



Parts Manual

Proportioning Unit

novaG - V

Issue 2.4 - 31/10/2025

Ref. NR-00007-ENG



Before installing the unit and starting it up, carefully read all the technical and safety documentation included in this manual. Pay special attention to the information to know and understand the handling and the conditions of use of the unit. All of the information is aimed at enhancing User Safety and avoiding possible breakdowns derived from the incorrect use of the unit.



WARRANTY

HI-TECH SPRAY EQUIPMENT, S. A. (hereinafter "HI-TECH") grants this Limited Guarantee to the original buyer (hereinafter the "Client") for the unit and the original accessories given with the unit (hereinafter the "Product") against any fault in the design, materials or manufacture of the Product at the time of the first purchase by the user and for a duration of two (2) years thereafter, except in the case of hoses and TSU's, which will have a warranty period of one (1) year. Additionally, for any other product manufactured by external suppliers, the warranty period will be as specified by the manufacturer.

If during the guarantee period and under normal conditions of use, the Product should fail to work correctly due to defects of design, material or manufacture, the authorised distributor of the country where the HI-TECH Product or technical assistance service has been purchased shall repair or replace the Product in accordance with what is established in the following:

CONDITIONS

- a) The validity of this guarantee will be subject to the presentation of the original invoice issued by the HI-TECH authorised distributor for the sale of the Product along with the Product handed over for repair or replacement, which must show the date of purchase and the serial number. HI-TECH reserves the right to refuse to give the guarantee service when the indicated data fail to appear on the invoice or have been modified after the purchase of the Product.
- b) The repaired or replaced Product will continue to maintain the original guarantee for the time remaining until the end of the guarantee or for three (3) months from the repair date, if the remaining period of the original guarantee were shorter.
- c) This guarantee will not be applied to the faults in the Product caused by its faulty installation, the natural wear and tear of the components, any use other than that considered normal for this Product or which should fail to strictly comply with the instructions of use provided by HI-TECH; due to accident, carelessness, adjustments, alterations or modifications of the Product not authorised by HI-TECH or due to the use of accessories, heating devices, pumping equipment and/or dispensers that have not been approved or manufactured by HI-TECH.
- d) The guarantee applicable to the components and accessories forming part of the Product and which have not been made by HI-TECH will be limited to the guarantee offered by the original manufacturer thereof.

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The restrictions on the guarantee suppose no limitation on the legal rights of the consumer established in applicable national legislation, nor do they affect any rights derived from the bargain and sale agreement between the consumer and supplier.



All information provided in this manual has been included in the confidence that it is true, although it does not constitute any responsibility or implicit or explicit guarantee. HI-TECH reserves the right at any time and without prior warning to make all improvements and modifications necessary to this manual, in order to rectify any possible typographical errors, increase the information contained or insert the changes caused to the characteristics and performance of the unit.

SAFETY AND HANDLING

The equipment described in this manual has been designed and manufactured in compliance with the following European Directives, following as application guide the harmonized standards detailed and in conformity with the relevant UK Statutory Instruments (and their amendments):

2006/42/EC Machinery Directive

2014/35/EU Low Voltage Directive

2014/30/EU EMC Directive

2011/65/EU RoHS Directive with amendment 2015/863

2012/19/EU Directive on waste electrical and electronic equipment

Standards used:

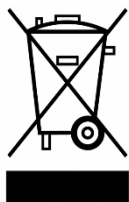
EN ISO 12100:2010

EN 60204-1:2018

EN IEC 61000-6-4:2019

EN IEC 61000-6-2:2019

EN IEC 63000:2018



Electrical products cannot be thrown out with the rubbish. They must be taken to a dedicated collection point for an environmentally sound disposal in accordance with local regulations. You must contact your local collective or retailer for information about recycling. Before leaving WEEE at appropriate collection facilities, batteries must be removed and disposed of separately for proper recycling. The packaging materials are recyclable. Dispose of packaging materials in an environmentally sound manner and place them at the disposal of recycling sectors.

TRANSPORT AND STORAGE

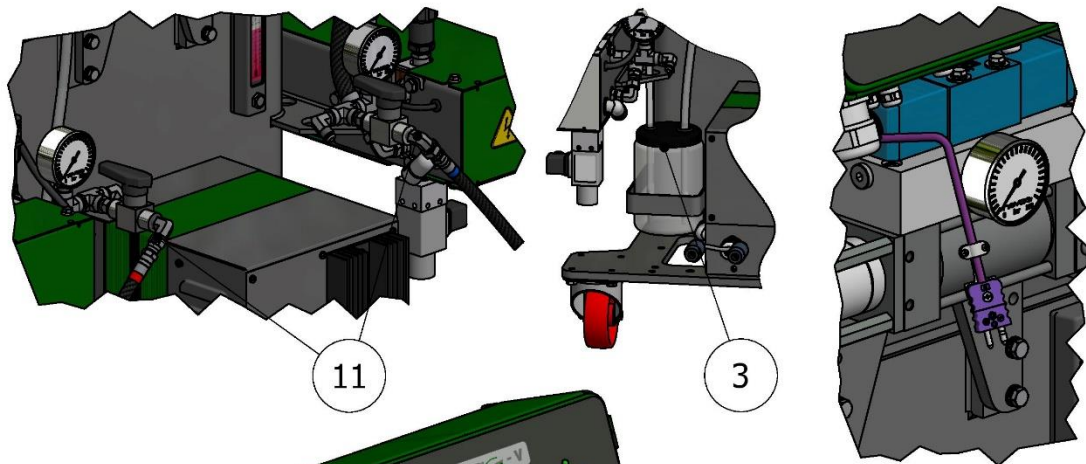
Proper precautions must be taken so that the equipment can withstand the effects of transport and storage temperatures between -25°C and $+55^{\circ}\text{C}$ or up to $+70^{\circ}\text{C}$ for short periods that do not exceed 24 hours. Also, appropriate means to prevent damage from moisture, vibrations or shocks must be foreseen.



PROPORTIONING UNIT NOVAG - V MODEL

RECIRCULATION KIT
(OPTIONAL)

DETAIL
LUBE RESERVOIR



DETAIL
TCS CONECTOR

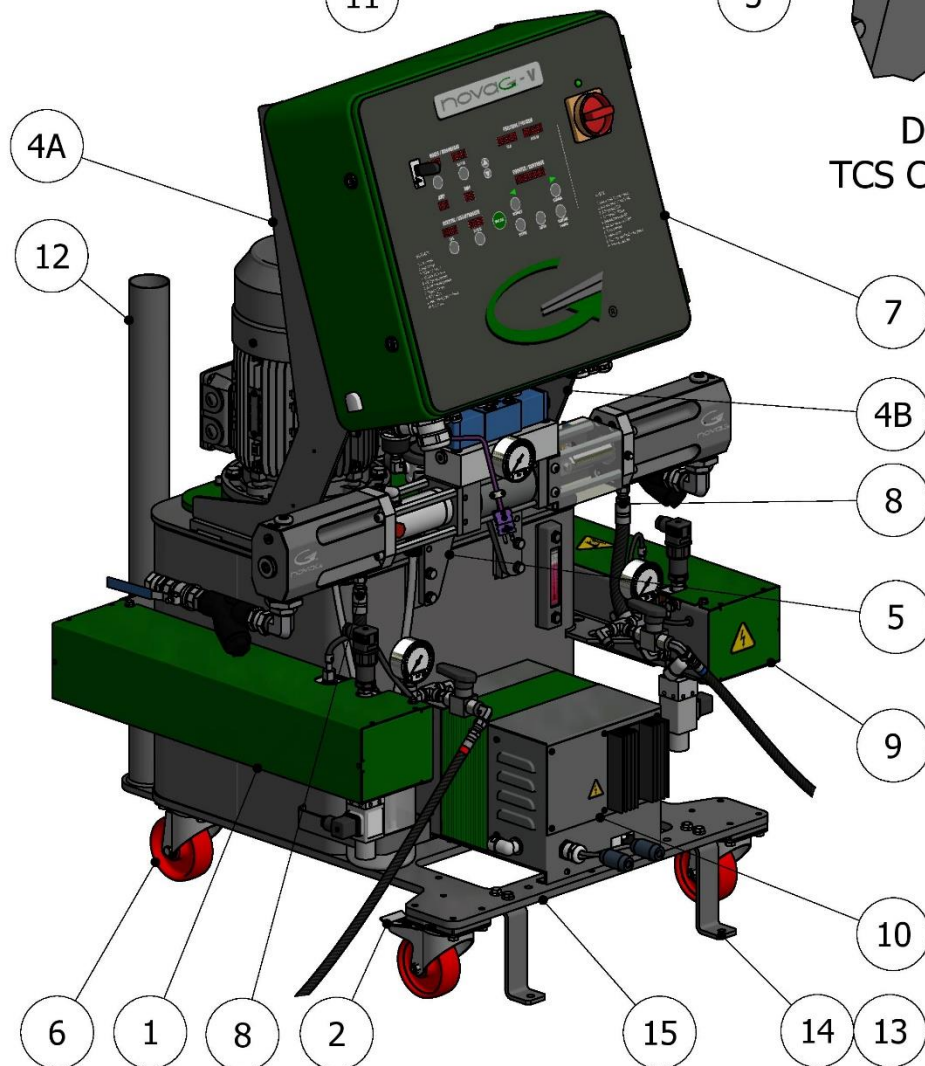


Figure 1. Proportioning Unit novaG – V Model

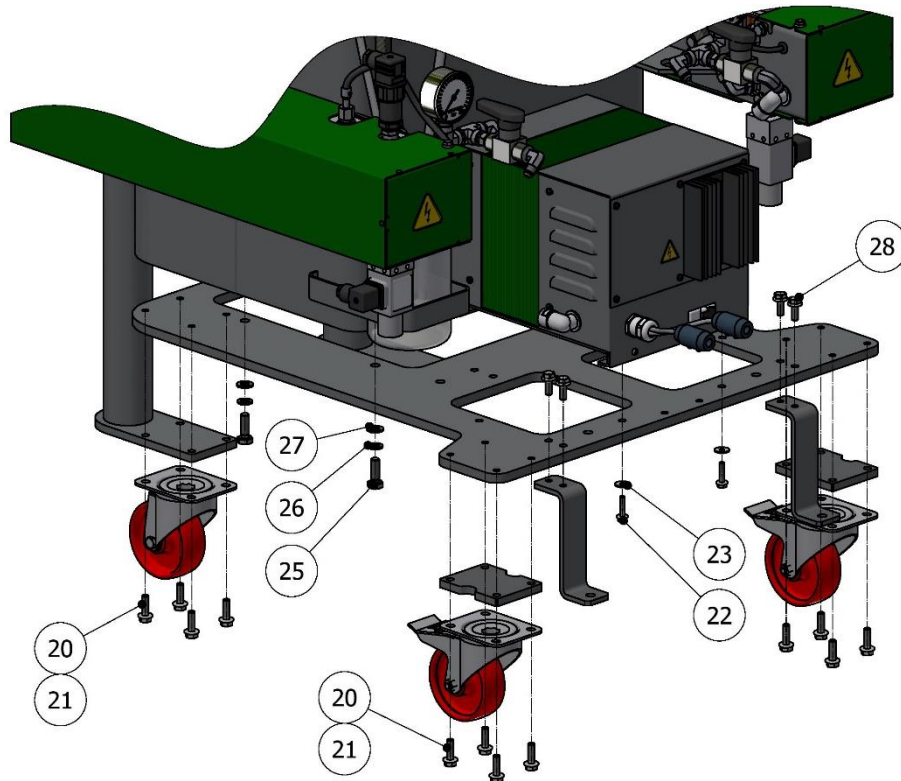


Figure 2. Generic Fixings Detail, Unit novaG – V Model

Table 1. Proportioning Unit novaG – V Model, Parts List

Item	Description	Part Number	Qty.
1	A Primary Heater	See Table 3	1
2	Front Wheel With Brake	MQ-01002	2
3	Lube Reservoir	MQ-01009-01	1
4A	Electrical Console LH Support	MQ-03003-00	1
4B	Electrical Console RH Support	MQ-03004-00	1
5	Pump Line Support	MQ-03000-00	1
6	Back Wheel	MQ-01016	2
7	Electrical Console Assy.	See Table 7	1
8	Hose Pump/Heater	MA-00180	2
9	R Primary Heater	See Table 5	1
10	Hose Transformer	See Table 2	1
11	Recirculation KIT (optional)	KT-00038	1



Item	Description	Part Number	Qty.
12	Transfer Pump Bracket (optional)	NMQ-01015-00	2
13	"Z" Bracket without Transfer Pump Bracket (optional)	NMQ-01017	2
14	"Z" Bracket with Transfer Pump Bracket (optional)	NMQ-02014	2
15	Plate	MQ-01001-05	1
16			
17			
18			
19			
20	Screw Hex. Flange (without transfer pumps bracket)	TN-00507	16
21	Hex. Screw (with transfer pumps support)	TN-00146	16
22	Screw Hex. Flange	TN-00505	4
23	Washer	TN-00395	4
24			
25	Hex. Screw	TN-00129	4
26	Lock Washer Spring	TN-00087	4
27	Flat Washer	TN-00162	4
28	Screw Hex. Flange	TN-00507	4

Table 2. Hose Transformer Reference List

Part Number	Description
NEL-00127-15	Hose Transformer 3PE~400V Version



Table 3. A-Primary Tube Heater Reference List

(see pg.34)

Part Number		Description
NCL-01001-00AT	400V	"A" ISO Heater 8000 W with Transducer / 250 bar – 3500 psi / 400V
NCL-01001-00BT	230V	"A" ISO Heater 8000 W with Transducer / 250 bar – 3500 psi / 230V

Table 4. A-Primary Round Heater Reference List

(see pg.40)

Part Number		Description
NCL-23005-00BT	400V	"A" ISO Heater 9000 W with Transducer / 250 bar – 3500 psi / 400V
NCL-23005-00FT	230V	"A" ISO Heater 9000 W with Transducer / 250 bar – 3500 psi / 230V

Table 5. R-Primary Tube Heater Reference List

(see pg.37)

Part Number		Description
NCL-01002-00AT	400V	"R" POL Heater 8000 W with Transducer / 250 bar – 3500 psi / 400V
NCL-01002-00BT	230V	"R" POL Heater 8000 W with Transducer / 250 bar – 3500 psi / 230V

Table 6. R-Primary Round Heater Reference List

(see pg.40)

Part Number		Description
NCL-23006-00BT	400V	"R" POL Heater 9000 W with Transducer / 250 bar – 3500 psi / 400V
NCL-23006-00FT	230V	"R" POL Heater 9000 W with Transducer / 250 bar – 3500 psi / 230V



Table 7. Electrical Console Reference List

Part Number	Description
EL-00245-03	Electrical Console Assy. (3PE~400V, with III phases Motor & Logger)



ELECTRICAL CONSOLE

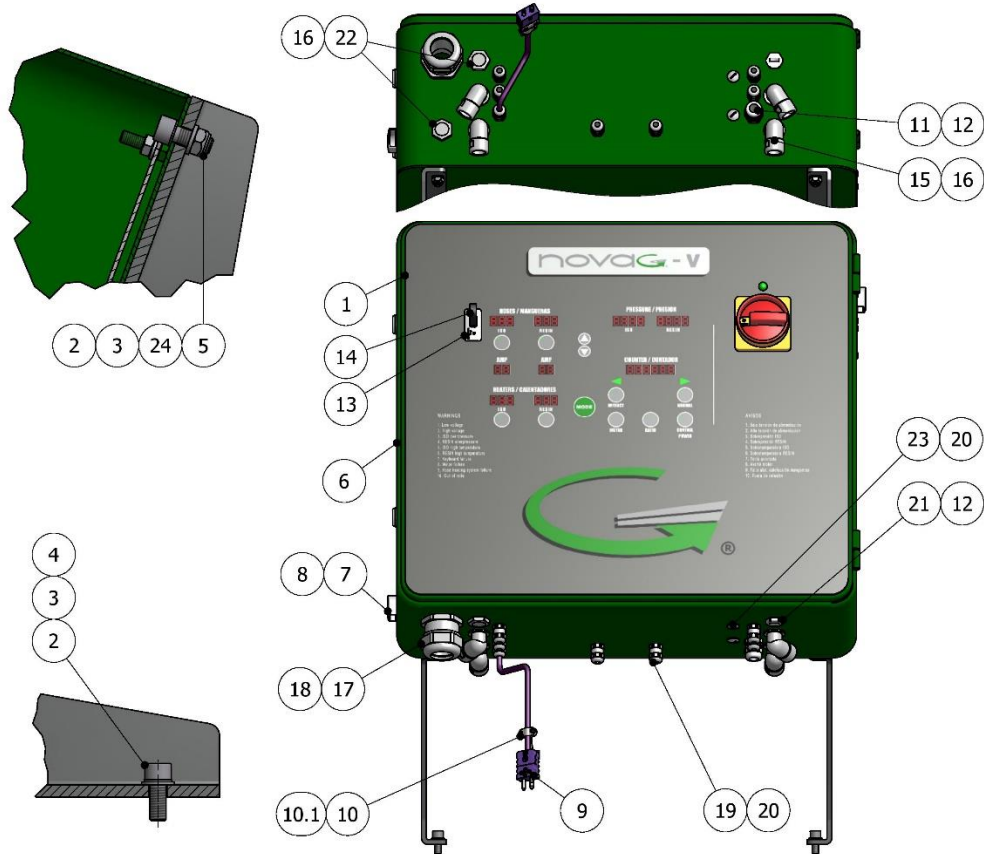


Figure 3. Electrical Console novaG - V



Table 8. Electrical Console novaG - V Model, Parts List

Item	Description	Part Number	Qty.
1	Bezel & Electronic Circuit	See Table 9	1
2	Screw	TN-00176	8
3	AET Washer	TN-00038	8
4	Washer	TN-00119	4
5	Lock Nut	TN-00283	4
6	Console Assy	EL-00246	1
7	Air Vent	EL-00158-05	2
8	Nut (included in POS.7)		
9	Male Connector	EL-00096-84	1
10	Staple	EL-00096-86	1
10.1			
11	Connector	EL-00088-05	1
12	Nut	EL-00090-06	2
13	USB Port, Included in Ref. 1 (optional)	See Table 9	1
14	Massive Storage 4 GB, included in Ref. 1 (optional)	See Table 9	1
15	Elbow	EL-00087-01	4
16	Nut	EL-00090-01	6
17	Connector	EL-00088-04	1
18	Nut	EL-00090-05	1
19	Connector	EL-00088-00	7
20	Nut	EL-00090-00	9
21	Plug	EL-00088-08	1
22	Plug	EL-00088-03	2
23	Plug	EL-00183	2
24	Lock Washer	TN-00028	4

**Table 9. Bezel Components Assembly**

	3PE~400V 50/60 Hz With Logger EL-00248-01
Bezel 1x	EL-00248
Circuit 1x	EL-00019-07
Switch 1x	EL-00107-18
Command Switch 1x	EL-00107-19
Divider 9x	EL-00019-03
USB Port 1x	EL-00078-04
Mass. Storage 1x	NEL-00078-05



HYDRAULIC MANIFOLD WITH MOTOR 3PE~400V/230V 50/60Hz (hyd. Pump 28 cc. compatible)

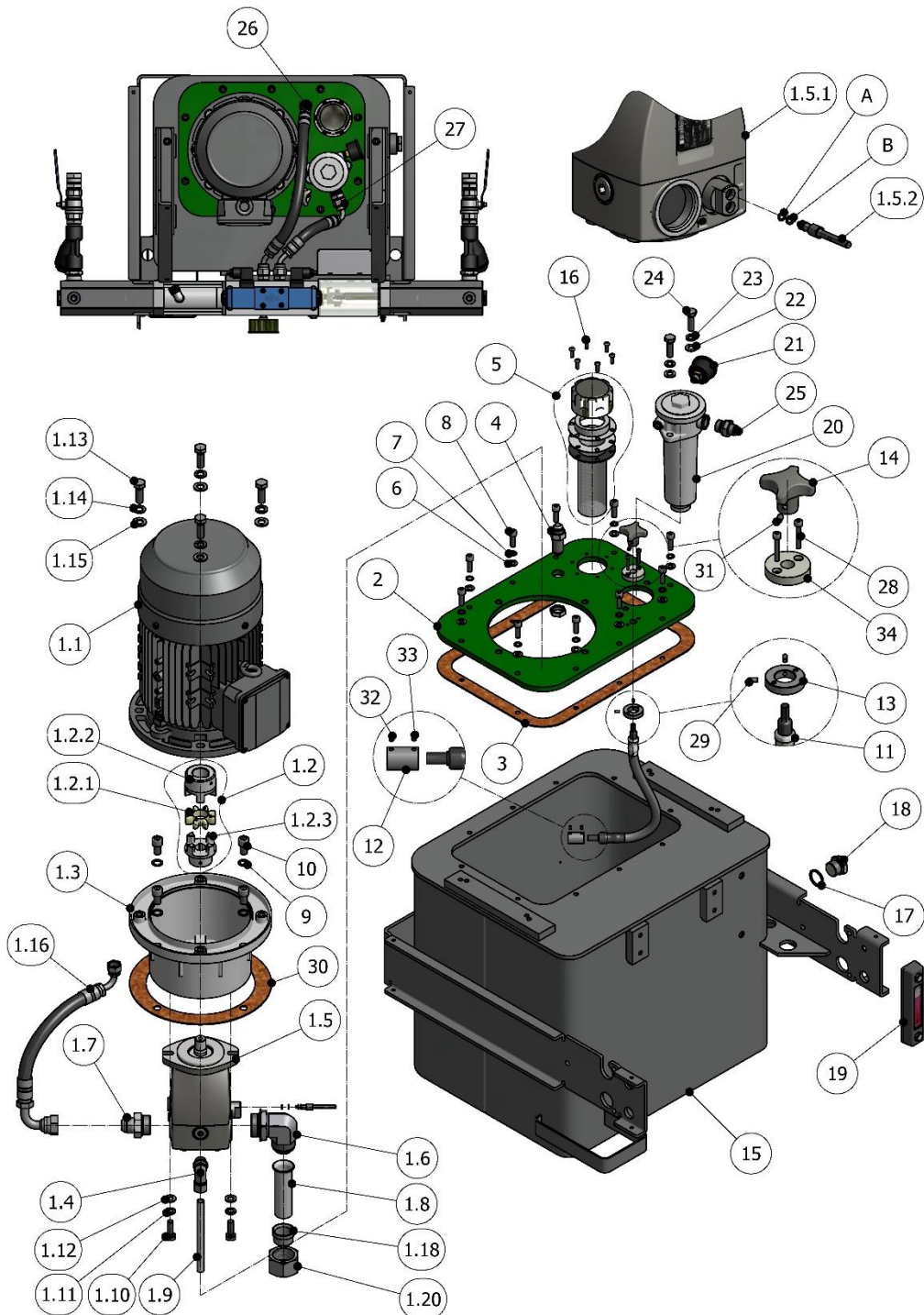


Figure 4. Hydr. Manifold 3PE~400V/230V 50/60Hz (hyd. Pump 28 cc compatible), Exploded View



Table 10. Hydr. Manifold with Motor 3PE~400V/230V 50/60Hz (28cc compatible), Parts List

Item.	Description	Part Number	Qty.
1	Motor/Pump Line Assembly	-	1
1.1	Electric Motor 5.5Kw 50/60Hz	NEL-00138-01	1
1.2	Coupler Assembly	HI-00046-00	1
1.2.1	Alignment Spider	HI-00006-01	1
1.2.2	Motor Shaft Coupling	HI-00006-02	1
1.2.3	Pump Shaft Coupling	HI-00046-01	1
1.3	Bell Housing	HI-00139-00	1
1.4	Elbow 90°	RA-00494	1
1.5	HYD Pump Assembly 28 cc. (items 1.5.1 & 1.5.2)	HI-00238-NV	1
1.5.1	HYD Pump 28 cc (included in item 1.5)	HI-00238	1
	"A" Anti Extrusion Ring	OR-	1
	"B" O-Ring	OR	1
1.5.2	18/28 cc Regulating rod (included in item 1.5)	HI-00149-03	1
1.6	Elbow 90°	RA-00027	1
	Ferrule	RA-00029	
	Nut	RA-00028	
1.7	Nipple	RA-00500	1
1.8	Suction Pipe (18/28 cc)	HI-00194	1
1.9	Drain Pump Pipe (18/28 cc)	HI-00156	1
1.10	Hex. Cap Screw	TN-00129	2
1.11	Lock Washer	TN-00087	2
1.12	Washer	TN-00162	2
1.13	Hex. Cap Screw	TN-00199	4
1.14	Lock Washer	TN-00039	4
1.15	Washer	TN-00040	4
1.16	Pressure Hose (18/28 cc)	HI-00157	1
1.17			
1.18	Ferule	RA-00029	1
1.19			
1.20	Nut	RA-00028	1



Item.	Description	Part Number	Qty.
2	Reservoir Cover Plate	HI-00163-00	1
3	Reservoir Cover Plate Gasket	HI-00164	1
4	Bulkhead Union	RA-00172	1
5	HYD-Oil Filler	HI-00002	1
6	Washer	TN-00119	10
7	Lock Washer	TN-00038	10
8	Screw	TN-00027	10
9	AET Washer	TN-00015	4
10	Screw	TN-00177	4
11	Flexible Extension	RA-00473	1
12	Coupler Extension to Pump	RA-00474	1
13	Support Extension to Cover	RA-00475	1
14	Handle	HI-00044-01	1
15	Hydraulic Tank	HI-00166-00	1
16	ULS Screw	TN-00166	6
17	Metal O-Ring	OR-00082	1
18	Hex.Cap Plug	RA-00022	1
19	Thermometer and Fluid Level Gauge	HI-00001	1
20	Hydraulic Filter	HI-00123-00	1
21	Pressure Gauge (included in item 20)	HI-00123-03	1
22	Washer	TN-00162	2
23	Lock Washer	TN-00087	2
24	Hex. Cap Screw	TN-00163	2
25	Nipple	RA-00316	1
26	Hyd. Pressure Hose	HI-00158	1
27	Hyd. Return Hose	HI-00159	1
28	Allen Screw	TN-00117	2
29	Screw	TN-00436	2
30	Bell Gasket	HI-00160	1
31	Screw	TN-00437	1
32	Screw	TN-00099	2
33	Screw	TN-00246	2
34	Extension Guide	RA-00475-01	1



Table 11. Hydr. Manifold with Motor 3PE~400V 50/60Hz (28cc discontinued), Parts List

Item.	Description	Part Number	Qty.
1	Motor/Pump Line Assembly	-	1
1.1	Electric Motor 5.5Kw 50/60Hz	NEL-00138-01	1
1.2	Coupler Assembly	HI-00006-00	1
1.2.1	Alignment Spider	HI-00006-01	1
1.2.2	Motor Shaft Coupling	HI-00006-02	1
1.2.3	Pump Shaft Coupling	HI-00006-03	1
1.3	Bell Housing	NHI-00086	1
1.4	Elbow	RA-00494	1
1.5	HYD Pump Assembly 28 cc with Regulator	HI-00081-NV	1
1.5.A	28cc HYD Pump	HI-0008-00	1 (°)
1.5.1	Regulator Bolt (without rings and nut)	HI-00102-01	1 (°)
	Anti-Extrusion Ring (supplied with pump)	OR-	1 (@)
	O-Ring (supplied with pump)	OR-	1 (@)
1.6	SAE Pair Clamp	RA-00495-01	1
1.7	SAE Clamp Set		1
1.7.1	SAE Pair Clamp	RA-00266	1 (*)
1.7.2	Washer	TN-00162	4 (*)
1.7.3	Allen Screw	TN-00253	4 (*)
1.8	Suction Pipe	HI-00155-01	1
1.9	Drain Pump Pipe	HI-00156-01	1
1.10	O-Ring	OR-00083	1
1.11	Hose Pressure	HI-00172	1
1.12	Hex. Screw	TN-00060	2
1.13	Block Washer	TN-00039	2
1.14	Washer	TN-00040	2
1.15	Hex. Screw	TN-00060	4
1.16	Block Washer	TN-00039	4
1.17	Washer	TN-00040	4

(°) Parts included in item 1.5 ; (@) Parts included in item 1.5.A

(*) Quantities included in sub-assembly.



Item.	Description	Part Number	Qty.
1.18	Press. Ring	RA-00495-02	1
1.19	Hex. Nut	RA-00495-03	1
1.20	Elbow for SAE Clamp	RA-00495-04	1
1.21	O-Ring	OR-00029	1
1.22	Washer	TN-00039	4
1.23	Allen Screw	TN-00254	4
2	Reservoir Cover Plate	HI-00163-01	1
3	Reservoir Cover Plate Gasket	HI-00164	1
4	Bulkhead Union	RA-00172	1
5	HYD-Oil Filler	HI-00002	1
6	Washer	TN-00119	10
7	Lock Washer	TN-00038	10
8	Screw	TN-00027	10
9	AET Washer	TN-00015	4
10	Screw	TN-00177	4
11	Flexible Extension	RA-00473	1
12	Coupler Extension to Pump	RA-00474-01	1
13	Support Extension to Cover	RA-00475	1
14	Handle	HI-00044-01	1
15	Hydraulic Tank	HI-00166-00	1
16	ULS Screw	TN-00166	6
17	Metal O-Ring	OR-00082	1
18	Hex.Cap Plug	RA-00022	1
19	Thermometer and Fluid Level Gauge	HI-00001	1
20	Hydraulic Filter	HI-00123-00	1
21	Pressure Gauge (included in item 20)	HI-00123-03	1
22	Washer	TN-00162	2
23	Lock Washer	TN-00087	2
24	Hex. Cap Screw	TN-00163	2
25	Nipple	RA-00316	1
26	Hyd. Pressure Hose	HI-00158	1
27	Hyd. Return Hose	HI-00159	1



Item.	Description	Part Number	Qty.
28	Allen Screw	TN-00117	2
29	Screw	TN-00436	2
30	Bell Gasket	HI-00160	1
31	Screw	TN-00437	2
32	Screw	TN-00099	2
33	Screw	TN-00246	2
34	Extension Guide	RA-00475-01	1
35	Remote Control Extension	HI-00044-02	1
36	Elbow	RA-00416	1



REVERSING SWITCH & PUMP LINE SUPPORT

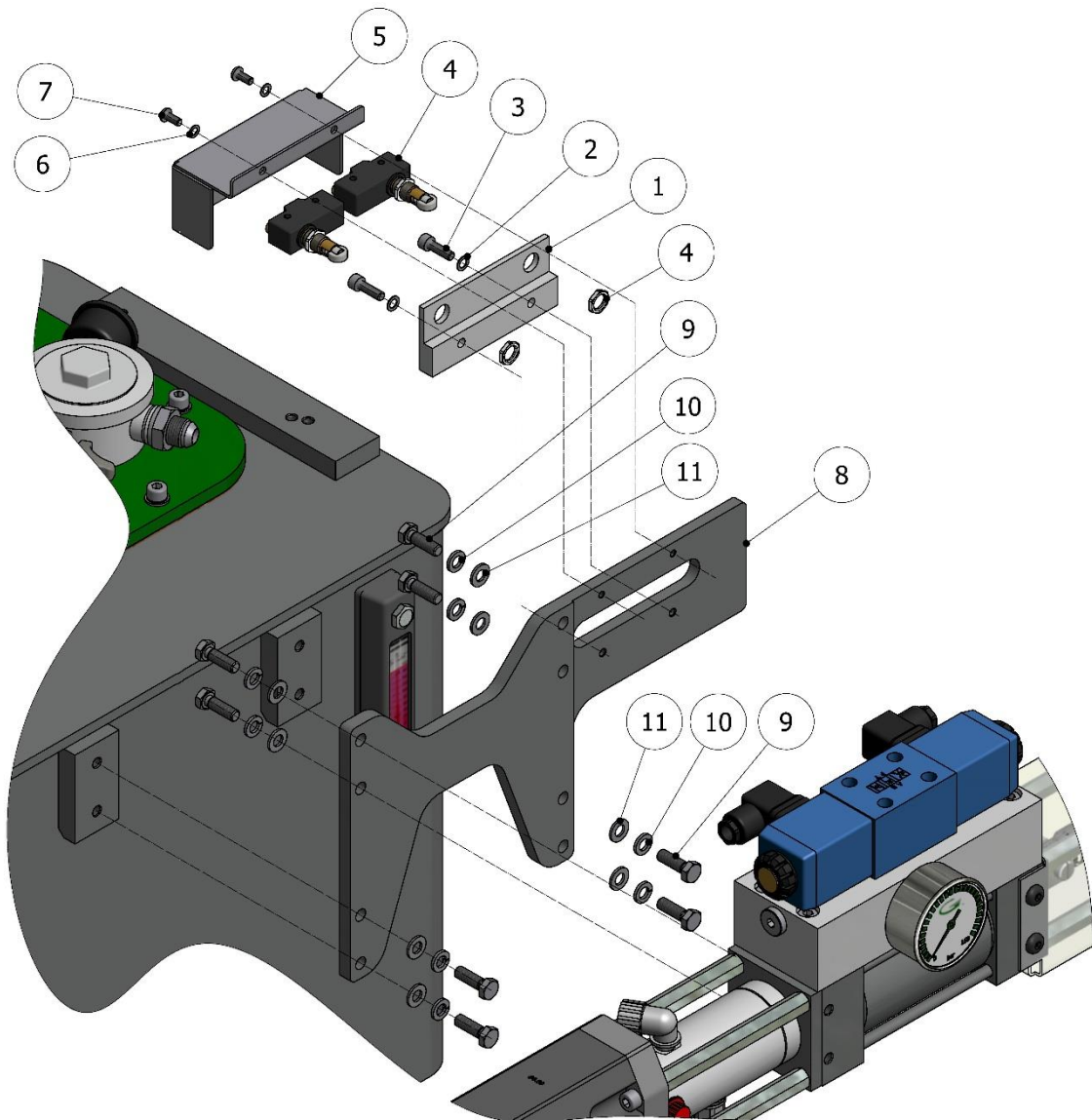


Figure 6. Reversing Switch & Pump Line Support, Exploded View

**Table 12. Reversing Switch & Pump Line Support, Parts List**

Item	Description	Part Number	Qty.
1	Reversing Switch Support	MQ-01005	1
2	AET Washer	TN-00048	2
3	Socket Head Cap Screw	TN-00026	2
4	Pump Reversing Switch (with 2 nuts)	EL-00020	2
5	Reversing Switch Cover	MQ-01006	1
6	AET Washer	TN-00017	2
7	ULS Screw	TN-00159	2
8	Pump Line Support	MQ-03000-00	1
9	Hex Head Cap Screw	TN-00146	4+4
10	Lock Washer	TN-00028	4+4
11	Washer	TN-00119	4+4



LUBE RESERVOIR HOSE ASSEMBLY

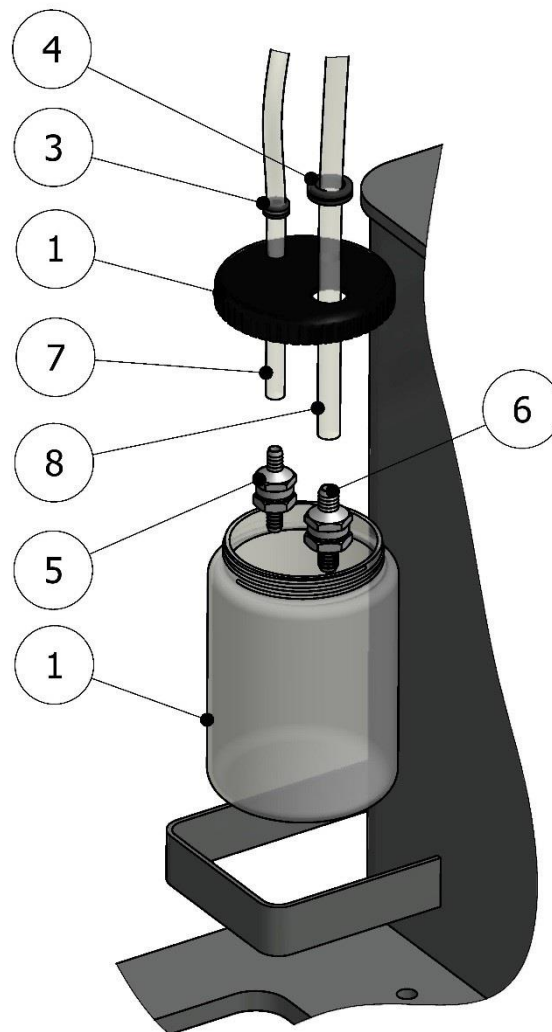


Figure 7. Lube Reservoir Hose Assembly, Exploded View

**Table 13. Lube Reservoir Hose Assembly, Parts List**

Item	Description	Part Number	Qty.
1	Lube Reservoir Bottle with Drilled Cap	MQ-01009-01	1
2			
3	Rubber Grommet	EL-00095-01	1
4	Rubber Grommet	EL-00095-03	1
5	Lube Reservoir Check Valve for Pipe 10x1	RA-00283	1
6	Lube Reservoir Check Valve for Pipe 12x1	RA-00068	1
7	Return Line	MA-00024	1
8	Supply Line	MA-00025	1



PUMP LINE ASSEMBLY

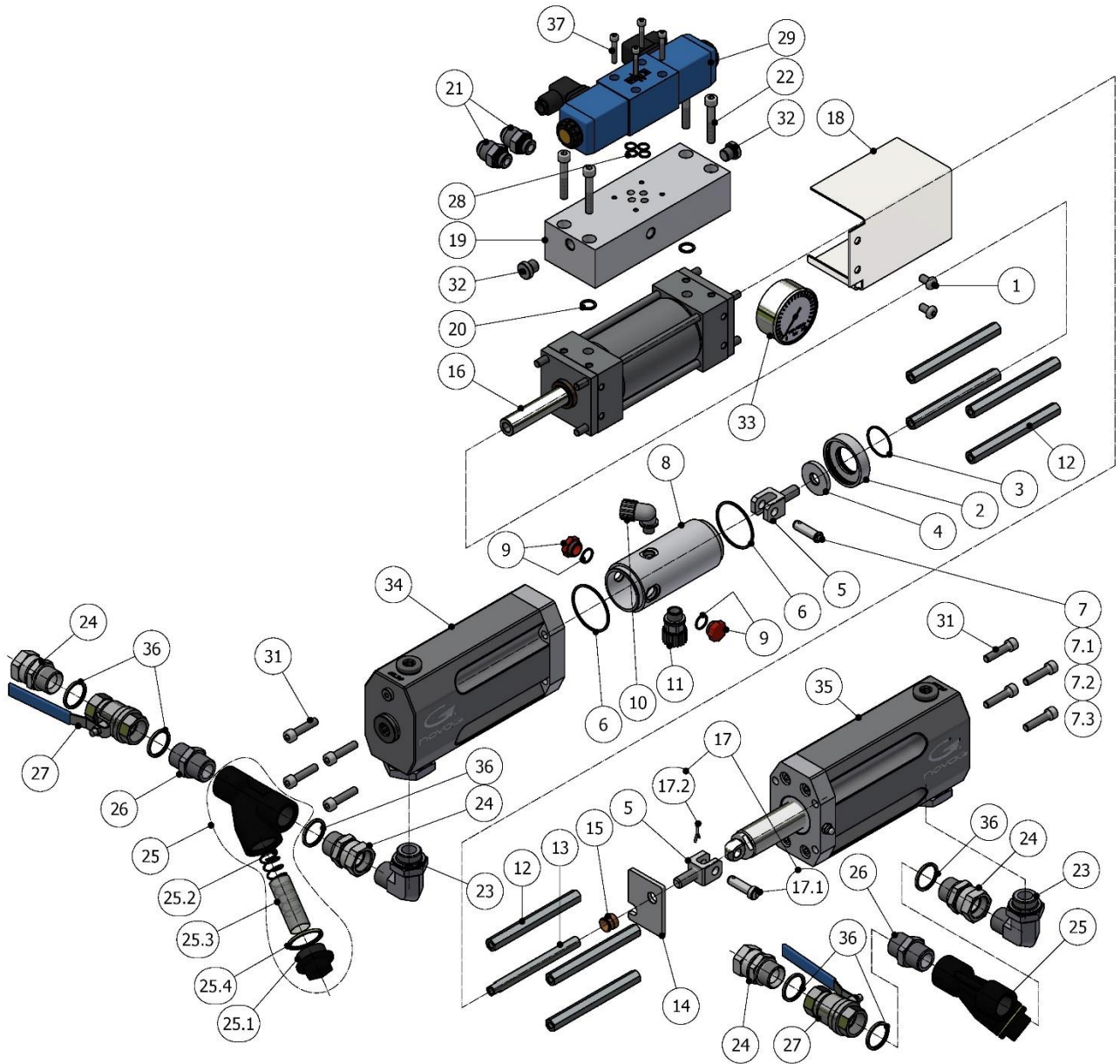


Figure 8. Pump Line Assembly, Exploded View



Table 14. Pump Line Assembly, Parts List

Item	Description	Part Number	Qty.
1	"ULS" Screw	TN-00135	2
2	Lube Cylinder Adapter Plate	PU-01021	1
3	O-Ring	OR-00021	1
4	Baffle	PU-01019	1
5	Hydraulic Cylinder Clevis	PU-01043	2
6	Lube Cylinder O-Ring	OR-00020	2
7	"A" Clevis Pin Assembly (Include item 7.1, 7.2 & 7.3)	PU-01044-00	1
7.1	Clevis Pin (included in item 7)	PU-01044-01M	1
7.2	Clevis Pin Clip (included in item 7)	TN-00136	1
7.3	Washer (included in item 7)	TN-00024	1
8	Lube Cylinder	PU-01018	1
9	Polyethylene Pipe Plug wit O-Ring	RA-00116	2
	O.Ring (included in Item 9)	OR-00025	1
10	Lube Cylinder Elbow	RA-00066	1
11	Lube Cylinder fitting	RA-00067	1
12	Proportioning Pump Spacer	PU-01025	7
13	Reversing Switch Pump Spacer	PU-01026	1
14	Reversing Switch Activate Plate	PU-01023	1
15	Bronze Bushing	PU-01022	1
16	Hydraulic Cylinder With Spacers	NHI-00101	1
17	"R" Clevis Pin Assembly (includes item 17.1 & 17.2)	PU-01045-00	1
17.1	"R" Clevis Pin	PU-01045-01	1
17.2	Pin	TN-00077	1
18	Activator Plate Cover	PU-01027	1
19	Hydraulic Manifold	MQ-01007	1
20	O-Ring	OR-00019	2
21	Hex nipple	RA-00062	2
22	Socket Head Cap Screw	TN-00090	4
23	Elbow	RA-00072	2
24	Swivel Union	RA-00073	4



Item	Description	Part Number	Qty.
25	Y-Strainer	RA-00074-00	2
25.1	Filter Plug	RA-00074-01	2
25.2	Filter Spring	SP-00017	2
25.3	Filter	RA-00074-03-30	2
25.4	Filter Gasket	OR-00061	2
26	Hex Nipple	RA-00143	2
27	Ball Valve	RA-00078	2
28	O-Ring	OR-00035	4
29	Directional valve	HI-00054	1
30			
31	Socket Head Cap Screw	TN-00245	8
32	Plug	RA-00013	2
33	Hydraulic Gauge	NHI-00078	1
34	"A" Proportioning Pump Assembly	See Table 15	1
35	"R" Proportioning Pump Assembly	See Table 15	1
36	Gasket	OR-00082	6
37	Screw	TN-00148	4

Table 15. Proportioning Pump Size, Parts

SIZE	Proportioning Pump Size	
	item 34 (ISO Pump)	item 35 (POL Pump)
1.20	NPU-06101-012G	NPU-06102-012G
0.80	NPU-06101-008G	NPU-06102-008G

Note: (*) The standard proportioning pump sizes are #1.20 & #0.80. Different sizes are available under order. For delivery time, please consult with marketing department.



HYDRAULIC CYLINDER WITH SPACERS

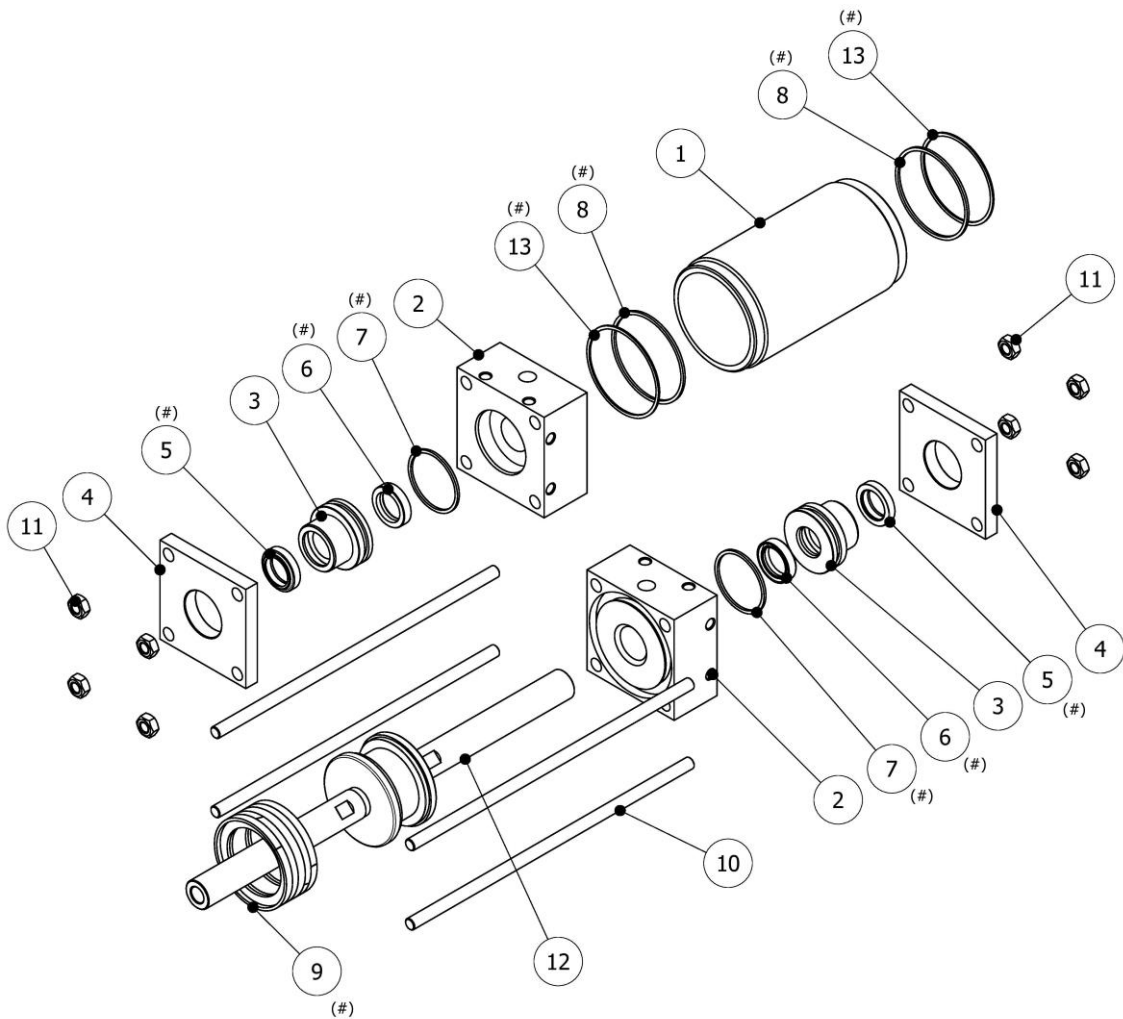


Figure 9. Hydraulic Cylinder with Spacers, Exploded View

N.B.: The indicated parts (#) are included in the repair seal kit KT-00010-01.



Table 16. Hydraulic Cylinder with Spacers, Parts List

Item	Description	Part Number	Qty.
1	Cylinder Body	NHI-00025-05	1
2	Port Block	NHI-00101-04	2
3	Rod Bushing	HI-00101-03	2
4	Front Plate	NHI-00025-02	2
5	Rod Wiper	OR-00095	2 (#)
6	Shaft Seal	OR-00096	2 (#)
7	O-Ring	OR-00039	2 (#)
8	O-Ring	OR-00040	2 (#)
9	Piston O-ring	OR-00041-00	1 (#)
10	Hydraulic Cylinder Tie Rod	NHI-00025-06	4
11	Nut (*)	TN-00029	8
12	Piston	HI-00101-01	1
13	O-Ring Anti Extrusion	OR-00063	2 (#)

() Only when the cylinder is supplied as a spare part. Not included in the Pump Line fitted in the machine.*

The indicated parts (#) are included in the repair seal kit KT-00010-01



“A” PROPORTIONING PUMP ASSEMBLY

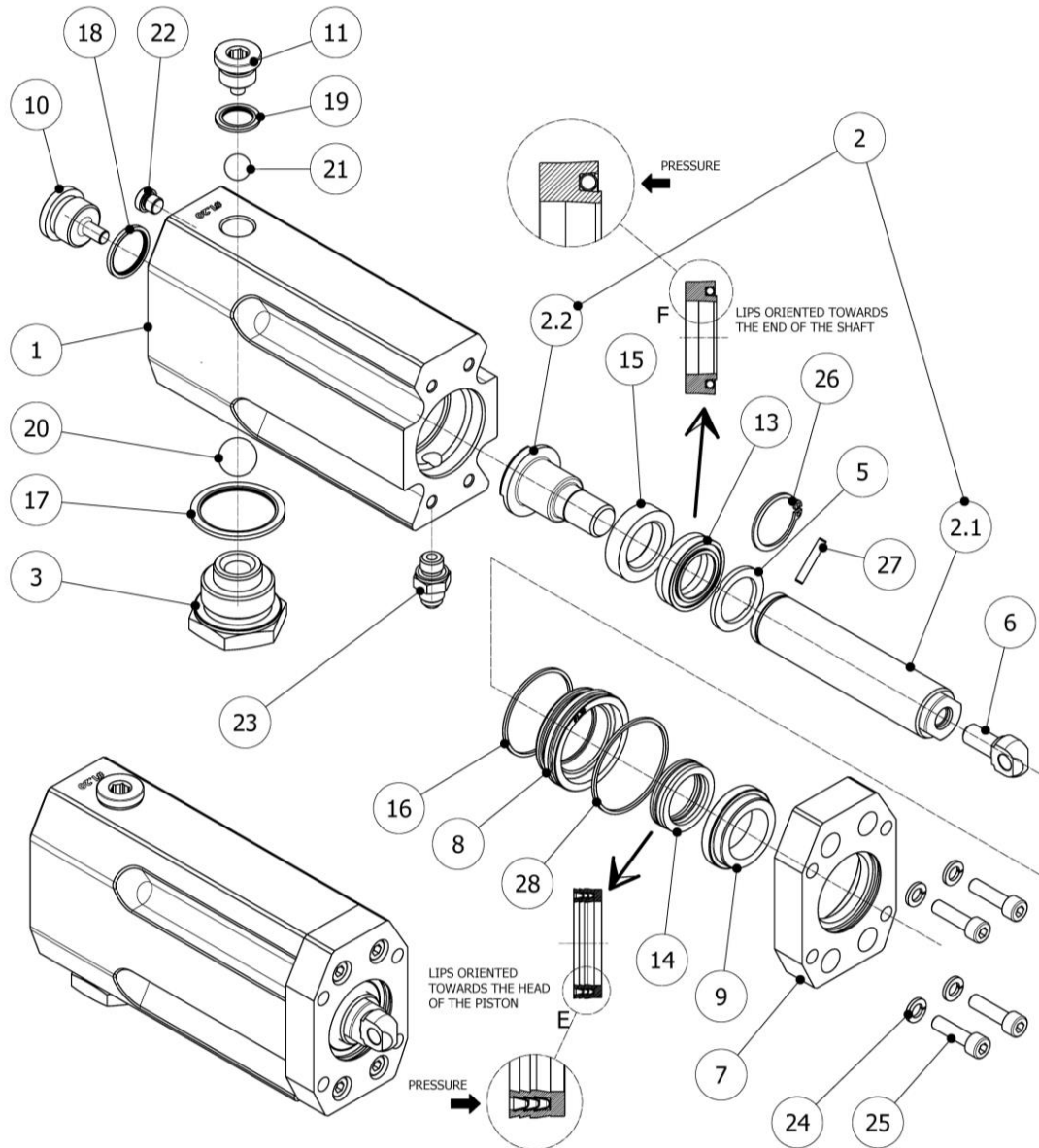


Figure 10. "A" Proportioning Pump Assembly, Exploded View

**Table 17. "A" Proportioning Pump Assembly, Parts List**

Item	Description	Part Number	Qty.
1	Body Pump with Check Valve Seat	See Table 18	1
2	Piston Rod Assembly (Only item. 2.1 y 2.2)	See Table 18	1
2.1	Piston Rod (Included in item 2)	See Table 18	1 (#)
2.2	Piston Head (Included in item 2)	See Table 18	1 (#)
3	Inlet Ball Seat Assembly	PU-01003-0J	1
4			
5	Piston Seal	See Table 18	1
6	Pump Clevis	PU-01042	1
7	Monobloc Flange Pump – ISO	NPU-06004	1
8	Seat Seal – ISO	See Table 18	1
9	Bearing ISO	See Table 19	1 (*)
10	Plug Side Pump	PU-01003-0E	1
11	Upper Plug Pump	PU-01003-0F	1
12			
13	Piston Seal	See Table 19	1 (*)
14	Cylinder Seal	See Table 19	1 (*)
15	Piston Guide	See Table 19	1 (*)
16	O-Ring	See Table 19	1 (*)
17	Metallic Ring	OR-00088	1
18	Metallic Ring	OR-00082	1
19	Metallic Ring	OR-00023	1
20	Lower Ball	TN-00013	1
21	Upper Ball	TN-00012	1
22	Plug	RA-00211	1
23	Output Elbow	RA-00145	1
24	Washer	TN-00028	4
25	Allen Screw	TN-00062	4
26	Seeger Ring	See Table 18	1
27	Pin	See Table 18	1
28	O-Ring	See Table 19	1 (*)

N.B.: The parts marked with (*), are included in the repair seal kit of "A" pump (see Table 20).

The parts marked with (#), are not supplied separately.



Table 18. "A" Proportioning Pump Assembly, Parts List

Pump	Item 1	Item 2 (2.1 + 2.2)	Item 2.1	Item 2.2
1.20	NPU-06001-012	PU-01006-012	PU-01007-012	PU-01008-012
0.80	NPU-06001-008	PU-01006-008	PU-01007-008	PU-01008-008

Pump	Item 5	Item 8	Item 26	Item 27
1.20	PU-01010-012	PU-06009-012G	TN-00070	TN-00086
0.80	PU-01010-008	PU-06009-008G	TN-00067	TN-00085

Table 19. Seals Monobloc "A" Pump

item	1.20 (#)	0.80
9	PU-06007-012	PU-06007-008
13	PU-01016-012A	PU-01016-008A
14	PU-01017-012G	PU-01017-008G
15	PU-01014-012A	PU-01014-008A
16	OR-00009	OR-00009
28	OR-00115	OR-00115

Table 20. Repair Seal Kit "A" Pump

Pump	Item
1.20	KT-00157
0.80	KT-00159

N.B :

The standard proportioning pumps sizes are #1.20 & #0.80. Different sizes are available under order. For delivery time, please consult with marketing department.

The Repair seal kit include the parts indicated () in the Table 17.*



“R” PROPORTIONING PUMP ASSEMBLY

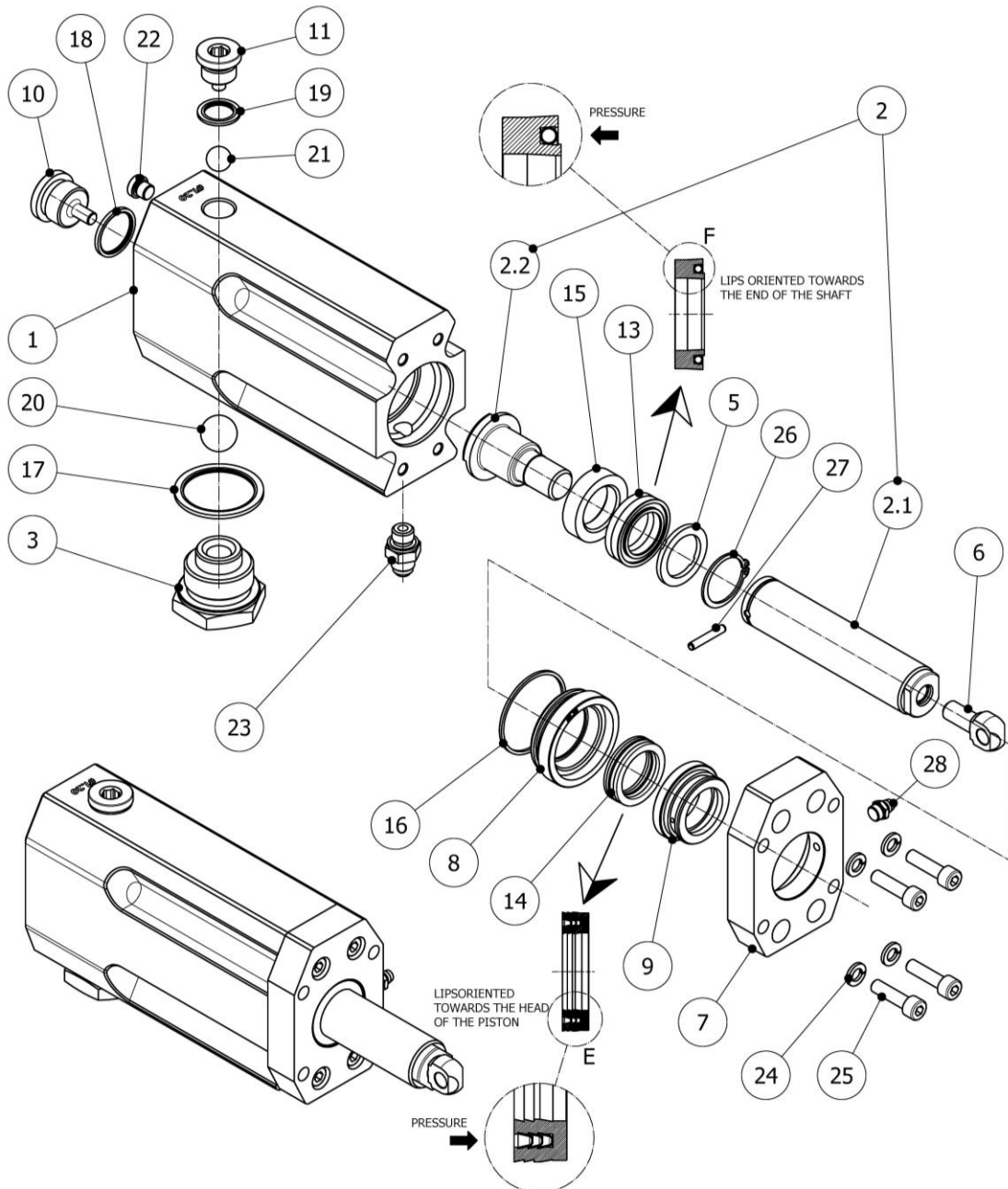


Figure 11. “R” Proportioning Pump Assembly, Exploded View



Table 21. "R" Proportioning Pump Assembly, Parts List

Item	Description	Part Number	Qty.
1	Body Pump with Check Valve Seat	See Table 22	1
2	Piston Rod Assembly (Only item. 2.1 y 2.2)	See Table 22	1
2.1	Piston Rod (Included in item 2)	See Table 22	1 (#)
2.2	Piston Head (Included in item 2)	See Table 22	1 (#)
3	Inlet Ball Seat Assembly	PU-01003-0J	1
4			
5	Piston Seal	See Table 22	1
6	Pump Clevis	PU-01042	1
7	Monobloc Flange Pump – POL	NPU-06005	1
8	Seat Seal – POL	See Table 22	1
9	Bearing ISO	See Table 23	1 (*)
10	Plug Side Pump	PU-01003-0E	1
11	Upper Plug Pump	PU-01003-0F	1
12			
13	Piston Seal	See Table 23	1 (*)
14	Cylinder Seal	See Table 23	1 (*)
15	Piston Guide	See Table 23	1 (*)
16	O-Ring	See Table 23	1 (*)
17	Metallic Ring	OR-00088	1
18	Metallic Ring	OR-00082	1
19	Metallic Ring	OR-00023	1
20	Lower Ball	TN-00013	1
21	Upper Ball	TN-00012	1
22	Plug	RA-00211	1
23	Exit Elbow	RA-00145	1
24	Washer	TN-00028	4
25	Allen Screw	TN-00062	4
26	Seeger Ring	See Table 22	1
27	Pin	See Table 22	1
28	Grease Fiting	TN-00073	1

N.B.: The parts marked with (*), are included in the repair seal kit of "R" pump (see Table 24).

The parts marked with (#), are not supplied separately.



Table 22. "R" Proportioning Pump Assembly, Parts List

Pump	Item 1	Item 2 (2.1 + 2.2)	Item 2.1	Item 2.2
1.20)	NPU-06001-012	PU-01006-012	PU-01007-012	PU-01008-012
0.80	NPU-06001-008	PU-01006-008	PU-01007-008	PU-01008-008

Pump	Item 5	Item 8	Item 26	Item 27
1.20	PU-01010-012	PU-06006-012G	TN-00070	TN-00086
0.80	PU-01010-008	PU-06006-008G	TN-00067	TN-00085

Table 23. Seals Monobloc "R" Pump

item	1.20 (#)	0.80
9	PU-06008-012	PU-06008-008
13	PU-01016-012A	PU-01016-008A
14	PU-01017-012G	PU-01017-008G
15	PU-01014-012A	PU-01014-008A
16	OR-00009	OR-00009

Table 24. Repair Seal Kit "R" Pump

Pump	Item
1.20	KT-00158
0.80	KT-00160

N.B :

The standard proportioning pumps sizes are #1.20 & #0.80. Different sizes are available under order. For delivery time, please consult with marketing department.

The Repair seal kit include the parts indicated () in the Table 21.*



“A” STANDARD PRIMARY HEATER

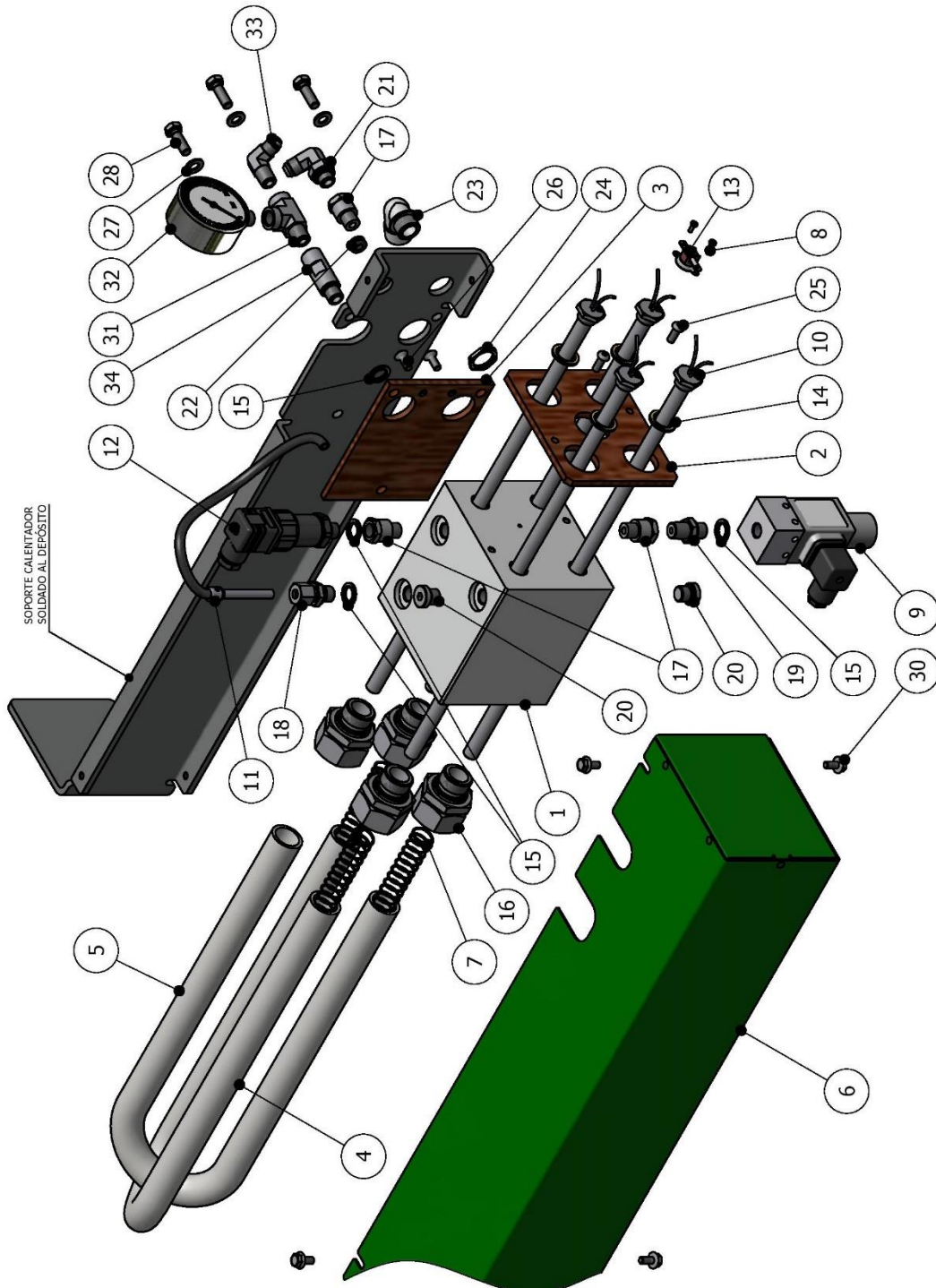


Figure 12. “A” Standard Primary Heater, Exploded View

**Table 25. "A" Standard Primary Heater, Parts List**

Item	Description	Part Number	Qty.
1	Heater Block	NCL-01001-02	1
2	Front Insulate Plate	NCL-01001-03	1
3	Side Insulate Plate	NCL-03001-04	1
4	Long Pipe	NCL-01001-05	1
5	Short Pipe	NCL-01001-06	1
6	Heater Cover	NCL-01001-08	1
7	Spring	SP-00037	3
8	Screw	TN-00128	2
9	Pressure Switch	HI-00021	1
10	Large Heat Resistance	See Table 26	4
11	Thermocouple	EL-00146-00	1
12	Transducer	HI-00033	1
13	Thermal Limit Switch	EL-00006	1
14	Metal O-Ring	OR-00018	4
15	Metal O-Ring	OR-00054	4
16	Male Connector	Ra-00493	4
17	Extension Nipple	RA-00077	3
18	Male Connector for Thermocouple	RA-00231	1
19	Union	RA-00138	1
20	Plug	RA-00013	2
21	Elbow 90°	RA-00050	1
22	Grommet	EL-00095-00	1
23	Plastic Elbow	EL-00087-01	1
24	Nut	EL-00090-01	1
25	"ULS" Screw	TN-00424	2
26	Screw	TN-00322	2
27	Washer	TN-00119	3
28	Hex. Cap Screw	TN-00146	3



Item	Description	Part Number	Qty.
29			
30	Hex. Cap Screw	TN-00491	4
31	"T" Adapter	RA-00018	1
32	Pressure Gauge	HI-00035	1
33	Elbow 90°	RA-00254	1
34	Extension Nipple	RA-00100	1

Table 26. "A" Heat Resistance Reference List

Item	Description	Part Number	Qty.
10	Large Heat Resistance 400v 2000w	EL-00258	4
	Large Heat Resistance 230v 2000w	EL-00177	4



“R” STANDARD PRIMARY HEATER

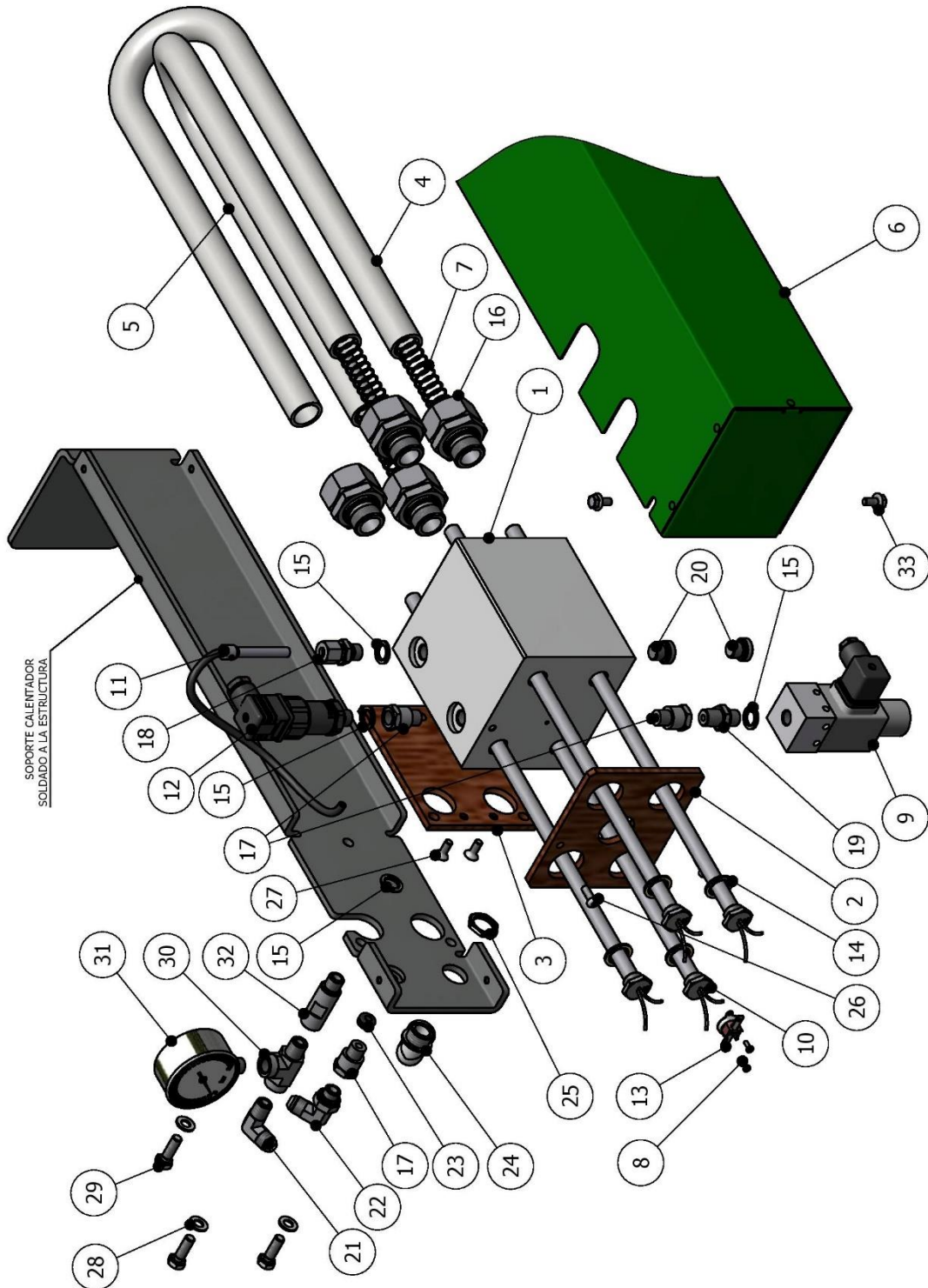


Figure 13. “R” Standard Primary Heater, Exploded View



Table 27. "R" Standard Primary Heater, Parts List

Item	Description	Part Number	Qty.
1	Heater Block	NCL-01001-02	1
2	Front Insulate Plate	NCL-01001-03	1
3	Side Insulate Plate	NCL-03001-04	1
4	Short Pipe	NCL-01001-06	1
5	Long Pipe	NCL-01001-05	1
6	Heater Cover	NCL-01002-08	1
7	Spring	SP-00037	3
8	Screw	TN-00128	2
9	Pressure Switch	HI-00021	1
10	Large Heat Resistance	See Table 28	4
11	Thermocouple	EL-00146-00	1
12	Transducer	HI-00033	1
13	Thermal Limit Switch	EL-00006	1
14	Metal O-Ring	OR-00018	4
15	Metal O-Ring	OR-00054	4
16	Male Connector	RA-00493	4
17	Extension Nipple	RA-00077	3
18	Male Connector for Thermocouple	RA-00231	1
19	Union	RA-00138	1
20	Plug	RA-00013	2
21	Elbow 90°	RA-00044	1
22	Elbow 90°	RA-00050	1
23	Grommet	EL-00095-00	1
24	Plastic Elbow	EL-00087-01	1
25	Nut	EL-00090-01	1
26	"ULS" Screw	TN-00424	2
27	Screw	TN-00322	2
28	Washer	TN-00119	3
29	Hex. Cap Screw	TN-00146	3



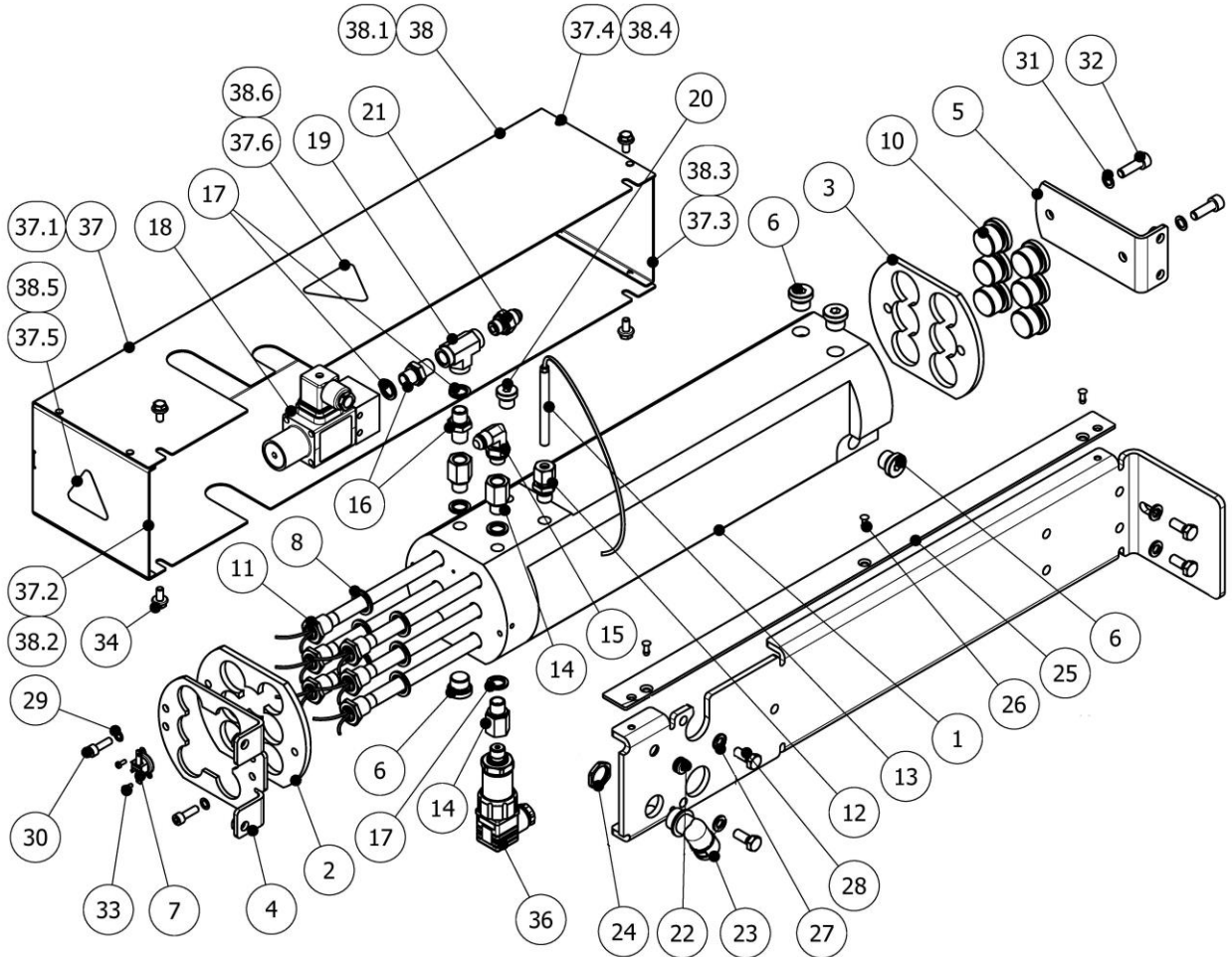
Item	Description	Part Number	Qty.
30	"T" Adapter	RA-00018	1
31	Pressure Gauge	HI-00035	1
32	Extension Nipple	RA-00100	1
33	Hex. Cap Screw	TN-00491	4
34			

Table 28. "R" Heat Resistance Reference List

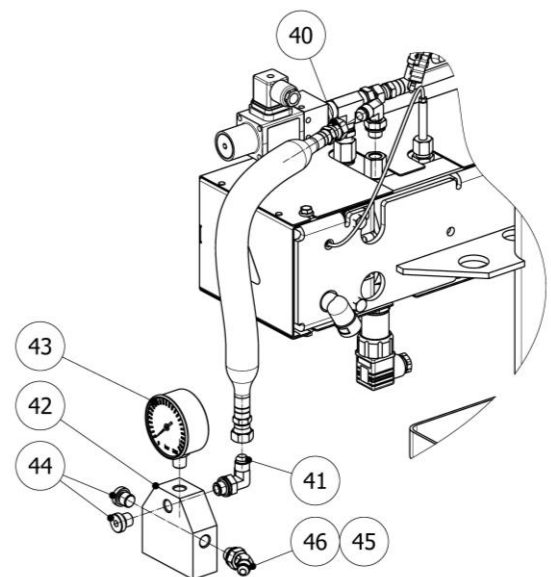
Item	Description	Part Number	Qty.
10	Large Heat Resistance 400v 2000w	EL-00258	4
	Large Heat Resistance 230v 2000w	EL-00177	4



ROUND PRIMARY HEATER "A" ISO / "R" POL



*Except as noted, both heaters
have the same parts*



**Figure 14. Round Primary Heater "A" ISO
/ "R" POL**

**Table 29. Round Primary Heater "A" ISO / "R" POL, Reference List**

item.	Description	Part Number	Qty.
1	Bloc Heater	CLH-01001-01A	1
2	Upper Disc Insulation	CL-21003-04	1
3	Lower Disc Insulation	CL-21003-05	1
4	Front Heater Support	CL-21003-02	1
5	Rear Heater Support	CL-21003-03	1
6	Plug	RA-00049	4
7	Thermostat	EL-00006	1
8	Bi material Seal	OR-00018	6
10	Plug	RA-00012	6
11	Large Resistance	Ver Table 30	6
12	Male Connector for Thermocouple	RA-00231	1
13	Thermocouple	EL-00146-00	1
14	Male-Female Extension	RA-00077	3
15	Elbow 90°	RA-00050	1
16	Nipple	RA-00138	2
17	Bi material Seal	OR-00054	5
18	Pressure Switch	HI-00021	1
19	"T" H Adapter	RA-00053	1
20	Plug	RA-00013	1
21	Nipple	RA-00145	1
22	Grommet	EL-00095-00	1
23	Bulkhead	EL-00087-01	1
24	Nut	EL-00090-01	1
25	Supplement Plate	MQ-21010	1
26	Rivet	TN-00240	3
27	Washer	TN-00028	4
28	Hex. Cap Screw	TN-00187	4
29	Washer	TN-00048	2
30	Allen Screw	TN-00026	2
31	Washer	TN-00038	2
32	Allen Screw	TN-00027	2

Unit quantities per heater.



Item	Description	Part Number	Qty.
33	Screw	TN-00128	2
34	Hex. Bolt Flange	TN-00491	4
36	Pressure Transducer	HI-00033	1
37	Round Heater Cover ISO Assy for 6 Heating Elements	NCL-23005-07	1
37.1	Round ISO Heater Housing Folded	CL-21003-01A	1
37.2	Round Heater Front Cover for 6 Heating Elements	CL-21003-01B	1
37.3	Round Heater Rear Cover for 6 Heating Elements	CL-21003-01C	1
37.4	Rivet	TN-00240	10
37.5	Tension Adhesive	-	1
37.6	Burn Adhesive	-	1
38	Round Heater Cover POL Assy for 6 Heating Elements	NCL-23006-07	1
38.1	Round POL Heater Housing Folded	CL-21004-01A	1
38.2	Round Heater Front Cover for 6 Heating Elements	CL-21003-01B	1
38.3	Round Heater Rear Cover for 6 Heating Elements	CL-21003-01C	1
38.4	Rivet	TN-00240	10
38.5	Tension Adhesive	-	1
38.6	Burn Adhesive	-	1
39			
40	"A" ISO Insulated Hose	MA-	1
	"R" POL Insulated Hose	MA-	
41	Elbow 90°	RA-00050	1
42	Manifold	MQ-21012-01	1
43	Pressure Gauge	HI-00035	1
44	Plug	RA-00013	2
45	Elbow 45° ISO	RA-00589	1
46	Elbow 45° POL	RA-00590	1

Unit quantities per heater.



Table 30. Resistances List according to model

Item	Description	Part Number	Qty.
11	Large Resistance 400v 1500w	EL-00179	6
	Large Resistance 230v 1500w	EL-00035	6

Unit quantities per heater.



RECIRCULATION KIT P#: KT-00038

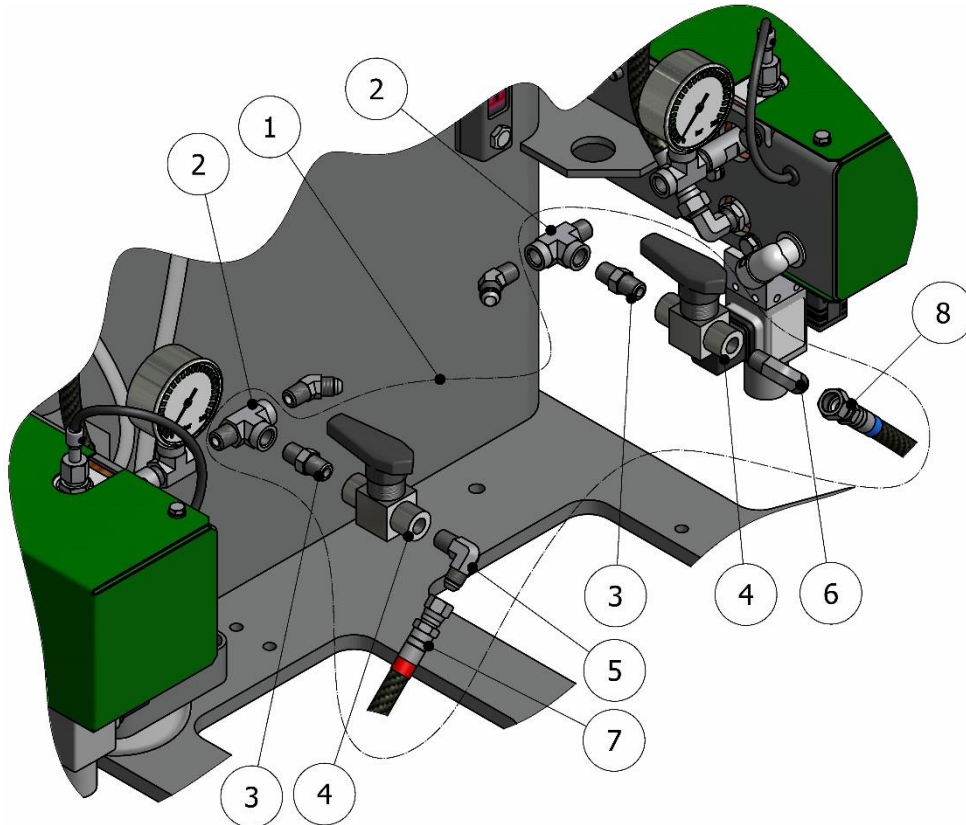


Figure 15. Recirculation Kit P#: KT-00038, Exploded View

Table 31. Standard Recirculation Kit, Parts List

Item	Description	Part Number	Qty.
1	Recirculation Kit	KT-00038	1
2	"T" Union	RA-00018	2
3	Male Union	RA-00188	2
4	Ball Valve	RA-00217	2
5	Elbow 90° ISO Side	RA-00254	1
6	Elbow 90° POL Side	RA-00044	1
7	A-Hose	MA-00050-01	1
8	R-Hose	MA-00050-00	1



RECIRCULATION KIT P#: KT-00038-01

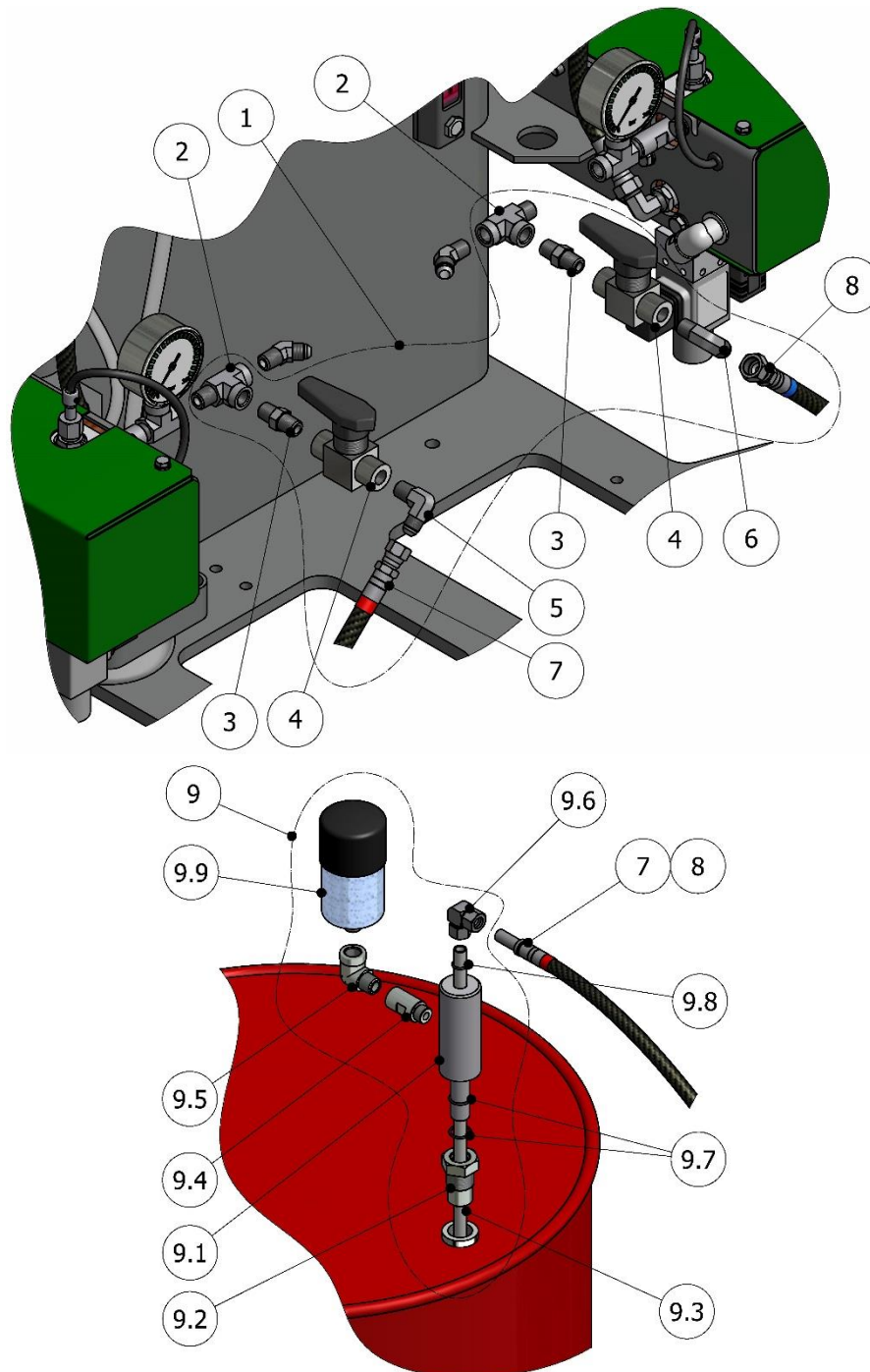


Figure 16. Recirculation Kit P#: KT-00038-01, Exploded View



Table 32. Recirculation Kit #KT-00038-01, Parts List

Item	Description	Part Number	Qty.
1	Recirculation Kit	KT-00038-01	1
2	"T" Union	RA-00018	2
3	Male Union	RA-00188	2
4	Ball Valve	RA-00217	2
5	Elbow 90° ISO Side	RA-00254	1
6	Elbow 90° POL Side	RA-00044	1
7	A-Hose	MA-00050-01	1
8	R-Hose	MA-00050-00	1
9	Assy. Connection to Tank with Filter	MQ-05009-00	2
9.1	Body Connection	MQ-05010	1 (*)
9.2	Connection Tank	MQ-05009	1 (*)
9.3	Pipe	HI-00075	1 (*)
9.4	Extension	RA-00256	1 (*)
9.5	Elbow	RA-00257	1 (*)
9.6	Elbow for Pipe	RA-00200	1 (*)
9.7	O-Ring	OR-00055	2(*)
9.8	O-Ring	OR-00011	1 (*)
9.9	Dehumidifier Filter	NE-00045	1 (*)

N.B.:

(*) Unitary Quantities included in 1 set of item.9



RECIRCULATION KIT P#: KT-00038-03

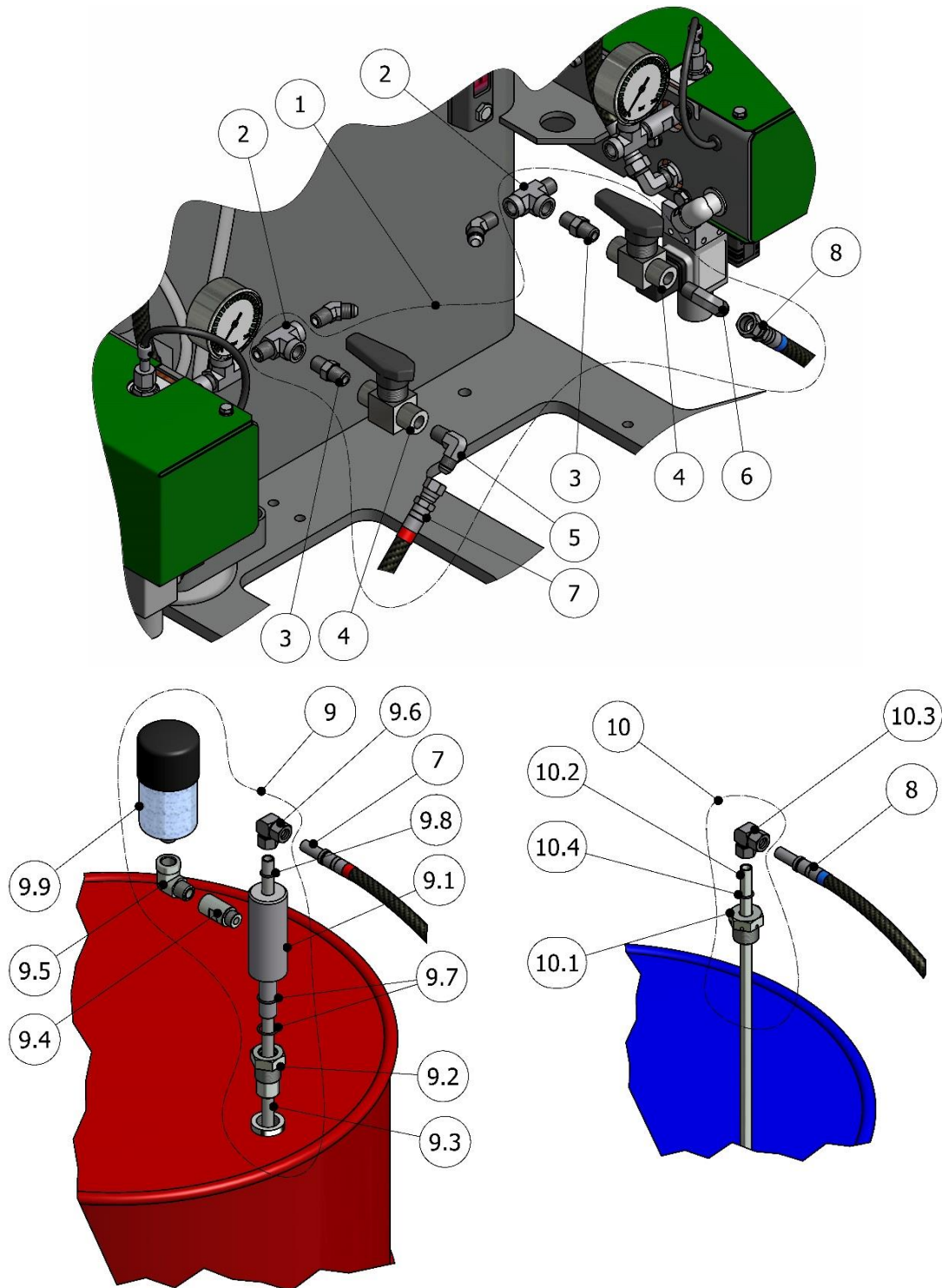


Figure 17. Recirculation Kit P#: KT-00038-03, Exploded View



Table 33. Recirculation Kit #KT-00038-03, Parts List

Item	Description	Part Number	Qty.
1	Recirculation Kit	KT-00038-03	1
2	"T" Union	RA-00018	2
3	Male Union	RA-00188	2
4	Ball Valve	RA-00217	2
5	Elbow 90° ISO Side	RA-00254	1
6	Elbow 90° POL Side	RA-00044	1
7	A-Hose	MA-00050-01	1
8	R-Hose	MA-00050-00	1
9	Assy. Connection to Tank with Filter	MQ-05009-00	1
9.1	Body Connection	MQ-05010	1
9.2	Connection Tank	MQ-05009	1
9.3	Pipe	HI-00075	1
9.4	Extension	RA-00256	1
9.5	Elbow	RA-00257	1
9.6	Elbow for Pipe	RA-00200	1
9.7	O-Ring	OR-00055	2
9.8	O-Ring	OR-00011	1
9.9	Dehumidifier Filter	NE-00045	1
10	Assy. Connection to Tank w/o Filter	MQ-05010-00	1
10.1	Connection Tank	MQ-05009-A	1
10.2	Pipe	HI-00075	1
10.3	Elbow for Pipe	RA-00200	1
10.4	O-ring	OR-00011	1



RECIRC. KIT FOR ROUND HEATERS WITHOUT FILTERS

Valid only for round heaters

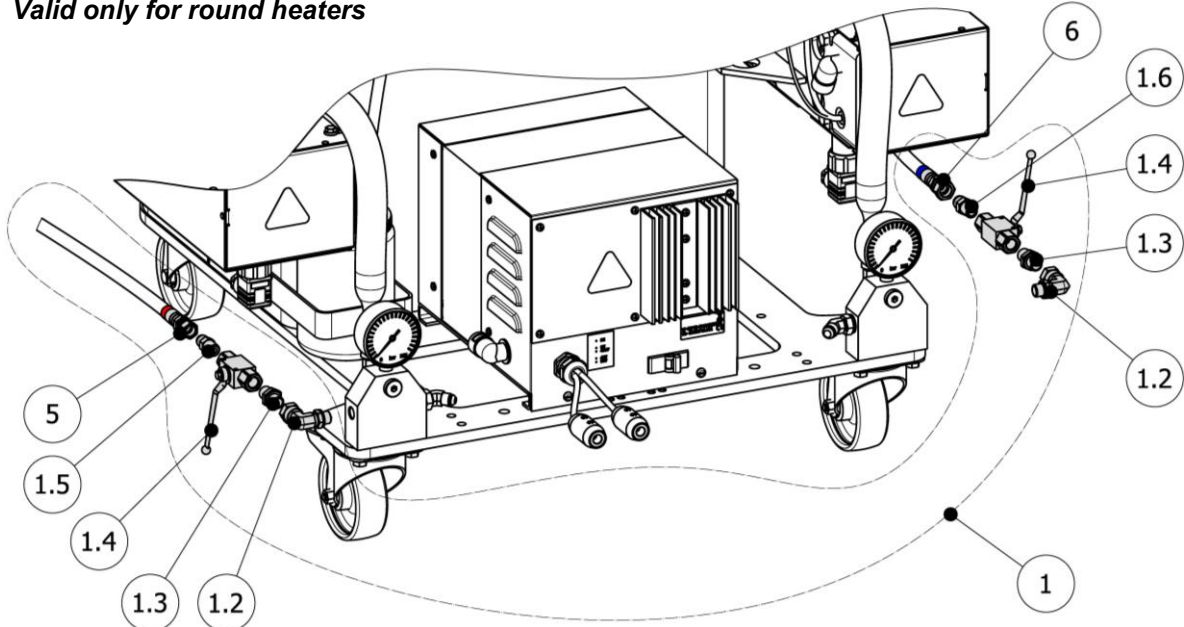


Figure 18. Recirc. Kit for Round Heaters without Filters

Table 34. Recirc. Kit for Round Heaters without Filters, Parts List

item.	Description	Part Number	Qty.
1	Recirculation Kit for Round Heaters without Filters		1
1.2	Elbow 90°	RA-00496	2
1.3	Nipple	RA-00138	2
1.4	Ball Valve	RA-00217	2
1.5	“A” ISO Nipple	RA-00146	1
1.6	“R” POL Nipple	RA-00147	1
5	ISO Recirculation Hose	MA-00050-01	1
6	POL Recirculation Hose	MA-00050-00	1



RECIRC. KIT FOR ROUND HEATERS WITH DOUBLE FILTER

Valid only for round heaters

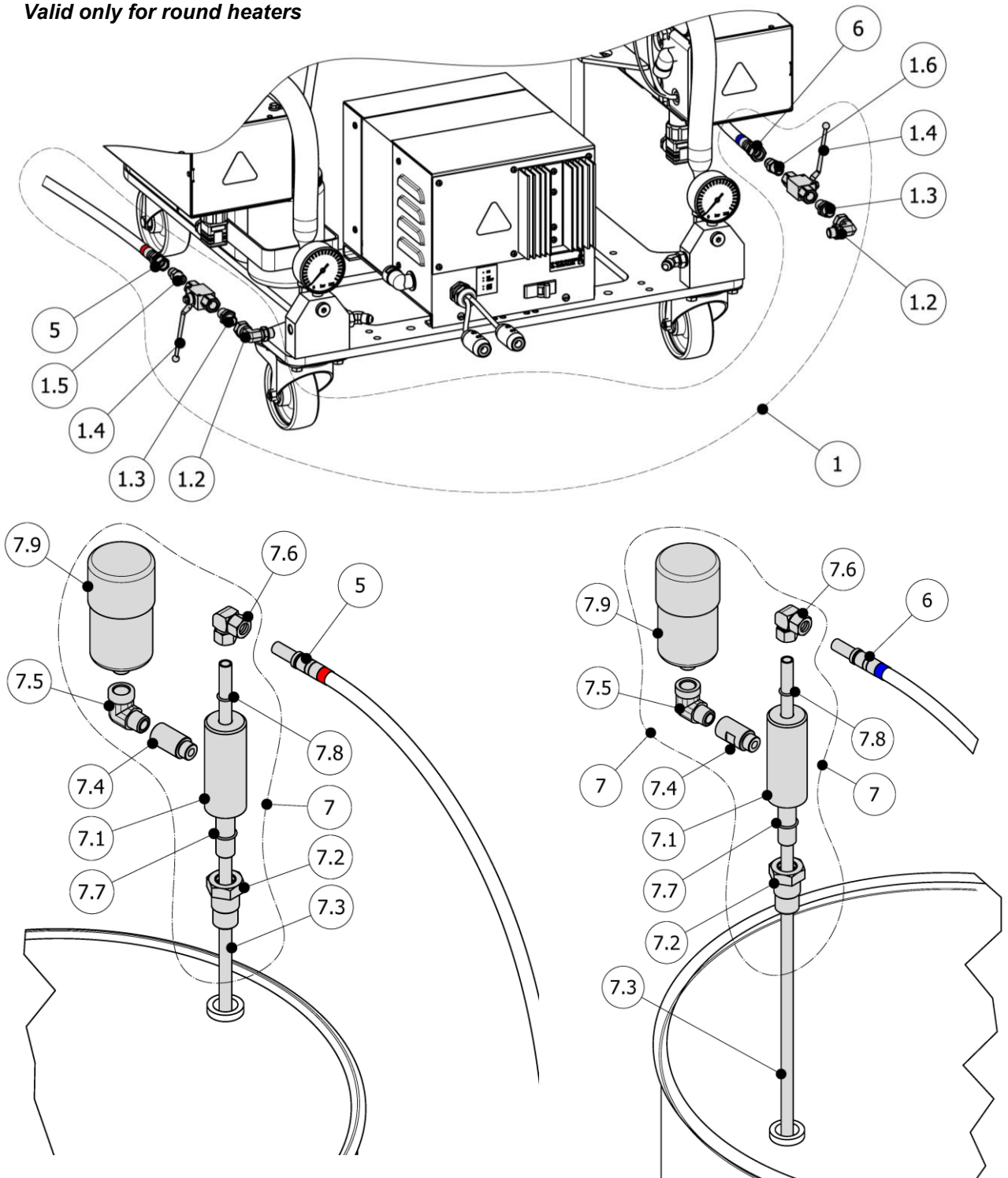


Figure 19. Recirc. Kit for Round Heaters with Double Filters



Table 35. Recirc. Kit for Round Heaters with Double Filter, Parts List

Item	Description	Part Number	Qty.
1	Recirc. KIT for Round Heaters with Double Filter		1
1.2	Elbow 90°	RA-00496	2
1.3	Nipple	RA-00138	2
1.4	Ball Valve	RA-00217	2
1.5	"A" ISO Nipple	RA-00146	1
1.6	"R" POL Nipple	RA-00147	1
5	ISO Recirculation Hose	MA-00050-01	1
6	POL Recirculation Hose	MA-00050-00	1
7	Tank Adaptation Assy with Filter	MQ-05009-00	2
7.1	Drum Coupling Body	MQ-05010	1 (*)
7.2	Drum Coupling	MQ-05009	1 (*)
7.3	Drum Coupling Tube	HI-00075	1 (*)
7.4	Length	RA-00256	1 (*)
7.5	Elbow 90°	RA-00257	1 (*)
7.6	Elbow 90°	RA-00200	1 (*)
7.7	O-Ring	OR-00055	2 (*)
7.8	O-Ring	OR-00011	1 (*)
7.9	Dehumidifier Filter	NE-00045	1 (*)

(*) Unit quantities included in 1 set item 7.



RECIRC. KIT FOR ROUND HEATERS WITH "A" ISO FITER

Valid only for round heaters

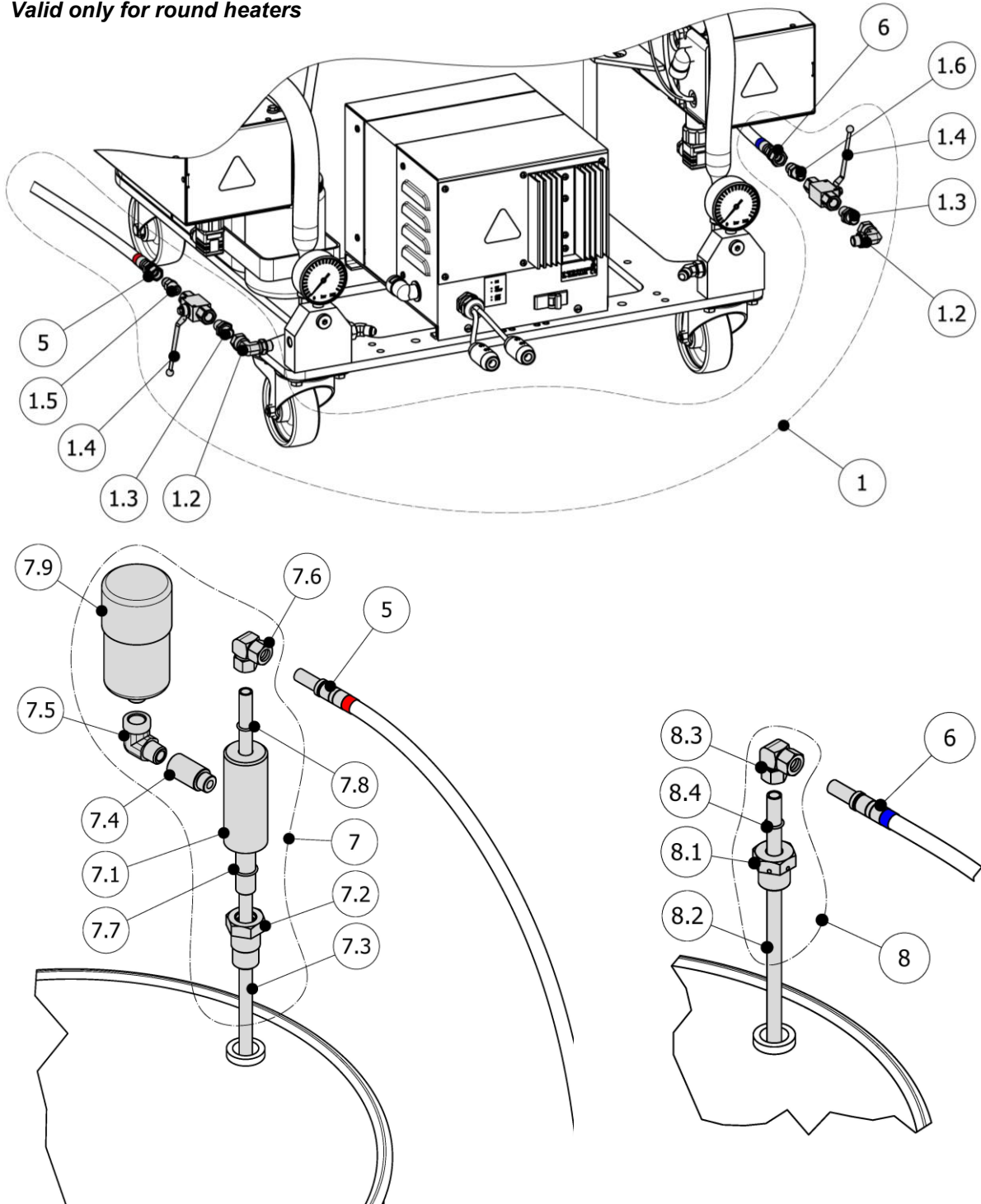


Figure 20. Recirc. Kit for Round Heaters with "A" ISO Filter



Table 36. Recirc. Kit for Round Heaters with "A" ISO Filter, Parts List

item	Description	Part Number	Qty.
1	Recirc. KIT for Round Heaters with "A" ISO Filter		1
1.2	Elbow 90°	RA-00496	2
1.3	Nipple	RA-00138	2
1.4	Ball Valve	RA-00217	2
1.5	"A" ISO Nipple	RA-00146	1
1.6	"R" POL Nipple	RA-00147	1
5	ISO Recirculation Hose	MA-00050-01	1
6	POL Recirculation Hose	MA-00050-00	1
7	Tank Adapter Assy with Filter	MQ-05009-00	1
7.1	Drum Coupling Body	MQ-05010	1
7.2	Drum Coupling	MQ-05009	1
7.3	Drum Coupling Tube	HI-00075	1
7.4	Length	RA-00256	1
7.5	Elbow 90°	RA-00257	1
7.6	Elbow 90°	RA-00200	1
7.7	O-Ring	OR-00055	2
7.8	O-Ring	OR-00011	1
7.9	Dehumidifier Filter	NE-00045	1
8	Tank Adapter Assy without Filter	MQ-05010-00	1
8.1	Drum Coupling	MQ-05009-A	1
8.2	Drum Coupling Tube	HI-00075	1
8.3	Elbow 90°	RA-00200	1
8.4	O-Ring	OR-00011	1



ELECTRICAL SCHEMATIC DIAGRAM 3PE~400V 50/60Hz

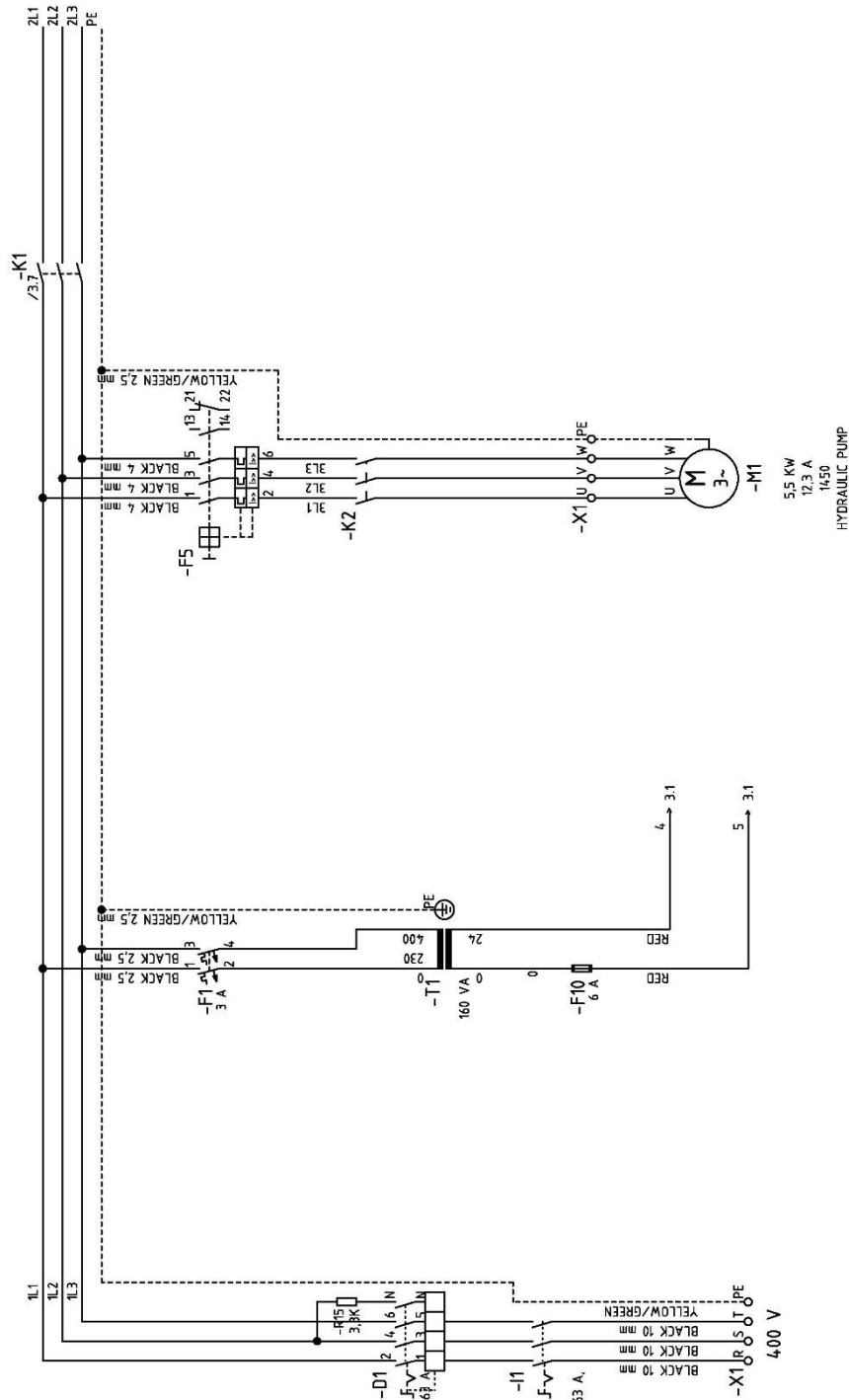


Figure 21. Elec. Schem. 3PE~400V 50/60Hz Standard Version (Sheet 1/7)

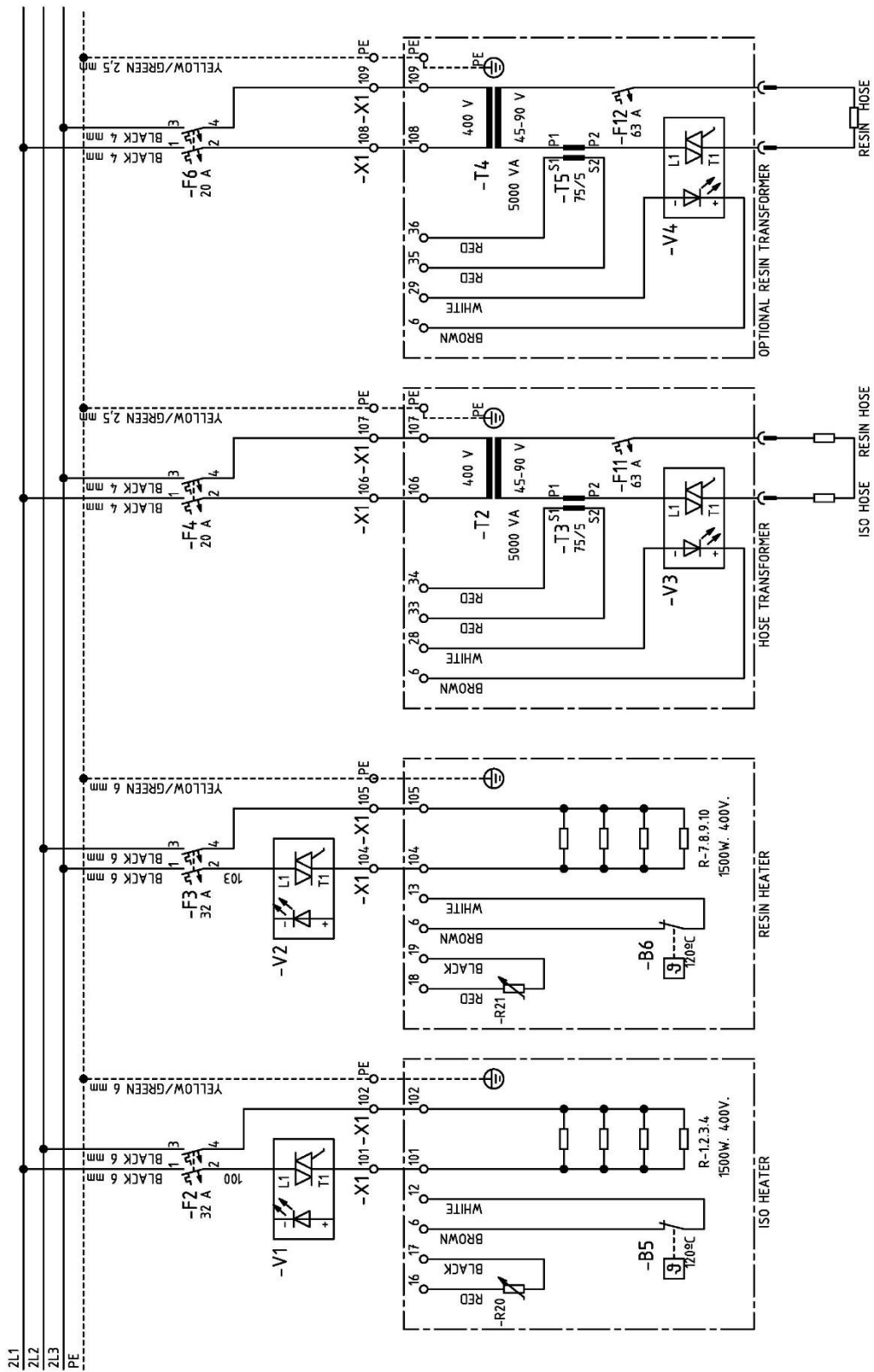


Figure 22. Elec. Schem. 3PE~400V 50/60Hz Standard Version (Sheet 2/7)

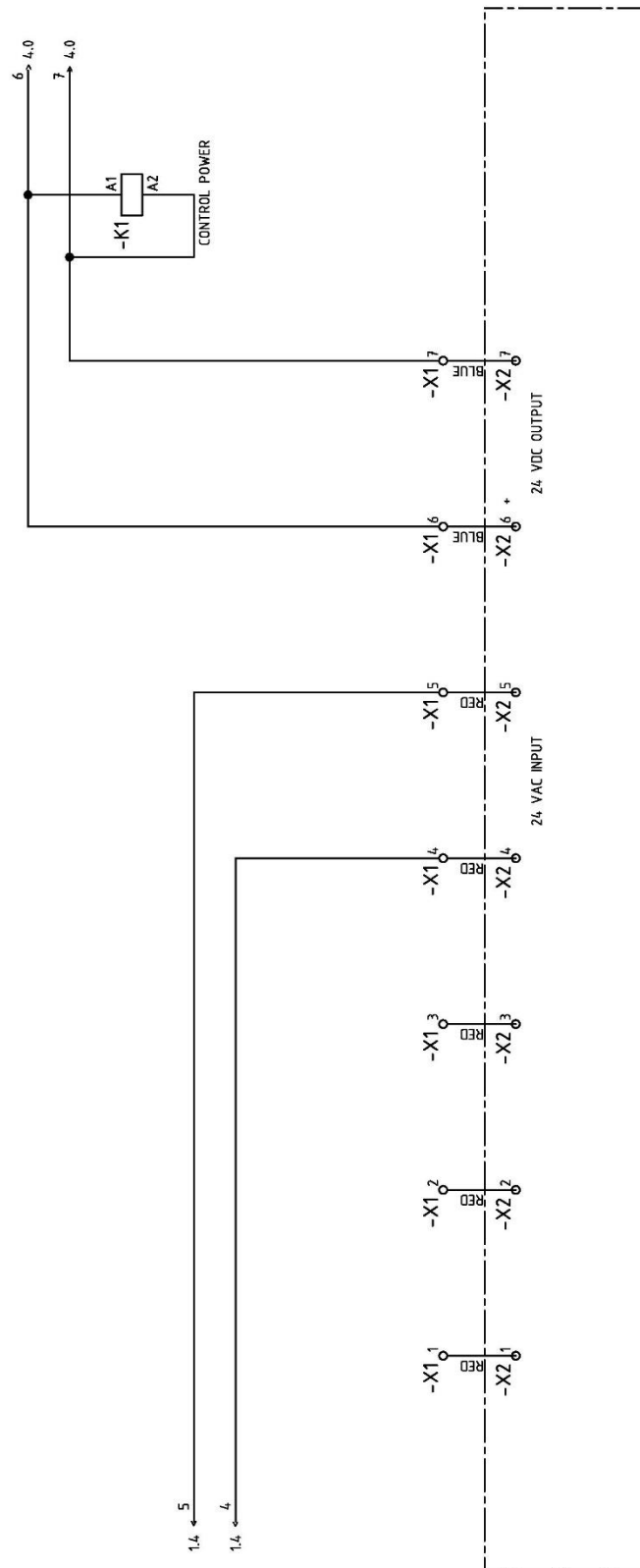


Figure 23. Elec. Schem. 3PE~400V 50/60Hz Standard Version (Sheet 3/7)

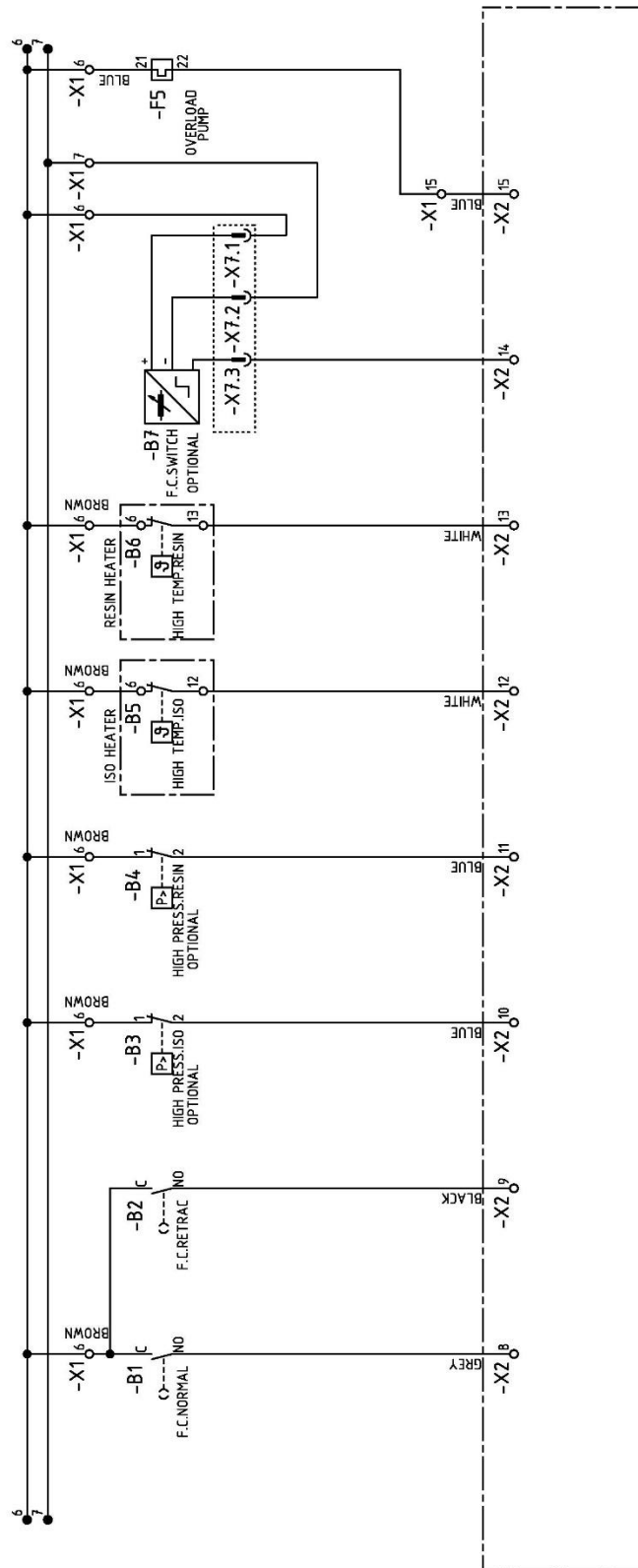


Figure 24. Elec. Schem. 3PE~400V 50/60Hz Standard Version (Sheet 4/7)

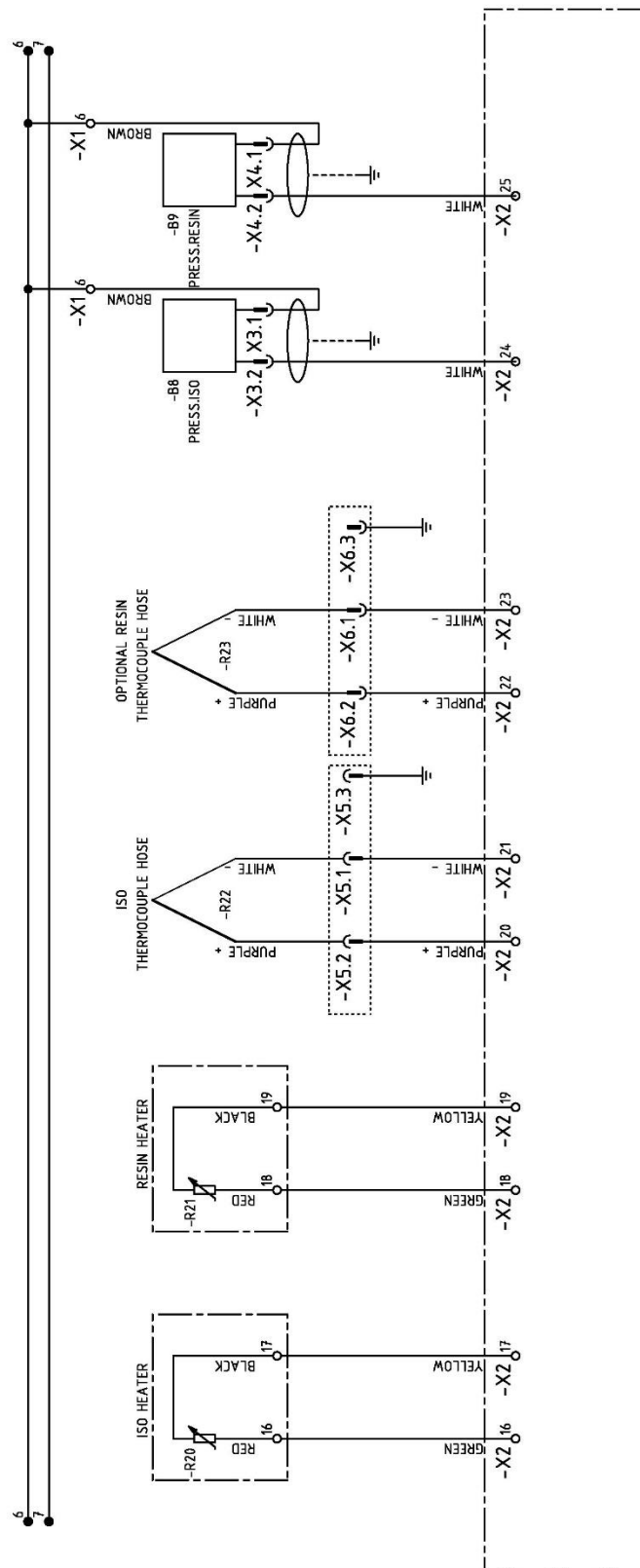


Figure 25. Elec. Schem. 3PE~400V 50/60Hz Standard Version (Sheet 5/7)

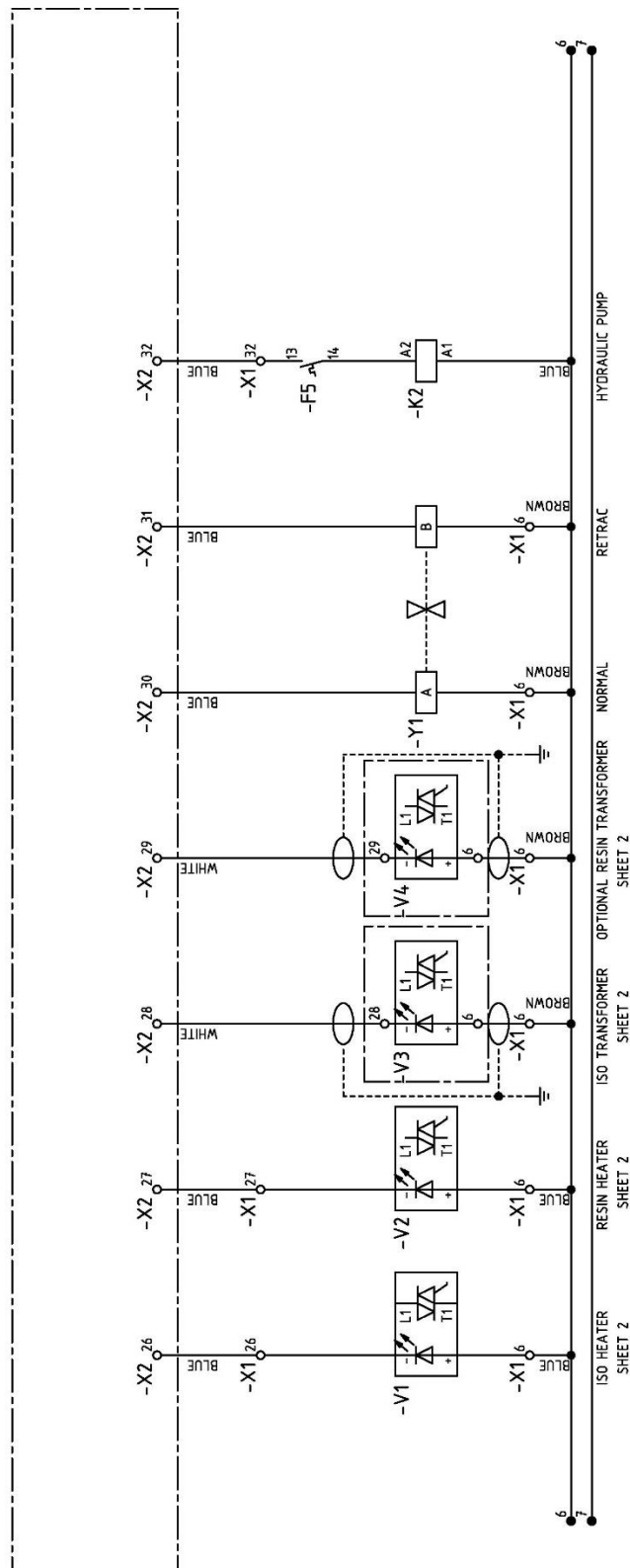


Figure 26. Elec. Schem. 3PE~400V 50/60Hz Standard Version (Sheet 6/7)

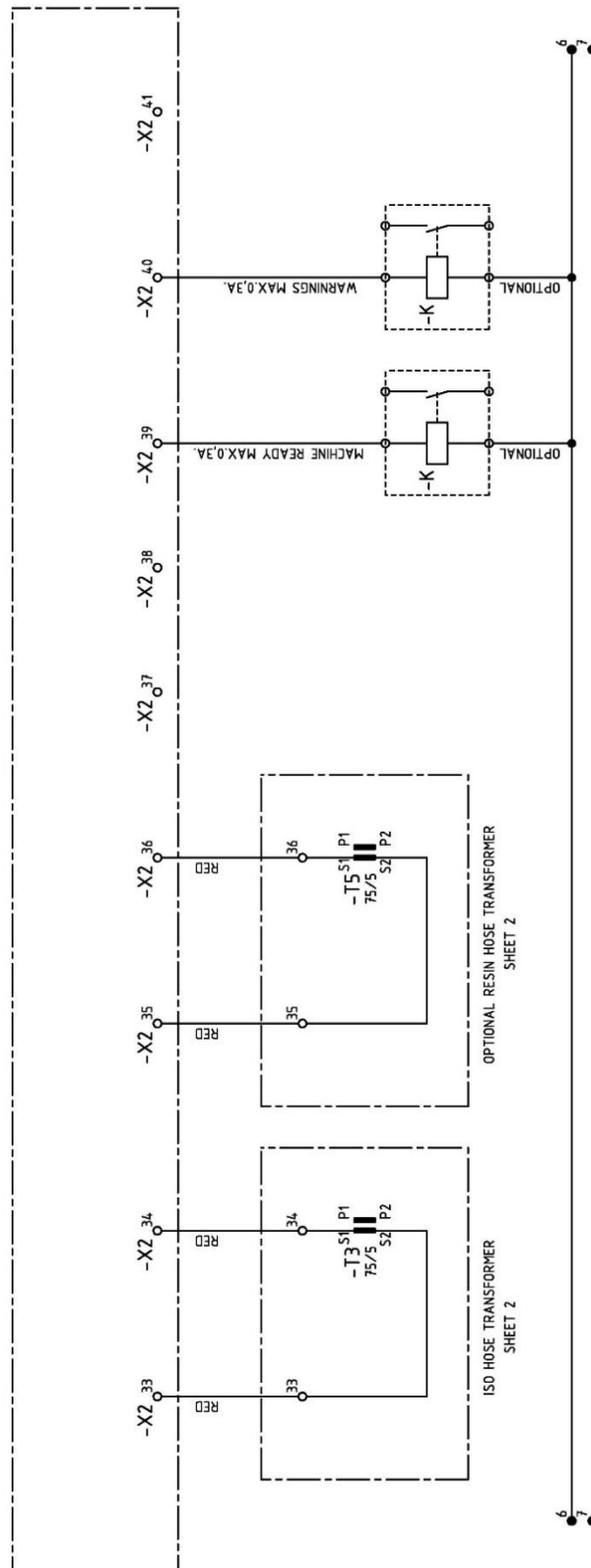


Figure 27. Elec. Schem. 3PE~400V 50/60Hz Standard Version (Sheet 7/7)

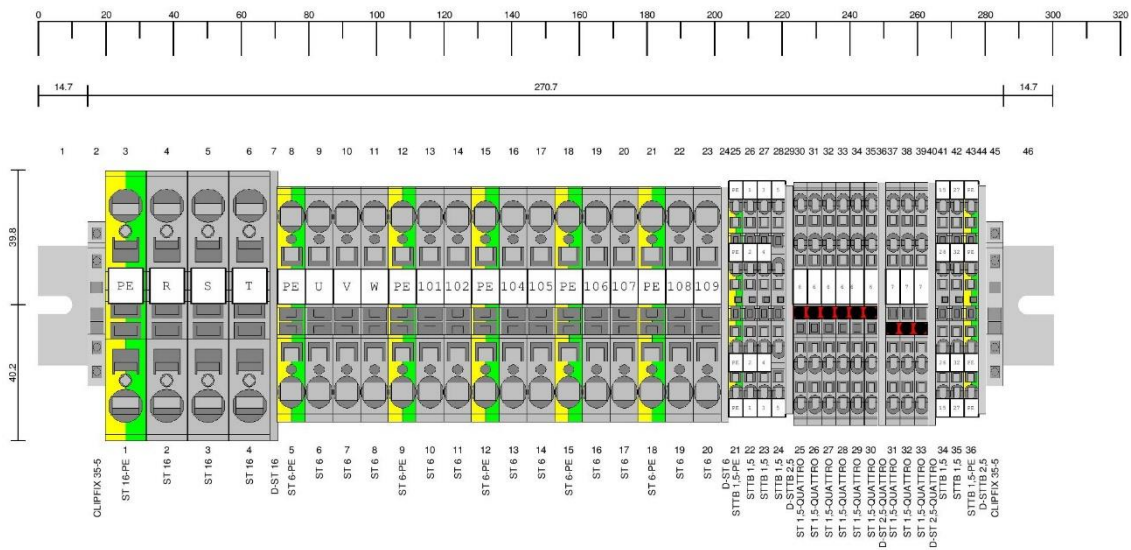


Figure 28. Distribution 3PE~400V 50/60Hz Standard Version

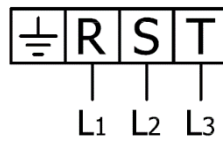


Figure 29. Connection 3PE~400V 50/60Hz Standard Version



Table 37. Electrical Schematic 3PE~400V 50/60Hz Standard Version, Parts List

Item	Description	Reference	Qty
	BEIGE TERMINAL 16 mm	EL-00104-03	3*
	GROUND TERMINAL 16 mm	EL-00104-05	1*
	BEIGE TERMINAL 6mm	EL-00104-06	9*
	GROUND TERMINAL 6mm	EL-00104-08	4*
	TERMINAL BLOCK 2,5	EL-00104-12	2*
	BEIGE TERMINAL 2,5	EL-00104-09	4*
	GROUND TERMINAL 2,5mm	EL-00104-11	2*
	UNION PLATE	EL-00104-14	2*
F 10	FUSIBLE POINT	EL-00104-13	1
F 10	FUSE	EL-00128-03	2
I 1	SWITCH 63 A	EL-00107-18	1
I 1	CONTROL YELLOW/RED	EL-00107-19	1
T 1	TRANSFORMER 230-400/24 160 VA	EL-00127-02	1
D 1	DIFERENTIAL 0,03 63 A	EL-00108-04	1
F 2,3	AUTOMATIC SWITCH	EL-00115-03	2
F 4	AUTOMATIC SWITCH	EL-00113-04	1
F 1	AUTOMATIC SWITCH	EL-00109-04	1
F 5	AUTOMATIC SWITCH 10-16A	EL-00119-05	1
F 5	AUXILIAR CONTACT	EL-00119-03	1
T 3	INTENSITY TRANSFORMER	EL-00127-03	1
V 1,2	STATIC RELAY	EL-00126-03	2
V 3	TRIAC	EL-00126-02	1
K 1	CONTACTOR	EL-00123-02	1
K 2	CONTACTOR	EL-00121-02	1
	RESISTENCE 3,3 K.Ω 6 W.	EL-00129-01	1
X 1	TERMINAL	EL-00105-06	1

(*) *Alternative material.*



PNEUMATIC SCHEMATIC DIAGRAM

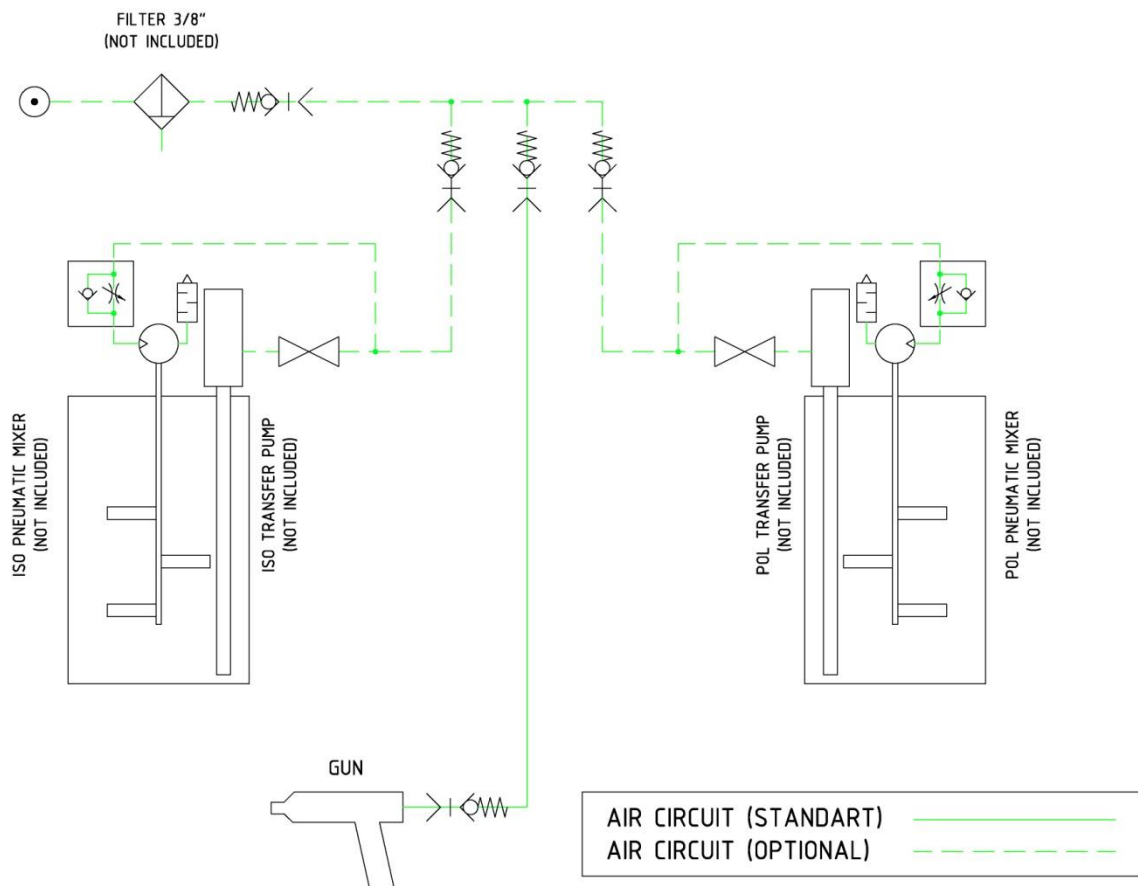


Figure 30. Pneumatic Schematic Diagram



HYDRAULIC SCHEMATIC DIAGRAM

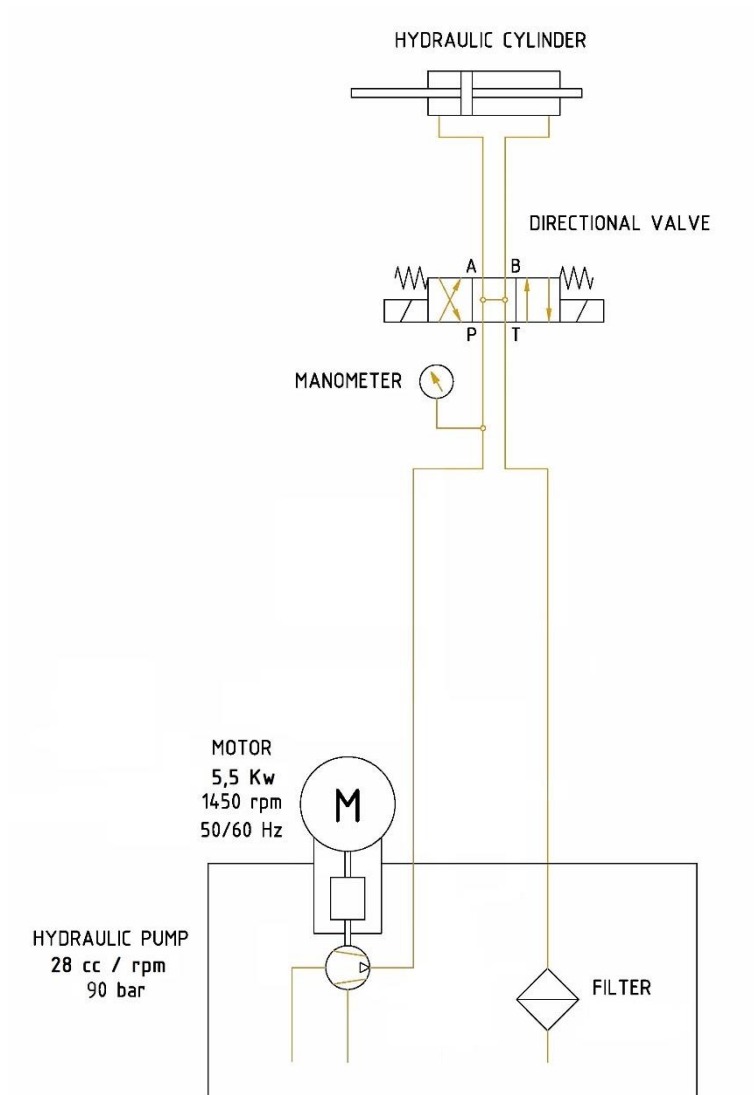


Figure 31. Hydraulic Schematic Diagram



FUNCTIONING SCHEMATIC DIAGRAM

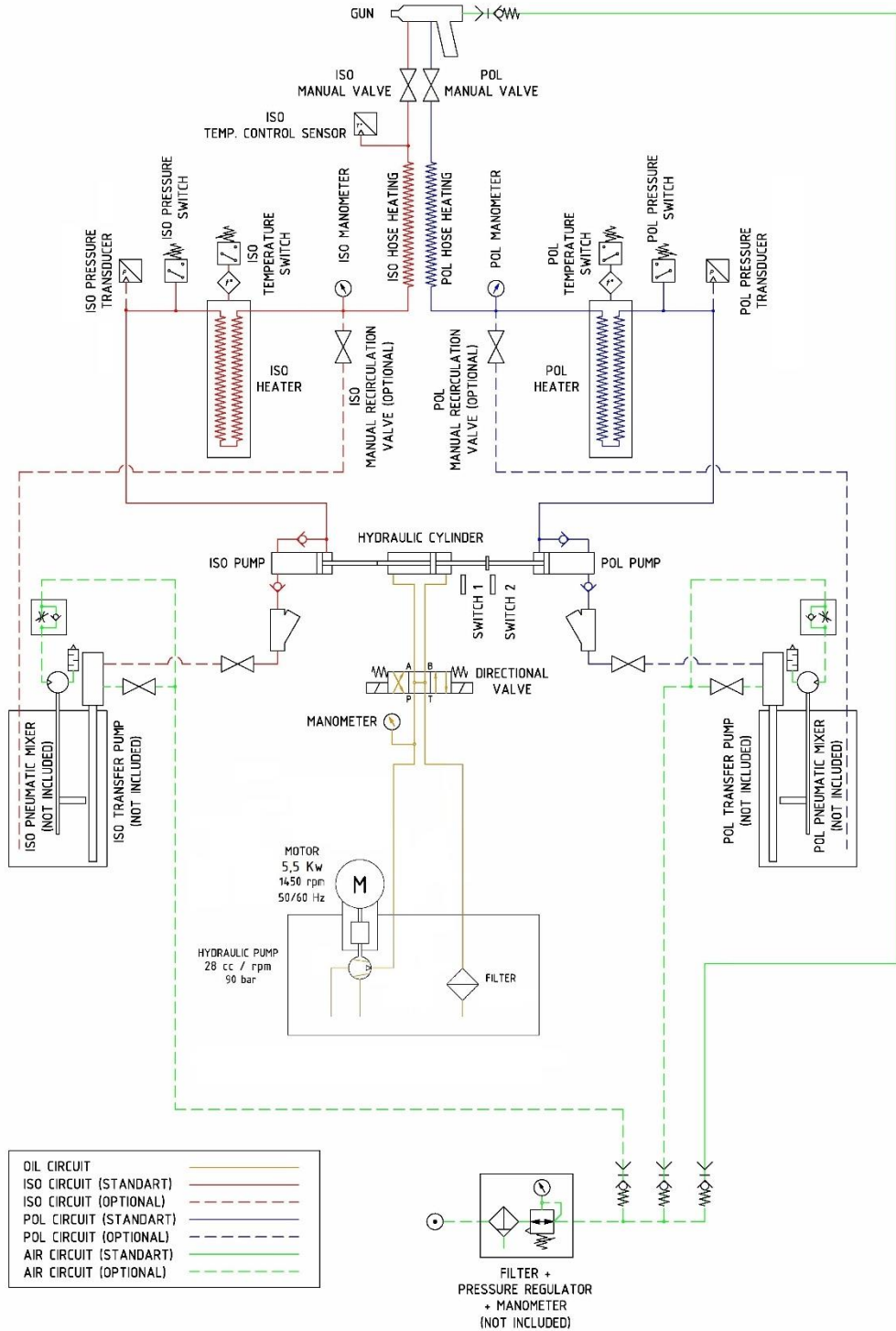


Figure 32. Functioning Schematic Diagram



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