2130 Tractor

JOHN DEERE

Technical Manual



John Deere Werke Mannheim
TM-4272
Printed in Germany (English)

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Group 10

Predelivery, Delivery and After-Sales Inspections

PREDELIVERY INSPECTION

Every new JOHN DEERE tractor leaves the factory in such a condition that it can be delivered to the customer after a minimum of service.

To promote complete customer satisfaction, proper predelivery service including mending of possible shipping damage and giving the finishing touches to the tractor, are of prime importance to the dealer.

A tag pointing out the factory-recommended procedure for predelivery service is attached to every new tractor before it leaves the factory. The reverse side of this tag is filled in by the factory after the tractor has undergone a thorough inspection prior to shipping.

After completing the factory-recommended dealer checks and services listed on the predelivery tag, remove the tag from the tractor and file it with the shop order for the job. The tag will then serve as a basis for certifying that the tractor has received the proper predelivery service.

Temporary Tractor Storage

Service	Specifications	Reference
Check radiator for coolant loss and antifreeze protection (gravity of antifreeze and rust inhibitor mixture)	Coolant level should be midway between radiator core and bottom edge of filler neck	Operator's manual
If the tractor is to be operated for a short time without battery (using a slave battery for starting), do not, under any circumstances, interrupt the circuit by switching off the main switch before stopping the engine by means of fuel pump shut off cable. Use additional current (lights) whilst engine is running. Insulate terminal of battery cable before starting by means of slave battery. If this advice is disregarded, damage to alternator and regulator may result.	. . . . .	Section 40, group 10
Remove batteries	Store in a cool and dry room	. . . . .
Reduce shipping pressure of tires	. . . . .	Operator's manual
Cover tractor and tires for protection and cleanliness	. . . . .	. . . . .

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HIGH-LOW SHIFT UNIT

Hydraulically controlled reduction gear which can be shifted under load, with "wet" multiple disk clutch and "wet" multiple disk brake. Allows reduction of the individual gear speeds by 21 %.

CREEPER TRANSMISSION

Mechanically controlled reduction gear. Allows reduction of range I and reverse gear speeds by 77 %.

DIFFERENTIAL AND FINAL DRIVES

Planetary reduction gear and differential with spiral bevel gears.

DIFFERENTIAL LOCK

Hand or foot operated; spring-loaded out of engagement.

POWER TAKE-OFF (PTO)

Independent of transmission, can be engaged and disengaged under load.

The independent PTO is engaged by a hydraulically operated disk clutch. Disengaging the clutch is achieved by operating the hydraulically actuated band type brake.

PTO Speeds (in rpm)

Engine speed in rpm	540 rpm shaft	1000 rpm shaft
750	195	365
2070	540	1000
2500	650	1210
2660	695	1285

HYDRAULIC SYSTEM

Closed center, constant pressure system; also includes rockshaft, power steering and selective control valves.

System pressure . . . . . 155 bar (2250 psi)

Pump . . . . . 4 or 8-piston pump driven by the engine

POWER STEERING

The steering system is a "closed center" type incorporated in the hydraulic system and supplied with oil by the hydraulic pump. It is connected to the front wheels by means of a steering linkage.

MANUAL STEERING

The manual steering is a recirculating ball bearing, worm and nut type. A number of steel balls between ball nut and steering wheel shaft provide for positive engagement of steering wheel and steering linkage.

HYDRAULIC BRAKES

The disk brakes run in an oil bath and are hydraulically controlled.

HANDBRAKE

Band-type locking brake acting on differential.

CAPACITIES

	Liters	U.S.gals.
Fuel tank	90.0	23.8
Cooling system	11.4	3.0
Engine crankcase		
incl. filter	8.5	2.25
without filter	8.00	2.1
Transmission-hydraulic system		
Dry system	36.0	9.5
At service intervals.	28.0	7.4
Belt pulley	1.0	0.3

TRAVEL SPEEDS

See Operator's Manual.

FRONT AND REAR WHEELS

For tire sizes, treads, inflation pressure and weights see Operator's Manual.

DIMENSIONS

See Operator's Manual.

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STANDARD TORQUES

Recommended torques in Nm, mkp and ft.lbs. for UNC and UNF cap screws

Head marking (identifying strength)	 or 6.8 *			 or 10.9 **			 or 12.9 ***		
Thread-O.D. (in.)	Nm	mkp	ft.lbs.	Nm	mkp	ft.lbs.	Nm	mkp	ft. lbs.
1/4	—	—	—	15	1.5	10	20	2	14
5/16	—	—	—	30	3	20	40	4	30
3/8	—	—	—	50	5	35	70	7	50
7/16	50	5	35	80	8	55	110	11	80
1/2	80	8	55	120	12	85	170	17	120
9/16	100	10	75	180	18	130	240	24	175
5/8	150	15	105	230	23	170	320	33	240
3/4	260	26	185	400	41	300	580	59	425
7/8	220****	22****	160****	600	61	445	930	95	685
1	340	35	250	910	92	670	1400	142	1030
1-1/8	450	46	330	1240	126	910	1930	202	1460
1-1/4	650	66	480	1700	173	1250	2800	285	2060

NOTE: A variation of ± 10 % is permissible for all torques indicated in this chart.

Torque figures indicated above and in the Specifications sections of this manual are valid for non-greased or non-oiled threads and heads unless otherwise specified. Therefore, do not grease or oil bolts or cap screws unless otherwise specified in this manual.

* Regular bolts and cap screws
** Tempered steel high strength bolts and cap screws
*** Tempered steel extra high strength bolts and cap screws
**** Bolts and screws 7/8 in. and larger are often formed hot rather than cold, which accounts for the lower torque.

SPECIAL TOOLS*

Part No.	Description	Use
19.58-90.578	Special adapter	Checking compression pressure
19.58-90.260**	Special tool	Checking oil pressure

* For ordering instructions please contact your sales branch service department
** Details see section 70, group 5

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Fuel injection nozzles defective or leaking

Fuel filter or fuel lines restricted

Defective fuel transfer pump

Incorrect engine timing

Improper valve clearance

Cylinder head gasket leaking

Worn or broken compression rings

Valves stuck or burnt

Exhaust system restricted

Engine compression too low

Engine overheated

Defective fuel injection pump

ENGINE MISSES

Water in fuel

Mixture of petrol (gasoline) and Diesel fuel

Air in fuel system

Defective fuel injection nozzles

Defective fuel injection pump

Fuel injection nozzles improperly installed

Leaking fuel injection nozzles seals

Engine overheated

Lobes of camshaft worn

Weak valve springs

Worn or defective fuel transfer pump

Pre-ignition

Incorrect engine timing

Engine compression too low

Improper valve clearance

Burnt, damaged or stuck valves

LACK OF ENGINE POWER

Air cleaner restricted or dirty

Excessive resistance in air intake system

Fuel filter restricted

Defective fuel transfer pump

Defective fuel injection pump

Defective fuel injection nozzles

Improper crankcase oil

Engine overheated

Engine clutch drags

Defective cylinder head gasket

Lobes of camshaft worn

Improper valve clearance

Improper valve timing *

Burnt, damaged or stuck valves *

Weak valve springs *

Incorrect engine timing

Piston rings and cylinder liners excessively worn *

Engine compression too low *

Improper coolant temperature

ENGINE OVERHEATS

Lack of coolant in cooling system

Radiator core and/ or side grille screens dirty

Loose or defective fan belt

Defective thermostat

Cooling system limed up

Engine overloaded

Fuel injection pump delivers too much fuel

Damaged cylinder head gasket

* Measure blow-by at crankcase vent tube or carry out cylinder compression test. See section 10, group 20.

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3. Remove upper and lower idler gear. Pull oil pump gear off the tapered pump shaft, using a commercial puller. DO NOT PRY GEAR OFF THE SHAFT BY MEANS OF MOUNTING BARS ETC.

4. Remove oil pump (see group 30).

5. Remove injection pump and gear (see section 30).

6. Remove camshaft and balancer shafts, (see group 10).

REPAIR

NOTE: For additional information see "Fundamentals of Service, Engines" manual.

Inspection of

camshaft gear and the balancer shafts, see group 10,

crankshaft gear, see group 20,

lube oil pump gear, see group 30,

fuel injection pump gear, see section 30, group 15.

CHECKING TIMING GEAR BACKLASH

As a matter of experience unusual gear train noise indicates excessive backlash or damaged teeth.

Check backlash between individual gear pairs and replace gears, if necessary (see Specifications).

IDLER GEARS

Measure I. D. of bushing in idler gear and O. D. of shaft; clearance see Specifications. If bushing has to be replaced, press in new bushing by means of tool JD 252 so that it is flush with one side of gear.

If there are signs of insufficient lubrication, make sure that oil passage of cylinder block for lubricating the upper idler gear as well as longitudinal and vertical oil bores of shaft are not restricted.

The lower idler gear is splash-lubricated.

FRONT PLATE AND TIMING GEAR COVER

Make sure front plate is not warped or otherwise damaged which would jeopardize safe sealing against cylinder block and timing gear.

Do not pry or press against timing gear cover with excessive force. The cover is cast aluminium alloy which might be sprung or warped.

If timing gear cover oil seal leaks, especially if this is indicated by oil on the timing gear cover, remove oil seal from cover.

IMPORTANT: Support timing gear cover squarely to prevent distortion.

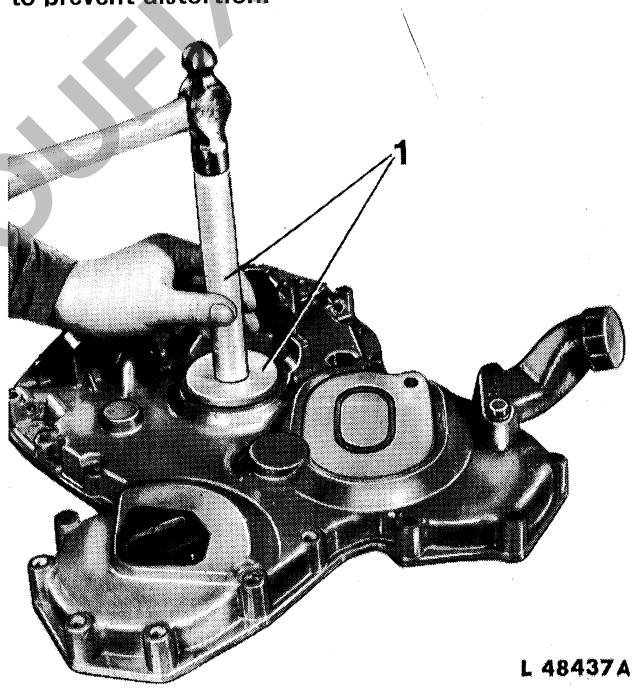
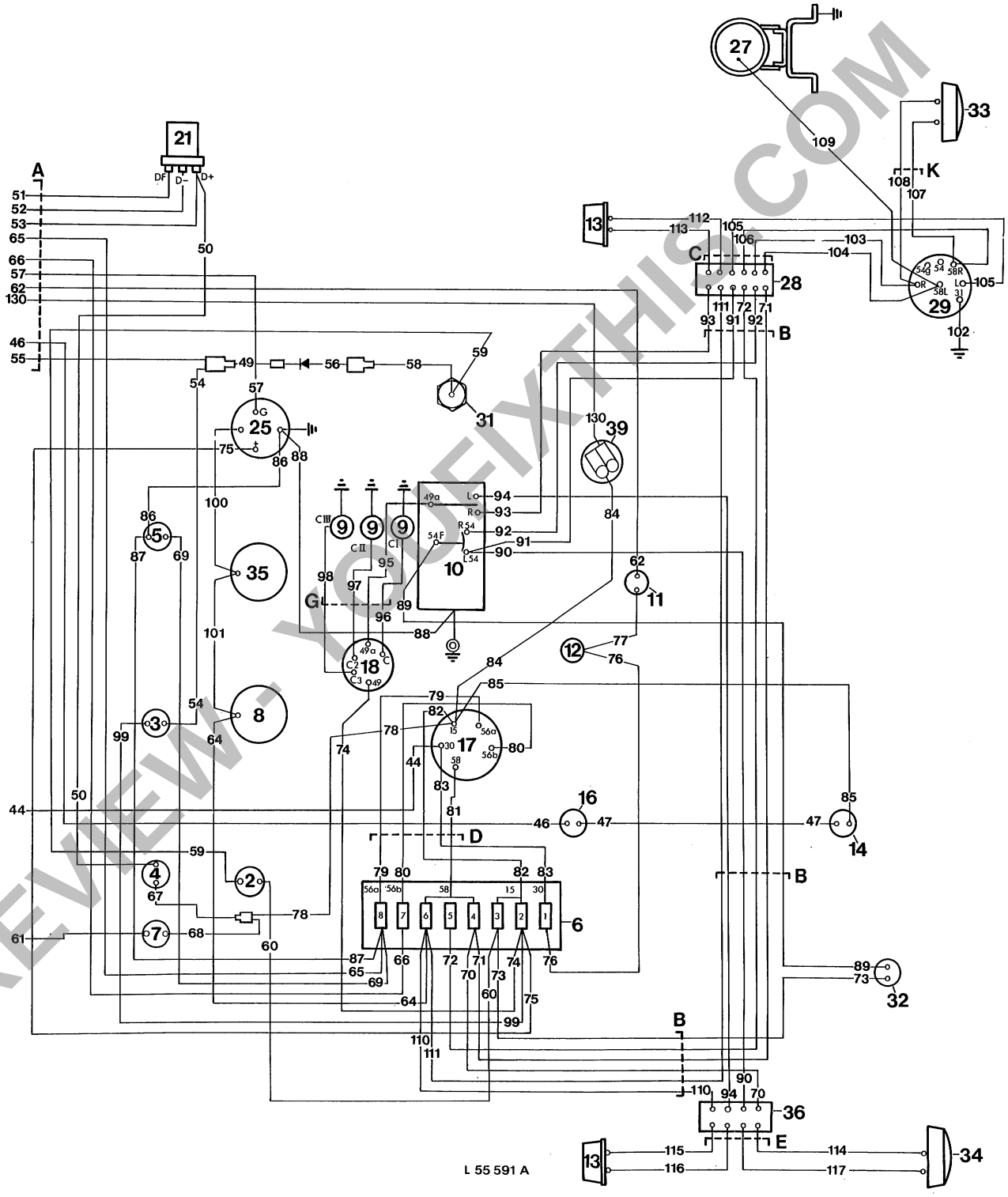


Fig. 2 — Driving Front Crankshaft Oil Seal in Timing Gear Cover

1 Special tool No. JD 250 and mandrel No. 815

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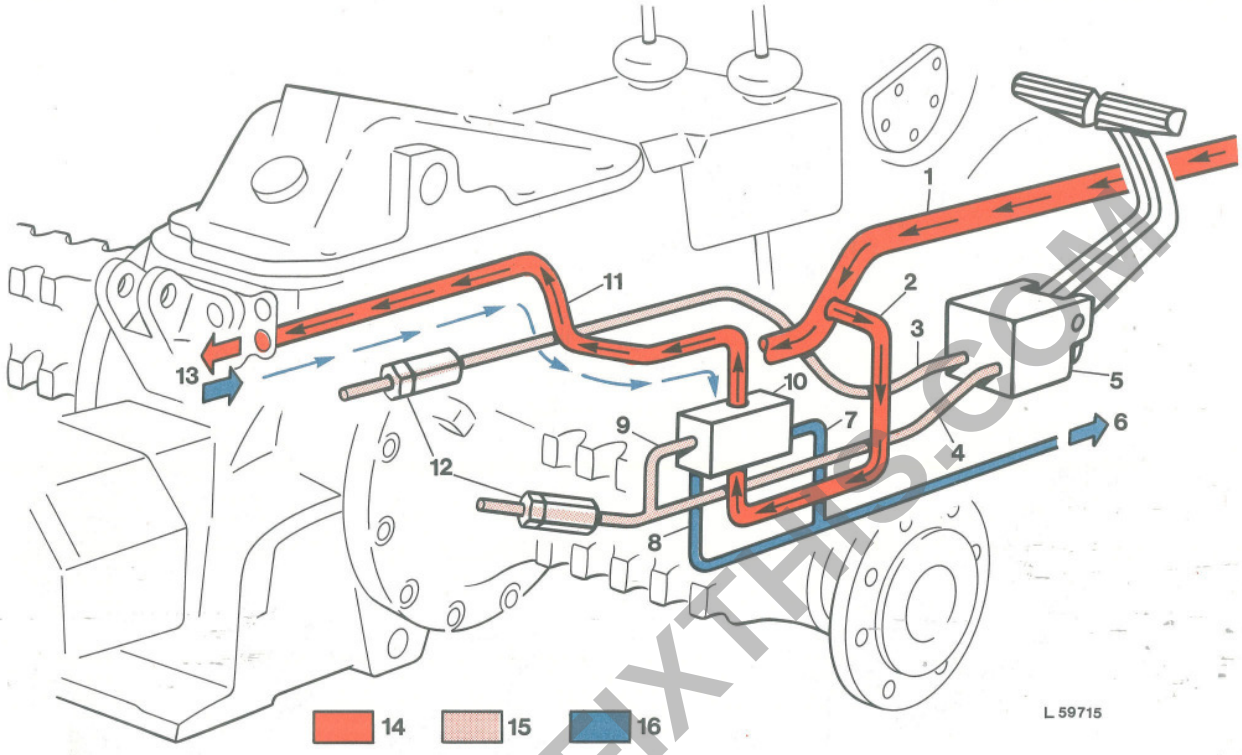


Fig. 12 — Oil Flow when Braking (Schematic View)

1 Pressure line (hydraulic pump)
2 Pressure line to brake valve
3 Left-hand tractor brake line
4 Right-hand tractor brake line
5 Brake valve assembly
6 Return and leak-off line to transmission case
7 Return line
8 Leak-off line
9 Control line
10 Trailer brake valve
11 Pressure line to quick disconnect coupler
12 Delivery valves
13 Pressure oil to trailer brakes and return oil from trailer brakes
14 High-pressure oil
15 Low-pressure oil
16 Pressure-free oil

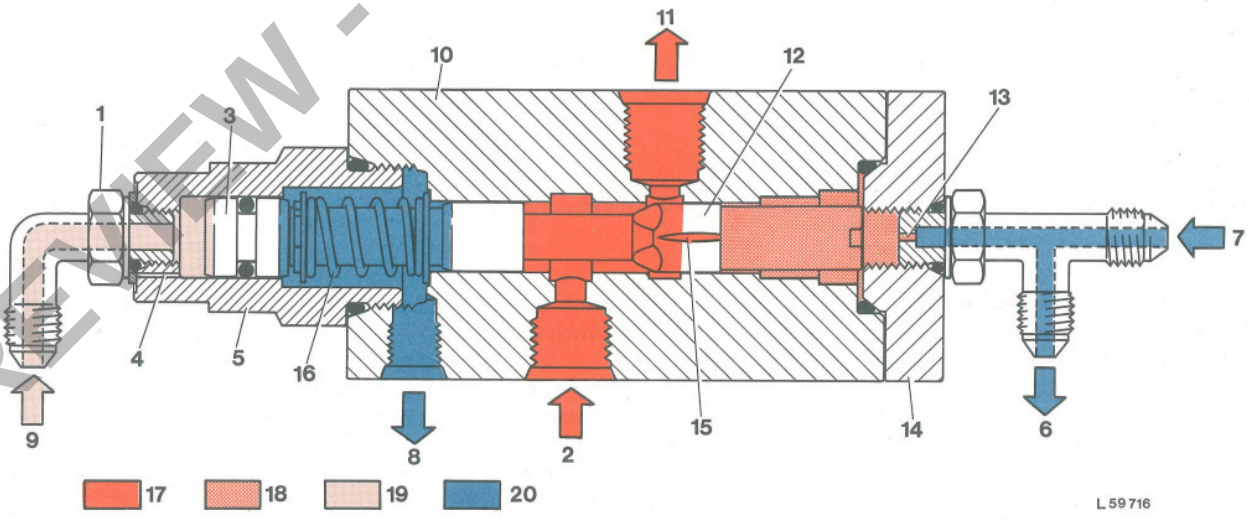


Fig. 13 — Oil Flow in Brake Valve

1 Hex. nut
2 Pressure line to brake valve
3 Piston
4 Bleeding orifice
5 Spring cap
6 Return and leak-off line to transmission case
7 Return line
8 Leak-off line
9 Control line
10 Brake valve
11 Pressure line to quick disconnect coupler
12 Spool
13 Restriction orifice
14 Valve cover
15 Spool grooves (3)
16 Pressure spring
17 High-pressure oil
18 Medium-pressure oil
19 Low-pressure oil
20 Pressure-free oil

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Group 5
Specifications

SERIAL NUMBERS

The engine serial number is stamped into the name plate located on the lower front right-hand side of the cylinder block.

NOTE: If ordering engine parts, indicate all digits of the serial number on the name plate.

The name plate showing the tractor serial number is located on the right-hand side of the front support.

NOTE: If ordering tractor parts, (excluding engine parts), indicate all digits of the serial number on the name plate.

MODEL NUMBERS

The injection pump, injection nozzles, alternator, starting motor and hydraulic pump have model numbers to facilitate indentification of different makes of a given unit.

ENGINE

Number of cylinders 4

Cylinder liner bore . . . . . 106.5 mm (4.19 in.)

Stroke . . . . . 110 mm (4.33 in.)

Displacement . . . . . 3920 cm^3 (239 cu. in.)

Compression ratio . . . . . 16.8 : 1

Maximum torque at
1400 rpm . . . . 246 Nm = 24.6 mkp (181 ft-lb)

Firing order . . . . . 1 - 3 - 4 - 2

Valve clearance (engine hot or cold)
Intake valve . . . . . 0.35 mm (0.014 in.)
Exhaust valve . . . . 0.45 mm (0.018 in.)

Fast idle . . . . . 2660 rpm

Slow idle . . . . . 750 rpm

Working speed range . . . . . 1400 to 2500 rpm

Flywheel horsepower at rated
engine speed of 2500 rpm
according to DIN 70020 . . . . . 55 kW (75 HP)

PTO horsepower*
at rated engine speed of:
2500 rpm engine speed
according to DIN 70020 . . . . . 51 kW (69 HP)
according to SAE J 816 B . . . . 49 kW (66 HP)

ENGINE CLUTCH

Single dry disk clutch with torsion damper (isolator), foot-operated.

ELECTRICAL SYSTEM

Batteries . . . . . 2 x 12 volts, 55 ampere-hours

Starting motor . . . . . 12 volt, 3 kW (4 HP)

Alternator . . . . . 14 volts, 28 amps.

Battery terminal grounded . . . . . negative

TRANSMISSION

Collar shaft transmission with helical cut gears.

This transmission is available in two variations:

8 speed transmission with parking lock, without independent hand brake and
8 speed transmission without parking lock and with independent hand brake;

With this transmission 8 forward and 4 reverse speeds are available.

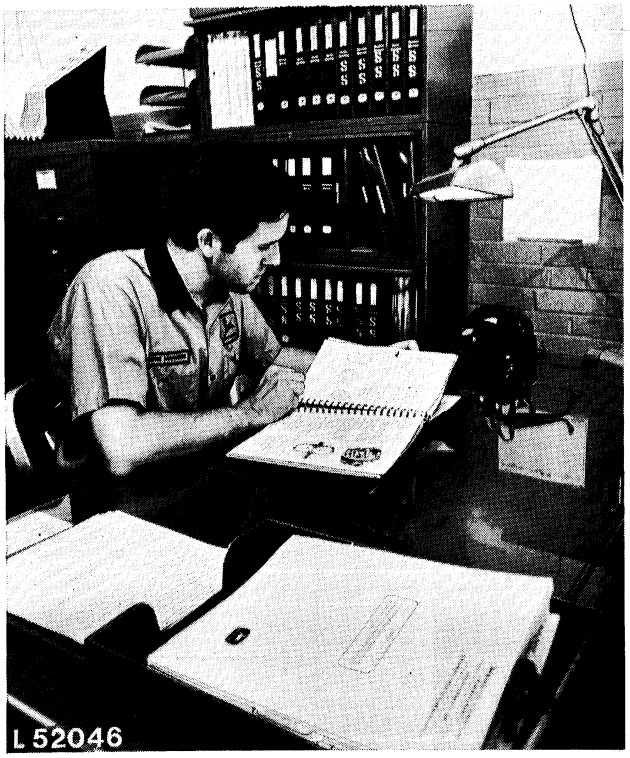
* With the engine run in (above 100 hours of operation) and having reached operating temperature (engine and transmission); measured by means of a dynamometer. Permissible variation ± 5 %.

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Introduction



Use FOS Manuals for Reference

This technical manual is part of a twin concept of service:

- **FOS Manuals — for reference**
- **Technical Manuals — for actual service**

The two kinds of manuals work as a team to give you both the general background and technical details of shop service.

Fundamentals of Service (FOS) Manuals cover *basic* theory of operation, *fundamentals* of trouble shooting, *general* maintenance, and *basic* types of failures and their causes. FOS Manuals are for training new personnel and for reference by experienced technicians.

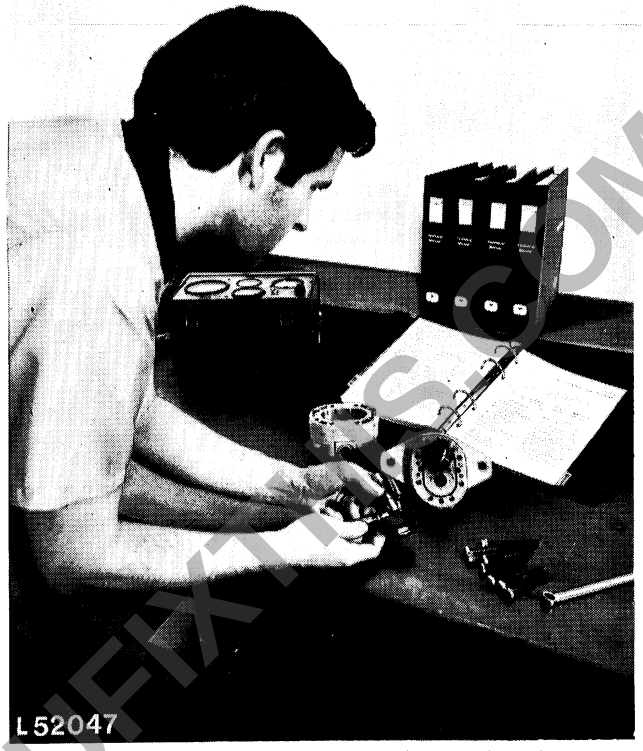
Technical Manuals are concise service guides for a *specific* machine. Technical Manuals are on-the-job guides containing only the vital information needed by an experienced technician.

IMPORTANT: Your technical manual contains the new SI metric measurements which have been standardized internationally.

Example:

New		Old
10 N (Newton)	≈	1 kp
10 Nm (Newton-Meter)	≈	1 mkp
1 bar	≈	1 kp/cm^2
1 kW = 1.36 PS (1.34 HP)		

Exact conversion: 1 kp = 9.81 N; 1 mkp = 9.81 Nm; 1 kp/cm^2 = 0.981 bar



Use Technical Manuals for Actual Service



When a technician should refer to a FOS Manual for more information, a FOS symbol like the one at the left is used in the TM to identify the reference.

Some features of this technical manual:

- *Table of contents on page 1*
- *Contents at front of each Section*
- *Specifications at end of each Group*
- *Torques for hardware at end of each Group*
- *Special tools at end of each Group*

This technical manual was planned and written for you — an experienced technician. Keep it in a permanent binder in the shop where it is handy. Refer to it whenever in doubt about correct service procedures or specifications.

Using the technical manual as a guide will reduce error and costly delay. It will also assure you the best in finished service work.

This safety alert symbol identifies important safety messages in this manual. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follow.

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CONNECTING RODS AND BEARINGS

Replace connecting rod bearings and piston pin bushings at every major engine overhaul.

Connecting rods and rod caps are only available as matched sets. Connecting rod bearing insert halves are available in standard sizes and several undersizes (see Specifications).

Insert bearing insert halves, install rod cap and tighten old rod screws to the specified torque. Measure each bearing bore and its respective crankshaft journal at several places. The difference between the two measurements is the bearing clearance (see Specifications).

Check piston pin bushing and replace, if necessary.

NOTE: Always install a new bushing when installing a new piston pin. Press in new bushing and hone until the respective piston pin can be inserted by "thumb-press" fit.

CYLINDER BLOCK

Remove all gaskets and scrape off any residual deposits. Remove O-rings sealing liners from cylinder block grooves and discard.

Thoroughly clean the block outside and particularly inside with cleaning solvent or by pressure steam cleaning. Make sure all passages and orifices are free from sludge, rust and grease and remove all scale or lime deposits.

From engine no. 197 639 CD: Inspect the four jet nozzles in cylinder block and replace, if necessary. Tighten spray jets to specified torque (see Torques for Hardware).

Replacement cylinder blocks are supplied with jet nozzles and plugs. When old cylinder block is equipped with jet nozzles then install nozzles supplied with replacement block, otherwise install plugs.

Valve Seat Bushing of Oil Pressure Regulating Valve

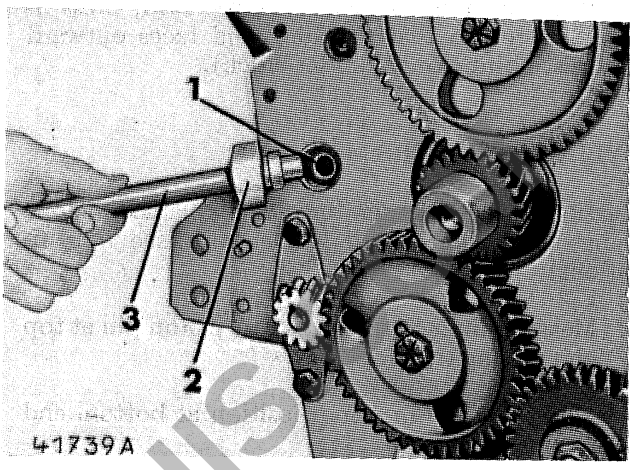


Fig. 3 — Driving in Valve Seat Bushing of Oil Pressure Regulating Valve

1 Valve seat bushing
2 Special tool No. JD 248
3 Special tool (driver) No. 813

Check the bushing with sealing edge for lubricating oil pressure regulating valve located in the front of cylinder block for serviceability. If necessary, remove unserviceable bushing from cylinder block and drive in a new bushing until driver contacts cylinder block, using special tools JD 248 and 813 (see fig. 3).

IMPORTANT: Do not use other unsuitable tools. Above all do not press tool against the slightly protruding inner edge of the bushing since it is a delicate sealing face.

Dowel Pins, Plugs and Studs

Check these parts for tight fit or proper sealing in cylinder block. If necessary, replace by new parts. Coat part to be inserted in cylinder block with a suitable oil and water-resistant sealant.

Threaded Bushing for Dip Stick

If the threaded bushing for the dip stick has to be replaced, coat threaded end of new bushing with an oil-resistant sealant. Thread into cylinder block as indicated under Specifications.

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The front plate available as a spare part for all engines provides threaded bores for different stud locations required for various injection pump models and makes. See fig. 9 for threaded bores applicable for model 2130 tractor.

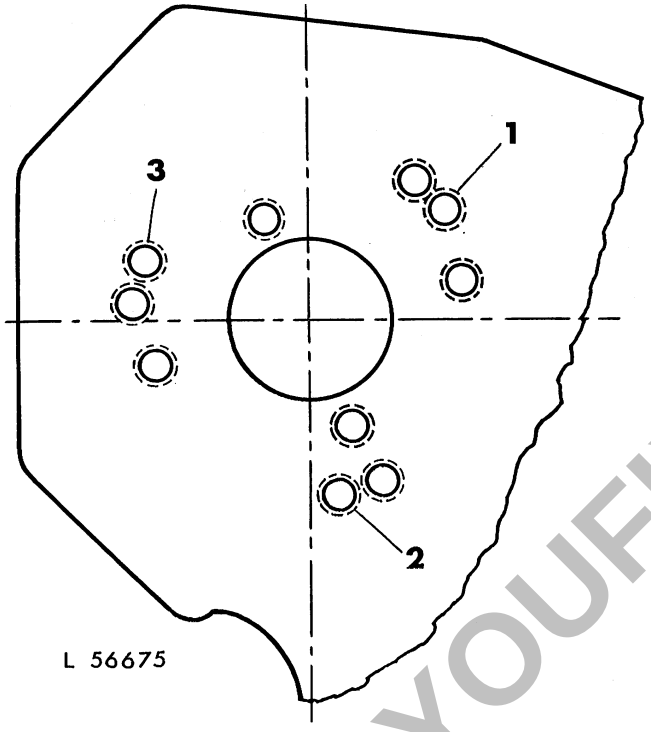


Fig. 9 — Threaded Bores in Front Plate

1 - 3 Threaded bores applicable for the 2130 tractor

4. Place marked gasket onto new front plate, making a mark on the front plate in exact alignment with mark on the gasket.

5. Install injection pump and time it as described previously.

INSTALLING FUEL LINES, SPEED CONTROL ROD AND SHUT-OFF CABLE

After adjusting and checking the injection timing, connect the speed control rod to the speed control lever and the shut-off cable to the shut-off lever.

Install fuel lines and pressurizing valves (see fig. 5). Be sure to use a copper washer on both sides of fuel line banjo. Tighten pressurizing valves to specified torque (see Torques for Hardware).

When tightening nozzle line nuts, use one hand and two wrenches, holding the line male union (see fig. 10). Tighten union nuts just enough to prevent leaks with the engine running.



Fig. 10 — Proper Tightening of Nozzle Fuel Line Nut

BLEEDING INJECTION PUMP AND FUEL SYSTEM

Always bleed the entire fuel system after installing the injection pump.

NOTE: A new or spare injection pump is not yet filled with fuel. This is done by operating the priming lever of the fuel transfer pump.

On earlier tractor models: Loosen the bleed plug on the front (first stage) fuel filter.

On later tractor models: Loosen the bleed plug on fuel filter.

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No.	Cables and Wires mm^2	Color	Component No.	from No.	Terminal	Component	to No.	Terminal No.
105*	1	red	Cab heater relay	57	86	Fuse (radio)	53	
106*	1	green	Cab heater relay	57	86	Fuse box (fuse 3)	34	15
107*	2.5	black	Main switch	37	15	Cab heater relay	57	30/53
108*	1.5	red	Cab ventilation and heater fan switch	41	B	Cab heater relay	57	87
109*	1.5	brown	Cab heater relay	57	85	Windshield wiper	31	31
110*	1.5	yellow	Cab ventilation and heater fan switch	41	M	Cab ventilation and heater fan	43	
111*	1.5	red	Cab ventilation and heater fan switch	41	H	Cab ventilation and heater fan	43	
112*	1.5	green	Cab ventilation and heater fan switch	41	L	Cab ventilation and heater fan	43	
113*	1.5	brown	Cab ventilation and heater fan	43		Cab roof		Ground

* On later tractors

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DISASSEMBLY

Remove cover from High-Low housing and pull High-Low shift assembly out of housing, taking care of the thrust washer located between housing and clutch drum.

Remove three short cap screws 26 (fig. 7) and three long cap screws 25 from cover plate 27. Remove cover plate as well as planet pinion carrier.

Store disks in installation sequence.

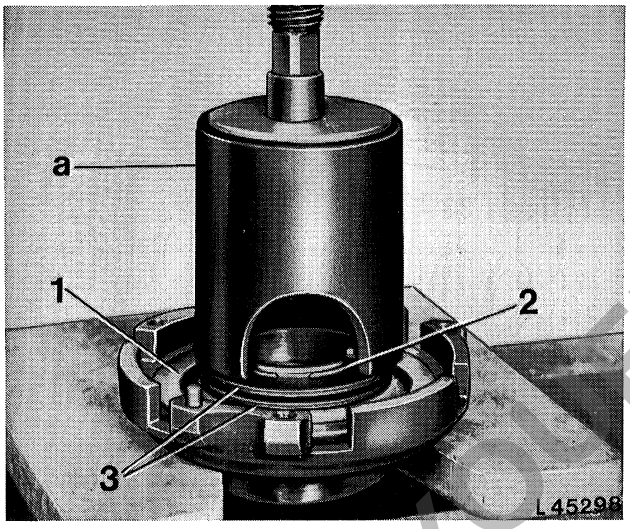


Fig. 6 — Removing Annular Piston of High Disk Clutch

a Special tool No. 19.58-90.617
1 Annular piston
2 Snap ring
3 Spring washers

To facilitate removal of annular piston 1 (fig. 6) from planet pinion carrier or High clutch drum, first remove snap ring 2 retaining spring washers 3 in planet pinion carrier or clutch drum.

Position special tool No. 19.58-90.617 (see "a", fig. 6) on spring washers and press washers down so that the snap ring can be removed.

⚠ CAUTION: Make sure special tool is centered over spring washer pack. After snap ring is removed, release pressure slowly and keep fingers away.

Remove spring washers and annular piston. Mark annular pistons for easier reassembly. Do not mix up annular pistons.

The planet pinions rotate in a carrier on pins 45 (fig. 7) and are supported by two needle bearings 42.

Prior to removal, rotate planet pinions until "V" marks match the "V" marks on sun gear. Then identify planet pinions and sun gear so that marks on pinions exactly match the SAME marks on sun gear when reassembling.

NOTE: Identification is necessary only if old planet pinions are to be installed again.

To remove planet pinions, pull bearing pins slightly out of planet pinion carrier by means of a 1/4 in. cap screw and remove detent ball at end of each bearing pin. Be careful not to lose the balls.

Pull bearing pins completely out of carrier and remove planet pinions, needle bearings, and thrust washers.

Remove sun gear and thrust washer from planet pinion carrier.

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INSPECTION AND REPAIR

Check spool 21 (fig. 11) and transmission shift cover 6 for damaged lands.

Check tension of springs 18, 31 and 33 (see Specifications).

ASSEMBLY

Assemble special pin and spool of control valve assembly as follows and check tension of springs:

1. Install washer 19 (fig. 11), spring 18, three shims 17 and snap ring 16 onto special pin 20. Place special pin (small end first) on spring scales. Press down with your finger on spring of special pin. The spring should break free from headed end of special pin at a determined load (see Specifications).

If necessary, add or deduct shims until correct spring preload is obtained.

IMPORTANT: There should always be a minimum of one shim.

2. Install five shims 17 (figs. 11 and 12) followed by spring 31, sleeve 32, spring 33 and snap ring 16 on spool 21.

Place spool end on scales and press with fingers on actuator. If actuator does not break free from snap ring end of spool at the specified load, add or deduct shims until correct spring preload is obtained (see Specifications).

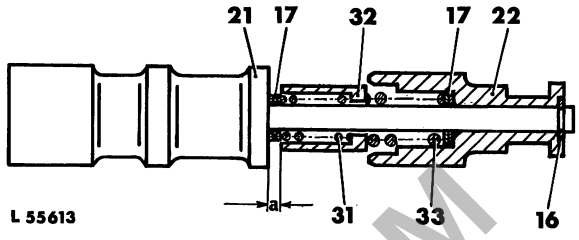


Fig. 12 — Adjustment of Actuators and Spool

a 1.5 to 2 mm (0.06 to 0.08 in.)
16 Snap ring
17 Shims (use as required)
21 Spool
22 Actuator
31 Spring
32 Sleeve
33 Spring

After having obtained correct spring preload by installing the correct number of shims, again remove parts from spool 21. Place some of the shims on spool 21 and the remainder in actuator 22 so that there is a distance of 1.5 to 2 mm (0.06 to 0.08 in.) between sleeve 32 and spool shoulder (see "a", fig. 12).

Slide control valve assembly into bore of transmission shift cover. Drive cap 14 (fig. 11) into bore of transmission shift cover (open end first) until flush with inner side of shift cover. If cap is driven too far into transmission shift cover, this will adversely affect correct shifting of spool.

ADJUSTING INTERLOCK MECHANISM OF PTO CONTROL LEVER

Coat both hex. socket screws with sealing compound and screw flush into transmission cover, that is until springs are fully compressed. After that unscrew both hex. socket screws two turns.

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11.3 cm^3 (0.69 cu.in.) and 22.6 cm^3 (1.38 cu.in.) hydraulic pump

Remove plug located opposite pump stroke control valve. Install adapter No. 19.58-90.271 (see 4, fig. 4) complete with O-ring.

Screw elbow No. 19.58-90.270 (see 3, fig. 4), provided with O-ring, in adapter. Connect pressure gauge No. 19.58-90.269 to elbow and thus to hydraulic pump by means of pressure hose of special tool No. 19.58-90.260 (see fig. 4).

39.5 cm (2.40 cu.in.) hydraulic pump

Remove plug (3/8 in.) located on upper right-hand of hydraulic pump and install adapter no. 19.58-90.266 (see 3, fig. 5).

On all hydraulic pumps

Test pump stand-by pressure (see Specifications, and check hydraulic components for proper operation.

Adjust pump stroke control valve to 103 bar (1500 psi).

Actuate control lever of one of the hydraulic components which does not have priority in oil supply (rockshaft or selective control valve); it should not operate. If components operate, this indicates a malfunction of the pressure control valve (contaminated valve or broken valve spring). Determine cause of trouble and remedy the fault (see group 10 of this section) before continuing the test.

Carry out either of the following two operations:

1. Move rockshaft control lever fully forward so that lift arms are completely lowered. Then move control lever backward until lift arms have completely risen.

2. Completely retract remote cylinder. Then move selective control lever in "fast extend" position.

Turn adjusting screw of pump stroke control valve so as to increase system pressure. Record gauge reading when actuated hydraulic component starts to operate normally. This value indicates pressure control valve adjustment. For proper pressure control valve adjusting pressure see Specifications.

If adjusting pressure is not correct, add or remove shims between valve spring and orifice (see group 10 of this section). One shim will change pressure by 2.5 to 2.8 bar (35 to 40 psi).

To adjust the pressure control valve, disconnect pressure line of hydraulic pump at adapter. Remove adapter from valve housing (see group 10). Pull spool out of valve, housing bore and install proper number of shims between orifice and spring.

Adjust stroke control valve of hydraulic pump so that correct system stand-by pressure is obtained.

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Inspect load control arm 11 for wear or damage.

Inspect special pin 6 for rough spots where in contact with load control shaft. Check extension 14 for wear and smooth off any roughness.

Examine load control shaft 1 for damage. Check for bent condition and replace, if necessary.

Check spacer bushings 2, on which the draft links are carried, for wear and replace as necessary.

Check load control arm negative stop screw 7 or both pins 20 and 21 for wear, especially on end contacting load control arm. Replace O-ring 9 on screw 7 or O-ring 22 on pin 21.

INSTALLATION

Coat load control shaft with clean transmission oil, insert in bushings and slide through transmission case.

IMPORTANT: Do not damage sealing rings.

Push spacer bushings on ends of load control shaft protruding from the transmission case.

Place load control arm with extension and cam follower into transmission case and insert control arm pivot shaft. Install cam follower return spring.

Before installing the load control arm negative stop screw 7 (fig. 22) or both pins 20 and 21 and cap screw 24, coat O-ring 9 or 22 with clean transmission oil. Take care not to damage the O-ring when installing stop screw 7 or pin 21. Screw load control arm negative stop screw into transmission case. Leave screw backed out slightly until final adjustment is made.

Install left-hand final drive, see section 10, group 25.

Install rockshaft assembly, see section 10, group 25.

Install 3-point hitch.

Install draft links, placing a bushing over both load control shaft ends. Secure each link with a pin and spring clip.

NOTE: If there is too much clearance between bushings and draft links, then install sufficient. shims 2 (fig. 24) on both sides between bushings and draft links so there is a clearance of 9.7 to 3.7 mm (0.10 to 0.14 in.).

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