guards

Armor guards protect linkages, tubing, hydraulic cylinders, and other vulnerable portions of the bulldozer.

1-23. Data

The following data provide the operator and organizational maintenance personnel with information for operating and servicing the M8A3 bulldozer:

1-24. General

	Angle	of	moldboard	cutting	edge	(with
horizor	ntal):					
Flo	oat positi	on				9 deg

	aog
Lowest position	deg

Relation of moldboard cutting edge to ground:
Lowest position 10-in. below
Highest position 30-in. above
Carrying position
Width and Height: Moldboard width146-in.
Moldboard height
Rate of lift:
Tank main engine at 1,500 rpm5.5-in. per
second
Tank main engine at 2,800 rpm 10.5-in per
second
Forward speed of tank while bulldozing:
Engine at 1,500 rpm and low gear1-3 mph
Recommended maximum speed of tank with
bulldozer installed5 mph
Hydraulic oil data: Reservoir capacity 15gal
Hydraulic system capacity

1-25. Weights

Reservoir, tubes and guards	298lb
Control valve, manifold, tubes and guards.	702lb
Control linkage and guards	41 lb
Mount assembly	105 lb
Right headlamp extension and guard	18 lb
Left headlamp extension and guard	18 lb
Moldboard	3,004 lb
Pushbeams	1,347 lb
Tilt arms	256 lb
Mounting brackets	1,816 lb
Cylinders, piping, and guards	795 lb
Total weight less oil	8,400 lb

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