

MAINTENANCE MANUAL

$\frac{3}{4}$ TON 4 x 4

DODGE TRUCKS

built for

UNITED STATES ARMY

STARTING SERIAL NUMBER 91,511,381

Contract Number W398-QM-11421

Model	Type of Vehicle	U. S. A. Registration Numbers
WC-51	Weapons Carrier	231293 to 234793 (Incl.)
WC-52	Weapons Carrier with Winch	243745 to 246394 (Incl.)
WC-53	Corryall	2072128 to 2073327 (Incl.)
WC-54	Ambulance	77841 to 78690 (Incl.)

Contract Number W398-QM-11422

Model	Type of Vehicle	U. S. A. Registration Numbers
WC-51	Weapons Carrier	259135 to 289212 (Incl.)
WC-52	Weapons Carrier with Winch	289213 to 291384 (Incl.)
WC-53	Corryall	20163146 to 20167956 (Incl.)
WC-54	Ambulance	78691 to 79999 (Incl.) and 710000 to 718635 (Incl.)
WC-56	Reconnaissance	20167957 to 20182608 (Incl.)
WC-57	Reconnaissance with Winch	20184953 to 20185868 (Incl.)
WC-58	Radio	20182609 to 20184952 (Incl.)

FARGO MOTOR CORPORATION

Subsidiary of Chrysler Corporation

DETROIT, MICHIGAN

May 15, 1942

TM 10-1531

WAR DEPARTMENT

Washington, March 26, 1942

TM 10-1531, Maintenance Manual, Truck $\frac{3}{4}$ -ton, 4x4 Dodge (Models WC-51, WC-52, WC-53, WC-54, WC-56, WC-57 and WC-58) published by the Fargo Motor Corporation, Subsidiary of Chrysler 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

MAINTENANCE MANUAL

$\frac{3}{4}$ TON 4 x 4

DODGE TRUCKS

built for

UNITED STATES ARMY

STARTING SERIAL NUMBER 81,534,381

Contract Number W-398-QM-11420

<u>Model</u>	<u>Type of Vehicle</u>	<u>U. S. A. Registration Numbers</u>
WC-51	Weapons Carrier	252293 to 254792 (Incl.)
WC-52	Weapons Carrier with Winch	245845 to 246394 (Incl.)
WC-53	Carryall	2072128 to 2073327 (Incl.)
WC-54	Ambulance	77841 to 78690 (Incl.)

Contract Number W398-QM-11422

<u>Model</u>	<u>Type of Vehicle</u>	<u>U. S. A. Registration Numbers</u>
WC-51	Weapons Carrier	259135 to 289212 (Incl.)
WC-52	Weapons Carrier with Winch	289213 to 291384 (Incl.)
WC-53	Carryall	20163146 to 20167956 (Incl.)
WC-54	Ambulance	78691 to 79999 (Incl.) 710000 to 718635 (Incl.)
WC-56	Reconnaissance	20167957 to 20182608 (Incl.)
WC-57	Reconnaissance with Winch	20184953 to 20185868 (Incl.)
WC-58	Radio	20182609 to 20184952 (Incl.)

Engineers' Symbol T214—Items 2, 3, 5, 6, 7, 8 and 10

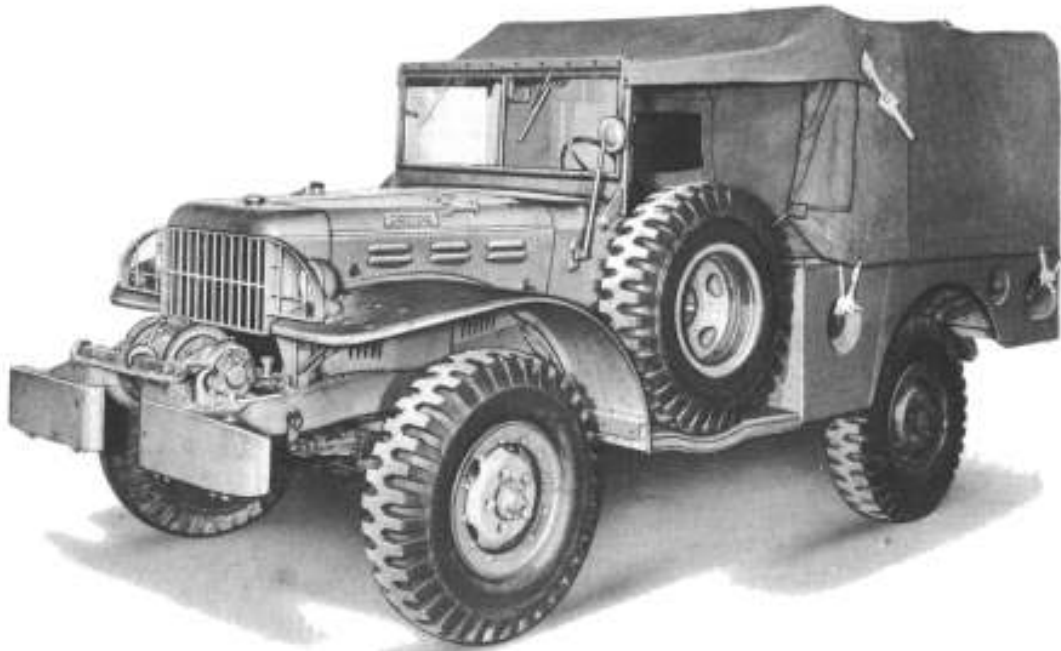
FARGO MOTOR CORPORATION
Subsidiary of Chrysler Corporation
DETROIT, MICHIGAN

TM 10-1531

D-10463
FIRST EDITION

INDEX

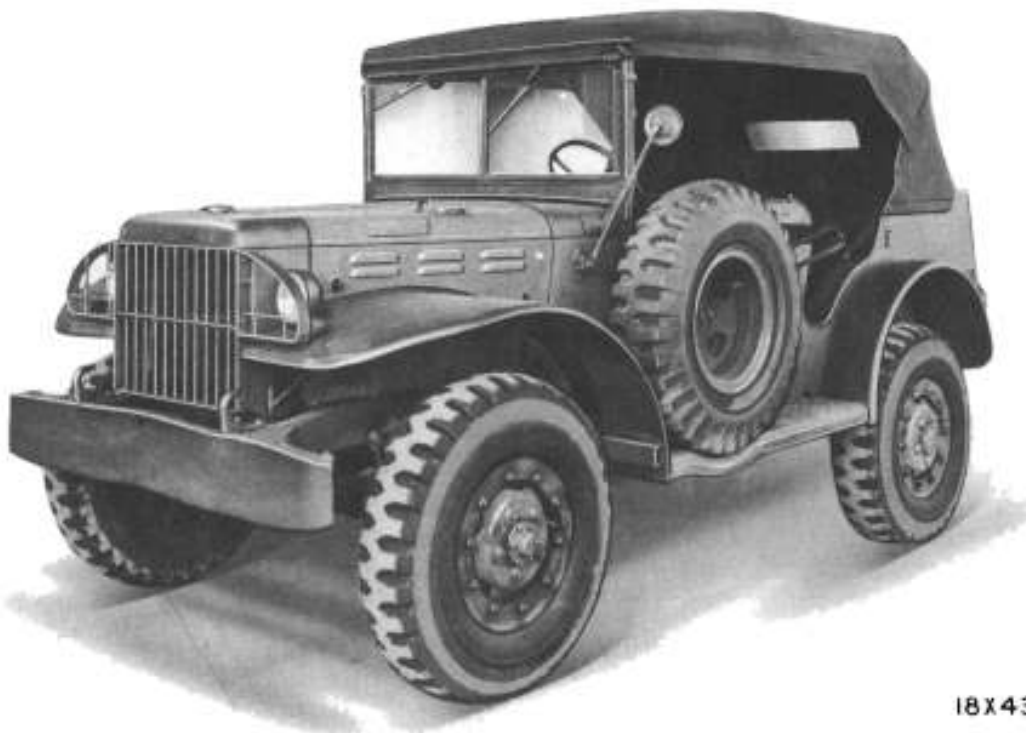
Group	Bend Back Pages to Find Group Desired
D	Driver's Instructions
L	Lubrication
P	Preventive Maintenance
01	Engine
02	Clutch
03	Fuel
04	Exhaust
05	Cooling
06	Electrical
07	Transmission
08	Transfer Case
09	Propeller Shaft
10	Front Axle
11	Rear Axle
12	Brakes
13	Wheels and Tires
14	Steering
15	Frame
16	Springs and Shock Absorbers
18	Body and Sheet Metal
19	Winch



18X441

DODGE WEAPONS CARRIER
DODGE WEAPONS CARRIER (with winch)

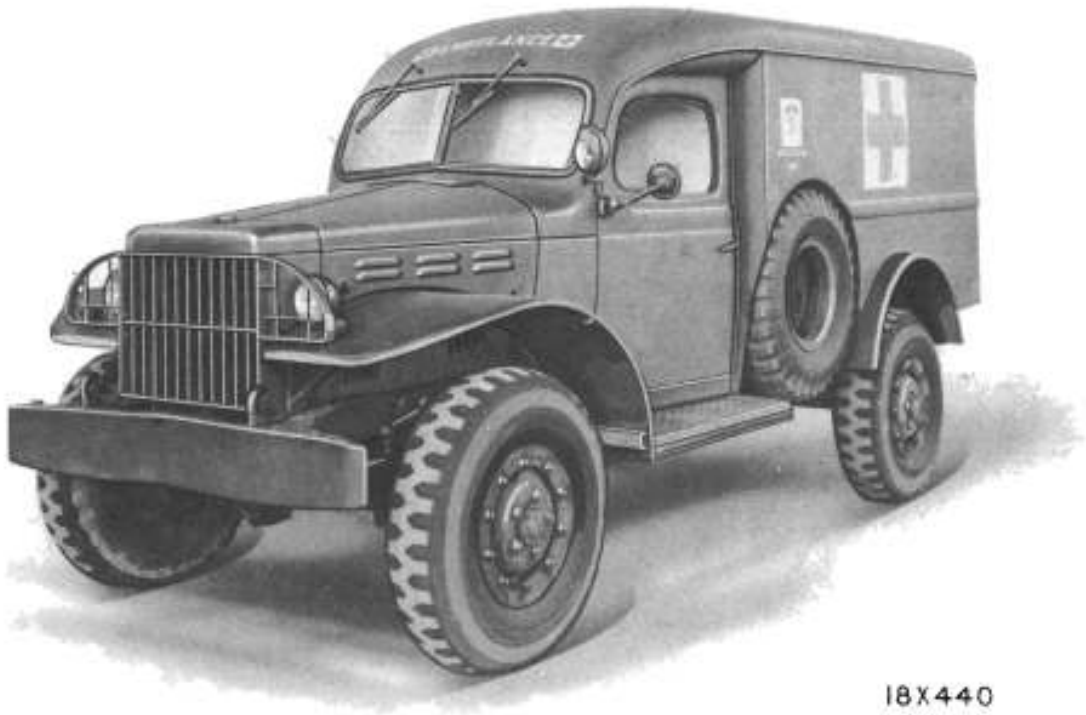
MODEL WC-51
MODEL WC-52



18X438

DODGE RECONNAISSANCE
DODGE RECONNAISSANCE (with Winch)
DODGE RADIO

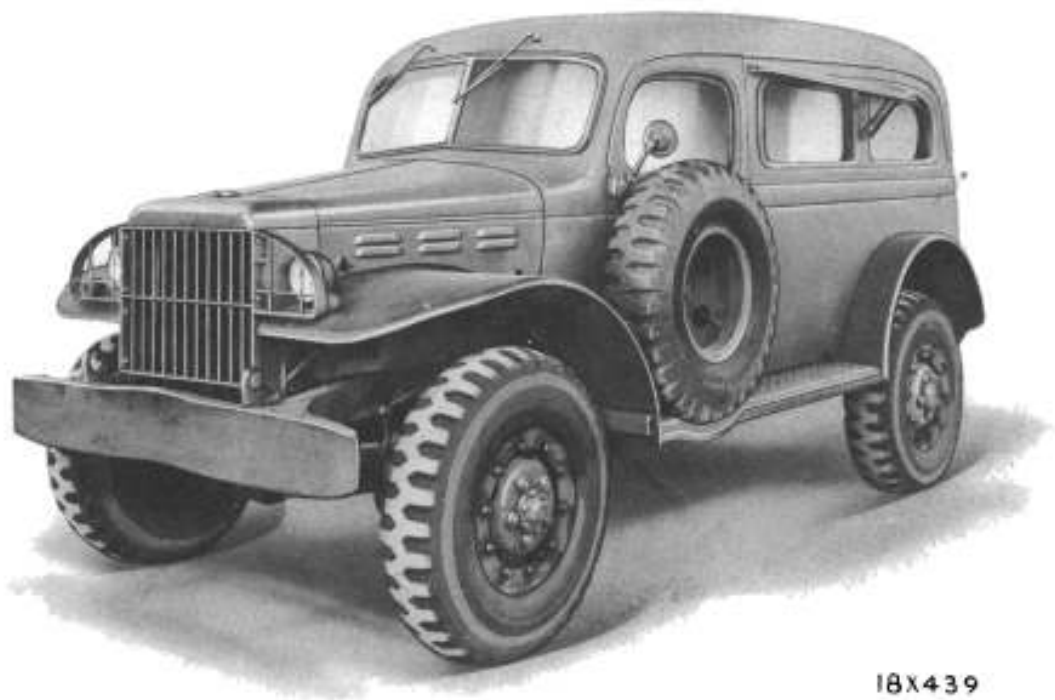
MODEL WC-56
MODEL WC-57
MODEL WC-58



18X440

DODGE AMBULANCE

MODEL WC-54



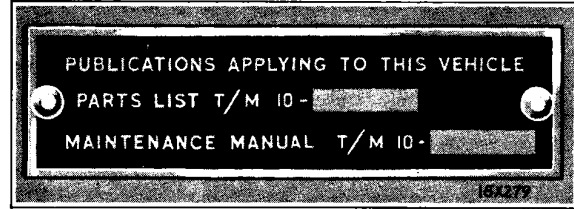
18X439

DODGE CARRYALL

MODEL WC-53

MAINTENANCE NUMBER PLATE

The number (TM 10-1531) assigned to this Manual appears on a Maintenance Number Plate attached to the package compartment door on the instrument panel. The Maintenance Number Plate also contains a number for the Parts List so that both the Maintenance Manual and the Parts List, applicable to the truck being serviced, can be easily identified by referring to the Maintenance Number Plate.



Maintenance Number Plate

The Functional Group Code

D	Driver's Instructions
L	Lubrication
P	Preventive Maintenance
01	Engine
02	Clutch
03	Fuel
04	Exhaust
05	Cooling
06	Electrical
07	Transmission
08	Transfer Case
09	Propeller Shaft
10	Front Axle
11	Rear Axle
12	Brakes
13	Wheels and Tires
14	Steering
15	Frame
16	Springs and Shock Absorbers
18	Body and Sheet Metal
19	Winch

HOW TO USE THIS MANUAL

Operating and Service information will be found in this Manual in the Group Sequence as outlined in the Functional Group Code reproduced to the left. To quickly locate the group desired, turn to page 1, bend back the edges of the pages and select the black thumb-dot which will appear opposite that index name.

Major groups are divided into Subjects which are numbered consecutively for convenient reference. These numbers are used to make quick reference to related Subjects, so that all information pertaining to the service operation in question is cross-referenced for convenience of the reader.

Information in each group in the Manual, beginning with Group 01— Engine, is presented, insofar as practicable, in the following sequence:

Trouble Shooting and General Solution

Adjustments or Tune-up Procedure

Disassembly—Repair—Reassembly

Specifications

Special Tools

Divisions of each major group entitled "Specifications" are tabulated summaries of adjustment specifications, dimensions of parts, as well as the name and type of units built by other manufacturers.

Special Service tools mentioned throughout the Manual are listed at the end of each group. They are identified by Federal Stock Numbers and names whenever possible. Special tools for which Federal stock numbers are not available are listed in the tool list, showing the tool number and names of suppliers from whom they can be obtained.

GENERAL DATA

Engine

Type	"L" Head
Horse Power—S. A. E.....	25.35
Displacement	230.2 cu. in.
Bore	3 $\frac{1}{4}$ "
Stroke	4 $\frac{5}{8}$ "
Number of Cylinders.....	6
Engine Governed Speed.....	3200 R.P.M.
Battery terminal grounded.....	Negative

Capacities

Fuel Tank.....	30 Gals.
Crankcase (refill).....	5 Qts.
Cooling System	17 Qts.
Transmission	6 Pts.
Transmission (with power take-off).....	8 Pts.
Oil Bath Air Cleaner.....	1 Qt.
Rear Axle Differential.....	4 $\frac{1}{2}$ Pts.
Front Axle Differential.....	4 $\frac{1}{2}$ Pts.
Transfer Case	4 Pts.
Winch	1 Qt.

Clearances

Overall Width.....	77 $\frac{3}{4}$ "
Overall Length:	
Weapons Carrier, Reconnaissance, Radio (without winch).....	165"
Weapons Carrier and Reconnaissance (with winch).....	174 $\frac{5}{8}$ "
Carryall	184 $\frac{5}{8}$ "
Ambulance	194 $\frac{1}{2}$ "
Overall Height:	
Weapons Carrier	82"
Reconnaissance, Radio	81 $\frac{1}{2}$ "
Carryall	80 $\frac{1}{4}$ "
Ambulance	90 $\frac{3}{8}$ "
Road Clearance—Front and Rear Axle.....	10 $\frac{23}{32}$ "
Turning Radius:	
Weapons Carrier	21' 8"
Reconnaissance, Radio	21' 8"
Carryall	24' 6"
Ambulance	36' 3"

Weights (Road weight of fully equipped vehicle without passengers)

Weapons Carrier without winch	5250 Lbs.
Weapons Carrier with winch.....	5550 Lbs.
Reconnaissance and Radio without winch.....	5375 Lbs.
Reconnaissance with winch	5675 Lbs.
Carryall	5750 Lbs.
Ambulance	5920 Lbs.

UNLOADING INSTRUCTIONS (Rail Shipments)**VEHICLE EQUIPMENT**

To assure proper delivery of U.S. Army vehicles shipped by rail some of the equipment is removed when the vehicle is loaded.

1. **A Tool and Equipment Check List** is placed in tool box kit for convenience of unloading personnel. Vehicle equipment should be checked against this list when the vehicles are unloaded. Shortages or damages should be noted on the Bill of Lading as carrier responsibilities, except for back-ordered material, which will be noted on the check sheet attached to original Bill of Lading.
2. **Reconnaissance Top Side Curtains** are placed in rear tail gate compartment.
3. **Tool Kit Boxes** are laid on the floor of each vehicle. Handle with care to avoid breakage of box and loss of tool equipment.
4. **Tire Chains** are contained in bags fastened to the floor of each vehicle.
5. **Starting Cranks** are placed in tool kit box.
6. **Snatch Blocks** (supplied with winch equipped vehicles) are fastened to floor of the vehicle together with tire chains.
7. **Tarpaulins and Safety Straps** are placed in the body of vehicle.
8. **Bows and Ridge-Poles** for Weapons Carriers are placed in the body of the vehicle, when removed, to provide loading clearance. Bolts and nuts for bows and poles are placed in package compartment.
9. **Keys:** Three identical keys for all vehicle locks are placed in a bag and attached to the steering column.



Chassis Hold-Down Strap (1) for Shipping Purposes

VEHICLE INSPECTION

Do not attempt to start a new vehicle which has just been unloaded from a freight car, until the following inspections have been made.

10. **Starting Motor Cable:** Connect to starter switch terminal. (If battery terminal is disconnected instead, be sure it is properly connected.)
11. **Cooling System:** Tighten drain cocks (one located at front of radiator and the other on left side of engine). Fill cooling system with water or antifreeze solution depending on the season of the year. Make sure all the hose connections are tight.
12. **Engine Oil Level:** Check engine oil level. The oil level gauge rod, (located on the left side of the engine between the distributor and the starting motor) is marked at "full" and "half-full". A third marking between "full" and "half-full" indicates the "running" level. The "full" mark shows the proper level of oil before the engine has been run. Never allow the oil level to drop below the "half-full" mark.
13. **Brake Fluid:** Inspect level of fluid in brake master cylinder. Level should not be lower than $\frac{1}{2}$ " from bottom of reservoir cover. Remove rubber nipple installed over vent.
14. **Battery and Connections:** Check level of electrolyte solution in battery and fill to proper level. See Group 06—Electrical in this Manual. See that the battery connections are tight.
15. **Chassis Lubrication:** Refer to the Lubrication Chart for complete lubrication instructions. Check level of lubricant in the transmission, transfer case, front and rear axles, steering gear and winch if so equipped. The lubricant should be level with filler plug opening.
16. **Wheels and Tires:** Check all tires and inflate or deflate to correct pressure (40 lbs. for 9.00/16-8 ply). Make certain that wheel stud nuts and front and rear axle drive flange nuts are securely tightened.
17. **Hold Down Straps:** On rail shipped vehicles, hold down straps are fastened to the frame side members under each fender. Remove the straps after the vehicle is unloaded to avoid interference between the straps and other vehicle parts.

GROUP D

DRIVER'S INSTRUCTIONS

By learning the location of each control lever, pedal and button before attempting to operate the vehicle, the driver will find driving easier than by trying to develop such knowledge while driving.

THE CONTROLS

The accompanying illustrations (Figs. 1, 2, 3 and 4) show the location of each control. By thoroughly fixing the location of each of these controls in his mind and by knowing their purpose and how to use them, the driver who is unaccustomed to driving a Dodge Military Vehicle will find it easier to follow the Operating Instructions outlined in this section of the manual.

1—Ignition Lock Switch

The ignition lock switch can be operated only when the key is inserted and turned to the right (clockwise). In this position the ignition and fuel gauge circuits are connected. The key cannot be removed unless the thumb piece of the key is vertical.

Keys

The three keys furnished with the truck will fit all locks used on the vehicle.

2—Choke Control Button

The choke control button closes the choke when the control button is pulled "out" to the limit of its travel. Pull the choke control "out" when starting a cold engine and gradually push it in as the engine becomes warm. Always run the engine with the choke button pushed in after the engine has reached normal operating temperature. Excessive use of the choke causes a flooding condition in the engine and excess fuel works its way past the pistons into the crankcase diluting the engine oil. It also increases fuel consumption unnecessarily. Use of the choke control is unnecessary in starting a hot engine.

3—Throttle Control Button

The hand throttle control button is for use when starting the engine. Pulling the button outward opens the throttle.

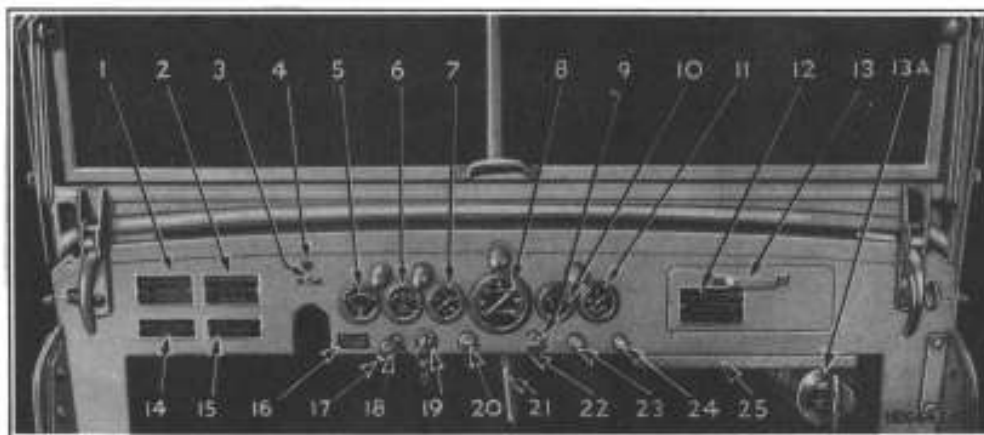


Fig. 1—Instrument Panel (Open Bodies)

- 1—Cooling system drain caution plate
- 2—Speed caution plate
- 3—Voltmeter switch (Reconnaissance and Radio)
- 4—Headlight bright beam indicator light
- 5—Voltmeter (Reconnaissance and Radio)
- 6—Ammeter
- 7—Oil pressure gauge
- 8—Speedometer

- 9—Throttle control button
- 10—Fuel gauge
- 11—Heat indicator
- 12—Serial number plate
- 13—Compartment door
- 13A—Fire extinguisher
- 14—Transmission shift diagram plate
- 15—Maintenance number plate
- 16—Voltmeter instruction plate

- 17—Service light lock-out button
- 18—Main lighting switch
- 19—Ignition switch
- 20—Carburetor choke control button
- 21—Cow ventilator handle
- 22—Speedometer trip mileage set stem
- 23—Instrument panel light switch
- 24—Black-out driving light switch
- 25—Map board

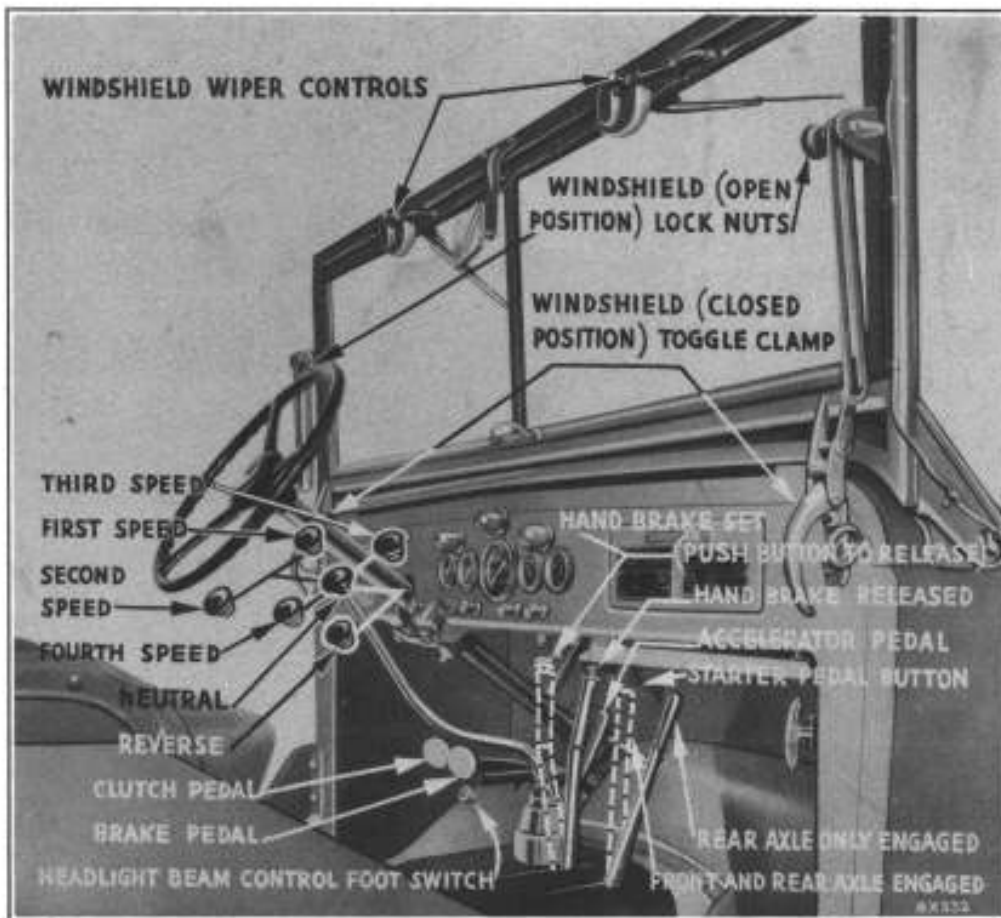


Fig. 2—Front Compartment (Open Bodies)

4—Accelerator Pedal

The accelerator pedal is used to control engine speed with the foot while driving the truck.

5—Starting Motor Pedal

This foot pedal is for operation of the starting motor which cranks the engine. It is located above the accelerator pedal so that it can be easily reached for starting the engine.

CAUTION: Do not press the starter pedal with the gearshift lever in gear or while the engine is running. See Subject 42 in this group.

6—Clutch Pedal

Pressing the clutch pedal down to the floor board, disengages the clutch so that the transmission gears may be shifted.

7—Transmission Gearshift Lever

This lever controls the shifting of all gears in the transmission. The diagram in Figs. 2 and 4 shows the different positions of the lever for various gear selections in the transmission. This is also illustrated on the shifting arrangement plate (Fig. 8).

CAUTION: Do not attempt to start the engine unless the gearshift lever is in neutral position. See Subject 42 in this group for further explanation of the gearshift lever.

Fig. 4—Front Compartment (Closed Bodies) →

- 1—Windshield wiper control knobs
- 2—Windshield adjusting arm lock nuts
- 3—Horn button
- 4—Clutch pedal
- 5—Brake pedal
- 6—Transmission gearshift lever
- 7—Headlight beam control foot switch
- 8—Starter pedal button
- 9—Accelerator pedal
- 10—Hand brake lever
- 11—Transfer case control hand lever