Workshop Service Manual

Pickup Header

4300

North America
4205 River Green Parkway, Duluth GA 30096 USA

July 2019
79036983C
NA
English

Make sure the machine is in the proper operating condition according to the Operator Manual.

Always operate the machine with the control console turned on.

Do not dismount from moving machinery.

Stay off slopes too steep for operation.

Be aware of the size of the machine and have enough space available to allow for operation.

Stay off slopes too steep for operation. Keep the header as low as possible while going down hills. Never suddenly reverse the wheels to stop or back up.

Where possible avoid operating the machine near ditches, embankments, and holes. Reduce ground speed when operating on rough, slippery, or muddy surfaces and when turning or crossing slopes.

DANGER: Machine electrical shock and electrocution hazard.

Personal injury or death can occur.

Keep the machine clear of overhead electrical power lines.

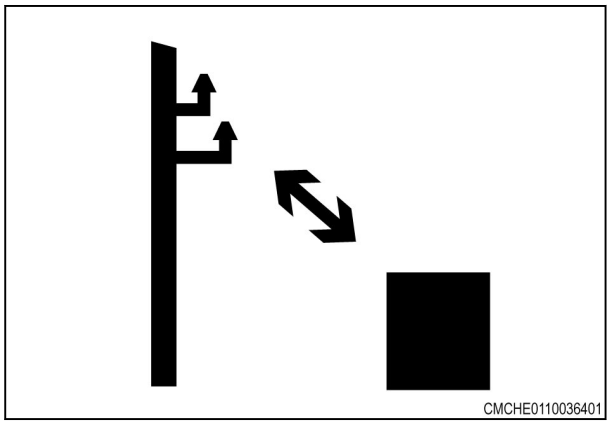

Fig. 5

1.2.7.3 Personal protective equipment

Put on all personal protective equipment (PPE) and protective clothes that are supplied to you or that are necessary for the conditions and by applicable laws. PPE includes equipment to prevent injury to your eyes, lungs, ears, head, hands and feet.

Always keep hands, feet, hair, and your clothes away from parts that move. Do not put on loose clothing, jewelry, watches, or other items that can tangle in parts that move. Tie up long hair that can also tangle in moving parts.

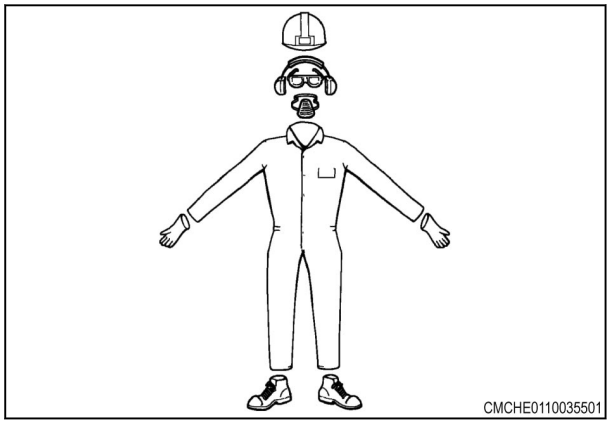

Fig. 6

1.4 Machine identification

Each machine is identified by a model and a serial number.

Record these numbers in the spaces given.

Give the model number and serial number to your dealer when parts or servicing are necessary.

Machine model number: _____

Machine serial number: _____

Date of delivery: _____

Dealer name: _____

Dealer address: _____

_____

_____

Dealer telephone number: _____

Dealer e-mail address: _____

Dealer fax number: _____

1.4.1 Serial number plate

The left-hand end sheet (1) has the serial number plate (2).

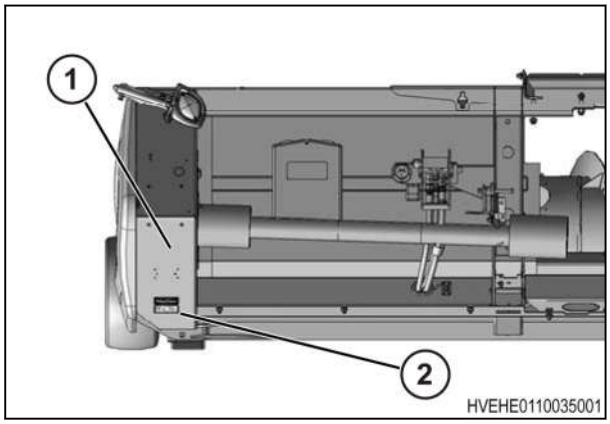

Fig. 27

1.4.2 Serial number description

Description of the serial number for model years 2017 and up.

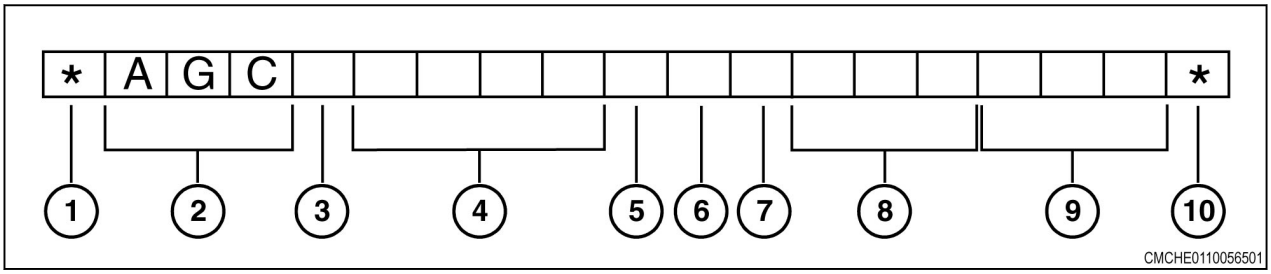

Fig. 28

(1) Beginning symbol
(2) World manufacturer code
(3) Brand code
(4) Model identifier (model number)

Master cylinder delayed behind secondary cylinder while lowering. Secondary cylinder delayed behind master cylinder while lifting.	
Cause(s)	**Solution(s)**
Cylinder is blocked.	Check lift cylinder and lift arm attachments.
Air in system.	Bleed the cylinders.
Hydraulic flow is blocked.	Check hoses and lines.

Secondary cylinder is extended more than 13 mm (0.50 in) when hold down arm is fully lowered.	
Cause(s)	**Solution(s)**
Air in the system.	Bleed the cylinders.

Hydraulic hold down will not lower.	
Cause(s)	**Solution(s)**
Hold down cylinder support is engaged.	Disengage the hold down cylinder support.
Hydraulics not connected correctly.	Inspect the hydraulic lines for damage and install the hydraulic lines correctly.

Driveline clutch is slipping.	
Cause(s)	**Solution(s)**
Clutch is worn.	Replace the clutch.
Auger is blocked.	Remove the blockage.

Pickup wheels bounce over bumps.	
Cause(s)	**Solution(s)**
Header height is too high.	Adjust the header height to 300 mm (12 in) measured from the ground to the center of the rear draper roller.

Speed control not functioning.	
Cause(s)	**Solution(s)**
Sensor is not adjusted correctly.	Adjust the sensor.

1.10 Field operation

Operation of the header in all conditions requires making the correct adjustments for changing crops and conditions.

Correct operation reduces crop loss and increases productivity. The correct adjustments and maintenance will increase the length of service of the machine.

Most adjustments are set from the factory, but most of the settings can be changed according to crop conditions.

1.10.1 Draper speed

Performance of the header in different crop and field conditions change with the speed of the draper belts. Performance of the header also changes with the ground speed of the combine.

- If the swath is pushed forward too much, the draper belt speed is too low. Some of the crop will not be picked up.
- If the swath is torn apart and is pulled toward the header, the draper speed is too high. The swath will not feed evenly into the combine.

Set the pickup speed so the swath is pushed forward a small amount.

If the combine has a reel speed readout, the reel speed readout is the draper speed. Draper speed is adjusted from the combine cab by changing the amount of oil flow to the pickup hydraulic motors using the reel speed controls. The ratio of pickup speed to combine ground speed can be set using the combine header controls.

Recommended speed

Front and rear deck aft roll: 51 rpm per 1.6 km/h (1 mph) of combine ground speed.

Example: For 8 km/h (5 mph), operate the rear roll shaft at 51 x 5 mph = 255 rpm.

1.10.2 Header height

Header height is the distance between the deck pivot and the ground. The specification for operating header height (1) is 305 mm (12 in).

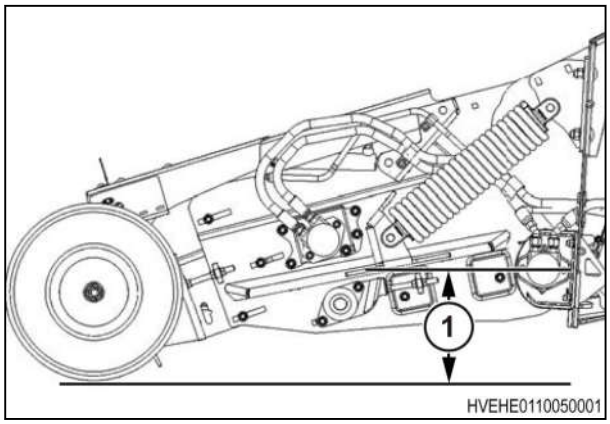

Fig. 58

7. Inspect the lock washer (1). Replace the lock washer if necessary.
8. Install the wheel with the wheel nut.
9. Tighten the wheel nut to 108 Nm (80 lbf ft).

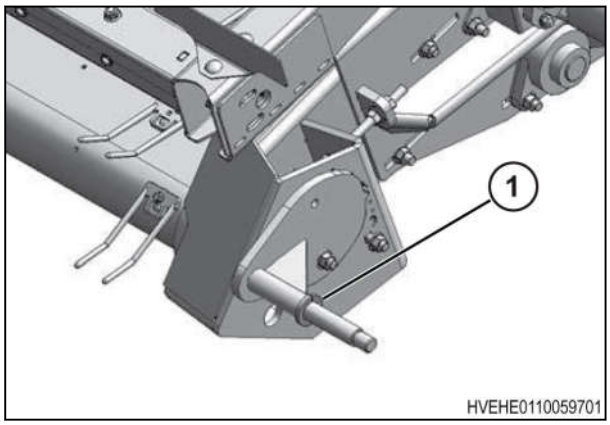

Fig. 2

3.5 Auger fingers

3.5.1 Replace the auger fingers

Check the auger fingers regularly. Replace missing, bent, or worn auger fingers.

Procedure

1. Raise the hold-down to the maximum height and engage the hold-down cylinder supports.

WARNING:
Stop the machine engine and remove the key before doing any lubrication or any maintenance function.

2. Remove the two screws (1) from the access cover (2) nearest to the bent or worn finger (3).
3. Remove the access cover.

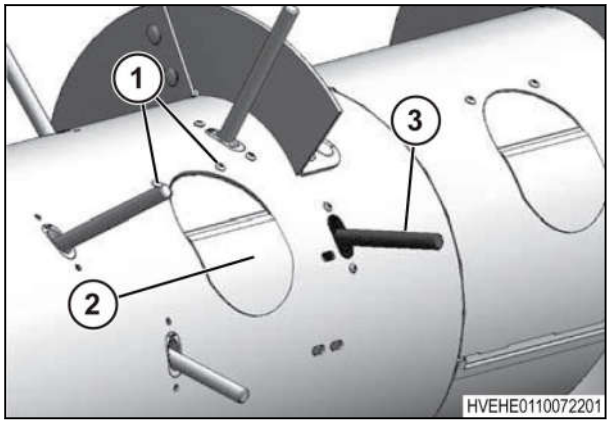

Fig. 14

4. Remove the hairpin (1).
5. Pull the finger (2) from the bushing (3).
6. Move the finger away from the bushing.
7. Remove the finger from the plastic guide (4).
8. Install the new finger in the plastic guide.
9. Install the new finger in the bushing.
10. Install the hairpin with the closed end in the direction of forward rotation (5).

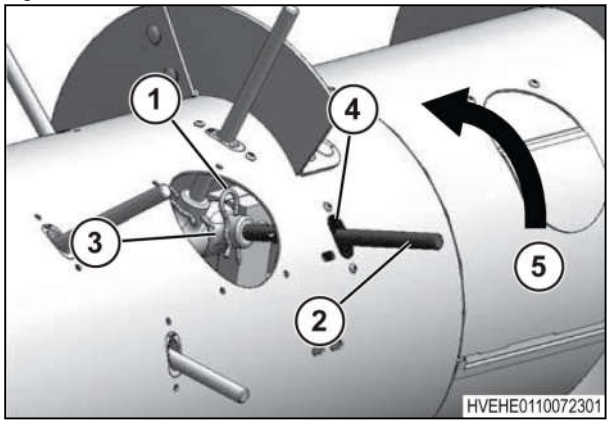

Fig. 15

11. Apply thread locking compound to the screws (1).
12. Put the access cover (2) in position.
13. Tighten the screws to 8.5 Nm (75 lbf in).

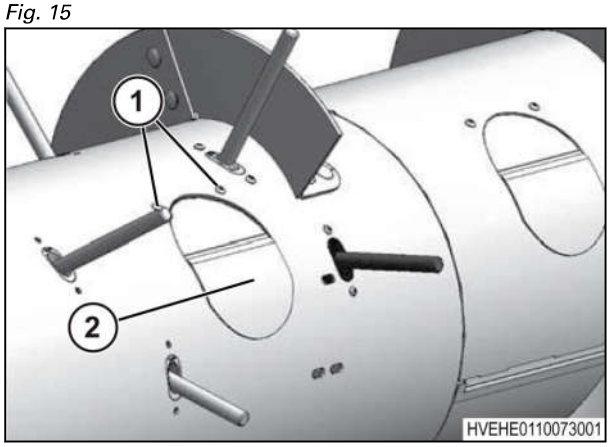

Fig. 16

11. Install the clevis pin (1) and washer (2) to through the auger arm (3) and the header frame on both ends of the header.

The illustration shows the left-hand end of the header.

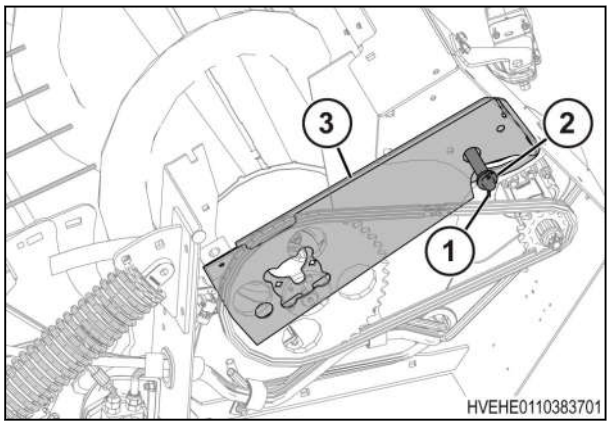

Fig. 41

12. Install the two nuts (1) and the two bolts (2) through the highest point in the notches on the top auger stop bracket (3) on each end of the header.

The illustration shows the left-hand end of the header.

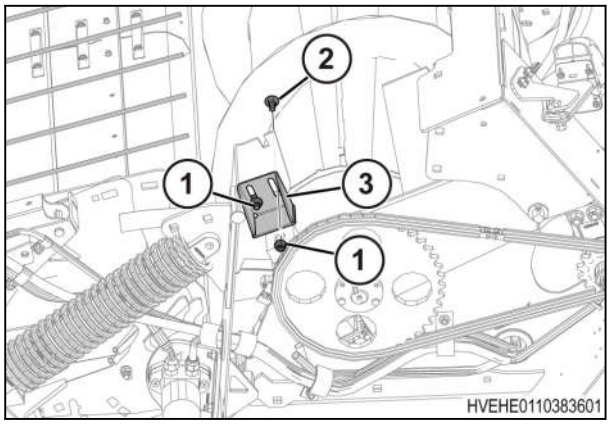

Fig. 42

13. Install the six nuts (1) and the six bolts (2) that hold the brace (3) to the header frame.

14. Check the auger drive chain and adjust if necessary.

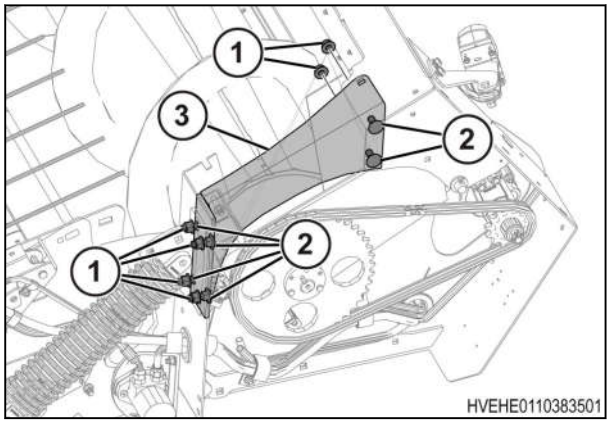

Fig. 43

15. Install the three nuts (1) and the three bolts (2) that hold the top panel (3) to the header frame.

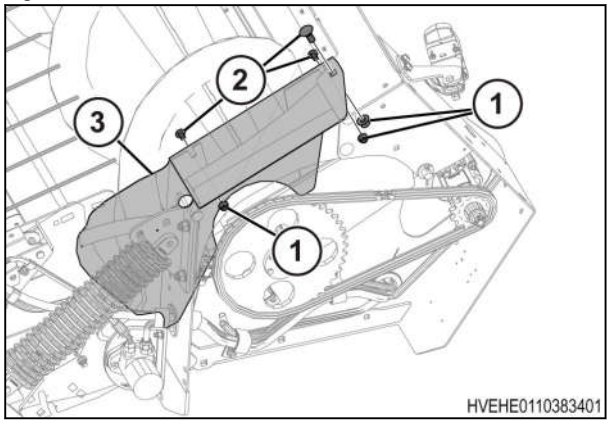

Fig. 44

2. Rotate the disc (1) on the driveline storage hook (2)

3. Remove the driveline from the hook.

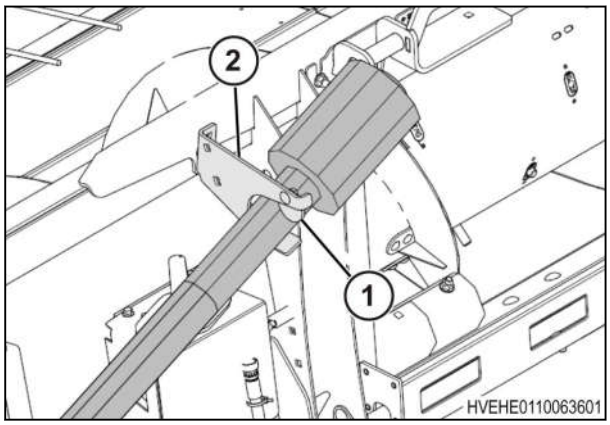

Fig. 11

4. Extend the machine end of the driveline (1) until the driveline separates.

Support the two parts of the driveline.

Fig. 12

5. Release the lubrication fitting and the lock (1) on the driveline bellows.

Fig. 13

13. Check the alignment of the sprockets.

If the sprockets do not align to 1 mm (0.04 in), record the amount.

Repeat the following procedure until the sprockets align correctly.

a) Measure from face of the tapered bushing (1) to the end of the drive shaft (2).
b) Remove the three hex screws (3) from the tapered bushing.
c) Install two hex screws in the threaded holes (4) in the tapered bushing.
d) Turn the hex screws into the tapered bushing one-half turn at a time in equal amounts for each hex screw.

   Turn the hex screws until the tapered bushing can move.
e) Adjust the position of the tapered bushing to get correct alignment of the sprockets.

   Use the measurement taken before to make the adjustment.
f) Install three hex screws (5) through the tapered bushing (6) and into the driven sprocket (7).

   Do not tighten the hex screws.
g) Align the driven sprocket (8) with the drive sprocket (9).

   Use a straight edge.
h) Align the sprocket faces to 1 mm (0.04 in) of each other.
i) Tighten the three hex screws (10) in equal amounts to 44 Nm (32 lbf ft).

   Check and keep the sprocket faces in alignment while tightening the hex screws.
j) Tap the bushing (11).
k) Repeat the tightening and tapping procedure three or more times.

   The hex screws must not turn at 44 Nm (32 lbf ft).
l) Check the alignment of the sprockets.

   If the sprockets do not align to 1 mm (0.04 in), record the amount.
m) Repeat this procedure until the sprockets align correctly.

14. Install the auger drive chain.

15. Adjust the tension of the auger drive chain.

16. Close the left-hand end shield.

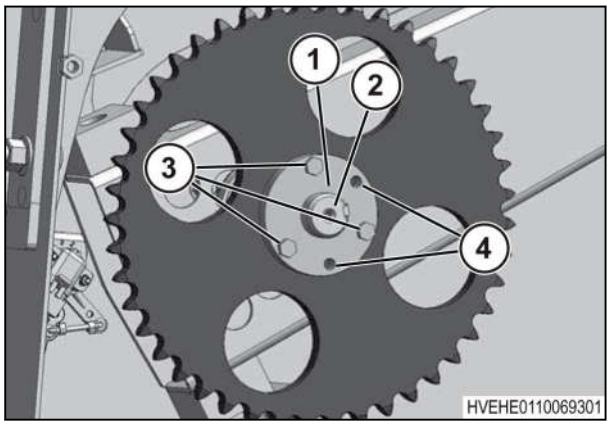

Fig. 35

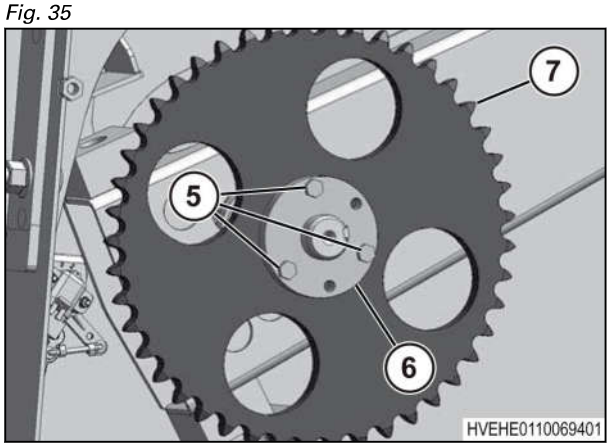

Fig. 36

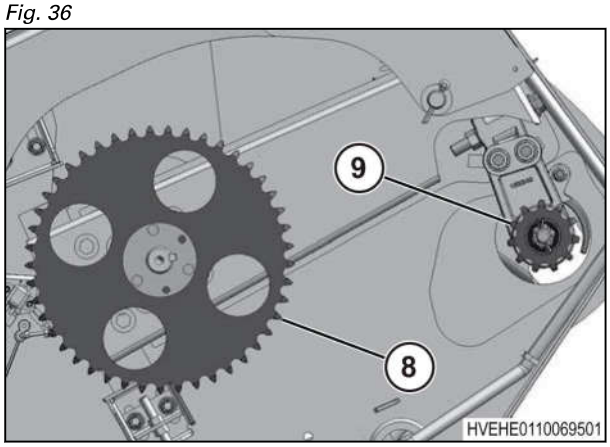

Fig. 37

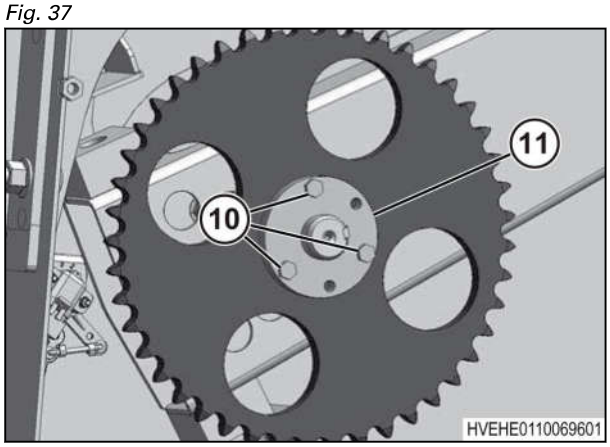

Fig. 38

Related Links

5.2 Draper belt tension

The draper belt tension is set at the factory, but make sure to check the draper belt tension before operating the header.

Make sure bottom section of the draper belt has a small amount of visible slack.

There will be a visible sag in the underside of the draper

The draper tension needs to be set only to prevent slippage.

The draper belt can be sticky when new. Use talcum powder or baby powder to make the draper belt less sticky.

Loosen the draper belt a small amount for the first several hours during the break in period.

5.2.1 Check the draper belt tension

WARNING: Machine movement hazard.

Personal injury or machine damage can occur.

Park the machine on a solid level surface. Lower all implements to the ground. Stop the engine, apply the park brake, and take the key with you.

Procedure

1. Park the machine on a solid, level surface.
2. Raise the header fully.
3. Stop the engine, apply the park brake, and take the key with you.
4. Engage the header lift cylinder stop.
5. Make sure the drapers are visible though the slots (1). Correct tension is made when the draper aligns with the indicator notch in the slots (1).

   IMPORTANT: *For correct draper tacking, make sure the deck indicator* (2) *is in the same position on both sides of the header.*
6. If the draper belt tension is not correct. Adjust the draper belt tension. See the information for adjusting the draper belt tension.

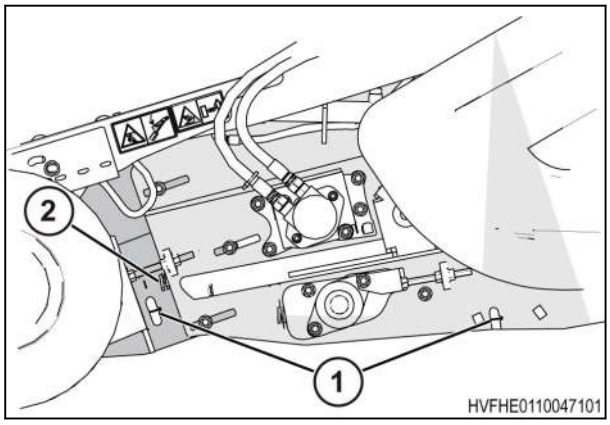

Fig. 2

5.4 Draper fingers and draper guides

Replace any broken or worn draper fingers. Broken or worn draper fingers reduce machine performance.

Draper guides make the draper belts track correctly.

The right-hand draper belt has draper guides at the inside on the outside edge of both decks. Replace any guides that have too much wear and cause the draper belt to not track correctly or to shift.

The draper guides must be at 90 degrees to the direction of draper belt travel. Incorrect draper guide alignment makes the draper belts shift and ride up on the frame. Incorrect draper belt tracking causes excessive edge wear and draper damage.

Remove the draper belts as required to replace draper fingers and draper guides.

Related Links

Remove the front draper belt page 5-10

5.4.1 Replace a draper guide

Procedure

1. Raise the hold-down to the maximum height and engage the hold-down cylinder supports.

   WARNING:
   Stop the machine engine and remove the key before doing any lubrication or any maintenance function.

2. If required, remove the draper finger (1) on the outside of a draper guide (2).

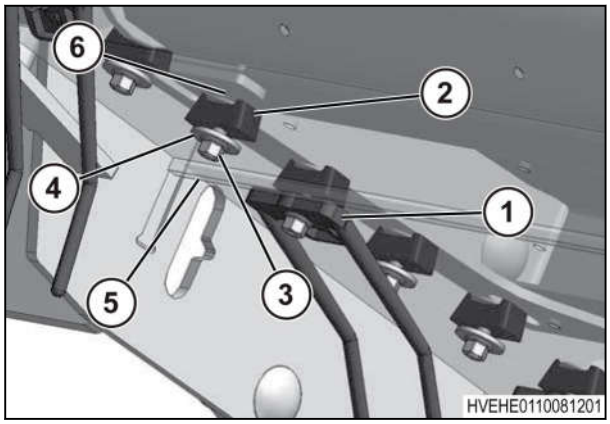

Fig. 27

3. Remove the flange nut (3) and the washer (4) from the draper guide for the draper belt (5).
4. Loosen the draper belt.
5. From under the deck, pull the draper belt away from the frame to get access to the draper guide.
6. Remove the draper guide and the elevator bolt.
7. Discard the draper guide.

5. Open the left side end shield (1).

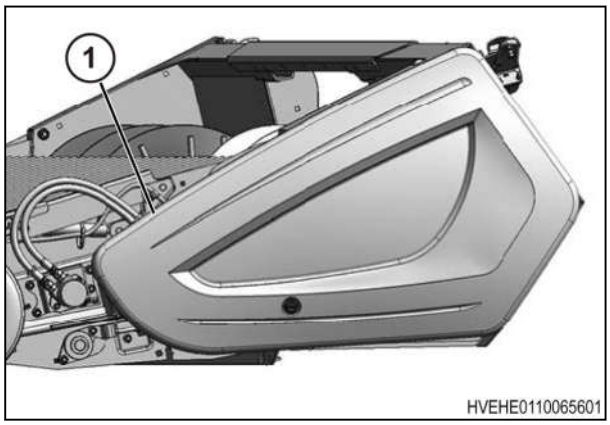

Fig. 54

6. Remove the rear hydraulic motor (1).

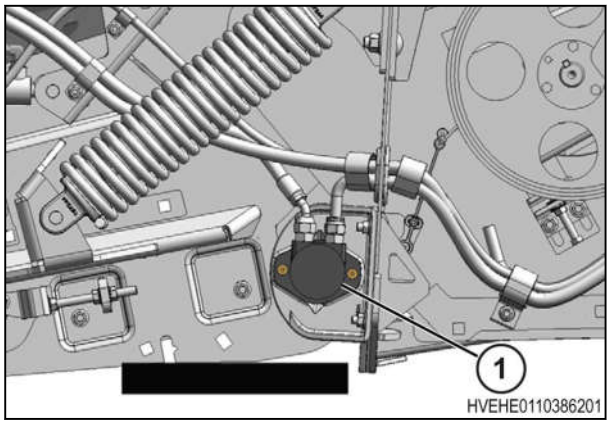

Fig. 55

7. Turn the drive roller until the set screw (1) in the lock collar (2) aligns with the recess (3) in the bearing support.

8. Loosen the set screw in the lock collar.

9. Rotate the lock collar counterclockwise to loosen and remove the lock collar.

10. Make sure the deck has support and cannot move.

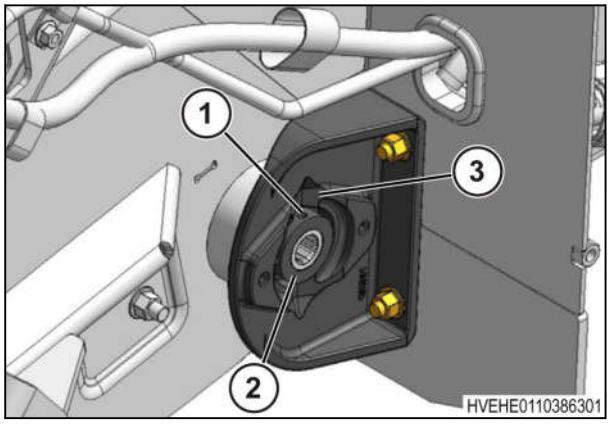

Fig. 56

11. Loosen the float springs (1).

12. Remove the nuts (2) from the bolts (3) holding the bearing support (4) to the frame.

13. Remove the bolts.

Do not damage the height controller when removing the bolts.

14. Remove the bearing support from the drive roller shaft.

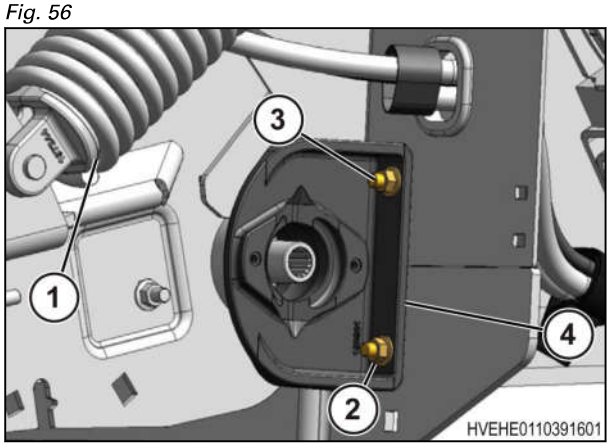

Fig. 57

5.7.3 Replace the bearing on the left side of the rear idler roller

Two self-aligning, permanently lubricated roller bearings support each draper roller.

A bearing (1) on the left side supports the left side end of the rear idler roller.

Use the following procedure to replace a worn or a damaged bearing.

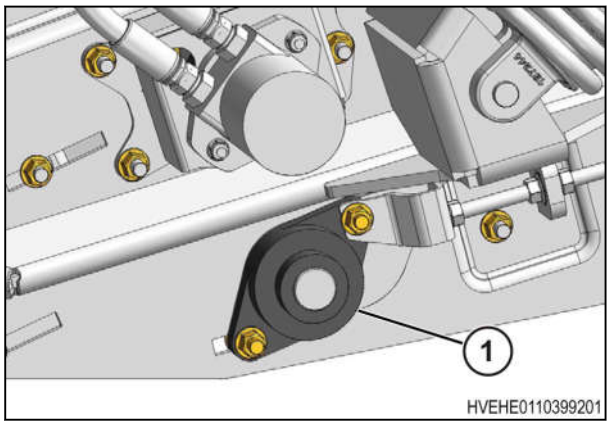

Fig. 89

Procedure

1. Completely lower the hold-down (1).

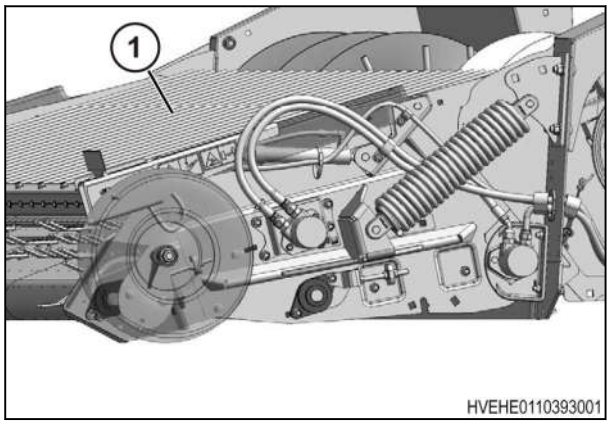

Fig. 90

2. Install wood blocks (1) under each side of the deck.

Put the left side wood block near the bearing.

3. Completely lower the header onto the wood blocks.

Make sure the wood blocks securely support the deck.

WARNING:
Stop the machine engine and remove the key before doing any lubrication or any maintenance function.

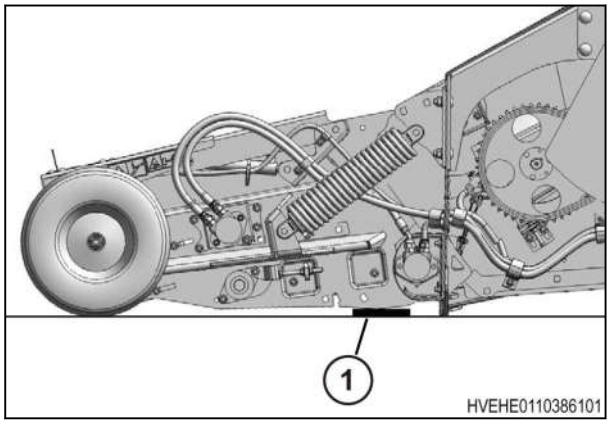

Fig. 91

4. Completely release the tension on the draper belt.

25. Install the front hydraulic motor (1).

26. Adjust the tension on the draper belt.

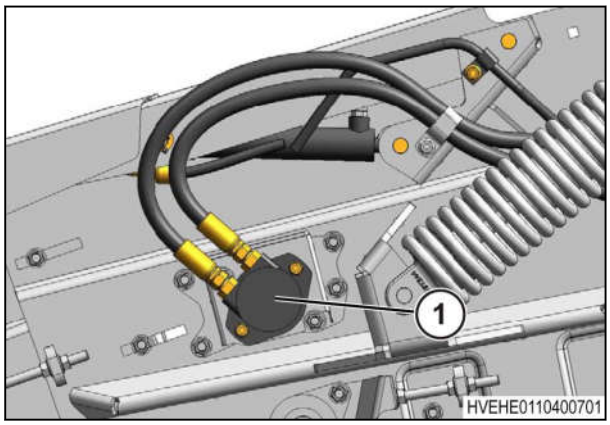

Fig. 118

27. Close the left side end shield (1).

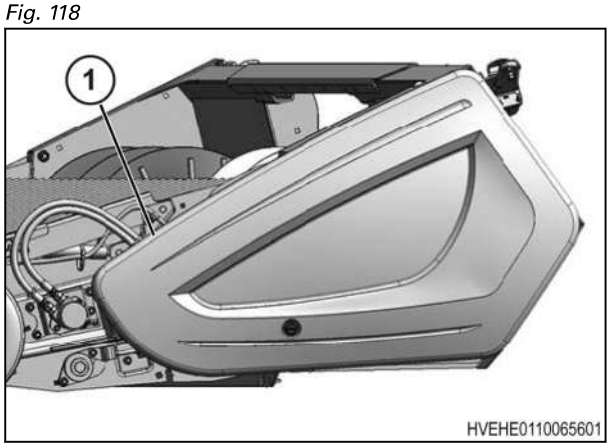

Fig. 119

28. Raise the header sufficient to remove the wood blocks (1) under each end of the deck.

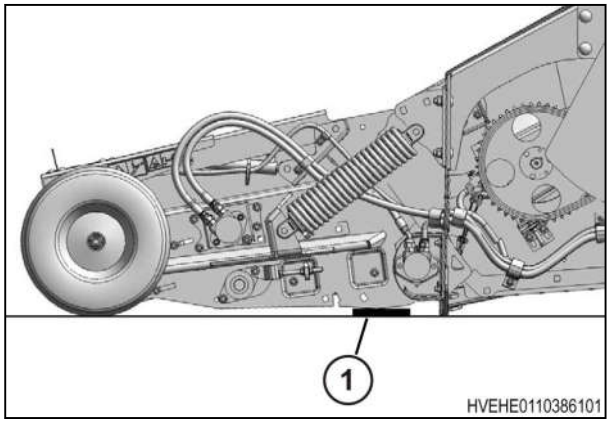

Fig. 120

29. Raise the hold-down (1) if necessary.

30. Check the machine for correct operation.

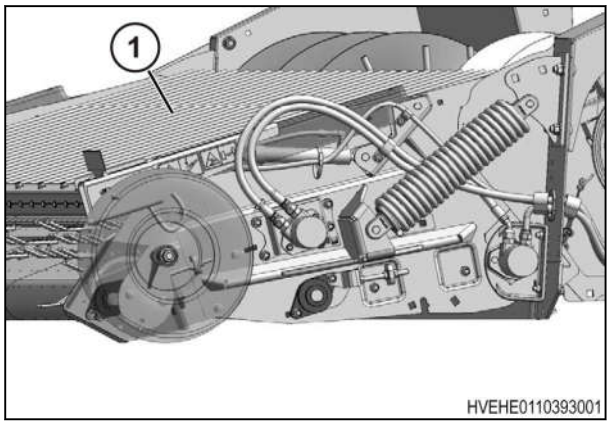

Fig. 121

19. Close the left-hand shield (1).

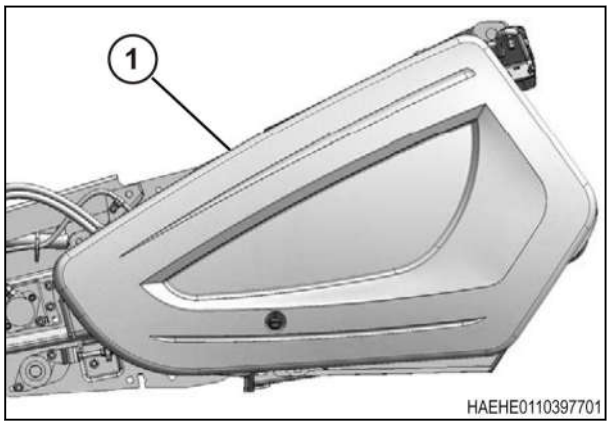

Fig. 152

Related Links

Remove the front hydraulic motor page 6-4
Adjust the front draper belt tension page 5-7
Install the front hydraulic motor page 6-5
Close the left side end shield page 8-4

6.4 Hydraulic motor hoses

6.4.1 Remove the hydraulic motor hoses

Before starting the procedure

Before removing the components, fasten identification tags on the components for correct assembly.

Put caps and plugs on all hoses, fittings, ports, and openings to prevent contamination.

Procedure

1. Park the machine on a solid, level surface.
2. Lower the header to the ground.
3. Lower the hold-down completely.
4. Relieve all pressure from the hydraulic system.
5. Apply the parking brake, stop the engine, and take the key with you.
6. Remove the left-hand end shield.
7. Remove the hose clips (1) and line clamps (2).
8. Disconnect and remove the hydraulic hoses (3) from the drive motors (4).

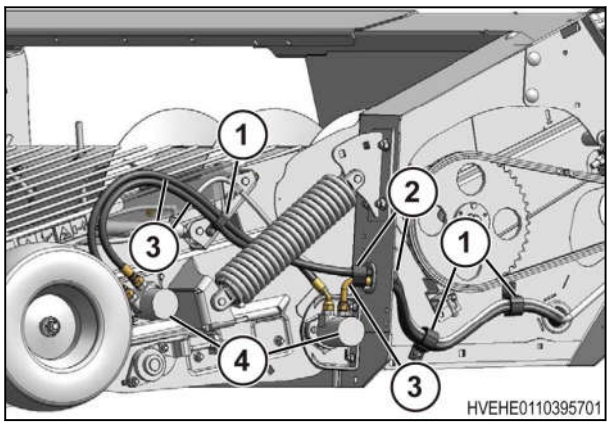

Fig. 9 Model year 2019 and before

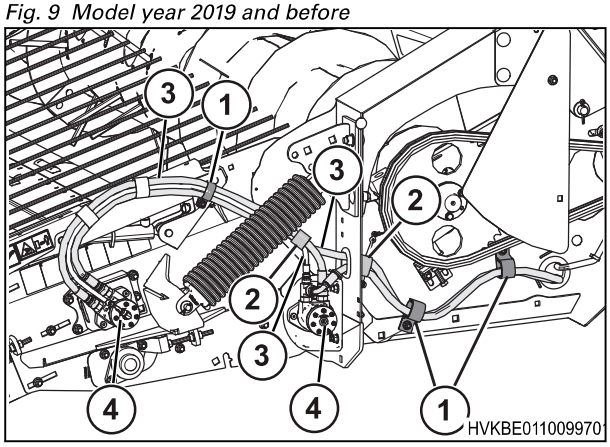

Fig. 10 Model year 2020 and after

7. Lubricate the output shaft (1) with hydraulic oil. Install the output shaft in the housing.

IMPORTANT:
Do not permit the oil to enter the threaded holes.

8. Install the needle bearing (2) and then the bearing race (3) on the output shaft. Pull the output shaft partially out of the housing. Push the output shaft, needle bearing, and bearing race into the housing all together.

IMPORTANT:
The bearing race must rotate freely when in position.

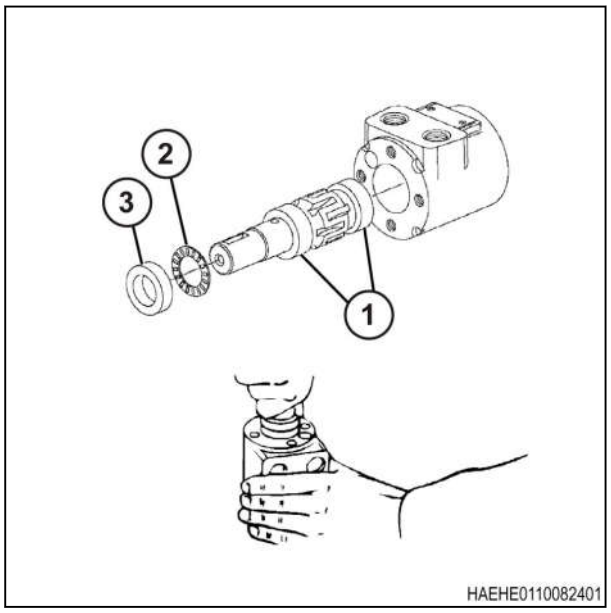

Fig. 35

9. Install the seal (1) into the mounting flange as shown.

10. Lubricate the inner seal tube (2) and the outside of the shaft seal (3) with petroleum jelly.

11. Using a seal driver (4), install the backup-ring (5) and the shaft seal (3) as shown.

12. Install the 49 mm (1.937 in) O-ring into the mounting flange.

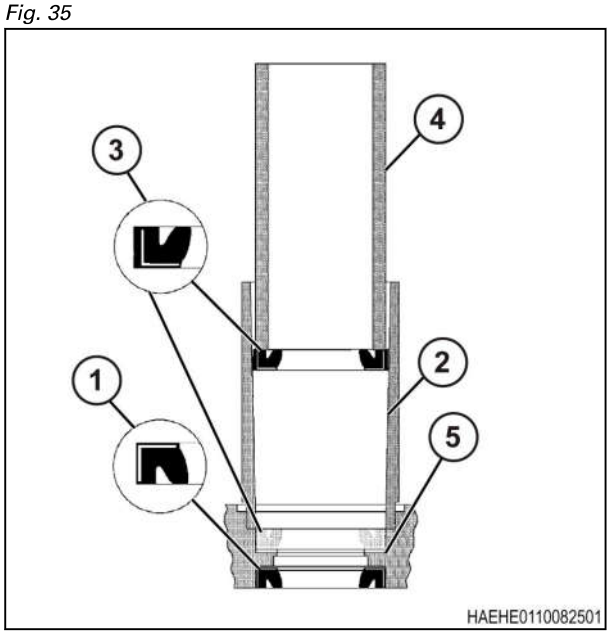

Fig. 36

13. Apply three or four drops of Loctite® Primer NF™ to the top of the threads on each threaded hole.

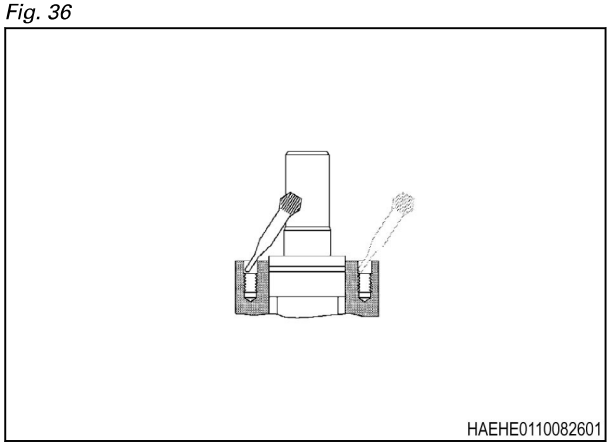

Fig. 37

2. Hold a container (1) up to the bleed plug (2).
3. Loosen the bleed screw.
4. Engage the lift control.
   The hold-down can lift some. Hydraulic fluid can come from the bleed screw.
5. Bleed the hydraulic system until the hydraulic fluid has no bubbles.
6. Release the lift control.
7. Tighten the bleed screw.
8. Raise the hold-down completely and disengage the hold-down cylinder supports.

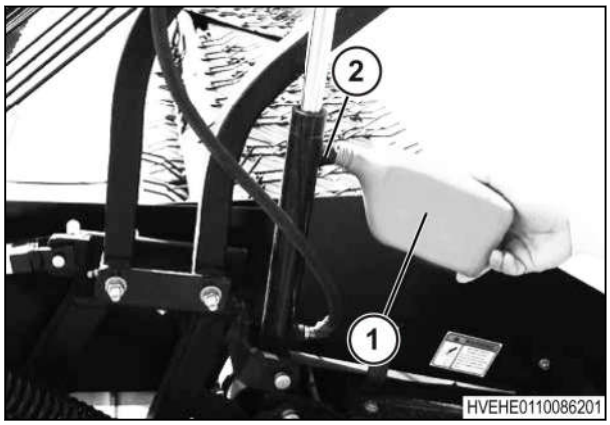

Fig. 63

Related Links

Engage the hold-down cylinder support page 1-16

6.6.6 Master cylinder components

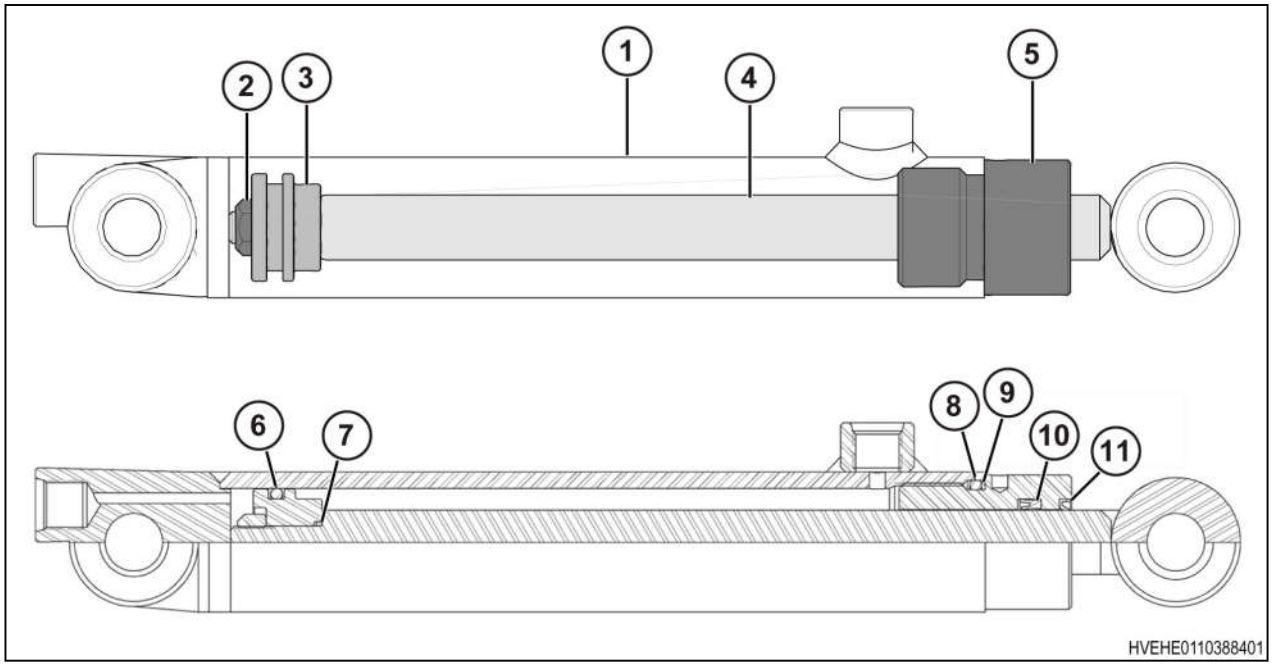

Fig. 64

(1) Cylinder tube
(2) Rod nut
(3) Piston
(4) Chrome cylinder rod
(5) Head gland
(6) O-ring 1.000 x1.250 x 0.125
(7) O-ring 0.375 x 0.500 x 0.063
(8) O-ring 1.188 x 1.438 x 0.125
(9) Backup seal 1.188 x 1.438 x 0.040
(10) Rod seal 0.750 x 1.000 x 0.250
(11) Rod wiper seal 0.750 x 1.000 x 0.125

7.2 Draper speed sensor

7.2.1 Draper speed sensor description

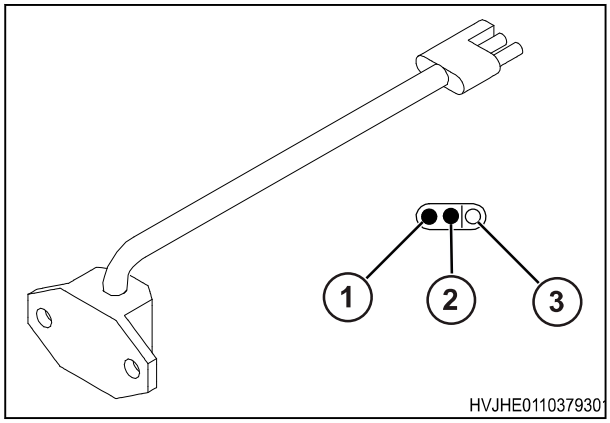

Fig. 2

Position	Function
(1)	Power (red)
(2)	Signal (white)
(3)	ground (black)

Supply voltage direct current (VDC): 5 VDC to 16 VDC

Output from the speed sensor: Square wave from 1 Hz to 20 kHz.

7.2.2 Examine the draper speed sensor adjustment

Procedure

1. Park the machine on a solid, level surface. Stop the engine, apply the park brake, and take the key with you.

2. Measure the clearance (A) between the sensor (1) and the sensor disc (2). Make sure the clearance is 0.5 mm (0.02 in). If necessary, adjust the sensor.

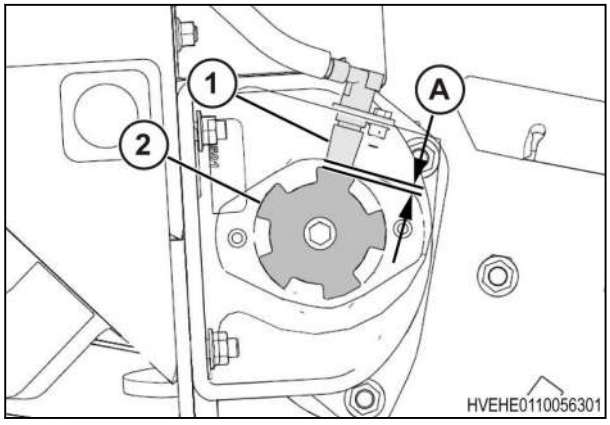

Fig. 3

5. Disconnect the harness (1).

6. Push up on the rod end clip (2).

7. Slide the linkage rod (3) out of the rod end clip (2).

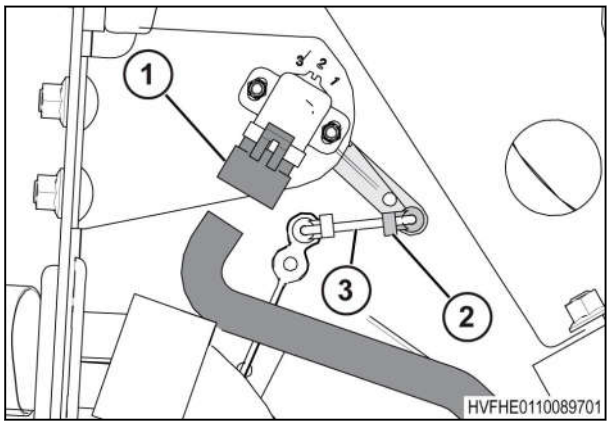

Fig. 13

8. Remove the nuts and bolts (1).

9. Remove the control (2) and the control arm (3). Note the position of the control arm to assist in assembly.

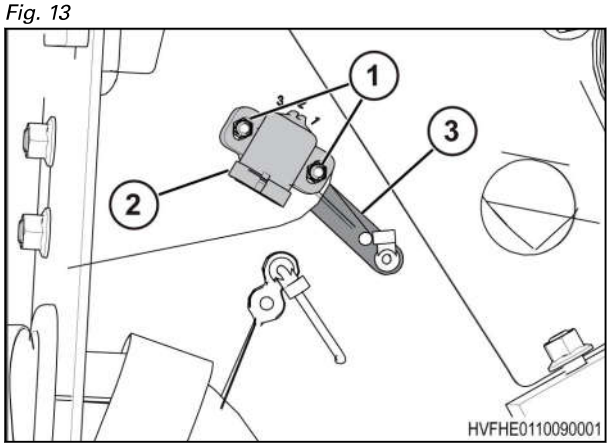

Fig. 14

10. Remove the nut (1).

11. Remove the long control arm (2) along with the linkage rod and the rod end clip.

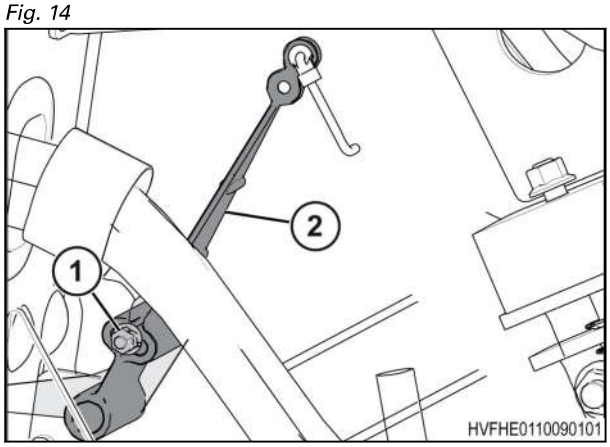

Fig. 15

12. Remove the hex socket screw (1).

13. Remove the control activation arm (2).

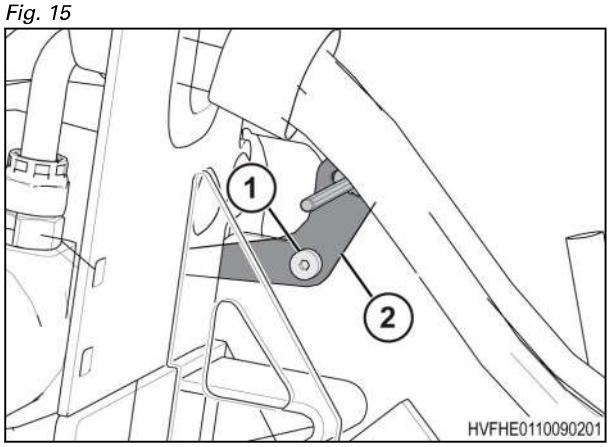

Fig. 16

8. Use a voltmeter at the right-hand height sensor. Measure the voltage between the brown ground wire (1) and the signal wire (2).

   This is the maximum voltage for the right-hand sensor.

9. Remove the supports and fully lower the combine feeder house.

   The float spring must be fully compressed.

10. Stop the combine engine. Turn the key so power is supplied to the sensors.

11. Check the voltage on the right-hand and the left-hand sensors.

    This is the minimum voltage for the sensors.

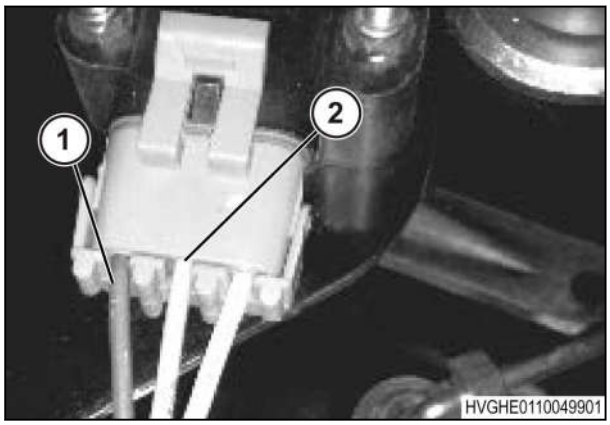

Fig. 42

12. Compare the voltages with the values in the table.
13. If the sensor voltage is not within the low and high limits or if the range between the low and the high limits is less than the range specified, adjust the sensors.
14. Close the left-hand endshield.
15. Install the panel on the right-hand side.

7.5.4 Adjust the header height control voltage range - right-hand side

Before starting the procedure

WARNING:
To prevent injury from a falling hold-down, always engage the hold-down cylinder supports before going under a raised hold-down.

IMPORTANT: *To prevent damage to the hold-down support arms, do not transport the header with the hold-down cylinder supports engaged.*

Procedure

1. Lower the header to the ground.
2. Put the transmission in neutral. Apply the park brake. Stop the engine and take the key with you.
3. Find the access panel (1) inside the right-hand end frame.
4. Remove the two screws (2) from the access panel.
5. Remove the access panel.

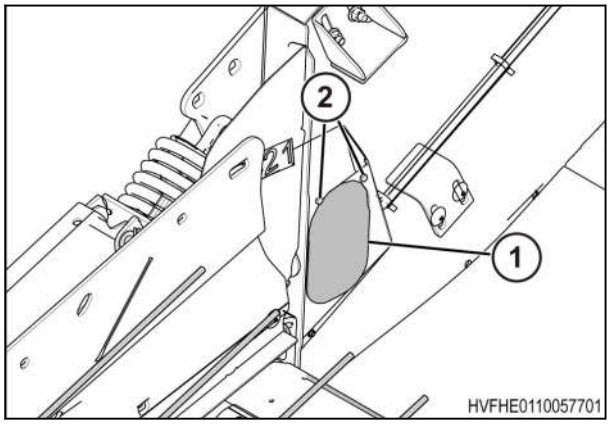

Fig. 43

2. Select the  icon (1) on the touch screen to go to the header main menu.

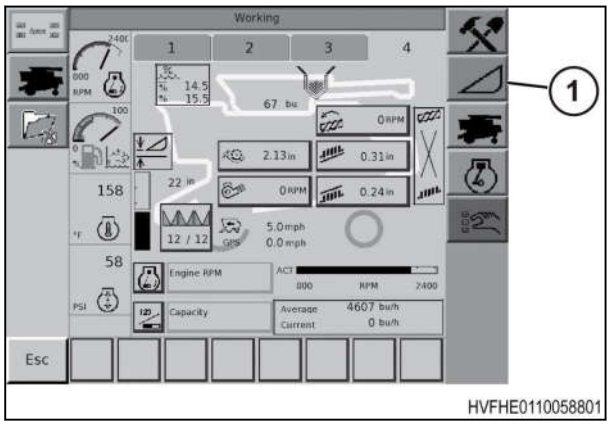

Fig. 64

3. In the Header main menu select Header control (1) to go to the header control menu.

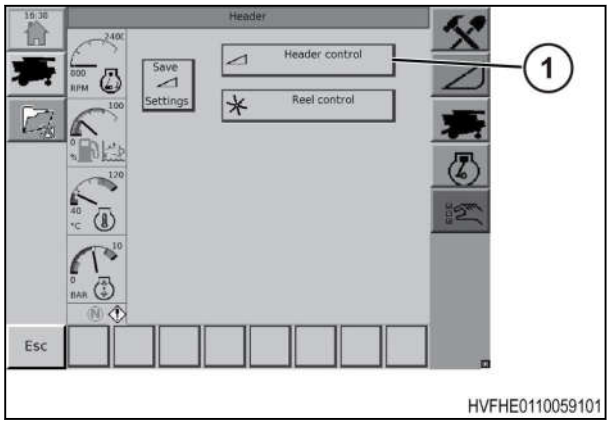

Fig. 65

4. In the Header Control menu (1) select the AHHC tab (2).

5. Select the sensitivity button (3).

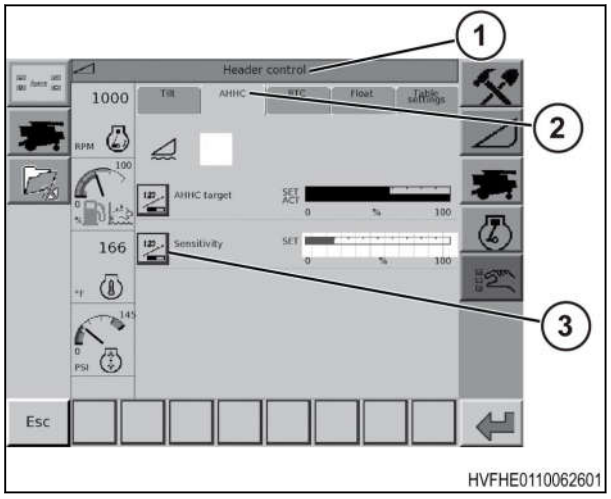

Fig. 66

Procedure

1. Turn the latch knob (1) about one-half turn counterclockwise.

2. Pull out at the front of the left side end shield (2) to open the left side end shield.

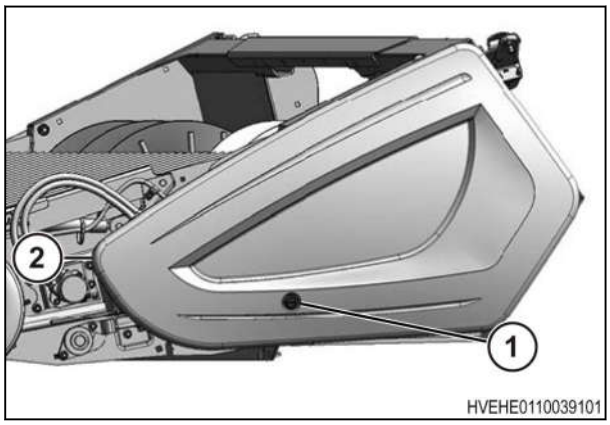

Fig. 7

3. With the left side end shield (1) opened, move the support (2) into the locked position.

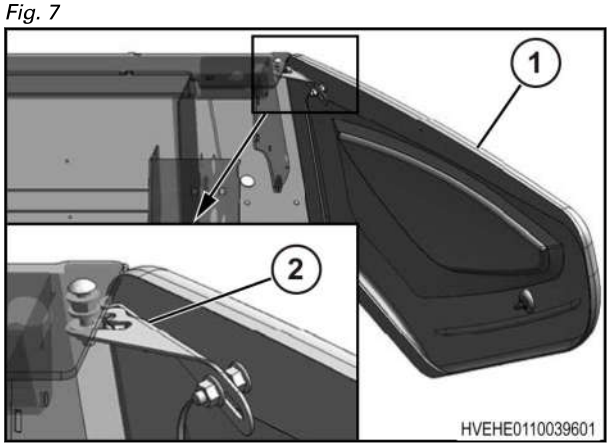

Fig. 8

4. Remove the nut (1) from the support (2) to the left side end shield (3).

5. Move the support off the bolt.

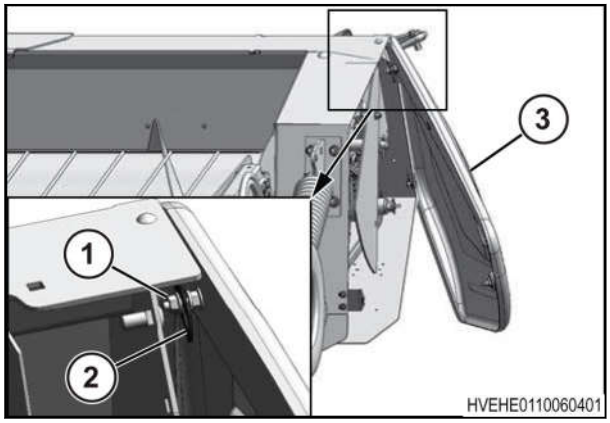

Fig. 9

6. Move the left side end shield (1) completely open.

7. Loosen the nuts (2) on the clips (3).

8. Disengage the clips from the slots in the header frame.

9. Remove the left side end shield from the header.

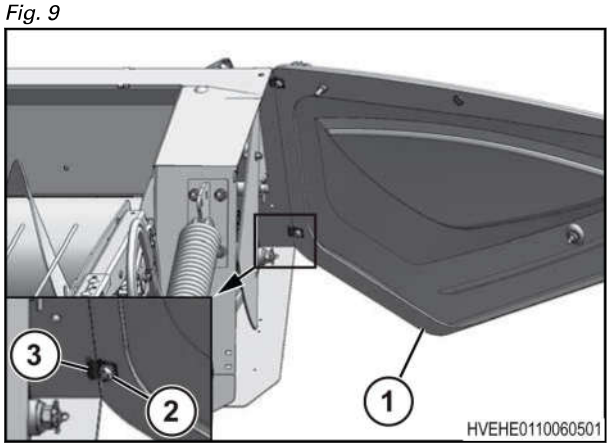

Fig. 10