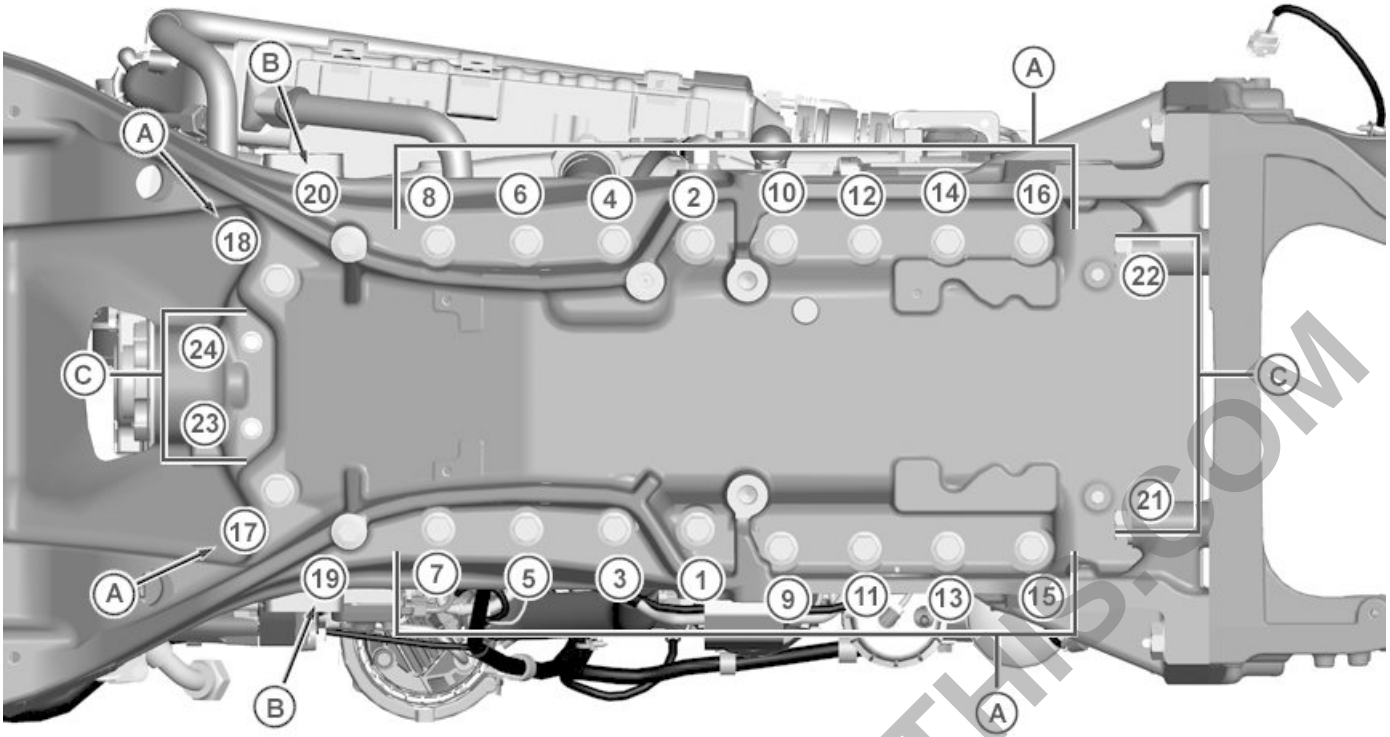
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Oil Pan Torque

LEGEND:

A	Cap Screws (1—18)
B	Cap Screws (19 and 20)
C	Cap Screws (21 —24)

Tighten cap screws (A) to specification.

Item	Measurement	Specification
9.0L Torque Turn Cap Screws (1—18)	Torque Turn	140 N·m + 90° Turn (103 lb.-ft.+ 90° Turn)

[33] - Tighten cap screws (B) to specification.

Item	Measurement	Specification
9.0L Torque Turn Cap Screws (19—20)	Torque Turn	200 N·m + 90° Turn (148 lb.-ft.+ 90° Turn)

[34] - Tighten cap screws (C) to specification.

Item	Measurement	Specification
9.0L Torque Turn Cap Screws (21 —24)	Torque Turn	45 N·m + 120° Turn (33 lb.-ft. + 120° Turn)

[35] - Tighten drive shaft yoke cap screws to specification.

Item	Measurement	Specification
Drive Shaft Yoke-to-Engine Cap Screws	Torque	70 N·m (52 lb.-ft.)

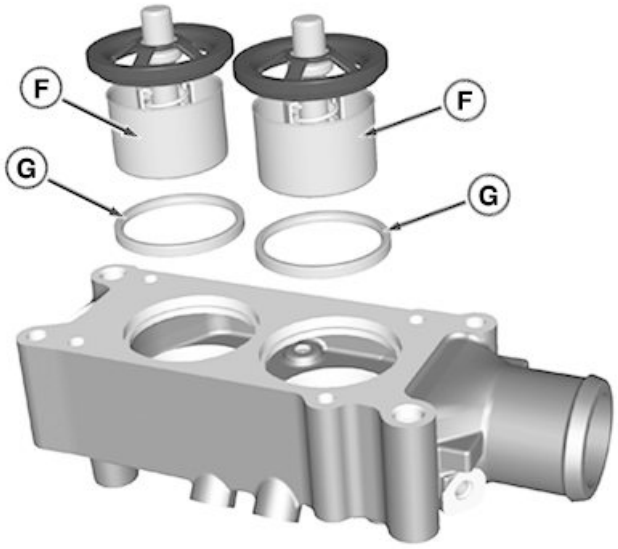
[36] - Assemble in reverse order.

[37] - Connect starter wiring harness.

[38] - Install front PTO input shaft. (See Install Front PTO Output Shaft in Section 50D, Group 25.

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Thermostat

Remove lines (C).

[12] - Remove hose clamp (A) and radiator hose (B) from thermostat housing (E).

[13] - Remove cap screws (D) and thermostat housing (E).

[14] - Remove thermostats (F), seals (G), and clean sealing area.

[15] -

→NOTE:

Thermostats are not installed during flushing procedure.

Install new seals (G).

[16] - Install thermostat housing (E) and thermostat housing cap screws (D). Tighten to specification.

Item	Measurement	Specification
Thermostat Housing Cap Screws	Torque	48 N·m (35 lb.-ft.)

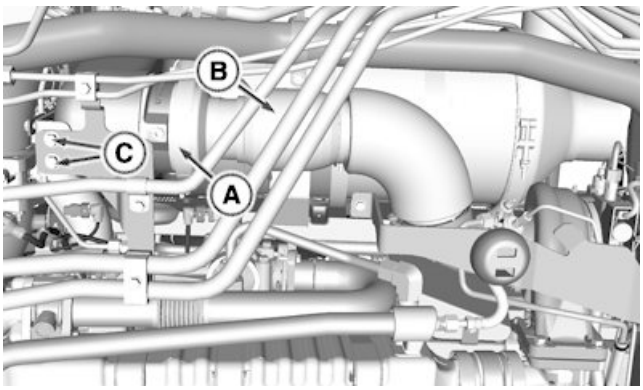
[17] - Install lines (C).

[18] - Install radiator hose (B) onto thermostat housing (E) and tighten hose clamp (A).

[19] -

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LEGEND:
A Gaskets and Clamps (2 used)
B Turbo Outlet Bellows
C Line Bundle Support Cap Screws (2 used)

9.0 L Shown

Remove gaskets and clamps (A).

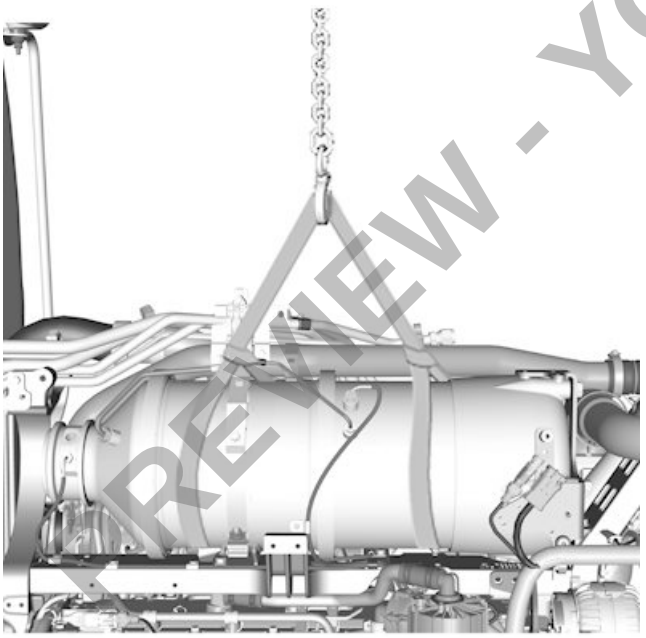
[18] - Remove turbo outlet bellows (B).

[19] - Remove cap screws (C).

[20] -

CAUTION:

Diesel Exhaust Filter weighs approximately 65 kg (143 lb.).



Lift DOC/DPF

Support diesel exhaust filter with lifting straps and overhead hoist.

[21] -

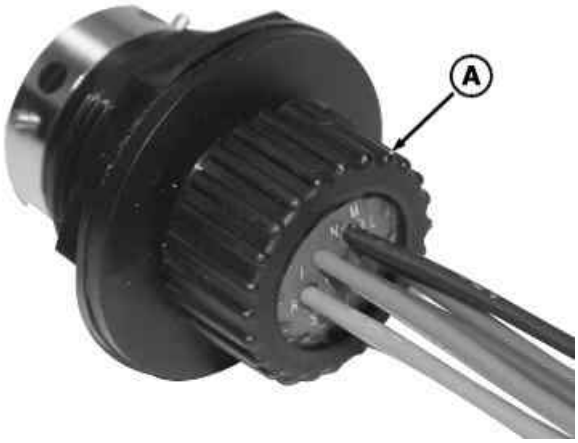
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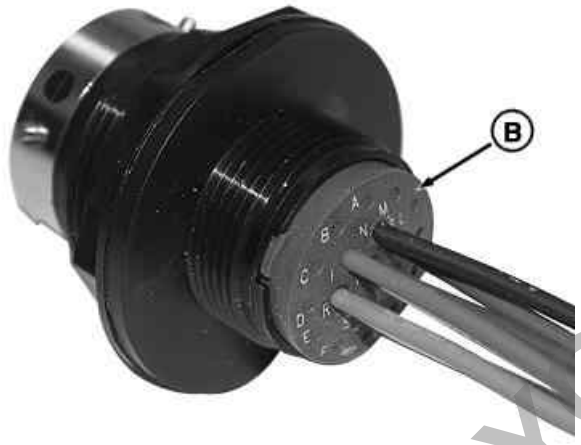
Repair ITT Connector

LEGEND:

A	Seal Retainer
B	Seal



ITT Connector



ITT Connector Seal

[1] - Remove seal retainer (A) from connector.

[2] - Slide seal (B) rearward on wires.

[3] -

→NOTE:

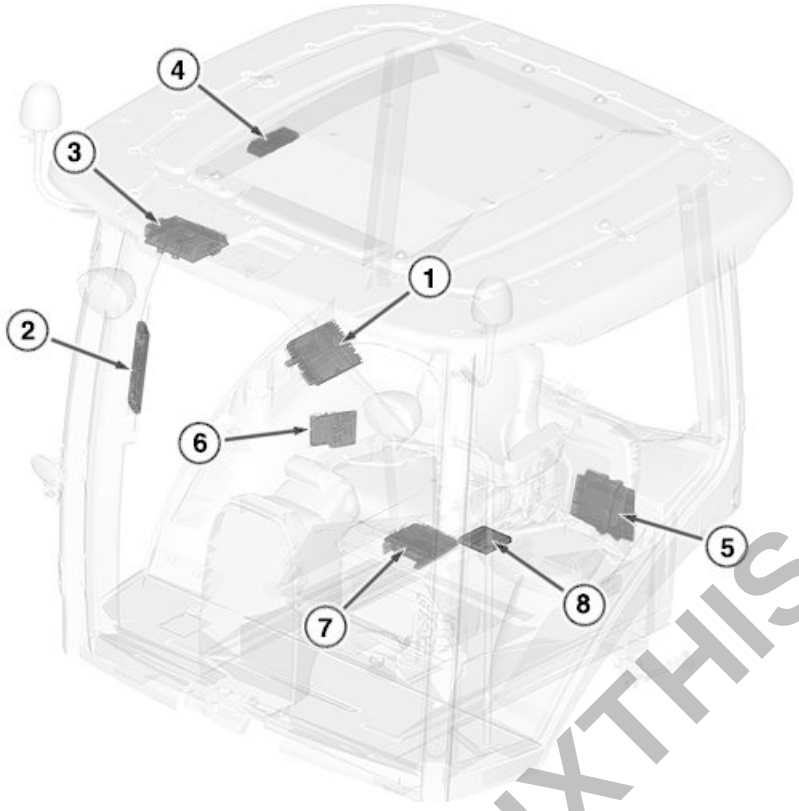
JDG140 Extraction Tool and JDG145 Universal Electrical Pliers are included in JDG155 Electrical Repair Tool Kit.

Allow tool push rod (C) to back out during insertion.

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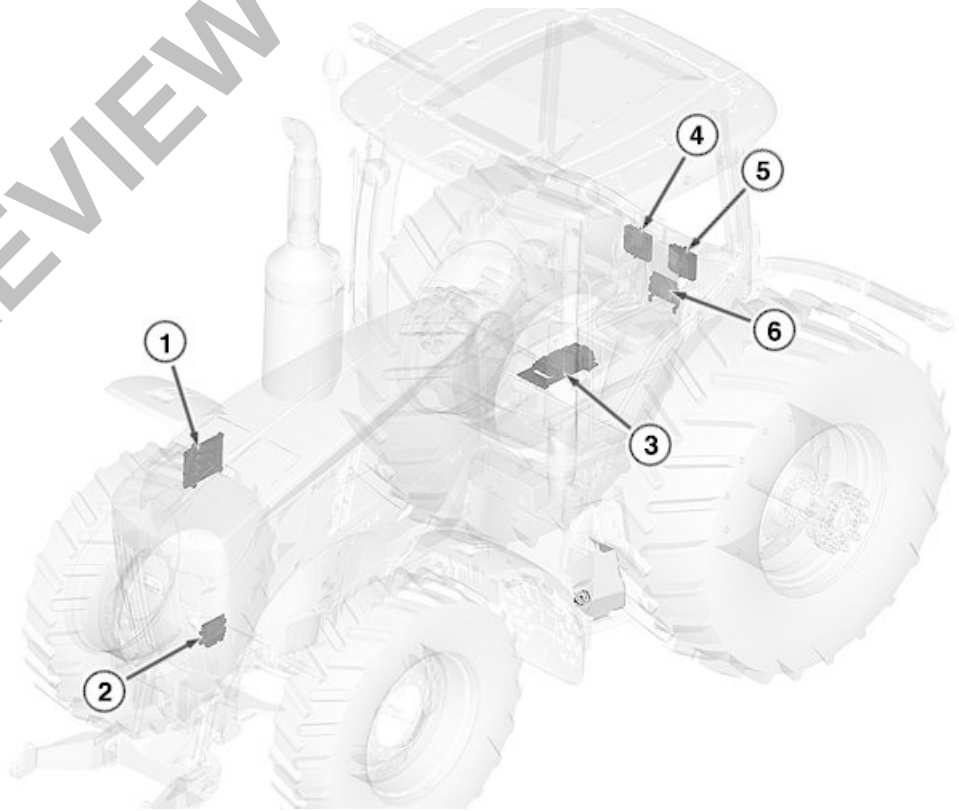
Replace Control Units



CommandQuad™/IVT™/e23™ Cab Control Unit Locations

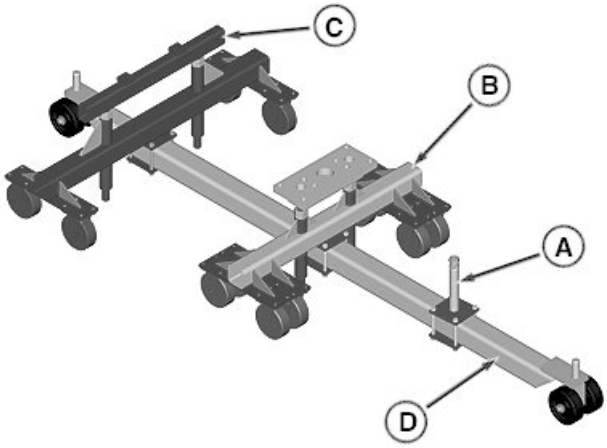
LEGEND:

1	A920 4100 or 4600 CommandCenter™ Processor
2	A903 Corner Post Display
3	A120 Roof Control Unit
4	A220 Automatic Temperature Control Unit
5	A107 Cab Control Unit
6	A012 Armrest Control Unit
7	A905 JDLink™ (MTG) control Unit
8	C912 Machine Communication Radio



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LEGEND:

A	JDG11217P3 Jack Screw
B	JDG11217P2 Rear Outrigger Support Stand
C	JDG2061 Front Adapter
D	JDG11217P1 Long Nose Stand

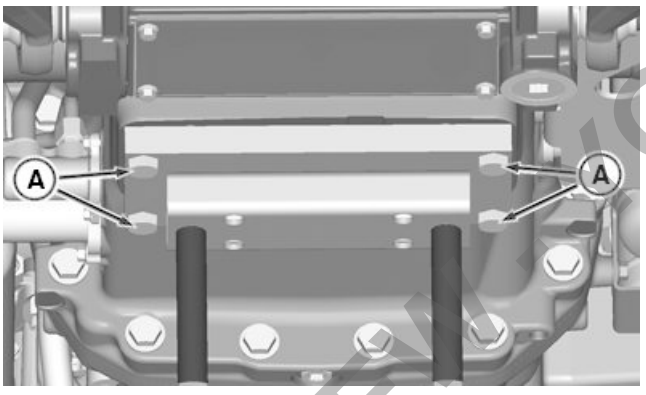
Splitting Stand

Install JDG11217P3 Jack Screw (A), JDG11217P2 Rear Outrigger Support Stand (B), and JDG2061 Front Adapter (C) to JDG11217P1 Long Nose Stand (D).

[16] -

→NOTE:

JDG11217 Splitting Stand must be brought in from right side of tractor.



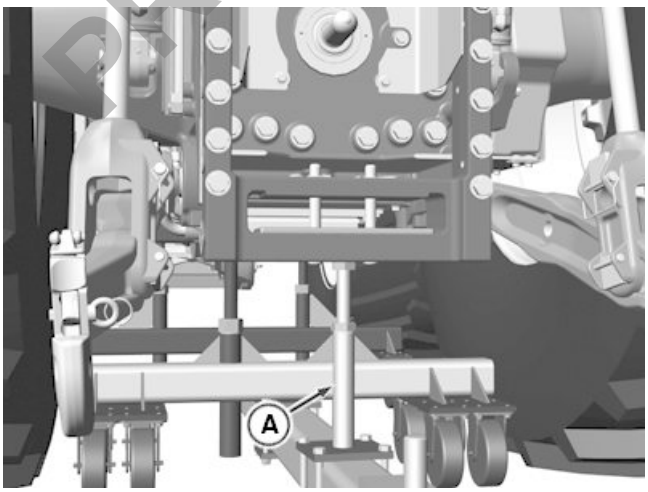
LEGEND:

A	Cap Screws (4 used)

Splitting Stand

Attach JDG11217P2 Rear Outrigger Support Stand to drawbar support using cap screws (A).

[17] -



LEGEND:

A	JDG11217P3 Jack Screw

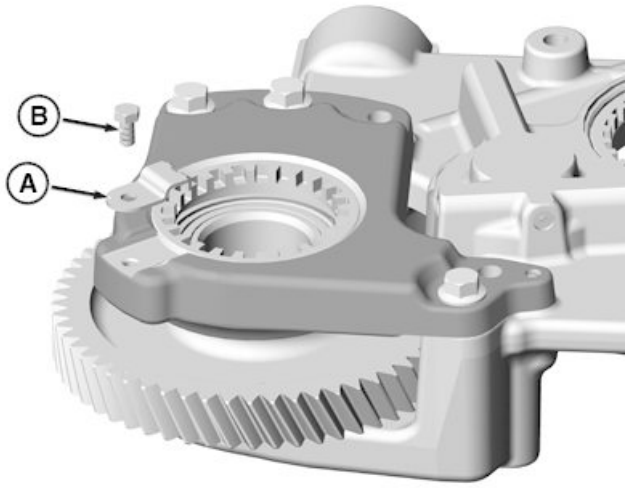
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[35] - Using JDG11196 472 mm DDS Spline Socket (B) record initial rolling drag torque.

[36] - Using JDG11191 Hydro Adjusting Ring Tool tighten adjusting ring until initial rolling drag torque is increased by 1.4—3.6 N·m (12—32 lb.-in.).

[37] -



LEGEND:
A Retaining Clip
B SU Idler Gear Bearing Support Retaining Clip Cap Screw

Retaining Clip

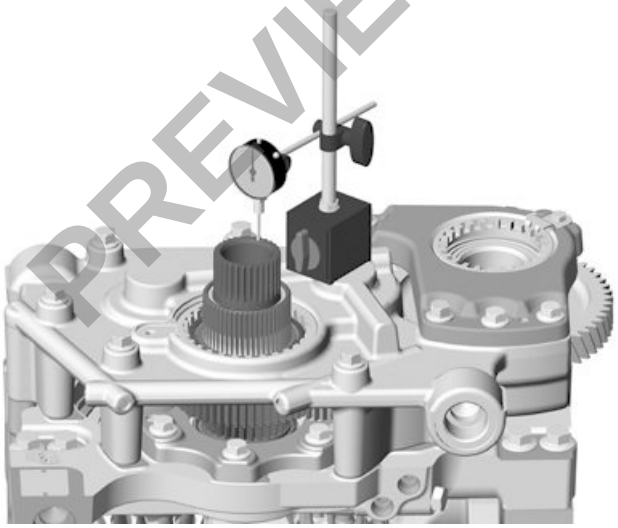
Install retaining clip (A) and SU idler gear bearing support retaining clip cap screw (B). Tighten to specification.

Item	Measurement	Specification
SU Idler Gear Bearing Support Retaining Clip Cap Screws	Torque	25 N·m (221 lb.-in.)

[38] -

→NOTE:

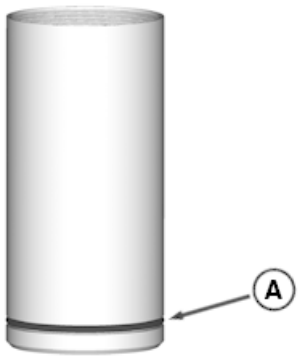
Make sure to rotate both shafts several times before checking end play.



Adjust End Play

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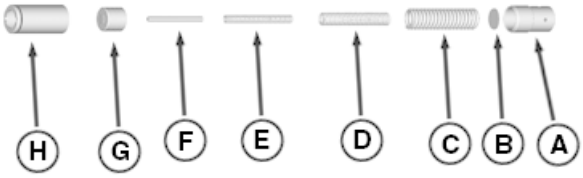
LEGEND:

A	O-ring

Accumulator Housing

Lubricate O-ring (A) with clean hydraulic oil and install on rear accumulator housing.

[5] -



LEGEND:

A	Front Accumulator Housing
B	Accumulator Spring Plate
C	Outer Spring
D	Middle Spring
E	Inner Spring
F	Accumulator Pin
G	Piston
H	Rear Accumulator Housing

Accumulator

Lightly lubricate piston (G) with clean hydraulic oil and install.

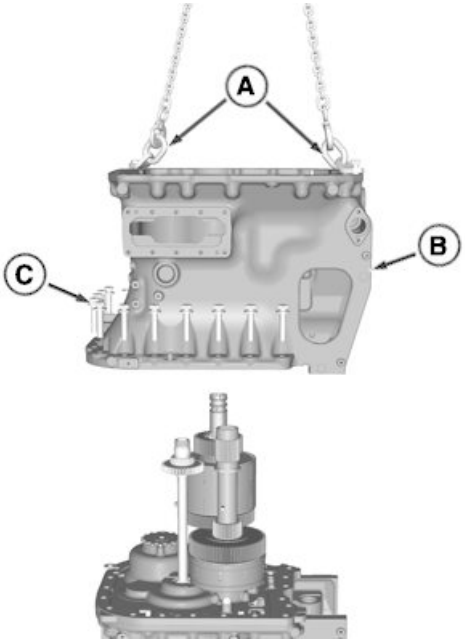
[6] - Install accumulator pin (F), inner spring (E), middle spring (D), outer spring (C), accumulator spring plate (B), and front accumulator housing (A) in rear accumulator housing (H).

[7] - Tighten accumulator halves to specification.

Item	Measurement	Specification
Accumulator Halves	Torque	75 N·m (55 lb.-ft.)

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LEGEND:

A	JDG909 Lifting Eyes (2 used)
B	Range Housing
C	Cap Screws (22 used)

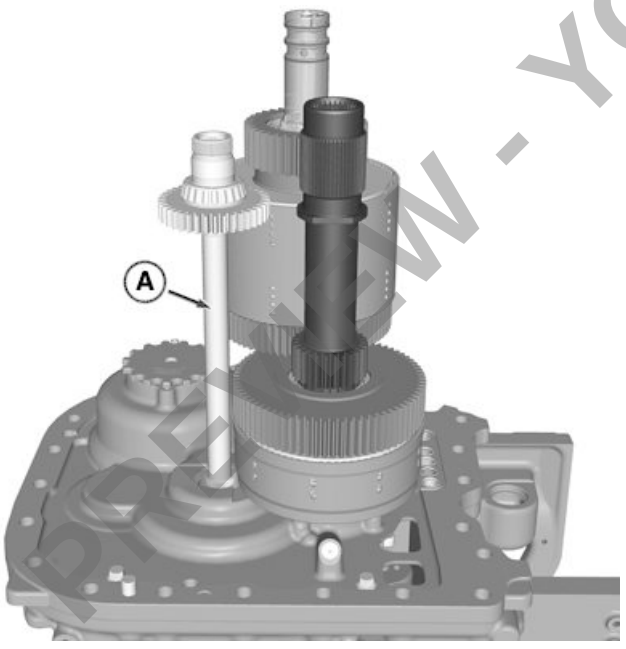
Rear Transmission Housing

Install JDG909 lifting eyes (A) in to range housing (B) as shown.

[18] - Remove cap screws (C).

[19] - Attach chain hoist and remove range housing (B) while leaving range shafts in place.

[20] -



LEGEND:

A	PTO Drive Shaft

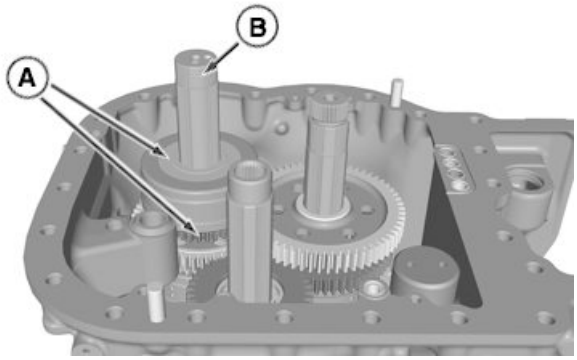
PTO Drive Shaft

Remove PTO drive shaft (A).

[21] -

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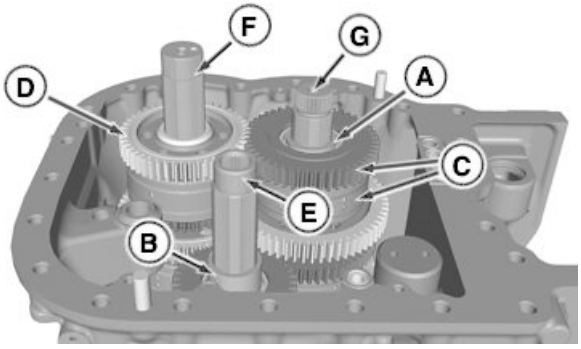


LEGEND:
A Second Speed Drive and Clutch
B B Countershaft

Second Speed Drive and Clutch

Install second speed drive and clutch (A) on B countershaft (B).

[32] -



LEGEND:
A Small Spacer Ring
B Large Spacer Ring
C Fourth Speed Drive and Clutch
D Fourth Speed Drive Gear
E Input Shaft
F B Countershaft
G C Countershaft

Fourth Speed Drive and Driven

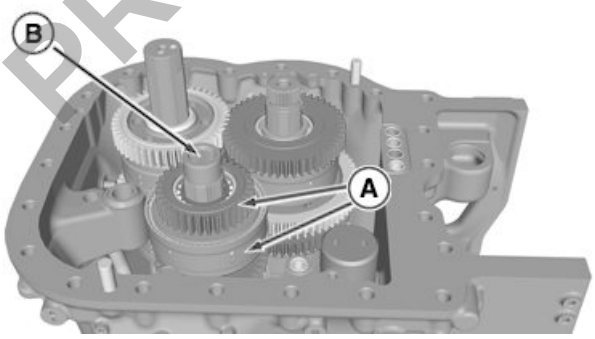
Install fourth speed drive gear (D) on B countershaft (F).

[33] - Install fourth speed drive and clutch (C) on C countershaft (G).

[34] - Install large spacer ring (B) on input shaft (E).

[35] - Install small spacer ring (A) on C countershaft (G).

[36] -



LEGEND:
A Second Speed Drive and Clutch
B Input Shaft

Second Speed Drive

Install second speed drive and clutch (A) on input shaft (B).

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Group 05 - PowrQuad-Plus™ Module

List of References

Below is a list of all items within this group.

Essential, Recommended, and Fabricated Tools 50C—05

Other Material 50C—05

Specifications 50C—05

Remove, Recondition, and Install Transmission Boost Valve—CQ

Remove, Recondition, and Install Cooler Bypass Valve—CQ

Remove And Install Front Transmission Cover Valves—CQ

Remove, Recondition, and Install Shift Valve Housing—CQ

Remove, Recondition, and Install Transmission Front Cover—CQ

Exploded View—Transmission Oil Pump—CQ

Remove, Recondition, and Install Transmission Oil Pump—CQ

Remove, Recondition, and Install Gear-Shift Planetary Drive—CQ

Remove, Recondition, and Install B1, B2 Brakes—CQ

Remove, Recondition, and Install B3 Brakes—CQ

Exploded View—C4 Clutch—CQ

Remove, Recondition, and Install C4 Clutch—CQ

Exploded View—Reverse Brake—CQ

Remove, Recondition, and Install Reverse Brake—CQ

Cross Sectional View—Forward Clutch with Planetary Drive—CQ

Exploded View—Forward Clutch with Planetary Drive—CQ

Remove, Recondition, and Install Forward Clutch With Planetary Drive—CQ

Exploded View—Output Shaft—CQ

Replace Output Shaft—CQ

Essential, Recommended, and Fabricated Tools 50C—05

→NOTE:

For further information, see SERVICEGARD™ online tool catalog.

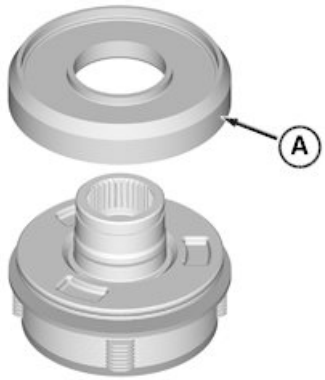
Below are tools listed in this group.

D01045AA Disk Set

D01048AA 17-1/2 Ton Hydraulic Puller Set

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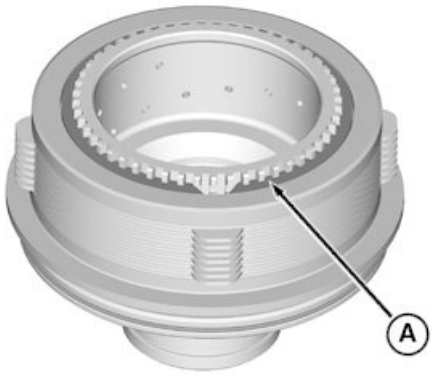
LEGEND:

A	Piston

Piston

Remove piston (A).

[16] -



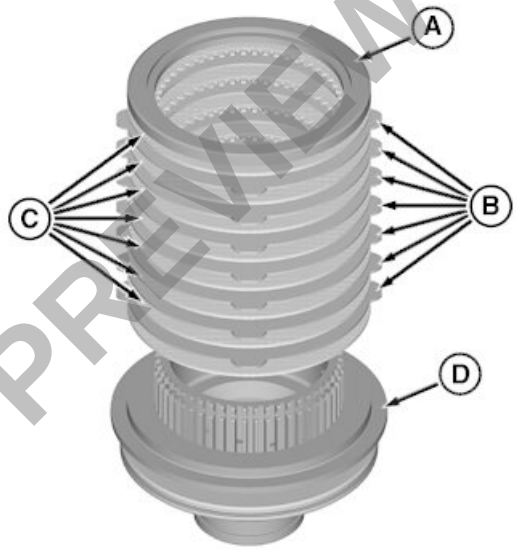
LEGEND:

A	Snap Ring

Snap Ring

Remove snap ring (A).

[17] -



LEGEND:

A	Backing Plate
B	Clutch Plates (7 used)
C	Clutch Disks (8 used)
D	Pressure Plate

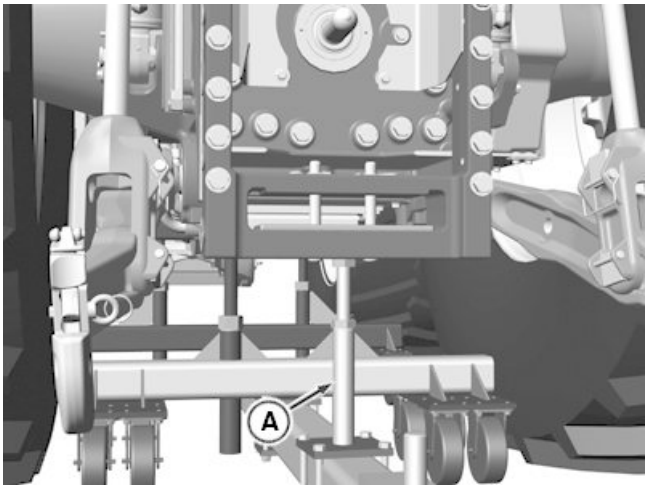
Clutch

Remove backing plate (A), clutch plates (B), clutch disks (C), and pressure plate (D).

[18] -

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LEGEND:

A	Jack Screw

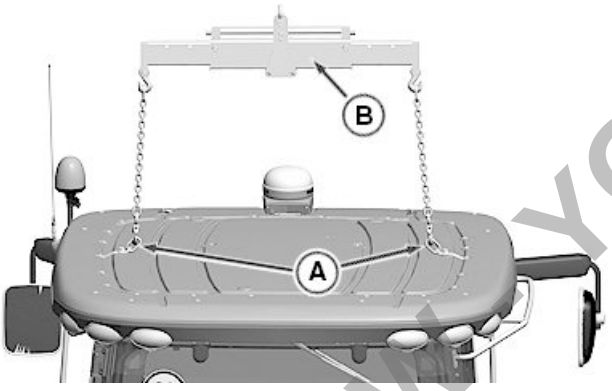
Jack Screw

Adjust jack screw (A) to drawbar support.

[10] - Tighten cap screws on JDG11217 Splitting Stand.

[11] - Remove rear wheels. (For further information, see Operator's Manual.)

[12] -



LEGEND:

A	JDG19 Lifting Eyes (2 used)
B	JT07336 Lift Sling

Hoist to Cab Hookup

Install JDG19 Lifting Eyes (A) on top of cab.

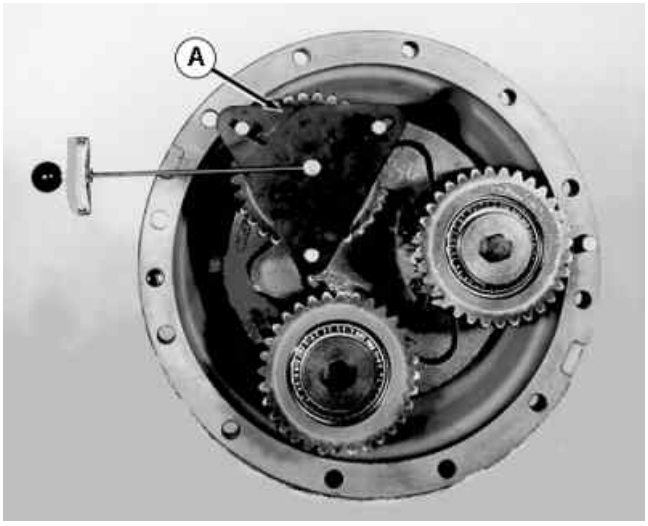
[13] - Using an overhead hoist attach JT07336 Lift Sling (B) and raise slightly.

[14] - Remove air trailer brake dryer assembly. (See Remove and Install Air Trailer Brake Dryer Assembly in Section 60A, Group 15.)

[15] -

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LEGEND:
A JDG778A Rolling Drag Torque Tool

Pinion Rotating Tool

Install JDG778A Rolling Drag Torque Tool (A) and note drag torque while rotating pinion with tool.

[18] - Tighten cap screw until correct drag torque is obtained.

Item	Measurement	Specification
New Bearings and Cups	Rolling Drag Torque	0.6—3 N·m (5—27 lb.-in.)
Used Bearings and Cups	Rolling Drag Torque	0.3—2 N·m (3—18 lb.-in.)

[19] -

IMPORTANT:

Rotate pinion minimum of three revolutions after each cap screw adjustment before checking drag torque.

Install planet pinion carrier assembly and check rolling drag torque. (See Install Planet Pinion Carrier And Check Rolling Drag Torque—100 mm in this group.)

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- Install PTO shaft and retaining snap ring.

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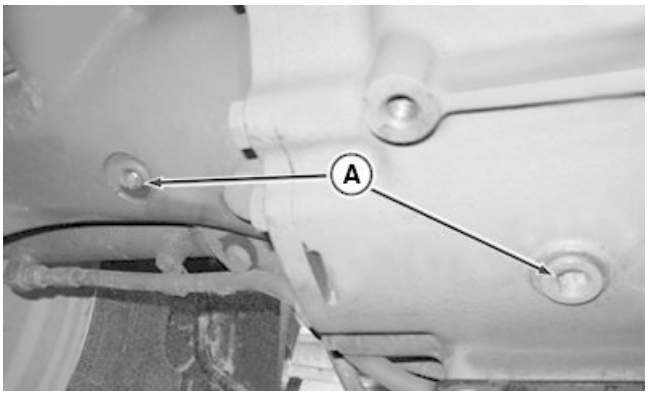
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Specifications 50E—10

Item	Measurement	Specification
Upper Kingpin-to-Knuckle Housing Cap Screws	Torque	545 N·m (402 lb.-ft.)
Lower Kingpin-to-Knuckle Housing Cap Screws	Torque	310 N·m (228 lb.-ft.)
Tie Rod-to-Kingpin Retaining Nut	Torque	195 N·m (144 lb.-ft.)
JDG1217-2 Plate Cap Screw	Torque	2.6 N·m (24 lb.-in.)
Axle Housing Cap Screws	Torque	350 N·m (258 lb.-ft.)

Install MFWD Axle Onto Rollover Stand—1100 Series

[1] -



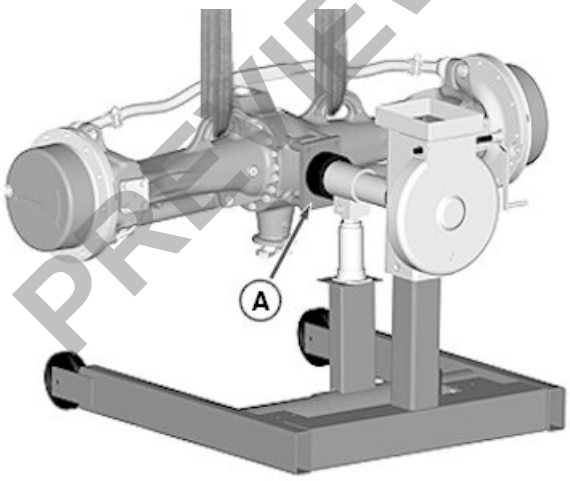
LEGEND:
A Drain Plugs (2 used)

Axle Drain Plug

Remove drain plugs (A) and drain oil from case.

[2] - Remove MFWD axle from tractor. (See Remove Non-Suspended MFWD Axle—1100 Series in Group 00.)

[3] -



LEGEND:
A JDG10227 Axle Mounting Bracket

Axle Mounting Bracket

Install JDG10227 Axle Mounting Bracket (A) on D05223ST Engine Rollover Stand.

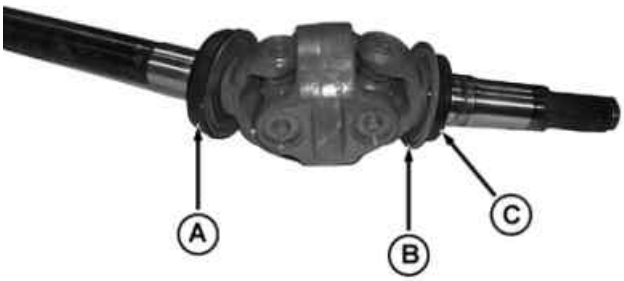
[4] - Install axle onto bracket using a hoist and straps.

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LEGEND:

A	Bellows Seal
B	Slinger
C	Excluder Seal



Seals On U-Joint/Axle Shaft

Remove bellows seal (A), slinger (B), and excluder seal (C) from U-joint/axle shaft as necessary taking care not to damage seal surfaces.

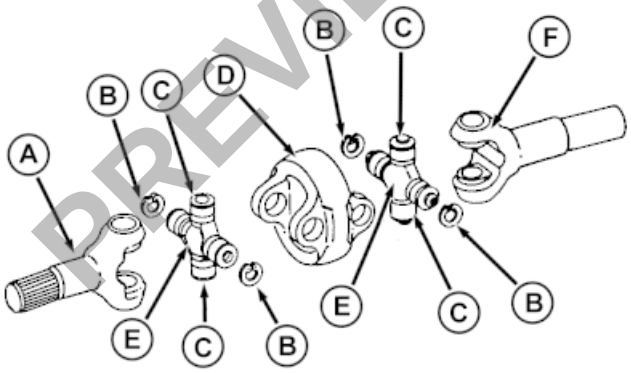
[38] -

LEGEND:

A	Planetary Shaft Yoke
B	Snap Rings (8 used)
C	Caps With Needle Bearings (8 used)
D	Center Section
E	Crosses (2 used)
F	Axle Shaft Yoke



Snap Rings and Inner Yoke/Axle Shaft



U-Joint Assembly

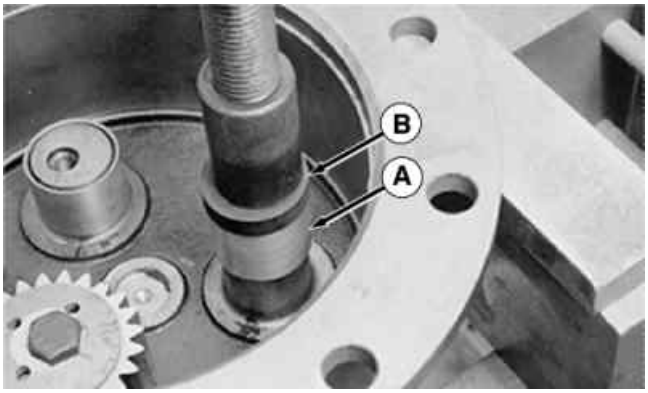
Install planetary shaft yoke (A) or axle shaft yoke (F) in vise.

[39] - Remove snap rings (B).

[40] - Strike upper caps with needle bearings (C) of cross (E) until bottom cap can be removed. Rotate shaft and remove other

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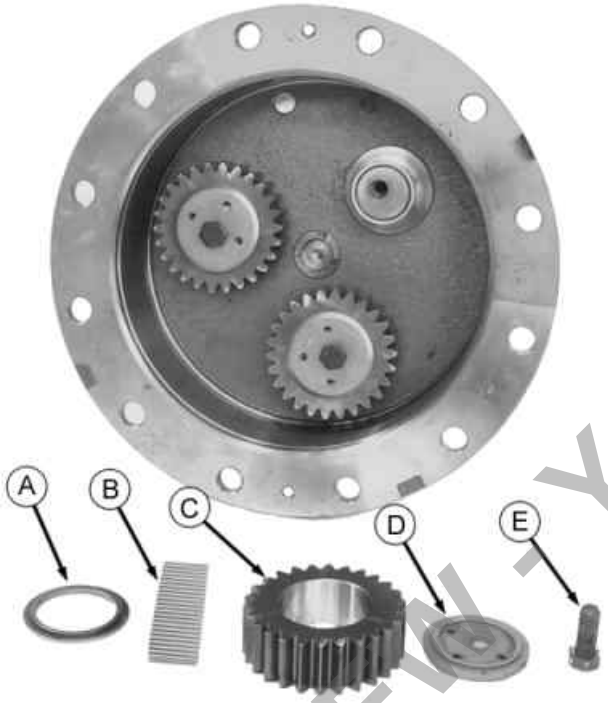
LEGEND:

A	Inner Race
B	Driver Disk

Inner Race and Driver Disk

Install inner race (A) flush with top of post using 57 mm (2-1/4 in.) driver disk (B).

[12] -



LEGEND:

A	Thrust Washers (3 used)
B	Needle Bearings (99 used)
C	Planet Pinions (3 used)
D	Retainers (3 used)
E	Planet Pinion Retaining Cap Screws (3 used)

Planet Pinion and Retainer

Install parts (A—C).

[13] - Lube needle bearings and install retainer (D).

[14] -

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Repair Differential Housing—Limited Slip Differential—TLS™

[1] -



LEGEND:

A	Differential Cap Screws (12 used)
B	Cover
C	Ring Gear

Cap Screws, Cover, and Ring Gear

Remove cap screws (A), cover (B), and ring gear (C).

[2] -



LEGEND:

A	Disk Pack

Bevel Gear

Remove disk pack (A) and bevel gear.

[3] -



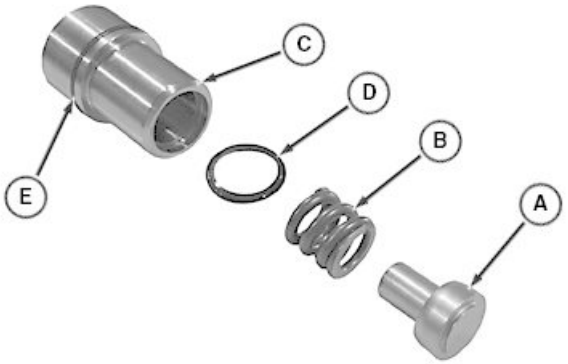
LEGEND:

A	Pins (2 used)
B	Shafts (3 used)
C	Bevel Gears (4 used)

Pin, Shaft, and Thrust Washer

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LEGEND:

A	Plungers (2 used)
B	Plunger Springs (2 used)
C	Pistons (2 used)
D	Wiper Rings (2 used)
E	Quad-Rings (2 used)

Plungers and Plunger Springs

Remove plungers (A) and plunger springs (B) from pistons (C).

[18] - Inspect parts and replace as necessary.

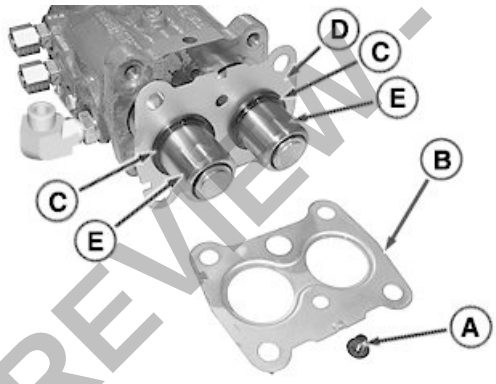
Item	Measurement	Specification
Plunger Springs	Free Length	24 mm
		(0.9 in.)
	Test Length	20.9 mm at 744—944 N
		(0.82 in. at 168—210 lb.-force)

[19] - Install new wiper rings (D).

[20] - Install plunger springs (B) and plungers (A) into pistons (C).

[21] - Install new quad rings (E).

[22] -



LEGEND:

A	Screw
B	Cover
C	Wiper Rings (2 used)
D	Stroke Limiter Cover
E	Pistons (2 used)

Cover, Wiper Rings, and Stroke Limiter

Install pistons (E), stroke limiter cover (D), and wiper rings (C).

[23] - Install cover (B) and screw (A).

[24] -

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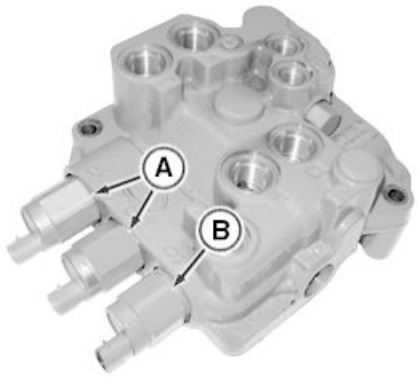
Repair AutoTrac™ Valve

[1] -

IMPORTANT:

Steering solenoids (A) are NOT serviceable. DO NOT REMOVE.

Disassemble and assemble valve in clean work area free of dust and dirt. Absolute cleanliness is essential when working on hydraulic components.



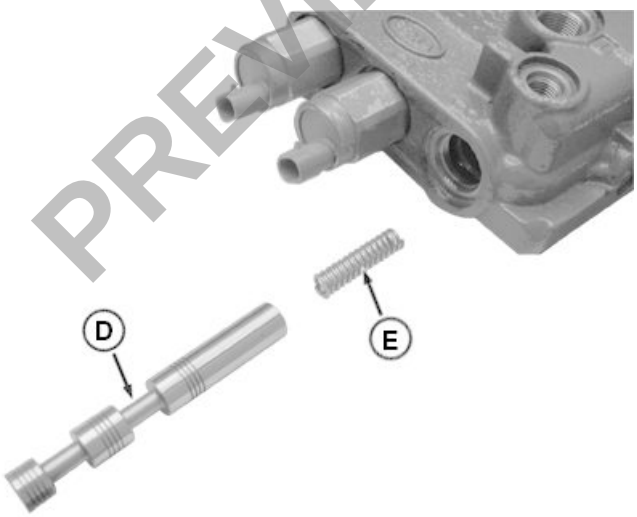
LEGEND:

A	Steering Solenoids (2 used)
B	Steering Enable Solenoid
C	O-rings (3 used)
D	Steering Enable Spool Valve
E	Spring

AutoTrac Valve



Steering Enable Solenoid



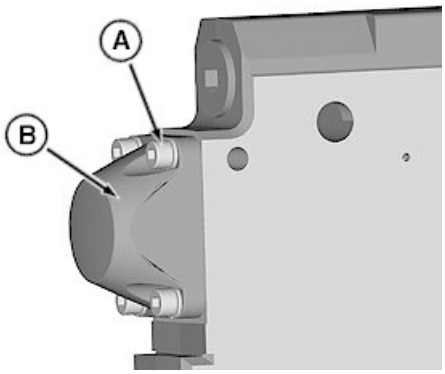
Spool and Spring

Remove steering enable solenoid (B).

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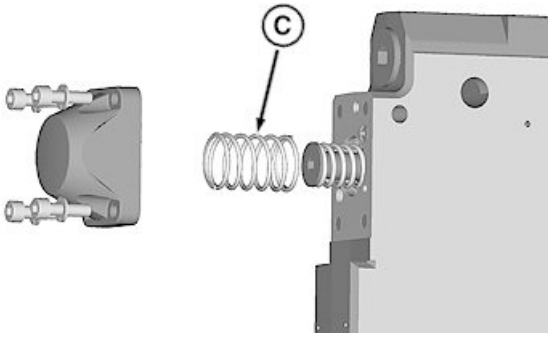
Service Spool Centering Spring Assembly



LEGEND:

A	Screws (4 used)
B	Spring Cover
C	Spring

Screws and Spring Cover



Spring and Washer

Disassembly Spool Centering Spring Assembly

CAUTION:

Use caution when removing spring cover. There is spring force behind cover.

[1] - Remove pressure compensating check valve. (See Service Pressure Compensating Check Valve in this group.)

[2] - Remove screws (A) and spring cover (B).

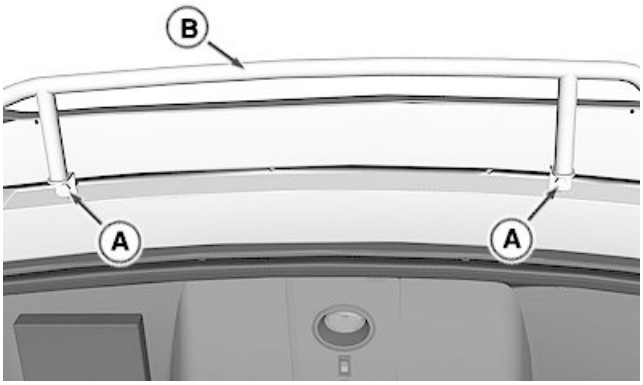
[3] - Remove spring (C).

[4] -

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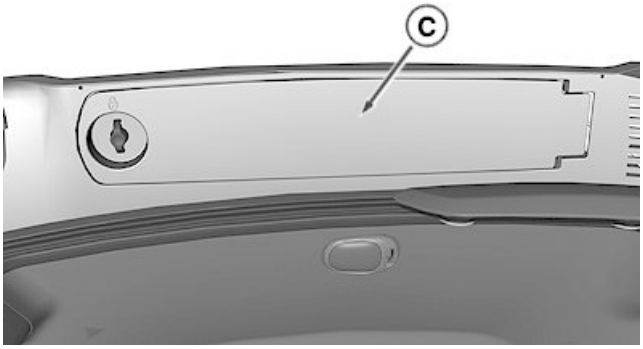
Remove Inner Roof



LEGEND:

A	Cap Screws (2 used)
B	Roof Handrail
C	Fresh Air Filter Cover

Roof Handrail



Cab Filter

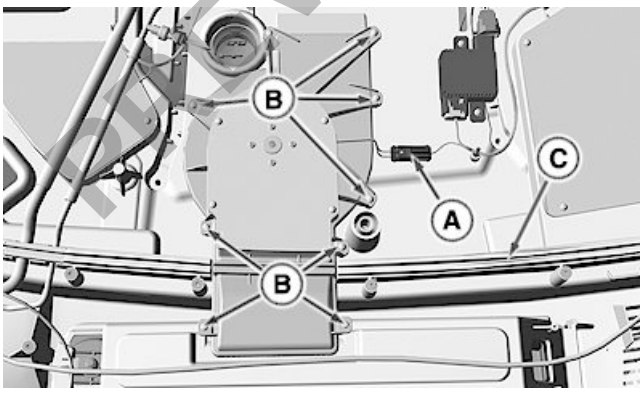
[1] - Remove HVAC module. (See Remove HVAC Module in Group 15.)

[2] - Remove beacon light, if equipped.

[3] - Remove cap screws (A) and roof handrail (B).

[4] - Turn knob to remove cover (C) and fresh air filter.

[5] -



LEGEND:

A	Harness
B	Screws (9 Used)
C	Seal

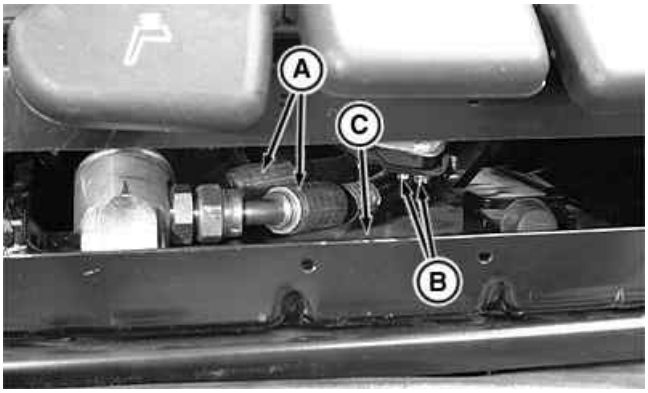
Pressurizer Blower Motor

Remove seal (C).

[6] - Remove screws (B) from cover.

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LEGEND:
A Hoses (2 used)
B Compressor Mounting Screws (2 used)
C Seat Base

Hose Clearance

Lower seat and ensure hoses (A) do not interfere with compressor mounting screws (B) or seat base (C), when the seat is moved through its full range of motion.

[17] -

→NOTE:

Air must be purged from ActiveSeat™ hydraulic system any time it is opened.

Purge air from system. (See Purging Air from ActiveSeat™ System in this group.)

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