

TM 10-1545

MAINTENANCE MANUAL

U. S. ARMY
MACK MODELS NR-8 & 9
10-TON 6x4 CARGO TRUCKS

CHASSIS SERIAL NO'S.
NR 4D 2871D thru 4470D

U. S. A. REGISTRATION NO'S.
523299 thru 524898

CONTRACT W-670-ORD-3357
CONTRACT W-398-QM-11587

Mack



TM 10-1545

DEC. 1942

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WAR DEPARTMENT

Washington, December 22, 1942.

TM 10-1545, Maintenance Manual, Trucks, 10-ton, 6 x 4, Cargo Body, MACK, (Models NR-8 & 9) published by the Mack Manufacturing Corporation, is furnished for the information and guidance of all concerned.

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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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Item No.	Part No.	Description	Manufacturer
4.		Handle, Jack (See also Item No. 8)	Walker Mfg. Co.
5.	2800	Cold Chisel, ½" Stock	Barcalo Mfg. Co.
6.	648BP	Pliers, 8" Combination	Barcalo Mfg. Co.
7.	3200	Punch, 5" Solid, 5/32" Point	Barcalo Mfg. Co.
8.		Handle, Jack (See also Item No. 4)	Walker Mfg. Co.
9.	¼-lb. Spool	Wire, #18 Black Annealed Iron	E. H. Tate & Co.
10.	1006	Wrench, Semi Blue Adjustable	Barcalo Mfg. Co.
11.	7499	Handle, Socket Wrench, & Rim Tool	Bonney Forge & Tool Works
12.	882	Wrench, Monkey #11	Fairmount Tool & Forging Co.
13.	3	Screw Driver, 3" Wood Handle	Fairmount Tool & Forging Co.
14.	7712	Screw Driver, #2 Phillips	Barcalo Mfg. Co.
15.	30	Screw Driver, 6" Perfect Handle	Tobrin Tool Co.
16.	7713	Screw Driver, #3 Phillips	Barcalo Mfg. Co.
17.	83X	"S" Wrench, 15/16" & 1-1/16"	Fairmount Tool & Forging Co.
18.	81A	"S" Wrench, 3/4" & 7/8"	Bonney Forge & Tool Works
19.	79S	"S" Wrench, 9/16" & 5/8"	Bonney Forge & Tool Works
20.	75S	"S" Wrench, 7/16" & 1/2"	Billings & Spencer Co.
21.	—	Hammer, 1½-lb. Ball Peen	Fayette R. Plumb, Inc.
22.	11RC116	Wrench, Axle Socket	Mack Mfg. Corp.
23.	5585	Gun, Grease	Stewart-Warner Corp.
24.	44RU1230	Plate, Jack Mounting	Mack Mfg. Corp.
25.	—	Cable, Tow, 5/8" Plow with 6x19 Hemp Core, 180" long	American Chain & Cable Co.
26.	13QEA215-P1	Hose Tire Inflation, With Hose #13H2522 and Air Chuck #7570A	Kellogg Division of American Brake Shoe & Fdy Co. A. Schrader & Son
27.	1 BM 304	Crank, Starting	Mack Mfg. Corp.

*Furnished with Item No. 3

Special Service Tools

The above tools, which are furnished with the vehicle, enable the making of minor adjustments and temporary repairs.

However, in addition, many special service tools are required for the complete maintenance of the vehicle.

These special tools are specified thruout the

manual under the title of the figures illustrating their use.

In some instances, the special tool is given in the paragraph describing the operation.

A summary of all the tools described in each group of the manual, is given as a complete listing in "Section 8: Tools" to be found near the end of each group.

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, 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:** Injection pump, Transfer pump, Injection nozzles, Synchronance, Injection timing, Governor, Energy cells, Combination control, Fuel lines, Fuel filters, and Air cleaner.
- 04 **Exhaust:** Muffler & pipes.
- 05 **Cooling:** Thermostats, Water pump, and Fan & belts.
- 06 **Electrical:** Generator & regulator, Starter & drive, Lighting switches, Headlamps, and Battery.
- 07 **Transmission:** Main drive pinion, Main shaft, Countershaft, Reverse shaft, Gears, and Bearings.
- 09 **Propeller Shaft:** Universal joints.
- 10 **Front Axle:** Axle, Steering knuckles, King pins, and Steering geometry.
- 11 **Rear Axle:** Axle shafts, Differential, Spur pinion, Bevel pinion, Gears, Bearings, Torque rods, and Trunnion brackets.
- 12 **Brakes:** Hand brake, Foot brakes, and Air compressor.
- 13 **Wheels:** Bearings, and Tires.
- 14 **Steering:** Steering gear, Drag link, and Tie rod.
- 15 **Frame:** Pintle hook, and Frame
- 16 **Springs:** Rubber shock insulators, and Shock absorbers.
- 18 **Body and Cab:** Windshield, Cab top, Cab mounting, Seat, Handles, Locks, Doors, Windows, Glass and Paint.

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.

Capacities and Dimensions

Engine

Model	MACK	ED
Type	Diesel	Overhead
Horsepower	A.M.A.	45.9
Displacement	Cu. In.	519
Bore	Inches	4 $\frac{3}{8}$
Stroke	Inches	5 $\frac{3}{4}$
Number of Cylinders		6
Engine Governed Speed	R.P.M.	2000

Capacities

Fuel Tanks	Gallons	each 75
Engine Crankcase, Refill	Quarts	15
Oil Filters, extra	Quarts	4
Cooling System	Quarts	60
Transmission	Pints	36
Oil Bath Air Cleaner	Quarts	4
Rear Axle Differential	Pints	each 8
Steering Gear	Pints	3

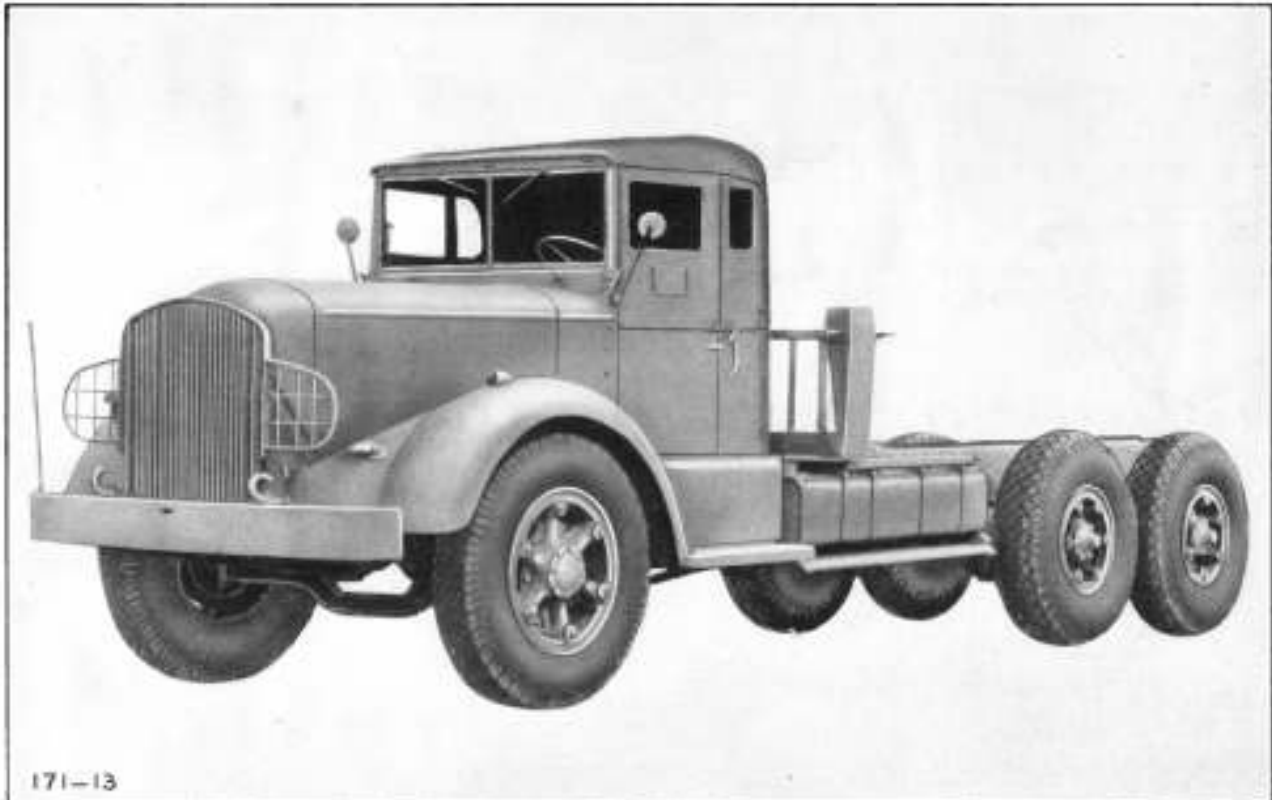
Dimensions

Turning Radius, Right	Ft.-In.	37'-9"
Turning Radius, Left	Ft.-In.	39'-7"
Height Overall	Inches	122 $\frac{3}{4}$ "
Width Overall	Inches	95"
Length Overall	Ft.-In.	26'-10 $\frac{1}{8}$ "
Weight of fully equipped truck without load	Pounds	NR-8 20450
Weight of fully equipped truck without load	Pounds	NR-9 20750
Road Clearance	Inches	13"
Wheelbase	Inches	173"-55"

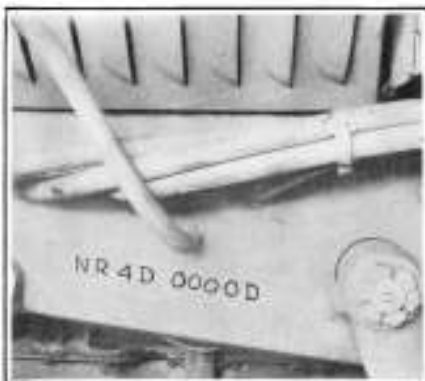
OPERATION

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.



Mack Models NR-8 & 9 11-ton 6x4 Cargo Trucks



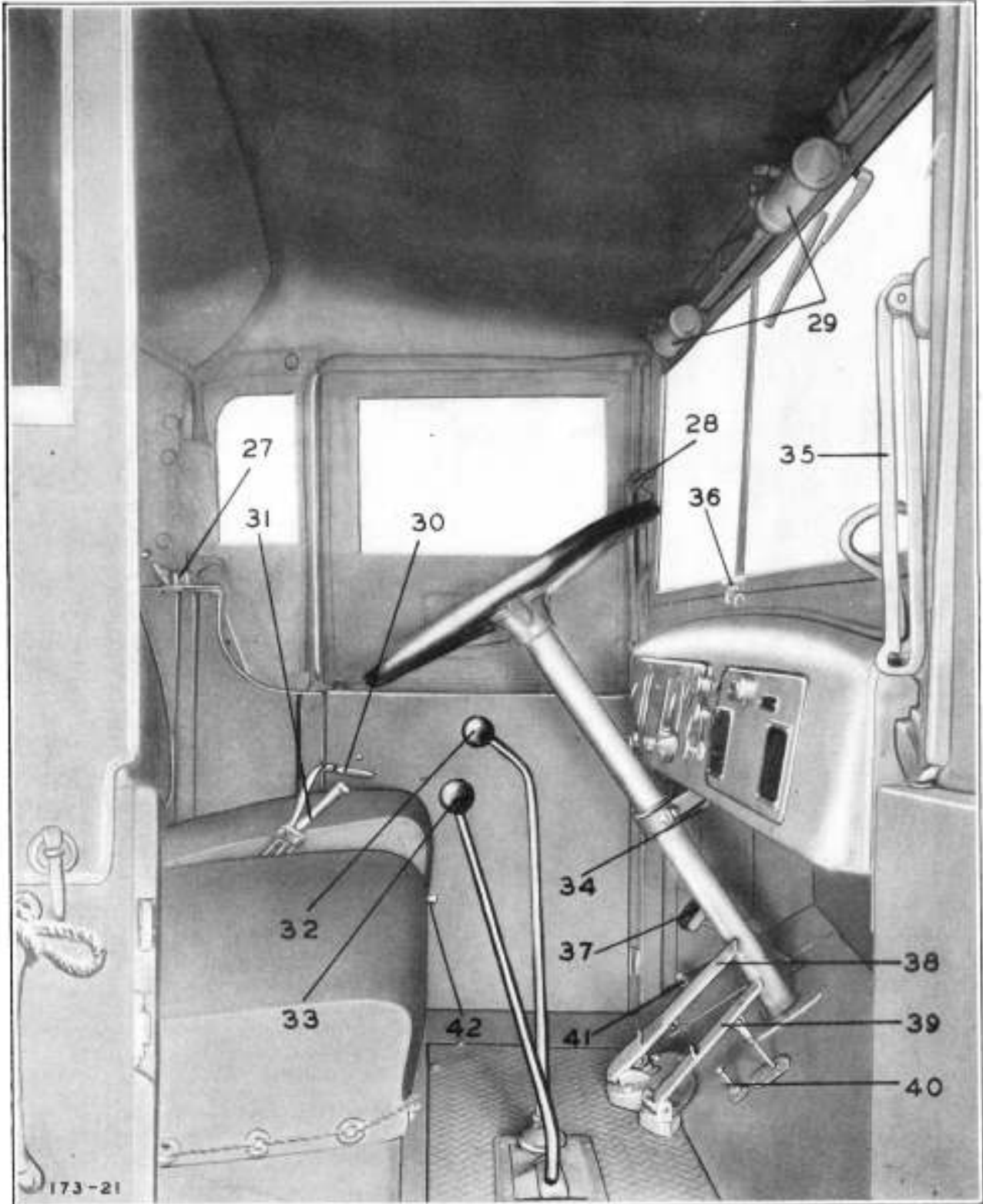
Chassis Serial Number
stamped on front end of
left frame side member



Chassis Name Plate
located on
right hand seat



Engine Serial Number
stamped on right side
of timing gear housing



View of Cab Controls

Instruments and Controls

1. **AIR PRESSURE GAGE:** The air pressure gage indicates the air pressure in the reservoir and pipe lines.

2. **WATER TEMPERATURE GAGE:** This gage indicates temperature of the water in the cooling system. Temperature range should be within 165° F. to 185° F. If temperature should reach 212° F., the vehicle should be stopped and the trouble corrected.

3. **SPEEDOMETER:** The speedometer indicates the road speed of the vehicle in miles per hour and total mileage traveled.

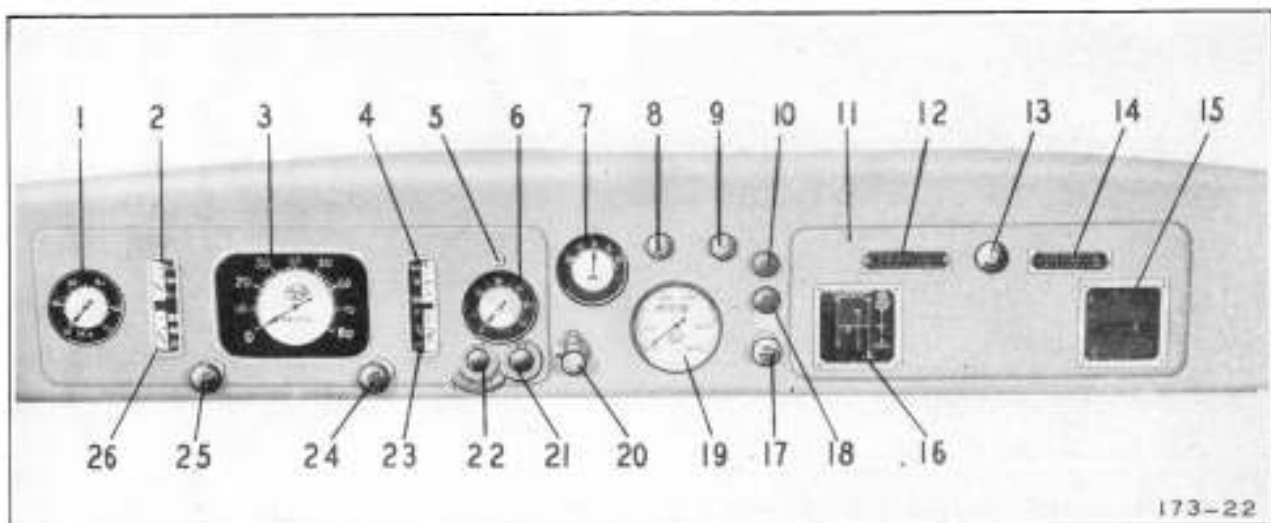
4. **MAIN AMMETER:** This vehicle is equipped with two ammeters. The main ammeter indi-

cates how much current the two sets of batteries in parallel are receiving when the engine speed is idling.

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

5. **HEADLAMP BEAM INDICATOR:** When the red light in the indicator is ON, the headlamps are on high beam. Light out indicates either low beam or switch OFF.

6. **FUEL OIL PRESSURE GAGE:** This gage indicates the pressure in the fuel line between transfer and injection pumps, and should be between three and eighteen pounds during operation.



173-22

View of Instrument Panel

- | | | |
|------------------------------------|-------------------------------------|---|
| 1. Air Pressure Gage. | 15. Diesel Instruction Plate. | 29. Air Operated Windshield Wipers. |
| 2. Water Temperature Gage. | 16. Gear Shift Instruction Plate. | 30. Door Handle. |
| 3. Speedometer. | 17. Emergency Engine Stop. | 31. Hand Brake Lever. |
| 4. Main Ammeter. | 18. Fuel Gage Switch Button. | 32. Transmission Shifter Lever. |
| 5. Headlamp Beam Indicator. | 19. Tachometer. | 33. Auxiliary Transmission Shifter Lever. |
| 6. Fuel Oil Pressure Gage. | 20. Blackout Lighting Switch. | 34. Cowl Ventilator Handle. |
| 7. Auxiliary Ammeter. | 21. Starter Switch. | 35. Windshield Elevating Arms. |
| 8. L.H. Windshield Wiper Valve. | 22. Heater Switch. | 36. Windshield Latch. |
| 9. R.H. Windshield Wiper Valve. | 23. Fuel Gage. | 37. Clutch Pedal. |
| 10. Instrument Panel Light Switch. | 24. Stop Control. | 38. Brake Pedal. |
| 11. Glove Compartment. | 25. Throttle Control. | 39. Accelerator Pedal. |
| 12. Publication Data Plate. | 26. Oil Pressure Gage. | 40. Accelerator Pedal Stop. |
| 13. Glove Compartment Push Button. | 27. Cab Top Latch. | 41. Headlamp Foot Switch. |
| 14. Identification Plate. | 28. Windshield Elevating Arm Screw. | 42. Seat Adjustment Lever. |