

TM 10-1477

MAINTENANCE MANUAL

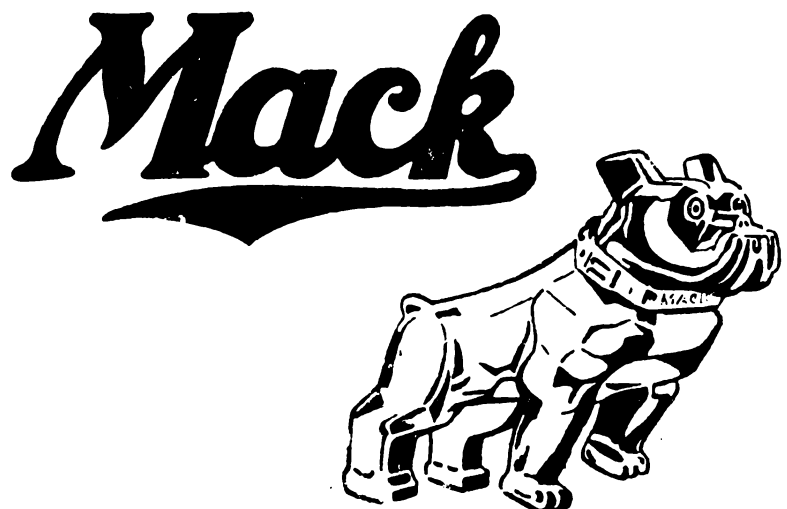
U. S. ARMY MACK MODEL NM-5 6-TON 6x6 PRIME MOVER TRUCK

**CHASSIS SERIAL NO'S.
NM 8D 1301 to 2360**

**U.S.A. REGISTRATION NO'S.
521086 to 522145**

CONTRACT W-670-ORD-3194

CONTRACT W-398-QM-11616



TM 10-1477

FEB. 1943

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WAR DEPARTMENT

Washington, February 10, 1942.

TM 10-1477, Maintenance Manual, Truck, 6-ton, 6x6 Prime Mover, MACK, (Model NM-5) published by the Mack Manufacturing Corporation, is furnished for the information and guidance of all concerned.

(AG 062.11 (4/26/41) PC (C), June 10, 1941.)

By order of the Secretary of War:

**G. C. MARSHALL,
Chief of Staff.**

Official:

**J. A. ULIO
Major General,
The Adjutant General.**

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MACK MANUFACTURING CORPORATION

Technical Service Department

L. I. City, N. Y., U. S. A.

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Division of Manual into Groups

This manual is divided into Groups, which correspond with the United States Army Ordnance Department Functional Group Code. Given un-

der each group below in small type, is a list of the main units described in each group.

General Data: Index, Division of Manual into Groups, Division of each Group into Sections, Oil & Water Capacities, and General Dimensions.

Operation: Instruments & Controls, and Operating Instructions.

Preventive Maintenance: Maintenance suggestions, and Preventive Maintenance Schedules.

Lubrication: Lubrication Chart, and Lubricating instructions.

- 01 Engine:** Cylinder block & heads, Crankshaft & bearings, Crankshaft oil seal, Pistons & rings, Piston pins, Connecting rods & bearings, Valves & springs, Valve lifters & guides, Valve tappets, Push rods, Rocker arms, Camshaft & bushings, Valve timing, Timing gears, Oil pump & gage, Viscometer, Oil filters, Manifolds, Engine mountings, Accessory drive, and Vibration damper.
 - 02 Clutch:** Clutch disk, Pressure plate & springs, Release bearing, Pedal, and Pilot bearing.
 - 03 Fuel:** Carburetor, Air cleaner, Fuel pump, and Governor.
 - 04 Exhaust:** Muffler & pipes.
 - 05 Cooling:** Thermostats, Water pump, and Fan & belts.
 - 06 Electrical:** Generator & regulator, Starter & drive, Distributor & condenser, Ignition coil, Lighting switches, Ignition timing, Ignition tune-up, Headlamps, Spark plugs, and Battery.
 - 07 Transmission:** Main drive pinion, Main shaft, Countershaft, Reverse shaft, Gears, and Bearings.
 - 08 Transfer Case:** Main shaft, Driven shaft, Idler shaft, Declutch shaft, Power-take-off shaft, Gears, and Bearings.
 - 09 Propeller Shaft:** Universal joints.
 - 10 Front Axle:** Differential, Spur pinion, Bevel pinion, Front wheel drive, Gears, and Bearings.
 - 11 Rear Axle:** Axle shafts, Differential, Spur pinion, Bevel pinion, Gears, Bearings, Torque rods, and Trunnion brackets.
 - 12 Brakes:** Hand brake, Foot brakes, Air compressor, and Electric brakes.
 - 13 Wheels:** Bearings, and Tires.
 - 14 Steering:** Drag link, Tie rod, and Gear.
 - 15 Frame:** Pintle hook, and Frame
 - 16 Springs:** Shackles, and Shock absorbers.
 - 18 Body and Cab:** Windshield, Cab mounting, Seat, Handles, Locks, Doors, Windows, Glass and Paint.
 - 19 Winch:** Safety brake.
-

Division of each Group into Sections

This manual is further subdivided as follows. Each group covering a major unit as Engine, Clutch, etc., is divided and described in Sec-

tions as given below. Some groups do not require this exact description but, in general, they are treated in the same manner.

1. Description and Principle of Operation:

Includes statement of type or design of unit used, and how it works. Uncommon features are mentioned especially.

2. Trouble Shooting and General Solutions:

Includes most common failures arising after reasonable service, or due to neglect in servicing or other conditions, and the possible solutions or remedies.

3. Adjustments:

Includes all possible adjustments that can be made without disassembling the unit. Methods of making adjustments are given. Adjustment figures include necessary fits as: measurements, clearances, etc., with tolerances to be maintained. Special tools needed are indicated.

4. Dis-assembly:

Includes step-by-step procedure to completely dis-assemble unit. Special tools needed are indicated.

5. Repairs:

Includes methods of effecting all possible repairs, fitting of parts and sizing: as broaching, lapping, grinding in place, etc. Special tools needed are indicated.

6. Lubrication:

Includes instructions for lubrication that can be accomplished only while the unit is dis-assembled. For other lubricating instructions, see LUBRICATION group.

7. Re-assembly:

Includes step-by-step procedure to re-assemble unit, but only where different from reverse of dis-assembly. Additional adjustments, not given under section 3 above, are included. Special tools needed are indicated.

8. Specifications:

Includes all specifications and other service data essential to proper maintenance. A summary of all adjustments listed in above items is given.

9. Tools:

Includes special tools, other than standard tools furnished with vehicle or common mechanic's tools, essential for the dis-assembly, repair, adjustment and re-assembly of the unit.

MACK Model NM-5 Truck**6-ton 6 x 6 Prime Mover****Engine**

Model	MACK	EY
Type	Gasoline	Overhead
Horsepower	A.M.A.	60.0
Displacement	Cu. In.	707
Bore	Inches	5
Stroke	Inches	6
Number of Cylinders		6
Engine Governed Speed	R.P.M.	2100

Capacities

Fuel Tank	Gallons	80
Engine Crankcase, Refill	Quarts	19
Oil Filters, extra	Quarts	9
Cooling System	Quarts	54
Transmission	Pints	20
Oil Bath Air Cleaner	Quarts	3½
Winch	Pints	5½
Transfer Case	Pints	8
Front Axle Differential	Pints	12
Rear Axle Differential	Pints	each 20
Steering Gear	Pints	8

Dimensions

Turning Radius, Right	Ft.-In.	37'-3"
Turning Radius, Left	Ft.-In.	35'-8"
Height Overall	Inches	121"
Width Overall	Inches	96"
Length Overall	Ft.-In.	23'-6¾"
Weight of fully equipped truck without load	Pounds	21720
Road Clearance	Inches	10⅛"
Wheelbase	Inches	151"-52"

OPERATION

MACK Model NM-5 6-ton 6x6 Prime Mover Truck



Important

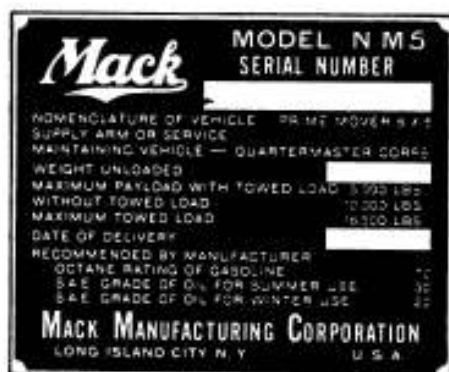
It is important to specify chassis number of vehicle when servicing same. Engine serial number should also be given. This is especially important when ordering parts. The illustrations below will assist in locating the serial numbers.

PUBLICATIONS APPLYING TO THIS VEHICLE

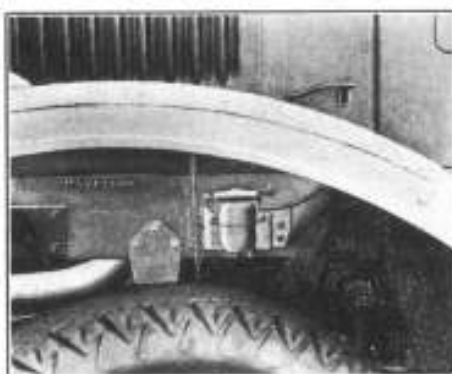
PARTS LIST T/M IO-1476

MAINTENANCE MANUAL T/M IO-1477

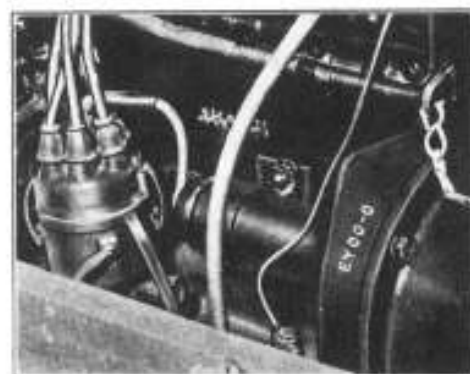
Publication Identification Plate
located on instrument panel



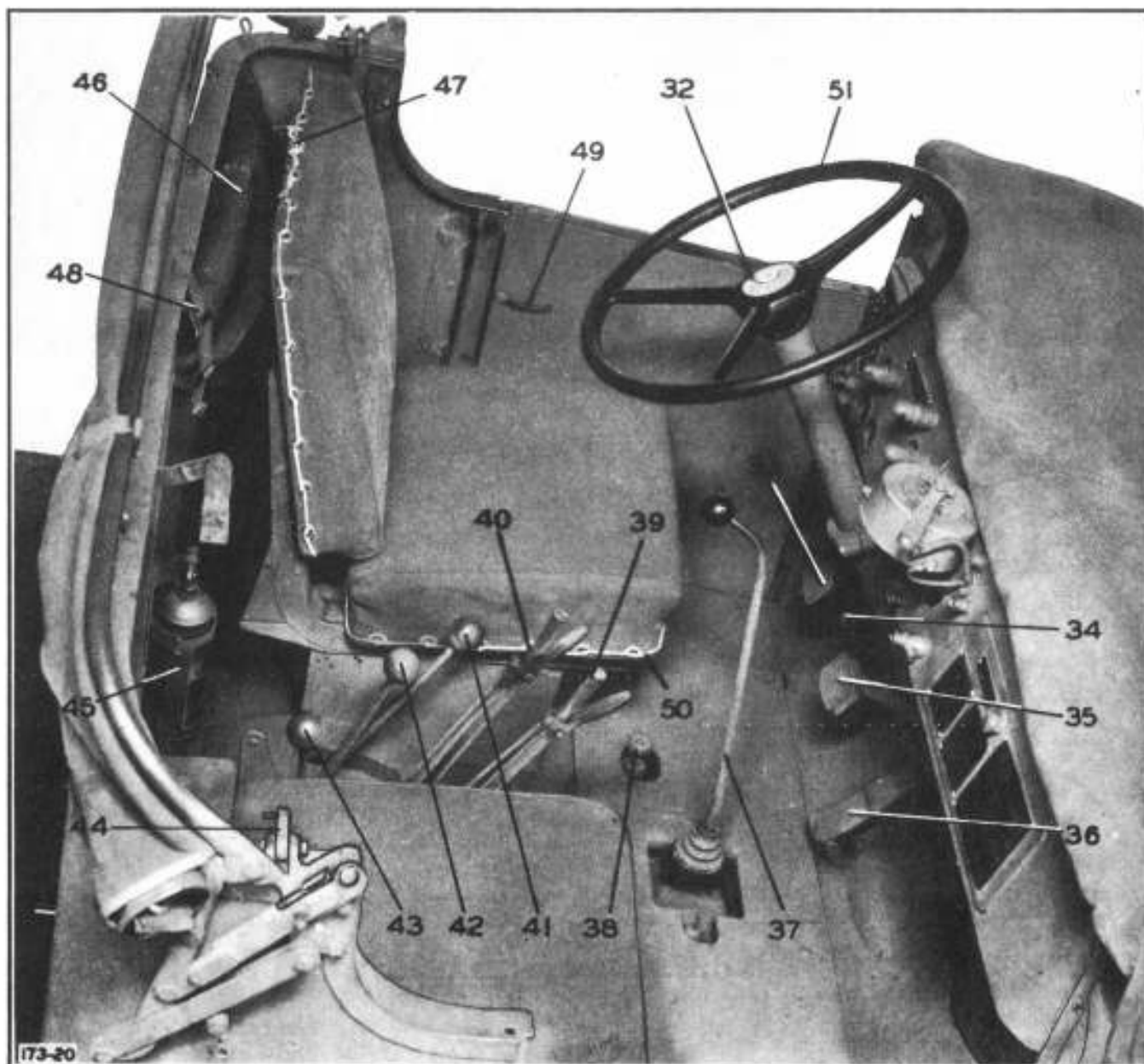
Chassis Name Plate
located on
instrument board



Chassis Serial Number
stamped on front end of
left frame side members



Engine Serial Number
stamped on right side
of timing gear housing



View of Cab Controls

- | | |
|---------------------------------|-----------------------------------|
| 32. Horn Button. | 42. Range Gear Shifter Lever. |
| 33. Clutch Pedal. | 43. Power-take-off Control Lever. |
| 34. Headlamp Foot Switch. | 44. Cab Roof Latch. |
| 35. Brake Pedal. | 45. Fire Extinguisher. |
| 36. Accelerator Pedal. | 46. Curtain Pocket. |
| 37. Transmission Shifter Lever. | 47. Seat Cushion Cover Lacing. |
| 38. Starting Switch. | 48. Curtain Pocket Strap. |
| 39. Winch Clutch Lever. | 49. Door Handle. |
| 40. Hand Brake Lever. | 50. Seat Adjustment Lever. |
| 41. Front Axle Shift Lever. | 51. Steering Wheel. |

INSTRUMENTS AND CONTROLS

1. L.H. WINDSHIELD WIPER CONTROL VALVE.

2. TACHOMETER MAXIMUM SPEED RESET LOCK: Tachometer is equipped with an auxiliary pointer which indicates the maximum speed reached by the engine. This lock permits resetting the pointer to zero if the engine is not running, or, if running, to the corresponding engine speed.

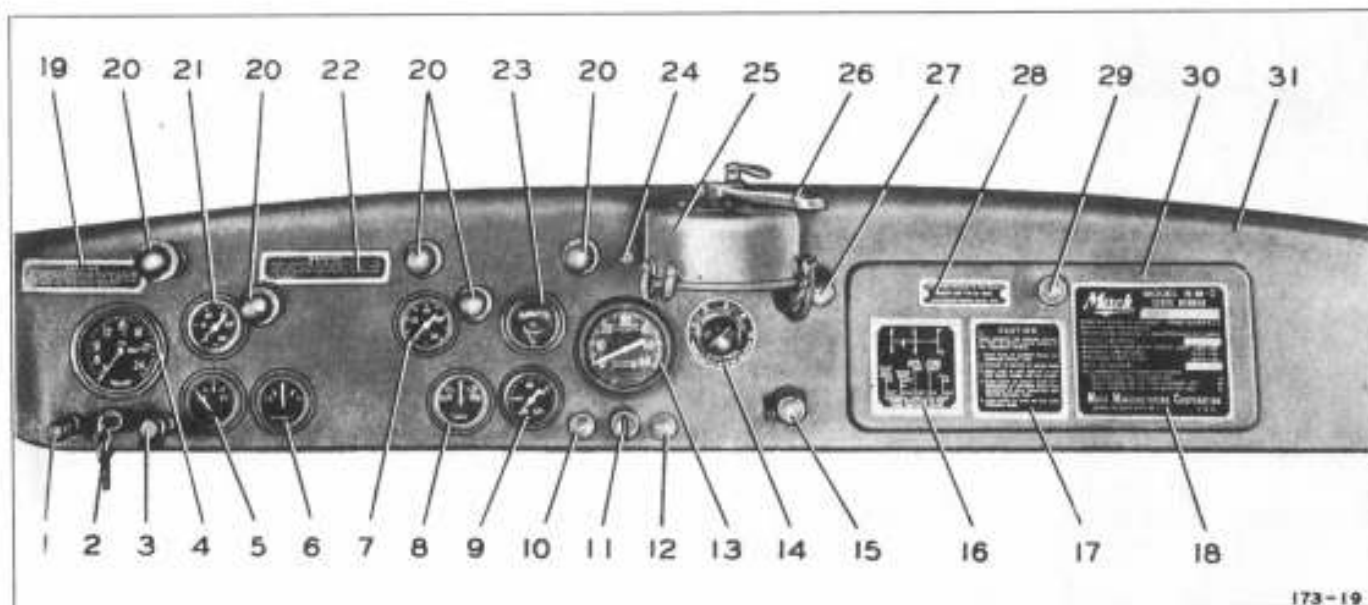
3. R.H. WINDSHIELD WIPER CONTROL VALVE.

4. TACHOMETER: Indicates the engine R.P.M. at any instant. It is also equipped with a maximum speed pointer which remains at the point of the highest speed until reset by the key in reset lock.

5. FUEL GAGE: This is an electrically operated gage and indicates the approximate level of the fuel in the tank whenever the ignition switch is "on". The current taken by gage is negligible.

6. AUXILIARY AMMETER: This auxiliary ammeter is provided to show that the second battery, which is connected in parallel with the first, is receiving a charge.

Since this battery receives its charge thru two sets of contacts in the series-parallel starting switch, and the contacts in two circuit breakers, this ammeter will immediately show if any of these contacts is not properly closed.



Instrument Panel

1. L. H. Windshield Wiper Control Valve.
2. Tachometer Maximum Speed Reset Lock.
3. R.H. Windshield Wiper Control Valve.
4. Tachometer.
5. Fuel Gage.
6. Auxiliary Ammeter.
7. Oil Pressure Gage.
8. Main Ammeter.
9. Temperature Gage.

10. Choke Control.
11. Ignition Switch.
12. Throttle Control.
13. Speedometer.
14. Electric Brake Control Rheostat.
15. Blackout Switch.
16. Gear Shift Instruction Plate.
17. Caution Plate.
18. Chassis Name Plate.
19. Overspeed Warning Plate.
20. Instrument Panel Lamps.

21. Air Pressure Gage.
22. Brake Pressure Warning Plate.
23. Viscometer.
24. Headlamp Beam Indicator.
25. Electric Brake Control Box.
26. Electric Brake Control Lever.
27. Instrument Panel Light Switch.
28. Publication Data Plate.
29. Glove Compartment Push Button.
30. Glove Compartment.
31. Instrument Panel.

7. OIL PRESSURE GAGE: The oil pressure gage indicates the pressure of the engine lubricating oil. This gage should indicate approximately 45 to 60 pounds at 2100 R.P.M. maximum speed and 10 to 20 pounds at 300 R.P.M. idling speed.

If oil pressure fails to register, vehicle should be stopped and the cause determined.

8. MAIN AMMETER: The main ammeter indicates how much current the two batteries are receiving when the engine is running above idling speed.

When the engine is stopped, this ammeter will show the amount of current taken from the batteries by any lights which are turned on.

9. TEMPERATURE GAGE: This gage indicates the temperature of the water in the cooling system. Temperature should range between 155° F. and 175° F. If temperature reaches 212° F., the vehicle should be stopped and the cause of this excessive rise corrected.

10. CHOKE CONTROL: Choke control should be used only when necessary. Choke should be pulled out far enough to allow the engine to run smoothly during the warm-up period. Choke should be pushed in as soon as possible after the engine is running smoothly. If choke is allowed to stay out, the fuel mixture will become too rich and may cause injury to the engine by allowing the unburned fuel to seep into the crankcase and dilute the lubricating oil.

11. IGNITION SWITCH: The ignition switch is turned "on" and "off" by means of the switch key which can be removed from the lock only when in the "off" position.

12. THROTTLE CONTROL: The throttle control is used when starting the engine or making adjustments to the engine. When button is pushed in, the engine will run at idling speed.

When the vehicle is in motion, the control button should be pushed in and the accelerator pedal used to control engine speed.

13. SPEEDOMETER: The speedometer indicates road speed of the vehicle in miles per hour and total mileage travelled.

14. ELECTRIC BRAKE CONTROL RHEOSTAT: The electric trailer-brake control Rheostat mounted in the center of the instrument board, regulates the maximum power that can be obtained from the trailer brakes.

15. BLACKOUT SWITCH: The switch which controls the headlamp, stop and tail lamps, is designated as a Blackout Switch. It has one "off" and three "on" positions.

With the control knob all the way in, all lights are off.

Pulling the knob out to the first position lights the blackout fender lamps and the blackout tail and stop lamps.

To light the headlamp and tail and stop lamps the switch must be pulled out to the third position, but this cannot be done until the switch-lock button is pressed.

Pulling the switch knob out to the fourth position lights the same lamps as position three.

16. GEAR SHIFT INSTRUCTION PLATE: Shifting positions for transmission, transfer case, power-take-off and front axle control, are shown on this plate.

17. CAUTION PLATE: This caution plate carries instructions for locating five plugs to be opened for draining the cooling system.

18. CHASSIS NAME PLATE: Located on the right half of the glove compartment door, this shows the model, chassis serial number, nomenclature, weight and oil recommendations.

19. OVERSPEED WARNING PLATE: A constant reminder of the engine speed allowable.
