

MAINTENANCE MANUAL

**4-5 TON COE 4x4 TRACTOR TRUCK
FEDERAL MOTOR TRUCK COMPANY**

**BUILT FOR
UNITED STATES ARMY**

MODEL NUMBER

94X43

CONTRACT NUMBER

398-OM-8931

U. S. A. REGISTRATION NUMBERS

W-428590 TO W-429269

W-457287 TO W-457476

TM 10-1107

**WAR DEPARTMENT
WASHINGTON, JULY 10, 1941**

**TM 10-1107, MAINTENANCE MANUAL TRUCK 4-5-TON
4 X 4, COE, FEDERAL (MODEL 94X43) PUBLISHED BY THE
FEDERAL MOTOR TRUCK COMPANY 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:

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

OPERATING and MAINTENANCE MANUAL

NOMENCLATURE: - TRACTOR TRUCK 4 X 4	
SUPPLY ARM OR SERVICE MAINTAINING	
VEHICLE: - QUARTERMASTER CORPS.	
MAKE - FEDERAL	MODEL 94 X 43
SERIAL NUMBER	106353
WEIGHT UNLOADED	11950 LBS.
MAX. GROSS WEIGHT LOADED	20950 LBS.
SEMI-TRAILER MAX. GROSS WEIGHT	20,000 LBS.
DATE OF DELIVERY	
RECOMMENDED BY MANUFACTURER	
OCTANE RATING OF GASOLINE	70 MIN.
S. A. E. GRADE OF OIL - SUMMER	40
S. A. E. GRADE OF OIL - WINTER	30 ZERO 20
FEDERAL MOTOR TRUCK CO. DETROIT MICH. U. S. A.	

U. S. A. REGISTRATION NUMBERS

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W457287 to W457476

Contract W398—QM 8981

FEDERAL MOTOR TRUCK CO.

DETROIT, MICHIGAN, U. S. A.

**Compiled and Edited
by
Technical Literature Service
Detroit, Michigan**

Lithographed in U. S. A.

FOREWORD

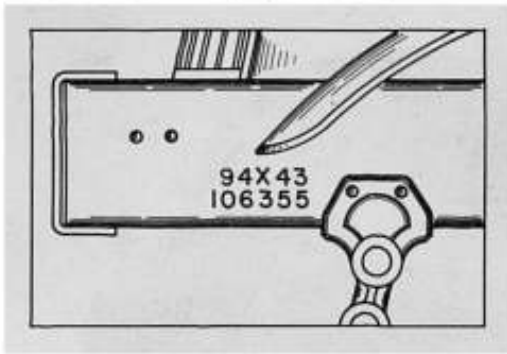
EVERY effort has been made to make this maintenance manual complete and exhaustive on the operation and care of the 4 x 4 Tractor Truck.

All service operation has been clearly illustrated to aid in training skilled personnel. However, there is no substitute for experience, and every opportunity should be taken to study the equipment in operation and learn the quickest and most convenient method of handling various operations under actual service conditions in the field.

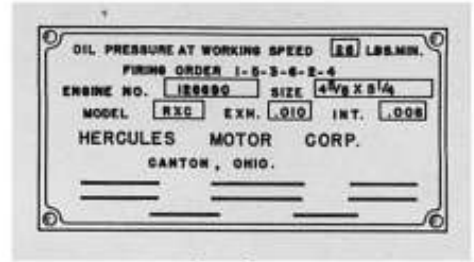
This book follows the Standard Federal Group System used in all parts books, instruction books and maintenance manuals published by the Federal Motor Truck Co. All grouping follows the margin indices showing on this page, for handy reference.

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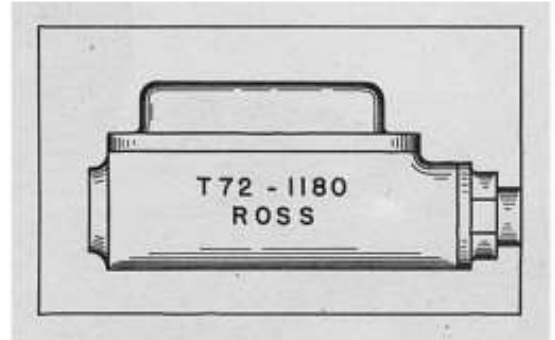
**Chassis Serial No.
L.H. Front Frame Side Rail**



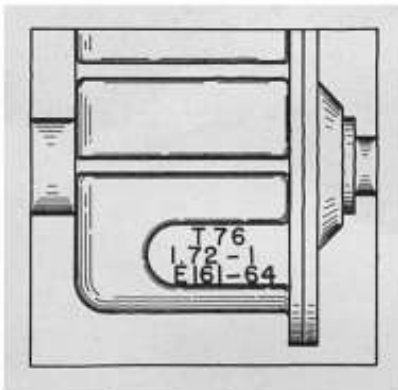
**Engine
L.H. Side Bracket Distributor**



**Cab Number
Upper R.H. Corner Windshield**



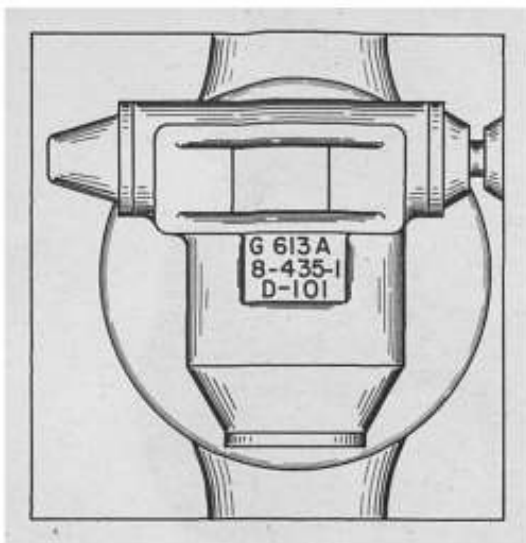
**Steering Gear
Top of Steering Gear Housing**



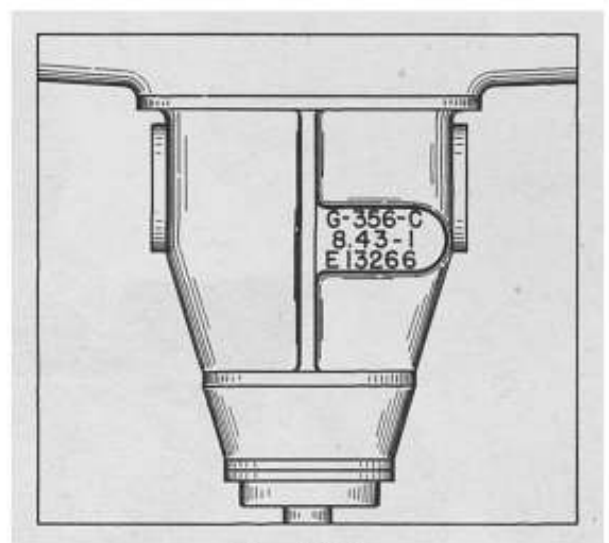
**Transfer Case
Lower L.H. Side**



**Transmission
L.H. Rear Corner**



**Rear Axle
Top of Carrier**



**Front Axle
Top of Carrier**

SERIAL NUMBER LOCATIONS

CARE AND OPERATION

THE vehicles covered by the following instructions have all been carefully inspected and adjusted before shipment and should require a minimum amount of attention before being put into service.

However, every piece of mechanical equipment requires constant care and maintenance and this book should serve as a guide and reference for correct operation and adjustment.

During the first 1000 miles of operation the moving parts of the engine, axle, transmission, and controls are working in, and extreme caution should always be exercised to prevent overloading or overspeeding during this period. Many failures that develop after thousands of miles of operation can be traced directly to abuse in the early life of the vehicle.

The good driver will find it wise to first acquaint himself with the instruments, controls, and levers before attempting to operate any truck. In the following text is a brief description of each lever and instrument required in the operation of the truck.

OIL PRESSURE GAUGE

Indicates engine oil pressure at all times. Should indicate approximately 26 pounds at normal engine speeds. If pressure fails, stop engine at once until cause can be determined.

GASOLINE GAUGE

Shows amount of gas in tank when ignition switch is turned on. Reading is based on depth of gas in tank and with cylindrical tanks varies as to depth. In other words, two inches near the top or bottom of the tank is not as much gasoline as two inches near the halfway mark.

THERMO GAUGE

Shows temperature of water in engine cooling system. It may vary widely under operating conditions but must never be allowed to reach 212 degrees or boiling. Continuous operation at any temperature over 200 degrees will result in serious damage to the engine.

AMMETER

Indicates rate of flow of electric current being supplied to battery by generator or rate of discharge from battery. When engine exceeds idling speed generator charges the battery if necessary and needle shows on positive + side. At slower speed or when all lights are on needle will show on negative or — side.

“B” AMMETER

Indicates that second battery or “B” battery is charging or discharging. This is valuable to insure that there are no breaks in the wiring system.

MAIN LIGHT SWITCH

Is pulled out to turn on blackout lights. To obtain service and head lights, press button on left side of Light Switch and pull out to second position.

DIMMER SWITCH

This is a foot switch located to the left of the clutch pedal and permits the operator to change from bright to dim lights as required by traffic conditions.

BEAM INDICATOR

This is a small light on the dash panel that shows red when the bright headlights are on and goes out when headlights are dimmed.

PANEL LIGHT SWITCH

This provides an auxiliary control for instrument panel lights and operates only when Main Light Switch is pulled out to second position.

SPEEDOMETER

Indicates road speed in miles per hour.

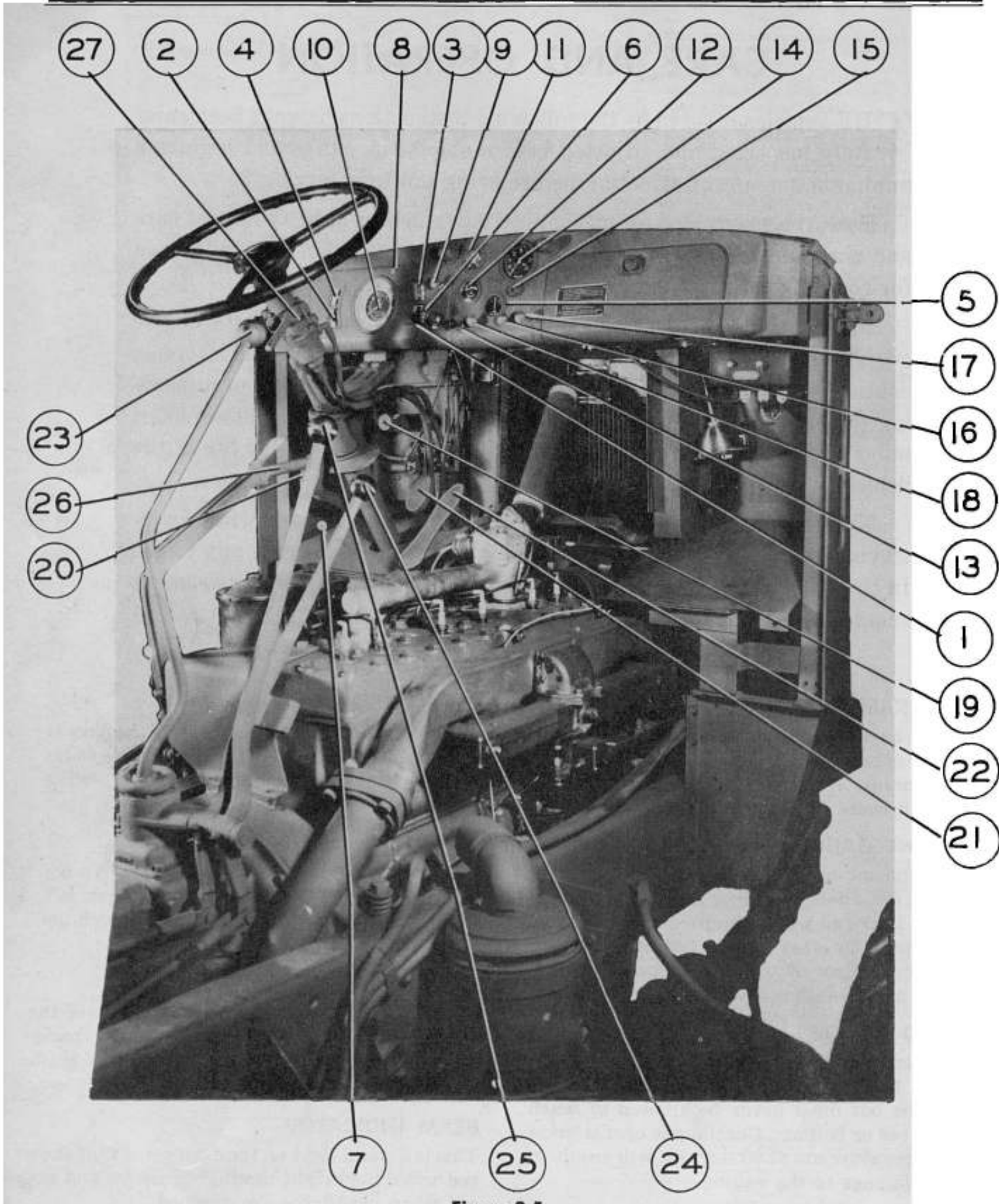


Figure 0-5
Instruments and Controls

1—Oil pressure gauge
2—Gasoline gauge
3—Thermo gauge
4—Ammeter
5—"B" ammeter
6—Main light switch
7—Dimmer switch
8—Beam Indicator
9—Panel light switch

10—Speedometer
11—Air pressure gauge
12—Viscometer
13—Ignition switch
14—Tachometer
15—Tachometer lock
16—Choke
17—Throttle
18—Spark

19—Starting motor switch
20—Clutch pedal
21—Brake pedal
22—Accelerator pedal
23—Transmission shift lever
24—Transfer case shift lever
25—Front axle control lever
26—Hand brake lever
27—Hand control valve

AIR PRESSURE GAUGE

Shows amount of air pressure available at all times. Do not attempt to put vehicle in operation when less than 60 pounds pressure is available.

VISCOMETER

Indicates the viscosity or condition of the oil. Accurate reading can be had only after the engine is completely warmed up and oil is hot.

IGNITION SWITCH

This key controls engine electric supply and must be in "ON" position to start engine. Always turn off except when starting or operating engine, or checking gas gauge reading, etc.

TACHOMETER

This is the engine speed indicator and shows actual engine revolutions per minute. Two hands are provided, the white hand shows actual engine revolutions at any given time, while the red hand shows highest actual engine revolutions reached. The red hand can only be turned to zero reading by inserting key in tachometer lock and turning.

TACHOMETER LOCK

Use only when necessary to reset maximum speed hand to zero.

CHOKE

This button is used when starting engine and is pushed in as soon as engine is running smoothly. It reduces the amount of air admitted to the engine and gives a richer, more powerful mixture.

THROTTLE

This button reduces or increases the engine speed. It is usually pulled out about $\frac{1}{2}$ " when starting and can be used if necessary as a manual speed control when driving.

SPARK

This button retards the spark advance. It should be pulled out about $\frac{3}{4}$ " when starting and pushed in as soon as the engine fires. It is also useful when operating on low grade gasoline and if pulled out slightly will stop "pinging."

STARTING MOTOR SWITCH

Located above clutch pedal, is pushed down firmly to crank engine. Release immediately when engine starts.

CLUTCH PEDAL

Pressing down this pedal disengages clutch, disconnecting transmission from engine as long as pedal is held down, permitting the operator to shift transmission and transfer case as required. Do not disengage clutch except when necessary. Do not use clutch pedal for a foot rest when driving.

BRAKE PEDAL

This opens air valve controlling brakes to stop truck. Air brakes are very powerful and extreme caution must be exercised in making application to avoid sudden stops with attendant damage to equipment and personnel. When operating with a trailer, brake application should usually be made first on the trailer and then on the tractor.

ACCELERATOR PEDAL

Is the usual control for engine and vehicle speed when driving.

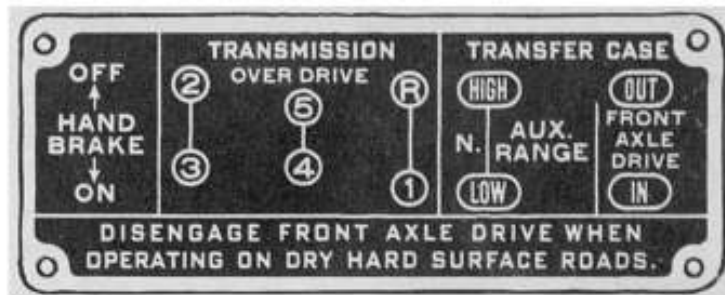


Figure 0-6
Shifting Diagram

TRANSMISSION SHIFT LEVER

This is used to shift transmission gears to select proper ratio. See Figure 0-6.

TRANSFER CASE SHIFT LEVER

This is used to shift from "HIGH" to "LOW RANGE."

FRONT AXLE CONTROL LEVER

This lever is used to disengage driving mechanism in front axle. Shifting into low range in transfer case automatically carries front axle control lever back to engaged position. It can however be shifted independently "IN" or "OUT" when operating in high range. See Figure 0-6.

EMERGENCY BRAKE LEVER

This lever controls the emergency or parking brake located at rear of transfer case. Pull up to set brake, push down to release.