MAINTENANCE MANUAL

FOR

FORD TRUCK

1½-TON 4 x 4

BUILT FOR
U. S. GOVERNMENT

MODEL GTB

Contract Numbers	U.S.A. Reg. Numbers
W-398-QM-11607	3123238—3129237

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Ford Motor Company
DEARBORN, MICH., U. S. A.

Published Aug. 20, 1942

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WAR DEPARTMENT

Washington, Feb. 4, 1942

TM-10-1435, Maintenance Manual, Truck 1½-Ton 4 x 4 Cargo, Ford, (Model GTB) published by the Ford Motor Company, 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:
E. S. ADAMS,
Major General,
The Adjutant General.

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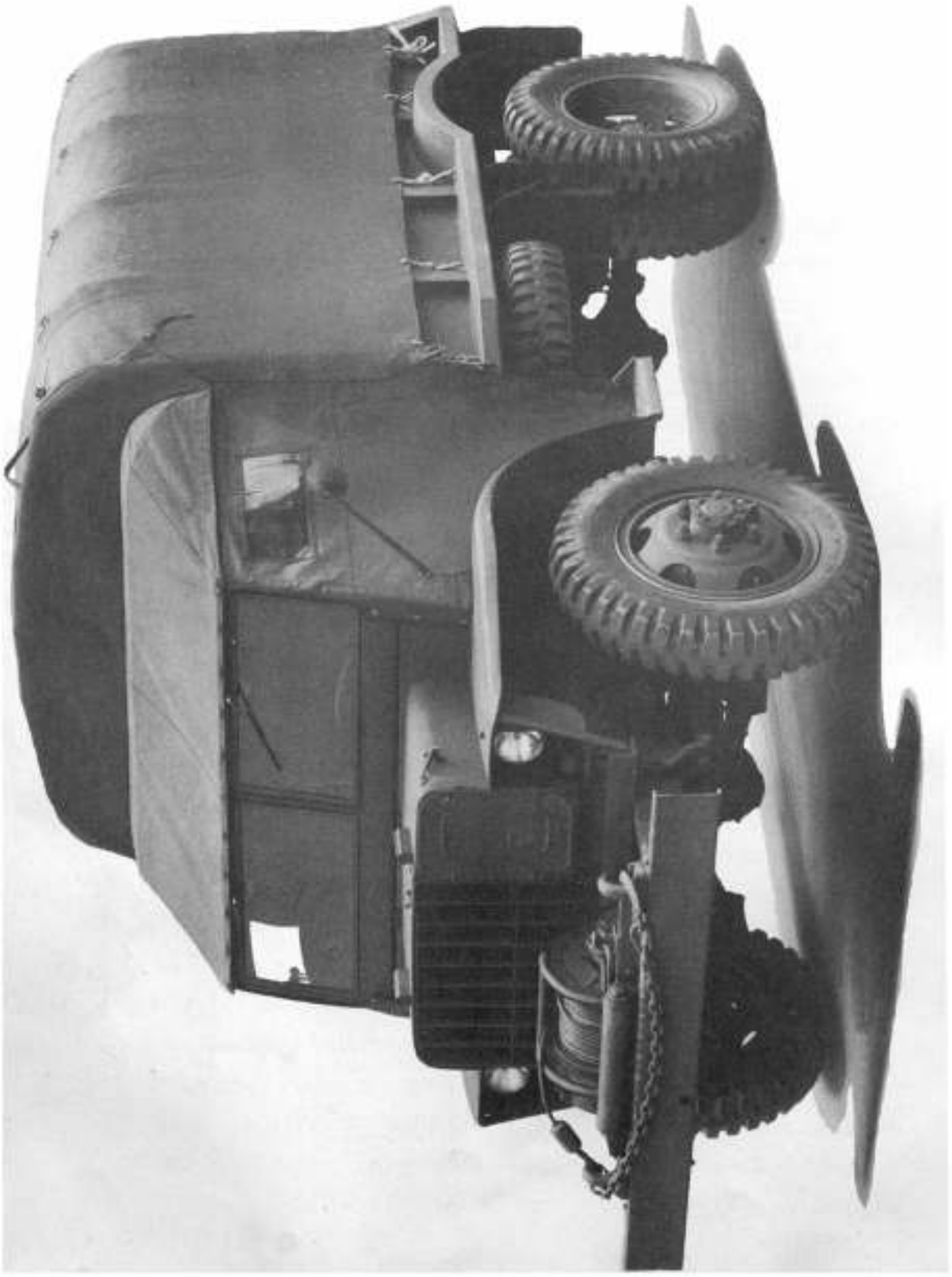
FOREWORD

THIS book has been prepared to supply operators and maintenance mechanics with all the essential information for insuring the most efficient performance of the Ford 1½-Ton, 4 x 4, Truck. Detailed specifications and data concerning manufacturing limits and tolerances will be found in the last section of the book.

The Ford Parts Numbering System is designed so that a basic number is assigned to each unit in the vehicle. For example, all wheels and wheel parts are within the series of numbers ranging from 1000 to 1500, all brake parts have numbers ranging from 2000 up, front axle parts have numbers ranging from 3000 up, steering gear parts have numbers ranging from 3500 up, etc. Since these basic numbers have been shown on all drawings showing exploded views of the various assemblies in the truck the book has been laid out in sections which conform to the grouping of the Ford Parts Numbering System. Each section is, therefore, numbered with the Ford basic number of the particular assembly or part described in that section. This will not only simplify the task of locating the various units in the book but will also make it easier for inexperienced men to locate in the Parts Book any items which may be referred to in the following text.

A brief description is given in each section of the operating principle involved in the particular assembly being discussed so the drivers, as well as mechanics will have some knowledge as to the functioning of each unit. In addition, detailed instructions for removing and installing parts, effecting necessary adjustments quickly, and properly lubricating all parts, are covered.

Such tools as are illustrated or mentioned in this book can be secured from K. R. Wilson, Buffalo, New York.



Ford — Model G.T.B.—4 x 4—1½-Ton Truck — Fig. 1

GENERAL DATA:

Ford Truck	4 x 4—1½-Ton
Model	G.T.B.
Wheelbase	115″
Tread Front	68.″
Tread Rear (Dual Wheels)	67.″
Axle Ratio (Front and Rear)	6.7 to 1
Length of Body	108″
Width of Body	70″
Length Overall	180.67″
Width Overall	96″
Height Overall (to top of stakes)	82.24″

ENGINE

Type	6 Cyl. "L" head
Number of Cylinders	6
Bore	3.300″
Stroke	4.400″
Piston Displacement	226 cu. in.
Torque	180 lb.ft. @ 1200 R.P.M.
Compression Ratio	6.7 to 1
Compression Pressure	165 lbs. @ 2000 R.P.M.
Firing Order	1-5-3-6-2-4
Weight with clutch and transmission	654 lbs.

CAPACITIES

Fuel Tank	40 gallons
Engine Crankcase	5 quarts
Cooling System	16 quarts
Transmission	5 pints
Front and Rear Axle	7 pints
Oil Bath Air Cleaner (Tractor Type)	1 quart
Tire Pressure	Front—55
	Rear—55

Engine Number is also the Serial Number

Number is stamped on top of Clutch Housing. To check number, raise engine cover.

OPERATION TIPS

The natural inclination of every motor vehicle operator is to take pride in his vehicle, in its accelerating qualities, smoothness of operation and ability to travel further on less fuel. To a great extent, these factors are subject to the control of the vehicle operator and the following paragraphs point out the precautionary measures which should be followed to secure the most satisfactory results.

"BREAKING IN"

Before attempting to start the engine or operate the vehicle, the careful driver will first make sure that there is sufficient water in the radiator and that the oil level in the crankcase is up to the "Full" mark on the dip stick. He will also examine each tire and see that it is brought up to the recommended tire pressure, if there is any indication of one or more of the tires being low. The good driver will also make certain there is an adequate supply of fuel in the tank.

One of the most important factors in the life of a motor vehicle is the care it receives during the first thousand miles of operation. For the first 500 miles, the new unit should not be driven in excess of 30 miles per hour. During the so-called "breaking in" period, the temperature indicator should be watched closely and if there is any tendency toward overheating, the operating speed should be reduced.

LUBRICANT

To avoid excessive or premature wear, clean lubricant of correct specifications must be used at the various points indicated on the lubrication chart.

All Ford products are designed to operate smoothly and without sharp knocks, rattles or metallic noises which indicate friction in any of the working parts. All unusual noises should therefore be investigated at once so the necessary corrective measures can be taken before serious damage results. If the noise seems due to an internal mechanical fault, the condition should be reported to a mechanic immediately and operation of the vehicle should be avoided until it has been released by a qualified technician.

TESTING BRAKES

The brakes should be tested daily soon after starting. Any faulty condition in the hydraulic brake system is readily apparent to the operator at the first application of the brake pedal, and the matter should be reported at once for correction.

FRONT WHEEL ALIGNMENT CHECK

The proper alignment of the front wheels is a most important factor in the steering of the vehicle. If hard steering is noticed, the first thing to check is inflation of the front tires. If the tires are properly inflated and the vehicle tends to wander to the right or left, or the steering wheel shakes (shimmies) when the vehicle is in motion, have a mechanic inspect and make the necessary repairs.

BATTERY INSPECTION

Battery should be inspected frequently and terminal corrosion removed by scraping or using a solution of baking (bicarbonate) soda and water. After the terminals have been cleaned, they should be coated with vaseline or light grease.

ELECTRIC CIRCUIT TERMINALS

All electrical connections must be kept clean and tight. Bear in mind that corroded terminals, also loose and dirty ground connections will cause ultimate failure of the electrical system.

SPARK PLUGS

Check spark plugs frequently for loose connections or broken porcelain which will usually be indicated by that particular cylinder missing fire when the engine is operating under a heavy load or accelerating with a wide open throttle. Faulty spark plugs and wires should be replaced.

AIR CLEANER

Instructions for cleaning the oil bath type air cleaner are given on the decalcomania on the air cleaner. Under extremely dusty conditions, the air cleaner should be cleaned more frequently and refilled with new oil of the same viscosity as is used in the crankcase.

WORKING UNDER VEHICLE

When working under the vehicle, it is inadvisable to depend only upon a jack to support the weight. Use wooden blocks or wooden jack.

REPORTING MECHANICAL FAULTS

Report any mechanical trouble and have it corrected. Temporary repairs should be used only as an expedient.

REVERSING

Reverse as little as possible. Never reverse without sounding the horn and making absolutely sure that the way is clear.

TIRE INFLATION

Proper tire inflation not only produces the greatest number of miles per tire but helps to avoid accidents.

INSTRUMENTS AND CONTROLS

Before attempting to operate any motor vehicle with which the operator is not familiar, it is imperative that he familiarize himself with the various controls.

All of the controls and instruments are illustrated in Figure 2. It will be observed that each item has been numbered so as to assist the reader in locating the various items as they are described in the following paragraphs:

IGNITION SWITCH No. 1 is located on the lower left corner of the instrument panel. Turning the switch to the right closes the ignition circuit so that current will flow to the ignition coil and distributor. Turning the switch to the left breaks the circuit and will stop the engine.

STARTER BUTTON No. 2 is located at the lower left corner of the instrument panel. When this button is pressed in, current is supplied to the magnetic starter switch which in turn closes the circuit to the starter motor.

CARBURETOR CHOKE No. 3 is the control button marked "Choke," located on the right hand steering column bracket. When this control button is pulled out, it reduces the amount of air going through the carburetor and thus provides a richer mixture. When the engine is warm, it is not necessary to pull out the choke button, in fact, this control should only be used when the weather is sufficiently cold to cause difficulty in starting. The choke button should be pushed in to its stop as soon as the engine is sufficiently warm to run smoothly.

HAND THROTTLE No. 4 is the control button marked "Throttle," located on the left hand steering column bracket. Pulling this button outward opens the carburetor throttle and increases the speed of the engine. During cold weather this control should be pulled out approximately one-quarter of an inch so the engine will idle somewhat faster until it is thoroughly warmed up. This control can also be used when it is desirable to run the engine at a constant speed.

ACCELERATOR No. 5 is a treadle-type lever which actuates the linkage connected to the carburetor throttle plate and thus increases or decreases the speed of the engine.

CLUTCH PEDAL No. 6 causes the tension exerted by the Clutch Pressure Plate Springs to be released when the pedal is pressed downward. This disengages the engine from the transmission so the gears the operator desires to use can be meshed easily.

It is a good practice to disengage the clutch before starting the engine as this will not only enable the starter to crank the engine more easily in cold weather but will also prevent the vehicle from moving in the event the transmission gear shift lever has been unknowingly left in gear. Do not drive with the foot resting on the clutch pedal as this will cause premature wear of the clutch facings and clutch throwout bearing.

BRAKE PEDAL No. 7 is connected by a rod to a piston in the Brake Master Cylinder. When pedal is pressed downward the piston forces fluid from the Master Cylinder through connecting tubes to cylinders at each of the four wheels which in turn expand the brake shoes.

TRANSMISSION SHIFT LEVER No. 8 is used to engage the transmission gears in the various speeds provided by the transmission. It provides four forward speeds and one reverse and operates entirely independent of the two transfer case shift levers. Lever positions for the various gear changes are shown on the plate attached to the engine cover and are also discussed in detail in a following paragraph.

HAND BRAKE No. 9 actuates a separate brake shoe located on the rear propeller shaft directly behind the transfer case. This lever should be pulled backward as far as possible whenever the vehicle is parked. After starting the engine and placing the transmission in gear, the brake should be released by pushing the lever forward as far as possible.

FRONT AXLE DRIVE LEVER No. 10 is connected to the transfer case and is used to engage or disengage the front axle drive as desired. When the vehicle is to be operated on smooth hard ground or pavement the lever should be pushed to the forward position so the front axle drive will be disengaged.

TRANSFER CASE AUXILIARY GEAR LEVER No. 11 enables the operator to shift into low speed gears when the vehicle must be operated through mud or sand or in the high speed gears when the vehicle is being operated on pavement or hard ground without pulling a load. The low speed auxiliary range gears cannot be engaged unless the front axle drive is engaged.

LIGHT SWITCH No. 12 is located on the instrument panel directly below the choke button and has two positions. When pulled out to the first position, it turns on the blackout lights only. The button on the side of the switch knob must then be pressed before the switch can be pulled out to a stop in which position it turns on the headlights, tail light and instrument panel light.

This button is a safety feature which prevents accidentally turning on the headlights during a blackout period. Before leaving the vehicle after dark, make sure the light switch is in the "off" position so as to avoid the possibility that the blackout lights may have been left burning.

INSTRUMENT PANEL LIGHT SWITCH No. 13 is controlled by a push-pull switch mounted on the instrument panel. This will turn the instrument panel lights on or off as desired, by pulling out or pushing in the switch knob.

LIGHT BEAM CONTROL SWITCH No. 14 is located on the floor board to the left of the clutch pedal. After the headlights have been turned on, this switch can be operated by the left foot to switch to either the upper or lower beam in the headlights. The upper beam is used for fast driving on country highways while the lower beam is used for driving in traffic.

BEAM INDICATOR No. 15 is a small red light which is turned on when the headlights are switched to the upper beam. When approaching an on-coming car, switch to the lower beam, red light off, by pressing down on the foot switch so as to avoid blinding the approaching driver.

FUEL GAUGE No. 16 is an electrical type gauge which indicates the approximate amount of gasoline in the tank. The gauge does not register except when the ignition is turned on.

AMMETER No. 17 is located in the instrument group. The dial indicates whether current is being charged into or discharged from the battery. The current flow is controlled by the generator regulator and the amount of charge will vary with the load and condition of the battery. When the voltage of the battery reaches a pre-determined value, the indicator hand will drop to a lower charging rate.

A slight fluctuation of the indicator hand at this point is caused by the action of the generator regulator.

OIL GAUGE No. 18 is a hydraulic type pressure gauge. Normal pressure is approximately 30 pounds, depending of course, upon the condition of the oil in the engine. Heavy or cold oil will result in higher pressure; thin or hot oil will show a lower pressure. The oil pressure gauge merely indicates whether or not the engine oil is circulating and does not show the quantity or quality of the oil.

In the event the indicator hand drops to Zero or fluctuates rapidly, the engine should be stopped immediately as this indicates that proper oil pressure is not being maintained and the engine might be damaged.

TEMPERATURE INDICATOR No. 19 is a Bourdon type instrument and shows the temperature of the water in the cooling system. The operator should watch this instrument closely.

WINDSHIELD SWING ARM NUTS No. 20: The windshield is so designed that it can be opened forward while in the upright position. This is done by loosening the two knurled clamp nuts and pushing the bottom of the windshield outward to the desired position. The two clamp nuts should then be tightened on the swing arms.

FIRE EXTINGUISHER No. 21 is held in place by a spring-type clamp. This clamp must be sprung open before the fire extinguisher can be removed. After removing the fire extinguisher from the mounting brackets, it can be operated by turning the handle to the left and then pumping it in and out. Each operator should carefully read the directions on the fire extinguisher so as to familiarize himself with its use.

SPEEDOMETER No. 22: The speedometer should be used as a guide for correct gear shifting, following the recommendations indicated on the caution plate for each transmission and transfer case gear change.

WINDSHIELD LATCHES No. 23: Latches are provided at the lower right and left corners of the windshield that, when released, permit the windshield to be folded forward over the hood. When in the lowered position, it is important that the windshield be securely fastened to the hood, using the latches provided for that purpose located on each front corner of the hood.