



# Parts Manual

## Proportioning Unit

### novaG V PLUS

Issue 2.5 - 31/10/2025  
Ref. NR-00009-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:

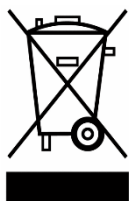
EN ISO 12100:2010

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  $-25^{\circ}\text{C}$  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 PLUS MODEL

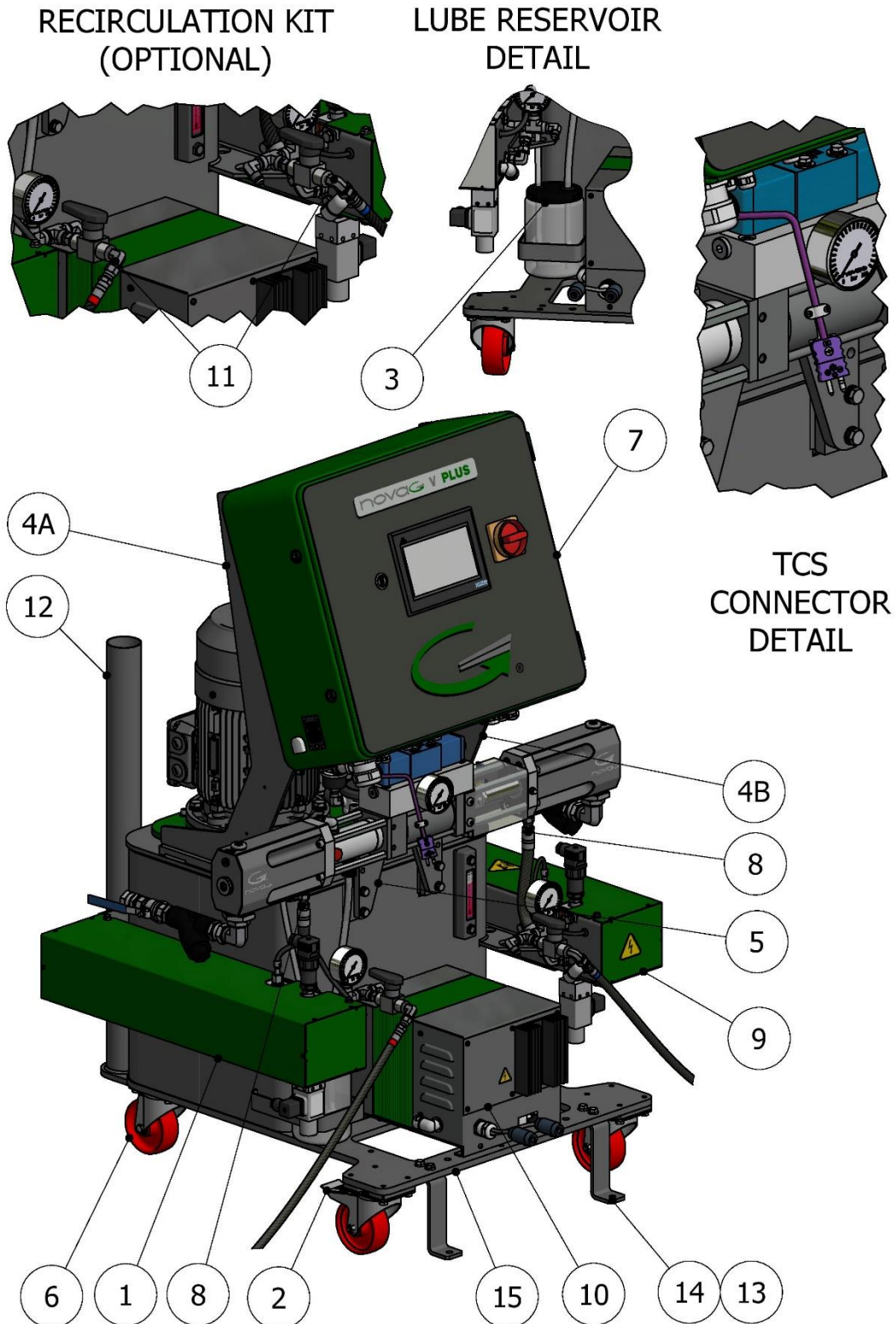
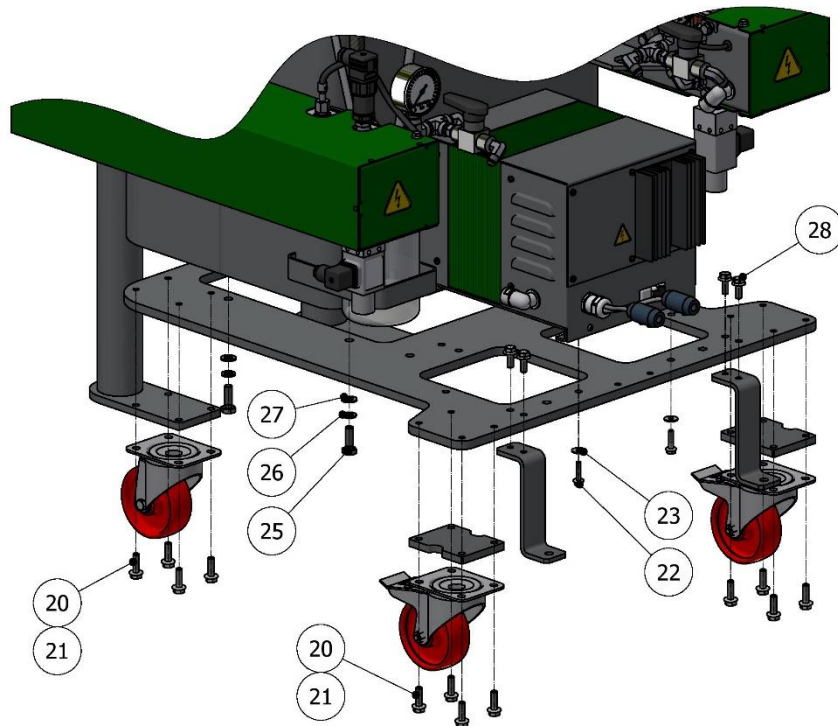


Figure 1. Proportioning Unit novaG V PLUS Model



**Figure 2. Generic Fixings Detail, Unit novaG V PLUS Model**

**Table 1. Proportioning Unit novaG V PLUS 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-00127-25	Hose Transformer 3PE~400V Version



**Table 3. A-Primary Heater Reference List**

(see pg.32)

Part Number		Description
NCL-01101-00AT	400V	"A" ISO Heater 8000 W with Transducer / 250 bar – 3500 psi /400V

**Table 4. A-Primary Round Heater Reference List**

(see pg.38)

Part Number		Description
NCL-23009-00BT	400V	"A" ISO Heater 9000 W with Transducer / 250 bar – 3500 psi / 400V

**Table 5. R-Primary Heater Reference List**

(see pg.35)

Part Number		Description
NCL-01102-00AT	400V	"R" POL Heater 8000 W with Transducer / 250 bar – 3500 psi /400V

**Table 6. R-Primary Round Heater Reference List**

(see pg.38)

Part Number		Description
NCL-23010-00BT	400V	"R" POL Heater 9000 W with Transducer / 250 bar – 3500 psi / 400V

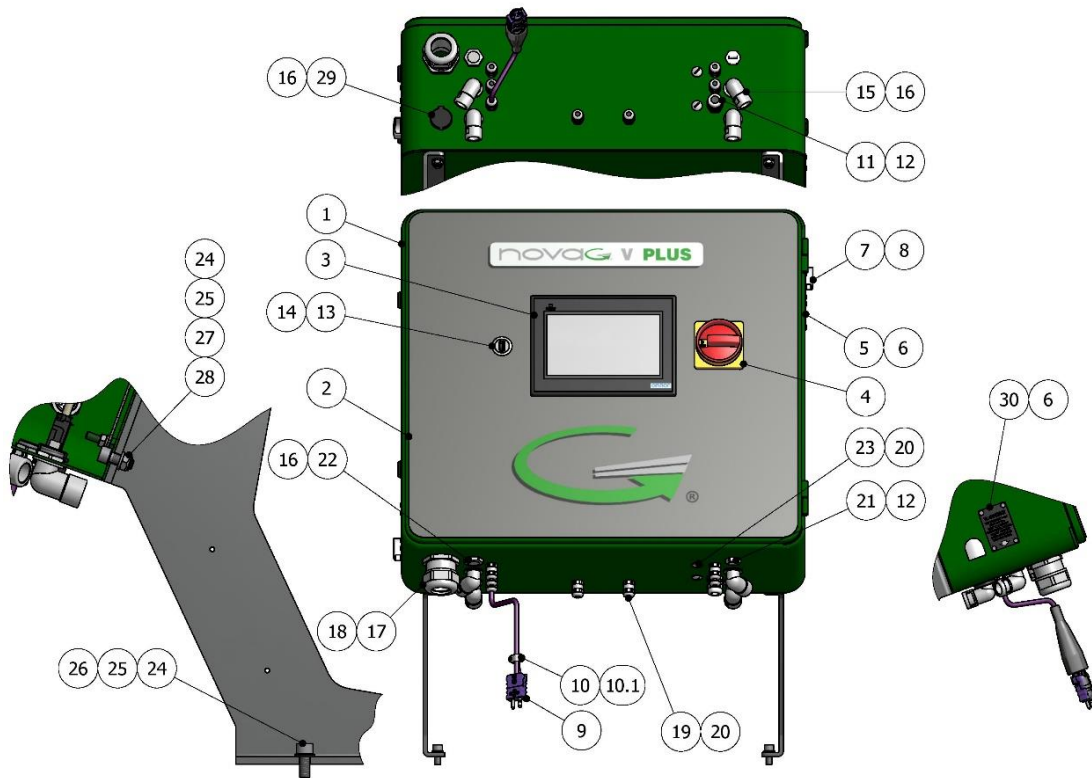
**Table 7. Electrical Console Reference List**

(see pg.)

Part Number	Description
EL-00245-05	Electrical Console Assy. (3PE~400V, with III phases Motor & Logger)



## ELECTRICAL CONSOLE



**Figure 3. Electrical Console novaG V PLUS**

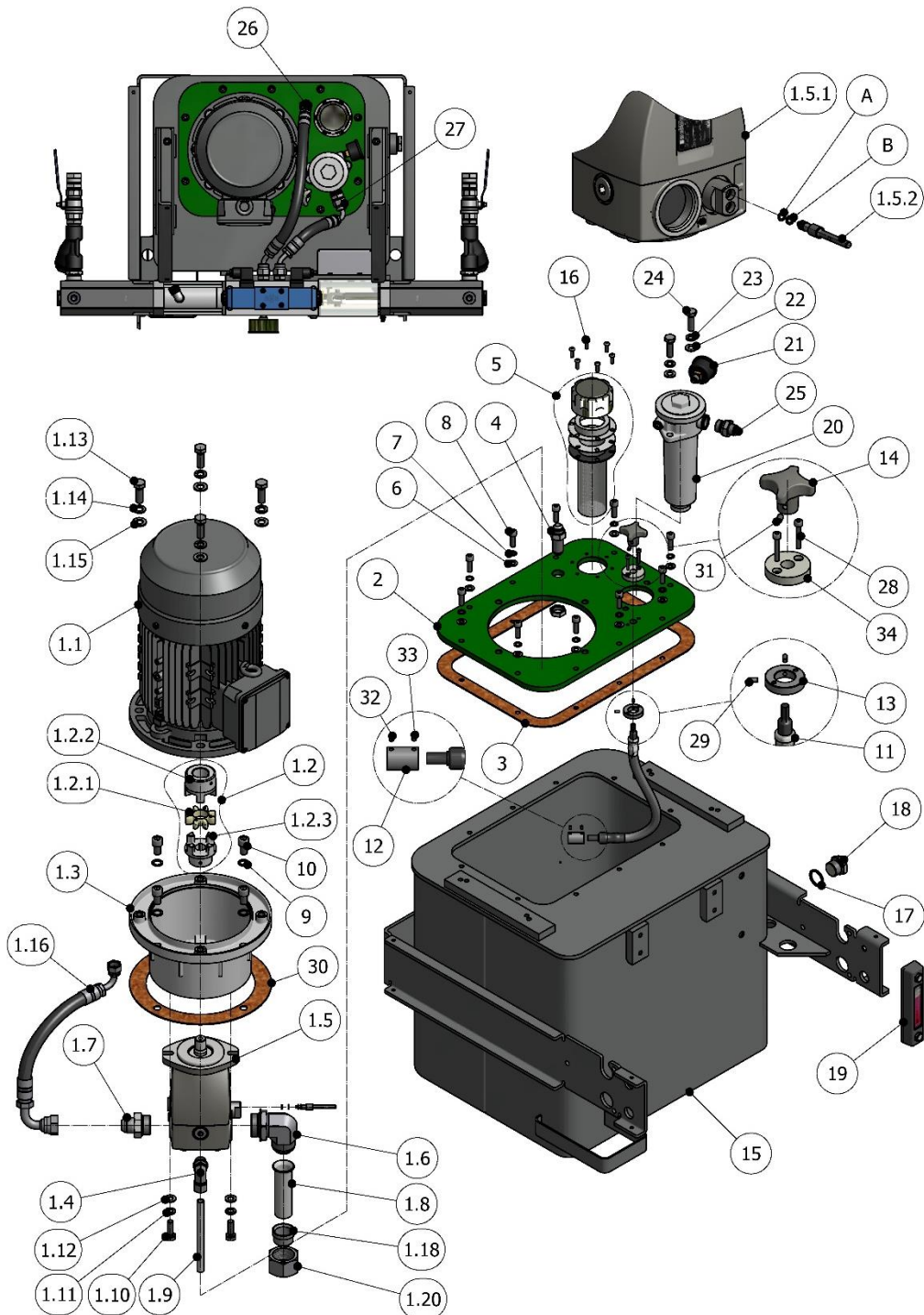
**Table 8. Electrical Console novaG V PLUS Model, Parts List**

Item	Description	Part Number	Qty.
1	Electrical Console	EL-00246	1
2	Bezel & Circuit Assy.	EL-00250-01	1
3	Touch Screen, Included in item 2	EL-00171-02	1
4	Main Switch, Included in item 2	EL-00107-18	1
	Command Switch, Included in item 2	EL-00107-19	1
5	Specs Plate	MQ-01010	1
6	Rivet	TN-00240	8
7	Air Vent	EL-00158-05	2
8	Nut (included in item6)		
9	Male Connector	EL-00096-84	1
10	Staple	EL-00096-86	1
11	Connector	EL-00088-05	1
12	Nut	EL-00090-06	2
13	USB Port, Included in Ref. 2	EL-00178-04	1
14	Mass. Storage USB 4GB, Included in Ref. 2 (*)	NEL-00078-05	1
15	Elbow 90°	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	1
23	Plug	EL-00183	2
24	Allen Screw	TN-00176	8
25	AET Washer	TN-00038	8
26	Washer	TN-00119	4
27	Lock Washer	TN-00028	4
28	Lock Nut	TN-00283	4
29	Female Ethernet Connector with Cap and Cable 0.5m	EL-00078-10	1
30	Warning Label	EM-00094	1

(\*) *Items not shown on drawing.*



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

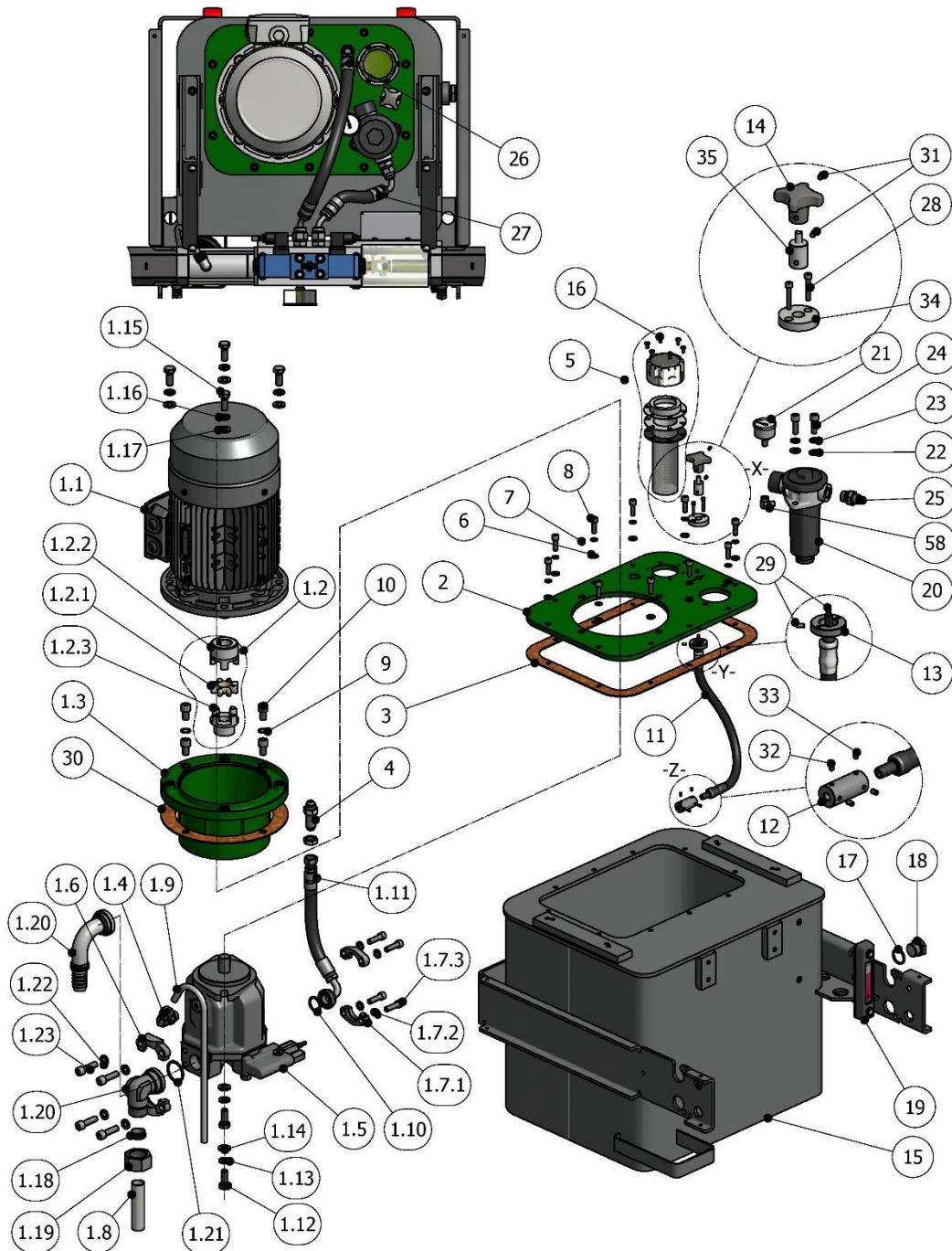
Item.	Description	Part Number	Qty.
1	Motor/Pump Line Assembly	-	1
1.1	Electric Motor 5.5Kw 50/60Hz	NEL-00138-01	1
1.2	Coupler Assembly	HI-00046-00	1
1.2.1	Alignment Spider	HI-00006-01	1
1.2.2	Motor Shaft Coupling	HI-00006-02	1
1.2.3	Pump Shaft Coupling	HI-00046-01	1
1.3	Bell Housing	HI-00139-00	1
1.4	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



<b>Item.</b>	<b>Description</b>	<b>Part Number</b>	<b>Qty.</b>
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



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



**Figure 5. Hydraulic Manifold 3PE~400V 50/60Hz (hyd. Pump 28 cc discontinued), Exploded View**



**Table 10. 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 Assembly		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-00155-02	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-00454	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



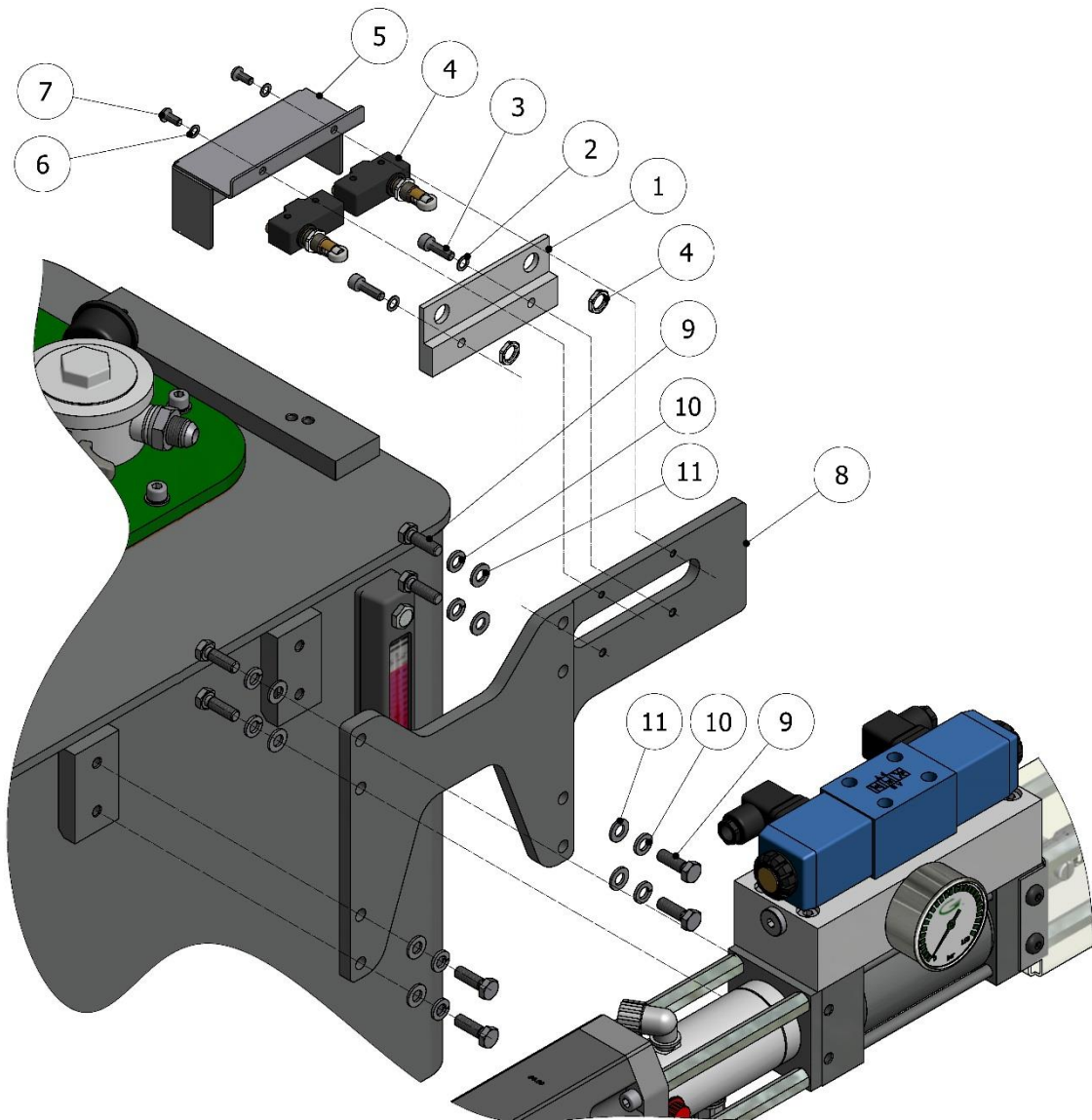
**novaG-V PLUS**

**Parts Manual**

<b>Item.</b>	<b>Description</b>	<b>Part Number</b>	<b>Qty.</b>
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 90°	RA-00416	1



## REVERSING SWITCH & PUMP LINE SUPPORT



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

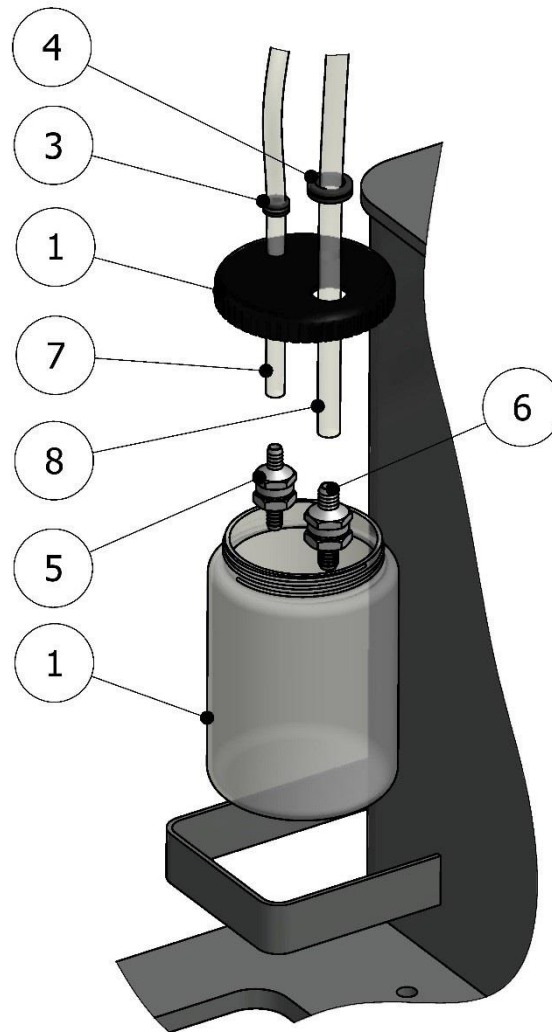


**Table 11. Reversing Switch & Pump Line Support, Parts List**

<b>Item</b>	<b>Description</b>	<b>Part Number</b>	<b>Qty.</b>
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*

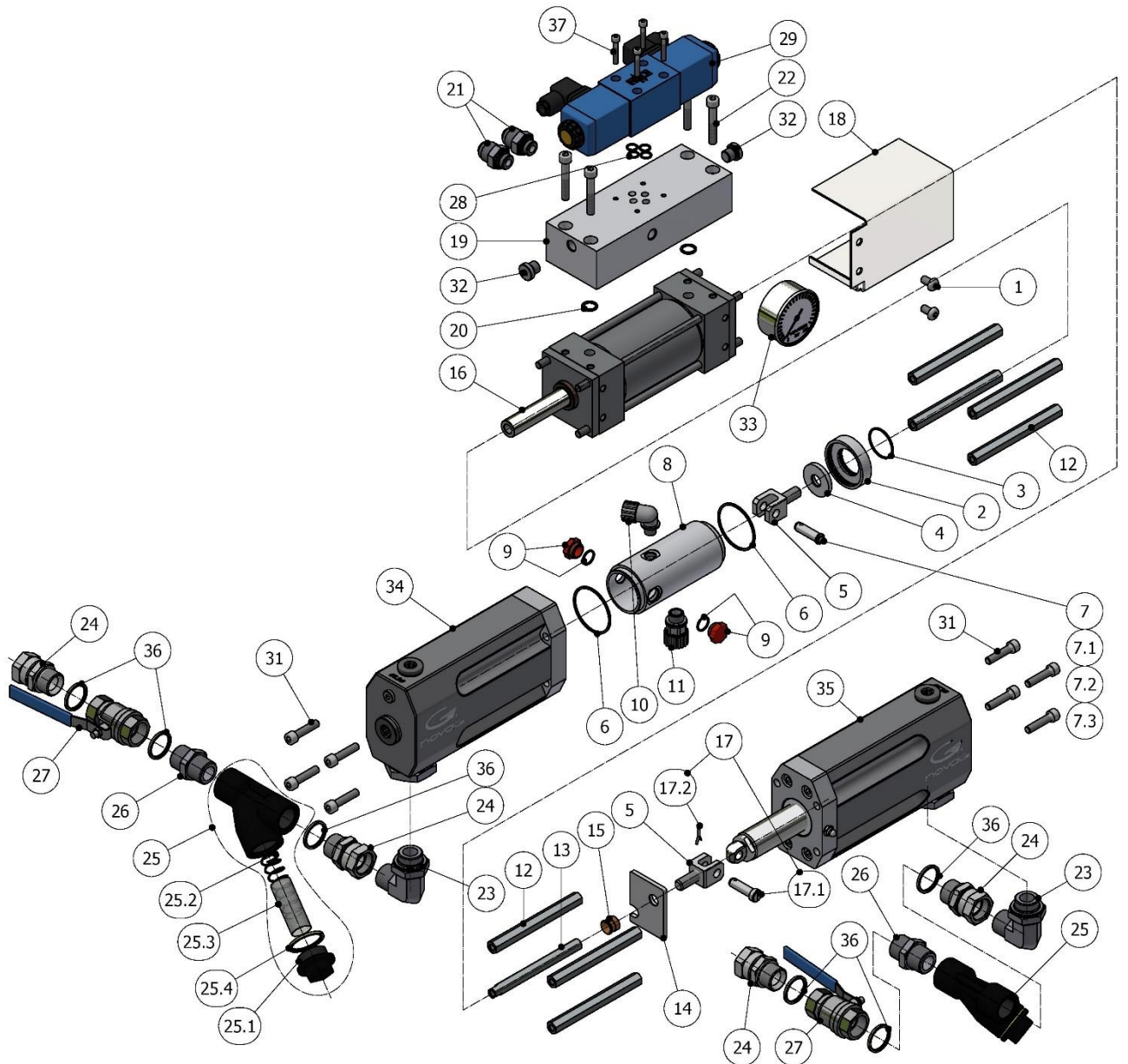


**Table 12. Lube Reservoir Hose Assembly, Parts List**

<b>Item</b>	<b>Description</b>	<b>Part Number</b>	<b>Qty.</b>
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 13. 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 with 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 14	1
35	"R" Proportioning Pump Assembly	See Table 14	1
36	Gasket	OR-00082	6
37	Screw	TN-00148	4

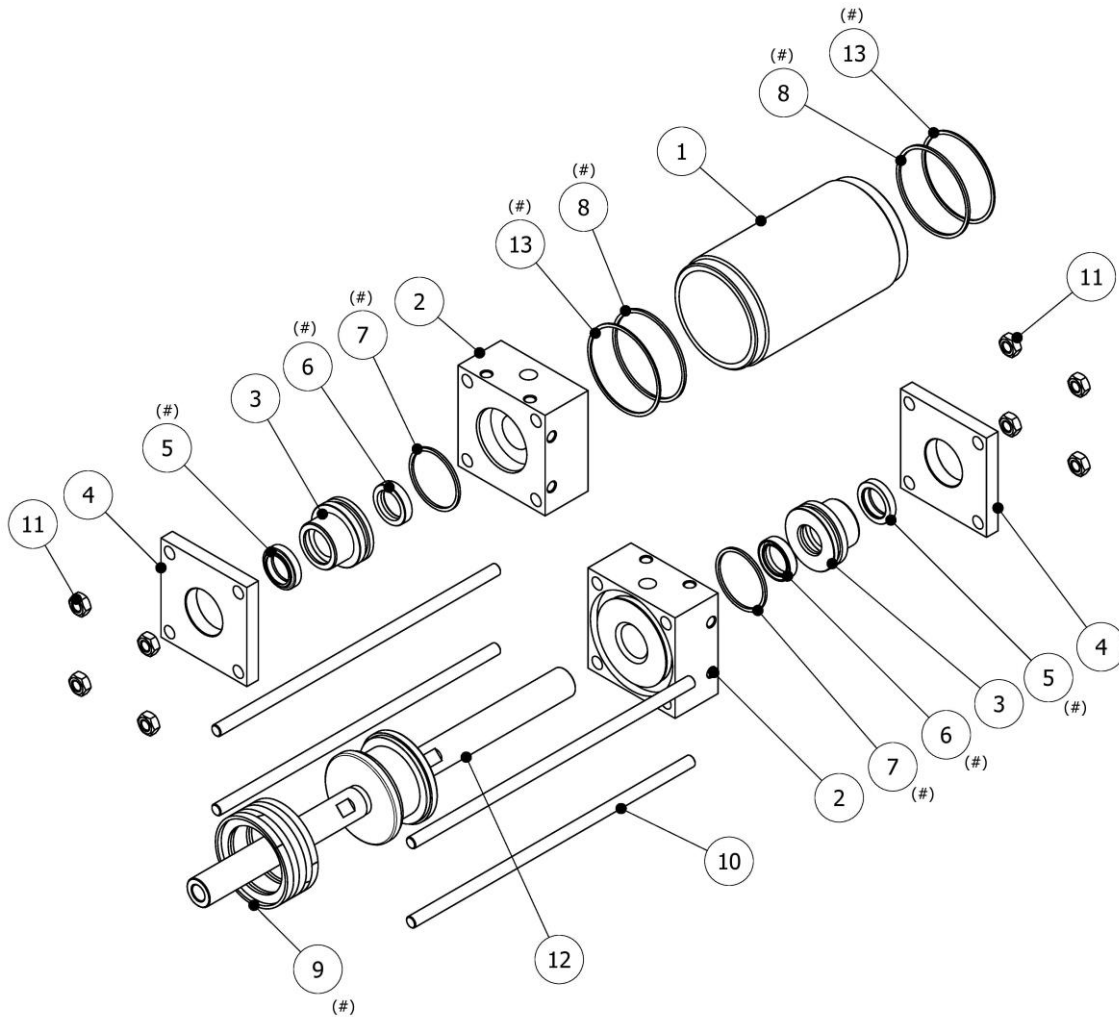
**Table 14. Proportioning Pump Size, Parts**

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 15. 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

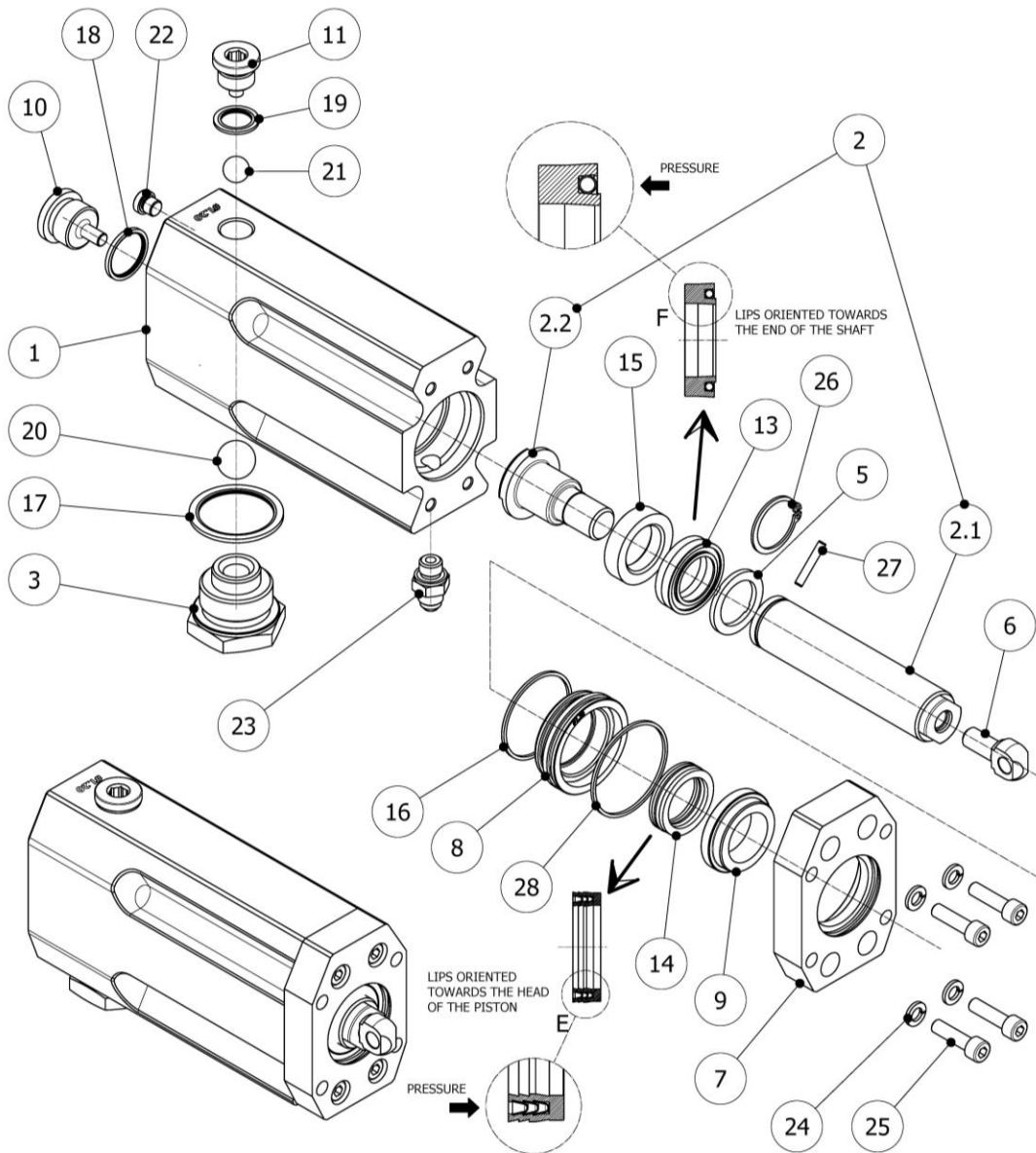


Figure 10. "A" Proportioning Pump Assembly, Exploded View

**Table 16. "A" Proportioning Pump Assembly, Parts List**

Item	Description	Part Number	Qty.
1	Body Pump with Check Valve Seat	See Table 17	1
2	Piston Rod Assembly (Only item. 2.1 y 2.2)	See Table 17	1
2.1	Piston Rod (Included in item 2)	See Table 17	1 (#)
2.2	Piston Head (Included in item 2)	See Table 17	1 (#)
3	Inlet Ball Seat Assembly	PU-01003-0J	1
4			
5	Piston Seal	See Table 17	1
6	Pump Clevis	PU-01042	1
7	Monobloc Flange Pump – ISO	NPU-06004	1
8	Seat Seal – ISO	See Table 17	1
9	Bearing ISO	See Table 18	1 (*)
10	Plug Side Pump	PU-01003-0E	1
11	Upper Plug Pump	PU-01003-0F	1
12			
13	Piston Seal	See Table 18	1 (*)
14	Cylinder Seal	See Table 18	1 (*)
15	Piston Guide	See Table 18	1 (*)
16	O-Ring	See Table 18	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 17	1
27	Pin	See Table 17	1
28	O-Ring	See Table 18	1 (*)

**N.B.:** The parts marked with (\*), are included in the repair seal kit of "A" pump (see Table 19).

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



**Table 17. "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 18. 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 19. Repair Seal Kit "A" Pump**

Pump	Item
1.20	KT-00157
0.80	KT-00159

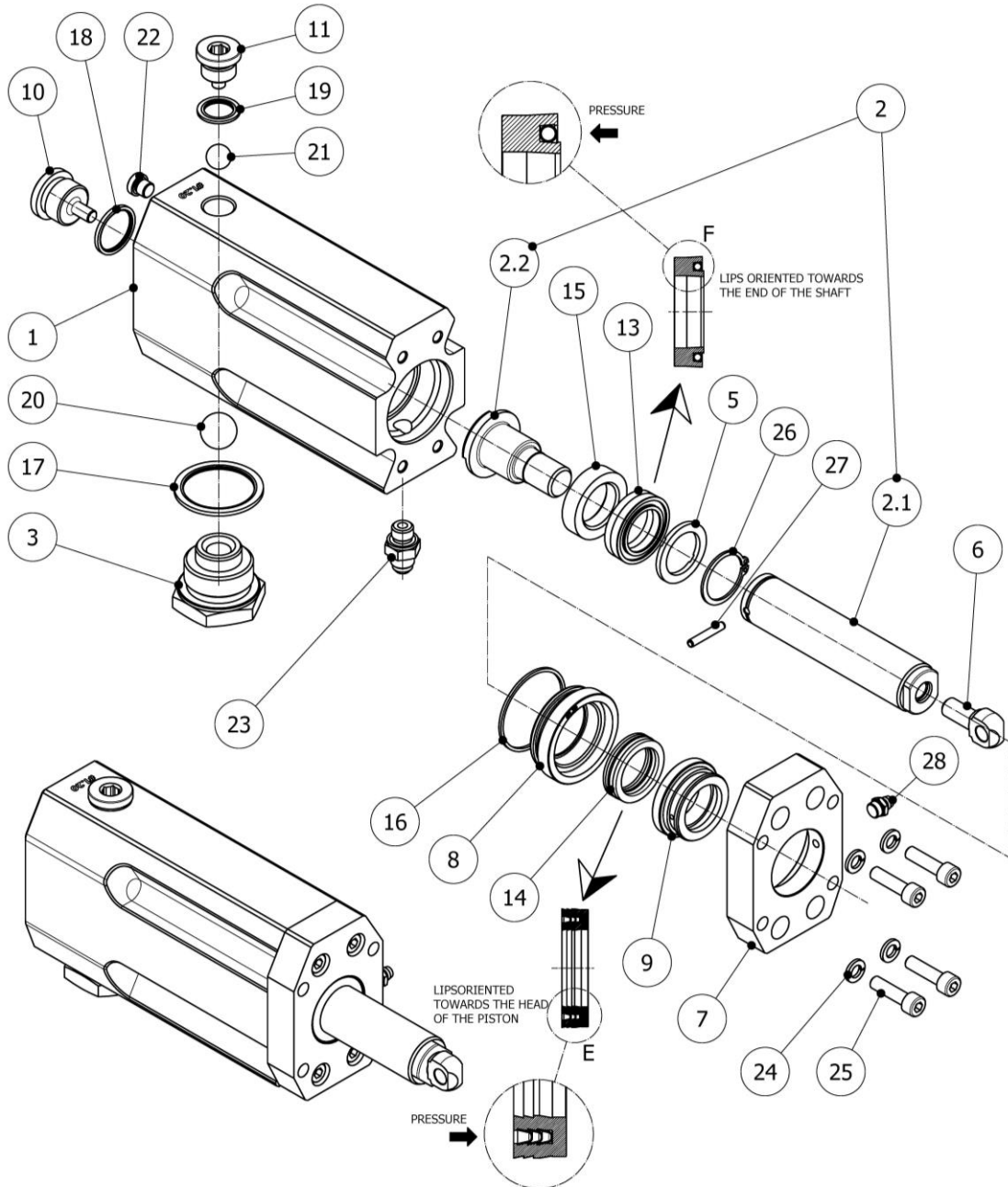
**N.B :**

*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 16.*



**“R” PROPORTIONING PUMP ASSEMBLY**



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



**Table 20. "R" Proportioning Pump Assembly, Parts List**

Item	Description	Part Number	Qty.
1	Body Pump with Check Valve Seat	See Table 21	1
2	Piston Rod Assembly (Only item. 2.1 y 2.2)	See Table 21	1
2.1	Piston Rod (Included in item 2)	See Table 21	1 (#)
2.2	Piston Head (Included in item 2)	See Table 21	1 (#)
3	Inlet Ball Seat Assembly	PU-01003-0J	1
4			
5	Piston Seal	See Table 21	1
6	Pump Clevis	PU-01042	1
7	Monobloc Flange Pump – POL	NPU-06005	1
8	Seat Seal – POL	See Table 21	1
9	Bearing ISO	See Table 22	1 (*)
10	Plug Side Pump	PU-01003-0E	1
11	Upper Plug Pump	PU-01003-0F	1
12			
13	Piston Seal	See Table 22	1 (*)
14	Cylinder Seal	See Table 22	1 (*)
15	Piston Guide	See Table 22	1 (*)
16	O-Ring	See Table 22	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 21	1
27	Pin	See Table 21	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 23).

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



**Table 21. "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 22. Seals Monobloc "R" Pump**

Ítem	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 23. 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 20.*



## “A” STANDARD PRIMARY HEATER

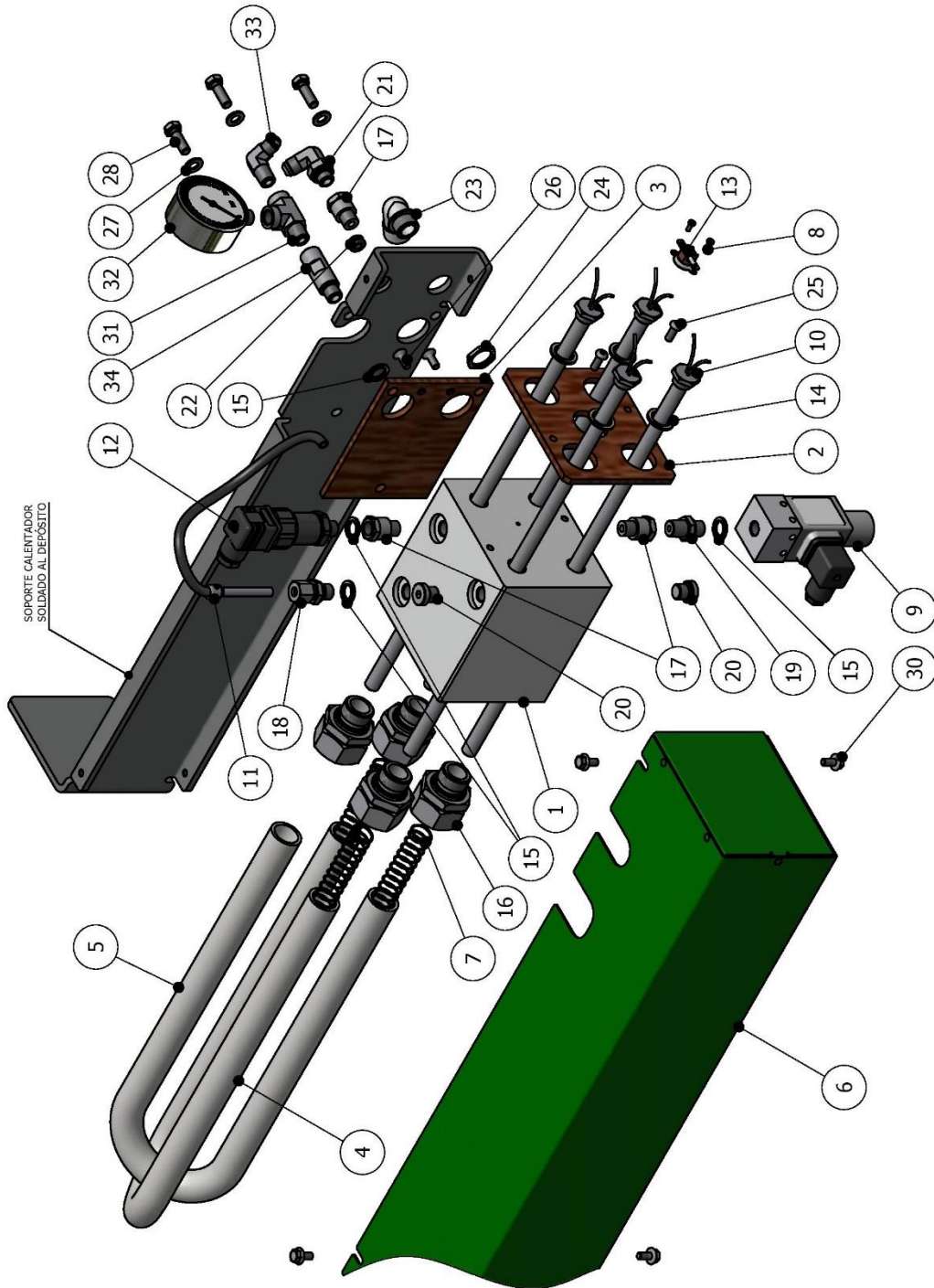


Figure 12. “A” Standard Primary Heater, Exploded View

**Table 24. "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 25	4
11	Thermocouple	EL-00156-01	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



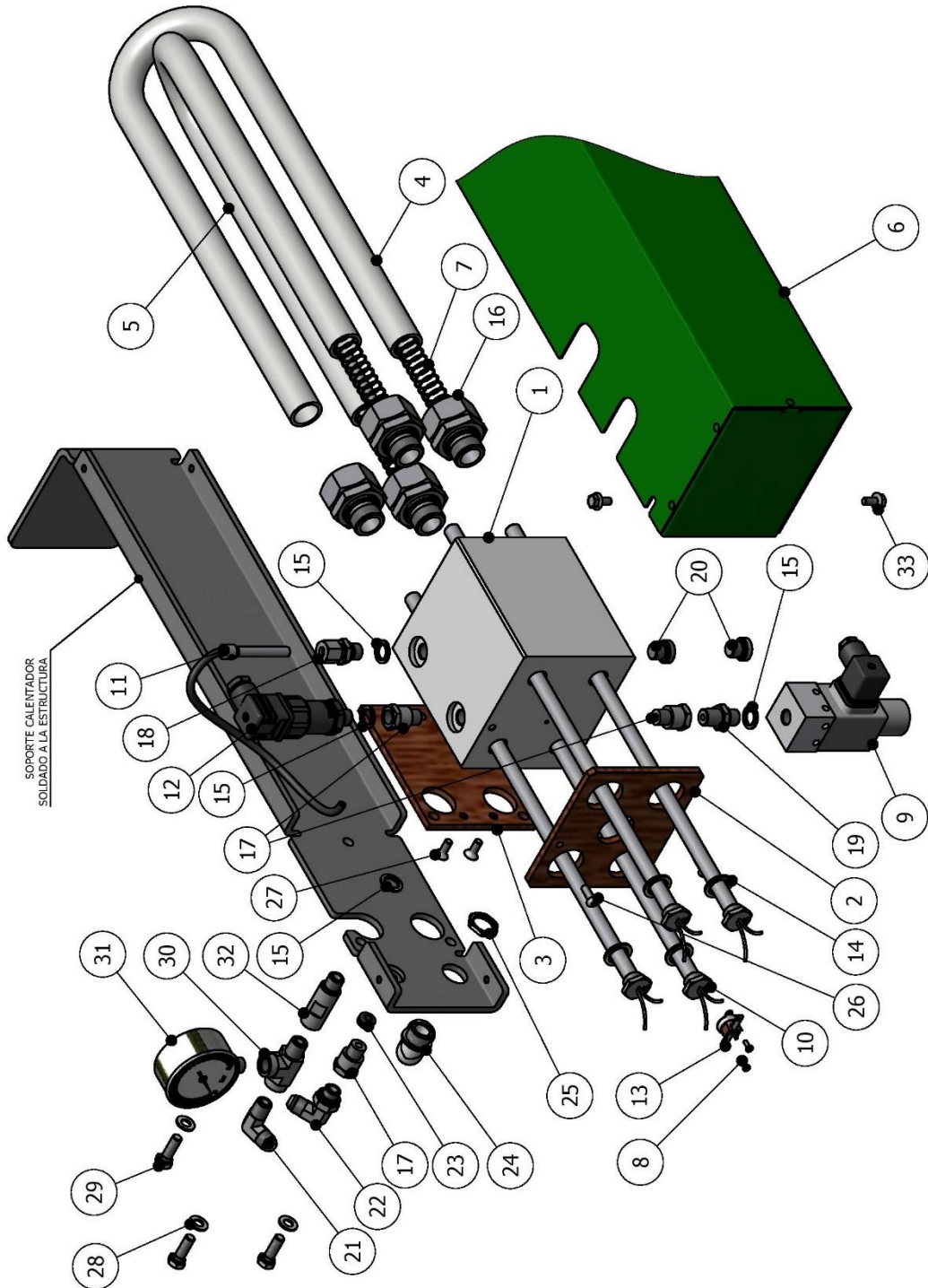
Item	Description	Part Number	Qty.
29			
30	Hex. Cap Screw	TN-00491	4
31	"T" Adapter	RA-00018	1
32	Pressure Gauge	HI-00035	1
33	Elbow 90°	RA-00254	1
34	Extension Nipple	RA-00100	1

**Table 25. "A" Heat Resistance Reference List**

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



**“R” STANDARD PRIMARY HEATER**



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



**Table 26. “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	Heat Resistance	See Table 27	4
11	Thermocouple	EL-00156-01	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



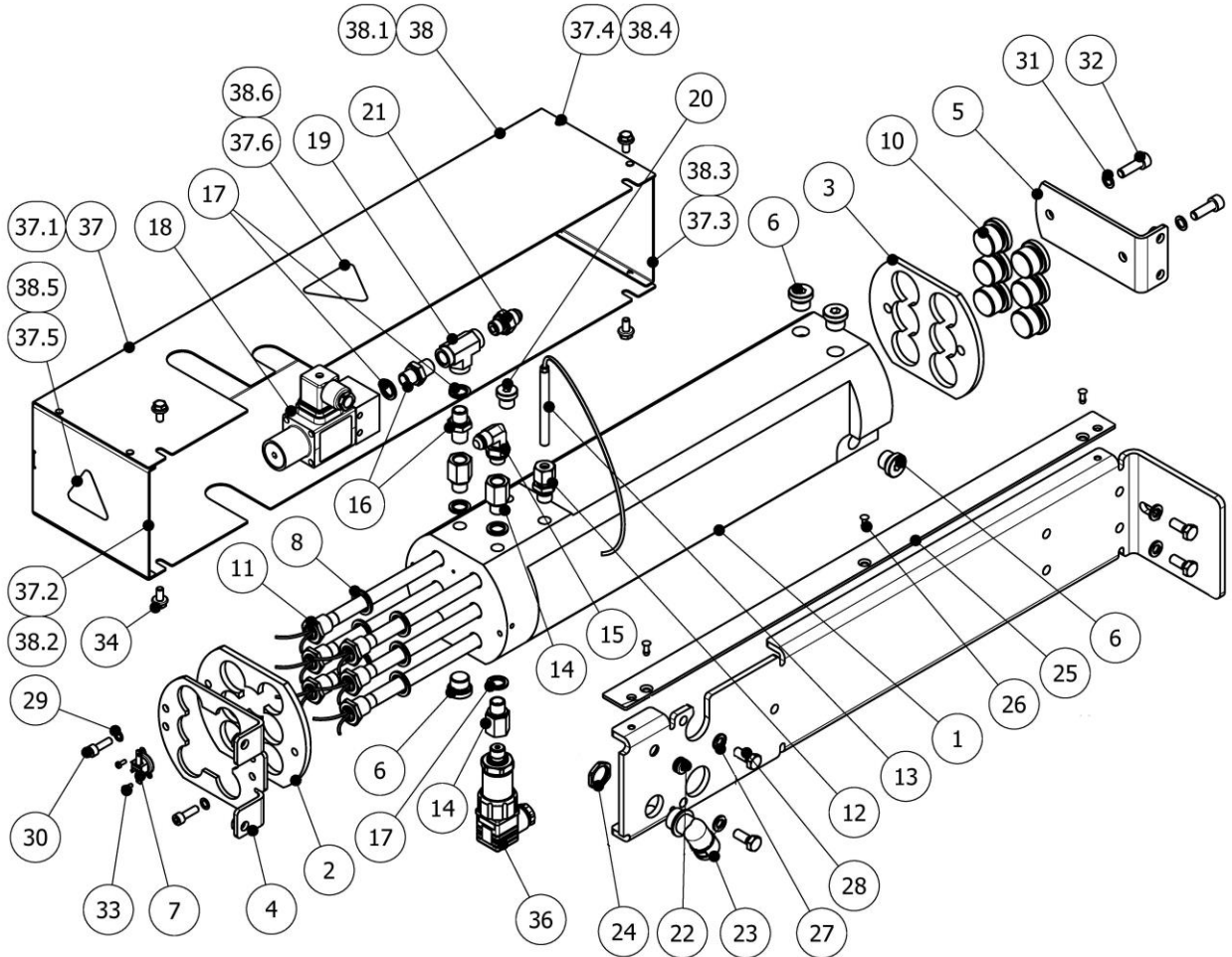
Item	Description	Part Number	Qty.
30	"T" Adapter	RA-00018	1
31	Pressure Gauge	HI-00035	1
32	Extension Nipple	RA-00100	1
33	Hex. Cap Screw	TN-00491	4
34			

**Table 27. "R" Heat Resistance Reference List**

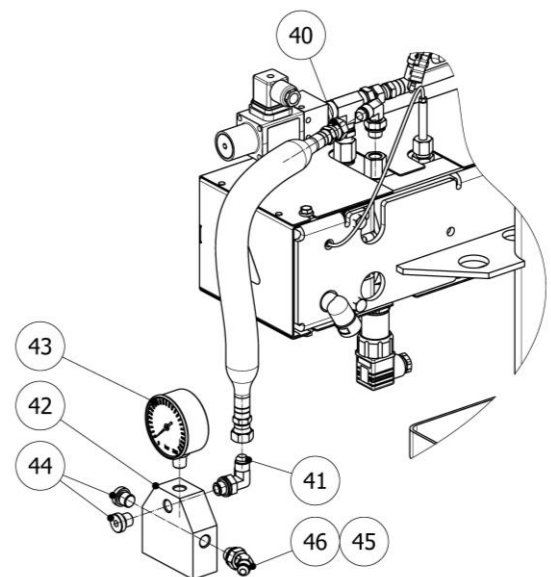
Item	Description	Part Number	Qty.
10	Heat Resistance 400v 2000w	EL-00258	4



## 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 28. 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 29	6
12	Male Connector for Thermocouple	RA-00231	1
13	Thermocouple	EL-00156-01	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.*



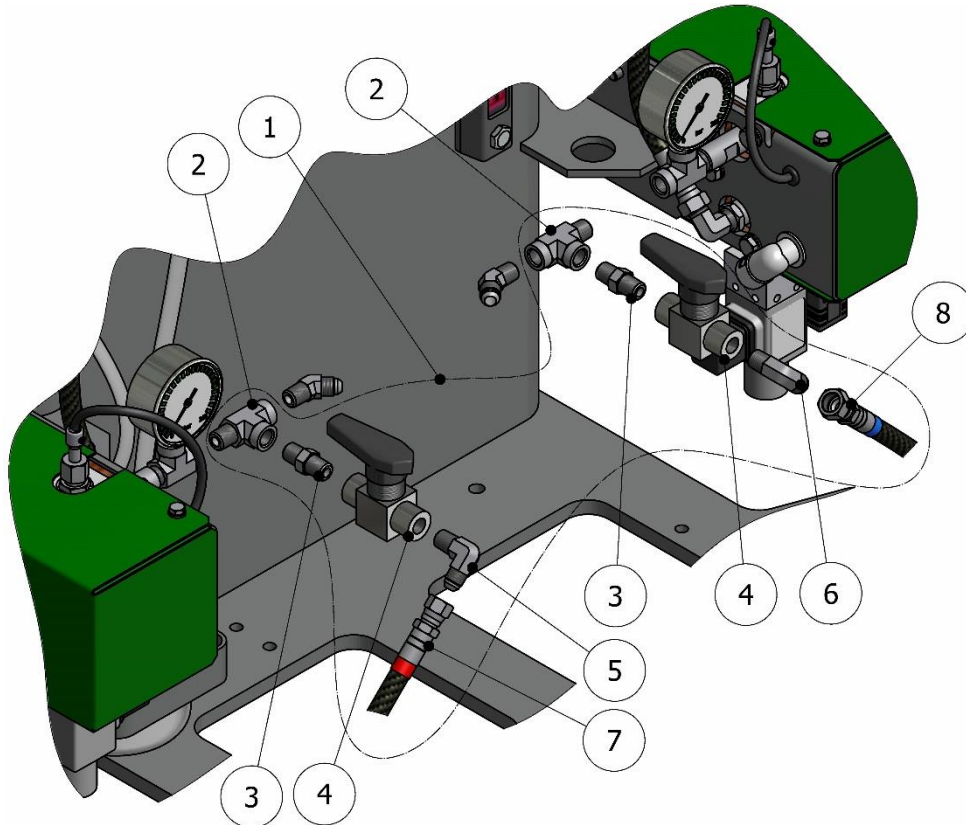
**Table 29. Resistances List according to model**

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

*Unit quantities per heater.*



**RECIRCULATION KIT P#: KT-00038**



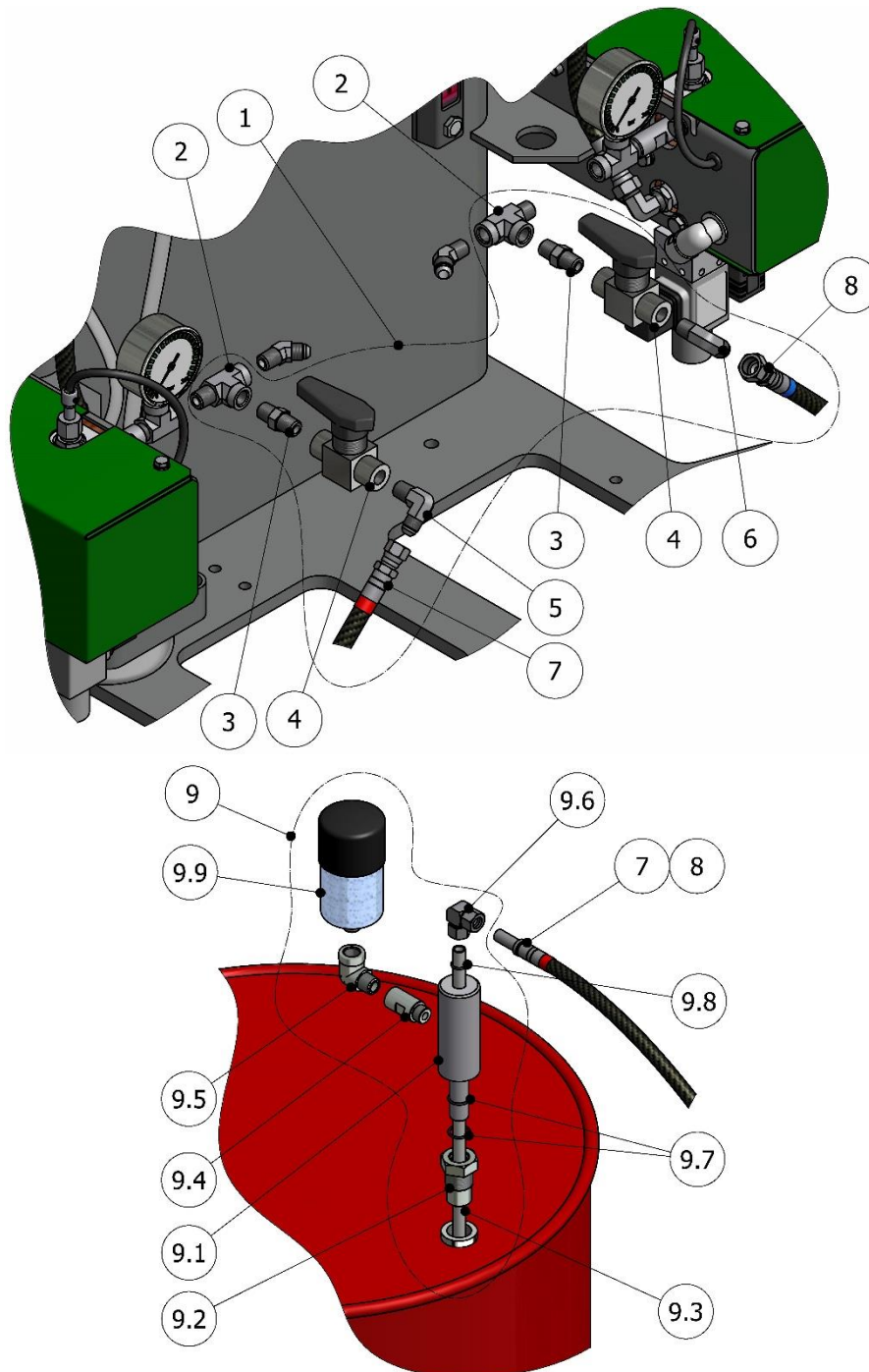
*Figure 15. Recirculation Kit P#: KT-00038, Exploded View*

*Table 30. 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 31. Recirculation Kit #KT-00038-01, Parts List**

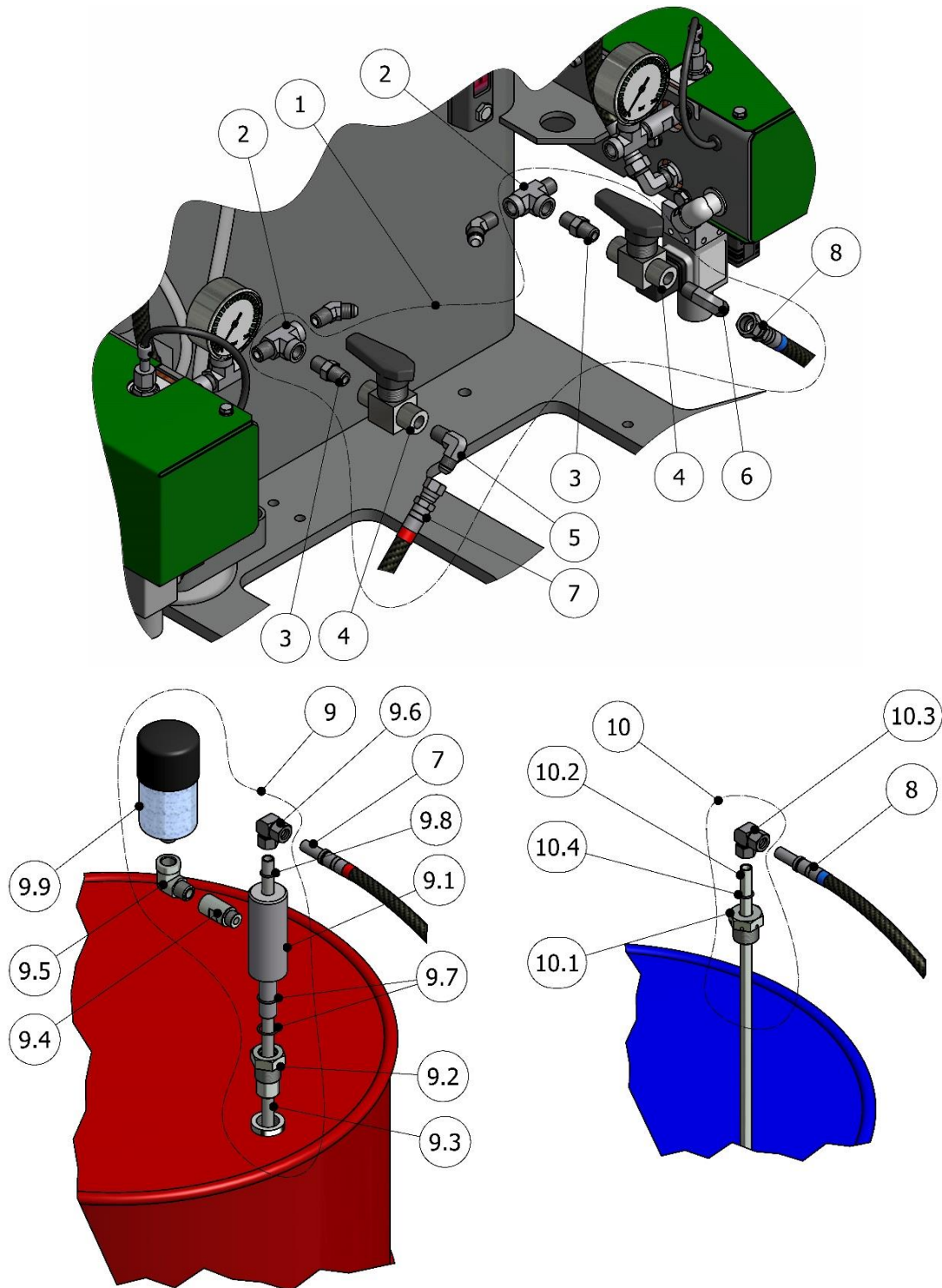
Item	Description	Part Number	Qty.
1	Recirculation Kit	KT-00038-01	1
2	"T" Union	RA-00018	2
3	Male Union	RA-00188	2
4	Ball Valve	RA-00217	2
5	Elbow 90° ISO Side	RA-00254	1
6	Elbow 90° POL Side	RA-00044	1
7	A-Hose	MA-00050-01	1
8	R-Hose	MA-00050-00	1
9	Assy. Connection to Tank with Filter	MQ-05009-00	2
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 32. 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

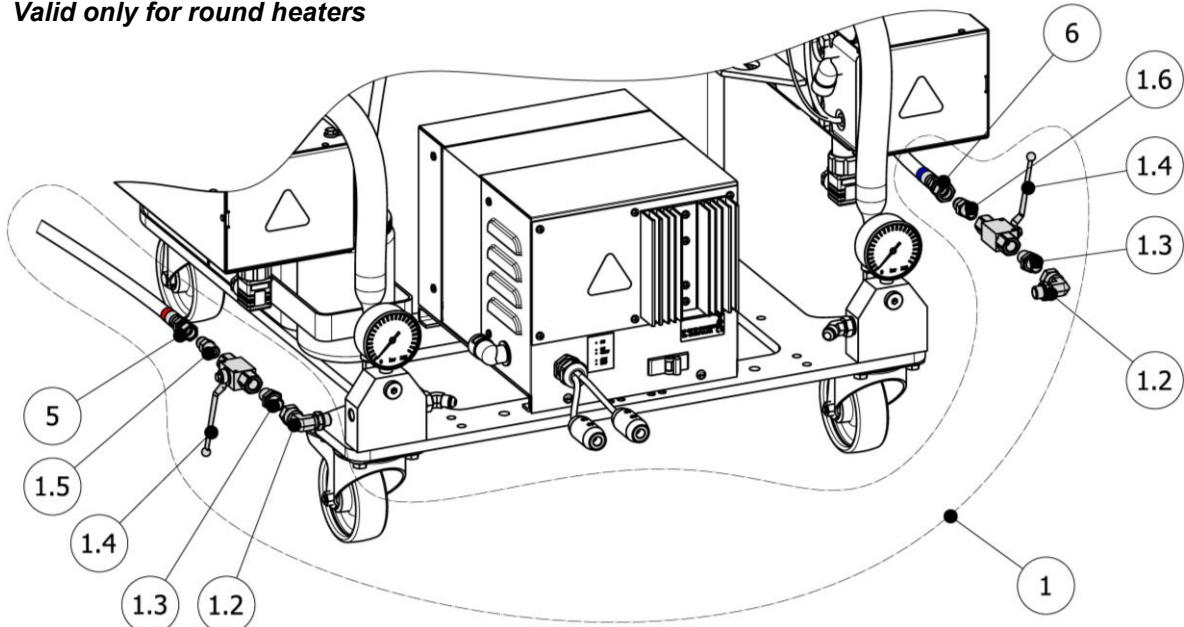


Figure 18. Recirc. Kit for Round Heaters without Filters

Table 33. 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

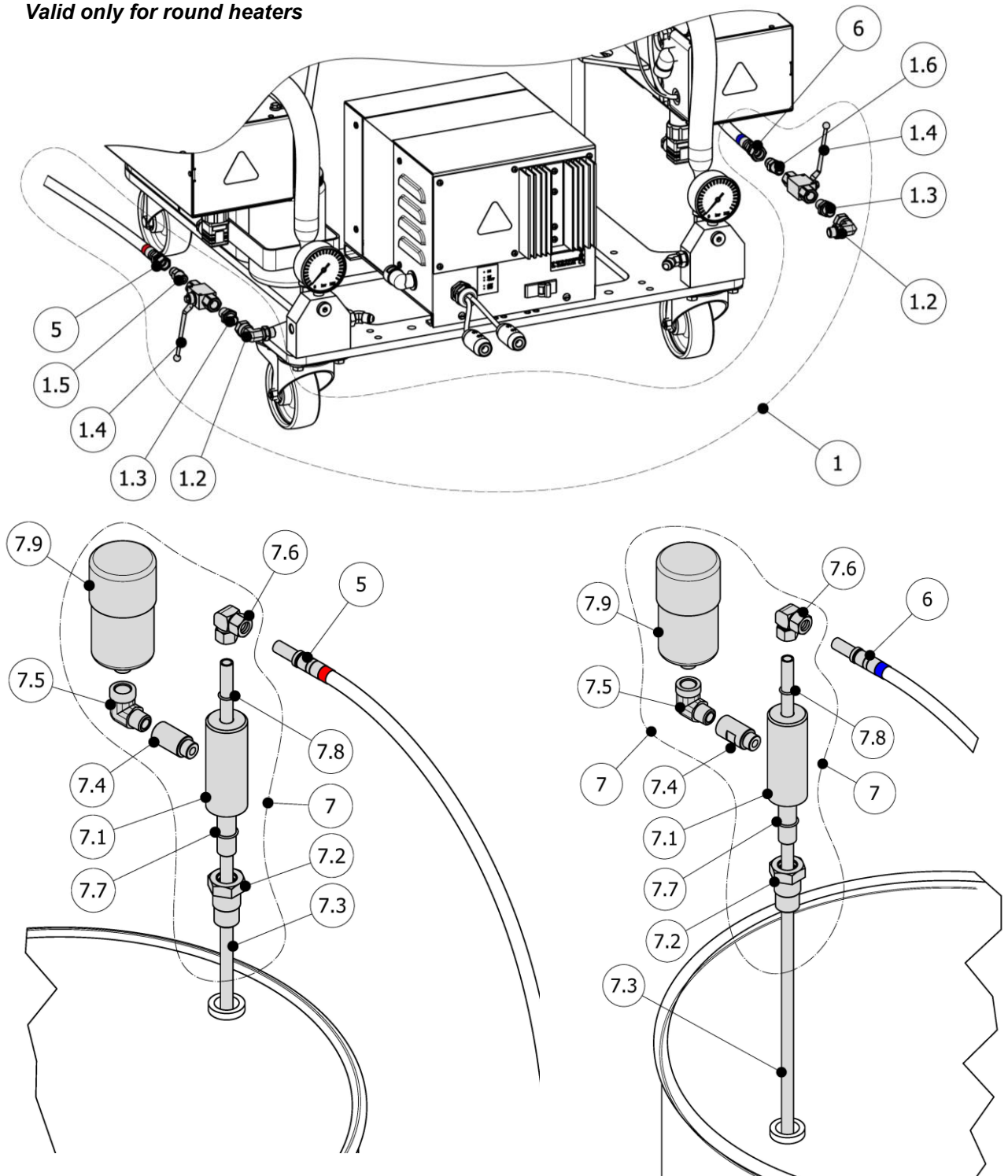


Figure 19. Recirc. Kit for Round Heaters with Double Filters



**Table 34. 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

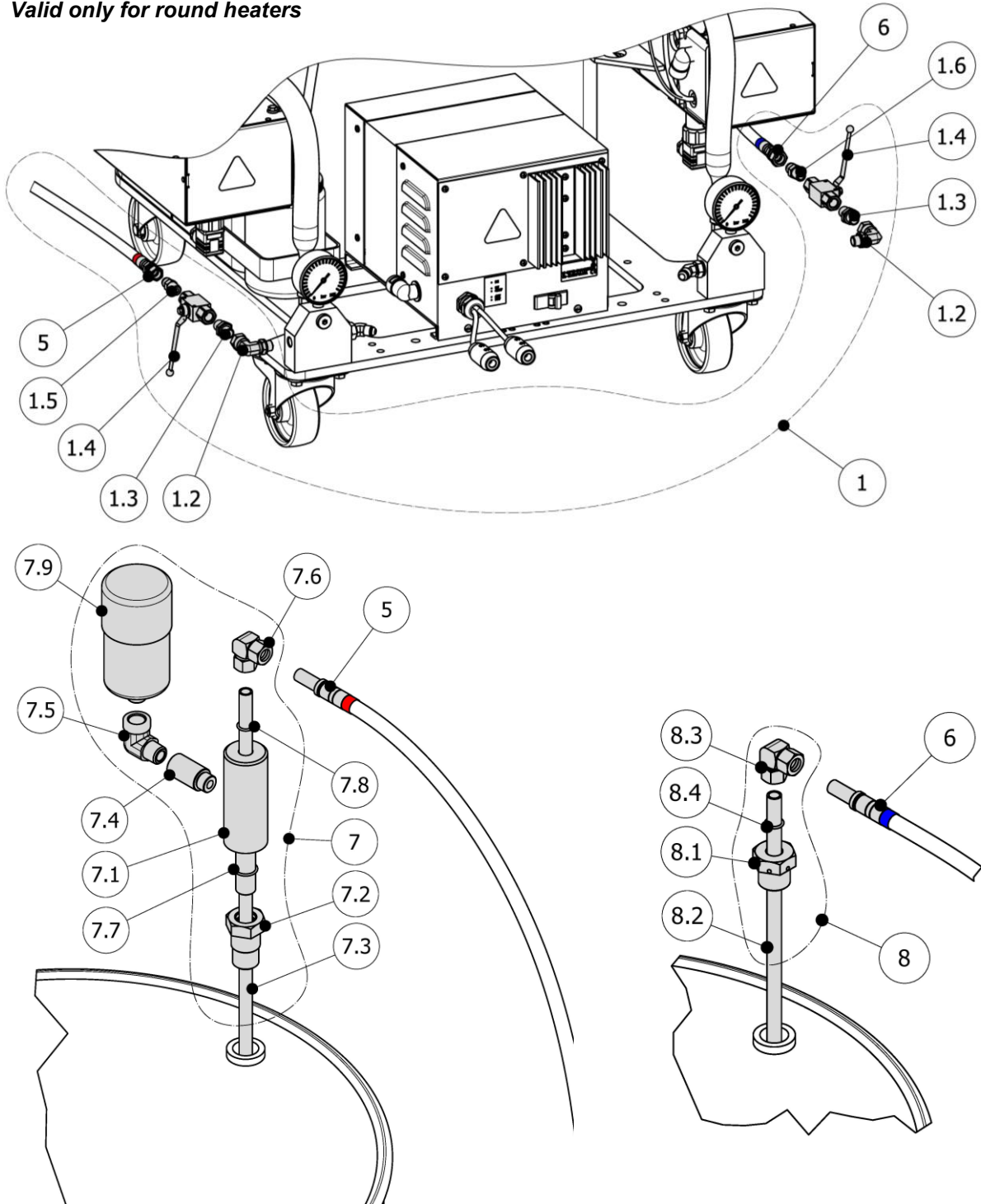


Figure 20. Recirc. Kit for Round Heaters with "A" ISO Filter



**Table 35. 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

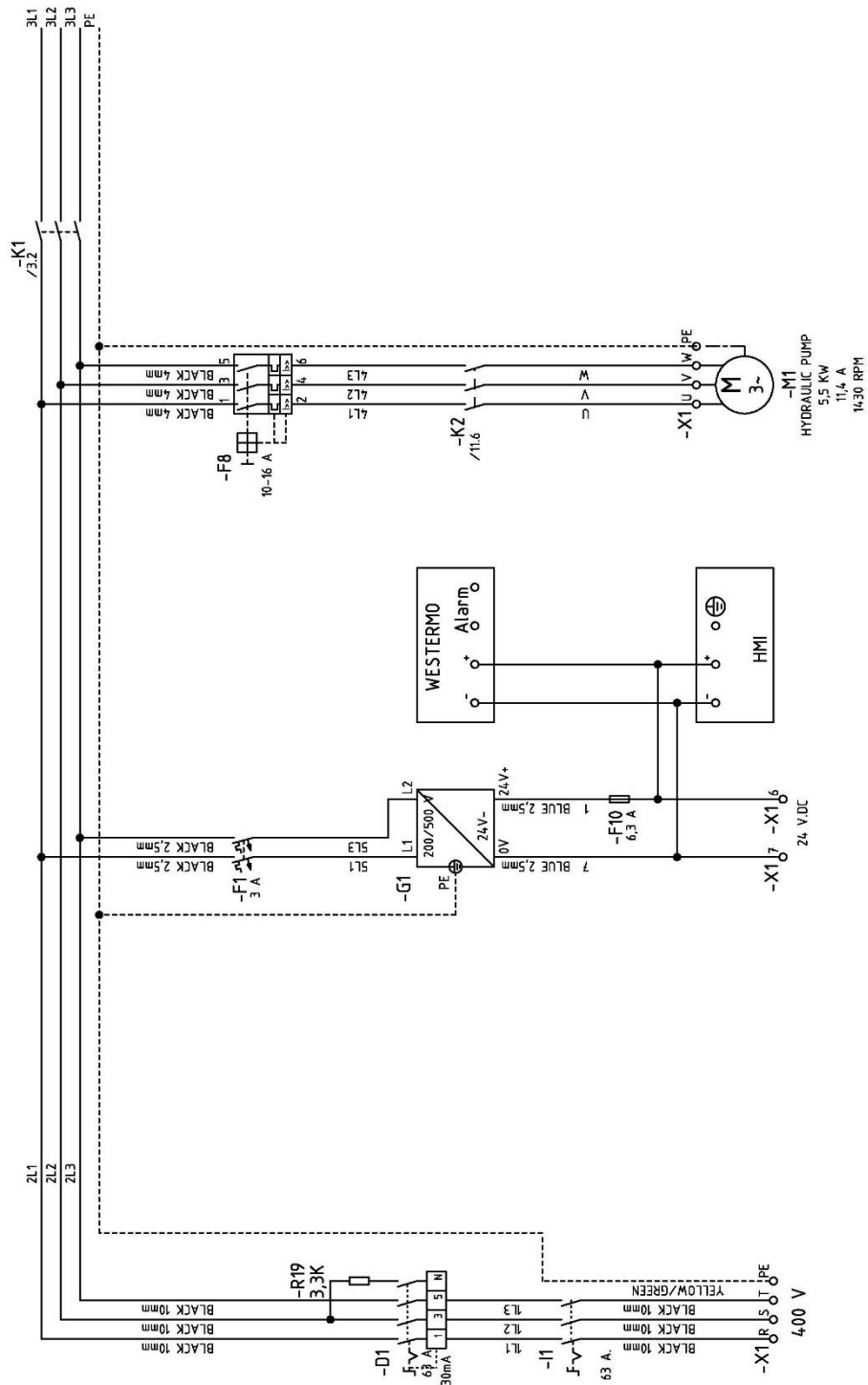


Figure 21. Elec. Schem. 3PE~400V 50/60Hz Standard Vers. (Sheet 1/12)

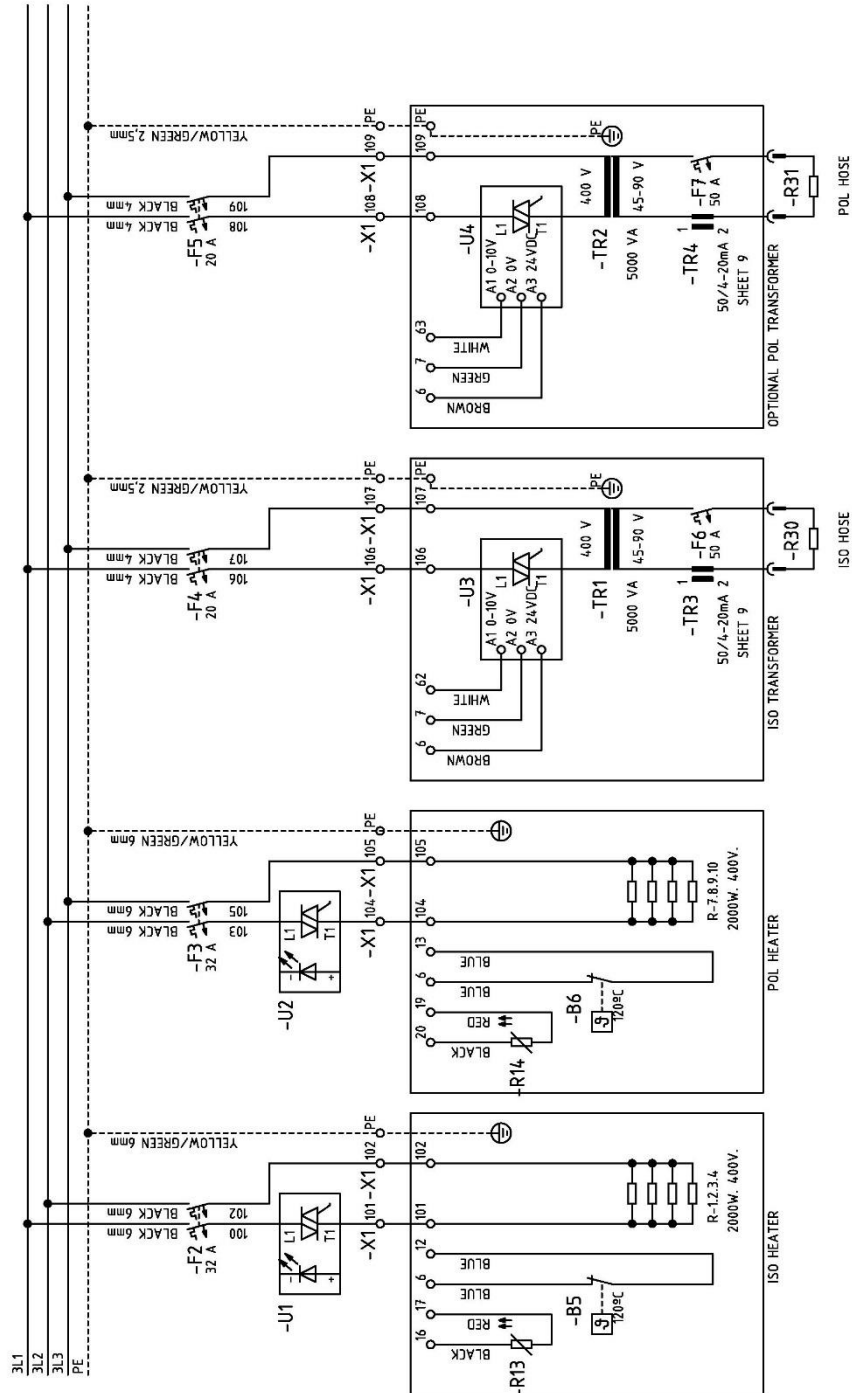


Figure 22. Elec. Schem. 3PE~400V 50/60Hz Standard Vers. (Sheet 2/12)

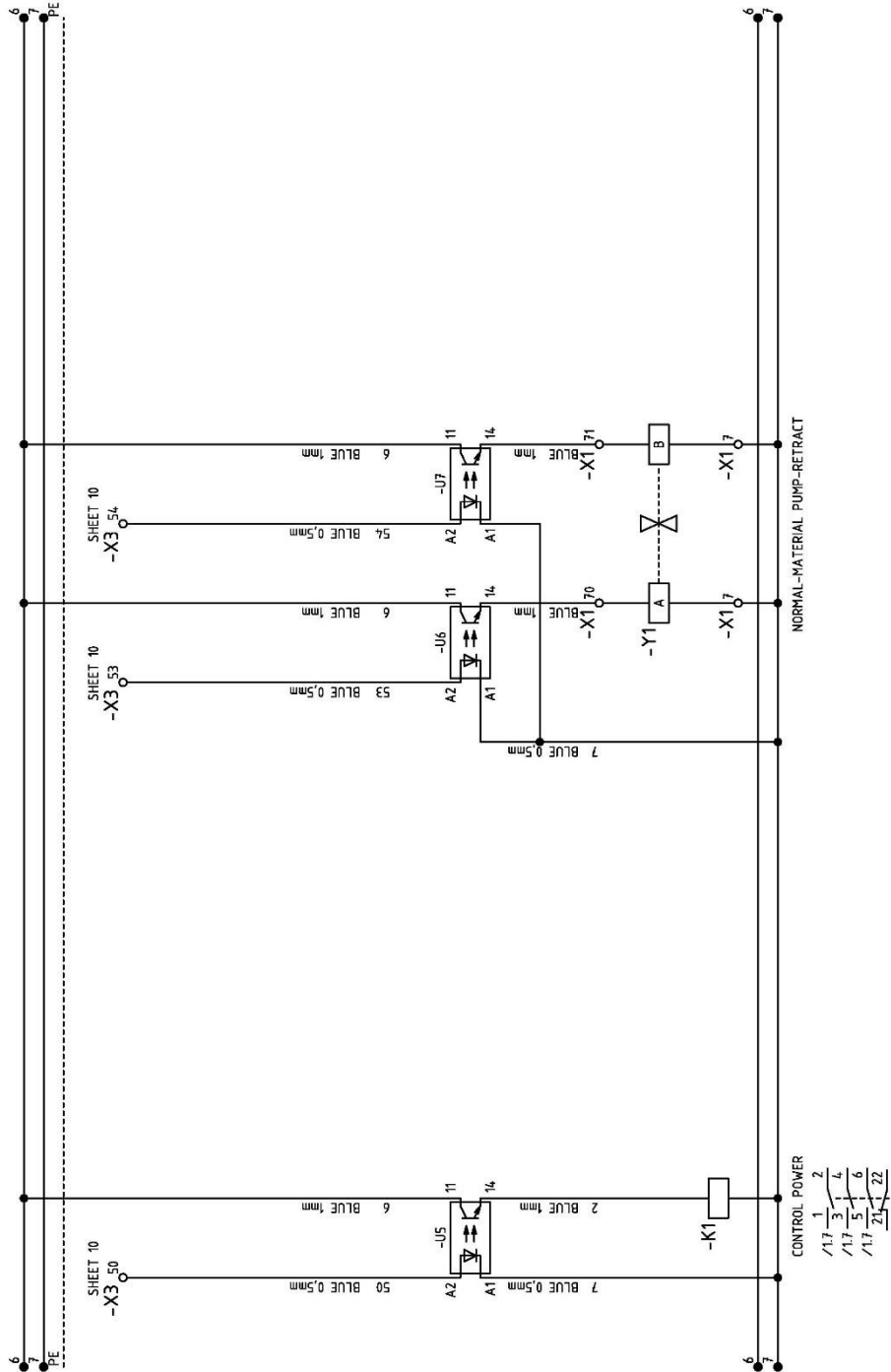
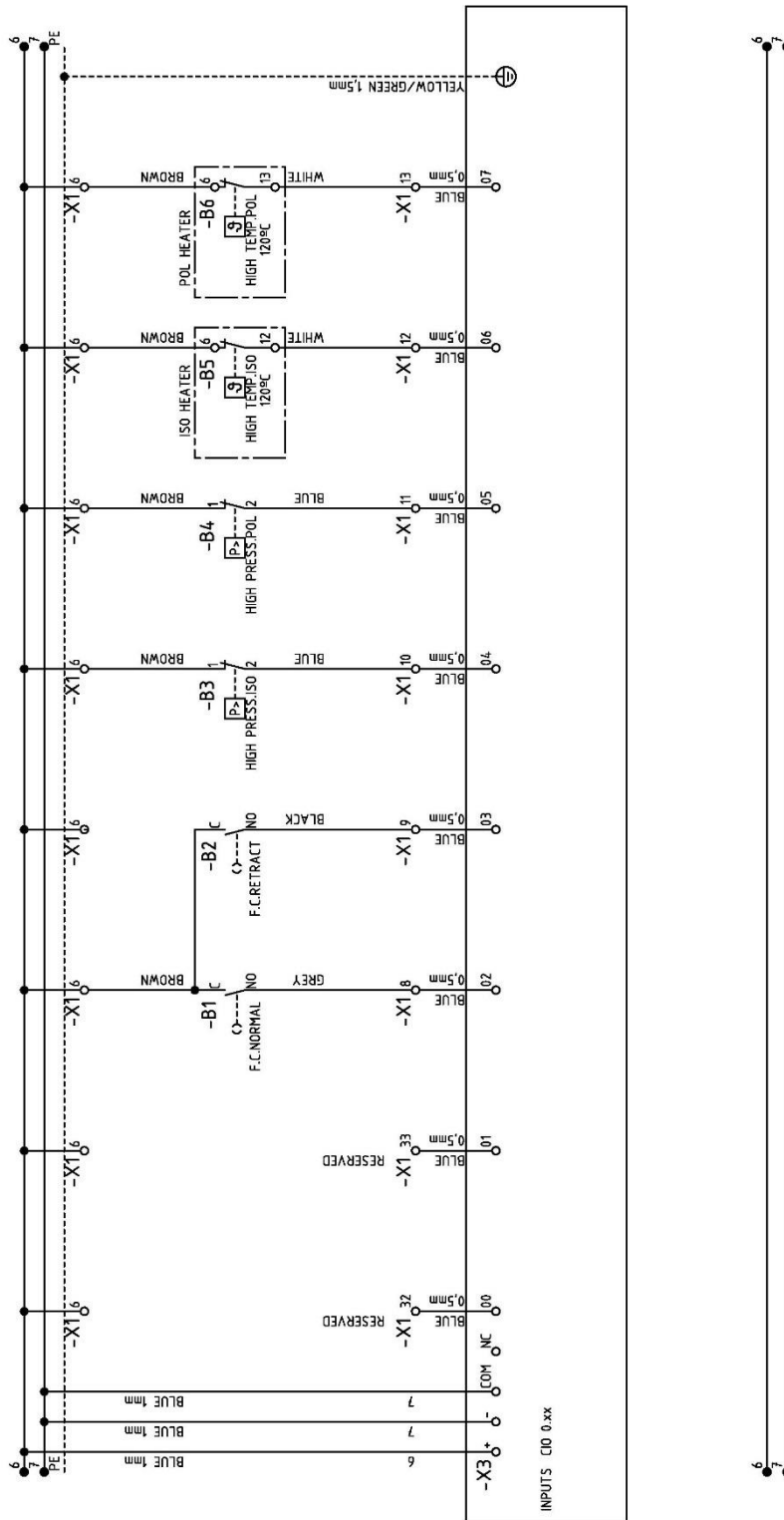


Figure 23. Elec. Schem. 3PE~400V 50/60Hz Standard Vers. (Sheet 3/12)



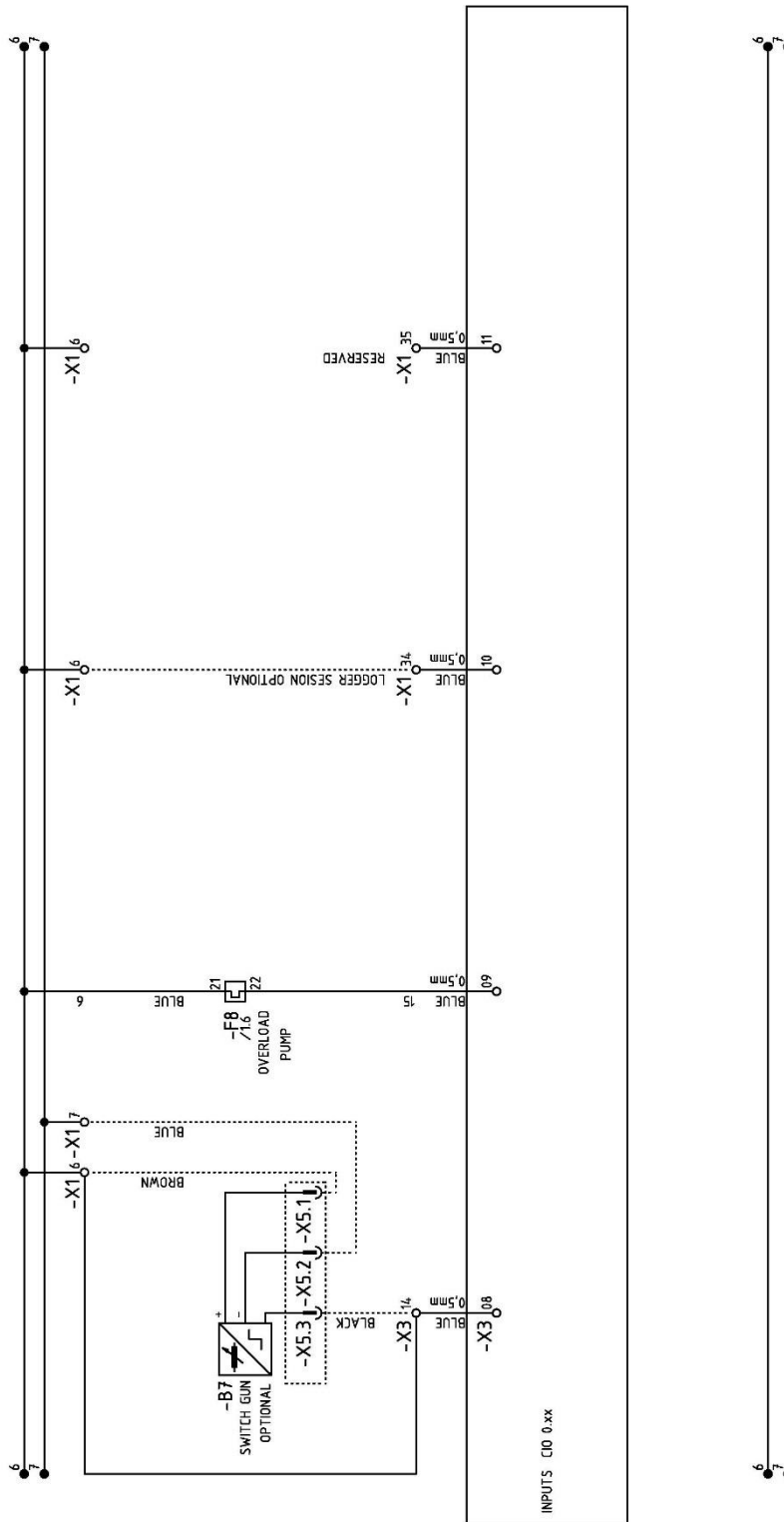


Figure 25. Elec. Schem. 3PE~400V 50/60Hz Standard Vers. (Sheet 5/12)

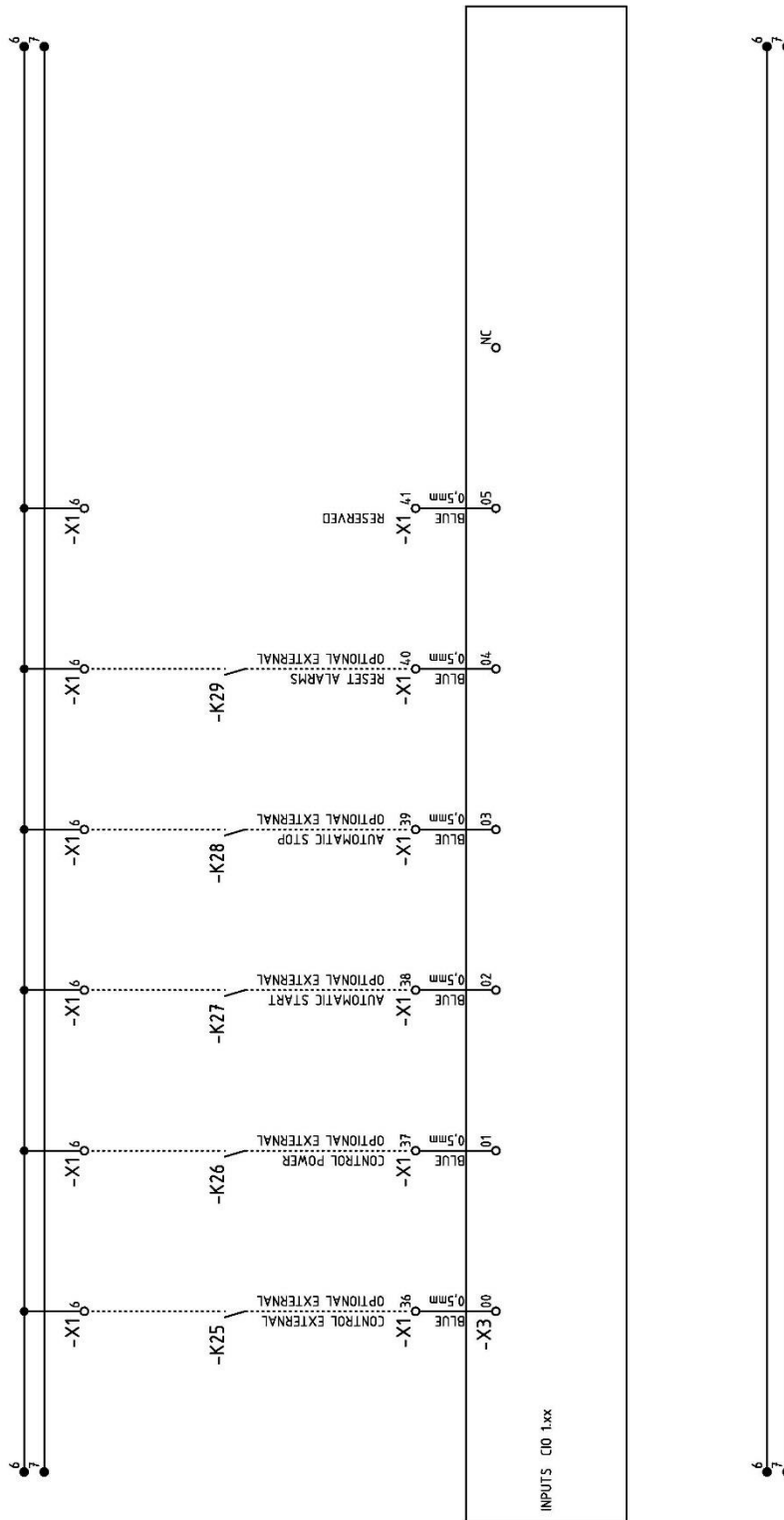


Figure 26. Elec. Schem. 3PE~400V 50/60Hz Standard Vers. (Sheet 6/12)

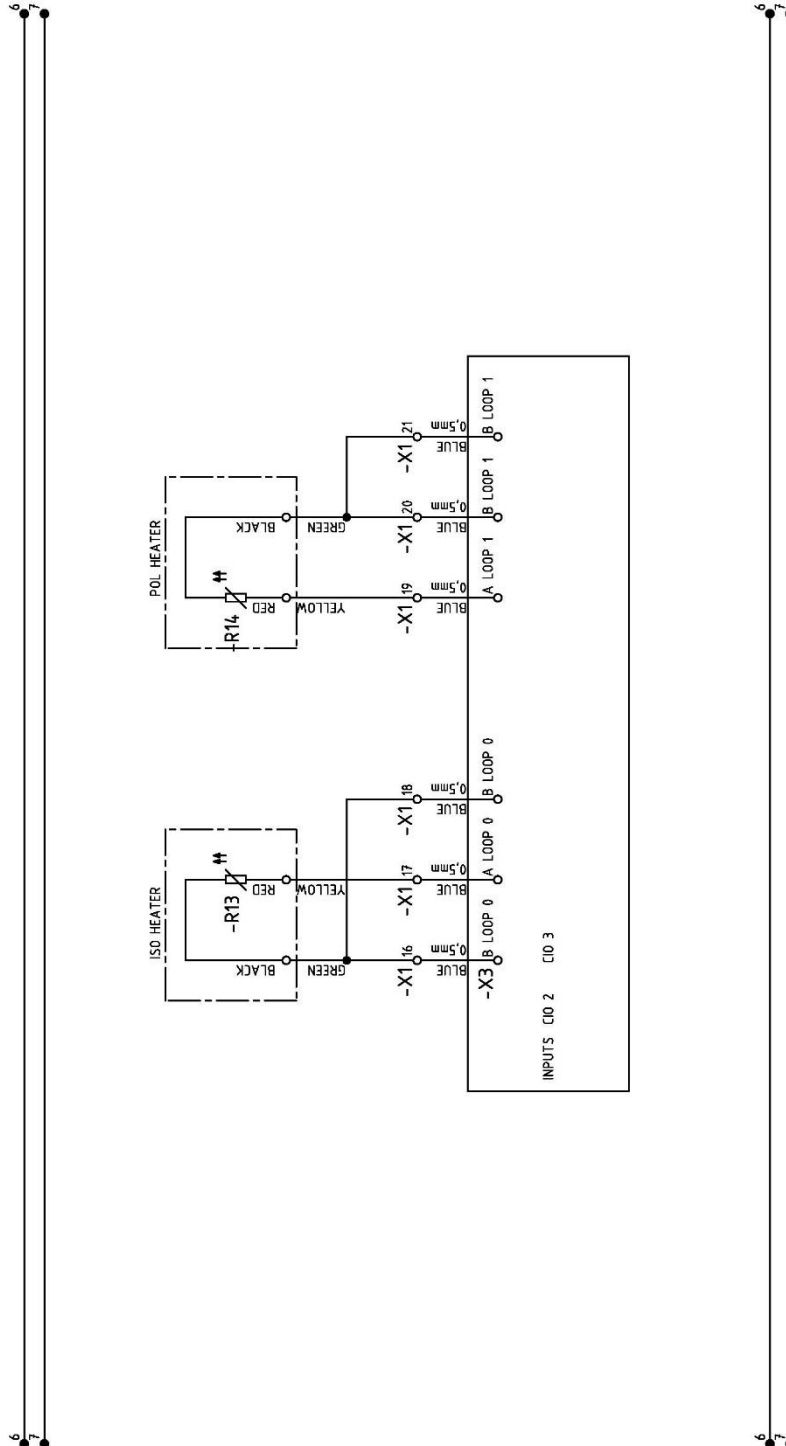


Figure 27. Elec. Schem. 3PE~400V 50/60Hz Standard Vers. (Sheet 7/12)

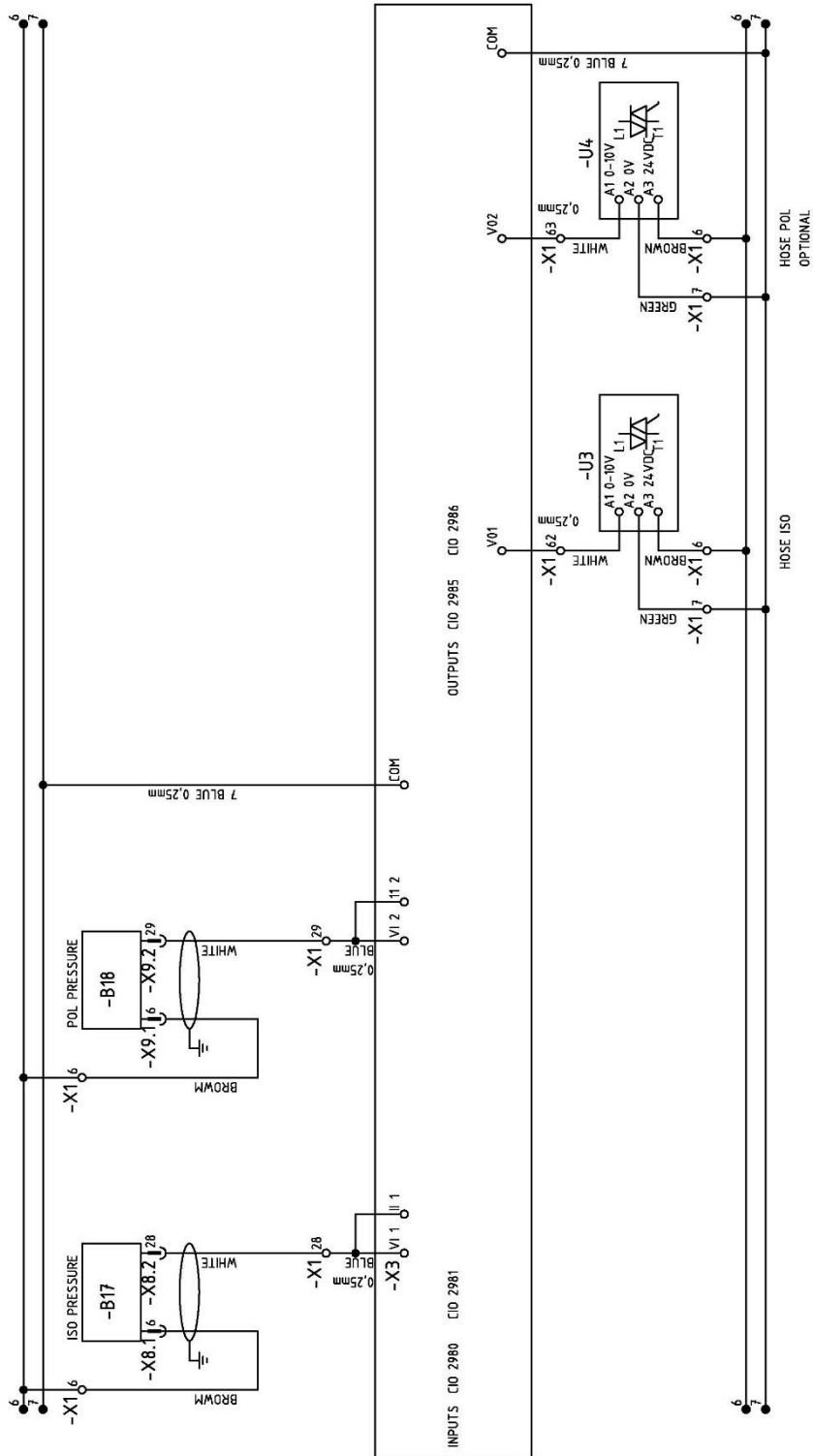


Figure 28. Elec. Schem. 3PE~400V 50/60Hz Standard Vers. (Sheet 8/12)

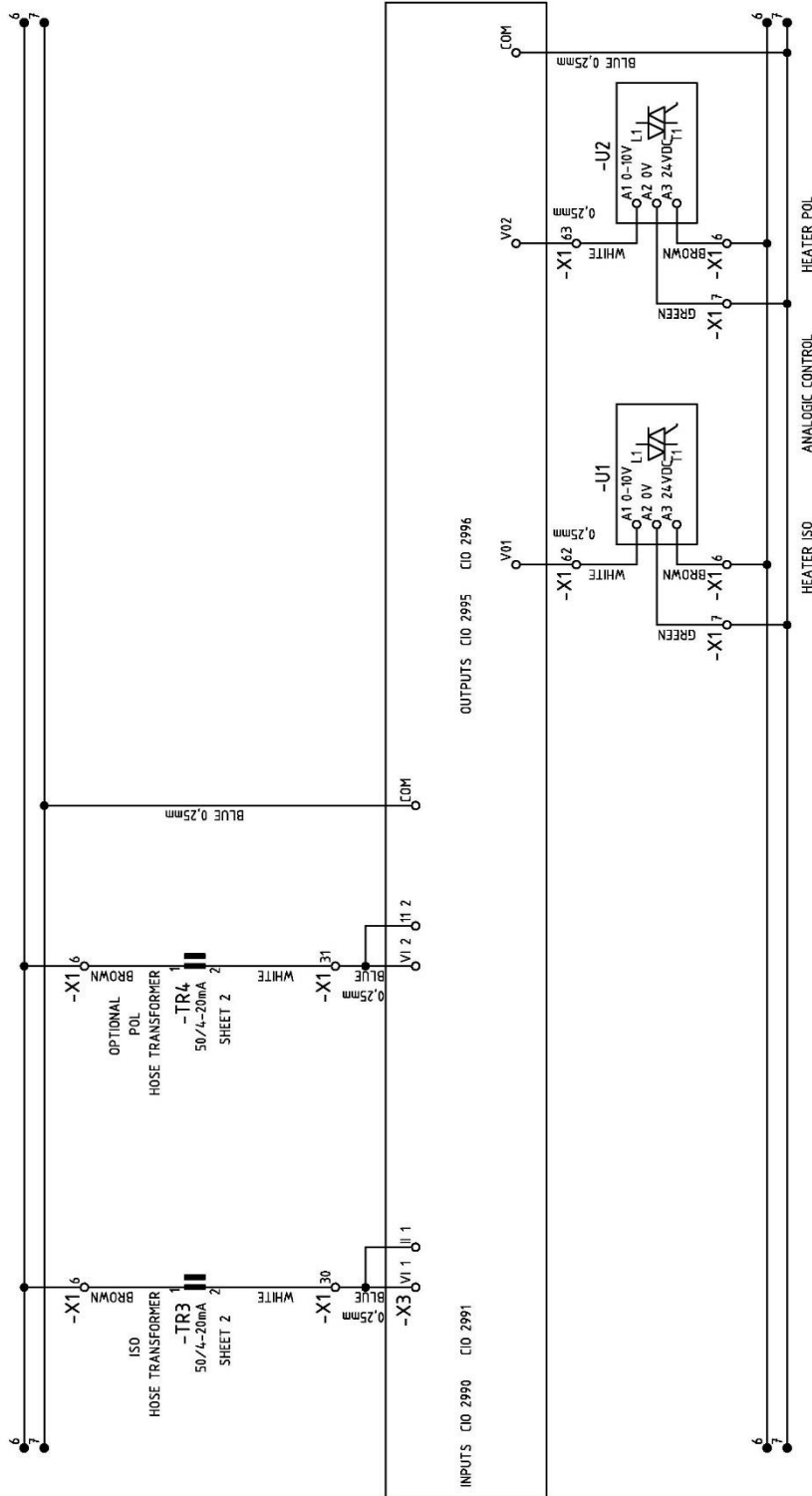


Figure 29. Elec. Schem. 3PE~400V 50/60Hz Standard Vers. (Sheet 9/12)

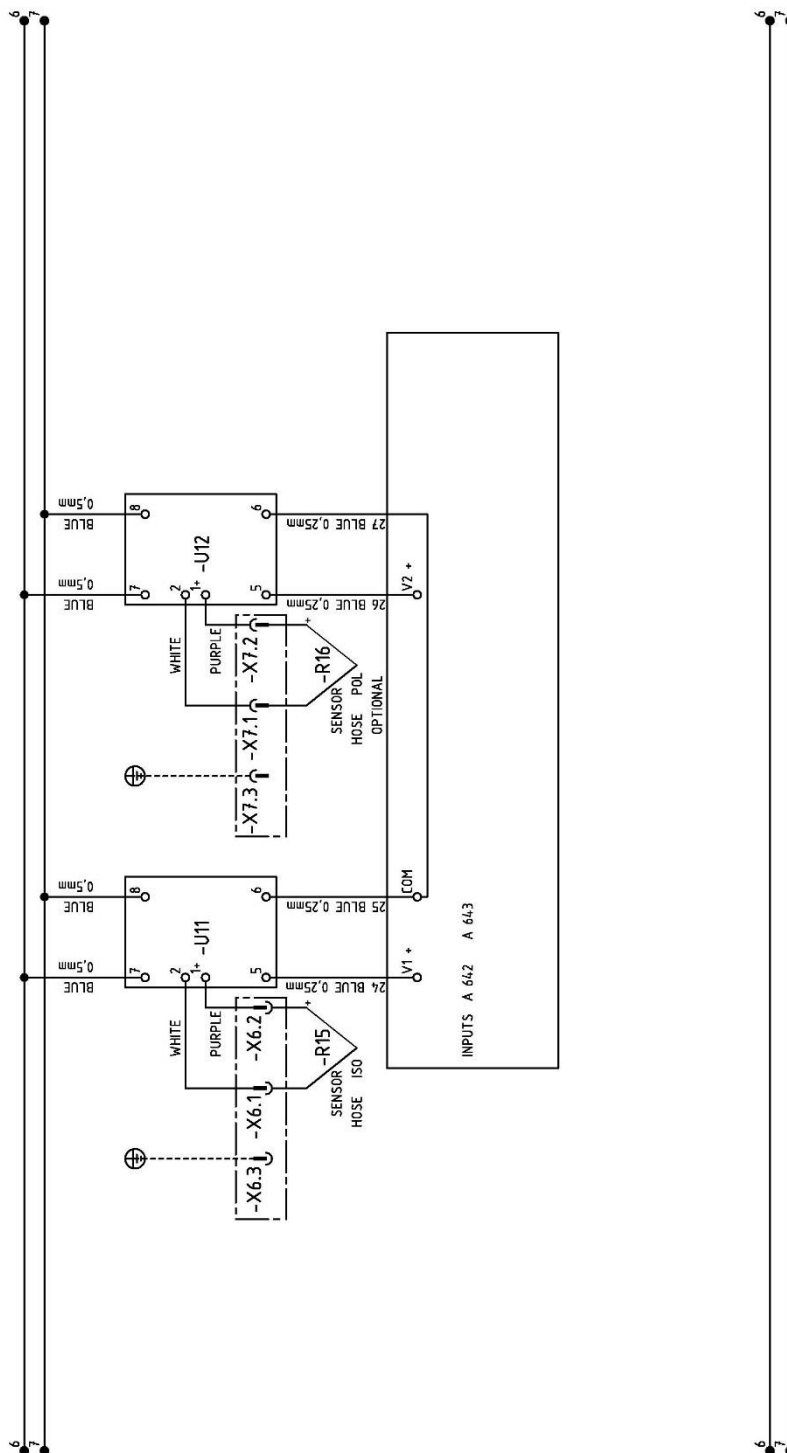


Figure 30. Elec. Schem. 3PE~400V 50/60Hz Standard Vers. (Sheet 10/12)

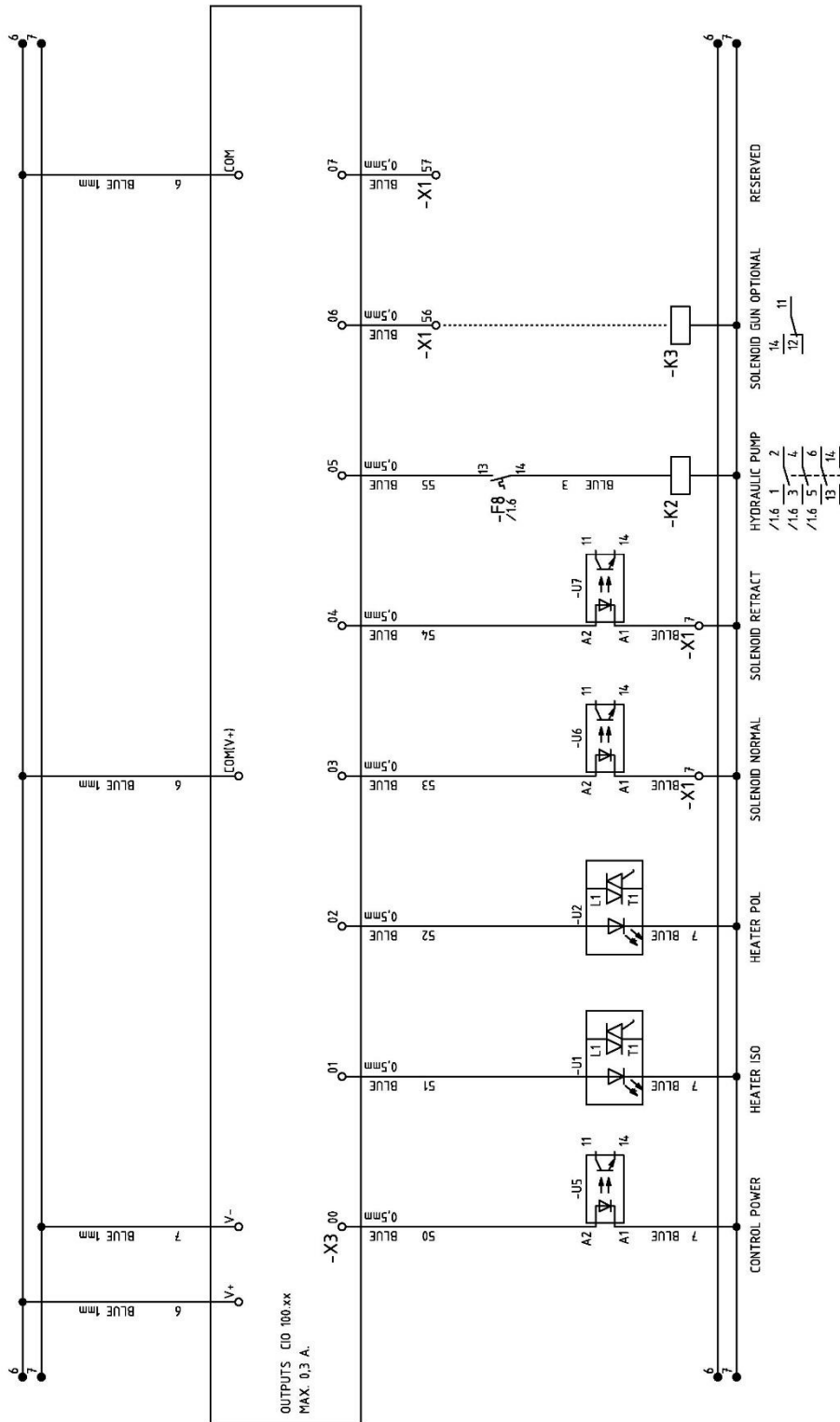


Figure 31. Elec. Schem. 3PE~400V 50/60Hz Standard Vers. (Sheet 11/12)

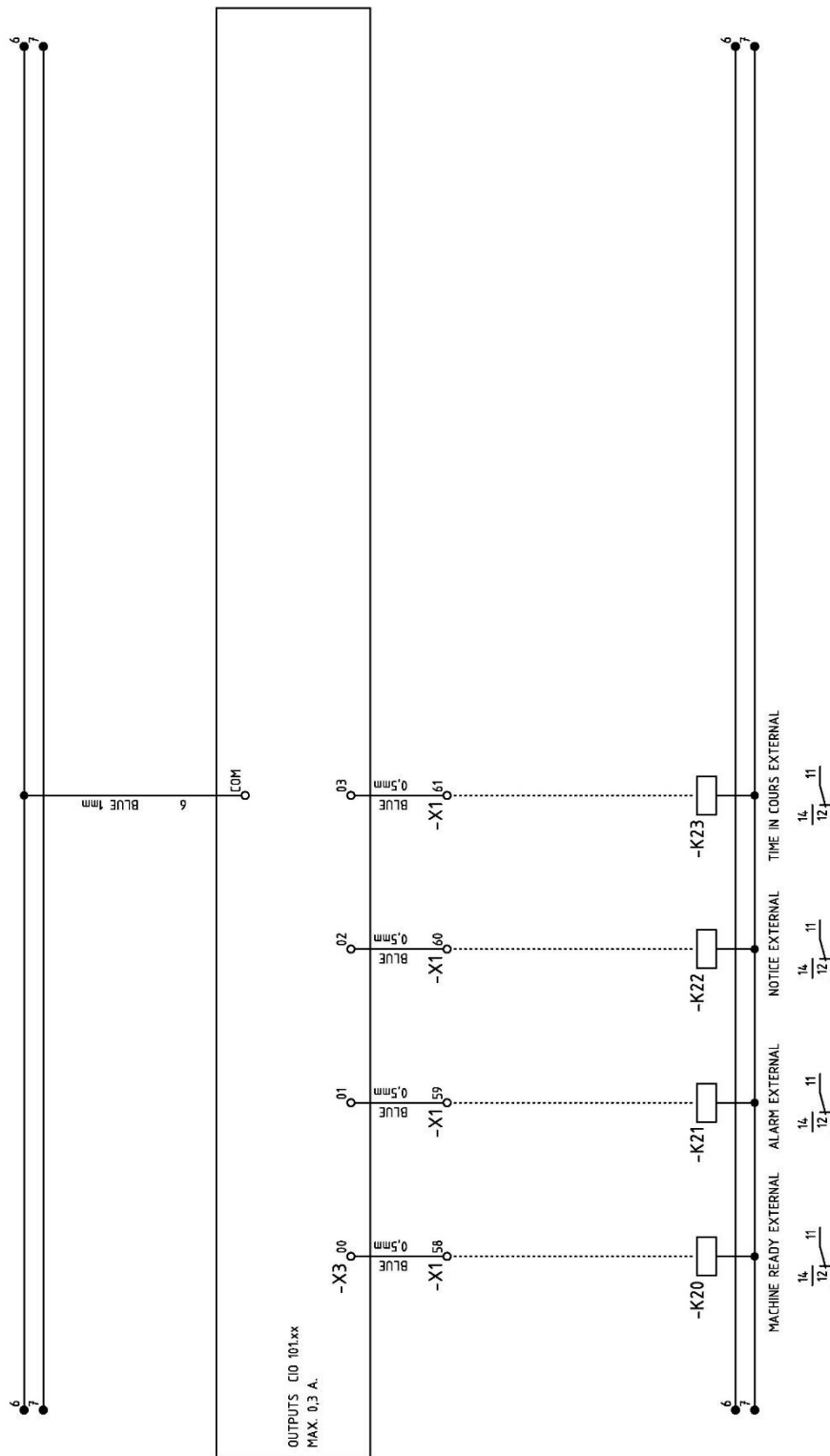


Figure 32. Elec. Schem. 3PE~400V 50/60Hz Standard Vers. (Sheet 12/12)

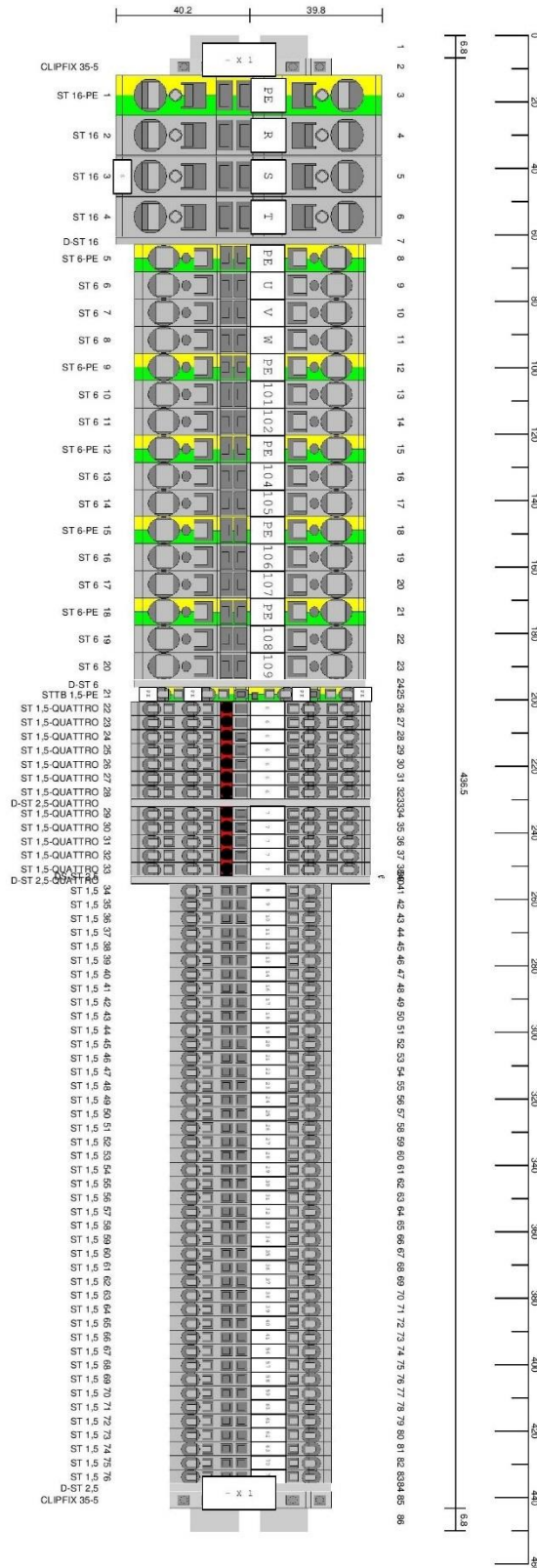
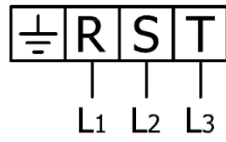


Figure 33. Distribution 3PE~400V 50/60Hz Standard Version



**Table 36. Electrical Schematic 3PE~400V 50/60Hz Standard Version, Parts List**

item.	Description	Reference	Qty.
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 RED YELLOW	EL-00107-19	1
G1	POWER SUPPLY 400/24 5A	EL-00135-03	1
D1	DIFFERENTIAL 0,03 63 A	EL-00108-04	1
F 2,3	CIRUIT BREAKER	EL-00115-03	2
F 4	CIRUIT BREAKER	EL-00113-04	1
F 1	CIRUIT BREAKER	EL-00109-04	1
F 5	CIRUIT BREAKER 10-16A	EL-00119-05	1
F 5	AUX. CONTACTOR	EL-00119-03	1
T 3	INTENSITY TRANSFORMER 50A 4/20mA	EL-00127-19	1
V 1,2	STATIC RELAY	EL-00126-13	2
V 3	TRIAC	EL-00126-11	1
V 3	WIRE CONNECTION TRIAC	EL-00126-12	1
K 1	CONTACTOR 24 VDC	EL-00123-02	1
K 2	CONTACTOR 24 VDC	EL-00121-02	1
	RESISTENCE 3.3 kΩ 6 W	EL-00129-01	1
X 1	TERMINAL STRIP	EL-00105-13	1
	BASE STATIC RELAY	EL-00126-07	3
	STATIC RELAY	EL-00126-06	3
	CPU	EL-00171-03	1
	2IN/2OUT ANALOGIC MODULE	EL-00171-05	1
	2OUT ANALOGIC MODULE	EL-00171-04	1
	EXPANSION MODULE 2Ept100	EL-00171-06	1
	SWITCH 5x ETHERNET	EL-00171-07	1
	7" TOUCH SCREEN	EL-00171-02	1
	ETHERNET WIRE 1,5 MTS	EL-00171-09	1
	ETHERNET WIRE 0,2 MTS	EL-00171-11	1
	MINI MCR-TC-UI-NC	EL-00164-02	1
	USB PORT	EL-00078-06	1
	CONSOLE 500x500		1
	VENTILATION DEVICE	EL-00158-05	1



*Figure 34. Connection 3PE~400V 50/60Hz Standard Version*



## PNEUMATIC SCHEMATIC DIAGRAM

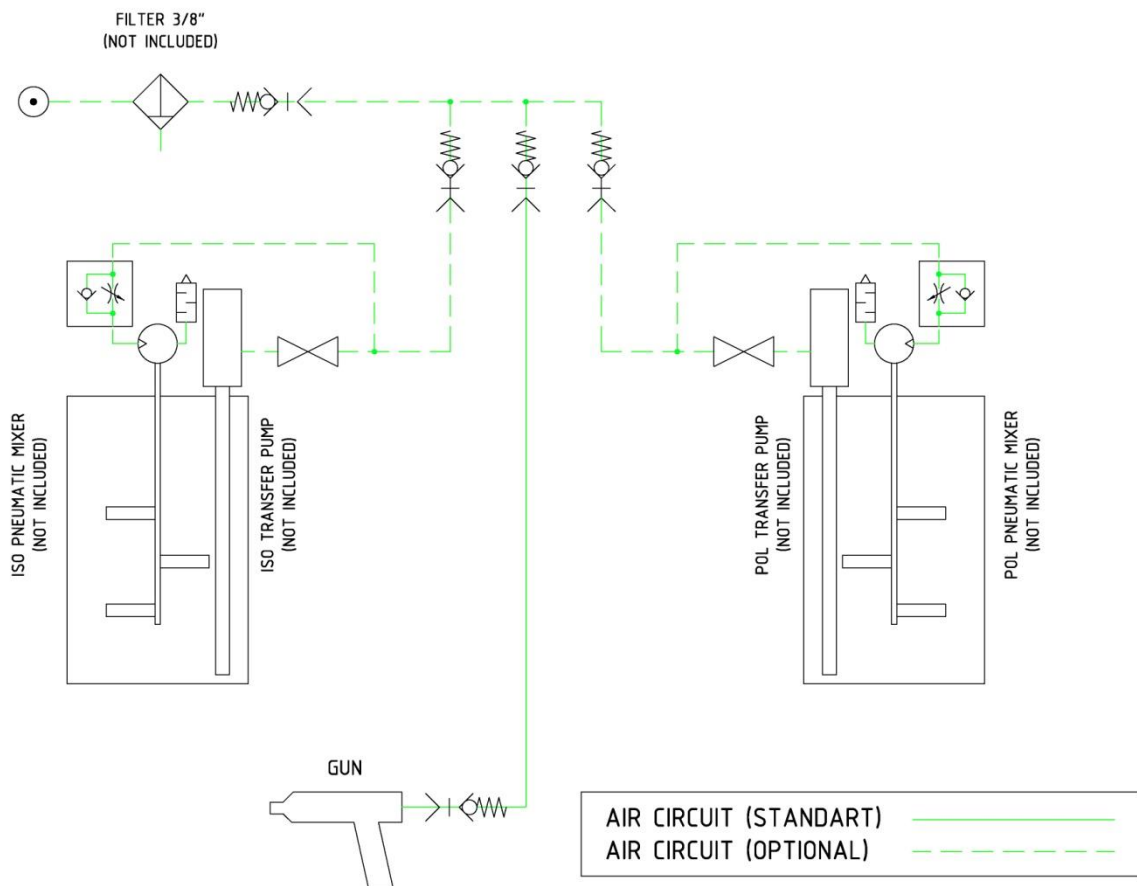


Figure 35. Pneumatic Schematic Diagram



## HYDRAULIC SCHEMATIC DIAGRAM

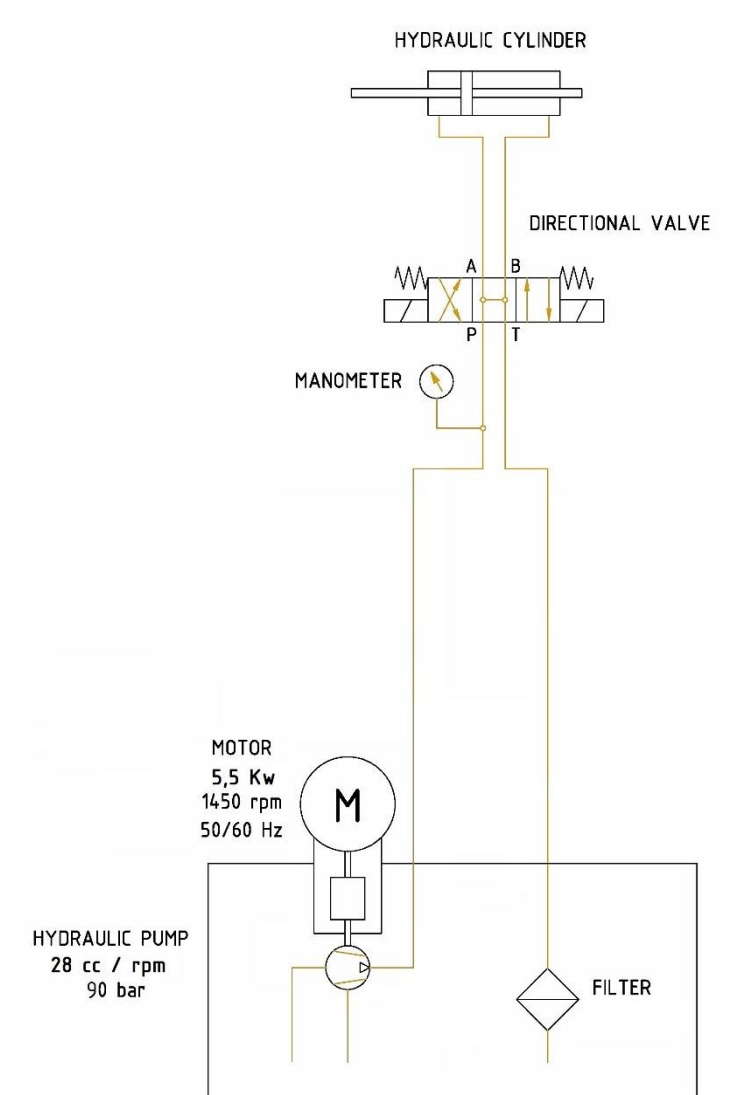


Figure 36. Hydraulic Schematic Diagram



## FUNCTIONING SCHEMATIC DIAGRAM

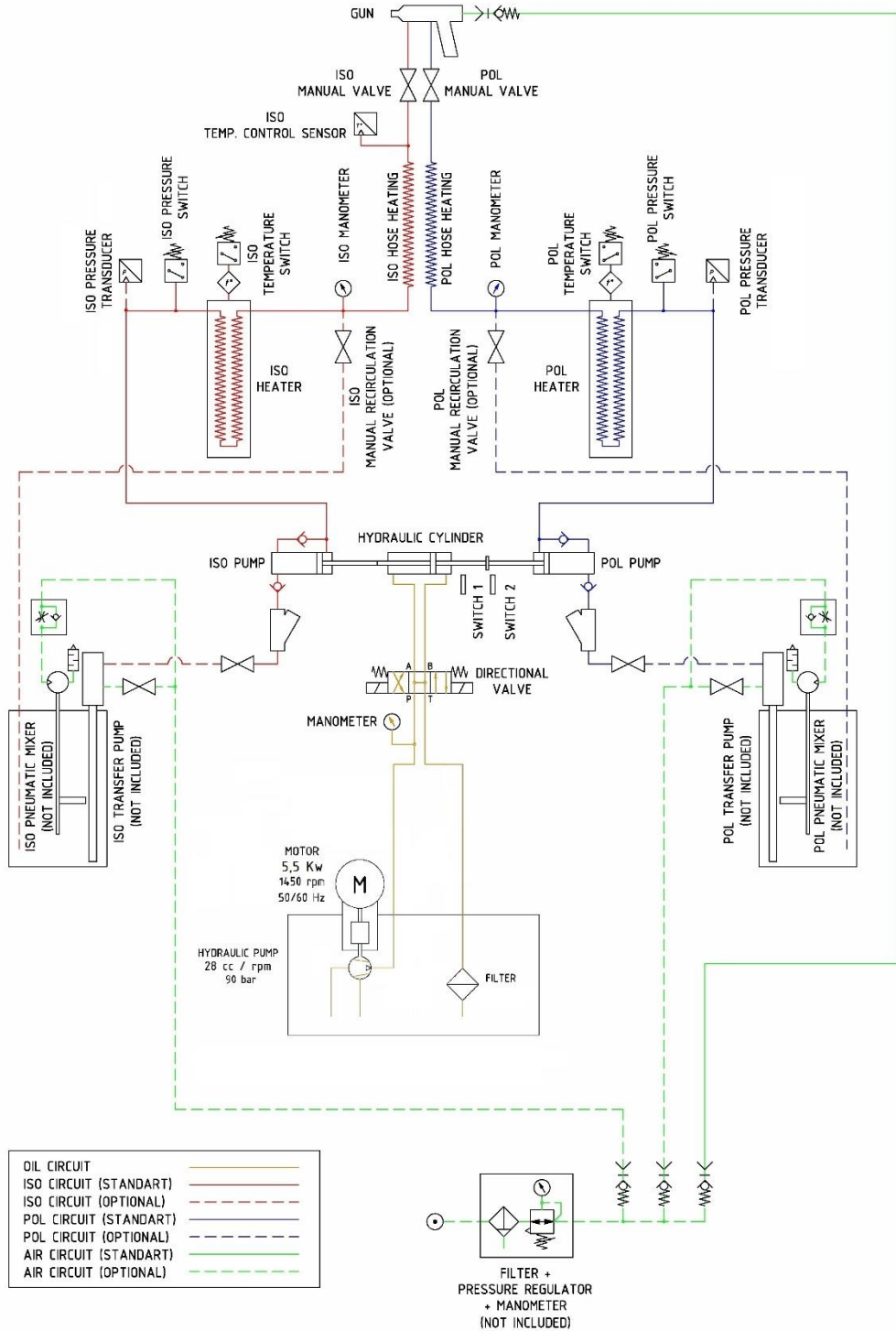


Figure 37. Functioning Schematic Diagram



## TABLE OF CONTENTS

Warranty _____	2
Safety and Handling _____	3
Proportioning Unit novaG V PLUS Model _____	4
Electrical Console _____	8
Hydraulic Manifold with Motor 3PE~400V/230V 50/60hz (hyd. Pump 28 cc. compatible) _	10
Hydraulic Manifold with Motor 3PE~400V 50/60hz (hyd. Pump 28 cc. discontinued) ____	13
Reversing Switch & Pump Line Support _____	17
Lube Reservoir Hose Assembly _____	19
Pump Line Assembly _____	21
Hydraulic Cylinder with Spacers _____	24
“A” Proportioning Pump Assembly _____	26
“R” Proportioning Pump Assembly _____	29
“A” Standard Primary Heater _____	32
“R” Standard Primary Heater _____	35
Round Primary Heater "A" ISO / "R" POL _____	38
Recirculation Kit P#: KT-00038 _____	42
Recirculation Kit P#: KT-00038-01 _____	43
Recirculation Kit P#: KT-00038-03 _____	45
Recirc. KIT for Round Heaters without Filters _____	47
Recirc. KIT for Round Heaters with Double Fiter _____	48
Recirc. KIT for Round Heaters with “A” ISO Fiter _____	50
Electrical Schematic Diagram 3PE~400V 50/60hz _____	52
Pneumatic Schematic Diagram _____	67
Hydraulic Schematic Diagram _____	68
Functioning Schematic Diagram _____	69
Table of Contents _____	70
List of Tables _____	71
List of Illustrations _____	73



## LIST OF TABLES

Table 1. Proportioning Unit novaG V PLUS Model, Parts List	5
Table 2. Hose Transformer Reference List	6
Table 3. A-Primary Heater Reference List	7
Table 4. A-Primary Round Heater Reference List	7
Table 5. R-Primary Heater Reference List	7
Table 6. R-Primary Round Heater Reference List	7
Table 7. Electrical Console Reference List	7
Table 8. Electrical Console novaG V PLUS Model, Parts List	9
Table 9. Hydr. Manifold with Motor 3PE~400V/230V 50/60Hz (28cc compatible), Parts List	11
Table 10. Hydr. Manifold with Motor 3PE~400V 50/60Hz (28cc discontinued), Parts List	14
Table 11. Reversing Switch & Pump Line Support, Parts List	18
Table 12. Lube Reservoir Hose Assembly, Parts List	20
Table 13. Pump Line Assembly, Parts List	22
Table 14. Proportioning Pump Size, Parts	23
Table 15. Hydraulic Cylinder with Spacers, Parts List	25
Table 16. "A" Proportioning Pump Assembly, Parts List	27
Table 17. "A" Proportioning Pump Assembly, Parts List	28
Table 18. Seals Monobloc "A" Pump	28
Table 19. Repair Seal Kit "A" Pump	28
Table 20. "R" Proportioning Pump Assembly, Parts List	30
Table 21. "R" Proportioning Pump Assembly, Parts List	31
Table 22. Seals Monobloc "R" Pump	31
Table 23. Repair Seal Kit "R" Pump	31
Table 24. "A" Standard Primary Heater, Parts List	33
Table 25. "A" Heat Resistance Reference List	34
Table 26. "R" Standard Primary Heater, Parts List	36
Table 27. "R" Heat Resistance Reference List	37
Table 28. Round Primary Heater "A" ISO / "R" POL, Reference List	39
Table 29. Resistances List according to model	41
Table 30. Standard Recirculation Kit, Parts List	42
Table 31. Recirculation Kit #KT-00038-01, Parts List	44
Table 32. Recirculation Kit #KT-00038-03, Parts List	46
Table 33. Recirc. Kit for Round Heaters without Filters, Parts List	47



**novaG-V PLUS**

**Parts Manual**

**Table 34. Recirc. Kit for Round Heaters with Double Filter, Parts List \_\_\_\_\_ 49**

**Table 35. Recirc. Kit for Round Heaters with "A" ISO Filter, Parts List \_\_\_\_\_ 51**

**Table 36. Electrical Schematic 3PE~400V 50/60Hz Standard Version, Parts List \_\_\_\_\_ 65**



## LIST OF ILLUSTRATIONS

Figure 1. Proportioning Unit novaG V PLUS Model _____	4
Figure 2. Generic Fixings Detail, Unit novaG V PLUS Model _____	5
Figure 3. Electrical Console novaG V PLUS _____	8
Figure 4. Hydr. Manifold 3PE~400V/230V 50/60Hz (hyd. Pump 28 cc compatible), Exploded View _____	10
Figure 5. Hydraulic Manifold 3PE~400V 50/60Hz (hyd. Pump 28 cc discontinued), Exploded View _____	13
Figure 6. Reversing Switch & Pump Line Support, Exploded View _____	17
Figure 7. Lube Reservoir Hose Assembly, Exploded View _____	19
Figure 8. Pump Line Assembly, Exploded View _____	21
Figure 9. Hydraulic Cylinder with Spacers, Exploded View _____	24
Figure 10. "A" Proportioning Pump Assembly, Exploded View _____	26
Figure 11. "R" Proportioning Pump Assembly, Exploded View _____	29
Figure 12. "A" Standard Primary Heater, Exploded View _____	32
Figure 13. "R" Standard Primary Heater, Exploded View _____	35
Figure 14. Round Primary Heater "A" ISO / "R" POL _____	38
Figure 15. Recirculation Kit P#: KT-00038, Exploded View _____	42
Figure 16. Recirculation Kit P#: KT-00038-01, Exploded View _____	43
Figure 17. Recirculation Kit P#: KT-00038-03, Exploded View _____	45
Figure 18. Recirc. Kit for Round Heaters without Filters _____	47
Figure 19. Recirc. Kit for Round Heaters with Double Filters _____	48
Figure 20. Recirc. Kit for Round Heaters with "A" ISO Filter _____	50
Figure 21. Elec. Schem. 3PE~400V 50/60Hz Standard Vers. (Sheet 1/12) _____	52
Figure 22. Elec. Schem. 3PE~400V 50/60Hz Standard Vers. (Sheet 2/12) _____	53
Figure 23. Elec. Schem. 3PE~400V 50/60Hz Standard Vers. (Sheet 3/12) _____	54
Figure 24. Elec. Schem. 3PE~400V 50/60Hz Standard Vers. (Sheet 4/12) _____	55
Figure 25. Elec. Schem. 3PE~400V 50/60Hz Standard Vers. (Sheet 5/12) _____	56
Figure 26. Elec. Schem. 3PE~400V 50/60Hz Standard Vers. (Sheet 6/12) _____	57
Figure 27. Elec. Schem. 3PE~400V 50/60Hz Standard Vers. (Sheet 7/12) _____	58
Figure 28. Elec. Schem. 3PE~400V 50/60Hz Standard Vers. (Sheet 8/12) _____	59
Figure 29. Elec. Schem. 3PE~400V 50/60Hz Standard Vers. (Sheet 9/12) _____	60
Figure 30. Elec. Schem. 3PE~400V 50/60Hz Standard Vers. (Sheet 10/12) _____	61
Figure 31. Elec. Schem. 3PE~400V 50/60Hz Standard Vers. (Sheet 11/12) _____	62
Figure 32. Elec. Schem. 3PE~400V 50/60Hz Standard Vers. (Sheet 12/12) _____	63



<b>Figure 33. Distribution 3PE~400V 50/60Hz Standard Version</b>	<b>64</b>
<b>Figure 34. Connection 3PE~400V 50/60Hz Standard Version</b>	<b>66</b>
<b>Figure 35. Pneumatic Schematic Diagram</b>	<b>67</b>
<b>Figure 36. Hydraulic Schematic Diagram</b>	<b>68</b>
<b>Figure 37. Functioning Schematic Diagram</b>	<b>69</b>