Group 05A - Safety

Recognize Safety Information



Safety-alert symbol

This is a safety-alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.

Follow recommended precautions and safe operating practices.

Understand Signal Words



Signal Words

A signal word—DANGER, WARNING, or CAUTION—is used with the safety-alert symbol. DANGER identifies the most serious hazards.

DANGER or WARNING safety signs are located near specific hazards. General precautions are listed on CAUTION safety signs. CAUTION also calls attention to safety messages in this manual.

Follow Safety Instructions

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Group 00 - Component Removal and Installation

List of References

Below is a list of all items within this group.

Essential, Recommended, and Fabricated Tools 20—00

Other Material 20—00

Specifications 20—00

Remove Engine

Install Engine

Remove Front Frame

Install Front Frame

Essential, Recommended, and Fabricated Tools 20—00

→NOTE:

For further information, see SERVICEGARD™ online tool catalog.

Below are tools listed in this group.

JT07336 Lift Sling

JDG820 Flywheel Rotation Tool

JDG861 Torque Wrench Adapter

JDG10041 Rear Lifting Bracket

JDG10042 Front Lifting Bracket

JDG11258 Rear Lifting Bracket

JDG11252 Front Lifting Bracket

Other Material 20—00

Number	Name	Use
• PM38657 (us) • TY9484 (canadian) • 17430 Loctite™ (us)	High Flex Form-In-Place Gasket	Used to seal surfaces.

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Group 05 - Diesel Fuel System

List of References

Below is a list of all items within this group.

Specifications 30—05

Remove and Install Left-Hand Fuel Tank

Remove and Install Right-Hand Fuel Tank

Remove Center Fuel Tank

Replace Fuel Filter, Fuel Pump, and Bleed Fuel System

Specifications 30—05

Item	Measurement	Specification
Fuel Tank-to-Tank Support Cap Screws	Torque	128 N·m (94 lb.-ft.)
Tank Support-to-Rear Bracket Cap Screws	Torque	128 N·m (94 lb.-ft.)
Tank Support-to-Front Bracket Cap Screws	Torque	128 N·m (94 lb.-ft.)
Hose Clamp	Torque	10 N·m (89 lb.-in.)
Fuel Supply Line Cap Screws	Torque	14 N·m (124 lb.-in.)
Fuel Return Line Cap Screws	Torque	14 N·m (124 lb.-in.)
Hydraulic Hose Clamp Retaining Nut	Torque	25 N·m (221 lb.-in.)
Fuel Supply Line Clamp Cap Screws	Torque	14 N·m (124 lb.-in.)
Fuel Level Sensor-to-Fuel Tank Cap Screws	Torque	2.8 N·m (25 lb.-in.)

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Group 05 - Connectors

List of References

Below is a list of all items within this group.

Essential, Recommended, and Fabricated Tools 40—05

Other Material 40—05

Use Electrical Insulating Compound

Using High-Pressure Washers

Installation of Repair Wire Assembly (RWA)

Repair AMP™ Connector

Repair AMPSEAL 16™ Connectors

Bosch™ Connectors

Remove Connector Body from Blade Terminals

CINCH™ Control Unit Connectors

Exploded View—CINCH™ FlexBox Connectors

CINCH™ FlexBox Connectors

Repair CPC™ Blade Type Connectors

Repair CPC™, Large Mate-N-Loc™, and Metrimate™ Pin Type Connectors

Repair DEUTSCH™ Connectors

Repair DEUTSCH™ Implement Connectors

Repair ITT Connector

Repair Small Mate-N-Loc™ Socket Connector

Repair Small Mate-N-Loc™ Pin Connector

Repair (Pull Type) Metri-Pack™ Connectors

Repair (Push Type) Metri-Pack™ Connectors

Repair Molex™ Control Unit Connectors

Repair Molex™ Connector

Repair SUMITOMO™ Connectors

Repair Tyco™ Fuel Injector Connector

Repair WEATHER PACK™ Connector

Repair YAZAKI™ Connectors

Essential, Recommended, and Fabricated Tools 40—05

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Group 00 - Component Removal and Installation

List of References

Below is a list of all items within this group.

Essential, Recommended, and Fabricated Tools 50A—00

Other Material 50A—00

Specifications 50A—00

Remove Transmission—IVT™

Install Transmission—IVT™

Remove and Install Scavenge Pump—IVT™

Essential, Recommended, and Fabricated Tools 50A—00

→NOTE:

For further information, see SERVICEGARD™ online tool catalog.

Below are tools listed in this group.

DFRW210—Hole Drilled in JT07201

DFRW231—Guide Pins

D01044AA Bushing, Bearing and Seal Driver Set

JDG768 Pilot Pins

JDG820 Flywheel Rotation Tool

JDG861 Torque Wrench Adapter

JDG1760 Spacer Kit

JDG1883 Transmission Lifting Fixture Adapter

JDG1885 STC Tools

JDG1935 Auxiliary Drive Support

JDG2061 Front Adapter

JDG10049 Seal Installer

JT07122 Splitting Stand

JT07122-7 Upright Supports

JT07201A Transmission Lifting Fixture

JT07321 Rear Support Wheels

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Group 00 - Component Removal and Installation

List of References

Below is a list of all items within this group.

Essential, Recommended, and Fabricated Tools 50C—00

Other Material 50C—00

Specifications 50C—00

Remove Rear Axle Assembly

Install Rear Axle Assembly

Remove Final Drive Assembly

Install Final Drive Assembly

Essential, Recommended, and Fabricated Tools 50C—00

→NOTE:

For further information, see SERVICEGARD™ online tool catalog.

Below are tools listed in this group.

DFRW144—European Narrow Rear Axle Lift Tool

Other Material 50C—00

Number	Name	Use
• PM37477 (us) • PM38622 (canadian) • 242 Loctite™ (us)	Thread Lock and Sealer (Medium Strength)	Used to retain cap screw.
• PM37397 (us) • PM38613 (canadian) • 592 Loctite™ (us)	Pipe Sealant with TEFLON™	Used to seal pipe plug threads.

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Group 05 - Service Brakes

List of References

Below is a list of all items within this group.

Essential, Recommended, and Fabricated Tools 60A—05

Specifications 60A—05

General Repair Procedures 60A—05

Remove and Install Brake Rod

Remove and Install Brake Valve

Repair Brake Valve

Remove and Install Priority and Load Sense Manifold

Repair Priority and Load Sense Manifold

Remove and Install Secondary Brake and Steering Control Manifold

Repair Secondary Brake and Steering Control Manifold

Remove and Install Primary and Secondary Brake Manifold

Remove and Install Backup Pump

Remove and Install Park Pump Off Manifold

Repair Park Pump Off Manifold

Bleed Brakes

Check Brakes

Manually Release Park Brake—IVT™

Manually Release Park Brake—e23™

Essential, Recommended, and Fabricated Tools 60A—05

→NOTE:

For further information, see SERVICEGARD™ online tool catalog.

Below are tools listed in this group.

DFRW168—Park Brake Solenoid Harness

DFRW213—Hydraulic Trailer Brake Test / Bleed Assembly

JDG1666 Park Brake Release Hand Pump Kit

JT05412 Universal Pressure Test Kit

JT07115 Master Hydraulic Kit

JT07115SUP Supplemental Master Hydraulic Kit

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Group 05 - Steering Column

List of References

Below is a list of all items within this group.

Specifications 60B—05

Remove and Install Control Support

Repair Steering Column

Remove and Install Steering Wheel Position Input Assembly

Repair Steering Wheel Position Input Assembly

Specifications 60B—05

Item	Measurement	Specification
Rear Control Support-to-Cab Floor Cap Screw	Torque	125 N·m (92 lb.-ft.)
Front Control Support-to-Cab Floor Cap Screw	Torque	35 N·m (25 lb.-ft.)
Foot Rest-to-Control Support Cap Screw	Torque	35 N·m (25 lb.-ft.)
Foot Rest-to-Cab Floor Cap Screw	Torque	35 N·m (25 lb.-ft.)
Steering Wheel Nut	Torque	32 N·m (25 lb.-ft.)
Steering Input Assembly Cap Screws	Torque	40 N·m (30 lb.-ft.)

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Group 00 - Component Removal and Installation

List of References

Below is a list of all items within this group.

Essential, Recommended, and Fabricated Tools 70—00

Specifications 70—00

Remove and Install Integrated Hydraulic Pump

Remove and Install Transmission Pump

Remove and Install Hitch-SCV Valve Stack

Remove and Install Hitch Frame

Essential, Recommended, and Fabricated Tools 70—00

→NOTE:

For further information, see SERVICEGARD™ online tool catalog.

Below are tools listed in this group.

JDG10024 Wrench Adapter

JDG1574 Lifting Bracket

JDG19 Lifting Eyes

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Group 05 - Hood and Side Panels

List of References

Below is a list of all items within this group.

Essential, Recommended, and Fabricated Tools 80A—05

Specifications 80A—05

Position Hood Forward

Optional Forward Hood Position

Remove and Install Hood

Remove and Install Grille and Headlight Assembly

Remove and Install Hood Side Panels

Remove and Install Hood Screens

Remove and Install Hood Latch

Essential, Recommended, and Fabricated Tools 80A—05

→NOTE:

For further information, see SERVICEGARD™ online tool catalog.

Below are tools listed in this group.

DFRW234—Hood Support Rod

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Group 05 - Track

List of References

Below is a list of all items within this group.

Essential, Recommended, and Fabricated Tools 80B—05

Specifications 80B—05

Install Support Stands

Track Tensioning and De-tensioning

Remove and Install Track

Check Track Alignment

Adjust Track Alignment

Drive Wheel And Walking Beam Settings

Adjust Track Tread Settings

Essential, Recommended, and Fabricated Tools 80B—05

→NOTE:

For further information, see SERVICEGARD™ online tool catalog.

Below are tools listed in this group.

DFRW233—Support Bar

JDG1076A Cone Stand and Adapter

JDG10929 Track Adjustment Tool

JT02043 Support Stands

JT02044 Support Stands

JT05706 Torque Multiplier Wrench

JT07211 Rear Differential Support Stands

RE164261 Track Charging Hose

Specifications 80B—05

Item	Measurement	Specification
Idler Wheel Cap Screws	Torque	1050 N·m (775 lb.-ft.)
Special Cap Screws	Torque	300 N·m (221 lb.-ft.)
Lock Plate Cap Screws	Torque	130 N·m (95 lb.-ft.)
Drive Wheel Cap Screws	Initial Torque	330 N·m (245 lb.-ft.)
Walking Beam Cap Screws	Torque	430 N·m

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Group 00 - Component Removal and Installation

List of References

Below is a list of all items within this group.

Essential, Recommended, and Fabricated Tools 90—00

Other Material 90—00

Specifications 90—00

Remove Cab

Install Cab

Repair Cab

Remove Inner Roof

Install Inner Roof

Remove and Install Left Hand Armrest

Essential, Recommended, and Fabricated Tools 90—00

→NOTE:

For further information, see SERVICEGARD™ online tool catalog.

Below are tools listed in this group.

JDG19 Lifting Eyes

JT07336 Lift Sling

Other Material 90—00

Number	Name	Use
• PM37477 (us) • PM38622 (canadian) • 242 Loctite™ (us)	Thread Lock and Sealer (Medium Strength)	Used to retain cap screw.

Specifications 90—00

Item	Measurement	Specification
Cab Mount Cap Screws [Zinc-Flake Coated]	Torque	300 N·m (221 lb.-ft.)
Inner Roof Retaining Nuts	Torque	40 N·m (30 lb.-ft.)
Ground Wire Cap Screw	Torque	40 N·m (30 lb.-ft.)

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Group 05 - Dealer Fabricated Tools

Fabricated Tools

Fabricated tools are tools identified by the factory as necessary for proper servicing that can be made at the dealership.

Use the information in this section to fabricate the tools required to perform service correctly.

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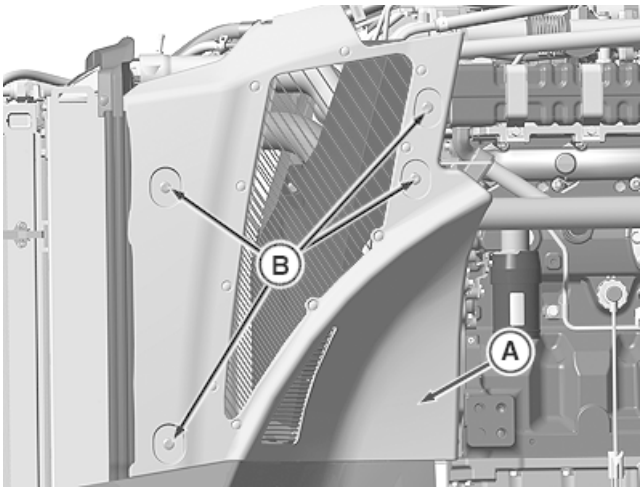
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Remove and Install Aspirator Pipe

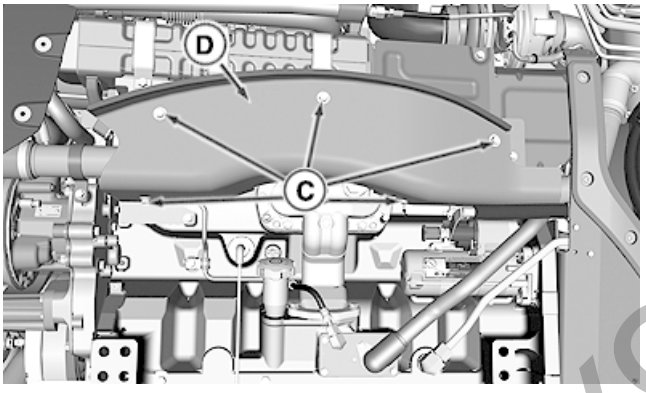
[1] -



LEGEND:

A	Front Side Panel
B	Front Side Panel Cap Screws (4 used)
C	Side Panel Cap Screws and Washers (5 used)
D	Side Panel

Front Side Panel



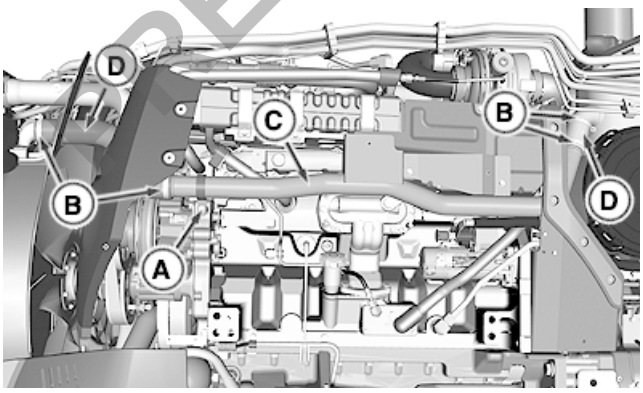
Side Panel

Position hood forward. (See Position Hood Forward in Section 80, Group 05.)

[2] - Remove cap screws (B) and left-hand front side panel (A).

[3] - Remove cap screws and washers (C) and side panel (D).

[4] -



LEGEND:

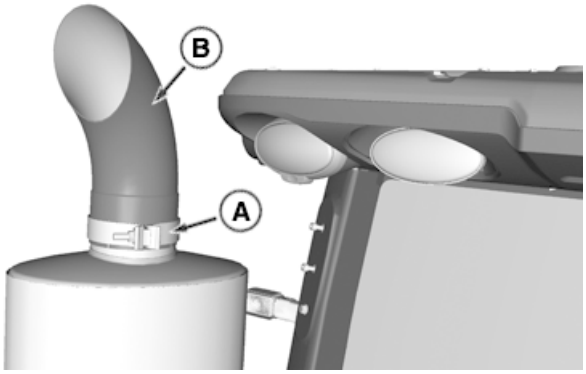
A	Aspirator Pipe Clamp
B	Hose clamps (4 used)
C	Aspirator Pipe
D	Coupling Hoses (2 used)

Aspirator

Remove hose clamps (B) and coupling hoses (D).

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LEGEND:

A	Exhaust Tip Clamp
B	Exhaust Tip

Exhaust Tip

Install exhaust tip (B) and exhaust tip clamp (A). Tighten to specification.

Item	Measurement	Specification
Exhaust Tip Clamp	Torque	50 N·m (37 lb.-ft.)

[16] -

IMPORTANT:

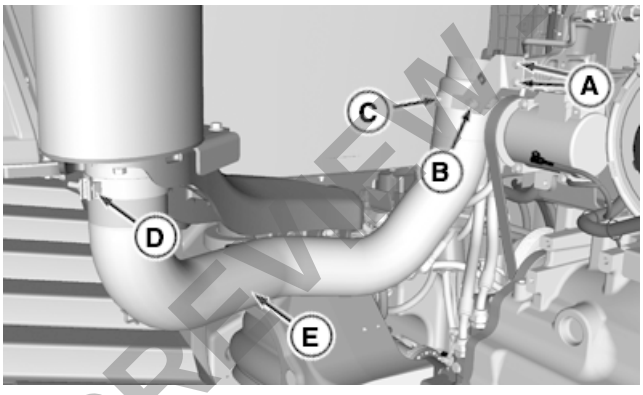
Visually check that flanges are aligned and clamp is sitting evenly around flanges of exhaust pipes.

Connecting flange MUST have gasket positioned over it to keep gasket in place while assembling clamp.

→NOTE:

For further information, see Air Intake Pipe Connections in group 10.

Align scribed lines on each exhaust pipe connection flange for proper aligning.



LEGEND:

A	M8 Exhaust Bracket Cap Screws (2 used)
B	M12 Exhaust Bracket Cap Screw
C	Exhaust Bracket
D	Exhaust Flange Clamp
E	Exhaust Pipe

Exhaust Bracket

Install exhaust pipe (E).

[17] - Install **NEW** gasket and exhaust flange clamp (D). Tighten to specification.

Item	Measurement	Specification
Exhaust Flange Clamp	Torque	20 N·m (177 lb.-in.)

[18] - Install exhaust bracket (C) and exhaust bracket cap screws (A and B). Tighten to specification.

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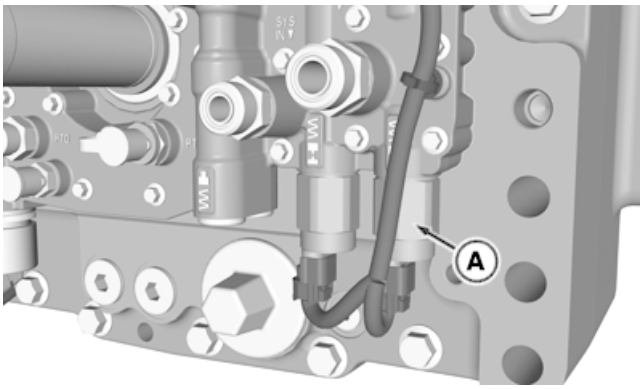
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[3] - Inspect and replace parts as necessary.

[4] - Install in reverse order. Tighten to specification.

Item	Measurement	Specification
Oil Cooler Bypass Solenoid	Torque	35 N·m (26 lb.-ft.)

Replace Lube Prioritization Valve Solenoid (e23™)



LEGEND:
A Lube Prioritization Valve Solenoid

Lube Prioritization Valve Solenoid

[1] - Disconnect harness.

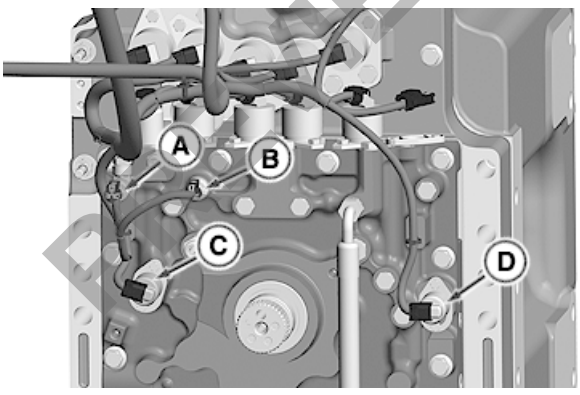
[2] - Remove Lube prioritization valve solenoid (A).

[3] - Inspect and replace parts as necessary.

[4] - Install in reverse order. Tighten to specification.

Item	Measurement	Specification
Lube Prioritization Valve Solenoid	Torque	35 N·m (26 lb.-ft.)

Replace Sensors and Solenoids PST Transmission



LEGEND:
A Park Brake Pressure Sensor
B Clutch Enable Pressure Sensor
C Park Sump Block Solenoid
D Lube Cut-off Solenoid

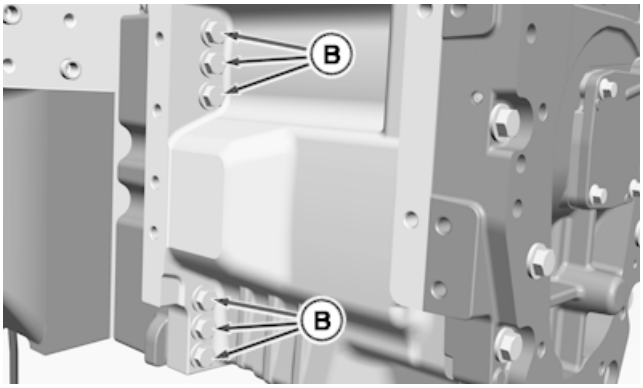
Sensors and Solenoids

[1] - Disconnect harness.

[2] - Remove sensors or solenoids (A—D) as required.

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Transmission Right-Hand Side

Turn tie rod (A) rearward into mid-frame and out of transmission.

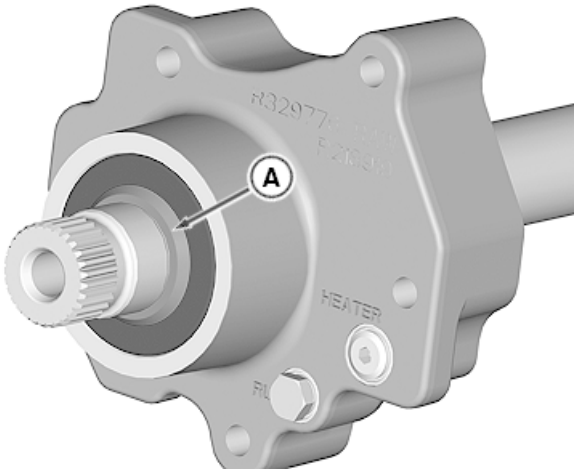
[74] - Remove remaining transmission-to-mid-frame cap screws (B).

[75] - Move transmission forward and slide off drive shafts and mid-frame.

[76] - Lower transmission, rotate 90°, and remove from left-hand side.

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LEGEND:

A	Dust Seal

Dust Seal

Install dust seal (A).

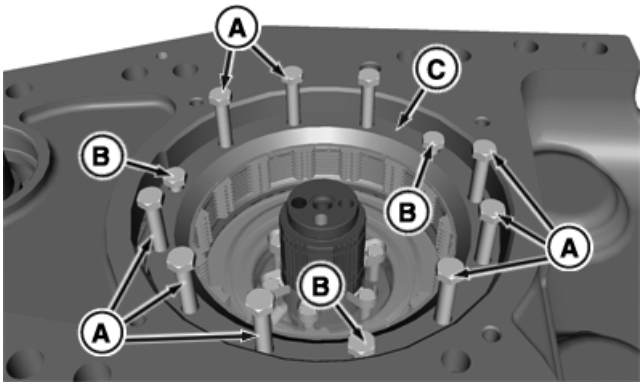
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[13] - Install and tighten park brake piston assembly cap screws (E) evenly until piston assembly bottoms out. Tighten to specification.

Item	Measurement	Specification
Park Brake Piston Assembly Cap Screws	Torque	35 N·m (26 lb.-ft.)

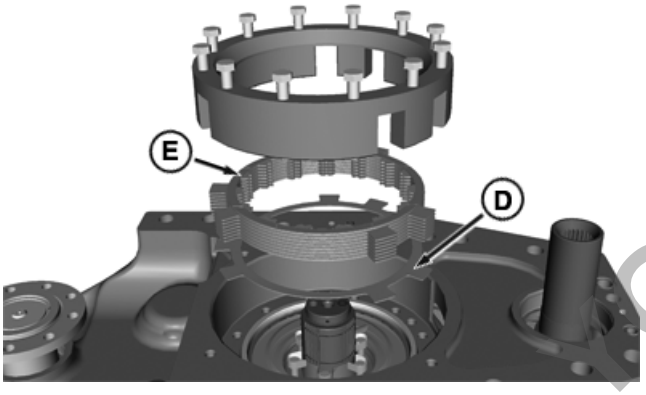
[14] -



LEGEND:

A	Housing Cap Screws (9 used)
B	Housing Cap Screws (3 used)
C	Housing
D	Separator Plates (8 used)
E	Clutch Disks (8 used)

Park Brake Cap Screws



Clutch Pack

Starting with separator plate (D) alternate clutch disks (E) and separator plates (D).

[15] - Install housing (C) leaving cap screws (A and B) loose.

[16] -

CAUTION:

Ensure clutch disks are completely loose to allow park brake drum (A) to be used to align clutch disks in housing.

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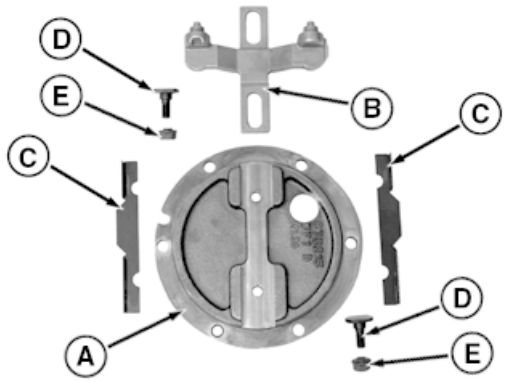
[26] - Install axle onto tractor. (See Install Final Drive Assembly in Group 00.)

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[36] - Remove side cover (C).

[37] -



LEGEND:

A	O-ring
B	Leveler Assembly
C	Inserts (2 used)
D	Special Screws (2 used)
E	Locking Nuts (2 used)

Assemble Side Cover

Remove leveler assembly (B) by removing locking nuts (E) from special screws (D).

[38] - Discard O-ring (A).

[39] - Inspect parts (B—D). Replace as necessary.

[40] -

→NOTE:

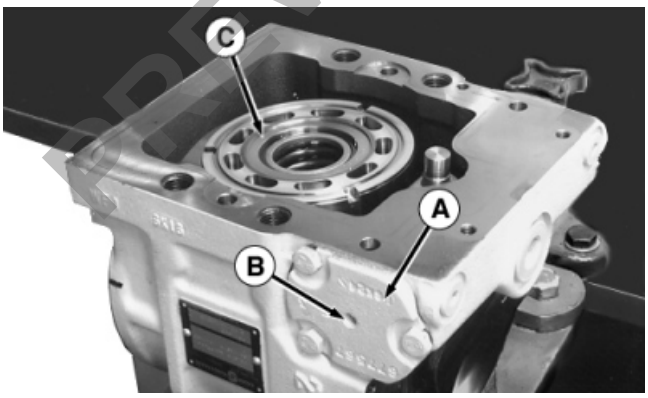
Ensure screw heads (D) are aligned as illustrated.

Assemble side cover using new locking nuts (E). Tighten to specification.

Item	Measurement	Specification
Leveler-to-Side Cover Locking Nuts	Torque	23 N·m (204 lb.-in.)

[41] - Install **new** O-ring (A) to side cover .

[42] -



LEGEND:

A	Servo Cylinders
B	Threaded Hole
C	Cylinder Block Assembly

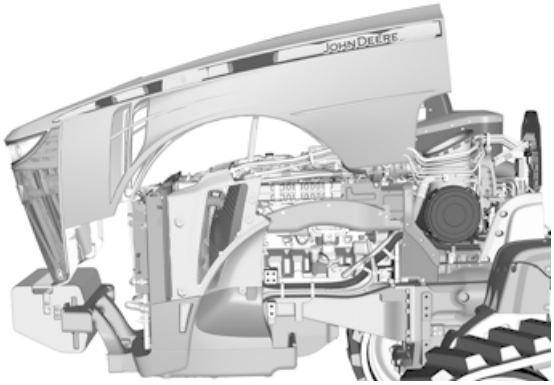
Servo Cylinders & Cylinder Block Assembly

Mark servo cylinders (A) for reassembly into bore from which cylinders were removed.

[43] - Remove cylinders (A) using an 8 mm x 1.25 screw in threaded hole (B) and a slide hammer.

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Hood in Forward Position

Disconnect hood harness connector (A).

[2] - Remove cap screws (B).

[3] - Lower front of hood to rest on front weight bracket.

[4] - Install in reverse order. Tighten to specification.

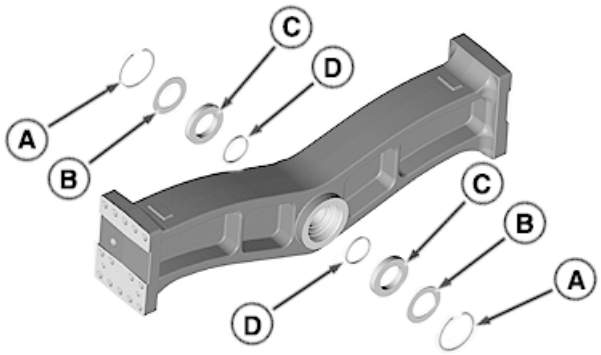
Item	Measurement	Specification
Rear Hood Arm Cap Screws	Torque	128 N·m (94 lb.-ft.)

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Replace Walking Beam Pivot Bushing and Isolator Bushing

[1] -



LEGEND:

A	Snap Rings (2 used)
B	Washers (2 used)
C	Foam Seals (2 used)
D	Lip Seals (2 used)

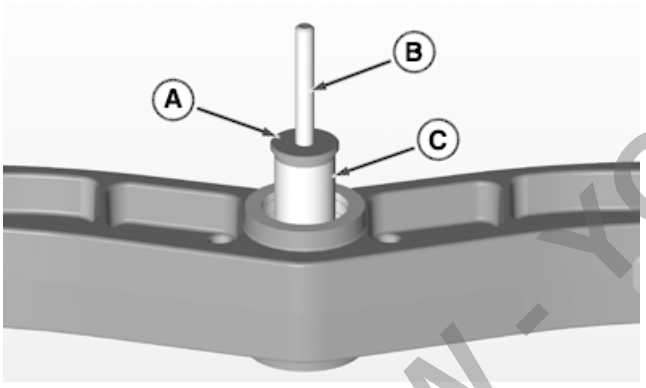
Walking Beam Center

For Both Bushings:

- Remove walking beam.

[2] - Remove snap rings (A), washers (B), foam seals (C), and lip seals (D) from both sides of walking beam.

[3] -



LEGEND:

A	JDG1427 Driver
B	JDG537 Driver Handle
C	Pivot Bushing

Install Pivot Bushing

Replacing Pivot Bushing Only:

- Remove pivot bushing by cutting with a hacksaw blade.

[4] -

→NOTE:

Driver disk is part of D01045AA Disk Set.

Support bottom of isolator bushing in press using a 108 mm (4-1/4 in.) driver disk.

[5] - Press in new pivot bushing (C) using JDG1427 Driver (A) and JDG537 Driver Handle (B) until driver contacts isolator bushing.

[6] -

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