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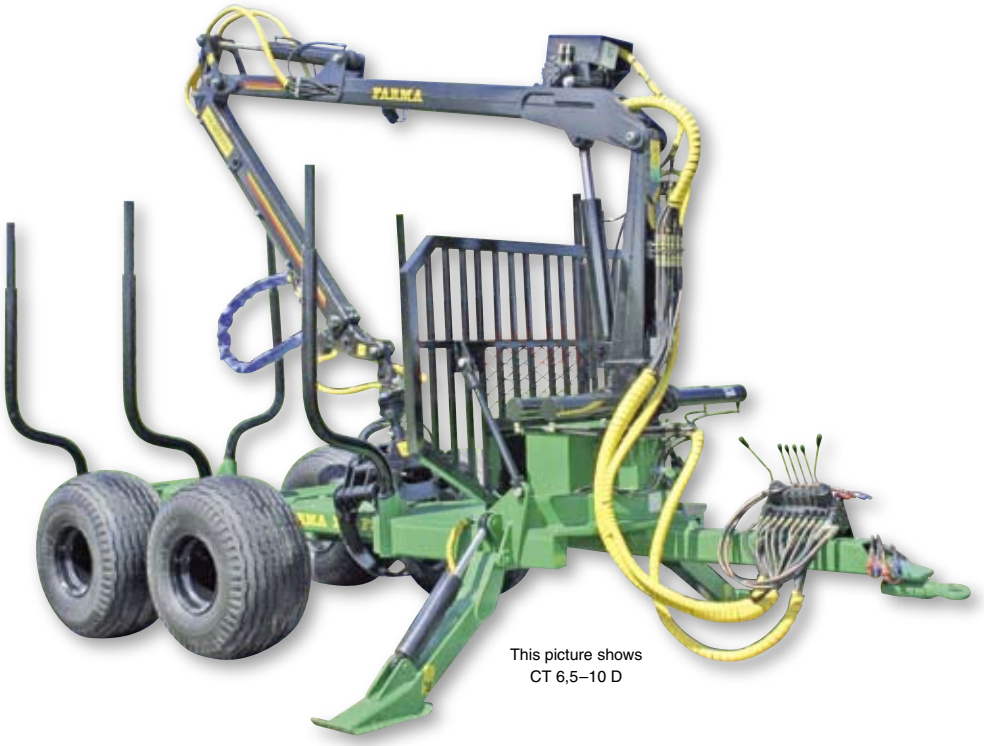

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CT 6,5–10 D

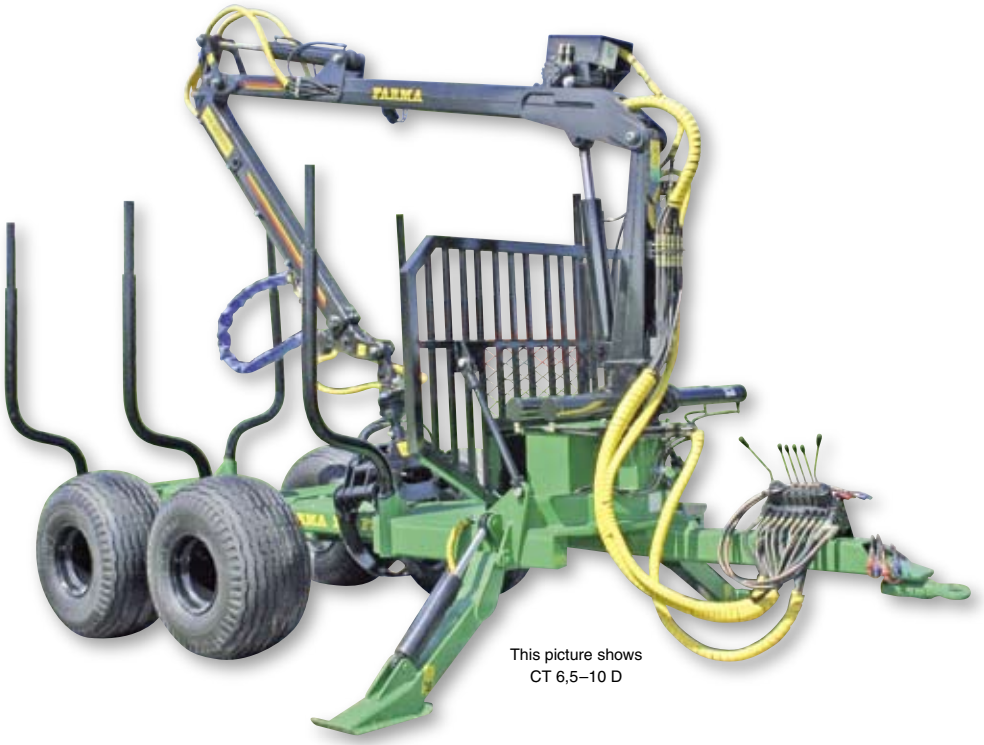
INSTRUCTION BOOK

FARMA CT 5,1–8

SERVICE AND SPARE PARTS

FORS MW

FARMA®



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CT 6,5–10 D

INSTRUCTION BOOK

GRAPPLE LOADER FARMA C 5,1 D

SERVICE AND SPARE PARTS

FORS MW

TABLE OF CONTENTS

1 INTRODUCTION

This manual deals with forest crane **C 5,1D** and contains all the operating and maintenance instructions you need for using the loader safely and correctly.

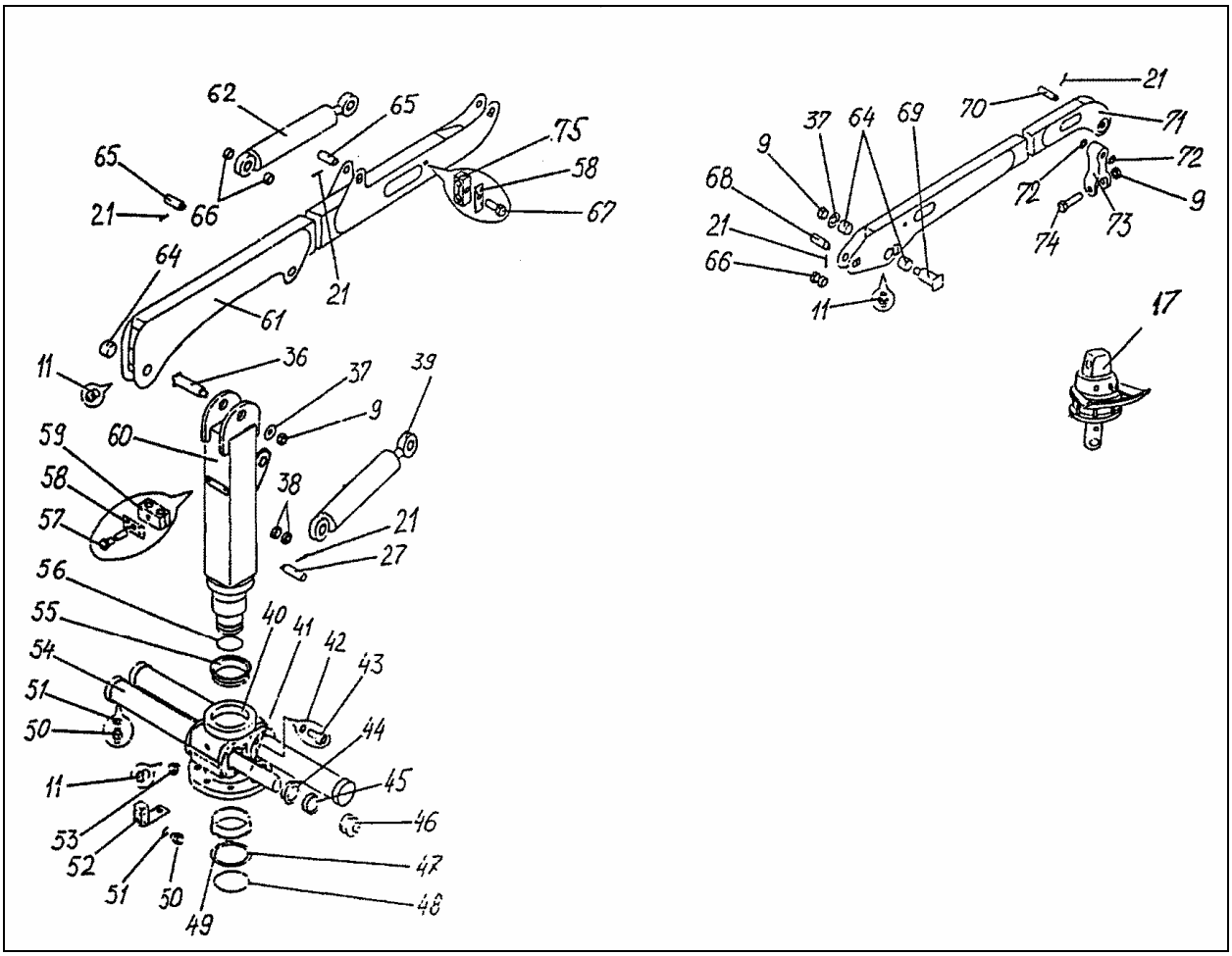
Even if you are experienced user of this kind of equipment, read this manual carefully. It contains information that enables the loader to be used efficiently and safely.

Regular maintenance is essential for troublefree, efficient and economical utilization. The loader delivered testrun and testloaded. The control valve and hydraulic cylinders are tested separately. Test operation at the factory is performed by using universal hydraulic oil (see lubricating instructions).

It is the operator duty to familiarize and obey all safety precautions and instructions carefully.

2 TECHNICAL SPECIFICATION

2.1 CONSTRUCTION OF THE LOADER

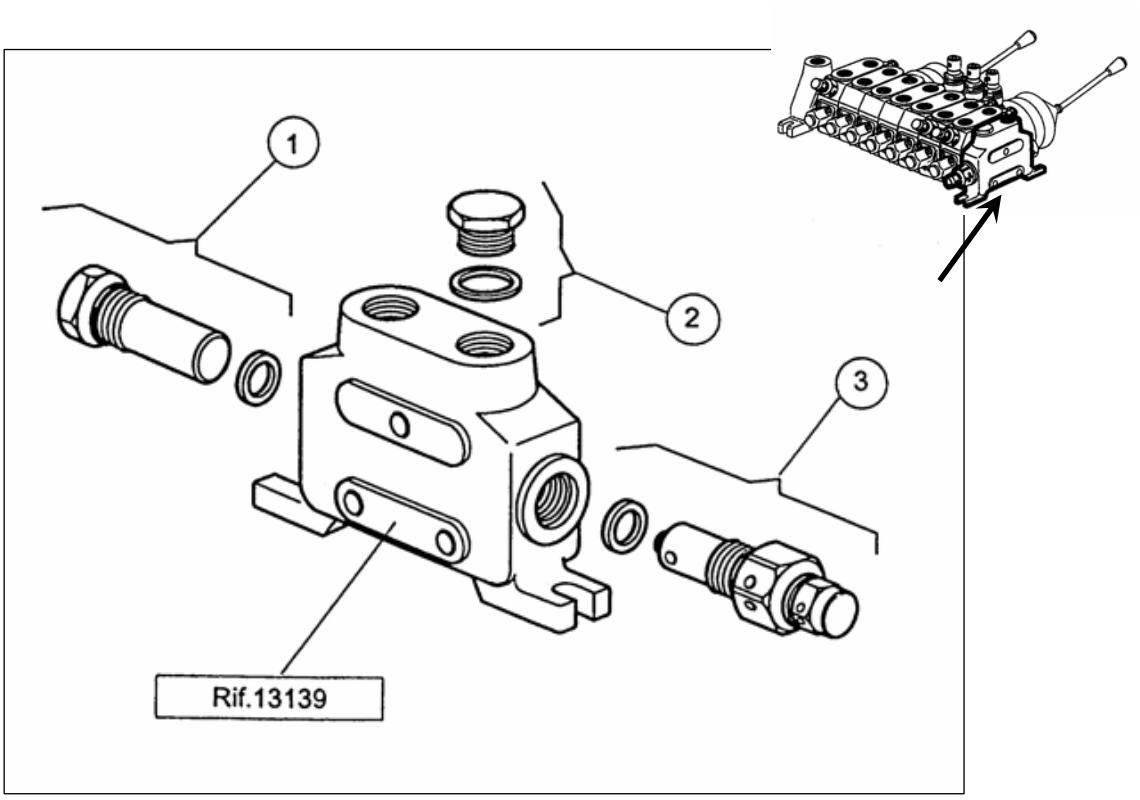


2.2 FOREST CRANE C 5,1D SPECIFICATION

Pos no	Art no	Number	Sparepart	Dimension	Pcs
9	24701		Nut	M 24	3
11	24702		Grease nipple	1/8"	4
17	24703		Rotator	MTR-30	1
21	24704		Split pin	Ø4×60	5
22	24705		Clamp	E 390-42-14	6
27	24706	M13-000000.002-030	Pin		1
36	24707	M13-000030.000-010	Axle bolt		1
37	24708	M13-000000.001	Plane washer	70x25x8	2
38	24709	M13-000000.017-010	Distance ring		2
39	24710	F13-100200.000	Hydraulic cylinder	100/40-400	1
40	24711	M13-130100.000	Turnhouse (body)		1
41	24712	M13-130000.001	Rack		2
42	24713		Spring washer	Ø 10	24
43	24714		Bolt	M 10×35 Insex	24
44	24715	M13-130000.002	Glide bearing		4
45	24716		Sealing	5×2 80-60-33,8	4
46	24717	M13-130000.005	Piston		4
47	24718	M13-130000.006	Cover ring		1
48	24719		Lock ring	SGA 115	1
49	24720	M13-130000.004	Glide bearing		1
50	24721		Adapter	G002-04-06	10
51	24722		Seal washer		10
52	24723	F13-000010.000	Valve		1
53	24724	M13-130000.007	Plug		1
54	24725	M13-130200.000	Hydraulic cylinder	90/80-500 turnh	4
55	24726	M13-130000.003	Glide bearing		1
56	24727		O-ring	104,0×5,7	1
57	24728		Bolt	M 8×65	2
58	24729		Cover plate	E394-12-01	6
59	24730		Clamp	E390-42-18	2
60	24731	F13-130004.000	Column		1
61	24732	F13-041000.000	Crane arm		1
62	24733	M13-100200.000	Hydraulic cylinder	90/40-400	1
64	24734		Glide bearing	PAP5040P10	4
65	24735	M13-000000.002-040	Pin		2
66	24736	M13-000000.017	Distance ring		6
67	24737		Bolt	M 8×40	4
68	24738	M13-000000.002	Pin		1
69	24739	M13-000030.000-050	Axle bolt		1
70	24740	M14-000000.002-020	Pin		1
71	24741	F13-030000.000-010	Crane stick		1
72	24742	M13-000000.023	Plane washer	Ø25xØ45x4	2
73	24743	M13-020000.000	Rotator fork		1
74	24744	M13-000000.004-010	Fork bolt		1
75	24745	L24.51-40	H-hose to turnhouse	L=650	4
76	24746	L24.51-40	H-hose to turnhouse	L=1800	2
77	24747	L24.51-40	H-hose to stick	L=5900	2
78	24748	L24.51-40	H-hose to beam	L=3170	1
79	24749	L24.51-40	H-hose to beam	L=3500	1
80	24750	L24.51-40	H-hose to rotator	L=9100	4
81	24751	L24.51-40	H-hose to valve	L=1500	2
82	24752	G. 0,16	H-hose to grapple	L=500	2

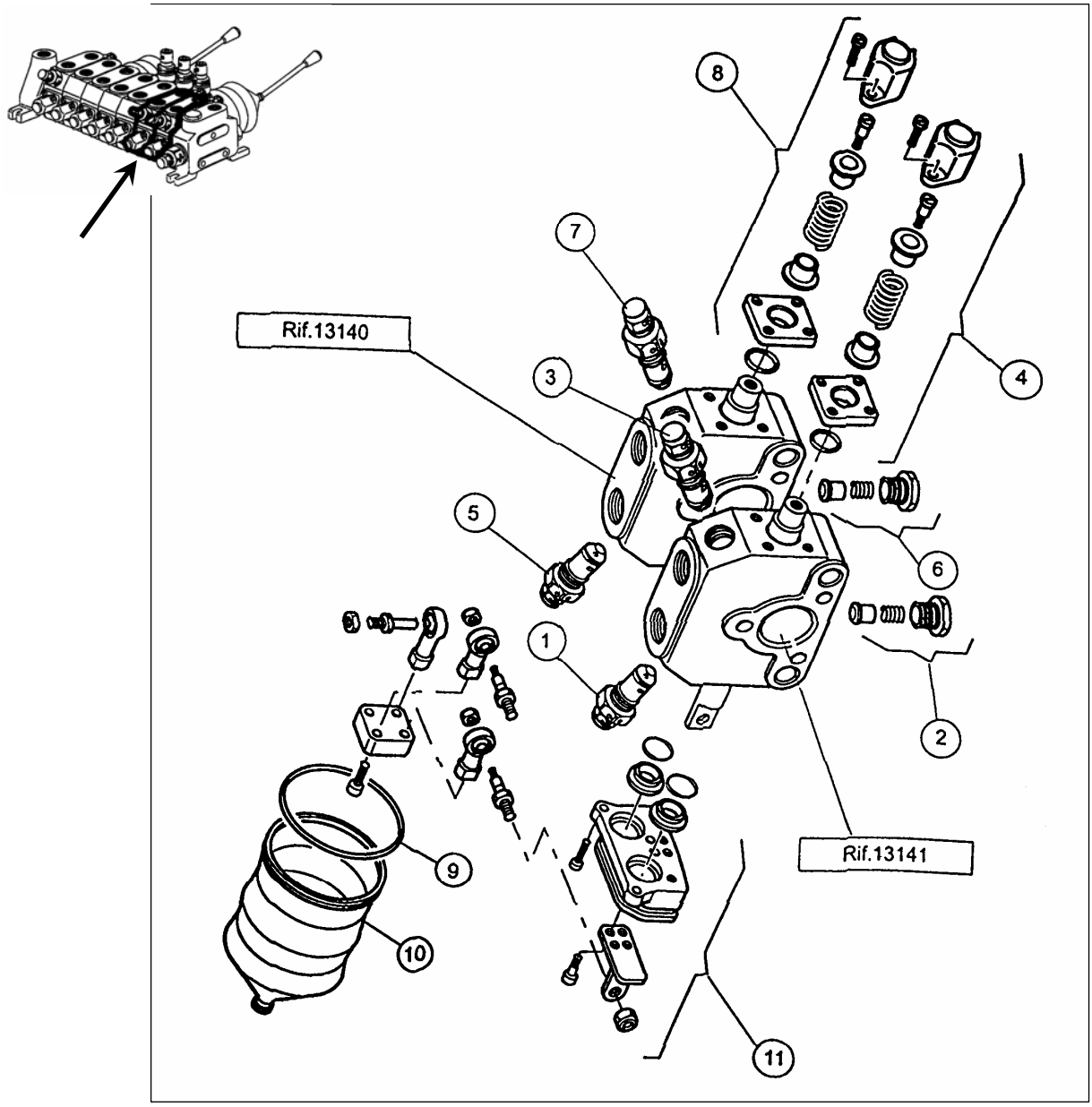
2.3 HYDRAULIC DISTRIBUTOR HC-D3M7

MODEL HC-D3M/7	**12166**	**12174**
Inlet section	13139	13139
First working section	11618	8999
Second working section	13141	13141
Third working section	2229	2229
Fourth working section	2229	2229
Fifth working section	2229	2229
Sixth working section	7813	7813
Seventh working section	13144	13142
Outlet section	11515	11515
Tie rod kit	300130007	300130007
Gasket kit	JSP13000251	JSP13000252



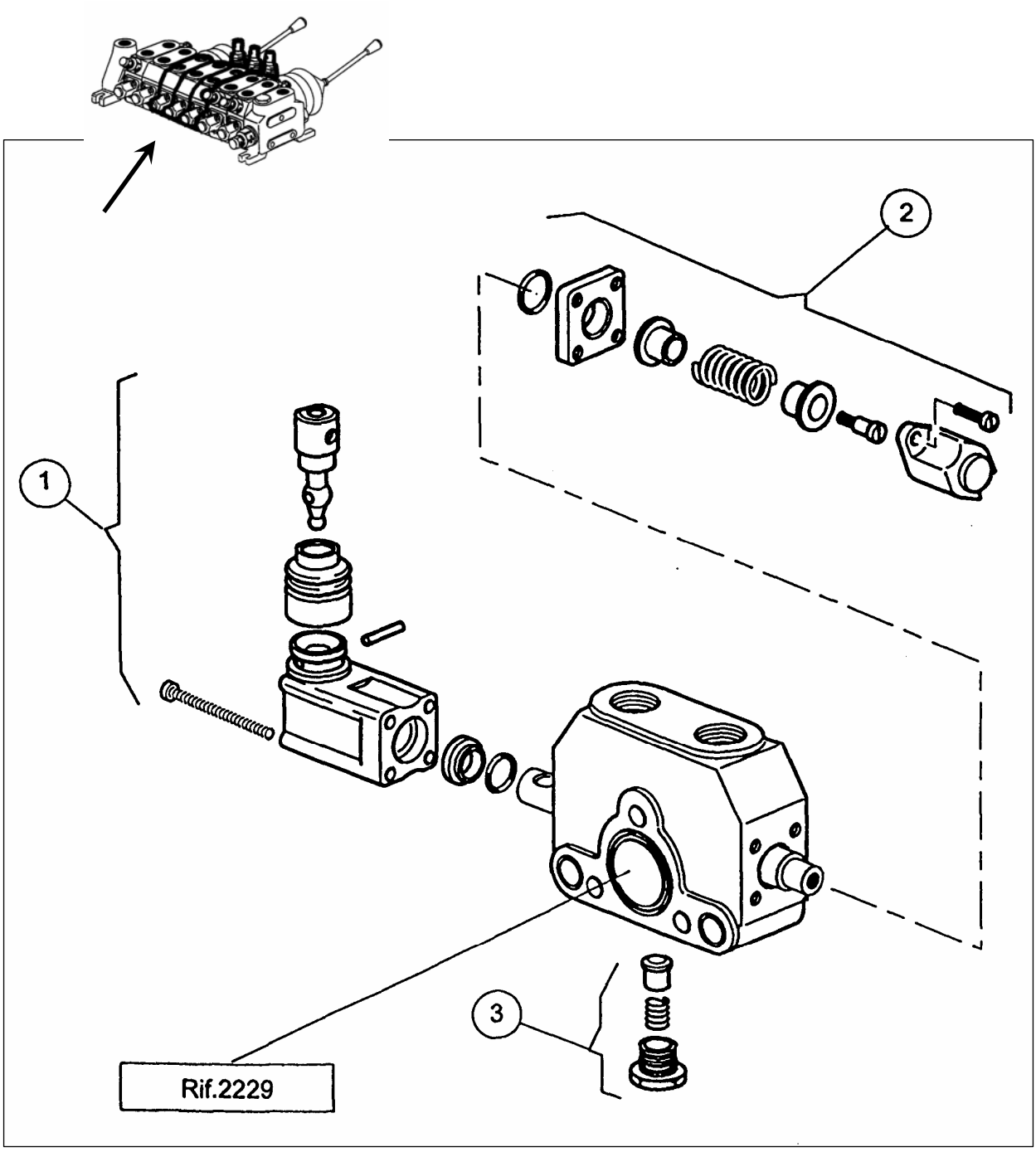
Directional control valve HC-D3M7

Pos.	Quantity	Code	Description	Dimension
1	1	430104001	Relief valve plugged	
2	1	300004001	Plug 1/2" GAS kit	
3	1	3308	Pilot operated pressure	
			relief valve (175) bar	



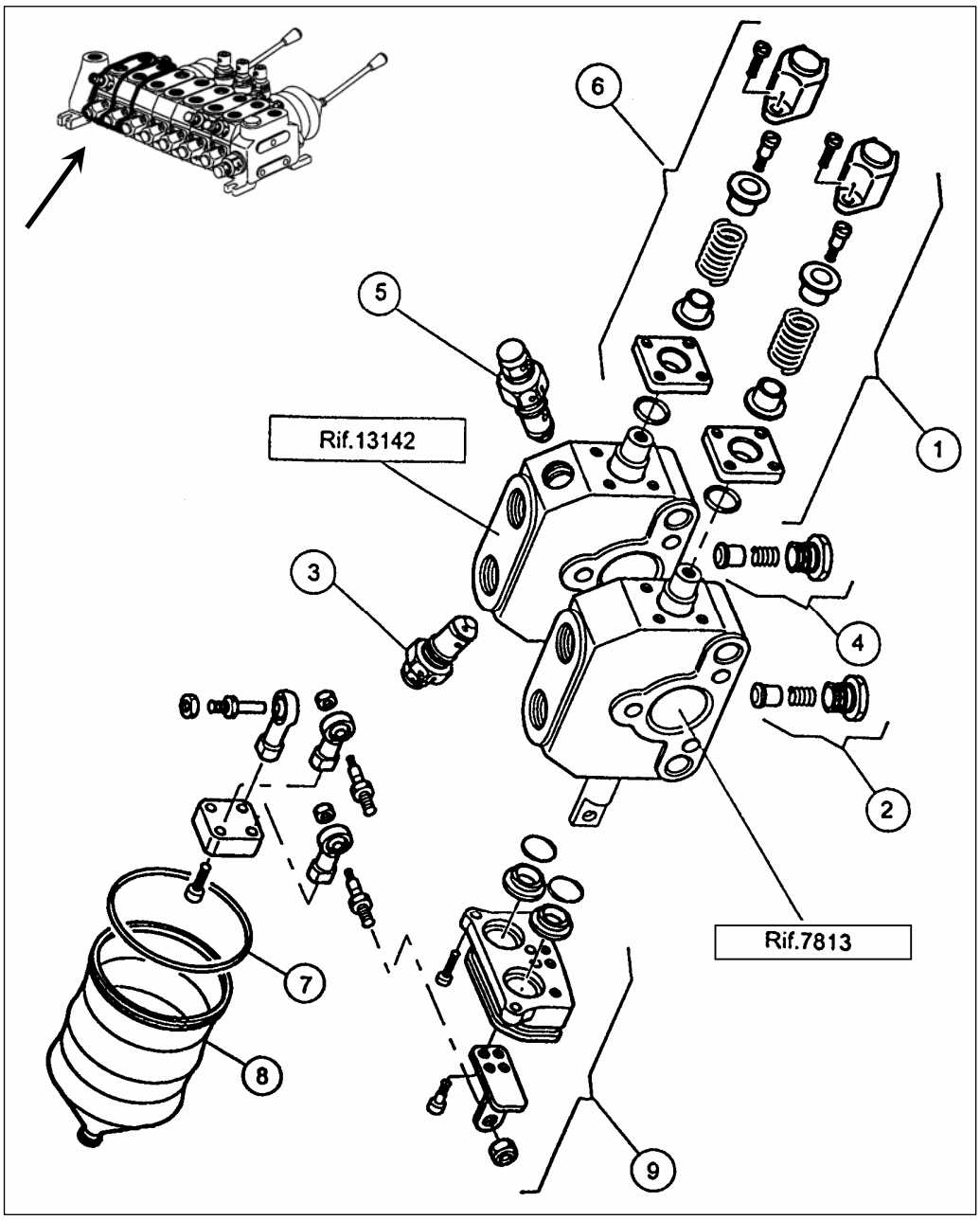
Directional control valve HC-D3M7

Pos.	Quantity	Code	Description	Dimension
1	1	8999	Anti-Shock valve (130-A) bar	
2	1	320230001	Check valve kit	
3	1	8999	Anti-Shock valve (130-A) bar	
4	1	320703001	Spool return action kit	
5	1	5128	Anti-shock valve (175-A) bar	
6	1	320230001	Check valve kit	
7	1	5128	Anti-shock valve (175-A) bar	
8	1	320703001	OR. VI-6285 P5008 Green	64x3
9	1	412030802	P5008	
10	1	423403013	Joystick rubber	
11	1	320630001	Joystick control kit	



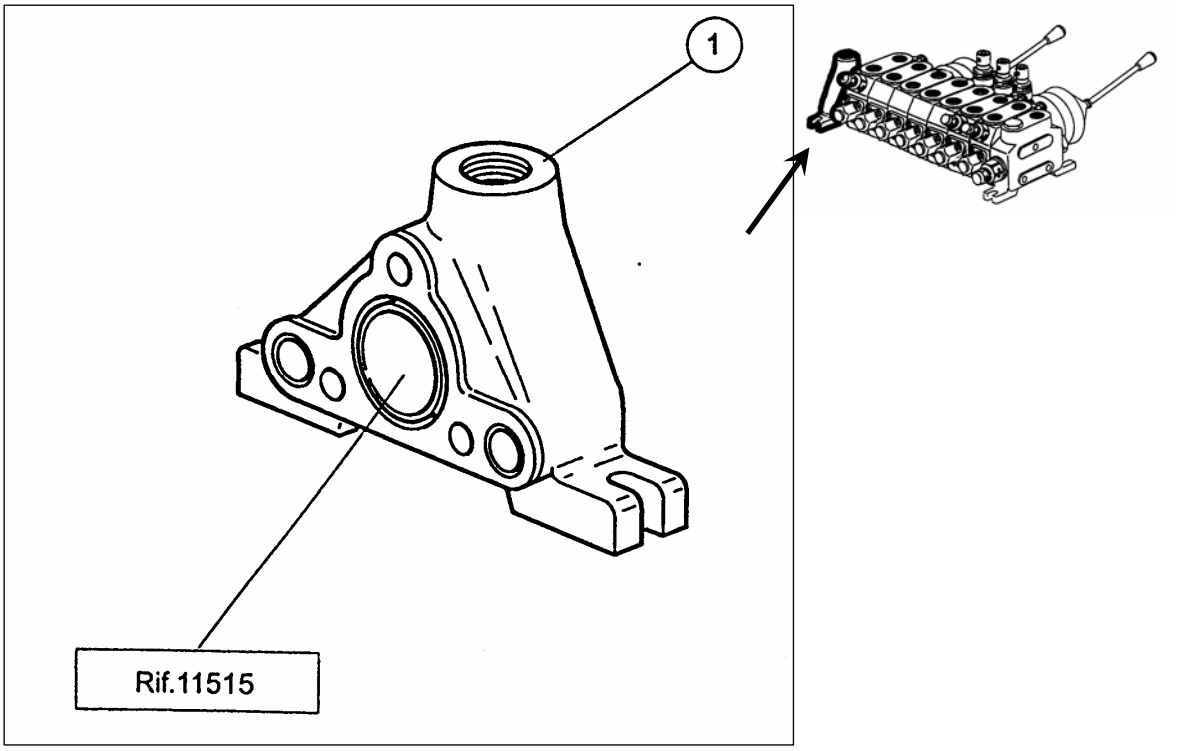
Directional control valve HC-D3M7

Pos.	Quantity	Code	Description	Dimension
1	1	320303001	Handle kit	
2	1	320703001	Spool return action kit	
3	1	320203001	Check valve kit	



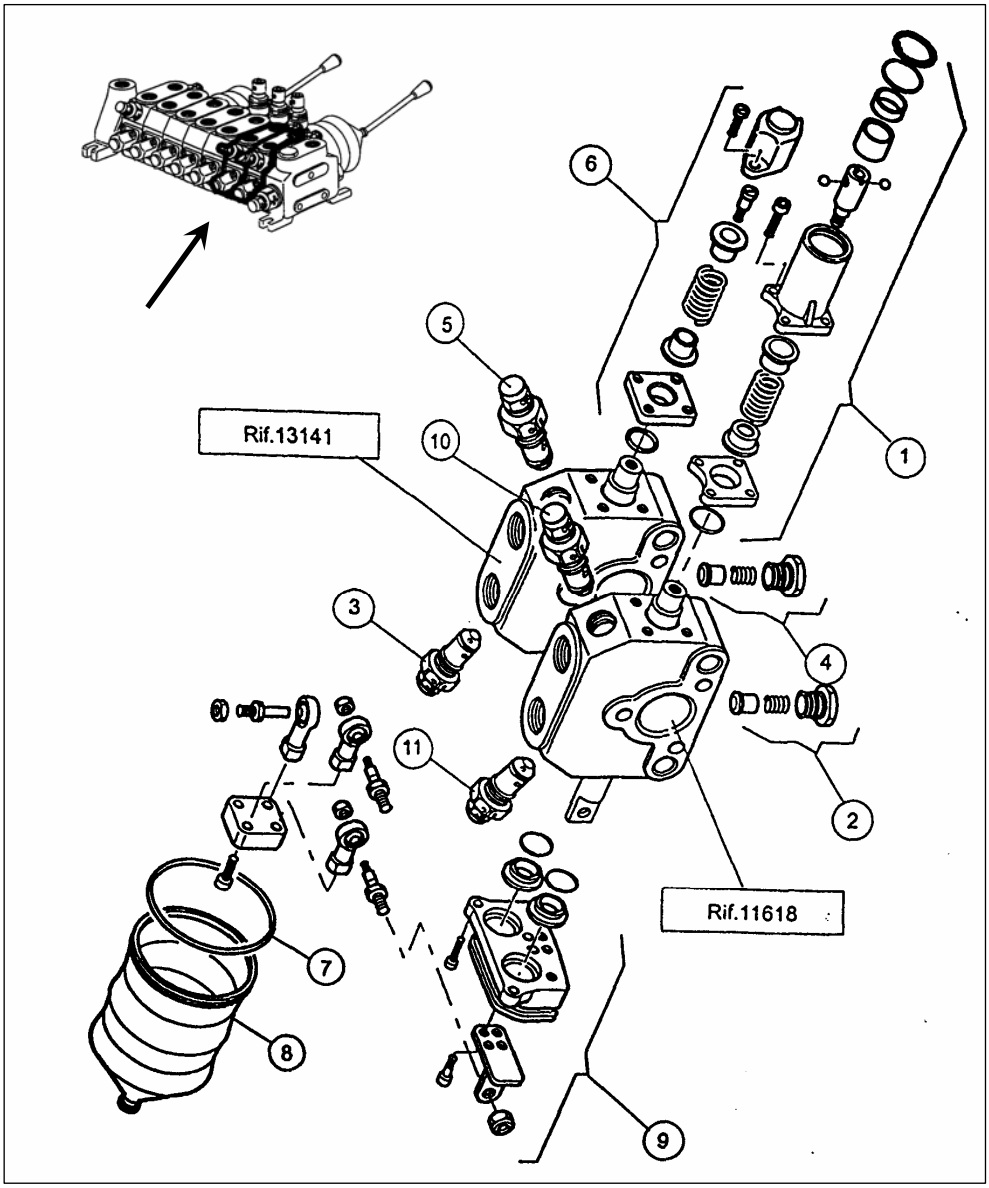
Directional control valve HC-D3M7

Pos.	Quantity	Code	Description	Dimension
1	1	320703001	Spool return action kit	
2	1	320203001	Check valve kit	
3	1	13171	Anti-shock valve (90-A) bar	
4	1	320230001	Check valve kit	
5	1	5128	Anti-shock valve (175-A) bar	
6	1	320703001	Spool return action kit	
7	1	412030802	O.R. Vt.6285 P5008 Green	64 x 3
8	1	423403013	Joystick rubber bellows	
9	1	320630001	Joystick control kit	



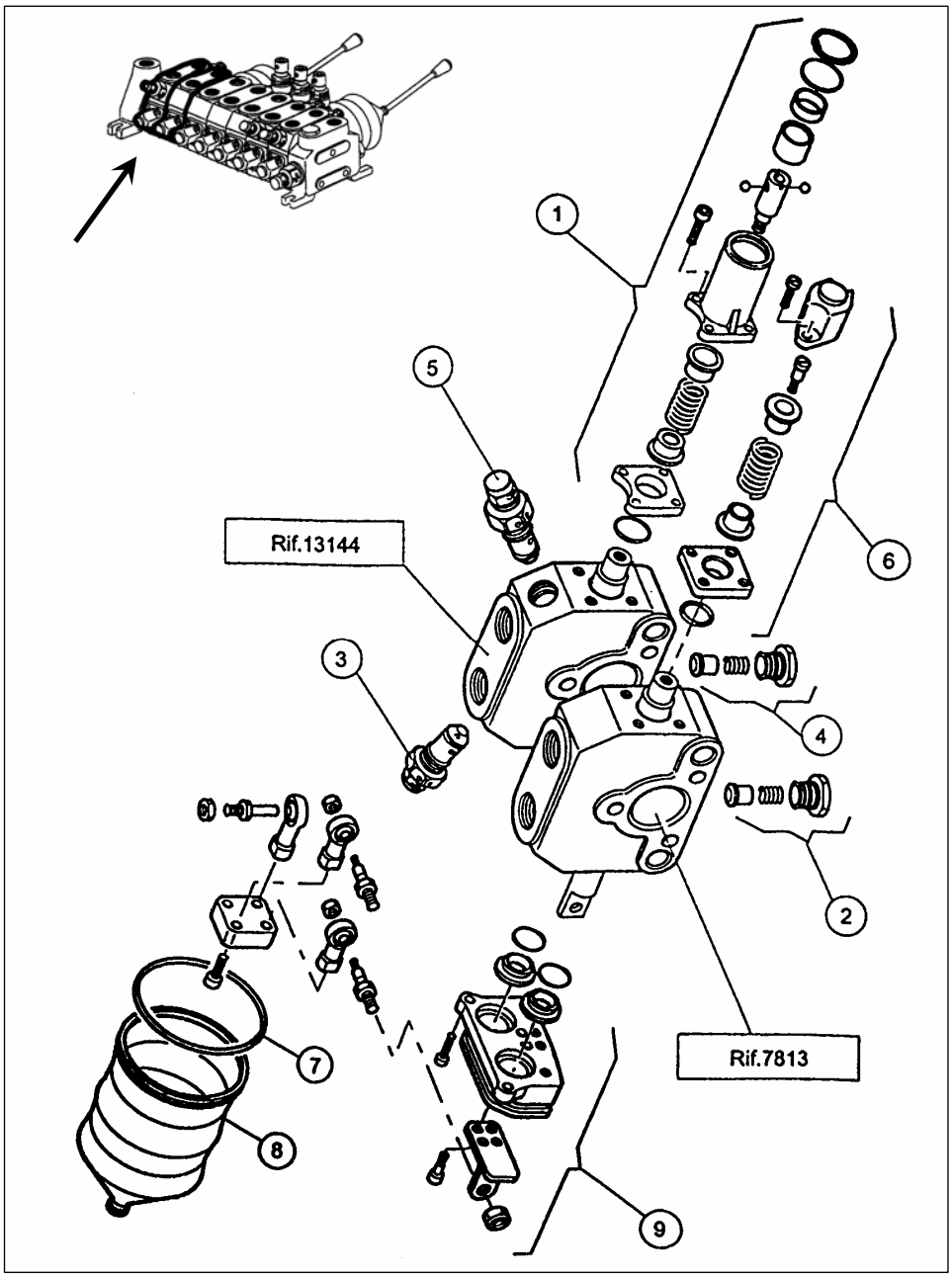
Directional control valve HC-D3M7

Pos.	Quantity	Code	Description	Dimension
1	1	420630004	Outlet section	



Directional control valve HC-D3M7 with floating position

Pos.	Quantity	Code	Description	Dimension
1	1	320803004	Kit detent floating	
2	1	320230001	Check valve kit	
3	1	8999	Anti-shock valve (130-A) bar	
4	1	320230001	Check valve kit	
5	1	8999	Anti-shock valve (130-A) bar	
6	1	320703001	Spool return action kit	
7	1	412030802	O.R. VI-6285 P5008 Green	64x3
8	1	423403013	Joystick rubber bellows	
9	1	320630005	Joystick control floating kit	
10	1	5128	Anti-shock valve (175-A) bar	
11	1	5128	Anti-shock valve (175-A) bar	



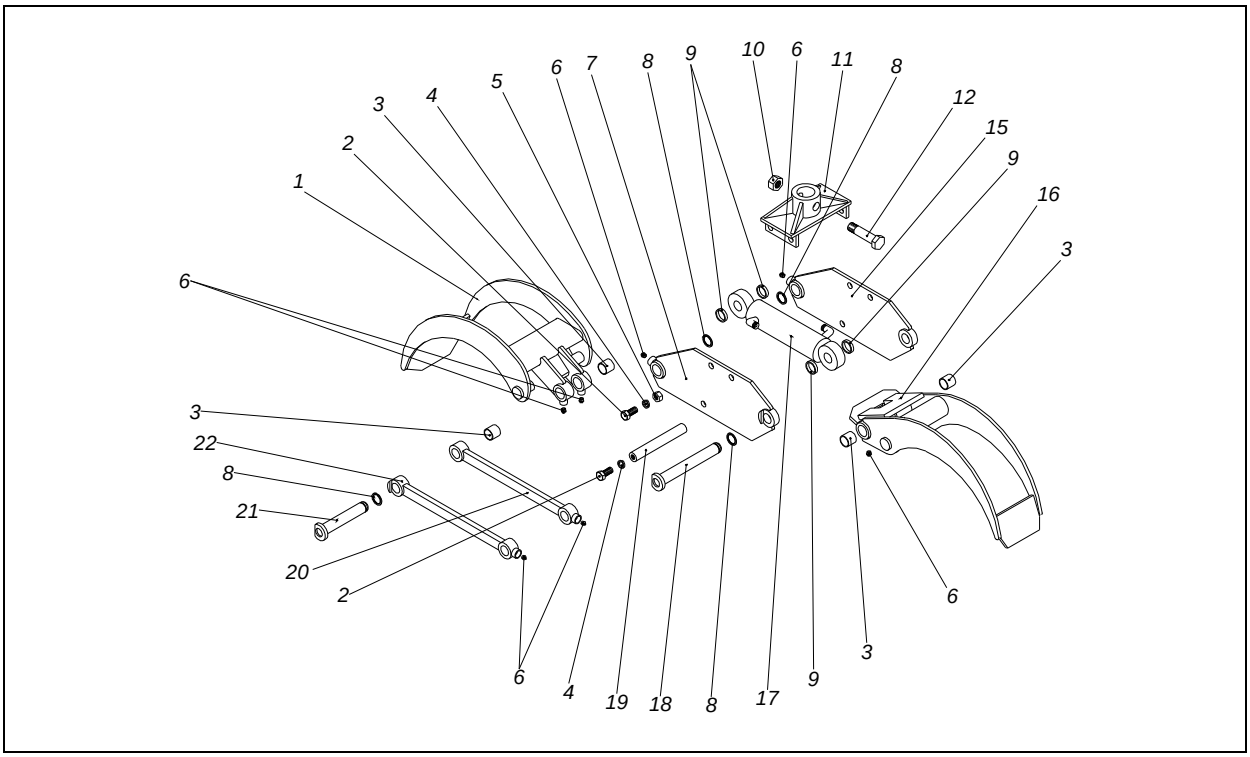
Directional control valve HC-D3M7 with floating position

Pos.	Quantity	Code	Description	Dimension
1	1	320803004	Kit detent floating	
2	1	320230001	Check valve kit	
3	1	13171	Anti-shock valve (90-A) bar	
4	1	320230001	Check valve kit	
5	1	5128	Anti-shock valve (175-A) bar	
6	1	320703001	Spool return action kit	
7	1	412030802	OR. Vl-6285 P5008 Green	64x3
8	1	423403013	Joystick rubber bellows	
9	1	320630005	Joystick control floating kit	

2.4 GRAPPLE FARMA 0,16

Produktions nr FMW 19.

Pos no	Art no	Number	Reservdel	Sparepart	Dimension	Pcs
1	37019005	FMW42-010000.000	Gripklo/utv.	Grip outside		1
2	906225		Ledbult	Axlebolt	M16x40	6
3	909140		Bussning	Bush	PM3030DX	10
4	908630		Låsbricka	Spring washer	Ø16	6
5	907234		Mutter	Nut	M16	4
6	930105		Smörjnippel	Grease nipple	1/8"	8
7	37019009	FMW42-030000.000	Godstjok.	Wall		1
8	911260		Låsring	Stopper ring	SGA30	6
9	37019013	FMW42-000000.001	Distansring	Distance ring		4
10	907255		Mutter	Nut	M24	1
11	37019016	FMW42-050000.000	Grapple's hållare	Grapple's holder		1
12	37019020	MAP13-000000.004	Ledbult	Bolt		1
15	37019010	FMW42-030000.000-010	Godstjok.	Wall		1
16	37019006	FMW42-020000.000	Gripklo/inv.	Grip inside		1
17	313116	FMW42-100100.000	Hydraulik cylinder	Hydraulic Cylinder	63x32x160	1
18	37019025	FMW42-060000.000-010	Ledbult	Axlebolt		1
19	37019035	FMW42-000000.002	Stång	Bar		1
20	37019044	FMW42-050000.000	Medbringare	Tie-rod		1
21	37019024	FMW42-060000.000	Ledbult	Axlebolt		1
22	37019045	FMW42-050000.000-010	Medbringare	Tie-rod		1



2.5 HYDRAULIC CYLINDERS

Sparepart list for hydraulic cylinder 100/40-400
Lift cyl for Farma 51-40 grapple loader

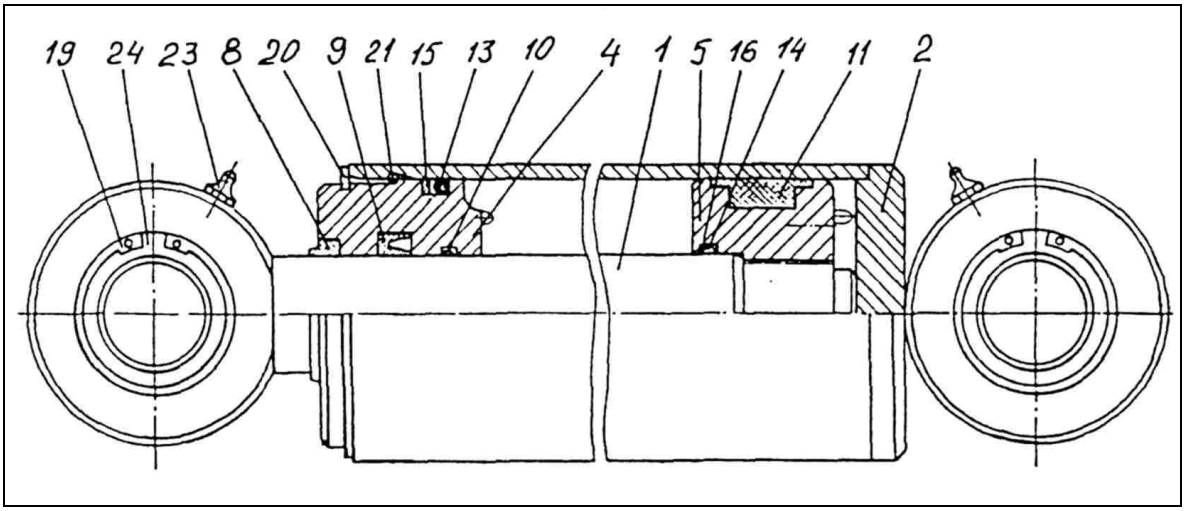
Pos no	Art no	Number	Sparepart	Dimension	Pcs
1	56601	M13-100120.000-010	Piston rod		1
2	56602	F13-100210.000	Tube		1
4	56603	F13-100200.001	Front bush		1
5	56604	F13-100200.002	Piston		1
8	56605		Scrape ring	AS40-50-7-10	1
9	56606		Sealing	NI 300 40-55-10	1
10	56607		Bush	DFI 40-45-5,5	1
11	56608		Sealing	SIMKO 5×2 100-75-33,8	1
13	56609		O-ring	89,2×5,7	1
14	56610		O-ring	40,2×3,0	1
15	56611		Sealing	SRA 100-5,1-2	1
16	56612		Sealing	SRI 40-2,6-1,5	2
19	56613		Lock ring	SGH 55	2
20	56614		Lock ring	SGA 97	1
21	56615		Lock ring	N°72310	1
23	56616		Grease nipple	1/8"	2
24	56617		Joint bearing	GE35ES	2

Sparepart list hydraulic cyl 90x40x400
Beam cyl for Farma 51-40 grapple loader

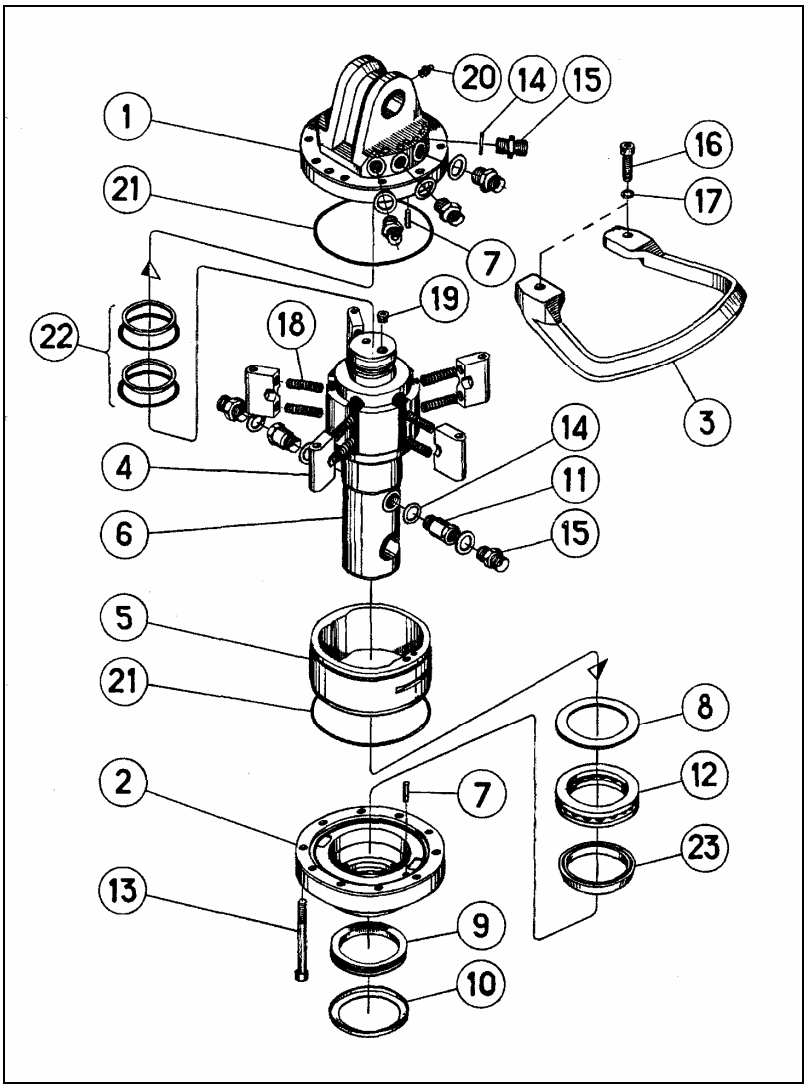
Pos no	Art no	Number	Sparepart	Dimension	Pcs
1	56501	M13-100120.000-010	Piston rod		1
2	56502	M13-100210.000	Tube		1
4	56502	F13-100100.001	Front bush		1
5	56503	F13-100100.002	Piston		1
8	56503		Scrape ring	AS40-50-7-10	1
9	56504		Sealing	NI 300 40-55-10	1
10	56504		Buch	DFI 40-45-5,5	1
11	56505		Sealing	SIMKO 5×2 90-70-33,8	1
13	56505		O-ring	79,2×5,7	1
14	56506		O-ring	40,2×3,0	1
15	56506		Sealing	SRA 90-5,1-1,5	1
16	56507		Sealing	SRI 40-2,6-1,5	2
19	56507		Lock ring	SGH 55	2
20	56508		Lock ring	SGA 87	1
21	56508		Lock ring	N°72290	1
23	56509		Grease nipple	1/8"	2
24	56509		Joint bearing	GE35ES	2

Sparepart list hydraulic cyl 63/32-160
Grapple cyl Farma 0,16

Pos no	Art no	Number	Sparepart	Dimension	Pcs
1	55401	F42-100202.000	Piston rod		1
2	55402	F42-100201.000	Tube		1
4	55402	M13-100300.001	Front bush		1
5	55403	M13-100300.002	Piston		1
8	55403		Scrape ring	AS 32-45-7-10	1
9	55404		Sealing	NI300 32-47-10	1
10	55404		Buch	DFI 32-35,1-4,0	1
11	55405		Sealing	SIMKO 5×2 63-47-29,8	1
13	55405		O-ring	52,2×5,7	1
14	55406		O-ring	32,2-3,0	1
15	55406		Sealing	SRA 63-5,1-1,5	1
16	55407		Sealing	SRI 32-2,6-1,0	2
19	55407		Lock ring	SGH 47	2
20	55408		Lock ring	SGA 60	1
21	55408		Lock ring	N 72240	1
23	55409		Grease nipple	1/8"	2
24	55409		Joint bearing	GE30ES	2



2.6 ROTATOR FMTR 30



Pos no	Art no	Sparepart	Pcs
1	MTR 30.01 M	Stator plate, upper	1
2	MTR 30.02 M	Stator plate, lower	1
3	MTR 31.03 LA	Hose guard	1
4	MTR 30.007 M	Vane	5
5	MTR 30.006	Stator frame	1
6	MTR 30.005	Rotator shaft	1
7	MTR 30.015-02	Pin	2
8	MTR 30.011	Shim	1
9	TWVA 00500	V-seal	1
10	MTR 30.013	Washer	1
11	MT 0205	Nipple	2

Pos no	Art no	Sparepart	Pcs
12	51110	Axial Bearing	1
13	MC6S 12.9 M8x70	Screw	10
14	GB-6 TREDO	Washer	8
15	0101-6	Nipple	6
16	M6S 8,8 M8x30	Screw	2
17	8.65Г	Washer	2
18	MTR 100.009	Spring	10
19	835-02	Tap	1
20	1.2.C6	Grease nipple	1
21	OR 116,00x2,50-N70	O-ring	2
22	GHH/R 40/47,5x3,2	Glide ring	2
23	TS 50/60x8	Seal	1

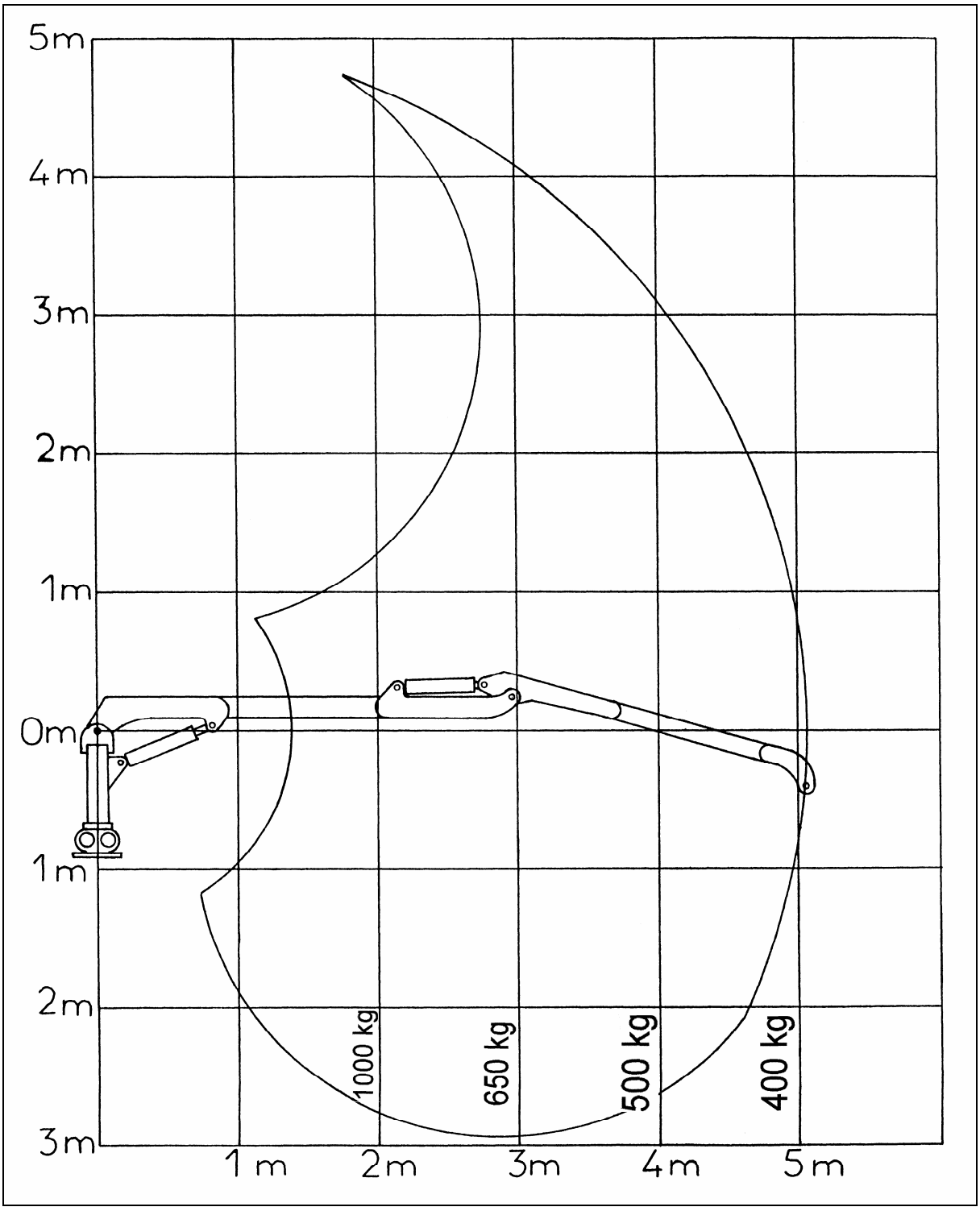
2.7 TECHNICAL DATA

LOADER	**C 5,1D**
Lifting capacity net, kNm	33
Outreach, m	5,1
Recommended pump capacity, l/min	35-50
Working pressure, bar	180
Lifting power, full reach, kg	400
Revolving moment, kNm	8,8
Turning angle, °	360
Loader weight, kg	490
Valve HC-D3M (2 joysticks + 3 levers)	

GRAPPLE, m^2	**0,16**
Opening, max, mm	1150
Opening, min, mm	40
Weight, kg	70

ROTATOR	**MTR 30**
Revolving moment, Nm	700
Weight, kg	17

2.8 WORKING AREA



3 OPERATING INSTRUCTIONS

3.1 SAFETY

- **Read the manual before operating the loader. Neglecting the instructions can cause danger to operator and machine.**
- **Operator must have sufficient training for using this machine.**
- **Do not use the loader until you are familiar with the controls.**
- **Before loading works, ensure there is no one in danger zone.**

DANGER ZONE IS 20 METRES!

Operator must have full visibility all over working area.

The vehicle must be on stable ground and positioned securely. Support legs must be used while loading to prevent the loader tipping over.

Don't forget to lift the support legs up before moving to another place.

Use vehicles parking brakes during the loading.

Do not exceed maximum loading values.

Never leave the boom on UP position without supervising. Do not use the loader for personnel lifting.

In installation hoistings take note of booms slow descending.

When working close to live conductors observe the special safety distance.

Take special care when lifting a heavy load from platform and then turning the loader to the side.

Do not use the loader for hauling.

Do not be under a hanging load.

READ AND UNDERSTAND THE OPERATION AND SAFETY INSTRUCTIONS BEFORE USING THE LOADER

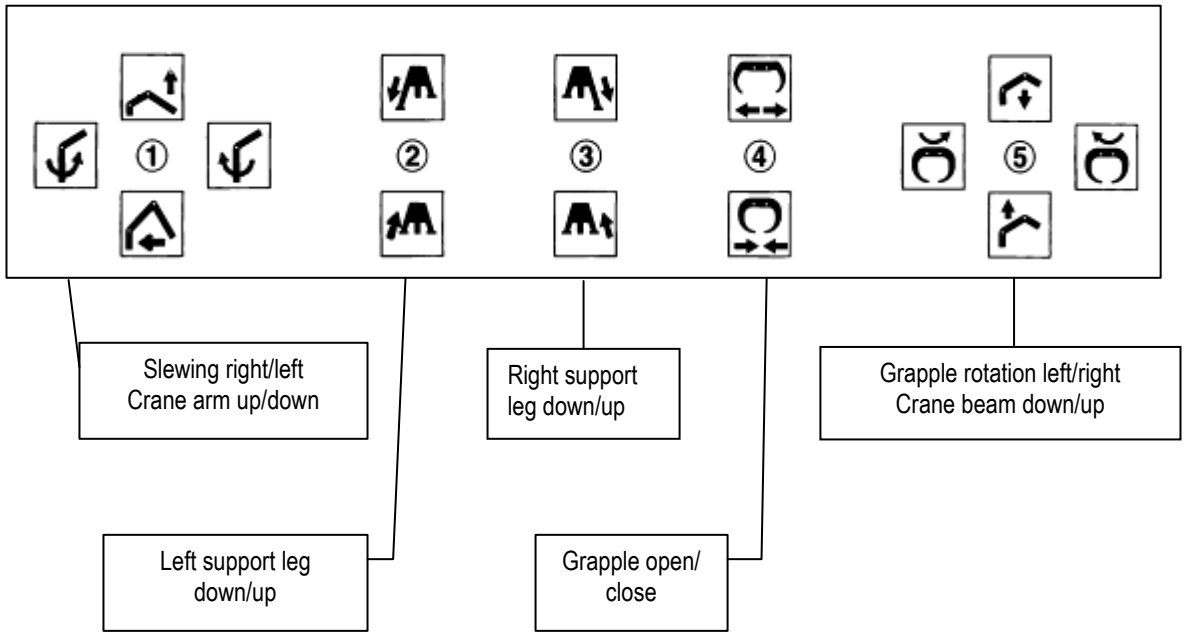
3.2 PRACTISING

Learn control valves operation. Drive through every function without load.

Learn to use several functions simultaneously. This enables smooth, precise operation and prevents unnecessary strain. Note that movements become slower when the same oil flow is divided to several cylinders.

Move control levers smoothly and steadily, avoid quick and jerky movements. In practice operation it is beneficial to adjust pumps output as low as possible. This makes avoiding sudden movements easier.

After getting accustomed to loaders movements choose the engine speed so that operation is efficient but you still have movements well under your control.



3.3 INSTRUCTIONS FOR SAFE OPERATION

SUPPORTING THE LOADER

- Always engage the base machines parking brakes before loading. If necessary put some obstacles in front of wheels.
- Always use support legs. Make sure the loader is situated at firm terrain.

DO NOT USE SUPPORT LEGS FOR LIFTING THE LOAD. USE SUPPORT LEGS ONLY FOR SUPPORTING THE LOADER

Do not turn the crane before load is sufficiently high.

Take special care when lifting a heavy load from platform while turning the crane sideways.

MANIPULATING THE LOAD

NEVER DRIVE LOADER FROM ONE EXTREME POSITION TO OTHER WITH SPEED! THIS MAY CAUSE OVERTURNING OF VEHICLE AND LOADER AND ALSO DAMAGING OF BEARINGS

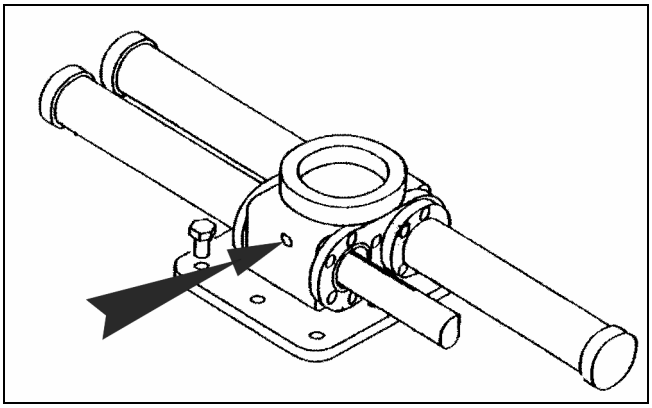
Avoid loading on a slanted ground or at least work with extreme cautiousness.

- When working on a slanted surface do not charge with full lifting moment.

ALWAYS ENGAGE THE BASE MACHINES PARKING BRAKES BEFORE LOADING. IF NECESSARY PUT SOME OBSTACLES IN FRONT OF WHEELS

3.4 DAILY INSPECTIONS

Examine visually the loader. Note defects and failures that might affect safety. Repair possible defects and failures.
Check there is no leakages on hydraulic system, nor damaged hoses.
Check loaders fastening bolts, booms articulations nuts, grapples fastening, loaders.
Grease the loader if necessary (see lubricating instructions).
Drive through every function to its extreme position.
Check that the oil is on level as shown in figure.



The oil level needs to be checked regularly. The oil level needs to be filled up to 1 cm underneath the refilling hole. For direction of plug se arrow above.

3.5 ACTING IN DANGEROUS SITUATION

IF THE LOADER STARTS TO FALL OVER LOWER THE LOAD CAREFULLY TO THE GROUND!

- Do not drop the load by opening the grapple!
- Do not jump out from vehicle.
- If the booms start descending due overloading try to transfer the load closer to the column; do not open the grapple.

IF THE LOADER COMES INTO CONTACT WITH HIGH VOLTAGE ELECTRIC WIRES COMPLY WITH FOLLOWING INSTRUCTIONS:

IF YOU ARE OUTSIDE THE MACHINE

Do not attempt to get into the machine. Keep everybody out from the machines vicinity. Do not touch any part of machine.

IF YOU ARE INSIDE THE MACHINE

Get out of it by **JUMPING**. Avoid touching any conducting parts.

Do not make yourself a wire through which electricity may flow.

Get away from the machine by **JUMPING** so that both feet do not touch the ground at the same time. Electric field at ground can cause fatal voltage between legs at about 20 meters away you are safe.

3.6 WORKING AT EXTREME CONDITIONS

Recommended working temperature range for loader is **–30℃ up to +40℃** .

Note that working at low temperatures accelerates hydraulic gaskets wearing and increases hydraulic hoses exposure to damages and steel constructions exposure to brittle fracture. When working at lower temperature than it is recommended lift the lighter loads than usual.

Before start working at cold conditions let the oil circulate freely through system a few minutes.

Slowly drive every action through several times so that gaskets come pliable before they receive full pressure.

At exceptionally warm conditions beware of hydraulic oils excessive heating. Too high oil temperature (higher **+80℃**) degrades oil and damages gaskets**.**

4 MAINTENANCE INSTRUCTIONS

4.1 SAFETY

READ THE MAINTENANCE INSTRUCTIONS BEFORE SERVICE OR MAINTENANCE WORKS. DO NOT ATTEMPT TO PERFORM SUCH MAINTENANCE WOKS WHICH YOU DO NOT FULLY UNDERSTAND

Repair all safety endangering defects immediately.
Check that the loader is on a level and stable ground.
Use vehicles parking brake during maintaining the loader.Make sure that nobody can unnecessarily have access to loaders or vehicles controls.
Never attempt to do maintenance works on the hydraulic system before you are sure there is no pressure.
Do not tighten or repair a leaking hydraulic couplings while the system is pressurized.
Never attempt to localize a leakage from hoses or connections by feeling with hand. The high pressure oil jet can penetrate skin and cause serious burns and damages. High pressure oil is also highly flammable.
Do not work under such device that is sustained only by hydraulics. During maintenance use supports.
Do not detach boom cylinders until booms are lowered, the hydraulic system de-pressurized and loader supported to prevent overturning.
Avoid direct skin exposure with oil.
Avoid getting oil into eyes. Use safety goggles and gloves.

4.2 GENERAL

- Maintenance works must be carried out regularly to ensure safe and malfunction-free operation.
- Maintenance works do not require any special tools, so most operations can be performed by the user.
- Use correct tools.
- Attempt to localize the defects aswell as possible, so you don’ t have to open the system unnecessarily.
- Keep disassembled parts and repair area protected from dirt.
- Keep spare parts in their packages until needed for installation.
- Valve adjustments and repairs are recommended to be performed by dedicated service personnel.

4.3 CHANGING HYDRAULIC COMPONENTS

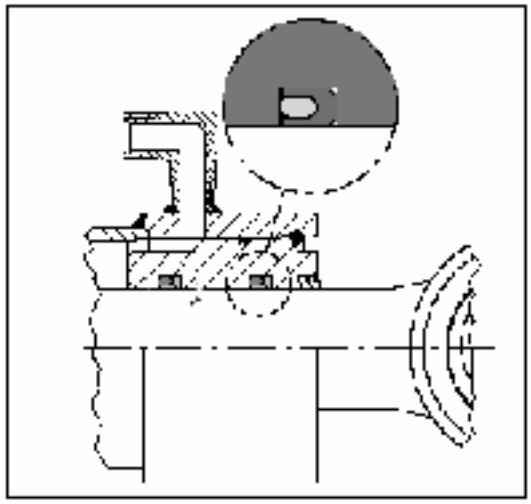
When replacing hydraulic components such as hoses, gaskets etc. make sure they correspond with original parts.

To minimalize malfunctions and ensure safe operation use original spareparts.

CHANGING THE SEALS

Change all cylinder seals at the same time. The piston cannot be split. The seals must be slipped over the piston edge. Be careful not to break the seals when fitting them in place.

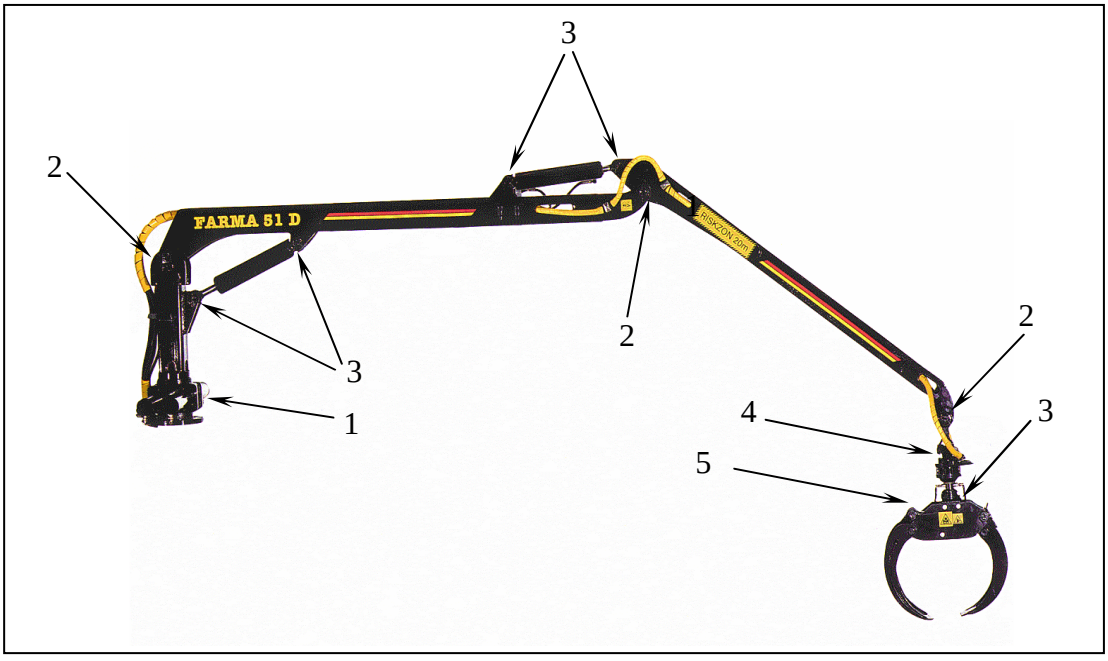
1. After removing the old seals clean the grooves carefully before fitting the new seals into place.
2. Lubricate the new seals with hydraulic oil.
3. Open the pistons lock nut.
4. Screw the piston off.
5. Withdraw the guide piece from the rod.
6. Change the guide piece seals; make sure that the piston rod seal is the right way round, i.e. the lip against the pressure (see figure).



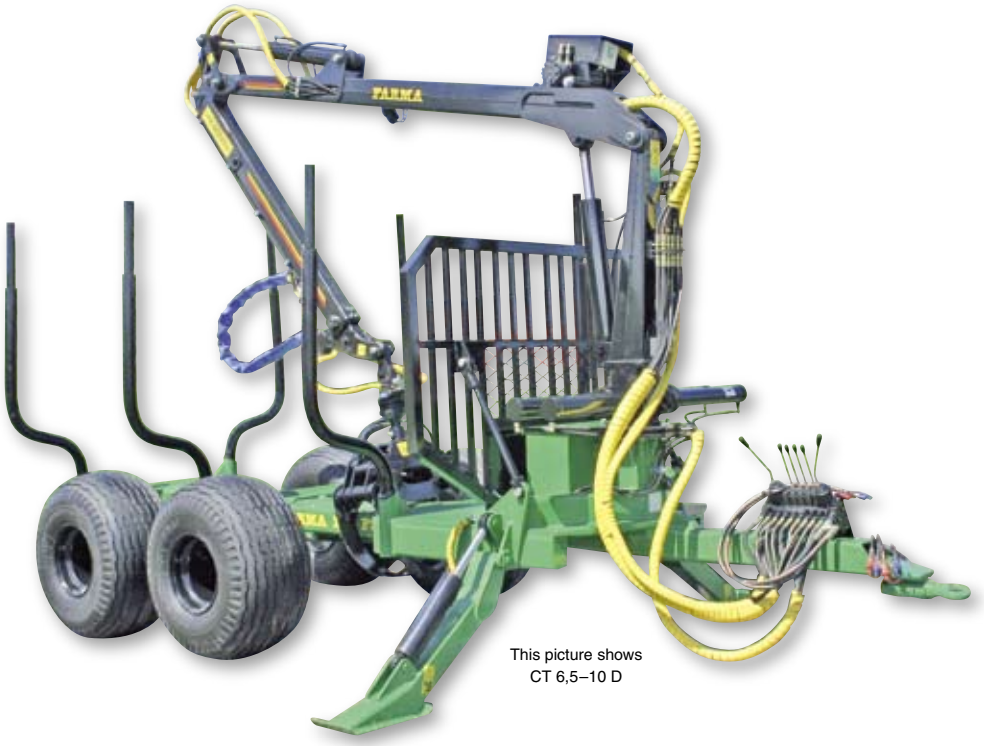
4.4 LUBRICATION

Lubricating point	Qty	Lubricant	Interval
			(working hours)
1. Slewing bearings	1	Grease	50 h
2. Articulation	3	Grease	50 h
3. Cylinder end	6	Grease	50 h
4. Rotator	1	Grease	50 h
5. Grapple	8	Grease	50 h

Loader model:	Oil volume:
C 3,2	1 litre
C 3,5	1 litre
C 3,8	1 litre
C 4,6 S	2,5 litre
C 4,6 D	2,5 litre
C 5,1	2,5 litre
C 6,0	2,5 litre
C 6,5	1 litre



FARMA®



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INSTRUCTION BOOK

FARMA T 8

SERVICE AND SPARE PARTS

FORS MW

TABLE OF CONTENTS

1 INTRODUCTION

This manual deals with the **T 8** forest trailer and contains all the operating and maintenance instructions you need for using the trailer safely and correctly.

Even if you are experienced user of this kind of equipment, read this manual carefully.

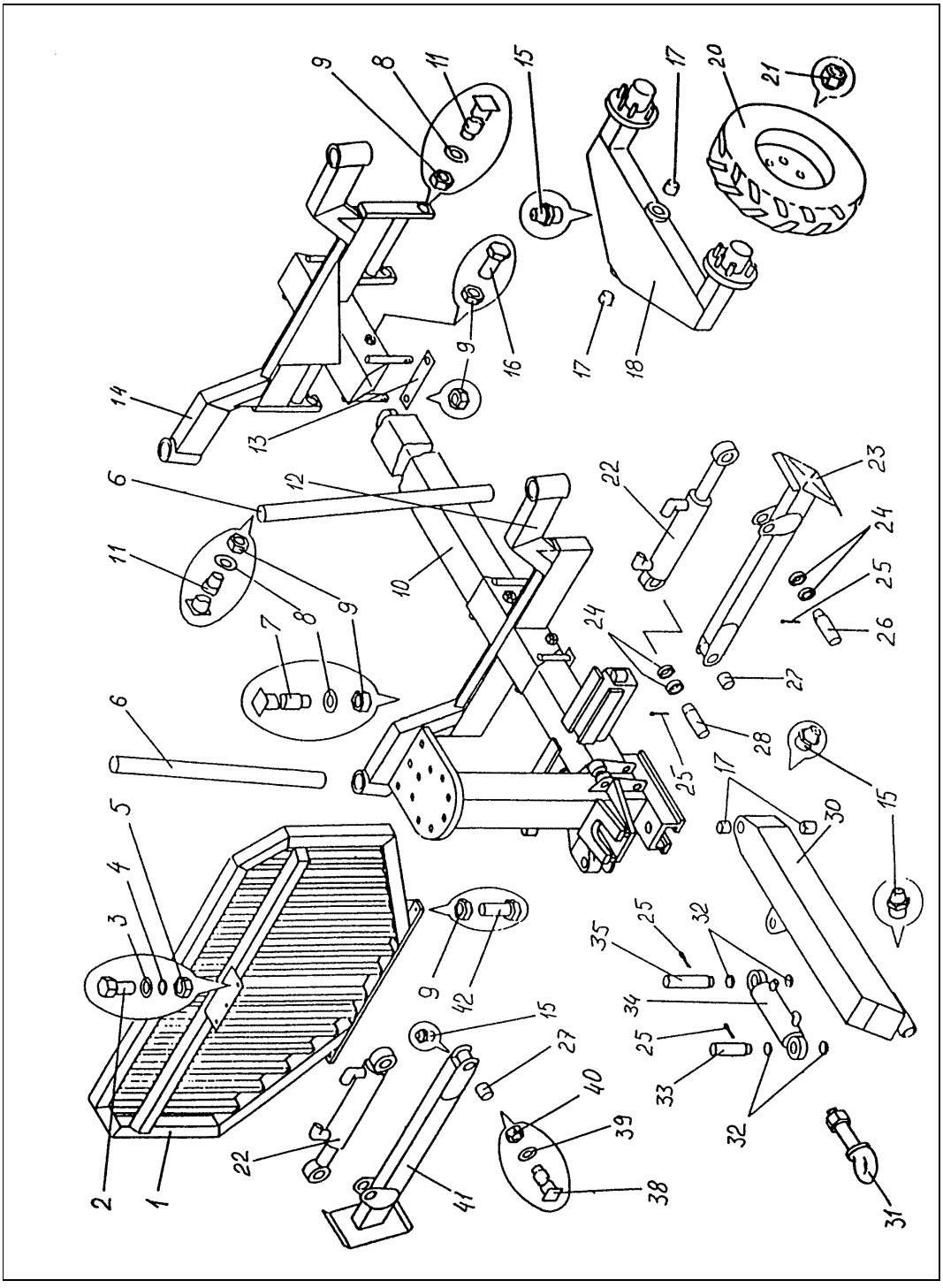
It contains information that enables the trailer to be used efficiently and safely. Make sure that this trailer corresponds to your demands.

Regular maintenance is essential for troublefree, efficient and economical utilization.

It is the operator duty to familiarize and obey all safety precautions and instructions carefully.

2 TECHNICAL SPECIFICATION

2.1. CONSTRUCTION OF THE TRAILER



2.2. SPAREPART LIST FOR TRAILER T8

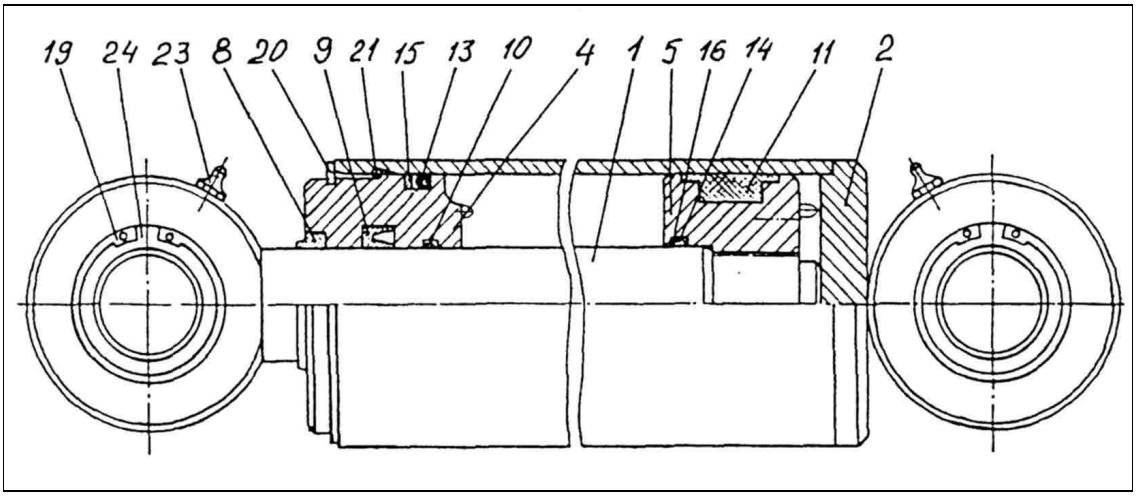
Production no FMW 12

Pos no	Art no	Number	Sparepart	Dimension	Pcs
1	12001	F11-080000.000	Backwall		1
2	12002		Bolt	M12x40	3
3	12003		Plane washer	Ø12	3
4	12004		Spring washer	Ø12	3
5	12005		Nut	M12	3
6	12006	F13-150000.000	Pin		4
7	12007	M13-000030.000-060	Axle bolt		1
8	12008	M13-000000.001	Plane washer	Ø24	3
9	12009		Nut	M24	19
10	12010	F11-070000.000	Frame/Chassis		1
11	12011	M13-000030.000-030	Axle-bolt		2
12	12012	F11-170000.000	Material holder		2
13	12013	F13-062000.003-010	Lock plate		4
14	12014	F11-061000.000	Wheel support		1
15	12015		Frame/Chassis	1/8 inch	8
16	12016		Bolt	M24x60	6
17	12017		Glide bearing	PAP5040P10	6
18	12018	M13-090000.000	Boggie side		2
20	12019		Wheel	400/60-16/14PR	4
21	12020		Wheel nut		24
22	12021	M14-100100.000-020	Hydraulic cylinder	63/32-300	2
23	12022	F11-140000.000-010	Stabilizer leg		1
24	12023	M14-000000.001	Distance ring		8
25	12024		Split pin	Ø4x60	6
26	12025	M14-000000.002-040	Axle bolt		1
27	12026		Glide bearing	PAP2530P10	4
28	12027	M14-000000.002-030	Axle bolt		2
30	12028	F11-050000.000	Pull beam		1
31	12029	F13-000010.000	Pull-loop	12 ton	1
32	12030	M13-000000.017	Distance ring		4
33	12031	M13-000000.002-020	Axle bolt		1
34	12032	F11-100100.000	Hydraulic cylinder	90/40-100	1
35	12033	M13-000000.002-040	Axle bolt		1
38	12034	M14-010050.000-040	Axle bolt		2
39	12035		Plane washer	Ø20	2
40	12036		Nut	M20	2
41	12037	F11-140000.000	Stabilizer leg		1
42	12038		Bolt	M24x80	2
43	12039	RF12.8,5	H-hose frame steering	L=2460	1
44	12040	RF12.8,5	H-hose frame steering	L=2700	1
45	12041	3P.8,5	H-hose stabilizer	L=2880	2
46	12042	3P.8,5	H-hose stabilizer	L=3500	2

2.3. HYDRAULIC CYLINDERS

Sparepart list for hydraulic cyl 90/40x100
Frame steering cyl for trailer T 7; T 8
Production no F11-100100.000

Pos no	Art no	Number	Sparepart	Dimension	Pcs
1	56101	F11-100120.000	Piston rod		1
2	56102	F11-100110.000	Tube		1
4	56102	F13-100100.001	Front bush		1
5	56103	F13-100100.002	Piston		1
8	56103		Scrape ring	AS40-50-7-10	1
9	56104		Sealing	NI 300 40-55-10	1
10	56104		Bush	DFI 40-45-5,5	1
11	56105		Sealing	SIMKO 5×2 90-70-33,8	1
13	56105		O-ring	79,2×5,7	1
14	56106		O-ring	40,2×3,0	1
15	56106		Sealing	SRA 90-5,1-1,5	1
16	56107		Sealing	SRI 40-2,6-1,5	2
19	56107		Lock-ring	SGH 55	2
20	56108		Lock-ring	SGA 87	1
21	56108		Lock-ring	N°72290	1
23	56109		Grease-nipple	1/8"	2
24	56109		Joint bearing	GE35ES	2



Sparepartlist for Hydraulic-cylinder 63/32-300
Stabilizer-cyl for trailer T 6; T 7; T 8
Production no M14-100100000-020.

Pos nr	Art no	Number	Sparepart	Dimension	Pcs
1	55601	M13-100320.000-020	Piston road		1
2	55602	M14-100110.000-020	Tube		1
4	55603	M13-100300.001	Front bush		1
5	55604	M13-100300.002	Piston		1
8	55605		Scrape-ring	AS 32-45-7-10	1
9	55606		Sealing	NI300 32-47-10	1
10	55607		Buch	DFI 32-35,1-4,0	1
11	55608		Sealing	Simco 5×2 63-47-29,8	1
13	55609		0-ring	52,2×5,7	1
14	55610		0-ring	32,2-3,0	1
15	55611		Sealing	SRA 63-5,1-1,5	1
16	55612		Sealing	SRI 32-2,6-1,0	2
19	55613		Lock-ring	SGH 42	2
20	55614		Lock-ring	SGA 60	1
21	55615		Lock-ring	N 72240	1
23	55616		Grease-nipple	1/8"	2
24	55617		Joint bearing	GE25ES	2

2.4. TECHNICAL DATA

FARMA TRAILER	8 t
Loading area, m^2	2,1
Ground clearance, mm	530
Center beam, mm	140x140x8
Steerable towbar	one cyl
Axle, mm	70x70
Length, m	5,7
Width, m	2,15
Wheels	400/60-15,5
Loader weight, kg	1600

3 OPERATING INSTRUCTIONS

3.1. SAFETY

- Read the manual before operating the trailer. Neglecting the instructions can cause danger to operator and machine.
- Operator must have sufficient training for using this machine.
- Do not use the trailer until you are familiar with the controls.
- Before loading works, ensure there is no one in danger zone (20 m).

DON'T FORGET TO LIFT THE SUPPORT LEGS UP BEFORE MOVING TO ANOTHER PLACE.

- Operator must have full visibility all over working area.
- The vehicle must be on stable ground and positioned securely. Support legs must be used while loading to prevent the trailer tipping over.
- Use vehicles parking brakes during the loading.
- Do not exceed maximum loading values.

3.2. INSTRUCTIONS FOR SAFE OPERATION

SUPPORTING THE TRAILER

- Always engage the base machines parking brakes before loading. If necessary put some obstacles in front of wheels.
- Always use support legs. Make sure the trailer is situated at firm terrain.

DO NOT USE SUPPORT LEGS FOR LIFTING THE LOAD. USE SUPPORT LEGS ONLY FOR SUPPORTING THE TRAILER.

MANIPULATING THE HYDRAULIC FUNCTIONS

NEVER CONTROL THE HYDRAULIC FUNCTIONS FROM ONE EXTREME POSITION TO ANOTHER WITH SPEED! THIS MAY CAUSE OVERTURNING THE TRAILER.

- Avoid loading on a slanted ground or at least work with extreme cautiousness.
- When working on a slanted surface load less than usual.

ALWAYS ENGAGE THE BASE MACHINES PARKING BRAKES BEFORE LOADING WORKS. IF NECESSARY PUT SOME OBSTACLES IN FRONT OF WHEELS.

3.3. WORKING AT EXTREME CONDITIONS

Recommended working temperature range for trailer is **–30℃ up to +40℃** .

Note that working at low temperatures accelerates hydraulic gaskets wearing and increases hydraulic hoses exposure to damages and steel constructions exposure to brittle fracture. Before start working at cold conditions let the oil circulate freely through system a few minutes.

Slowly drive every action through several times so that gaskets come pliable before they receive full pressure.

At exceptionally warm conditions beware of hydraulic oils excessive heating. Too high oil temperature (higher +80℃) degrades oil and damages gaskets.

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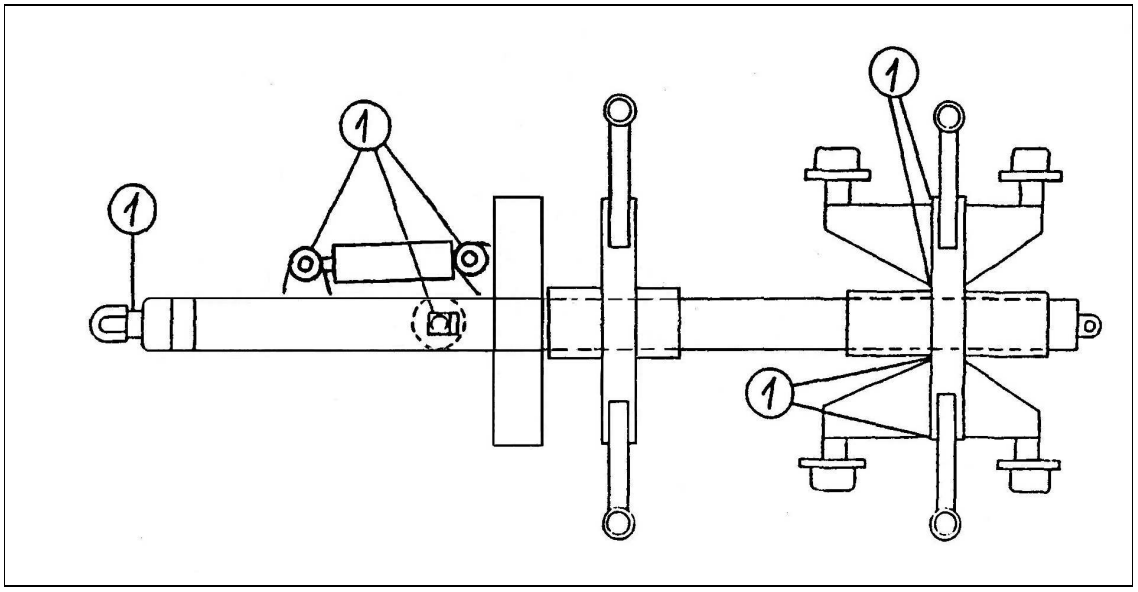
- Repair all safety endangering defects immediately.
- Check that the trailer is on a level and stable ground.
- Use vehicles parking brake during maintaining the trailer. Make sure that nobody can unnecessarily have access to trailers or vehicles controls.
- Never attempt to do maintenance works on the hydraulic system before you are sure there is no pressure.
- Do not tighten or repair a leaking hydraulic couplings while the system is pressurized.
- Never attempt to localize a leakage from hoses or connections by feeling with hand. The high pressure oil jet can penetrate skin and cause serious burns and damages. High pressure oil is also highly flammable.
- Do not work under such device that is sustained only by hydraulics. During maintenance use supports.
- Avoid getting oil into eyes. Use safety goggles and gloves.

4.2. LUBRICATION



SAFETY

- Before any lubrication or service works read these instructions and follow recommended procedures.
- When lubrication or servicing the trailer, turn off the vehicle engine.
- Ensure regularity of lubrication by following the lubricating schedule.
- Keep your hands, feet and loose clothing away from power driven parts.
- Inspect equipment daily for signs of failure or beginning of failure.
- Use proper tools for service.
- Keep flammable material away from heat, sparks and open fire.
- Do not let oil get into nature. Oil spilled into ground pollutes environment. It is recommended to use vegetable-based oil instead of mineral oil.
- Pressurized oil can penetrate skin and cause serious injures.
- Hot oil and oil spray can be hazardous. Small amounts swallowed or inhaled do not usually cause intoxication. Old oil is more dangerous than new.
- Use safety goggles. If oil has got into eyes flush them with cool water, after which go to the doctor.
- Although the occasional skin exposure with oil is not dangerous it is recommended to use protective gloves and clothing.

RECOMMENDED GREASES

BRAND	TYPE
BP	Energrease LS-EP2, L2M
ESSO	Beacon EP2, Multipurpose GR Moly
MOBIL	Mobilux EP2, Mobil Grease MP Special
SHELL	Alvania EP Grease 2
UNION/TEXACO	Marfak Multi-Purpose 2, Molytex Grease 2

PAY SPECIAL ATTENTION TO THE TOWBAR CYLINDER. GREASE IT AFTER EVERY 50 WORKING HOURS.