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MANUAL PREVIEW

International Harvester

Service Manual

544 Utility & 2544
Chassis Only

Service Manual

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IH-S-544 UTIL



16

Blue Ribbon Service

MANUAL PREVIEW

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General Contents

Page

Special Service Tools Required	IV
Standard Torque Data for Nuts and Bolts	VI

Section



ENGINE REMOVAL AND INSTALLATION



SPLITTING THE TRACTOR



ENGINE CLUTCH



CLUTCH HOUSING



BRAKES, TRANSMISSION, DIFFERENTIAL AND FINAL DRIVE



HYDRAULICS



INDEPENDENT POWER TAKE OFF



ELECTRICAL



ADJUSTMENTS

SPECIAL SERVICE TOOLS REQUIRED

SECTION 1

FES 100 Universal Engine Lifting Chain Assembly

SECTION 2

FES 11-1A Front jack stand
FES 11-1B Rear Safety stand
FES 52 Engine stand
FES 52-1 Engine adapter plate
FES 68-7 Hook bolt
FES 117 Rear jack stand
FES 122 Retaining plate

SECTION 3

FES 11-1A Front jack stand
FES 50 Clutch adjusting tool
FES 68-7 Hook bolt
FES 117 Rear jack stand
FES 122 Retaining plate

SECTION 4

FES 10-6 Driving collar
FES 10-9 Oil seal protector sleeve
FES 10-10 Oil seal protector sleeve
FES 10-11 Pin punch
FES 10-12 Spanner wrench
FES 10-15 Dummy shaft
FES 10-16 Allen wrench
FES 10-23 Driving mandrel
FES 10-29 Bearing driver

Plus all Tools listed in Section 2.

SECTION 5

FES 10-27 Driver
FES 11-1A Front jack stand
FES 11-1B Rear safety stand
FES 68-7 Hook bolt
FES 117 Rear jack stand
FES 122 Retaining plate

SECTION 6

FES 2-8	Hose
FES 2-11	Connector
FES 2-17	Plug
FES 2-27	Hose
FES 2-28	Connector
FES 6-12	Special spanner wrench
FES 11-1A	Front jack stand
FES 51	Flo-Rater
FES 52	Engine stand
FES 52-1	Engine adapter plate
FES 57-3	O-ring removing tool
FES 58-20	Connector
FES 65	O-ring protector
FES 68-7	Hook bolt
FES 94-2	Tube connector
FES 94-4	Gauge
FES 98-1	Cap
FES 98-17	Service tee
FES 122	Retaining plate

SECTION 7

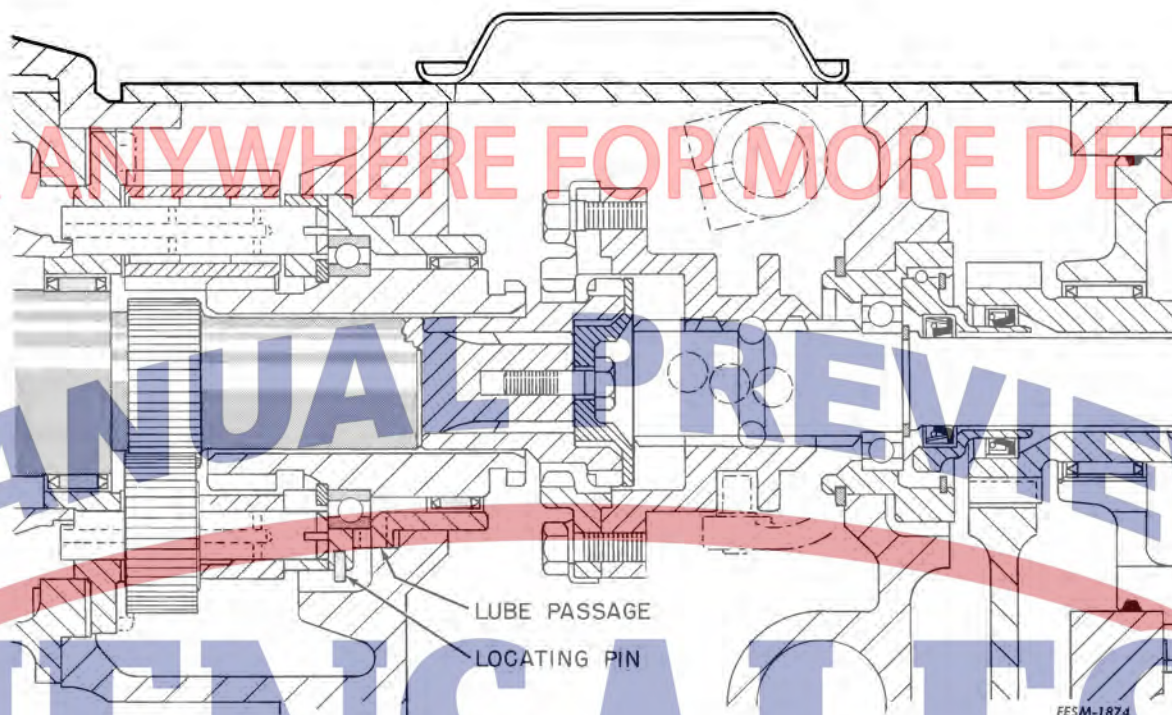
None Required

SECTION 8

FES 63	Volt-ampere tester
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SECTION 9

FES 51	Flo-Rater
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Illust. 4-7. Sectional view of forward and reverse drive.

When the tooth clutch is moved to the reverse position it engages the driving sun gear which will force the three long planet gears to turn on their shafts. The long planet gears force the three short planets

to rotate as shown in the insert (Illust. 4-6). These three short planet gears are meshed with the driven sun gear (on output shaft)® and force it to rotate in a direction opposite to that of the input shaft.

DISASSEMBLY General

Make a front section split as covered in Section 2. Remove the clutch housing from the rear frame and mount it on the engine stand.

NOTE 1: Steps 1 through 6 can be performed without making a rear split, by removing the IPTO rear unit and drive shaft.

NOTE 2: If the tractor is equipped with a 540 rpm IPTO, steps 1 through 5 must be performed in the order given to prevent damaging the rear tapered roller bearing on the IPTO drive shaft during removal.

1. Remove the engine clutch release shaft, fork, and throw out bearing (Illust. 4-8).
2. Remove the 2 inch pipe plug from the front of the clutch housing to expose the IPTO driven gear retaining bolt (Illust. 4-8).



Illust. 4-8. Release shaft, fork and throw out bearing.

Detent mechanism (if so equipped)

Detent spring	free length	1-1/16 inches
	test length	45/64 inch
	test load	23.5 to 28.5 lbs.
Detent ball diameter		5/16 inch
Lock ball diameter		1/4 inch

Double Acting Check Valve

Ball diameter (2)		1/2 inch
Springs (2)	free length	1.340
	test length	.980
	test load	4.6 to 5.4 lbs.

Auxiliary system relief valve		1600 psi
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Cylinder

Type	Single acting
Packing type	O-ring with back-up washer
Piston OD	3.747 to 3.749 inches
Cylinder ID	3.750 to 3.752 inches
Force exerted by piston	18,750 to 22,050 lbs.
Length of stroke	5-3/4 inches

Cushion valve

Type	Ball and spring
Opening pressure	2000 psi
Maximum limiting opening pressure	2500 psi

Hydraulic Unit Housing and Rockshaft

Bore ID at Rockshaft bearings	right side	2.437 to 2.438 inches
	left side	2.218 to 2.219 inches
Rockshaft OD at bearings	right side	2.310 to 2.312 inches
	left side	2.085 to 2.087 inches
Rockshaft OD at rockshaft arm spline		2.235 to 2.245 inches
Bearings, type		Bronze bushings
Bearing ID	right side	2.315 to 3.320 inches
	left side	2.090 to 2.095 inches

Special Torques

Foot Pounds

*Capscrews for auxiliary valves 20 to 25

Steering wheel retaining nut 35

*Must be torqued in 5 lb. increments, in rotation, and all three must be exactly alike.

If the oil level and filter are satisfactory check:

1. Crossover suction tube seal and O-ring. The seal must be installed far enough into the clutch housing bore to seal properly. It can be placed near the end of the tube and allowed to position itself as the pump and tube are installed.

2. O-rings and gaskets between the pumps or the pump and cover, depending on how the tractor is equipped.

3. The oil filter cover gasket. It is possible for a small leak at this point to let air in but not leak oil out.

4. The quad ring or O-ring (depending on how equipped) on the suction tube between the clutch housing and the rear frame.

NOTE: The suction tube should extend 5/16 inch through the rear frame.

NOTE: If 1, 2 or 4 are the offenders, adding 4 extra gallons of Hy-Tran to the system will eliminate the air and noise.

If the filter cover gasket is allowing air in, over-filling may not correct it as the oil lowers in this cavity when the tractor is operated.

Hitch

1. Check the hydraulic pump for flow and pressure as follows:

(a) Attach the Flo-Rater at the pump mounting flange as shown in Illust. 6-80. Direct the return from the Flo-Rater to the filler hole.

(b) Remove the position control handle guide assembly at the top end of the quadrant. Move the position control lever about one inch past the end of the quadrant. This will cause the hitch to raise to its limit of travel and remain on high pressure.

(c) If the system does not meet specifications, the system relief valve should be replaced and the system rechecked. If the pump still does not meet specifications, remove the drain plug in the left front corner of the hitch housing and observe for leaks as follows:

(1) Turn the Flo-Rater Valve in to obtain approximately 1600 psi. If a bad leak is present or if the pump is no good you may not be able to obtain the 1600 psi.

(2) If leakage is observed, cor-



Illust. 6-80. Checking the efficiency of the hitch pump.

rect by replacing O-rings or parts as necessary.

(3) If no leakage is present replace the pump.