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MANUAL PREVIEW

J. I. Case

Service Manual

Case-O-Matic

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CA-S-CAS-O-MAT

800 SERIES TRACTORS CASE-O-MATIC DRIVE

The torque convertor system of the Case-O-Matic drive consists of the following units:

Oil Manifold

The oil manifold is located on the right hand side of the torque convertor housing and contains:

Spur gear oil pump which supplies the entire convertor system with oil Figure A-1.

Oil pump relief valve - protects pump against extreme pressure from cold oil - set at 250 PSI.

Suction pipe from the oil reservoir to the oil pump Figure A-2.

Convertor oil filter which can be removed for cleaning.

Convertor Control Valve

The convertor control valve is located on the left hand side of the convertor housing. The convertor control valve has two spools which have two positions - Neutral and Operating.

Upper spool directs the oil to the Single Disc Direct Drive Clutch.

Lower spool directs the oil to the Multiple Disc Main Powr-Clutch.

NOTE: The upper (Direct Drive) spool is equipped with a lock plate so the lower (Main Powr-Clutch) spool is always moved into operating position first. The main powr-clutch is always engaged first to provide a smooth "pick-up" of the load through the torque convertor.

Pressure Regulator Valve - the pressure regulator valve is located in the control valve body and regulates the engaging speed of the main powr-clutch and the oil pressure to both powr-clutches.

"Quick Release" Check Valve - allows the oil that is holding Main Powr-Clutch in engagement to by-pass orifice in regulator valve and return to sump quickly when the clutch is released.

Torque Convertor Unit

The torque convertor unit consists of the following:

Single stage torque convertor - can hydraulically match the engine torque to load - up to double the engine torque.

Multiple disc main powr-clutch – actuated by hydraulic piston through control valve. Connects engine and converter to transmission.

Single disc direct drive clutch – actuated by hydraulic piston through control valve. Locks turbine assembly in converter to flywheel to provide direct drive from engine flywheel to transmission through the main multiple disc powr-clutch.

Converter relief or regulator valve located on converter unit, maintains approximately 40 PSI oil pressure in converter whenever engine is running to prevent cavitation in turbine assembly.

Oil pump drive gear located on converter between main powr-clutch and turbine assembly Figure A-1 drives spur gear converter oil pump.

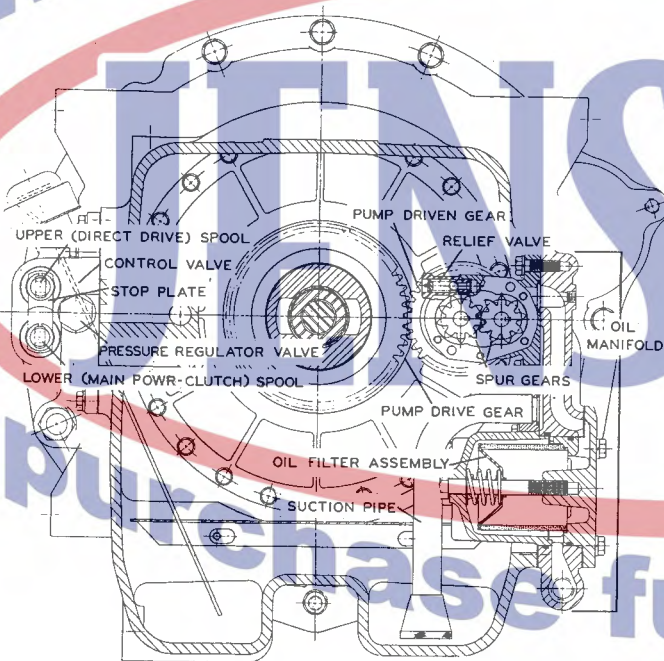


Figure A-1

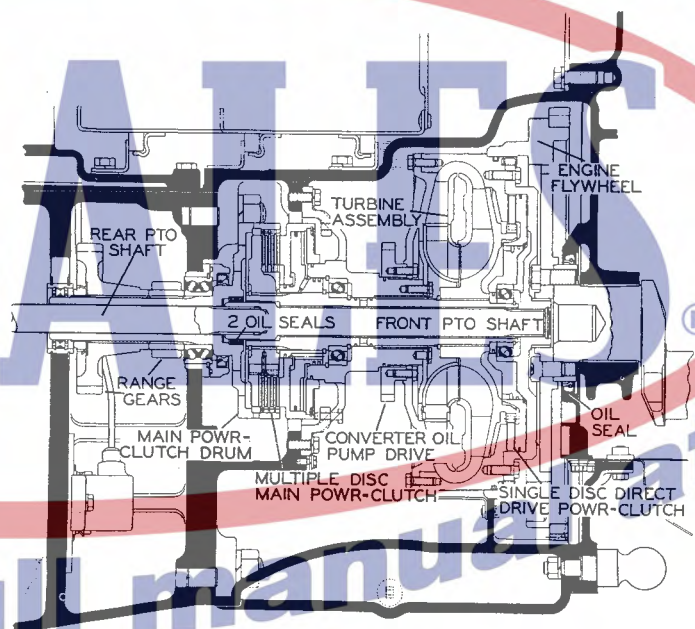


Figure A-2

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The following pages illustrate the oil flow and the parts that turn when the tractor is in neutral or operating in either direct drive or torque converter drive. Study these illustrations carefully as they will aid you in your service diagnosis.

Figures A-4 through A-8 illustrate the oil flow and parts that turn for the 800 Series Tractor.

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A-3

Figure A-3 Cut-A-Way View Showing Powr-Clutches, Torque Converter, PTO Shaft and Range Gears

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Case-O-Matic Pressure Checks

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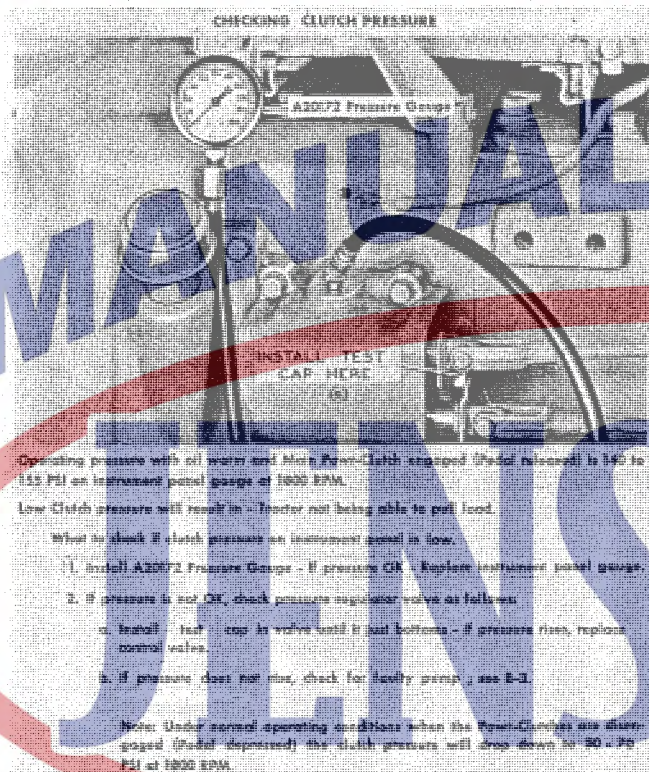


Figure B-1

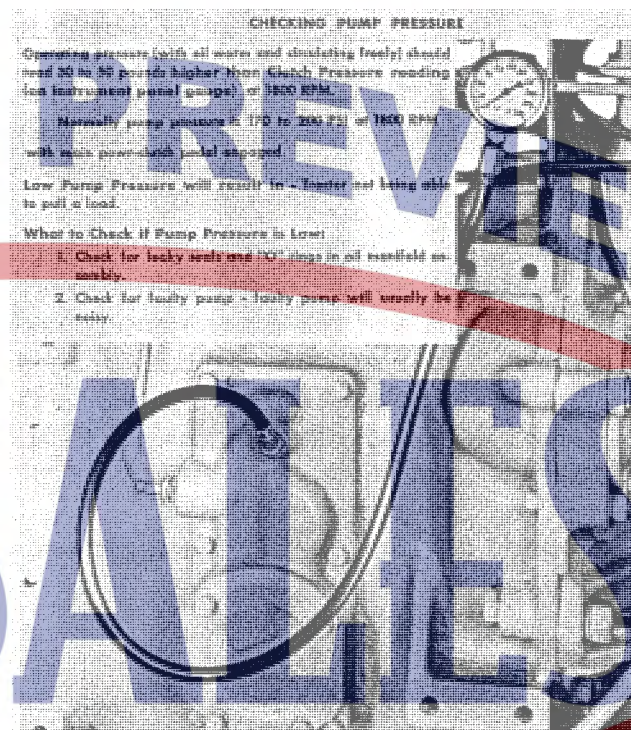


Figure B-3

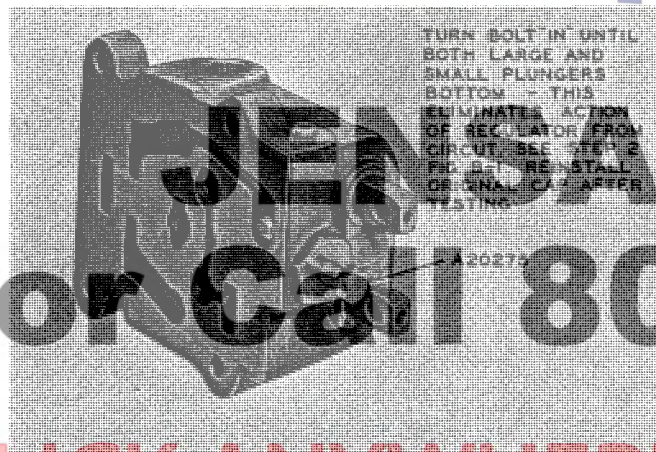


Figure B-2



Figure B-4

HYDRAULIC ADAPTER HOUSING

The hydraulic adapter housing on the 400 B and 600 B Tractor is composed of the following units:

1. The Hydraulic Control Valve Interlock and Filter.
2. Torque Converter Control Unit.
3. Torque Converter Pressure Regulator Valve.

The following pages in this section of the manual cover the identification and removal of the above three units.

Tractor Hydraulic Control Valve, Interlock and Filter

All 400 B and 600 B Case-O-Matic Drive Tractors are equipped with a special hydraulic control valve assembly which differs from the 200 B, 300 B and 500 B Series Tractors.

The following instructions cover the disassembly and identification of these two types of Control Valves.

Servicing Tractor Hydraulic Control Valves on 400 B and 600 B Case-O-Matic Drive Tractors

General

Tractors equipped with "Case-O-Matic" drive may have any of the following hydraulic valve combinations:

1. Eagle Hitch and portable ram valves.
2. Eagle Hitch valve only.
3. Portable ram valve only.
4. No tractor hydraulic system.

The pressure for the tractor hydraulic system is supplied by a ten gallon per minute pump attached to the underside of the hydraulic adapter plate and driven from the torque converter drive gear.



Figure C-1

REMOVING AND SERVICING TRACTOR HYDRAULIC CONTROLS

The controls can be serviced without removing the complete hydraulic adapter housing from the torque tube. If it is removed, support the adapter housing on two blocks so the suction tubes from the hydraulic pumps are clear of the work bench.

Hydraulic controls, in most instances, can be readily serviced without removing the adapter housing from the torque tube.

In order to obtain a clearer view, the following illustration shows the housing removed from the tractor:

1. Remove 1/4 inch roll pin from upper end lower crank lever, Figure C-2.
2. Insert drift through housing and drive pin from lower crank.
3. Turn cranks rearward until they clear the spool.
4. Extract attaching bolts and remove cover gaskets and controls.
5. Notice the length of the attaching bolts. The four center bolts are 1/4 inch shorter than the two bolts on each end. This is true for both single and double controls.
6. The gaskets between the top cover and the control valves and the base are all identical. They must be placed properly, as illustrated in Figure C-2, so no port openings are closed by the gasket.



Figure C-2



VALVE FOR 200 300B
AND 500B TRACTORS

VALVE FOR 400B
600B TRACTORS

Figure C-3



HYDRAULIC CONTROL TOP COVER
FOR 400 AND 600 TRACTORS

Figure C-4

NOTE: The hydraulic control valves for the torque converter are different from those used on the non-torque converter tractor as shown in Figure C-3. These valves are not interchangeable.

Servicing Tractor Hydraulic Oil Filter

1. Thoroughly clean all dirt from outer surface of filter cap.
2. Remove the four bolts from the cap and slide filter from housing.
3. Thoroughly wash in solvent and blow clean with compressed air.
4. Examine the edge wound paper filter for cracks or imbedded dirt. Replace with new element if necessary.



TRACTOR HYDRAULIC FILTER

Figure C-5

Installing Filter

1. Place filter element in cavity, being certain that the element is seated squarely in the inner sleeve.
2. Install outer cover with "O" ring and spring loaded retainer cap.
3. Install the four bolts in place and draw cap up evenly.
4. Start tractor and allow hydraulic oil to become warm. Operate hydraulic valves and check for evidence of oil leaks around the filter cap.

CASE-O-MATIC OIL PUMP

Oil Manifold (800 Series Tractor)

The oil manifold on the right hand side of the torque converter housing on 800 series tractors contains the oil pump, suction pump and oil filter assembly. Figures E-1 and E-2 illustrate the removal and installation of the oil pump and suction pump.

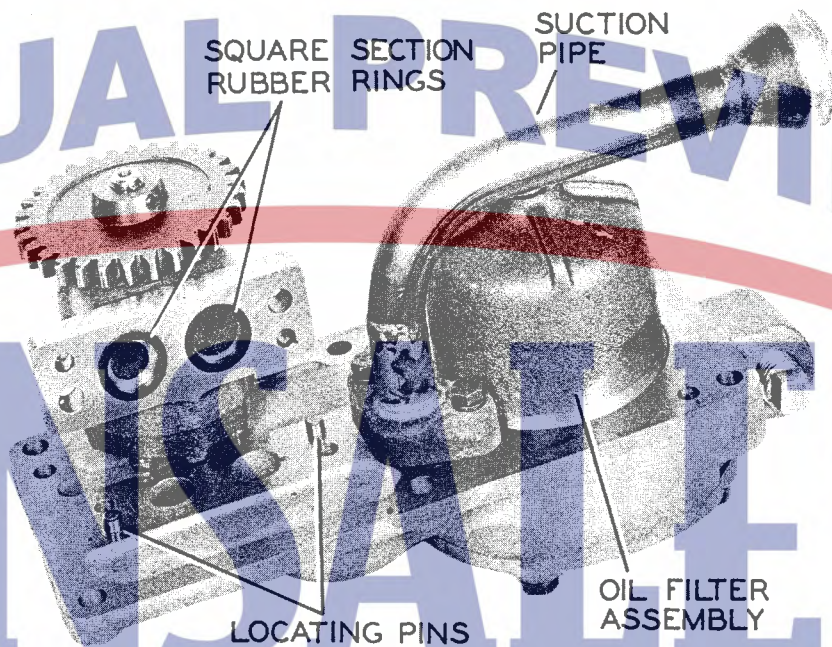


Figure E-1

SQUARE SECTION
RUBBER RING



Figure E-2

Servicing The Oil Pump
400 B - 600 B And 800 Series Tractors

RELIEF VALVE

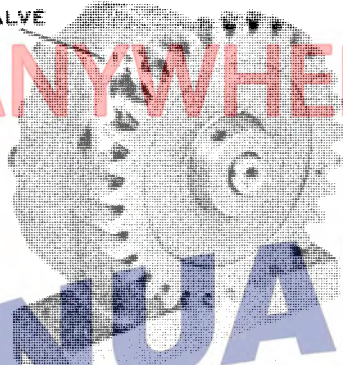


Figure E-3

USE NO. 2 TRUARC PLIERS

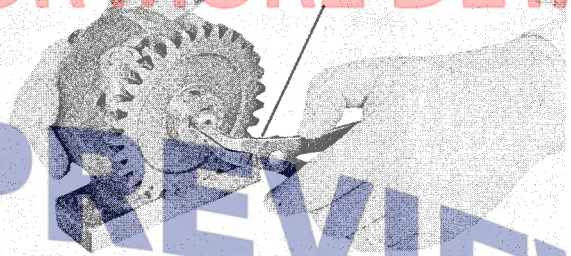


Figure E-6



Figure E-4



Figure E-7

WHEN INSTALLING GEAR MAKE SURE
ALLEN HEAD SET SCREW IS IN DETENT
ON SHAFT

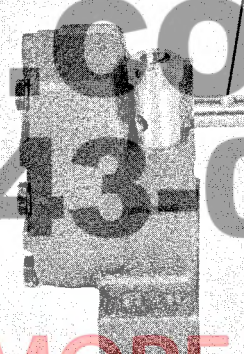


Figure E-8

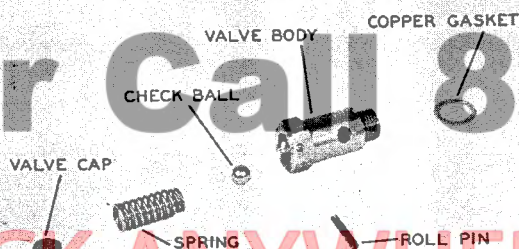


Figure E-5
Oil Pump Relief Valve

Attach the loading tool to the converter housing as shown in Figure F-2. Attach a suitable hoist to the loading tool and place enough tension on the lifting hoist to prevent the converter from lowering itself in the torque tube which could damage the multiple plate clutch drive lugs.

Remove the bolts on the torque converter hub and move the converter assembly straight rearward being very cautious not to allow the multiple plate clutch to strike the sides. Damage to the drive lugs may result.

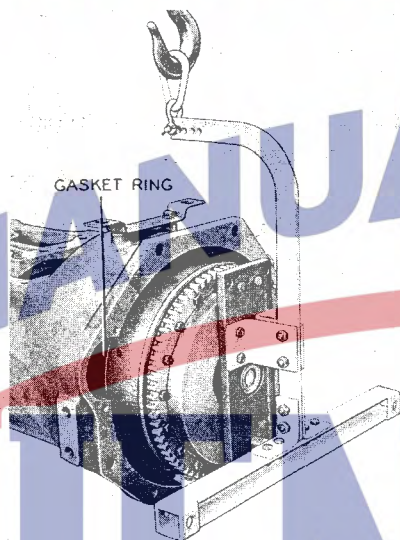


Figure F-2



Figure F-4



Figure F-3

Installing Torque Converter
On 400 B And 600 B Tractors

The torque converter may be assembled in the torque tube in the reverse order from which it was removed.

NOTE: Be certain to remove the multiple plate clutch setting pins before hydraulic adapter housing is assembled to torque tube.