

MAINTENANCE MANUAL

FOR

FORD TRUCK

$\frac{1}{4}$ TON 4 x 4

BUILT FOR
U. S. GOVERNMENT

MODEL GPW

Contract Number
W-398-QM-10977

U. S. A. Reg. Number
2054778 to 2069777

★ ★ ★

Ford Motor Company

DEARBORN, MICH., U. S. A.

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By order of the Secretary of War:

G. C. MARSHALL,
Chief of Staff.

Official:

E. S. ADAMS,
Major General,
The Adjutant General.

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FOREWORD

This Motor Vehicle has been thoroughly tested and inspected. Like any other piece of machinery, to maintain it in proper operating condition, it should be lubricated at the time specified using the proper grades of oil and grease. All working parts as well as oil holes should be kept clean and free from dirt and grit. This vehicle should periodically have a systematic inspection.

In the following pages we have described how to take care of this unit and handle it in such a way that it will give maximum service and dependable performance.

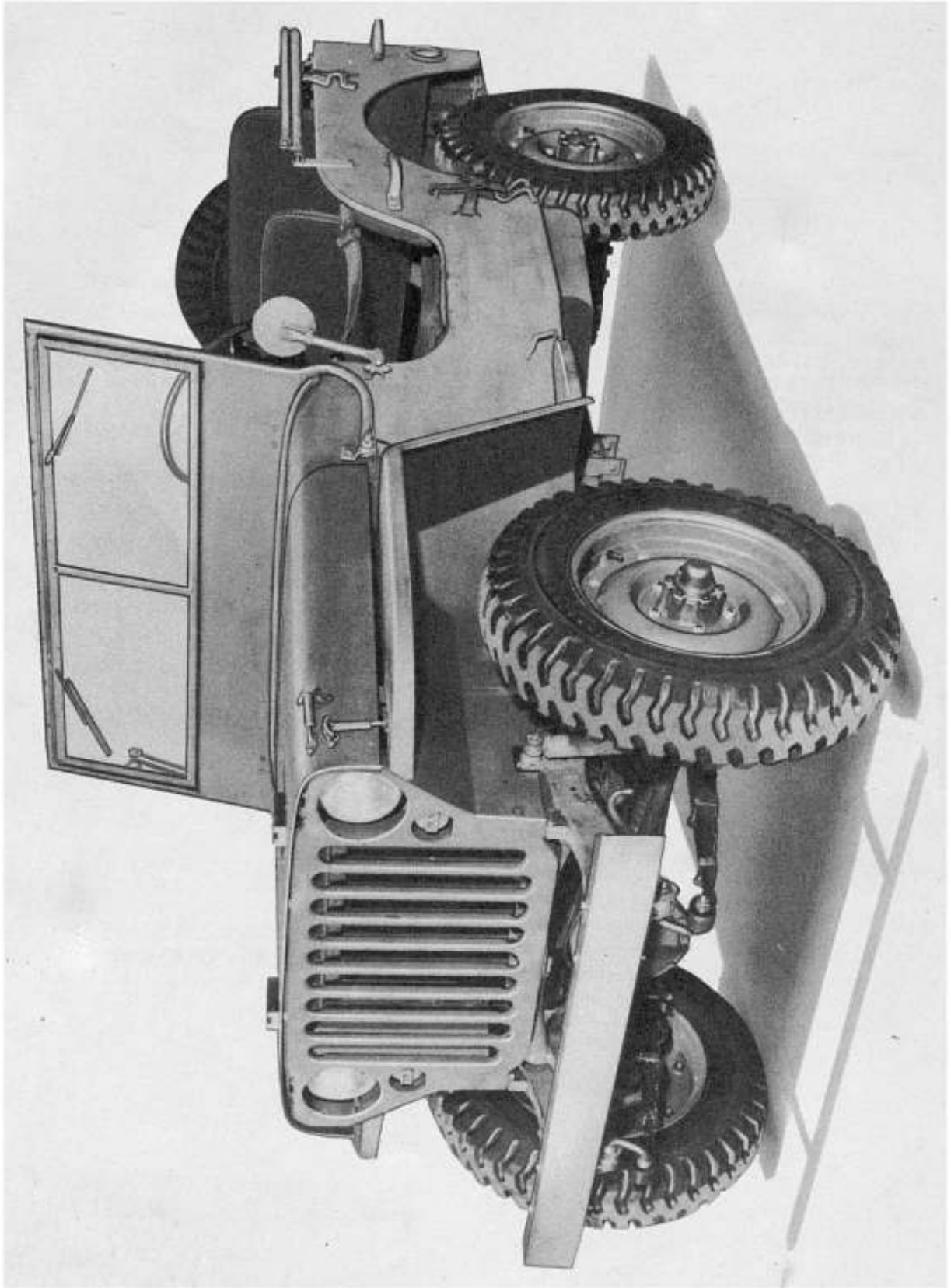
In the forepart of this Manual will be found complete instructions relative to conditioning the unit for Service, Driver's Instructions, Lubrication and Inspection.

In the Maintenance and Repair Section will be found instructions which will enable one to make proper adjustments and repairs.

See Index on preceding page; bend back edge of pages to find Section desired.

Read and follow these instructions carefully.

FORD MOTOR COMPANY



FORD MODEL G.P.W. 1/4 TON 4 x 4 TRUCK

FORD TRUCK

Model GPW-¼ Ton 4 x 4

GENERAL DATA

ENGINE

| | |
|---|---------------|
| Type..... | Gasoline |
| Number of Cylinders..... | 4 |
| Bore..... | 3 1/8" |
| Stroke..... | 4 3/8" |
| Piston Displacement..... | 134.2 cu. in. |
| Compression Ratio..... | 6.48-1 |
| Horsepower—S.A.E..... | 15.6 |
| Horsepower { Actual..... | 60 |
| { Revolutions per minute..... | 3600 |
| Torque { Maximum Lbs.-Ft..... | 105 |
| { Revolutions per Minute..... | 2000 |
| Wheelbase..... | 80" |
| Tread..... | 48 1/4" |
| Overall Width..... | 62" |
| Overall Length..... | 132 3/4" |
| Overall Height—Normal Load | |
| To top of cowl..... | 40" |
| To top of steering wheel..... | 51 1/4" |
| Top up..... | 69 3/4" |
| Weight—Maximum Pay Load..... | 800 lbs. |
| Maximum Trailed Load..... | 1000 lbs. |
| Shipping (Less water, gasoline and chains)..... | 2125 lbs. |
| Road..... | 2315 lbs. |
| Gross..... | 3125 lbs. |

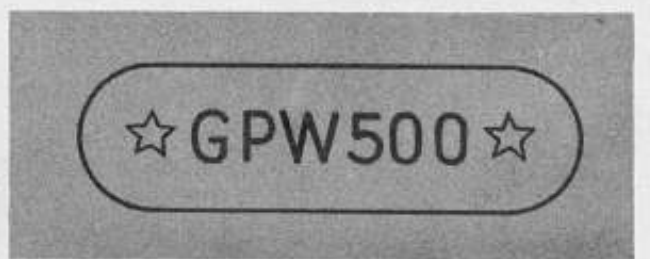
CAPACITIES

| | U.S. | Imperial | Metric |
|--------------------------------------|-------|----------|--------------|
| Fuel Tank (Gals.)..... | 15 | 12 1/2 | 56.78 liters |
| Engine Crankcase-Refill (Qts.)..... | 4 | 4 | 4.73 " |
| Cooling System (Qts.)..... | 11 | 9 1/4 | 10.41 " |
| Transmission (Pts.)..... | 2 | 1 3/4 | .95 " |
| Transfer Case (Pts.)..... | 3 | 2 1/2 | 1.42 " |
| Front Axle Differential (Pts.)..... | 2 1/2 | 2 | 1.18 " |
| Rear Axle Differential (Pts.)..... | 2 1/2 | 2 | 1.18 " |
| Oil Bath Air Cleaner (Pts.)..... | 1 | 1 | .47 " |
| Brake System Brake Fluid (Pts.)..... | 3/4 | 1/4 | .36 " |

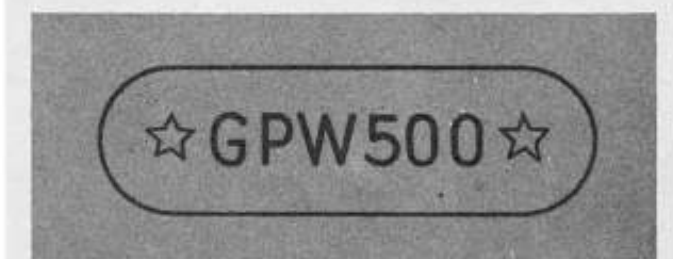
LAMP BULBS

| | Mazda |
|--|------------------|
| Head Lamp (Sealed Beam type)..... | 2400 |
| Upper Beam..... | 45 Watts |
| Lower Beam..... | 35 Watts |
| Blackout Fender Lamp Bulb (1)..... | 3 Cp. SC 63 |
| Left Tail Lamp Bulb (1)..... | 21-3 Cp. DC 1154 |
| Left Tail Lamp Bulb (1)..... | 3 Cp. SC 63 |
| Right Tail Lamp Bulbs (2)..... | 3 Cp. SC 63 |
| Instrument Lamp Bulb (2)..... | 1.5 Cp. SC 51 |
| Fuse (Thermal Type)—On Light Switch-30 Amperes | |

IDENTIFICATION



Chassis Serial Number located on inside of frame at left front end.



Engine Number located on right side of cylinder block, front upper corner.

UNLOADING INSTRUCTIONS

Spot freight car along side of the unloading platform. Open freight car door and make visual inspection of vehicles for damage, loose blocking and shortages, due to rough handling or pilferage while vehicles were in transit. If any evidence of carrier's responsibility, the railroad representative should inspect shipment and note it on Bill of Lading.

Vehicles are shipped from one to six in a freight car, therefore, the manner varies in which the vehicles are anchored in the car. Where shipment does not exceed two vehicles per freight car, the regular 36 foot box car is used. Where three or more vehicles are shipped an "Evans" or "Channel" automobile freight car is used. These freight cars are equipped with upper deck platforms operated by chain falls and have anchor chains in flooring; to operate follow printed instructions on inside wall at controls.

One or Two Vehicles per Car.

The vehicles are anchored to floor with grooved blocks spiked to the floor at front and rear of each wheel. Spring rebound straps are anchored to front end of front springs and rear end of rear springs and spiked to the floor.

To remove vehicles from car, use a crow bar to pry loose wheel blocks and straps from floor. Remove bolt in spring rebound strap at springs and remove straps.

Roll one vehicle to end of car, then jack or lift the other vehicle so it can be removed through door to platform, then remove second vehicle, and check all items listed in Tool and Accessory list.

Three Vehicles per Car

Where three vehicles are shipped, the two end vehicles are fastened at front end with car equipment anchor chains. The rear wheels have grooved blocks spiked to the floor. Spring rebound straps at end of rear springs are also spiked to the floor.

The center vehicle is anchored at the ends of front and rear axles with car equipment chains. Spring rebound straps at end of front and rear springs are spiked to the floor.

To remove vehicles first remove all wooden blocks, spring rebound straps and anchor chains from the three vehicles. Run end vehicles to extreme ends of freight car; jack or lift center vehicle so it can be rolled through door to platform. Repeat this operation to remove other two vehicles.

Four Vehicles per Car

Where four vehicles are shipped, one is decked and three anchored to the floor the same as in three vehicle shipment.

To remove vehicles, first remove anchor chains and wooden blocks from the three vehicles on floor and remove vehicles to platform. Follow instructions printed on inside of freight car at controls in ends of car for lowering Deck platform. Lower platform and remove anchor chains, then remove vehicle.

Five Vehicles per Car.

Two vehicles are decked and three anchored to flooring in same manner as four to a car.

The removal of vehicles should be in the same sequence as outlined under three and four car shipment.

Six Vehicles per Car.

Where six vehicles are shipped, two are decked and four are anchored to the floor.

The two end vehicles are fastened at front ends with anchor chains, the rear end of vehicles are anchored with grooved blocks and spring rebound straps spiked to the floor.

The two center vehicles are fastened in the opposite manner, rear ends with anchor chains and front ends with wheel grooved blocks and spring rebound straps spiked to the floor.

To remove vehicles remove wheel blocks, spring rebound straps and anchor chains. Roll end cars and one center car to end of freight car, jack or lift other center vehicle so it can be removed to platform, then remove other three.

Lower one decked vehicle by chain falls, following instructions printed on wall. Then remove second decked vehicle in same manner.

PRE-OPERATION INSTRUCTIONS

All vehicles are carefully tested and inspected before leaving the factory, however, while in transit and unloading some things may happen which will require attention before putting vehicle into Service. We therefore suggest checking the following items before operating vehicle.

1. Fill radiator and check all connections for water leaks.
2. Check oil in engine, transmission, transfer case, front and rear differential housings.
3. Fill gasoline tank and check fuel system for leaks.
4. Check battery fluid level.
5. Check terminal connections at battery, generator, voltage control, starter, distributor and spark plugs.
6. Check operation of lights and horn.
7. Check brake fluid level in master cylinder and check connections for leaks or damage.
8. Check steering connections and front wheel alignment.
9. Check tire pressure, inflate to 30 lbs.
10. Check hand brake operation.

DRIVER'S INSTRUCTIONS

This vehicle should not be driven faster than 40 miles an hour for the first 100 miles nor more than 50 miles an hour from 100 to 500 miles. If the vehicle is operated at excessive speeds while new, the closely fitted parts may possibly become overheated, resulting in serious damage to mechanical units. Never race the Engine while making adjustments or when vehicle is standing idle.

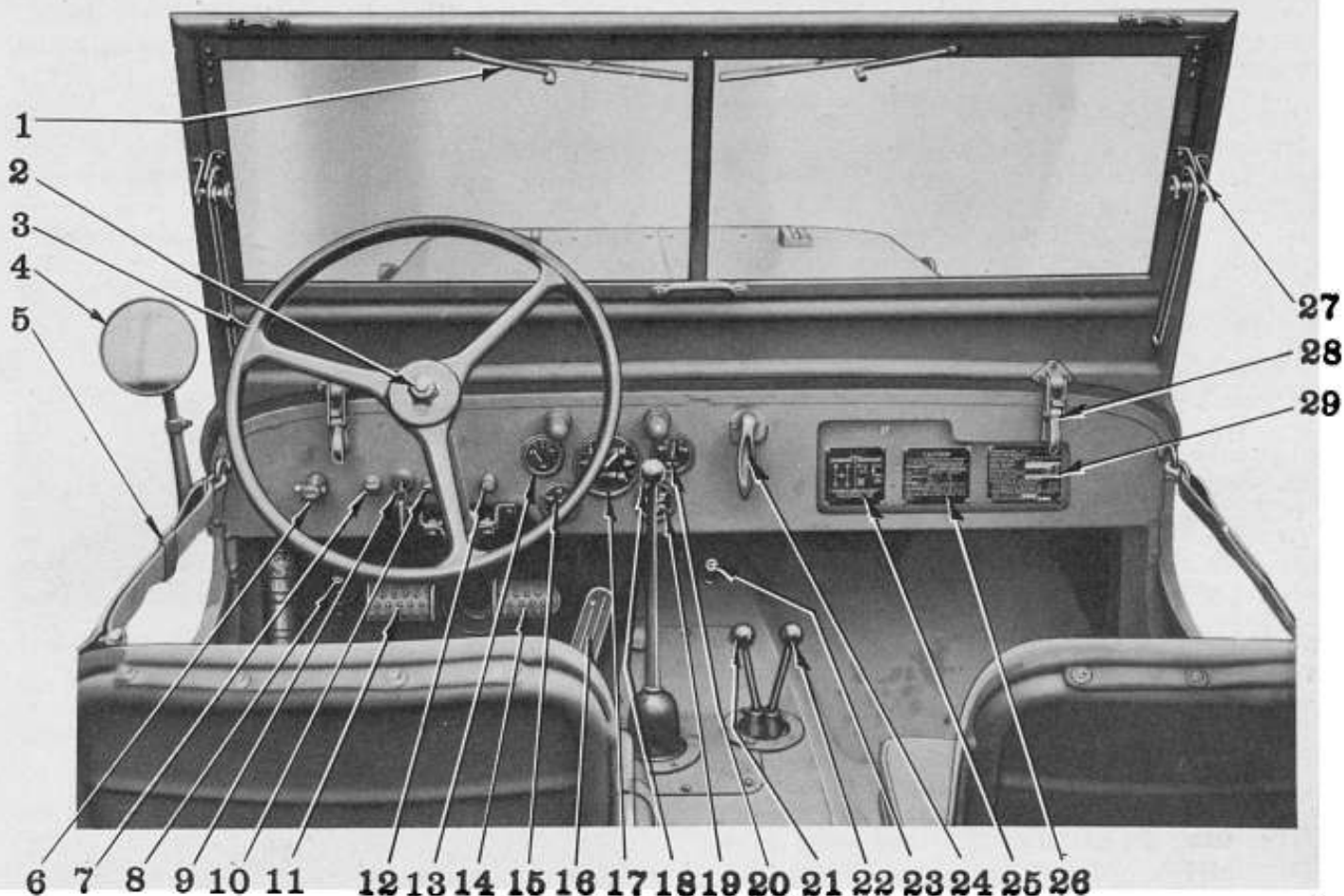


FIG. 1—CONTROLS

It is very important that the driver of this vehicle be thoroughly familiar with the various Controls and their proper use. The most experienced driver should study the Controls because there are a number which are not ordinarily found on standard vehicles.

Illustrations show the controls, instruments and instruction plates; in the following paragraphs we refer to these illustrations by the key numbers so the reader may easily follow the instructions.

Ignition Switch—No. 9, Fig. 1.

Is operated by a key; turning key to right (clockwise) closes the ignition circuit. Turning key to left (counter clockwise) opens the ignition circuit and shuts off the engine.

Light Switch—No. 6, Fig. 1

The light switch is the push-pull type with safety lock.

This switch controls the entire lighting system including the instrument panel lights and stop lights.

When the control knob is pulled out to the first position, the blackout lamp circuit is closed—which consists of two fender lamps, stop and tail lamps.

To obtain white lights, push in lockout control button on left of switch and pull out control knob

to second position. This closes entire bright light circuit, which consists of two head lamps—instrument panel lamps, stop and tail lamps.

CAUTION: When driving during the day press in lockout control button and pull Control Knob out to the last or Stop Light position to cause regular Stop Light to operate.

Panel Light Switch—No. 12, Fig. 1.

The Panel Light switch controls the Panel Lights when the main Light Switch is in Service or bright light position, otherwise the Panel Lights do not operate.

Head Lamp Beam Control Switch—No. 8, Fig. 1

Pressing and releasing the button of the selector foot switch with the left foot alternately changes the headlight beam from high to low.

Starter Switch—No. 23, Fig. 1

Toe board mounted to the right of the accelerator; pushing button down closes starter circuit and causes starter to crank engine—release the button as soon as the engine starts.

Hand Throttle—No. 10, Fig. 1.

Pulling control button out opens carburetor throttle valve and increases engine speed.

Carburetor Choke Control—No. 7, Fig. 1

Pulling control button out closes choke valve in carburetor to enrich gas mixture for starting the engine when cold, and opens throttle valve slightly for faster idle speed.

Oil Gauge—No. 15, Fig. 1

The instrument panel oil gauge indicates oil pressure delivered to camshaft, crankshaft, timing chain and connecting rod bearings when engine is running.

Proper registration should be not below 20 on idle nor more than 80 at speeds above 10 miles per hour.

This gauge does not indicate the amount of oil in crankcase.

Ammeter—No. 20, Fig. 1

The ammeter is used to indicate when the generator is charging the battery. It also indicates the amount of current being consumed.

If the ammeter shows discharge at all times, the cause should be immediately investigated and corrected, otherwise the wiring may be damaged and battery discharged.

Fuel Gauge—No. 13, Fig. 1

The fuel gauge registers the amount of fuel in the gas tank when ignition switch is turned on. The dial graduations are for—empty, ¼, ½, ¾, and full.

Temperature Indicator—No. 19, Fig. 1

This is a thermal type gauge and registers the temperature of the liquid in the cooling system. The operator should watch this instrument closely.

The normal operating temperature is indicated when hand stands between 160 and 185. The driver should immediately investigate the cause if temperature becomes excessive. Continuous operation of an overheated engine will cause serious damage.

Never fill cooling system with cold water when engine is overheated.

Speedometer—No. 17, Fig. 1

The Speedometer indicates the speed at which vehicle is being driven. The Odometer (in upper part of speedometer face) registers the total number of miles the vehicle has been driven.

A trip mileage indicator (in lower part of speedometer face) gives miles covered on any trip. It

can be reset by a knurled control shaft extending through the rear of the speedometer.

Nomenclature Plate (Name Plate)—Fig. 2

The nomenclature plate identifies this vehicle and gives the manufacturer's model and serial number, date of delivery, recommended fuel and lubricating oil. Service publication numbers are also given for reference. (When ordering parts be sure to give serial number). See No. 29, Fig. 1.

| | | |
|---|------------|-------------------|
| NOMENCLATURE | | TRUCK ¼ TON 4 X 4 |
| SUPPLY ARM OR SERVICE | | |
| MAINTAINING VEHICLE QUARTERMASTER CORPS | | |
| MAKE AND MODEL | WILLYS MB. | |
| SERIAL NUMBER: | _____ | |
| GROSS WEIGHT | _____ | LBS. |
| MAXIMUM PAYLOAD | _____ | 800 LBS. |
| MAXIMUM TRAILOLOAD | _____ | 1000 LBS. |
| DATE OF DELIVERY. | _____ | |
| RECOMMENDED BY MANUFACTURER | | |
| OCTANE RATING OF GASOLINE | _____ | 68 MIN. |
| SAE GRADE OF OIL FOR SUMMER USE | _____ | 30 SAE |
| SAE GRADE OF OIL FOR WINTER USE | _____ | 10W SAE |
| PUBLICATIONS APPLYING TO THIS VEHICLE | | |
| PARTS LIST T/M 10- | _____ | |
| MAINTENANCE MANUAL T/M 10- | _____ | |

FIG. 2—NAME PLATE

| CAUTION | | |
|--|------------------|-----------|
| MAXIMUM PERMISSIBLE ROAD SPEEDS IN THE FOLLOWING GEAR POSITIONS | | |
| TRANSMISSION IN | TRANSFER CASE IN | |
| | HIGH RANGE | LOW RANGE |
| HIGH | 65 M.P.H. | 33 M.P.H. |
| INTERMEDIATE | 41 | 21 |
| LOW | 24 | 12 |
| REVERSE | 18 | 9 |

TO DRAIN COOLING SYSTEM: OPEN RADIATOR DRAIN COCK LOCATED ON HOSE FITTING AT LOWER LEFT SIDE OF RADIATOR AND CYLINDER BLOCK DRAIN COCK ON RIGHT FORWARD SIDE OF ENGINE.

FIG. 3—CAUTION PLATE

Caution Plate—Fig. 3 & No. 26, No. 1

Covers maximum permissible road speeds in different gear positions and gives instructions relative to complete draining of the cooling system.

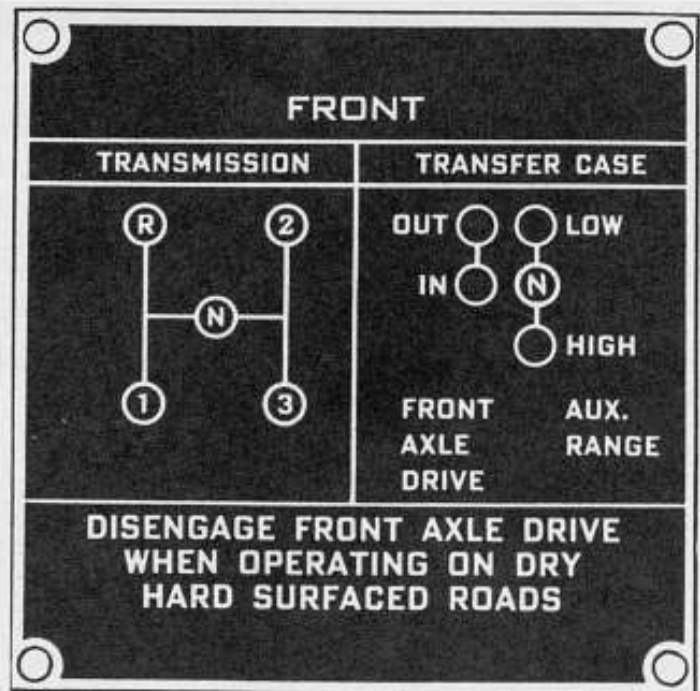


FIG. 4—SHIFT

Transfer Case Shifting Instructions—Fig. 4

This diagram gives relative position of shifting levers for front axle drive, low and high gear ratios.

On hard surface and flat roads disengage front axle drive by placing center shift lever, (front axle drive) in forward position. No. 25, Fig. 1.