

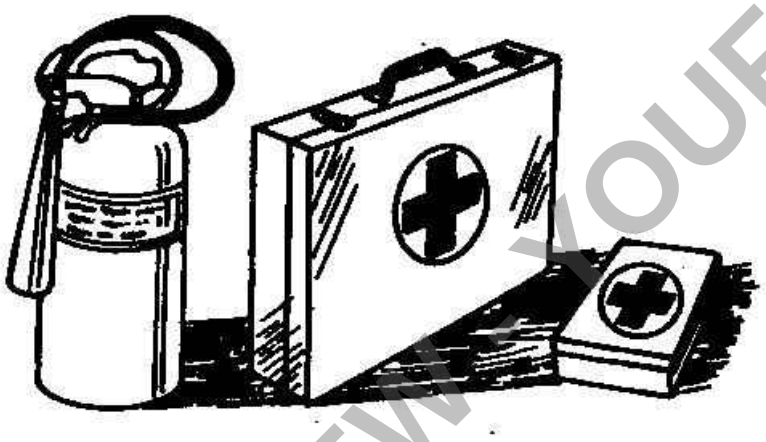
Battery Explosions

Keep sparks, lighted matches, and open flame away from the top of battery. Battery gas can explode.

Never check battery charge by placing a metal object across the posts. Use a volt-meter or hydrometer.

Do not charge a frozen battery; it may explode. Warm battery to 16°C (60°F).

Prepare for Emergencies



First Aid Kit

Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher handy.

Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.

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General Specifications

General Specifications

	8230T	8330T	8430T
Power (Factory Observed):			
PTO	149 kW (200 hp)	175 kW (235 hp)	190 kW (255 hp)
Rated Speed	2100 rpm		
Engine Speed at 1000 rpm PTO Speed:	2000 rpm		
Governed Speed Range	900—2200 rpm		
Operating Speed Range	1500—2100 rpm		
Slow Idle Speed	890—910 rpm		
Fast Idle Speed	2200 rpm		
Engine:			
Type	Diesel		
Cylinders	In-line 6, Wet Sleeve, Valve-in-Head		
Aspiration	Turbocharged and Air-to-Air Aftercooled		
Lubrication	Full Pressure, Full-Flow Filtration with Bypass		
Displacement	9 L (549 $in.^3$)		
Bore	118 mm (4.66 in.)		
Stroke	136 mm (5.35 in.)		
Compression Ratio	16.3:1		
Valve Clearance:			
.. Intake	0.46 mm (0.018 in.)		
.. Exhaust	0.71 mm (0.028 in.)		
Electrical System:			
Type	12-volt		
Alternator	200 amp		
Batteries	(2) 12-volt in Parallel		
Cold Cranking Amps	1850		
Capacities:			
Fuel Tank	492 L (130 gal)		
Cooling System:	40 L (10.5 gal)		
Crankcase	24 L (25.5 qt)	24 L (25.5 qt)	25.5 L (27 qt)
Transmission and Hydraulics	246 L (65 gal); Includes 23 L (6 gal) for Clean-Oil Reservoir		
Drive Wheel Hubs (each)	25 L (6.6 gal)		

Machine Specifications

Cooling System:

Type ..... 70 kPa (0.7 bar) (10 psi) Liquid with Gear-Driven Centrifugal Pump and Enclosed Recovery Tank

Fan Drive: ..... Variable Ratio Belt Drive

Thermostats ..... Two Heavy-Duty

Fuel System:

Injection Pump Type ..... Electronically Injected and Governed—High-Pressure Common Rail

Fuel Filter ..... Spin-On with Water Separator and Sensor

Air Cleaner ..... Dry-Type with Secondary Element

Hydraulic System:

Type ..... Pressure/Flow Compensated

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Tandem Gear Pump (Transmission Control-Charge):

.. Rated Flow at Charge Pump ..... 2.0 L/s (31 gpm)

.. Rated Flow at Primary Pump ..... 1.4 L/s (23 gpm)

Secondary Axial Piston Pump (Hitch-SCV)

.. Maximum Pressure ..... 20 000 kPa (200 bar) (2900 psi)

.. Available Flow (45 cm^3) ..... 2.1 L/s (33.5 gpm)

.. Available Flow (Optional 57 cm^3) ..... 2.7 L/s (42.5 gpm)
Available Flow at one SCV ..... 1.9 L/s (30 gpm)

Hitch Lift Capacity:

..North America (with Quick Coupler) ..... 6894 kg (15,200 lb)

..European (with Waltersheid hitch) ..... 6894 kg (15,200 lb)

Brakes:

Type ..... Power Hydraulic Wet Disk

Steering:

Type ..... Hydrostatic Differential

PowerShift Transmission:

Type ..... Automatic PowerShift, Electronically-Controlled, Hydraulically-Activated Wet Disk Clutches

Gear Selections:

.. North America ..... 16 Forward – 4 Reverse

.. European ..... 16 Forward – 5 Reverse

Power Take Off:

Type ..... Fully Independent

Size ..... 45 mm (1-3/4 in.) 1000 rpm

Clutch ..... Multiple Wet-Disk Hydraulically Activated

Weight:

Average Shipping Weight, less Weights (North America) ..... 10,725 kg (23,656 lb)

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Overall Dimensions

Overall Dimensions

Overall Dimensions:

Wheelbase ..... 2260 mm (89 in.)

Overall Length less Hitch and Drawbar ..... 5502 mm (216.6 in.)

....With Front Weights ..... 5869 mm (231.1 in.)

Width:
....Standard Tread, 16-in. Track at 1524 mm (60 in.) Tread Spacing ..... 2634 mm (103.7 in.)

....Wide Tread, 25-in. Track at 3048 mm (120 in.) Tread Spacing ..... 3657 mm (144 in.)

....Wide Tread, 30-in. Track at 3048 mm (120 in.) Tread Space ..... 3810 mm (150 in.)

....Narrow Tread (European), 16-in. Track at 1524 mm (60 in.) Tread Spacing ..... 2543 mm (100.1 in.)

Height, Top of Cab ..... 3172 mm (124.9 in.)

Crop Clearance:

....Rear Axle ..... 550 mm (21.7 in.)

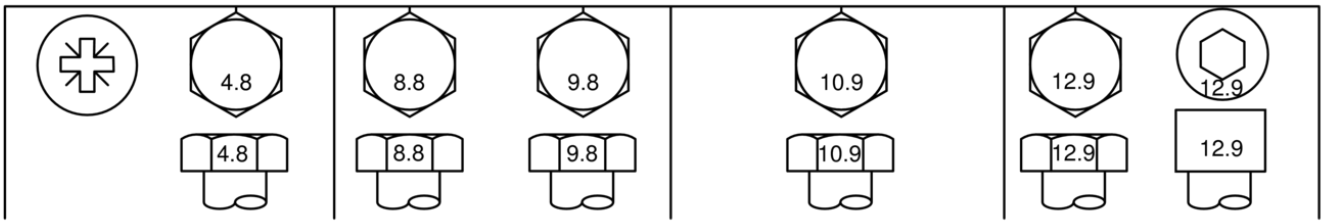
....Drawbar ..... 450 mm (17.7 in.)

Turning Radius ..... Can Counter-Rotate

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Metric Bolt and Screw Torque Values



Metric Bolt and Screw

Metric Torque Values

Bolt or Screw Size	Class 4.8				Class 8.8 or 9.8				Class 10.9				Class 12.9			
	Lubricated ["Lubricated" means coated with a lubricant such as engine oil, fasteners with phosphate and oil coatings, or M20 and larger fasteners with JDM F13C, F13F or F13J zinc flake coating.]		**Dry** ["Dry" means plain or zinc plated without any lubrication, or M6 to M18 fasteners with JDM F13B, F13E or F13H zinc flake coating.]		**Lubricated** ["Lubricated" means coated with a lubricant such as engine oil, fasteners with phosphate and oil coatings, or M20 and larger fasteners with JDM F13C, F13F or F13J zinc flake coating.]		**Dry** ["Dry" means plain or zinc plated without any lubrication, or M6 to M18 fasteners with JDM F13B, F13E or F13H zinc flake coating.]		**Lubricated** ["Lubricated" means coated with a lubricant such as engine oil, fasteners with phosphate and oil coatings, or M20 and larger fasteners with JDM F13C, F13F or F13J zinc flake coating.]		**Dry** ["Dry" means plain or zinc plated without any lubrication, or M6 to M18 fasteners with JDM F13B, F13E or F13H zinc flake coating.]		**Lubricated** ["Lubricated" means coated with a lubricant such as engine oil, fasteners with phosphate and oil coatings, or M20 and larger fasteners with JDM F13C, F13F or F13J zinc flake coating.]		**Dry** ["Dry" means plain or zinc plated without any lubrication, or M6 to M18 fasteners with JDM F13B, F13E or F13H zinc flake coating.]	
	N˙m	**lb.-in.**	**N˙m**	**lb.-in.**	**N˙m**	**lb.-in.**	**N˙m**	**lb.-in.**	**N˙m**	**lb.-in.**	**N˙m**	**lb.-in.**	**N˙m**	**lb.-in.**	**N˙m**	**lb.-in.**
M6	4.7	42	6	53	8.9	79	11.3	100	13	115	16.5	146	15.5	137	19.5	172
									N˙m	**lb.-ft.**	**N˙m**	**lb.-ft.**	**N˙m**	**lb.-ft.**	**N˙m**	**lb.-ft.**
M8	11.5	102	14.5	128	22	194	27.5	243	32	23.5	40	29.5	37	27.5	47	35
			N˙m	**lb.-ft.**	**N˙m**	**lb.-ft.**	**N˙m**	**lb.-ft.**								
M10	23	204	29	21	43	32	55	40	63	46	80	59	75	55	95	70
	N˙m	**lb.-ft.**														
M12	40	29.5	50	37	75	55	95	70	110	80	140	105	130	95	165	120
M14	63	46	80	59	120	88	150	110	175	130	220	165	205	150	260	190
M16	100	74	125	92	190	140	240	175	275	200	350	255	320	235	400	300
M18	135	100	170	125	265	195	330	245	375	275	475	350	440	325	560	410
M20	190	140	245	180	375	275	475	350	530	390	675	500	625	460	790	580
M22	265	195	330	245	510	375	650	480	725	535	920	680	850	625	1080	800
M24	330	245	425	315	650	480	820	600	920	680	1150	850	1080	800	1350	1000
M27	490	360	625	460	950	700	1200	885	1350	1000	1700	1250	1580	1160	2000	1475
M30	660	490	850	625	1290	950	1630	1200	1850	1350	2300	1700	2140	1580	2700	2000
M33	900	665	1150	850	1750	1300	2200	1625	2500	1850	3150	2325	2900	2150	3700	2730
M36	1150	850	1450	1075	2250	1650	2850	2100	3200	2350	4050	3000	3750	2770	4750	3500

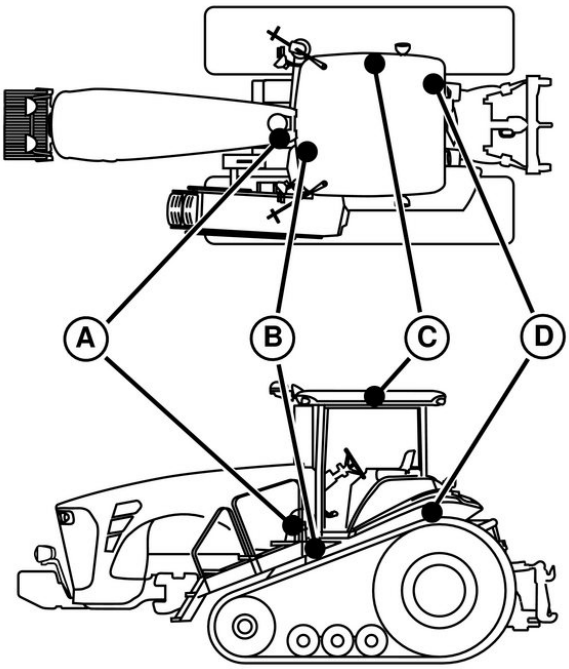
Torque values listed are for general use only, based on the strength of the bolt or screw. DO NOT use these values if a different torque value or tightening procedure is given for a specific application. For stainless steel fasteners or for nuts on U-bolts, see the tightening instructions for the specific application. Tighten plastic insert or crimped steel type lock nuts by turning the nut to the dry torque shown in the chart, unless different instructions are given for the specific application.

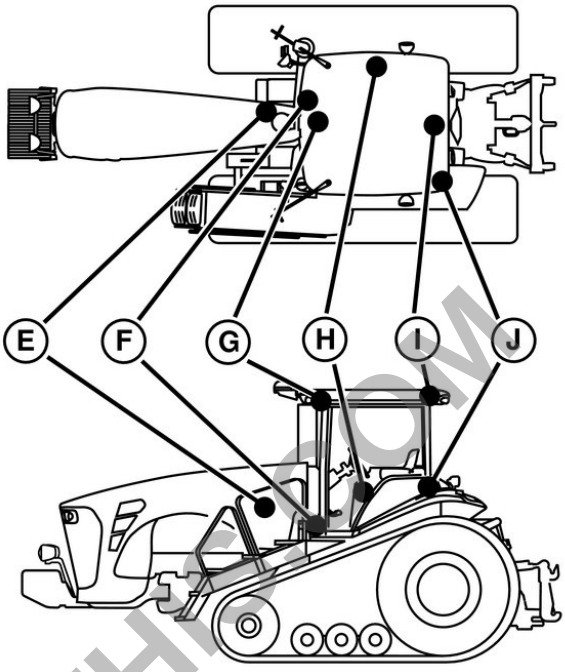
Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical property class. Replace fasteners with the same or higher property class. If higher property class fasteners are used, tighten these to the strength of the original. Make sure fastener threads are clean and that you properly start thread engagement. When possible, lubricate plain or zinc plated fasteners other than lock nuts, wheel bolts or wheel nuts, unless different instructions are given for the specific application.

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Ground Point Locations





Ground Point Locations

LEGEND:

A	Single Point Ground
B	Cab Chassis Ground
C	Cab Roof Ground
D	Cab Floor
E	A/C Compressor Clutch Ground
F	Radio Ground
G	Front Wiper Motor Ground
H	Right Junction Block
I	Rear Wiper Motor
J	Left Junction Block

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Group 15 - Charging Circuit

List of References

Below is a list of all items within this group.

Repair Alternator—Use CTM77

Disconnect Electrical Circuit

Exploded View—Alternator

Replace Alternator

Repair Alternator—Use CTM77

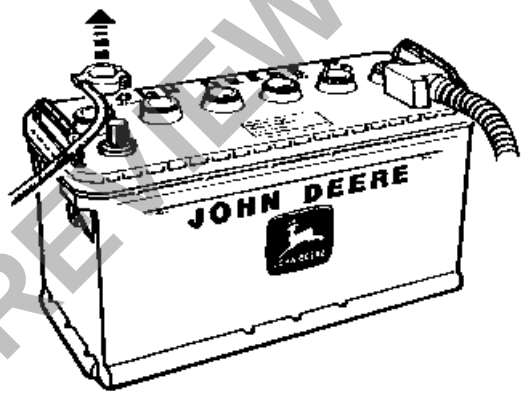


Component Technical Manual

For complete repair information on alternator, component technical manual is also required.

Use the component technical manual in conjunction with this machine manual.

Disconnect Electrical Circuit

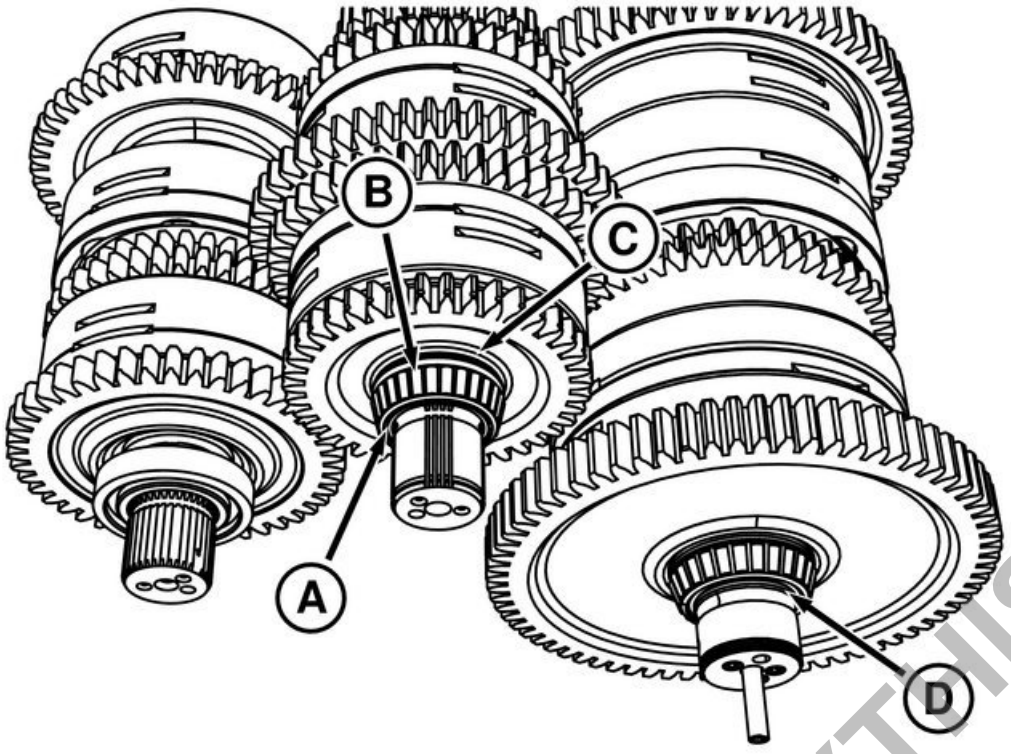


Disconnect Electrical Circuit

Disconnect battery ground (-) cable before carrying out any electrical repairs.

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Output Shaft Bearings

LEGEND:

A	O-Ring (Temporary)
B	Front Bearing
C	Countershaft Front Thrust Washer
D	Output Shaft Front Bearing Snap Ring

Remove O-ring (A) and bearing (B).

[41] - Remove thrust washer (C).

[42] - Remove bearing retaining snap ring (D).

[43] - Remove output shaft front bearing and thrust washer.

[44] -

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Disassemble and Recondition Spiral Bevel Pinion Shaft

[1] -



Differential Pinion Retaining Tool

LEGEND:

A	Retaining Tool

Remove pump drive housing. (See Remove and Install Pump Drive Housing in this group.)

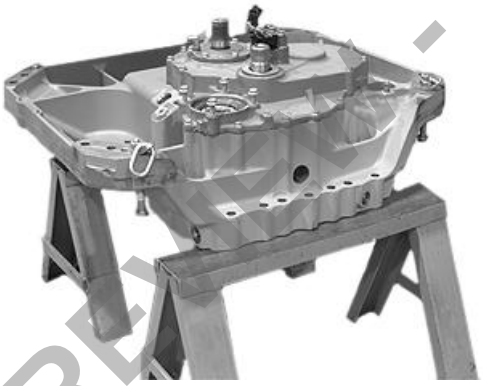
[2] -

→NOTE:

For 8530T useJDG1606 Differential Pinion Retaining Tool.

Install JDG1073 Differential Pinion Retaining Tool for 8130T-8430T orJDG1606 Differential Pinion Retaining Toolfor 8530T Differential Pinion Retaining Tool (A).

[3] -



Pump Drive Housing on Stands

Support the pump drive housing on the rear sealing surface using sawhorses or stands.

[4] -

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→NOTE:

Pump shaft cannot be installed without hex screw (B) installed.

Install four washers (A) and one of large hex screws (B) as illustrated.

[104] - Install 8 mm hex screw (C) with spacer and lifting bracket and tighten.

[105] - Install and tighten 8 mm hex screw (D).

Item	Measurement	Specification
End Cap-to-Steering Pump Small Cap Screws	Torque	38 N·m (28 lb-ft)

[106] -



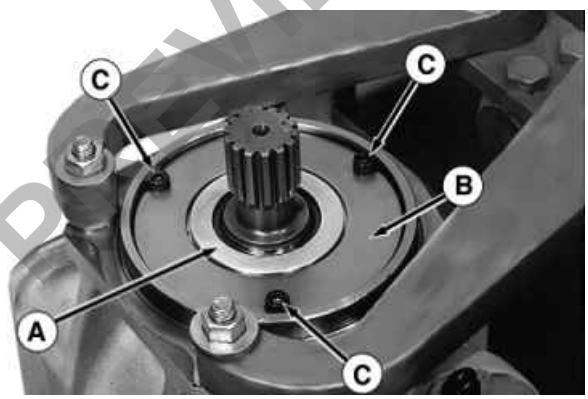
Installing Shaft and Bearing Assembly

Turn pump 180° to install shaft.

[107] - Install shaft and bearing assembly.

[108] - Rotate shaft to ensure rotating assembly turns freely.

[109] -



Seal Carrier, Retaining Plate, and Screws

LEGEND:

A	Seal Carrier
B	Retaining Plate
C	Hex Screws

Carefully install seal carrier (A) with**NEW** lip seal.

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Repair:

- Most brake valve components are serviced as kits.
- O-rings, seals, and backup rings are included in brake valve overhaul kit.

IMPORTANT:

Absolute cleanliness is essential when working on the hydraulic system. Contamination can result in serious damage or inadequate operation.

Disassembly and Assembly:

- Left and right brake valve components are select fit and must be kept separate.
- Replace all seals, O-rings, and backup rings.
- Lubricate all internal parts with clean hydraulic oil during assembly.
- Components must be tightened to specified torque.

Cleaning and Inspection:

- Clean parts with clean solvent. Use moisture-free compressed air to dry parts and to clear oil passages of any contamination. DO NOT use shop towels to dry parts.
- Valve components must not bind in housing bores.
- Inspect springs for wear, damage, or distortion.

System Startup:

- Brake system must be bled. (See Bleed Brakes in this group.)

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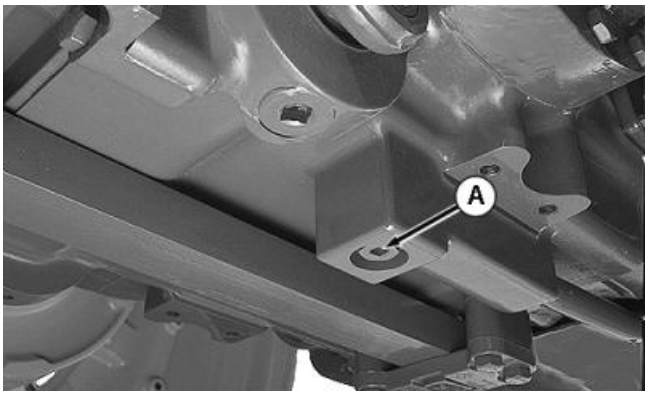
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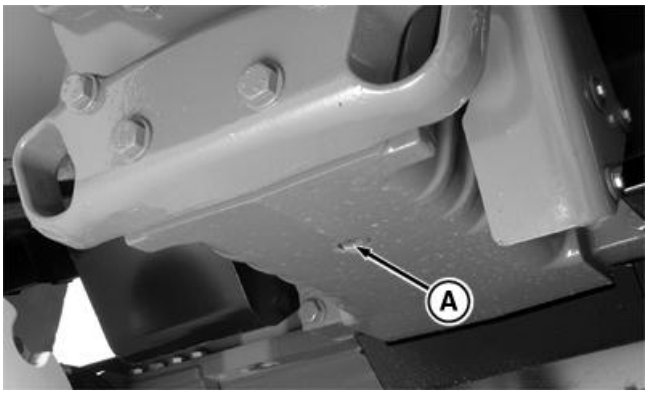
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Drain Hydraulic System

[1] -



Differential Case



Transmission Housing

LEGEND:

A	Differential and Transmission Drain Plugs

Remove drain plugs (A) on the differential case and transmission housing.

Item	Measurement	Specification
Transmission and Differential	Observed Drain Capacity	246 L (65 gal)
	Observed Drain Capacity (Less Clean-Oil Reservoir)	205 L (54 gal)

[2] -

IMPORTANT:

Prevent system contamination. Use a JT05746 Filter Caddy to filter the oil BEFORE refilling the hydraulic system. (See Hydraulic Cleanup Procedure in this group.)

→NOTE:

Capacities are average values and may vary between tractors or each oil change.

Reinstall drain plugs.

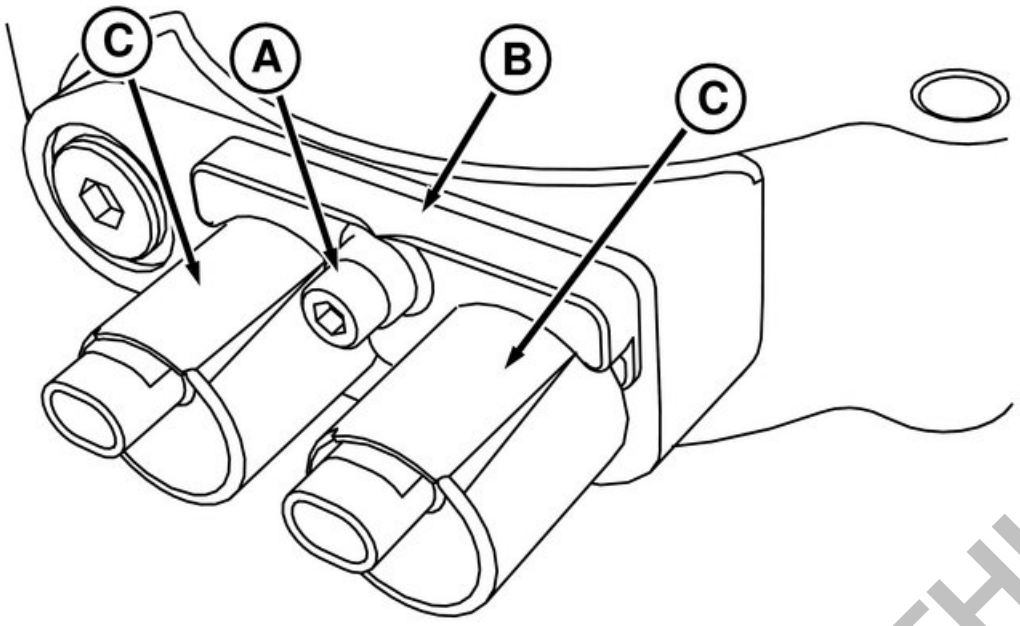
[3] -

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Disassemble, Inspect, and Assemble Hitch Valve

[1] -



30 Series Valves

LEGEND:

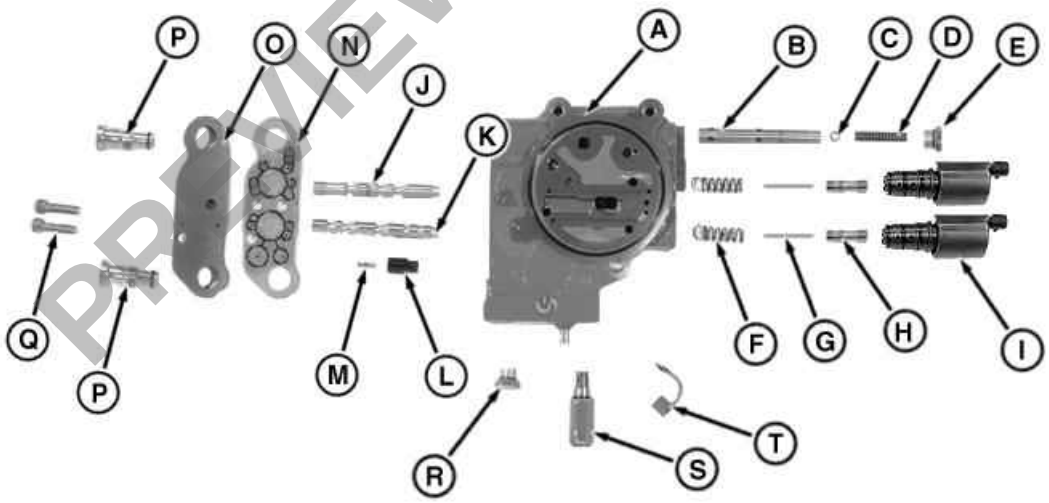
A	Socket Head Screw
B	Armature Retainer
C	Armatures (2 used)

Remove socket head screw, clamp and armatures.

[2] -

IMPORTANT:

Hitch valve must be recalibrated if armatures are replaced or exchanged.



Exploded View - Hitch Control Valve

LEGEND:

A	Hitch Valve Housing
B	Compensator Valve
C	Washer

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Load Check Poppet

LEGEND:

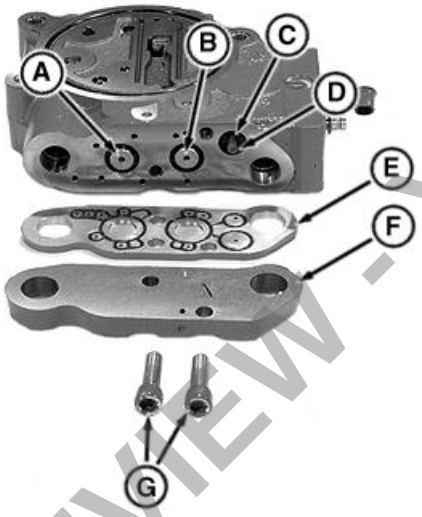
A	Poppet Seat

Inspect load check poppet for damage. Seat area (A) must be free of any scores or embedded foreign material.

[11] -

IMPORTANT:

Spools must be installed in correct bores. Hitch raise spool has a (+), hitch lower spool has a (-) machined on end.



Valve Spools

LEGEND:

A	Hitch Raise Spool
B	Hitch Lower Spool
C	Load Poppet
D	Spring
E	Seal Plate
F	End Cover
G	Socket Head Screws (2 used)

Lubricate spools (A and B) and install in housing.

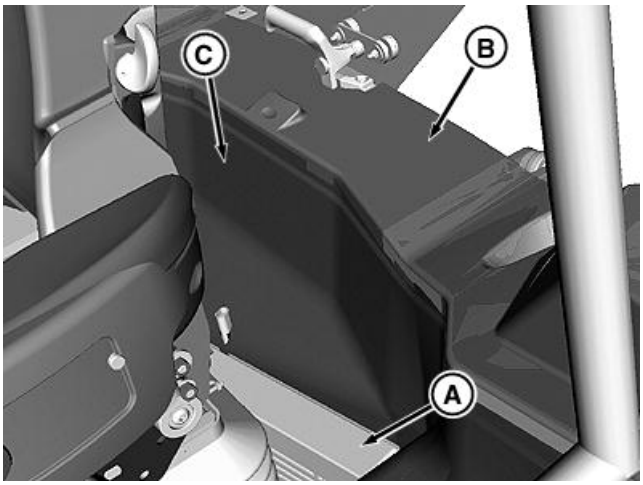
[12] - Install load poppet (C) and spring (D).

[13] - Install**NEW** seal plate (E), end cover (F), and**hand** tighten socket head screws (G).

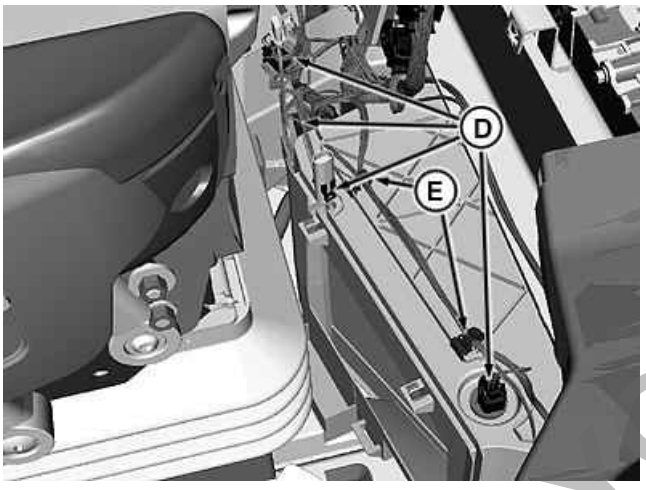
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Remove HVAC Module



Cab Upholstery



Connectors

LEGEND:

A	Cab Recirculating Filter and Cover
B	Fuse Panel Cover
C	Rear Cab Upholstery
D	Connectors
E	Harness Clamps

[1] - For all tractors: Drain cooling system.

[2] - Discharge system. (See Discharge Air Conditioning System in Group 10.)

[3] - Remove cab recirculating filter and cover (A).

[4] - Remove fuse panel cover (B).

[5] - Remove rear upholstery panel (C) behind seat.

[6] - Disconnect and identify thermostat and blower speed resistor connectors (D) for reassembly.

[7] - Remove harness from harness clamps (E).

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- After flushing system with solvent, to prevent oil dilution
- System was contaminated with nitrogen or two refrigerants
- System was left open to the atmosphere and flushing could not be performed
- Installation of new lines, condenser, or evaporator was required

Evacuating:

Evacuating the system is a process to remove air and moisture from the system, by creating a vacuum.

Solvents

The following solvent is recommended for flushing air conditioning systems. Use only solvents with an equivalent MSDS.

TY16134 A/C System Flushing Solvent

→NOTE:

New solvent used in parts cleaning tank can be used for the PRIMARY flush, providing a FINAL flush with TY16134 Solvent is performed. Parts tank solvents will not evaporate below 60°C (140°F). Therefore TY16134 Solvent must be used for the final flush, since the evaporation temperature is much lower, and it is easily removed when evacuating the system.

Purge Air Conditioning System

IMPORTANT:

Air compressors used for purging systems require a water separator. Purging without a separator adds moisture, creating hydrofluoric acid when combined with refrigerant oil. Acid is corrosive to metal tubing.

[1] - Connect dry nitrogen hose to gauge manifold center hose.

[2] - Connect gauge manifold suction hose to compressor suction port and open valves.

[3] - Connect gauge manifold discharge hose to compressor discharge port, and open valve. Disconnect discharge hose from gauge manifold to allow purging nitrogen to atmosphere.

[4] - Open nitrogen tank valve and adjust regulator to 275 kPa (2.75 bar) (40 psi). Purge system for two minutes. Disconnect nitrogen supply.

[5] - Evacuate system. (See Evacuate Air Conditioning System in this group.)

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InstallJDG1849 Track Adjustment Tool Kitusing following steps:

a. Remove four of five front and rear cap screws of track frame.
b. Install bracket and two bearings with bolts and washers in holes on top of tension cylinder bracket (A).

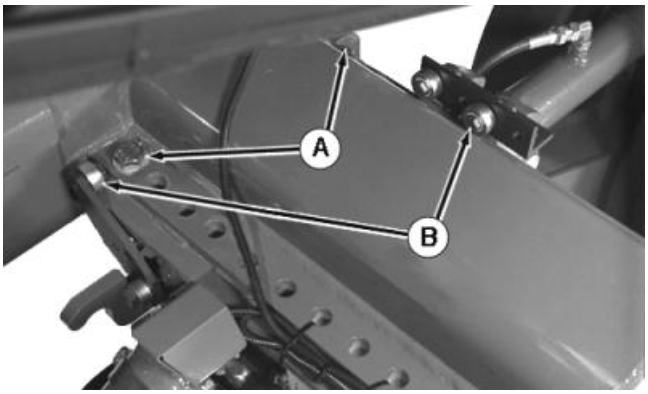
→NOTE:

Washer should be against bracket to allow bearing to turn.

Install cam assembly (B) into weld nut on back of track frame with spacer between weld nut and cam assembly.

[4] - Apply a small amount of lubricant on track frame (C) to allow adjustment kit to slide in or out.

[5] -



Cap Screws and Rollers



Track

LEGEND:

A	Cap Screws
B	Rollers
C	Track Loosened

Remove track tension. (See Detension and Tension the Track in this group.)

[6] - Remove final two cap screws (A) holding track frame to mid-frame beam.

[7] -

→NOTE:

Track frame should be hanging on rollers (B) and track dragging on ground (C).

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