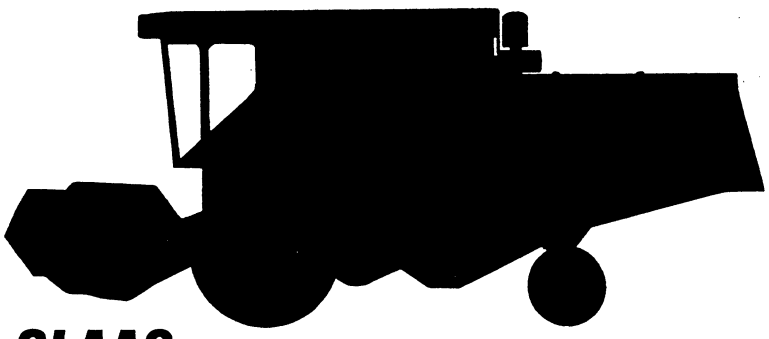
REPAIR MANUAL

CLAAS



CLAAS
DOMINATOR 218 MEGA
DOMINATOR 208 MEGA
DOMINATOR 204 MEGA
DOMINATOR 203 MEGA
DOMINATOR 202 MEGA

1
Specifications

DOMINATOR 202 MEGA

Torque settings of wheel bolts

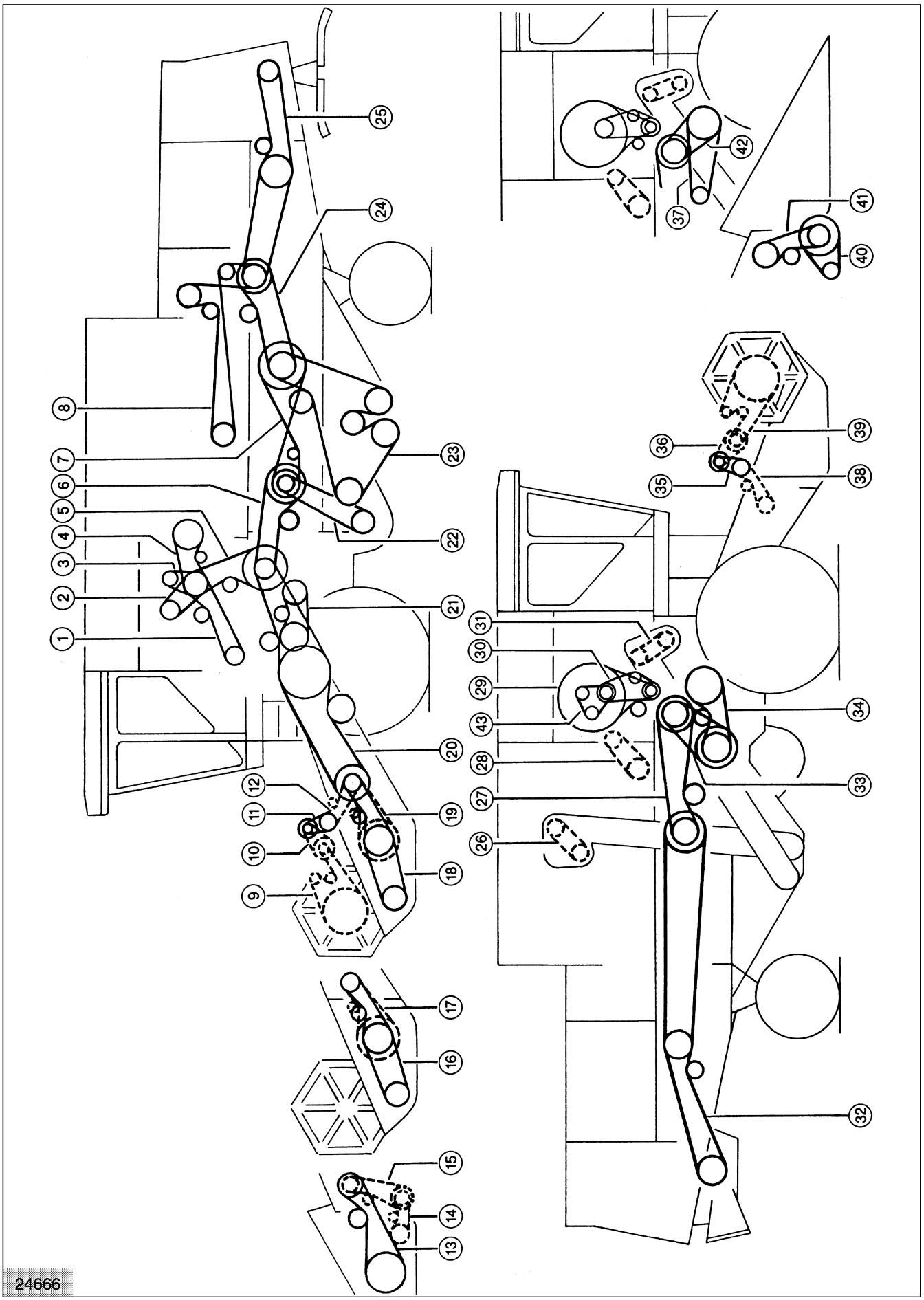
Front wheels	wheel nuts with thrust piece H 22 DIN 74361 - 10 = 860 Nm (86 mkp)
Rear wheels	wheel bolts M 18 x 1.5 = 325 Nm (32.5 mkp)
CLAAS 4-Trac rear wheel drive	wheel bolts M 22 x 1.5 - 8.8 and spring washers C 22.5 DIN 74361 (Limes ring) = 520 Nm

Basic setting

Reel	drive shaft perpendicular above knife bar, reel tines perpendicular
Intake auger	approx. 15 mm clearance between auger flights and bottom plate of cutterbar trough

Brakes

Foot brake	full braking effect after first third of pedal travel
Hand brake	brake must hold after the first 3 to 4 teeth of the segment
Steering	With steering cylinder piston fully extended, the adjustable stop bolts must be contacting the steering arms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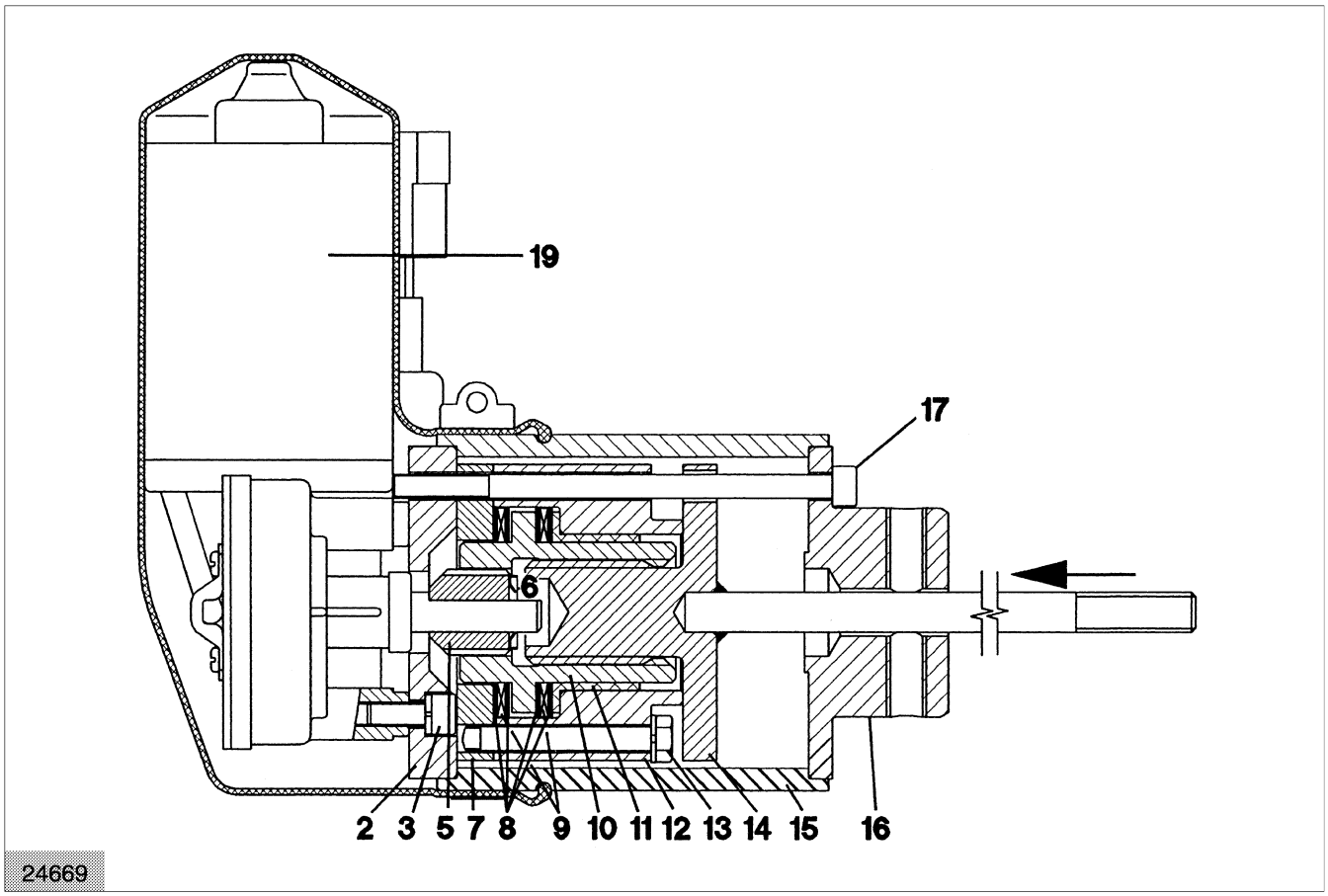
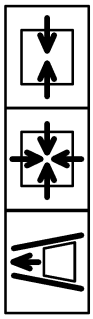


12

Assembly and installation of electric reel speed controls



IMPORTANT! Prior to assembly apply K2K DIN 51825 lithium-saponified multi-purpose grease (e.g. Shell Alvania G2 or similar product) to all sliding faces, to the seals, washers and bearings.

Up to machine no. ... install sealing ring (1).

Push flange (2) onto electric motor and secure with the socket head cap screws (6). Torque the socket head cap screws to **8 Nm**.

Insert parallel key (4) into the grove of the output shaft and fit coupler (5), paying attention to position. For machines up to machine no. ..., fit contact washer (6). On machines above no. ..., fit quick fastener instead of hex. nut and contact washer.

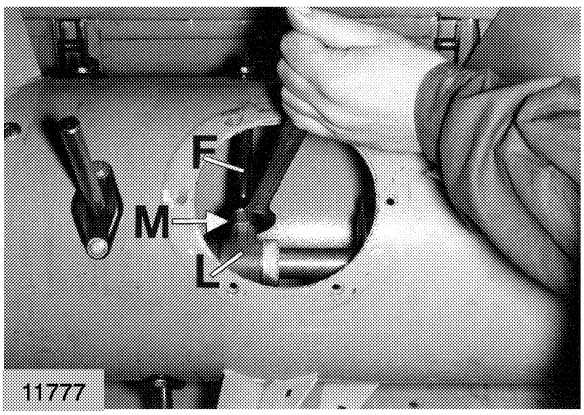
Fit flange (7) and axial washers (8) with needle bearing (9) and adjusting nut (10). Install bush (11) and secure clamping piece (12) with the hex. bolts (13).

Use two cables and fit female connectors to one end of each cable. At the other end of the cable, make one loop each and attach one cable each to the (+) terminal post and to the (-) terminal post of a 12 V battery. Connect the cables to the terminal spades of the geared electric motor to start the motor (change cables for correct direction of rotation, if required).

Removing the fingers of the intake auger

Undo the appropriate inspection door. Loosen lock nut (M) and remove finger (F).

(Fig. 41)



41

Installing the fingers of the intake auger

1. Run the nut right down to the end of the thread.
2. Screw the finger (F) into finger bearing (L) until the finger locates on the shaft. Then ease back the finger, approx. 1 mm and lock it with the lock nut.

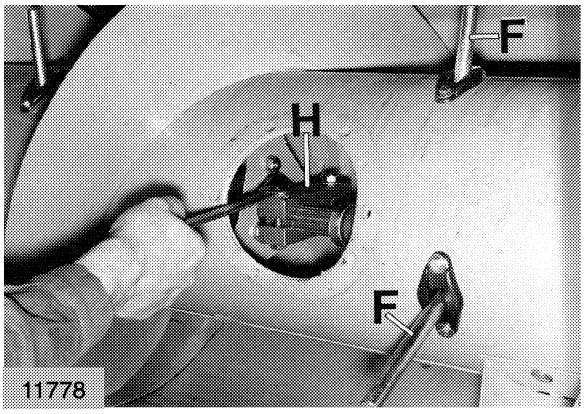
IMPORTANT! The finger (F) must be threaded as far as possible into the bearing. But make sure that the finger will not drag on the shaft.

(Fig. 41)

Removing the finger shaft from the intake auger

With the service doors open, remove the clamping bolts of arms (H). Remove the fingers (F) of the appropriate shaft.

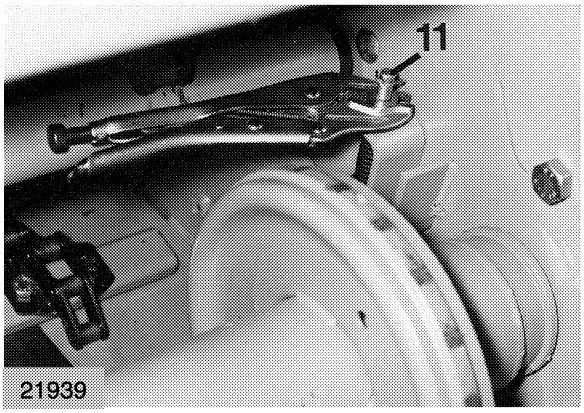
(Fig. 42)



42

Pull pins (11) on both sides up out of the support arm and secure with a self-grip wrench.

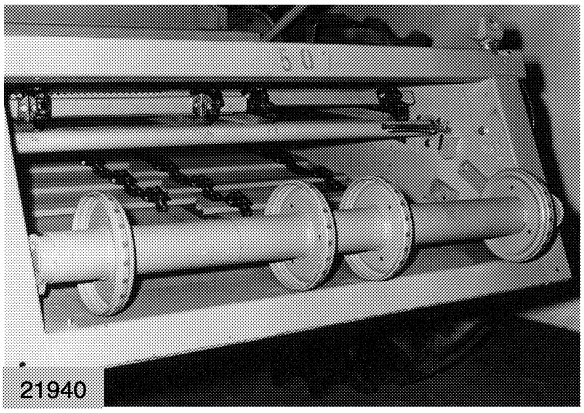
(Fig. 65)



65

Remove the lower feed rake drum to the front.

(Fig. 66)

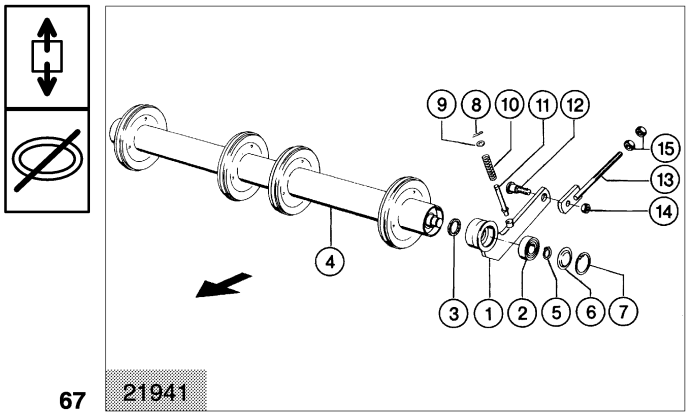


66

DOMINATOR 218 MEGA / 208 MEGA
Lower feed rake drum disassembled

1 Support arm, L/H
  Support arm, R/H
2 Deep grooved ball bearing 6306 2RS DIN 625
3 Felt strip
4 Drum
5 Circlip 30 x 1.5 DIN 471
6 Dust cap
7 Circlip 72 x 2.5 DIN 472
8 Split pin 3.2 x 18 DIN 94
9 Washer
10 Pressure spring
11 Stud
12 Stud
13 Chain tensioner
14 Self-locking nut Vm 16
15 Hex. nut M 20 DIN 934

(Fig. 67)



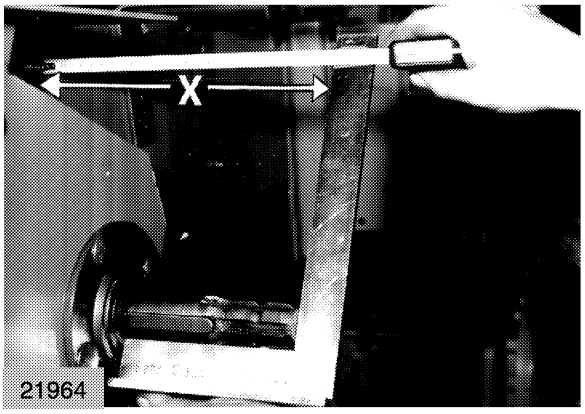
67

Installation of cutterbar intermediate shaft

Push in the shaft from the left and install the flanged bearings on the left and right. Align the shaft axially so that dimension (X)

for DO 218 / 208 MEGA = **270 mm**
for DO 204 / 203 / 202 MEGA = **400 mm**.

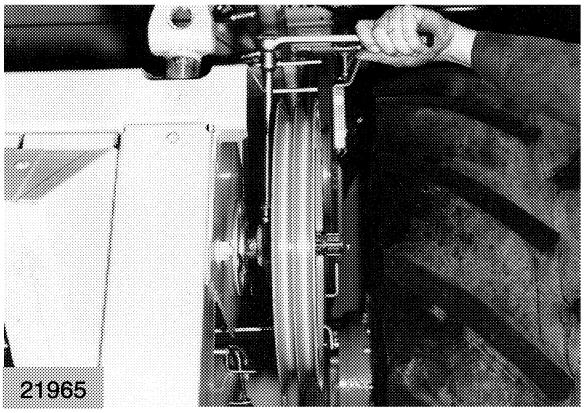
(Fig. 93)



93

Push on and align the V-belt pulley. Secure clamping hub (DO 218 – 208 MEGA) or hub with gib head key (DO 204 – 202 MEGA).

(Fig. 94)



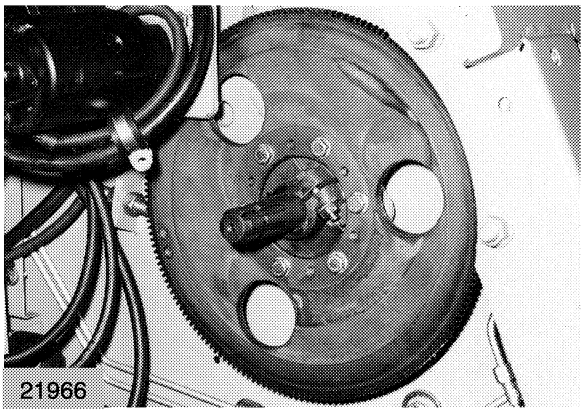
94

Fit the lock collar for the flanged bearing on the right. Push on the sprocket of the reversing unit and secure with the clamping hub (DO 218 – 208 MEGA) or hub with gib head key (204 – 202 MEGA).

Fit the guard of the reversing unit.

Fit and tension the V-belt.

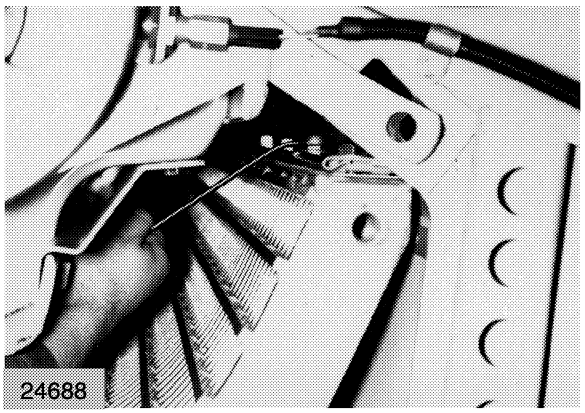
(Fig. 95)



95

Remove rake behind concave or transition plate and deflector curtain.

(Fig. 16)



16

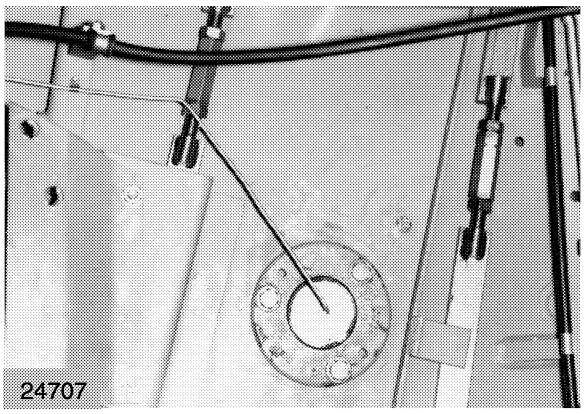
Lift concave out the front of the machine body.

IMPORTANT! Fold in lateral seals to avoid damaging them.

On the right hand side of the machine fit washer (24) with circlip (23).

Screw on lubricating line and lubricate both bearing points.

(Fig. 40)



40

Check basic adjustment of concaves and correct as necessary.
(See Adjustment of main concave and preconcave)

Install both covers on drum housing.

Secure the guard.

Install feed rake.

THRESHING DRUM

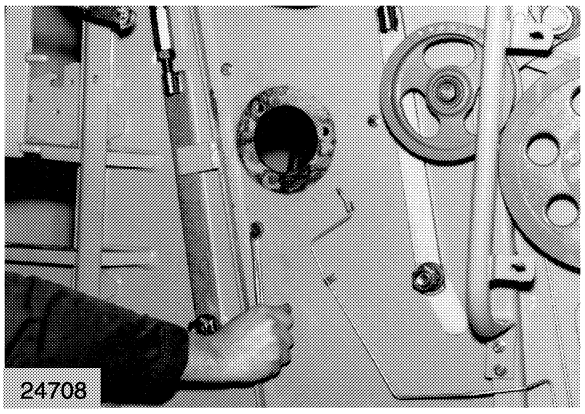
Removal of threshing drum

Remove feed rake.

Remove accelerator.

On the left-hand side of the machine, remove anti-wrapping guard from the accelerator. Do this by removing the three M 8 x 18 hex. bolts.

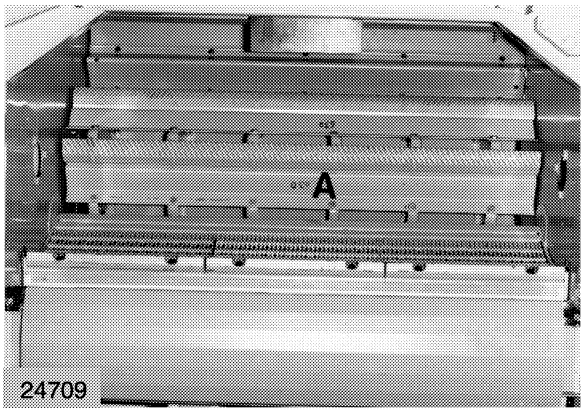
(Fig. 41)



41

Unbolt two opposing drum cover plates (A).

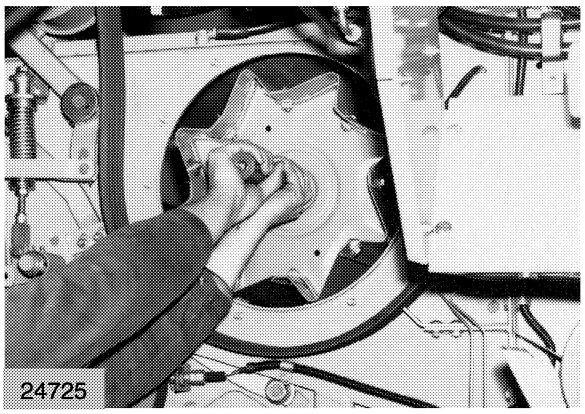
(Fig. 42)



42

Pull impeller out the left-hand side of the machine.

(Fig. 66)



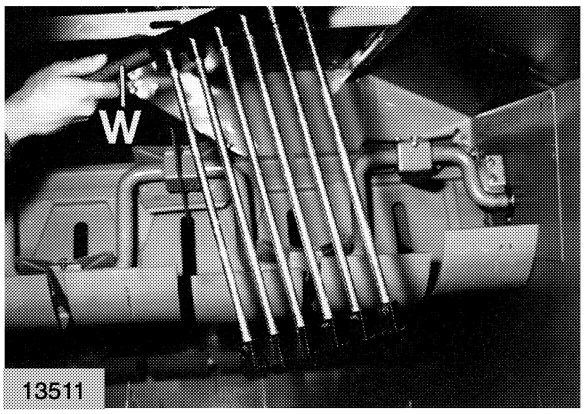
66

Before removing the impeller discs, it is recommended to measure the distance between the shaft and the outermost discs.

Once installed, it is extremely difficult to align the impeller relative to the machine wall.

Remove the bolts that attach the control shaft (W) to the side panels and remove the complete shaft assembly towards the top.

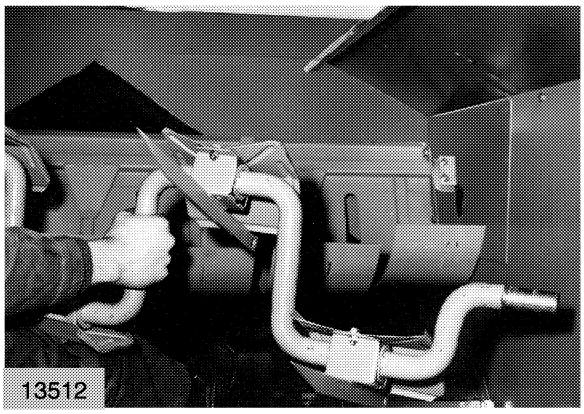
(Fig. 94)



94

Drive both flange ball bearings off the tine crankshaft, from inside the combine outward. Incline and remove the complete tine crankshaft assembly.

(Fig. 95)



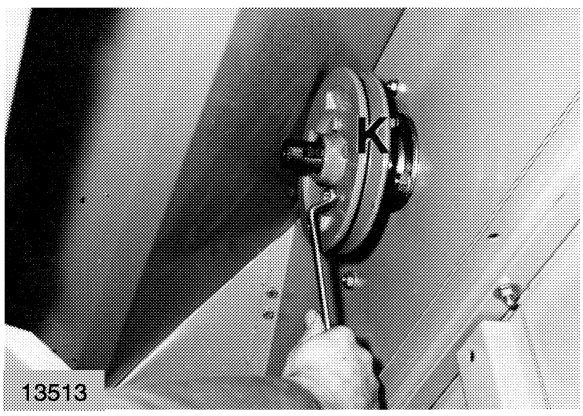
95

Removal of front tine crankshaft

Swing out the unloading auger and remove the guard located in front of the intensive separation unit drive.

Remove the V-belt and remove pulley (K) from the hub.

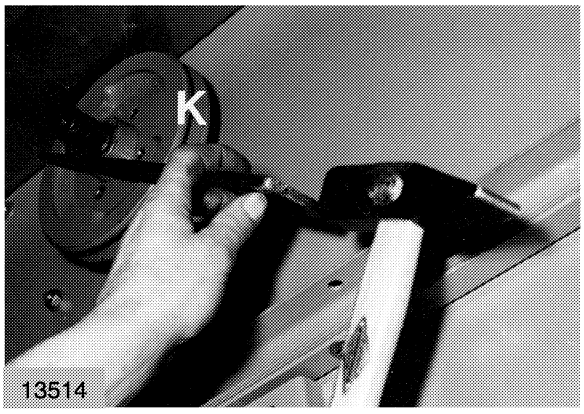
(Fig. 96)



96

Pull out the gib-head key and withdraw the complete pulley assembly (K).

(Fig. 97)

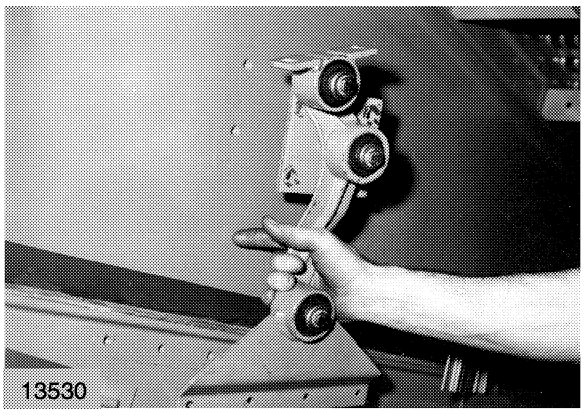


97

Unbolt the inner sieve pan rocker arm assemblies.

Lift the sieve pan out the combine from the rear.

(Fig. 125)

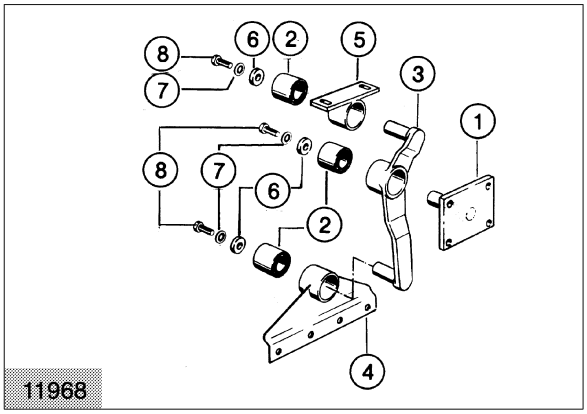


125

Inner rocker arms disassembled:

1 Trunnion
2 Metal rubber trunnion
3 Rocker arm, left and right
4 Bearing support for sieve pan
5 Bearing support for under-walker return floor
6 Washer 12.5 x 32 x 9
7 Contact washer
8 Hex. bolt M 10 x 30 DIN 933 - 8.8

(Fig. 126)

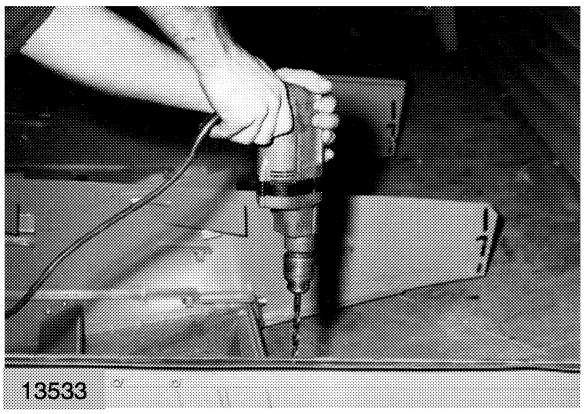


126

Installing new seal strips

With sieve pan removed, drill off the rivet heads and drive out the rivets.

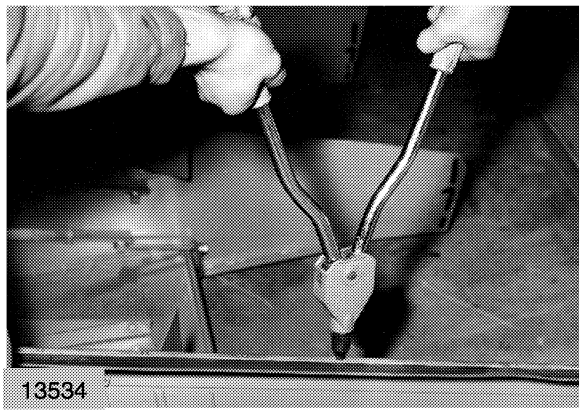
(Fig. 140)



140

Attach new seal strips using blind rivets.

(Fig. 141)



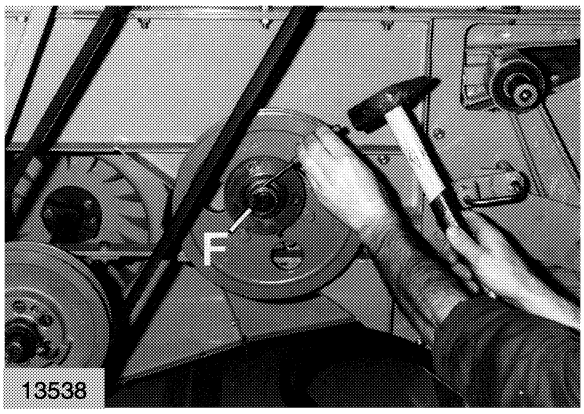
141

Removal of intermediate drive shaft for rocker arms

On both sides of the machine remove the pitmans. Remove the belt that drives the sieve pan.

Loosen the lock collar of lock collar bearing (F) and remove from crank pin.

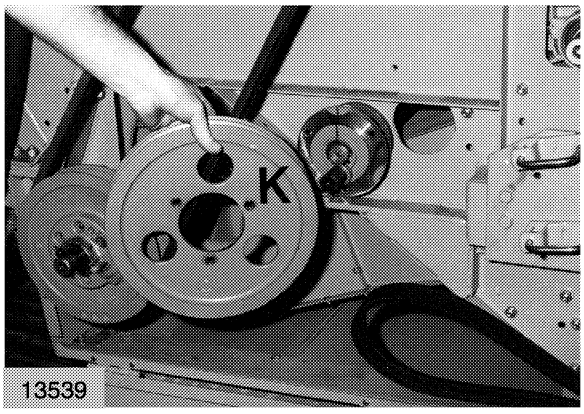
(Fig. 142)



142

Remove the bolts that secure V-belt pulley (K).

(Fig. 143)

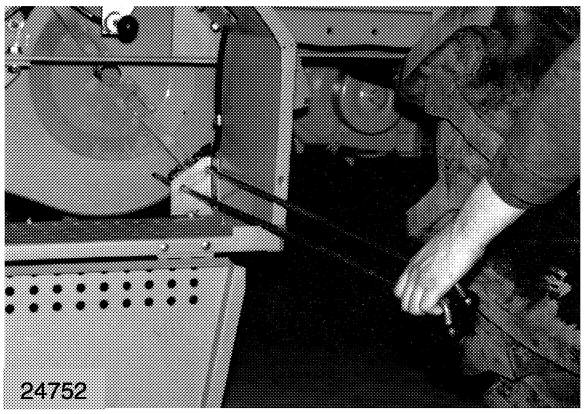


143

Loosen the clamping screws in the plate halves of the fan blast reduction kit.

Pull the lower connecting rods out the right-hand side of the machine while a second person removes the rotors.

(Figs. 168 and 169)



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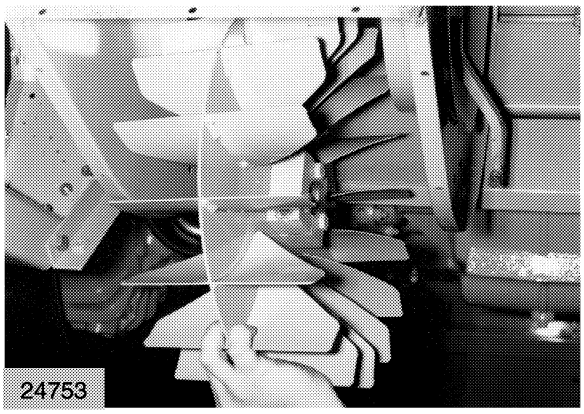


169

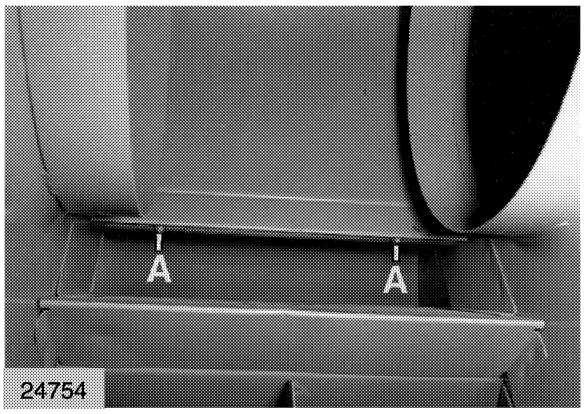
Removal of fan housing

DO 218 MEGA / 208 MEGA / 204 MEGA

Remove fan rotors.

Unscrew the self-locking nuts at (A) and remove the air deflectors out the bottom of both fan housings.

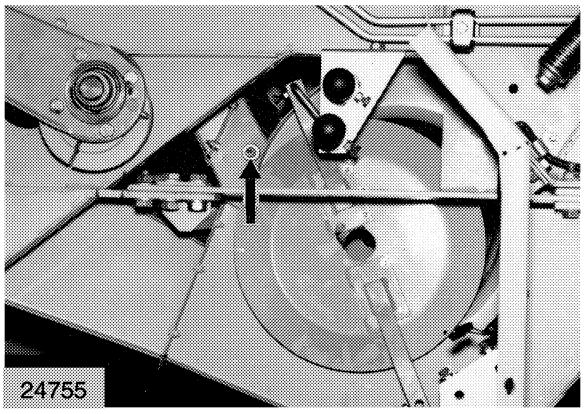
(Fig. 170)



170

Undo set collars on the air deflector adjustment shaft and pull out shaft to the left.

(Figs. 171 and 172)



171

Removal of cleaning fan

DO 203 MEGA / 202 MEGA

Remove fan belt.

Operate the cleaning fan to maximum speed. Disengage the threshing mechanism, stop the engine and remove the ignition key.

Screw one BM 12 x 80 DIN 564-8.8 hex. bolt (S, part no. 236 301.0) into a tapped hole in the front fixed pulley half until the rear moveable pulley is blocked open.

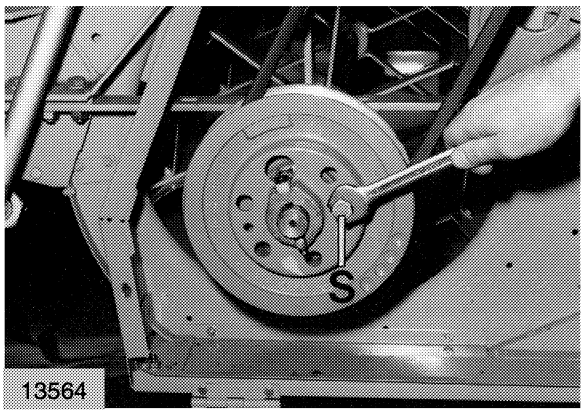
With the engine switched off, turn on the ignition and engage the threshing mechanism. Then operate the fan variable speed drive to the slow speed position by actuating the appropriate rocker switch.

Remove the variable speed belt from the pulleys.

On the left-hand side of the machine, lower the hinged bottom plate. To do this, release the plug. Unbolt the side guard.

Undo the two M 10 x 8 set screws of the variable speed pulley. Pull the variable speed pulley assembly off the shaft and withdraw the parallel key.

(Fig. 197)



197

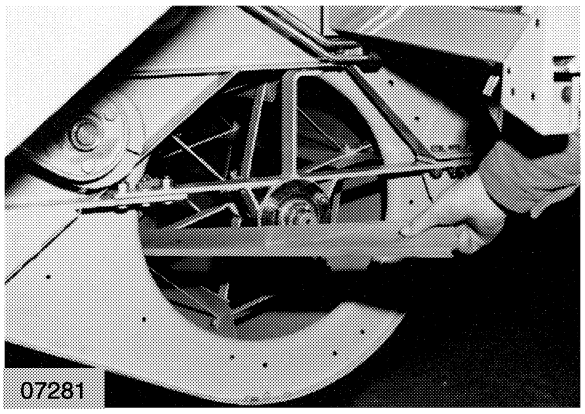
Fan blades

DO 203 MEGA / 202 MEGA

Fan blades and / or stays can now be replaced by new ones as necessary.

The fan assembly is balanced. Mark the fan blades and spiders and note balancing weights (which could be bolts) where fitted, before disassembly.

(Fig. 198)



198

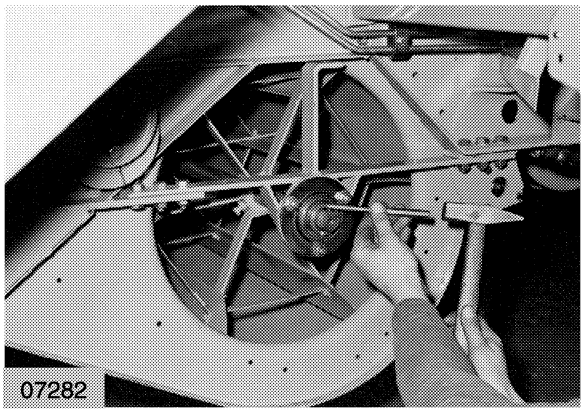
Fan shaft

DO 203 MEGA / 202 MEGA

Right-hand side:

Unlock the castellated nut of the adapter sleeve bearing and back off the nut a few turns.

(Fig. 199)



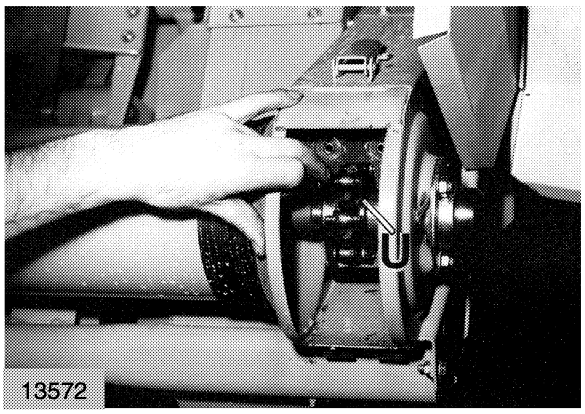
199

RETURNS ELEVATOR

Removal of upper returns elevator shaft

Open the elevator boot door, turn the elevator chain until chain connecting link (U) is at the bottom. Relieve the tension in the elevator chain and remove the connecting link.

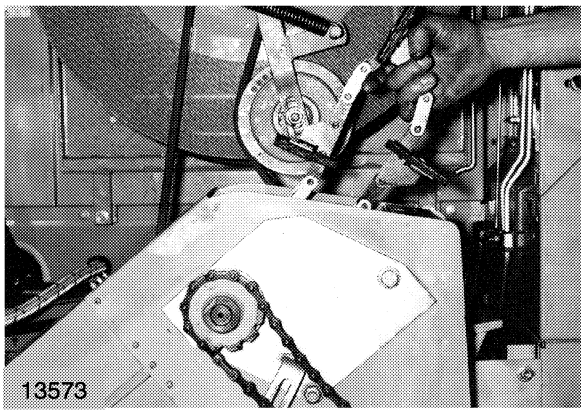
(Fig. 1)



1

Remove the cover of the elevator head and take out the elevator chain through the top of the elevator housing.

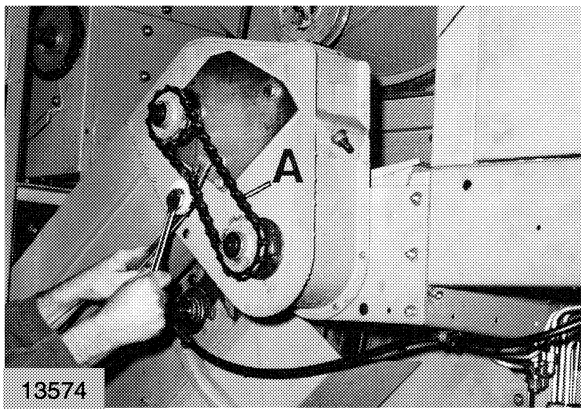
(Fig. 2)



2

Slacken and remove drive chain (A) of the returns delivery auger.

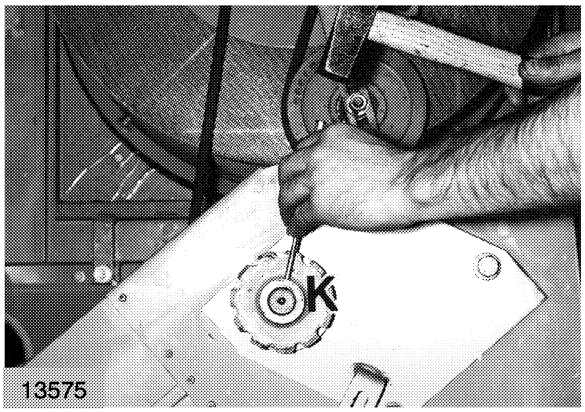
(Fig. 3)



3

Drive the expansion pin out of the hub of sprocket (K) and remove the sprocket.

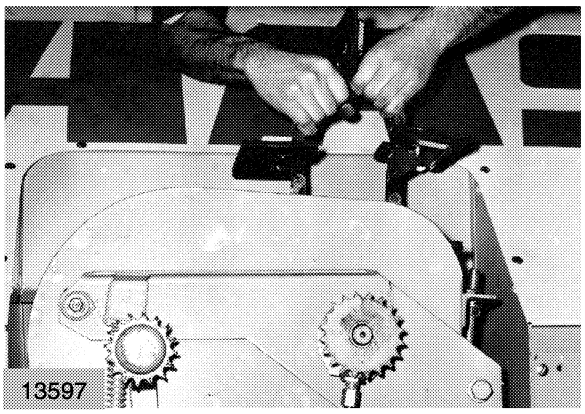
(Fig. 4)



4

Evenly pull out both strands of the grain elevator chain through the top of the housing.

(Fig. 29)



29

Installation of grain elevator chain

Feed in the elevator chain from the top, ensuring that both chain strands hang down the same length. The delivery side is to the front.

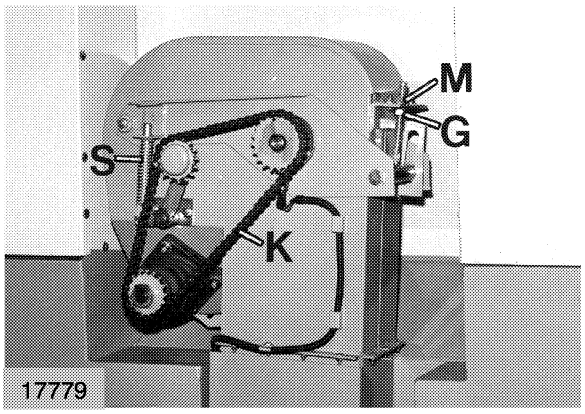
Tension the elevator chain:

Loosen counter-nut (G) on the elevator head and tension the elevator chain with nut (M).

Tension the elevator chain so that the delivery plates do not scrape on the elevator housing. It must still be possible to push the chain to the side by hand at the bottom sprocket.

Tighten the counter-nut again and close the elevator boot cover tightly. Drive chain (K) for the filler auger is automatically tensioned by spring-loaded tensioner (S).

(Figs. 27 to 30)

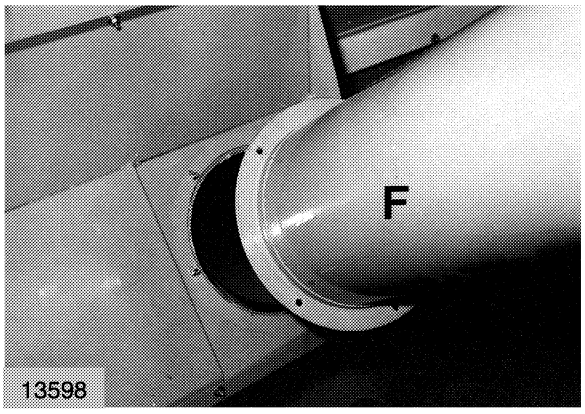


30

Removal of grain tank filler auger

Unbolt grain tank filler auger (F) at the grain tank wall.

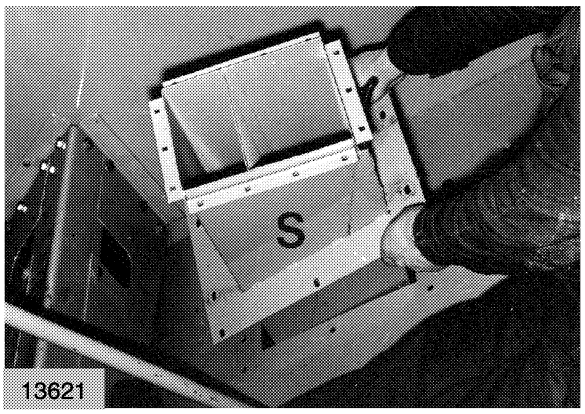
(Fig. 31)



31

Remove grain elevator housing (S) through the top of the grain tank.

(Fig. 56)



56

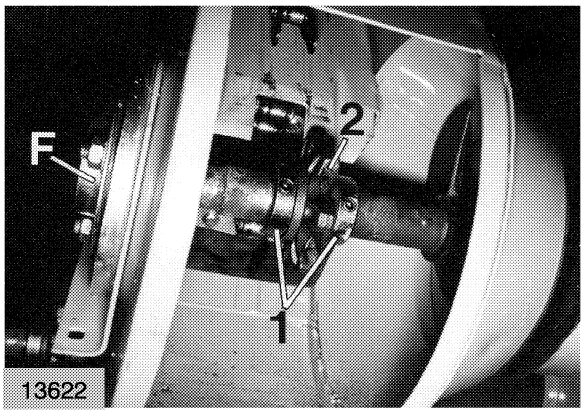
Removal of grain auger

Open the elevator boot door, turn the elevator chain until the chain connecting link is at the bottom, relieve the tension in the elevator chain and remove the connecting link.

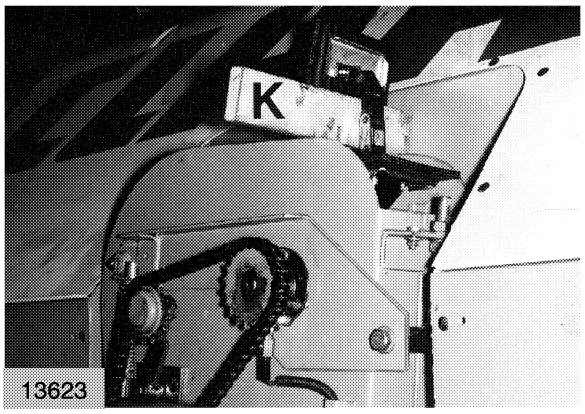
Remove the elevator cover. Evenly pull out both strands of the grain elevator chain slightly and support the chain on the elevator head using a suitable length of timber (K) or similar block.

Loosen set collars (1) holding sprocket (2) in the elevator boot and loosen the lock collar of flange ball bearing (F). Thoroughly clean the shaft of the grain auger in the elevator boot.

(Figs. 57 and 58)



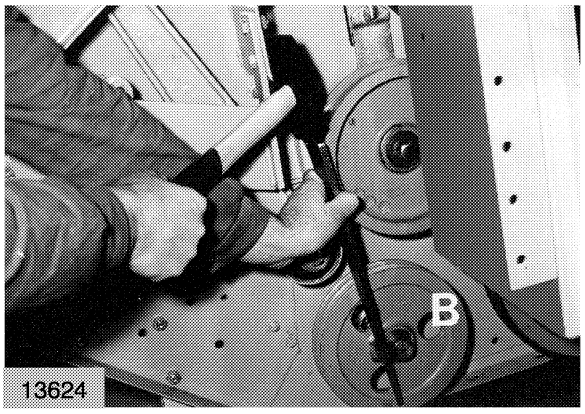
57



58

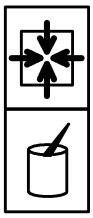
On the left-hand side of the machine, remove the auger drive belt and pull off grain auger drive pulley (B).

(Fig. 59)



59

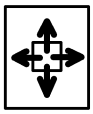
Installation of lateral augers



1. Install the lateral auger together with the bearings and at the same time install the bevel gear in the angle drive gearbox.
2. Bolt the rear bearing to the rear panel of the grain tank. Bolt the bearing flange of the front bearing to the angle drive gearbox.

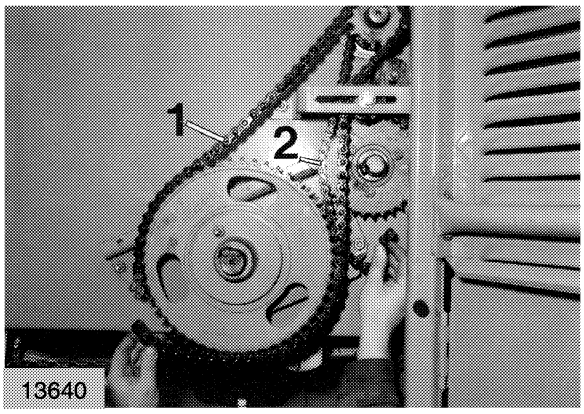
   Install the circlip in front of the bevel gear.
3. Push the auger backwards or forwards so that the bevel gears have a slight backlash. Next secure first the front bearing, then the rear bearing with the lock collars.
4. Pack the angle drive gearbox with 250 g of roller bearing grease and fit the gearbox cover.

Removal of grain tank intermediate drive shaft



Remove steel roller chains (1 and 2)

(Fig. 91)



91

Remove sprocket (3) and bearing (4) from the intermediate drive shaft.

(Fig. 92)

92

On OM 441 A

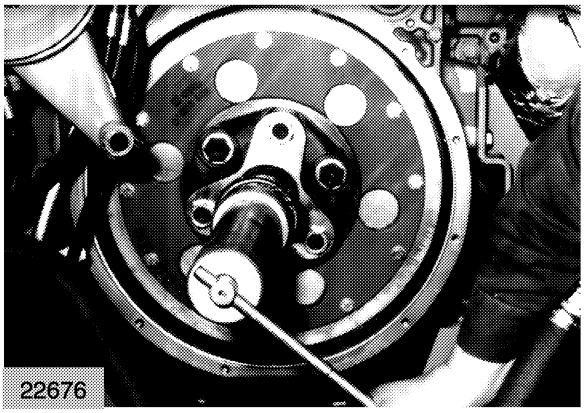
Unlock and remove the castellated nut from the face of the adapter sleeve bearing.

Special tool:

Installation tool for engine output shaft bearing
Part No. 181 963.0

1 Special socket spanner - Part No. 181 968.0
2 Tube - Part No. 181 964.0

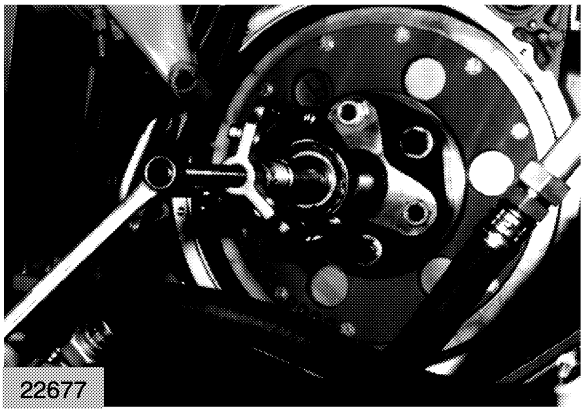
(Fig. 16)



16

Pull off the adapter sleeve bearing and multi-ring seal using a 3-arm puller.

(Fig. 17)



17

On OM 366 LA / OM 366 A

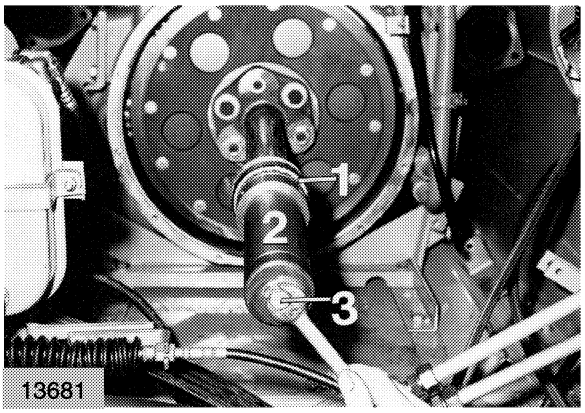
Pull off the bearing assembly of the engine output shaft using a special tool.

Special tool:

3 Threaded adapter - Part No. 181 967.0
4 Tube - Part No. 181 964.0
5 Hexagon head bolt Bm 12 x 180
DIN 564-8.8 - Part No. 236 302.0

If the bolt length is not sufficient to pull off the bearing completely, insert a shaft section between bolt and engine output shaft.

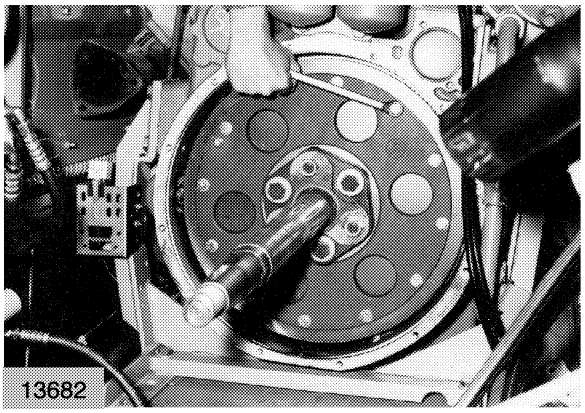
(Fig. 18)



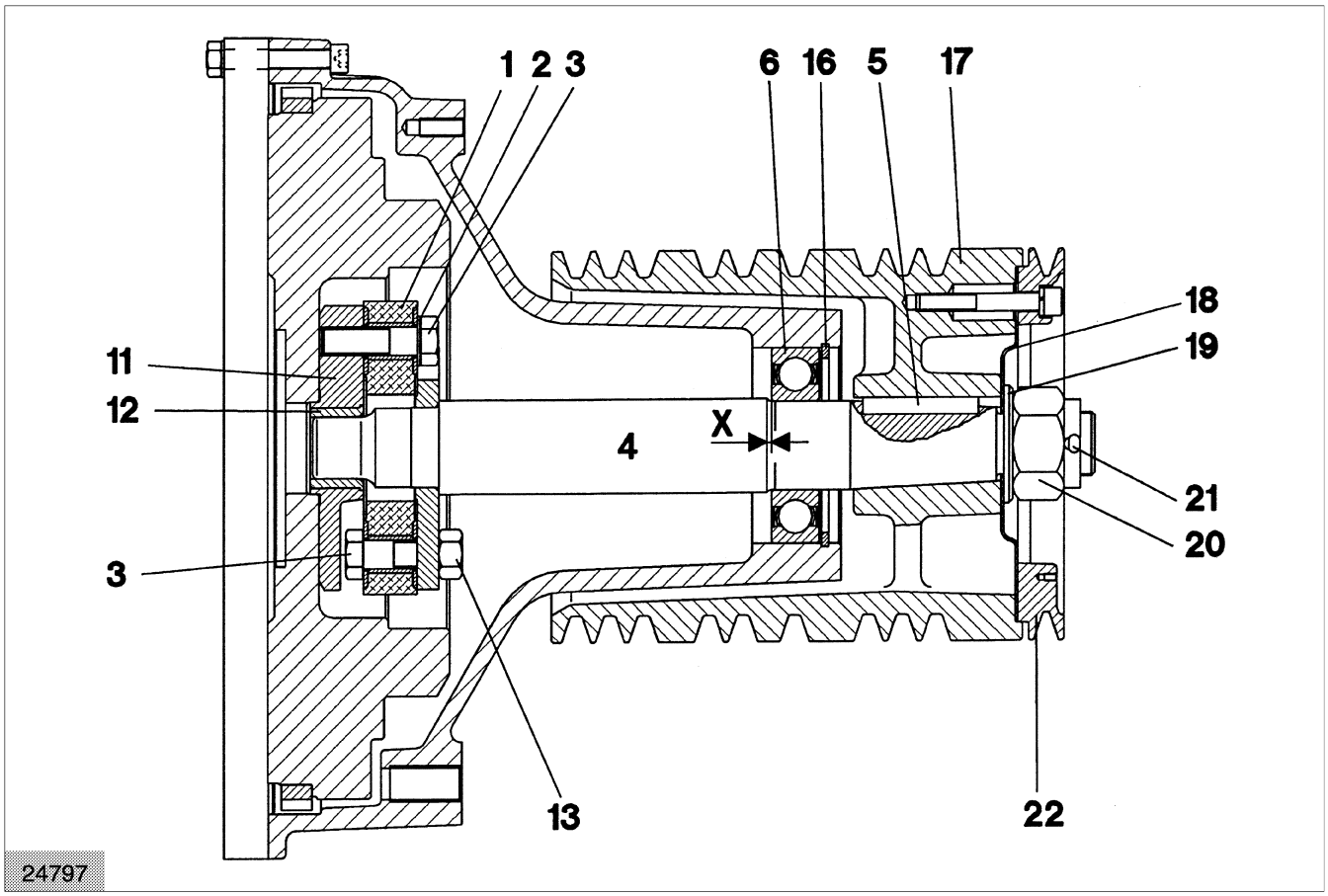
18

Unbolt the engine output shaft complete with driven disc from the engine flywheel.

(Fig. 19)



19



31

DOMINATOR 203 MEGA

PERKINS 1006.6 T

1 Ball bearing (6) must be heated before installation. Heat the bearing using a hot plate or similar heater to approx. 80° C and quickly push the bearing onto the bearing seat until it is approx. 2.5 mm (dimension X) from the shaft shoulder.
2 Bolt flexible coupling disc to the flange of engine output shaft (4) using three self-locking hexagon head bolts (3) M 16 x 55 DIN 931 VP (Verbus-Plus). Tighten the hexagon head bolts to a torque of **210 Nm**. Screw on hex. nuts (20) and also tighten to **210 Nm**.

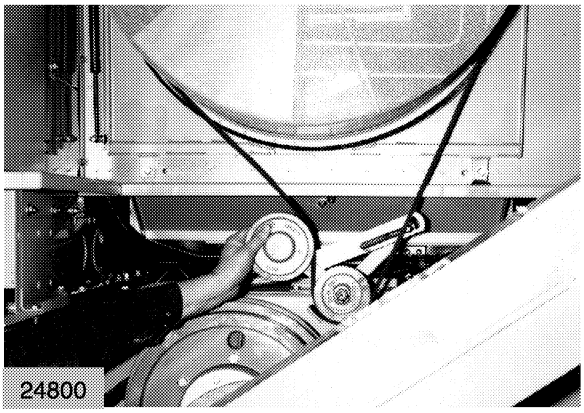
   CAUTION! When tightening the hex. nuts, be sure to counterhold the hexagon head bolts.
3 Position spacer (11) with bushing (12) on the ball of the engine output shaft and bolt the spacer with flexible coupling disc (1) to the engine output shaft using three self-locking hexagon head bolts (3) M 16 x 55 DIN 931 VP (Verbus-Plus). Tighten the hexagon head bolts to a torque of **210 Nm**.
4 Push on engine output shaft housing (14) and bolt to the engine all round. Fit circlip (16). A slight clearance must be left between circlip and bearing outer race.
5 Insert parallel key (5) and push on engine pulley (17). Install cover plate (18) and washer (19) on the shaft and tighten castellated nut (20) to a torque of **550 Nm**. Tighten the nut until cotter pin (21) can be inserted.
6 On combines with air conditioning, install belt pulley (22).

(Figs. 30 and 31)

Swing back the jockey pulley to relieve the drive belt tension and remove the drive belt.

(Fig. 55)

Remove the flap under the radiator rotary screen by unbolting the struts on the left and right from the rear panel of the radiator screen. Remove the bolts on the side and take off the flap.

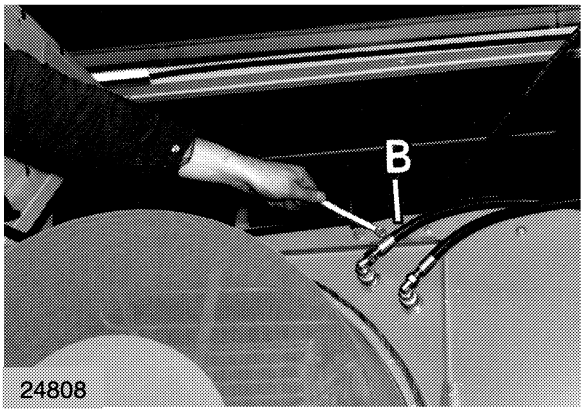


55

Remove the shock absorbers of the radiator screen rear panel.

Remove radiator grille (B).

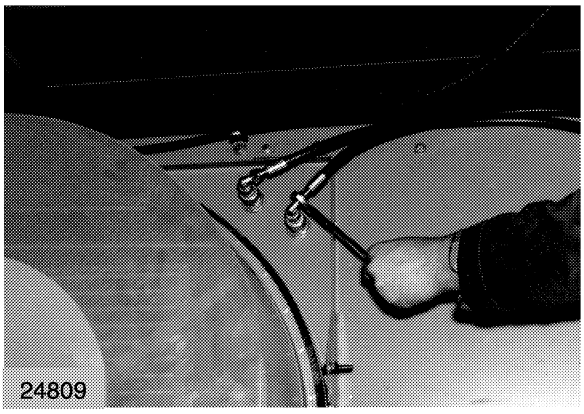
(Fig. 56)



56

Disconnect the hoses from the hydraulic oil cooler and tightly plug the ends of the hoses and the connections on the oil cooler with dust caps or plugs.

(Fig. 57)



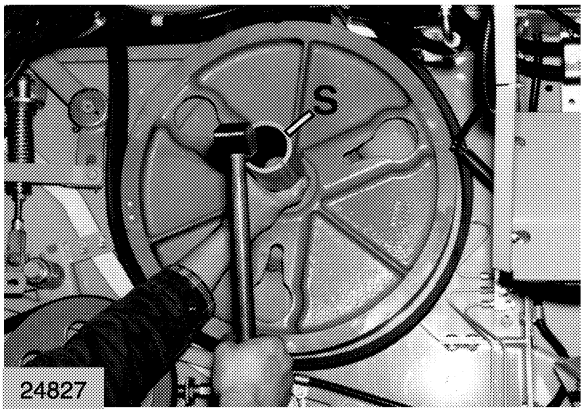
57

On combines with air conditioning, the radiator screen can be placed on top of the engine so that the air conditioning system does not have to be evacuated.

Never disconnect the hoses of the air conditioning system as otherwise the refrigerant would escape. **DANGER OF ACCIDENTS!**

Using a block-ended tube (S), loosen the cone in the threshing mechanism drive pulley with a short, sharp blow. The inside diameter of the tube must be larger than the diameter of the cone to prevent the cone being damaged.

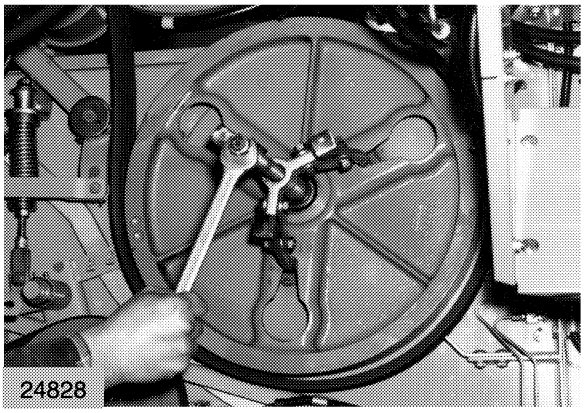
(Fig. 80)



80

Remove the cone and pull off the threshing mechanism drive pulley.

(Fig. 81)



81

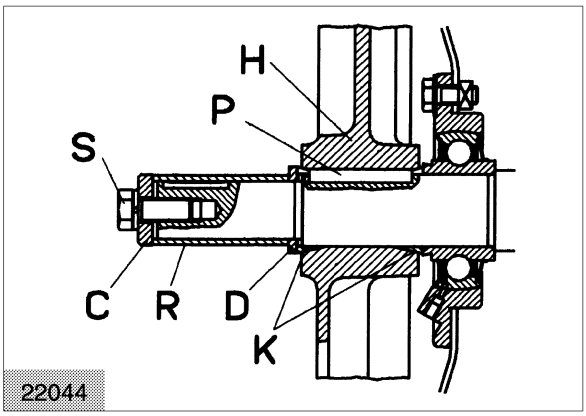
Installing threshing mechanism drive pulley

Apply semi-fluid gear lubricant G 00 DIN 51 502 (411 423.0) to all cones, the corresponding tapered seats and the insides of the hubs before assembly.

1. Install threshing mechanism drive pulley (H) with cones (K) and parallel key (P).
2. Push on spacer ring (D) and spacer tube (R) 40.2 x 48.3 x 96 (629 176.0). Push on lock washer (C) and tighten bolt (S) to a torque of **180 Nm**.
3. Unscrew bolt (S) and remove tube (R). Push rear cone for the hub of the hydraulic cutterbar clutch or cutterbar drive pulley onto the shaft up to the spacer ring. Fit hub or washer with front cone. Screw in hexagon head bolt (S) with spring lock washer and lock washer and tighten to a torque of **180 Nm**.
4. Fit belt and install power band belt.

Adjust threshing mechanism drive and cutterbar drive according to the adjustment instructions.

(Fig. 82)

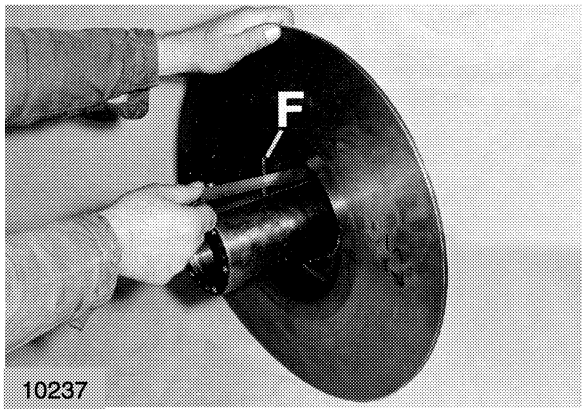


82

Assembling spring-loaded variable speed pulley assembly

In order to centre parallel key (3), first drive a roll pin (F, 6 mm dia., approx. 30 mm long) through the parallel key into the bore of the groove.

(Fig. 98)

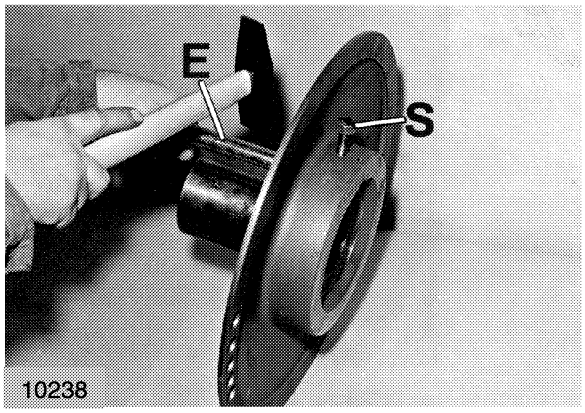


98

Place a square bar, flattened shaft or similar tool (E) onto parallel key (3). Screw a hexagon head bolt M 12 x 1.5 with full-shaft thread in at (S) until it contacts this assembly aid. Now alternately tighten bolt (S) and hammer the assembly aid at (E) until the parallel key is pressed **completely** into the groove.

After installing the parallel key, drive out roll pin (F) towards the inside. Coat parallel key and notched dowel (7) and hex. socket head cap screws (4) with liquid locking compound (Casco 118 / Loctite 75) and tighten the hex. socket head cap screws to a torque of **10 Nm**.

(Figs. 97 and 99)



99

Determine backlash:

Thoroughly clean both variable speed pulleys.

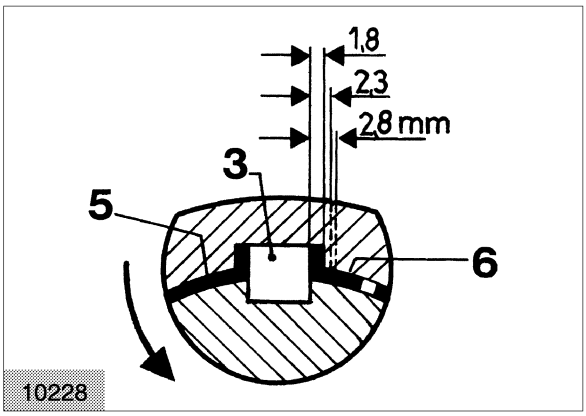
Liberally oil sliding bushing (5) and sliding rail (6), install and assemble the variable speed pulley halves.

Make a mark opposite one another on each variable speed pulley half, then turn the variable speed pulley halves in opposite directions and measure the backlash at the outer circumference of the pulleys (distance between the two marks).

When the variable speed pulley halves move easily, the backlash should be as small as possible. It must not exceed 1 mm.

If necessary, the next thicker sliding rail (6) must be used.

(Fig. 100)

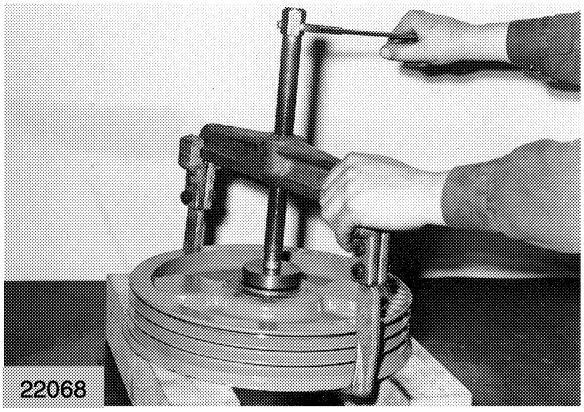


100

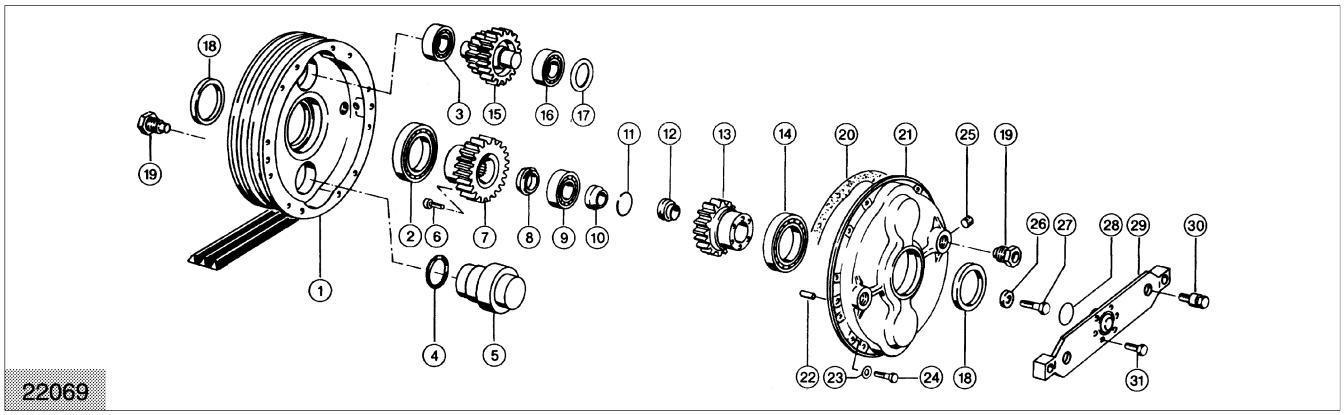
Remove the cone and press the sun gear out of the gearbox halves using a puller.

(Fig. 121)

When pressing the cylindrical roller bearings out of the gearbox halves, count and note the number of shims.



121



122

Planetary gear unit dismantled:

1 Gearbox housing
2 Deep-groove ball bearing 16016 C4 DIN 625
3 Cylindrical roller bearing Nj 2207 Ecma / C3
4 O-ring 65 x 3 - N DIN 3771
5 Balancing weight
6 Hex. socket head cap screw M 6 x 12
7 Sun gear
8 Cone
9 Cylindrical roller bearing
10 Stepped sleeve
11 Circlip
12 Needle bearing 28 x 45 x 17 / 20
13 Sun gear
14 Deep-groove ball bearing 16016 C4 DIN 625
15 Planetary gear stage
16 Cylindrical roller bearing Nj 2207 Ecma / C3
17 Shim
18 Shaft seal As 80 x 100 x 10 DIN 3760
19 Threaded stud
20 Gasket
21 Gearbox housing
22 Roll pin D 10 x 28 DIN 7979
23 Contact washer S 8
24 Hexagon head bolt M 8 x 25 DIN 933
25 Plug M 16 x 1.5
26 Washer
27 Hexagon head bolt M 16 x 45 DIN 933
28 O-ring 45 x 1.5 - N DIN 3771
29 Torque arm
30 Tapered bolt
31 Hexagon head bolt M 10 x 25

(Fig. 122)

Assembling and installing electric fan speed control

1. **NOTE!** Before assembly, coat all sliding surfaces, shims, sealing washer and bearings with grease K2K to DIN 51825, lithium-saponified multi-grade grease (e.g. Shell Alvania G2 or equivalent product).
2. Push seal ring (61) onto motor (62). Insert hexagon head bolts (37) into bores of flange (60) and push flange onto the shaft. Bolt flange to motor with three hex. socket head cap screws (59). Tighten the screws to a torque of **8 Nm**.
3. Push driver (58) onto the shaft stub and secure with quick connector (57).
4. Push on ring (46) with axial washer, needle bearings (43, 44) and adjusting nut (45). Install bushing (42) and clamping ring (41) and secure with hexagon head bolts (40).
5. Adjust variable speed pulley half (13) to gap
   (H) = 32 mm (218 / 208 / 204 MEGA) or
   (H) = 31.5 mm (203 / 202 MEGA)
   (high fan speed position)
6. Now screw on hex. nut (34) to obtain a stroke
   (K) = 22_{-1} mm (218 / 208 / 204 MEGA) or
   (K) = 20_{-1} mm (203 / 202 MEGA)
7. Push on back-up washer (36) until it contacts the hex. nut. Position the back-up washer as shown in detail (W) with the hole pattern to dimension (P) = 45°+10° to the horizontal and secure with hex. nut (34).
8. Fit flat connectors to one end of two cables. Make a loop in the other cable end and connect one to the (+) terminal and one to the (–) terminal of a 12 V battery. Operate the electric geared motor by touching the cables to the terminals of the motor. Check the correct direction of rotation of the geared motor and correct, if necessary, by reversing the connections.
9. Coat the thread of thrust collar (39) with grease K2K to DIN 51825, lithium-saponified multi-grade grease (e.g. Shell Alvania G2 or equivalent product) and hold against adjusting nut (45) so that the two thrust pins (J) engage in the holes of back-up washer (36) when the motor is tilted at an angle of (R) = 15° + 10° to the horizontal (see detail (W). Screw in thrust collar completely in this position.
10. Now push on spacer tube (38) and bolt the electric geared motor complete with the hexagon head bolts and nuts (37) to back-up washer (36). Ensure that the motor is in the correct position as shown in detail (W). Push on the flat connector housing.

Lower variable speed pulley assembly:

Place a straightedge (L) against the lower, spring-loaded variable speed pulley. Now move the lower variable speed pulley on the shaft until the distance at the top between the free straightedge (which is the extension of the lower pulley) and the upper fixed pulley half (inner edge) is

(E) = 43.5 mm (218 / 208 / 204 MEGA) or
(E) = 41.5 mm (203 / 202 MEGA) plus shim thickness (F).
Now secure the spring-loaded variable speed pulley assembly on the shaft.

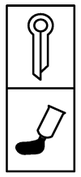
(Figs. 138 to 141)

6. Press pinion shaft (19) and taper roller bearings (18 and 20) firmly into their seats without any axial play. Now select the thickness of the shims (17) at (Y) so that an **axial preload of 0.1 to 0.2 mm** is created when cover (16) is bolted on. Apply a uniform, thin coat of sealing compound (DELO-ML 5328) to the flange faces of the cover and housing and bolt on the cover.

7. Place the final drive gearbox on the wheel flange. Ensure that wheel shaft (45) has no axial play in taper roller bearing (42) as well as in spur gear (39) and spacer ring (44).
   Now measure distance (D) from the flange surface of the housing cover to the spacer ring.
   If distance (D) exceeds 63.25 mm, shim (35) must be inserted.
8. Install circlip (37) and back-up washer (36). Now measure control dimension (K) from the flange surface of the housing cover to the spacer washer.
   Maximum distance 64.64 mm
   Minimum distance 64.15 mm
   If necessary, fit shim (37) and taper roller bearing (34). Screw on castellated nut (30) and tighten the nut whilst turning the bearing in both directions until there is no measurable play. Now tighten the castellated nut to a torque of approx. **250 to 600 Nm**.
   Now secure the castellated nut with roll pins (31 and 32) and fit spacer ring (33). Coat the seat of cap (29) with sealing compound (DELO-ML 5328) and press into place.

When all the sealing lips of the shaft seals have been thoroughly wetted with oil, the rolling torque at the pinion shaft at (Z) should be **300 to 700 Ncm**.

(Figs. 10 and 9)



8. Place the final drive gearbox on the wheel shaft flange. Insert cone (21).

   Ensure that the wheel shaft has no axial play in the bearing and spur gear. Now measure distance (D) from the flange surface of the housing to the cone.

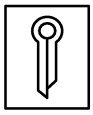
   If distance (D) exceeds 46.9 mm, shim (22) must be inserted.

9. Coat inner wheel shaft bearing (24) with roller bearing grease. Install circlip (23) and spacer ring (25). Screw on castellated nut (26) and tighten the nut whilst turning the bearing in both directions until there is no measurable play.

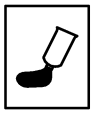
   

   Now tighten the castellated nut to a torque of approx. **300 to 500 Nm** and secure with roll pin (27).

10. Press pinion shaft (3) and taper roller bearings (4 and 2) firmly into their seats without any axial play. Now select the thickness of the shims (6) at (J) so that an **axial preload of 0.1 to 0.2 mm** is created when cover (7) is bolted on. Install shaft seal (8) in cover (7). Apply a uniform, thin coat of sealing compound (DELO-ML 5328) to the flange faces of the cover and housing and bolt on the cover.

11. Coat the seat of cap (28) with sealing compound (DELO-ML 5328) and press into place.

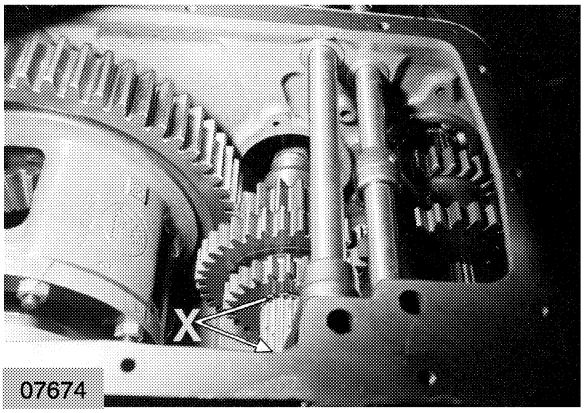
    

When all the sealing lips of the shaft seals have been thoroughly wetted with oil, the slip torque at the pinion shaft at (Z) should be **2.5 to 5 Nm.**

(Figs. 31 and 30)

Remove two circlips from their grooves on the main shaft at (X).

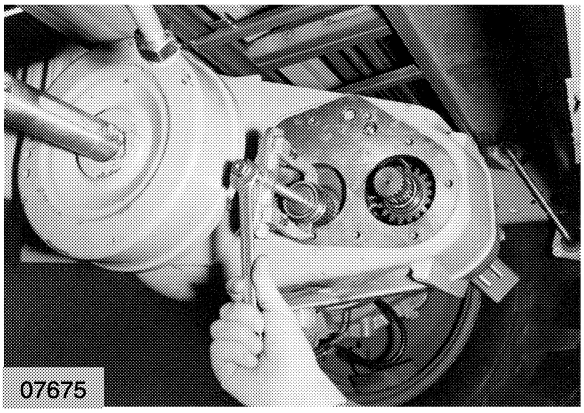
(Fig. 58)



58

On the left-hand side, pull off the inner race of the cylindrical roller bearing.

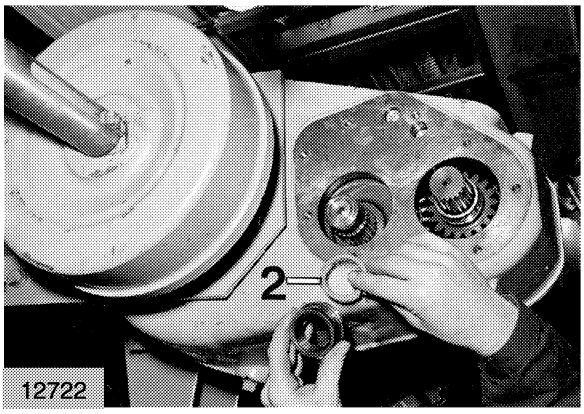
(Fig. 59)



59

Remove back-up washer (2) together with the bearing inner race.

(Fig. 60)

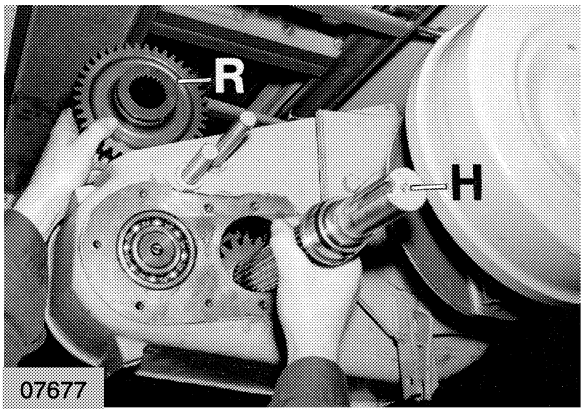


60

Pull main shaft (H) out to the right, at the same time taking out spur gears (R) and the circlips through the top of the transmission case.

There are two back-up washers in front of the right-hand bearing inner race.

(Fig. 61)



61

11 Differential housing
12 Roll pin 13 x 30 DIN 1481
Roll pin 8 x 30 DIN 1481
13 Ring gear
14 Self-locking nut VM 12 DIN 980-10
15 Hexagon head bolt M 12 x 160 DIN 931-10.9
16 Deep-groove ball bearing 6217 DIN 625
(on 218 MEGA / 208 MEGA / 204 MEGA / 203 MEGA)
Deep-groove ball bearing 6218 DIN 625
(on 202 MEGA)

(Fig. 94)

Assembly of the differential

Thoroughly clean all parts and oil before installation.

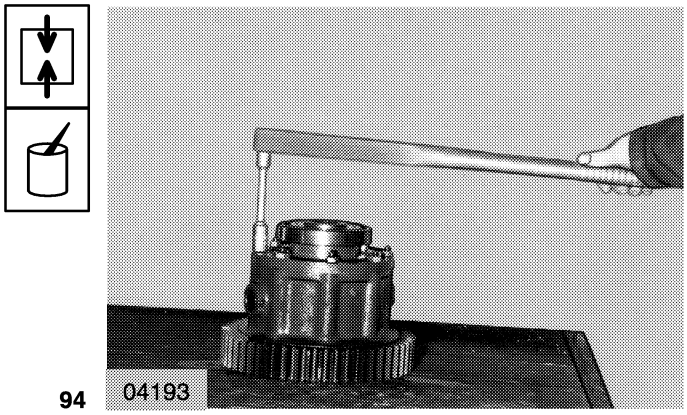
Apply a uniform, thin coat of Molykote paste G (CLAAS Part No. 411 294.0) to the contact surfaces at (A).

Install all parts of the differential housing. Centre ring gear (13) on the differential housing with roll pins (12) and insert hexagon head bolts (15).

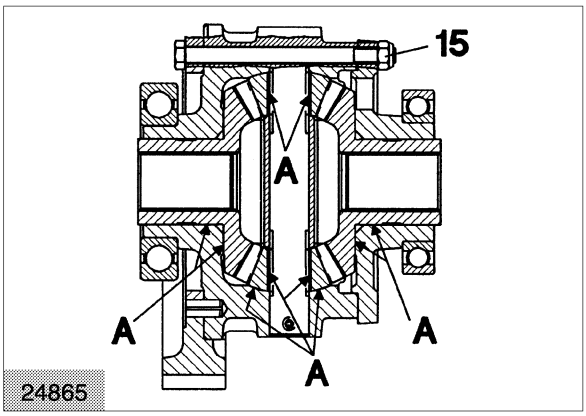
Tightening torque:

Hexagon head bolt M 12 x 160 = **100 Nm**

(Figs. 94 and 95)



94



95

Assembling and installing transmission

DO 218 / 208 MEGA

Install the differential. Install main shaft and drive shaft, ensuring that the back-up rings between housing wall and the gear wheels are in place.

Install the transmission. Take care not to damage the radial seal rings during installation of the intermediate shafts.

Install the final drive gearbox. Install the hydrostatic motor.

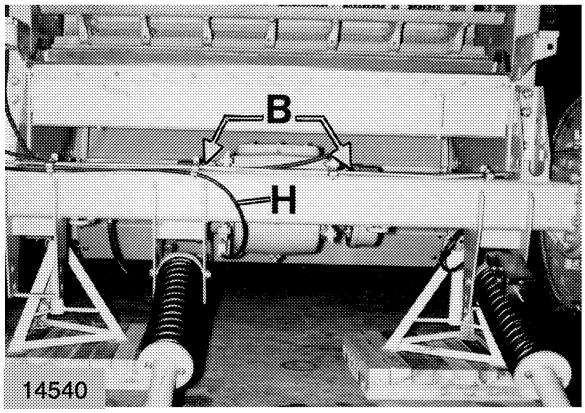
Adjust the gear shift linkage and the brakes.

Unscrew the hydraulic lines at the cutterbar cylinders and collect the hydraulic oil.

Disconnect the cutterbar cylinder at the axle.

Unscrew brake lines (B) at the foot brake slave cylinders. Loosen the clamp bands for handbrake cable (H).

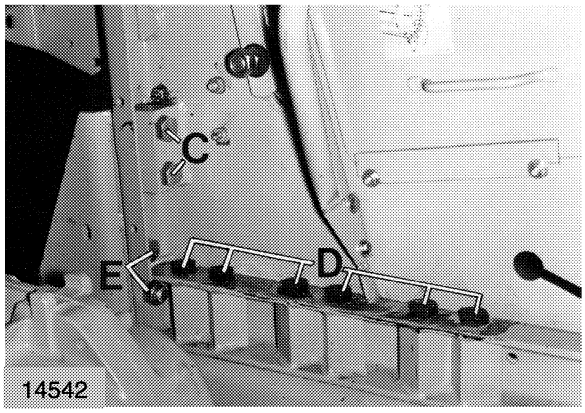
(Fig. 127)



127

Remove axle mounting bolts (C, E and D) on both sides and pull out the complete axle together with the final drive gearboxes to the front.

(Fig. 128)



128

Installing the front axle assembly

Mounting bolts D:
Hexagon head bolts M 20 x 1.5 x 140 DIN 960-8.8
Self-locking nuts VM 20 x 1.5 DIN 980-8
Tightening torque = **415 Nm**

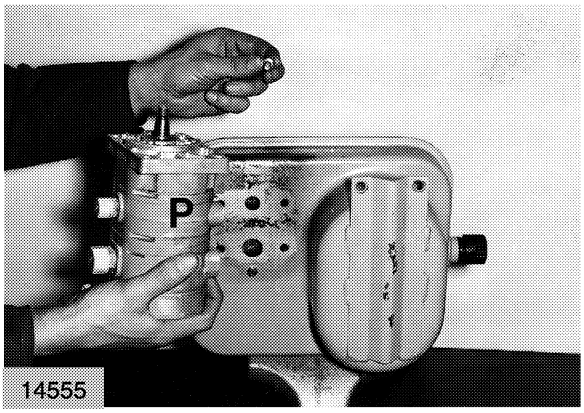
Mounting bolts E:
Hexagon head bolts M 20 x 1.5 x 50 DIN 960-8.8
Self-locking nuts VM 20 x 1.5 DIN 980-8
Tightening torque = **415 Nm**

Mounting bolts C:
Hexagon head bolts M 20 x 1.5 x 100 DIN 960-8.8
Self-locking nuts VM 20 x 1.5 DIN 980-8
Tightening torque = **415 Nm**

(Fig. 128)

Going through the openings for the filters, unscrew hydraulic pump (P) from the hydraulic oil reservoir.

(Fig. 7)

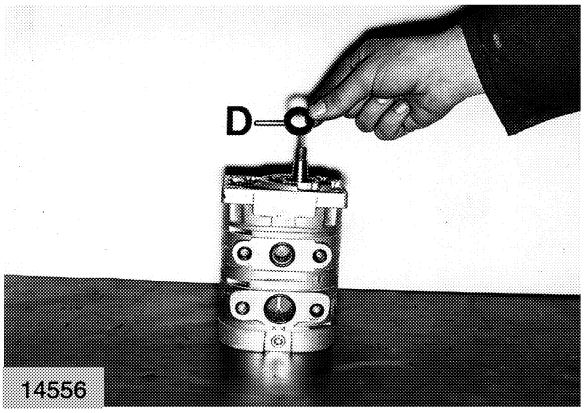


7

A damaged radial seal (D) can be replaced without disassembling the pump. Use a screwdriver or similarly suitable tool to lever out the damaged seal, taking care not to damage its seat in the housing or the shaft.

During installation of the new radial seal, take care to ensure that the lips of the seal are not damaged by the keyway or at the shaft shoulder. Use a suitable tube to drive in the seal.

(Fig. 8)



8

The hydraulic pump is secured in the oil reservoir by four M 8 x 25 DIN 933-8.8 Verbus Plus bolts.

Always use new Verbus Plus bolts if the hydraulic unit has been disassembled. If genuine bolts are not available, normal hex. bolts meeting the specifications of DIN 933-8.8 may be used. Coat these bolts with locking compound (DELO-ML-5349) before inserting.

Take care to ensure that no locking compound gets into the hydraulic pump.

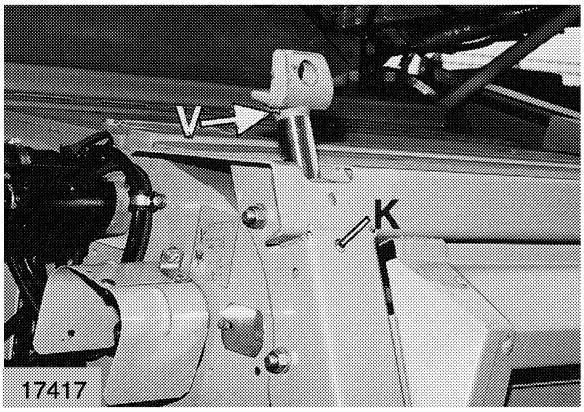
Bleeding hydraulic cylinder for cutterbar lateral levelling

(Machines with Auto Contour System)

This must be done after the hydraulic system has been repaired.

1. Move lever (H) to (A) in order to open shut-off tap (R). Loosen hex. screw plugs (V) on both the coupling lugs. On the right-hand side loosen hex. head Allen screw (K) at the cylinder head.
2. Switch on safety rocker switch (62). Press the R/H end of the rocker switch (51) for manual operation so that both pistons extend. Tighten screws (V and K) when bubble-free oil emerges.
3. Both cylinders should now be full extended. Loosen hex. head Allen screw (L) at the L/H cylinder.
4. Press the L/H end of the rocker switch (51). Tighten the screw (L) when bubble-free oil is issued. The L/H cylinder is now retracted.

(Figs. 33 to 36)



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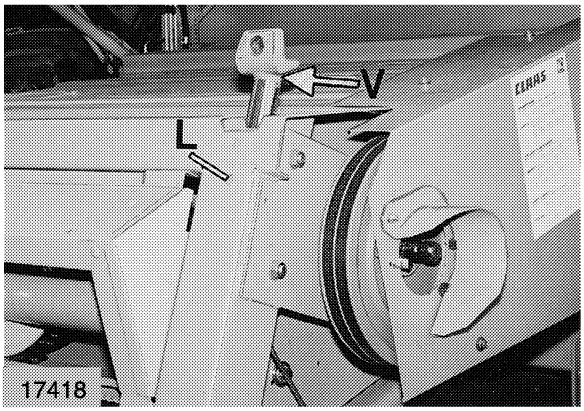
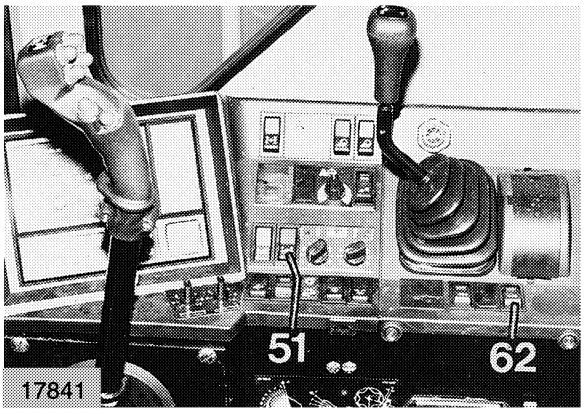


34



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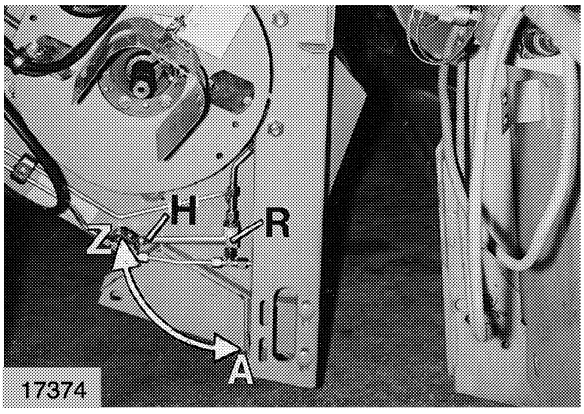
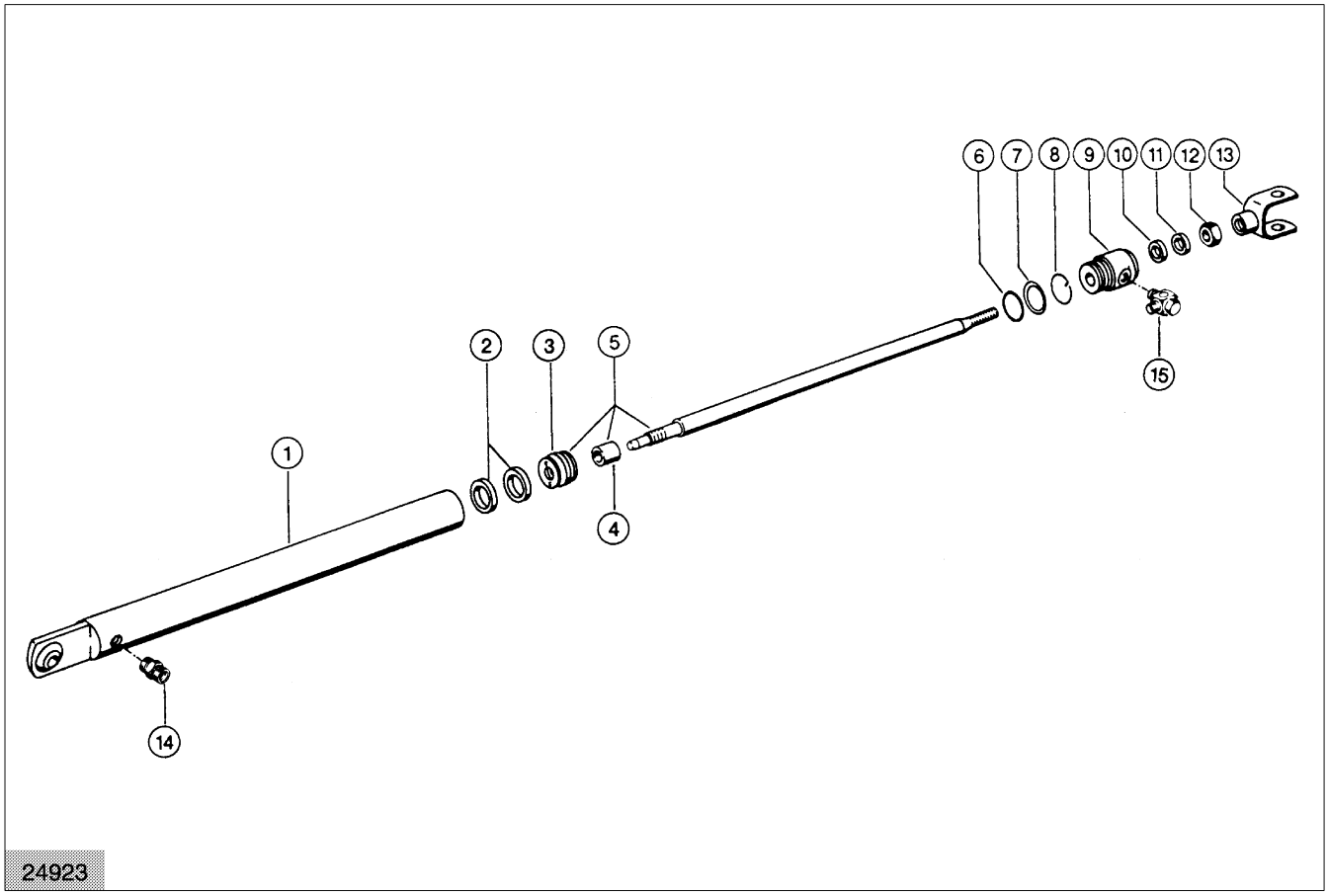


36

Disassembling swing cylinder for grain tank unloading auger

The swing cylinder for the unloading auger is disassembled in the same manner as the steering cylinder (see above).

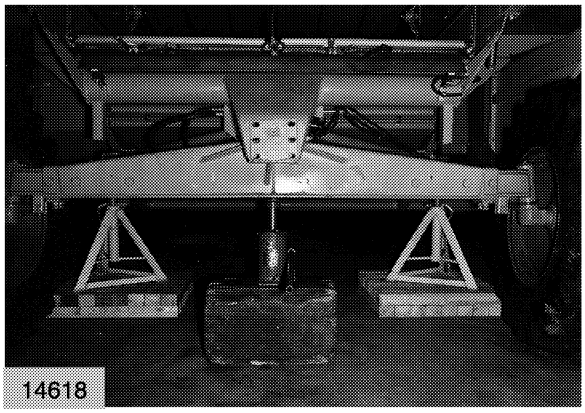


53

Swing cylinder disassembled:

1 Cylinder barrel
2 Seal (2 used)
3 Piston
4 Bush
5 Ram
6 O-ring 46.2 x 3 NB 72
7 Back-up ring
8 Locking wire
9 Cylinder head
10 Seal
11 Wiper seal
12 Hex. nut BM 18 x 1.5 DIN 439
13 Yoke
14 Pipe union L 10 M DIN 3901
15 Angle union L 10 M

(Fig. 53)

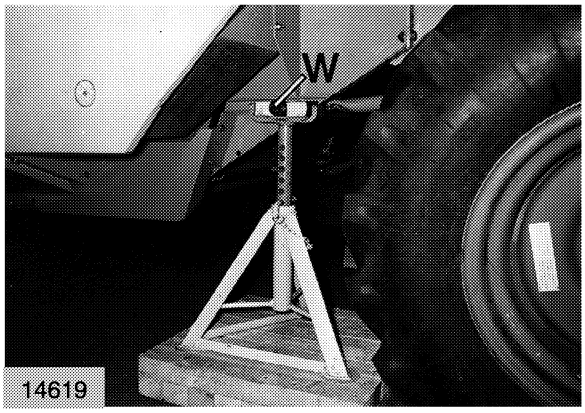


12

REAR AXLE

If the rear axle and/or the rear axle suspension has to be removed from the machine, securely support the machine under the square tube.

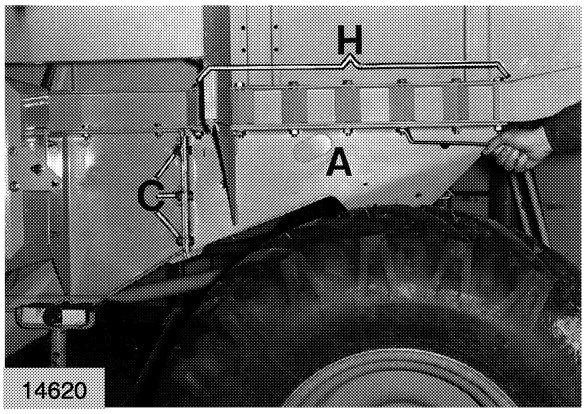
(Fig. 12)



13

Position the stands or blocking material under the extreme ends of the square tube. If required, insert a shaft (W), 40 mm diameter, into the square tube for supporting the machine on the stands.

(Figs. 12 and 13)



14

Rear axle suspension

The rear axle suspension (A) is connected with the thresher house and cleaning unit on both sides of the machines.

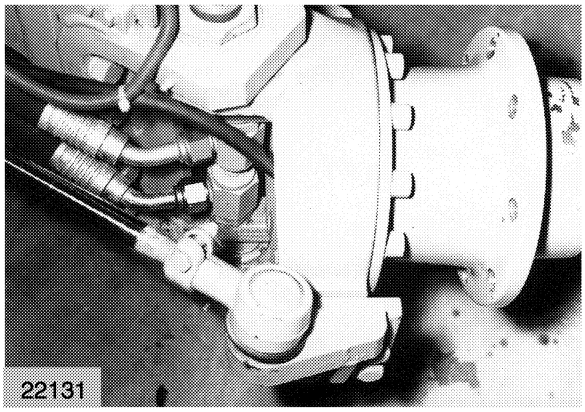
Hex. bolts M 14 x 130 DIN 931-8.8 are used at connections (H). Hex. bolts M 14 x 40 DIN 933-8.8 are used at connections (C).

Torque on the bolts = **122 Nm**

The rear axle suspension is also supported by two tube braces from underneath.

Hex. bolts 116 x 40 DIN 933-8.8
Self-locking nut VM 16 and at each bolt two contact washers A 16.

(Fig. 14)



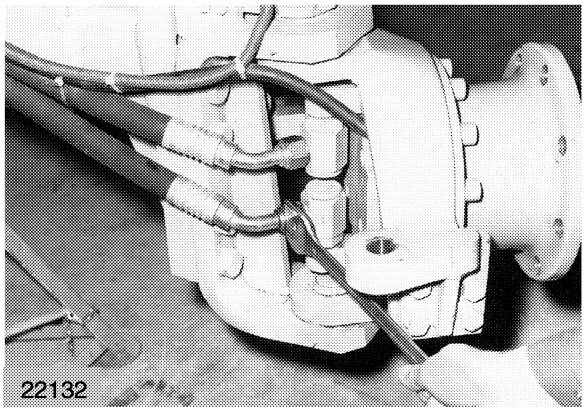
32

Removal of the wheel hub unit

Support the rear axle securely.

Take off the wheel and disconnect the hydraulic steering cylinder on the left side, as seen in the direction of travel.

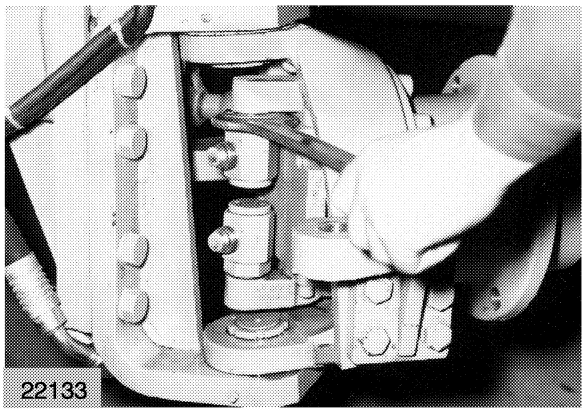
(Fig. 32)



33

Disconnect the hydraulic hoses and close the ends tight with plastic caps.

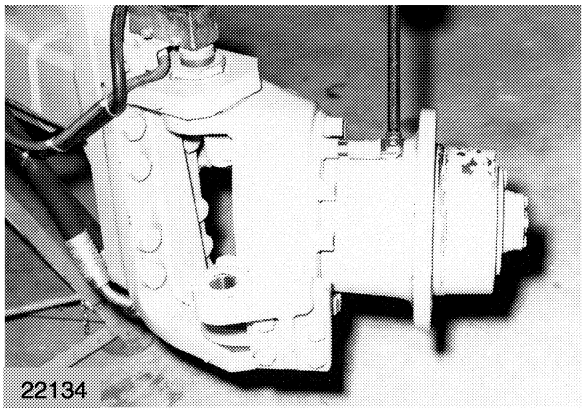
(Fig. 33)



34

Unscrew the 90-degree elbow swivels.

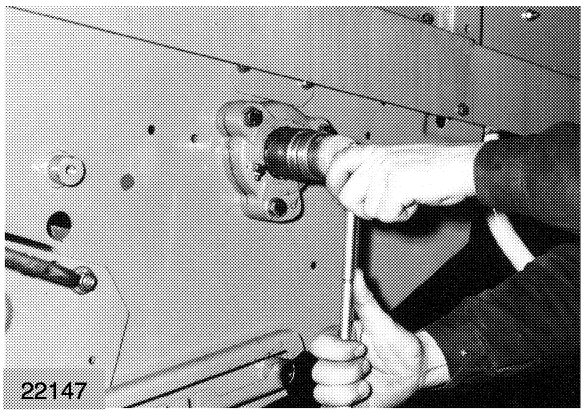
(Fig. 34)



35

Unscrew the M 16 x 40 hexagon socket head cap screws from the wheel hub unit.

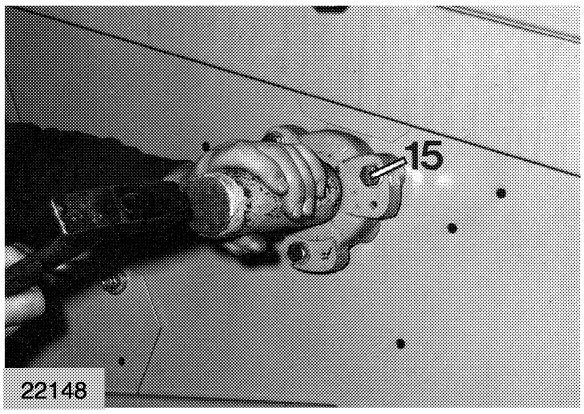
(Fig. 35)



4

Loosen the tab washer and unscrew the slotted nut with a hook spanner.

(Fig. 4)

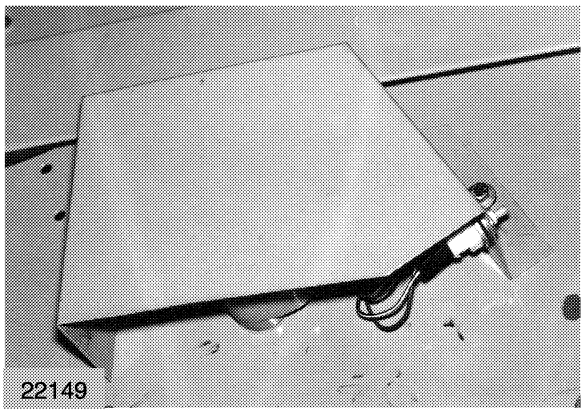


5

Loosen the taper lock adapter sleeve with an appropriate block-ended tube.

Unscrew the hex. bolts (15) and take off the bearing.

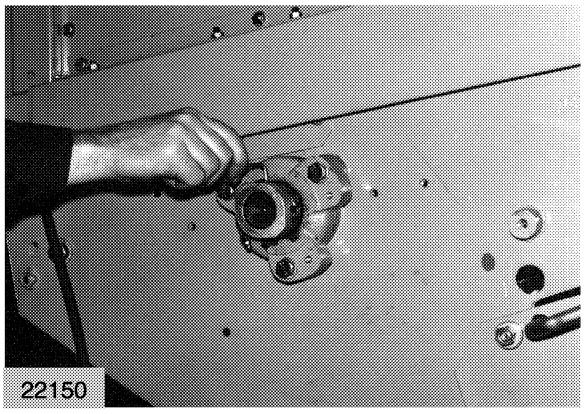
(Fig. 5)



6

On the left-hand side of the machine unplug the cable for the magnetic pick-up sensor. Take off the shield.

(Fig. 6)



7

Take off the sensor.

Loosen both hexagon socket set screws and take off the cam wheel.

Cam wheel with four cams for maize and cam wheel with two cams for small grains.

Loosen the taper lock adapter sleeve with an appropriate block-ended tube.

Unscrew the hex. bolts (15) and take off the bearing.

(Fig. 7)