

SWATH UP 450

CLAAS

Repair Manual



Service & Parts

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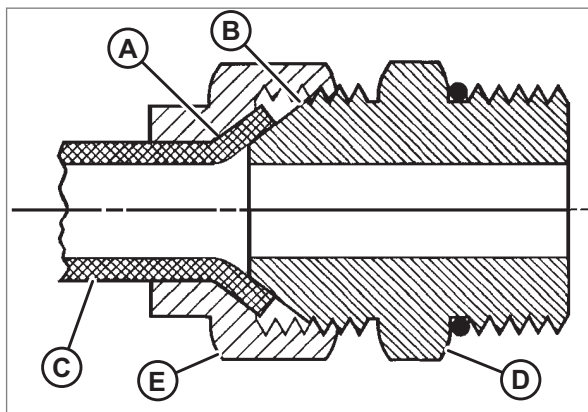
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Flare-type hydraulic fittings



255058-001

- ▶ Check flare (A) and flare seat (B) for defects that might cause leakage.
 - ▶ Align tube (C) with fitting (D) and thread nut (E) onto fitting without lubrication until contact has been made between the flared surfaces.
 - ▶ Torque the fitting nut (E) to the specified number of FFFT or to a given torque value shown in the following table.
 - ▶ To prevent the fitting (D) from rotating, use two wrenches. Place one wrench on the fitting body (D) and tighten the nut (E) with the other wrench to the torque shown.
- 4 ▶ Assess the final condition of the connection.

SAE Dash Size	Thread Size (in.)	Torque Value ¹		Flats From Finger Tight (FFFT)	
		Nm	lbf-ft	Tube	Swivel Nut or Hose
-2	5/16-24	4-5	3-4	—	—
-3	3/8-24	7-8	5-6	—	—
-4	7/16-20	18-19	13-14	2-1/2	2
-5	1/2-20	19-21	14-15	2	2
-6	9/16-18	30-33	22-24	2	1-1/2
-8	3/4-16	57-63	57-63	2	1-1/2
-10	7/8-14	81-89	81-89	1-1/2	1-1/2
-12	1-1/16-12	113-124	83-91	1-1/2	1-1/4
-14	1-3/16-12	136-149	100-110	1-1/2	1-1/4
-16	1-5/16-12	160-176	118-130	1-1/2	1
-20	1-5/8-12	228-250	168-184	1	1
-24	1-7/8-12	264-291	195-215	1	1
-32	2-1/2-12	359-395	265-291	1	1
-40	3-12	—	—	1	1

¹Torque values shown are based on lubricated connections as in reassembly.

Safety

Recognizing safety messages

173669-004

Safety alert symbol



This safety alert symbol gives a warning about risk of injury.

- ▶ To prevent injuries and death, follow all measures that are labeled with the safety alert symbol.

181226-001

Signal word

The warnings in this repair manual are introduced with the safety alert symbol and a signal word. The signal word gives expression to the hazard.



DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.



WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

Installing header drive line

168333-004

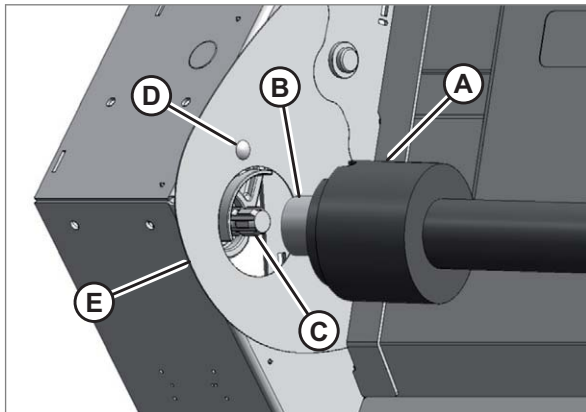
⚠ DANGER

Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.

168374-003

⚠ CAUTION

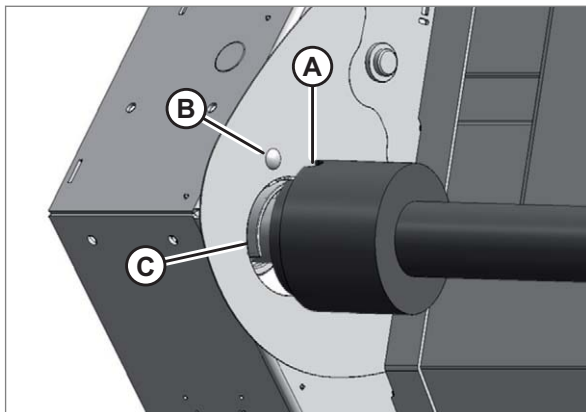
To prevent injury, or damage to the drive line, hold the drive line so that it doesn't fall to the floor.



252509-002

34

- ▶ Lower header to ground, shut down engine, and remove key from ignition.
- ▶ Pull back the guard (A) to expose the collar (B) at the header (notched) end of the driveline.
- ▶ Pull back collar (B), and slide coupler onto splined input shaft (C) until it locks. Release the collar (B).
- ▶ If necessary, loosen bolt (D) so that plate (E) can be moved to provide sufficient clearance for driveline guard.



252510-002

35

- ▶ Line up the notch (A) in the driveline rubber bellows with bolt (B) so that the notch fits around the casting (C) inside the auger drive compartment.

Pin	Wire	Color	To	Service
5	5	white	Pin 5 on (B)	Reel speed sensor power
6	6A	pink	Pin 6 on (B)	Right height sensor power

12 position receptacle (B)

Pin	Wire	Color	To	Service
1	1	green	Pin 1 on (A)	Reel speed sensor ground
2	2	yellow	Pin 2 on (A)	Reel speed sensor signal
3	3	brown	Pin 3 on (A)	Left height sensor ground
	3A	brown	Pin 3 on (C)	Right height sensor ground
4	4	orange	Pin 2 on (C)	Left height sensor signal
5	5	white	Pin 5 on (A)	Reel speed sensor power
6	6	pink	Pin 1 on (C)	Left height sensor ground
	6A	pink	Pin 6 on (A)	Right height sensor power
9	9	orange	Pin 4 on (A)	Right height sensor signal
10	10	light blue	Bullet connector	Right turn
11	11	dark blue	Bullet connector	Left turn
12	12	black	Bullet receptacle	Ground lights
	12A	black	Bullet receptacle	Ground lights

3 position plug (C)

Pin	Wire	Color	To	Service
1	6	pink	Pin 6 on (B)	Left height sensor ground
2	4	orange	Pin 4 on (B)	Left height sensor signal
3	3A	brown	Pin 3 on (B)	Right height sensor ground

1012 Modules / sensors

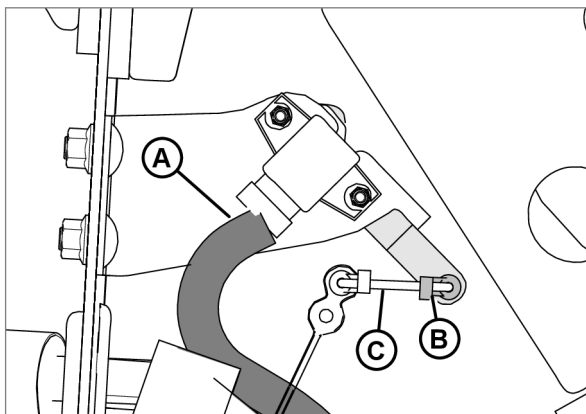
CLAAS AUTO CONTOUR (CAC)

The SWATH UP CAC feature works in conjunction with the CAC option available on certain combine models. A sensor is installed at each end of the SWATH UP. These sensors send a signal to the combine to allow it to maintain a consistent cutting height as the header follows ground contours.

The SWATH UP is factory-equipped for CAC. However, before using the CAC feature, you must:

- ▶ Ensure that the CAC sensors' output voltage range is appropriate for the combine.
- ▶ Calibrate the CAC system so that the combine can correctly interpret data from the height sensors on the header.
- ▶ Once calibration is complete, you are ready to use the CAC feature in the field. For each combine, certain operation settings can be used to improve the performance of the CAC feature.

Removing left height sensor



280441-001

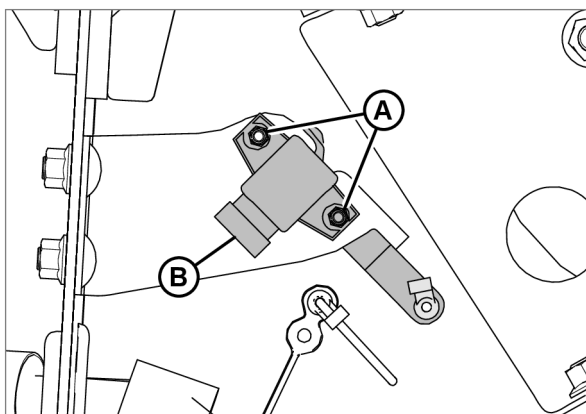
- ▶ Lower header to ground, shut down engine, and remove key from ignition.

! DANGER

To avoid bodily injury or death from unexpected startup of machine, always stop engine and remove key from ignition before leaving operator's seat for any reason.

61

- ▶ Open left endshield. [Page 158](#)
- ▶ Disconnect the wire harness (A).
- ▶ Push up on the rod end clip (B). Slide the linkage rod (C) out of rod end clip (B).



280442-001

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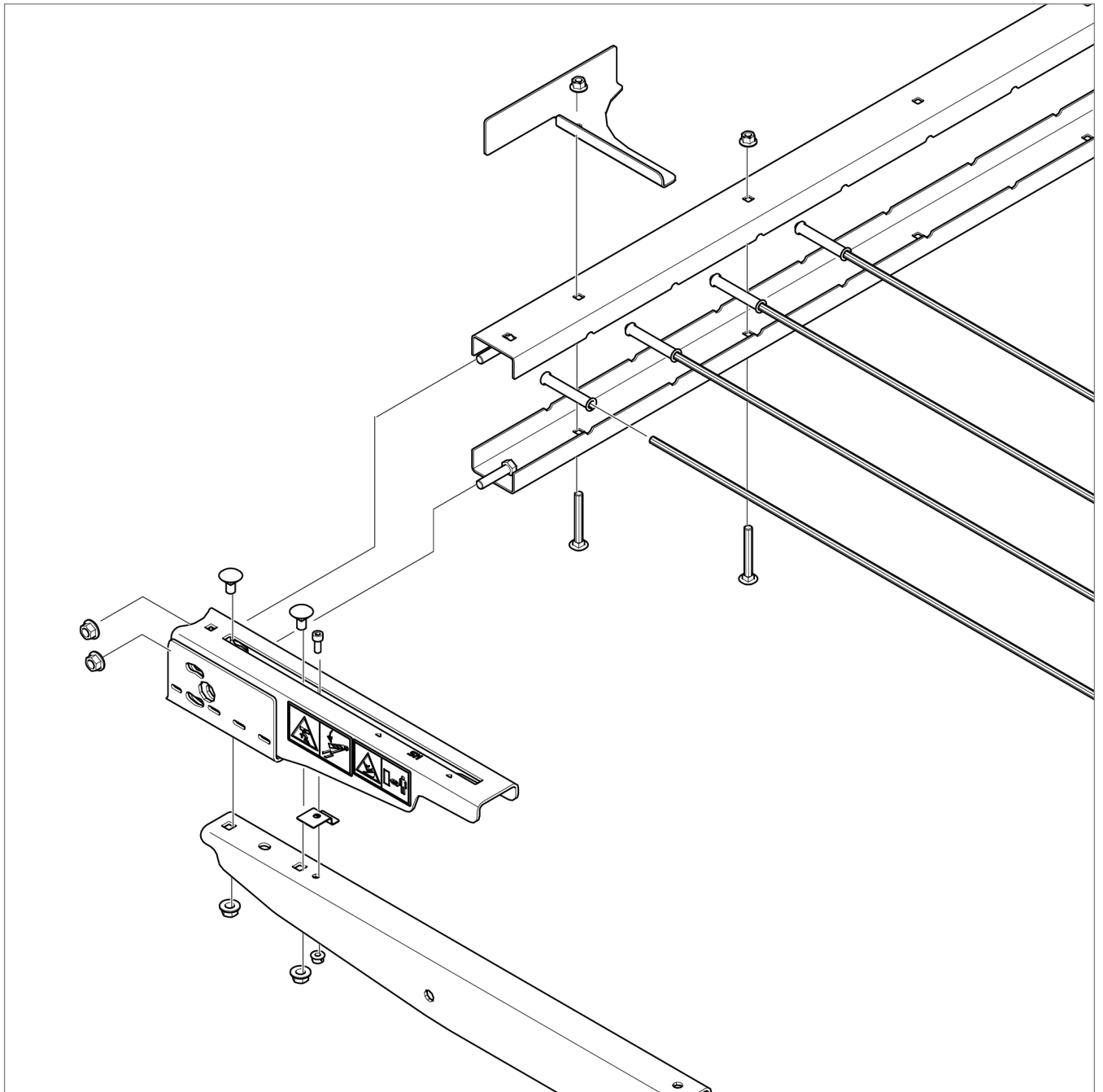
- ▶ Remove nuts and bolts (A).
- ▶ Remove sensor (B) complete with control arm.

20 Crop feeding

2020 Pick-up

Hold-down assembly

170922-003



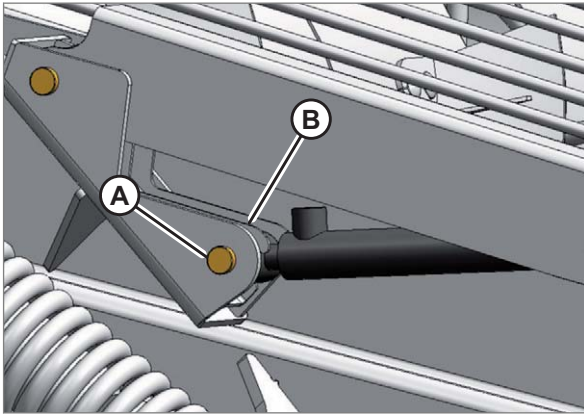
255789-003

86

168035-004

Replacing fiberglass rods

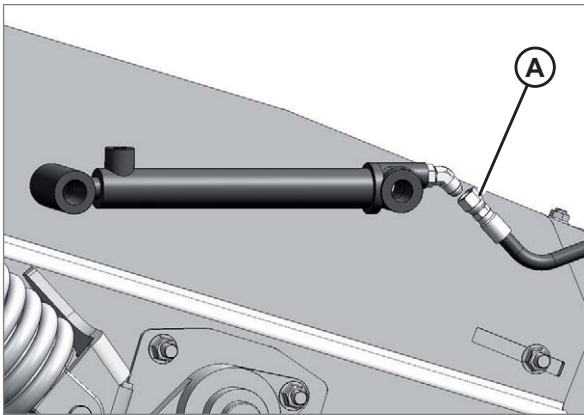
- ▶ Lower hold-down, and lower header to the ground.



246596-001

114

- ▶ Remove clevis pin (A) at rod end of cylinder, and remove cylinder and safety prop (B).



246413-001

115

- ▶ Disconnect hydraulic hose (A) from cylinder.
- ▶ Install cap onto hose end, or wrap with plastic.

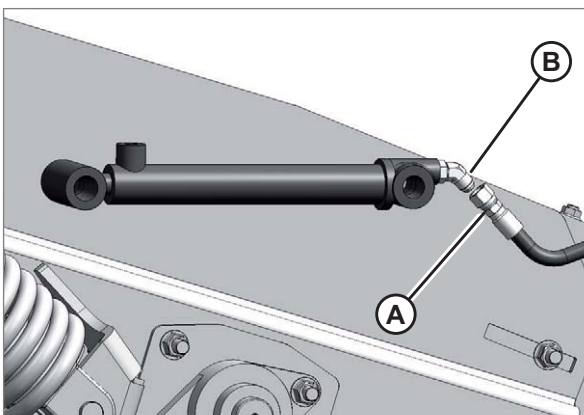


246414-001

116

Installing slave cylinder

- ▶ Remove the 45 degree elbow (A) from previously removed slave cylinder.
- ▶ Remove plug from new cylinder port.
- ▶ Install elbow (A) onto new cylinder as shown. Ensure fitting is in line with cylinder, and tighten jam nut on elbow.



246509-001

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- ▶ Connect hose (A) from master cylinder to elbow (B). Tighten fitting.

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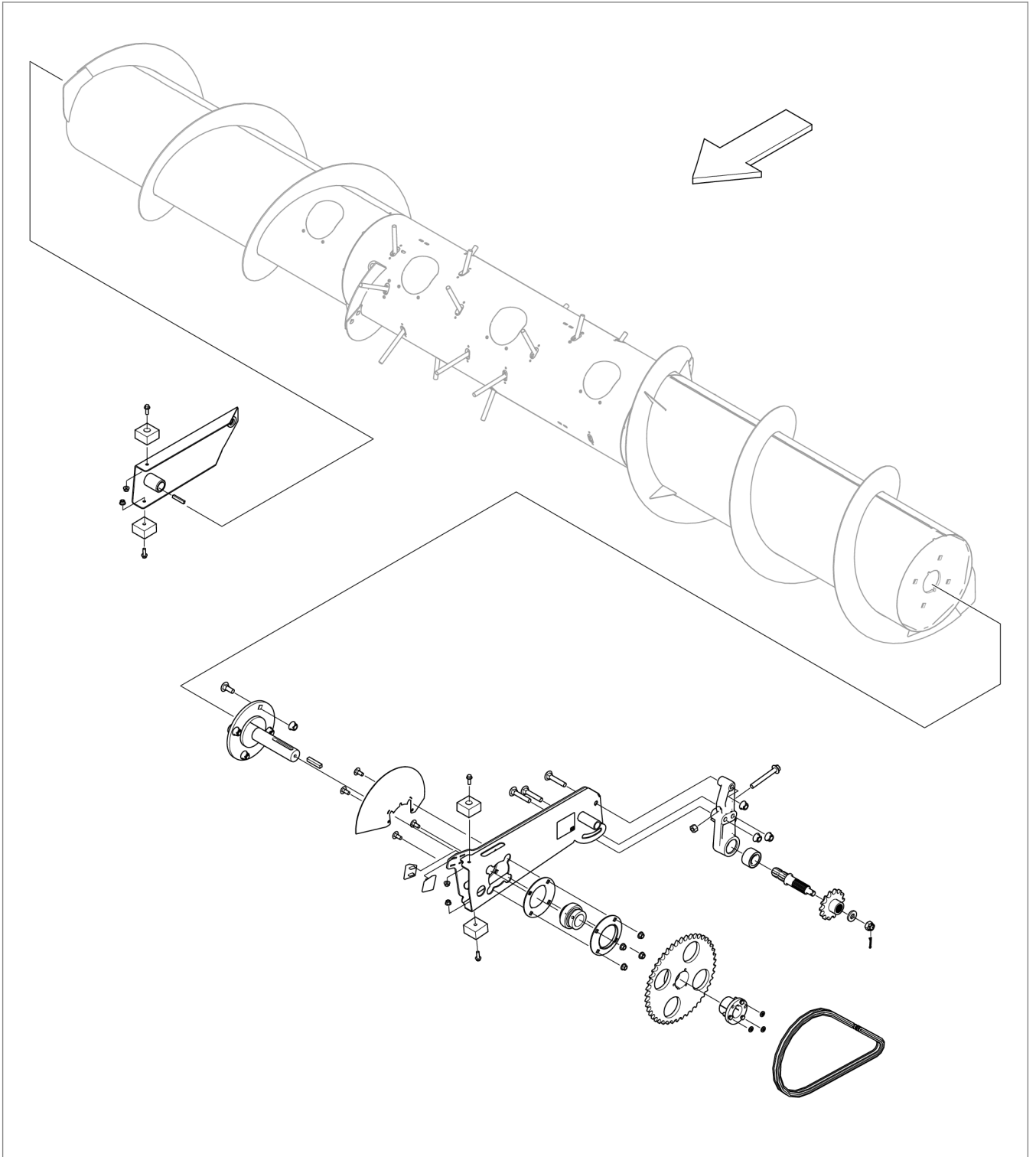
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21 Feeder unit

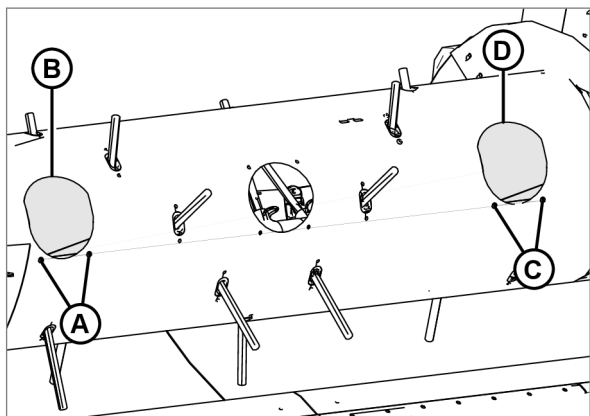
2140 Intake auger

Auger assembly (from 2016)

206497-001



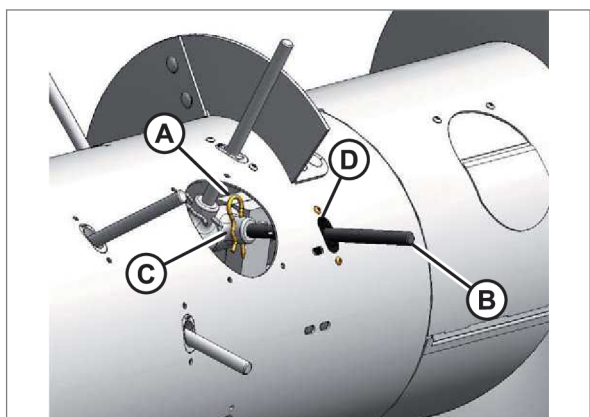
338917-001



273824-001

161

- ▶ Remove 2 screws (A) and remove right access cover (B) if the finger holder requiring replacement is located on the right side of the auger, or remove 2 screws (C) and remove the left access cover (D) if the finger holder is located on the left side.



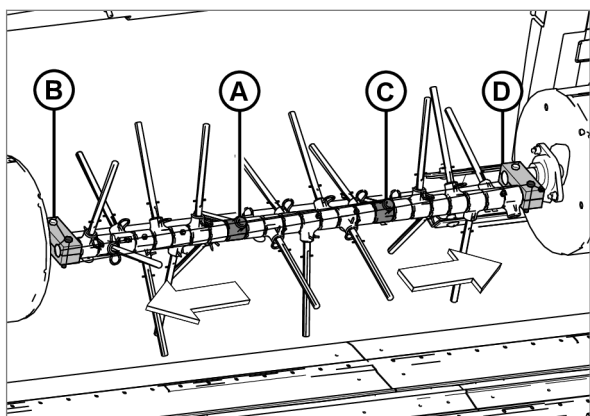
246371-002

162

- ▶ Reach inside the auger, remove hairpin (A) from the auger finger (B) requiring holder replacement, and pull auger finger out of holder (C).
- ▶ Reach inside the auger, swivel auger finger (B) away from holder (C), pull from plastic guide (D), and remove from auger.

Depending on the number of auger fingers (B) installed in the auger, there may be spare holder (C) on the shaft. Look inside the drum to see if there are any spare holders. If there are spare holders already installed, completely remove the damaged holder. To access the spare holder, remove auger fingers accordingly.

There must always be 24 holders (C) on the shaft. Otherwise, the holders may slide over and cause the auger fingers (B) to fall into the drum during operation.



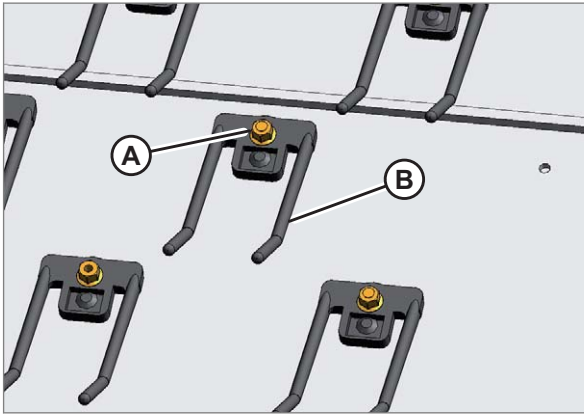
Middle auger sheet removed for clarity.

273827-001

163

- ▶ If the auger finger removed is on the right side of the auger, reach inside the auger and remove all the auger fingers between the damaged holder (A) and the right finger support clamp (B) as described in the following steps.
- ▶ If the auger finger removed is on the left side of the auger, remove all the auger fingers between the damaged holder (C) and the left finger support clamp (D) as described in the following steps.

2145 Belt conveyor



246429-001

213

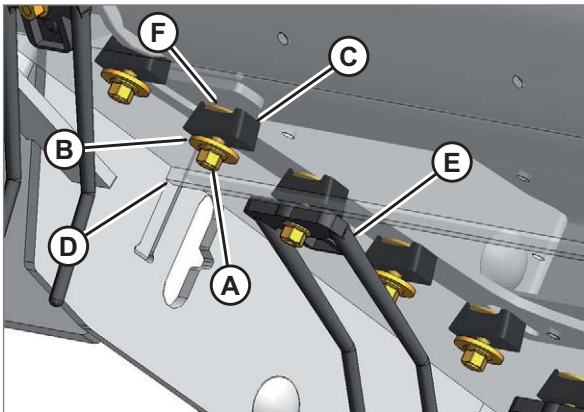
- ▶ Stop engine, and remove key from ignition.
- ▶ Remove M6 flange nut (A) securing finger (B) to the draper belt.
- ▶ Remove finger (B), and replace with new finger.
- ▶ Secure with M6 flange nut (A).
- ▶ Torque flange nut (A) to 4–5.6 Nm (37–50 lbf-in). Hold finger to prevent turning while tightening nut.

Replacing draper guide

- ▶ Raise the hold-down fully, and engage lift cylinder safety props.
- ▶ Raise the header fully, and engage the combine lift cylinder safety props.



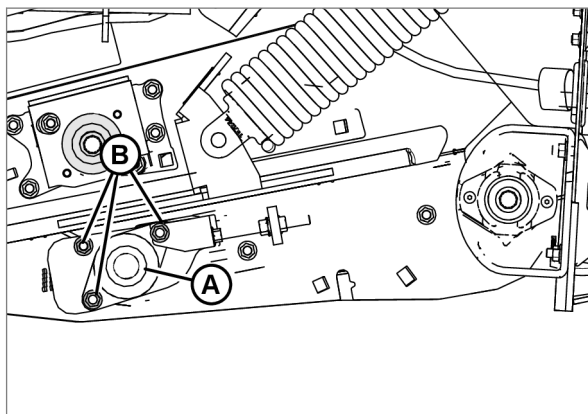
To avoid bodily injury or death from unexpected startup of machine, always stop engine and remove key from ignition before leaving operator's seat for any reason.



246430-001

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- ▶ Stop engine, and remove key from ignition.
- ▶ Loosen draper belt (D) as much as possible.
- ▶ Pull the draper belt (D) away from the frame from under the deck to expose guide (C).
- ▶ Remove the M6 flange nut (A) and washer (B) securing guide (C) to the draper belt (D). If guide is under a finger (E), remove the finger.
- ▶ Remove the guide (C) and elevator bolt (F). Discard the old guide.
- ▶ Place a new guide (C) onto the M6x26 elevator bolt (F), and install onto the draper belt (D).
- ▶ Install M6 washer (B) and flange nut (A).

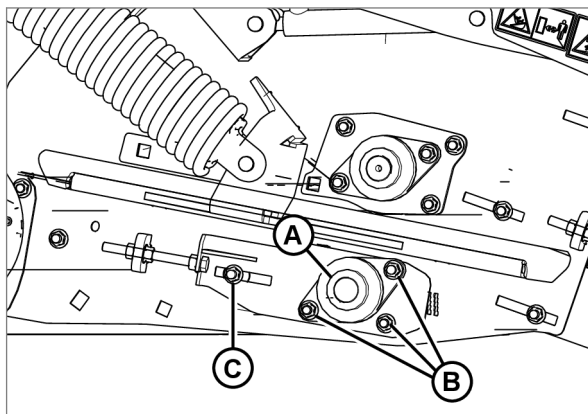


left side

273906-001

- ▶ Loosen the locking collar (A) and the three nuts (B) attaching the bearing flange to the frame on each side of the header.
- ▶ Loosen locking bolt (C).

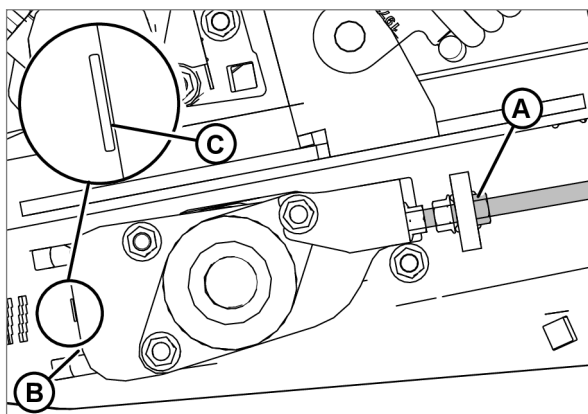
240



right side

273908-001

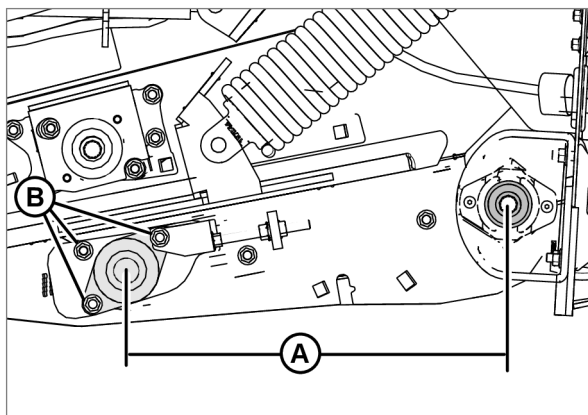
241



273907-001

- ▶ Turn adjuster nut (A) and draw the rear draper deck roller assembly into the header until the leading edge (B) of the bearing support plate lines up with the single cutout (C) on each side of the header.

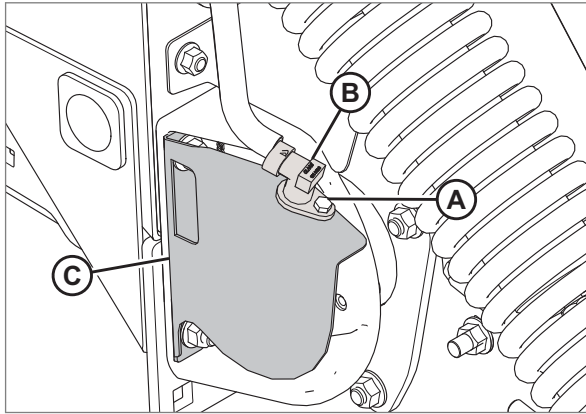
242



273905-001

- ▶ Measure from the center of the rear drive roller to the center of the front driven roller. Set dimension (A) to 19.29 in (490 mm) on each side of the header.

243



246609-001

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DANGER

To avoid bodily injury or death from unexpected startup of machine, always stop engine and remove key from ignition before leaving operator's seat for any reason.

- ▶ Lower SWATH UP to the ground, and lower the hold-down completely.
- ▶ Shut down combine, and remove key from ignition.
- ▶ Replace draper speed sensor as follows:
 - ▶ Remove bolt (A) and pull sensor (B) from support (C).
 - ▶ Disconnect sensor (B) from harness.
 - ▶ Attach new sensor (B) to harness.
 - ▶ Locate sensor (B) in support (C) and secure with bolt (A) and nut.
 - ▶ Adjust clearance between sensor and sensor disc. Refer to adjusting draper speed sensor.

178332-001

Removing header spring float assembly

- ▶ Attach the header to the combine feeder house and ensure it is latched securely. [Page 149](#)
It is not necessary to hookup the driveline or hydraulics.

168333-004

DANGER

Stop engine and remove key from ignition before leaving operator's seat for any reason. A child or even a pet could engage an idling machine.

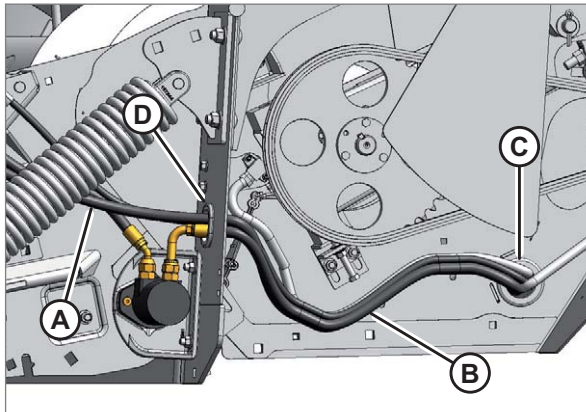
- ▶ Lower combine feeder house so the front draper deck is rotated upward to full floated-up position. Header frame will be close to the ground and coil spring will be fully collapsed.
- ▶ Shut down combine and remove key from ignition.
- ▶ Open left-hand endshield. [Page 158](#)

178335-001

NOTICE

The right side spring float assembly can be removed or adjusted without removing the right-hand endshield. For improved accessibility, remove right-hand endshield.

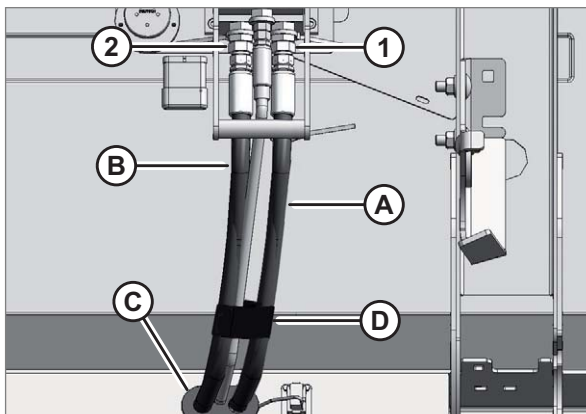
Installing hydraulic motor hoses



246569-001

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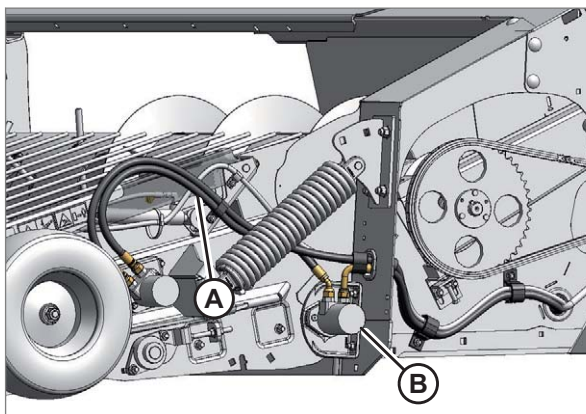
- ▶ Route the 2 longer hoses (A) and (B) through hole (C) in endsheet and hole (D) in frame. Angled fitting on hose (B) attaches to the pick-up rear drive motor. Hose (A) with yellow cable ties has identical fittings at both ends and attaches to the forward drive motor fitting that has a matching yellow cable tie.



246570-001

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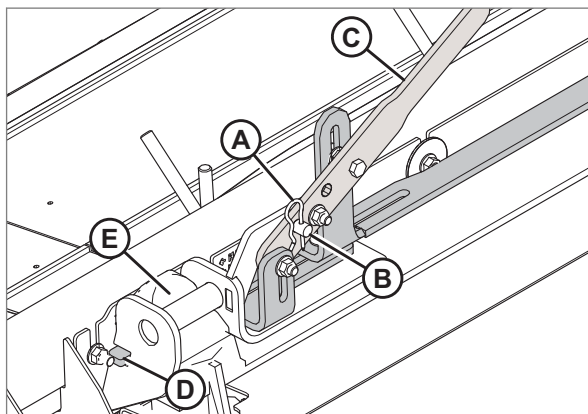
- ▶ Route hoses (A) and (B) through grommet (C) in bottom beam cover. Match colored cable ties and attach hoses (A) and (B) to multi-coupler. If colored cable ties are missing, attach as follows:
 - ▶ Attach longer hose (A) to forward port on forward drive motor, and to connector (1) on multi-coupler.
 - ▶ Attach shorter hose (B) to aft port on rear drive motor, and to connector (2) on multi-coupler.
 - ▶ Secure hoses with cinch strap (D).



246594-001

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- ▶ Connect the shortest hose (A) to the hydraulic motors. Angled fitting attaches to rear motor (B).

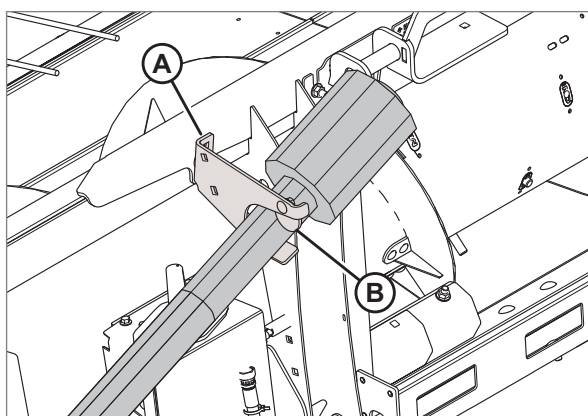


246599-001

For headers with CAC feeder house locks, proceed as follows:

- ▶ Remove hairpin (A) and clevis pin (B) from latch.
- ▶ Push lever (C) inboard so that locking bar (D) engages feeder house posts (E).
- ▶ Check that locking bars (D) project beyond latch brackets.
- ▶ Insert clevis pin (B) through lever (C), and secure with hairpin (A).

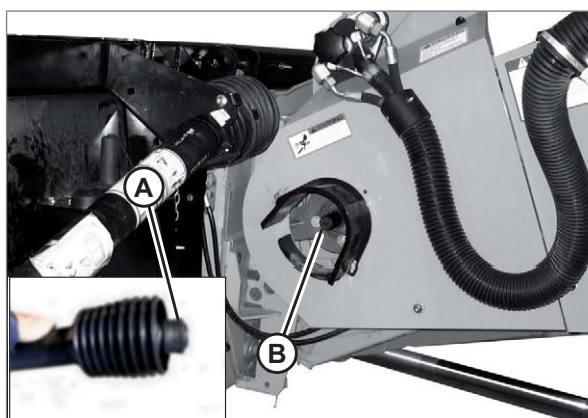
322



246473-001

- ▶ Rotate disc (B) on header driveline storage hook (A), and remove driveline from hook.

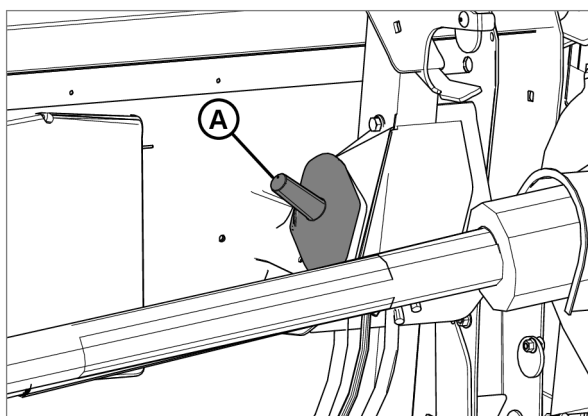
323



246541-001

- ▶ Pull back collar (A) on end of driveline, and push onto combine output shaft (B) until collar locks.

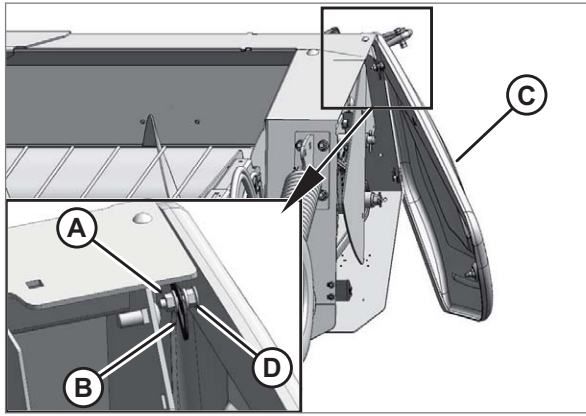
324



273509-001

- ▶ Remove cover (A) from multi-coupler receptacle on header, and ensure mating surface of receptacle is clean.

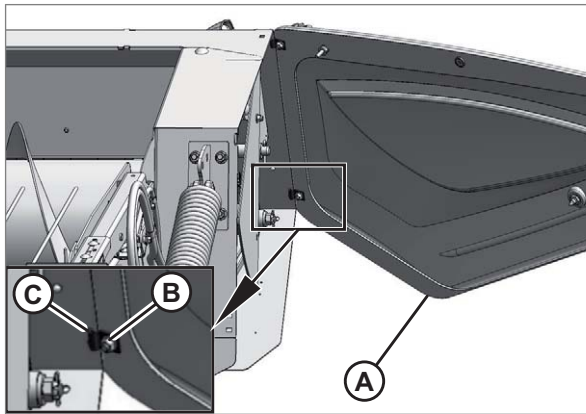
325



246560-001

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- ▶ Remove nut (A) securing support (B) to endshield (C), and move support (B) off the bolt.

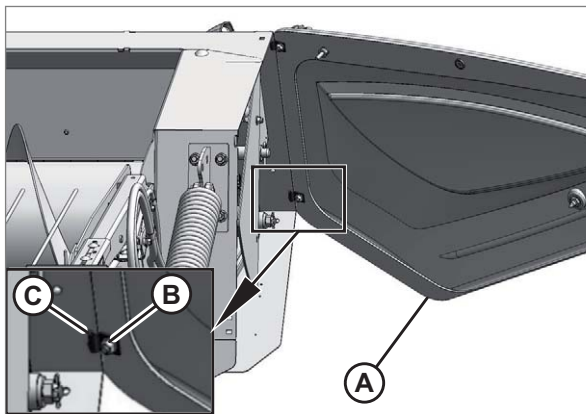


246563-001

348

- ▶ Swing endshield (A) fully back and loosen nuts (B) on clips (C) at back of endshield so clips disengage slots in header frame.
- ▶ Move endshield (A) away from header.

Installing left endshield



246563-001

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- ▶ Hold endshield (A) up to frame and insert clips (C) into slots in header frame.
- ▶ Tighten nuts (B) on clips (C) just enough to hold endshield in place.

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