Workshop Service Manual

Large Square Baler

1290 UD

North America
4205 River Green Parkway, Duluth GA 30096 USA
FENDT is a worldwide brand of AGCO

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79037317C
EME
English

1.1.9 Tool box

The machine has a toolbox (1) on the top of the machine on the right side. Keep service parts and the shear bolts in the tool box.

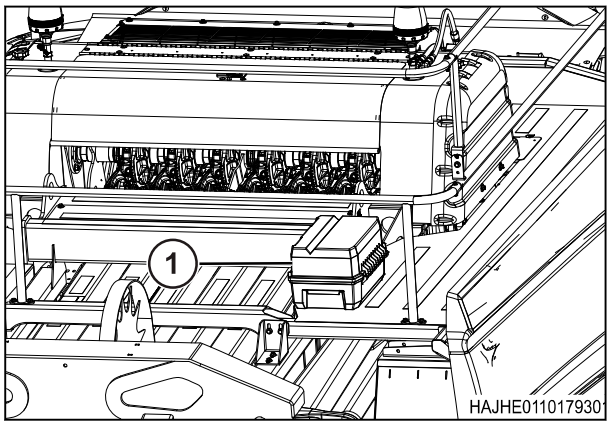


Fig. 5

1.1.10 Operation

1.1.10.1 General information

When parking, park the machine and the tractor on a solid level surface. put all controls in neutral and apply the tractor park brake. Stop the tractor engine and take the key with you.

Make sure the tractor and implement are in the proper operating condition according to the operator manuals. Make sure the tractor brakes and the machine brakes are adjusted correctly.

The tractor must have enough weight and braking capacity, especially when operating on roads and terrain that is not even. Use a tractor of recommended size and weight to tow the machine.

Tractor must be equipped with rollover protective structure (ROPS) and a seat belt. Use seat belt during operation.

Do not dismount from moving machinery.

Always operate the machine with the terminal turned on.

Never start the tractor with the PTO engaged or terminal turned on.

Stay off slopes too steep for operation.

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.

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

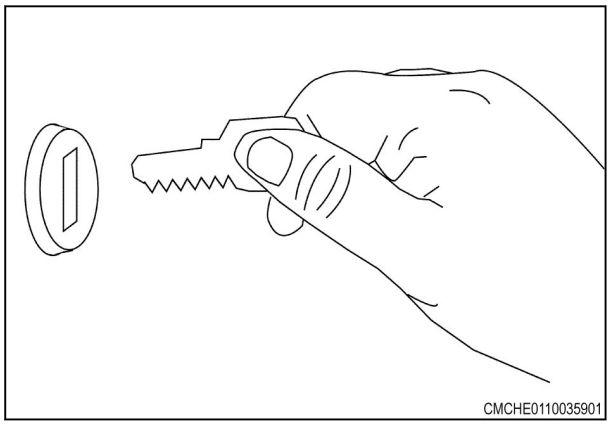


Fig. 6

Do not weld on the rim when a tire is installed. Welding will make an air/gas mixture that can cause an explosion and burn with high temperatures. This hazard applies to all tires, inflated or deflated. Removing air or breaking the bead is not enough. The tire must be completely removed from the rim prior to welding.

When preparing a calcium chloride solution for fluid ballast the tractor tires, never pour water onto the calcium chloride. A chlorine gas can be generated which is poisonous and explosive. This can be avoided by slowly adding calcium chloride flakes to water and stirring until they are dissolved.

When seating tire beads onto rims, never exceed 2.4 bar (35 psi) or the maximum inflation pressure specified on the tire. Inflation beyond this maximum pressure may break the bead, or even the rim, with explosive force.

Related Links

Tire specifications page 1-28

Tank capacity	2 liter (2.1 qt)
Grease fittings lubricant	Number 2 multi-purpose lithium grease
Wheel bearings	Heavy duty wheel bearing grease
Hydraulic oil	
Type	ISO 68 hydraulic oil
System quantity, approximate	40 L (42 qt)
Tank quantity, approximate	24.6 L (26 qt)

1.3.1.19 Tire specifications

Lug nut size	M22 x 1.5
Lug nut torque (lightly lubricated lugs, SAE 30)	475 Nm to 500 Nm (350 lbf ft to 370 lbf ft)
Standard tires	
Tire size	620/50R-22.5
Tire pressure	2.8 bar (40 psi)
Optional 1	
Tire size	620/55R-26.5
Tire pressure	2.2 bar (32 psi)
Optional 2	
Tire size	710/50R-26.5
Tire pressure	1.8 bar (26 psi)
Pickup tires	
Tire size	4.8 x 8.0, 8 ply pneumatic with inner tube
Tire pressure	2.76 bar (40 psi)

1.3.1.20 Brake specifications

Park brake system	Manual control, mechanical actuation
Service brake system	Actuated with the tractor brakes
Drum size	406 mm x 120 mm (16 in x 4.72 in)

1.3.1.21 Maximum speed

Tandem axles and brakes	60 kph (37 mph)

Do not exceed the maximum legal speeds for this machine on public roads.

1.5.5 Outside view - top

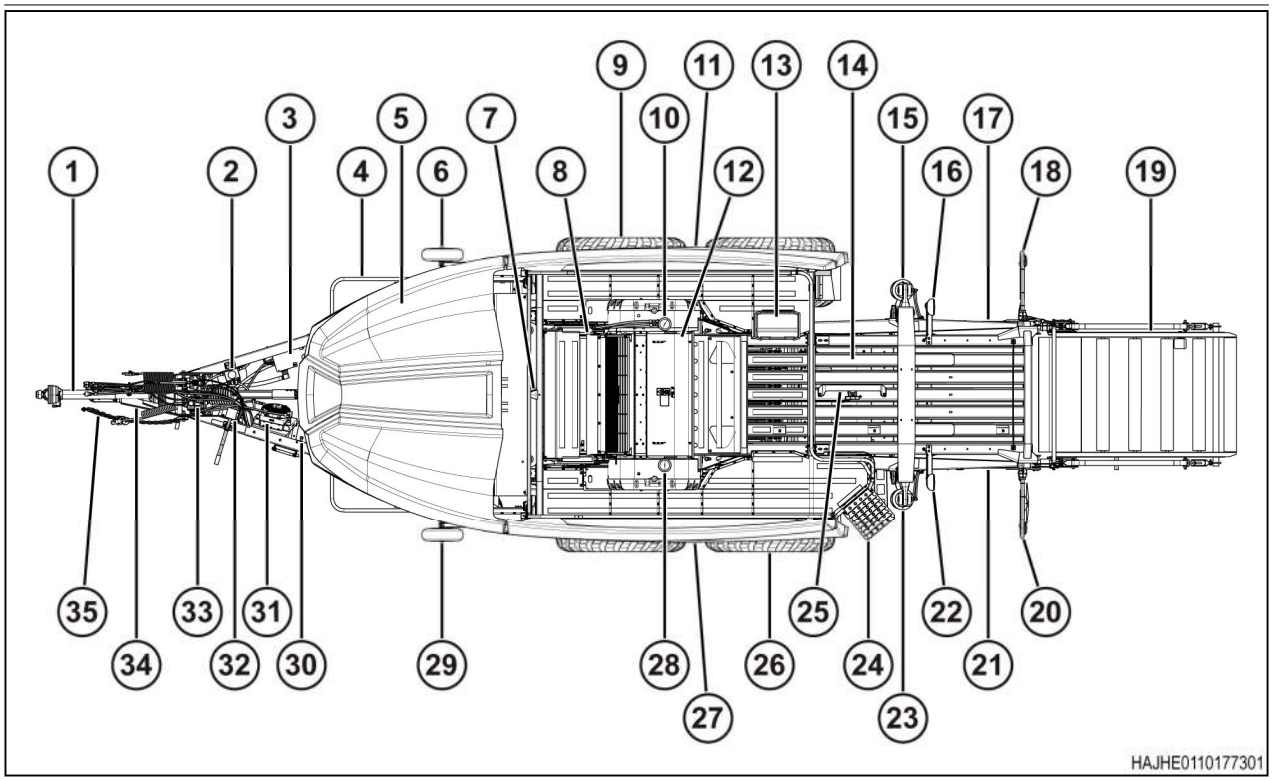


Fig. 44

(1) Implement drivelive
(2) Jack - hydraulic (optional)
(3) Hydraulic fluid reservoir for onboard hydraulic system
(4) Pickup guard rail
(5) Front shield
(6) Right pickup wheel
(7) Knotter flag lamp
(8) Knotter blower cover
(9) Tires, wheels, and axles
(10) Right beacon lamp
(11) Right side shield
(12) Knotter shield
(13) Tool box
(14) Top bale density door
(15) Right bale density cylinder
(16) Right field lamp
(17) Left bale density door
(18) Right tail lamp and turn signal lamp
(19) Roller bale chute
(20) Left tail lamp and turn signal lamp with slow moving vehicle (SMV) emblem (The SMV emblem is used on North American machines only.)
(21) Left bale density door
(22) Left field lamp
(23) Left bale density cylinder
(24) Ladder
(25) Bale length wheel
(26) Steering axle
(27) Left side shield
(28) Left beacon lamp
(29) Left pickup wheel
(30) Latch for front shield
(31) Cooling fan for onboard hydraulic system
(32) Jack - manual (optional)
(33) Pedestal gearbox
(34) Tongue
(35) Safety chain

4. Apply lubrication through the lubrication fittings (1) until a small quantity of lubrication comes out of each bearing.

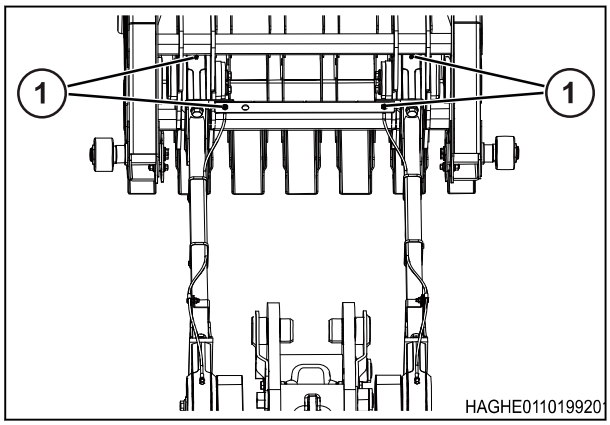


Fig. 58

1.6.2.7 Examine the packer crank bearings

Procedure

No maintenance is necessary for a packer crank assembly that operates correctly and does not make noise.

1.6.2.8 Lubricate the bearing for the main drive sprocket

Do this task each 500 hours or 10000 bales.

NOTE: *Do not lubricate the bearing for the main drive sprocket too much. The bearing for the main drive sprocket only gets used when a shearbolt breaks.*

Procedure

1. Manually turn the flywheel until the hole in the main drive sprocket aligns with the grease fitting.
2. Apply the flywheel brake.
3. Lubricate the bearing for the main drive sprocket (1).

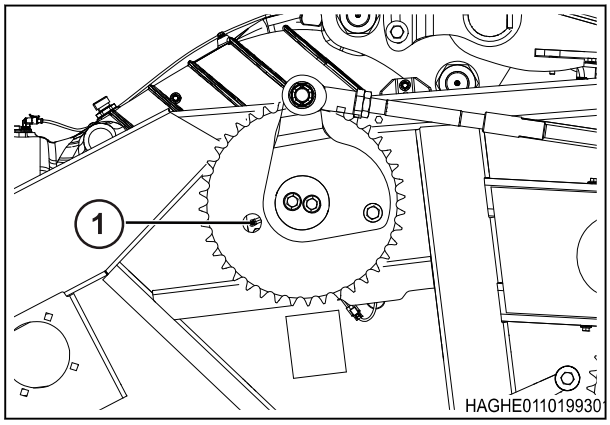


Fig. 59

1.6.2.9 Lubricate the stuffer drive

Do this task at the times specified in this procedure.

2. Make a mark (1) on the inner shield aligned with the end of the outer shield.

   This mark shows the minimum length of the CV IDL.

3. Extend the CV IDL 152 mm (6 in).

4. Make a mark (2) on the inner shield aligned with the end of the outer shield.

   This mark shows the middle of the CV IDL.

5. Extend the CV IDL 152 mm (6 in) more.

6. Make a mark (3) on the inner shield aligned with the end of the outer shield.

   This mark shows the maximum length of the CV IDL.

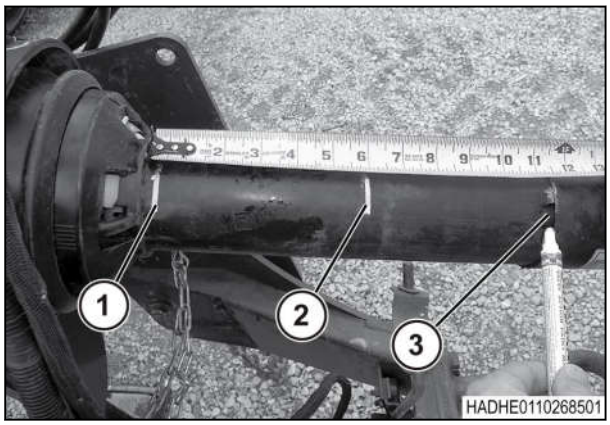


Fig. 78

7. Connect the CV IDL to the tractor PTO.

8. Put the tractor and the machine into the next four angles.

   The angles simulate turns, travel up and over ridges, and travel down and through ditches.

   The CV IDL must not retract or extend too far.

   (1) Align the tractor and the machine. Put the front of the tractor 15 degrees down. Have the machine level.

   (2) Align the tractor and the machine. Put the front of the tractor 15 degrees up. Have the machine level.

   (3) Steer the tractor as far to the right as possible. Put the front of the tractor 15 degrees down. Have the machine level.

   (4) Steer the tractor as far to the right as possible. Put the front of the tractor 15 degrees up. Have the machine level.

   a) Check the marks on the inner shield of the CV IDL. Make sure the CV IDL does not retract and cover the front mark on the inner shield.
   b) Check the marks on the inner shield of the CV IDL. Make sure the inner shield does not have an opening between the rear mark and the outer shield.
   c) Replace or change the tractor drawbar if necessary.
   d) Check the machine hitch and the CV IDL adjustments again.

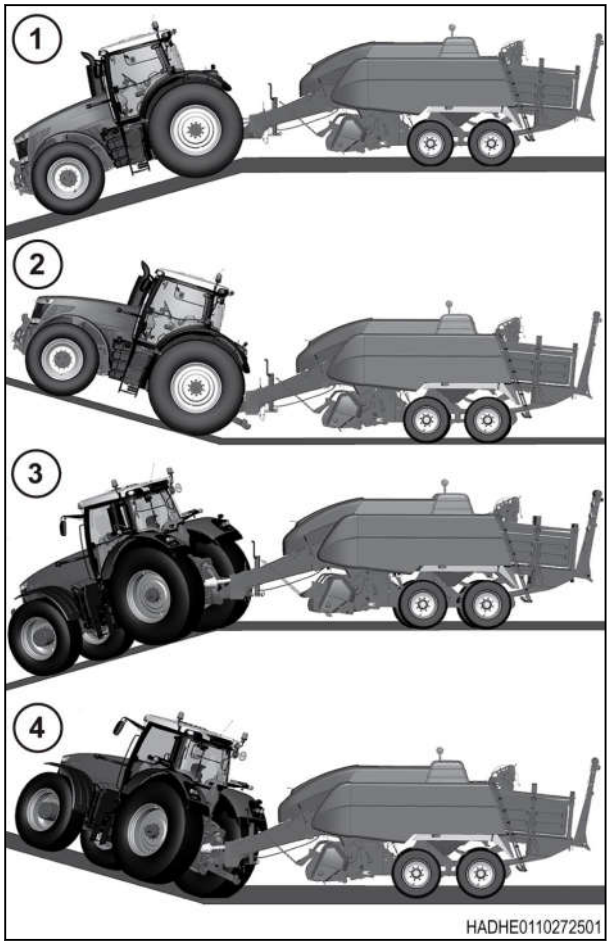


Fig. 79

9. Do this procedure until the CV IDL, the hitch components, and the tractor drawbar operate correctly.

Related Links

Connect a constant velocity implement driveline to a power take-off (PTO) page 1-59

Reflectors

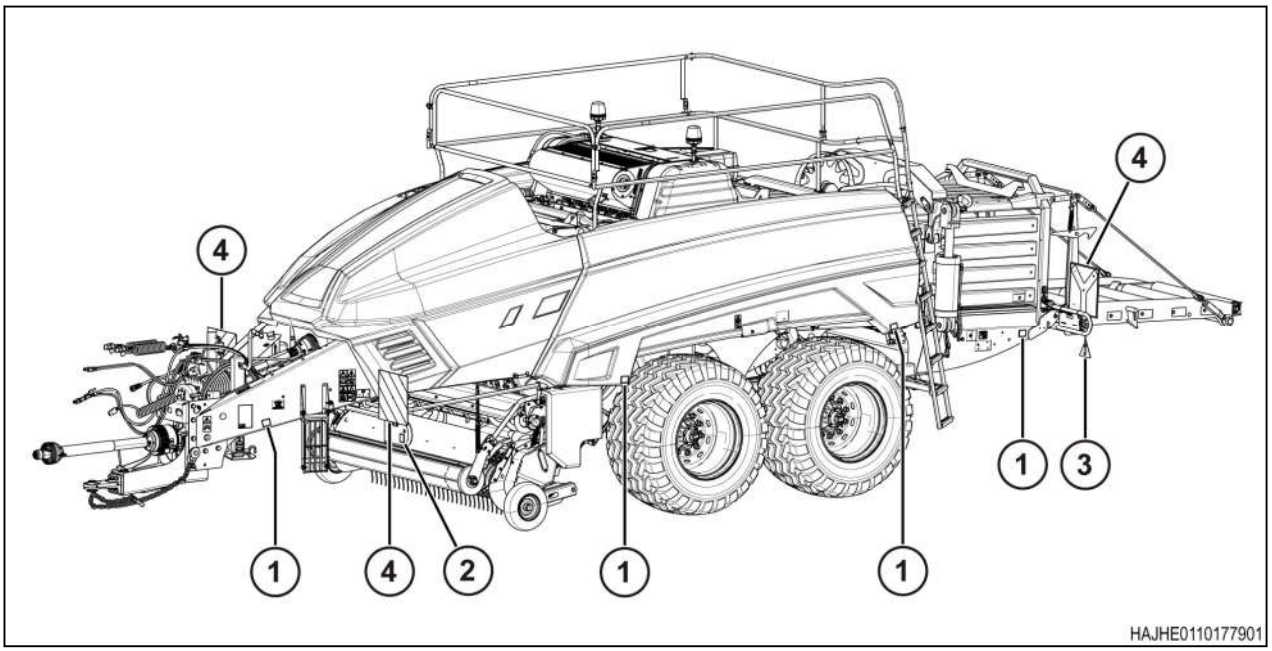


Fig. 95 Reflector and marker locations - left side view

The reflector system has eight amber reflectors (1), two uncolored reflectors (2), two red triangle reflectors (3), and four extremity markers (4) with red and white diagonal stripes.

IMPORTANT: *Replace any reflector or marker that is torn or damaged.*

There are four amber reflectors on the left side and four on the right side of the machine.

These reflectors are located as follows:

- On the tongue just aft of the jack
- On the side shield at the front of the wheel well
- On the side shield at the back of the wheel well
- On the rear panel at the aft end of the bale chamber (in front of the tail lamp)

The red triangle reflectors are directly below each tail lamp (5). The uncolored reflectors are below the marker (position) lamps at the outbound end of the front light support.

The extremity markers are on the top outbound end of each light support. The rear extremity markers are directly above each tail lamp.

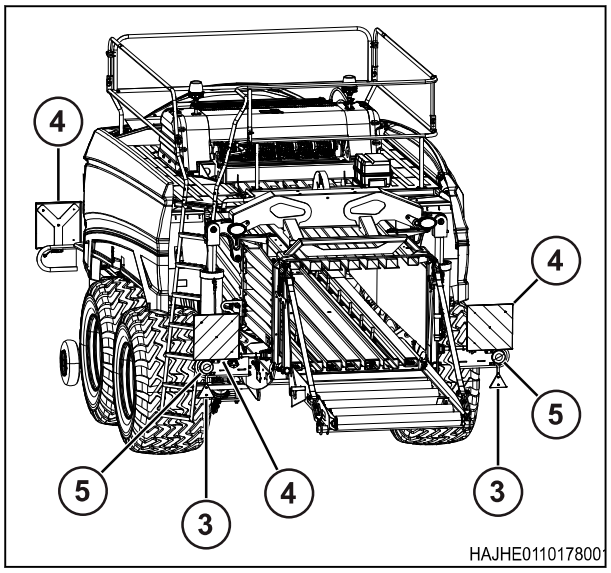


Fig. 96 Reflector and marker locations - rear view

8. Lift the windguard (1) as high as possible. Attach the windguard with the chain (2) to the chain hook (3).
9. Lock the rear axle.
10. Close all the guards and all the access doors correctly.
11. Attach all loose parts of the machine correctly.

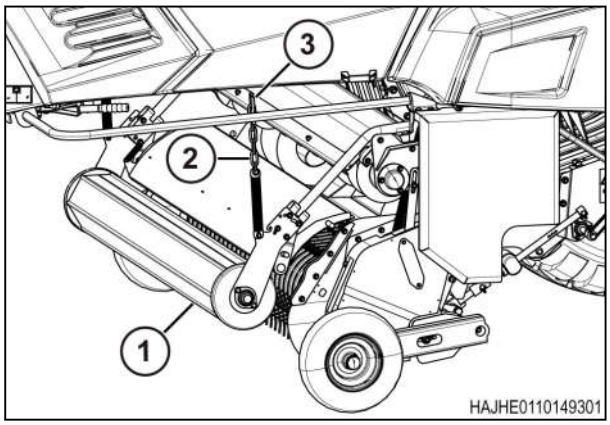


Fig. 106

Related Links

Lift the roller bale chute page 8-3

2.1.3 Install a wheel and tire

Procedure

1. Clean the threads of the wheel studs with a metal brush.
2. Apply a small quantity of SAE 30 oil to the threads.
3. Use the correct lift equipment to lift the wheel and tire.
4. Align the holes in the wheel with the lug bolts and put the wheel on the lug bolts.
5. Put the wheel nuts on the lug bolts. Tighten the wheel nuts with a hand wrench. Use the sequence in the illustration to tighten the wheel nuts.

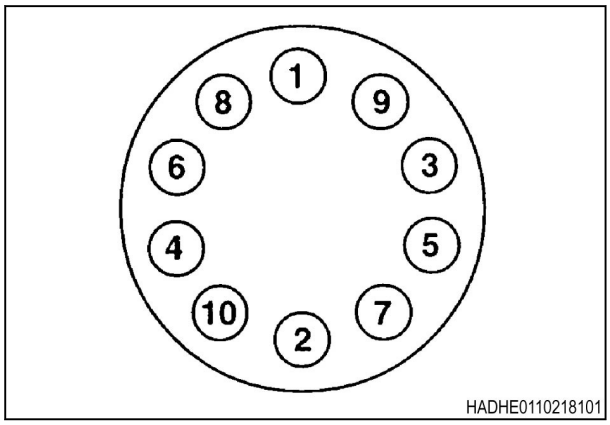


Fig. 1

IMPORTANT: *Do not use an impact wrench to tighten the nuts.*

6. Lift the machine to get the tire off the ground. Remove the support stands.
7. Lower the tire to the ground.
8. Tighten the wheel nuts to 350 Nm in the sequence shown.
9. Check the torque of the wheel nuts after the first three to five hours of operation. Check the torque again after each 50 hours of operation.

2.4 Axle frame group

2.4.1 Remove the axle frame - tandem axle with hydraulic brakes

Procedure

1. Lift the machine with an overhead lift rated for more than the weight of the machine and with the correct lift points.

   IMPORTANT: *The tandem axle group has a weight of more than 460 kg.*

2. Put jack supports under the axle group.
3. Disconnect the hydraulic brake line (1).
4. Disconnect the hydraulic line to the steering cylinders (2).
5. Disconnect the pressure switch on the rear axle.

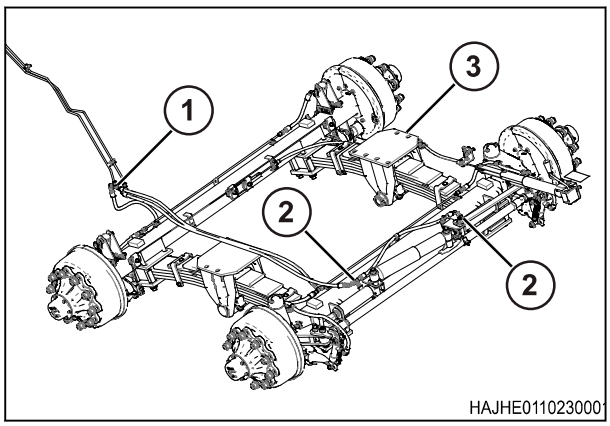


Fig. 11

6. Remove the pressure switch wire from the P-clamps up to the top of the axle frame.
7. Remove the bolts from the pedestal brackets (3). .

   NOTE: *At this time the axle group will be loose and only supported by the support jacks.*

8. Lower the axle frame onto a fork lift rated for more than the weight of the axle frame. Move the axle group out from under the machine.

Related Links

Jack points page 1-80
Lift points page 1-80

2.4.2 Remove the axle frame - tandem axle with air brakes

Procedure

1. Lift the machine with an overhead lift rated for more than the weight of the machine and with the correct lift points.

   IMPORTANT: *The tandem axle group has a weight of more than 460 kg (1014 lb).*

2. Put jack supports under the axle group.
3. Remove the air line from the top of the adapter valve (1).
4. Disconnect the hydraulic line to the steering cylinders (2).
5. Disconnect the pressure switch on the rear axle.

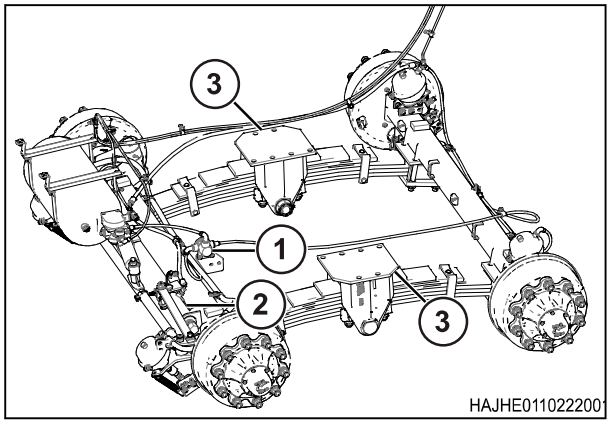


Fig. 12

6. Remove the pressure switch wire from the P-clamps up to the top of the axle frame.
7. Remove the six bolts from the right-hand and the front left-hand pedestal brackets(3).

   NOTE: *At this time the axle group will be loose and only held by the support jacks.*

8. Lower the axle frame onto a fork lift rated for more than the weight of the axle frame. Move the axle group out from under the machine.

2. Make a mark (1) on the inner shield aligned with the end of the outer shield.

   This mark shows the minimum length of the CV IDL.

3. Extend the CV IDL 152 mm (6 in).

4. Make a mark (2) on the inner shield aligned with the end of the outer shield.

   This mark shows the middle of the CV IDL.

5. Extend the CV IDL 152 mm (6 in) more.

6. Make a mark (3) on the inner shield aligned with the end of the outer shield.

   This mark shows the maximum length of the CV IDL.

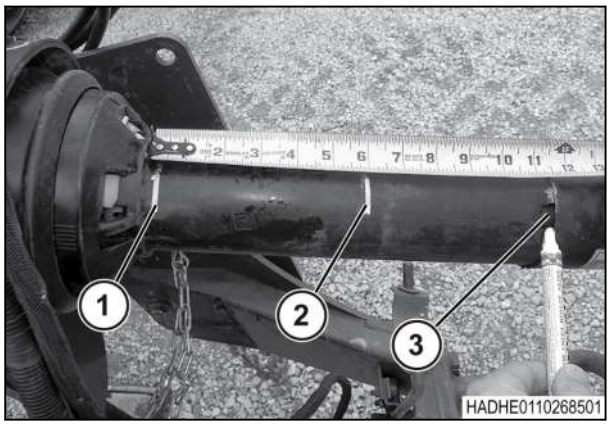


Fig. 17

7. Put the tractor and the machine into the next four angles.

   The angles simulate turns, travel up and over ridges, and travel down and through ditches.

   The CV IDL must not retract or extend too far.

   (1) Align the tractor and the machine. Put the front of the tractor 15 degrees down. Have the machine level.

   (2) Align the tractor and the machine. Put the front of the tractor 15 degrees up. Have the machine level.

   (3) Steer the tractor as far to the right as possible. Put the front of the tractor 15 degrees down. Have the machine level.

   (4) Steer the tractor as far to the right as possible. Put the front of the tractor 15 degrees up. Have the machine level.

   a) Check the marks on the inner shield of the CV IDL. Make sure the CV IDL does not retract and cover the front mark on the inner shield.
   b) Check the marks on the inner shield of the CV IDL. Make sure the inner shield does not have an opening between the rear mark and the outer shield.
   c) Replace or change the tractor drawbar if necessary.
   d) Check the machine hitch and the CV IDL adjustments again.

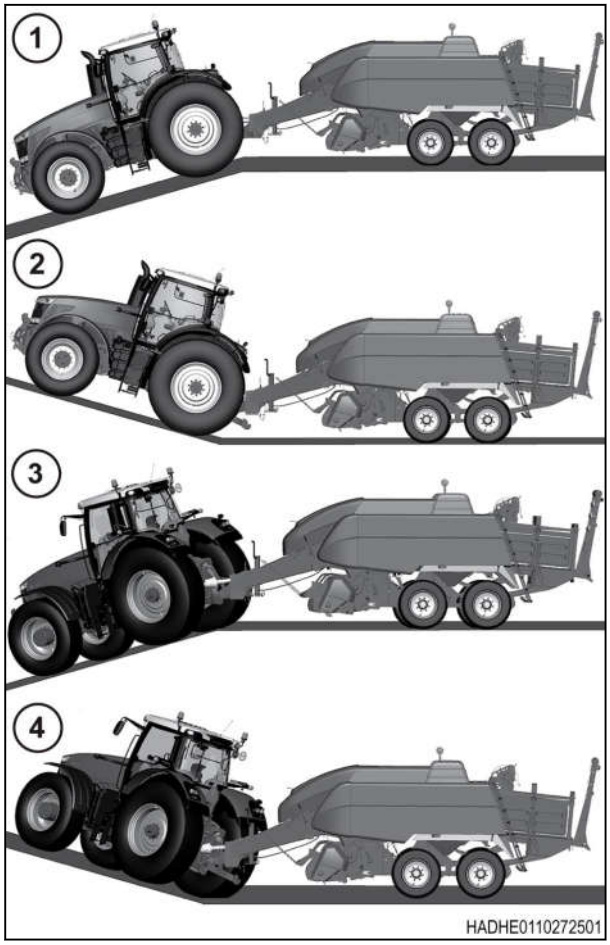


Fig. 18

8. Do this procedure until the CV IDL, the hitch components, and the tractor drawbar operate correctly.

3.1.3.5 Remove the implement driveline (IDL)

Procedure

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

Type 3 ASABE power take-off

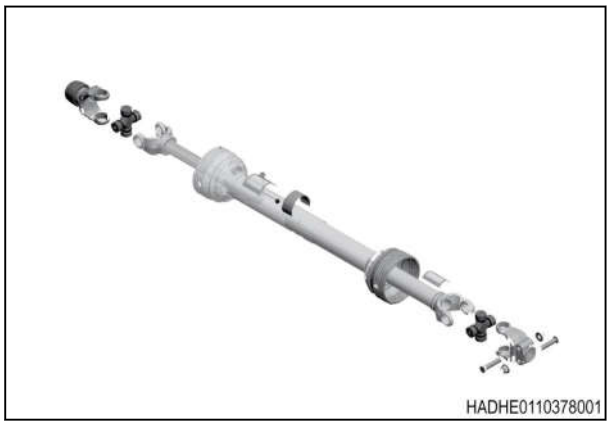


Fig. 40

Type 3 ASABE power take-off	Shaft length	978 mm
	Shaft length to collar	170 mm

3.2.3 Remove the main drive shaft

Procedure

1. Park the machine on a solid level surface. Stop the engine, apply the park brake, and take the key with you.
2. Remove the shield on the connection of the main driveline and the pedestal gearbox.
3. Move the clip (1) into the release position.

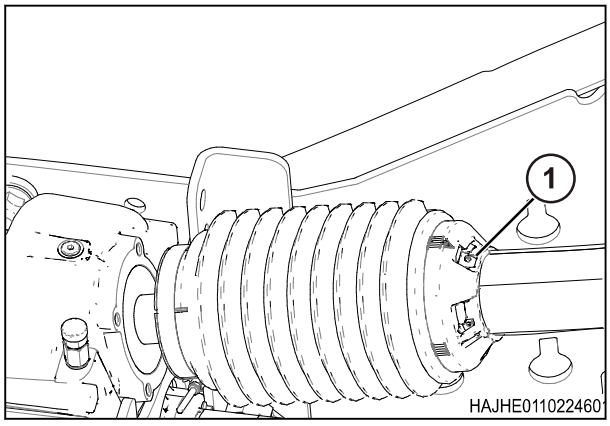


Fig. 41

4. Rotate the nylon bearing (1) to align the split with the arrow (2) on the shield.

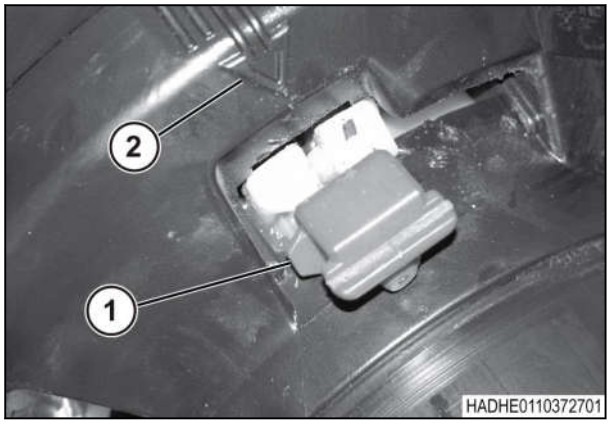


Fig. 42

18. Install the packer drive chain (2).

19. Adjust the chain deflection to 25 mm while applying 174 Nm of force to the middle of the chain.

20. Tighten the nut (1) on the adjusting bolt.

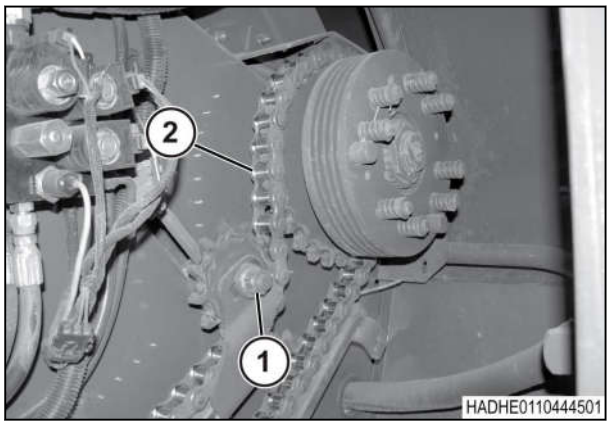


Fig. 58

4.1.2 Hydraulic components, right side

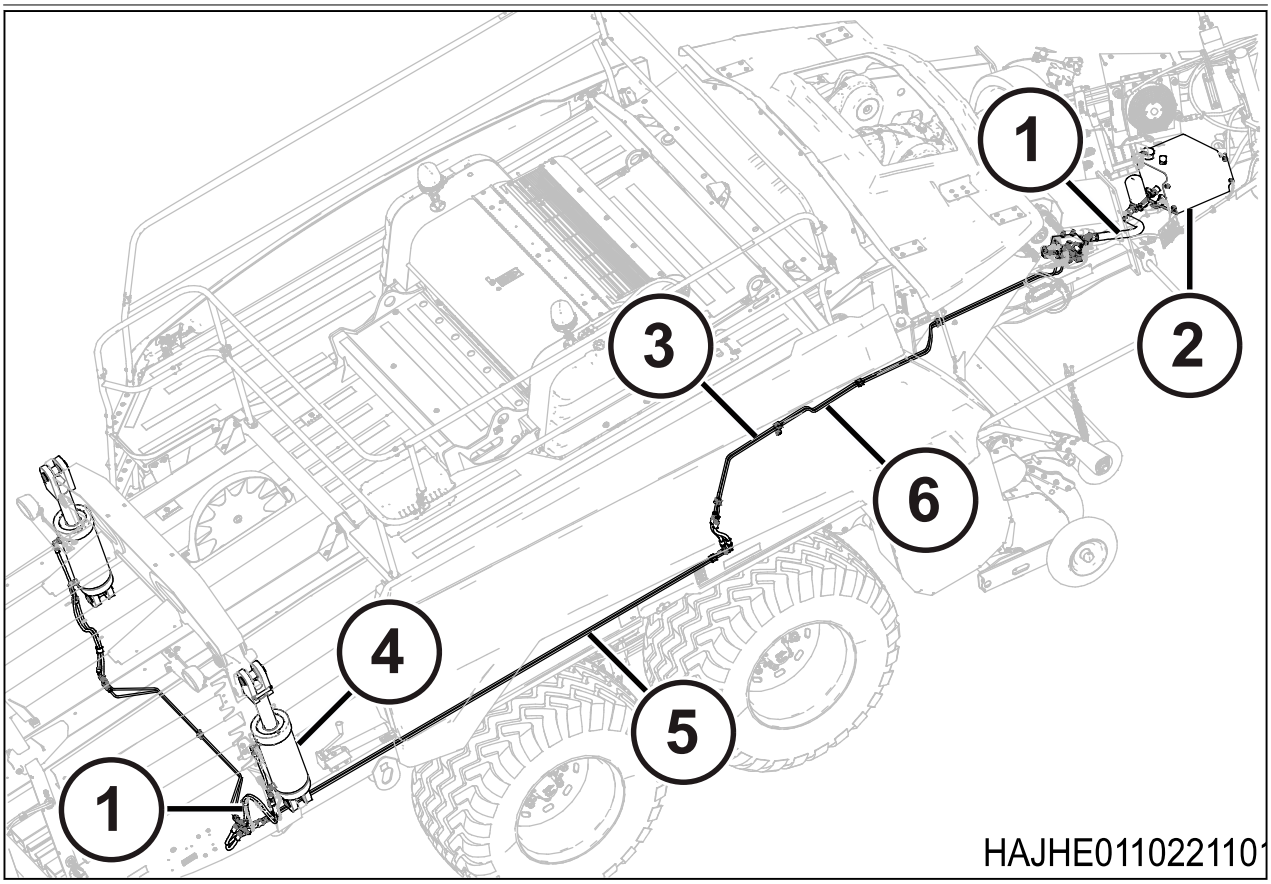


Fig. 2

(1) Hydraulic hose
(2) Hydraulic reservoir
(3) Hydraulic line - to the cylinder rod
(4) Bale density cylinder
(5) Hydraulic line
(6) Hydraulic line - to the cylinder base

4.1.3 Hydraulic components, rear

(1) Hydraulic hose - to the cylinder rod
(2) Hydraulic cylinder
(3) Hydraulic line
(4) Hydraulic hose
(5) Hydraulic clamp
(6) Hydraulic bulkhead tee
(7) Bulkhead fitting

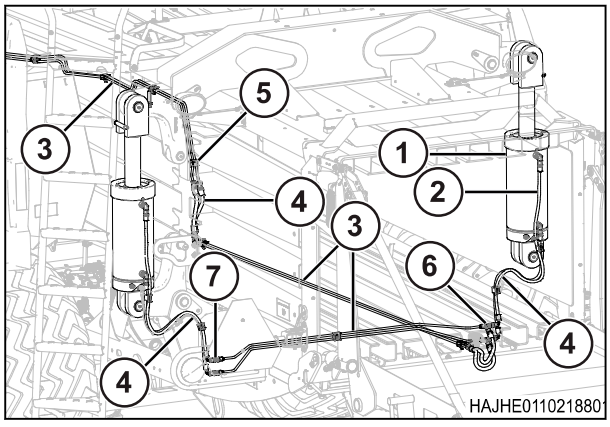


Fig. 3

4.4.2 Install the baler control valve assembly

Procedure

1. If a new baler control valve assembly is being installed, remove the fittings (1) from the old baler control valve assembly.
2. Inspect the O-rings and replace as necessary.
3. Install the fittings in the new baler control valve assembly. Make sure the fittings are rotated to the correct position.
4. Put the baler control valve assembly on the mainframe.

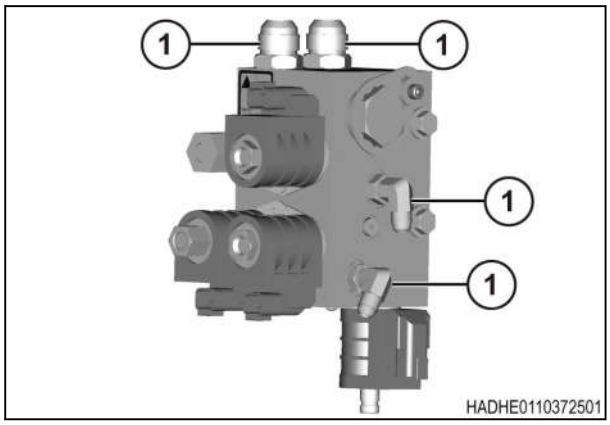


Fig. 22

5. Install the hardware (1). Do not tighten the hardware at this time.
6. Connect the hydraulic lines to the baler control valve assembly.
7. Tighten the hardware fastening the baler control valve assembly to the mainframe.

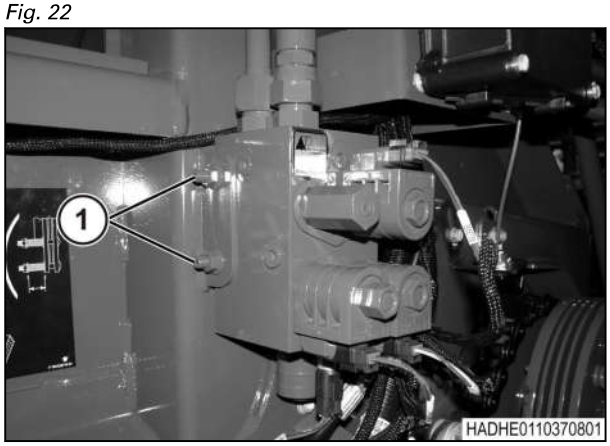


Fig. 23

8. Connect the connector for the pressure transducer (1).

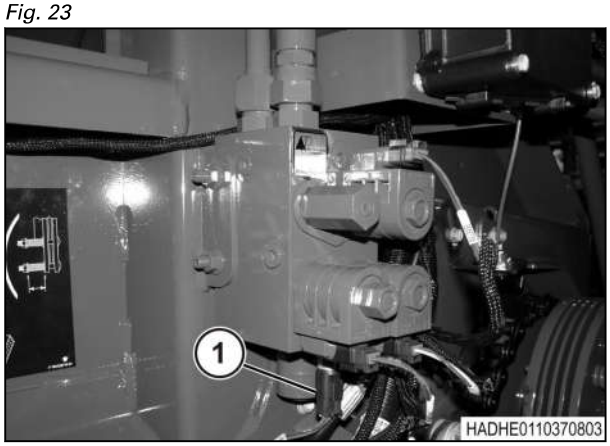


Fig. 24

2. Install the clevis pin (1) and the cotter pin (2) at both ends of the bale density cylinder.

3. Remove the lifting equipment.

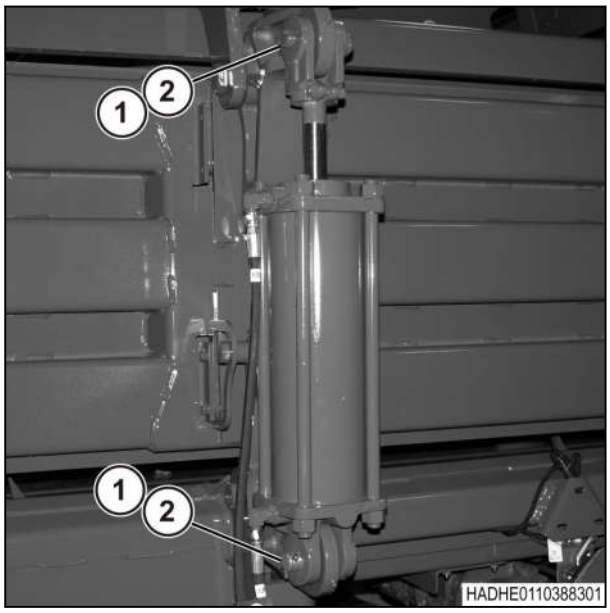


Fig. 46

4. Connect the hoses (1) to the bale density cylinder.

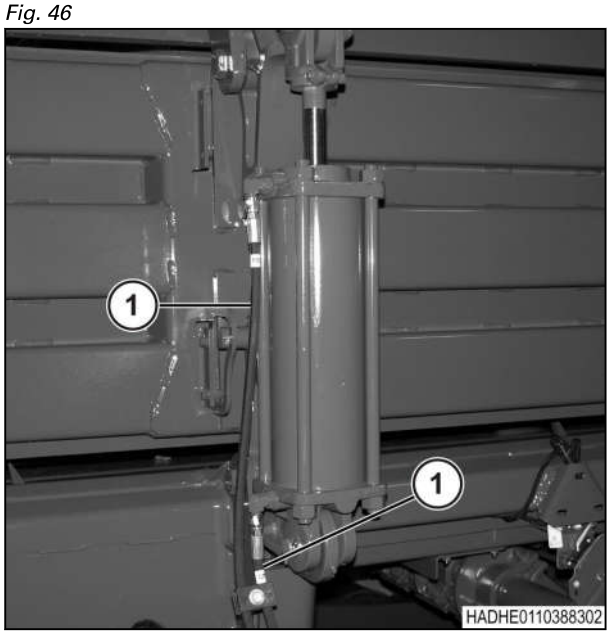


Fig. 47

4.5.4 Disassemble the bale density cylinders

WARNING:
Wear safety goggles for eye protection.
Leaking high pressure hydraulic fluid can be very hard to see. High pressure hydraulic fluid can go into the skin causing serious injury.
Hydraulic fluid injected into the skin must be removed surgically within a few hours. Hydraulic fluid that is not removed immediately can generate a serious infection or reaction. Go immediately to a doctor who is familiar with this type of injury.

Procedure

1. Clean the outside of the cylinder.

14. Examine the pin or socket (2) for corrosion and bending.

15. Make sure the wire seals (3) do not have damage.

16. The ends of all the terminals must be even with each other.

17. Replace any terminals that have damage or are missing.

5.2.5 Terminal numbers

The numbers for some of the terminals are on the face of the amp connectors. The illustration shows an example of the terminal numbers in sequence.

(1) Pins
(2) Sockets

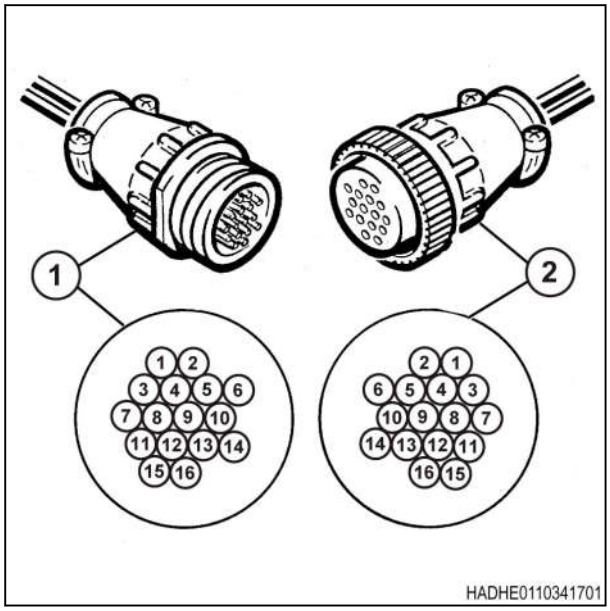


Fig. 7

5.2.6 Pins and sockets

The terminals that the pins (1) are connected to and sockets (2) have fingers (3). The fingers push out against the inside of the body of the connector to hold the terminal in position. Special tools must be used for removing the terminals and the sockets. The tools are used to release the fingers from the body of the connector.

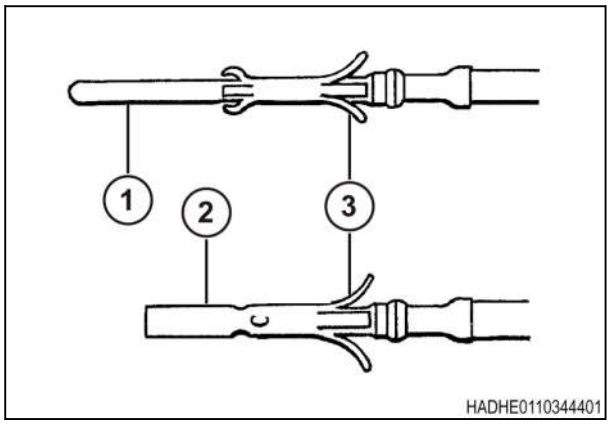


Fig. 8

5.3.2 Sensors and switches locations and specifications

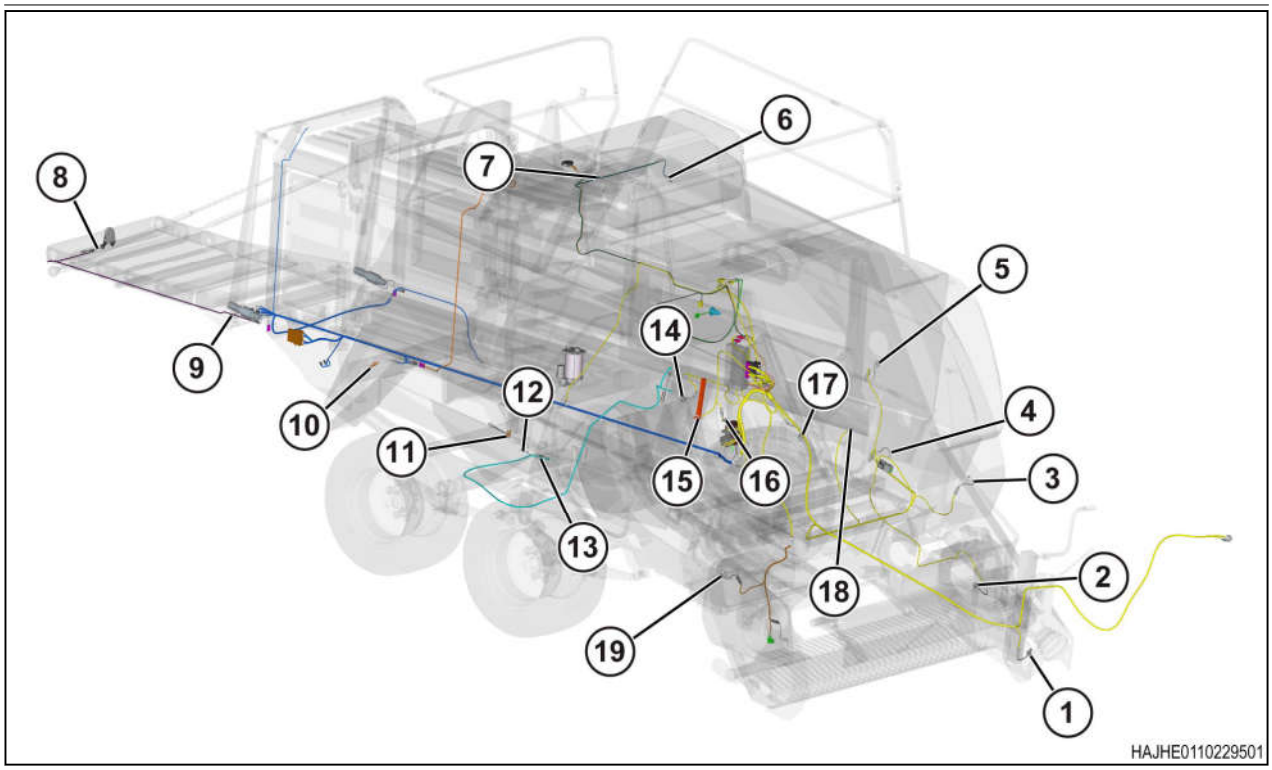
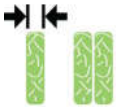


Fig. 30

Ref	Name	Notes
1	Power take-off (PTO) sensor	Gap to sprocket tooth: 0.50 to 0.75 mm (0.020 to 0.030 in)
2	Feeder slip sensor	Gap to sprocket tooth: 0.50 to 0.75 mm (0.020 to 0.030 in)
3	Flywheel brake switch	Gaps: 1 mm (0.039 in) between the actuator and the plate and between the switch and the plate In series with the stuffer lock switch
4	Stuffer lock switch	Gap: 2 to 4 mm (0.079 to 0.157 in) In series with the flywheel brake switch
5	Stuffer shearbolt sensor	Gap to sprocket tooth: 0.50 to 0.75 mm (0.020 to 0.030 in)
6	Lower knotter switch	Gap: 2 to 4 mm (0.079 to 0.157 in)
7	Upper knotter switch	Gap: 2 to 4 mm (0.079 to 0.157 in)
8	Bale drop switch, if equipped	Gap: 3 to 5 mm (0.118 to 0.197 in)
9	Bale chute down switch, if equipped	Gap: 3 to 5 mm (0.118 to 0.197 in)
10	Needles home switch	Gap: 5 to 8 mm (0.197 to 0.315 in)
11	Park brake switch, if equipped	Gap: 5 to 8 mm (0.197 to 0.315 in)
12	Steering axle position switch, if equipped	Gap: 4 to 5 mm (0.157 to 0.197 in) In series with the tandem lock switch
13	Tandem lock switch, if equipped	In series with the steering axle position switch

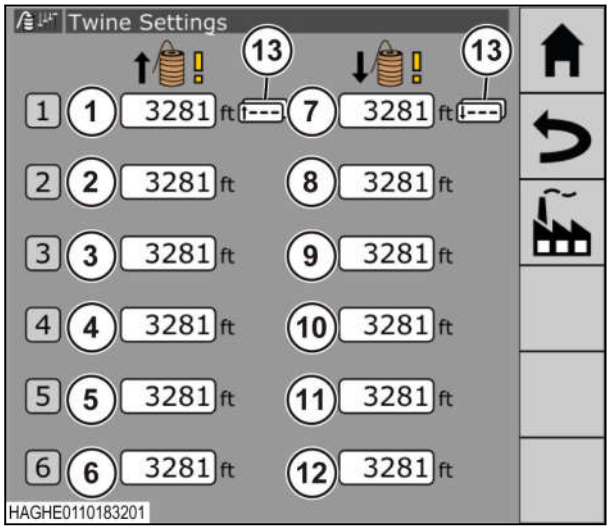
Icon	Description
	Feeder clutch slip in percent and rotor cutter slip in percent. Not available on all configurations of the machine.
	Power take-off (PTO) speed
	Current bale weight
	Job average bale weight
	Current crop moisture
	Average crop moisture
	Total number of bales for a job
	Current flake thickness
	Flakes per bale estimate
	Main gearbox oil temperature
	Pedestal gearbox oil temperature
	Hydraulic oil temperature

(1) Knotter 1
(2) Knotter 2
(3) Knotter 3
(4) Knotter 4
(5) Knotter 5
(6) Knotter 6
(7) Needle 1
(8) Needle 2
(9) Needle 3
(10) Needle 4
(11) Needle 5
(12) Needle 6

If all the needles or knotters have the same quantity of twine, enter the value in the top box. Select fill down (13) to fill the the other values for the needles or knotters.

Select  to set the twine quantity back to the factory settings.

Select  to go back to the work screen.



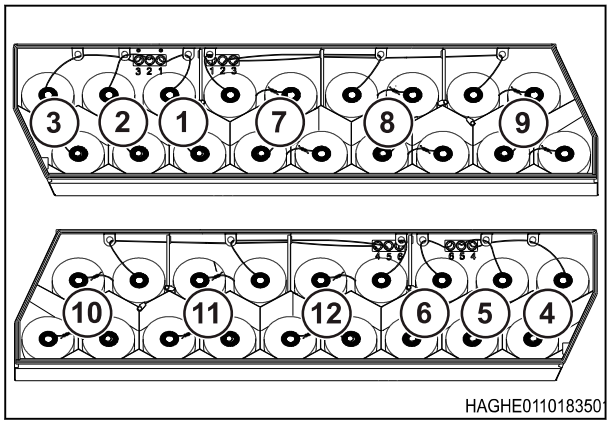


Fig. 56

5.4.5.13 Two terminal setup

NOTE: *Without two terminals the setup screen shows no icons.*

Select the icons in this sequence to open the two terminal setup screen:

If more than one terminal is on the CANBus, use the two terminal setup screen to select the screen to show the baler software.

Select  to go back to the work screen.

5.4.6 Service screens

5.4.6.1 Machine information

Select the icons in this sequence to see the machine information:

Use the icons to:

- Go to the work screen
- Start record
- Stop record
- Edit the the work record name or the crop name
- Add one bale to the bale count
- Remove one bale from the bale count
- Set all counters on the current work record to zero

  To set all work records to zero, hold for five seconds.
- Delete the current work record

  To delete all work records and counters, hold for five seconds.
- Save the work records to the data card in comma separated values (CSV) file.

  A CSV file can be opened by most spreadsheet programs on an office computer.

  The function is not available on terminals that do not have a file server.

Task Controller

If Task Controller is used to record baler information, then the current task information is shown in the work records screen.

Task Controller information is saved on the terminal.

NOTE: *Work record information cannot be saved while a task is active.*

Bales can be added or removed from the task.

- Add one bale to the bale count
- Remove one bale from the bale count

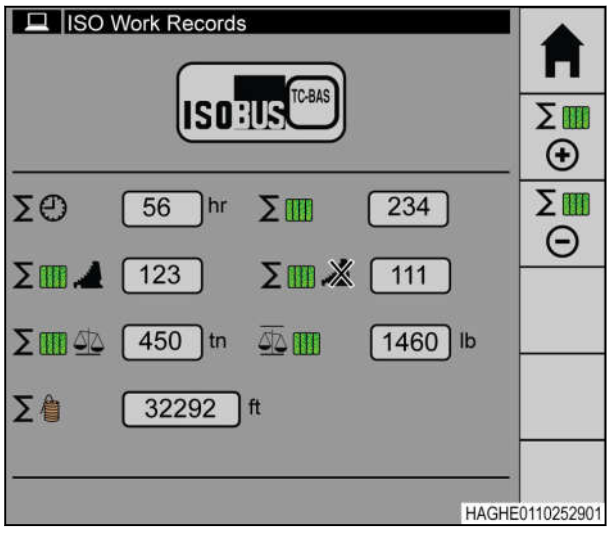


Fig. 75

5.6.85 Fault code SPN 521003 FMI 4

Stuffer Shearbolt Sensor Fault: Short to ground or sensor failure

5.6.86 Fault code SPN 521004 FMI 11

Stuffer Cycle Sensor Fault: Root cause unknown

5.6.87 Fault code SPN 521004 FMI 3

Stuffer Cycle Sensor Fault: Short to high, open circuit or sensor failure

5.6.88 Fault code SPN 521004 FMI 4

Stuffer Cycle Sensor Fault: Short to ground or sensor failure

5.6.89 Fault code SPN 521005 FMI 11

Stuffer Lock Sensor Fault: Root cause unknown

5.6.90 Fault code SPN 521005 FMI 3

Stuffer Lock Sensor Fault: Short to high, open circuit or sensor failure

5.6.91 Fault code SPN 521005 FMI 4

Stuffer Lock Sensor Fault: Short to ground or sensor failure

5.6.92 Fault code SPN 521006 FMI 11

Flywheel Brake Sensor Fault: Root cause unknown

5.6.93 Fault code SPN 521006 FMI 3

Flywheel Brake Sensor Fault: Short to high, open circuit or sensor failure

5.6.94 Fault code SPN 521006 FMI 4

Flywheel Brake Sensor Fault: Short to ground or sensor failure

5.6.95 Fault code SPN 521007 FMI 11

Pickup Speed Sensor Fault: Root cause unknown

5.6.96 Fault code SPN 521007 FMI 3

Pickup Speed Sensor Fault: Short to high, open circuit or sensor failure

5.6.97 Fault code SPN 521007 FMI 4

Pickup Speed Sensor Fault: Short to ground or sensor failure

5.6.98 Fault code SPN 521016 FMI 11

Plunger Position Sensor Fault: Root cause unknown

6.3.5 Remove the scrapers and the wear plates

Procedure

1. Remove the nuts (1) and the carriage bolts (2) that fasten the scrapers and the wear plates to the auger pans.

2. Remove the scrapers and the wear plates (3) from the pickup.

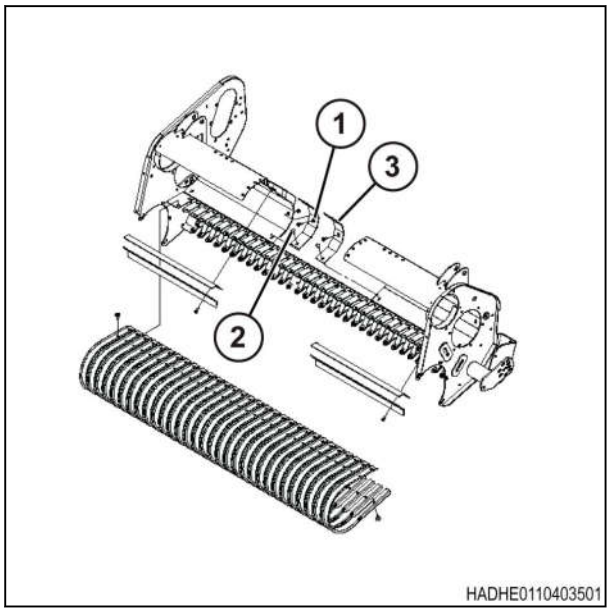


Fig. 10

8. Pull out on the cutterbed latch (1) and using the cutterbed handle (2), slide the cutterbed out.

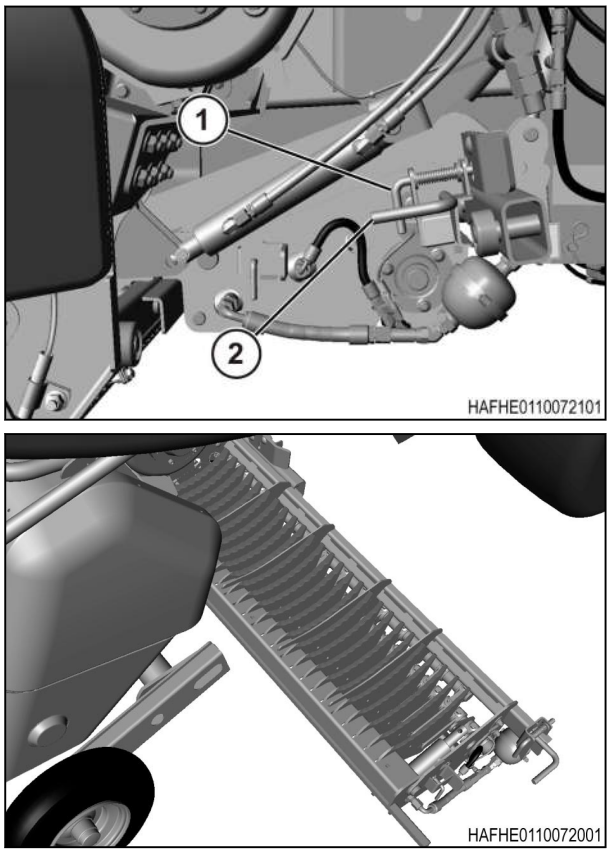


Fig. 25

9. Pull out on the selector latch (1).

10. Rotate the knife latch handle (2) counterclockwise to the other slot to release the knives.

WARNING: Sharp objects can be a hazard.

Contact with the knive can cause personal injury.

Wear personal protective equipment when working with sharp objects

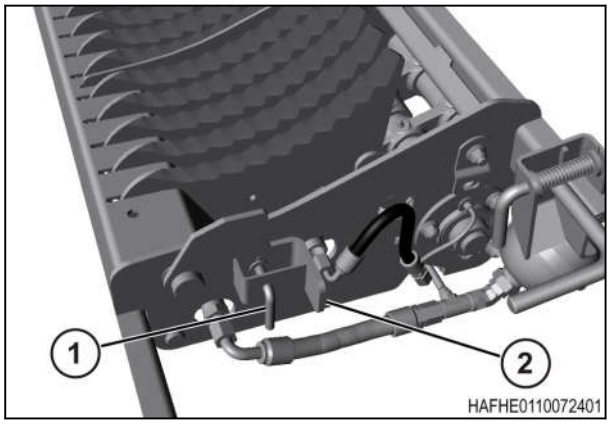


Fig. 26

11. Pull up on the knife (1) to remove from the cutterbed.

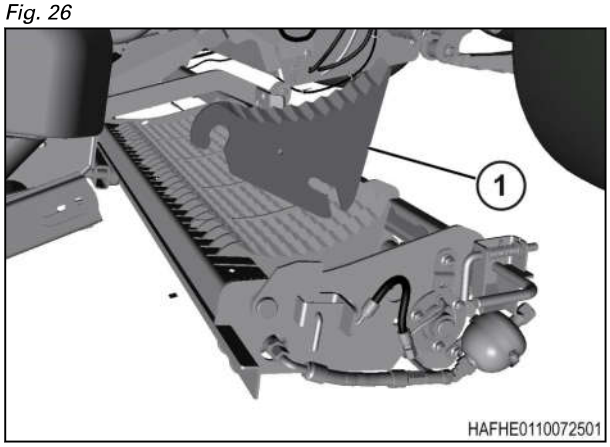


Fig. 27

12. Sharpen or replace the knives as necessary.

7. Remove the pickup stop group (1) at the bottom end.

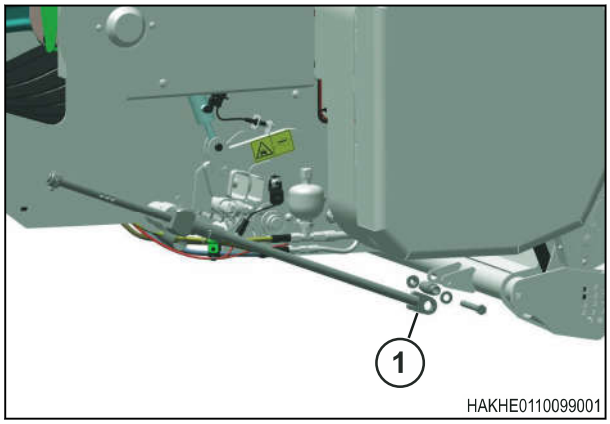


Fig. 45

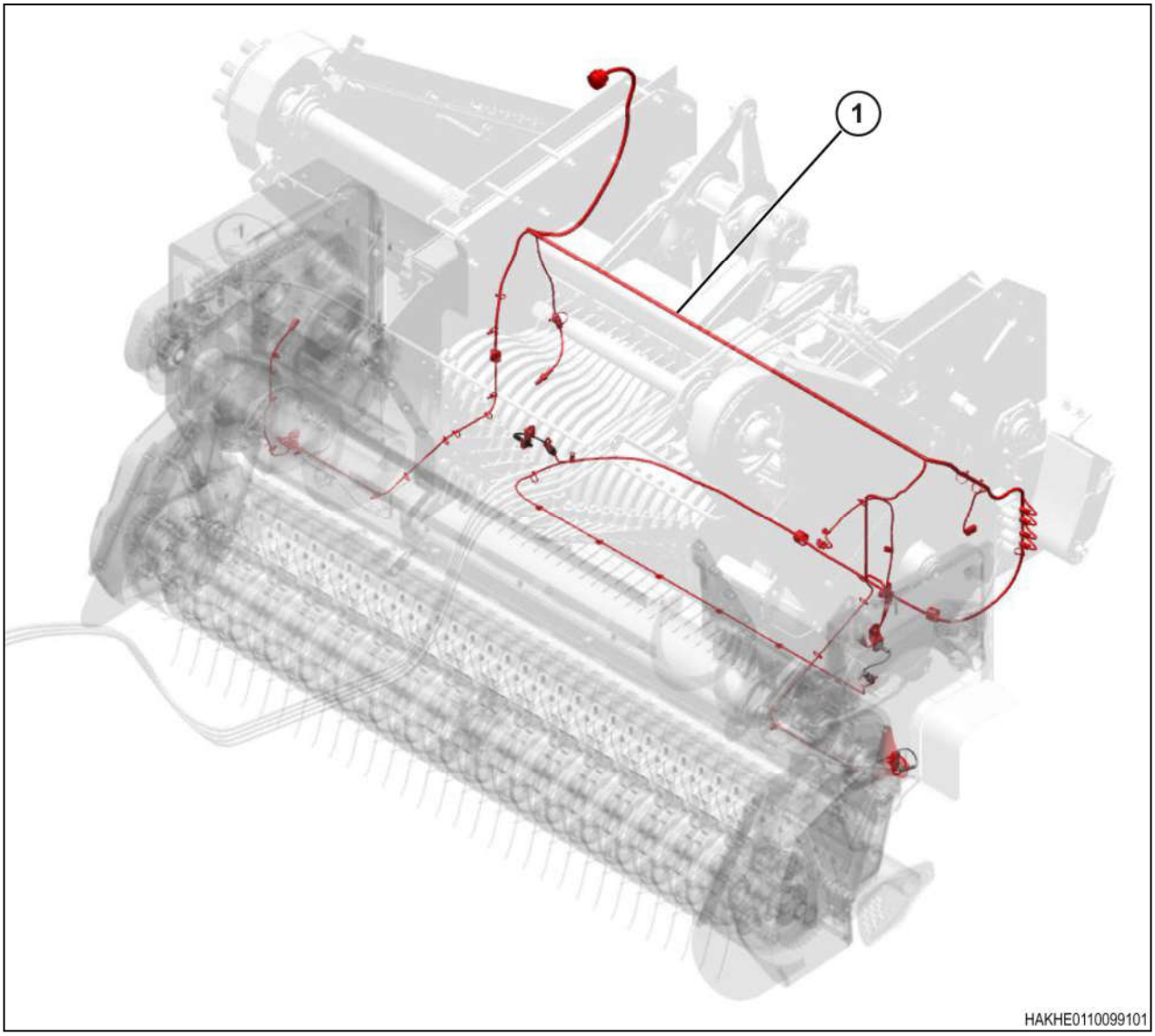


Fig. 46

8. Disconnect the sensors in the pickup from the pickup harness (1). Remove the pickup harness as necessary.

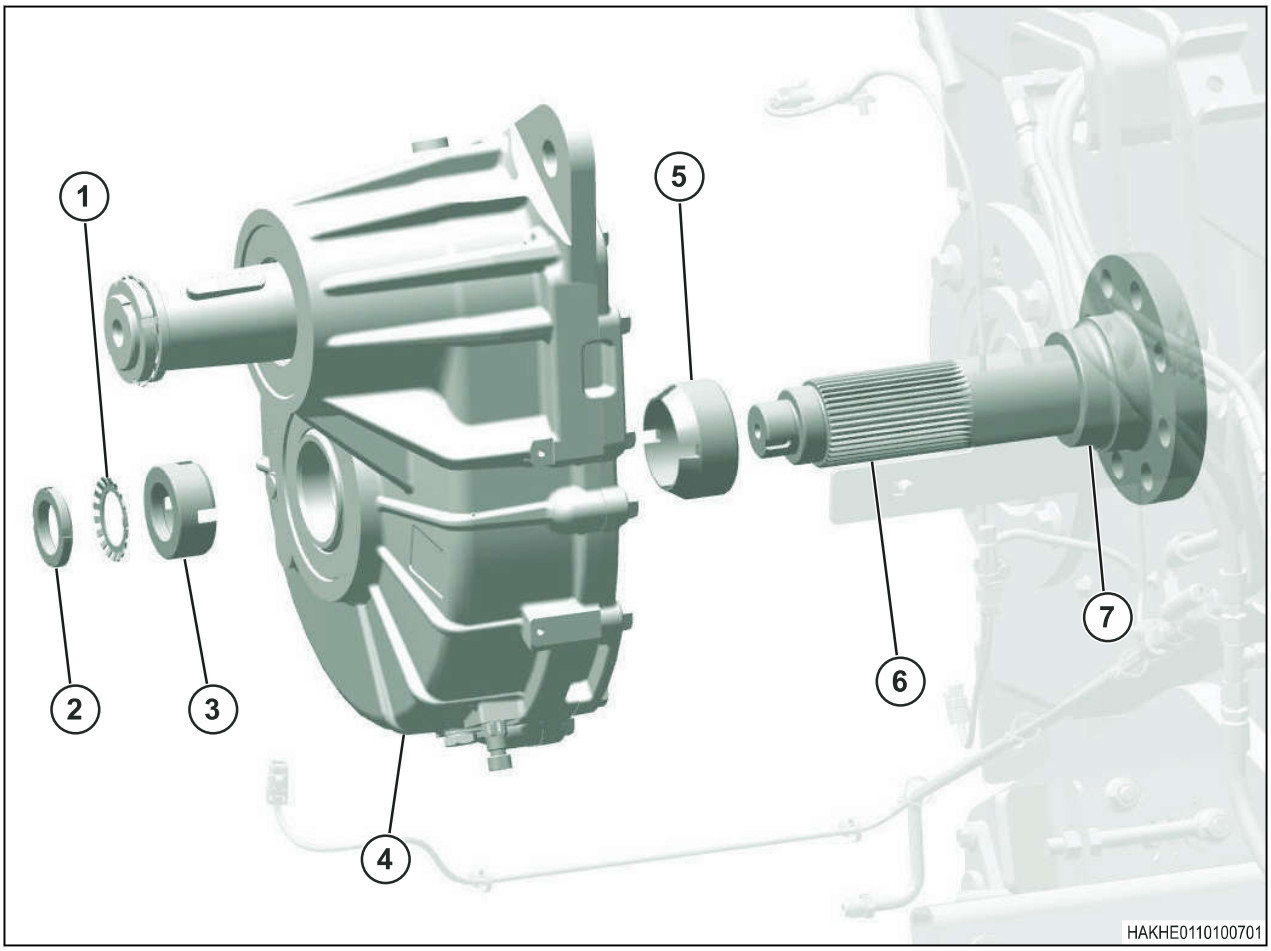


Fig. 56

28. Bend the tabs (1) on the lock washer away from the nut (2).

29. Remove the nut.

30. Carefully remove the outside spacer (3).

31. Work the cutter gearbox (4) back and forth until it comes loose from the inside spacer (5) and from the drive shaft (6) for the cutter rotor.

32. Remove the cutter gearbox.

NOTE: *The cutter gearbox has no serviceable parts. If any part of the cutter gearbox is damaged or too worn to operate correctly, replace the cutter gearbox.*

NOTE: *If the shaft comes loose from the cast hub* (7)*, or has come loose from the cast hub, you must not weld the two parts together. If you weld the two parts together you can damage the cutter rotor and other parts of the machine. You must replace the shaft and the cast hub as a unit.*

6.6.6.3 Install the cutter gearbox

Before starting the procedure

Use lifting equipment that can correctly support the cutter gearbox, or other parts of the machine.

When you install lifting equipment, do not put lifting equipment on, or over, sensors, or other parts that can bend or break.

Put containers in location to catch hydraulic fluid where it can leak. Have cloths and other absorbent material to remove hydraulic fluid that does not go into the containers.

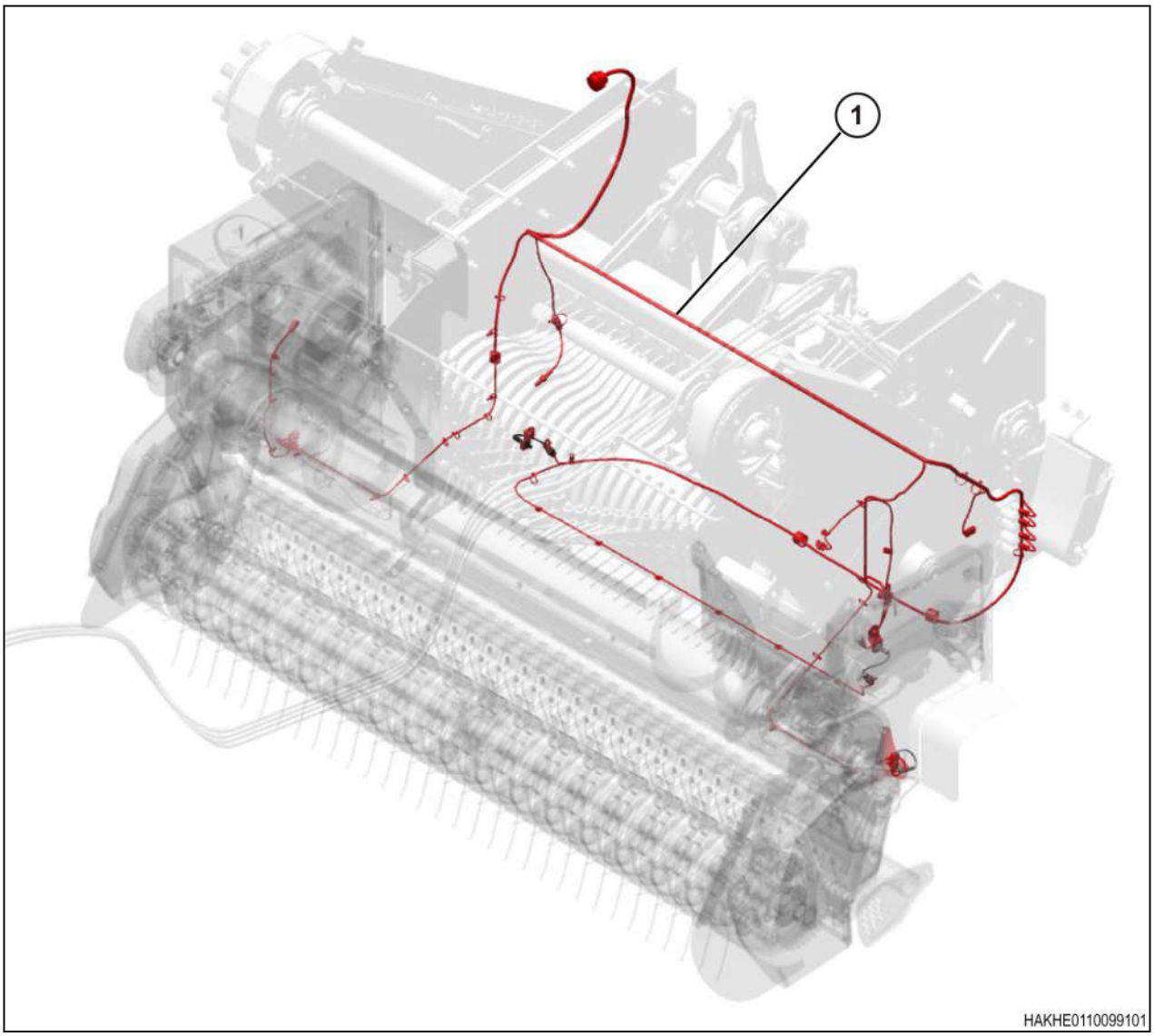


Fig. 67

32. Install the pickup harness (1) as necessary and connect the sensors in the pickup to the pickup harness.

33. Install the pickup stop group (1) at the bottom end.

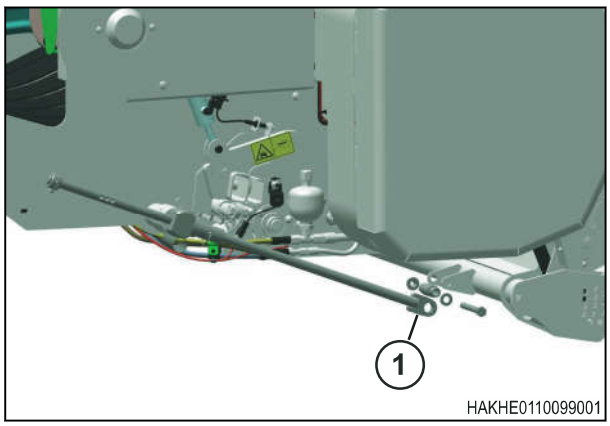


Fig. 68

6.7.9 Packer crank components

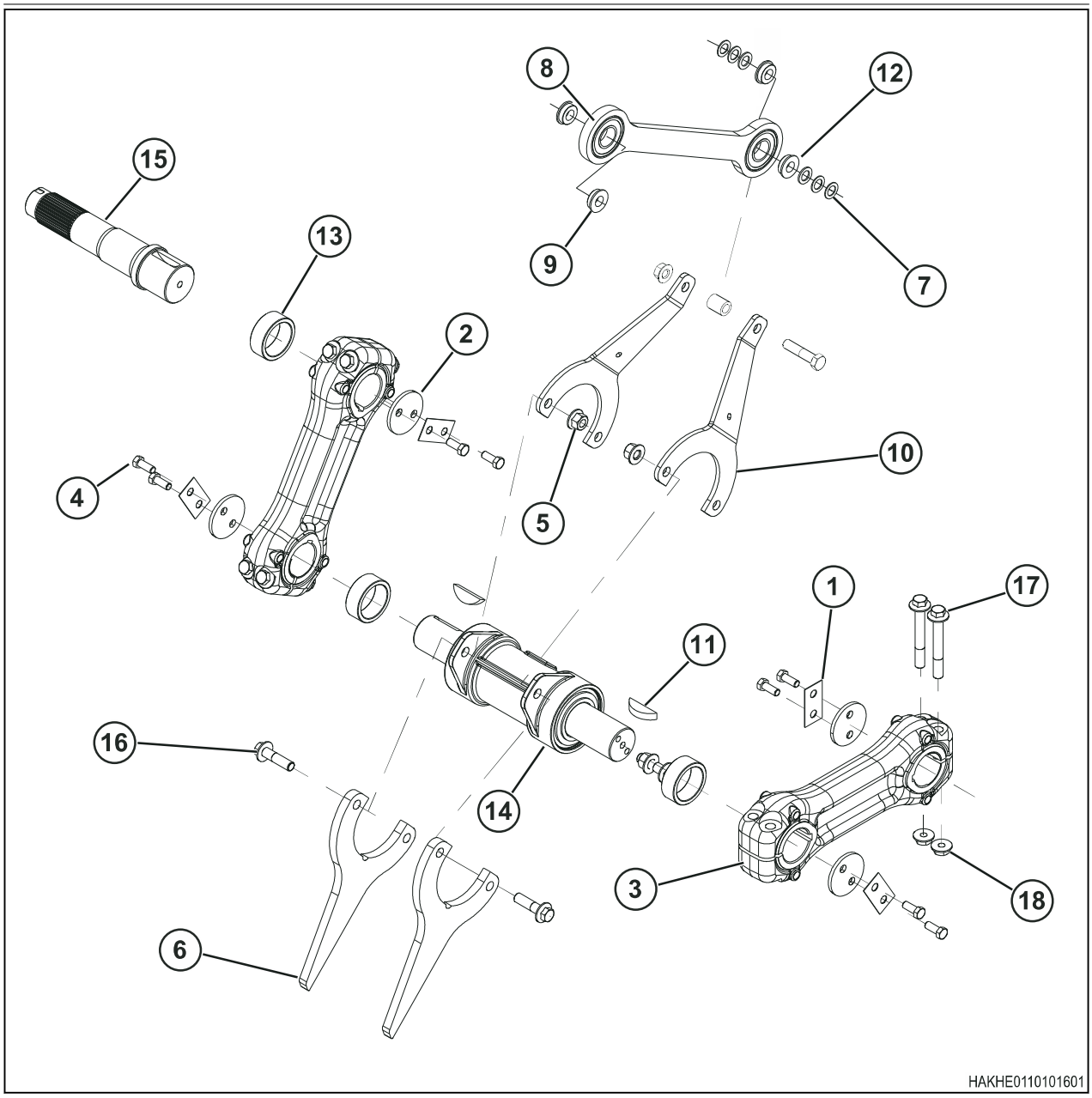


Fig. 88

(1) Tab lock
(2) Tension plate
(3) Packer arm - long
(4) Cap screw
(5) Top lock nut
(6) Packer finger
(7) Machine bushing
(8) Finger link assembly
(9) Bearing bushing
(10) Packer control arm
(11) Woodruff key
(12) Machine bushing
(13) Long spacer
(14) Outer hub assembly
(15) Outer packer shaft
(16) Flange screw
(17) Flange screw
(18) Flange nut

6.8 Stuffer

6.8.1 Stuffer general information

The crop feeds into the stuffer chute by the pickup assembly and the packer fingers. When enough crop is in the stuffer chute to make a flake, pressure on the stuffer sensor door actuates the stuffer clutch. The stuffer clutch engages the stuffer fingers to move the crop into the bale chamber. As the stuffer fingers extend into the stuffer chute, a ramp on the stuffer arm crank engages the holding finger lever. The holding finger lever moves the holding fingers out of the stuffer chute to let the flake into the bale chamber during the return stroke of the plunger. Once the stuffer fingers move out of the stuffer chute, the ramp releases the holding finger lever. This causes the spring to pull the holding fingers into the stuffer chute again.

6.8.2 Adjust the stuffer/knotter/needle chain

A correctly adjusted chain has 50 mm (2.00 in) of deflection with 175 N (40 lbf) of force.

Loosen the stuffer/knotter/needle chain before you replace a shearbolt to make the procedure easier to do. If you make the stuffer/knotter/needle chain too loose, the chain can come off the gear teeth. If the stuffer/knotter/needle chain comes off the gear teeth the stuffer fingers go out of time.

Procedure

1. Open the twine box cover on the left side of the machine.
2. Loosen the hex jam nuts (1) on the adjustment bolt (2) for the tensioner sprocket (3). Loosen hex jam nuts enough to allow free movement of the tensioner spocket.
3. Loosen or tighten the adjustment bolt for the tensioner sprocket as needed to set the correct chain tension.

   To set the correct chain tension, apply 175 N (40 lbf) to the upper section of the chain. Apply the force at the middle of the chain; between the upper and the lower sprockets. The chain will have 50 mm (2.00 in) of deflection (A) when the chain tension is correct.

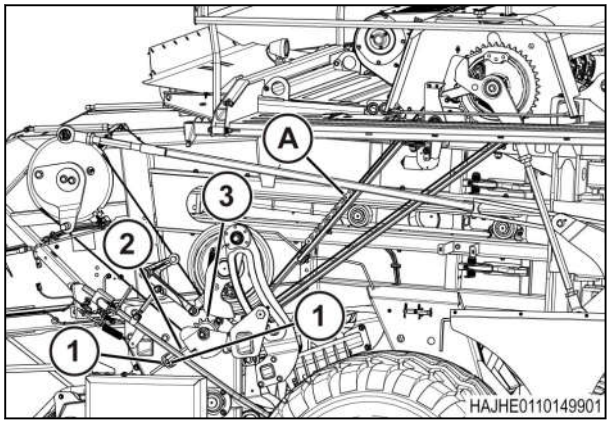


Fig. 110

4. When the chain tension is correct, tighten hex jam nuts on the adjustment bolt for the tensioner sprocket.
5. Align all the timing marks.
6. Close the twine box cover on the right side of the machine.

6.8.3 Stuffer cycle

Correct operation of the stuffer cycle is important to the operation of the machine. The stuffer cycle and timing sensors are compared to determine if the stuffer mechanism is operating correctly.

In good, even windrows the stuffer will cycle with each plunger stroke. If the stuffer does not cycle with each plunger stroke, increase ground speed. The strokes per flake display on the terminal will indicate the number of plunger strokes that occur per stuffer cycle. The number 1 in the strokes per flake display indicates the machine is operating near full capacity.

As crop is fed into the machine in normal baling conditions, the stuffer must cycle at least every one to three plunger strokes. If the stuffer does not cycle, the plunger load system will not work correctly and an alarm will be shown on the terminal. Disengage the tractor power take-off (PTO) and stop the tractor

11. Manually rotate the flywheel clockwise (as seen from the front) until the clutch roller (1) is on the cam lobe (2) in the stuffer drive sprocket

12. Apply the flywheel brake.

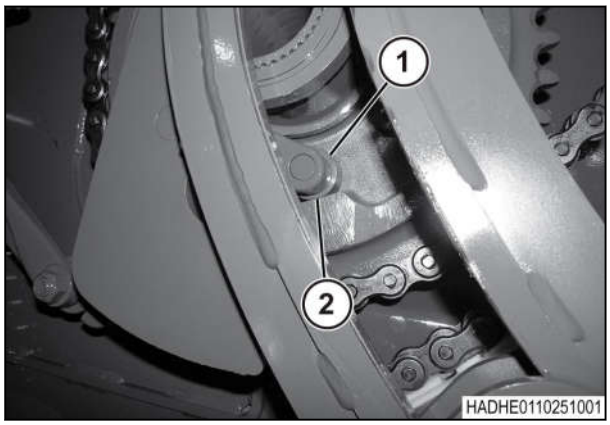


Fig. 122

13. If the roller (1) is against the drive arm (2), do the following.

a) Measure the distance (A) between the drive arm and the stop (3). The distance must be a minimum of 2.5 cm (3/32 in).

b) If the distance is less than the minimum, tighten the springs on the stuffer brake.

Adjust each of the stuffer brake springs an equal amount. Do not adjust more than 1/4 turn each time.

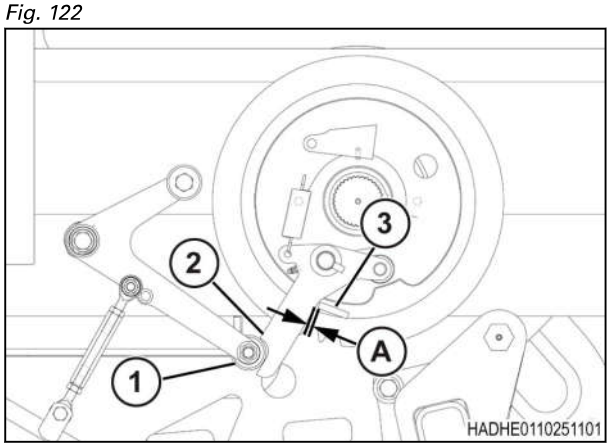


Fig. 123

14. If the roller (1) does not touch the drive arm (2), do the following.

a) With the cam roller (3) on the cam (4), measure the gap (A). The gap must not be more than 5 mm (3/16 in).

b) If the gap is too wide, check the stuffer brake for excessive heat after the machine has been used for 30 minutes to one hour of baling.

c) If the gap remains too wide, loosen the stuffer brake springs.

Adjust each of the stuffer brake springs an equal amount. Do not adjust more than 1/4 turn each time.

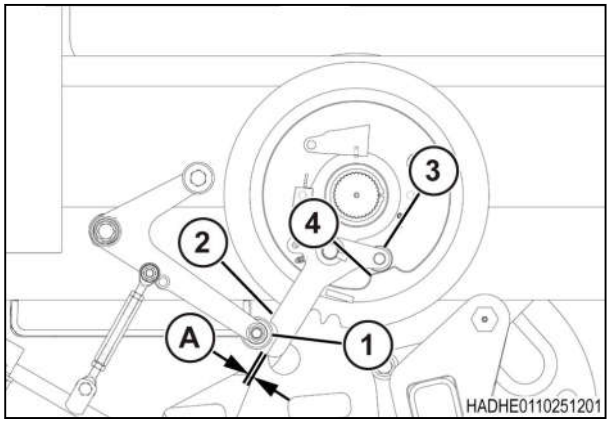


Fig. 124

6.12.3 Remove the stuffer brake

Procedure

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

2. Disconnect the implement driveline from the tractor.

3. Check the timing to make sure the knotter drive and the stuffer drive timing is correct.

4. Put a board under the tips of the stuffer fingers.

6.13.6 Replace the bushing for the stuffer drive sprocket

Procedure

1. Remove the stuffer clutch (1).

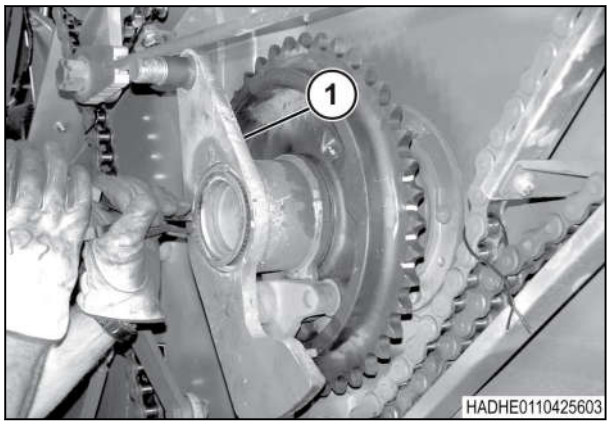


Fig. 146

2. Remove the stuffer drive sprocket (1).
3. Press the bushings from the stuffer drive sprocket.
4. Clean the bore and the lubrication holes on the stuffer drive sprocket.
5. Press a new bushing into each side of the stuffer drive sprocket. The bushings must be even with the edge of the stuffer drive sprocket.
6. Install the stuffer clutch.

Fig. 147

Related Links

Remove the stuffer clutch page 6-87
Install the stuffer clutch page 6-90

18. Remove the retaining ring (1) from the end of the shaft.
19. Remove the shim (2) from the shaft.
20. Remove the dog clutch (3) from the shaft.
21. Remove the washers (4) from the shaft.
22. Remove the stuffer drive sprocket (5) from the shaft.
23. Remove the washers (6) from the shaft.

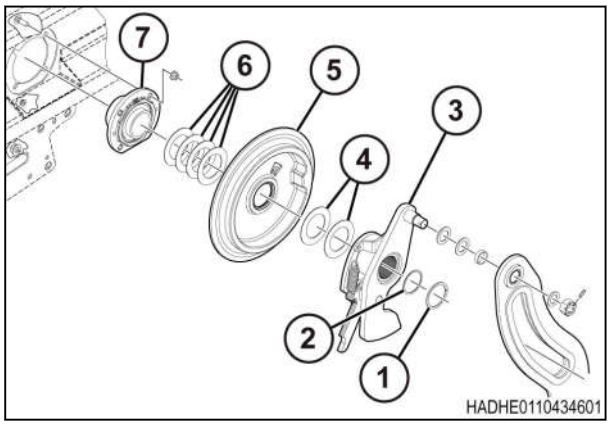


Fig. 172

24. Remove the retaining ring (1) from the right-hand end of the shaft.
25. Remove the stuffer crank (2).
26. Remove the stuffer brake (3).
27. Remove the spacer (4).
28. Support the shaft to prevent the shaft from dropping and damaging the bearings.
29. Remove the bolts that fasten the right-hand and left-hand bearing assemblies to the mainframe.
30. Pull the bearing assemblies from the shaft.

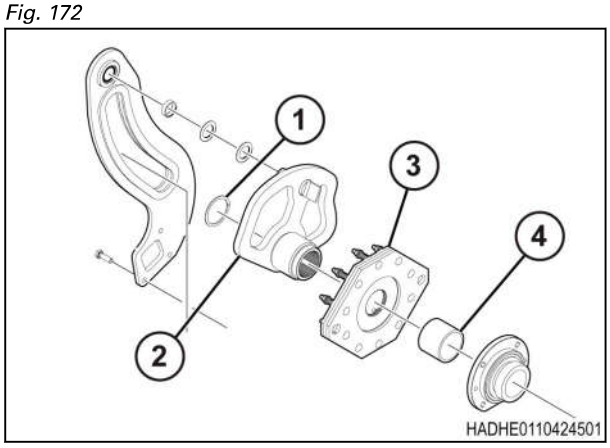


Fig. 173

31. Support the shaft while removing the shaft from the machine through a bearing mounting hole.

6.14.6 Install the stuffer shaft

Procedure

1. Support the shaft while installing the shaft into the machine through a bearing mounting hole.
2. Install the bearings onto each end of the shaft.
3. Install the bolts that hold the bearings to the mainframe.
4. Remove the supports for the shaft.
5. Install the spacer (4) onto the right-hand end of the shaft.
6. Install the stuffer brake (3).
7. Install the stuffer crank (2).
8. Install the retaining ring (1).

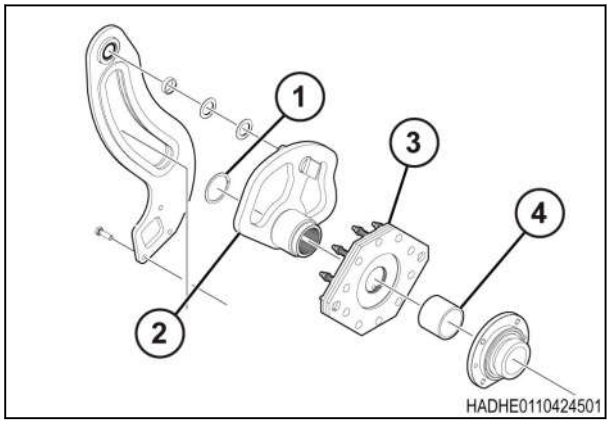


Fig. 174

6.17 Stuffer chute

6.17.1 Stuffer chute adjustment

Adjust the position of the wrappers (1) in the stuffer chute to change the bale shape.

Adjustment	Result
Lower the bottom mounting angle (2).	Less crop at the bottom of the bale
Raise the bottom mounting angle (2).	More crop at the bottom of the bale
Move the top mounting plate (3) rearward.	Less crop at the top of the bale
Move the top mounting plate (3) forward.	More crop at the top of the bale

For the best bale shape in heavy moisture crops, move the bottom mounting angle to the bottom position. Move the top mounting plate to the forward location. This puts more crop to the top of the bale.

When moving the top of the wrappers, make sure the wrappers clear the plunger knives 4 to 6 mm (0.157 to 0.236 in).

The stuffer chute must be a minimum of 25 mm (1 in) larger at the top than at the bottom so the stuffer drive will not overload in damp crop.

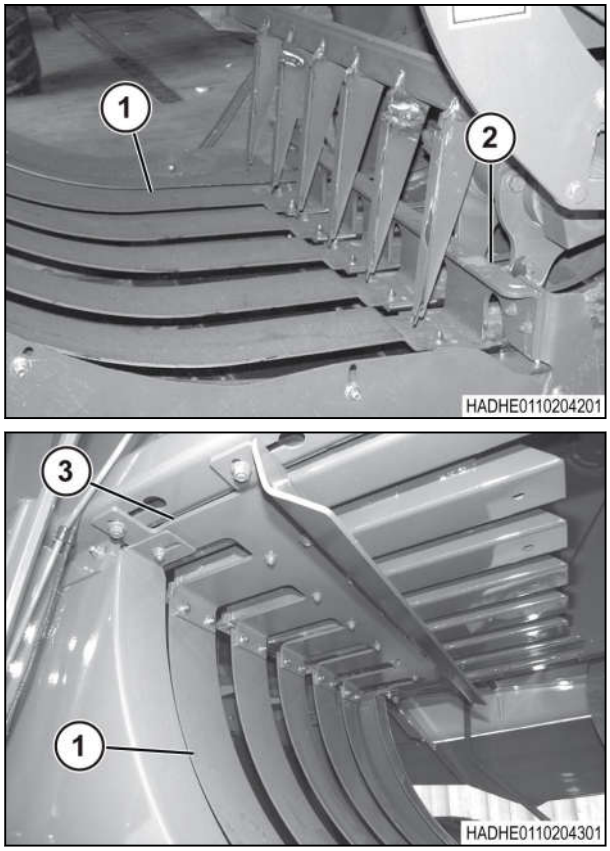


Fig. 192

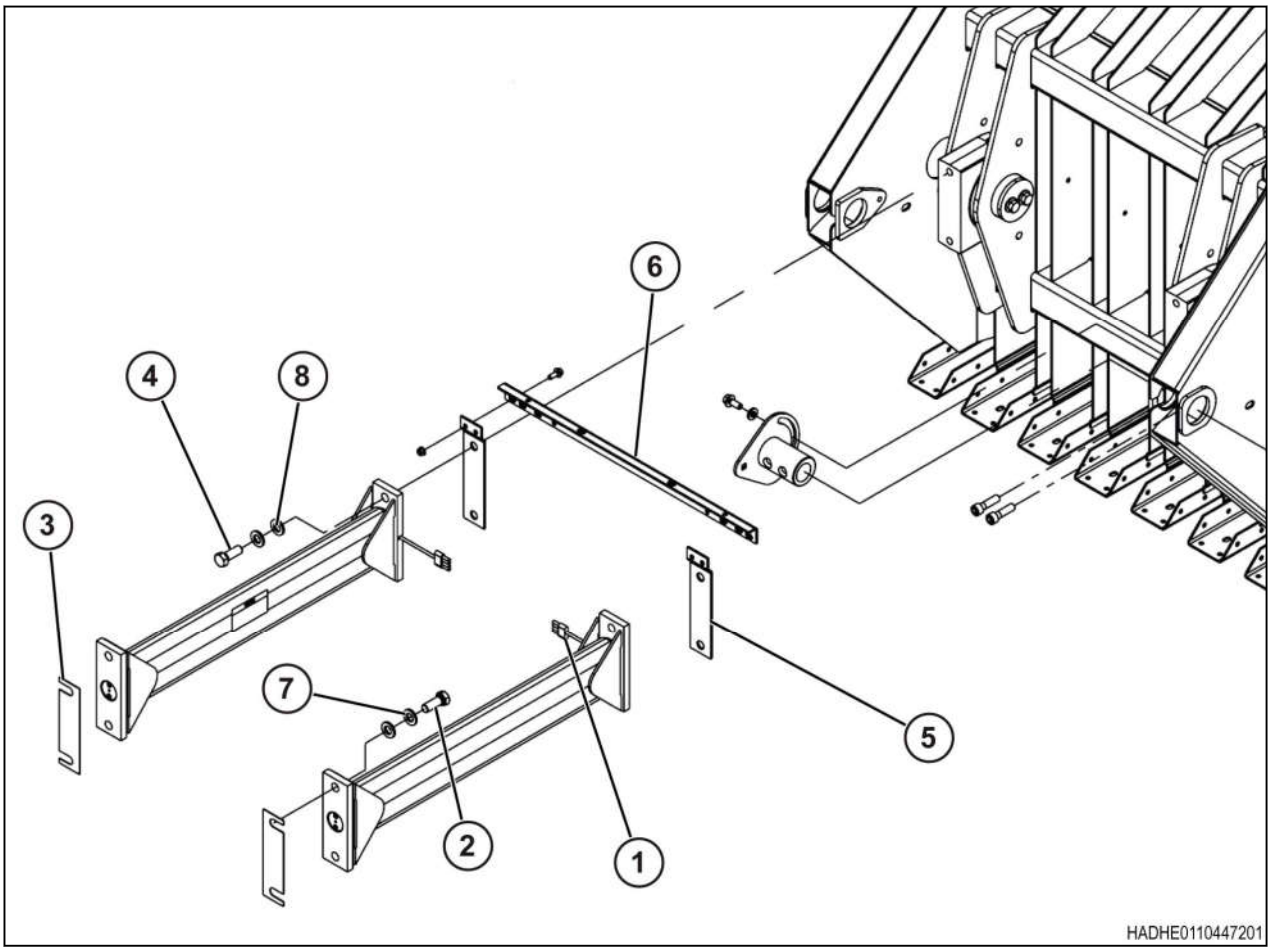


Fig. 5

13. Disconnect the harness from each connecting rod harness connection (1). Move the harness out of the way.

14. Loosen the screws (2) fastening the front of the connecting rods to the crank arm bearing assemblies. Do not remove the screws.

15. Fasten the shims (3) to the front ends of the connecting rods.

16. Loosen the screws (4) fastening the rear of the connecting rods to the plunger bearing assemblies.

17. Fasten the connecting rod plates (5) to the rear ends of the connecting rods.

18. Support each connecting rod.

19. **IMPORTANT:** *Always remove the screws from the front first. Too much side rotation damages the seals of the crank arm bearings. The angle* (6) *across the rear of the connecting rods keeps the connecting rods from rotating too far to the side.*

Remove, and keep, the screws and the washers (7) from the front of the connecting rods.

20. Remove, and keep, the screws and the washers (8) from the rear of the connecting rods.

IMPORTANT: *If a connecting rod fails, replace both connecting rods. Replace the connecting rods in factory assembled pairs. Do not try to repair connecting rods.*

21. Move the plunger to the front. Align the plunger with the opening in the top of the machine.

22. Install lifting equipment with a minimum of 1815 kg capacity.

Do not fasten the lifting equipment to the rollers.

The lifting equipment must lift the bottom of the plunger more than 4876 mm above the floor.

13. Loosen, but do not remove, the nut (1) and bolt (2) holding the bearing assembly (3) to the crank arm (4).

14. Remove and keep the screws and washers that fasten the connecting rods and the bearing assemblies.

Keep the shims, if equipped. Fasten the shims to the connecting rods. When replacing the shims, make sure the shims go in the original locations.

15. Release the flywheel brake.

16. Manually rotate the flywheel. Move the crank arms all the way forward.

17. Apply the flywheel brake.

18. Remove the nut (1) from the bolt (2).

The bolt goes through the bearing assembly (3) and the crank arm (4).

19. Remove the bolt and the spacer (5).

20. Remove the bearing assembly and the chamfered spacer (6).

Removing the bearing assembly can require pulling equipment.

The chamfered spacer must go on the crank arm shaft with the large chamfer (7) on the inside.

21. Remove the seals (1) on each side of the bearing assembly (2).

Always use new seals.

22. Remove the retaining rings (3).

23. Remove the bearing (4)

Removing the bearing can require a press.

Always use a new bearing.

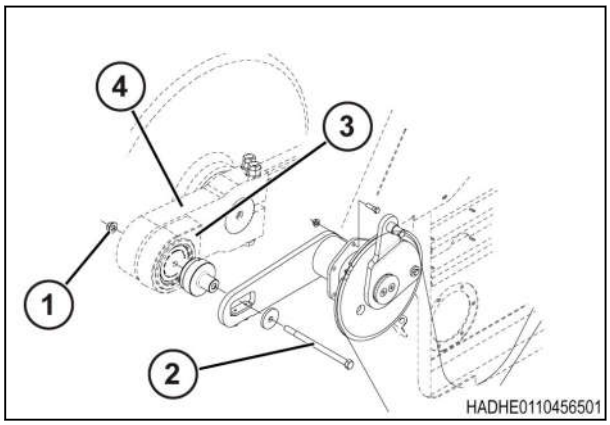


Fig. 23

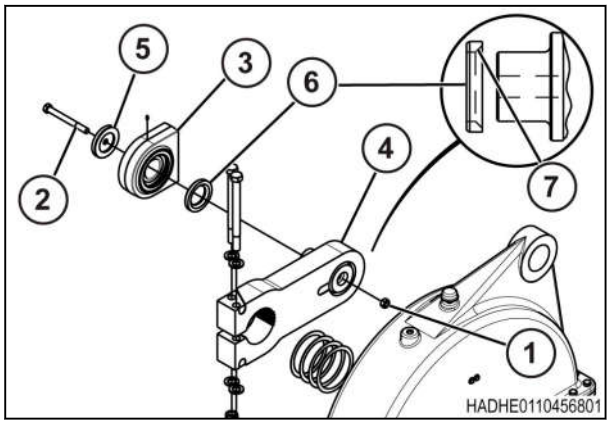


Fig. 24

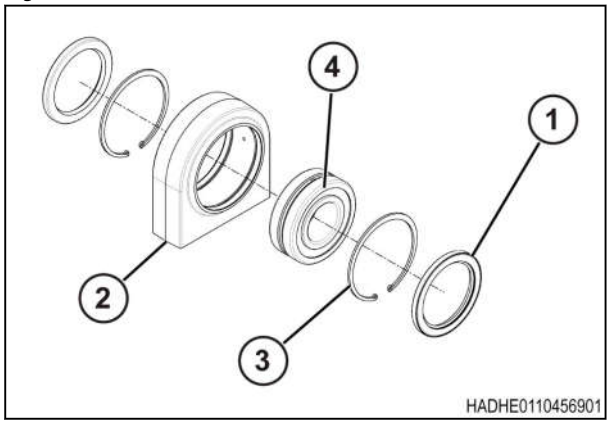


Fig. 25

7.2 Hay dogs

7.2.1 Examine the top and side hay dogs

Procedure

1. Check the extension of each hay dog.

The heel (1) must not be less than 3 mm (1/8 in) (A) from the inside surface of the baling chamber (2). If the hay dog, rubber bumper(3), or pin show wear, replace the part. Do not try to repair the part.

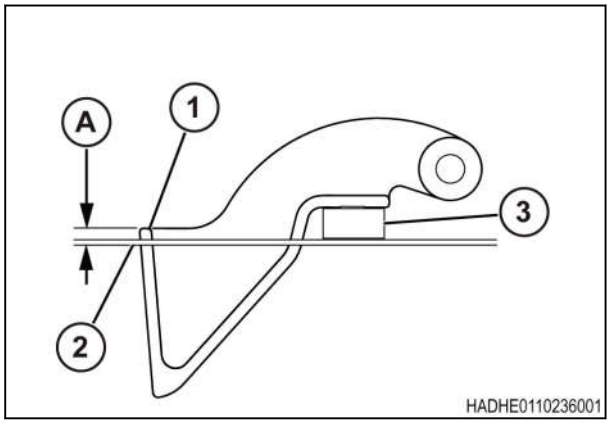


Fig. 46

2. Make sure the springs (1) at the top and side hay dogs (2) do not rub the mounting brackets (3).

The heat from the rubbing can cause the spring to fail. If a spring rubs the mounting bracket, bend the spring away from the mounting bracket.

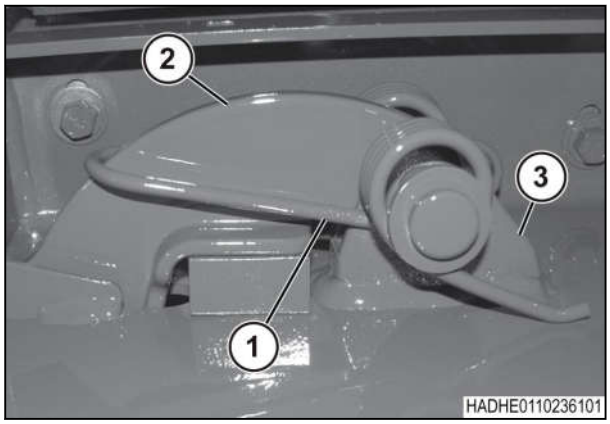


Fig. 47

7.2.2 Examine the stationary hay dogs

Procedure

1. Periodically inspect the stationary hay dogs (1).

2. If worn, replace the stationary hay dogs.

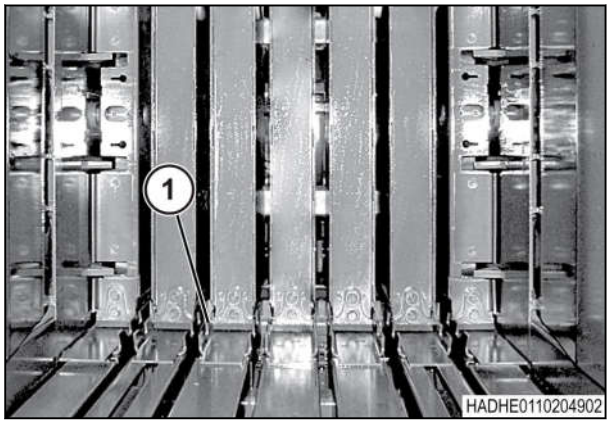


Fig. 48

The billhook continues to turn about 180 degrees while the billhook tongue (1) raises to receive the twine ends. The twine finger (2) retracts to supply twine for the knot. The twine disc finishes the rotation and the twine is in position to be cut by the twine knife (3).

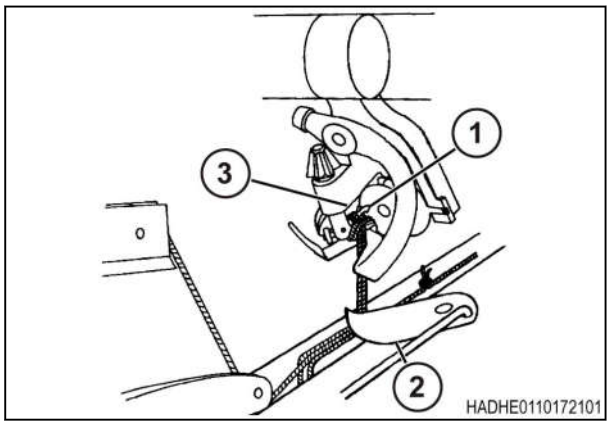


Fig. 67

The billhook tongue closes to hold the twines and the twine knife moves forward, cutting both twines. The twine finger moves rearward to tighten the twines and aid in removing the twines from the billhook. The billhook holds the cut ends of the twines (1) as the loop is removed from the billhook by the stripper arm (2) forming the knot. This finishes the second knot of the tying cycle.

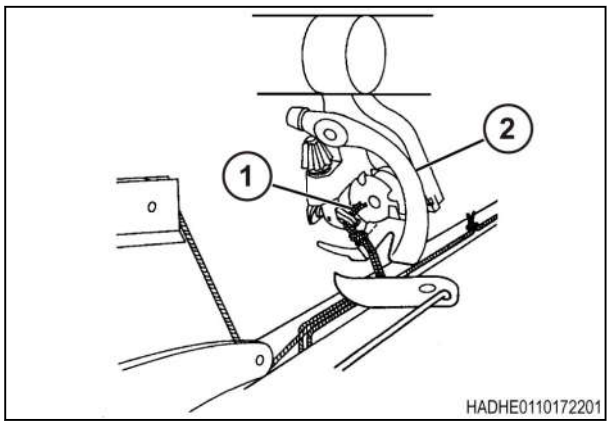


Fig. 68

The knotter slacker arm (1) moves up to remove the slack from the twine as the second knot (2) is removed from the billhook.

NOTE: *When the knotter slacker arms are raised, the monitoring flags are up, showing the second knot has been tied. As the next bale is formed, the knotter slacker arms and monitoring flags will move down. If a knotter slacker arm stays up too long, the terminal will show an alarm. This condition normally occurs when there is no twine in the knotter or when there is a missing tie. The monitoring flags will remain down if the knot does not release from the billhook.*

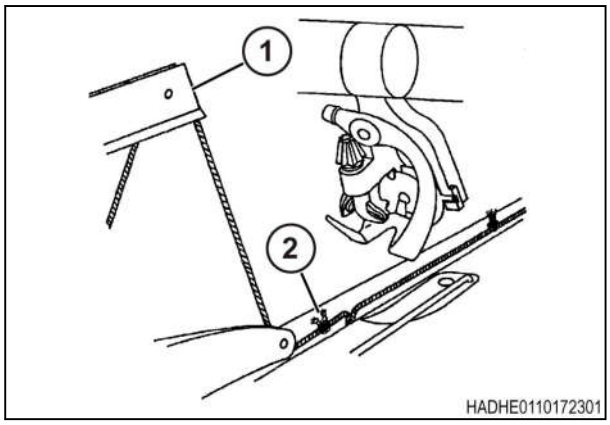


Fig. 69

7.4.4 Knotter/needle lockout

WARNING:
To prevent personal injury, always engage the knotter/needle lockout when working with, or around, the needles and knotters.

The knotter/needle lockout handle is located on the left-hand side of the machine near the ladder and metering wheel.

This lock controls the needles and the knotters.

7.6.3 Knotter head components

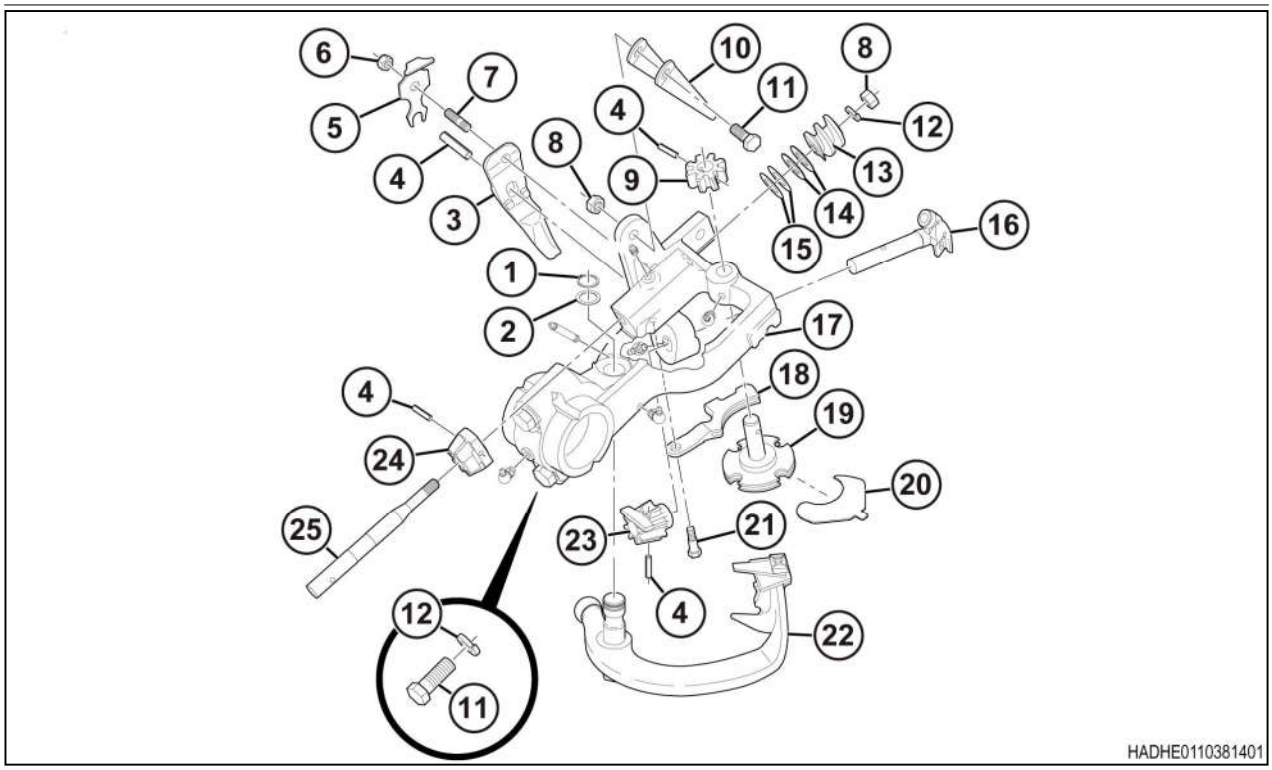


Fig. 79

(1) Retaining ring
(2) Machinery bushing
(3) Billhook cam
(4) Roll pin
(5) Tensioner spring
(6) Lock nut
(7) Mount stud
(8) Nut
(9) Twine disc pinion gear
(10) Twine spring
(11) Cap screw
(12) Lock washer
(13) Worm gear
(14) Machinery bushing
(15) Shim
(16) Billhook
(17) Knotter head
(18) Twine holder
(19) Twine disc
(20) Twine disc cleaner
(21) Shoulder screw
(22) Stripper arm
(23) Billhook pinion gear
(24) Worm pinion gear
(25) Worm gear shaft

Procedure

1. Remove the clevis pin and swing the knotter head up.
2. Loosen the worm gear nut (1).
3. Tap the nut end of the worm gear shaft lightly to loosen the worm gear (2) from the taper on the worm gear shaft.
4. Push the disc cleaner toward the cam gear.
5. Turn the twine disc to the correct position.

   When correctly adjusted, 1 mm to 3 mm (0.039 in to 0.118 in) (A) of the disc cleaner will be past the edge of the notch on the twine disc.

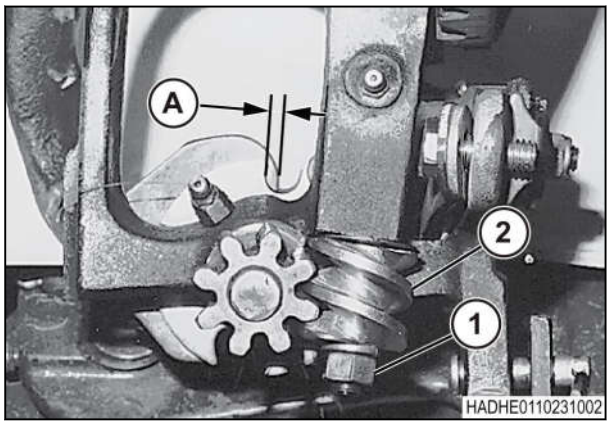


Fig. 101

6. Hold the twine disc and turn the worm gear against the machinery bushing between the knotter head frame and worm gear.
7. Tighten the nut on the end of the worm gear shaft.
8. Check the adjustment before baling.
9. Check the adjustment after one complete knotter cycle. Make sure the twine disc stops with the leading edge of the visible slot of the twine disc aligned with the twine holder.

   Adjustment is correct when both twine lengths are approximately 19 mm (0.75 in).

7.7.4 Adjust the twine holder

The twine holder (1) holds the twine in the twine disc (2). The twine holder springs (3) apply pressure to the twine holder. The twine holder meters a sufficient length of twine through the twine disc to make a knot.

Adjust the twine holder in the field. Do not turn the adjustment bolt (4) more than 1/6 turn at a time.

Measure the length of the twine tails in a knot. Measure the length of the twines dropped by the twine holder. You have correct twine holder adjustment when length of the twine tail and the length of the dropped twine are each approximately 25 mm (1 in). Examine the lengths immediately after a tie cycle and with the bale in the bale chamber.

Over tight twine holders make weak knots.

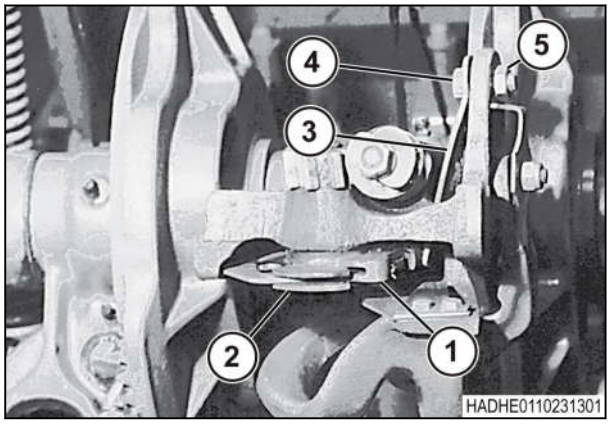


Fig. 102

Procedure

1. Loosen the lock nut (5).
2. Tighten or loosen the adjustment bolt 1/6 of a turn (60°)at a time.
   - If the ends of the knots are too short and the knots pull loose, loosen the adjustment bolt.
   - If the ends of the knots are too long (the knots stay on the billhook too long), tighten the adjustment bolt.
   - If the knotter makes bow knots, tighten the adjustment bolt.
3. Hold the adjustment bolt and tighten the lock nut.

Procedure

1. Turn the brake adjustment nuts (1) to get a spring length (A) of 36 mm (1.417 in).
2. Try to turn each of the springs (2) manually.
   If a spring can be turned manually, tighten the spring.
3. Cycle the knotter at full speed two to three times.
4. Stop the machine. Make sure the flywheel comes to a complete stop.

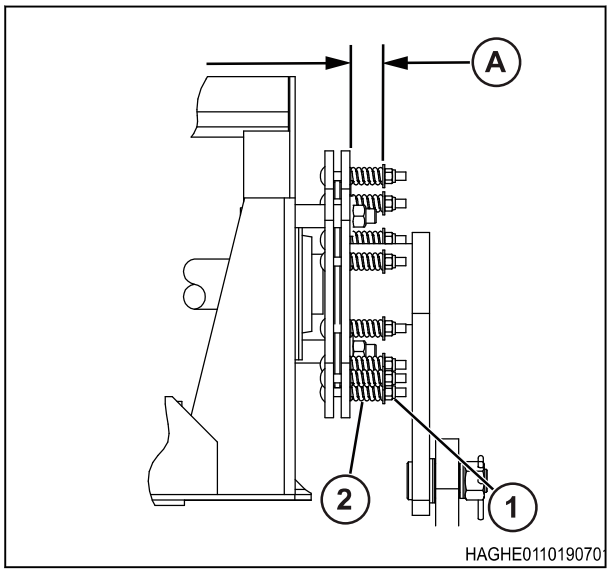


Fig. 118

5. Turn the flywheel manually until the clutch roller (1) is on the knotter/needle sprocket lobe (2).
6. Measure the clearance between the outer end of the clutch arm (3) and the anvil head (4).
   The correct knotter/needle brake setting gives a clearance (A) of no more than 3 mm (0.118 in).
   A clearance of more than 3 mm (0.118 in) identifies a too tight knotter/needle brake. Loosen each brake adjustment nut 1/4 turn to loosen the knotter/needle brake. Check the clearance again. Loosen the adjustment nuts until you get the correct clearance.
   With too much clearance the knotter/needle sprocket lobe hits the clutch roller and causes damage to the two parts. Too much clearance can also cause a malfunction in the knotter/needle clutch. The malfunction causes damage to:
   - The needles,
   - The needle protection linkage,
   - The needle carriage,
   - Other knotter parts.

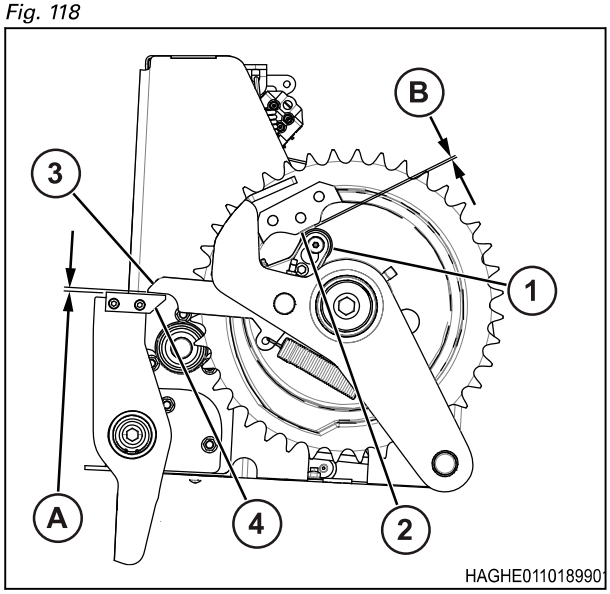


Fig. 119

7. Measure the clearance between the knotter sprocket lobe and the clutch roller.
   Correct knotter/needle brake setting gives a clearance (B) of no more than 1.5 mm (0.059 in).
   A clearance of more than 1.5 mm (0.059 in) identifies a too loose knotter/needle brake. Tighten each brake adjustment nut 1/4 turn to tighten the knotter/needle brake. Check the clearance again. Tighten the adjustment nuts until you get the correct clearance.
   A too loose knotter/needle brake causes high forces in the knotter clutch arm. The high forces shear the key in the bottom of the knotter clutch arm.
   The needle carriage does not stop at the correct location. The knotter/needle protection linkage pulls back on the needle carriage and puts stress on the knotter/needle protection linkage.

7.10.3 Disassemble the lower tensioner arm

Procedure

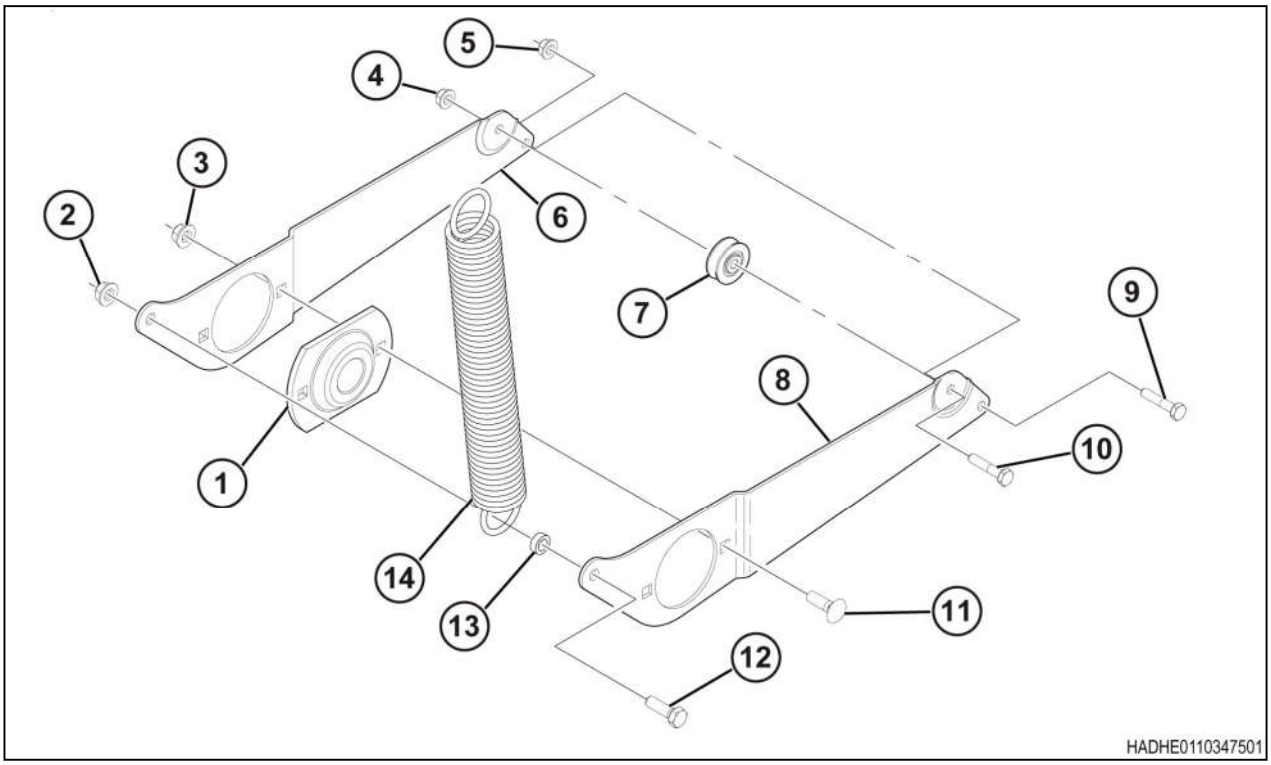


Fig. 132

1. Loosen all the cap screws.
2. Make note of the position of the spacer (13) and the bearing flange (1).
3. Remove the spring attachment cap screw (12) and locknut (2).
4. Remove the spacer (13).
5. Remove the spring (14).
6. Remove the roller cap screw (10) and the lock nut (4).
7. Remove the roller (7).
8. Remove the locknuts (3) the carriage bolts (11), and the bearing flange (1), .
9. Remove the cap screw (9) and the lock nut (5).

7.11.2 Knotter Assembly

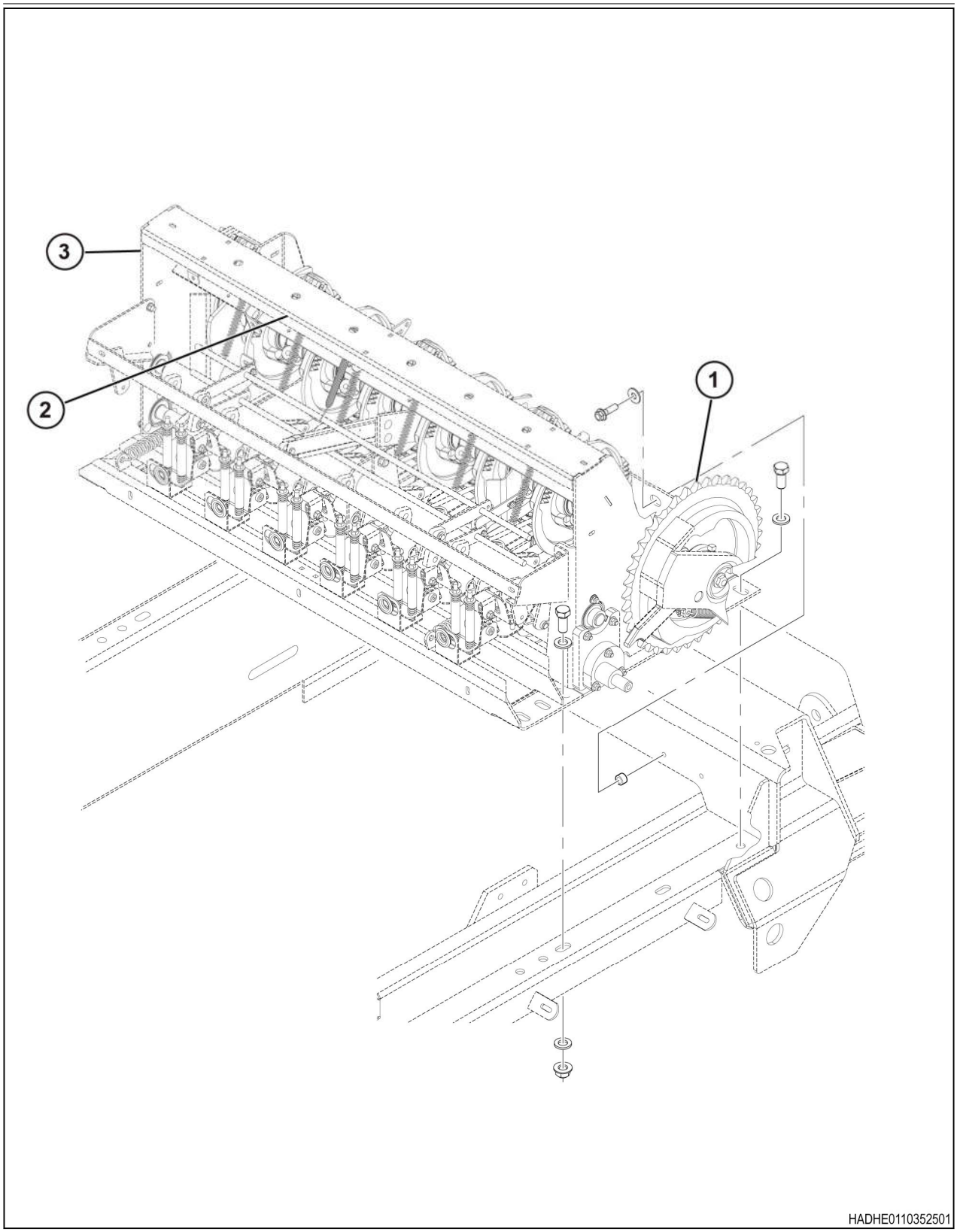


Fig. 144

(1) Drive sprocket
(2) Knotter frame
(3) Upper twine tensioner

7.12.5 Assemble the six twine knotter assembly

Procedure

1. Install the key (13) and twine cam (11) on the knotter assembly shaft.
2. Install the shims (7) 0.78 mm.
3. Install the spacer (10).
4. Install the bearing (9).
5. Install the sprocket (8).

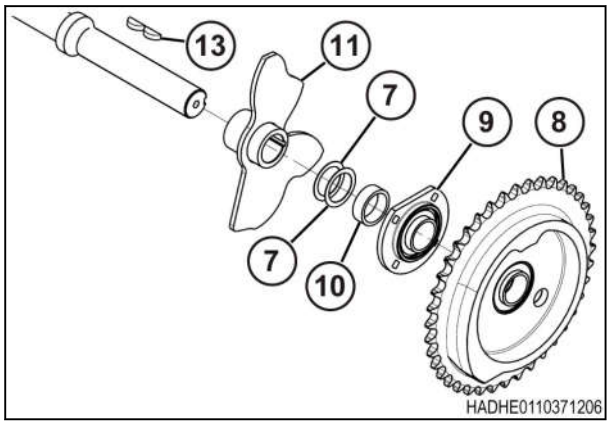


Fig. 162

6. On the other end of the knotter assembly shaft, install the adjustable shim (1) and the screws (2).

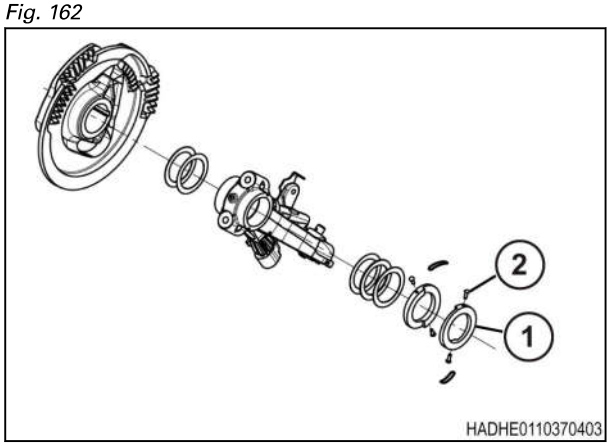


Fig. 163

7. Check the angle between the screws (1) on the adjustable shim. To permit correct adjustment, the angle must not be more than 45 degrees. If not correct, remove the wire and rotate the adjustable shim.

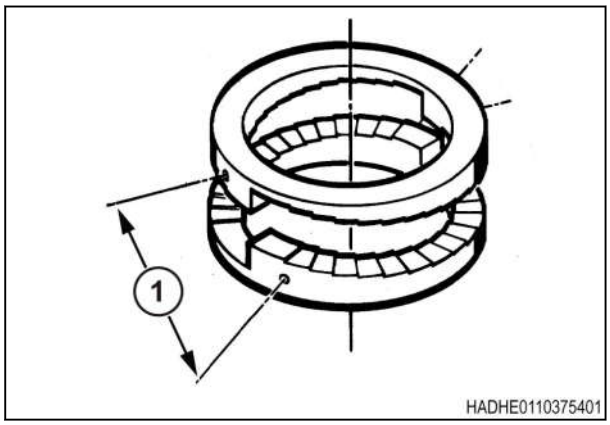


Fig. 164

12. Remove the hardware (1) that fastens the knotter brake assembly to the knotter frame.

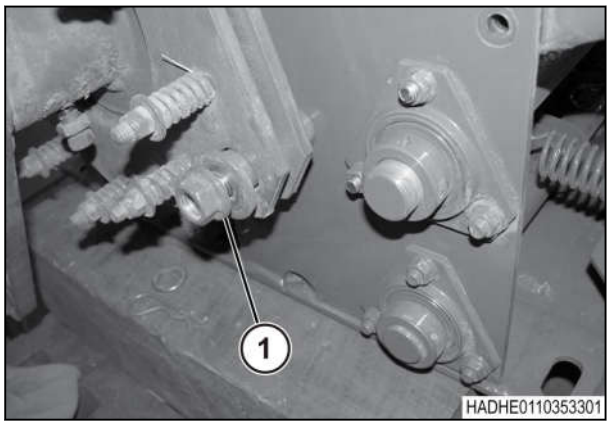


Fig. 187

13. Remove the hardware from the right-hand end of the drive shaft. Use wire or twine to fasten the shims and washers to the right-hand needle arm.

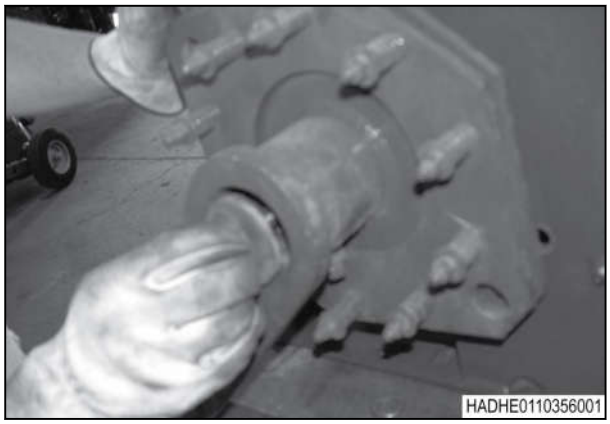


Fig. 188

14. Loosen the jam nuts (2) and set screws (1) in the right-hand needle arm.

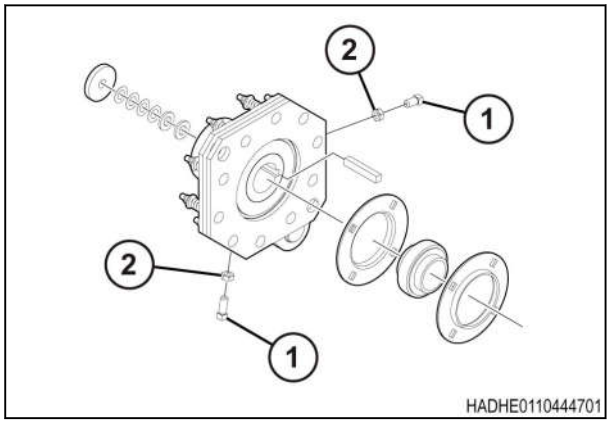


Fig. 189

15. Remove the key from the right-hand needle arm and the drive shaft.

16. Disconnect the clevis from the knotter stop arm.

17. Disconnect the lubrication lines from the knotter.

18. Correctly connect lifting equipment to the knotter assembly and remove the knotter assembly from the machine.

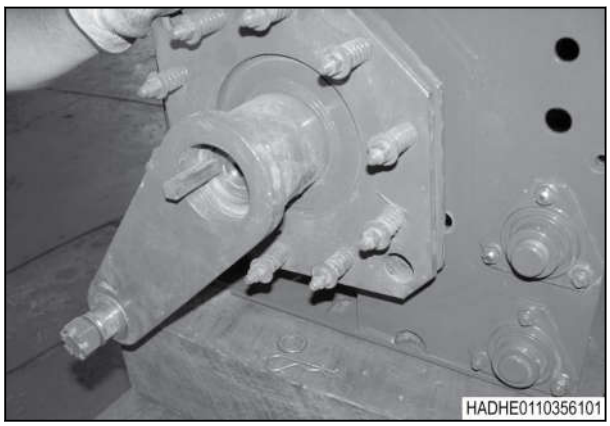


Fig. 190

2. Apply the flywheel brake (1).

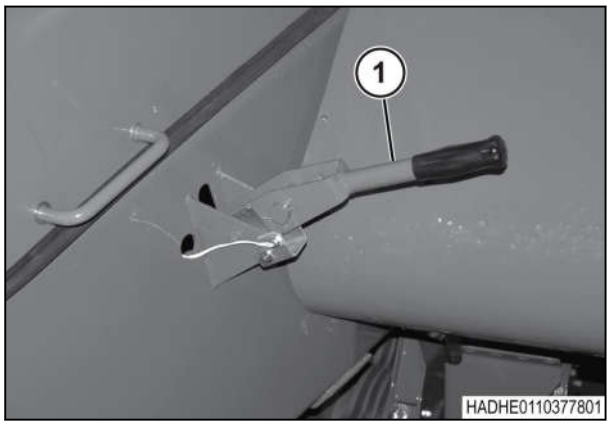


Fig. 212

3. Remove the shield for the knotter brake.

Fig. 213

4. Disconnect the needle actuating rod (1) from the right-hand needle arm (2). Use wire to fasten the needle actuating rod to the side of the machine.

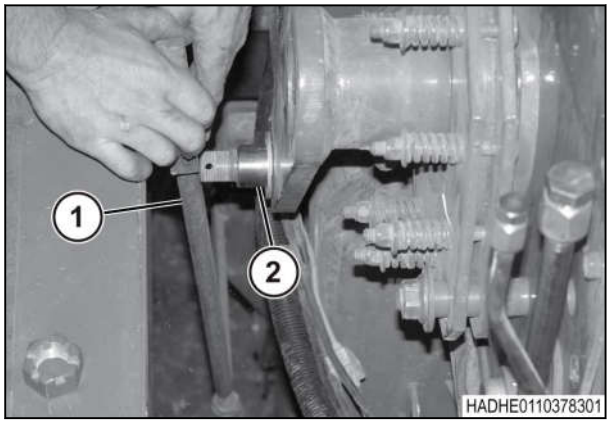


Fig. 214

5. Remove the hardware (1) that fastens the knotter brake assembly to the knotter frame.

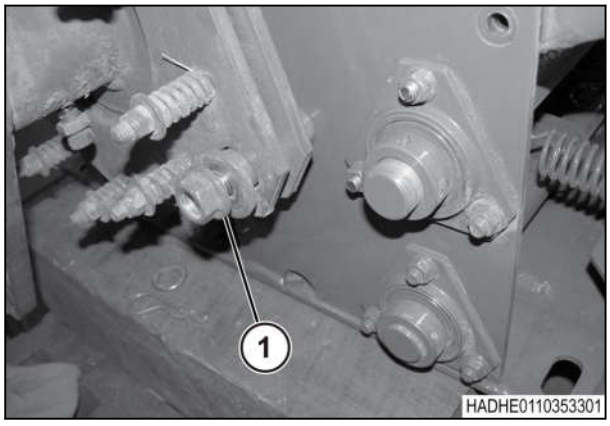


Fig. 215

13. Hit the nut to loosen the stripper arm on the stripper arm shaft.

NOTE: *Apply force to the stripper arm to keep the shaft from rotating during removal.*

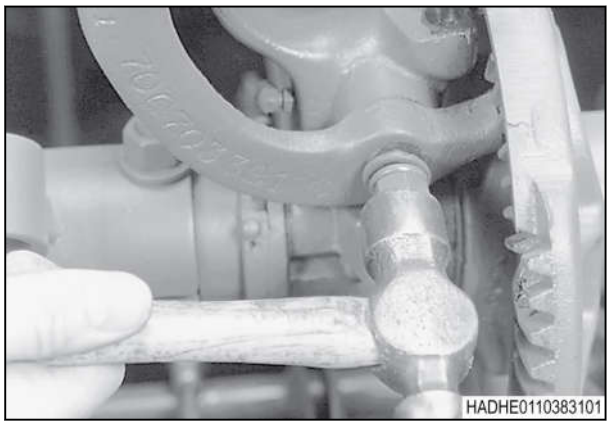


Fig. 242

14. Remove the nut, the lock washer, and the special washer from the stripper arm shaft.

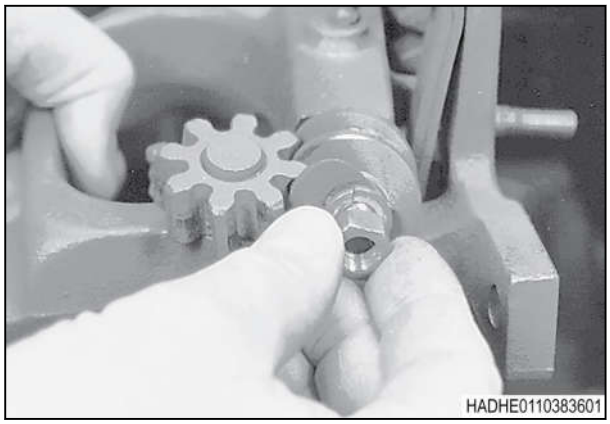


Fig. 243

15. Remove the stripper arm (1).

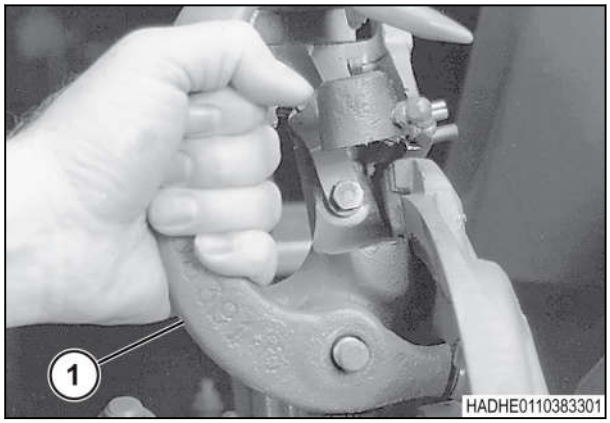


Fig. 244

16. Loosen the nut on the worm gear shaft.

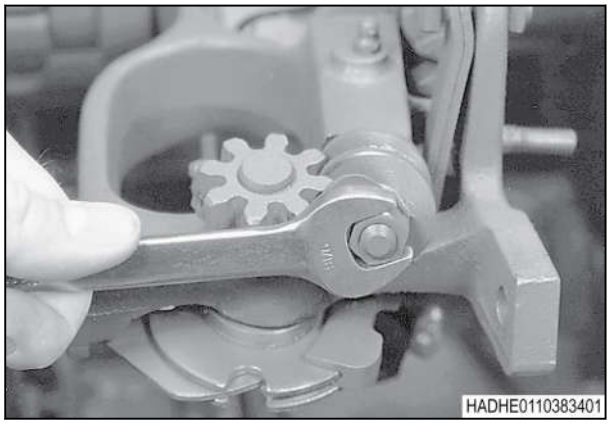


Fig. 245

31. Lower the knotter assembly by pushing down on the knotter mounting tab (1). Be careful not to touch any of the moving parts.

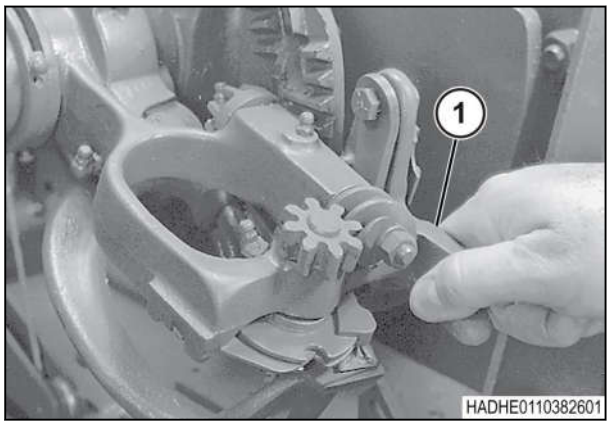


Fig. 277

32. Install the clevis pin and the hairpin.

33. Connect the lubrication lines to the knotter. Make sure the twine will not rub on the lubrication lines.

34. Check the operation of the knotter in the field. If necessary, troubleshoot the knotter.

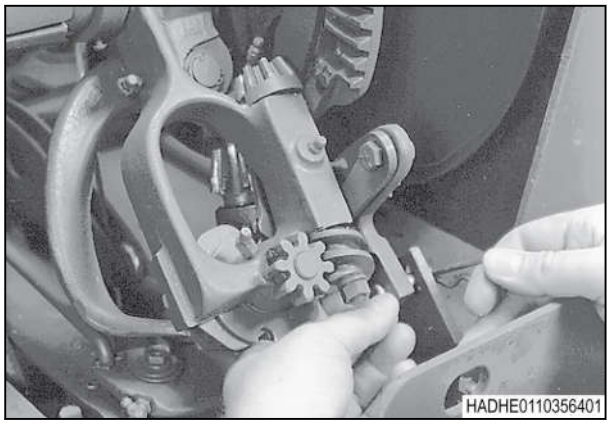


Fig. 278

Related Links

Time the twine disc page 7-57
Adjust the twine holder page 7-58
Tying troubleshooting page 7-173

5. Remove the hex screw (1) and the washer (2) from the shaft (3).

If necessary, remove machinery bushings (4).

6. Remove the reset arm (5).

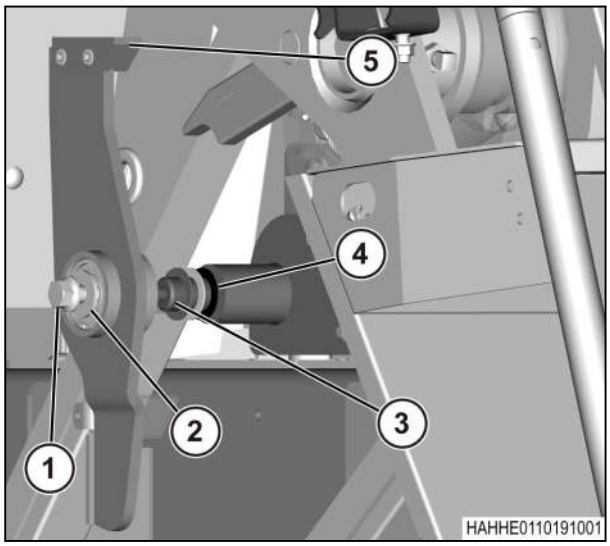


Fig. 307

7. Remove the nuts (1).

8. Remove the reset mount (2).

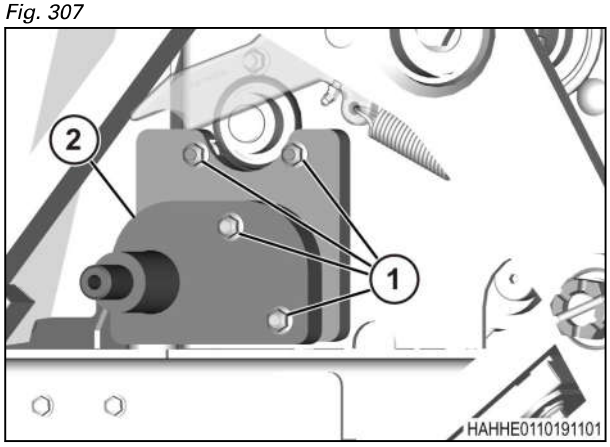


Fig. 308

9. Remove the 3/8-16 hex flange nut (1) from the 3/8-16 x 1 inch carriage bolt (2).

10. Remove the 3/8-16 x 1 inch carriage bolt.

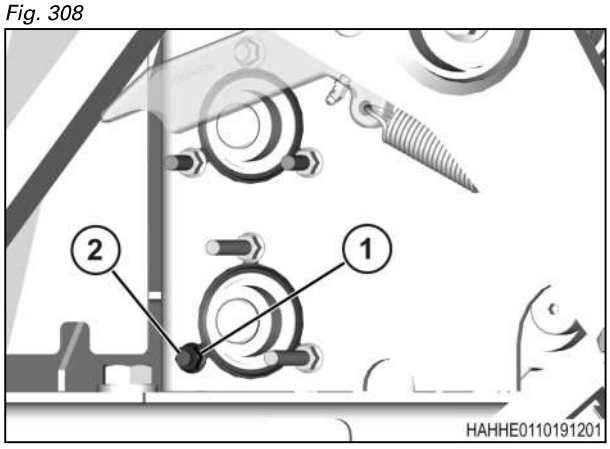


Fig. 309

7.18.4 Assemble the knotter blower

Procedure

1. Install the blower shaft (1) into the blower (2).
2. Tighten the set screws at each end of the blower.

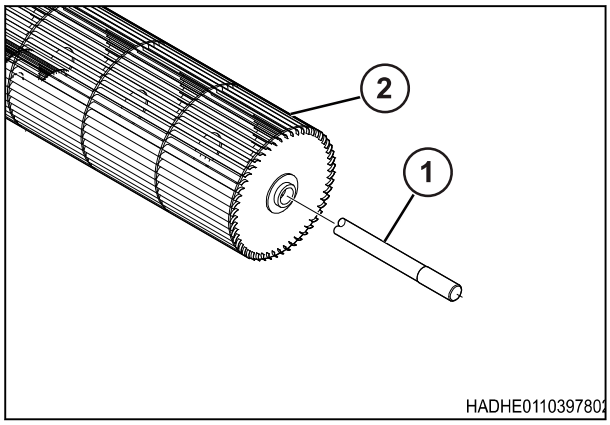


Fig. 331

7.18.5 Install the knotter blower

Procedure

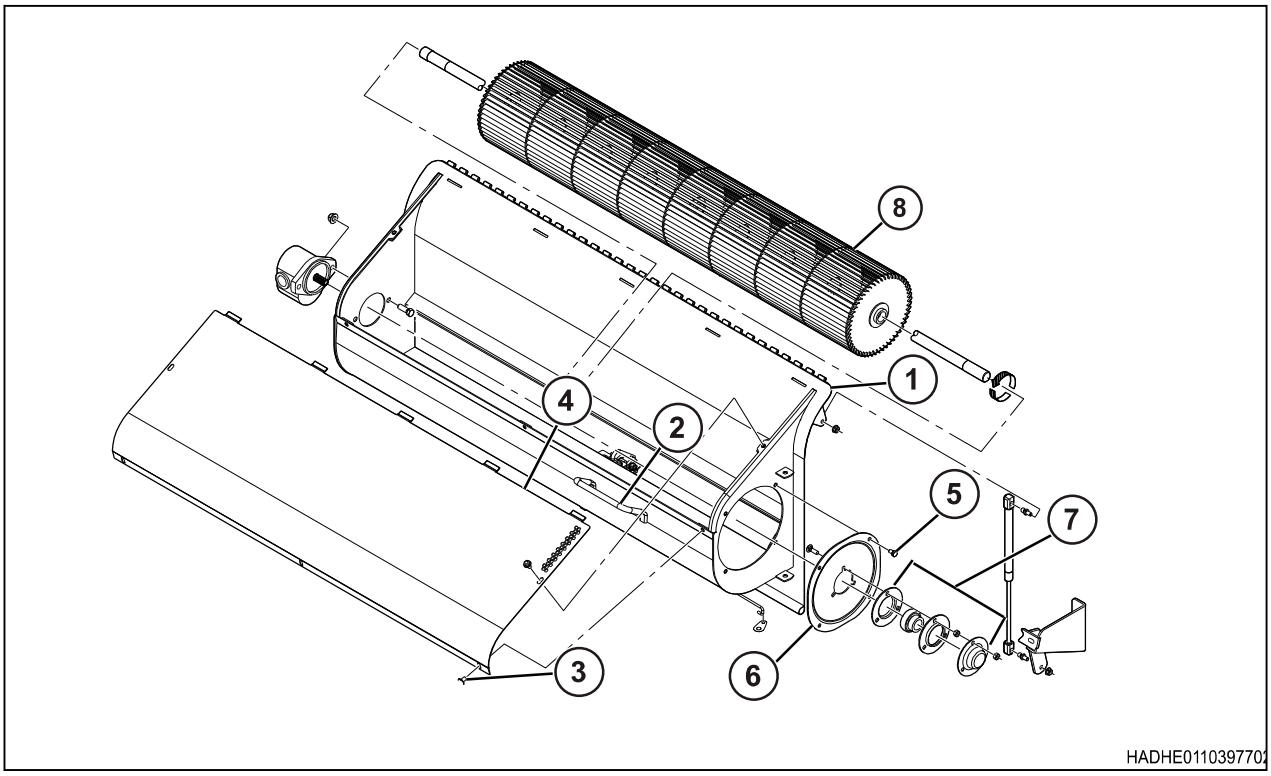


Fig. 332

1. Install the blower (8) into the blower housing (1).
2. Install the bearing mount panel (6) and bearing assembly (7).
3. Install the bearing mount panel cap screws (5).
4. Install the blower shield (4).
5. Install the blower shield cap screws (3).

7.21 Remove a bale from the bale chamber

7.21.1 Operate the ejector, if equipped

Procedure

1. Disengage the power take-off (PTO).
2. Park the machine on a solid level surface. Apply the park brake.
3. Make sure bale chute, if equipped, is down.
4. If part of a bale has been made, tie off the partial bale.

   Tying off the partial bale leaves the twine tied and ready for the next bale.

   a) Engage the PTO.
   b) Manually lift the knotter trip arm (1) to operate the knotters and needles.
   c) Stop the PTO.
5. Apply the flywheel brake.
6. Pull out on the selector latch (1). Pull the knotter/needle lockout handle (2) rearward. Make sure the selector latch is completely engaged in the rear latch hole.
7. Make sure the the ejector is selected on the terminal baler configuration screen.
8. Release the bale chamber pressure.

   The ejector enable icon (

)will be shown on the terminal.
9. Engage and lock the tractor remote valve for the pickup in the raised position.
10. Use the ejector control (1) to move the ejector to about 102 mm (4 in) behind the farthest forward location.

    NOTE: *If the ejector is too far forward the teeth cannot be selected.*

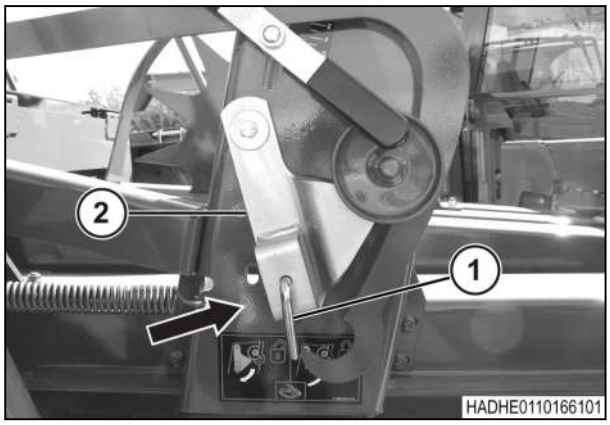


Fig. 353

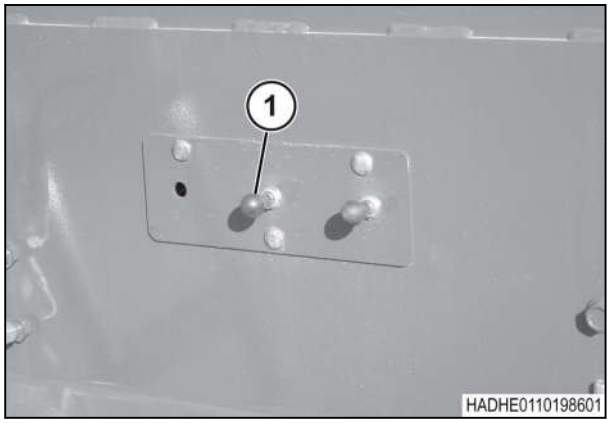


Fig. 354

Fig. 364

Twine ends are not even

Cause(s)	Solution(s)
Dull or damaged twine knife	Sharpen or replace the twine knife.
Not enough twine tension on either the top or bottom twines	Increase the spring tension on the twine tensioner gears.

Fig. 365

Strands of one twine double back through the knot

Cause(s)	Solution(s)
Billhook tongue is closing on top of the twine	Adjust the timing of the twine disc. Adjust the stripper arm to hold the twine over the billhook tongue farther to the right-hand.
Not enough spring tension on the twine holder springs	Increase the tension on the holder springs.
Dull or damaged twine knife	Sharpen or replace the twine knife.

Fig. 366

Frayed knot

Cause(s)	Solution(s)
Twine tension is too high	Examine and adjust the twine tension at both the top and bottom twine tensioners. Decrease the tension on the twine holder springs.
Damaged twine disc or twine holder	Inspect the twine holder for rough and sharp areas that can damage the twine. Repair as necessary.
Rough or sharp areas on the billhook or stripper arm	Remove the rough or sharp edges.
Dull or damaged twine knife	Sharpen or replace the twine knife.

Procedure

1. Loosen the jam nut (1).
2. Adjust the torque of the inside nut (2) to 136 Nm.
3. Hold the inside nut and tighten the outside nut to 136 Nm.

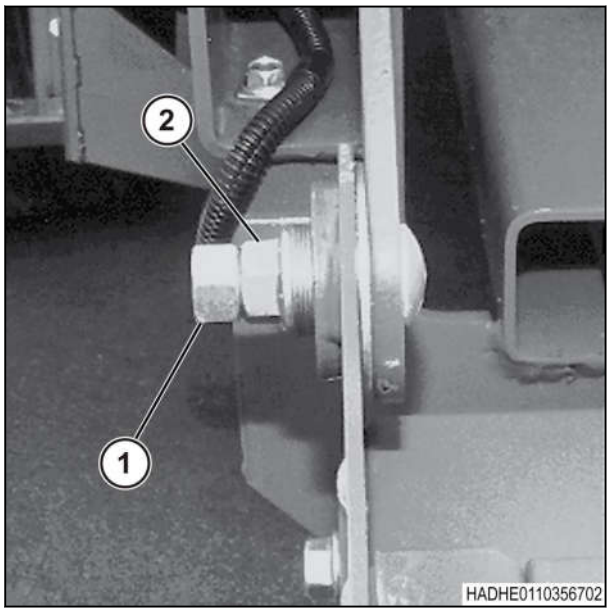


Fig. 12

8.1.6 Replace the roller bearings for the front rollers on the roller bale chute

Procedure

1. When replacing bearings on the two front rollers, remove the inner frame of the bale chute from the outer frame.

   NOTE: *When replacing the bearing on the third roller, the bale chute must be in the long position.*
2. Remove the roll pin from the bearing.
3. Remove the nuts from the carriage bolts that fasten the bearing flange to the bale chute frame.
4. Remove the bearing flange.
5. Remove the bearing from the roller shaft.
6. Install the new bearing on the roller shaft.
7. Install the bearing flange and install and tighten the nuts on the carriage bolts.
8. Align the hole in the bearing race with the hole in the roller shaft and install the roll pin.

8.1.7 Replace the roller bearings for the rear rollers on the roller bale chute

Procedure

1. Remove the nuts from the carriage bolts that fasten the bearing flanges to the bale chute frame.
2. Remove the outer bearing flange.
3. Remove the bearing from the roller shaft.
4. Install the new bearing on the roller shaft.
5. Install the outer bearing flange and install and tighten the nuts on the carriage bolts.
6. Install and tighten the locking collar.

   NOTE: *When changing both bearings on a roller, center the roller in the bale chute before tightening the locking collars.*

12_CBL1-001	MCH	ISO LOW	18	GN	C27	9	S9	
12_TW2-002	MCH	ISO LOW	18	GN	S9		C01B	16
12_CBL3-003	MCH	ISO LOW	18	GN	S9		S5	
12_TW4-004	MCH	ISO LOW	18	GN	S5		C10B	7
12_CBL5-005	MCH	ISO LOW	18	GN	S5		C02	12
12_CBL8-008	LHR	ISO LOW	18	GN	C65	12	S55	
12_CBL9-009	LHR	ISO LOW	18	GN	S55		C72	F
12_TW10-010	LHR	ISO LOW	18	GN	S55		C75	4
13_TW1-001	MCH	SENSOR HIGH	18	YE/WH	C03	A	S21	
13_TW2-002	MCH	SENSOR HIGH	18	YE/WH	S21		C05	C
13_TW3-003	MCH	SENSOR HIGH	18	YE/WH	S21		S2	
13_TW4-004	MCH	SENSOR HIGH	18	YE/WH	S2		C01A	63
13_TW5-005	MCH	SENSOR HIGH	18	YE/WH	S2		S6	
13_TW6-006	MCH	SENSOR HIGH	18	YE/WH	S6		C11B	15
13_TW7-007	MCH	SENSOR HIGH	18	YE/WH	S6		S12	
13_TW8-008	MCH	SENSOR HIGH	18	YE/WH	S12		C10A	6
13_TW9-009	MCH	SENSOR HIGH	18	YE/WH	S12		C12	7
13_TW10-010	LHL	SENSOR HIGH	18	YE/WH	C40	7	S45	
13_TW11-011	LHL	SENSOR HIGH	18	YE/WH	S45		C58	3
13_TW12-012	LHL	SENSOR HIGH	18	YE/WH	S45		C59	A
14_TW1-001	MCH	SENSOR LOW	18	GN/WH	C03	B	S22	
14_TW2-002	MCH	SENSOR LOW	18	GN/WH	S22		C05	D
14_TW3-003	MCH	SENSOR LOW	18	GN/WH	S22		S3	

71-065	MCH	GROUND	18	BK	S29		C139	2
72-001	MCH	ECU GROUND	12	BK/GY	C27	2	S28	
72-002	MCH	ECU GROUND	18	BK/GY	S28		C02	4
72-003	MCH	ECU GROUND	18	BK/GY	S28		C05	A
72-005	MCH	ECU GROUND	18	BK/GY	S28		C19	25
72-006	MCH	ECU GROUND	18	BK/GY	S28		C22	3
72-007	MCH	ECU GROUND	18	BK/GY	S28		C09	3
72-008	MCH	ECU GROUND	18	BK/GY	S28		C33	1
72-023	MCH	ECU GROUND	18	BK/GY	S28		C21	3
72-024	LHR	ECU GROUND	18	BK/GY	S54		C65	4
72-027	LHR	ECU GROUND	18	BK/GY	C73	2	S54	
72-029	LHL	ECU GROUND	18	BK/GY	C58	2	C40	4
72-031	UCH	ECU GROUND	18	BK/GY	S57		C80	3
72-032	UCH	ECU GROUND	18	BK/GY	C84	3	S57	
72-033	MCH	ECU GROUND	18	BK/GY	S28		C12	4
72-035	LHR	ECU GROUND	18	BK/GY	C75	3	S54	
72-039	UCH	ECU GROUND	18	BK/GY	C82	3	S57	
72-040	PLH	ECU GROUND	18	BK/GY	S64		C36	3
72-041	PLH	ECU GROUND	18	BK/GY	C37	1	S64	
72-042	PLH	ECU GROUND	18	BK/GY	C38	1	S64	
72-043	PLH	ECU GROUND	18	BK/GY	C38	4	S64	
72_CBL6	PCC	ECU GROUND	18	BK	C34	3	C35	3
73-001	MCH	GND RTN +8.5V	18	BK/PU	S18		C01A	46

225-003	BDH	CHUTE UP	18	GY/BK	C110	5	C111	4
234-001	LHL	KNOTTER LOCKOUT	18	BL/YE	C57	3	C40	16
234-004	MCH	KNOTTER LOCKOUT	18	BL/YE	C12	16	C01B	34
236-001	MCH	LEFT KNIFE SWITCH	18	GY/YE	C06	M	C01B	36
236-002	CUH	LEFT KNIFE SWITCH	18	GY/YE	C100	M	C108	4
237-001	MCH	STUFFER LOCKOUT	18	GY/YE	C12	20	C01B	37
237-002	LHL	STUFFER LOCKOUT	18	GY/YE	C40	20	C42	4
238-001	MCH	RIGHT KNIFE SWITCH	18	GY/YE	C06	N	C01B	38
238-002	CUH	RIGHT KNIFE SWITCH	18	GY/YE	C100	N	C109	4
239-001	MCH	FLOOR SWITCH	18	GY/YE	C06	L	C01B	39
239-002	CUH	FLOOR SWITCH	18	GY/YE	C100	L	C101	4
241-001	MCH	PUMP RELAY	18	OR/BK	C01B	41	C19	14
242-001	MCH	FAN FWD RELAY	18	OR/BL	C01B	42	C19	12
243-001	MCH	FAN REV RELAY	18	OR/GN	C01B	43	C19	24
244-001	MCH	LADDER LIGHT	18	PU/BK	C01B	44	C09	19
244-002	TBH	LADDER LIGHT	18	PU/BK	S76		C118	1
244-003	TBH	LADDER LIGHT	18	PU/BK	S76		C128	1
244-005	UCH	LADDER LIGHT	18	PU/BK	C80	19	C81	5
244-006	TBH	LADDER LIGHT	18	PU/BK	C115	5	S76	
249-001	MCH	NEEDLES LIGHT	18	PK/BL	C01B	49	C02	23
249-002	LHR	NEEDLES LIGHT	18	PK/BL	C65	23	C67	1

9.1.11 Chute/ejector - SB05

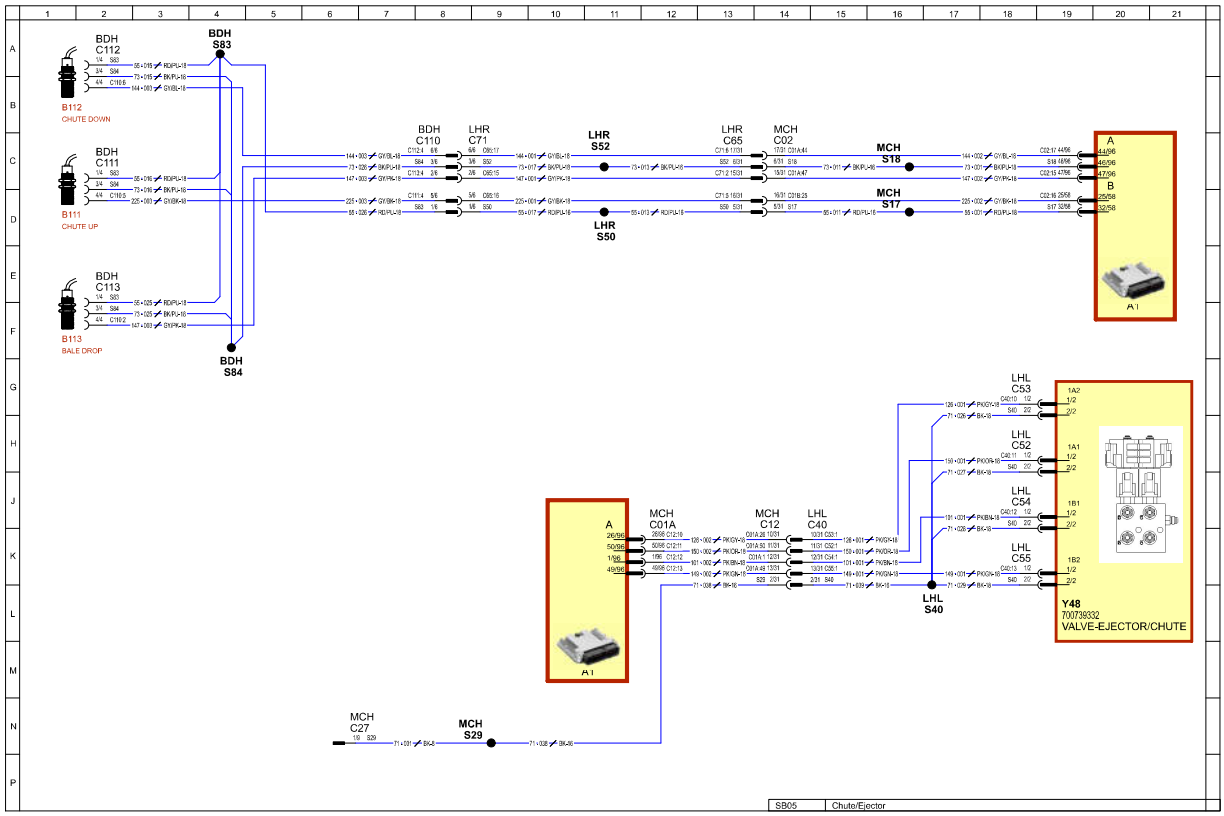


Fig. 11

9.1.21 Stuffer - SB20

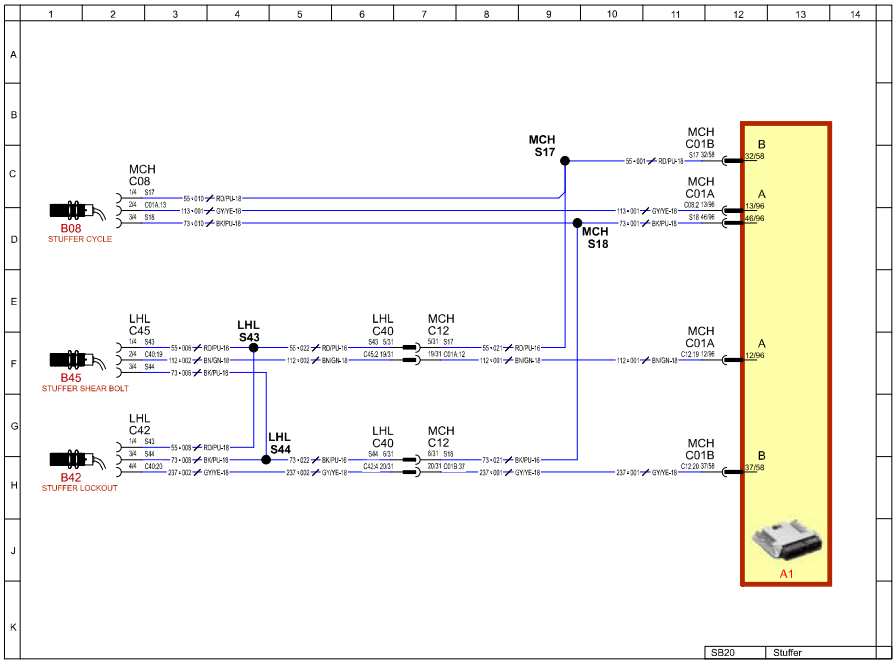


Fig. 21

9.2.2 Lighting - CE

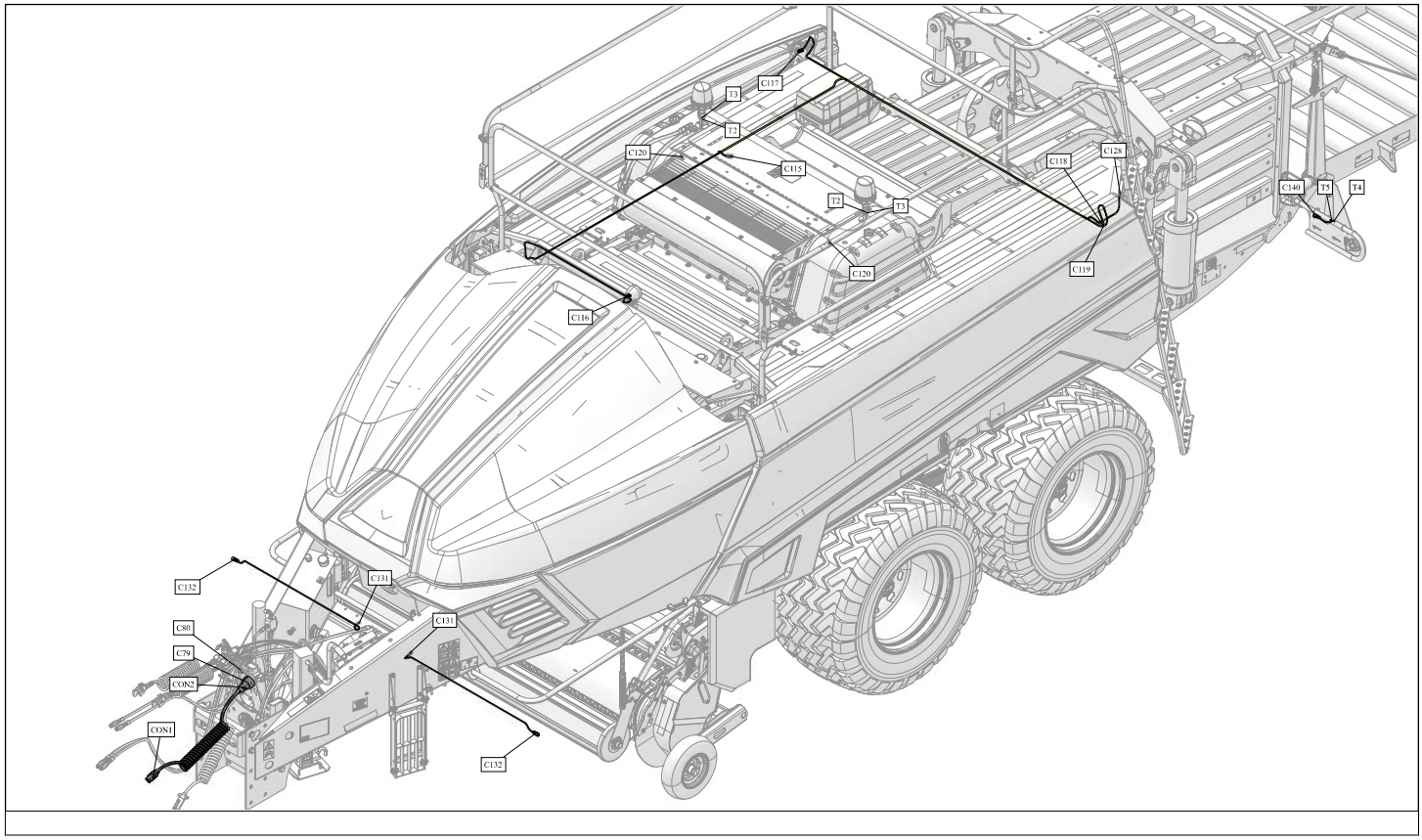


Fig. 28