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MANUAL PREVIEW

Detroit Diesel

Operator's Manual

6-V71, 8V-71,

12V-71 & 16V-71

Diesel Engines

Operator's Manual

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DD-O-V-71 SER

V-71 ENGINES

MANUAL PREVIEW

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SERVICE AND PARTS INFORMATION

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TABLE OF CONTENTS

SUBJECT	PAGES
DESCRIPTION	
Principles of Operation	4
General Description	5
Model Description, Rotation and Accessory Arrangement	6
General Specifications	7
Engine Model and Serial Number Designation	8
Built-In Parts Book	8
ENGINE SYSTEMS	
Fuel System	10
Air System	13
Lubricating System	19
Cooling System	22
ENGINE EQUIPMENT	
Instrument Panel, Instruments and Controls	27
Engine Shut-Down and Alarm Systems	28
Manual Shut-Down System	28
Automatic Mechanical Shut-Down System	28
Automatic Electrical Shut-Down System	31
Alarm System	32
Governors	34
Transmissions	35
Power Take-Off Assemblies	35
Torqmatic Marine Gears	38
Twin Disc Marine Gears	40
Snow-Nabstedt Marine Gear	41
Torqmatic Converters	41
Starting Systems	41
Electrical Starting System	41
Hydraulic Starting System	42
Cold Weather Starting Aids	45
OPERATING INSTRUCTIONS	
Engine Operating Instructions	47
A.C. Power Generator Units	51
LUBRICATION AND PREVENTIVE MAINTENANCE	
Lubrication and Preventive Maintenance	55
Diesel Fuel Oil Specifications	69
Lubricating Oil Specifications	70
ENGINE TUNE-UP PROCEDURES	
Engine Tune-Up	71
Exhaust Valve Clearance Adjustment	72
Timing Fuel Injectors	75
Limiting Speed Mechanical Governor Adjustment (6, 8 and 12V)	76
Limiting Speed Mechanical Governor Adjustment (16V)	83
Variable Speed Mechanical Governor Adjustment (6, 8 and 12V)	89
Variable Speed Mechanical Governor Adjustment (16V)	95
Variable Speed Hydraulic Governor Adjustment (6, 8 and 12V)	99
Variable Speed Hydraulic Governor Adjustment (16V)	105
Limiting Speed Hydraulic Governor Adjustment (16V)	111
Hydraulic Governor (EG-B Electric) (6, 8 and 12V)	119
Mechanical Output Shaft Governor and Linkage Adjustment	125
Hydraulic Output Shaft Governor and Linkage Adjustment	129
TROUBLE SHOOTING	133
STORAGE OF ENGINE UNITS	138
BUILT-IN PARTS BOOK	143
ALPHABETICAL INDEX	163



Fig. 5 - Typical Light-Duty Air Cleaner

supports the inner cup and is a reservoir for oil and a settling chamber for dirt.

Maximum protection of the engine against dust and other forms of air contamination is possible if the air cleaner is serviced at regular intervals. The light-duty oil bath air cleaner, Fig. 5 should be serviced as follows:

1. Loosen the wing bolt and remove the air cleaner assembly from the air inlet housing. The cleaner may then be separated into two sections; the upper section or body assembly contains the filter element, the lower section consists of the oil cup, removable inner cup or baffle, and the center tube.
2. Soak the body assembly and element in fuel oil to loosen the dirt; then flush the element with clean fuel oil and allow it to drain thoroughly.
3. Pour out the oil, separate the inner cup or baffle from the oil cup, remove the sludge and wipe the baffle and outer cup clean.
4. Push a lint-free cloth through the center tube to remove dirt or oil.
5. Clean and check all the gaskets and sealing surfaces to ensure air tight seals.

6. Refill the oil cup to the oil level mark only, install the baffle, and reassemble the air cleaner.
7. Check the air inlet housing before installing the air cleaner assembly on the engine. The inlet will be dirty if air cleaner servicing has been neglected or if dust laden air has been leaking past the air cleaner to air inlet housing seals.
8. Make sure that the air cleaner is seated properly on the inlet housing and the seal is installed correctly. Tighten the wing bolt until the air cleaner is securely mounted.

The heavy-duty oil bath air cleaner, Fig. 6, should be serviced as follows:

1. Loosen the wing nuts and detach the lower portion of the air cleaner assembly.
2. Lift out the removable element assembly and hold it up to a light. An even, bright pattern of light through the wire element indicates it is clean. Even a partially plugged element must be cleaned with a suitable solvent or fuel oil and blown out with compressed air to remove any dirt, lint or chaff.

One of the most important steps in properly cleaning the tray type oil bath air cleaner is a step that is most overlooked. Unless the filter



Fig. 6 - Heavy-Duty Oil Bath Air Cleaner

PRESSURIZED CYLINDER STARTING AID

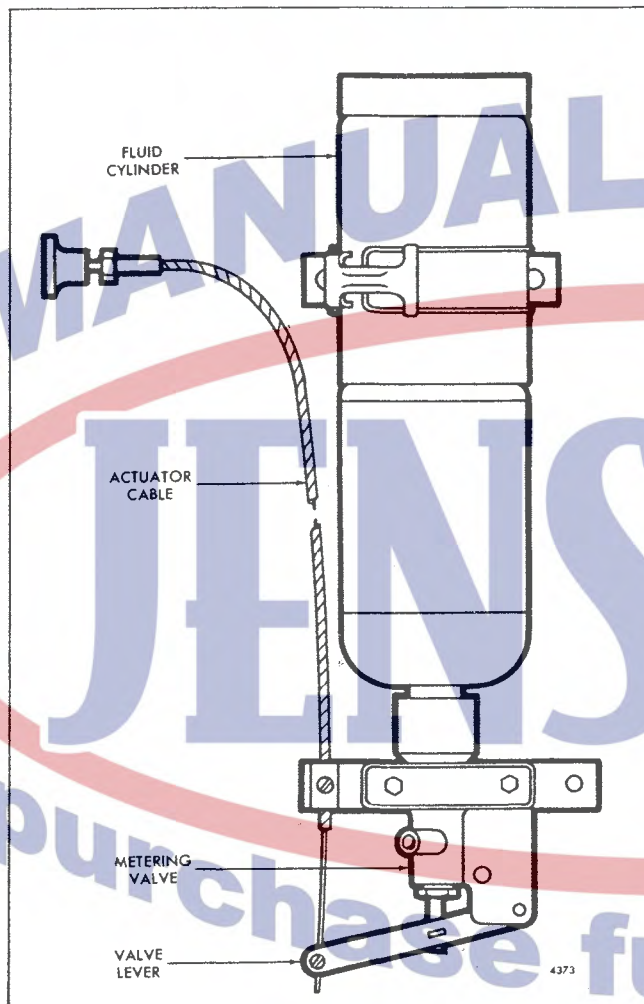


Fig. 15 - "Quick Start" Assembly

Operation

Start the engine during cold weather, using the "Quick Start" starting aid system (Fig. 15) as follows:

1. Press the engine starter button.
2. Pull out the "Quick Start" knob for one or two seconds, then release it.

3. Repeat the procedure if the engine does not start on the first attempt.

CAUTION: Do not crank the engine more than 30 seconds at a time when using an electric starting motor. Always allow one minute intervals between cranking attempts to allow the starting motor to cool.

Lubrication and Preventive Maintenance

Periodically perform the following service items to assure good performance:

1. Remove the fluid cylinder and lubricate the valve around the pusher pin under the gasket with a few drops of oil.
2. Lubricate the actuator cable.
3. Actuate the valve with the cable to distribute the oil on the cable and allow the oil to run down through the valve.
4. Remove any dirt from the orifice by removing the air inlet housing fitting, the orifice block and the screen and then blow air through the orifice end only.
5. Assemble and tighten the air inlet housing fitting to the actuator valve and tube.
6. Check for leakage of fluid (fogging) on the outside of the engine air inlet housing by actuating the starting aid while the engine is stopped. If fogging occurs, disassemble and retighten the air inlet housing fitting to the housing.

CAUTION: Do not actuate the starting aid more than once with the engine stopped. OVER-LOADING THE ENGINE AIR BOX WITH THIS HIGH VOLATILE FLUID COULD RESULT IN A MINOR EXPLOSION.

7. Check the fluid cylinder for hand tightness.



Fig. 5 - Adjusting Maximum No-Load Engine Speed

droop setting of 3% will reduce the speed to approximately 1-1/2% above rated speed at full travel of the centrifugal governor power piston). With the speed adjusting screw at this setting during normal operation (i.e., with the electric section controlling), the centrifugal governor power piston will be held in its maximum fuel position.

If adjustment of the maximum no-load speed is required, proceed as follows:

1. Disconnect the wiring at the receptacle on the governor cover.
2. Start the engine and run it at no-load.
3. Turn the speed adjusting screw (Fig. 5) until the desired speed is obtained. Turning the screw counterclockwise will decrease the speed setting.

Adjust Needle Valve

When starting the engine for the first time, eliminate any air which may be trapped in the actuator oil passages as follows:

1. Open the needle valve of the centrifugal governor section (Fig. 6) until the engine hunts or surges. After a half minute, gradually close the needle valve until the engine speed just stabilizes. Closing the needle valve farther than necessary will make the governor slow to return to normal speed after a load change. Never close the needle valve tight.
2. Test the action by manually disturbing the speed of the engine. The engine should promptly return to its original steady-state speed with only a small overshoot or undershoot.

Speed Droop Adjustment

The governor is set with approximately 3% droop when shipped from the factory. When the electric governor section is controlling the engine, the speed droop adjustment has no effect on operation and should be left as factory set. When, for some reason, the centrifugal governor section is controlling the engine, the speed droop setting can be adjusted, if necessary, to suit the operating requirements. The governor should never be set at "zero" droop unless the unit is maintaining the frequency of paralleled alternators or is operating as a single, isolated unit. Not more than one unit in a system of paralleled alternators with engines controlled by centrifugal governors can be operated on "zero" droop.



Fig. 6 - Location of Centrifugal Governor Needle Valve