

 **FARMA**®

Grapple
Link
Rotator

EN_S1.5-2017W01

Original instructions

SPARE PARTS

SPARE PARTS

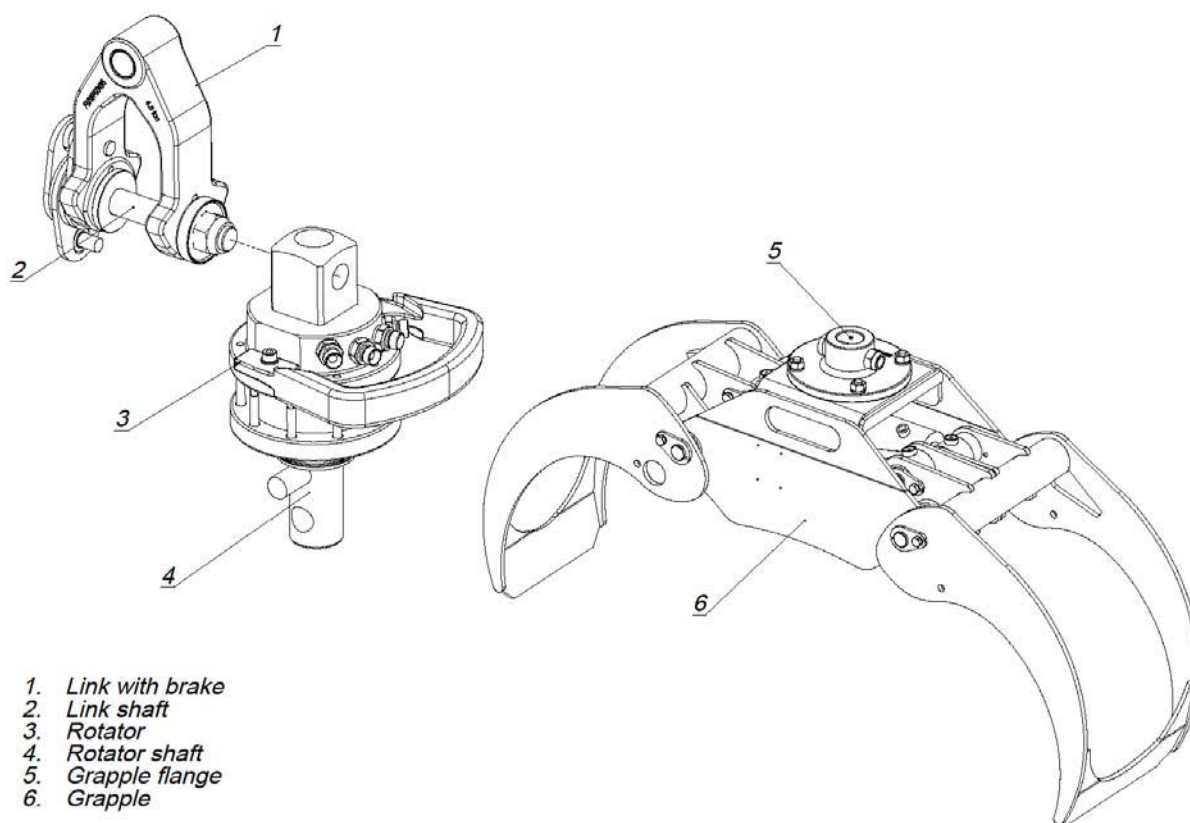
LINK/ROTATOR/GRAPPLE

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1 SPARE PARTS

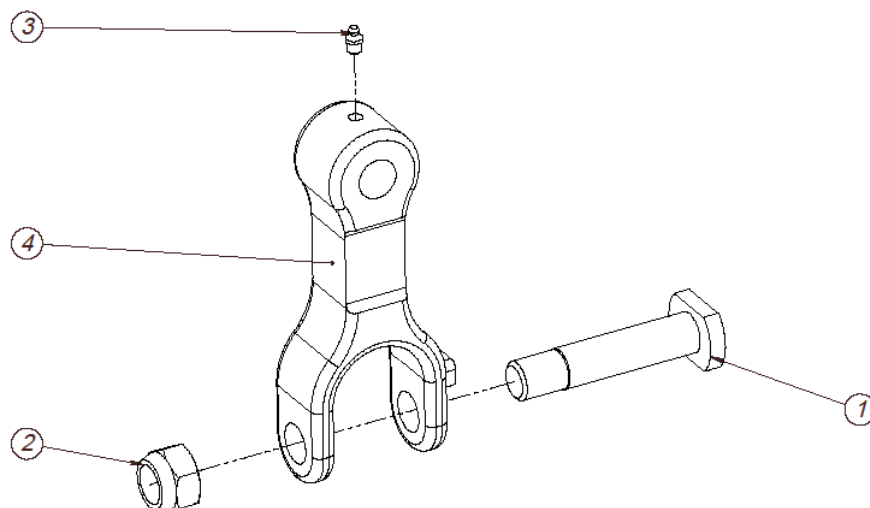
1.1 MAIN PARTS



1. Link with brake
2. Link shaft
3. Rotator
4. Rotator shaft
5. Grapple flange
6. Grapple

* This picture is for illustrative purpose only

1.2 LINK L50



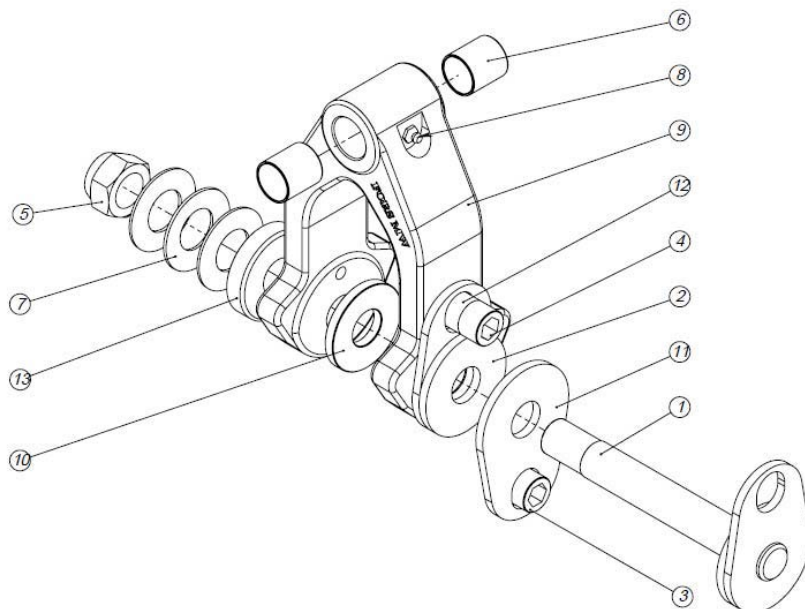
Suitable for cranes C3,5–C5,1

LINK L50

ITEM NO.	PART NUMBER	DESCRIPTION	TYPE	QTY.
1	FMWS00254	Fork bolt	-	1
2	907252	Nut Hex. Nylock	M24 fzb DIN 985	1
3	930105	Grease nipple	1/8" DIN 71412	1
4	FMWP03061	Link 50	50x90x230	1

Design file: 25.11.2013

1.3 LINK L60 WITH SINGLE BREAK



Suitable for Cranes C5,3– C8,5

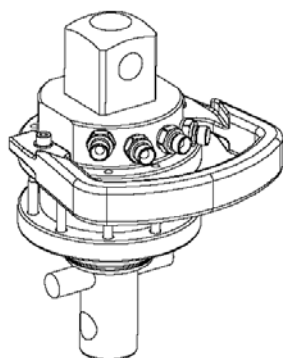
REF: 140103

LINK L60

ITEM NO.	PART NUMBER	DESCRIPTION	TYPE	QTY.
1	FMWS00351	Shaft	-	1
2	FMWS00352	Plate	-	1
3	906532	Bolt Hex. Socket	M16x20 DIN 912	1
4	906541	Bolt Hex. Socket	M16x40 DIN 912	1
5	907242	Nut Hex. Nylock	M24x1,5 fzb DIN 985	1
6	909135	Slide bearing	25 28 30 P	2
7	920503	Disk spring	56x28,5x2 DIN 2093	3
8	930105	Grease nipple	1/8" DIN 71412	1
9	FMWP00495	Rotator link 60		1
10	FMWP00814	Washer	RndØ60 - 7	2
11	FMWP01589	Plate	PLT6 - 110x75	1
12	FMWP01590	Bush	STØ25x3,5 - 14	1
13	FMWP01591	Lock washer		1

REF: 140103

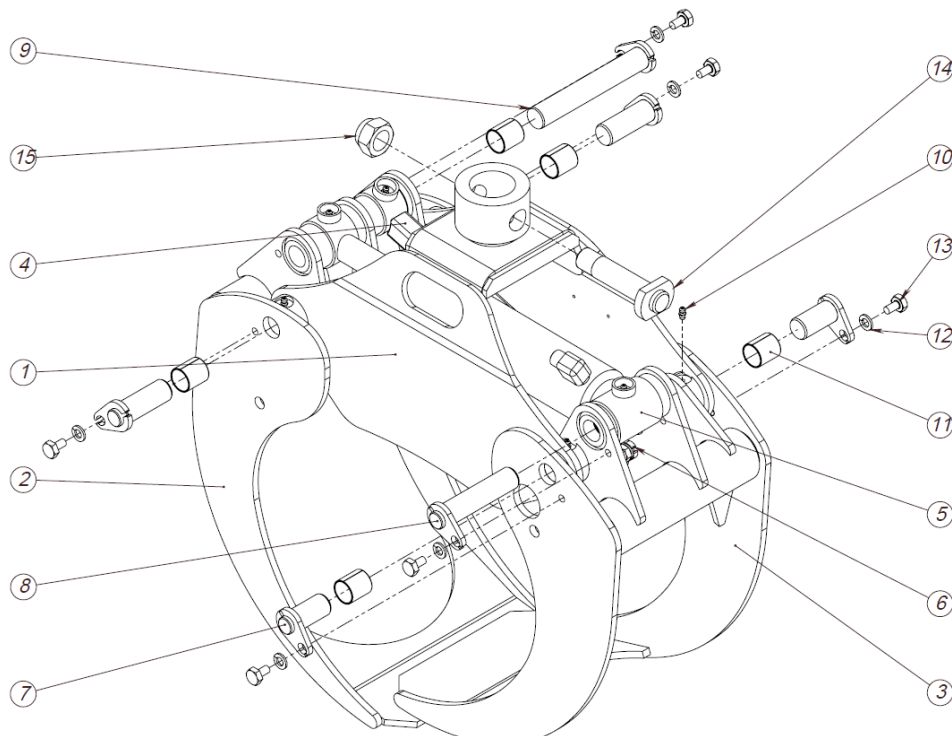
1.4 ROTATOR



ROTATOR

PART NUMBER	DESCRIPTION
100080	Rotator, complete, 3 tonnes
3700704	Seal kit, rotator, 3 tonnes
100081	Rotator, complete, 4 tonnes
3700714	Seal kit, rotator, 4 tonnes

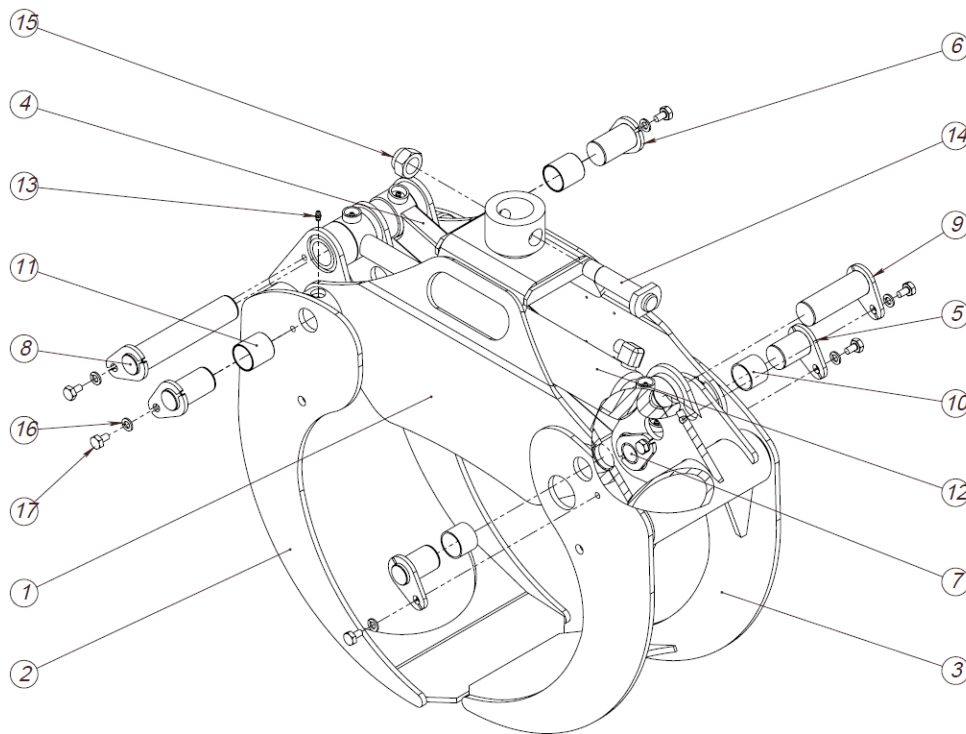
1.5 GRAPPLE 0.12


REF: 150212

FG 0.12 G2.1

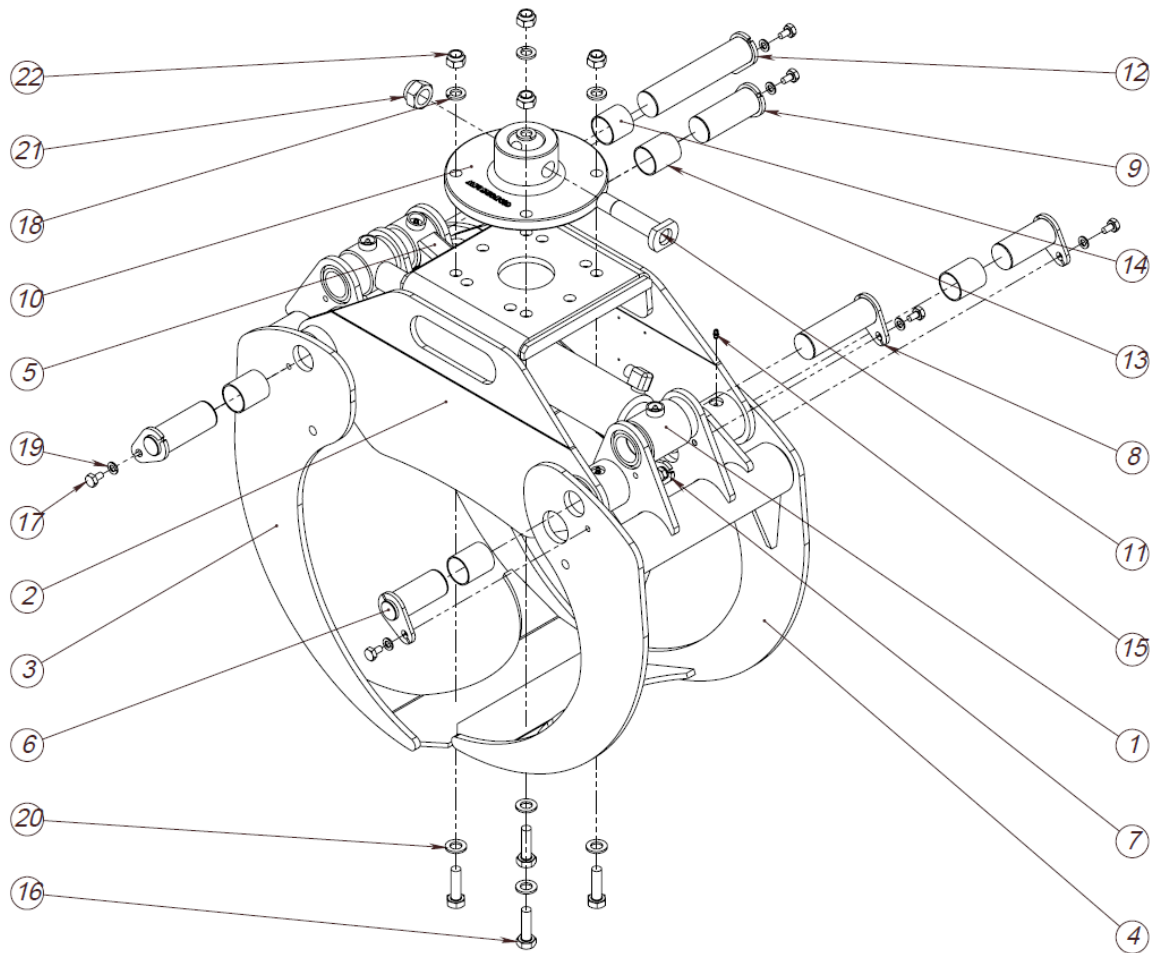
ITEM NO.	PART NUMBER	DESCRIPTION	TYPE	QTY.
1	FMWS00506	Yoke 0,12		1
2	FMWS00805	Jaw outer grapple 0,12 G2.1		1
3	FMWS00807	Jaw inner grapple 0,12 G2.1		1
4	FMWS00809	Parallel link 0,12 G2.1		1
5	313120	Hydraulic cylinder	60/30 - 182	1
6	FMWS00510-01	Shaft GrndØ25	GrndØ25 - 77(66)	3
7	FMWS00510	Shaft GrndØ25	GrndØ25 -59(48)	2
8	FMWS00510-03	Shaft GrndØ25	GrndØ25 -115(104)	1
9	FMWS00810	Shaft compl.	GRNDØ25-170(159)	1
10	930107	Grease nipple	M6 DIN 71412	6
11	909135	Slide Bearing	25-28-30 P DIN 1494	6
12	908620	Washer Spring	M10 fzb DIN 127	7
13	906287	Bolt Hex. Cap	M10x16 DIN 933	7
14	FMWS00253	Grapple bolt	GRND25-113(103)	1
15	907252	Nut Hex. Nylock	M24 DIN 985	1

REF: 150212

1.6 GRAPPLE 0.16

REF: 150212
FG 0.16 G2.1

ITEM NO.	PART NUMBER	DESCRIPTION	TYPE	QTY.
1	FMWS00100	Yoke 0,16		1
2	FMWS00743	Jaw outer grapple 0,16 G2.1		1
3	FMWS00744	Jaw inner grapple 0,16 G2.1		1
4	FMWS00774	Parallel-link 0,16 G2.1	L=502	1
5	FMWS00104	Shaft	GrndØ35h9 - 60(49)	2
6	FMWS00104-01	Shaft	GrndØ35h9 - 71(60)	2
7	FMWS00105	Shaft	GrndØ35h9 - 82(76)	1
8	FMWS00773	Shaft compl.	Grnd35-188(178)	1
9	FMWS00106-01	Shaft	GrndØ35h9-109(103)	1
10	909145	Slide bearing	35 39 30 DIN 1494	4
11	909146	Slide bearing	35 39 40 DIN 1494	2
12	313109	Hydraulic cylinder	60/30 - 230	1
13	930107	Grease nipple	M6 DIN 71412	6
14	FMWS00253	Grapple bolt	GRND25-113(103)	1
15	907252	Nut Hex. Nylock	M24 DIN 985	1
16	908620	Washer Spring	M10 fzb DIN 127	7
17	906287	Bolt Hex. Cap	M10x16 DIN 933	7

REF: 150212

1.7 GRAPPLE 0.20


FG 0.20

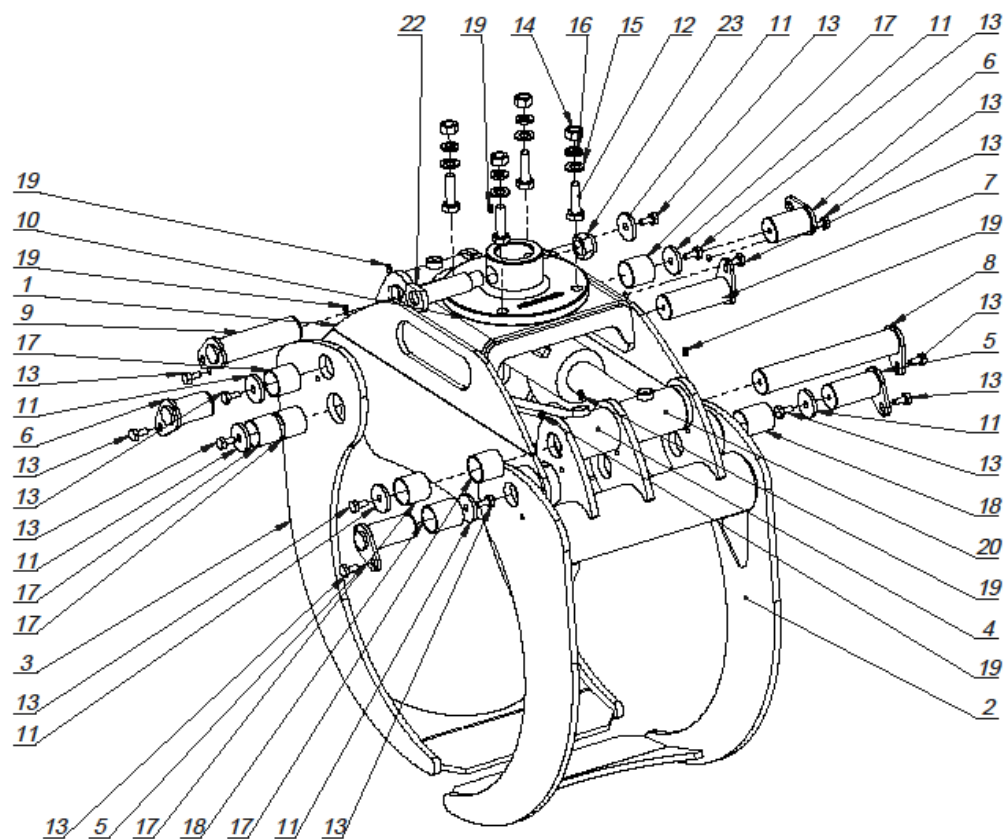
REF: 150212

FG 0.20 G2.1

ITEM NO.	PART NUMBER	DESCRIPTION	TYPE	QTY.
1	313110	Hydraulic cylinder	70/40 - 245	1
2	FMWS00163	Yoke 0,20		1
3	FMWS00797	Jaw outer grapple 0,20 G2.1		1
4	FMWS00798	Jaw inner grapple 0,20 G2.1		1
5	FMWS00799	Parallel-link 0,20 G2.1	L=523,8	1
6	FMWS00115-01	Shaft	GrndØ40-99(88)	2
7	FMWS00116	Shaft	GrndØ40-83(72)	1
8	FMWS00815	Shaft	GrndØ40-135(124)	1
9	FMWS00168	Shaft	GrndØ40-112,5(101,5)	2
10	FMWP00483	Flange	D230 Hole ID49,5	1
11	FMWS00253-01	Grapple bolt	GRND25-125(115)	1
12	FMWS00804	Shaft	GRNDØ40 200(189)	1
13	909148	Slide bearing	40 44 50 DIN 1491	4
14	909149	Slide bearing	40 44 40 DIN1491	2
15	930107	Grease nipple	M6 DIN 71412	6
16	906228	Bolt Hex. Cap	M16x50 fzb DIN 933	4
17	906287	Bolt Hex. Cap	M10x16 DIN 933	7
18	908630	Washer Spring	M16 fzb DIN 127	4
19	908620	Washer Spring	M10 fzb DIN 127	7
20	908267	Washer flat	M16 fzb DIN 125	4
21	907252	Nut Hex. Nylock	M24 DIN 985	1
22	907237	Nut Hex. Nylock	M16 fzb DIN 985	4

REF: 150212

1.8 GRAPPLE 0.24



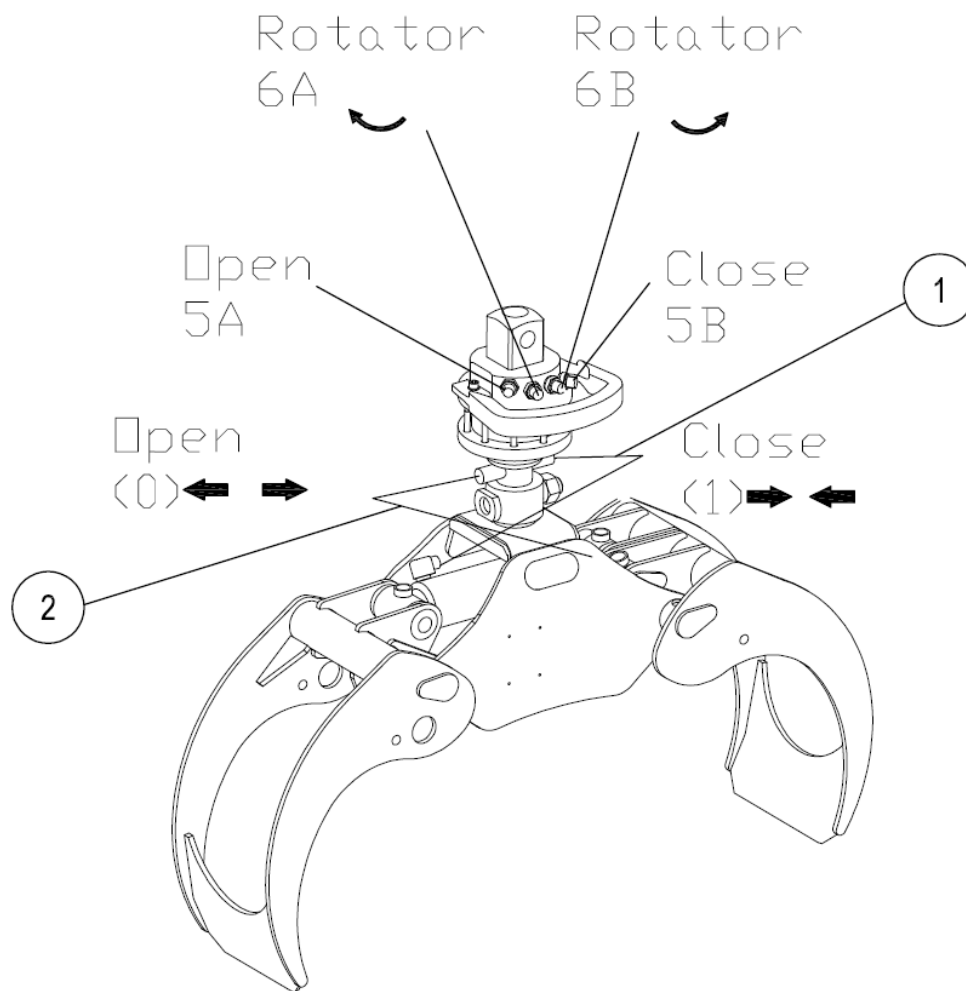
FG 0.24

FG 0.24

ITEM NO.	PART NUMBER	DESCRIPTION	TYPE	QTY.
1	FMWS00655	Yoke 0,24		1
2	FMWS00656	Jaw outer grapple 0,24		1
3	FMWS00658	Jaw inner grapple 0,24		1
4	FMWS00661	Parallel-link 0,24		1
5	FMWS00674	Shaft	GrndØ40-95(84)	2
6	FMWS00675	Shaft	GrndØ40-77(66)	2
7	FMWS00676	Shaft	GrndØ40-125(114)	1
8	FMWS00677	Shaft	GrndØ40-261(250)	1
9	FMWS00678	Shaft	GrndØ40-157(146)	1
10	FMWP00483-01	Flange	D230 Hole ID59	1
11	FMWP03768	Washer	PLT6-45x45	7
12	906228	Bolt Hex. Cap	M16x50 fzb DIN 933	4
13	906170	Bolt Hex. Cap	M10x20 fzb DIN 933	14
14	907237	Nut Hex. Nyloc	M16 fzb DIN 985	4
15	908267	Washer flat	M16 fzb DIN 125	4
16	908630	Washer Spring	M16 fzb DIN 127	4
17	909149	Slide bearing	40 44 40 DIN1491	6
18	909148	Slide bearing	40 44 50 DIN 1491	2
19	930107	Grease nipple	M6 DIN 71412	6
20	313169	Hydraulic cylinder	80/50 x240	1
21	37313169	Sealing kit 80/50		1
22	FMWS00253-02	Grapple bolt	GRND30-125(115)	1
23	907252	Nut Nyloc	M24 fzb DIN 985	1

REF: 140313

1.9 HYDRAULIC SCHEME FG, FE, FBL



REF: 160530

HYDRAULIC SCHEME
FG – FARMA GRAPPLE

FE – FARMA ENERGY BRUSH GRAPPLE

FBL- FARMA GRAPPLE BUCKET

POS. NO.	PART NO.	DESCRIPTI ON	TYPE	-01	-02	-03	-04
				FG 0.12 FE 0.12 Qty.	FG 0.16 FE 0.16 Qty.	FG 0.20 FE 0.20 FBL 160 FBL 200 Qty.	FG 0.24 Qty.
1	FMWH00489	H-hose	42040604- 1/4(420)-42010604	1	-	-	-
2	FMWH00490	H-hose	42040604- 1/4(380)-42010604	1	-	-	-
1	FMWH00492	H-hose	42040606- 3/8(370)-42040606	-	1	-	-
2	FMWH00491	H-hose	42040606- 3/8(510)-42040606	-	1	-	-
1	FMWH00254	H-hose	42040606- 3/8(570)-42010606	-	-	1	-
2	FMWH00253	H-hose	42040606- 3/8(490)-42010606	-	-	1	-
1	FMWH00462	H-hose	42040606- 3/8(580)-42010806	-	-	-	1
2	FMWH00463	H-hose	42040606- 3/8(500)-42010806	-	-	-	1

REF: 160530

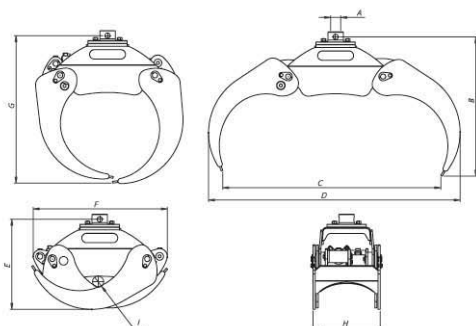
2 TECHNICAL SPECIFICATION

2.1 MEASUREMENTS & TECHNICAL DATA

Generation 2.1



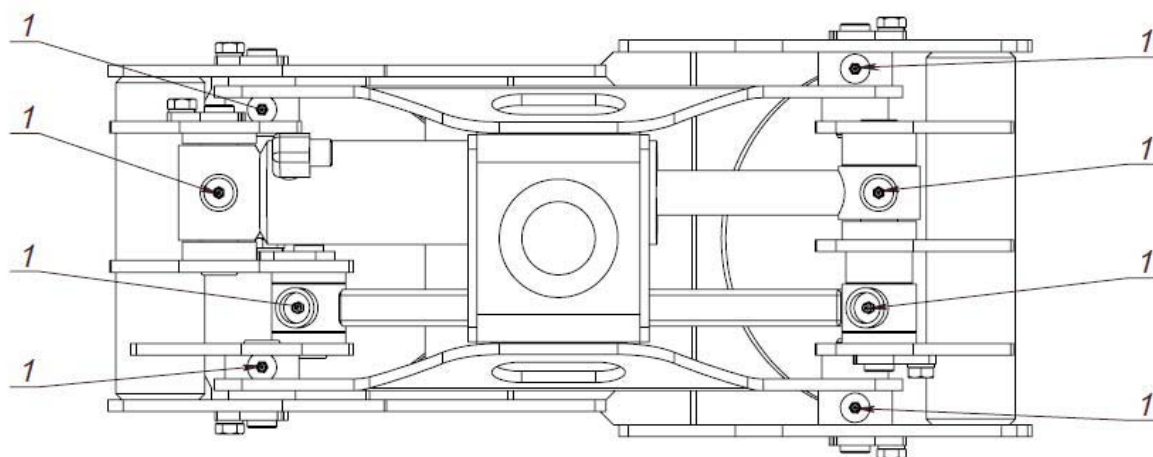
Measure	0,12 m²	0,16 m²	0,20 m²	0,24 m²
A	Diam. 50 mm	Diam. 50 mm	Diam. 50/60 mm	Diam. 50/60 mm
B	630 mm	715 mm	700 mm	815 mm
C	875 mm	1045 mm	1255 mm	1375 mm
D	1010 mm	1225 mm	1380 mm	1470 mm
E	425 mm	510 mm	510 mm	530 mm
F	600 mm	715 mm	745 mm	785 mm
G	625 mm	730 mm	800 mm	860 mm
H	280 mm	280 mm	370 mm	395 mm
I	Diam. 55 mm	Diam. 80 mm	Diam. 70 mm	Diam. 75 mm



Technical data	0,12 m²	0,16 m²	0,20 m²	0,24 m²
Weight	53 kg	70 kg	115 kg	145 kg
Working pressure	17,5 MPa	17,5 MPa	17,5 MPa	21 MPa
Gripping force arms tip-tip	6,3 kN	7 kN	8,25 kN	11,0 kN
Max. load	1000 kg	1000 kg	1500 kg	2000 kg

REF: EN_1612

2.2 LUBRICATION POINTS



*Picture: FG 0.16

REF: 150212

3 EC-DECLARATION OF CONFORMITY (SAMPLE)***EC Declaration of Conformity of the Machinery***

Manufacturer:

Fors MW AS

Tule 30

76505 Saue

Estonia

The technical file is compiled by **Peter Kastberg;**

I hereby confirm that this equipment, **FARMA grapple 0,xx:**

Trade mark: **FARMA**

Function: **interchangeable equipment**

Model: **0.xx**

Type: **FG** variant: **0.xx** version: **G2**

Serial no.: **FG00xxxxxxxxxxx**

Trade name: **FARMA Grapple 0.xx**

Manufacture year: **xxxx**

is manufactured accordingly to demands in **directive 2006/42/EC** and therefore can be used mounted together with other equipment to provide a complete machine.

The equipment can't be used before the machine or the formation that it will take place in, is accordingly to the demands of the EC Machinery directive.

For the guarantee and safety, it is of uttermost significance that the instruction book is read before the machine is put into service.



Peter Kastberg
CEO

Saue, Estonia

2017-01-02