Group 05 - 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.

Prevent Battery Explosions

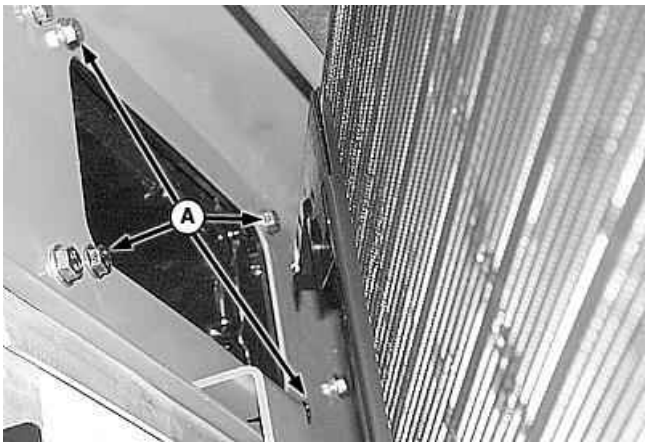
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Group 05 - Air Intake System

Remove and Install Charge Air Cooler (W Series, T Series)

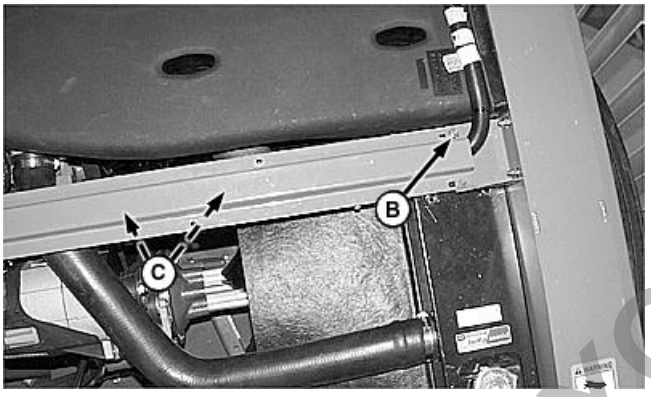
[1] -



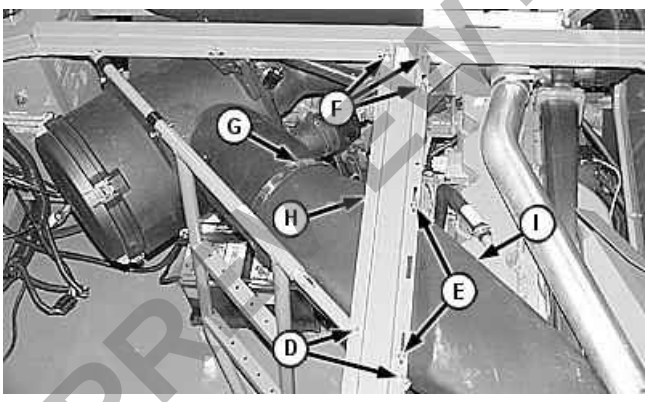
LEGEND:

A	Cap Screw (4 used)
B	Nut
C	Harness Retainer (2 used)
D	Cap Screw and Nut (2 used)
E	Cap Screw (2 used)
F	Cap Screw and Nut (3 used)
G	Clamp
H	Channel
I	Intake Duct

Intake Tube



Wiring Harness



Fresh Air Tube

Remove covers, shields and supports surrounding charge air cooler.

[2] - Open rotary screen door. Remove cap screws (A).

[3] - Remove nut (B).

[4] - Remove wiring harness from harness retainer (C).

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Group 05 - Harness and Connector Repair

Essential or Recommended Tools

→NOTE:

Order tools from the U.S. SERVICEGARD ™ or European Microfiche Tool Catalogs.

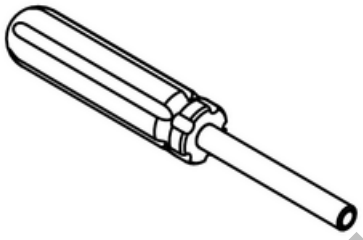
ESSENTIAL TOOLS listed are required to perform the job correctly and are obtainable only from SERVICEGARD ™ or European Microfiche Tool Catalogs.

RECOMMENDED TOOLS, as noted, are suggested to perform the job correctly. Some tools may be available from local suppliers or may be fabricated.

WEATHER PACK Extractor

JDG364

[Included in JT07195B Electrical Repair Kit]



JDG364, WEATHER PACK Extractor

Repair WEATHER PACK connectors.

Technician's Electrical Repair Kit

JT07195B

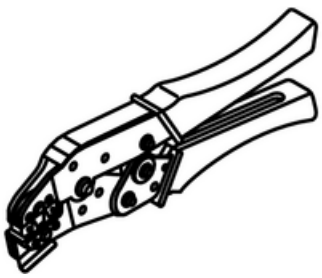


Technician's Electrical Repair Kit

Repair electrical connectors.

Crimping Pliers

JDG10145



JDG10145, Crimping Pliers

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Group 05 - Transmission and Differential

Other Material

Number	Name	Use
• TY6304 (us)	Flexible Sealant	To seal shifter rail cap.
• TY16021 (us)	Form-in-Place Gasket	To seal front cover to transmission.
• TY6252 (us)	80W90 GL5 GEAR LUBE	To coat rotor and stator of transmission oil pump during assembly and fill transmission.
• AR41870 (us)	Corrosion Inhibitor	To protect components in storage.
• TY16285 (us)	Clean and Cure Primer	To prime seal shims on lube pump before applying flexible sealant.
• T43512 (us)	Thread Lock and Sealer (medium strength)	To coat threads of cap screws attaching transmission oil pump, differential ring gear, differential cradle, and transmission pinion shaft carrier.
• TY6341 (us)	Multipurpose SD Polyurea Grease	Especially effective in rolling contact applications.
• TY15130 (us)	Form-in-Place Gasket	To seal hydrostatic motor mount.

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Group 05 - Steering

Essential and Recommended Special Tools

→NOTE:

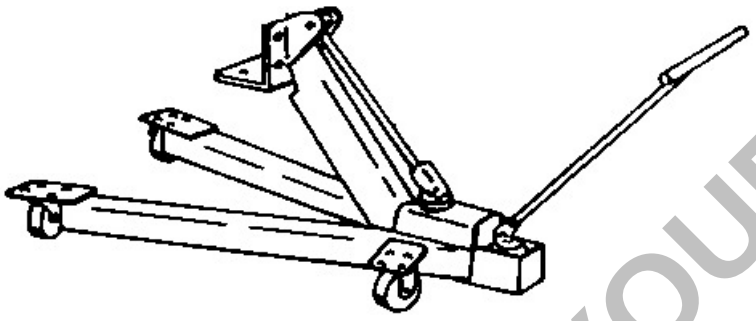
Order tools from the U.S. SERVICEGARD ™ catalog or via the European spare parts channel.

ESSENTIAL TOOLS listed are required to perform the job correctly and are obtainable from the U.S. SERVICEGARD ™ catalog or via the European spare parts channel.

RECOMMENDED TOOLS , as noted, are suggested to perform the job correctly. Some tools may be available from local suppliers or may be fabricated

Service Jack

D05070ST

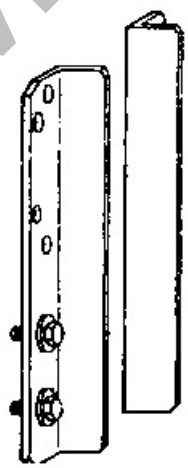


Service Jack

Used with JT05874 final drive adapter to remove and install rear spindle.

Final Drive Adapter

JT05874



Final Drive Adapter

Used with D05070ST jack to remove and install rear spindle.

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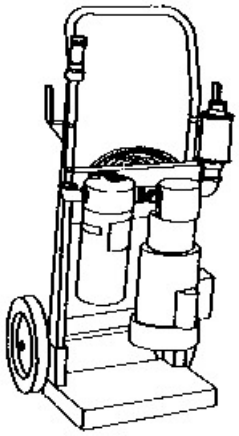
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Group 05 - Hydraulic Oil Reservoir

Service Equipment and Tools

→NOTE:

Order tools from the U.S. SERVICEGARD ™ catalog or via the European spare parts channel. Some tools may be available from a local supplier.



Caddy

Portable Filter Caddy

JT05746

Used to flush hydraulic/hydrostatic systems.

Specifications

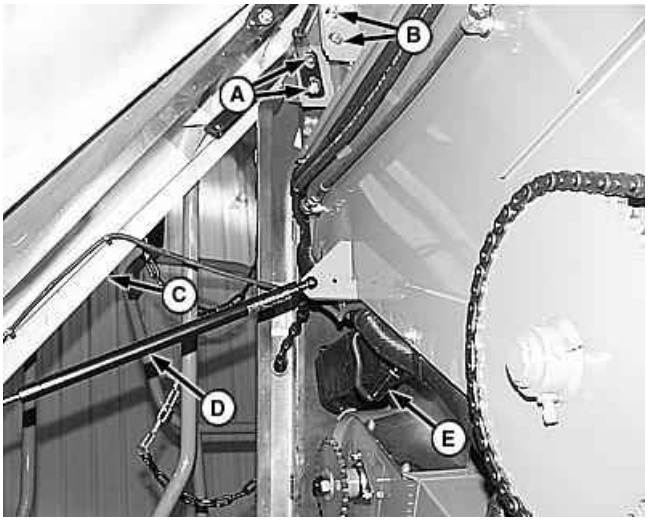
Item	Measurement	Specification
Hydraulic Oil Reservoir	Capacity	34 L (36 qt)
Hydraulic Oil Reservoir	Weight (Approx.)	18 kg (40 lb)
Hydraulic Reservoir Pressure Test	Pressure	35 kPa (0.34 bar) (5 psi)

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Group 05 - Gull Wing Doors

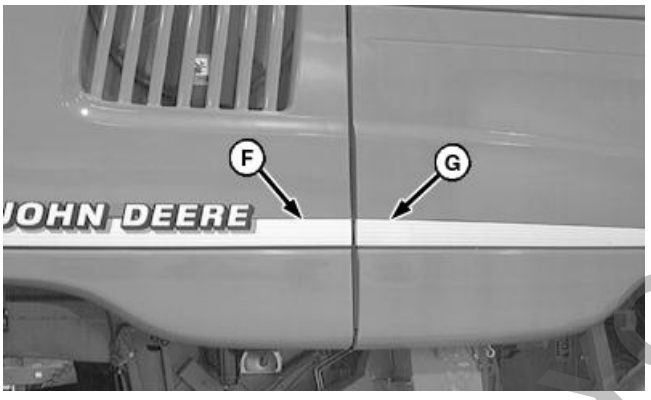
Remove and Install Gull Wing Doors



LEGEND:

A	Cap Screw (4 used)
B	Cap Screw (4 used)
C	Gull Wing Panel
D	Cylinder
E	Connector
F	Decal
G	Decal

Gull Wing Door Removal



Decal

CAUTION:

Cylinder contents under pressure. Do not take apart, puncture, apply heat or fire.

[1] - Disconnect connector (E) and remove cylinder (D) at both ends of gull wing panel.

[2] -

CAUTION:

Use two or more people to remove gull wing panel to prevent injury to yourself and others.

→NOTE:

Do not remove cap screws (B). Used for vertical adjustment only.

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Group 05 - Air-Conditioning System (R134a)

Essential or Recommended Tools

→NOTE:

Order tools from the U.S. SERVICEGARD or European Microfiche Tool Catalogs.

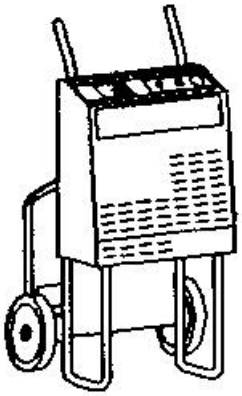
ESSENTIAL TOOLS listed are required to perform the job correctly and are obtainable **only** from SERVICEGARD or European Microfiche Tool Catalogs .

RECOMMENDED TOOLS , as noted, are suggested to perform the job correctly. Some tools may be available from local suppliers or may be fabricated.

HFC134A Recovery/Recycling Station

JT02050

[Used with JT02046 Charging Station. JT02047 Recovery, Recycling, and Charging Station can be substituted for JT02046 and JT02050.]

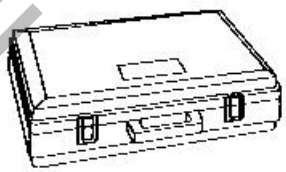


Recovery and Recycling Station

Servicing air conditioning system using R134a refrigerant.

Air Conditioning R12/R134a Fitting Kit

JT02098



Air Conditioning R12/R134a Fitting Kit

Connect flushing, purging and pressure equipment.

Manifold with Gauges

JT02051

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Group 05 - Conveyor

Other Material

Number	Name	Use
• T43512 (us) • TY9473 (canadian) • 242 LOCTITE ™ (loctite)	Thread Lock and Sealer (Medium Strength)	To retain cap screws.

Specifications

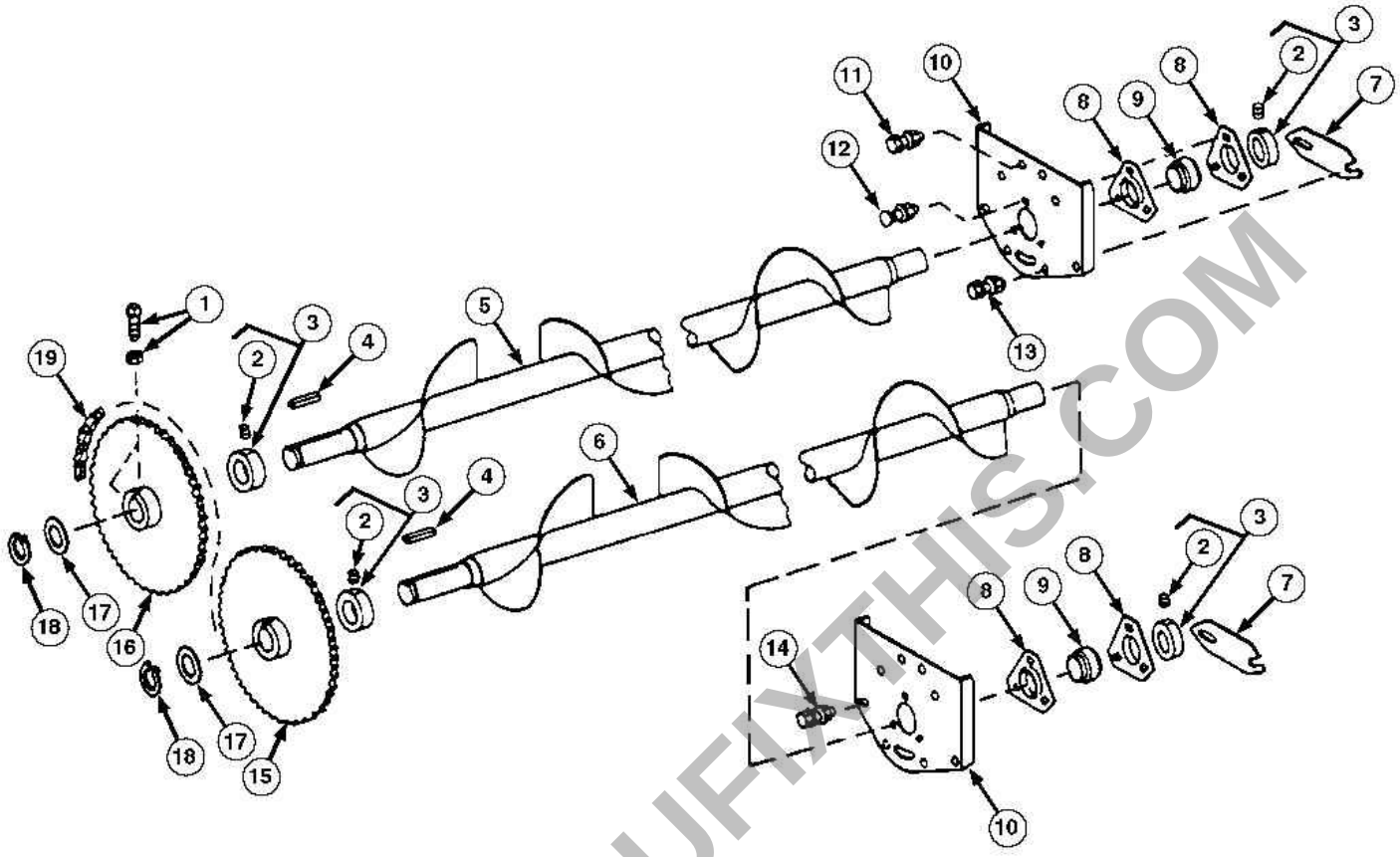
Item	Measurement	Specification
Feeder House Clamp-to-Frame Cap Screws	Torque	620 N˙m (457 lb-ft)
Feeder House Drum Shield Cap Screws	Torque	130 N˙m (95 lb-ft)
Conveyor Drum Bearing Cap Screws	Torque	130 N˙m (95 lb-ft)

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Group 05 - Grain Tank Cross Augers

Remove and Install Grain Tank Cross Augers



Grain Tank Cross Augers

LEGEND:

1	Set Screw and Nut (4 used)
2	Set Screw (4 used)
3	Locking Collar (4 used)
4	Key (2 used)
5	Front Auger
6	Rear Auger
7	Cover (2 used)
8	Flanged Housing (4 used)
9	Ball Bearing (2 used)
10	Reinforcement (2 used)
11	Screw and Flange Nut (8 used)
12	Screw and Flange Nut (3 used)
13	Screw and Nut (4 used)
14	Screw and Flange Nut (4 used)
15	Sprocket, 49 Teeth
16	Sprocket, 49 Teeth
17	Washer (As Required)
18	Snap Ring (2 used)
19	Chain

[1] -

→NOTE:

Remove gas cylinders from right gull wing door. Lift and support door high enough to remove augers from grain tank.

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- When welding on the machine, make sure to connect ground lead to the parts being welded. For maximum protection disconnect all electronic controllers before welding. Why: The high currents associated with welding can damage wiring harnesses that are involved in the ground path. Welding can also cause electrical voltage spikes that can damage electronic components.

Electrical Connector / Wiring Harness Handling and Repair

- Electrical connectors must not be forcibly mated or un-mated.Why: The connectors have been designed to be mated easily. If you have to use tools or excessive force you may be doing something wrong. Prying on or forcing connectors may cause permanent damage to the locking mechanism, contacts or both.
- When working on connectors make sure you are working on the correct terminal!Why: Measuring diagnostic values at the wrong connector terminal can lead to unnecessary part replacement. The male and female halves of an electrical connector are mirror images of each other and it is easy to confuse terminal locations. Look for the terminal identifier info on the connector body.
- Use proper terminals for any connector repairs.Why: In some connectors different terminal materials are used (to carry different currents). If improper terminals or terminal materials are used future electrical problems may occur from corrosion or current carrying capacity.
- When removing terminals from a connector body it is very important to use the proper extraction tool and procedure. Extraction tools are available through SERVICEGARD. Why: The connector body can be damaged if terminals are just "jerked" out. The damage caused by this action may not be readily visible, but may prevent new terminals from being properly retained and cause replacement of the connector body.
- When installing a new terminal on a wire make sure the proper crimping tools is used.Why: Each part of the electrical terminal is designed for a specific purpose, failure to properly crimp the terminal can result in future electrical or mechanical problems. Terminal crimping tools are available through SERVICEGARD. It is important to make sure the insulation and wire crimps on each terminal are made properly. Soldering terminals is not recommended. See repair procedures in the Connector Repair Procedures Group
- Soldering splices is not recommended.Why: Any repairs to wires in the harness should not allow moisture to come in contact with the actual copper conductor. Soldering a wire splice is not recommended because a portion of stranded wire will become solid and can cause it to break in the future, especially if it is subject to movement. When repairing a broken wire in a wiring harness, use "Heat-Shrinkable" butt splices. Be careful not to place a splice in any section of the harness subject to motion or flexing.

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[2] - Remove sensor (A or B). Sensor cannot be repaired. If defective, it must be replaced.

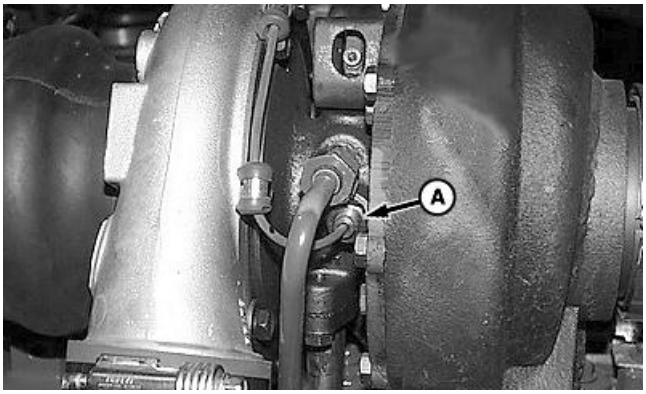
[3] - Apply TY9375 pipe sealant with TEFLON to threads of sensor and install sensor (A or B).

Number	Name	Use
• TY9375 (us)	TEFLON Pipe Sealant	Seal threads to prevent escape of liquid or gases.

[4] - Connect wiring harness connector.

Remove and Install Turbocharger Speed Sensor

[1] -



LEGEND:
A Sensor

Turbocharger Speed Sensor

Disconnect wiring harness connector.

[2] - Remove sensor (A). Sensor cannot be repaired. If defective, it must be replaced.

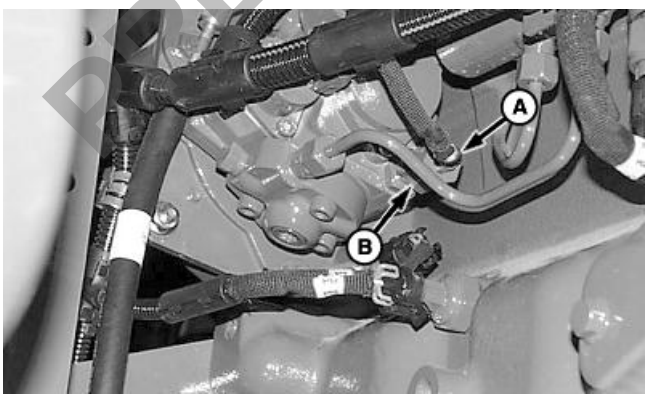
[3] - Apply TY9375 pipe sealant with TEFLON to threads of sensor and install sensor (A).

Number	Name	Use
• TY9375 (us)	TEFLON Pipe Sealant	Seal threads to prevent escape of liquid or gases.

[4] - Connect wiring harness connector.

Remove and Install Fuel Temperature Sensor

[1] -



LEGEND:
A Connector
B Sensor

6.8 L

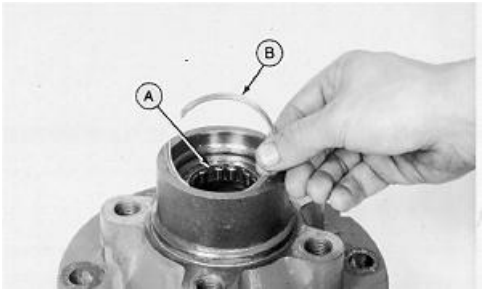
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E	Cap Screw (12 used)
F	Cradle (2 used)
G	O-Ring (2 St.)
H	Bearing Cone (2 used)
I	Cup (2 used)
J	Cap Screw (14 used)
K	Ring Gear (Heavy Duty Transmission)
L	Ring Gear (Standard Duty Transmission)
M	Housing
N	Shim
O	Thrust Washer (2 used)
P	Thrust Washer (2 used)
Q	Pinion (2 used)
R	Thrust Washer (2 used)
S	Snap Ring (2 used)
T	Needle Bearing (52 used)
U	Washer (2 used)
V	Gear (2 used)
W	Pin
X	Spring Pin

Remove drive shafts and remove cradles.

[19] -



LEGEND:

A	Bearing
B	Snap Ring

Differential

Remove snap ring (B) to remove bearing (A).

[20] -



LEGEND:

A	Cap Screw (14 used)
B	Ring Gear

Heavy Duty Differential Shown

Remove cap screws (A) to remove ring gear (B).

[21] -

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Group 16 - Transmission and Differential for Combines with ProDrive Transmission

Specifications

Item	Measurement	Specification
Brake disk	Minimum thickness	2.96 mm (0.116 in.)
Thrust washer for bevel gear of differential lock	Minimum thickness	2.44 ± 0.01 mm (0.960 ± 0.0004 in.)
	Nominal thickness	2.59 ± 0.01 mm (0.101 ± 0.0004 in.)
Disk to differential lock	Minimum thickness	2.91 ± 0.18 mm (0.114 ± 0.007 in.)
	Nominal thickness	3.3 ± 0.08 mm (0.130 ± 0.003 in.)
Clutch disk of planetary drive (gear shift)	Minimum thickness	2.12 ± 0.07 mm (0.083 ± 0.002 in.)
	Nominal thickness	2.24 ± 0.07 mm (0.088 ± 0.002 in.)
Differential module	End play	0.08 to 0.13 mm (0.003 to 0.005 in.)
Planetary drive (gear shift)	End play	0.1 to 0.4 mm (0.004 to 0.015 in.)
Input shaft of planetary drive (gear shift)	End play	0.08 to 0.13 mm (0.003 to 0.005 in.)
Countershaft	End play	0.08 to 0.13 mm (0.003 to 0.005 in.)
Hydraulic lines to shift valve housing	Torque	140 N·m (103 lb-ft)
Hydraulic hoses to shift valve housing	Torque	140 N·m (103 lb-ft)
Solenoid valves (Y44, Y28, Y10 and Y9), attaching screws	Torque	6 N·m (4 lb-ft)
Solenoid valve Y27 on shift valve housing	Torque	45 N·m (33 lb-ft)
Check valve to shift valve housing	Torque	45 N·m (33 lb-ft)
Pressure relief valve to shift valve housing	Torque	45 N·m (33 lb-ft)
Sending units B61 and B65 to shift valve housing	Torque	17 to 20 N·m (12.5 to 14.7 lb-ft)
Sending unit B62 to back plate on transmission housing	Torque	17 to 20 N·m (12.5 to 14.7 lb-ft)
Plate to brake housing, hex. socket head screws	Torque	25 N·m (18 lb-ft)
Cover to brake housing, flange screws	Torque	125 N·m (92 lb-ft)
Brake module to transmission housing, attaching screws	Torque	125 N·m (92 lb-ft)
Ring gear to differential body, screws	Torque	306 to 374 N·m (225 to 275 lb-ft)
Cover of differential lock piston to differential body, screws	Torque	126 to 154 N·m (93 to 113 lb-ft)
Bearing support of differential to transmission housing, hex. socket screws	Torque	310 N·m (228 lb-ft)
Brake housing of planetary drive (gear shift) to planetary carrier, screws	Torque	25 N·m (18 lb-ft)
Bearing housing of planetary drive (gear shift) to transmission housing, screws	Torque	310 N·m (228 lb-ft)
Cover of planetary drive (gear shift) to transmission housing, screws	Torque	30 N·m (22 lb-ft)
Clutch housing of planetary drive (gear shift) to cover, screws	Torque	70 N·m (51 lb-ft)
Cover of countershaft, screws	Torque	30 N·m (22 lb-ft)
Shift valve to transmission housing, attaching screws	Torque	45 to 55 N·m (33 to 41 lb-ft)
Back plate to transmission housing, attaching screws	Torque	70 N·m (51 lb-ft)
Transmission speed sensor—B1	Turns	1.5 (unscrew)
Transmission housing to machine frame, attaching screws	Torque	180 N·m (133 lb-ft)
Front drive motor to transmission housing, attaching screws	Torque	180 N·m (133 lb-ft)
Transmission and differential	Capacity	13 L (3.43 U.S. gal)

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KJD10332

KJD10332

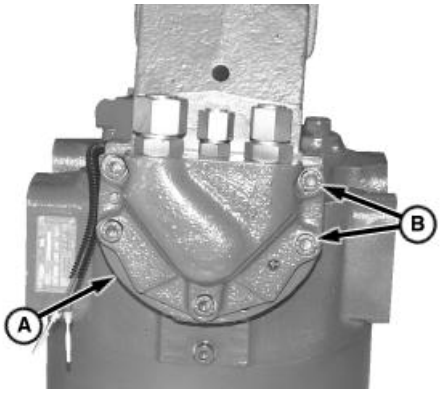
Used to drive bearing cone (gear side) onto countershaft

[7] - Install countershaft (A) in the transmission housing. See Install the Countershaftin this Group.

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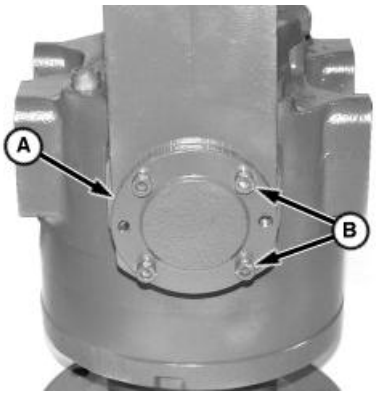
[20] -



LEGEND:

A	Pivot Pin (2 used)
B	Hex. Socket Screw (9 used)

Pivot Installation



Pivot Installation

Install pivot pins (A) into yoke and motor and retain with screws (B).

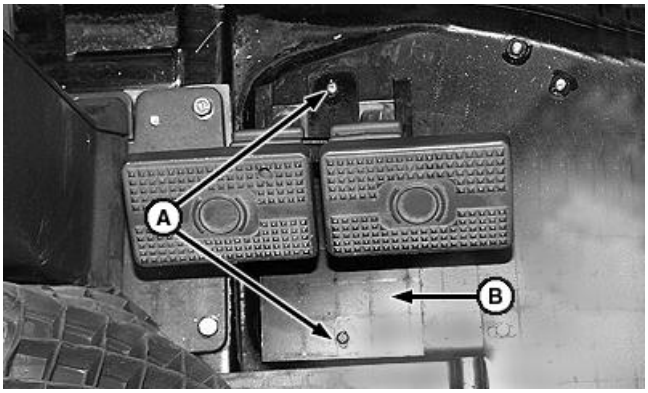
[21] - Tighten screws to specified torque.

Item	Measurement	Specification
Pivot Pin Screws	Torque	70 N˙m
		(50 lb-ft)

[22] - Install solenoid valve harness through yoke and install wires into wire connector.

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LEGEND:

A	Cap Screws
B	Floor Plate

Floor Plate

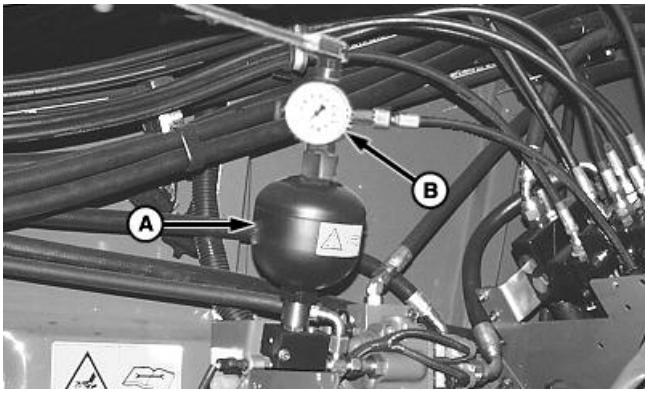
[22] - Install floor mat.

[23] - Adjust the push rods of the master cylinder (see Adjust Master Cylinder in this Group).

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[1] -



LEGEND:

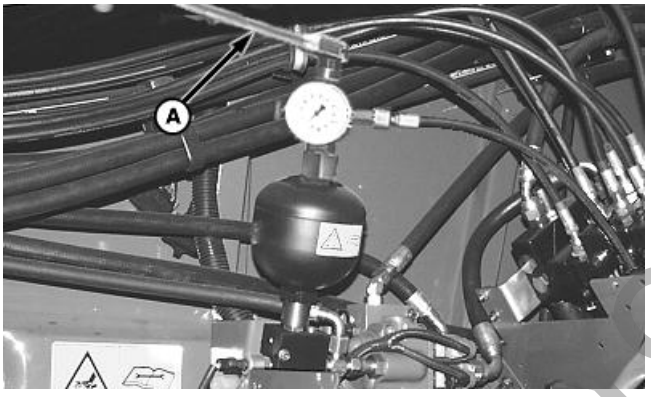
A	Accumulator
B	Test Device

Test Device Attached

Relieve pressure in hydraulic line to header lift cylinders by actuating switch for lowering header.

[2] - For checking accumulator (A), connect device FKM10448 (B) to accumulator.

[3] -



LEGEND:

A	Ratchet

Accumulator

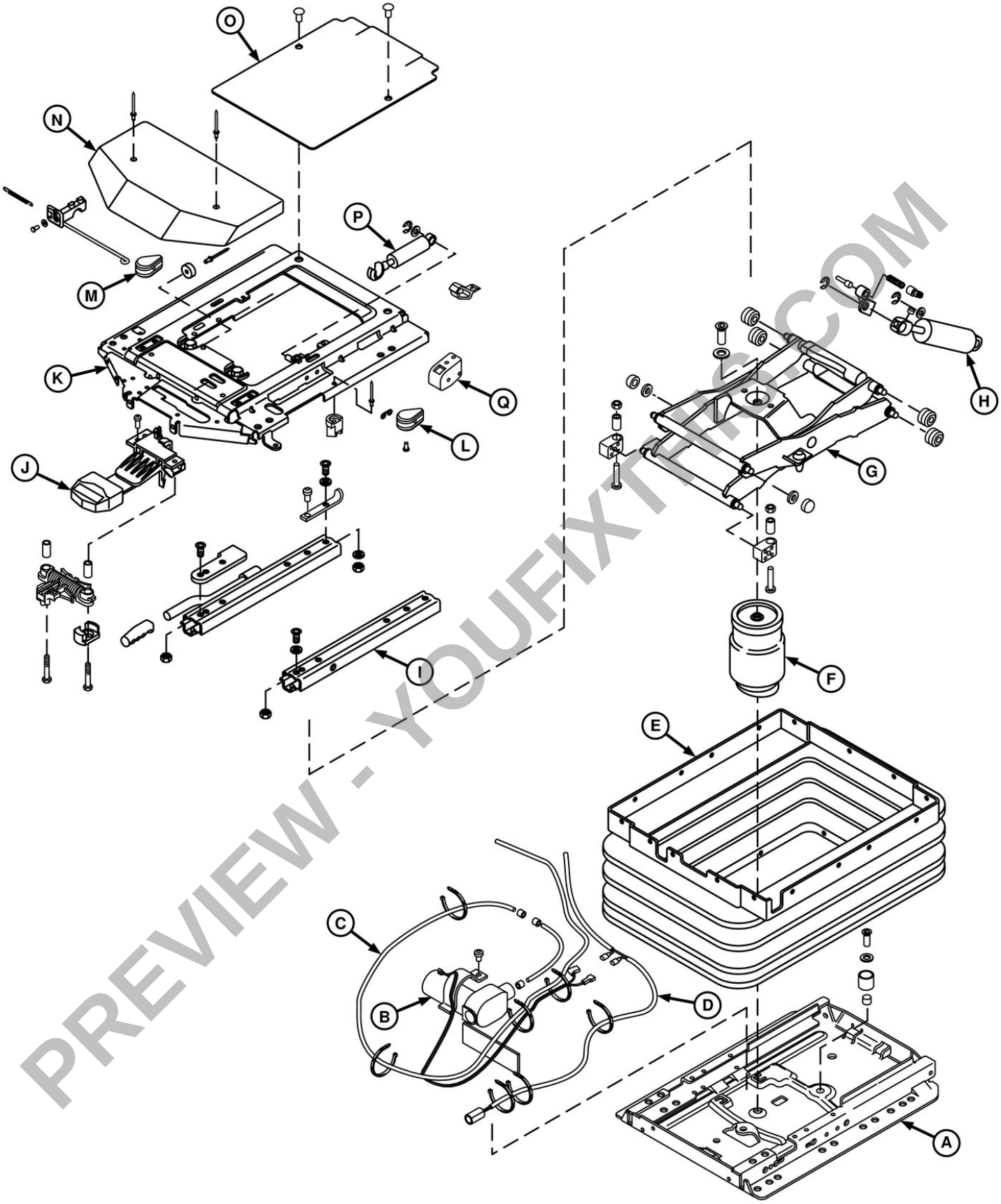
Use a ratchet located on test device to open accumulator valve. Accumulator charge pressure is indicated by the pressure gauge. If charging pressure is too low, the accumulator must be charged with nitrogen.

[4] -

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Operator Seat Air Suspension Assembly—Exploded View



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Operator Seat Air Suspension Assembly

LEGEND:

A	Lower Housing
B	Air Compressor
C	Air Line

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[6] - Insert shaft (A).

[7] - Install two keys (B) in shaft.

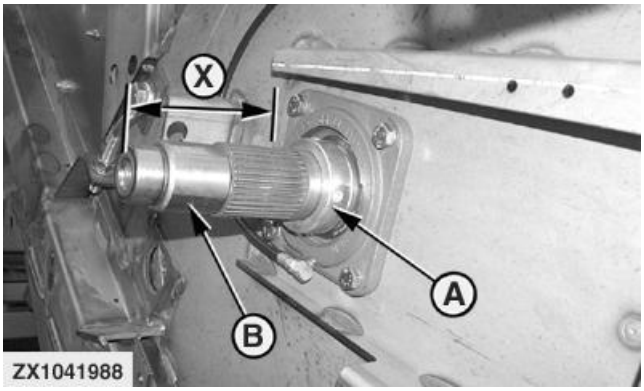
[8] - Complete shaft installation.

[9] -

IMPORTANT:

Adjust distance (X) between shaft end and sidewall.

Item	Measurement	Specification
Distance (X) from Shaft End to Sidewalll	Length	198 mm (7.80 in.)



LEGEND:
A Locking Collar
B Shaft
X Distance (X) from Shaft End to Sidewalll

Distance (X)

Install locking collar (A) on shaft (B).

[10] - Center cylinder between side sheets.

[11] -



LEGEND:
A Shaft
B Clamp (2 used)
C Nut (2 used)

Shaft

Install nuts (C) on clamps (B) to secure shaft (A). Tighten to specification.

Item	Measurement	Specification
Threshing Cylinder Head Hardware	Torque	123 N˙m (91 lb-ft)

[12] -

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Group 20 - Straw Chopper and Chaff Spreader

Service Equipment and Tools

→NOTE:

Order tools from the U.S. SERVICEGARD ™ catalog or via the European spare parts channel. Some tools may be available from a local supplier.

Vacuum Pump

D15032NU

To remove and install chaff spreader pump.

Chaff Spreader Pump Driver

27505

Install washer and seal into front plate.

Other Material

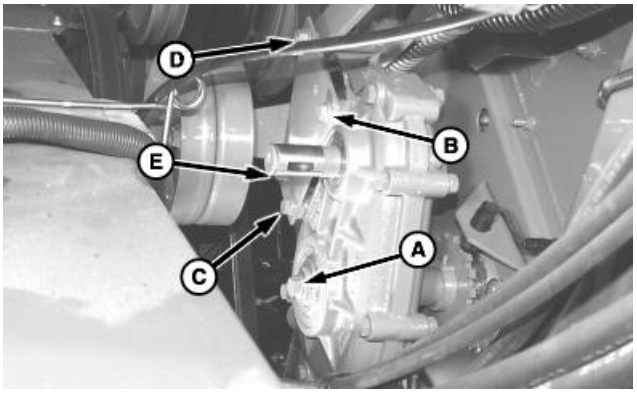
Number	Name	Use
• T43513 (us)	High Strength Thread Lock (271)	To retain jackshaft bearings to jackshaft.
• TY6341 (us)	Multipurpose SD Polyurea Grease	Apply to bushings of front drive.

Specifications

Item	Measurement	Specification
Chopper Blade Lock Nuts	Torque	60 N˙m
		(45 lb-ft)
Sheave Cap Screw	Torque	70 N˙m
		(52 lb-ft)

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LEGEND:

A	Screw and Washer
B	Cap Screw with Nut
C	Cap Screw with Nut
D	Cap Screw, Spacer and Nut
E	Nut

Beater Gear Case

Remove screw and washer (A) from shaft.

[8] - Remove cap screws and nuts (B) and (C).

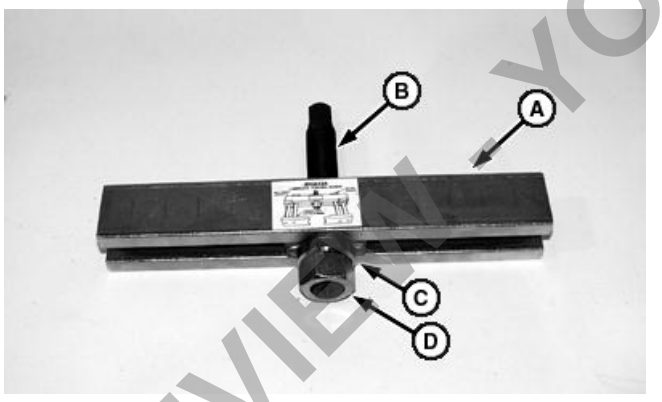
[9] - Remove cap screw, spacer and nut (D).

[10] - Loosen nut (E) and set idler aside.

[11] -

→NOTE:

It will be necessary to use H-frame (A), forcing screw (B), washer (C) and nut (D) of JDG643A Straw Walker Gear Case Puller, in addition to JDG729 Beater Gear Case Puller, to remove beater gear case.



JDG643A

LEGEND:

A	H-Frame
B	Forcing Screw
C	Washer
D	Nut

Straw Walker Gear Case Puller

JDG643A

Used in conjunction with JDG729 beater gear case puller to remove beater gear case.

Beater Gear Case Puller

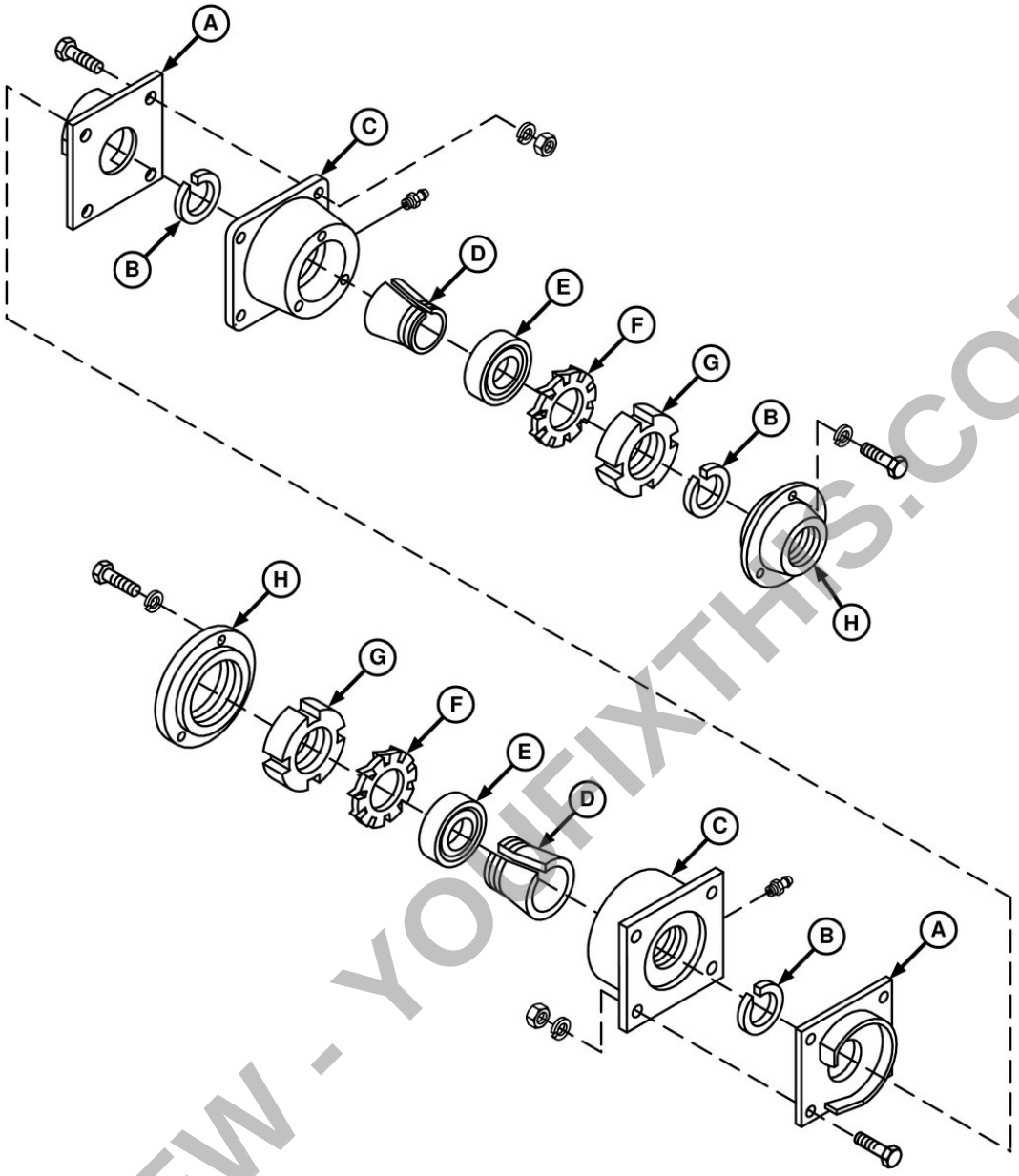
JDG729

Used in conjunction with JDG643A straw walker gear case puller to remove straw walker gear case.

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Remove and Install Rotor Bearings



Rotor Bearings

LEGEND:

A	Guard
B	Felt Seal
C	Bearing Support
D	Clamping Ring
E	Bearing
F	Lock Washer
G	Slotted Nut
H	Bearing Cap

[1] - Remove bearing cap (H) and felt seal (B).

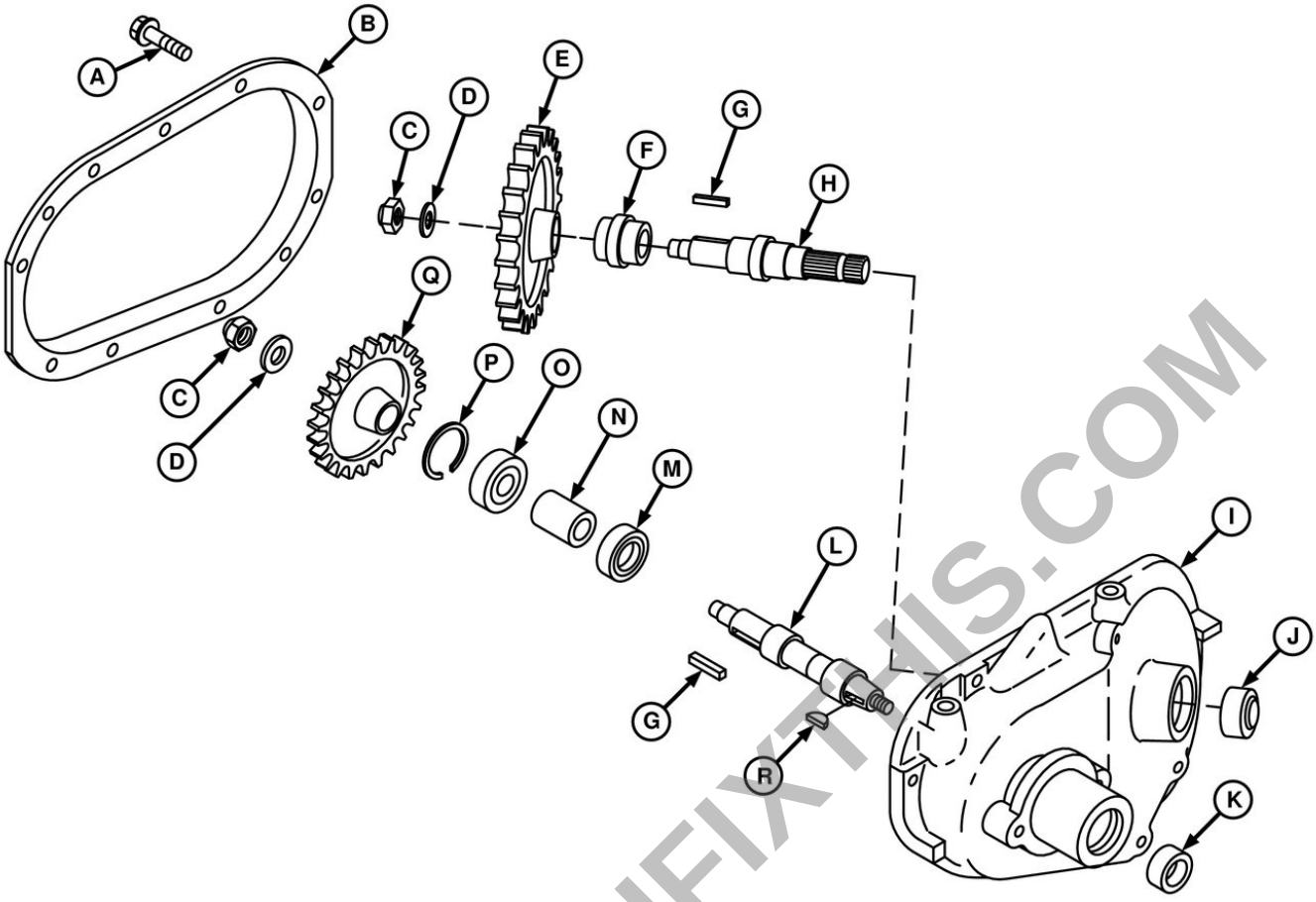
[2] - Loosen slotted nut (G) and clamping ring (D).

[3] - Remove bearing support (C) with bearing (E).

[4] - Inspect bearing (E) and replace, if necessary.

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Clean Grain Elevator Gear Case

LEGEND:

A	Screw and Washer (11 used)
B	Cover
C	Lock Nut (2 used)
D	Washer (2 used)
E	Gear
F	Bearing Assembly
G	Key (2 used)
H	Output Shaft
I	Gear Case
J	Seal
K	Seal
L	Input Shaft
M	Ball Bearing
N	Bushing
O	Ball Bearing
P	Snap Ring
Q	Bevel Gear
R	Key

Drive ball bearing (M) over threaded end of input shaft (L) and seat against shoulder.

[11] - Install input shaft (L) with bearing (M) through large opening of gear case (I) and into long quill side of case.

→NOTE:

End of shaft with keyway should extend out of quill and case.

[12] - Slide bushing (N) over shaft and against bearing (M).

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