

Reciprocating Compressors for industrial refrigeration Series Grasso 11

Parts List (PL)



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This manual must be carefully read and understood prior to installing and servicing the compressor (package)

General Safety

All service operations described in this servicemanual are only to be carried out by well-trained/qualified personnel and even then only after this service manual has been read carefully and is fully understood.

Personal safety

Observe all (inter)national and/or local safety standards, measures and regulations during reinstalling, repairing and connecting the compressor (package).

Mechanical safety

If the compressor does not have to be removed from its base, it is advisable to put warning labels on vital parts of the compressor saying that the plant is out-of-operation and must not be started up.

If the compressor has to be opened for service, the refrigerant has to be pumped down and the electric supply has to be cut off.

After having run the initial 100 operating hours, it is essential (in both new and modified plants) to replace the red running-in discharge oil filter element with the permanent grey filter element. Also replace the running-in suction gas filter element.

Check the direction of rotation is correct before re-starting the compressor.

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Preface

This preface gives a survey of the types of documentation available for reciprocating Grasso compressor series.



All documentation and selection software is on-line available on www.grasso-global.com

1) Product Information (PI)

Contents

All product information (engineering data) for this series compressor and the corresponding recommended accessories. It is meant to be a guide to the selection of these components.

User group

Project engineers, application engineers, sales managers, product managers for both end-users and contractors.

Distribution

Your Grasso contact only.

2) Operating manual (OM)

Contents

General operation guide lines; safety instructions, periodical inspections, fault analysis, periodical maintenance.

User group

To be used in the field by the end-user.

Distribution

Supplied together with the compressor.

3) Safety instructions refrigerant ammonia

Contents

Strict safety provisions have been defined to protect human beings and facilities. Reference is made to the main guidelines and provisions to be observed in planning and operating refrigerating plants. With regard to their operation, the detailed operating manuals of the plant manufacturers shall be taken into account as well. Manual will be supplied with all compressors

User group

To be used in the field by qualified personnel for both end-user and contractor.

Distribution

(If applicable supplied together with the compressor)

4) Installation and maintenance manual (IMM)

Contents

This manual will provide information on how to transport, install, start-up and maintain the compressor (package). It also contains a number of "Product Information Sheets" and the current "Parts List"

User group

To be used in the field by qualified personnel for both end-user and contractor.

Distribution

Supplied together with the compressor.

5) Product Descriptions, Instructions for Accessories (PD)

Contents

All the relevant mounting and installation instructions and spare parts information for those accessories supplied with the compressor.

User group

To be used in the field by qualified personnel for both end-user and contractor.

Distribution

Supplied together with the compressor.

6) Parts list (PL)

Contents

All current parts of the compressor and accessories together with the design changes applicable to previous supplied components ("History").

User group

Service and parts department for both end-user and contractor.

Distribution

Your Grasso contact only.

7) Service & Maintenance Schedules (SMS)

Contents

Complete set of service and maintenance schedules for 100 operating hours up to 48000 operating hours (inspection, renewal, measuring, cleaning, ...) of the bare shaft compressor.

User group

Service and parts department and in the field by qualified personnel for both end-user and contractor.

Distribution

Your Grasso contact only.

8) Service Instruction Manual (SIM)

Contents

Description of (re)assembling, inspection, repair and part or total overhaul of the bare shaft compressor. This manual should be used together with the 'Installation and Maintenance Manual'.

User group

To be used in the field by qualified personnel of refrigeration installers or contractors.

Distribution

Your Grasso contact only.

9) Typographic signs



Indicates a **WARNING**. **READ IT CAREFULLY!**



Indicates an **IMPORTANT** note or procedure to which you should pay special attention.



Indicates a **HINT**.

Cylinder numbering

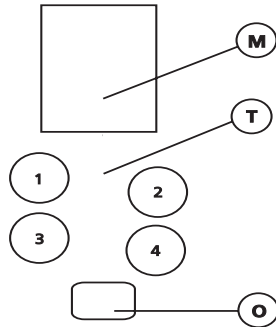


Fig. 1 Cylinder numbering Grasso reciprocating compressors

Legend	
1, 2, 3, ...	Cylinder numbers
T	Top view of compressor
M	Motor/Drive end of compressor
O	Oil pump of compressor

Booster or single-stage operation

Booster operation applies if condensing temperature <5 °C.

Single stage operation applies if condensing temperature =>5°C.

1. PARTS COMPRESSOR

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Item	Description	Dims.	Ref. No.	Qty	Remarks
Fig. RC11-01 COMPRESSOR HOUSING WITH CONNECTIONS & OVERFLOW SAFETY VALVES					
1	HEXAGON NUT	M16	0115810	-	
2Aa	COVER	296P	0531996	-	
2Ab	CYLINDER COVER	296P-G13	0531998	-	
2Ba	CYLINDERCOVER	556x296k110	2317500	2	
2Bb	CYLINDER COVER	556x296K110-G13	2317510	2	
3A	GASKET	227x241x1.5	0903227	-	
3B	GASKET	213x542x1.5	0907213	2	
4	STUD	M16x35	0151835	-	
5	STUD	M16x60	0151860	-	
7	PLUG	T13	0365013	1	
8	NON-RETURN VALVE	5	0627505	-	
9	GASKET	180x196x1.5	0903180	-	
10	SERVICE COVER	260	0531260	-	
11	HEXAGON HEAD BOLT	M16x40	0110840	-	
12	BLIND FLANGE	60BA	0505960	1	
13	HEX. HEAD BOLT	M16x35	0110835	4	
14	GASKET	67x81x1.5	0903067	1	
15	GASKET	50x65x1.5	0903050	4	
16	SIGHT GLASS	65x15	1226065	2	
17	SIGHT GLASS FLANGE	65	0516065	2	
18	HEXAGON HEAD BOLT	M8x30	0110430	12	
19	ALU SEALING RING	10x18x1	0912010	2	
20	CAP NUT	GK21R	0117021	1	
21	SOCKET COUPLING	6G21	0337216	1	
22	HEXAGON NUT (ZINC PLATED)	M10	0115510	6	
23	VALVE COVER	28x44	4813032	1	
24	VALVE COVER	28x30	4813031	1	
25a	HEX. HEAD BOLT	M10x60	0110560	2	
25b	HEX. HEAD BOLT	M10x55	0110555	2	
26	HEXAGON HEAD BOLT	M10x40	0110540	4	
27	VALVE SET	RC11-R-NH3	4827523	1	
27.1	VALVE GUIDE	29M10	4840629	1	
27.2	TEFLON RING	10x38x3	0942380	1	
27.3	SPRING CUP	22	4865022	1	
27.4	LOCKING NUT (ZINC PLATED)	M10	0145500	1	
27.5	PRESSURE SPRING	7.5x37.5x9.5x129	1131757	1	
27.6	ADJUSTMENT RING	28x34x1	1115271	-	
27.8	GASKET	77x87x1.5	0903077	1	
28	VALVE HOUSING		4802256	1	
29X	VALVE ASSY	12 bar LP	4827513	1	

Item	Description	Dims.	Ref. No.	Qty	Remarks
Fig. RC11-01 COMPRESSOR HOUSING WITH CONNECTIONS & OVERFLOW SAFETY VALVES					
29Y	VALVE ASSY	21 bar HP	4827521	1	

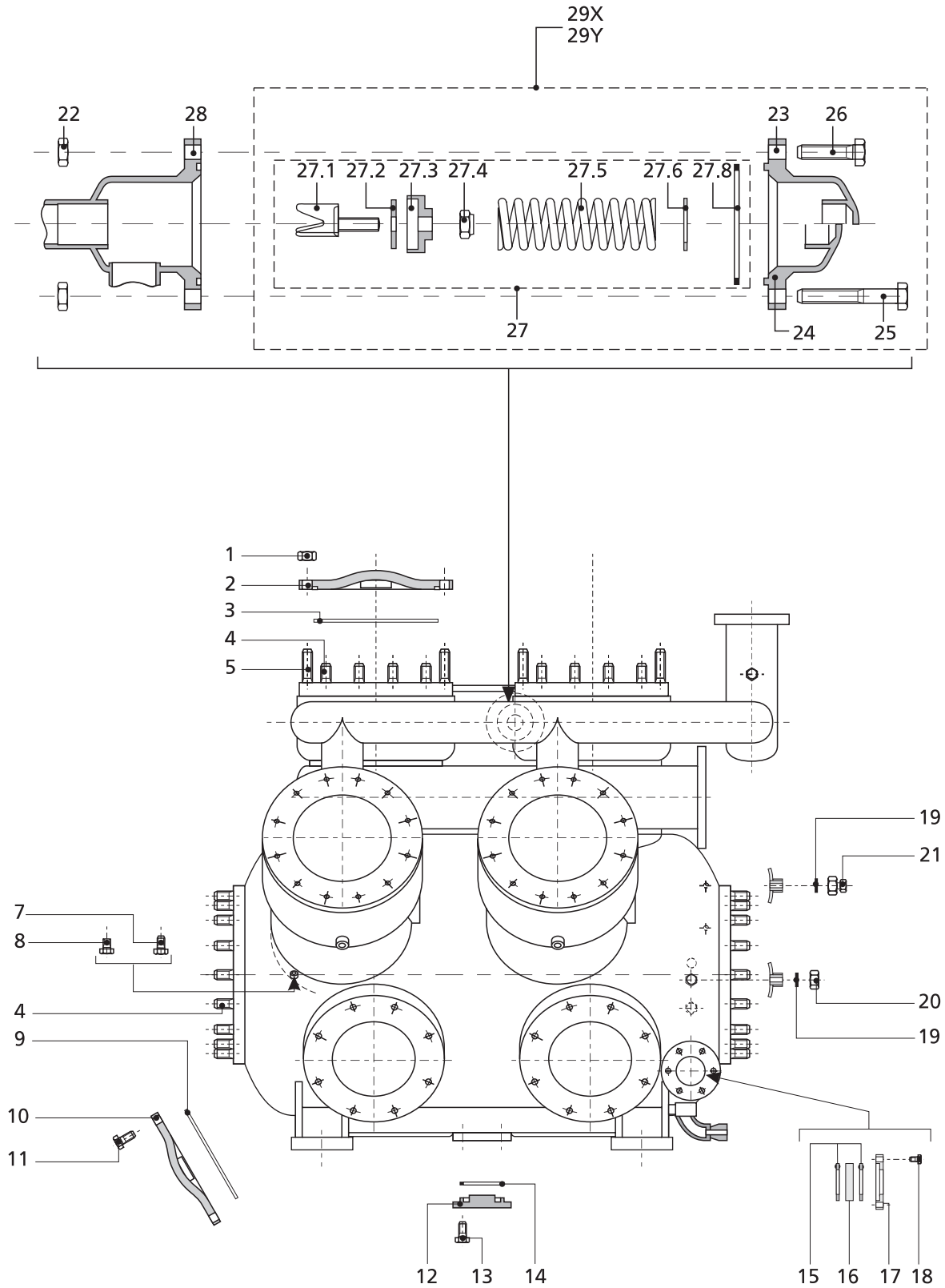


Fig. 1-1 RC11-01

Item	Description	Dims.	Ref. No.	Qty	Remarks
Fig. RC11-02 BEARING COVERS AND INTERMEDIATE BEARINGS					
1	BEARING COVER ASSY	RC11SC	*	1	
1.1	BEARING COVER	RC11C	2118822	1	
1.2	DOWEL PIN	4x8	1106408	1	
1.3	BEARING BUSH	90X96X103	1146291	1	
1.4	STUD	M12x95	0151695	8	
2	BEARING COVER ASSY	K110MSB	*	1	
2.1	BEARING COVER	K110M	2116821	1	
2.2	DOWEL PIN	4x8	1106408	1	
2.3	BEARING BUSH	90x96x107	1146191	1	
2.4	STUD	M12x130	0151616	8	
3	BEARING BLOCK	90M	1169901	-	
3.1	BEARING BLOCK HALVES	90M	*	1	
3.2	BEARING SHELL	90x81	1144900	1	
3.3	HEXAGON HEAD BOLT	M16 x 100	0110810	4	
3.4	LOCKING RING SET	M16 / 13-ST-G.V.	1139800	4	
3.5	DOWEL PIN	12x26	1106226	2	
3.6	HEXAGON NUT	MF16	0147805	4	
4	BRONZE THRUST RING	96x127x16	1168970	1	
5.a	GASKET	252x265x1.5	0903252	2	
5.b	GASKET	252x265x1	0902252	2	
6	LOCKING PLATE	M20x49	1113149	2	
7	LOCKING PLATE	M20S	1114142	2	
8	HEXAGON HEAD BOLT	M20x60	0110160	3	
9	HEXAGON NUT	M16	0115810	32	

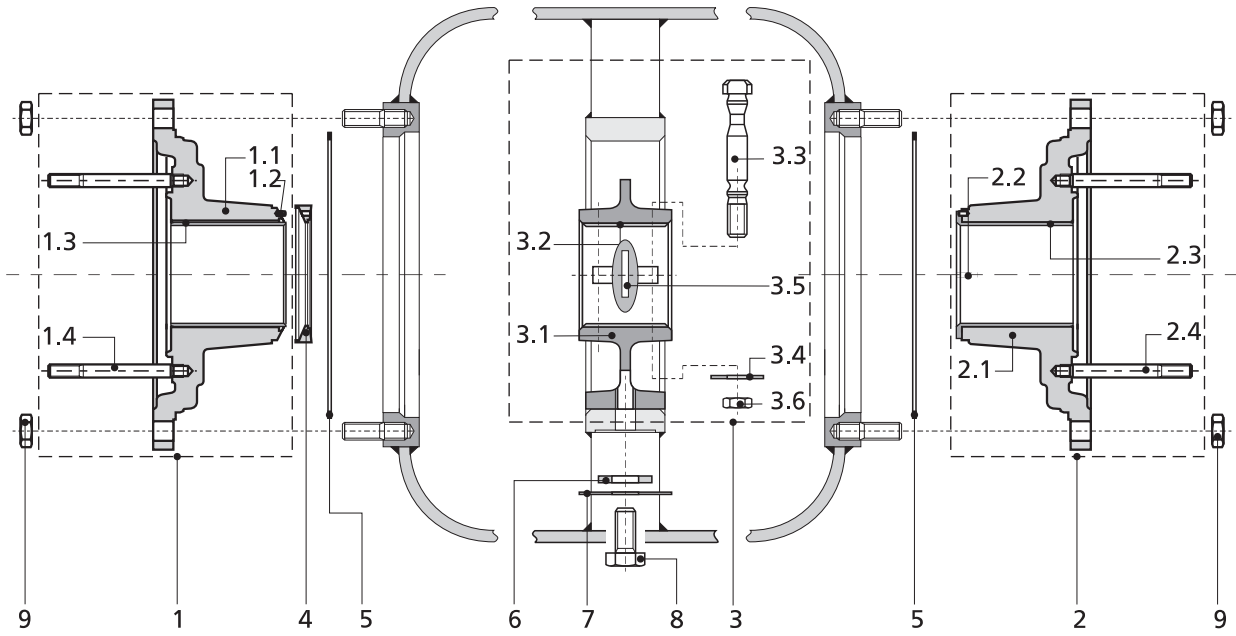


Fig. 1-2 RC11-02

Item	Description	Dims.	Ref. No.	Qty	Remarks
Fig. RC11-03 CRANKSHAFT					
1A.a	CRANKSHAFT	E-RC211S	2219202	1	
1A.b	CRANKSHAFT	K-RC211S	2219212	1	
1B.a	CRANKSHAFT	E-RC311S	2219302	1	
1B.b	CRANKSHAFT	K-RC311S	2219312	1	
1C.a	CRANKSHAFT	E-RC411S	2219402	1	
1C.b	CRANKSHAFT	K-RC411S	2219412	1	
1D.a	CRANKSHAFT	E-RC611S	2219602	1	
1D.b	CRANKSHAFT	K-RC611S	2219612	1	
1E.a	CRANKSHAFT	E-RC911S	2219902	1	
1E.b	CRANKSHAFT	K-RC911S	2219912	1	
1F.a	CRANKSHAFT	E-RC1211S	2219002	1	
1F.b	CRANKSHAFT	K-RC1211S	2219012	1	
1.1	CRANKSHAFT	E/K-RC11	*	1	
1.2	COUNTER BALANCE WEIGHT		*	-	
1.3	LOCKING PLATE	2M16	1114840	-	
1.4	HEXAGON HEAD BOLT	M16x80	0110880	-	
1.5	CARRIER DISC	65X11	1125111	1	
1.6	LOCKING BOLT	M6X16	0165316	4	
1.7	DOWEL PIN	6X10	1106610	1	
1.8	STEEL THRUST RING	100x128x10	1168109	1	
1.9	SPACER ASSY	90X116X60S M	1112990	1	
1.9.1	FITTED BOLT	M8X10X10	0124410	2	
1.9.2	SPACER	90x116x60E	*	1	
1.9.3	LOCKING NUT	M8	0145400	2	
2	KEY	22X14X120	1102012	1	
3	HUB FIXING	M24X108	1915211	1	
4	LOCKING PLATE	M24xM12	1114248	1	
5	FLAT WASHER	M12	1113601	1	
6	HEXAGON HEAD BOLT	M12x40	0110640	4	

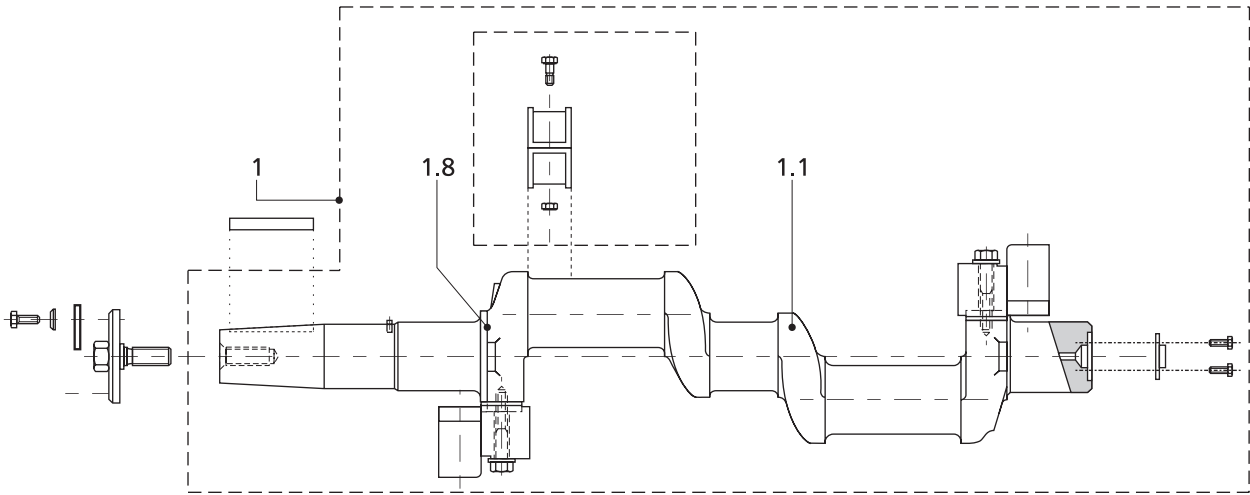


Fig. 1-3 RC11-03

Item	Description	Dims.	Ref. No.	Qty	Remarks
Fig. RC11-04 PISTON AND CONNECTING ROD					
1	PISTON ASSY	S160x50x160 K110M	2417011	1	
1.1	GUDGEON PIN	36x50x148RC 11	2418320	1	
1.2	PISTON		*	1	
1.3	LOCKING PLATE	M12S	1114642	1	
1.4	LOCKING BOLT	M12x35	0144635	1	
1.5	SET OF PISTON RINGS		0974160	1	
2a	CONNECTING ROD	S275RC11LD	2419510	-	
2b	CONNECTING ROD	S275RC11HD	2419520	-	
2.1a	CONNECTING ROD	(aluminium alloy)	*	1	
2.1b	CONNECTING ROD	(aluminium alloy)	*	1	
2.2a	BEARING BUSH	50x62x60	1146652	1	
2.2b	NEEDLE BEARING	NK50/25	1163451	2	
2.3b	DISTANCE BUSH	52x62x10	1116562	1	
2.4	BEARING SHELL	90x53	1144590	1	
2.5	CONNECTING ROD BOLT	MF16	0111810	2	
2.6	LOCKING RING SET	M16 / 13-ST-G.V.	1139800	2	
2.7	HEXAGON NUT	MF16	0147805	2	

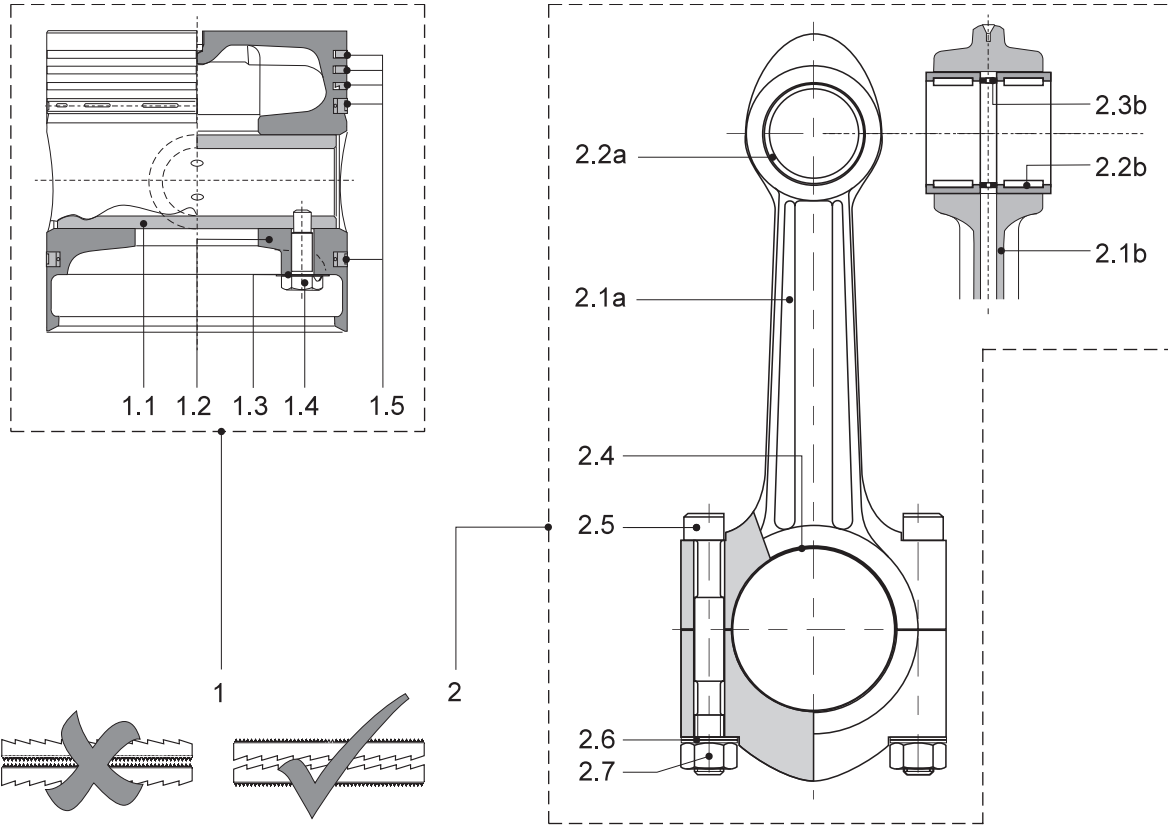


Fig. 1-4 RC11-04

Item	Description	Dims.	Ref. No.	Qty	Remarks
Fig. RC11-05 CYLINDER AND VALVE LIFTING MECHANISM					
1	CYLINDER LINER ASSY	160RC11S	2319110	1	
1.1	CYLINDER LINER	160RC11	2318010	1	
1.2	HEXAGON NUT	M6	0115310	4	
1.3	PRESSURE RING	160xD110	2716510	1	
1.4	PRESSURE SPRING	2x10x27x110	1131209	2	
1.5	SUPPORTING RING	160K110	2716570	1	
1.6	SPRING WIRE	0.75x3.1	1132081	1	
1.7	CYLINDER HEAD SCREW	M6x140	0168314	2	
1.8	SEMI CIRCULAR LEVER	K110	2716610	1	
1.9	LOCKING PIN	6x55	1107355	1	
1.9.1	SPLIT PIN	1,5x10	1108010	1	
1.9.2	WASHER	M6	1113301	1	
2a	OILIT SEALING RING	207x216x1	0902206	1	
2b	OILIT SEALING RING	207x216x1.25	0901206	1	
2c	OILIT SEALING RING	207x216x1.5	0903206	1	
3	HEXAGON HEAD BOLT	M10x70	0110570	4	
4	O-RING	3.53x59	0952376	1	
5	PRESSURE SPRING	3.2x25x3.5x4 2.5	1131325	1	
6	CONTROL PISTON	RC11	2718670	1	
6.1	CONTROL PISTON	51x39	*	1	
6.2	O-RING	3.5x44	0952350	1	
7	PISTON HOUSE VALVE LIFTING	K110	2716650	1	
9	NIPPLE COUPLING	6G13	0338136	1	

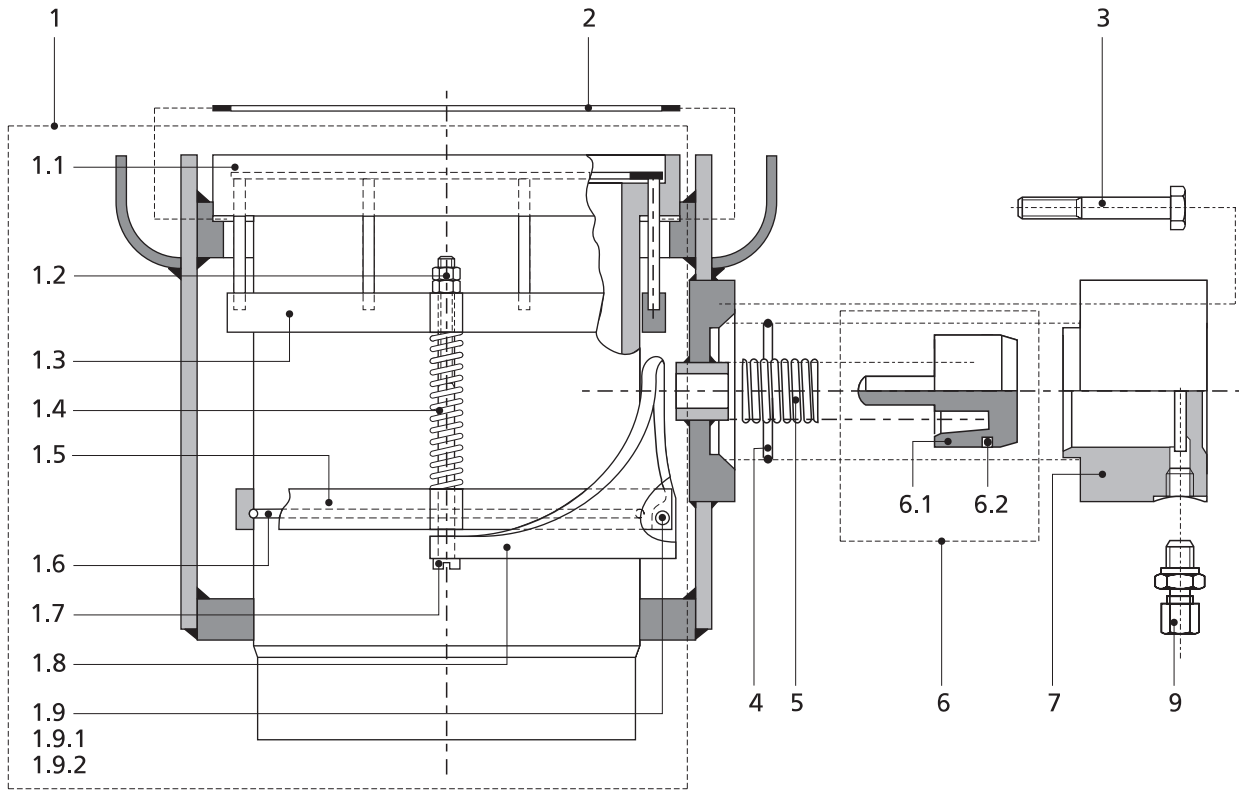


Fig. 1-5 RC11-05

Item	Description	Dims.	Ref. No.	Qty	Remarks
Fig. RC11-06 SUCTION AND DISCHARGE VALVE					
1	PRESSURE SPRING	18x88x2.4x11 5	1131181	1	
2	SPRING CUP	160RC11	2718410	1	
3	DISCHARGE VALVE ASSY	160RC11E	2719111	1	
3.1	LOCKING NUT	M16	0145800	1	
3.2	STROKE LIMITOR	160RC11A	2718360	1	
3.3	SINUSOIDAL SPRING	58x69	*	2	
3.4	SINUSOIDAL SPRING	76x87	*	2	
3.5	SINUSOIDAL SPRING	94x105	*	2	
3.6	VALVE RING	58x69x1	*	1	
3.7	VALVE RING	76x87x1	*	1	
3.8	VALVE RING	94x105x1	*	1	
3.9	VALVE PLATE	160RC11	2718265	1	
3.10	FITTED BOLT	M16x62-15	0124863	1	
4	SINUSOIDAL SPRING	171x200	*	2	
5	VALVE RING	171x200x1	*	1	
6	DISCHARGE RING & SPRING SET		2038031	1	
7	SUCTION RING & SPRING SET		2038032	1	

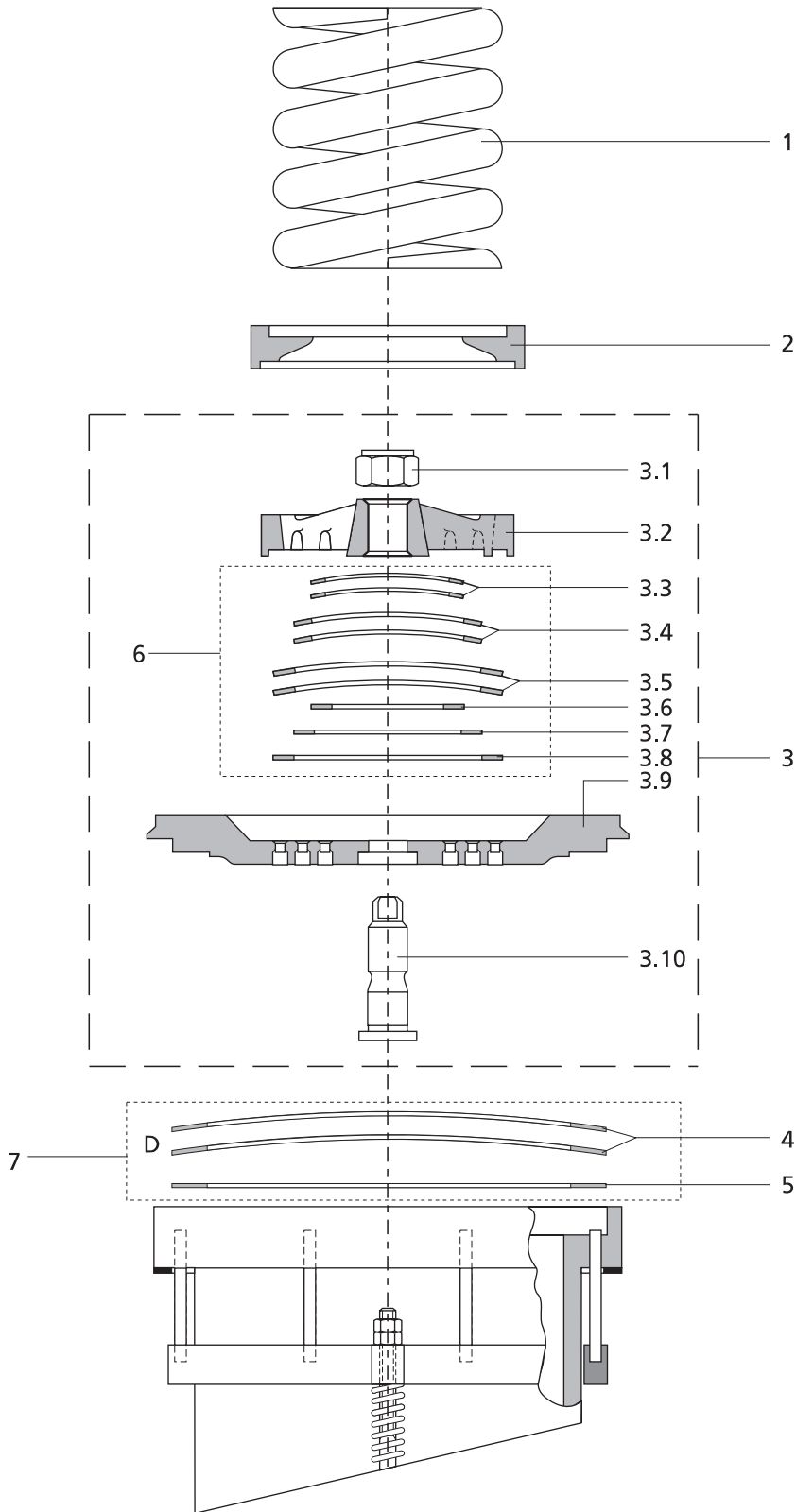


Fig. 1-6 RC11-06

Item	Description	Dims.	Ref. No.	Qty	Remarks
Fig. RC11-07 ROTARY SHAFT SEAL					
1	SHAFT SEAL HOUSING	FA110	2608200	1	
2	HEXAGON NUT	M12	0115610	8	
3	ALU SEALING RING	21.5x27x1	0912022	1	
4	PLUG	G21	0136216	1	
5	NIPPLE COUPLING	16G21	0338212	1	
6	SHAFT SEAL SET	085-B	0962920	1	
6.1	COUNTER SLIP RING ASSEMBLY	085B	*	1	
6.1.1	O-RING	101.1x3.53	0952390	1	
6.2	SLIP RING ASSEMBLY		*	1	
6.2.1	O-RING	84.95x4.0	0952340	1	
6.3	O-RING	3x150	0952311	1	
7	NIPPLE COUPLING	12G13	0338131	1	
8	WELDED BEND	12x1.5	0402212	1	

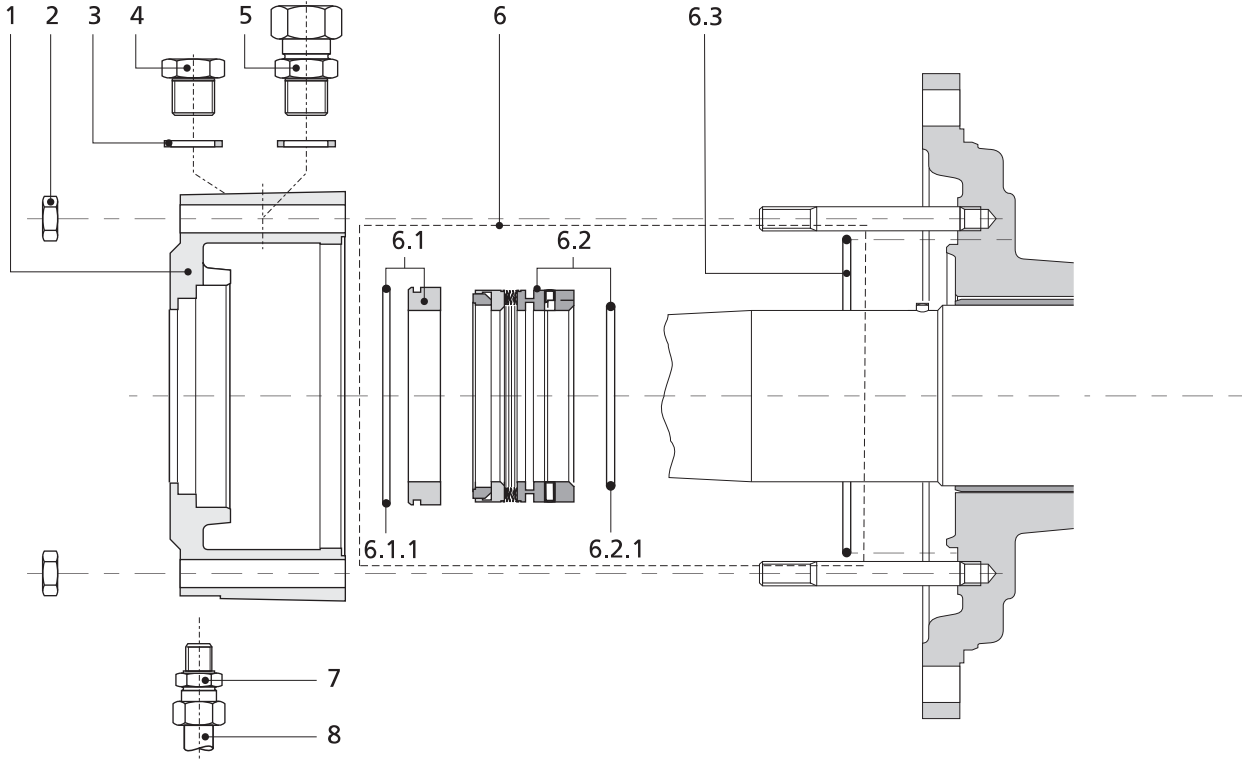


Fig. 1-7 RC11-07

Item	Description	Dims.	Ref. No.	Qty	Remarks
Fig. RC11-08 OIL PUMP					
1A	GEAR PUMP	RC11	1810185	1	
1B	GEAR PUMP	RC11	1810180	1	
1.1A	PUMP HOUSING	RC11A	2618510	1	
1.1B	PUMP HOUSING	RC11	2618500		
1.2	GEAR WHEEL	4x9 D18	1937809	1	
1.3	GEAR WHEEL	4x9 D18	1937859	1	
1.4	BEARING BUSH	18x24x61	1146718	2	
1.5	O-RING	5.33x146.1	0952544	1	
1.6	PUMP COVER	RC11	2618600	1	
1.7	HEXAGON HEAD BOLT	M6x20	0110320	2	
1.8A	CONTROL PLUNGER	12RC11A	2608915	1	
1.8B	CONTROL PLUNGER	B FA110M	2608911	1	
1.9	CONTROL PISTON	24K110M	2616821	1	
1.10	VALVE PLUNGER	10K110M	2616801	1	
1.11	PISTON ASSY	30K110	2617830	1	
1.11A	PISTON ASSY	30K110G	2617835	1	
1.12	PRESSURE SPRING	1.1x15x15x97	1131117	1	
1.13	ALU.SEALING RING	34x44x1	0912034	1	
1.13a	O-RING	3x33	0952300	1	
1.14	PLUG	G33	0136336	1	
1.15	CONTROL PISTON	14K110M	2616811	1	
1.16	PRESSURE SPRING	2.1x11.3x13.5 x70.5	1131222	1	
1.17	ALU.SEALING RING	17x21x1	0912016	1	
1.18	PLUG	G17	0136176	1	
1.19	ALU SEALING RING	13.5x20x1	0912014	1	
1.20	PLUG	G13S	0136134	1	
1.21	NIPPLE COUPLING	6G13	0338136	2	
1.22	ALU.SEALING RING	6.5x11x1	0912007	1	
1.23	HEXAGON HEAD BOLT	M6x10	0110310	1	
1.24	T-COUPLING	E6x6x6	0340306	1	
1.25	SOLID CLAMPING SLEEVE INCL. O-RING	P6	0334596	1	
2	HEXAGON NUT	M12	0115610	8	
3	O-RING	3x150	0952311	1	

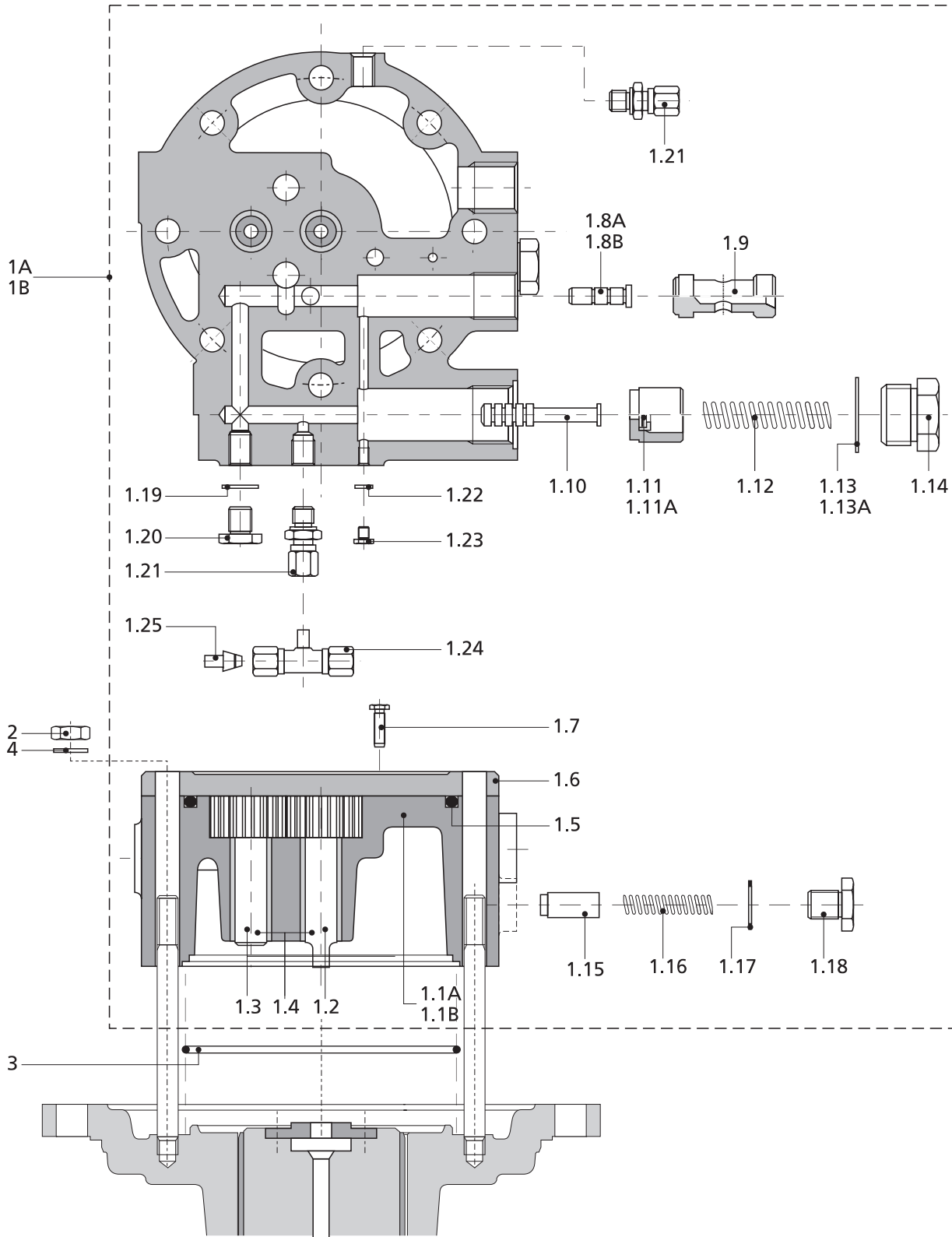


Fig. 1-8 RC11-08

Item	Description	Dims.	Ref. No.	Qty	Remarks
Fig. RC11-09 OIL FILTERS					
1	OIL SUCTION FILTER ASSY	290x250	4405621	1	
1.1	FILTER UPPER HOUSING ASSY	100x98	*	01	
1.2	STEEL PRECISION PIPE	22x2.5	*	-	
1.3	WELDABLE NIPPLE	G21L	*	1	
1.4	UNION NUT	G30R	*	2	
1.5	PIPE END	G30	*	2	
1.6	ALU SEALING RING	10x18x1	0912010	2	
1.7	UNION SOCKET	G21RxG21L	0329921	1	
1.8	STOP VALVE	TAH8	0607013	1	
1.9	CAP NUT	GK21R	0117021	1	
1.10	NIPPLE	G27xG30	0304130	1	
1.11	PLUG	G21	0136216	1	
1.12	ALU SEALING RING	21.5x27x1	0912022	1	
1.13	HEX. HEAD BOLT	M12x50	0110650	6	
1.14	O-RING	3.5x26	0952354	2	
1.15	GAUZE STRAINER ELEMENT	1700x60	0716171	1	
1.16	LOCKING DISC	M24x38	1113738	1	
1.17	PRESSURE SPRING	2x29x3x32	1131219	1	
1.18	GASKET	117x127x1.5	0903118	1	
1.19	LOWER HOUSING HALF	26x56	*	1	
1.20	HEXAGON NUT	M12	0115610	6	
1.21	ALU SEALING RING	21x27x2	0914023	1	
2	PAPER FILTER	22G27	0711023	1	
2.1	NIPPLE	G27xG30	0304130	1	
2.2	STEEL PRECISION PIPE	22x2.5	*	1	
2.3	FILTER UPPER HOUSING ASSY		*	1	
2.4	HEX. HEAD BOLT	M12x50	0110650	6	
2.5	GASKET	117x127x1.5	0903118	1	
2.6	O-RING	3.5x26	0952354	2	
2.7	PAPER FILTER SET	1700x15	0711920	1	
2.8	LOCKING DISC	M24x38	1113738	1	
2.9	PRESSURE SPRING	2x29x3x32	1131219	1	
2.10	SNAP RING	18	1104018	1	
2.11	FLAT WASHER	M8	1113401	1	
2.12	PRESSURE SPRING	1.25x14x9x35 .5	1131134	1	
2.13	BEAMING BALL	W14	1119009	1	
2.14	LOWER HOUSING HALF	26x44	*	1	
2.15	HEXAGON NUT	M12	0115610	6	
2.16	UNION NUT	G30R	*	1	
2.17	ALU SEALING RING	21x27x2	0914023	1	
2.18	PIPE END	G30	*	1	

Item	Description	Dims.	Ref. No.	Qty	Remarks
Fig. RC11-09 OIL FILTERS					
3	ALU SEALING RING	21x27x2	0914023	1	
4	ALU.SEALING RING	27x34x1	0912027	2	

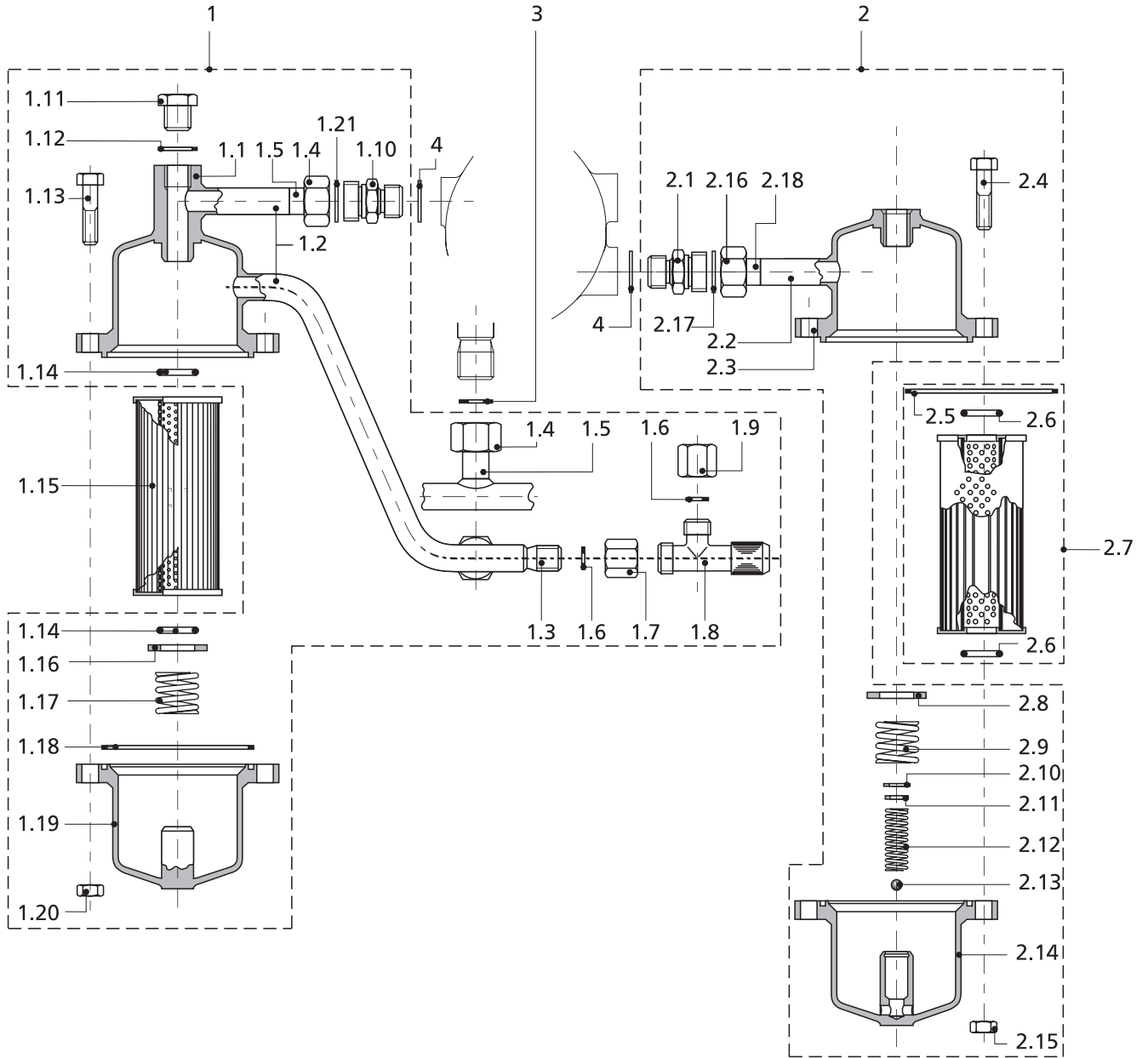


Fig. 1-9 RC11-09

Item	Description	Dims.	Ref. No.	Qty	Remarks
Fig. RC11-10 LUBRICATING OIL LINES					
1	OIL RETURN LINE		4405922	1	
1.1	NIPPLE COUPLING	16G21	0338212	1	
1.2	STEEL PRECISION PIPE	16x2	*	1	
1.3	VALVE HOUSING	H9K	4803010	1	
1.4	ALU SEALING RING	21x27x2	0914023	1	
1.5	BEAMING BALL	W16	1119010	1	
1.6	PRESSURE SPRING	1.25x14x9x35 5	1131134	1	
1.7	THRUST BOLT	G21x60S	0135218	1	
1.8	O-RING	1.78x8.73	0952184	1	
1.9	NIPPLE	G21CxG21	0304921	1	
1.10	ALU SEALING RING	10x18x1	0912010	1	
1.11	CAP NUT	GK21R	0117021	1	
2.1	STEEL PRECISION PIPE	K16x2	0438165	1	
2.2	SWIVEL COUPLING	16G21	0339216	1	
3.1	SWIVEL COUPLING	16G21	0339216	1	
3.2	STEEL PRECISION PIPE	16x2	*	1	
3.3	NIPPLE COUPLING	16G21	0338212	1	
3a	OIL DISCHARGE PRESS.LINE	16x573S	4405720	1	
3b	OIL DISCHARGE PRESS.LINE	16x573	4405730	1	
3c	OIL DISCHARGE PRESS.LINE	16x814	4405740	1	
3d	OIL DISCHARGE PRESS.LINE	16x963	4405760	1	
3e	OIL DISCHARGE PRESS.LINE	16x1354	4405790	1	
3f	OIL DISCHARGE PRESS.LINE	16x1744	4405700	1	
4	ALU SEALING RING	27x34x1	0912027	1	
5	ALU SEALING RING	10x18x1	0912010	1	
6	SOCKET NIPPLE	G21xG27	0302927	1	

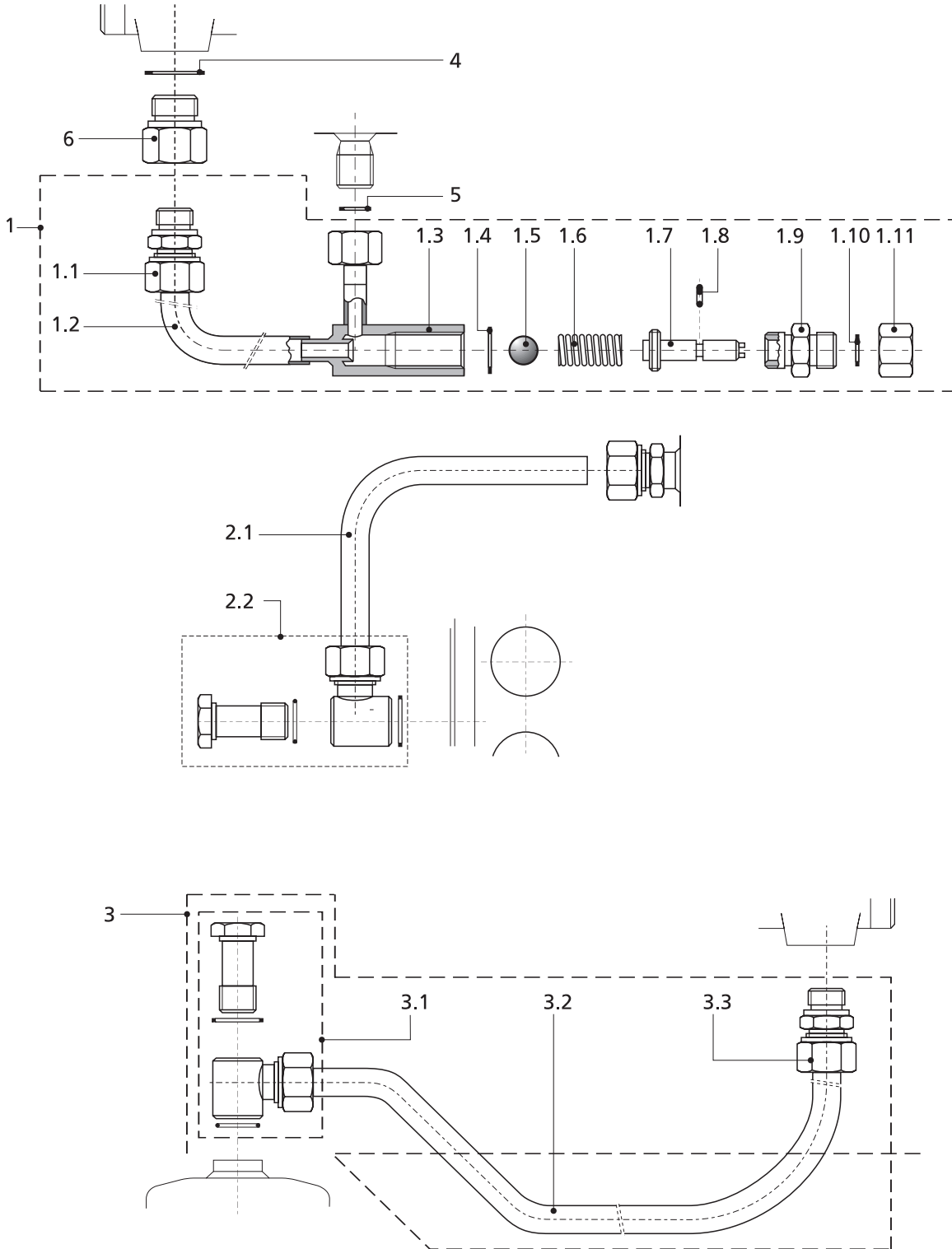


Fig. 1-10 RC11-10

Item	Description	Dims.	Ref. No.	Qty	Remarks
Fig. RC11-11 SUCTION GAS STRAINER					
1	STRAINER HOUSING		*	1	
1.1	WELDABLE COUPLING	16x21	0335016	1	
1.2	WELDABLE COUPLING	6x11	0335006	1	
2A	GASKET	124x136x1.5	0903124	2	
2B	GASKET	180x196x1.5	0903180	2	
3A	COVER	185	0530185	1	
3B	COVER	260	0531261	1	
4A	HEX. HEAD BOLT	M12x40	0185640	16	
4B	HEXAGON HEAD BOLT	M16x40	0110840	16	
5A	STRAINER ELEMENT	1700x110	0716170	1	
5B	STRAINER ELEMENT	3200x110	0716320	1	
6A	COVER	185P	0530995	1	
6B	COVER	260P	0531961	1	
7A	FLAT WASHER	M12	1113601	1	
7B	PRESSURE SPRING	6x40x2.7x42	1131601	1	
8A	HEXAGON NUT	M16	0115810	8	
8B	HEXAGON NUT	M20	0115110	8	
9A	GASKET	84x98x1.5	0903084	2	
9B	GASKET	117x131x1.5	0903117	2	
9C	GASKET	143x161x1.5	0903143	2	
9D	GASKET	169x187x1.5	0903169	2	
10A	HEXAGON HEAD BOLT	M16x60	0110860	8	
10B	HEXAGON HEAD BOLT	M20x70	0110170	8	

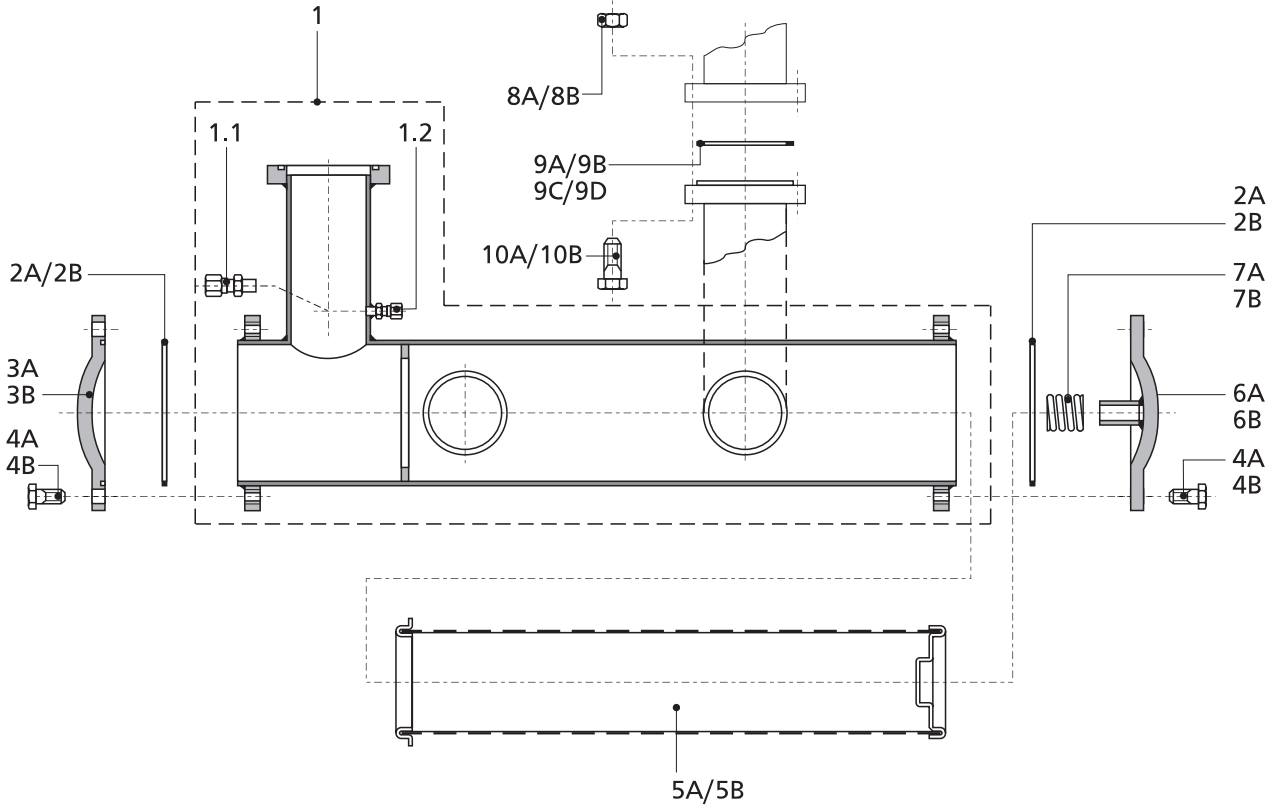


Fig. 1-11 RC11-11

Item	Description	Dims.	Ref. No.	Qty	Remarks
Fig. RC11-12 MAIN FLANGE SEALING RINGS					
1.a	GASKET	84x98x1.5	0903084	1	
1.b	GASKET	98x112x1.5	0903098	1	
1.c	GASKET	117x131x1.5	0903117	1	
1.d	GASKET	143x161x1.5	0903143	1	
1.e	GASKET	169x187x1.5	0903169	1	
2.a	GASKET	67x81x1.5	0903067	1	
2.b	GASKET	98x112x1.5	0903098	1	
2.c	GASKET	84x98x1.5	0903084	1	
2.d	GASKET	117x131x1.5	0903117	1	
3.a	GASKET	67x81x1.5	0903067	1	
3.b	GASKET	84x98x1.5	0903084	1	
3.c	GASKET	117x131x1.5	0903117	1	
4.a	GASKET	67x81x1.5	0903067	1	
4.b	GASKET	98x112x1.5	0903098	1	
4.c	GASKET	117x131x1.5	0903117	1	
4.d	GASKET	84x98x1.5	0903084	1	

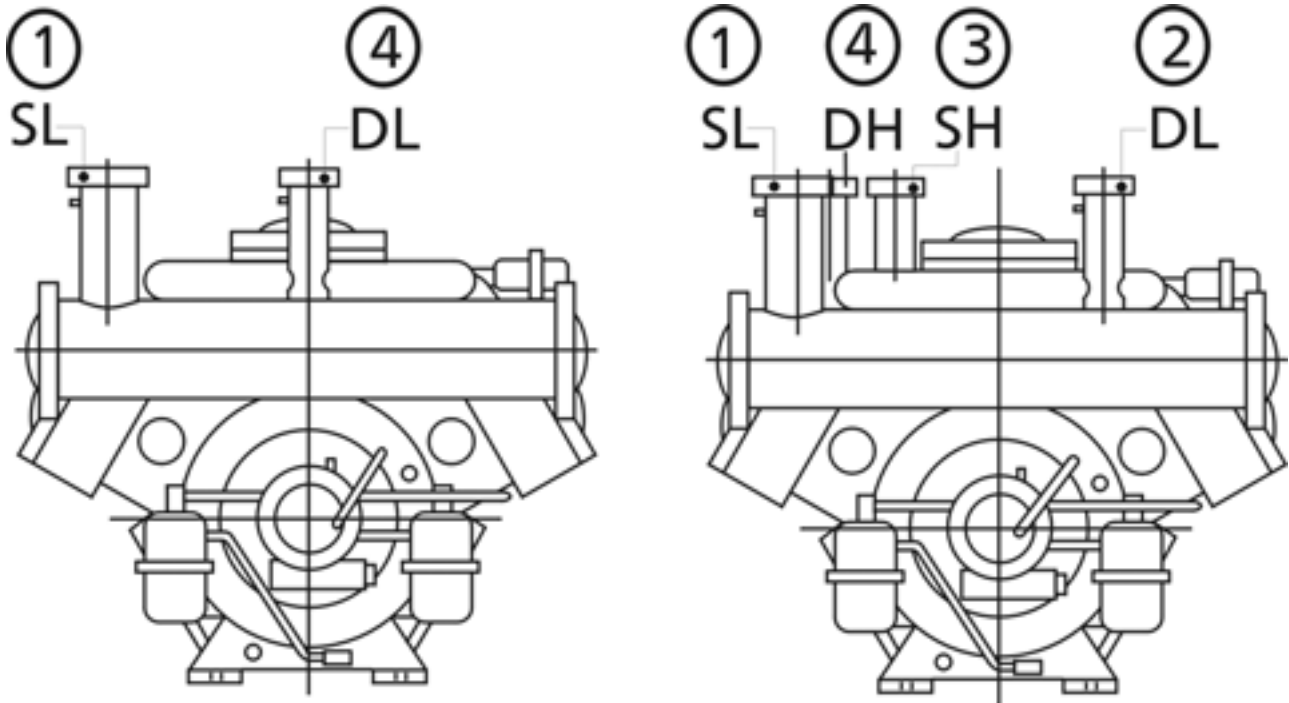


Fig. 1-12 RC11-12

2. PARTS ACCESSORIES

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Item	Description	Dims.	Ref. No.	Qty	Remarks
Fig. RC11-A1 MANUALLY OPERATED CAPACITY CONTROL					
1	MANUAL CAPACITY CONTROL	110x12	1273212	1	
1.1	DISTRIBUTOR HOUSING	R6x613	*	1	
1.2	PLUG	G13	0136136	1	
1.3	ALU SEALING RING	13.5x20x1	0912014	-	
1.4	PRESSURE SPRING	0.75x5.2x7.5x 18	1131083	1	
1.5	BEAMING BALL	W6	1119004	1	
1.6	BALL BEARING	6004	*	2	
1.7	DISTRIBUTOR SPINDLE	42x106	*	1	
1.8	O-RING	2.5x10	0952252	2	
1.9	O-RING	3.5x44	0952350	1	
1.10	COVER	90x15	*	1	
1.11	INDICATION PLATE	088	1176088	1	
1.12	BUSH	8x8	4846108	1	
1.13	SOCKET HEAD SCREW	M10x20	0104520	3	
1.14	HAND GRIP	040	0249040	1	
1.15	CYLINDER HEAD SCREW	M4x20	0168220	1	
1.16A	SWIVEL COUPLING	6G13	0339136	-	
1.16B	PLUG	G13	0136136	-	
1.17	NIPPLE COUPLING	6G13	0338136	1	
1.18	COUNTERSUNK HEAD SCREW	M5x10	0169910	4	
2	CYLINDER HEAD SCREW	M5x10	0168910	4	
3	FLAT WASHER	M5	1113003	4	
4	SUPPORT	U100x300	0243130	1	
5	HEX. HEAD BOLT	M8x16	0110416	4	

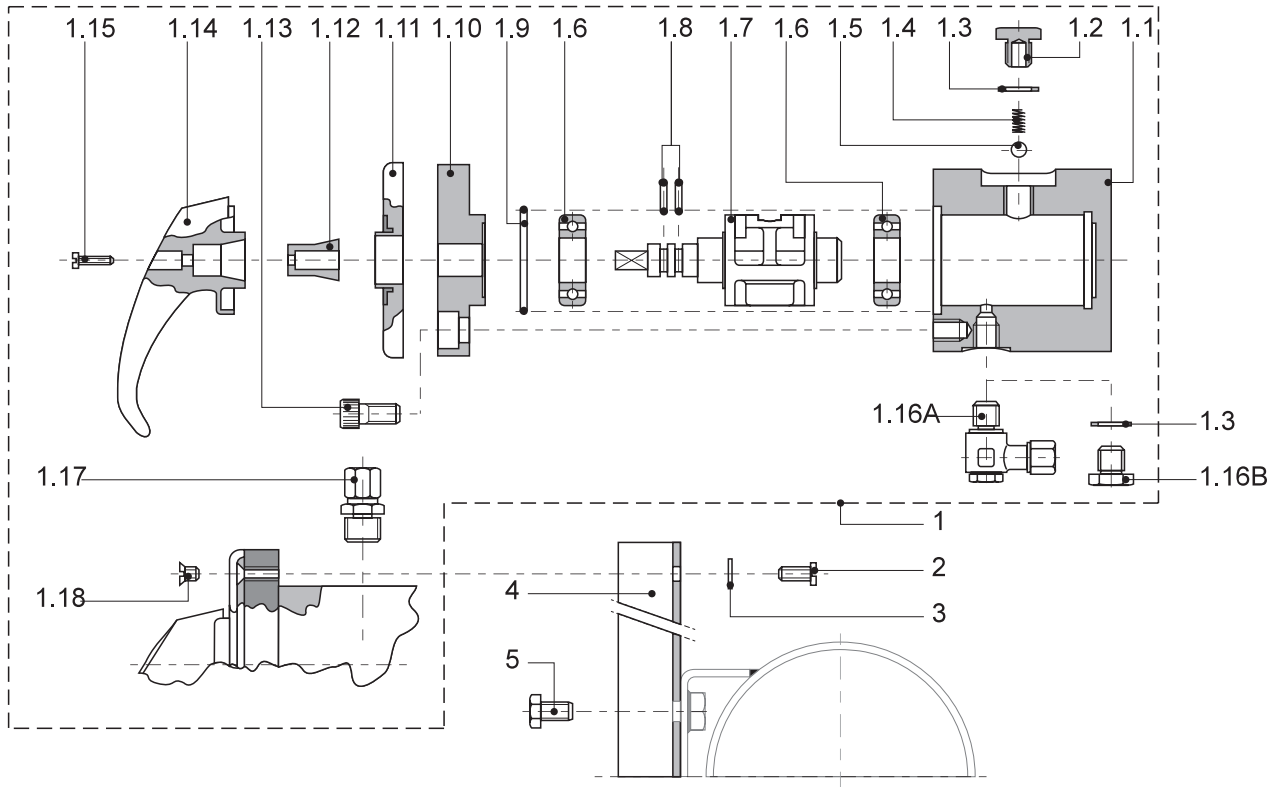


Fig. 2-1 RC11-A1

Item	Description	Dims.	Ref. No.	Qty	Remarks
Fig. RC11-A2 ELECTRICALLY OPERATED CAPACITY CONTROL					
1	JUNCTION BOX		*	1	
2	HEXAGON HEAD BOLT	M6x16	0110316	2	
3	SUPPORT	Z18x80	0240610	1	
4	HEX. HEAD BOLT	M8x16	0110416	4	
5	THREE-WAY SOLENOID VALVE	220HB	0680410	-	
5.1a	VALVE COIL	110-120/50-60	1316311	-	
5.1b	VALVE COIL	220-240/50-60	1316322	-	
6	SOCKET HEAD SCREW	M5x8	0104208	2	
7a	NIPPLE COUPLING	6G10	0338106	2	
7b	SWIVEL COUPLING 6G10	6G10	0339106	2	
8	SOCKET COUPLING	6G10	0337106	1	
9	ANGLE COUPLING	EV6X6	0352006	2	
10	T-COUPLING	E6x6x6	0340306	2	
11	JUNCTION BOX		*	1	
11.1a	LAMP, BAJONET FITTING	24V	1308624	-	
11.1b	LAMP, BAJONET FITTING	48V	1308648	-	
11.1c	LAMP, BAJONET FITTING	110V	1308610	-	
11.1d	LAMP, BAJONET FITTING	230V	1308620	-	
12	CYLINDER HEAD SCREW	M4x16	0168216	2	
13	WASHER	M4	1113201	2	
14	HEXAGON NUT	M4	0115211	2	
15a	CONNECTOR	DIN	1316610	-	without LED
15b	CONNECTOR	220/240 VAC, DIN incl. LED	1316611	-	with 220V-AC/DC LED
15c	CONNECTOR	24/48 V AC/DC, DIN incl. LED	1316615	-	with 48V-AC/DC LED

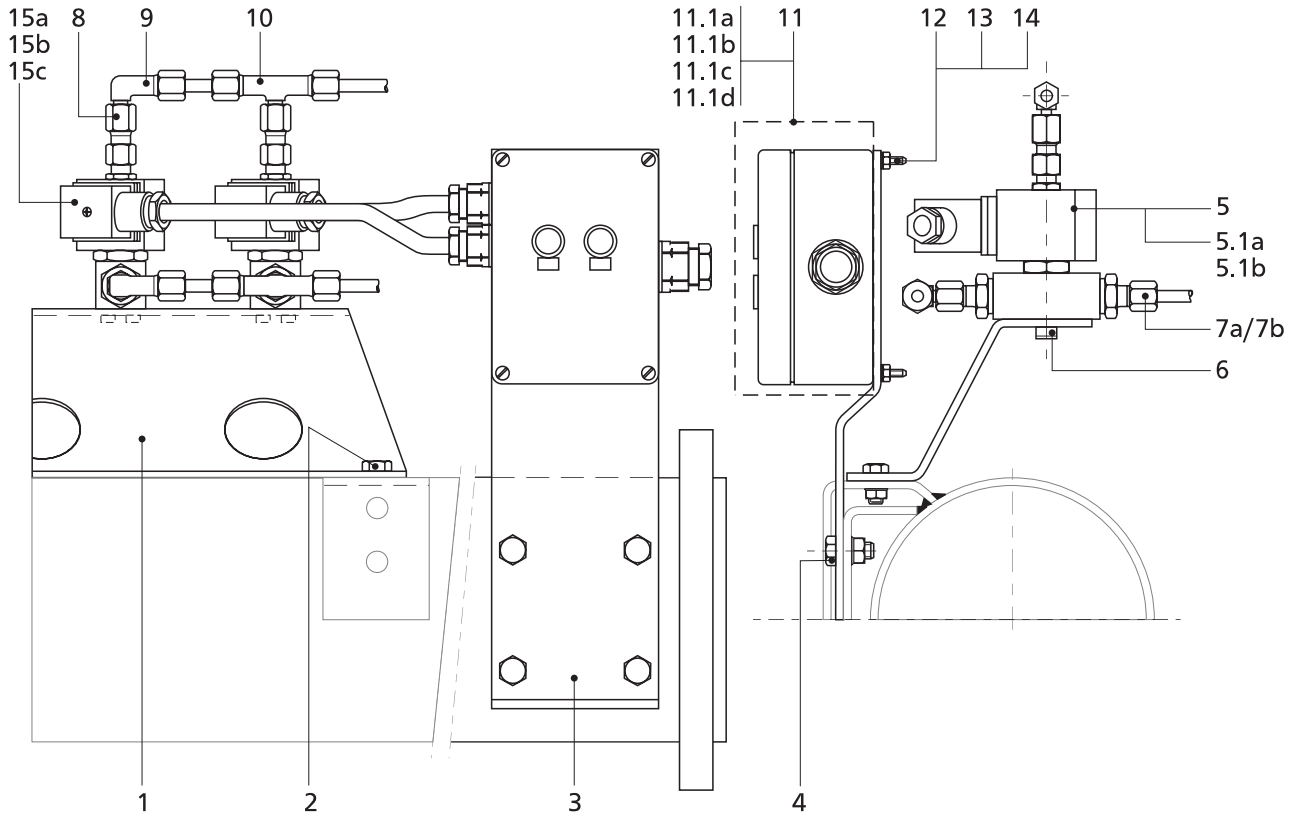


Fig. 2-2 RC11-A2

Item	Description	Dims.	Ref. No.	Qty	Remarks
Fig. RC11-A3 PRESSURE GAUGE PANEL					
1a	PRESSURE GAUGE	NH3-P-100	1210113	1	
1b	PRESSURE GAUGE	R-P-100	1212113	1	
1c	PRESSURE GAUGE	R-P-100	1212114	1	R134a
1d	PRESSURE GAUGE	R-P-100	1212115	1	
1e.a	PRESSURE GAUGE	NH3-Z-100	1210114	1	
1e.b	PRESSURE GAUGE	NH3-Z-100	1210114	2	
1f	PRESSURE GAUGE	R-Z-100	1212116	1	
1g	PRESSURE GAUGE	R-Z-100	1212117	2	
1h.a	PRESSURE GAUGE	R-Z-100	1212118	1	
1h.b	PRESSURE GAUGE	R-Z-100	1212118	2	
1k	PRESSURE GAUGE	R-O-100	1215114	1	
2	STOP VALVE	TAH4C	0607007	1	
4	ALU.SEALING RING	6.5x11x1	0912007	1	
5	UNION SOCKET	G21RxG21L	0329921	1	
6	HEXAGON NUT	MF12	0147605	1	
7	CLAMPING SLEEVE	S6	0334106	2	
8	UNION NUT	MF12x1.5	0351006	2	
9	HEXAGON NUT (ZINC PLATED)	M10	0115510	2	
10	MOUNTING STRIP		*	1	
11	HEXAGON HEAD BOLT	M10x20	0110520	2	
12	HEXAGON HEAD BOLT	M6x45	0110345	2	
14	FRONT PANEL		*	1	
15	SPACER SLEEVE	13.7x2.2x31	*	2	
16	HEXAGON NUT	M6	0115310	2	

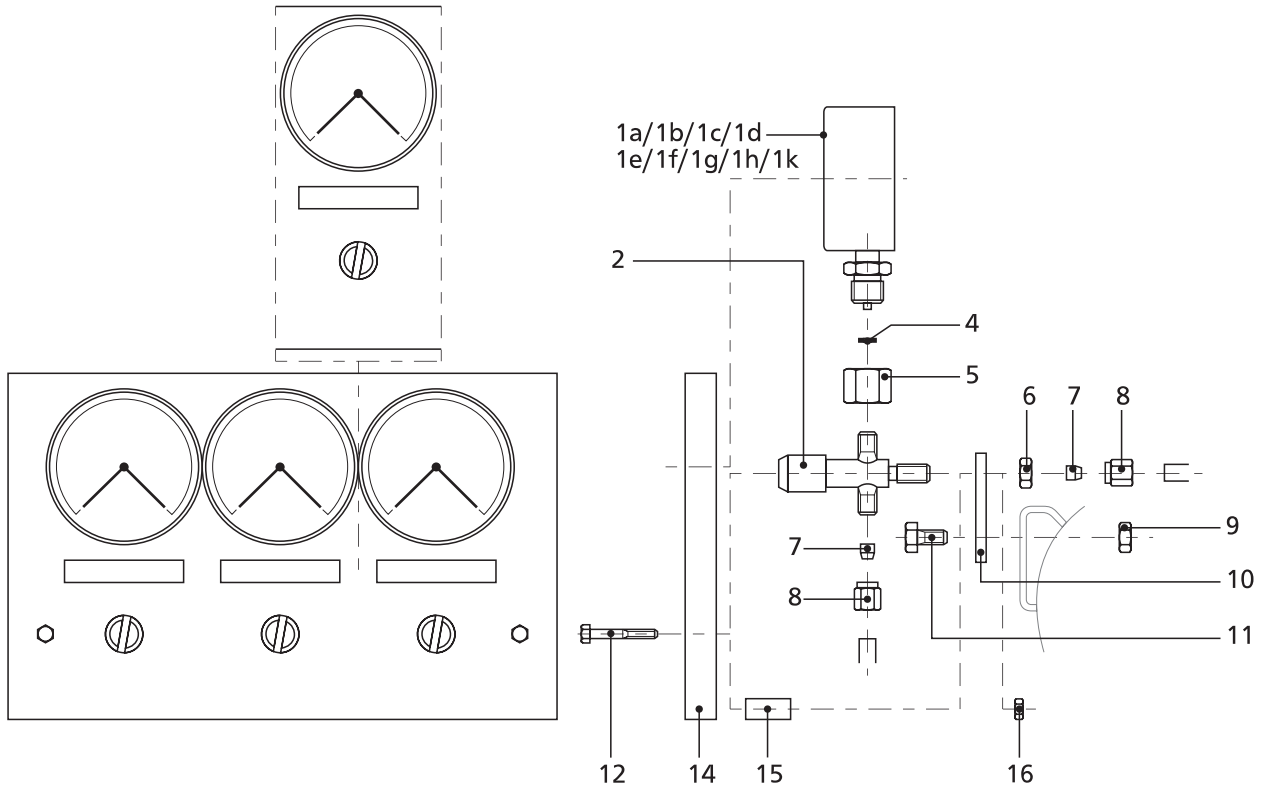


Fig. 2-3 RC11-A3

Item	Description	Dims.	Ref. No.	Qty	Remarks
Fig. RC11-A4 STANDARD SAFETY SWITCH PANEL					
1	PANEL	5x100	*	1	
2	HEX. HEAD BOLT	M10x50	0110550	2	
3	SPACER SLEEVE	17.1x2.3x34	*	2	
4	HEXAGON NUT (ZINC PLATED)	M10	0115510	2	
5	GROMMET	2x13	0924213	2	
6	CYLINDER HEAD SCREW	M4x50	0168250	6	
7	HEXAGON NUT	M4	0115211	6	
8	LOCK WASHER	M4	1113203	6	
9a	PRESSURE SAFETY SWITCH	RT5	1261151	1	
9b	PRESSURE SAFETY SWITCH	RT5A	1260151	1	
10a	PRESSURE SAFETY SWITCH	RT1	1261121	1	
10b	PRESSURE SAFETY SWITCH	RT1A	1260121	1	
11a	PRESSURE SAFETY SWITCH	MP55	1261232	1	
11b	PRESSURE SAFETY SWITCH	MP55A	1260232	1	
11c	PRESSURE SAFETY SWITCH	RT260A	1260240	1	
12	ALU.SEALING RING	8x14.5x1	0912008	4	
13	SOCKET COUPLING	6G17	0337176	4	
14	SOCKET NIPPLE	6F6	0337906	4	
15	UNION NUT		*	4	
16	CLAMPING SLEEVE	S6	0334106	4	
17	T-COUPLING	S6x6x6	0340006	1	

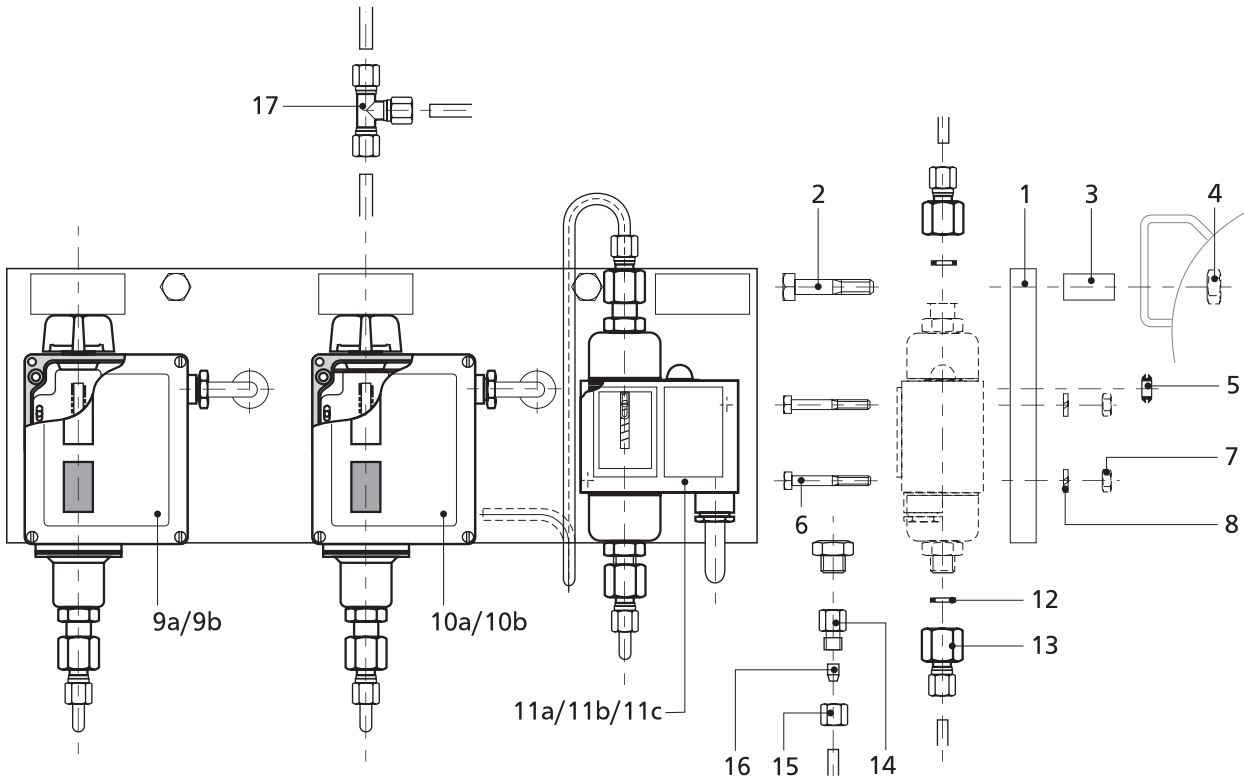


Fig. 2-4 RC11-A4

Item	Description	Dims.	Ref. No.	Qty	Remarks
Fig. RC11-A5 DIRECT DRIVE					
1	FLYWHEEL	0x772x166FP CS	1913714	1	
1.1	SPACER SLEEVE	17.1x2.3x34	*	1	
1.2	HUB FIXING	M24X108	1915211	1	
1.3	LOCKING PLATE	M24xM12	1114248	1	
1.4	FLAT WASHER	M12	1113601	1	
1.5	HEXAGON HEAD BOLT	M12x35	0110635	4	
2	FLANGE SHAFT	84x322x230x 150	1963087	1	
3	LOCKING PLATE	M20	1113102	6	
4	HEXAGON HEAD BOLT	M20x60	0110160	6	
5	KEY	22x14x160	1102016	1	
6.A	WAVED BAND	225X	1918938	1	
6.B	WAVED BAND	426X	1918939	1	
6.C	WAVED BAND	828X	1918955		

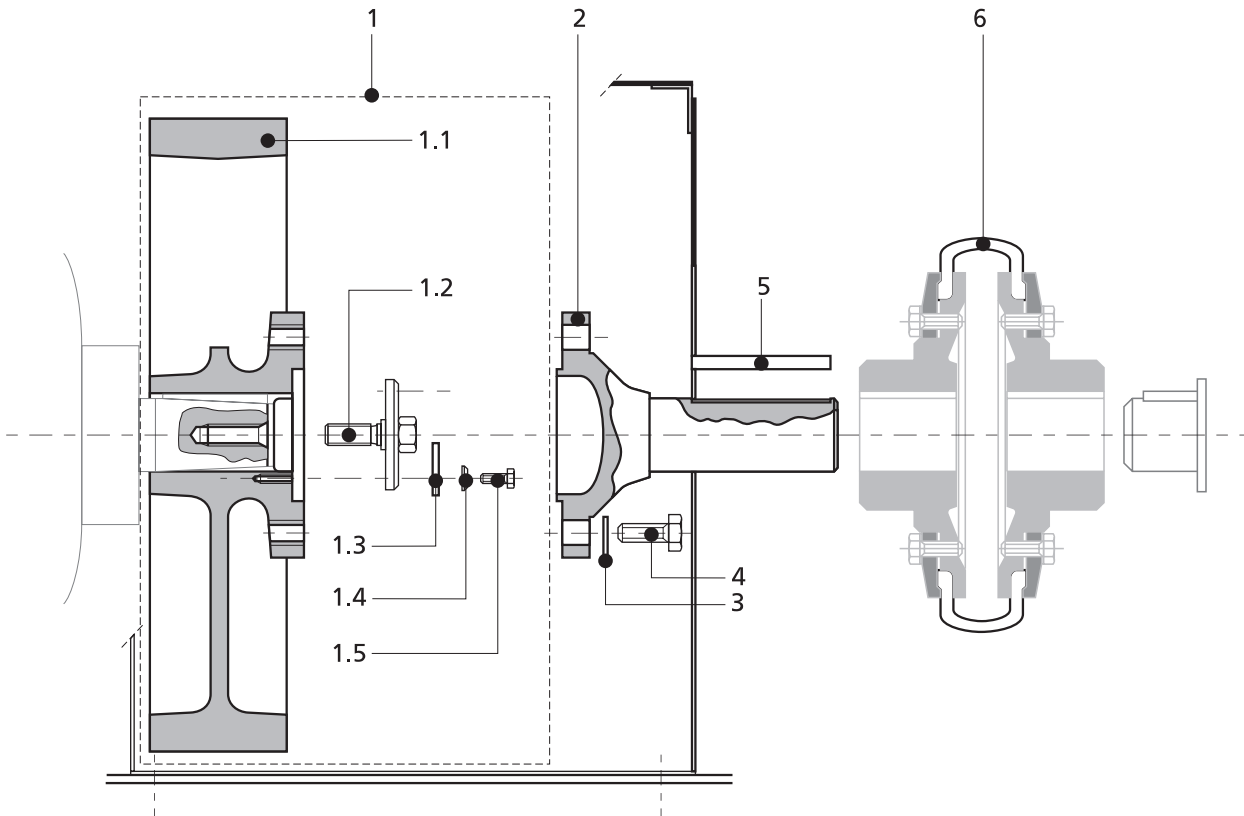


Fig. 2-5 RC11-A5

Item	Description	Dims.	Ref. No.	Qty	Remarks
Fig. RC11-A6 PARTS FOR CLAMP COUPLINGS					
1A	CLAMPING SLEEVE	P6	0334506	-	
1B	CLAMPING SLEEVE	P16	0334516	-	
1C	CLAMPING SLEEVE	P22	0334522	-	
2A.a	UNION NUT	M12x1.5 (DIN 2353)	*	-	
2A.b	UNION NUT	M14x1.5 (DIN 2353)	*	-	
2B	UNION NUT	M24x1.5 (DIN 2353)	*	-	
2C	UNION NUT	M30x2 (DIN 2353)	*	-	
3	CLAMPING SLEEVE	S6	0334106	-	
4	UNION NUT	MF12x1.5	0351006	-	

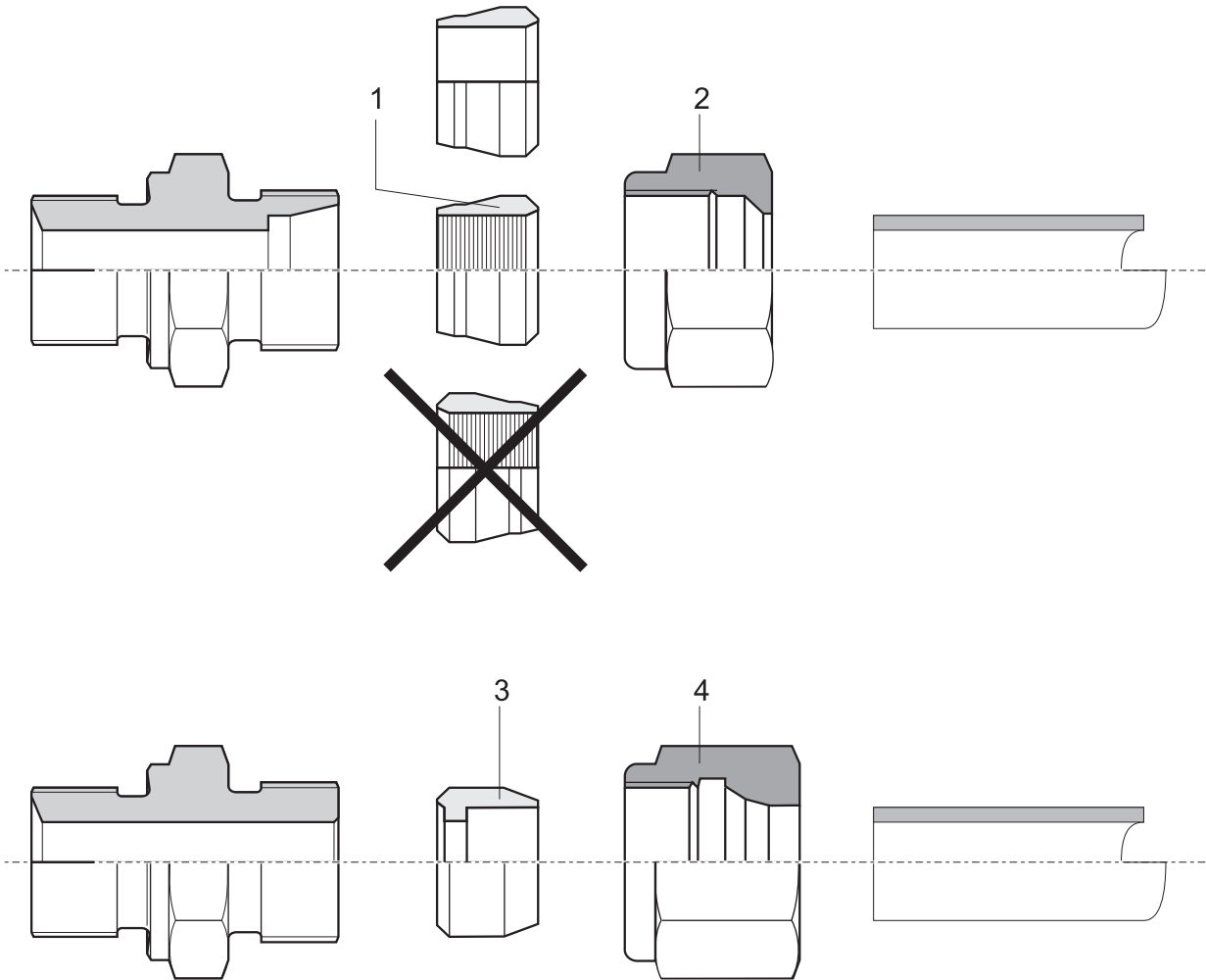


Fig. 2-6 RC11-A6

Item	Description	Dims.	Ref. No.	Qty	Remarks
Fig. RC11-A7 STANDARD SETS OF PARTS, SEALS AND TOOLS					
1	SET OF TOOLS		2018010	1	
2a	SET OF SPARE PARTS		2018021	1	
2b	SET OF ADD. SPARE PARTS		2018031	-	
2c	SET OF SPARE PARTS		2018041	1	
3a	GASKETS (SET)		0990012	1	
3b	ADDITIONAL SET OF GASKETS (PER 3 CYLINDERS)		0990013	1	
3c	GASKETS (SET)		0990014	1	

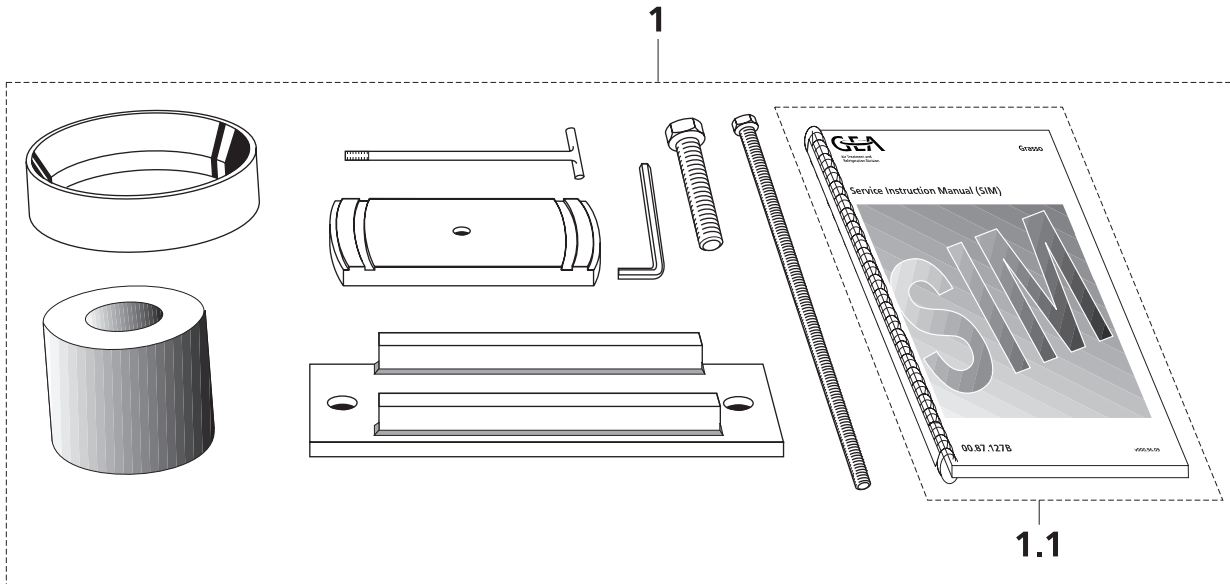


Fig. 2-7 RC11-A7

3. HISTORY PARTS

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Item	Description	Dims.	Ref. No.	Qty	Remarks
Fig. RC11-H1 OVERFLOW SAFETY VALVE					
23	DISTANCE RING	109x68x11	*	1	
24	HOUSING TOP HALF	28x21x8	*	1	
25	SOCKET HEAD SCREW	M10x60	0104560	2	
26a	SOCKET HEAD SCREW	M10x25	0104525	6	
26b	SOCKET HEAD SCREW	M10X40	0104540	6	
27.7	GASKET	69x79x2	0904069	2	

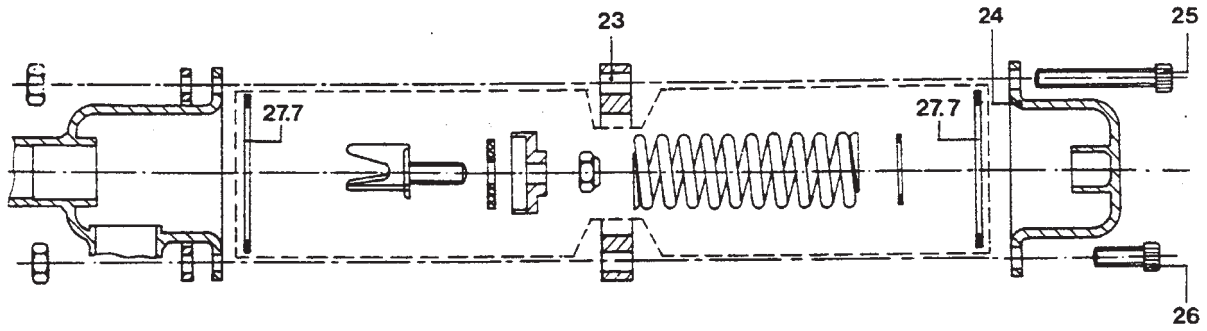


Fig. 3-1 RC11-H1

Item	Description	Dims.	Ref. No.	Qty	Remarks
Fig. RC11-H2 CONNECTING ROD					
2a	CONNECTING ROD	590x275FA11 0	2408500	-	
2b	CONNECTING ROD	90x275RC11H D	2419550	-	
2.1b	NEEDLE BEARING	NK50/25	1163451	2	
2.2a	BEARING BUSH	50/58	1146650	1	
2.2b	DISTANCE BUSH	52x62x10	1116562	1	
2.3b	ALU RING	109x96	9800699	1	

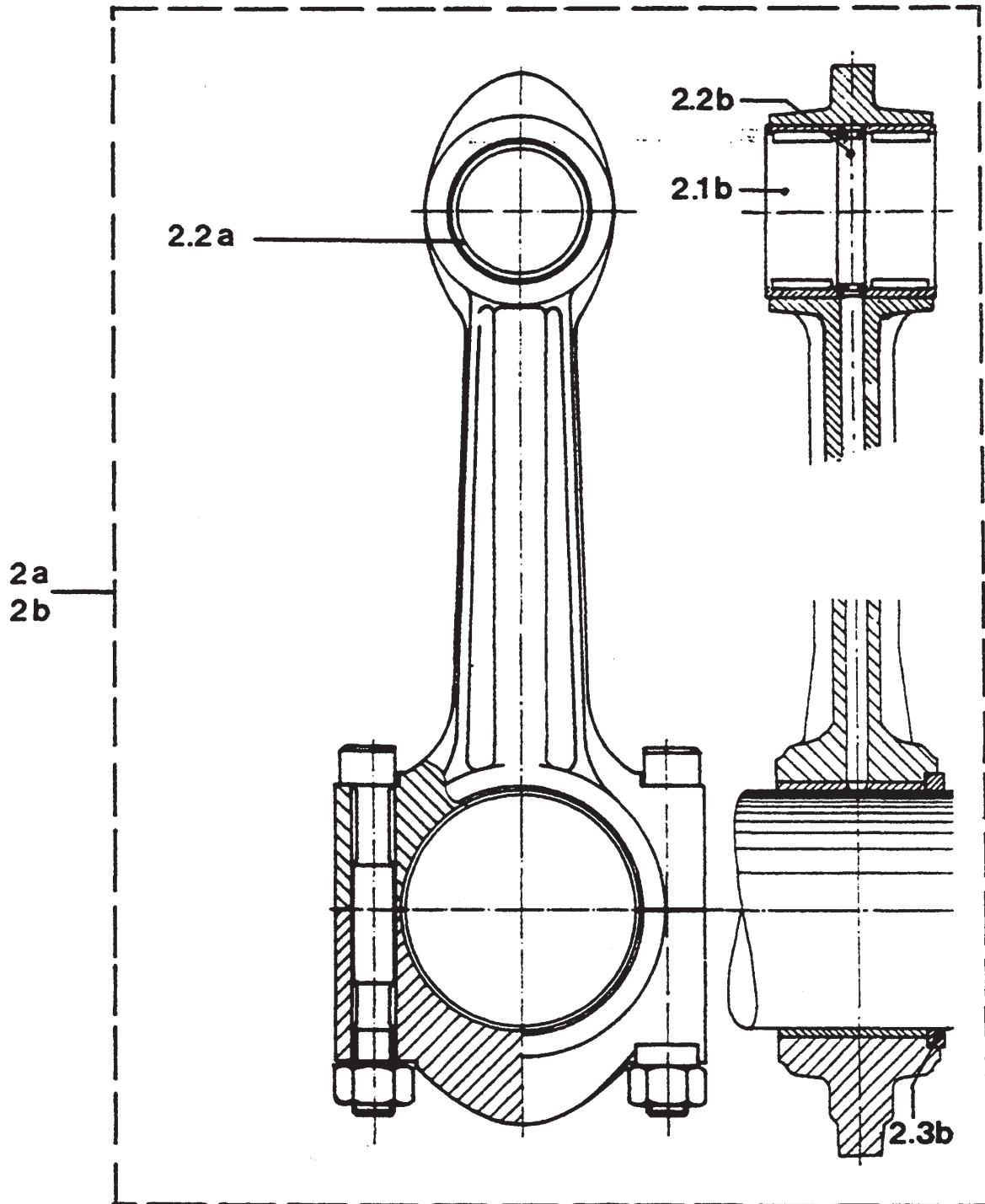


Fig. 3-2 RC11-H2

Item	Description	Dims.	Ref. No.	Qty	Remarks
Fig. RC11-H3 OIL FILTERS					
1.1	HOUSING TOP HALF		*	1	
1.13	SOCKET HEAD SCREW	M10x20	0104520	12	
1.18	GASKET	109x119x2	0904109	1	
1.19	HOUSING BOTTOM HALF		*	1	
1.20	HEXAGON NUT (ZINC PLATED)	M10	0115510	12	
2.3	HOUSING TOP HALF		*	1	
2.14	HOUSING BOTTOM HALF		*	1	

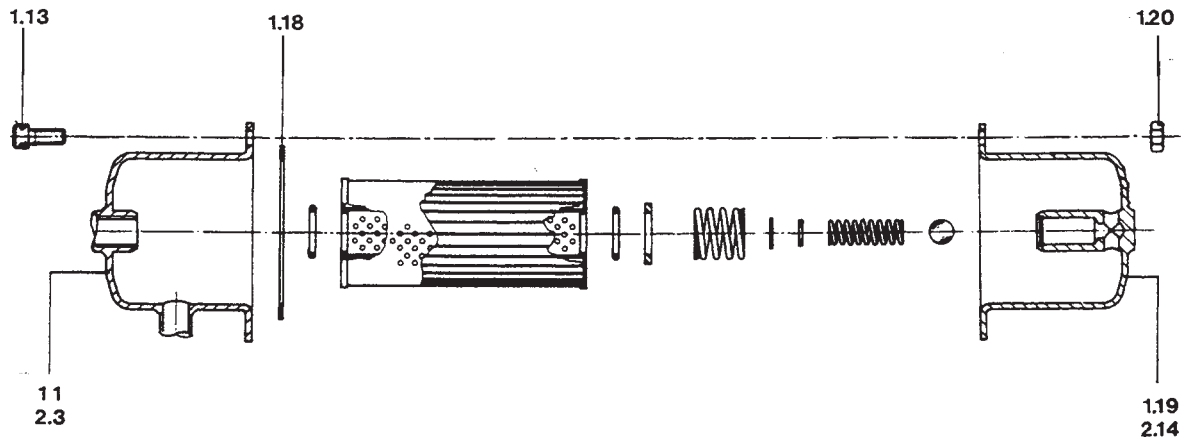


Fig. 3-3 RC11-H3

Item	Description	Dims.	Ref. No.	Qty	Remarks
Fig. RC11-H4 ROTARY SHAFT SEAL (item 6A=Ref. nr. 0962086)(item 6B=Ref. nr. m0962286)					
6A	SHAFT SEAL ASSY	85MO	*	1	
6B	SHAFT SEAL ASSY	CK85	*	1	
6.1	O-RING	7.5x95	0952756	1	
6.2	O-RING	7x85	0952704	1	

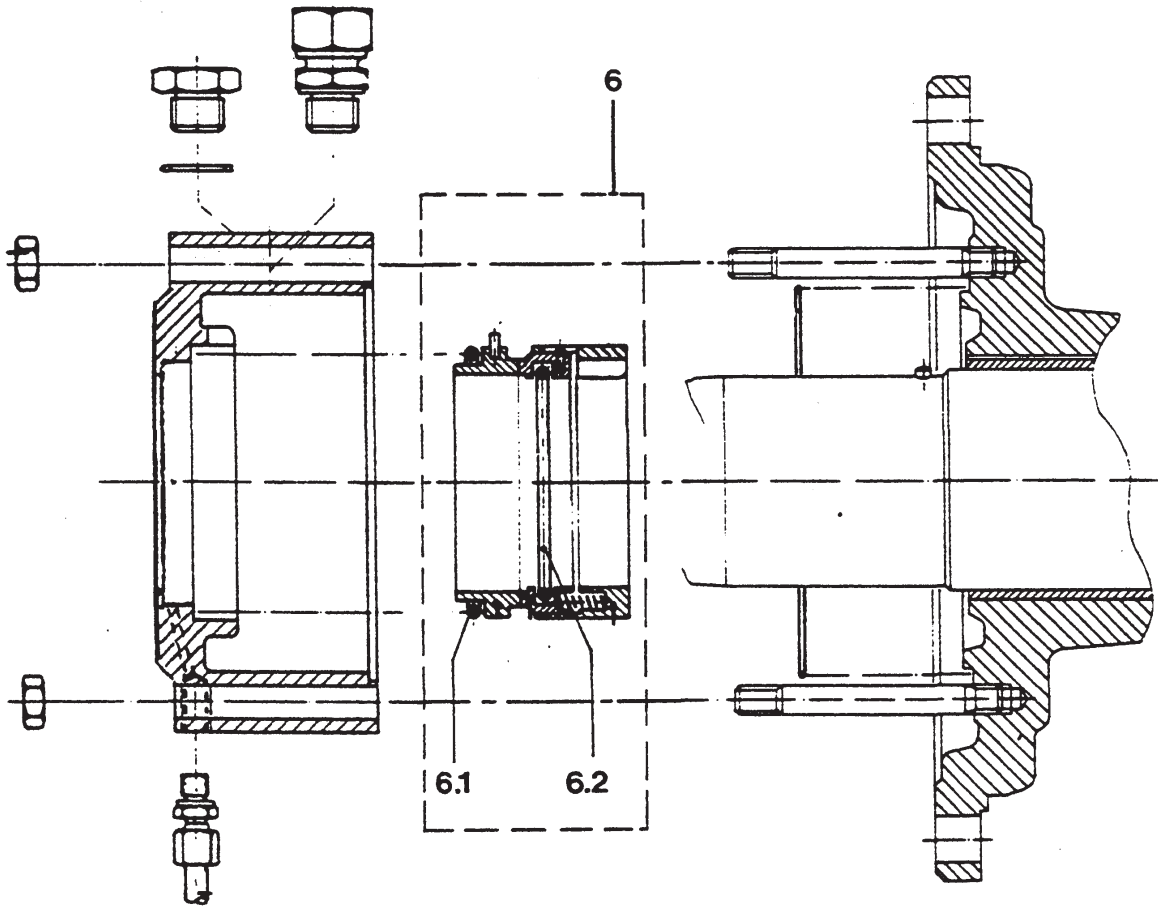


Fig. 3-4 RC11-H4

Item	Description	Dims.	Ref. No.	Qty	Remarks
Fig. RC11-H5 SUCTION AND DISCHARGE VALVE					
3	DISCHARGE VALVE ASSY	160RC11	2719110	1	
3.9	DISCHARGE VALVE SEAT	160RC11A	2718261	1	
4	STROKE LIMITOR SUCTION	160RC11A	2718311	1	
5	ALU.SEALING RING	201x214x1	0912201	1	

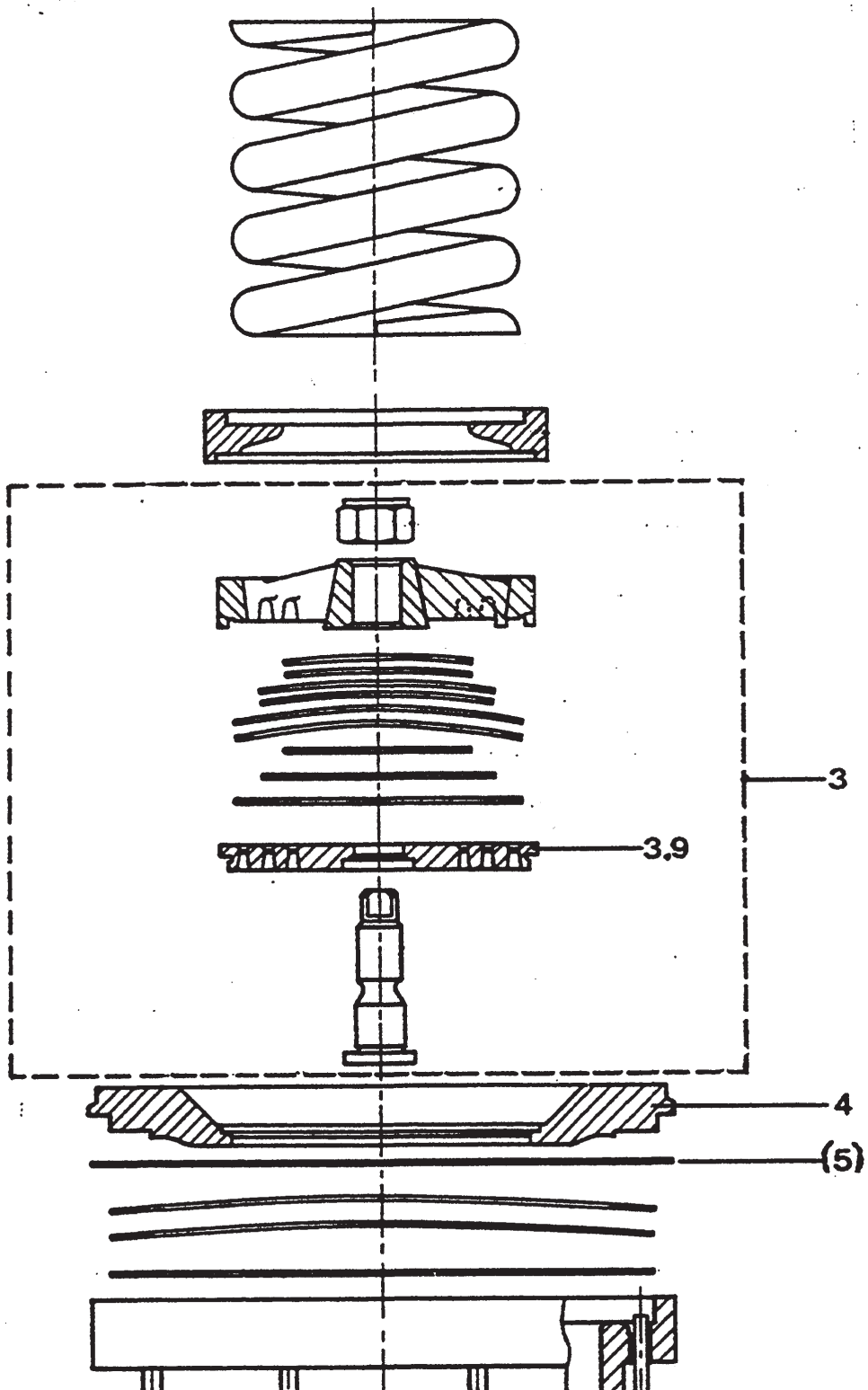


Fig. 3-5 RC11-H5

Item	Description	Dims.	Ref. No.	Qty	Remarks
Fig. RC11-H6 ELECTRICALLY OPERATED CAPACITY CONTROL					
5	THREE-WAY SOLENOID VALVE	220HA	*	-	
6	SOCKET HEAD SCREW	M6x10	0104310	2	
7	NIPPLE COUPLING	6G13	0338136	2	
12	CYLINDER HEAD SCREW	M4x20	0168220	2	

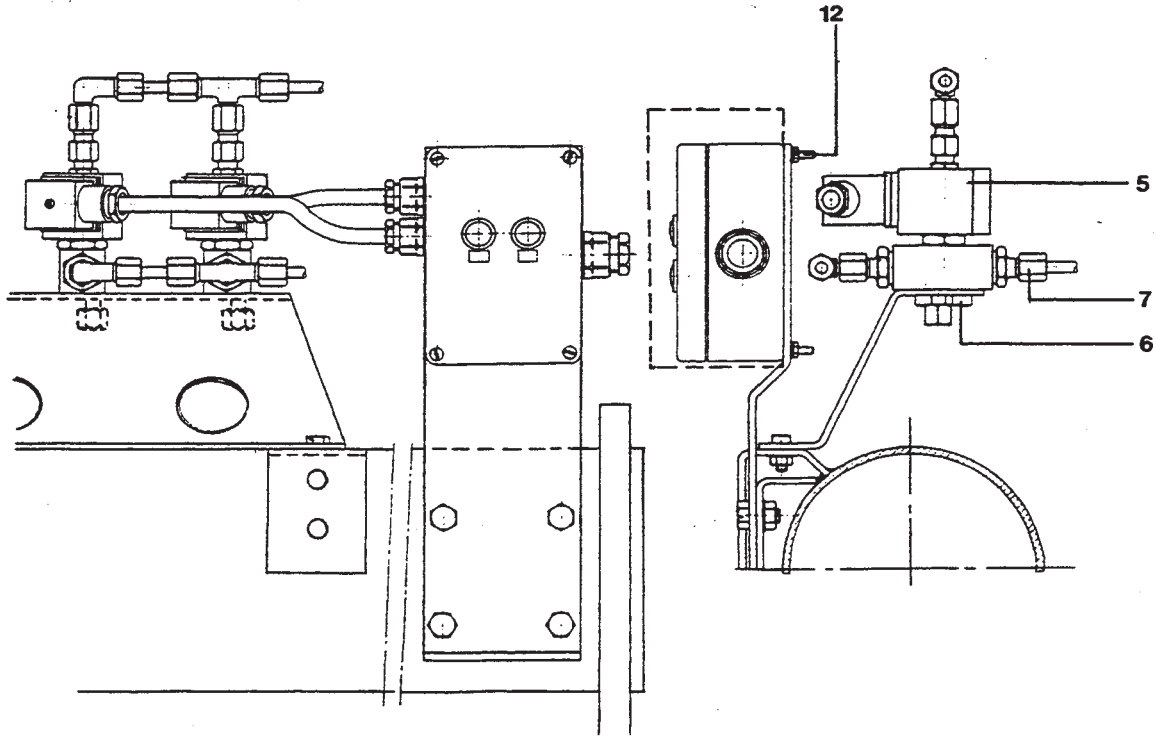


Fig. 3-6 RC11-H6

Item	Description	Dims.	Ref. No.	Qty	Remarks
Fig. RC11-H7 BEARING COVER					
1	BEARING COVER ASSY	RC11SA	*	1	
1.1	BEARING COVER	RC11A	*	1	
1.3	BEARING BUSH	90x96x105	1146290	1	
4	BRONZE THRUST RING	96x125x9	1168969	1	

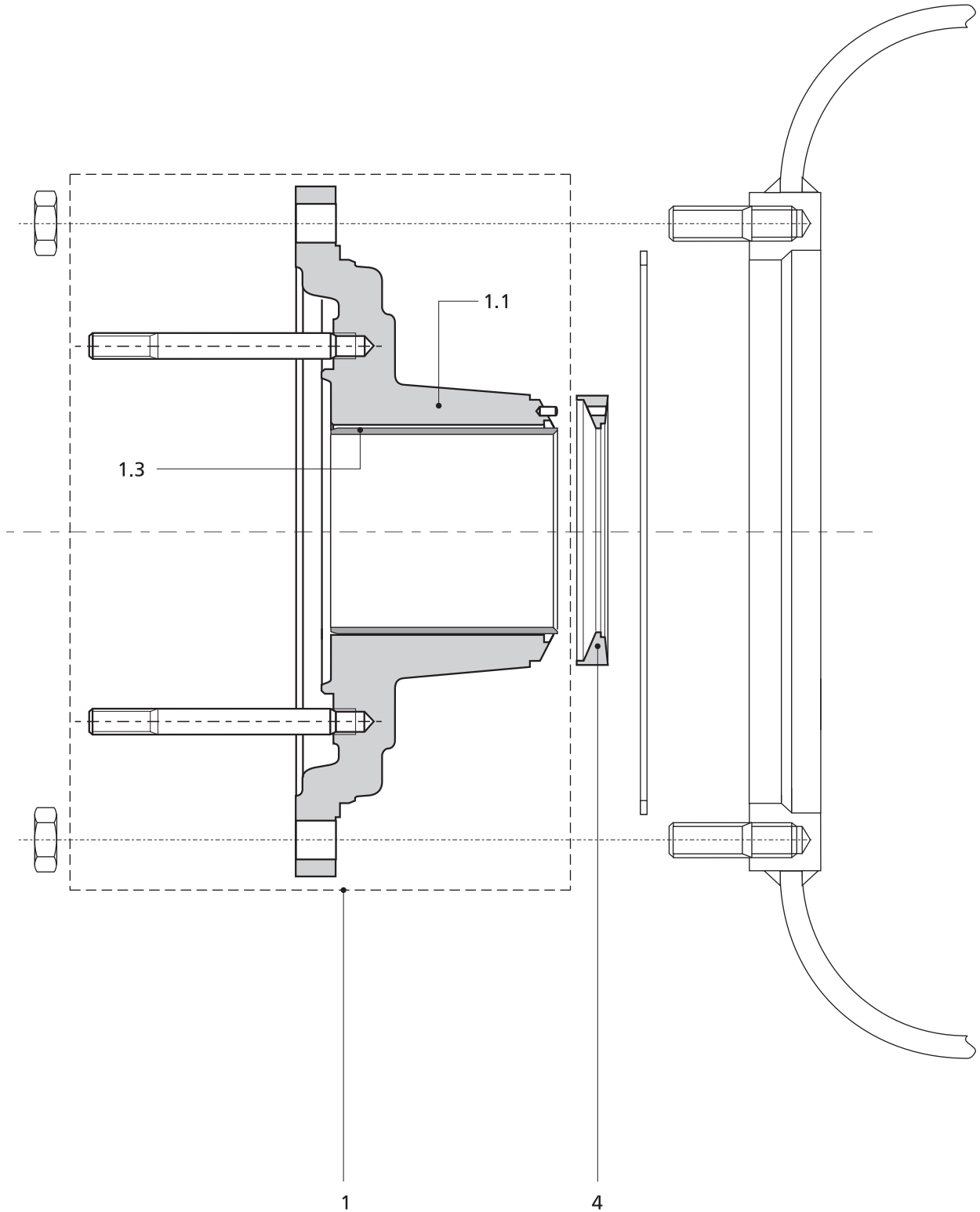


Fig. 3-7 RC11-H7

Item	Description	Dims.	Ref. No.	Qty	Remarks
Fig. RC11-H8 CRANKSHAFT					
1Aa	CRANKSHAFT	E-RC211S	*	1	
1Ab	DITTO K-RC211S (WITH APPROVAL)	K-RC211S	*	1	
1Ba	CRANKSHAFT	E-RC311S	*	1	
1Bb	DITTO K-RC311S (WITH APPROVAL)	K-RC311S	*	1	
1Ca	CRANKSHAFT	E-RC411S	*	1	
1Cb	DITTO K-RC411S (WITH APPROVAL)	K-RC411S	*	1	
1Da	CRANKSHAFT	E-RC611S	*	1	
1Db	DITTO K-RC611S (WITH APPROVAL)	K-RC611S	*	1	
1Ea	CRANKSHAFT	E-RC911S	*	1	
1Eb	DITTO K-RC911S (WITH APPROVAL)	K-RC911S	*	1	
1Fa	CRANKSHAFT	E-RC1211S	*	1	
1Fb	DITTO K-RC1211S (WITH APPROVAL)	K-RC1211S	*	1	
1.8	STEEL THRUST RING	100x120x8s	*	1	

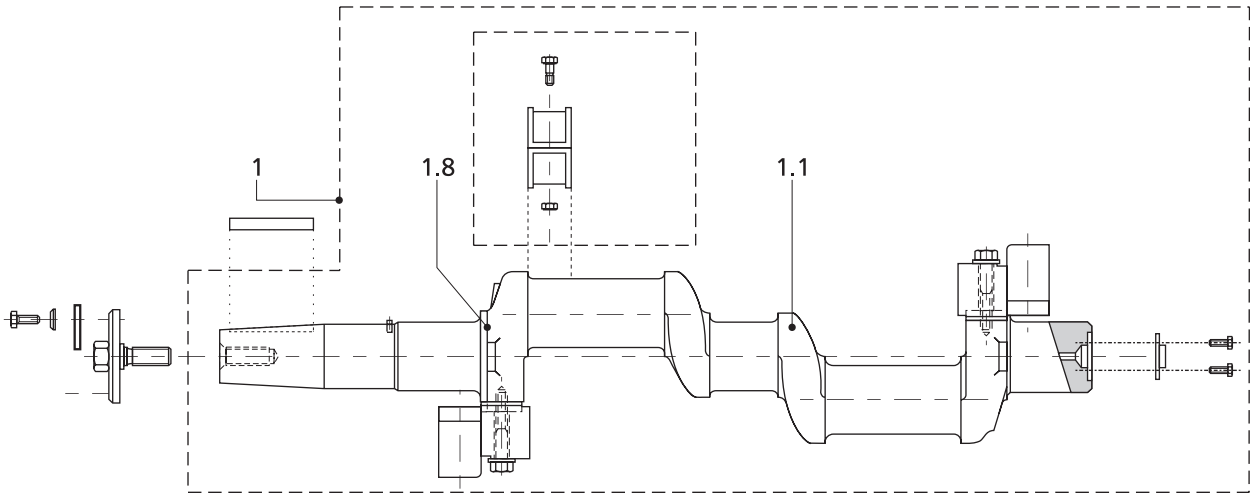


Fig. 3-8 RC11-H8

Item	Description	Dims.	Ref. No.	Qty	Remarks
Fig. RC11-H9 INTERMEDIATE BEARING					
3.3	CONNECTING ROD BOLT	MF16	0111810	4	
3.4	FLAT WASHER	M16	1113801	4	
3.5	HEXAGON NUT	M16	0115810	4	

Fig. 3-9 RC11-H9

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