FORD

Service Manual

Tractor Series
2000, 3000, 4000, 5000, 7000
3400, 3500, 3550, 4400, 4500,
5500, and 5550

1965 – 1975

40200050

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Cylinder Head and Gasket

Although new cylinder head part numbers have been allocated, the only difference between the cylinder heads used previously and those used with the new model engines is that the latter have the valve seats located 0.020 in. (0.52 mm) deeper.

A new cylinder head gasket with wide beading interconnecting the bores on the underside of the gasket is used on new model Ford 2000 and 3000 diesel engines. This gasket may be used for service on previous Ford 2000 and 3000 diesel engines.

Camshaft – Diesel Engines only

A new camshaft with higher cam lift is used in new model Ford 2000 and 3000 diesel engines. This change is merely to commonize with the camshaft of the new model 4000 diesel engine.

The camshaft of the Ford 2000 gas engines, and also that of the Ford 3000 gas engines, are unchanged.

Crankshaft – Ford 3000 Diesel

Apart from a difference in material, the crankshaft in the Ford 3000 diesel engine is virtually identical with that of the previous type Ford 4000 gas engine. The current Ford 3000 diesel crankshaft will be discontinued when existing stock is exhausted. The crankshaft used in the previous Ford 4000 gas engine will then be used for production and service of all Ford 3000 diesel engines, as well as for service of the previous Ford 4000 gas engine.

COOLING SYSTEM

New radiators have been introduced with some of the new model Ford 4000 and 5000 Agricultural tractors and the 5200 Row Crop tractor. The difference is in the number of cooling fins per inch. There are no changes to the radiators in Ford 2000 and 3000 tractors.

Model	Engine	Trans.	Cooling Option	No. of Radiator Fins/inch	
				Previous	*New Model*
4000	Gas	8-Speed and Select-O-Speed	Standard	5	7
4000	Gas	Select-O-Speed	Tropical	7	9
4000	Diesel	8-Speed	Standard	5	7
4000	Diesel	8-Speed	Tropical	5	7
4000	Diesel	Select-O-Speed	Standard	No change	
5000	Gas	8-Speed and Select-O-Speed	Standard	7	9
5000	Diesel	8-Speed	Standard	5	9
5000	Diesel	Select-O-Speed	Standard	7	9
5000	Diesel	8-Speed and Select-O-Speed	Tropical	7	9
5200	Row Crop	All Models		7	9

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Part 2

FUEL SYSTEMS–DIESEL

FORD 2000 and 3000

The fuel injection pumps and injectors of new model Ford 2000 and 3000 tractors are identical to those used on the previous model Ford 2000 and 3000 tractors.

FUEL INJECTORS

The fuel injectors used in new model Ford 4000 and 5000 engines differ from those used in previous Ford 4000 and 5000 engines. The outward appearance of the new injector is the same as those used on the previous tractors. The difference between current and previous injectors is in the size and angle of the nozzle holes which, without accurate gauges, cannot be readily recognized.

For this reason, when re-conditioning injectors in service, special attention should be given to the identification code numbers which are etched on the body of the nozzle. This number in conjunction with the following chart will enable each nozzle to be identified with the tractor it was designed for.

Previous New Range Tractors	Nozzle Identification	Current New Model Tractors	Nozzle Identification
Ford 2000	BDLL150S6443	Ford 2000	BDLL150S6443
Ford 3000	NL 413	Ford 3000	NL 413
Ford 4000	BDLL150S6476	Ford 4000	BDLL140S6422
Ford 5000	NL 413	Ford 5000	BDLL140S6422

FORD 4000 DIESEL – AIR CLEANER

The air cleaner specified for use with the new Ford 4000 diesel engine is the same as that used on the previous and current Ford 5000 tractor. The diameter of this cleaner is 7 in. (178 mm) as compared to the 6.5 in. (165 mm) diameter cleaner previously used on the Ford 4000. The inlet and outlet ports are 2.25 in. (57.15 mm) diameter as compared to the 2 in. (50.8 mm) diameter ports in the previous cleaner. The air cleaner hoses have been changed accordingly.

Part 2

FUEL SYSTEMS–GAS

FORD 5000 (GAS) – AIR CLEANER

A new air cleaner is used with the new model Ford 5000 gas engine. This cleaner has a diameter of 7 in. (178 mm) compared to the 6.5 in. (165 mm) diameter cleaner used on the previous Ford 5000 gas tractor. It has an inlet port diameter of 2.25 in. (57.15 mm) as compared to the 2.0 in. (50.8 mm) diameter inlet port in the previous cleaner used on Ford 5000 gas tractors.

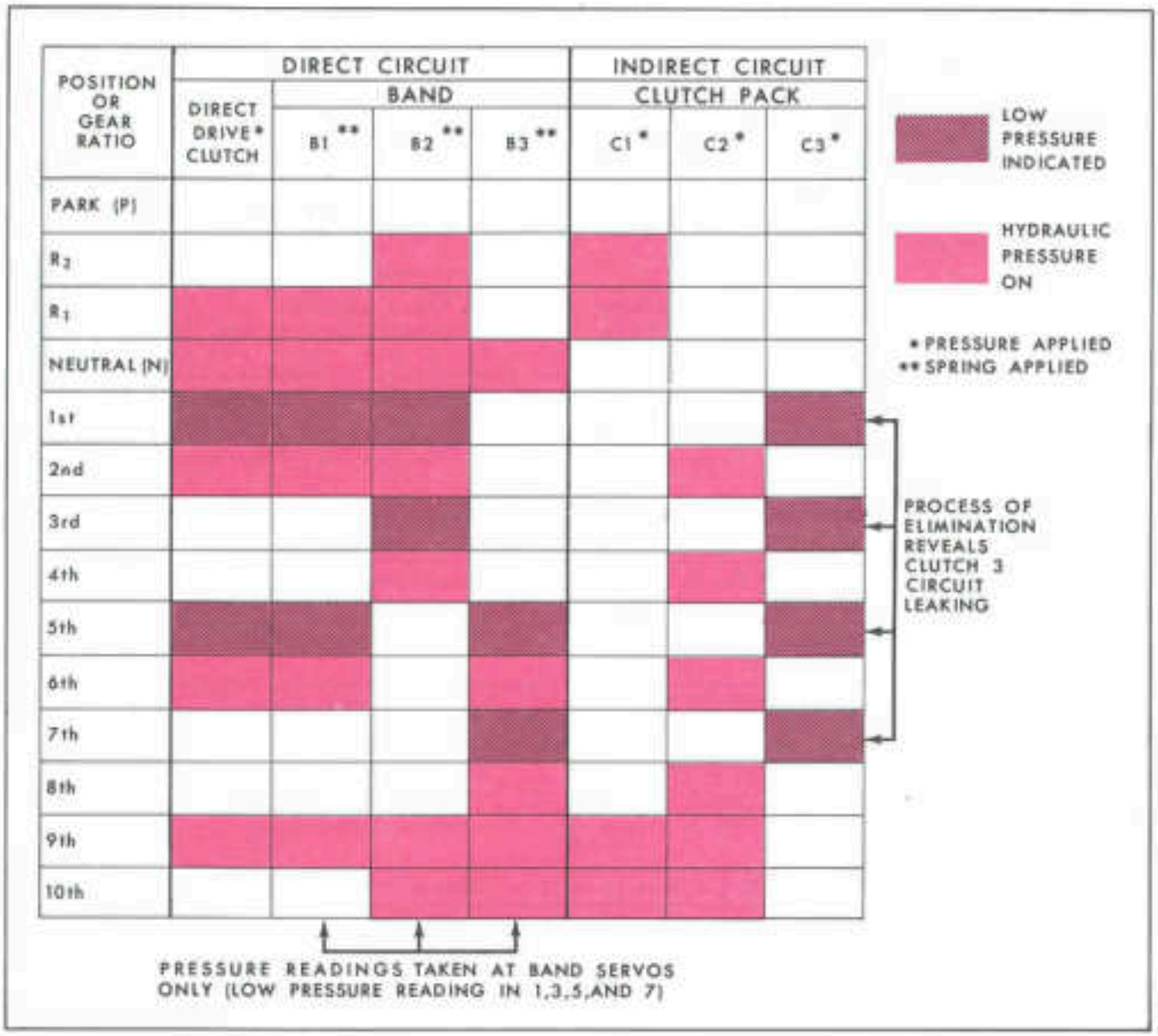
ALL GAS ENGINES – NO LOAD AND IDLE SPEEDS

The following no load and idle speeds are specified for new model gasoline engines.

Model	No Load Speed	Idle Speed
Ford 2000	2065–2165	600–700
Ford 3000	2285–2385	600–700
Ford 4000	2395–2495	600–700
Ford 5000	2285–2385	600–700

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When the trouble shooting chart is used in conjunction with the pressure checks, the band or clutch columns must be approached solely from a hydraulic pressure application standpoint whether the element itself is applied or released. The pressure application on the charts are indicated by the red shaded areas. Thus, for 3rd gear ratio, hydraulic pressure is applied to band 2 servo, and clutch 3.

Since the pressure checks are made only at the band servos, it is necessary to compare the low pressure readings obtained in the various gear ratios with the shaded areas on the chart in order to form a pattern. This, of course, is done following the procedure covered in Hydraulic Condition 4 in the Diagnostic Procedure. For example, low pressure readings are noted in 1st, 3rd, 5th, and 7th.

The inching pedal is depressed in each of these ratios as covered in 2a, Hydraulic Condition 4. The pressures at B-1, B-2, and B-3, increase to specification. The leak is in the indirect circuit. Since only gear ratios 1, 3, 5, and 7 are affected, and since only the indirect circuit is involved, it is readily indicated by shaded areas on the chart that clutch 3 is the only indirect circuit clutch used in these gear ratios. Thus, it is readily determined that a pressure leak is occurring in the transmission clutch 3 circuit.

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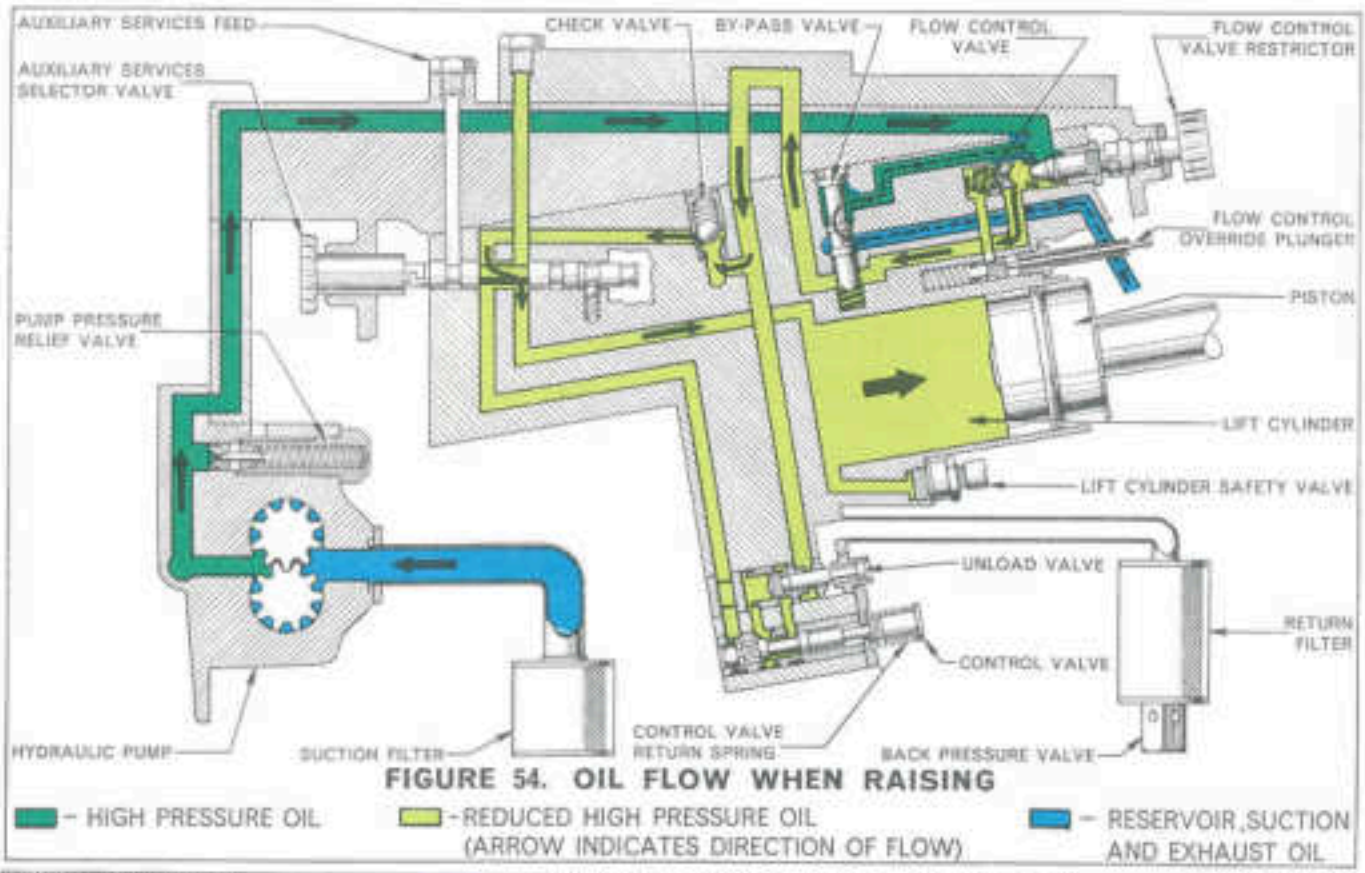


FIGURE 54. OIL FLOW WHEN RAISING

– HIGH PRESSURE OIL – REDUCED HIGH PRESSURE OIL (ARROW INDICATES DIRECTION OF FLOW) – RESERVOIR, SUCTION AND EXHAUST OIL

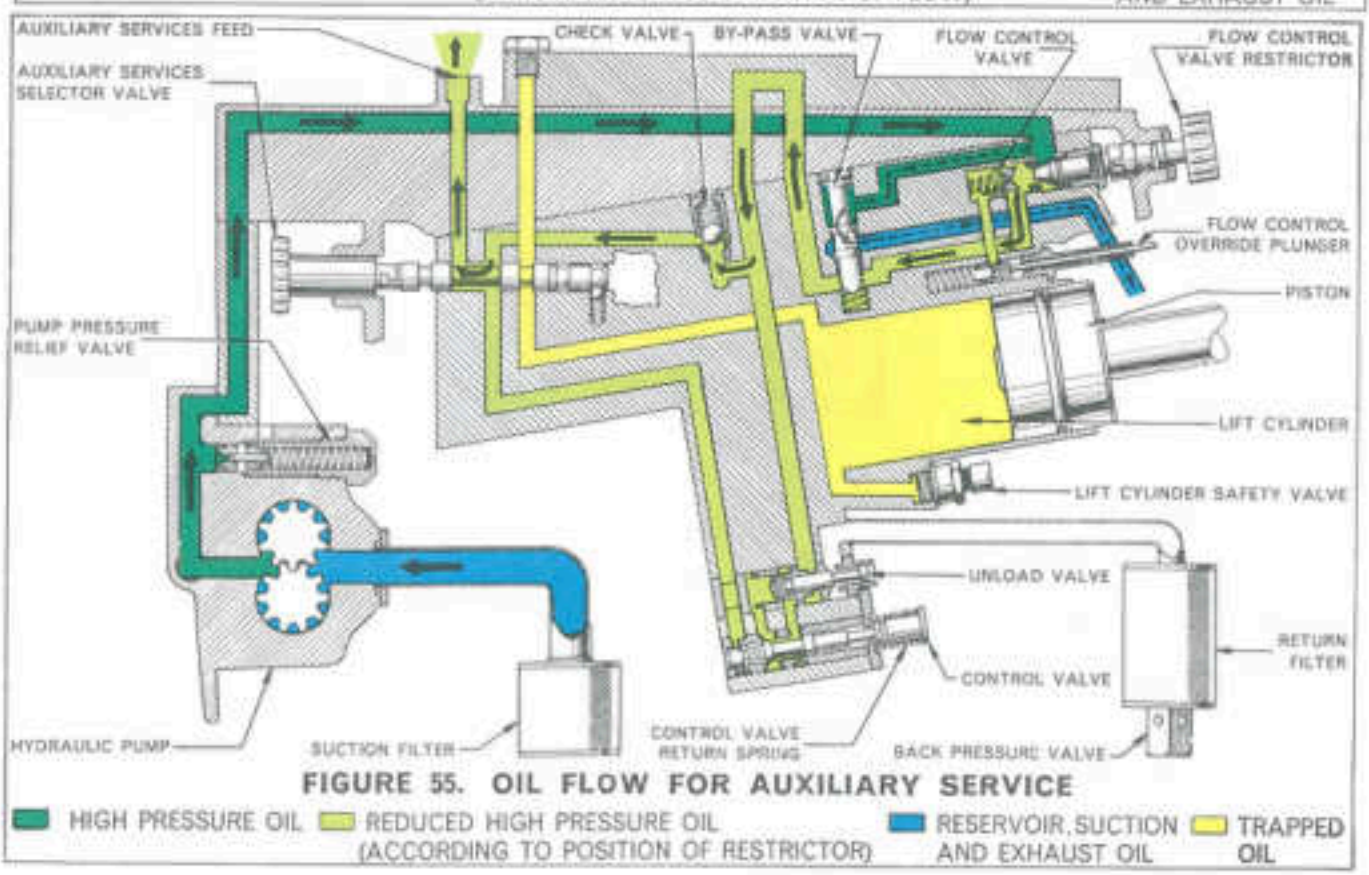


FIGURE 55. OIL FLOW FOR AUXILIARY SERVICE

HIGH PRESSURE OIL – REDUCED HIGH PRESSURE OIL (ACCORDING TO POSITION OF RESTRICTOR) – RESERVOIR, SUCTION AND EXHAUST OIL – TRAPPED OIL

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