

Workshop Service Manual

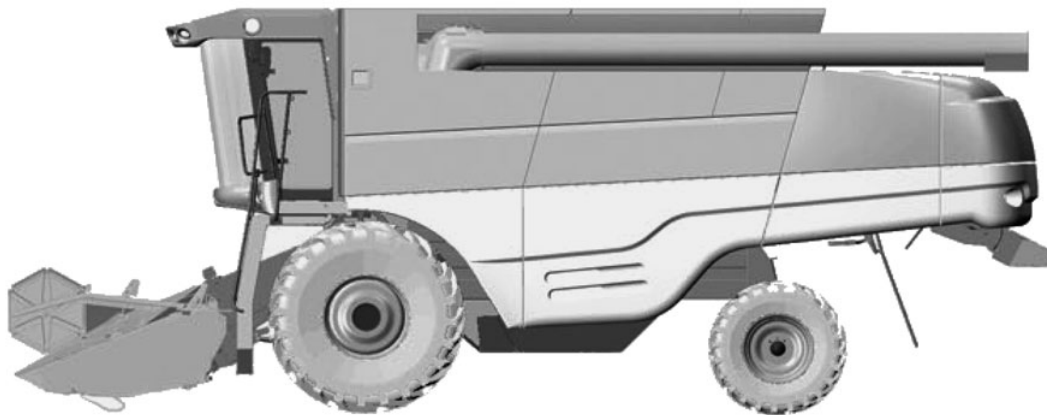
Combine Range

CENTORA 7282

CENTORA 7280

+ Auto Level

+ Rotary Separator



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0. Introduction - Specifications

<i>Engine</i>	Unit	CENTORA 7280/7282
Gross power* (with Power Boost**)	HP	348 (378)/382 (413)
Gross power* (with Power Boost**)	kW	256 (278)/281 (304)
Engine oil, capacity	litres	27
Rotary screen	units	1
Exhaust-aspirated air cleaner on air intake		yes
Fuel tank, capacity	litres	750
Coolant	litres	60
<i>* Gross power according to ISO 14396</i>		
<i>** Power Boost ensures additional capacity during tank unloading. A signal from the unloading system increases the engine output by 30 HP / 22 kW during unloading.</i>		

<i>Gear oil</i>	Unit	CENTORA 7280/7282
Gearbox contains	litres	9.5
Coupler housing for oil motor	litres	1.5
Final drives contain	litres	6.0

Transmission			Unit	CENTORA 7280/7282
Hydrostatic transmission				yes
3-speed, mechanical gearshift				-
4-speed, electric gearshift				yes
Speed	1st gear	Forward	km/h	0-6
		Reverse	km/h	0-3*
	2nd gear	Forward	km/h	0-12
		Reverse	km/h	0-6
	3rd gear	Forward	km/h	0-20
		Reverse	km/h	0-10
	4th gear	Forward	km/h	0-25**
		Reverse	km/h	0-12
<i>*Reverse speed is up to 6 km/h when the threshing unit is engaged.</i>				
<i>** Applies to all countries except Germany, where max. speed is 20 km/h.</i>				

0. Introduction - Specifications

0.5 Practical advice

Safety

When working on any machine, the first thing you must be aware of is your own safety and that of others. In order to work without risk, it is important to understand what the work actually involves, to use implements and any equipment needed correctly, and, finally, to use your head at all times.

Troubleshooting

The following method can be used to help locate faults in the machine based on the information in the workshop manual.

The method involves going through a number of logical steps in order to identify, localise and repair the fault:

- Establish the nature of the problem.
- List possible causes.
- Rule out causes.
- Carry out the checks in the right order in order to find the right cause.
- Compare the approximate useful life remaining with the cost of spare parts and labour.
- Carry out the repair that was found to be necessary.
- Check that the components and functions affected are working correctly.

Handling heavy objects

Unless otherwise indicated, adjustable lifting tackle must always be used for disassembly. All lifting straps or chains must be parallel with each other and hang as vertically as possible in relation to the object being lifted. If the straps or chains are designed for a much greater lifting capacity than the weight of the current load, it is permissible to use straps and chains in a triangular arrangement (2, 3 or 4 straps or chains from the same ring under the tackle hook).

Please note that when a tilted component is removed, the lifting eye will have a much smaller capacity if the angle between the load-bearing elements and the object is less than 90° (right and wrong lifting method). The lifting eye must never be bent. The same applies to the yokes, which must only be subjected to tensile stress. A length of pipe and a disc can be used to reduce the load on the lifting eye.

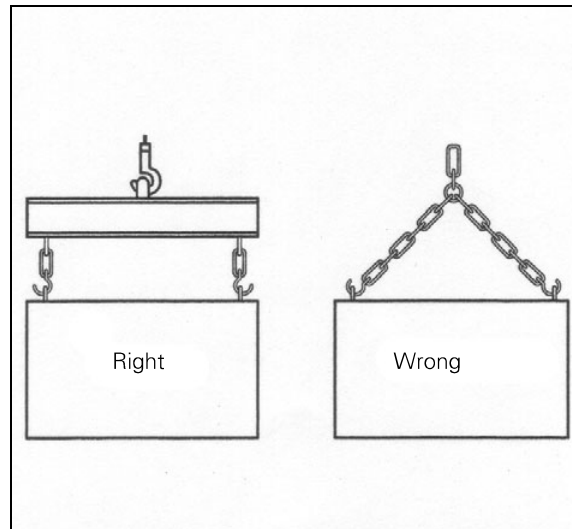


Fig. 2

00001

0. Introduction - Specifications

0.8 Locking and sealing agents

The products are called Loctite in this manual for original fitting.

The trade names or AGCO's equivalent part numbers as set out in the following table are used for repairs:

Original fitting name	Trade name
270	Strong thread locking
242	Normal thread locking
AS 310 silicone	Colourless silicone
5910 black silicone seal for rear axle tube	Blacktite
510 sealing agent for flat surfaces	Formajoint/Masterjoint
518 sealing agent for flat surfaces	Unijoint/Masterjoint

The products can be ordered from the following address:

Henkel Loctite France S.A.
10, avenue Eugène Gazeau
BP 40090
F-60304 Senlis Cedex

Procedure for using Loctite products

1. Remove all old product residues and rust.
 - By mechanical means: Brush, abrasive cloth.
 - By chemical means: "DECAPLOC 88"
 - Allow the product to work, scrape and wipe.
2. Degrease the parts with a dry solvent.
 - Preferably "LOCTITE 706 Super Dry Solvent".
3. Allow the solvent to evaporate.
4. Coat the parts with the recommended LOCTITE product:
 - In non-through holes put the product on the last few grooves in the bottom of the hole.
 - In the case of cylindrical knock-ins, coat both contact faces with the product using a clean brush.
 - With bearing surfaces put a stripe on one of the two surfaces and round the holes, then press the surfaces together as quickly as possible.

Note: Limit the amount of product used to avoid jamming adjoining parts.

Note: The fit must not be changed after 5 minutes of hardening so as not to "break" the product film.

Note: If the ambient temperature is below +10°C, LOCTITE T 747 activator should be used on at least one of the parts after the second stage in order to make the LOCTITE product harden faster (except for SILICOMET). Excess product outside the joint will not harden (the products are anaerobic, i.e. they harden when there is no oxygen present).

Grease

If components that are in contact with the hydraulic oil are lubricated with grease, oil-miscible grease must be used to prevent the hydraulic filters from becoming blocked.

Use: "Amber Technical" grease, which is available from WITCO, 76320 Saint-Pierre des Elfes, France.

1. Cutting table

6. Remove the ring nut with a special socket wrench.

Note: The bolt is secured with Loctite. It should therefore be heated to approx. 100°C before being loosened.

7. Press the rotor out with a puller.

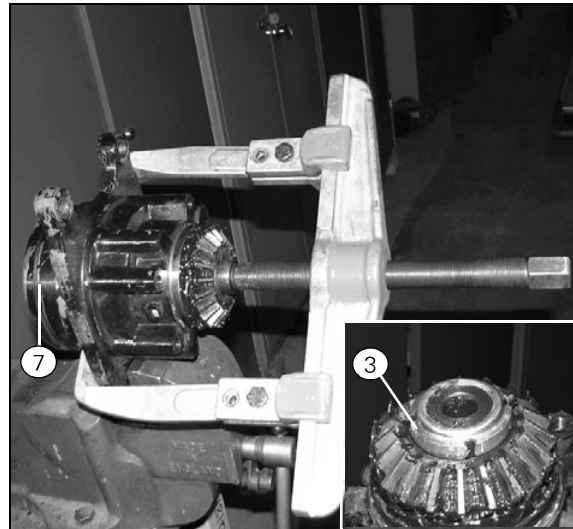


Fig. 10

01181_01178

8. Press bearing and gearwheel out of housing.

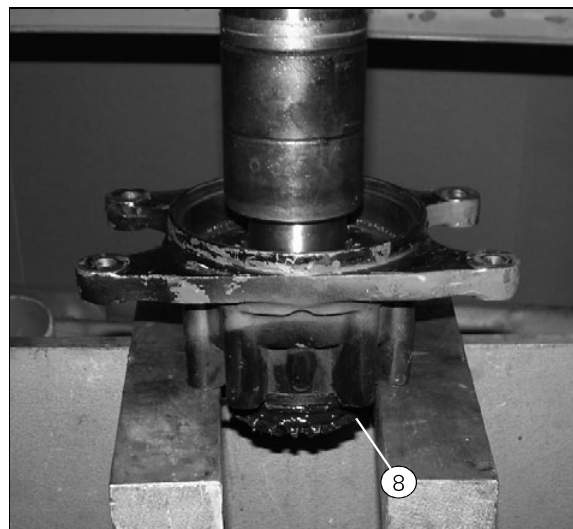


Fig. 11

01182

9. Knock inner crank half carefully out of rotor using a brass punch. Turn crank slightly before each blow.
10. Knock needle bearing out with a screwdriver.

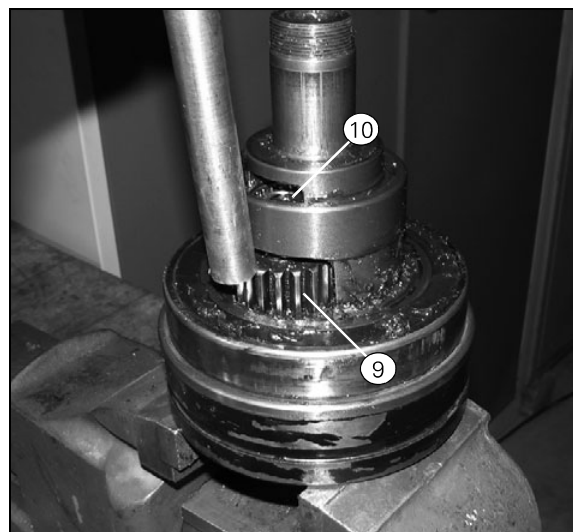


Fig. 12

01183

1. Cutting table

1.3.7 Adjusting the table auger and feathering fingers

Note: Depending on geographical area and varying harvesting conditions, different adjustments may be necessary to give the best results. The adjustment dimensions listed are the factory recommendation. The adjustments can be changed based on local conditions and experience.

1. Undo the bolts in the end cover on both sides. Turn the adjustment bolt (A) to set the clearance between the auger flights and the bottom to $(X) = 10 \text{ mm} \pm 2$.
2. Tighten bolts (1) and (A).
3. Undo the nuts on the right-hand side: Use the adjustment bracket (B) to set the clearance between the feathering fingers and the table bottom to $(Z) = 23 \text{ mm} +2/-3$ when the feathering fingers are at right angles to the bottom.

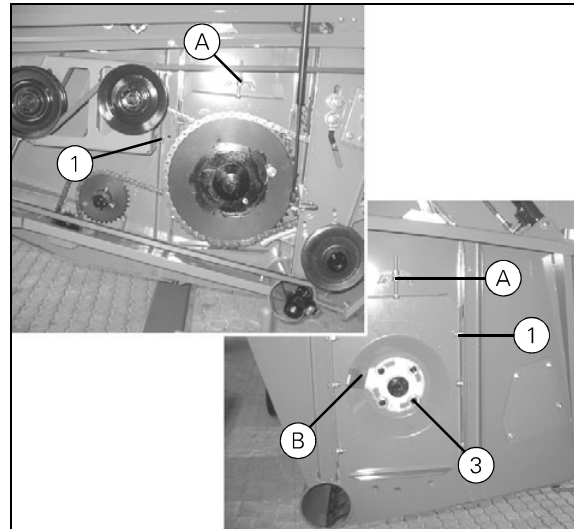


Fig. 35

01460_01461

Note: When the removable cut-off strip is fitted (as described in section 1.4.1 on page 48), set the clearance between the auger flights and the cut-off strip to $(Y) = 3 \text{ mm} \pm 1$, and the clearance between the feathering fingers and the table bottom to $(Z) = 33 \text{ mm} +2/-3$ when the feathering fingers are at right angles to the bottom.

IMPORTANT: The clearances must be checked across the full width of the cutting table and the listed dimensions must be adjusted where the clearances are smallest.

Note: The permitted play for the table auger depends on the width of the cutting table and is shown in the table below. Control measurements can only be taken when the cutting table has been parked indoors or in the shade for at least four hours. If the cutting table is allowed to rest in the sun for a good while, the table auger will bend owing to the temperature difference between the front and rear. This applies particularly to cutting tables over 6 m:

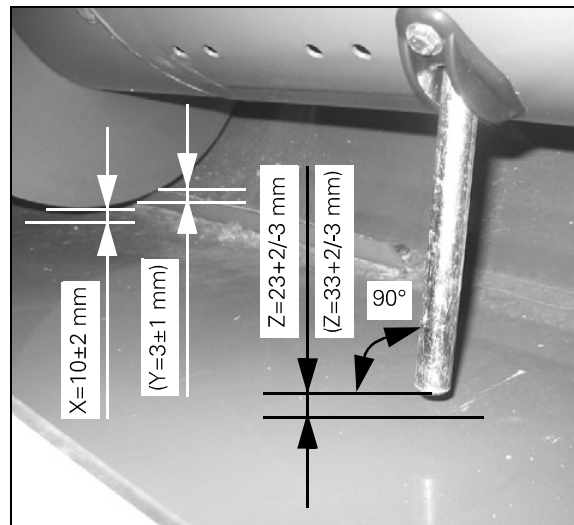


Fig. 36

01482

Cutting table	Permitted play, max.
12' - 3.7 m	4 mm
14' - 4.3 m	4 mm
16' - 5.0 m	5 mm
18' - 5.6 m	5 mm
20' - 6.2 m	6 mm
22' - 6.8 m	6 mm
25' - 7.7 m	8 mm
30' - 9.2 m	8 mm

1. Cutting table

When dismantling the rear rollers from the right-hand side:

5. Remove the cover.
6. Unscrew the bolts for the outermost rear bearing bracket.
7. Pull the roller with bearing bracket off the hexagon shaft and out through the side of the cutting table to release the belt.
8. Unscrew the bolts for the next bearing bracket, pull the roller with bearing bracket off the hexagon shaft and the belt is free.



Fig. 60

01699

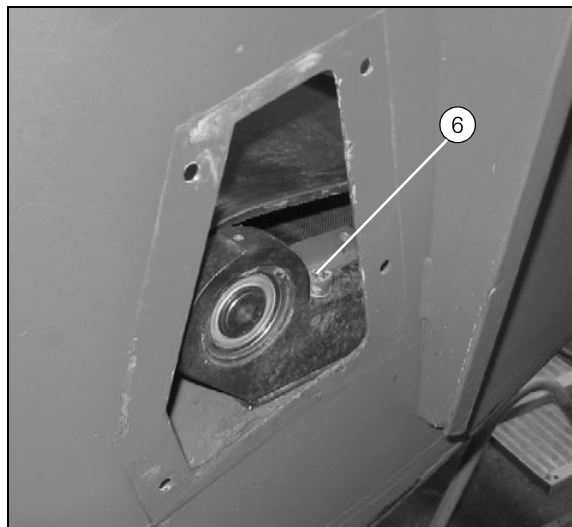


Fig. 61

01703

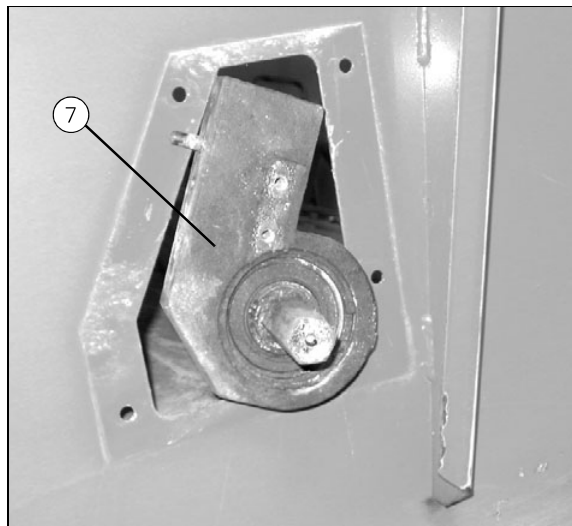


Fig. 62

01725

2. Reel

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2. Reel

To adjust stop discs, proceed as follows:

1. Loosen stop ring (E).
2. Close flow divider completely with electric motor using function key on multi-function lever (engine running and cutting table engaged).
3. Turn stop ring (E) towards stop (G) and tighten gently.

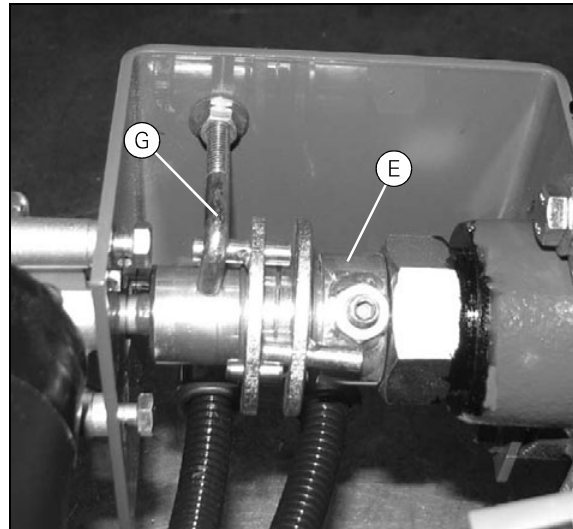


Fig. 17

20146

4. Using electric motor, open flow divider $30^\circ \pm 10^\circ$, corresponding to a distance (X) of 10 ± 2 mm between the pins on the two stop rings. If necessary, fine tune by adjusting stop (G).

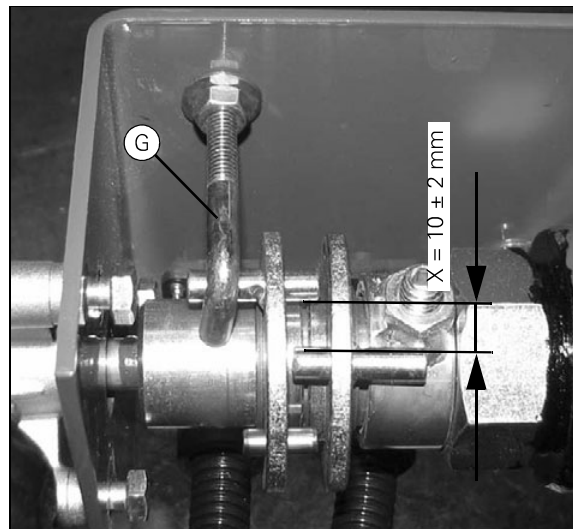


Fig. 18

20147

5. Loosen stop ring (E), turn in direction of arrow towards stop (H) and secure.

This ensures that the electric motor can only open the flow divider to deliver the right amount of oil to the reel motor.

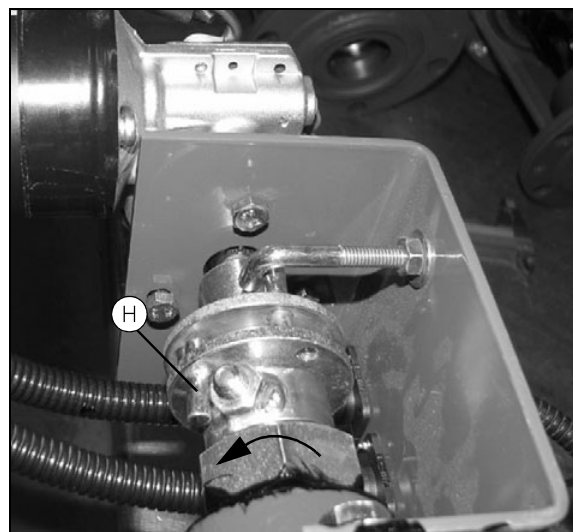


Fig. 19

20113

3. Main crop elevator

3.1 General

Remove the table as described in the Operator's Manual.

It is advisable to remove the traction wheels and chock the machine up in a safe and secure manner, as this will make the work easier.

The descriptions and illustrations relate to the main crop elevator for 8 straw-walker machines.

3. Main crop elevator

3.4.4 Replacing sprockets

To replace the sprockets, dismantle the shaft as described in section 3.4.1 on page 95.

1. Remove the outer shaft protection tube and dismount the spacing sleeve (pointed screw in sleeve).
2. Dismount the shaft protection tube between the 1st and 2nd and between the 3rd and 4th sprockets. Using a drill, remove one row of pop rivets from the joint, open the protection tube and pull it off the shaft.
3. Knock out the gib key and pull the sprocket out.

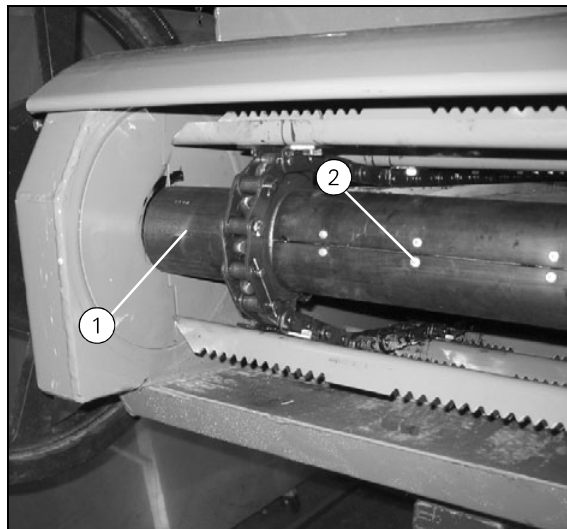


Fig. 22

30119

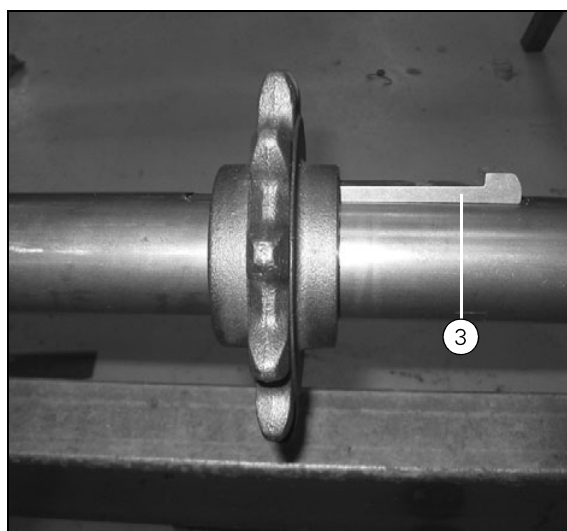


Fig. 23

30139

4. When refitting, push the sprocket (A), middle protection tube (D) and outer protection tube (B) loosely onto the shaft.
5. Place the shaft in the crop elevator and push the right- and left-hand bearing housings onto the shaft.
6. Fit the guards (9) (Fig. 20).

Note: It is important that the guards (9) (Fig. 20) are positioned as illustrated so that the joints are at an angle of approx. 45° in relation to the crop elevator.

7. Secure the bearing housing and guard in the crop elevator.
8. Push the spacing sleeve (E) right up to the guard on both sides and tighten.
9. Position the sprockets at the distances indicated in (Fig. 24) and fasten with gib-head keys (3) (Fig. 23). Knock the keys in from the side on which the shaft protection tubes (C) have not yet been fitted.

3. Main crop elevator

3.8.5 Replacing the angle sensor

1. Check that the adapter is parallel to the crop elevator.
2. After replacement, fit the sensor in the bracket but do not tighten.
3. Fit the arm on the sensor and tighten in position.
4. Fit the linkage and adjust the length to:
445 mm
5. Adjust the sensor by reading the voltage for "Table|horizontal position" on the DATAVISION terminal. ("Diagnostics|Electric diagnostics|Diagnostics RH|Diagnostics input|Next")
6. Rotate sensor (2) until the voltage reads 2.7 ± 0.05 V. Lock the sensor in this position.

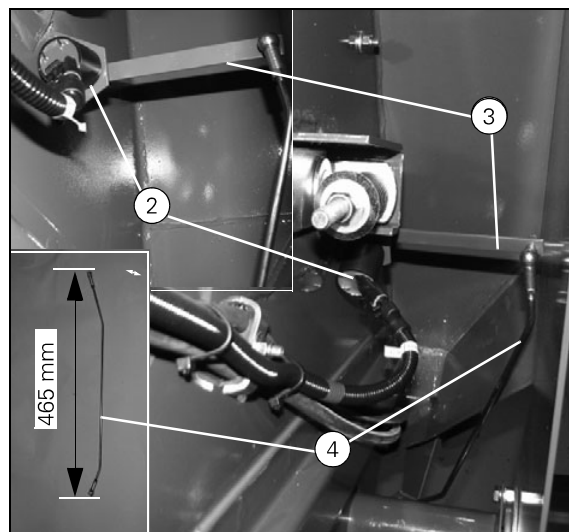


Fig. 46

31402_31051_31045

4. Threshing unit

4.4 Threshing cylinder

4.4.1 Removal

1. Dismount the connecting rods for the concave suspension on the left-hand side.

Note: Support the concave on the left-hand side as described in section 4.3 on page 113.

2. Dismount the sensor for the revolution counter using the special tool as described in section 18.6 on page 549.
3. Remove the inspection cover.
4. Remove the flanged bearing. Loosen the locking collar at the bearing and pull the bearing off the shaft.
5. Dismount the side plate (bearing suspension).
6. Dismount the guard.
7. Slacken the belt and remove as described in section 11.3.2 on page 250.
8. Remove the flanged bearing. Loosen the locking collar at the bearing and pull the bearing off the shaft.
9. Dismount the supporting bracket for the bearing.
10. Dismount the belt pulley using a three-pronged puller.
11. Remove the flanged bearing. Loosen the locking collar at the bearing and pull the bearing off the shaft.
12. Lift out the threshing cylinder using a crane or other suitable lifting gear.

Note: Slide a tube with a suitable diameter in over both shaft ends. Sink a pointed screw into the tube to prevent it from sliding out (Fig. 19).

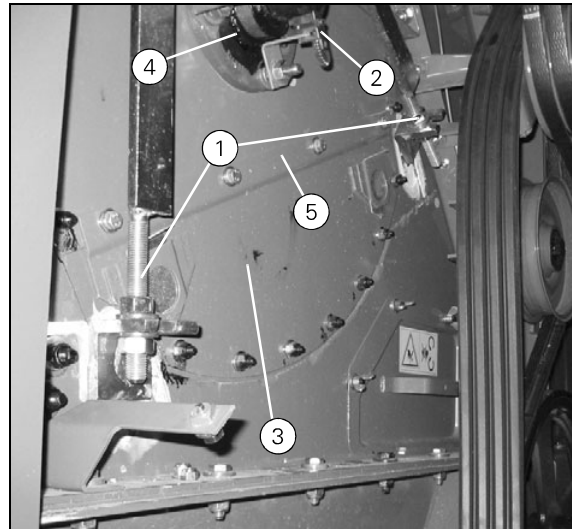


Fig. 17

40011

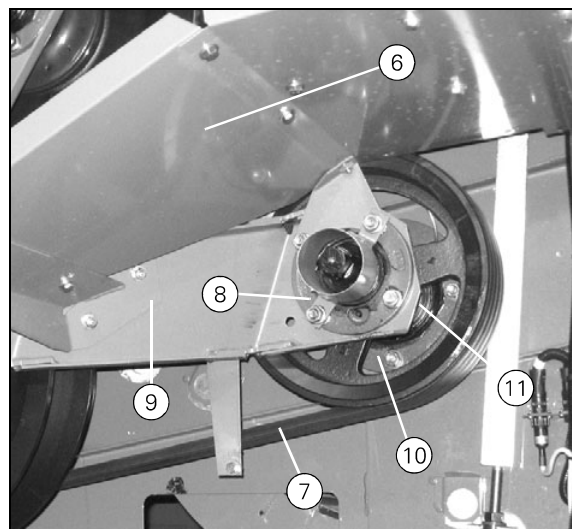


Fig. 18

40026

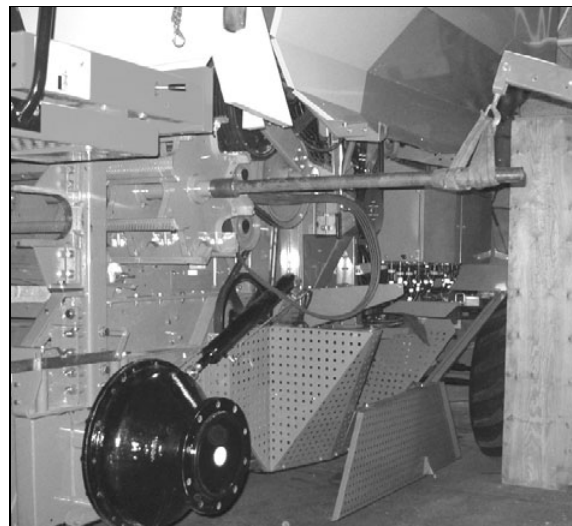


Fig. 19

40032

4. Threshing unit

12. Unscrew the nut from the shaft using the special tool (D86883386).
13. Pull the magnetic clutch off the shaft and lift down using suitable lifting gear, see (Fig. 43).

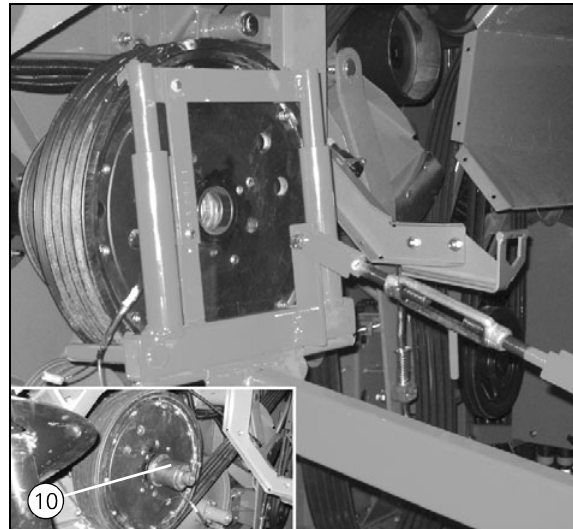


Fig. 43

40225_40234

4.5.8 Assembly, magnetic clutch

To assemble, follow points 1 - 11 in reverse order. Please note:

- Lubricate the shaft, tightening elements and nut with hydraulic oil before assembly.
- Fit the two sets of tightening elements (D), spacing sleeve (E), lock plate (F) and centre nut (G) in the order shown in (Fig. 44).
- Tighten the centre nut (G) to 600 Nm.

IMPORTANT: After fitting the magnetic clutch, but before fitting the supporting bracket and belts, make sure that the shaft play at the shaft end is max. 0.4 mm.

- When fitting the supporting bracket (9) (Fig. 42), run the wire through the bearing in the groove in the shaft before fitting the locking collar of the bearing.
- Connect the wires to the commutator (Fig. 41): Red to + and black to -.
- Finally adjust all belts as instructed.

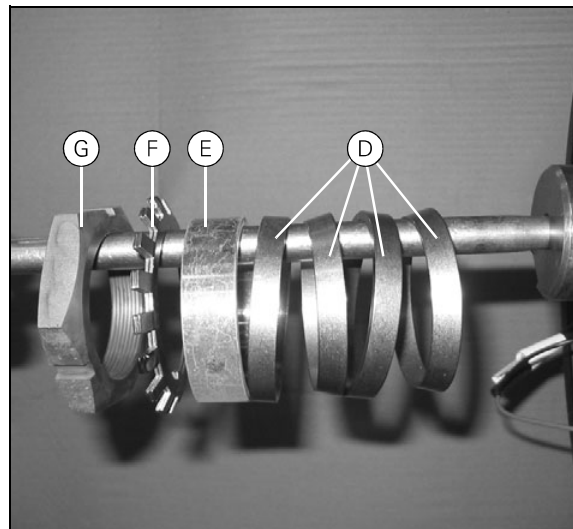


Fig. 44

40273

4. Threshing unit

4.9.3 Replacing the bearings

Once the bearing and bearing housing have been removed, replace the bearing as described in section 18.4 on page 547.

Right-hand side:

1. Slacken the belt and take it off the belt pulley as described in section 11.3.3 on page 251.
2. Pull the belt pulley off the shaft using a three-pronged puller.
3. Loosen the locking collar, unscrew the bearing housing and pull the bearing off the shaft.

Left-hand side:

4. Dismount the revolution sensor using the special tool as described in section 18.6 on page 549.
5. Loosen the locking collar, unscrew the bearing housing and pull the bearing off the shaft.

To assemble, follow the above points in reverse order.

4.9.4 Replacing the rasp bars

1. Dismount the rasp bars as described in section 4.9.1 on page 135.
2. Fit the rasp bars on the cylinder spiders alternately so that the pins are offset in relation to each other (A) (Fig. 70).

IMPORTANT: *The cylinder is balanced electronically at the factory before being fitted in the machine. The necessary counterweights are screwed onto the outer cylinder spiders and may not normally be removed.*

When reconditioning the rotary separator cylinder by aligning it or replacing rasp bars, weigh all the rasp bars precisely in pairs. Any weight differences can be equalised by grinding the rear edge of the heavier or welding a weight onto the lighter bar of each pair. Then fit them on the cylinder in opposing pairs.

3. Check the initial setting of the rotary separator concave as described in section 4.10.3 on page 139.

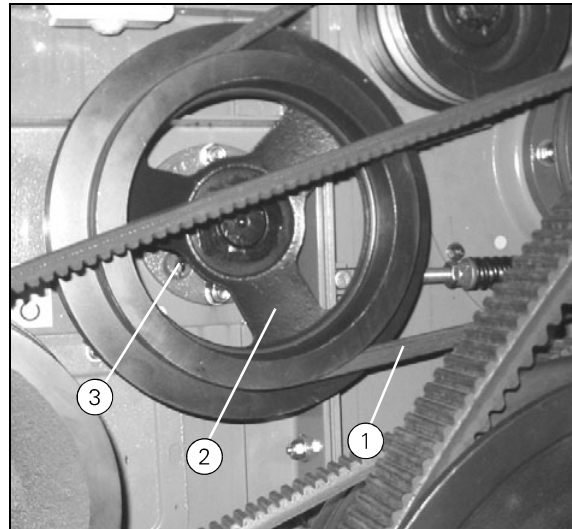


Fig. 68

40402

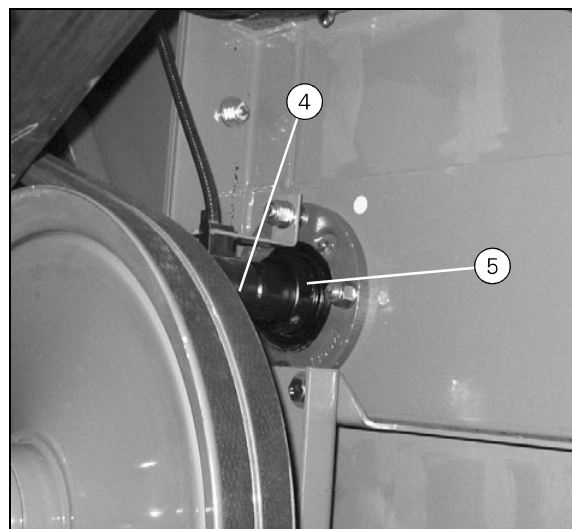


Fig. 69

40401

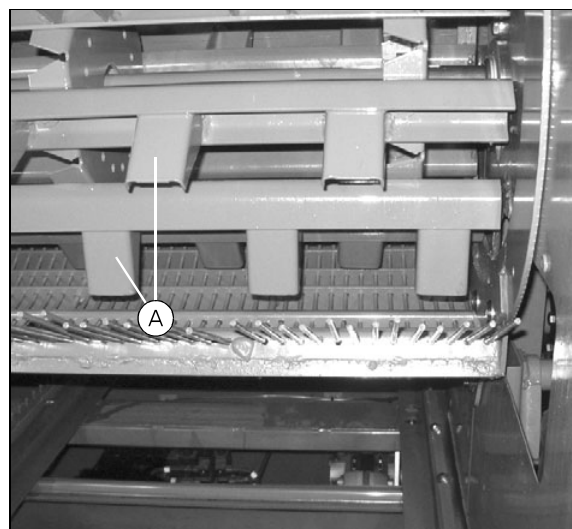


Fig. 70

40411

5. Straw walkers

5.4 Crank - rear

5.4.1 Removal

1. Dismount the second grain pan as described in section 6.4.1 on page 159.
2. Dismount the straw walker bearings on the straw walkers.
3. Support the straw walkers by putting a wooden beam under them and chocking it up on the ground behind the machine.
4. Dismount the flanged bearing on the right-hand side. Undo the locking collar (A) for the bearing and pull the bearing off the shaft.
5. Undo the bolts in the bearing flange on the left-hand side without dismounting the bearing. Undo the locking collar for the bearing and pull the shaft out of the bearing.
6. Pull the crank out of the bearing on the left-hand side, then edge it out of the right-hand side of the machine.

5.4.2 Assembly

To assemble, follow points 1 - 6 in reverse order. Please note:

- Fit the flanged bearings (C) externally on the sides of the machine with a locking collar on the inside.
- After positioning the crank on the sides of the machine, tighten the bolts in the bearing flanges loosely.
- Adjust the crank laterally so that the distance (B) from the outer bearing to the side of the machine is the same on both sides, and tighten the locking collar on the right-hand bearing.
- Tighten the bolts in the bearing flanges.
- Turn the crank a couple of times and tighten the locking collar on the left-hand bearing.

5.4.3 Replacing the bearings

Replace the bearings in the same way as for the front crank as described in section 5.3.3 on page 146.

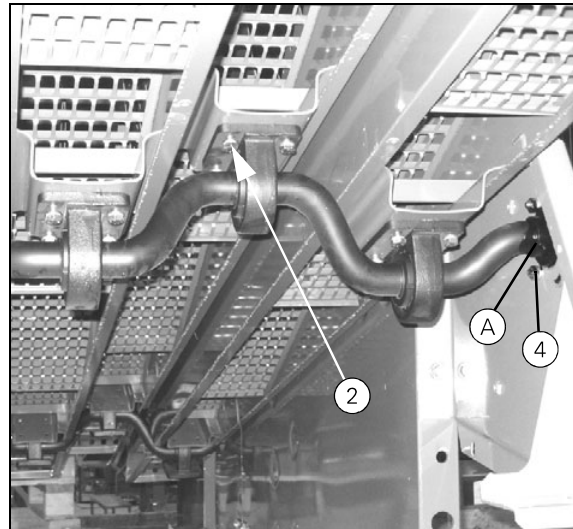


Fig. 10

50391

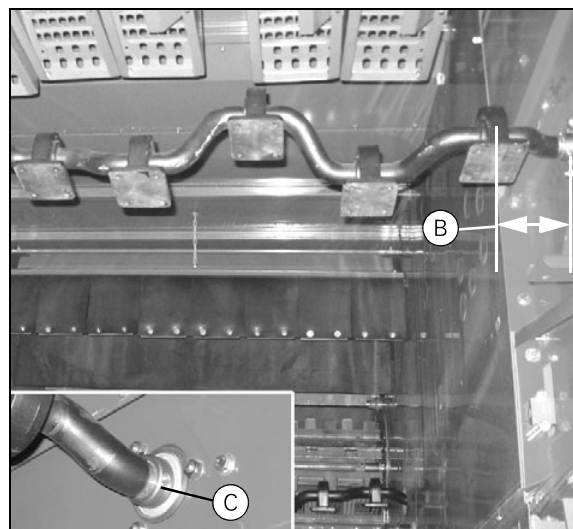


Fig. 11

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6. Shaker shoe - Fanning mill

6.3.2 Assembly

To assemble, follow points 1 - 7 in reverse order. Please note:

- For assembly, hold the two bearing shells together by putting a seal ring on each bolt (A), as there is no room to assemble the parts when the main grain pan is being fitted in the machine. Remember to fit the shim (B) under the bottom bearing shell.
- Check that the clearance (C) between the side of the machine and the main grain pan is the same on both sides ± 2 mm, and that the side seals bear against the side of the machine along the full length of the pan.
- Check that the sealing block (D) is in place and undamaged.

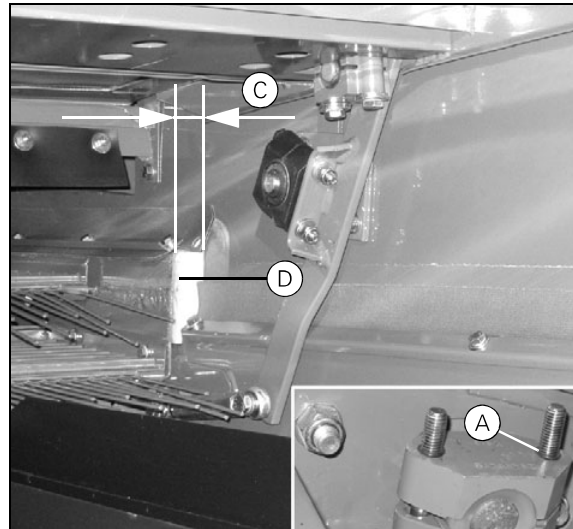


Fig. 15

60290_60344

6.3.3 Replacing the swivel arm and bearings

1. Replace the rubber bearings (A) and (B) in the front swivel arm by dismantling the bearing shell. Remove the old element by cutting it up. Clean the journal and press a new element on. Distance (X) from centre of bearing to swivel arm = 29 mm.

For the rear plastic bearing at the shaker shoe to be replaced, the sieves and stepped plates must be removed as described in the operator's manual. This provides access from the rear of the machine.

2. Dismount the bearing housing as described in section 6.3.1 on page 156.
3. Raise the main grain pan and hold it in place with a wooden block (D). Remove the old element with a puller or by cutting it up. Clean the journal and press a new element on. Soften the element in hot water before fitting. Distance (F) from centre of bearing to bracket = 43 mm.
4. Mount the bearing housing as described in section 6.3.2 on page 157.

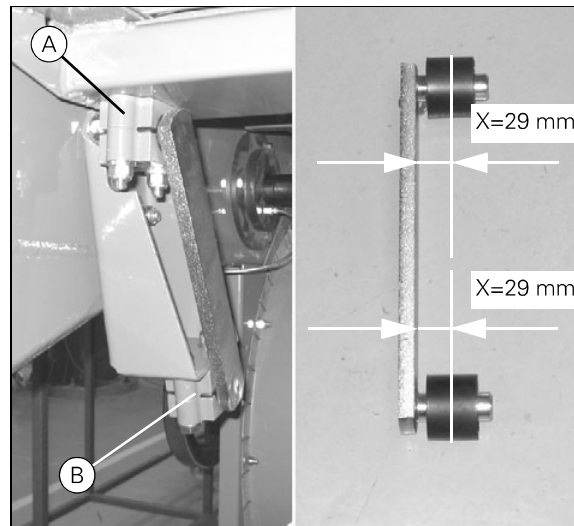


Fig. 16

60282_60452

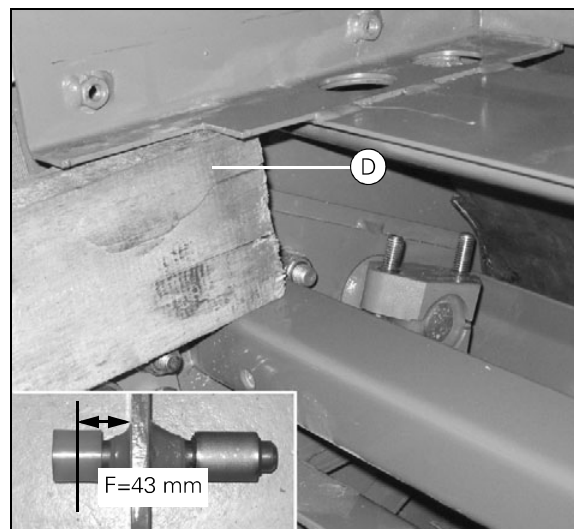


Fig. 17

60348_60448

6. Shaker shoe - Fanning mill

6.6 Bottom shaker shoe

6.6.1 Removal

1. Dismount top shaker shoe as described in section 6.5.1 on page 163.
2. Dismount the guard.
3. Dismount the rear swivel arm.
4. Dismount the transverse bearing suspension.
5. Dismount the bearing.
6. Dismount the strut inside the machine.
7. Dismount the bearing bracket.
8. The shaker shoe can now be lifted backwards out of the machine.

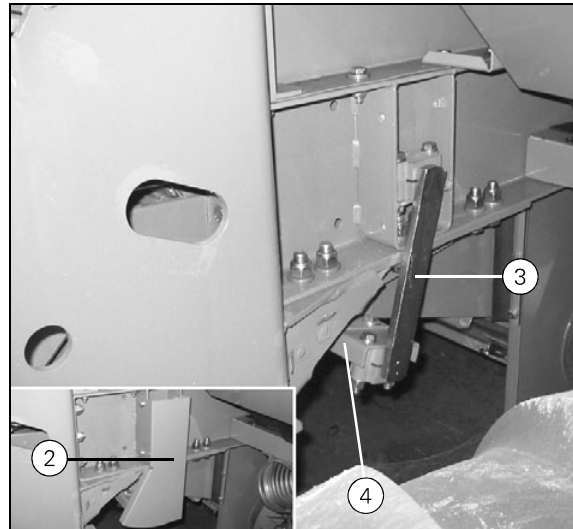


Fig. 39

60443_60442

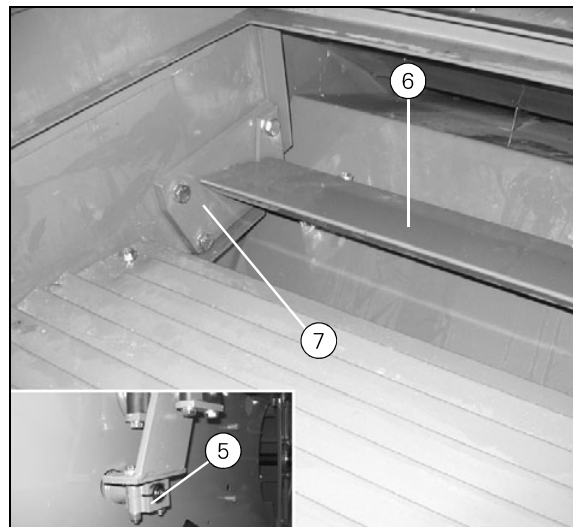


Fig. 40

60433_60447

6. Shaker shoe - Fanning mill

- Support the bearing housing and press the bottom bearing (C) out. Pull the bearing off the shaft, then turn the bearing housing and press the other bearing out.
- Check the moving parts of the variator for wear and seizures.

Clean the parts thoroughly and polish with fine emery cloth if necessary. Fit new O-rings (D) (Fig. 64) and clean all the threaded holes with compressed air. Make especially sure that the oil groove in the bearing housing for lubricating the moving parts of the variator is clear. Grease all the sliding surfaces before reassembly.

- Assemble and fit the variator by following points 1 – 5. Cross-tighten the bolts (E) to a torque of 23 Nm.

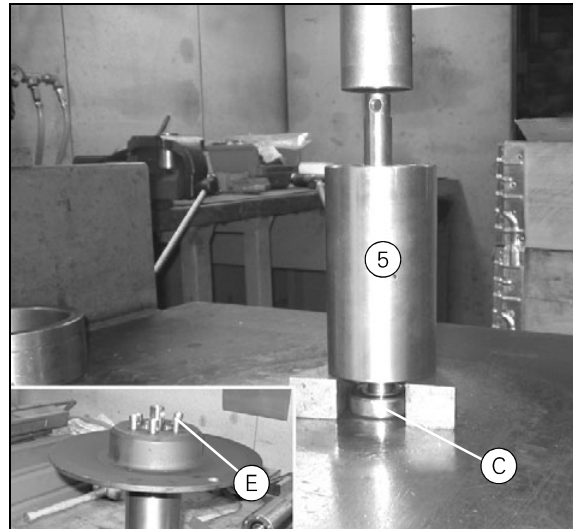


Fig. 65

60238_60235

6.9.2 Adjusting the fanning mill variator

- Adjust the actuator all the way out to its extreme position.
- Undo the bolts (A) in the bracket.
- Push the intermediate pulley (B) into its extreme position so that the belt from the fanning mill (C) is at max. diameter and the belt from the rear beater (D) is at min. diameter.
- In this position, tension the belts using the adjusting bolts (E) on both sides of the variator.
- Secure the bracket (S).
- Check the speed in the extreme positions by adjusting the actuator.

Min. = 460 ± 25 Max. = 1150 ± 50

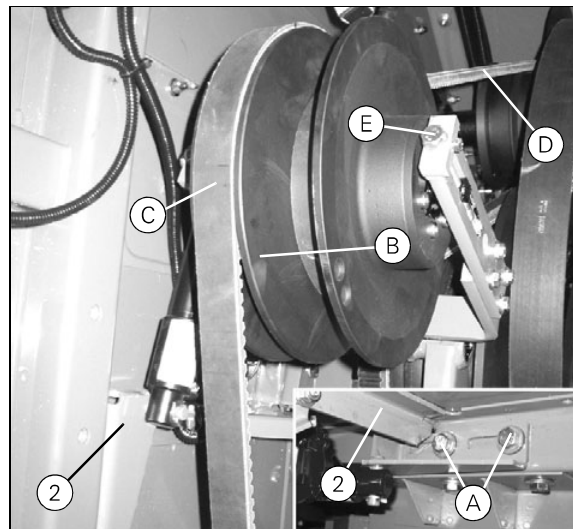


Fig. 66

60303_60302

7. Elevators

7.3 Returns thresher

7.3.1 Removal

1. Dismount the chains as described in section 11.4.4 on page 258.
2. Unscrew the bolts at (A), (B) and (C). Remember to support the returns thresher.
3. Lift the returns thresher free of the machine.

7.3.2 Assembly

To assemble, follow points 1 - 3 in reverse order.

7.3.3 Replacing the sprockets

Note: The returns thresher has to be removed to make space to replace the sprockets.

1. Remove the centre bolt (A) and pull the sprocket off the shaft.
2. When reassembling, insert 5 x 2 mm spacers (B).

7.3.4 Replacing the threshing cylinder

Note: The returns thresher has to be removed in order to replace the threshing cylinder.

1. Remove the centre bolt.
2. Remove the bolts in the right-angle gear.
3. Pull the threshing cylinder off the shaft while pushing the right-angle gear to one side.

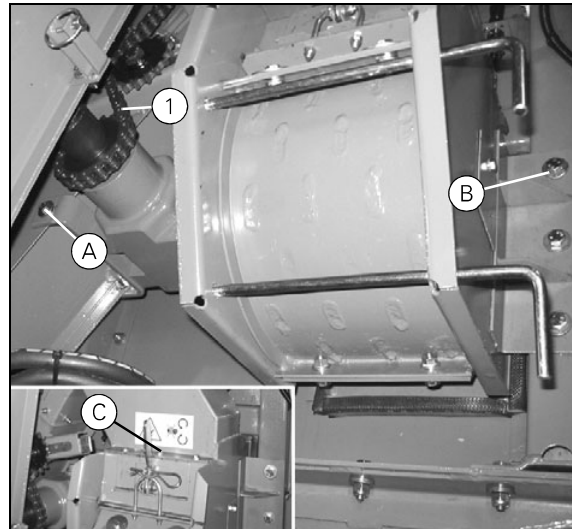


Fig. 17

70516_70512

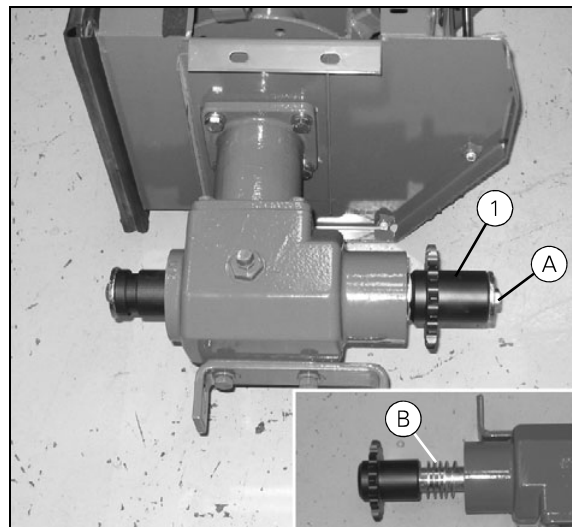


Fig. 18

70524_70522

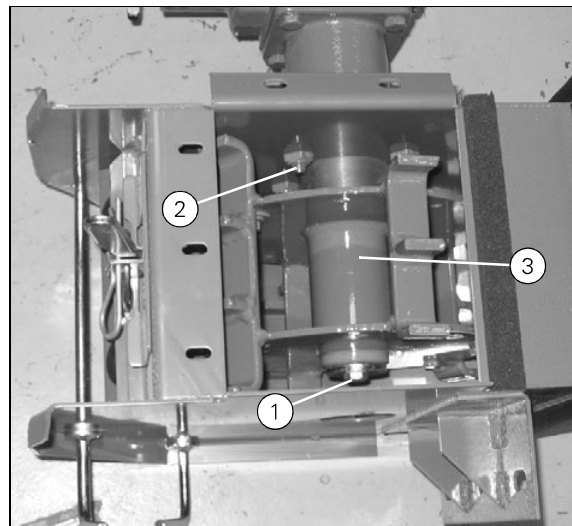


Fig. 19

70525

8. Engine

11. Dismount the auxiliary hydraulics pump without undoing the hose connections.
12. Unplug the electrical connectors from the alternator.
13. Unplug the electrical connectors from the starter.
14. Unplug the electrical connectors from all sensors and transmitters (not illustrated).

IMPORTANT: *Expose all the cables and tie them up to prevent them from being damaged when the engine is being hoisted out and in.*

15. Remove the countershaft belt as described in section 11.5.4 on page 261.
16. Remove the belt for the unloading auger shaft as described in section 11.5.9 on page 264.
17. Remove the belt for the hydrostatic pump as described in section 11.5.10 on page 265.
18. Dismount the guards.
19. Dismount the belt pulley for the hydrostatic pump.

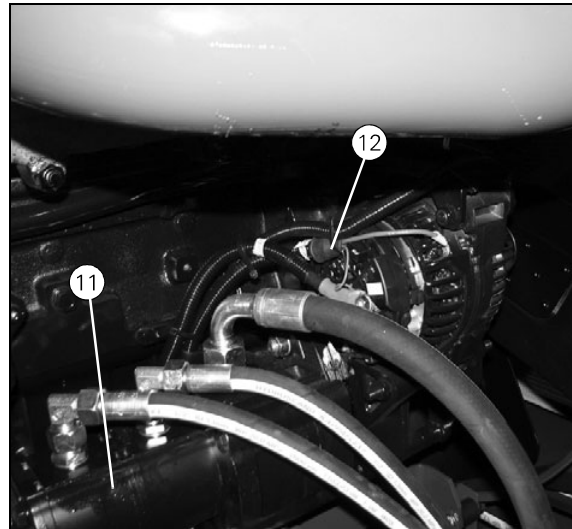


Fig. 4

81085

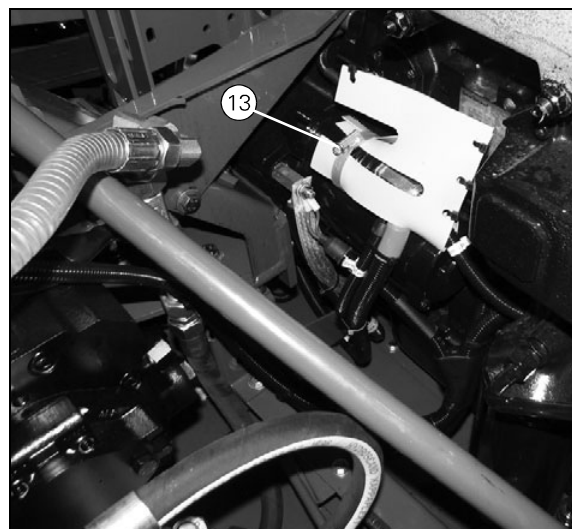


Fig. 5

81086

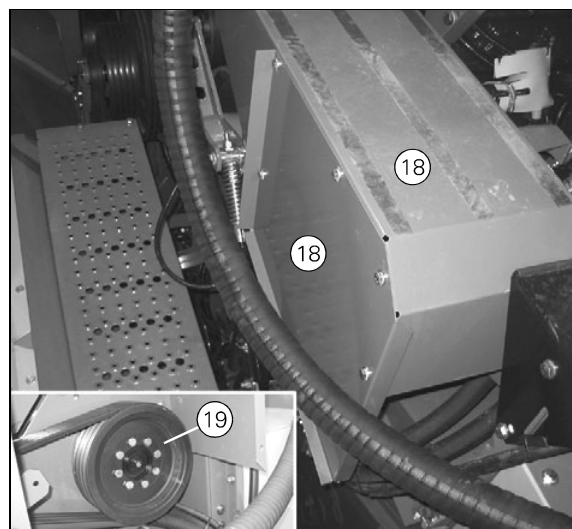


Fig. 6

80625_80622

9. Unloading auger - Grain tank

9.4 Unloading tube - vertical

9.4.1 Removal

1. Dismount the side panel (A) (Fig. 8) of the machine.
2. Dismount the guard (B) (Fig. 8).
3. Dismount the vertical unloading auger as described in section 9.2.1 on page 204.
4. Remove the bolts in the top assembly flange.

Note: Remember to mark the position of the bracket for hydraulic cylinder (C) to ensure that it is put back in the same place during assembly.

5. Remove the through bolts in the swivel flange.
6. Lift the unloading tube down after securing the horizontal unloading tube with a crane or hoist.

9.4.2 Assembly

To assemble, follow points 1 - 6 in reverse order. Please note:

- Fit the swivel bearing so that the join at the clamps (D) (Fig. 10) is at right angles to the machine.
- Position the unloading tube so that the vertical weld faces the machine and the lubrication tube faces backwards (when the unloading tube is turned in).
- Check the adjustment of the hydraulic cylinder as described in section 9.4.4 on page 209.

IMPORTANT: The horizontal and vertical augers can be assembled at the right-angle gear in two positions, which are offset by 180° . It is very important for them to be assembled as described in section 9.1.2 on page 203 so that the flights of the two augers run correctly.

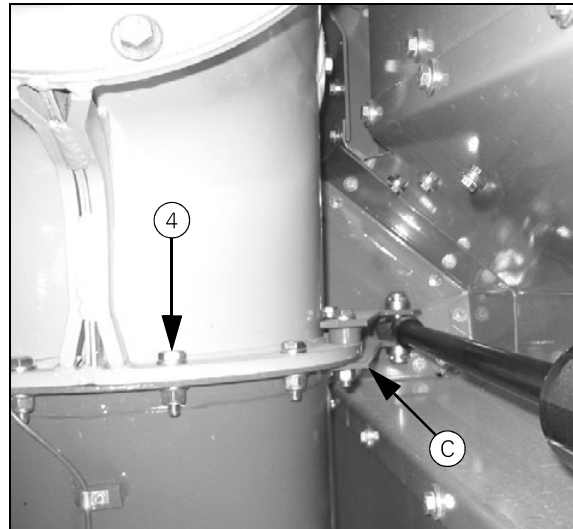


Fig. 9

90060

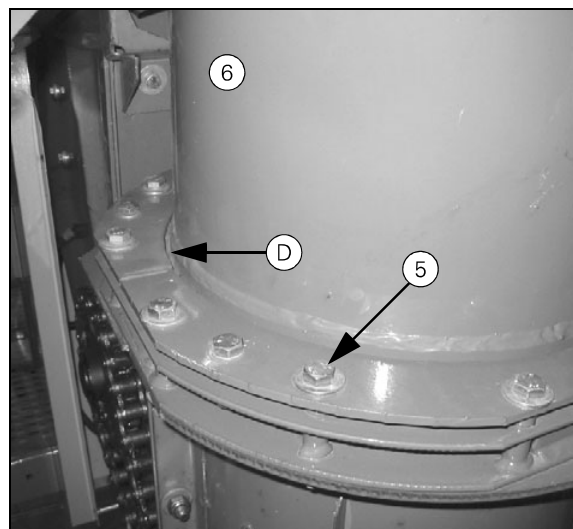


Fig. 10

90062

9. Unloading auger - Grain tank

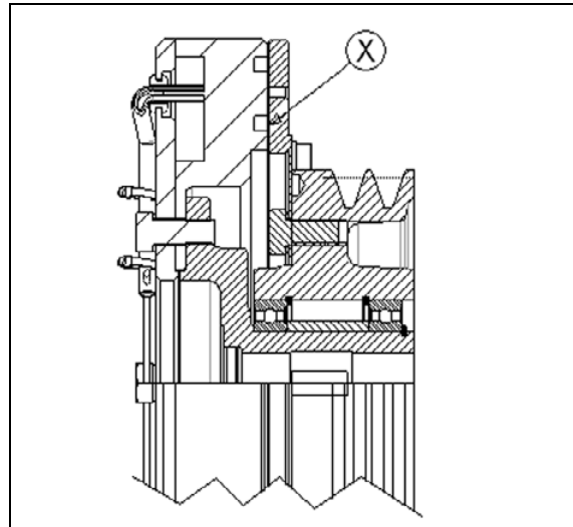


Fig. 32

95576

10. Drive unit

10.4.4 Replacing the drive shaft and clutch

Carrier shaft:

1. Tilt the rotary screen out.
2. Dismount the belt as described in section 11.3.7 on page 254.
3. Remove the bolts and dismount the bracket (A).
4. Remove the flanged bearing as described in section 18.4 on page 547.
5. Undo the locking screws in the belt pulley (C).
6. Dismount the bolts in the flanged bearing (D) and draw the bearing and shaft out.

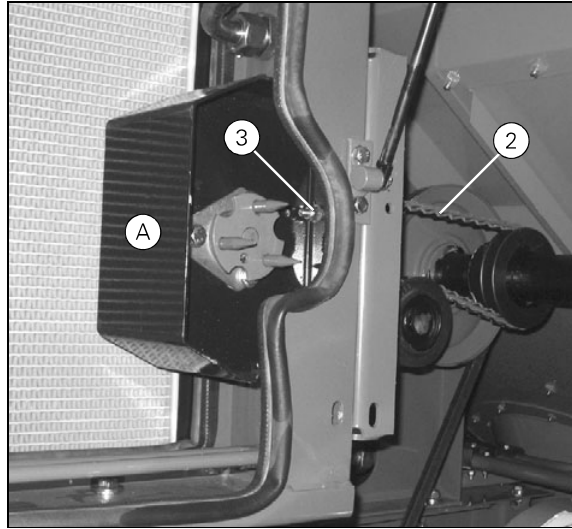


Fig. 17

10379

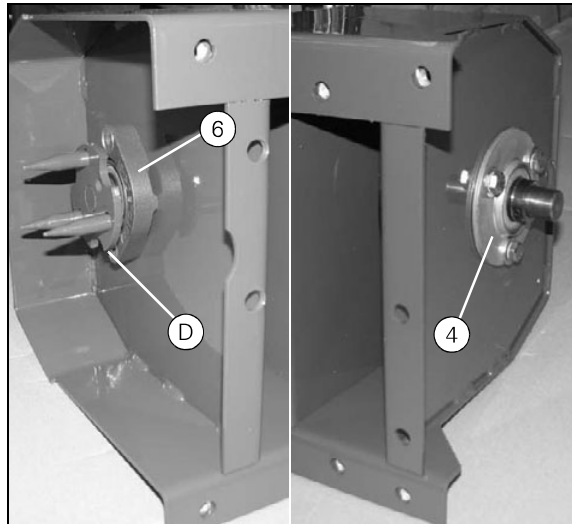


Fig. 18

10004_10003

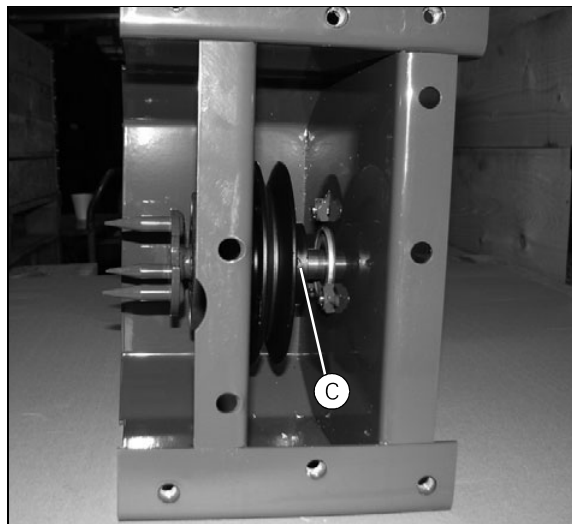


Fig. 19

10005

10. Drive unit

10.10 Compressor – air conditioning

10.10.1 Removal

1. The AC unit must be emptied of refrigerant before being dismantled.

IMPORTANT: *Emptying and filling must be carried out by an authorised refrigeration company and the refrigerant must be collected in accordance with regulations.*

2. Disconnect the hoses.
3. Unplug the electric connector.
4. Slacken the belt tensioner and dismount the belt.
5. Remove the bolts and lift the compressor down.

10.10.2 Assembly

To assemble, follow points 1 - 5 in reverse order. Please note:

- Replace the receiver-dryer.
- Fill the unit with 2000 g of R134a refrigerant and top up with ISO VG 22 compressor oil.

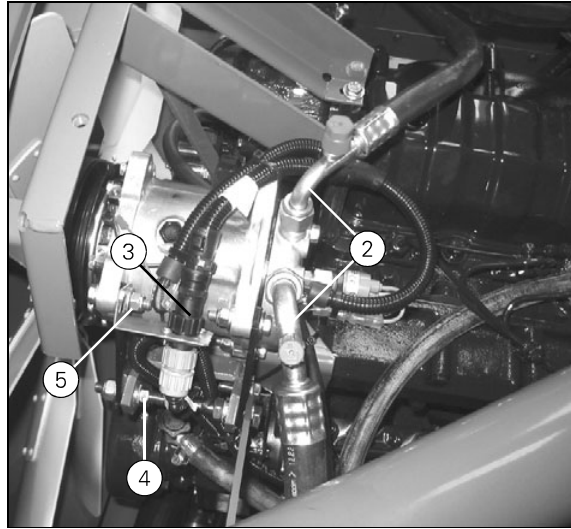


Fig. 42

10358

11. Transmissions

10. Unscrew the centre nut (C) and pull the belt pulley off the shaft.
11. On the right-hand side knock the locking collar (E) free, dismount the lubrication tube (F) and unscrew the bearing housing. From inside the machine, knock the bearing slightly out to make space for a puller. The bearing housing can now be pulled off the shaft.
12. On the left-hand side dismount the lubrication tube (G), unscrew the bearing housing and lift the shaft and bearing housing out of the machine.

Note: The shaft and bearings inside the machine can be accessed by crawling into the machine from the rear over the straw walkers.

IMPORTANT: Cover the straw walkers with something suitable so as to avoid damaging the straw raisers.

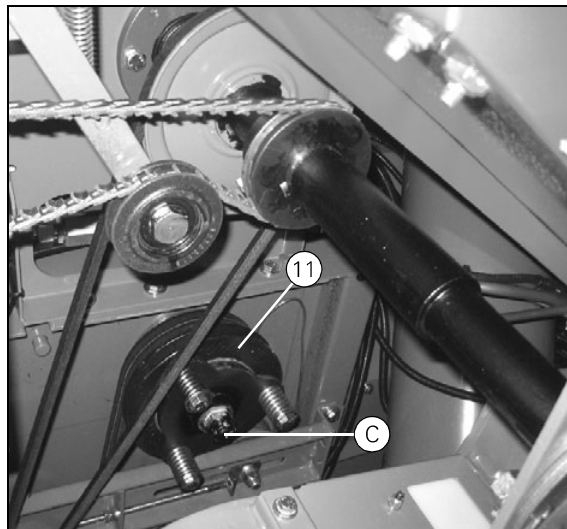


Fig. 4

11272

11.2.2 Assembly

To assemble, follow points 1 - 12 in reverse order. Please note:

- Clean the shaft so that it is dry and free from grease.
- The bearing on the right-hand side must bear against the shaft collar. Tighten the bolts in the bearing housing and knock the locking collar (E) into position.
- Place shims (H) on the left-hand side between the bearing housing and the side of the machine. Tighten the bolts in the bearing housing and knock the locking collar (J) into position.
- Before fitting the belt pulley on the left-hand side, check the shaft wobble just before where the shaft becomes conical (K) = max. 0.2 mm.
- Place a special washer under the centre nut (D). Tighten the nut to 560 Nm and then rotate it forwards to the nearest cotter slot.

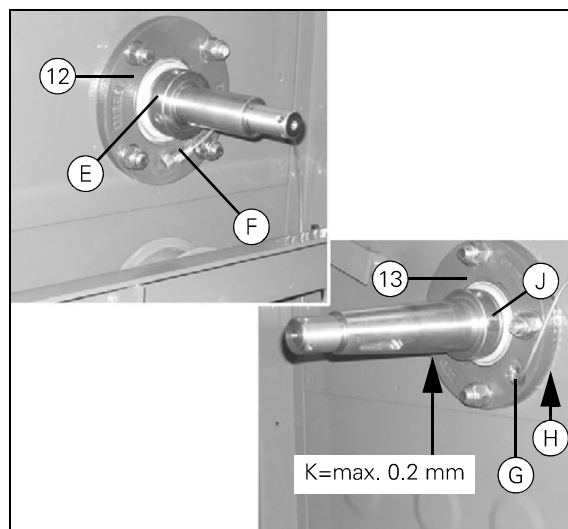


Fig. 5

11267_11268_2

11. Transmissions

11.4 Replacing the chains, right-hand side

11.4.1 Counter drive, elevators - returns elevator

1. Loosen the tension pulley at the centre bolt (A).
2. Separate the chain at the joint link and fit new chain.
3. Tension the chain by tightening the centre bolt (A) slightly. Tension the chain with light hammer blows on the clamp (B) and tighten the centre bolt.
4. Finally, run the chain at least one turn and make sure it is not too tight anywhere.

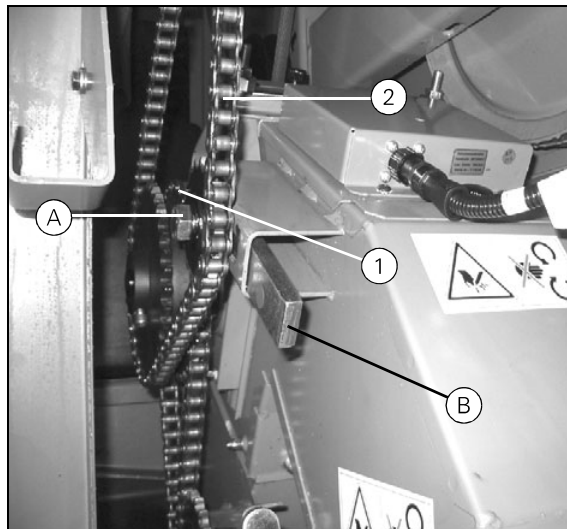


Fig. 25

11509

11.4.2 Counter drive, elevators - tank filling elevator

1. Loosen the tension pulley at the centre bolt (A).
2. Separate the chain at the joint link and fit new chain.
3. Tension the chain by tightening the centre bolt (A) slightly. Tension the chain with light hammer blows on the clamp (B) and tighten the centre bolt.
4. Finally, run the chain at least one turn and make sure it is not too tight anywhere.

11.4.3 Counter drive, elevators - tank filling auger

5. Loosen the tension pulley at the centre bolt (C).
6. Separate the chain at the joint link and fit a new chain.
7. Tension the chain by tightening the centre bolt (C) slightly. Tension the chain with light hammer blows on the clamp (D) and tighten the centre bolt.
8. Finally, run the chain at least one turn and make sure it is not too tight anywhere.

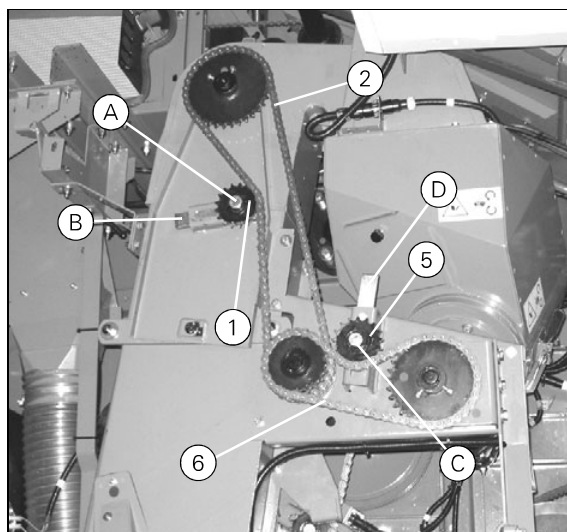


Fig. 26

11489

11. Transmissions

11.5.12 Table countershaft - knife drive

1. Slacken the belt at (A). Remember to loosen the centre bolt.
2. Replace the belt and tighten with the adjusting screw (A).

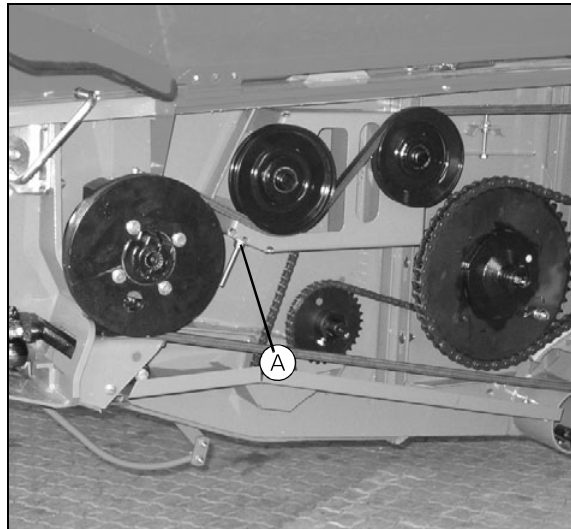


Fig. 47

11575

11.5.13 Countershaft - hydraulic pump, chaff spreader

1. Slacken the belt at the tightening screw (A) when the bolts (B) have been loosened.
2. Dismount the supporting bracket at the centre bolt (C) in order to remove the belt.
3. Replace the belt and reassemble in reverse order.

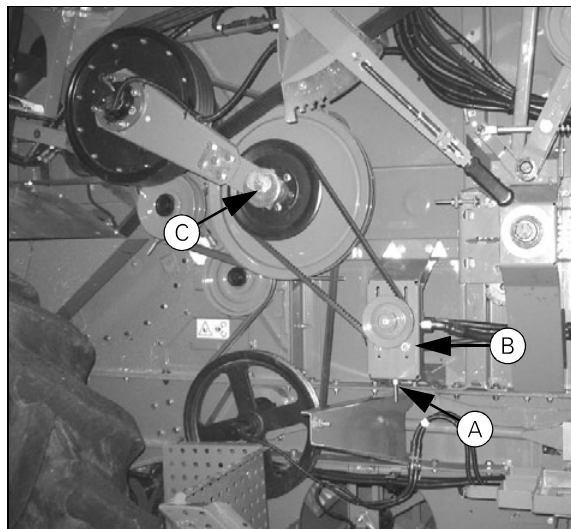


Fig. 48

11077

12. Undercarriage

- When the final drive bracket has been positioned on the final drive, the input shaft (H) (Fig. 6) must be centred in relation to the bracket. Make up a tube bushing with a handle (N) so that it can be inserted in the bracket tube. Dimensions: Outside $\text{\O}80$ mm - inside $\text{\O}45$ mm.
- Push in seal rings (S) on the tube during assembly. When all the bolts have been tightened, push the seal rings home in the groove.
- Tighten the bolts (P) to 1220 Nm (secure with Loctite 270). Bearing in mind the high torque, it may be advantageous to carry out tensioning when the final drive bracket is mounted on the front axle, but before it has been fully pushed into position.
- When the final drive bracket is pushed into position, the splined shaft can be "caught" in the bush by turning the brake disc back and forth.
- Support the hydraulic cylinder (R) and push it into position while the final drive bracket is being pushed right home.
- Finally, fill the final drive with approx. 6 litres of gear oil (check oil level as described in section 19.3.5 on page 589). Lubricate the slide bearings (V) and flanged bearing (U) with bearing grease.
- Lubricate the internal splined bushing (T) by filling the bracket tube with bearing grease.



Fig. 7

12535



Fig. 8

12537

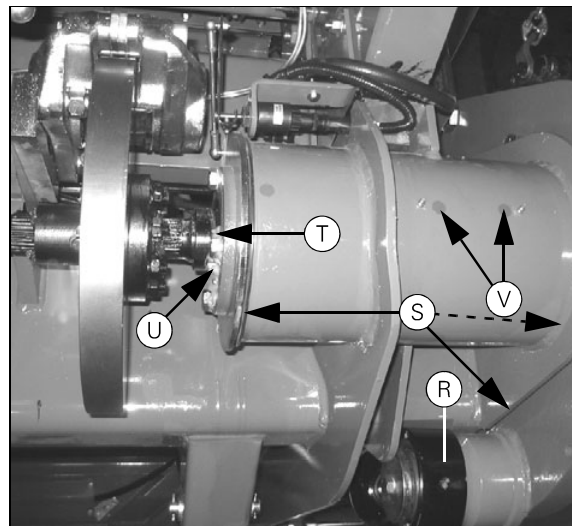


Fig. 9

12543

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12. Undercarriage

12.3 Gearbox

12.3.1 Removal

1. Dismount the traction wheels and chock up the machine in a safe and secure manner.
2. Drain off the gear oil from the coupler housing.
3. Remove the locking bolt and push the bushings (A) towards the brake disc on both sides so that they are clear of the gearbox output shaft (B).

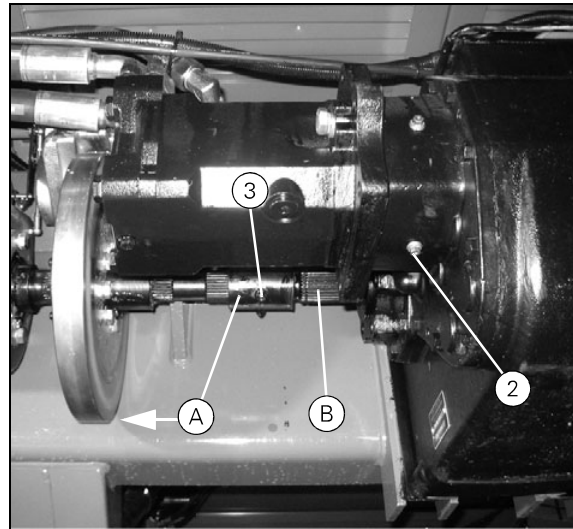


Fig. 21

12140

4. Drain off the gear oil from the gearbox.
5. Dismount the protective cover.
6. Unplug the connector for the revolution sensor.

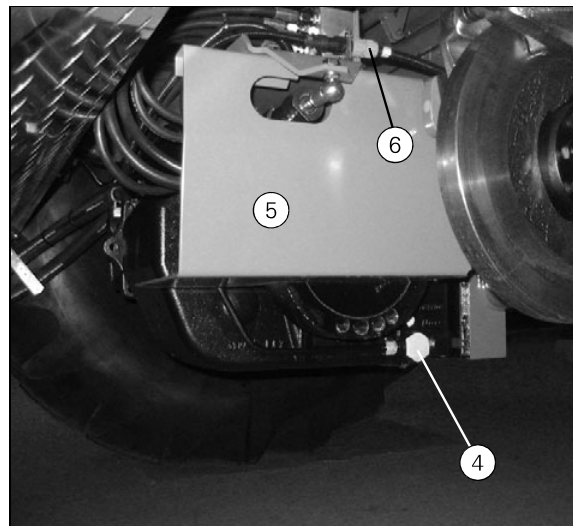


Fig. 22

12126_B

7. Remove the bolts in the shifter shaft.
8. Disconnect the shifter cylinder bracket.
9. Remove the cotter bolt in the handbrake cable.

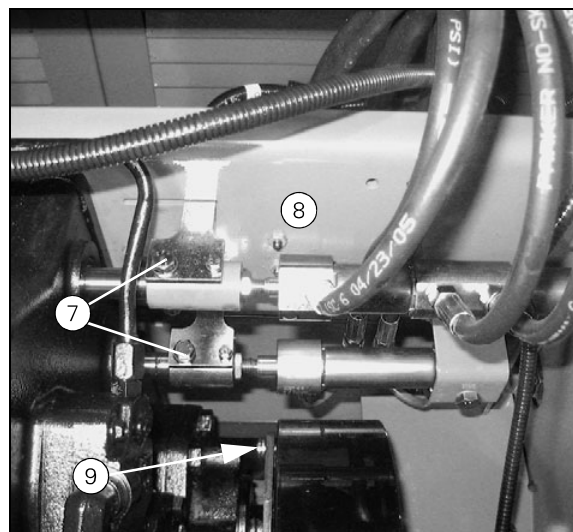


Fig. 23

12120

12. Undercarriage

5. Relieve the differential using a crane or hoist. Hold the differential with tongs.
6. Remove the bolts and pull the output shaft with bearing housing out of the transmission housing on both sides.

Note: Tie the washer and shims together and label them to ensure that they are fitted in the same place during assembly.

Note: Mark the two halves of the differential and the large gear wheel to ensure that they are reassembled in the right position.

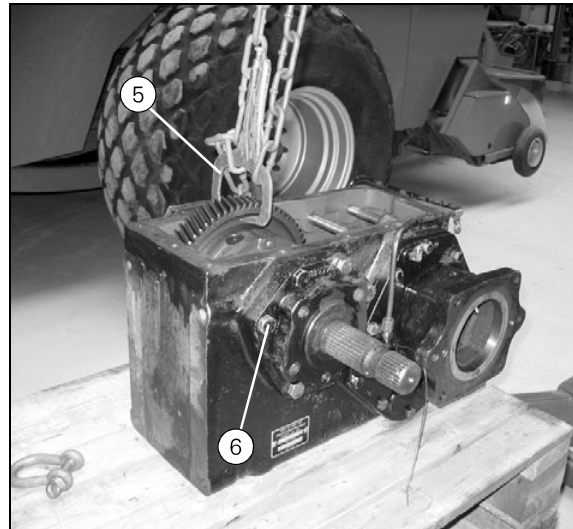


Fig. 39

12184

7. Remove the 16 M14 bolts and disassemble the differential. (As the bolts have been locked with Loctite, heat may be required to remove them).



Fig. 40

12155

12. Undercarriage

12.5.3 Bleeding the brakes

IMPORTANT: *After any kind of repair to components, pipes or hoses in the brake system, the system must be bled.*

Bleeding requires an assistant to operate the pedals in the cab. The pedals must not be latched. Always bleed at both brake callipers.

1. Connect a transparent hose to the bleed screw and run the hose into a suitable container.
2. Top up the brake fluid tank.
3. When the right-hand calliper is bled, a constant pressure must be exerted on the left-hand brake pedal and vice versa to neutralise the compensation valve function as described in section 12.5.4 on page 308.
4. Open the bleed screw while the assistant presses the pedal all the way down slowly. Close the bleed screw before the pedal is released.
5. Repeat the procedure until brake fluid without any air bubbles emerges when the pedal is pressed all the way down.
6. When both sides have been bled, latch the pedals. Check that the brake feels firm and hard when pressed and that it does not go too far down.

12. Undercarriage

1. The toe-in of the rear wheels is adjusted at the tie rod (C). Loosen the bolts (D) and turn the tie rod to increase or reduce the toe-in.

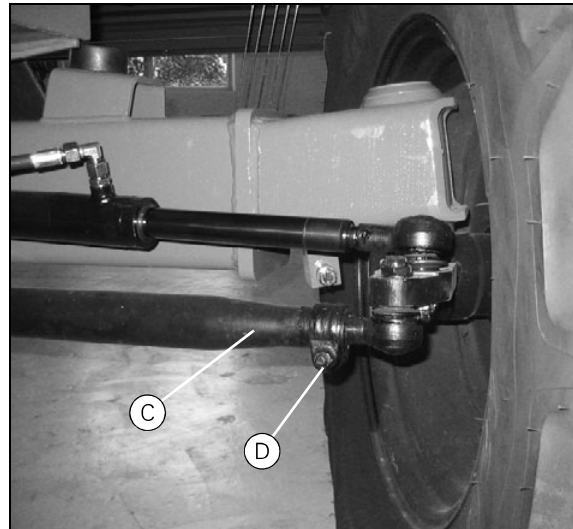


Fig. 87

12017

2. Measure the clearance between the tyres at the two marks in front and at the rear. The toe-in is calculated by subtracting the clearance measured in front (E) from the clearance measured at the rear (F).

With a standard rear axle, the toe-in should be between -1 mm and -7 mm.

With a 4WD rear axle, the toe-in should be between -2 mm and -6 mm.

3. Tighten the bolts (D) when the toe-in is correct.

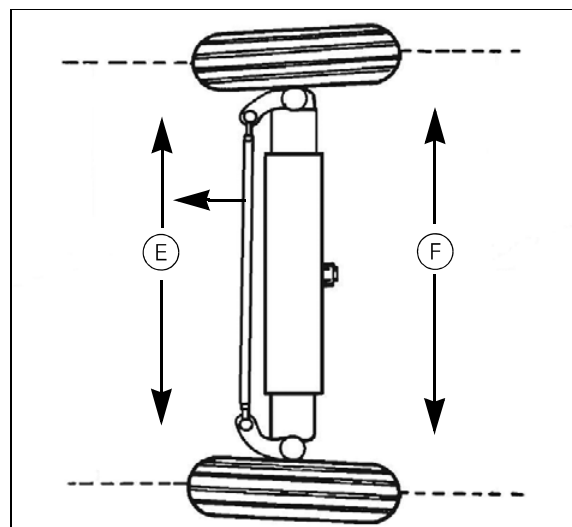


Fig. 88

7A007

IMPORTANT: The maximum steering deflection depends on the tyres on the rear wheels.

4. STANDARD REAR AXLE:

The steering deflection is limited by a stop screw (G) and a spacing sleeve (H) according to the table below:

Tyres	Sleeve	Clearance "X"
15.5/80 - 24	7 mm	17 mm
500/60 - 26.5	14 mm	24 mm
600/55 - 26.5	14 mm	24 mm

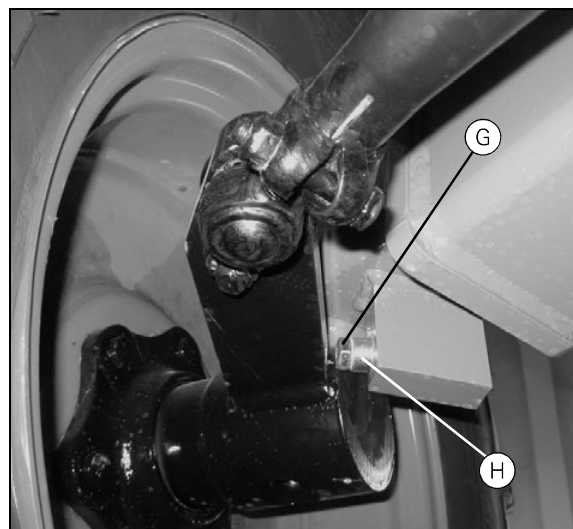


Fig. 89

12015

13. Cab

13.4.3 Replacing the windscreen wiper

1. Tilt the cover (A) off and remove both wiper arms.
2. Tilt the outer roof up and remove inspection door (B) (Fig. 13).
3. Disconnect the wires.
4. Remove the lock (F) and pull the connecting rod (G) off.
5. Dismount the wiper motor.

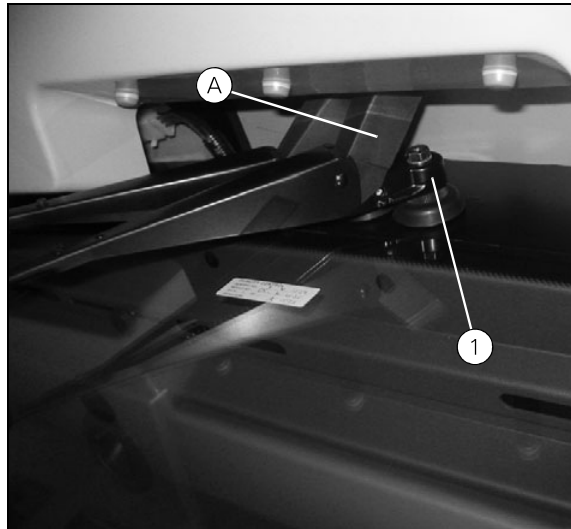


Fig. 14

13230

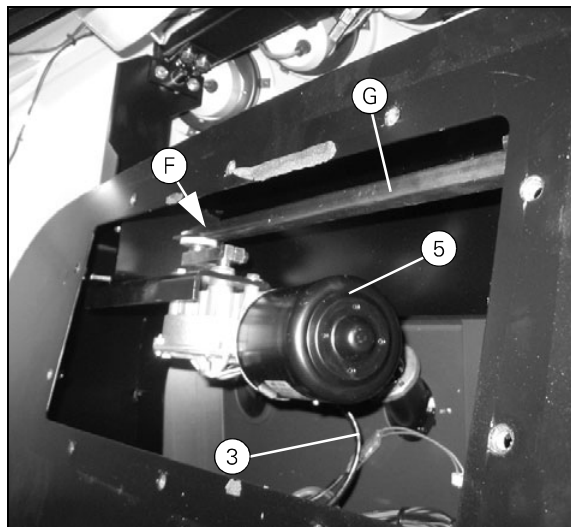


Fig. 15

13033

13.4.4 Replacing the blower

1. Tilt the outer roof up and remove inspection door (C) (Fig. 13).
2. Remove the top plate.



Fig. 16

13038

14. Hydraulics

Key to Hydraulics Diagram, Auto Level Combine / Auto Level Table			
A	Hydraulic oil tank	G	Orbitrol steering valve
B1	Hydraulic pump	H1	Cylinder for Auto Level combine, RH side
B2	Hydraulic pump for chaff spreader	H2	Cylinder for Auto Level combine, LH side
C	Flow divider for reel revolutions	H3	Cylinder for table levelling
D	Quick-attach coupling	I1	Hydraulic accumulator for table up/down
E1	Hydraulic motor for reel revolutions	I2	Hydraulic accumulator for table up/down
E2	Hydraulic motor for rape auger	I3	Hydraulic accumulator for table up/down
E3	Hydraulic motor for reversing	I4	Hydraulic accumulator for table levelling
E4	Hydraulic motor for chaff spreader	I5	Hydraulic accumulator for table levelling
F1	Magnetic valve for reel up/down	J1	Master cylinder for reel fore/aft
F2	Magnetic valve for reel fore/aft	J2	Slave cylinder for reel fore/aft
F3	Solenoid valve for table up	K1	Master cylinder for reel up/down
F4	Solenoid valve for table up	K2	Slave cylinder for reel up/down
F5	Magnetic valve for cylinder variator	L	Cylinder for table up/down
F6	Magnetic valve for unloading auger	M1-2	Steering cylinder
F7	Non-return valve for reel fore/aft	N	Hydraulic oil filter
F8	Valve for machine up/down	O	Hydraulic oil filter
F9	Valve for Auto Level RH and LH	P	Pressure control/by-pass valve
F10	Valve for machine up/down	S	Cylinder variator
F11	Valve for table levelling	T	Cylinder for unloading auger
F13	Non-return valve for unloading auger	U	Hydrostatic pump
F14	Magnetic valve for table down	V	Hydrostatic motor
F15	Magnetic valve for table down	W1	Cylinder for gearshift
F16	Non-return valve for table levelling	W2	Cylinder for gearshift
F17	Magnetic valve for gearshift	W3	Cylinder for gearshift
F18	Magnetic valve for gearshift	X1	Oil cooler, transmission
F19	Magnetic valve for gearshift	X2	Oil cooler, auxiliary hydraulics
F20	Solenoid valve for reversing		

14. Hydraulics

14.3 Gearshift

14.3.1 Hydraulic cylinders - gearshift

Hydraulic cylinder, shift high/low (1)

Designation on diagram: W1

Hydraulic cylinder, shift 1-2-3-4 (2)

Designation on diagram: W2

Hydraulic cylinder, shift 1-2-3-4 (3)

Designation on diagram: W3

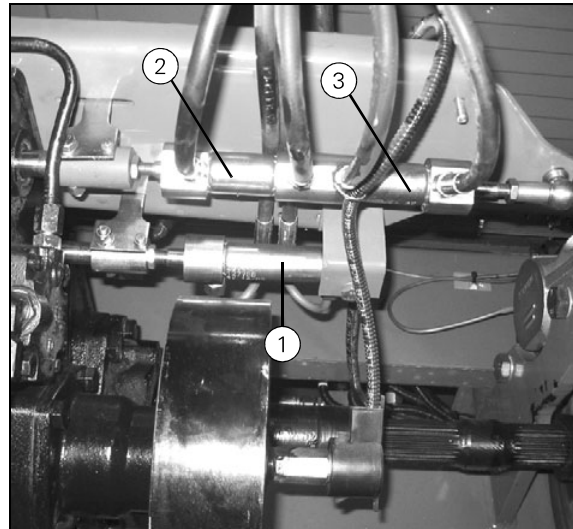


Fig. 13

14511

14.3.2 Hydraulic valves - gearshift

Hydraulic valve (4)

Designation on diagram: F17 - F18 - F19

Magnetic coil, gearshift (5)

Designation on diagram: DVM 15

Magnetic coil, gearshift (6)

Designation on diagram: DVM 16

Magnetic coil, gearshift (7)

Designation on diagram: DVM 17

Magnetic coil, gearshift (8)

Designation on diagram: DVM 18

Magnetic coil, gearshift (9)

Designation on diagram: DVM 19

Magnetic coil, gearshift (10)

Designation on diagram: DVM 20

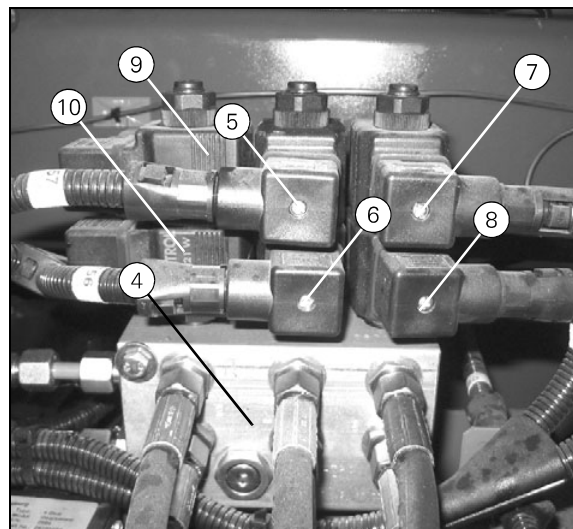


Fig. 14

16584

14. Hydraulics

14.6.4 Hydraulic valve - table up/down (Auto Level machine)

Hydraulic valves (11)

Designation on diagram: F3/4/14/15

Magnetic coil, table up/down (12)

Designation on diagram: HOM 01

Magnetic coil, table up/down (13)

Designation on diagram: HOM 02

Magnetic coil, table down (14)

Designation on diagram: HOM 16

Magnetic coil, table down fast (15)

Designation on diagram: HOM 20

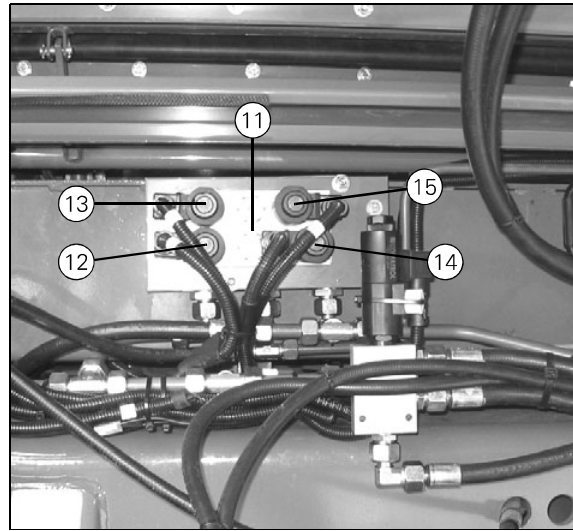


Fig. 29

14516

14. Hydraulics

14.8.3 Hydraulic cylinders - reel fore/aft

Hydraulic cylinder, reel fore/aft (5)

Master cylinder

Designation on diagram: J1



Fig. 44

14523

Hydraulic cylinder, reel fore/aft (6)

Slave cylinder.

Designation on diagram: J2

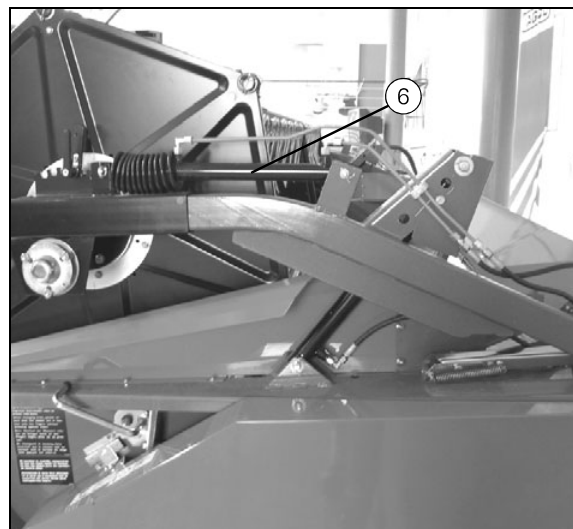


Fig. 45

14524

14.8.4 Hydraulic valve - reel fore/aft

Hydraulic valve (7)

Designation on diagram: F2

Magnetic coil, reel forward (8)

Designation on diagram: HOM 08

Magnetic coil, reel back (9)

Designation on diagram: HOM 09

Non-return valve, levelling (10)

Designation on diagram: F7

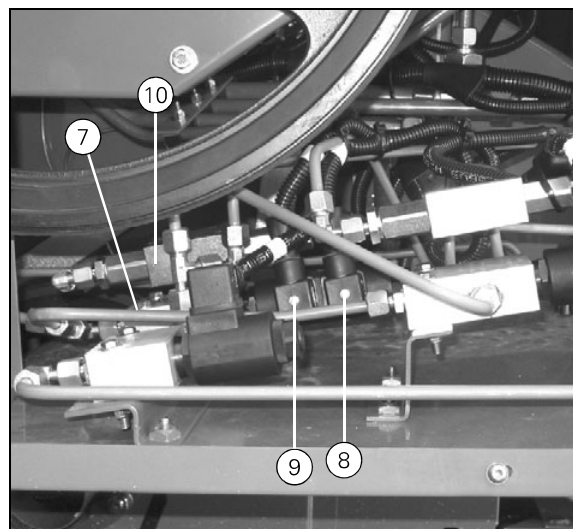


Fig. 46

14519

14. Hydraulics

14.12 Reversing

14.12.1 Oil motor

Oil motor, reversing (1)

Designation on diagram: E3

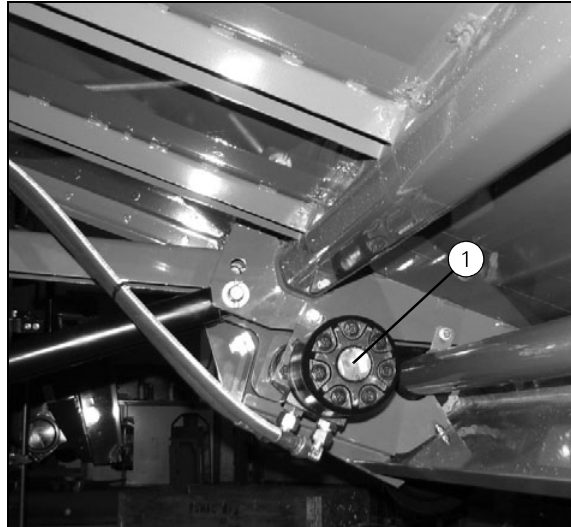


Fig. 62

14001

14.12.2 Hydraulic valve - reversing

Auto Level combine:

Hydraulic valve (2)

Designation on diagram: F20

Magnetic coil, reversing (3)

Designation on diagram: HOM 13

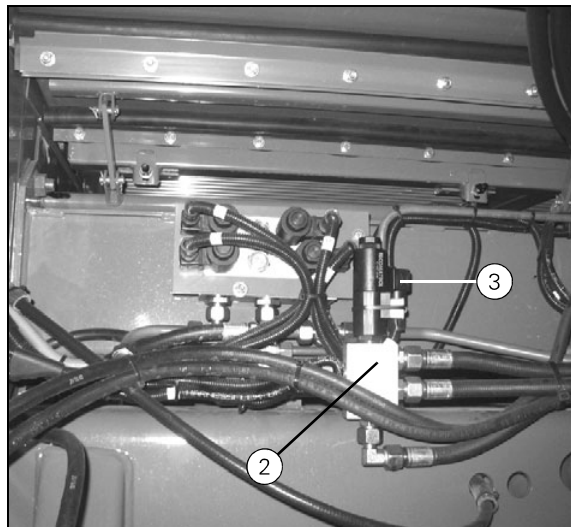


Fig. 63

14515

Standard machine:

Hydraulic valve (4)

Designation on diagram: F20

Magnetic coil, reversing (5)

Designation on diagram: HOM 13

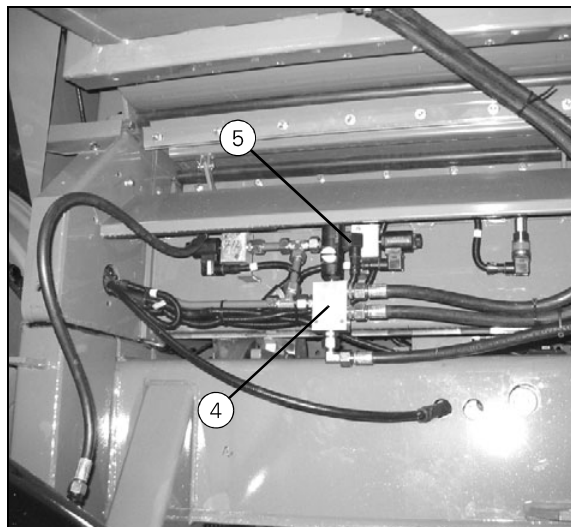


Fig. 64

14521

14. Hydraulics

14.15.5 Troubleshooting table

Note: On machines with an electrically controlled pump, first carry out an electrical diagnostics of the system.

Failure	Possible cause	Check
No forward speed in any direction.	Insufficient oil in the tank. No or too low charge pump pressure. Hydraulic pump defective. Hydraulic motor defective.	Refill oil. Check the charge pump as described in section 14.15.6 on page 388. Check the pump as described in section 14.15.10 on page 390. Check the motor as described in section 14.15.11 on page 391.
Driving only possible in one direction.	High pressure valve defective. Servo control defective.	Check valves as described in section 14.15.7 on page 388 (a quick check can be run by exchanging the two high pressure valves). If the machine is then able to drive in the opposite direction, the valve is defective. Check the servo control as described in section 14.15.9 on page 389.
Lack of tractive power.	No or too low charge pump pressure. High pressure valve defective. Hydraulic pump defective. Hydraulic motor defective.	Check the charge pump as described in section 14.15.6 on page 388. Check the valve as described in section 14.15.7 on page 388. Check the pump as described in section 14.15.10 on page 390. Check the motor as described in section 14.15.11 on page 391.
Control is reacting slowly.	Too low charge pump capacity. Servo control defective.	Check the charge pump as described in section 14.15.6 on page 388. Check the servo control as described in section 14.15.9 on page 389.
Machine not stationary in neutral.	Multifunction lever incorrectly adjusted. Servo control defective.	Adjust the multifunction lever as described in section 13.1.3 on page 322. Check the servo control as described in section 14.15.9 on page 389.

16. Electrical system

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16. Electrical system

16.4.6 Calibrating Auto Level Combine

A calibration is required before the DATAVISION Auto Level system can be put into operation, and also after replacement of sensors or DATAVISION job computers. For calibration park the combine on level ground. It is essential that the ground is as level as possible. This can be checked while the machine is in transport position, on the level tube fitted in the cab ceiling. If the level tube is in mid position, the combine is level. A more accurate reading of the ground inclination is possible from the "Level tube" in the menu "Diagnostics|Control|Auto Level combine" on the DATAVISION terminal.

Before calibration is started, the correct wheel track and combine type must be entered into the DATAVISION terminal, all table calibrations must be completed and the main crop elevator must be raised.

To carry out the calibration select "Main menu|Coding|Next|Auto Level combine".

Start calibration by pressing the "Calibrate" key and holding it until calibration is completed. While the key is pressed DATAVISION shows on the screen what is going on.

Calibration steps:

1. Combine lowering into bottom position.
2. Combine raising into top position.
3. Combine lowering into working position.
4. Combine tilting to the left and table to the right.
5. Combine tilting to the right and table to the left.
6. Combine levelling into mid position.
7. Combine lowering into bottom position.
8. Table levelling.

If the calibration is successful, the text "Calibration routine is ended! Please release key!" will appear on the DATAVISION terminal. Now, calibration is completed.

If the calibration fails, the alarm "Calibration error" "Calibration is not OK" will appear on the DATAVISION terminal.

The machine will remain in the position where the error occurred. The various steps listed below showing the volt values of the potentiometers involved, can be used for troubleshooting.

To ascertain whether the calibration error is related to an electrical or hydraulic failure, the machine must be brought in all the above calibration positions manually using the keys on the terminal before troubleshooting is carried out on the individual potentiometers.

Step 1: Both the left-hand wheel potentiometer (CAP02 02) and the right-hand wheel potentiometer (CAP02 05) must show approx. 2.0V.

Step 2: Both the left-hand wheel potentiometer (CAP02 02) and the right-hand wheel potentiometer (CAP02 05) must show approx. 4.5V.

Step 3: Both the left-hand wheel potentiometer (CAP02 02) and the right-hand wheel potentiometer (CAP02 05) must show approx. 3.25V.

Step 4: The left-hand wheel potentiometer (CAP02 02) must show approx. 2.0V whereas the potentiometer for

the main crop elevator (CRP02 35) must show approx. 2.25V.

Step 5: The right-hand wheel potentiometer (CAP02 05) must show approx. 2.0V whereas the potentiometer for the main crop elevator (CRP02 35) must show approx. 3.25V.

Step 6: Both the left-hand wheel potentiometer (CAP02 02) and the right-hand wheel potentiometer (CAP02 05) must show approx. 3.25V.

Step 7: Both the left-hand wheel potentiometer (CAP02 02) and the right-hand wheel potentiometer (CAP02 05) must show approx. 2.0V.

Step 8: The potentiometer for the main crop elevator (CRP02 35) must show approx. 2.75V.

16.4.7 Table Calibration

To ensure accurate cutting height indication under all harvesting conditions and to ensure that preset cutting height is functioning correctly, the cutting height indicator must be zeroed.

Note: *An Auto Level machine must be brought into harvest position before the zeroing of the cutting height is carried out.*

Select the menu "Coding|Table calibration|Zero cutting height".

Lower the table until just touching the ground, then press "Zero".

At the zeroing the voltage of the cutting height (CRP05 27) must show 1.5V in the diagnostics menu.

Now the cutting height bar will be at zero and the indication will correspond with the actual cutting height. If the sensor voltage is not within the range indicated on the bar above the sensor bar, the initial setting of the sensor must be adjusted before zeroing is possible. The potentiometer is positioned beneath the operator platform on the right-hand side.

Table angle calibration

Call up the menu "Coding|Table calibration|Table angle calibration".

Raise the table, lower it to the right and left, respectively, using the manual switch in the control panel. Press "Calibrate" when the table is in its extreme positions.

During calibration the voltage which can be read from the diagnostics menu, must be as follows:

When the table is raised and tilted to the left, the main crop elevator potentiometer (CRP02 35) must show approx. 3.25V.

When the table is raised and tilted to the right, the main crop elevator potentiometer (CRP02 35) must show approx. 2.25V.

The potentiometer is positioned on the right-hand side of the main crop elevator.

Normally this zeroing is necessary only the first time the table is attached, or after repair of the system.

16. Electrical system

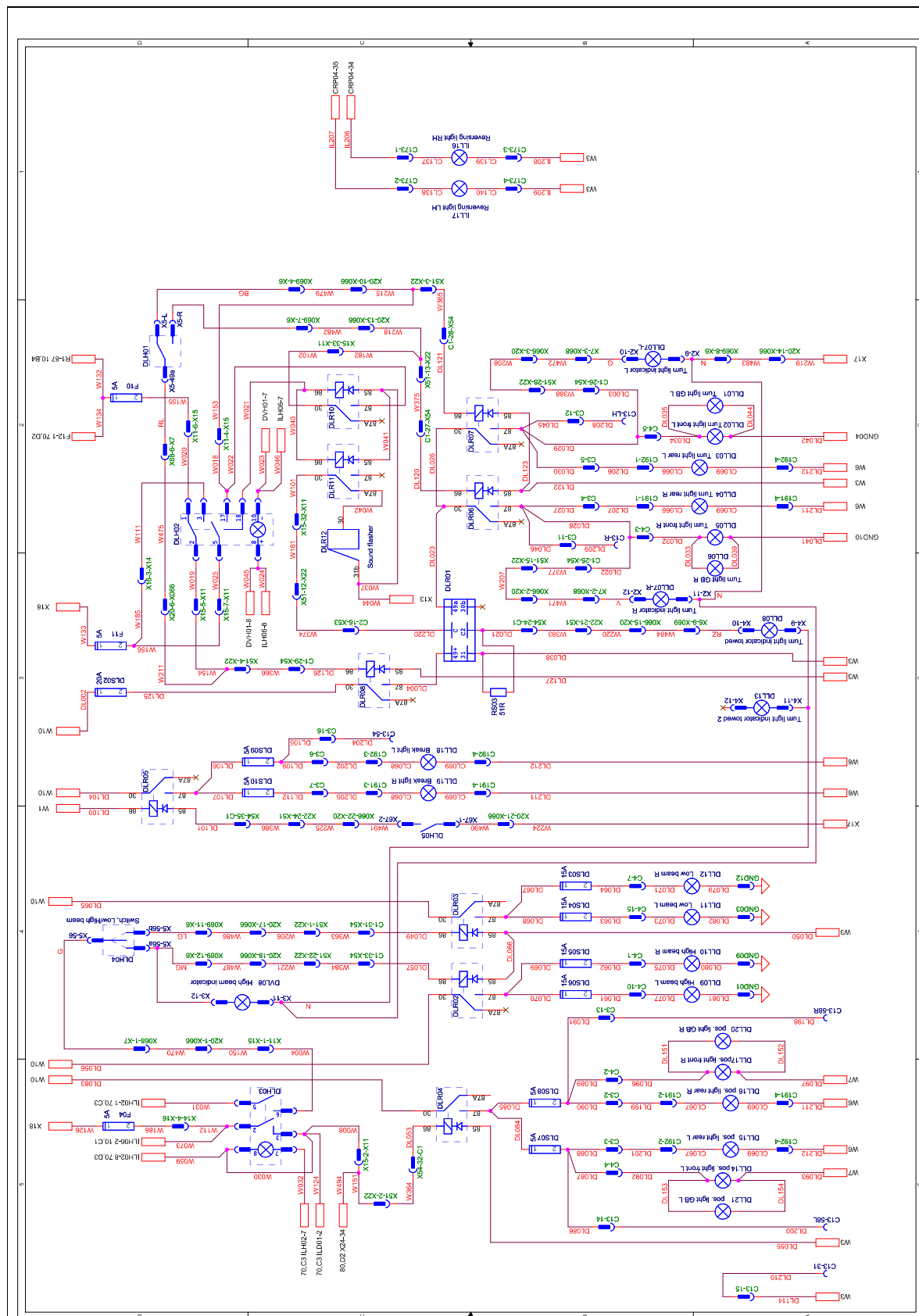


Fig. 14

16. Electrical system

Connector No.	Diagram page	Position
C90	90	RH machine side, in the guard above the front wheel.
C93	90	Right beneath the electric box.
C95		At the vertical knife.
C96		At the vertical knife.
C97	90	LH machine side, to the left of and behind the electric box.
C99	90	RH side of the main crop elevator.
C100	90	RH machine side. On the motor for reel pump. In the guard to the left of the front wheel.
C102	80	Straw deflector. On straw chopper.
C103	80	Straw deflector. On straw chopper.
C105	80	Straw deflector. On straw chopper.
C109	40+90	Right beneath the electric box.
C110	40	
C111	40	
C112	40	
C113	40	
C114	40	AL wheel potentiometer connector DNP09.
C115	40	AL wheel potentiometer connector DNP10.
C117	40	Mechanical tilt sensor. Cab
C118	40	Mechanical tilt sensor. Cab
C119	40	Mechanical tilt sensor. Cab
C124	80	At the electrical sieve actuator, RH side.
C125	80	At the electrical sieve actuator, RH side.
C129	80	At the electrical sieve actuator, RH side.
C130	80	At the electrical sieve actuator, RH side.
C131	90	
C132	90	
C133	40	Mechanical tilt sensor. In cab floor at operator seat.
C136	90	Above the front axle. On RH side.
C141	80+90	Right beneath the electric box.
C143	30+70+80+90	Right beneath the electric box.
C144	80	Right beneath the electric box.
C147	80	LH machine side. Grey/white connecting box for grain loss sensors.
C149	30	Electrical gearbox.

16. Electrical system

Component	Description	Diagram	Picture reference
U02	Radio	100-6	(Fig. 173)
U05	HVAC, control module	100-6	(Fig. 174)
U06	HVAC, blower motor	100-6	(Fig. 175)
U07	Valve, HVAC	100-6	(Fig. 176)

16. Electrical system

Component: DNF05

Revolution sensor, filling auger (5)

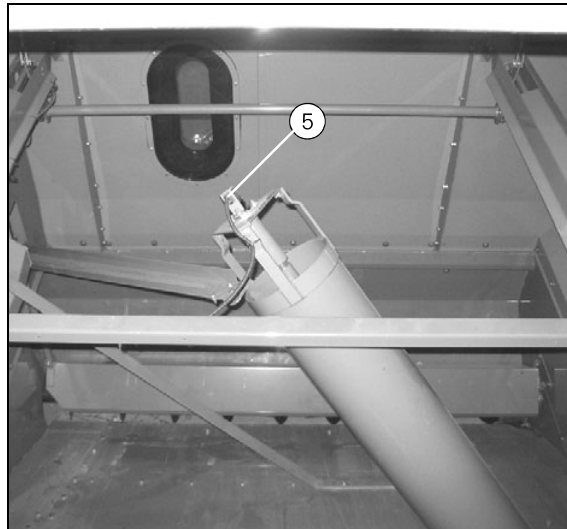


Fig. 44

16591

Component: DNF06

Revolution sensor, straw walkers (6)

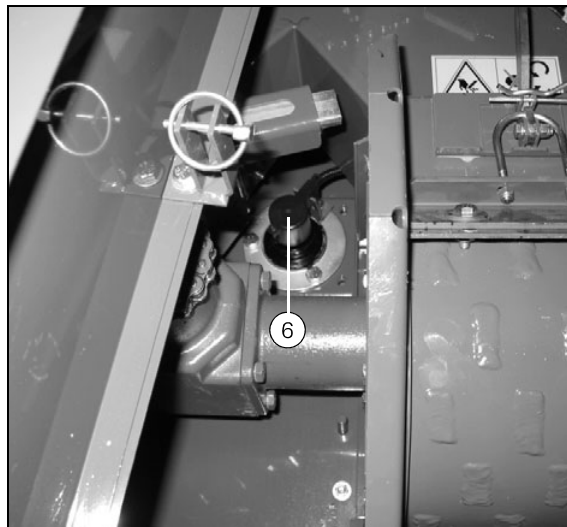


Fig. 45

16558

Component: DNF07

Revolution sensor, shaker shoe (7)

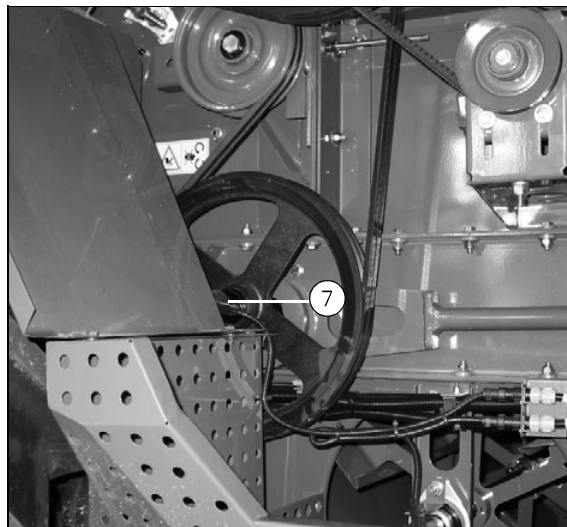


Fig. 46

16113

16. Electrical system

Component: DNP12

Potentiometer, main crop elevator angle (4)

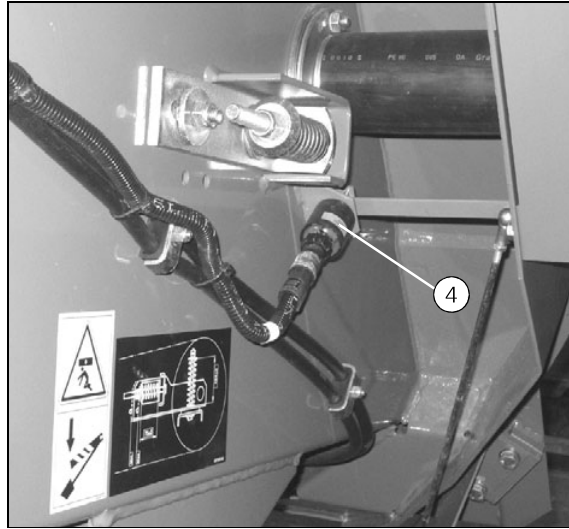


Fig. 74

16610

Component: DNP13

Yield meter, DI (5)

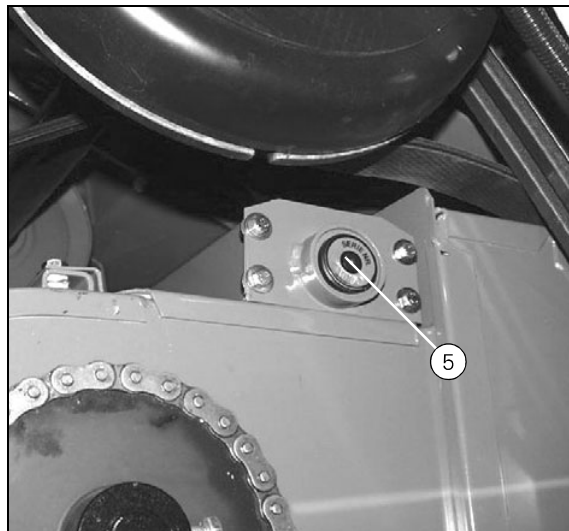


Fig. 75

16565

Component: DNP14

Micro-Trak slope sensor (6)

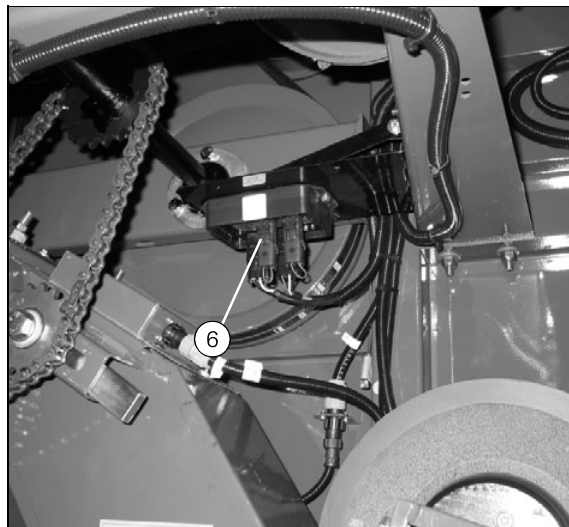


Fig. 76

16219

16. Electrical system

Component: DVM01
Starter motor (1)

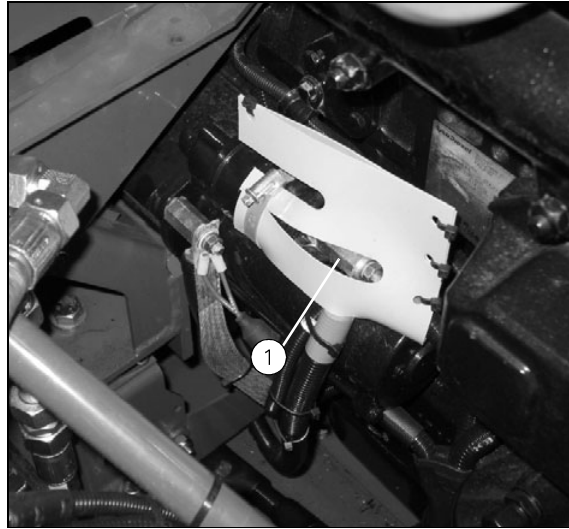


Fig. 104

16225

Component: DVM04
Wiper motor (2)

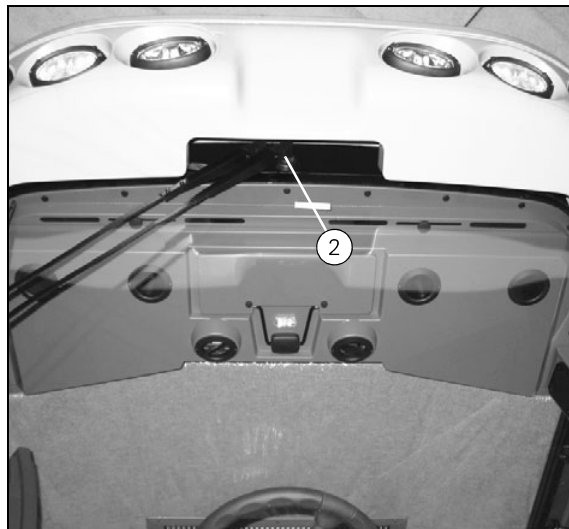


Fig. 105

16161

Component: DVM07
Valve, 4-wheel drive (3)



Fig. 106

16139

16. Electrical system

Component: HOM03

Magnetic valve, reel up/down (10)

Component: HOM04

Magnetic valve, levelling LH (11)

Component: HOM05

Magnetic valve, levelling RH (12)

Component: HOM08

Magnetic valve, reel forward (13)

Component: HOM09

Magnetic valve, reel backward (14)

Positioned over the right-hand front wheel

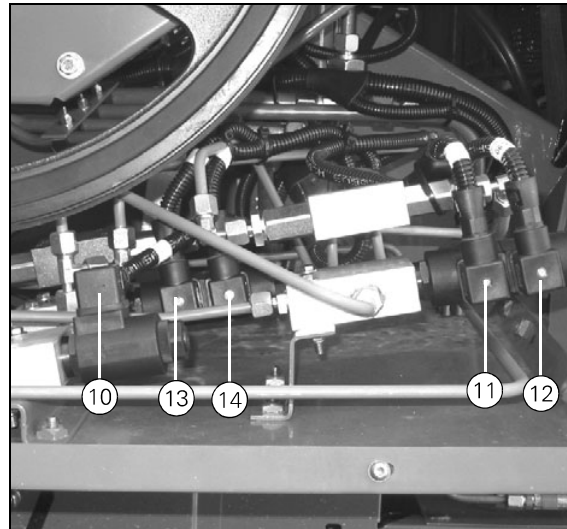


Fig. 132

16609

Component: HOM07

Main valve 1 (15)

Component: HOM17

Main valve 2 (16)

Positioned in the engine compartment on the back of the grain tank

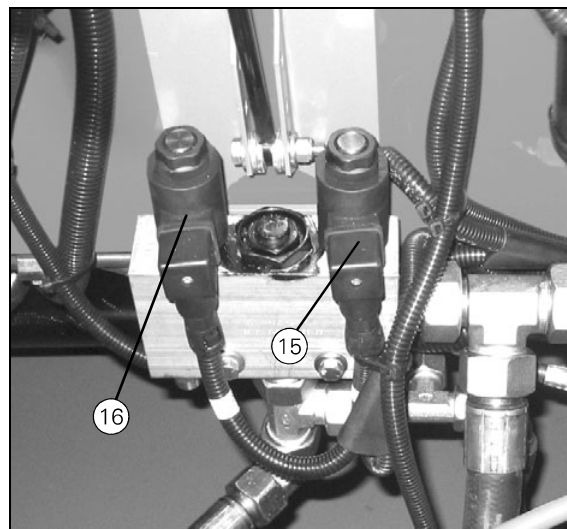


Fig. 133

16065

Component: HOM11

Valve, unloading auger out (17)

Component: HOM12

Valve, unloading auger in (18)

Positioned on the left-hand machine side

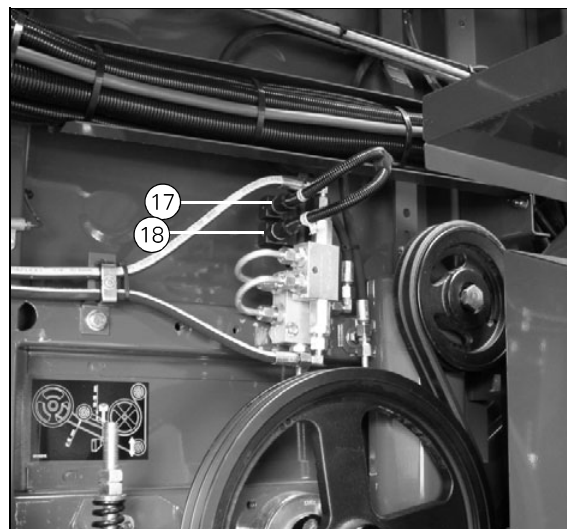


Fig. 134

16169

16. Electrical system

Component: R10
Relay, HVAC (8)

Component: R11
Relay, HVAC (8)

Component: R12
Relay, HVAC (8)

Component: R13
Relay, HVAC (8)

Component: R14
Relay, HVAC (8)

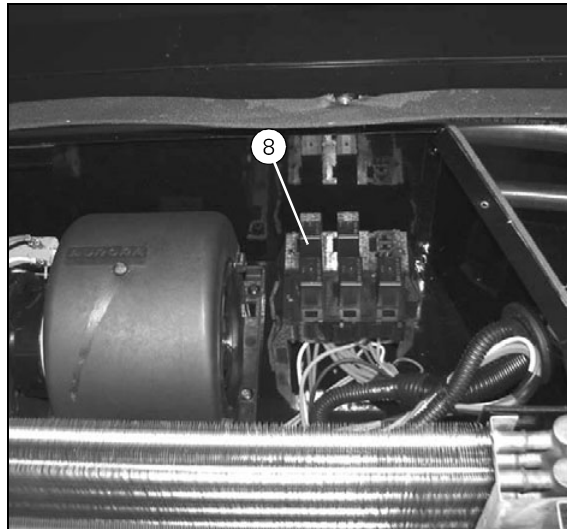


Fig. 160

16210

Component: RS01
Resistor 120 ohm, CAN bus (1)
Positioned on the back of the connector C166 for connecting the terminal to the right-hand cab pillar

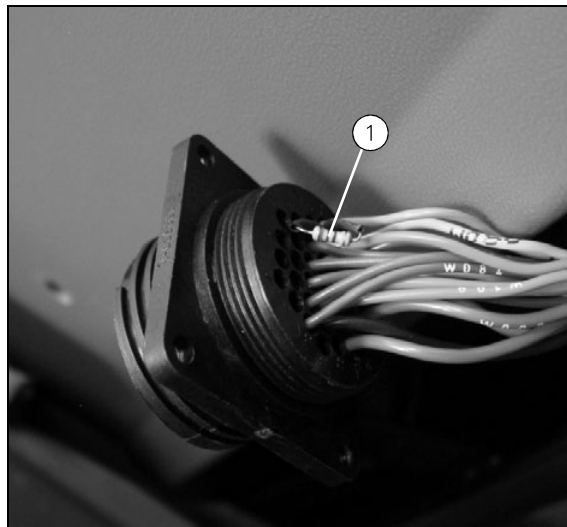


Fig. 161

16234

Component: RS02
Resistor 120 ohm, CAN bus (2)
Positioned on the back of the connector CAP01 on the Auto Level/electrical sieve job computer in the electric box on the left-hand machine side

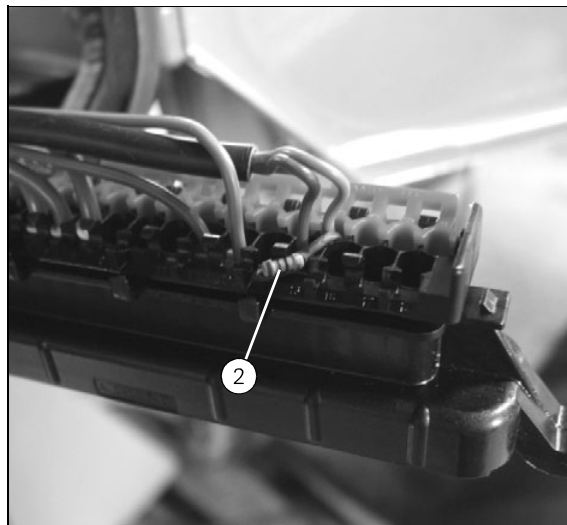


Fig. 162

16235

16. Electrical system

Wire No	Page	LH Conn	LH Pin	RH Conn	RH Pin	Wire Colour	Part No	Revision	Note
DL028	60	DLR06	87	C4	3	BLACK	28782994	4,0	
DL029	60	DLR07	87	C4	5	BLACK	28782994	4,0	
DL030	60	DLR07	87	C3	5	BLACK	28782994	4,0	
DL032	60	C4	3	DLL06		BLACK	28782999	2,0	
DL033	60	DLL05	1	DLL06	1	BLACK	28782999	2,0	
DL034	60	C4	5	DLL01		BLACK	28782999	2,0	
DL035	60	DLL01		DLL02		BLACK	28782999	2,0	
DL038	60	DLR01	31	W3		BROWN	28782994	4,0	
DL039	60	DLL06	2	DLL05	2	BROWN	28782999	2,0	
DL041	60	GND10		DLL06		BROWN	28782999	2,0	
DL042	60	GND04		DLL02		BROWN	28782999	2,0	
DL044	60	DLL02		DLL01		BROWN	28782999	2,0	
DL045	60	DLR07	87	C3	12	BLACK	28782994	4,0	
DL046	60	DLR06	87	C3	11	BLACK	28782994	4,0	
DL049	60	DLR03	86	C1	31	BLACK	28782994	4,0	
DL050	60	W3	-	DLR03	85	BROWN	28782994	4,0	
DL053	60	C1	32	DLR04	86	BLACK	28782994	4,0	
DL055	60	DLR04	85	W3		BROWN	28782994	4,0	
DL056	60	DLR02	30	W10		RED	28782994	4,0	
DL057	60	C1	33	DLR02	86	BLACK	28782994	4,0	
DL060	100	C1	34	CRP03	13	BLUE	28782994	4,0	
DL061	60	DLS06	2	C4	10	BLACK	28782994	4,0	
DL062	60	C4	1	DLS05	2	BLACK	28782994	4,0	
DL063	60	DLS04	2	C4	15	BLACK	28782994	4,0	
DL064	60	DLS03	2	C4	7	BLACK	28782994	4,0	
DL065	60	DLR03	30	W10		RED	28782994	4,0	
DL066	60	DLR02	85	DLR03	85	BLACK	28782994	4,0	
DL067	60	DLR03	87	DLS03	1	BLACK	28782994	4,0	
DL068	60	DLS04	1	DLR03	87	BLACK	28782994	4,0	
DL069	60	DLS05	1	DLR02	87	BLACK	28782994	4,0	
DL070	60	DLR02	87	DLS06	1	BLACK	28782994	4,0	
DL071	60	C4	7	DLL12			28782999	4,0	
DL073	60	C4	15	X102	2	BLACK	28782999	2,0	
DL075	60	X108	2	C4	1	BLACK	28782999	2,0	

16. Electrical system

Wire No	Page	LH Conn	LH Pin	RH Conn	RH Pin	Wire Colour	Part No	Revision	Note
DV244	40	C109	8	C110	1		28782705	0,0	
DV245	40	C109	14	C110	2		28782705	0,0	
DV253	40	C109	9	C111	1		28782705	0,0	
DV254	40	C109	15	C111	2		28782705	0,0	
DV257	40	C109	10	C112	1		28782705	0,0	
DV258	40	C109	12	C112	2		28782705	0,0	
DV259	40	C109	13	C113	2		28782705	0,0	
DV260	40	C109	11	C113	1		28782705	0,0	
DV418	NA	C244	36	CLP05	14	NA	28782542	3,0	
DV419	NA	C244	37	CLP05	5	NA	28782542	3,0	
DV528	10	W10		DVS04	1	RED	28782994	4,0	
DV662	50	W10		CRP01	1		28782701	0,0	
DV663	50	W10	-	CRP01	2		28782701	0,0	
DV664	50	W3		CRP01	6		28782701	0,0	
DV665	50	W3		CRP01	7		28782701	0,0	
DV666	50	W10		CLP01	1		28782701	0,0	
DV667	50	W10		CLP01	2		28782701	0,0	
DV668	50	W10		CLP01	3		28782701	0,0	
DV669	50	W3		CLP01	6		28782701	0,0	
DV670	50	W3		CLP01	7		28782701	0,0	
DV671	50	W3		CLP01	8		28782701	0,0	
DV672	50	W29		CRP01	12		28782701	0,0	
DV673	50	W29		CRP01	13		28782701	0,0	
DV674	50	W29		CLP01	12		28782701	0,0	
DV675	50	W28		CLP01	13		28782701	0,0	
DV684	10	DVS30	1	DVR01	86	BLACK	28782994	4,0	
DV686	10	DVS30	2	DVR38	86	BLACK	28782994	4,0	
DV687	10	W29		DVR38	87	RED	28782994	4,0	
DV693	50	CAP01	1	W10			28782703	0,0	
DV694	50	CAP01	2	W10			28782703	0,0	
DV695	50	CAP01	3	W10			28782703	0,0	
DV696	50	CAP01	6	W3			28782703	0,0	
DV697	50	CAP01	7	W3			28782703	0,0	
DV698	50	CAP01	8	W3			28782703	0,0	

16. Electrical system

Wire No	Page	LH Conn	LH Pin	RH Conn	RH Pin	Wire Colour	Part No	Revision	Note
IL078	10	C2	11	ILR04	86	BLACK	28782994	4,0	
IL079	10	ILR04	85	W3		BROWN	28782994	4,0	
IL080	10	ILS04	1	W10		RED	28782994	4,0	
IL081	10	ILR04	30	ILS04	2	BLACK	28782994	4,0	
IL083	10	ILC05	+	W16		BLACK	28782994	4,0	
IL092	10	C4	9	ILC02	30	BLACK	28782999	2,0	
IL093	10	C4	11	ILC01		BLACK	28782999	2,0	
IL095	10	ILC01		GND		BROWN	28782999	2,0	
IL096	10	ILC02		GND		BROWN	28782999	2,0	
IL113	10	C14	21	ILC04	-	BROWN	28787259	2,0	
IL114	10	C14	21	W3		BROWN	28782994	4,0	
IL115	10	W16		C14	15	BLACK	28782994	4,0	
IL116	10	C14	15	ILC04	+	BLACK	28787259	2,0	
IL120	10	W16		C4	11	BLACK	28782994	4,0	
IL121	10	W16		C4	9	BLACK	28782994	4,0	
IL123	10	ILR04	87	W16		BLACK	28782994	4,0	
IL124	10	W3		ILC05	-	BROWN	28782994	4,0	
IL206	60	C173	1	CRP04	34		28782541	0,0	
IL207	60	C173	2	CRP04	35		28782541	0,0	
IL208	60	C173	3	W 3			28782541	0,0	
IL209	60	C173	4	W 3			28782541	0,0	
IL250	70	C3	1	C201	1		28786836	0,0	
IL251	70	W6		C201	2		28786836	0,0	
IL252	70	C3	18	ILL12	+		28786836	0,0	
IL253	70	W6		ILL12	-		28786836	0,0	
IL258	70	C15	2	C186	3	BLACK	28782998	2,0	
IL259	70	C15	3	C186	2		28782998	2,0	
IL260	70	C15	4	C186	1	BLACK	28782998	2,0	
IL261	70	C15	2	CLP03	6		28782542	3,0	
IL262	70	C15	4	CLP03	30		28782542	3,0	
IL263	70	W1		C15	3	BLACK	28782994	4,0	
RED	80	SLOPE	A	A		RED	28782928	1,0	
SHIELD	80	C01	04	C79	04	SHIELD	28781736	0,0	
SHIELD	80	C175	13	C70	2	SHIELD	28786603	1,0	

16. Electrical system

Wire No	Page	LH Conn	LH Pin	RH Conn	RH Pin	Wire Colour	Part No	Revision	Note
W265	90	X23	29	X25	17	VI	28782980	3,0	
W266	90	X25	18	X23	30	BL	28782980	3,0	
W267	90	X23	31	X25	19	BROWN	28782980	3,0	
W268	90	X25	20	X23	32	PK	28782980	3,0	
W269	90	X23	33	X25	21	PU	28782980	3,0	
W270	90	X25	22	X23	34	VI	28782980	3,0	
W271	90	X23	35	X25	23	BL	28782980	3,0	
W272	100	X26	1	F17	2	RD	28782980	3,0	
W273	100	X17	1	X26	2	BLACK	28782980	3,0	
W274	100	X27	1	X26	1	RD	28782980	3,0	
W275	100	X23	36	X27	2	BL	28782980	3,0	
W276	100	X28	1	F20	2	RD	28782980	3,0	
W277	100	X17	1	X28	2	BLACK	28782980	3,0	
W278	70	X18	1	F03	1	RD	28782980	3,0	
W279	30	ILD02	1	X22	25	BL	28782980	3,0	
W280	30	X21	3	R7	86	BL	28782980	3,0	
W281	30	X17	1	R7	85	BLACK	28782980	3,0	
W282	30	R7	30	R7	85	BLACK	28782980	3,0	
W283	30	X18	1	F02	1	RD	28782980	3,0	
W284	80	X45	2	X33	1	OR	28782985	3,0	
W284	10+80	X45	2	X33	1	OR	28782985	3,0	
W285	80	X33	2	X45	3	BL	28782985	3,0	
W285	80	X33	2	X45	3	BL	28782985	3,0	
W286	90	X48	3	X33	3	BL	28782985	3,0	
W287	90	X33	4	X48	1	BL	28782985	3,0	
W288	80	X45	7	X33	5	BLACK	28782985	3,0	
W288	80	X45	7	X33	5	BLACK	28782985	3,0	
W289	90	X33	6	X35	3	BL	28782985	3,0	
W290	90	X35	2	X33	7	BL	28782985	3,0	
W291	90	X36	3	X33	8	BL	28782985	3,0	
W292	20	X33	9	X38	7	BL	28782985	3,0	
W293	20	X38	2	X33	10	BL	28782985	3,0	
W294	90	X33	11	X39	3	BL	28782985	3,0	

16. Electrical system

Wire No	Page	LH Conn	LH Pin	RH Conn	RH Pin	Wire Colour	Part No	Revision	Note
CR218		C66	3	SPL3			6229265M9 1	.02	
CR221		C66	2	C96	1		6229265M9 1	.02	
BR088		C66	22	C96	1		6229265M9 1	.02	
CR219		C66	4	C95	1		6229265M9 1	.02	
BR089		C66	23	C95	1		6229265M9 1	.02	
CR222		C66	5	GND1			6229265M9 1	.02	
BR090		C66	24	GND1			6229265M9 1	.02	
CR220		C95	2	GND2			6229265M9 1	.02	
CR223		C96	2	GND3			6229265M9 1	.02	
BR083		C64	3	SPL4			6229265M9 1	.02	
BR084		C64	?	SPL4			6229265M9 1	.02	
BR085		C64	4	SPL3			6229265M9 1	.02	
BR086		C64	?	SPL3			6229265M9 1	.02	
BR087		C66	25	C64	?		6229265M9 1	.02	
CAN HI	20	C258	30	C255	20		28273880	3,00	
CAN LO	20	C258	31	C255	21		28273880	3,00	
EM085	20	C258	8	C255	22		28273880	3,00	
EM088	20	C258	7	GND	W3		28273880	3,00	
EM089	20	C258	5	C255	4		28273880	3,00	
EM090	20	C258	6	C255	5		28273880	3,00	
EM091	20	C258	10	C255	6		28273880	3,00	
EM092	20	C258	14	C255	7		28273880	3,00	
EM093	20	C258	15	C255	8		28273880	3,00	
EM094	20	C258	17	C255	9		28273880	3,00	
EM095	20	C258	19	C255	10		28273880	3,00	
EM096	20	C258	16	C255	11		28273880	3,00	

18. General assembly instructions

18.4 Fitting a flanged bearing with locking collar

The following instructions must be followed when fitting flanged bearings.

1. Both halves of the flange must be on the same side of the mounting plate.
2. Insert the bolts and do up by hand.
3. To align the bearings, rotate the shaft a few times before tightening the bolts.
4. Knock the locking collar firmly home using a punch and hammer. Tighten the locking collar in the rotation direction of the shaft (if the bearing housing rotates, tighten the locking collar counter to the rotation direction).
5. Tighten the cup point screw firmly.

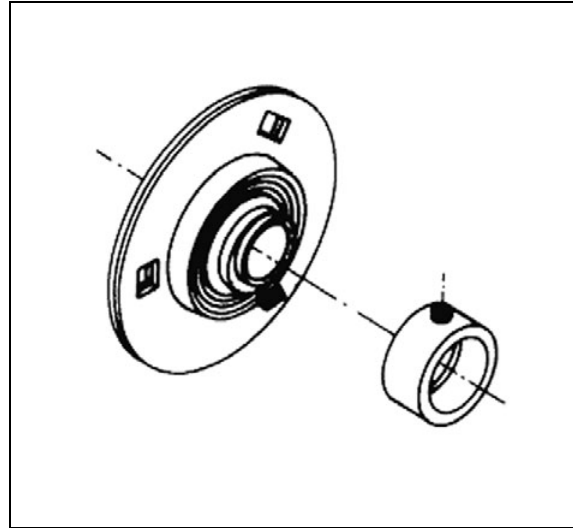


Fig. 9

20100

19. Miscellaneous data

Side	No.	Description	Qty	Grease	Oil
		Various linkages (*7)	-		X

250 hours (white)

Side	No.	Description	Qty	Grease	Oil
LH	24	Hubs, rear wheels	1	X	
LH	25	King pins	1	X	
LH	26	Rear axle pivot	2	X	
RH	31	King pins	1	X	
RH	32	Hubs, rear wheels	1	X	
RH	59	Ball joint for levelling ram, AL table	1	X	
RH	64	Tension pulley for alternator	1	X	
RH+LH		Wheel bogie for table trailer	1+1	X	
		Spindle for jockey wheel, table trailer (if grease nipple is available)	1	X	

In addition to the above, lubricate linkages, etc. as required, e.g. brake cables, concave adjustment bearings, etc.

1. Lubricate daily in maize.
2. Elevator chains and the table transmission chain must be slackened during lubrication to make sure that the oil penetrates the chain links.
3. The cylinder variator pulley must be lubricated with the hydraulically operated (upper) variator pulley fully closed (lubricate until grease appears in the overflow aperture). To ensure that the grease is distributed evenly to all moving parts in the variator pulleys, start the machine after greasing, engage the threshing unit and then vary the cylinder speed over its full range.
4. Apply lithium grease only.
5. The straw chopper clutch must be lubricated only when disengaged.
6. Quantity depending on model.
7. After cleaning and washing for off-season storage, oil the linkage at the flow divider. Start the engine and vary the spindle completely out/in five times.

19. Miscellaneous data

Bearings for rear beater (18)

Quantity: 2
Colour: Yellow
Interval: 100 hours
Lubricant: Grease
Notes: -

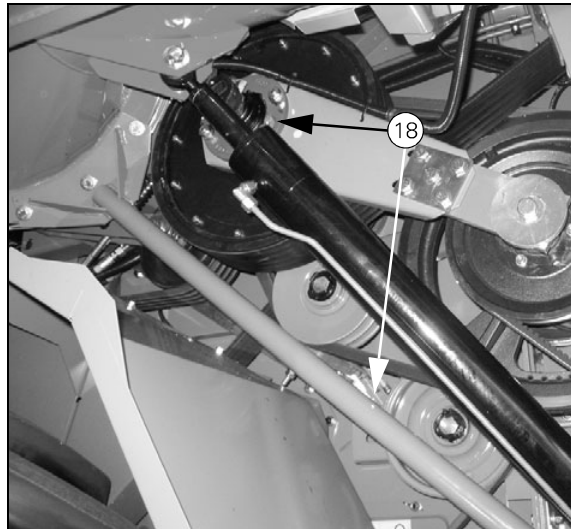


Fig. 20

19V18

Bearing for eccentric shaft (19)

Quantity: 1
Colour: Blue
Interval: 50 hours
Lubricant: Grease
Notes: -

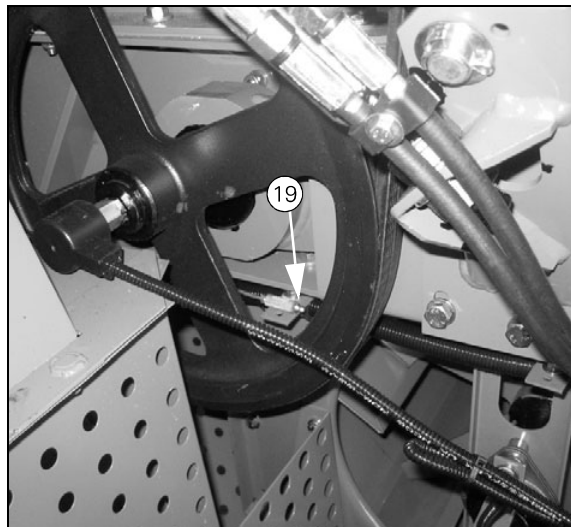


Fig. 21

19V19

Tension pulley for threshing unit clutch (20)

Quantity: 1
Colour: Blue
Interval: 50 hours
Lubricant: Grease
Notes: -

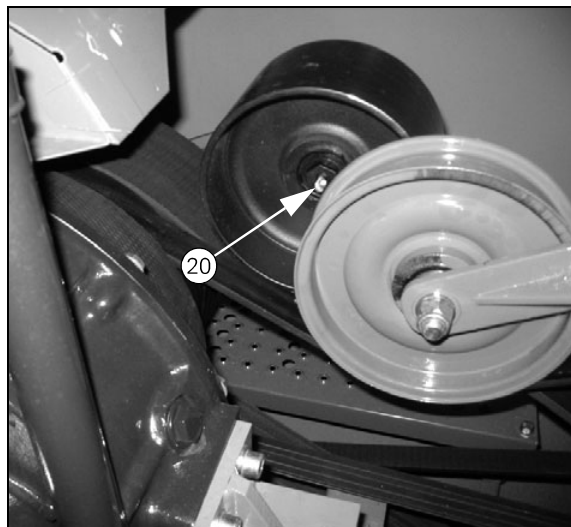


Fig. 22

19V20

19. Miscellaneous data

Chain drive for elevator and filling auger (33)

Quantity: 2
Colour: Blue
Interval: 50 hours
Lubricant: Oil
Notes: Lubricate daily in maize.

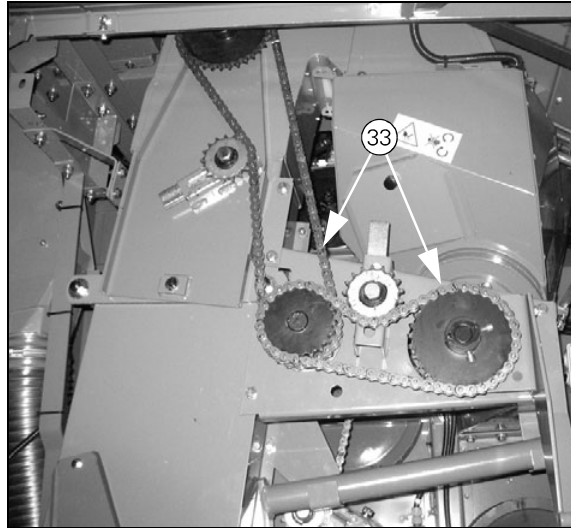


Fig. 48

19H33_1

Chain drive for elevator and returns thresher (33)

Quantity: 2
Colour: Blue
Interval: 50 hours
Lubricant: Oil
Notes: Lubricate daily in maize.

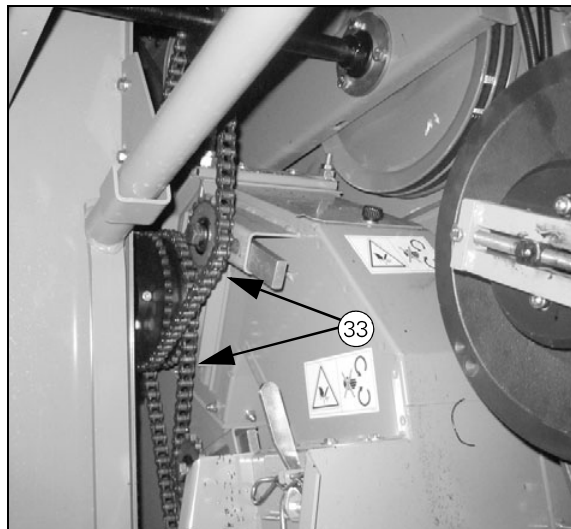


Fig. 49

19H33_2

Slip clutch for elevators (34)

Quantity: 1
Colour: Blue
Interval: 50 hours
Lubricant: Grease
Notes: -

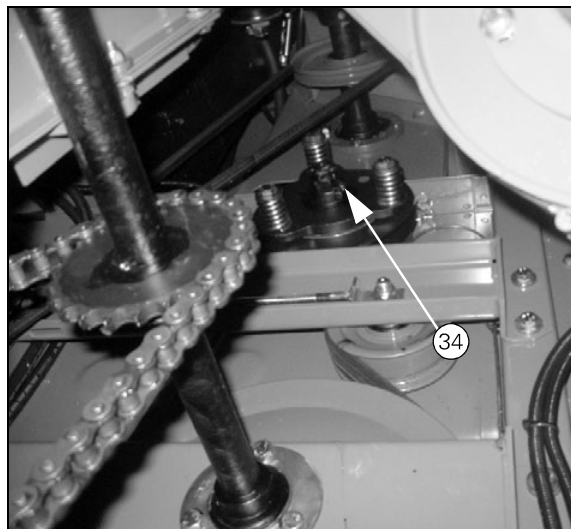


Fig. 50

19H34

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