

1000 Series Crawler Tractors



SERVICE MANUAL

1000 Series
Crawler Tractors

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ENGLISH



**SERVICE MANUAL FOR
JOHN DEERE DEALERS**

**1000
SERIES**

**CRAWLER
TRACTORS**

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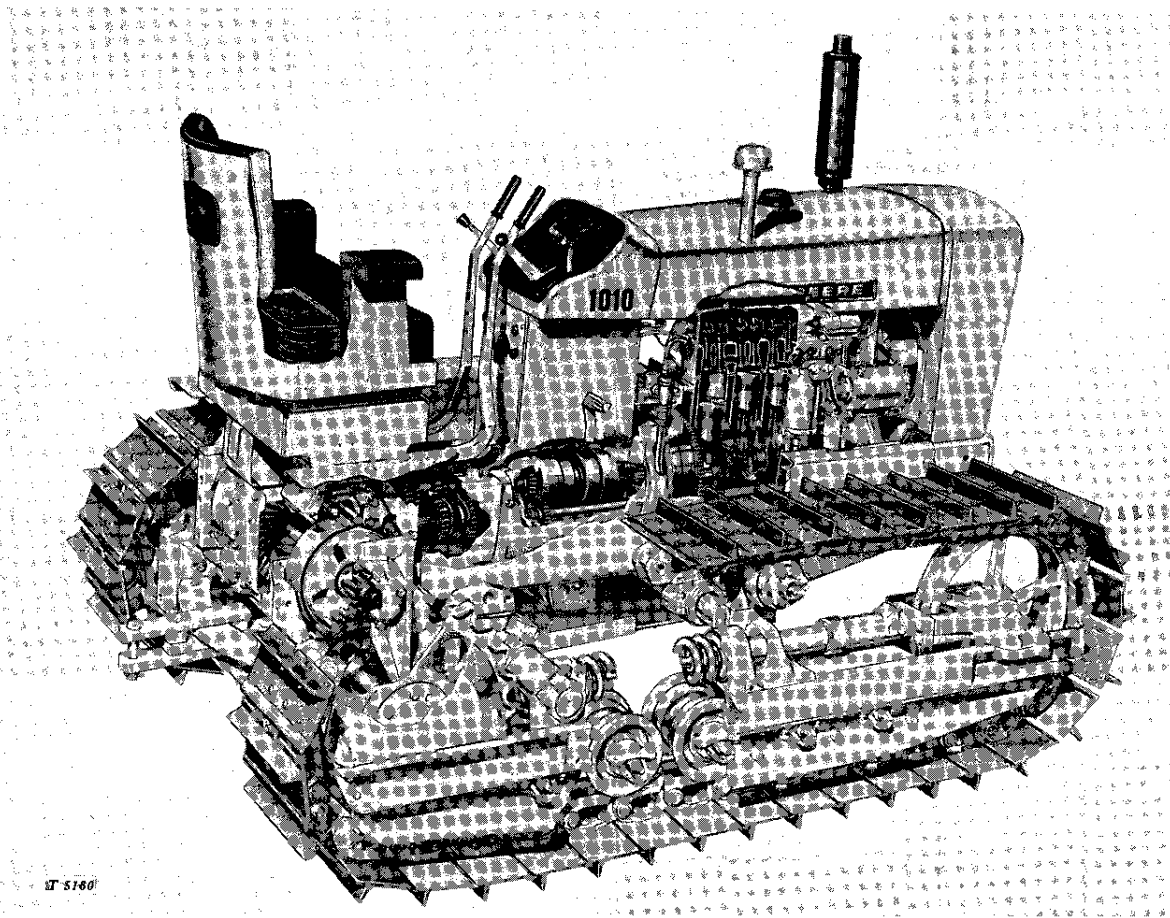
TO THE JOHN DEERE SERVICEMAN

This service manual contains maintenance instructions for John Deere 1000 Series Crawler Tractors. Included are complete instructions for removal, disassembly, inspection, repair, assembly and installation of the major parts and assemblies of the tractor.

In addition, the manual contains brief descriptions of the more complicated systems of the tractor, and tells how they operate. Dimensions of many new wearing parts are given as an aid in determining when parts replacement is necessary. Tests and adjustments, required to keep the tractor operating efficiently, are explained in detail.

This manual was planned and written for the Service Department; its place is in the shop. Use the manual whenever in doubt about correct maintenance procedures. Use it as a text book for training new Service Department personnel who are unfamiliar with John Deere Tractors.

Daily use of the Service Manual as a guide for any and all service problems will reduce error and costly delay to a minimum and assure you the best in finished service work. In many instances your customer's confidence in your work will be improved when he sees you using the Service Manual. He knows you are following approved maintenance procedures and making proper adjustments. There is no guesswork when you use the manual.



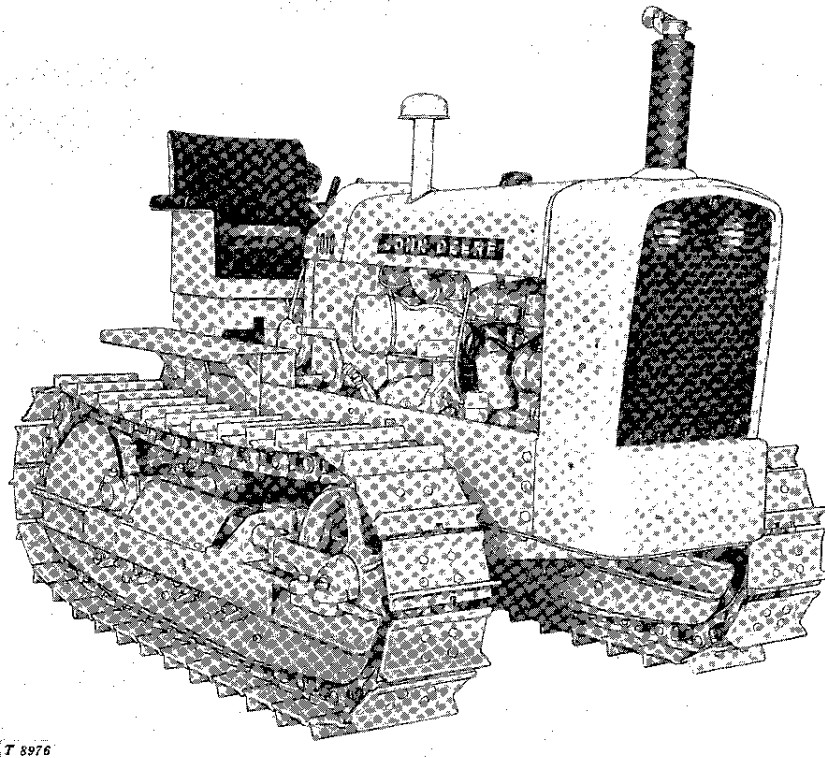
Cutaway View of John Deere 1010 Crawler Tractor

Section 10

DESCRIPTION, OPERATION AND SPECIFICATIONS

Group 5

DESCRIPTION



T 8976

*Fig. 10-5-1—Right-Hand View of 1010 Crawler Tractor
(Gasoline Illustrated)*

The John Deere 1010 Series Crawler Tractor (Fig. 10-5-1) is built rugged and strong to meet the needs of industrial users. Its track laying tread makes this tractor especially useful whenever good flotation and additional traction or extra stability is desirable. With the wide variety of equipment available for this tractor, it plays an important role in the construction and logging industries.

stroke cycle, internal combustion engine. A bore of 3-1/2 inches and a stroke of 3 inches gives a piston displacement of approximately 115 cubic inches.

The compression ratio is 7.9 to 1. (Pistons are available for high altitude operation which provide a 9.0 to 1 compression ratio.)

FEATURES

GASOLINE ENGINE

The 1010 Series Gasoline Crawler has a vertical, four cylinder, valve-in-head, four

A wet-type "sleeve and deck" cylinder liner assembly is used. This new feature allows worn cylinder walls to be renewed without replacing or reboring the cylinder block.

The engine has replaceable precision-type main and connecting rod bearing inserts. All bearings and other parts of the engine are lubricated by a force-feed and splash-type system with an oil filter. The crankcase is ventilated by means of a vent tube attached to the rocker arm cover and discharging below the crankcase flange. Engine speeds are controlled by a fly-weight-type governor, gear-driven from the camshaft gear.

DIESEL ENGINE

The 1010 Series Diesel Crawler has a vertical, 4-cylinder, valve-in-head, fuel injection, four-stroke cycle, internal combustion engine. A bore of 3-5/8 inches and a stroke of 3-1/2 inches gives a piston displacement of approximately 145 cubic inches.

The compression ratio of the diesel engine is 19 to 1. Maximum torque is 100 ft.-lbs.

A wet-type "sleeve and deck" assembly is used. This feature allows worn cylinder walls to be renewed without replacing or reboring the cylinder block.

The engine has replaceable precision-type main and connecting rod bearing inserts. All bearings and other parts of the engine are lubricated by a force-feed and splash-type system with an oil filter. The crankcase is ventilated by means of a vent tube attached to the rocker arm cover and discharging below the crankcase flange. Engine speeds and injection timing are controlled by the fuel injection pump.

Crankshaft rotation is clockwise when viewed from the front.

FUEL SYSTEM

The 1010 Series gasoline fuel system is equipped with a 12 U.S. gallon fuel tank. The carburetor is a conventional updraft type.

The 1010 Series Diesel uses a distributor-type fuel injection pump. The fuel system consists of a 12 gallon fuel tank, two fuel filters, fuel strainer, fuel injection pump, fuel injection nozzles, and turbulence chambers. The fuel injection pump is an opposed plunger, inlet meter-

ing, distributor-type. The pintle-type injection nozzles are located in turbulence chambers mounted at the top of each cylinder.

IGNITION

Gasoline models have a battery-distributor-type ignition system with automatic spark advance. A 12-volt battery, generator, and starter are standard equipment.

The diesel engines are equipped with electrical pre-heating devices called "Glow Plugs" which are located above the fuel injectors on the turbulence chambers. There are four glow plugs on the 1010 Series Diesel Tractors. They are used when starting a cold engine and need not be used when starting a warm engine. The 12-volt battery also actuates this system.

LIGHTING SYSTEM

All lighting equipment is optional and includes grille-mounted headlights, a dash light, a combination white and red rear warning light, and auxiliary plug-in socket.

COOLING SYSTEM

The engines are liquid cooled with a pressure type system; the coolant flows through passages around the cylinders in the block, and around valves in the cylinder head. Coolant is circulated evenly in all passages in the block, head, and through the radiator by a centrifugal water pump located on the cylinder block, and operated by the fan belt. A thermostat and fixed bypass insure a quick and thorough engine warm-up.

LUBRICATION

The engine lubrication system is force-fed by a positive displacement, gear driven oil pump. The oil pump is located underneath the fuel injection pump on diesel models and underneath the distributor on gasoline models. The pump extends into the bottom of the crankcase. Oil is fed under 35 to 50 pounds pressure onto governor bearings, crankshaft main bearings, and connecting rods, and splashed onto piston pins and valve tappet assemblies. This lubrication system employs an oil filter with a replaceable micronic filter element.

CLUTCH

The engine clutch used on the 1010 Series Tractors (on tractors not equipped with direction reverser) is a springloaded, single dry-disk, foot-operated clutch enclosed in the center frame. Adjustment for free clutch pedal travel can be made externally.

TRANSMISSION

The transmission has four forward speeds and one reverse. It is a selective sliding-gear type and is shifted manually. Power is transmitted by the output shaft, through a ring gear and hub assembly, to the steering clutches.

POWER TAKE-OFF

The power take-off is the continuous-running type. It is an engine-driven type and is completely independent of tractor ground travel. It fully meets all ASAE-SAE standards.

DIRECTION REVERSER

A direction reversing mechanism, which provides reverse speed equivalent to transmission forward speed, is available as optional equipment. The direction reverser replaces the engine clutch and is controlled hydraulically—no foot clutching is required.

The direction reverser unit is located ahead of the transmission. A control lever mounted on the instrument panel operates the unit, which has two operating positions: Forward and Reverse. When the lever is in forward position, the tractor is in direct drive.

BELT PULLEY

A belt pulley is available as an attachment. The pulley assembly slips over the power take-off shaft and is attached to the power take-off housing. The belt pulley is driven by the power take-off shaft.

BRAKES

The two brakes are of the contracting band type, and are operated by one foot brake located on the right side of the tractor. A brake lock, located on the right footrest, holds the tractor in place for belt work or when parking.

STEERING MECHANISM

The Crawler Tractor is steered by two combination clutch and brake mechanisms located in the steering clutch housings. Pulling back on a steering lever separates the drive faces and driven plates of dry-type multiple disk clutch on the side, interrupting flow of power to that track

sprocket. Any further rearward movement of the steering lever contracts a brake band around the drum on the clutch driven assembly, retarding or stopping motion of the sprocket and track.

The brake bands can also be operated by a pedal located on the right side of the tractor. Depressing the pedal applies both brakes; it does not disengage the steering clutches.

TRACKS

The tracks are made of extremely tough steel. Replaceable, four-bolt track shoes are bolted to hardened links which are joined together by replaceable pressed-in pins and bushings. Track shoes are available in 10-, 12-, and 14-inch widths.

TRACK CARRIER ASSEMBLIES

Tracks are held in position by heavy steel carrier assemblies.

Track tread width is fixed at 48 inches.

Tracks are aligned and adjusted for tension by shifting the idler wheels forward or backward as required. A hydraulic track tension adjuster is available as optional equipment.

HYDRAULIC SYSTEM

The 1010 Crawler may be equipped with either of two hydraulic systems. Both of these systems are double-acting; that is, hydraulic power is applied when raising and also when lowering the implement.

The larger of these hydraulic systems is capable of handling two sets of double-acting remote hydraulic cylinders. The smaller system can handle one set of double-acting remote cylinders.

UNIVERSAL 3-POINT HITCH

The 1010 Crawler Tractor may be equipped with a Universal 3-Point implement attachment system to which a wide variety of 3-point hitch implements can be attached. The hitch is actuated through the rockshaft by two remote hydraulic cylinders.

The hitch is designed for use with implements having category 2 hitch.

TIMBER HITCH

The 1010 Crawler Tractor may be equipped with a timber hitch. The hitch is actuated by

two hydraulic cylinders located to the right and left of the final drive housings. The hitch can be activated to raise a chain (attached between

the tractor drawbar and the logging sled), thereby relieving weight from the front of the logging sled.

Group 10

OPERATION

PRE-STARTING INSPECTION

COOLING SYSTEM

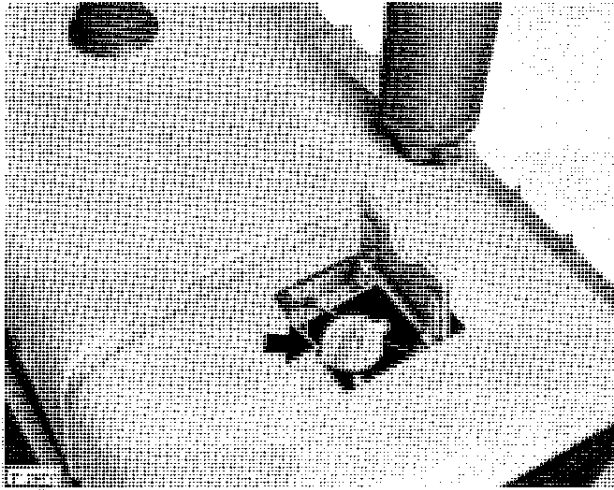


Fig. 10-10-1 -- Radiator Filler Cap

Check coolant level in radiator. Examine drain cocks and plugs to be sure they are secure. See that hose connections are tight and without evidence of leakage. If coolant is changed, add sealer and rust inhibitor.

CRANKCASE OIL LEVEL

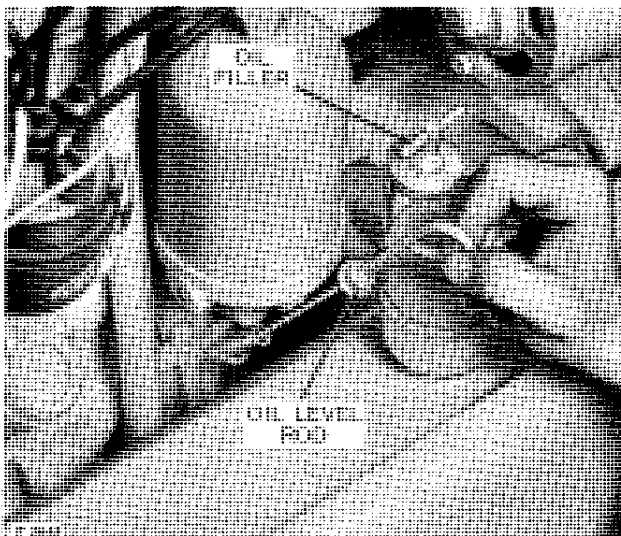


Fig. 10-10-2 -- Oil Level Rod

Check the crankcase oil level by means of the oil level rod. If oil is below the "ADD 1 QT." mark, add oil of correct weight and viscosity in sufficient amount to bring oil up to the "FULL" mark on the gauge. See Section 30 of this Manual.

FUEL SUPPLY

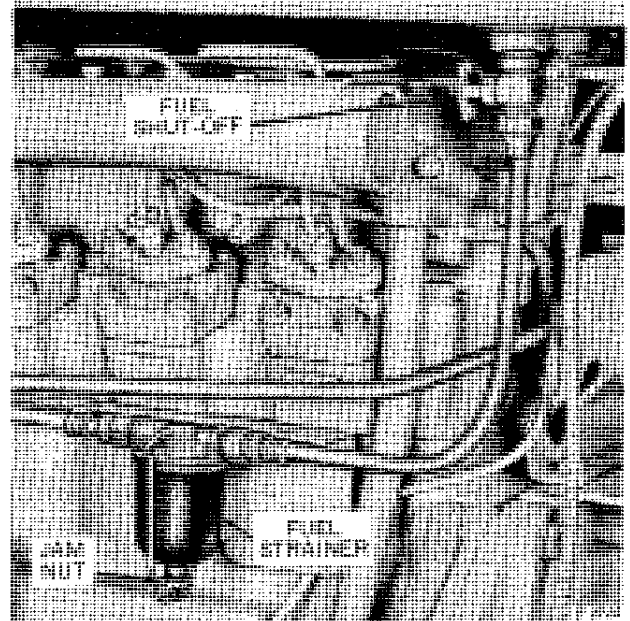


Fig. 10-10-3 -- Fuel Shut-Off Valve and Fuel Strainer (Diesel (Illustrated))

Inspect fuel strainer for signs of moisture and dirt and clean as necessary. Check to be sure that the fuel shut-off valve located under the fuel tank is in "open" position so that fuel supply to engine is not restricted.

AIR CLEANER

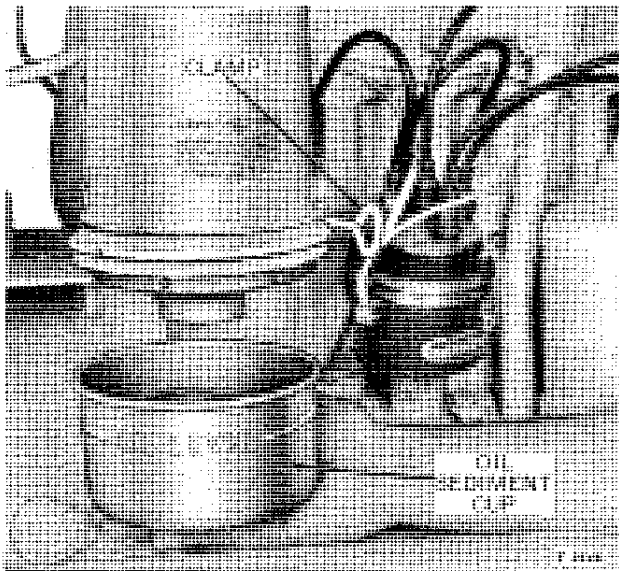


Fig. 10-10-4 -- Air Cleaner

Check air cleaner connections and make sure they are tight. Remove air cleaner cup and note level of oil. If necessary add oil of proper weight and viscosity until the level is even with the oil level mark on the cup.

GENERAL LUBRICATION CHECK-OUT

Check oil level of final drives, transmission, belt pulley, Hydraulic System, PTO attachment, direction reverser, and rockshaft housing.

Lubricate track roller assembly and all grease fittings. Lubricate generator sparingly. See Section 30 of this manual.

BATTERY

Check solution level of battery. Battery condition should be checked at least every 200 hours of operation.

STARTING THE ENGINE

GASOLINE MODEL

1. Open shut-off valve below fuel tank.
2. Place shift lever in "neutral," apply brake lock, and depress clutch pedal to decrease drag on engine (Fig. 10-10-9).

3. Advance hand throttle to the halfway open position (Fig. 10-10-9).

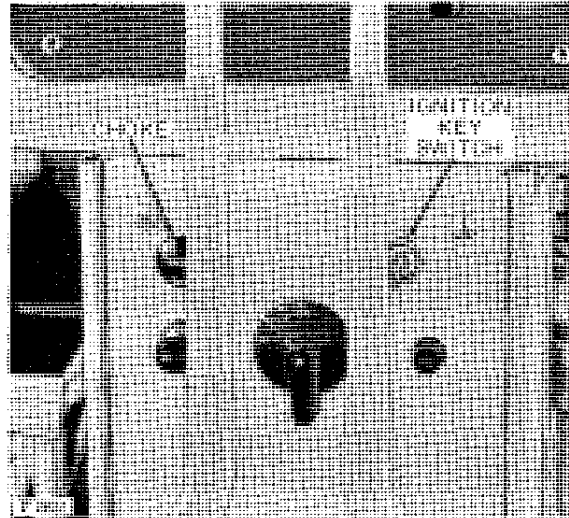


Fig. 10-10-5 -- Starting Controls (Gasoline)

4. Pull choke control outward full distance. (If tractor engine has been running previously, it may not be necessary to use choke. It is advisable to try starting engine without choking in this case.)

5. Turn ignition key switch clockwise to actuate starter. Hold in this position until engine has had time to rotate several revolutions.

NOTE: Limit time starter is used to 1/2 minute. If engine does not start within 1/2 minute, let starter rest for two minutes before trying again. This will allow battery to restore charge and give starter time to cool.

6. After engine has started, or after it has turned 4 or 5 revolutions, push choke control all the way in. This will prevent flooding of carburetor. Usually enough gasoline for starting purposes has been drawn into combustion chamber by this time.

7. Regulate engine speed by using hand throttle.

NOTE: The governor is adjusted to run engine at correct speed when tractor leaves factory -- 600 rpm slow idle and 2700 rpm fast idle.

DIESEL MODEL

1. Open the fuel shut-off valve located under the fuel tank. Make sure the fuel shut-off control knob is pushed in.

2. Place shift lever in neutral and apply brake lock (Fig. 10-10-9).

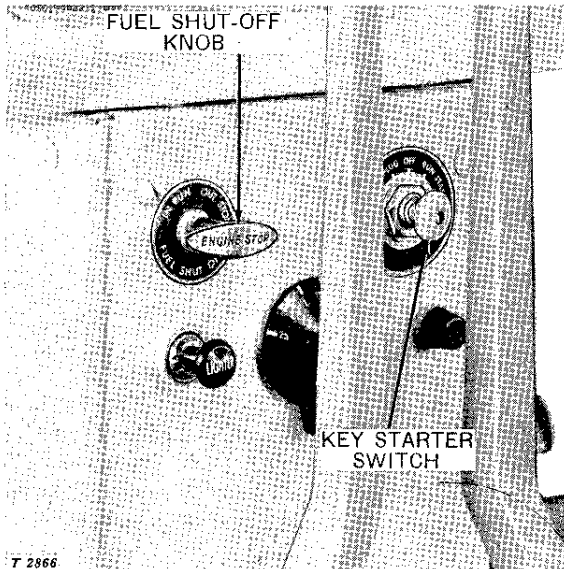


Fig. 10-10-6 -- Starting Controls (Diesel)

3. Turn key starter switch one-eighth turn counter-clockwise to actuate glow plugs. Key switch is spring loaded, and so must be held in counter-clockwise position throughout desired preheating period. Period of time for actuating glow plugs depends on the air temperature.

Refer to the following chart:

Temperature	Preheat Time
Above 40° F.	1 minute
40° F. to 10° F.	1-1/2 to 2 minutes
10° F. to -10° F.	2 to 3 minutes
-10° F. to -20° F.	3 to 4 minutes

4. To insure delivery of fuel to the injectors, move hand throttle to the full speed position (forward) and then move lever back to approximately one-half to three-quarters open.

5. Depress clutch pedal to completely disengage clutch, thus eliminating the need of the starter turning the transmission while starting the engine (Fig. 10-10-9).

6. Turn key starter switch one-eighth turn clockwise to actuate instrument panel; then one-quarter turn clockwise to actuate engine starter.

7. If engine does not begin firing after 15 to 30 seconds of cranking, preheat an additional 1 minute before continuing cranking. Repeat this procedure until the engine starts.

CAUTION: If engine fails to start during the 15 to 30 second cranking period, do not actuate starting switch again until starter stops rotating. Otherwise, serious damage to the starter may result.

If no smoke is expelled from muffler at the initial cranking, it will be necessary to check the fuel system for leaks and to bleed the air out of the system. (See Section 91.)

8. As soon as engine starts, release key starter switch and adjust engine speed to approximately 1000 rpm.

9. Release clutch; warm engine and transmission for five minutes by operating engine at 800 to 1000 rpm. Do not allow engine to operate at idle speed during engine warm up.

COLD WEATHER STARTING

The fuel injected into the turbulence chamber is ignited by the increased temperature due to compression. This temperature is high enough under ordinary operating conditions, but may not be sufficiently high at extremely low outside temperatures to ignite the fuel injected.

NOTE: The engine will start easier while starting at low ambient temperatures if the hand throttle is placed in the one-half speed position and the clutch disengaged. Refer to "Temperature and Preheat Time" table for instructions on proper usage of glow plugs.

If tractor gets completely cold at temperatures below -10° F., it will be necessary to use a booster battery to obtain sufficient cranking speed.

The booster battery and proper preheating should enable starting even under the most severe conditions.

CAUTION: To avoid any possible damage to the engine or starter, it is recommended that ETHER NOT be used as a cold weather starting aid.

AFTER-STARTING INSPECTION

EFFICIENT ENGINE OPERATION (DIESEL)

The governor located in the fuel injection pump is adjusted to run engine at correct speed when tractor leaves factory — 750 rpm slow-idle and 2650 rpm fast-idle speed in overtravel.

The Diesel engine should operate SMOKE-FREE. Black smoke from the exhaust stack indicates unburned fuel normally caused by overloading or dirty injection nozzles. A thorough cleaning of the nozzles should eliminate this problem if it is due to dirty nozzles.

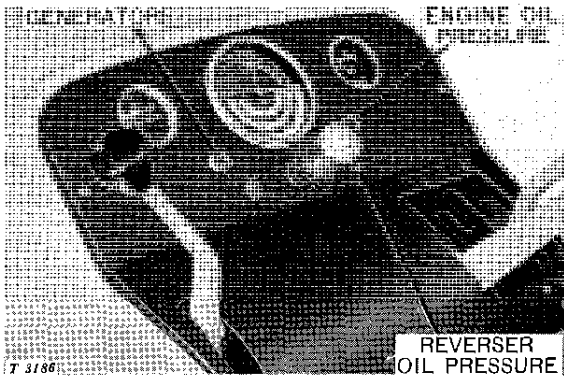


Fig. 10-10-7 -- Tel-Lights

GENERATOR TEL-LIGHT

The tel-light will glow red for a few seconds after ignition is turned on, during cranking, and after engine has fired. If tel-light continues to glow after engine has been running approximately 10 seconds, the battery is discharging. Check the battery, generator, and regulator to determine source of trouble.

NOTE: Tel-light may glow continuously with engine speed at slow idle. This is normal and does not indicate malfunction unless tel-light continues to glow after increased acceleration.

OIL PRESSURE TEL-LIGHT

With engine running and hand throttle advanced, oil pressure tel-light should go out. If indicator glows bright red after engine has been running 10 seconds ignition key should be turned off and cause of reduced oil pressure determined.

REVERSER OIL PRESSURE TEL-LIGHT

This light (marked "CLU") glows red when there is a failure in the direction reverser system. Normally, the light should go out during engine operation. A definite sign of failure is to have this light stay on with engine at speeds of 1900 rpm or over.

WATER TEMPERATURE GAUGE (Warm-up Period)

Note appearance of gauge: "C" (cold), "N" (normal), "H" (hot). Before placing load on engine, allow indicator to rise above "C" zone on gauge and into "N" zone. Oil will then circulate freely, preventing excessive wear on piston rings, cylinder liners, and bearings.

If indicator enters "H" zone, stop engine and allow coolant to cool off slowly. If overheating occurs during next operation of engine, discontinue operation until source of trouble has been determined and remedied. Do not race engine during warm-up period. This wastes fuel and causes excessive wear on engine parts.

STOPPING THE ENGINE

Sudden cooling of a hot engine causes extreme contraction of heated parts. For this reason, allow tractor engine to cool off gradually in cold or freezing weather by idling a few minutes before turning off ignition. In freezing weather, never drain water immediately after stopping.

GASOLINE ENGINE

To stop gasoline engine, first allow it to operate for a short time at full throttle. Then turn key ignition switch counter-clockwise to vertical (OFF) position.

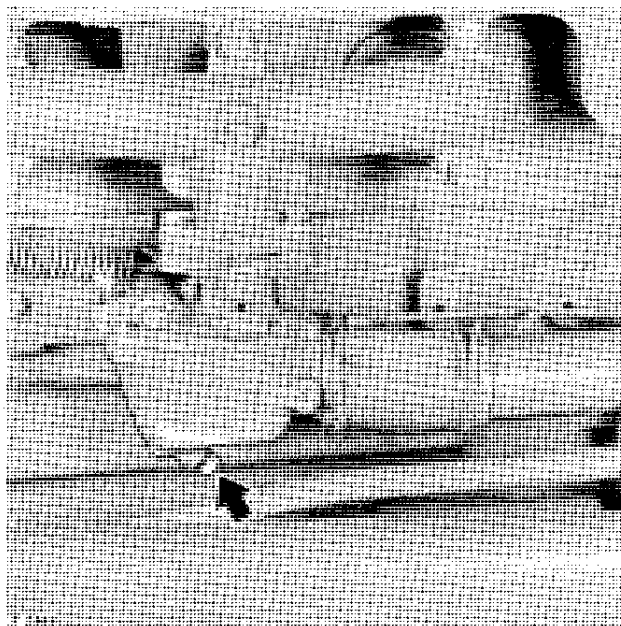


Fig. 10-10-8 -- Carburetor Drain Plug

If tractor is not to be used for several days, shut off gasoline supply at fuel shut-off valve (or valves) located below the gasoline tank (Fig. 10-10-3). Open drain plug on underside of carburetor and drain carburetor. Be sure to replace this plug after draining, to prevent dirt from entering carburetor. Draining will prevent accumulation of gum in carburetor, caused by evaporation of gasoline. This gum is a contributing factor to hard starting and poor engine operation.

DIESEL ENGINE

Stop the engine by performing the following sequence of operations.

1. Allow engine to idle at 1000 rpm for a short time.

2. Turn key switch to "OFF" (vertical position and pull out fuel shut-off control to cut off fuel. Pulling out the fuel shut-off control will place the pump in the "NO FUEL" position.

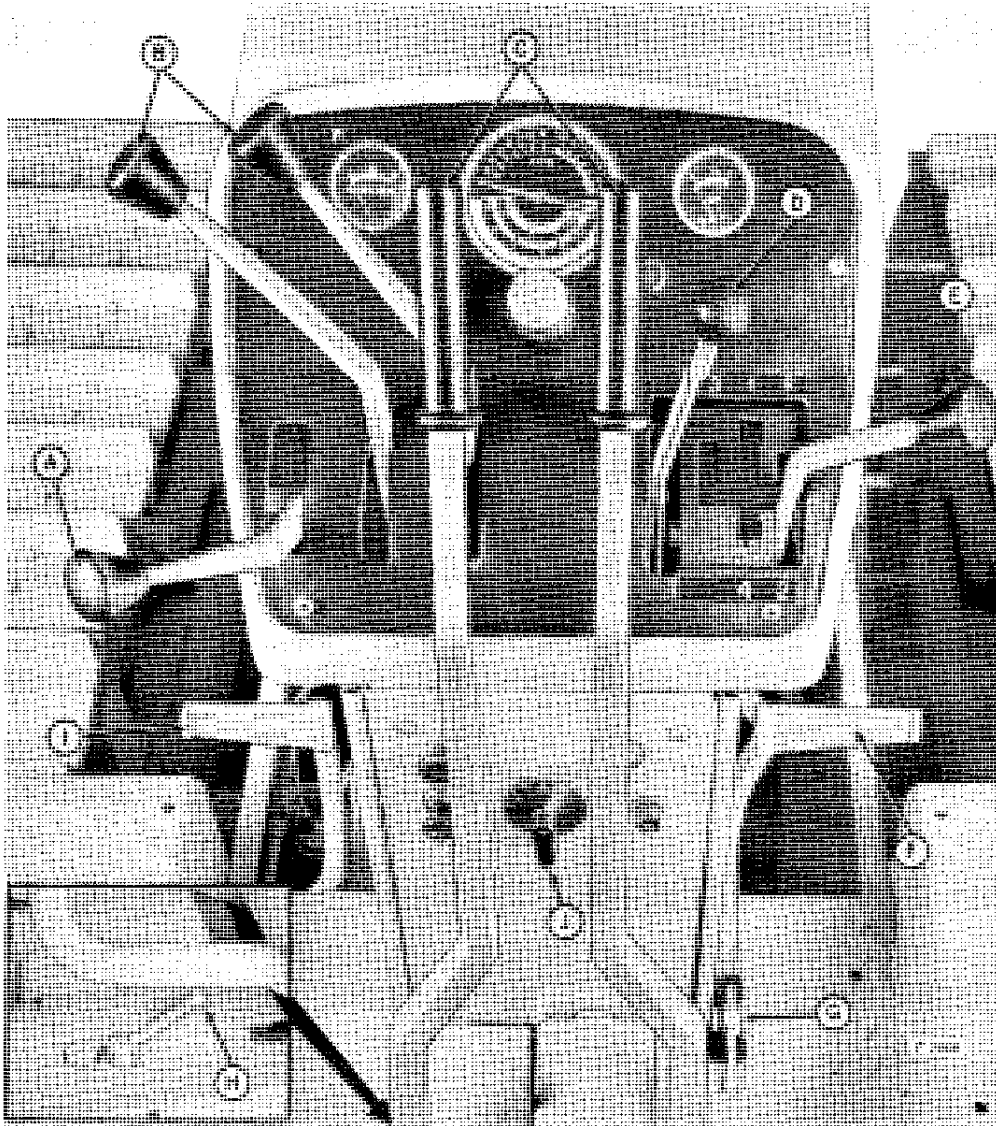
CAUTION: Do not attempt to stop engine by turning off fuel supply at fuel tank shut-off valve. Doing so will cause pump to run dry and damage internal parts.

ENGINE BREAK-IN

Before the tractor was shipped from the factory, all bearings and friction surfaces were correctly fitted, and crankcase was filled with a "breaking-in" oil.

To be sure that all bearing surfaces will be properly lubricated, operate tractor under normal load for the first 20 hours of operation. Avoid light loads and excessive engine idling during this period. Check periodically to be sure that an adequate supply of oil is maintained in the crankcase. If it becomes necessary to add oil during "breaking-in" period either SAE 10W or SAE 5W-20 can be used. At the end of this 20 hour period, "Breaking-in" oil should be drained, oil filter changed, and crankcase filled with new oil in accordance with recommendations in Section 30 of this Manual.

OPERATING THE TRACTOR



- | | |
|--------------------------------------|-----------------------|
| A - Direction Reverser Control Lever | F - Brake Pedal |
| B - Hydraulic System Control Levers | G - Brake Lock |
| C - Steering Levers | H - PTO Shifter Lever |
| D - Hand Throttle | I - Clutch Pedal |
| E - Shift Lever | J - Light Switch |

Fig. 10-10-9 -- Operating Controls

A. DIRECTION REVERSER CONTROL LEVER

The direction reverser lever allows the operator to reverse tractor motion without de-clutching or shifting gears. The lever has two positions—front and rear—which give equivalent forward and reverse speeds for whatever forward gear the tractor is operating in. On tractors equipped with direction reverser, the clutch pedal is used for shifting transmission gears,

or it could also be used for "inching" into a load.

B. HYDRAULIC SYSTEM CONTROL LEVERS

In the double hydraulic system, two control levers are used. The inner lever controls the hydraulic cylinders at rear of tractor; the outer lever controls remote cylinder functions when used. In the single hydraulic system only the

inner control lever is used and it controls all hydraulic functions.

C. STEERING LEVERS

To turn the tractor to the right, pull back on the right steering lever; to turn tractor to the left, pull back on left lever. Pulling back on one lever disengages a steering clutch, stopping flow of power to the track on the same side. Pulling the lever farther back applies a brake which retards or stops the track, making short turns possible.

D. HAND THROTTLE

The hand throttle controls engine speeds. Moving the hand throttle forward increases engine speed; pulling the lever rearward reduces speed. When moving the hand throttle forward, it will strike a stop at 2100 rpm. If faster engine speed is desired, press lever to the right and move forward past the stop.

E. SHIFT LEVER

The shift lever is used to select any one of four forward gears or one reverse gear. A shifting diagram is printed on the panel above and below the shift quadrant.

F. BRAKE PEDAL

The foot pedal, located in front of the right footrest, is provided to slow tractor down when it is in motion. Depressing brake pedal applies both steering brakes evenly without disengaging steering clutches, thereby allowing tractor engine to help slow or stop the tractor.

G. BRAKE LOCK

A brake lock is provided for locking brake pedal in depressed position during parking. This lock is engaged by lifting lock from footrest and inserting it in ratchet on brake while pedal is depressed.

H. PTO SHIFTER LEVER

This control lever engages and disengages the powershaft. When the belt pulley is mounted on the powershaft, the lever is used to engage and disengage the belt pulley. The powershaft is engaged when lever is moved to left.

I. CLUTCH PEDAL

The clutch pedal interrupts the flow of power from the engine to the transmission and powershaft. The clutch is disengaged by depressing the pedal. Releasing the pedal engages the power from the engine to the transmission and powershaft.

J. LIGHT SWITCH

All lights are controlled by the light switch. The switch has four positions as follows:

- "OFF" All light off.
- "L" Bright front lights and white rear light on.
- "B" Bright front lights and red rear light on.
- "D" Dim front lights and red rear light on.

PROMOTING LONGER ENGINE LIFE

The tractors will handle economically and efficiently all jobs within their range of power. Using tractor on loads beyond its power range places excessive strain on all its parts and will eventually result in unnecessary expense and impaired operating efficiency. An overloaded tractor can usually be detected by gradual slowing down in ground speed and slowing down and laboring of engine.

Since starting the engine is accomplished with no more effort than starting the average automobile engine, there should be no reason for prolonged engine idling. (Stop the engine, as you would your automobile engine, when prolonged idling periods would otherwise occur.) Load may be placed on engine as soon as indicator on water temperature gauge enters "N" zone. A full load should not be placed on a "cold" engine. Low operating engine temperatures causes the development of several conditions detrimental to engine operation and life. Incomplete combustion of fuel in a cold engine causes crankcase dilution and forms lacquer or gummy deposits on valves, pistons, and rings. It also causes rapid accumulation of sludge within the engine.

Group 15 SPECIFICATIONS

PERFORMANCE

	<u>DIESEL</u>	<u>GASOLINE</u>
Nebraska Test No.	798	801
Max. drawbar pull (lbs.) . .	7484	7179
(Gasoline tractor weighing 7370 lbs. and diesel tractor weighing 7580 lbs.)		
Max. PTO horsepower . . .	36.31	35.93
Max. drawbar horsepower .	29.31	28.12

ENGINE

Flywheel horsepower (SAE corrected)	42.0	42.0
Torque, (ft-lbs) Max. (SAE corrected) (1500 rpm) . .	100.0	91.5
Torque, (ft-lbs) at 2500 rpm (SAE corrected) . . .	88.2	88.2
Number of cylinders	4	4
Bore and stroke, inches . .	3-5/8 x 3-1/2	3-1/2 x 3
Displacement in cubic inches	145	115
N.A.C.C. or A.M.A. horsepower rating for tax purposes	21.03	19.6
Intake valve clearance (cold)012 in.	.012 in.
Exhaust valve clearance (cold)018 in.	.018 in.
Compression ratio	19 to 1	7.9 to 1
Slow-idle (rpm)	800	600
Fast-idle (rpm)	2650	2700
Working speed range (rpm)	1500 to 2500	1500 to 2500

TRANSMISSION

Type . . . Manually selected, sliding gear with 4 forward speeds and one reverse.

TRAVEL SPEEDS, MPH (No Slip)

	1500 rpm	2100 rpm	2500 rpm
<u>Gear</u>	<u>rpm</u>	<u>rpm</u>	<u>rpm</u>
1st	.85	1.18	1.41
2nd (-15257)	1.25	1.76	2.09
2nd (15258-up)	1.16	1.62	1.93
3rd (-15257)	2.39	3.34	3.98
3rd (15258-up)	1.99	2.78	3.32
4th	3.92	5.49	6.54
Rev. (-15257)	1.43	2.00	2.39
Rev. (15258-up)	1.16	1.62	1.93

DIRECTION REVERSER

Type . Hydraulic wet clutch type giving "on the go" reversing without clutching.

CAPACITIES (U.S. Standards)

Fuel tank	12 gals.
Cooling system	2-3/4 gals.
Engine crankcase (including filter)	6 qts.
Transmission case	9 qts.
Hydraulic system	4 gals.
Direction reverser case	3 gals.
Final drives, each	1-1/2 pts.
Rockshaft housing	1 pt.

DIMENSIONS

Maximum height (inches) (with vertical muffler)	
(Gasoline)	70-7/8
(Diesel)	74-5/16
Height to top of hood	53-5/16 inches
Over-all width (minimum) . . .	61-1/8 inches
Over-all length (5 roller)	
Measured at tracks	98-1/2 inches
To back of regular seat	90-11/16 inches
To back of deluxe seat	93-9/16 inches
Clearance (at drawbar)	12-3/16 inches

SHIPPING WEIGHT (approx.)

(Gasoline)	6900 lbs.
(Diesel)	7000 lbs.

TRACK EQUIPMENT

Track frame	4 or 5 roller
Diameter of roller	7-3/16
Type of bushing	bronze
Upper support idler (5 roller)	1
Diameter of idler (5 roller) . .	4-7/8 inches
Type of bushing	bronze
Track shoes (types and sizes)	
Open center full grouser	12- or 14-inch
All-purpose semi-grouser	12-inch
Steel grouser	10-, 12-, or 14-inch
Snow shoes	12- or 14-inch
Rubber	10-inch
Track tread (center to center)	48 inches
Number of track shoes (each side)	
Four-roller type	32
Five-roller type	36

Total ground contact area (sq. in.):			
	4-roller with		
	4-roller	large idler	5-roller
10-inch shoes:	1178	1155	1385
12-inch shoes:	1413	1386	1662
14-inch shoes:	1649	1617	1935
Ground pressure			
(lbs. per sq. in. with 12-inch shoes)	4.9	5.0	4.1
Length of track			
on ground			
(inches)	58-7/8	57-3/4	69-1/4

STEERING

Type . Manually operated clutch and brake type
Clutches multiple disk
No. of friction surfaces (each clutch) 15
Brakes contracting band
Turning clearance circle
(5 roller) 179 inches

FINAL DRIVES

Induction hardened spur and bull gear type.
Gear reduction ratio in first gear
(engine to axle) 112 to 1
Gear reduction ratio in high gear
(engine to axle) 24 to 1

POWER TAKE-OFF

Conforms to ASAE-SAE standards. 540 rpm
(at 1620 rpm engine speed).
PTO is transmission driven, rear.

BELT PULLEY

Diameter Choice of 9-1/16 or 5-19/32
inches
Face 6-3/8 inches
RPM at 1620 rpm engine speed 1224
Belt speed at 1620 rpm engine speed
(with 9-1/16-inch pulley) 2910 fpm
(with 5-19/32-inch pulley) 1794 fpm

IGNITION SYSTEM (Gasoline)

Type Battery-distributor
Distributor point gap022 inch
Spark plugs:
Size 14 mm
Gap025 inch

ELECTRICAL SYSTEM

Battery (dry) voltage (nominal) 12 volts
Battery specific gravity (full charge) . . . 1.250
Battery terminal grounded positive
Type of generator regulation Voltage
regulator

SERIES 10 WINCH

Drum speed (at 2100 rpm
engine speed) 57-1/2 rpm
Drum diameter 6 inches
Drum capacities:*
(with 1/2-inch cable) 195 feet
(with 5/8-inch cable) 125 feet
Cable speed (at 2100 rpm engine speed):
(with bare drum) 98 fpm
(with full drum) 157 fpm
Cable pull (at 2100 rpm engine speed):
(with bare drum) 10,600 lbs.
(with full drum) 6,650 lbs.

**Calculated capacities-allowance must be made
for looseness and uneven spooling.*

*(Specifications and design subject to change
without notice.)*