



HF 231

**OPERATION, MAINTENANCE AND
SPARE PARTS MANUAL**

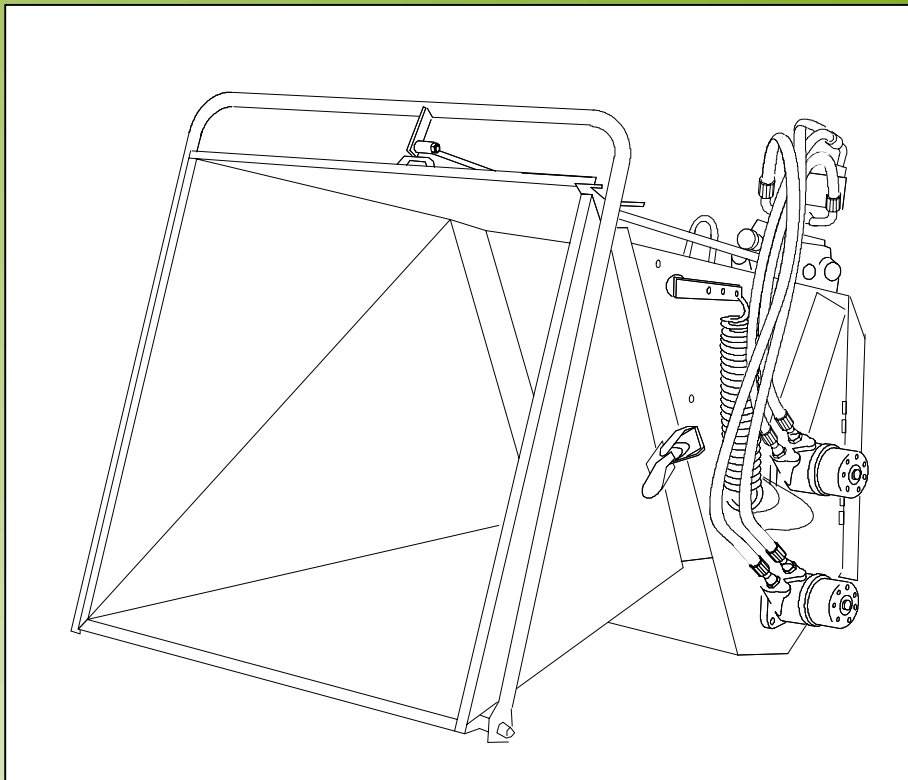
FARMI[®]

Forest
Made in Finland

03294709

VALBY

HYDRAULIC FEEDER AND FEED CHUTE HF231



From machine: 329 4036-

**It is very important to read this instruction
handbook thoroughly before using the machine!**

1. TERMS AND SYMBOLS USED IN INSTRUCTIONS

**THINK
SAFETY!**

Safety is a combination of operator common sense and alertness at all times when the machine is being operated or serviced.

CAUTION!



This message is used for general reminders of good safety practices or to direct attention to unsafe practices. The message will appear in your operator's manual and/or the sign will appear on the machine with the color combination of yellow and black.

WARNING!



This message denotes a specific potential hazard. The sign will be displayed on the machine in areas of potential hazard. The sign will have the color combination of yellow and black.

DANGER!



This message denotes the most serious specific potential hazard. The sign will be displayed on the machine in areas of potential hazard.

IMPORTANT!



Messages labeled "Important" will appear in your operator's manual to provide specific instructions for performing adjustments, services, etc. If these instructions are not followed it could result in damage to the machine.

2. SAFETY

2.1. GENERAL SAFETY



Do not operate this machine until you have read and understood the manual page by page.

The owner of this machine is responsible for instructing all operators and support personnel in the operation and safety precautions of this chipper.

Proper training prior to operating the chipper is obligatory.

- Inform everyone who works with the chipper about the risks and how they can avoid accidents.
- Before the chipper is running, ensure that the working place is clear of any bystander within a minimum risk zone of 100 ft. (30 meter).
- Do not let children or untrained persons operate the chipper.
- Always have the chipper mounted on the 3-point hitch of the tractor. Otherwise the chipper will tip over.
- There is a serious crushing hazard between tractor and chipper. Do not go between the tractor and the chipper in any case, for example when you are mounting the chipper to the tractor.
- Check that the covers of the universal shaft are in their place and the transmission chains are fastened.
- Safety goggles, earmuffs and a hard hat are obligatory when chipping. Use respirator mask, if necessary.
- Do not wear loose clothing, loose sleeves, scarves or long uncovered hair around moving parts of machinery. Also avoid gloves of poor condition or with loose fitting, because they might get caught in the branches.
- Stay alert! Do not operate the chipper when fatigued, or under the influence of alcohol or drugs.
- **IMPORTANT!** Never leave the chipper running and unattended.
- **IMPORTANT!** Failure to obey the warnings on the chipper or in the operator's manual will result in personal injury and / or death and / or equipment damage.
- Check the material before you feed it. The material must be free from nails, stones and all other materials that are not wood, paper or plastic. **IMPORTANT!** Feeding wire and barbed wire into the chipper is very dangerous as it might pull in the operator.
- Make sure that no one is in the path of flying chips. Point the discharge pipe away from windows, doorways and other areas where people or animals may be.
- Keep the work area clean so there is nothing to trip over.

- Disengage the PTO, cut the engine and remove the keys before any maintenance.
- Use only original parts replacements. **IMPORTANT!** Do not make any modifications.
- Check all moving parts. They should be fastened in place, in good working condition and all shields and guards must be in place.
- Point the discharge downwind to prevent dust or chips from blowing onto the operator.
- If a wood jams inside the chipper, cut the engine and wait for all movements to stop before reaching inside the feed chute.
- Do not use the chipper indoors when you use it with a the tractor or with the separate hydraulic motor. It's possible to use the chipper indoors with the electric motor use.
- You must be very careful when working indoors. Protect yourself against possible hazards like exhaust gas by sufficient ventilation, for dust that can catch fire by cleaning your environment regularly.
- Always use the lock bolt before and during maintenance on the machine.
- Place the PTO shaft in the holding device when disconnected from tractor.



Danger!



Risk of cutting injury or hits by flying debris.

Do not reach into the feed chute for any reason.

Failure to follow these instructions could result in serious injury or death.

2.2.SAFETY INSTRUCTIONS FOR THE HYDRAULIC FEEDER AND FEED CHUTE

- **IMPORTANT!** Always also read the general safety instructions.
- **IMPORTANT!** Do not ever put any part of your body inside the feed chute!
- Prior to operating get familiar with the function and controls of the machine. All functions must be in blameless condition.
- Test the stop function.
- Before starting up, check that there is no debris or foreign objects in the feed chute.
- Do not work in front of the feed chute opening! Stand on the left side of the chute when feeding, as the feed roller might jerk the wood up or to the right.
- When checking malfunction, all controls must be in "off" or in "stop" position.
- Let go of the wood when the feed roller or the knives get hold of it. To feed short pieces, push them in with longer ones.

2.3.SAFETY INSTRUCTIONS FOR THE HYDRAULIC UNIT

- Before performing lubrication work on any equipment, consult the manufacturer's instruction manual and follow the recommended procedures.
- Before lubricating the machine, shut down the engine and stop the machine.
- Pressurized oil can be hazardous. Pressurized oil jet can penetrate skin and cause serious injuries or death.
- Occasional skin exposure with oil is not dangerous. If though you can not prevent long-time exposure use protective gloves and other protective clothing.
- Keep flammable material away from heat, sparks and open fire.
- Hot oil and oil spray can be hazardous. Small amounts swallowed or inhaled do not usually cause toxication. Old oil is more dangerous than new.
- If oil has got into eyes flush them with cool water after which go to doctor. Use safety goggles.
- Avoid mixing lubricants of different grade and quality. Use only recommended oils or oils with corresponding characters.

2.4.SAFETY INSTRUCTIONS FOR THE SEPARATE HYDRAULIC MOTOR USE

- Check the moving parts. They should be fastened in place, in good working condition and all shields and guards must be in place.
- Inform everyone who works with the chipper about the risks and how they can avoid accidents.
- Do not let children or incapable persons operate the chipper. Do not wear loose clothing, loose sleeves, neckties or long uncovered hair around moving parts of machinery.
- Disengage the PTO and turn the tractor off before you service the chipper.
- Use only original parts replacements. Do not make any modifications.
- Failure to obey the warnings printed on the chipper or in the operator's manual might result in a serious injury or death.
- When checking the malfunction, all devices must be in "off" position.
- Place the PTO shaft in the holding device when disconnected from tractor.



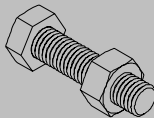
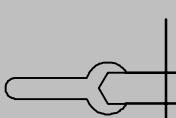
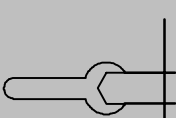
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SPARE PARTS

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WHEN ORDERING SPARE PARTS, PLEASE INDICATE MACHINES TYPE FROM THE MACHINE PLATE, SPARE-PARTS ORDER NUMBER, DESCRIPTION AND QUANTITY REQUIRED.

EXAMPLE: HF231, 23292105, Upper feed roller, 1 pcs.

 Thread	 Millimeter	 Inch
M6	10	7/16
M8	13	1/2
M10	17	11/16
M12	19	3/4
M16	24	15/16
M20	30	1 3/16

3. FEED CHUTE PRESENTATION

3.1. FIELD APPLICATION

The hydraulic feed chute HF231 makes feeding difficult material easier and more effective. The chip quality improves due to constant feeding speed and is less dependent on knives sharpness.

The HF231 can be driven by the tractor hydraulics or by the optional independent hydraulic unit HD11.

HF231 is easily mounted to the same attachment as the mechanical feed chute and the drop spout.

3.2. MAIN COMPONENTS

1. Control lever
2. Directional valve
3. Flow regulator
4. Hydraulic motors
5. Feed rollers
6. Frame
7. Chute

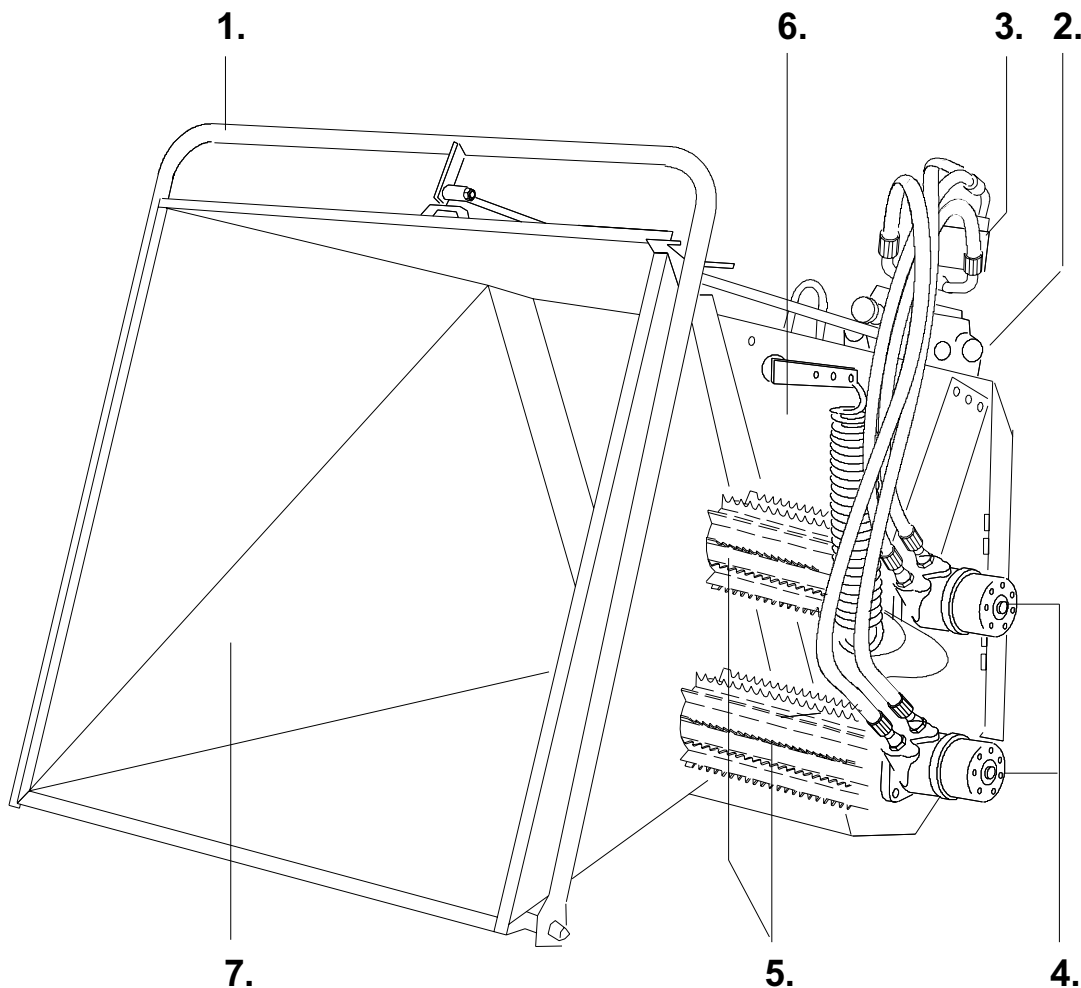


Fig.1. HF 231 main parts.



3.3. TECHNICAL DATA

Feed roller	2 pcs. Ø208 mm (11")
Max. tree diameter	250 mm (10")
Hydraulic motor	2 pcs. 250 cm ³
Oil demand, P.T.O speed chip 20 mm, 540 rpm. chip 20 mm, 1000 rpm.	30 l/min (8 US gal/min.) 52 l/min (13 ² / ₃ US gal/min.)
Feed chute opening size	820 mm x 787 mm (32.3" x 31")
Weight	210 kg (463 lb)

4. ASSEMBLY AND MOUNTING

1. Fasten the frame of the hydraulic feed to the chipper with two hinge pins. See fig.2.

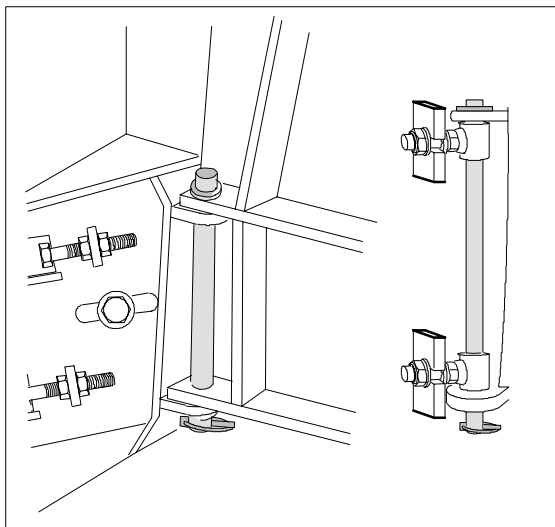


Fig.2.

2. Fasten the feed chute to the frame with two hinge bolts (M10x110 screws and M10 lock-nuts) and lock it into working position. Fig.3.

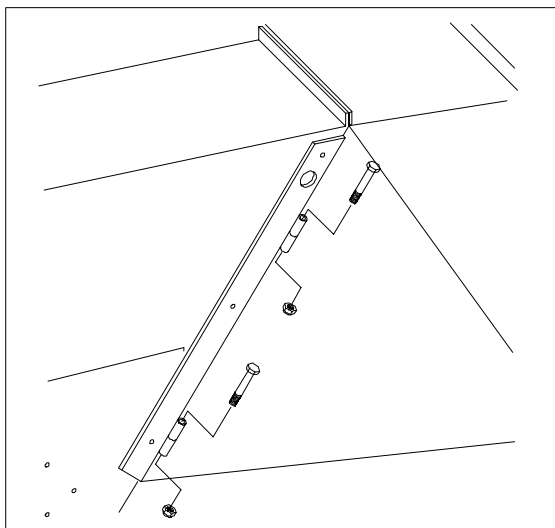


Fig.3.

3. Hook up the control rods extension with the pin.

4. Connect hydraulic hoses; Connect pressure hose (marked "IN") to tractors hydraulic connection. Maximum pressure is 172 bar (2500 PSI).

Connect return hose (marked "OUT") either to double-acting hydraulic valves return hose hook-up, or in a single acting system directly to the oil reservoir. Fig.4.

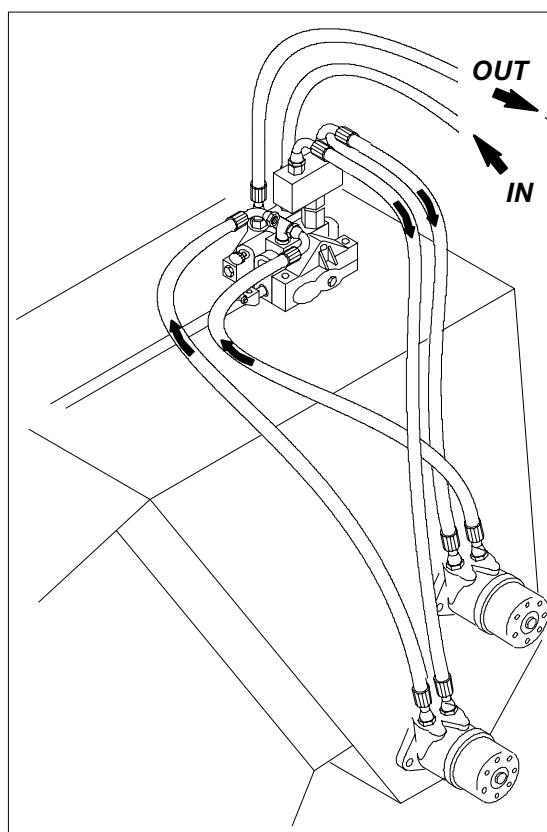


Fig.4. Connecting the hydraulics.

5. CHANGING THE VALVE FOR CLOSED CENTRE HYDRAULICS

- The chippers valve is built for open center hydraulics. If your tractor has a closed centre hydraulic system, can the valve be changed to suit your system by changing the plug at the end of the valve. See fig.5.

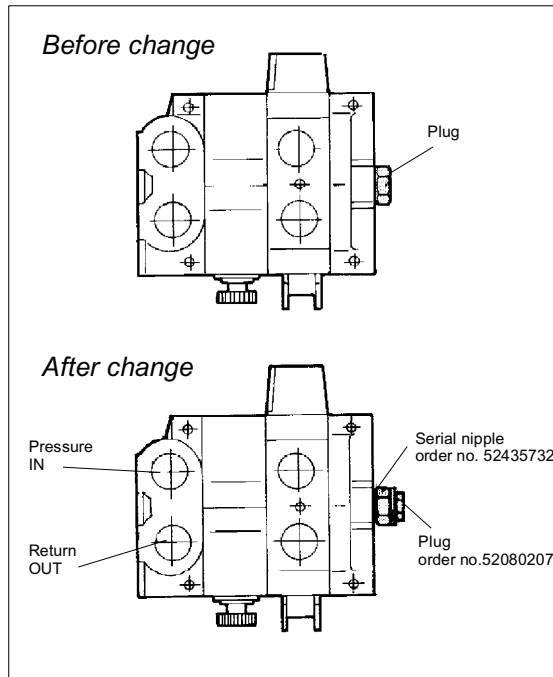


Fig.5. Changing the valve for closed center hydraulics.

- Instructions for connecting the hydraulics when using the optional hydraulic unit can be found in hydraulic units mounting instructions.

6. OPERATION

6.1. CONTROLS

HF231 is operated with an operating handle which has three positions: FEEDING, STOP and REVERSE. Fig.6.

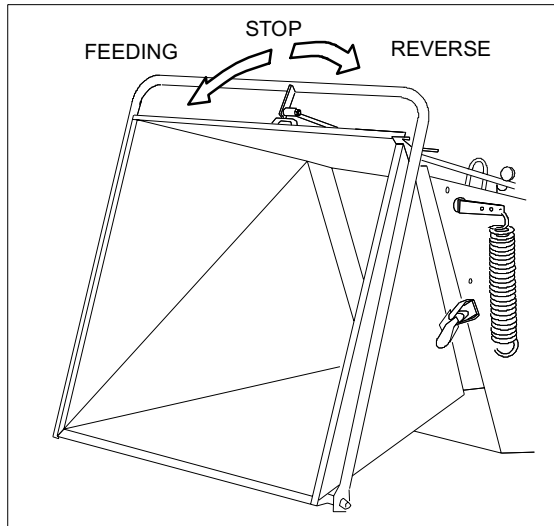


Fig.6. Controls

6.2. OPERATION

- 1.Ensure that the feed chute is empty. Turn the tractor hydraulics on.
- 2.Before feeding make sure that the tree is free from stones, nails and other foreign objects.
- 3.If necessary adjust feedrollers rotation speed to match the speed of the disk.
- 4.Pull the operating handle to FEEDING position. Feedrollers start rolling when all air in hydraulic circuit has been displaced.
- 5.Push the tree trunk inside the chute. Let go of the tree as soon as the feedroller gets hold of it.



Don't work too close to the feeding chute. The tree might jerk up or to the right when it comes into contact with the teeth of the roller.

- When chipping large wood with a weak tractor, can the tractor's speed of rotation sink too much. Interrupt the feeding by pushing the control rod to STOP position. When the speed of rotation has increased enough, con-

tinue feeding by pushing the rod to FEED position.

- In case you must remove the tree from the feed chute during chipping, push the rod to REVERSE position and keep it there until the feedrollers release the tree. The rod returns itself to STOP position.



Oil is heating up when it flows through the hydraulic motor. Heating occurs especially if the tractor has a very small hydraulic oil reservoir. Check twice every hour to prevent the oil from overheating. Let the tractor cool off if the motors are hot

6.3. ADJUSTING THE FEEDING SPEED

- Adjust feedrollers rotational speed to match the speed of the disk with the oil control valve. Turning counter-clockwise increases the feedrollers speed. Fig.7.

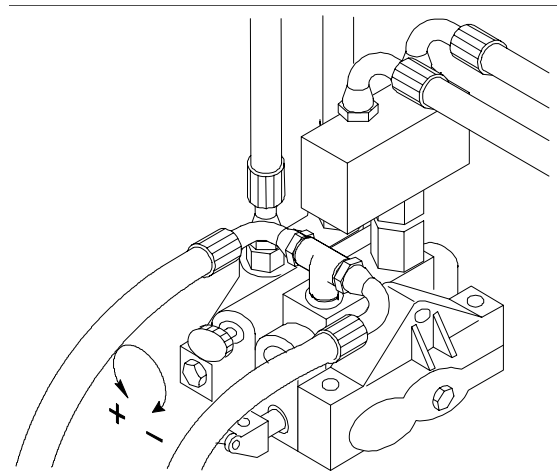


Fig.7.

- Speed is suitable when the wood doesn't push against the flange of the disk, or the feedroller doesn't noticeably slow the feeding of the wood. See table below.

CHIP SIZE		FEEDROLLERS ROTATING SPEED	
mm	inch	rpm	rps
7	1/4"	18	0,30
15	5/8"	39	0,65
22	7/8"	57	0.95



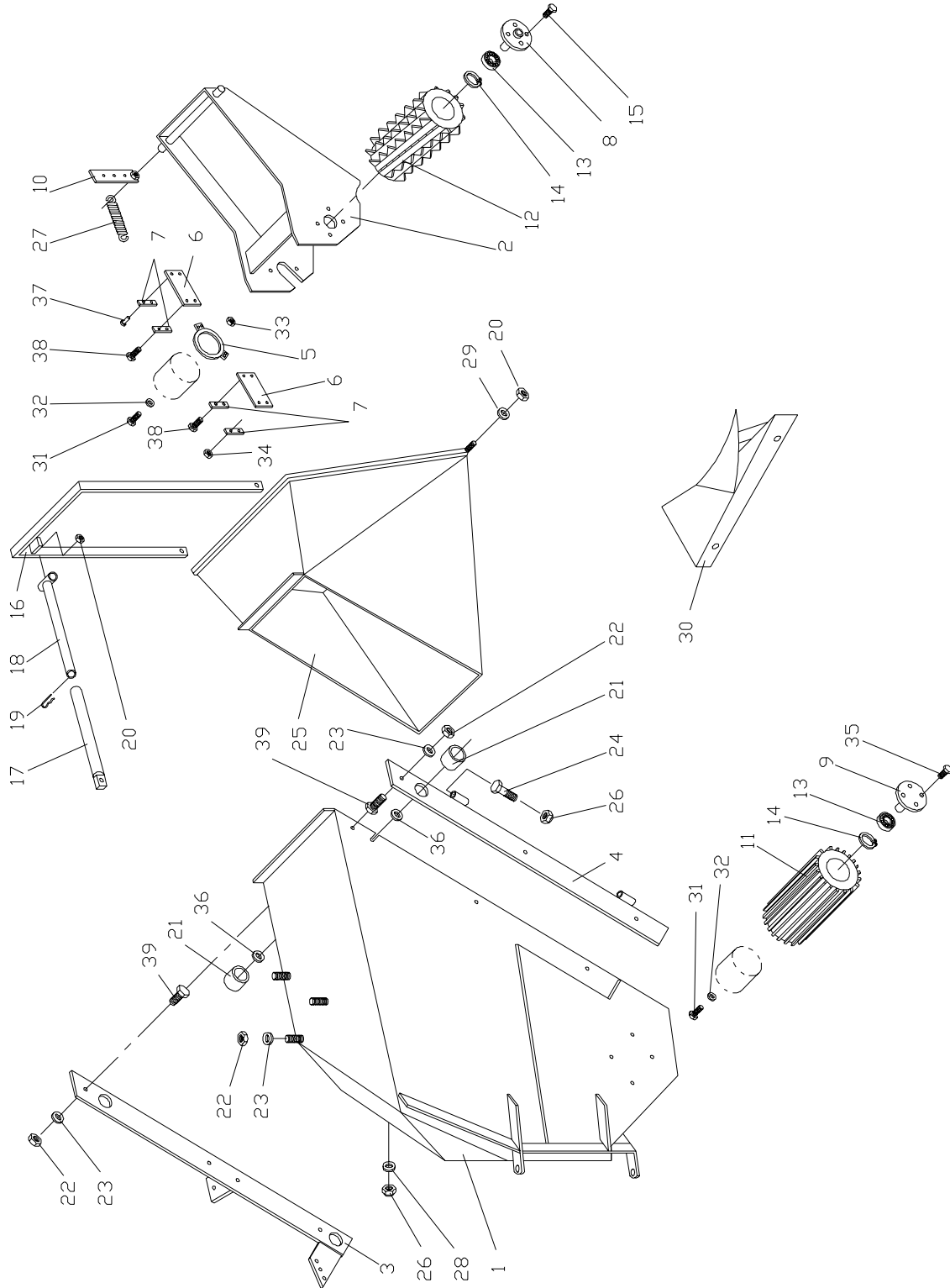
7. MAINTENANCE

- All bearings in the feed system are permanently lubricated and do not need any further lubrication.
- Check and tighten possibly loose screws and nuts often.
- Take care that the oil in the hydraulic system is clean. Dirt may damage valves and hydraulic motors.



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03294709 HF 231 Hydraulic feeder chute

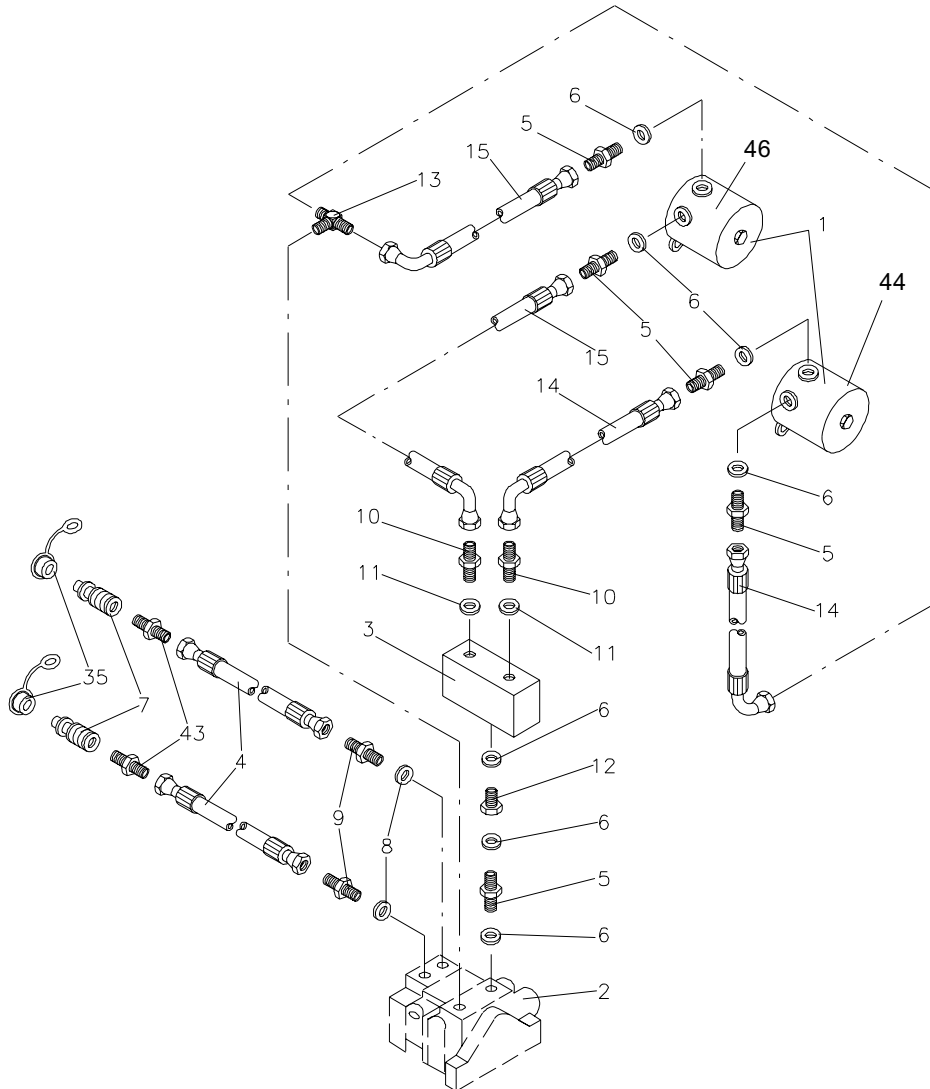




03294709 HF 231 Hydraulic feeder chute

Part	Order no.	Description	Remarks	Qty.
1	13291562	Frame		1
2	13291802	Roller frame		1
3	33291873	Frame bracket	right	1
4	43293786	Frame bracket	left	1
5	33291931	Motor fastening bracket		1
6	43291962	Rubber shield		2
7	43291970	Shield fastener		4
8	43291988	Upper roller support		1
9	43292002	Lower roller support		1
10	43291996	Spring lever		1
11	23292048	Lower feed roller		1
12	23292105	Upper feed roller		1
13	54511431	Ball bearing	6004 2RS	2
14	52230034	External retaining ring		2
15	52090438	Socket head cap screw	M10x 20 DIN 7991	4
16	43295831	Control handle		1
17	43292184	Control extension		1
18	43292192	Control rod		1
19	52842135	Hair pin	Ø 4 x 80	1
20	52117124	Lock nut	M12 DIN985	3
21	54561022	Bushing	MB2015 DU	2
22	52110046	Nut	M10 DIN934	9
23	52211042	Spring washer	M10 DIN 127	6
24	52060332	Hex. screw	M10 x 110 DIN931	2
25	23295678	Feed chute extension		1
26	52117108	Lock nut	M10 DIN985	1
27	94617073	Spring		1
28	52200045	Washer	M10 DIN126	4
29	52200052	Washer	M12	2
30	33297380	Plate		1
31	52062023	Bolt	M12 x 30 DIN933	4
32	52211059	Spring washer	M12 DIN 127	4
33	52110053	Nut	M12 DIN934	2
34	52110020	Nut	M6 DIN934	9
35	52060225	Bolt	M10 x 25 DIN933	4
36	43292325	Ring		2
37	52832102	Rivet	4,8 x 15	3
38	52060381	Bolt	M6 x 12 DIN933	6
39	52090743	Socket head cap screw	M10 x 35 DIN7991	6

03294725 Hydraulics





HF 231

SPARE PARTS

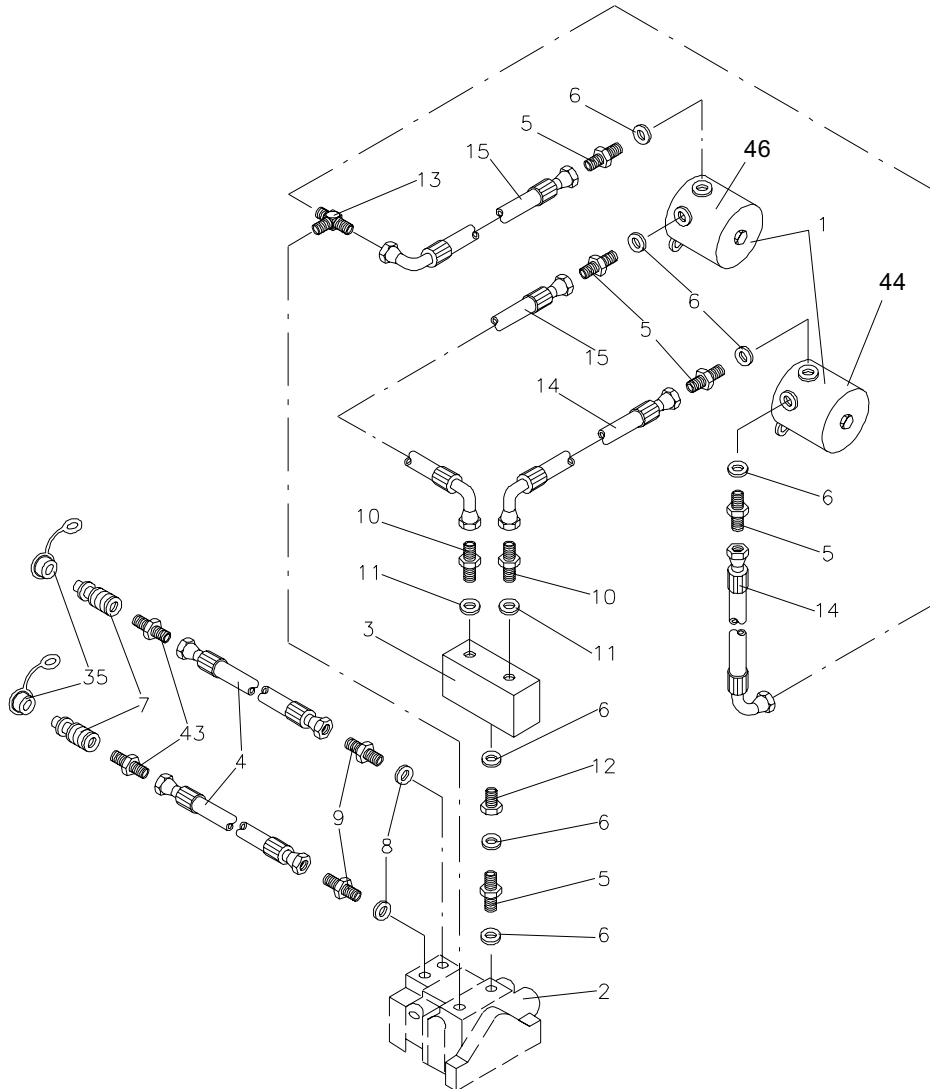
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03294725 Hydraulics

Part	Order no.	Description	Remarks	Qty.
1	56001951	Hydraulic motor		2
2	56046154	Valve, complete	See separate spare parts list	1
3	56070162	Equalizer valve		1
4	56524259	Hose	S1/2S L=2,0 m	2
5	52432051	Adapter	R1/2-R1/2	7
6	52390382	Copper ring	1/2"	9
7	52449022	Quick coupler	1/2" male	2
8	52390390	Coupler ring	3/4"	2
9	52432044	Double nipple	3/4"-1/2"	2
10	52432010	Double nipple	1/2"-3/8"	2
11	52390374	Copper ring	3/8"	2
12	52435062	Extension nipple	R1/2"-R1/2"	1
13	52443132	T-nipple	RK1/2"- R1/2"	1
14	56526197	Hose	S1/2"K L=1,4 m	2
15	56526114	Hose	S1/2"K L=0,8 m	2
16	-	-	-	-
17	-	-	-	-
18	-	-	-	-
19	-	-	-	-
20	-	-	-	-
21	-	-	-	-
22	-	-	-	-
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28	-	-	-	-
29	-	-	-	-
30	-	-	-	-
31	-	-	-	-
32	-	-	-	-
33	-	-	-	-
34	-	-	-	-
35	54922141	Cap		2
36	-	-	-	-
37	-	-	-	-
38	-	-	-	-
39	-	-	-	-
40	-	-	-	-

03294725 Hydraulics





HF 231

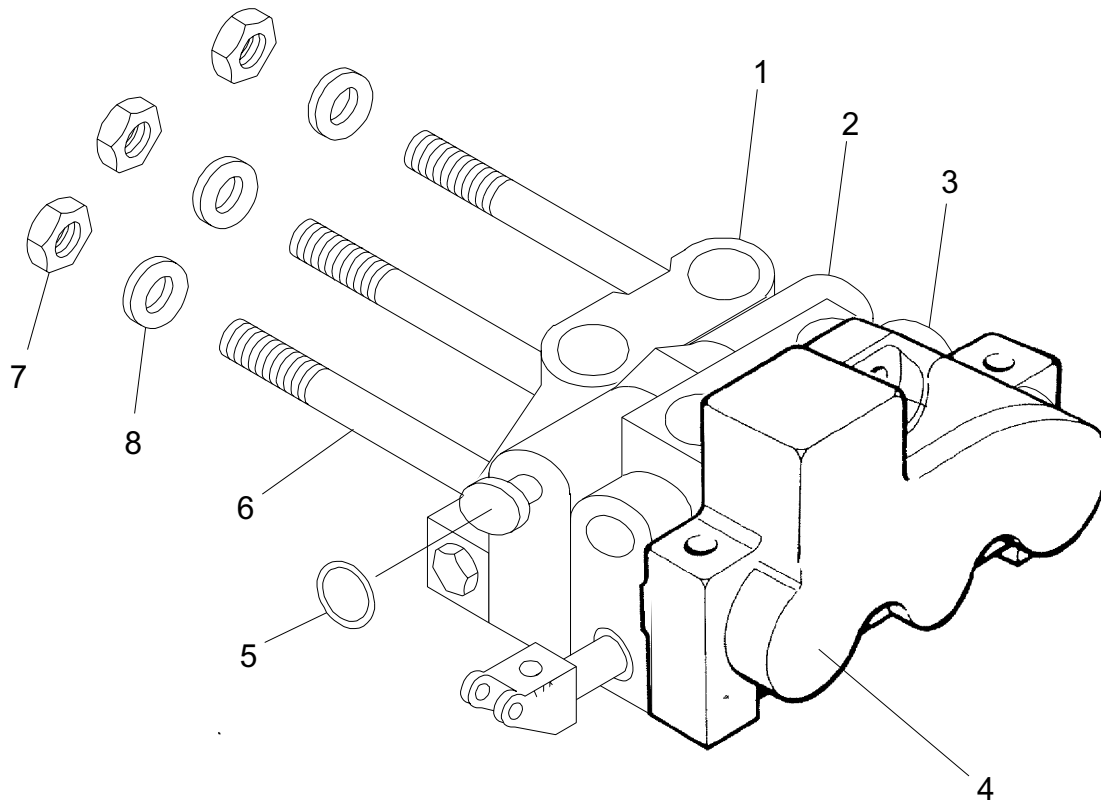
SPARE PARTS



03294725 Hydraulics

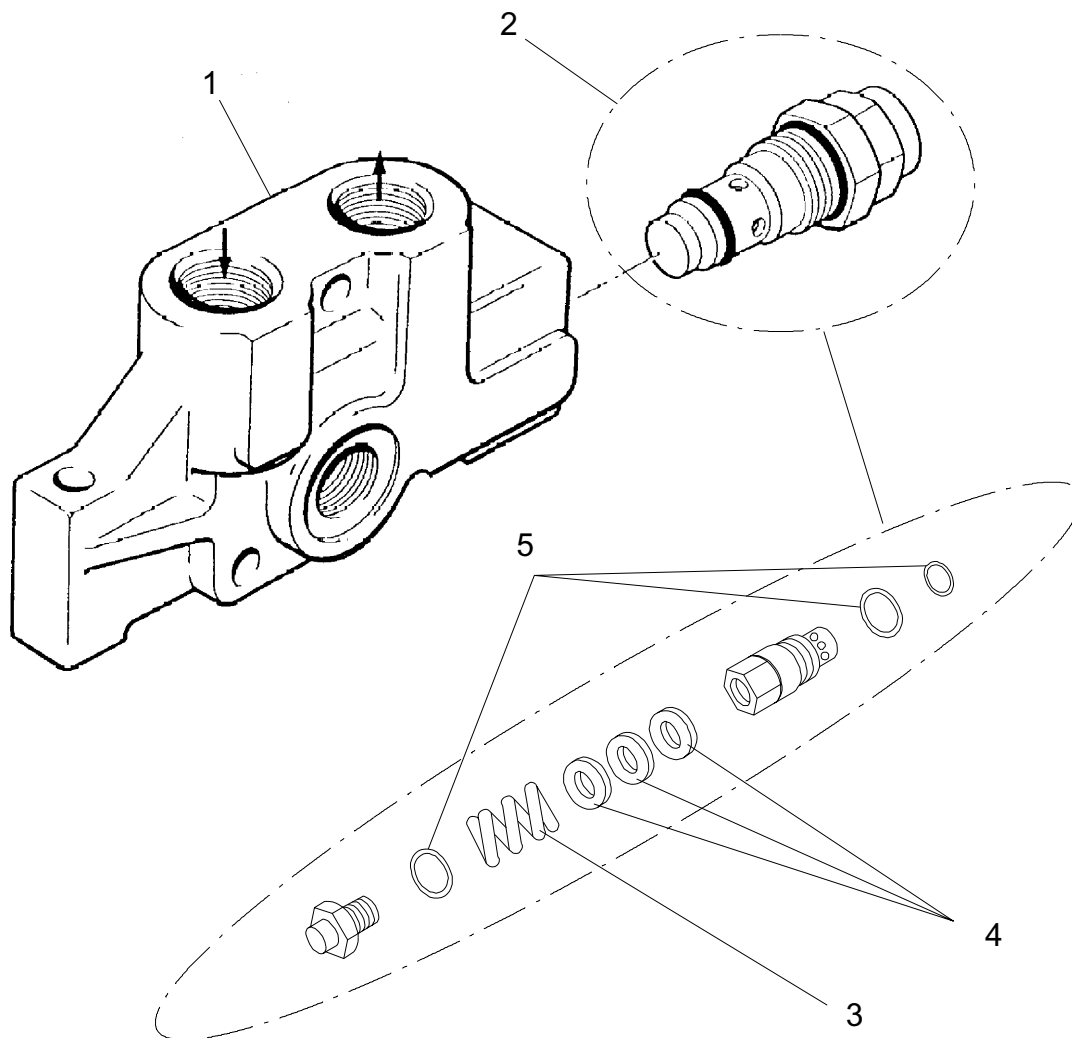
Part	Order no.	Description	Remarks	Qty.
41	....	-	
42	....	-	
43	.... 52412069	.... Double nipple	.... R 1/2-RK 1/2	.... 2
44	.... 58217746	.... Seal kit for hydraulic motor		
45	....	-	
46	.... 57609125	.... Spline		

56046154 Control valve, complete



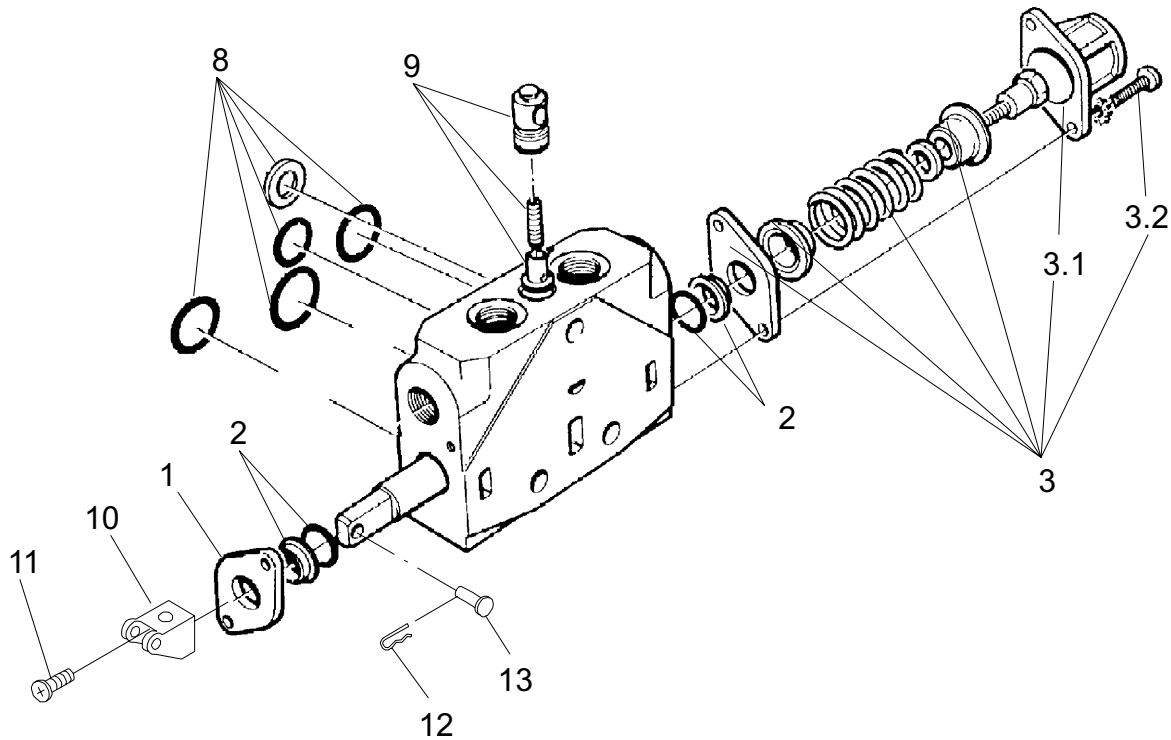
Part	Order no.	Description	Remarks	Qty.
1	56046204	Inlet section, complete	See separate spare parts list	1
2	56046220	Flow control section		1
3	58101551	Work section, complete	See separate spare parts list	1
4	56040215	Outlet section, complete	See separate spare parts list	1
5	52356896	Flow control section seal kit		1
6	52011228	Screw	3/8" UNF 155	3
7	52127024	Nut	3/8" UNF	3
8	52211042	Spring washer	M10	3

56046204 Inlet section, complete



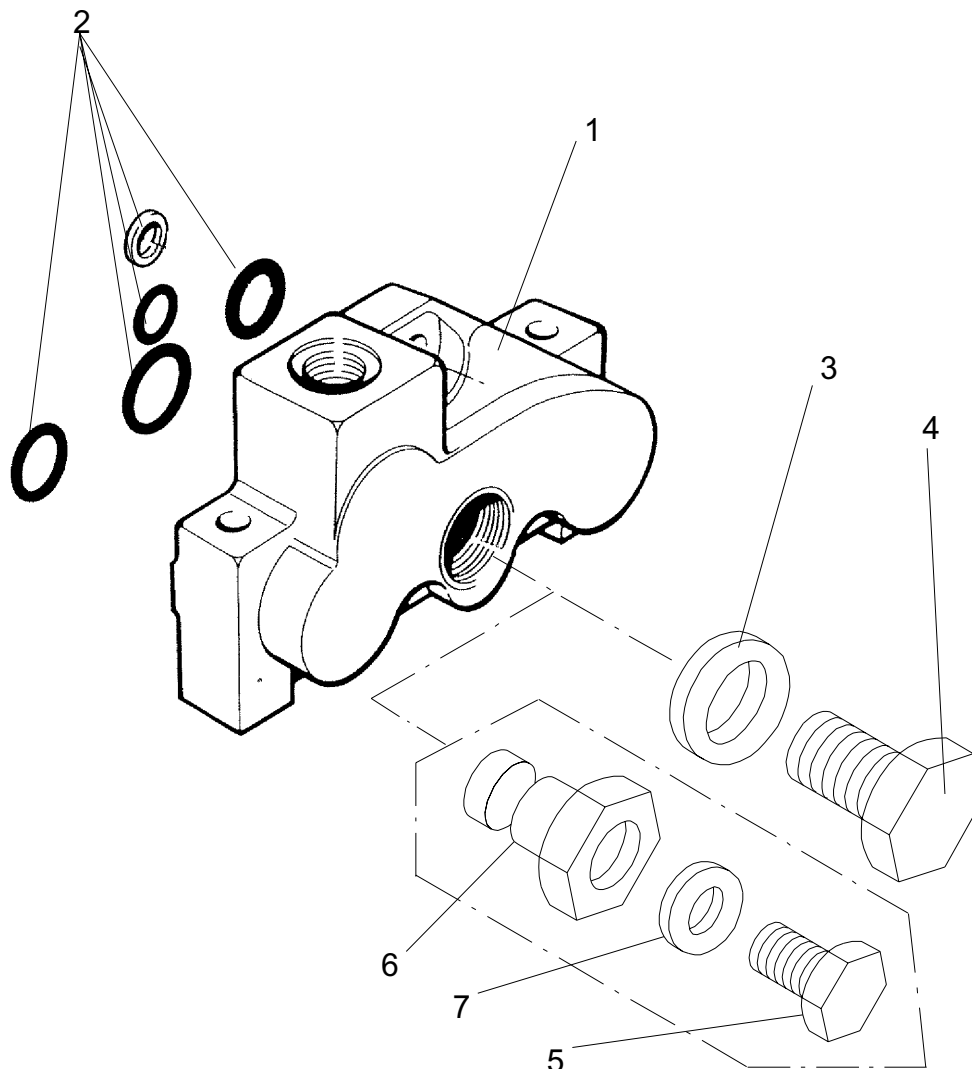
Part	Order no.	Description	Remarks	Qty.
1	56046204	Housing		1
2	56070576	Relief valve	175 bar	1
3	56070741	Spring		1
4	56070758	Adjusting washer		3
5	52357639	Relief valve seal kit		1

58101551 Work section, complete



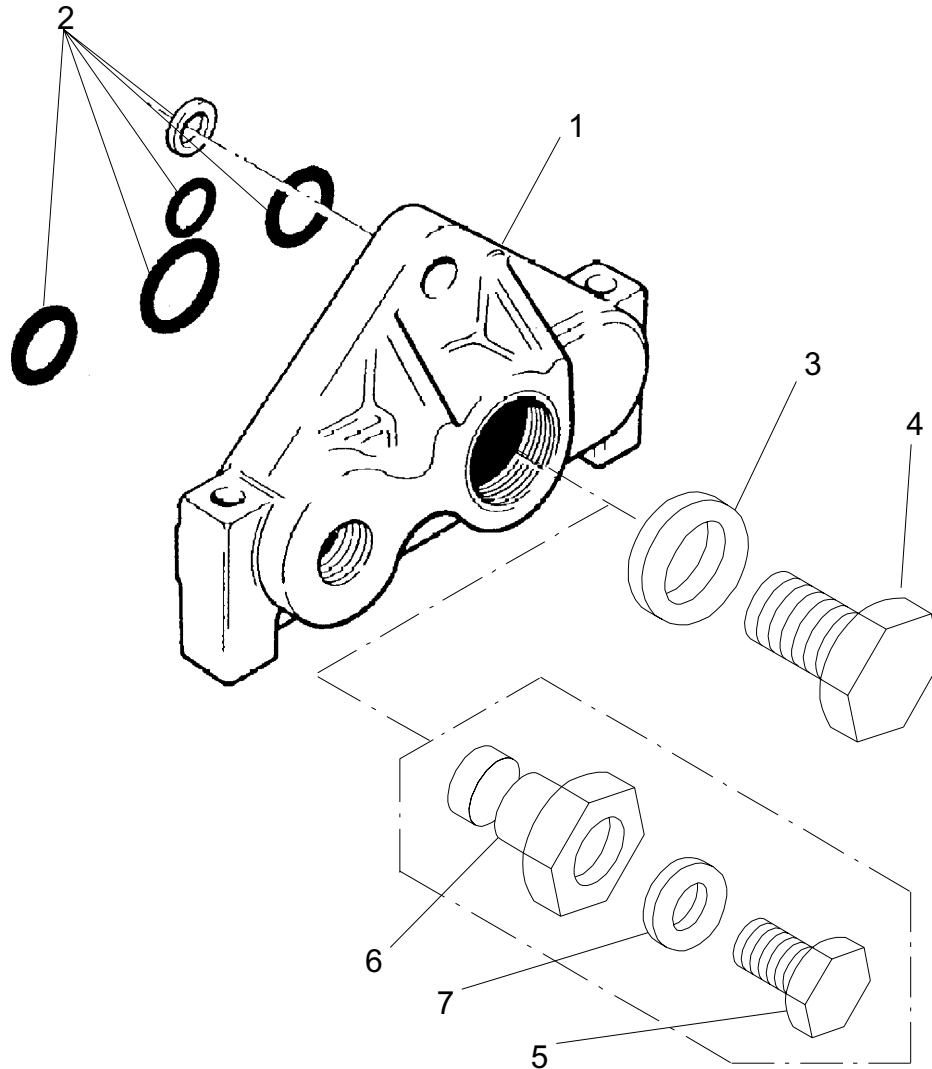
Part	Order no.	Description	Remarks	Qty.
1	58101627	Seal retainer plate		2
2	52356854	Spool seal kit		2
3	58101593	Complete mechanism & end cap kit		1
3.1	56040173	Cover		1
3.2	52090131	Screw		4
4	-			
5	-			
6	-			
7	-			
8	52356888	Inter-section seal kit		1
9	58101635	Anti load check kit		1
10	56011844	Lever bracket		1
11	52090131	Screw	1/4" UNF 3/4"	4
12	56018718	Hair pin cotter		1
13	56018700	Pin		1

56040215 Outlet section, complete, new model



Part	Order no.	Description	Remarks	Qty.
1	58101633	Housing		1
2	52356888	Inter-section seal kit		1
3	-	Gasket	7/8"	1
4	-	Plug	7/8"	1
5	52080207	Plug	R1/2"	1
6	52436680	Serial adapter		1
7	52390382	Copper ring	1/2"	1

56040215 Outlet section, complete, old model



Part	Order no.	Description	Remarks	Qty.
1	58101633	Housing		1
2	52356888	Inter-section seal kit		1
3	52390580	Gasket	3/4"	1
4	52080850	Plug	3/4"	1
5	52080207	Plug	R1/2"	1
6	52435732	Serial adapter		1
7	52390382	Copper ring	1/2"	1



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LIMITED WARRANTY

Valby products are warranted to be free from defects in materials and workmanship for 12 months from the date of purchase, or one month from in-service, whichever is longer. The warranty covers parts replacement only. The free replacement of parts is exclusive. The manufacturer is not liable for any incidental or consequential damages. No labor costs are included. This warranty does not cover defects resulting from:

- * misuse of the product
- * inadequate maintenance or
- * modifications of the product.

The warranty is effective only, if the lower portion of this card is completed and returned to the importer within 14 days of receipt of the product.

IMPORTANT: Do not operate your machine without reading the operators manual! If the operators manual was lost, a new manual can be obtained from importer (write address below or call 607-589-6160).



normet



NORTHEAST IMPLEMENT CORP.

476 Halsey Valley Road
SPENCER, NEW YORK 14883

Date of delivery ____ / ____ 20 ____

Dealer: _____

Dealer's address: _____

Tel: _____

Customer: _____

Customer's address: _____

Tel: _____

Product: _____

Serial No: _____

Notes: _____



NORMET CORPORATION
Ahmolantie 6
74510 Peltosalmi
Finland
Tel. +358-17-83241
Telefax +358-17-823606

Return to the manufacturer:

Date of delivery ____ / ____ 20 ____

Dealer: _____

Dealer's address: _____

Tel: _____

Customer: _____

Customer's address: _____

Tel: _____

Product: _____

Serial No: _____

Notes: _____



NORMET CORPORATION
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