800B Diesel Tractor

Operators Manual

9-423

CASE

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THIS SAFETY ALERT SYMBOL INDICATES IMPORTANT SAFETY MESSAGES IN THIS MANUAL. WHEN YOU SEE THIS SYMBOL, CAREFULLY READ THE MESSAGE THAT FOLLOWS AND BE ALERT TO THE POSSIBILITY OF PERSONAL INJURY OR DEATH.

M171B

If Safety Decals on this machine use the words **Danger, Warning or Caution,** which are defined as follows:

- **DANGER:** Indicates an immediate hazardous situation which if not avoided, will result in death or serious injury. The color associated with Danger is RED.
- **WARNING:** Indicates an potentially hazardous situation which if not avoided, will result in serious injury. The color associated with Warning is ORANGE.
- **CAUTION:** Indicates an potentially hazardous situation which if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices. The color associated with Caution is YELLOW.

If Safety Decals on this machine are ISO two panel Pictorial, decals are defined as follows:

- The first panel indicates the nature of the hazard.
- The second panel indicates the appropriate avoidance of the hazard.
- Background color is YELLOW.
- Prohibition symbols such as  and  if used, are RED.

WARNING

IMPROPER OPERATION OF THIS MACHINE CAN CAUSE INJURY OR DEATH. BEFORE USING THIS MACHINE, MAKE CERTAIN THAT EVERY OPERATOR:

- Is instructed in safe and proper use of the machine.
- Reads and understands the Manual(s) pertaining to the machine.
- Reads and understands ALL Safety Decals on the machine.
- Clears the area of other persons.
- Learns and practices safe use of machine controls in a safe, clear area before operating this machine on a job site.

It is your responsibility to observe pertinent laws and regulations and follow Case Corporation instructions on machine operation and maintenance.

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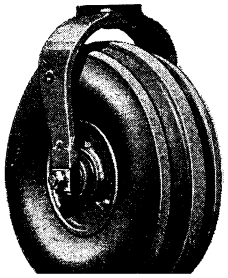
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GENERAL PURPOSE TRACTOR

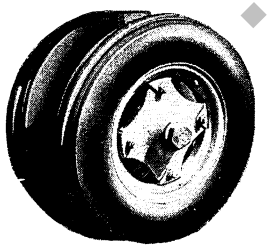
3 *Tractors In* 1



Adjustable Front Axle Attachment



Single Front Wheel Attachment



Dual Front Wheel Attachment

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GENERAL SPECIFICATIONS FOR CASE 800 SERIES DIESEL TRACTORS

ENGINE

General

Type	4 Cylinder, 4 Stroke Cycle, Valve-in-Head, Diesel Engine
Firing Order	1-3-4-2
Bore	4⅛ Inches
Stroke	5 Inches
Piston Displacement	267 Cubic Inches
Compression Ratio	15 to 1
Cylinder Sleeves	Removable, Wet Type
Full Governed Engine Speed at No Load (Approximate)	1950 RPM
Full Governed Engine Speed at Full Load	1800 RPM
Engine Idling Speed	600 RPM
Valve Tappet Clearance (Both Intake and Exhaust)	.012 Inch (cold)
Cold Weather Starting Aid	Ether Capsule Type Starting Aid Standard Equipment (Use only 7 CC Capsules)
Diesel Fuel	Number 2 Diesel Fuel (Refer to Fuel Specification Section)

Piston Rings

Rings Per Piston	4
Number of Compression Rings	3
Number of Oil Rings	1

Piston Pins

Type Pins	Full Floating Type

Connecting Rods

Type Bearings	Replaceable Precision, Steel Back, Copper-Lead Alloy Liners

Main Bearings

Number of Bearings	5
Type Bearings	Replaceable Precision, Steel Back, Copper-Lead Alloy Liners

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APPROXIMATE CAPACITIES

	U. S.	Imperial
Cooling System (Gallons)	7.5	6.2
Fuel Tank (Gallons)	22	18.3
Engine Crankcase (including oil filter) (Quarts)	9	7.4
Air Cleaner Oil Cup (Pints)	4	3.3
Torque Converter Housing (Gallons)	4	3.3
Transmission and Differential (Gallons)	15	12.4
Rear Axle Housing (Model 803 Only) (Quarts)	4.5	3.7
Hydraulic Control Housing (With Eagle Hitch) (Quarts)	10.5	8.7
Hydraulic Control Housing (Without Eagle Hitch) (Quarts)	9	7.4
Power Steering System (Models 801, 803) (Quarts)	3.75	3.1
(Models 800, 802) (Quarts)	2	1.7
Power Steering Reservoir Only (All) (Pints)	1.5	1.2

NOTE: Always add additional Automatic Transmission Fluid (Type A) to the hydraulic housing for each empty Case portable cylinder connected to the system.

RECOMENDED LUBRICANTS

Description	Above 80°F.	80° to 32°F.	32° to –20°F.	Below –20°F.
Engine Crankcase*	SAE 30**	SAE 20-W**	SAE 10-W	SAE 5-W
Fuel Injection Pump*	SAE 30**	SAE 20W**	SAE 10-W	SAE 5-W
Air Cleaner Oil Cup	SAE 30	SAE 20-W	SAE 10-W	SAE 5-W
Rear Axle Housing (803 Only)	SAE 90	SAE 90	SAE 80	SAE 80
Generator	Light Oil	Light Oil	Light Oil	Light Oil
All Pressure Fittings	No. 1 Gun Grease	No. 1 Gun Grease	No. 1 Gun Grease	No. 1 Gun Grease

*Use a stable, high quality "Heavy Duty" Type engine lubricating oil designed primarily for diesel engine usage. The oil should have a service designation of either "Service DG — Favorable Diesel Engine Service" "Service" DM — Moderate to Severe Diesel Engine Service (also referred to as "Series 1") or "Service DS — Severe Diesel Engine Service," (also referred to as "Series 2 or 3") depending upon the operating conditions and sulphur content of the fuel.

**For the first 480 hours, use oil one grade lighter than recommended in table when temperature is above 32 degrees F.

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RUN-IN PROCEDURE

IMPORTANT

AT ALL TIMES, MAINTAIN THE CORRECT OPERATING TEMPERATURE.

ALWAYS OPERATE ENGINE AT FULL THROTTLE DURING RUN-IN PERIOD. DO NOT IDLE THE ENGINE.

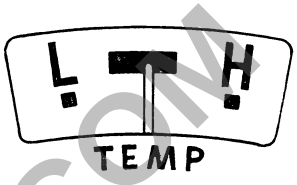


Figure 35

Careful attention must be given to proper "Run-In" procedure. Piston rings and cylinder sleeves can be seriously damaged in a new engine if "run-in" instructions are not followed. The following procedure is recommended:

1. Load

For the 1st 50 hours, maintain a normal field load. Do not "baby" the engine, but do not "lug" it. (Engine must not be "lugged" down below its full load governed engine speed.)

2. Engine Speed

During "run-in" period, always operate the tractor at full governed RPM (throttle wide open). Avoid idling at reduced engine speed.

3. Operating Temperature

Maintain the correct coolant temperature as shown above.

Low operating temperatures contribute to the formation of destructive acids and harmful deposits in the engine.

4. Crankcase Oil

Case Diesel Tractors are shipped from the factory with a special "run-in" oil in the crankcase. After the first 20 hours of operation, drain this oil while the engine is hot and replace it with fresh oil.

NOTE: For the next 480 hours, change the crankcase oil at the recommended 120 hour intervals, but use one grade lighter oil than recommended in the table on page 35 when the air temperature is above 32 degrees F. **Do not drain special run-in oil until the engine has been operated 20 hours.**

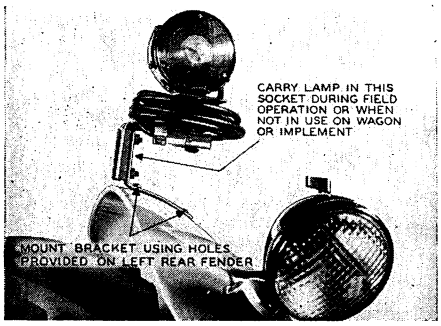
5. TORQUE CONVERTER HOUSING OIL FILTER

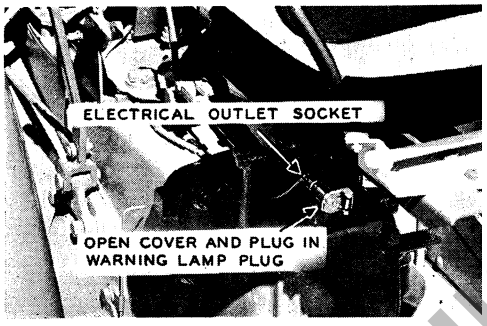
After the **first 20 hours** of operation, remove and clean the Torque Converter Housing oil filter for the initial run-in cleaning. Refer to Page 49.

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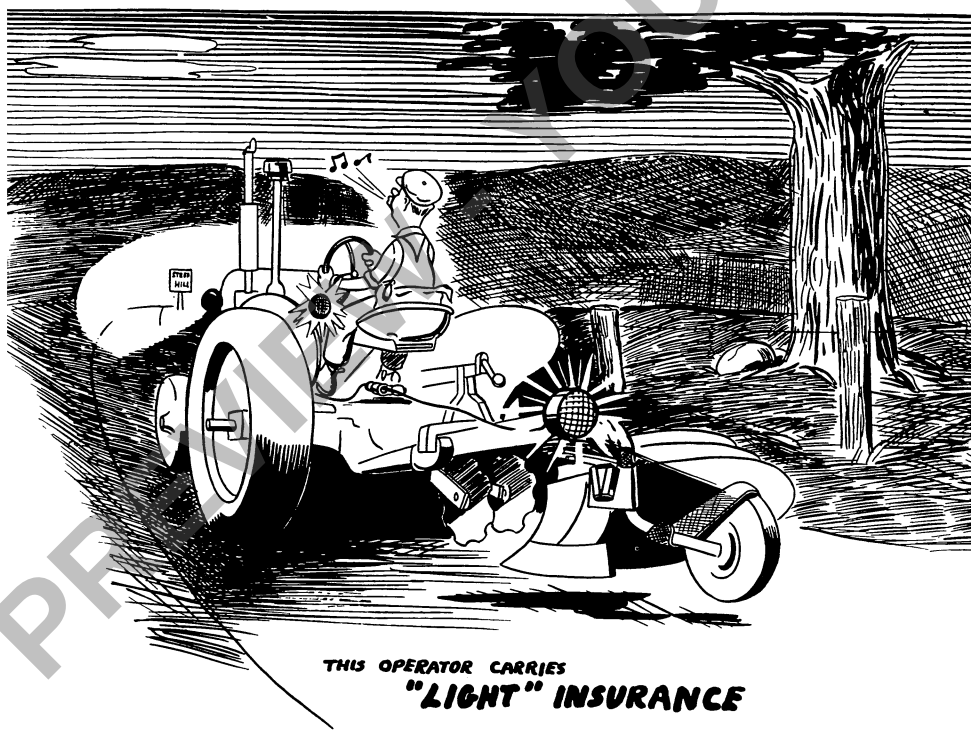
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IMPLEMENT WARNING LAMP





The implement warning lamp can be ordered from your Authorized Cas Dealer for use when trailing implements or wagons over public thoroughfare after dark. **Keep your machines and implements well outlined with lights and reflectors.**



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SERVICE SUGGESTIONS

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ENGINE STALLS

Cause	Remedy
1. No fuel in tank.	1. Refill fuel tank. Bleed fuel system. Page 148.
2. Fuel tank shut-off valve closed.	2. Open shut-off valve. Bleed system, Page 148.
3. Unsuitable fuel or water in fuel.	3. Drain fuel system and refill with recommended fuel, Page 23. Bleed fuel system, Page 148.
4. Fuel tank breather plugged.	4. Wash breather filter and reinstall as described on Page 157.
5. Bleeder by-pass valve open.	5. Close bleeder by-pass valve. Page 148.
6. One or more fuel filters plugged.	6. Check and service filters as described on Pages 150 through 157.
7. Air leak in fuel line from the tank to first stage filter or to the transfer pump.	7. This will be indicated when air collects in fuel filters. Tighten and inspect fittings. Bleed fuel system, Page 148.
8. Air cleaner plugged.	8. Remove air cleaner oil cup, removable screens and intake pipe. Service as described on Page 160.
9. Coolant temperature too low.	9. Keep coolant temperature within "Center bar" on temperature gauge.
10. Lack of coolant in engine (overheating).	10. Coolant level must be maintained well above radiator tubes.
11. Gum or varnish deposits forming in fuel, resulting in both plugging the fuel system and binding the governor action.	11. Use a "Diesel Fuel Conditioner" as described on Pages 32 and 33 of the Fuel Section.

ENGINE OVERSPEEDS OR SURGES

(Call Your Authorized Case Dealer)

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POWER TAKE-OFF CLUTCH ADJUSTMENT

The power take-off clutch will need adjustment occasionally to compensate for normal wear. Adjust the clutch immediately if slippage is noted when a power take-off driven machine is attached and started. Failure to make the adjustment will cause excessive wear on the clutch plates resulting in eventual breakdown.

To adjust the power take-off clutch:

1. Have the power take-off clutch hand lever in the full forward, disengaged position.

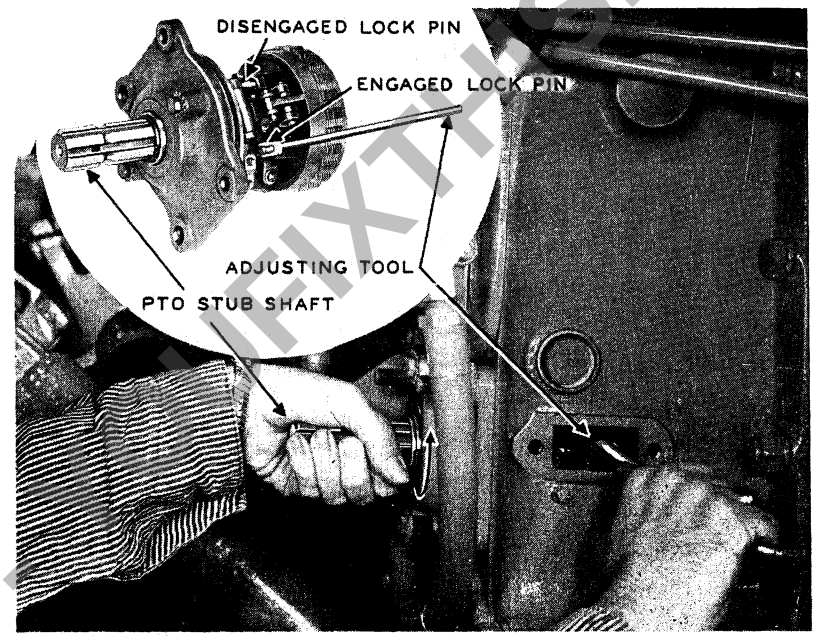


Figure 170. Adjusting PTO Clutch

2. Remove the adjusting hole cover from the hydraulic housing, Figure 170. Using a flashlight, look through the hole and manually turn the PTO shaft until the 2 spring loaded lock pins are visible. You will note that one pin is engaged in the "in" position while the other is disengaged.
3. Insert the adjusting tool through the hole as shown and pull the engaged lock pin out with the forked end of the tool, Figure 170.
4. **To tighten the clutch,** turn the PTO stub shaft counter-clockwise, as shown until the disengaged lock pin drops into a notch. One adjustment is usually sufficient.
5. After each adjustment, check the engagement of the power take-off clutch hand lever by pulling it fully rearward. A correctly adjusted clutch will require approximately 60 to 65 pounds pull and will engage with a decided "snap" of the lever.

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STORING THE TRACTOR

Whenever the 800 Series Diesel Tractor is to remain idle for an extended period of time or whenever it is to be removed from storage, certain precautions must be observed — especially as to protecting the fuel system.

To protect the diesel fuel system, the valves and the cylinder sleeve walls, proceed as follows:

1. Clean the tractor thoroughly and completely lubricate it as directed on Page 35.

2. While the engine is still hot from operation:
   a. Drain the crankcase and refill it with a good grade of new engine oil.
   b. Drain and clean the oil filter and install a new element.
   c. Drain, clean, and refill the air cleaner oil cup with clean oil. Remove and clean the screens, Pages 160 through 162.

3. Drain the diesel fuel tank and pour one or two gallons of Diesel Flushing Oil into the fuel tank.

The following commercial Diesel Flushing Oils — or the equivalent — may be used:

Solnus XXX	Sun Oil Co.
VM 1102	Socony Vacuum Oil Co.
Carnea Oil #21	Shell Oil Co.
Alweather Oil	Sinclair Refining Co.
Capella Oil AA	The Texas Co.
Texaco Almag	The Texas Co.
No. 10C	General Electric Co
Wemco C	Westinghouse Electric Co
Lonco #71	London Chemical Co.

If flushing oil is not available, a mixture of 50 per cent SAE 10-W engine crankcase oil and 50 per cent pure white kerosene may be used.

4. Start and operate the engine until a blue-white smoke appears at the exhaust. This indicates the regular fuel in the filters has been used up and the flushing oil is being burned. Operate the engine for an additional ten minutes before stopping it.

5. While the engine is still hot, drain the coolant from the cooling system. After the system is drained, leave the radiator and engine block drains open and loosen the radiator cap to release pressure on the gasket. Place a warning tag on the radiator cap stating that cooling system has been drained.

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