



 **POLYUREATEC**

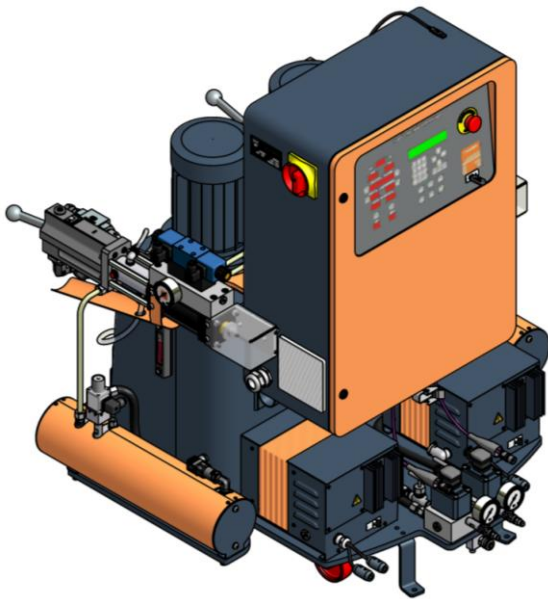
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Parts Manual

Metering Unit

evolution VR

Issue 4.5 06/03/17
Ref. NR-00014-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

GARRAF MAQUINARIA, S. A. (hereinafter "GAMA") provides this **LIMITED WARRANTY** (hereinafter "Warranty") to the original purchaser (hereinafter "Customer") covering this equipment and the original GAMA manufactured accessories delivered with the equipment (hereinafter "Product") against defects in material or workmanship of the Product (hereinafter "Defect" or "Defective") for a period of two (2) years from the date of first purchase as shown on the original GAMA invoice (hereinafter "Warranty Period").

If during the Warranty Period under normal use, the Product is suspected by Customer to be Defective in material or workmanship, it is Customer's responsibility to contact GAMA and return the Product to GAMA as directed by GAMA, freight prepaid. If GAMA determines that the Product is Defective and that such Defect is covered by this Warranty, GAMA will credit Customer for the reasonable freight charges incurred by Customer in returning the Defective Product to GAMA, and GAMA (or its authorized agent) will, at GAMA's option, repair or replace the Product, subject to the following:

Original Invoice: The original invoice must be kept as proof of the date of first sale and the Product serial number. The Warranty does not cover any Product if the Original Invoice appears to have been modified or altered, or when the serial number on the Product appears to have been altered or defaced.

Product Maintenance: It is the Customer's responsibility to maintain the Product properly. See your maintenance schedule and owner's manual for details. The Warranty does not cover an improperly maintained Product.

Non-GAMA Components and Accessories: Non-GAMA manufactured components and accessories that are used in the operation of the Product are not covered by this Warranty. Such components and accessories shall be subject to the warranty offered to the Customer, if any, by the original manufacturer of such component or accessory.

Other Warranty Exclusions: The Warranty does not cover any Product that GAMA determines has been damaged or fails to operate properly due to misuse, negligence, abuse, carelessness, neglect, or accident. By way of example only, this includes:

- Normal wear and tear.
- Improper or unauthorized installation, repair, alteration, adjustment or modification of the Product.
- Use of heating devices, pumping equipment, dispensers, or other parts or accessories with the Product that have not been approved or manufactured by GAMA.
- Failure to follow the operating instructions and recommendations provided by GAMA.
- Cosmetic damage.
- Fire, flood, "acts of God," or other contingencies beyond the control of GAMA.

THE WARRANTY DESCRIBED HEREIN IS THE EXCLUSIVE REMEDY FOR THE CUSTOMER AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, IMPLIED, STATUTORY OR OTHERWISE, AND THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND ALL OTHER WARRANTIES ARE HEREBY DISCLAIMED. TO THE FULLEST EXTENT PERMITTED BY LAW, GAMA SHALL NOT BE RESPONSIBLE, WHETHER BASED IN CONTRACT, TORT (INCLUDING, WITHOUT LIMITATION, NEGLIGENCE), WARRANTY OR ANY OTHER LEGAL OR EQUITABLE GROUNDS, FOR ANY CONSEQUENTIAL, INDIRECT, INCIDENTAL, LOST PROFITS, SPECIAL, PUNITIVE OR EXEMPLARY DAMAGES, WHETHER TO PERSON OR PROPERTY, ARISING FROM OR RELATING TO THE PRODUCT, EVEN IF GAMA HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH LOSSES OR DAMAGES.

Non-Warranty Service by GAMA: If GAMA determines that the suspected Defect of the Product is not covered by this Warranty, disposition of the Product will be made pursuant to the terms and conditions of GAMA's written estimate on a time and materials basis.

Continuing Warranty for Products Repaired or Replaced under Warranty: Following the repair or replacement of a Product covered by this Warranty, such Product will continue to be subject to the original Warranty for the remainder of original Warranty Period or for three (3) months from the repair or replacement date, whichever is longer.

No Rights Implied: Nothing in the sale, lease or rental of any Product by GAMA shall be construed to grant any right, interest or license in or under any patent, trademark, copyright, trade secret or other proprietary right or material owned by anyone; nor does GAMA encourage the infringement of same.

Exclusive Warranty: This writing is the final, complete, and exclusive expression of the Warranty covering the Product. Any statements made by GAMA, its employees or agents that differ from the terms of this Warranty shall have no effect. It is expressly understood that Customer's acceptance of this Warranty, by performance or otherwise, is upon and subject solely to the terms and conditions hereof, and any additional or different terms and conditions proposed or expressed by Customer or anyone, whether in writing or otherwise, are null and void unless specifically agreed to in writing by an Officer of GAMA.



METERING UNIT evolution VR MODEL

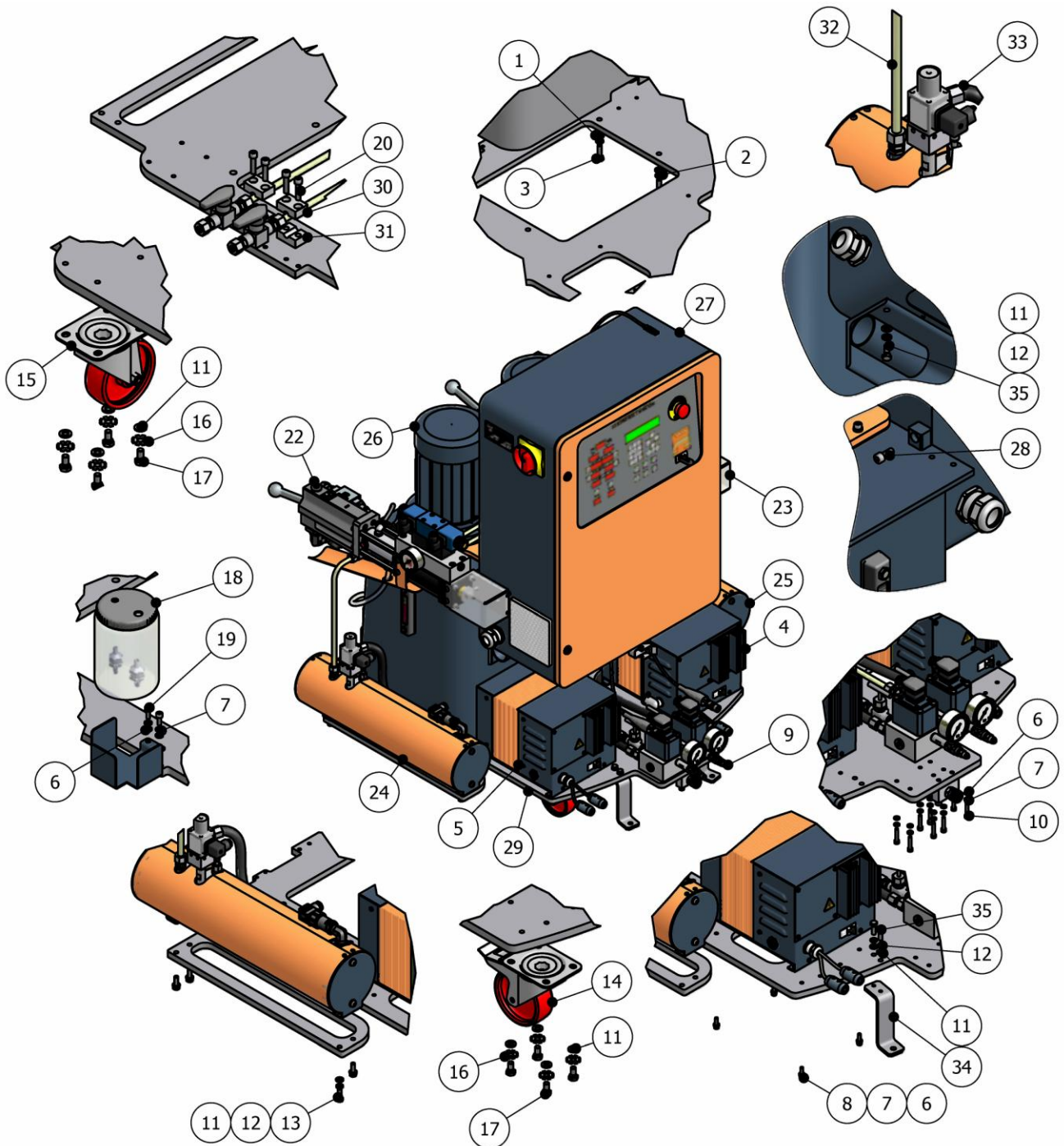


Figure 1. Metering Unit evolution VR Model



Table 1. Metering Unit evolution VR Model, Parts List

Ref.	Description	Parts Number	Qty.
1	Washer	TN-00162	4
2	Lock Washer	TN-00087	4
3	Hex Head Cap Screw	TN-00163	4
4	R Transformer (3x400v-N)	EL-00127-15	1
5	A Transformer (3x400v-N)	EL-00127-15	1
6	Washer	TN-00024	18
7	Lock Washer	TN-00025	18
8	Socket Head Cap Screw	TN-00026	8
9	Recirculation Kit (Manual – Automatic)	See Table 3	1
10	Socket Head Cap Screw	TN-00014	8
11	Washer	TN-00119	40
12	Lock Washer	TN-00028	31
13	Hex Head Cap Screw	TN-00146	8
14	Front Wheel with Brake	MQ-01002	2
15	Back Wheel	MQ-01016	2
16	Lock Washer	TN-00038	16
17	Hex Head Cap Screw	TN-00114	16
18	Lube Reservoir Assembly	MQ-01009-01	1
19	Socket Head Cap Screw	TN-00248	2
20	Socket Head Cap Screw	TN-00245	4
22	A Pump/Heater Hose Assy.	See Table 4	1
23	R Pump/Heater Hose Assy.	See Table 5	1
24	A Primary Heater	See Table 2	1
25	R Primary Heater	See Table 2	1
26	Pump Motor Assembly	See Table 6	1
27	Electrical Console Assy.	EL-00077-00	1
28	Socket Head Cap Screw	TN-00176	2
29	Base Plate	MQ-05001	1
30	Upper Tube Clamp	MQ-05013	2



Ref.	Description	Parts Number	Qty.
31	Lower Tube Clamp	MQ-05014	2
32	Tube Inlet to Heater	HI-00010	2
33	Heater Output Hose	MA-00051	2
34	"Z" Bracket without Transfer Pumps Bracket	MQ-01017	2
35	Hex. Head Cap Screw	TN-00187	7

Table 2. List of heaters as the Main Voltage of the unit

Main Voltage	"A" Heater	"R" Heater	Power & Voltage of Resistance
3 x 400v-N	CLH-05001-00C	CLH-05002-00C	9000w(6x1500w) @ 400 v
	CLH-05001-00D	CLH-05002-00D	7500w(6x1250w) @ 400 v



DESCRIPTION OF THE NOMENCLATURE

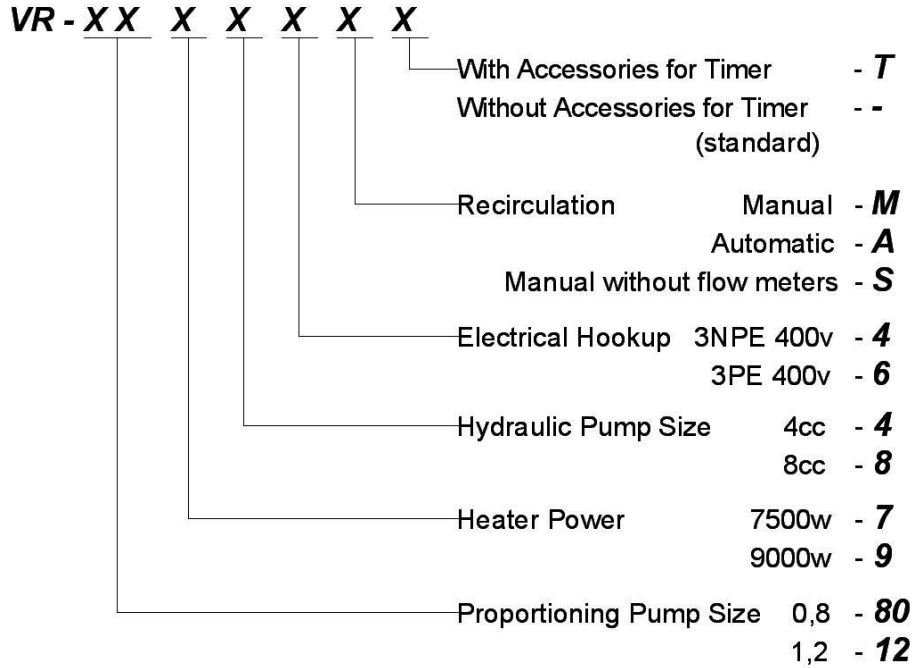


Table 3. Recirculation Kit, Parts Number List

Part Number Unit	Ref. 9	Description
VR-XXXXXA-	KT-00055	Automatic Recirculation Kit
VR-XXXXXM-	KT-00054	Manual Recirculation Kit
VR-XXXXXS-	KT-00056	Manual Recirculation Kit without Flow Meters

N:B.:

Optionally the recirculation kits will be completed up to the tanks with the KT-00038-06

Table 4. A Pump Line Assembly, Parts Number List

Part Number Unit	POS. 22	Description
VR-80XXXXX	PU-06200-008	A Pump Line Assembly # 0.8
VR-12XXXXX	PU-06200-012	A Pump Line Assembly # 1.2



Table 5. R Pump Line Assembly, Parts Number List

Part Number Unit	POS. 23	Description
VR-80XXXXX	PU-06300-008	R Pump Line Assembly # 0.8
VR-12XXXXX	PU-06300-012	R Pump Line Assembly # 1.2

Table 6. Pump Motor Assembly, Parts List

Part Number Unit	POS. 26	Description
VR-XXX4XXX	HI-00055-02	Motor 3Kw and Hydraulic Pump 4cc
VR-XXX8XXX	HI-00055-03	Motor 3Kw and Hydraulic Pump 8cc
VR-12X8XXX	HI-00055-04	Motor 4Kw and Hydraulic Pump 8cc

ELECTRICAL CONSOLE ASSEMBLY

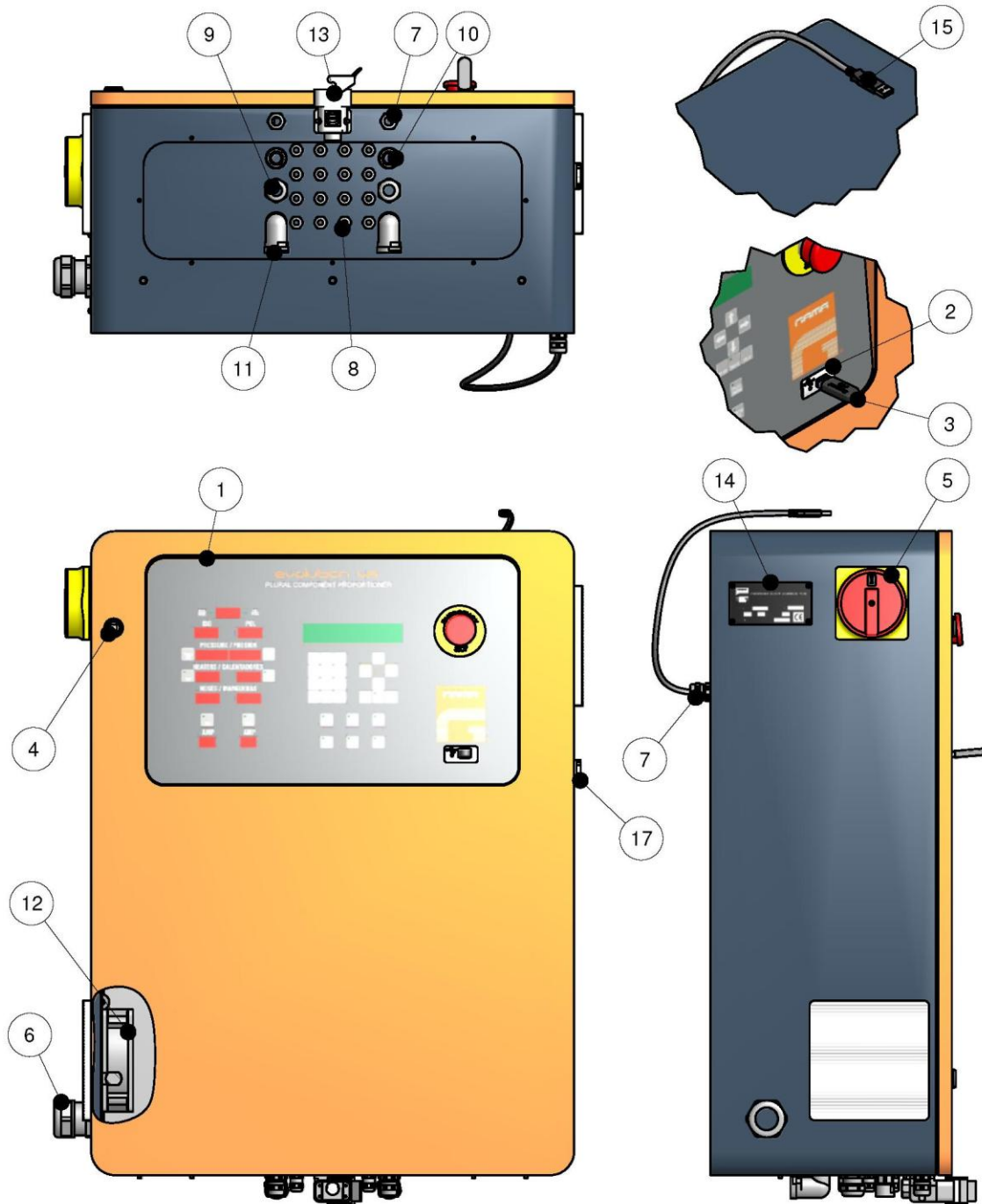


Figure 2. Electrical Console Assembly, evolution VR



Table 7. Electrical Console, Parts List

Ref.	Description	Parts Number	Qty.
1	Bezel	EL-00078-01	1
	Electric Circuit	EL-00078-02	1
2	USB Port (Included in Ref.1)	EL-00078-04	1
3	Pen Drive 1 GB (Included in Ref.1)	EL-00078-05	1
4	Lock Electrical Console Assembly	EL-00034	2
5	Switch	EL-00107-02	1
6	Cable Connector	EL-00088-04	1
	Nut	EL-00090-05	1
7	Strain Relief	EL-00088-05	3
	Nut	EL-00090-06	3
8	Strain Relief	EL-00088-00	16
	Nut	EL-00090-00	16
9	Strain Relief	EL-00088-02	2
	Nut	EL-00090-01	2
10	Strain Relief	EL-00087-00	2
	Nut	EL-00090-01	2
11	Strain Relief	EL-00087-02	2
	Nut	EL-00090-01	2
12	Fan	EL-00133-00	1
13	Base Connector	EL-00096-04	1
14	Standard Features Bezel	MQ-01010	1
15	Aerial USB Port	EL-00078-08	1
16	Internal Electronic Board	EL-00078-09	1
17	Acoustic adviser	EL-00130-00	1

HIDRAULIC MANIFOLD (8CC PUMP)

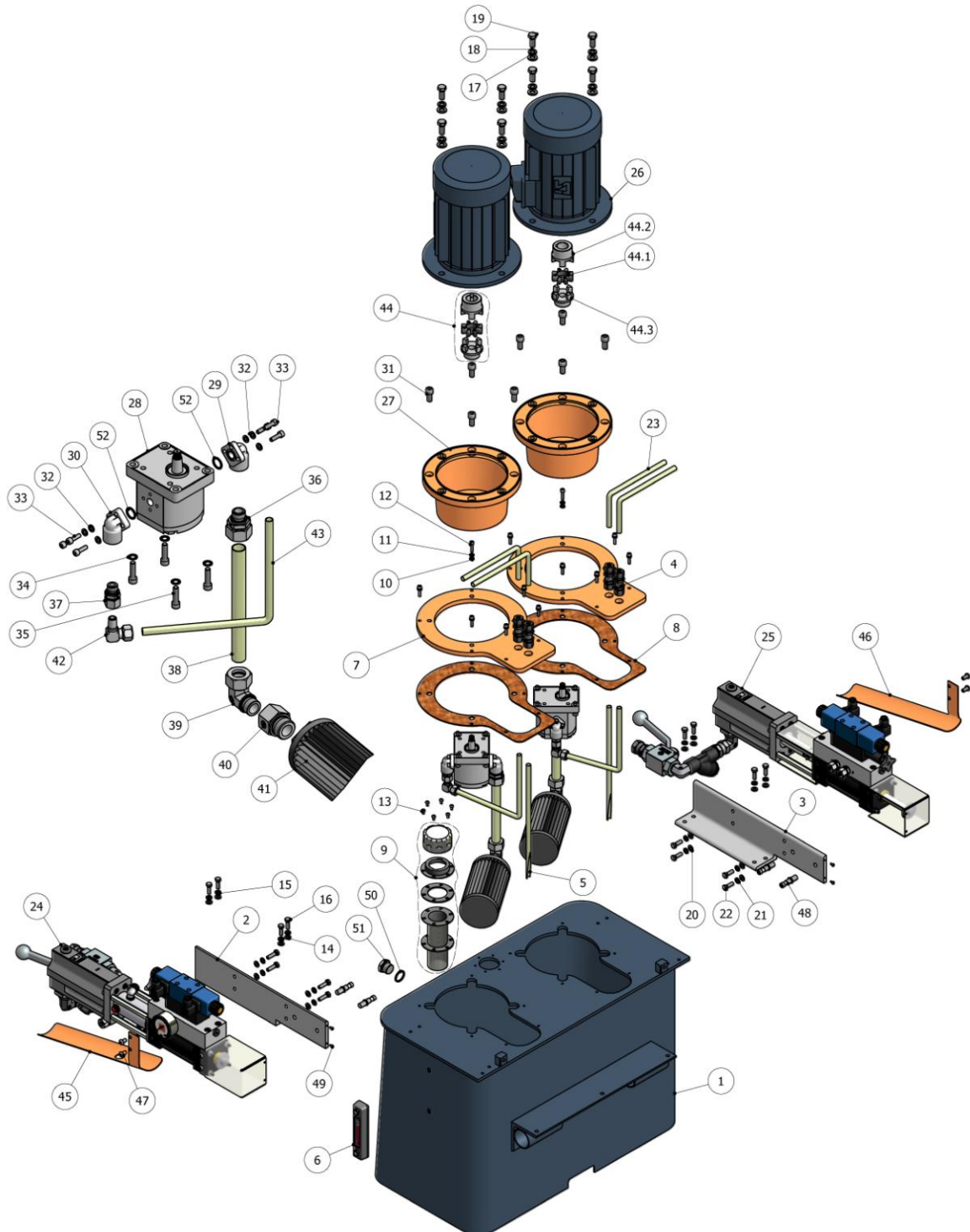


Figure 3. Hydraulic Manifold (8cc Pump), exploded View



Table 8. Hydraulic Manifold 88cc Pump), Parts List

Ref.	Description	Parts Number	Qty.
1	Oil Tank	HI-00055-01	1
2	A Pump Bracket	MQ-05005	1
3	R Pump Bracket	MQ-05006	1
4	Adapter Bulkhead Union	RA-00025	4
5	Return Tube	HI-00010 (*)	2
6	Thermometer and Fluid Level Gauge	HI-00001	1
7	Motor Support	HI-00055-01G	2
8	Gasket	HI-00055-01H	2
9	HYD-Oil Filler	HI-00002	1
10	Washer	TN-00024	14
11	Lock Washer	TN-00025	14
12	Socket Head Cap Screw	TN-00169	14
13	ULS Screw	TN-00166	6
14	Washer	TN-00119	8
15	Lock Washer	TN-00028	8
16	Hex Head Cap Screw	TN-00146	8
17	Washer	TN-00040	8
18	Lock Washer	TN-00015	8
19	Hex Head Cap Screw	TN-00060	8
20	Washer	TN-00119	8
21	Lock Washer	TN-00028	8
22	Hex Head Cap Screw	TN-00146	8
23	Tube	HI-00010	4
24	A Pump Line assembly	See Table 10	1
25	R Pump Line Assembly	See Table 10	1
26	Electric Motor	See Table 10	2
27	Bell Housing	HI-00056	2
28	Hydraulic Pump	See Table 10	2
29	Suction Bridle	HI-00072	2
30	Pressure Bridle	HI-00071	2
31	Socket Head Cap Screw	TN-00177	8



Ref.	Description	Parts Number	Qty.
32	Lock Washer	TN-00025	12
33	Socket Head Cap Screw	TN-00257	12
34	Lock Washer	TN-00038	8
35	Socket Head Cap Screw	TN-00062	8
36	Male Stud Connector	RA-00198	2
37	Male Stud Connector	RA-00036	2
38	Tube	HI-00074 (*)	2
39	Street Elbow	RA-00199	2
40	Thread Reducer	RA-00175	2
41	Filter	HI-00070	2
42	Street Elbow	RA-00196	2
43	Tube	HI-00010 (*)	2
44	Couple Assembly	HI-00069-00	2
44.1	Alignment Spider	HI-00069-01	2
44.2	Shaft Coupling	HI-00069-02	2
44.3	Shaft Coupling	HI-00069-03	2
45	A Drip Pan	MQ-05017	1
46	R Drip Pan	MQ-05018	1
47	ULS Screw	TN-00135	4
48	Inductive Detector	EL-00136-03	4
49	ULS Screw	TN-00031	4
50	O-Ring	OR-00082	1
51	Plug	RA-00022	1
52	O-Ring	OR-00087	4

The codes of the marked parts (), are referenced to the code of the raw material.*

HIDRAULIC MANIFOLD (4CC PUMP)

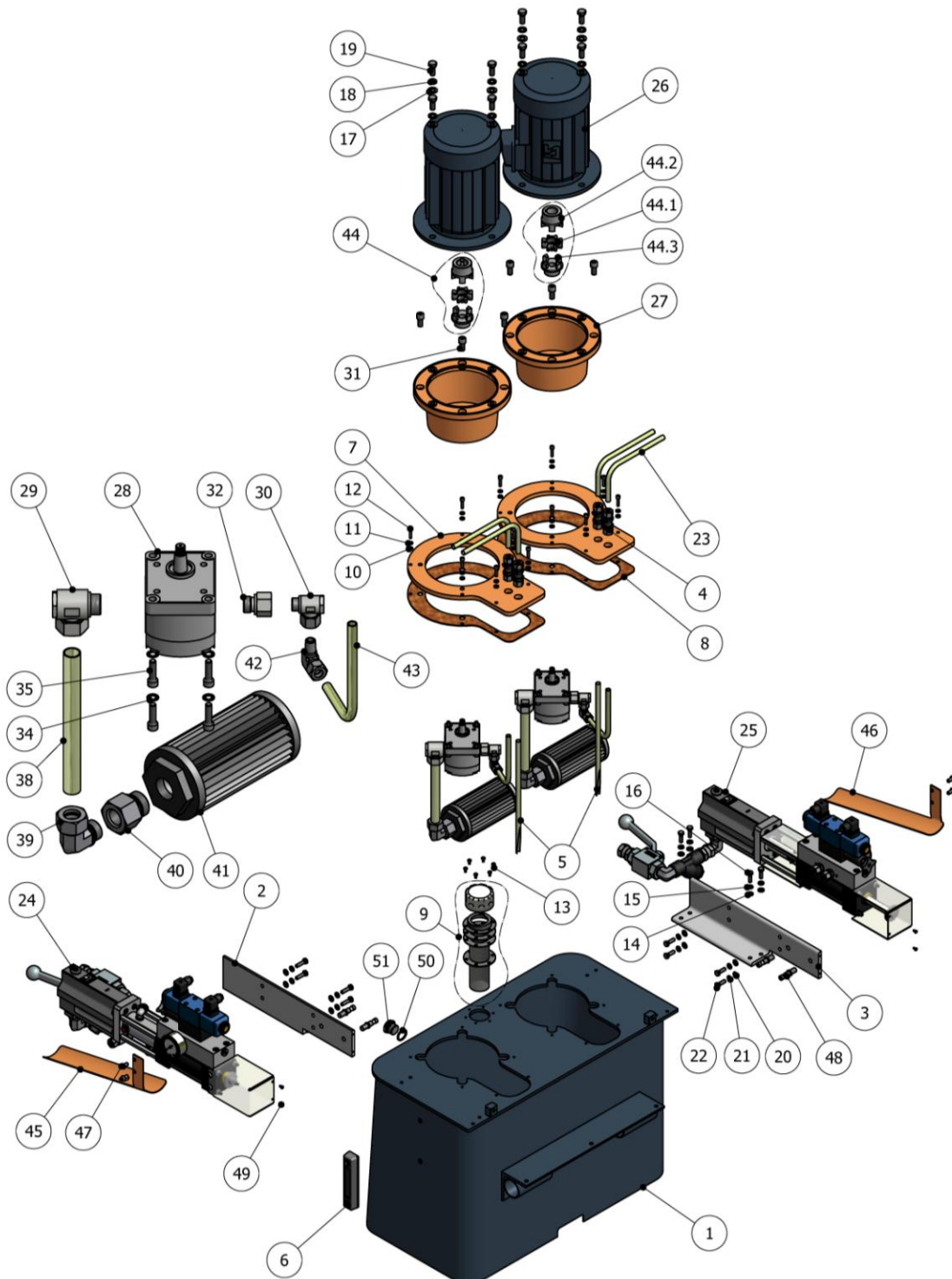


Figure 4. Hydraulic Manifold (4cc Pump), exploded View



Table 9. Hydraulic Manifold (4cc Pump), Parts List

Ref.	Description	Parts Number	Qty.
1	Oil Tank	HI-00055-01	1
2	A Pump Bracket	MQ-05005	1
3	R Pump Bracket	MQ-05006	1
4	Adapter Bulkhead Union	RA-00025	4
5	Return Tube	HI-00010 (*)	2
6	Thermometer and Fluid Level Gauge	HI-00001	1
7	Motor Support	HI-00055-01G	2
8	Gasket	HI-00055-01H	2
9	HYD-Oil Filler	HI-00002	1
10	Washer	TN-00024	14
11	Lock Washer	TN-00025	14
12	Socket Head Cap Screw	TN-00169	14
13	ULS Screw	TN-00166	6
14	Washer	TN-00119	8
15	Lock Washer	TN-00028	8
16	Hex Head Cap Screw	TN-00146	8
17	Washer	TN-00040	8
18	Lock Washer	TN-00015	8
19	Hex Head Cap Screw	TN-00060	8
20	Washer	TN-00119	8
21	Lock Washer	TN-00028	8
22	Hex Head Cap Screw	TN-00146	8
23	Tube	HI-00010	4
24	A Pump Line assembly	See Table 10	1
25	R Pump Line Assembly	See Table 10	1
26	Electric Motor	See Table 10	2
27	Bell Housing	HI-00056	2
28	Hydraulic Pump	See Table 10	2
29	Suction Banjo Elbow	RA-00008	2
30	Pressure Banjo Elbow	RA-00007	2
31	Socket Head Cap Screw	TN-00177	8



Ref.	Description	Parts Number	Qty.
32	Reduction	RA-00011	2
33			
34	Lock Washer	TN-00038	8
35	Socket Head Cap Screw	TN-00062	8
36			
37			
38	Tube	HI-00074 (*)	2
39	Street Elbow	RA-00199	2
40	Thread Reducer	RA-00175	2
41	Filter	HI-00070	2
42	Street Elbow	RA-00196	2
43	Tube	HI-00010 (*)	2
44	Couple Assembly	HI-00069-00	2
44.1	Alignment Spider	HI-00069-01	2
44.2	Shaft Coupling	HI-00069-02	2
44.3	Shaft Coupling	HI-00069-03	2
45	A Drip Pan	MQ-05017	1
46	R Drip Pan	MQ-05018	1
47	ULS Screw	TN-00135	4
48	Inductive Detector	EL-00136-03	4
49	ULS Screw	TN-00031	4
50	O-Ring	OR-00082	1
51	Plug	RA-00022	1

The codes of the marked parts (), are referenced to the code of the raw material.*

Table 10. Hydraulic Manifold, Parts List

Part Number Unit	24	25	26	28
VR-80X44XX	PU-06201-008	PU-06301-008	EL-00138-06	HI-00057
VR-80X84XX	PU-06201-008	PU-06301-008	EL-00138-06	HI-00058
VR-12X84XX	PU-06201-012	PU-06301-012	EL-00138-07	HI-00058

LUBE RESERVOIR HOSE ASSEMBLY

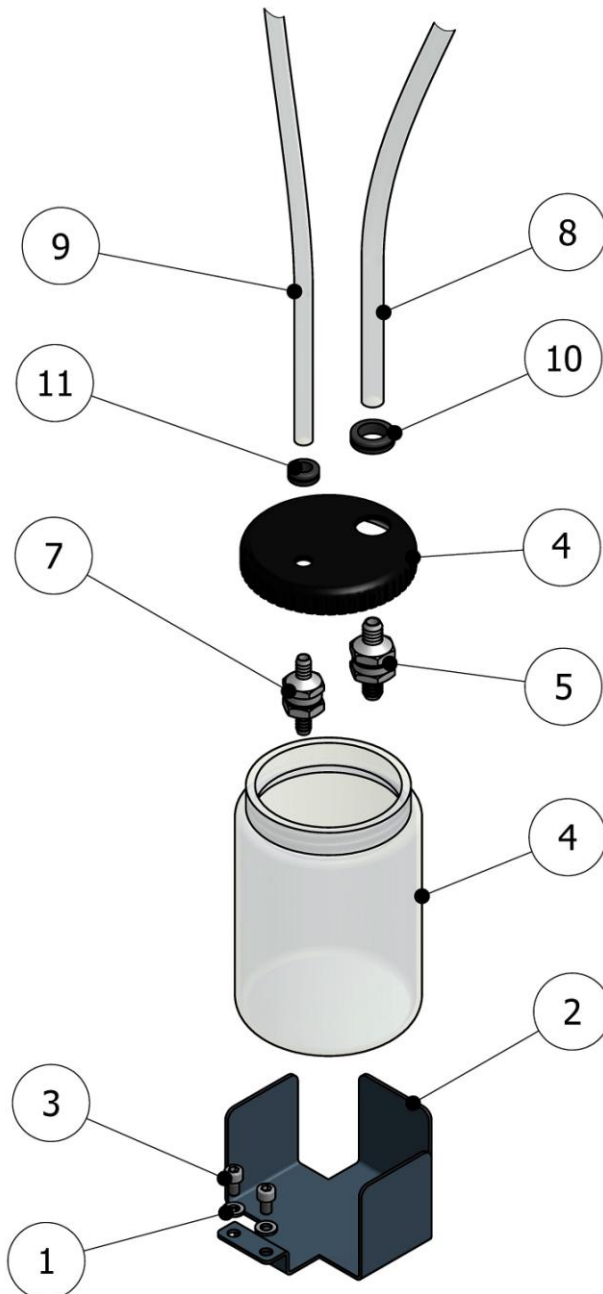


Figure 5. Lube Reservoir Hose Assembly, Exploded View



Table 11. Lube Reservoir Hose Assembly, Parts List

Ref.	Description	Parts Number	Qty.
1.1	Washer	TN-00024	2
1.2	Washer	TN-00025	2
2	Lube Reservoir Bracket	MQ-01008	1
3	Socket Head Cap Screw	TN-00248	2
4	Lube Reservoir Bottle with Drilled Cap	MQ-01009-01	1
5	Lube Reservoir Check Valve for Pipe 12x1	RA-00068	1
6			
7	Lube Reservoir Check Valve for Pipe 10x1	RA-00283	1
8	Supply Line	MA-00025	1
9	Return Line	MA-00024	1
10	Rubber Grommet	EL-00095-03	1
11	Rubber Grommet	EL-00095-01	1

“A” PUMP LINE ASSEMBLY

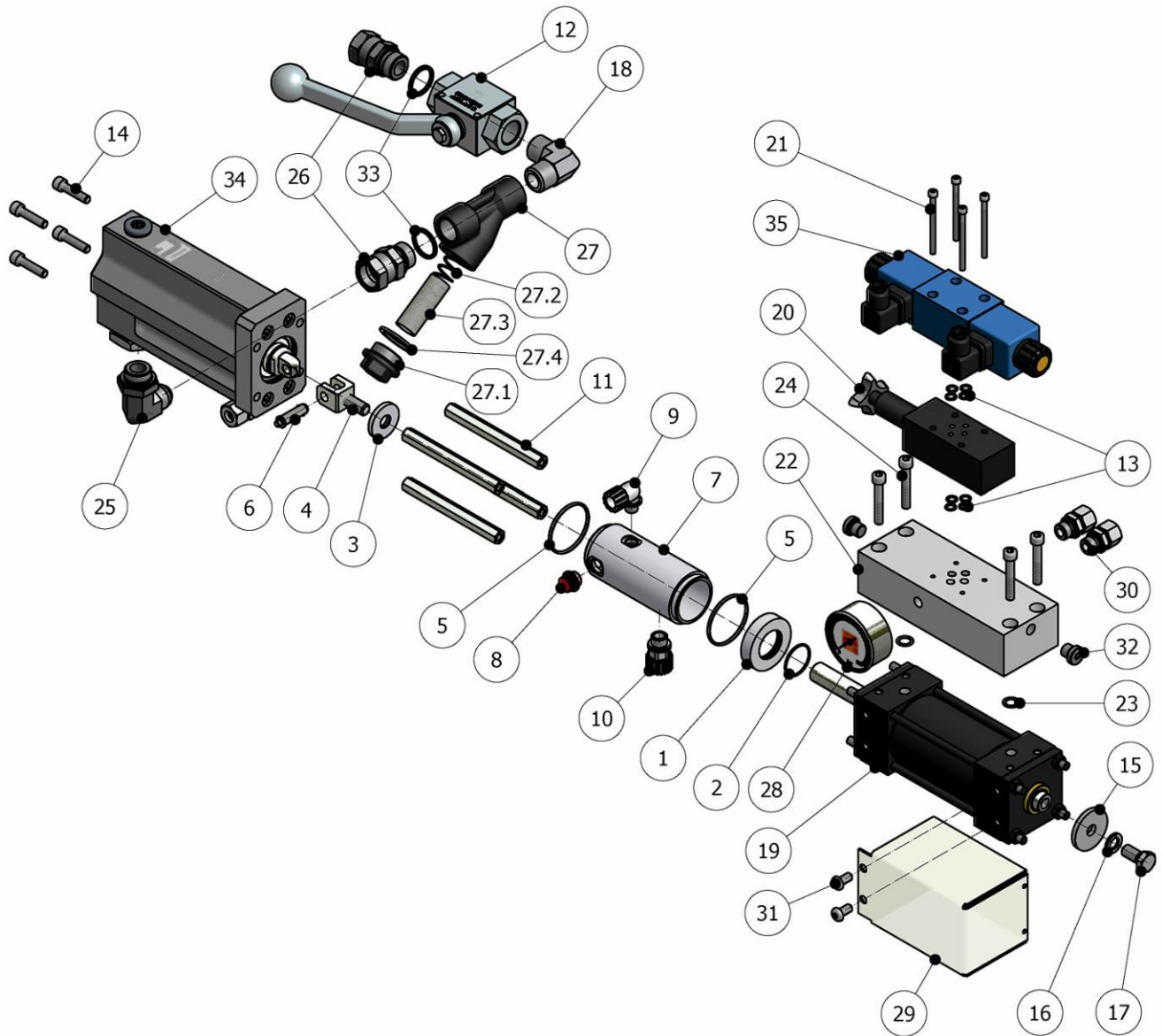


Figure 6. “A” Pump Line Assembly, Exploded View



Table 12. "A" Pump Line Assembly, Parts List

Ref.	Description	Parts Number	Qty.
1	Lube Cylinder Adapter Plate	PU-01021	1
2	O-Ring	OR-00021	1
3	Baffle	PU-01019	1
4	Hydraulic Cylinder Clevis	PU-01043	1
5	Lube Cylinder O-Ring	OR-00020	2
6	"A" Clevis Pin Assembly (Include 6.1 + 6.2+6.3)	PU-01044-00	1
6.1	Clevis Pin (included in Ref. 6)	PU-01044-01M	1
6.2	Clevis Pin Clip (included in Ref. 6)	TN-00136	1
6.3	Washer Supplement (Included in Ref. 7) not shown	TN-00024	1
7	Lube Cylinder	PU-01018	1
8	Polyethylene Pipe Plug	RA-00116	1
9	Lube Cylinder Elbow	RA-00066	1
10	Lube Cylinder fitting	RA-00067	1
11	Proportioning Pump Spacer	PU-01025	4
12	Ball Valve	RA-00293	1
13	O-Ring	OR-00035	8
14	Socket Head Cap Screw	TN-00245	4
15	Reversing Switch Activate Plate	PU-01037	1
16	Lock Washer	TN-00039	1
17	Hex Head Cap Screw	TN-00130	1
18	Street Elbow	RA-00194	1
19	Hydraulic Cylinder With Spacers	HI-00101	1
20	Safety Valve	HI-00067	1
21	Socket Head Cap Screw	TN-00243	4
22	Hydraulic Manifold	MQ-01007	1
23	O-Ring	OR-00019	2
24	Socket Head Cap Screw	TN-00090	4
25	Street Elbow	RA-00072	1
26	Swivel Union	RA-00073	2
27	Y Strainer	RA-00074-00	1



Ref.	Description	Parts Number	Qty.
27.1	Filter Plug	RA-00074-01	1
27.2	Filter Spring	SP-00017	1
27.3	Filter	RA-00074-03-30	1
27.4	Filter Gasket	OR-00061	1
28	Hydraulic Gauge	HI-00078	1
29	Activator Plate Cover	PU-01038	1
30	Hex nipple	RA-00036	2
31	ULS Screw	TN-00135	2
32	Polyethylene Pipe Plug	RA-00013	2
33	Gasket	OR-00082	2
34	A" Proportioning Pump Assembly	See Table 13	1
35	Directional valve	HI-00054	1

Table 13. "A" Proportioning Pump Size, List

Part Number Pump Line Assy.	Pump Size	Description	POS. 34
PU-06200-008	0.8	A Pump Line Assembly # 0.8	PU-06201-008
PU-06200-012	1.2	A Pump Line Assembly # 1.2	PU-06201-012



“R” PUMP LINE ASSEMBLY

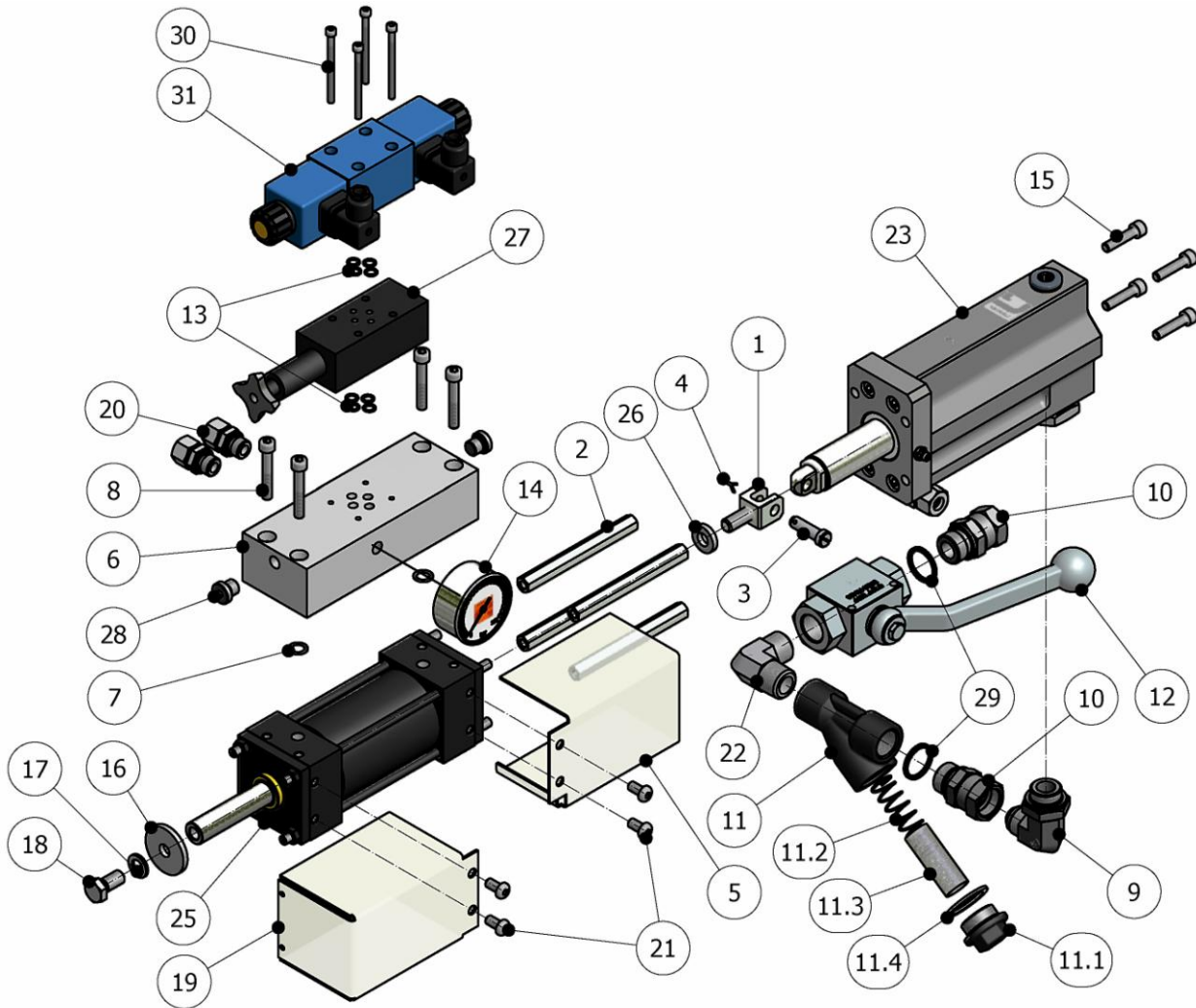


Figure 7. “R” Pump Line Assembly, Exploded View



Table 14. "R" Pump Line Assembly, Parts List

Ref.	Description	Parts Number	Qty.
1	Hydraulic Cylinder Clevis	PU-01043	1
2	Proportioning Pump Spacer	PU-01025	4
3	"R" Clevis Pin Assembly	PU-01045-01	1
4	Pin	TN-00077	1
	"R" Clevis Pin Assembly (Include ref. 3 & 4)	PU-01045-00	1
5	Activator Plate Cover	PU-01027	1
6	Hydraulic Manifold	MQ-01007	1
7	O-Ring	OR-00019	2
8	Socket Head Cap Screw	TN-00090	4
9	Street Elbow	RA-00072	1
10	Swivel Union	RA-00073	1
11	Y-Strainer	RA-00074-00	1
11.1	Filter Plug	RA-00074-01	1
11.2	Filter Spring	SP-00017	1
11.3	Filter	RA-00074-03-30	1
11.4	Filter Gasket	OR-00061	1
12	Ball Valve	RA-00293	1
13	O-Ring	OR-00035	8
14	Hydraulic Gauge	HI-00078	1
15	Socket Head Cap Screw	TN-00245	4
16	Reversing Switch Activate Plate	PU-01037	1
17	Lock Washer	TN-00039	1
18	Hex Head Cap Screw	TN-00130	1
19	Activator Plate Cover	PU-01038	1
20	Hex nipple	RA-00036	2
21	ULS Screw	TN-00135	2
22	Street Elbow	RA-00194	1
23	R Proportioning Pump Assembly	See Table 15	1
25	Hydraulic Cylinder With Spacers	HI-00101	1
26	Hydraulic Cylinder Clevis Washer	PU-01039	1



Ref.	Description	Parts Number	Qty.
27	Safety Valve	HI-00067	1
28	Polyethylene Pipe Plug	RA-00013	2
29	Gasket	OR-00082	2
30	Socket Head Cap Screw	TN-00243	4
31	Directional valve	HI-00054	1

Table 15. “R” Proportioning Pump Size, List

Part Number Pump Line Assy.	Pump Size	Description	POS. 23
PU-06300-008	0.8	R Pump Line Assembly # 0.8	PU-06301-008
PU-06300-012	1.2	R Pump Line Assembly #1.2	PU-06301-012

HYDRAULIC CYLINDER WITH SPACERS

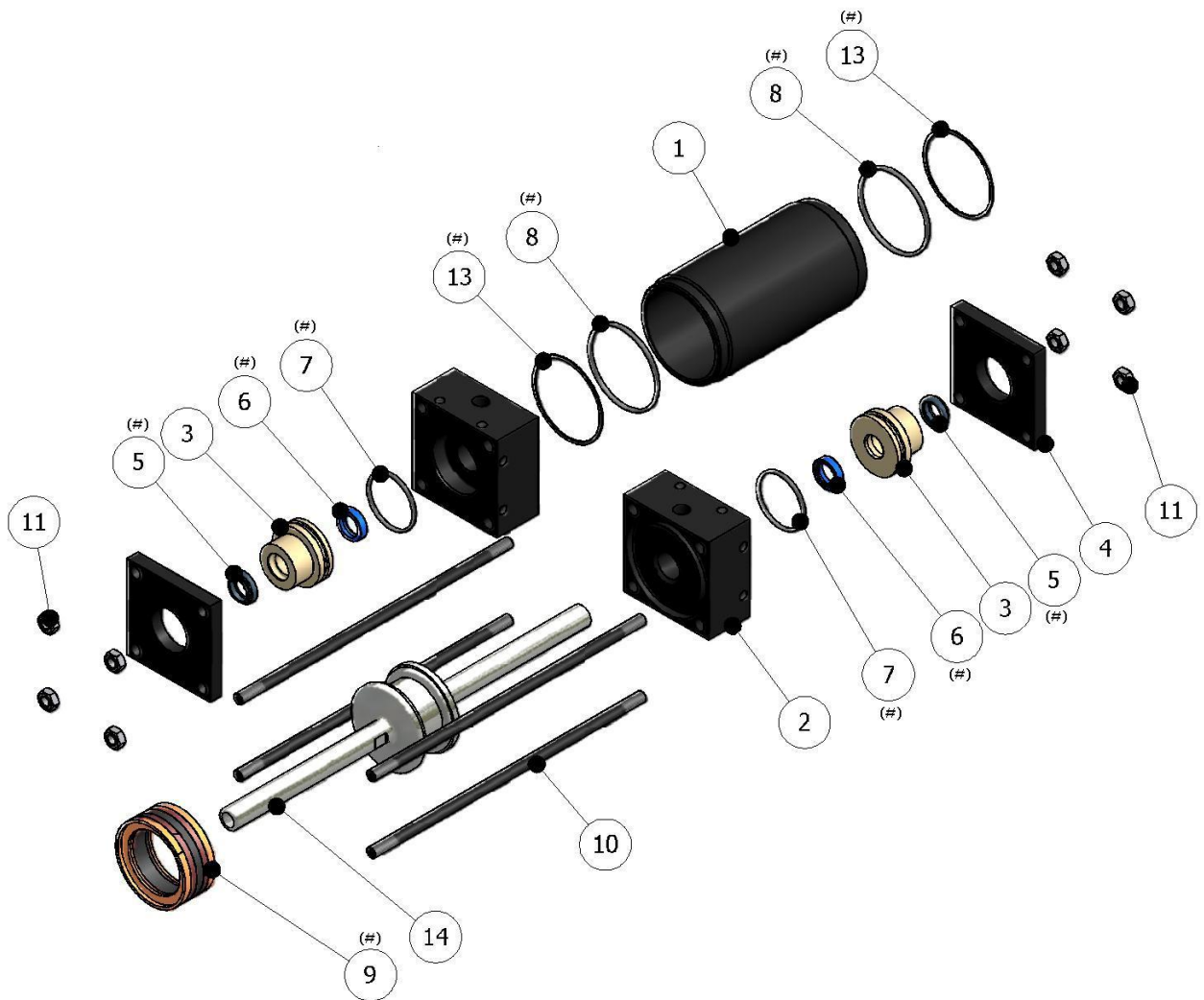


Figure 8. Hydraulic Cylinder with Spacers, Exploded View

N.B.: The indicated parts (#), are included in the repair seal kit KT-00010-01 (these are not supply separately).



Table 16. Hydraulic Cylinder with Spacers, Parts List

Ref.	Description	Parts Number	Qty.
1	Cylinder Body	HI-00025-05	1
2	Port Block	HI-00101-04	2
3	Rod Bushing	HI-00101-03	2
4	Front Plate	HI-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	HI-00025-06	4
11	Nut (*)	TN-00029	4 (8)
13	O-Ring Anti Extrusion	OR-00063	2 (#)
14	Piston	HI-00101-01	1

() When the cylinder is supplied as a spare part 8 units are enclosed. In the Pump Line fitted in the machine, 4 units are enclosed.*

(#) Parts & Qtys. are included in the Repair Seal Kit KT-00010-01 (these parts are not supply separately).

“A” PROPORTIONING PUMP ASSEMBLY

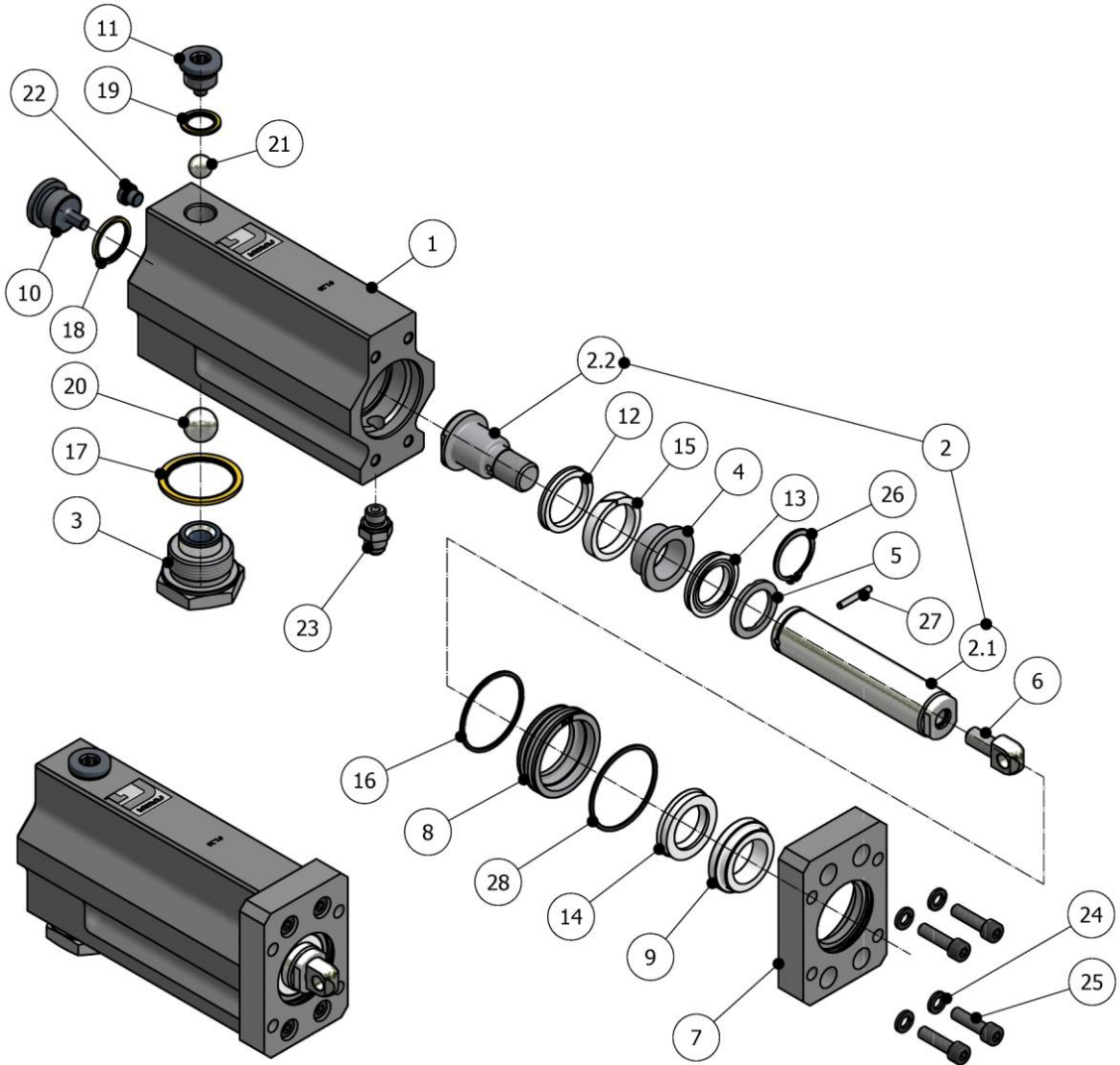


Figure 9. “A” Proportioning Pump Assembly, Exploded View



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	Piston Seal Support	See Table 18	1
5	Piston Seal	See Table 18	1
6	Pump Clevis	PU01042	1
7	Monoblock Flange Pump – ISO	PU-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	Piston Seal Wiper Ring	See Table 19	1 (*)
13	Piston Seal	See Table 19	1 (*)
14	Cylinder Seal	See Table 19	1 (*)
15	Piston Guide	See Table 19	1 (*)
16	O-Ring	OR-00009	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-00038	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	OR-00115	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	Item 4
0.80	PU-06101-008	PU-01006-008	PU-01007-008	PU-01008-008	PU-01009-008
1.20	PU-06101-012	PU-01006-012	PU-01007-012	PU-01008-012	PU-01009-012

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

Table 19. Seals Monoblock "A" Pump

item	#1.2
9	PU-06007-012
12	PU-01015-012
13	PU-01016-012
14	PU-01017-012
15	PU-01014-012
28	OR-00115

Table 20. Repair Seal Kit "A" Pump

Pump	Item
0.80	KT-00095-008
1.20	KT-00095-012

N.B :

The standard proportioning pump sizes are #0.80 & #1.20. 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

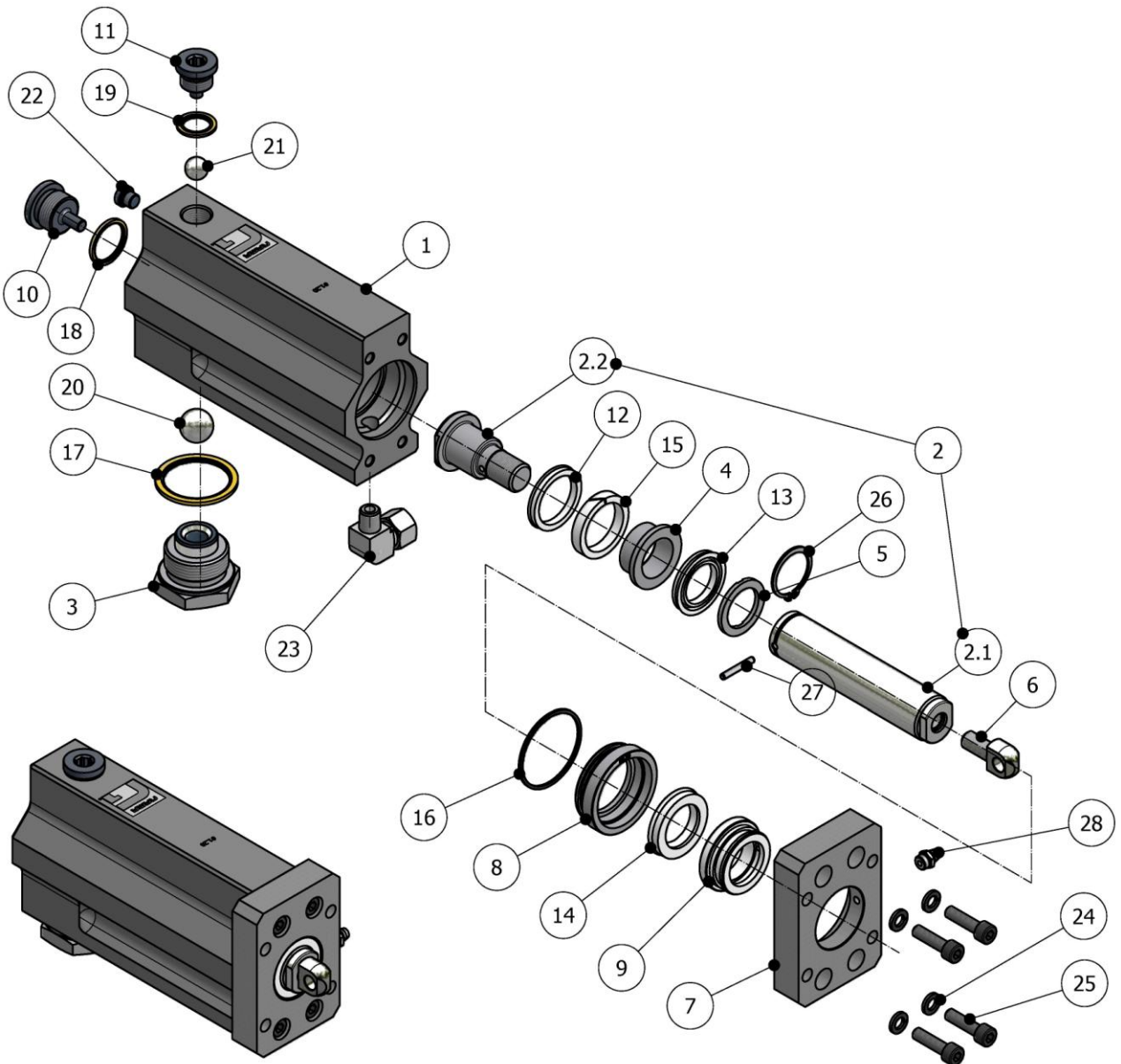


Figure 10. “R” Proportioning Pump Assembly, Exploded View



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	Piston Seal Support	See Table 22	1
5	Piston Seal	See Table 22	1
6	Pump Clevis	PU01042	1
7	Monoblock Flange Pump – POL	PU-06005	1
8	Seat Seal – POL	See Table 22	1
9	Bearing POL	See Table 23	1 (*)
10	Plug Side Pump	PU-01003-0E	1
11	Upper Plug Pump	PU-01003-0F	1
12	Piston Seal Wiper Ring	See Table 23	1 (*)
13	Piston Seal	See Table 23	1 (*)
14	Cylinder Seal	See Table 23	1 (*)
15	Piston Guide	See Table 23	1 (*)
16	O-Ring	OR-00009	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-00038	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	Item 4
0.80	PU-06101-008	PU-01006-008	PU-01007-008	PU-01008-008	PU-01009-008
1.20	PU-06101-012	PU-01006-012	PU-01007-012	PU-01008-012	PU-01009-012

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

Table 23. Seals Monoblock “R” Pump

Pump	Item 9	Item 12	Item 13	Item 14	Item 15
0.80	PU-06008-008	PU-01015-008	PU-01016-008	PU-01017-008	PU-01014-008
1.20	PU-06008-012	PU-01015-012	PU-01016-012	PU-01017-012	PU-01014-012

Table 24. Repair Seal Kit “R” Pump

Pump	Item
0.80	KT-00096-008
1.20	KT-00096-012

N.B :

(#) The standard proportioning pump sizes are #0.80 & #1.20. 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” PRIMARY HEATER

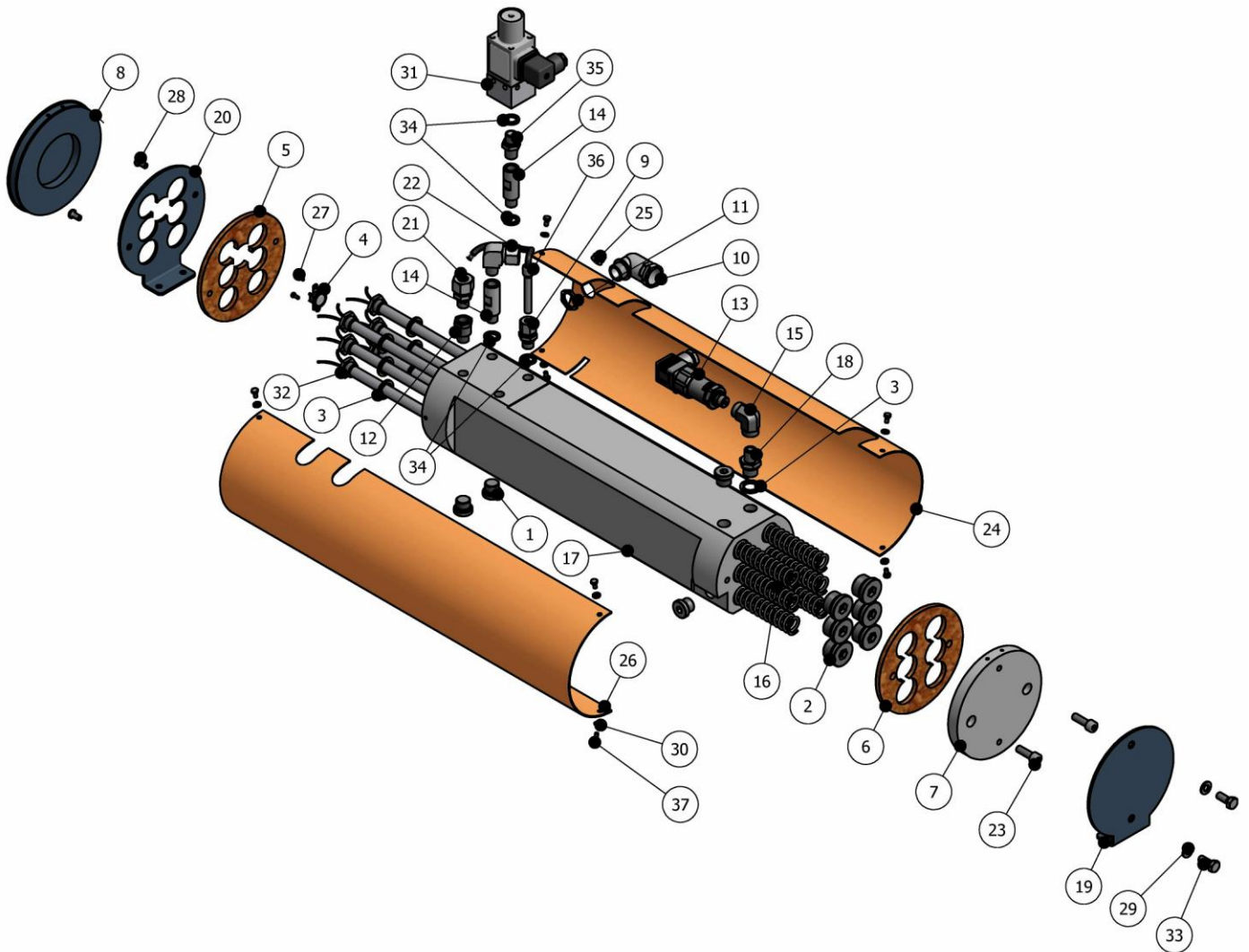


Figure 11. “A” Primary Heater, Exploded View



Table 25. "A" Primary Heater, Parts List

Ref.	Description	Part Number	Qty.
1	Pipe Plug	RA-00049	4
2	Pipe Plug	RA-00012	6
3	Seal	OR-00018	7
4	Thermal Limit Switch	EL-00006	1
5	Top Insulate Plate	CL-01001-04	1
6	Bottom Insulate Plate	CL-01001-03	1
7	Bottom Cap	CL-01001-02	1
8	Cover	CL-01001-07	1
9	Thermocouple Nipple	RA-00231	1
10	Conduit Connector	EL-00087-02	1
11	Nut	EL-00090-01	1
12	Swivel Union	RA-00077	1
13	Pressure Transducer	HI-00033	1
14	Swivel Union	RA-00100	2
15	Male Elbow	RA-00105	1
16	Spring	SP-00009	6
17	Heat Block	CLH-01001-01A	1
18	Thread Reducer	RA-00160	1
19	Heater Support Front	CL-05001-08	1
20	Heater Support Back	CL-05001-07	1
21	Tube Fitting	RA-00182	1
22	Elbow Tube Fitting	RA-00038	1
23	Socket Head Cap Screw	TN-00027	2
24	Heater Cover	CL-05001-05	1
25	Rubber Grommet	EL-00095-00	1
26	Heater Cover	CL-05001-06	1
27	Screw	TN-00128	2
28	ULS Screw	TN-00170	2
29	Washer	TN-00119	2
30	Washer	TN-00104	8



Ref.	Description	Part Number	Qty.
31	Pressure Switch	HI-00021	1
32	Heat Resistance	See Table 26	6
33	Hex. Screw	TN-00187	2
34	Seal	OR-00054	4
35	Swivel Union	RA-00138	1
36	Thermocouple	EL-00146-00	1
37	Hex. Screw	TN-00317	8

Table 26. Parts List for each model of "A"-Heater

Part Number	Description	POS. 32
CLH-05001-00C	"A"-Heater 9000 watts 400 v	EL-00179
CLH-05001-00D	"A"-Heater 7500 watts 400 v	EL-00197



“R” PRIMARY HEATER

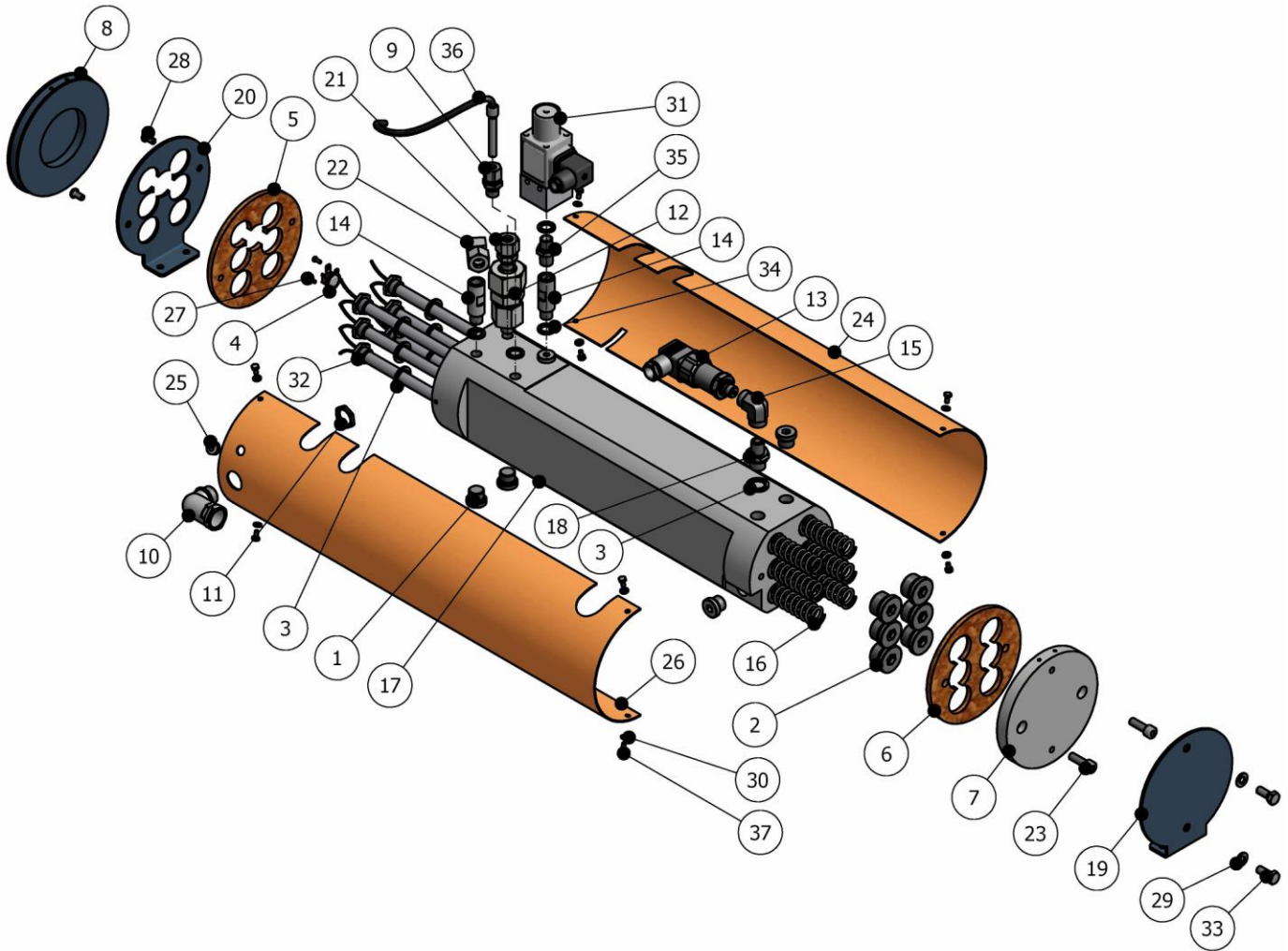


Figure 12. “R” Primary Heater, Exploded View



Table 27. “R” Primary Heater, Parts List

Ref.	Description	Part Number	Qty.
1	Pipe Plug	RA-00049	4
2	Pipe Plug	RA-00012	6
3	Seal	OR-00018	7
4	Thermal Limit Switch	EL-00006	1
5	Top Insulate Plate	CL-01001-04	1
6	Bottom Insulate Plate	CL-01001-03	1
7	Bottom Cap	CL-01001-02	1
8	Cover	CL-01001-07	1
9	Thermocouple Nipple	RA-00231	1
10	Conduit Connector	EL-00087-02	1
11	Nut	EL-00090-01	1
12	Swivel Union	RA-00077	1
13	Pressure Transducer	HI-00033	1
14	Swivel Union	RA-00100	2
15	Male Elbow	RA-00105	1
16	Spring	SP-00009	6
17	Heat Block	CLH-01001-01A	1
18	Thread Reducer	RA-00160	1
19	Heater Support Front	CL-05001-08	1
20	Heater Support Back	CL-05001-07	1
21	Tube Fitting	RA-00182	1
22	Elbow Tube Fitting	RA-00038	1
23	Socket Head Cap Screw	TN-00027	2
24	Heater Cover	CL-05002-05	1
25	Rubber Grommet	EL-00095-00	1
26	Heater Cover	CL-05002-06	1
27	Screw	TN-00128	2
28	ULS Screw	TN-00170	2
29	Washer	TN-00119	2
30	Washer	TN-00104	8



Ref.	Description	Part Number	Qty.
31	Pressure Switch	HI-00021	1
32	Heat Resistance	See Table 28	6
33	Hex. Screw	TN-00187	2
34	Seal	OR-00054	4
35	Swivel Union	RA-00138	1
36	Thermocouple	EL-00146-00	1
37	Hex. Screw	TN-00317	8

Table 28. Parts List for each model of “R”-Heater

Part Number	Description	POS. 32
CLH-05002-00C	“R”-Heater 9000 watts 400 v	EL-00179
CLH-05002-00D	“R”-Heater 7500 watts 400 v	EL-00197

PNEUMATIC COMPONENTS

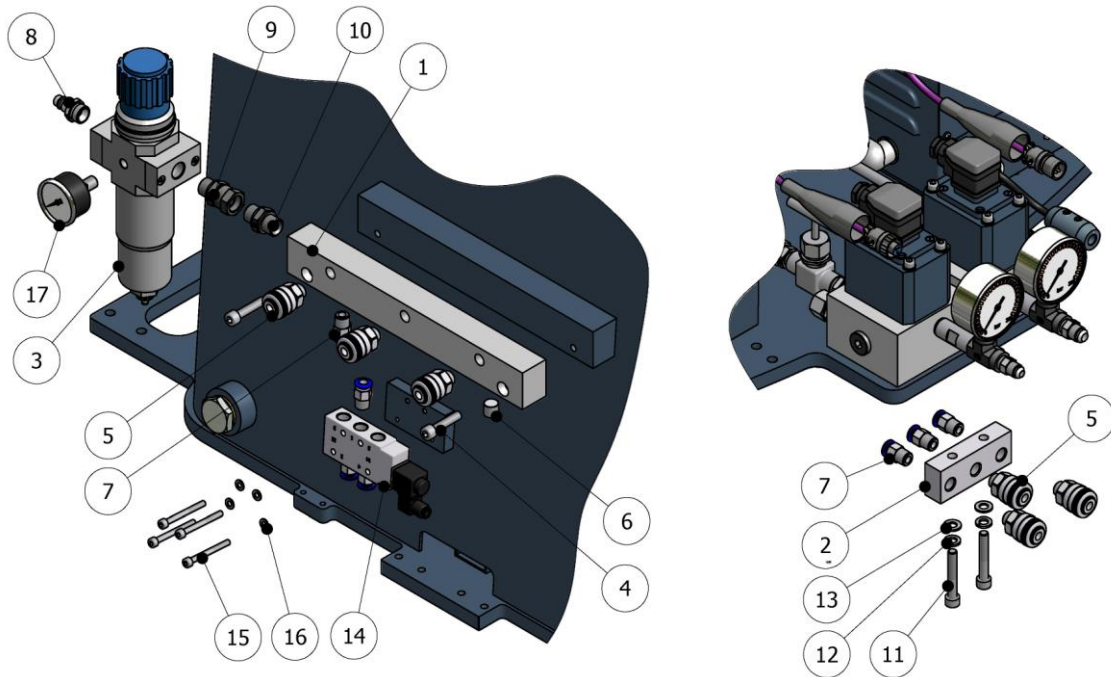


Figure 13. Pneumatic Components, Exploded View

Table 29. Pneumatic Components, Parts List

Ref.	Description	Part Number	Qty.
1	Air Manifold	MQ-05012	1
2	Air Connection Support for Gun with magnetic switch	MQ-02005	1
	Air Connection Support for Gun with Timer (Optional)	MQ-05020	1
3	Air Filter with Pressure Regulator	NE-00050	1
4	Screw	TN-00245	2
5	Fast Socket	RA-00095	4
	Fast Socket for Timer (Optional)		+2
6	Plug	RA-00120	2
7	Tube Fitting	RA-00150	2
	Tube Fitting for Timer (Optional)		+6
8	Coupler Plug	RA-00096	1
9	Swivel Union	RA-00089	1



Ref.	Description	Part Number	Qty.
10	Hex Nipple	RA-00090	1
11	Screw	TN-00090	2
12	Washer	TN-00028	2
13	Washer	TN-00119	2
14	Solenoid Valve with Coil for Timer (Optional)	NE-00042	1
15	Screw for Timer (Optional)	TN-00148	4
	Screw for Timer + Automatic Recirculation (Optional)	TN-00111	4
16	Washer	TN-00103	4
17	Manometer	NE-00033	1

MANUAL RECIRCULATION KIT # KT-00054

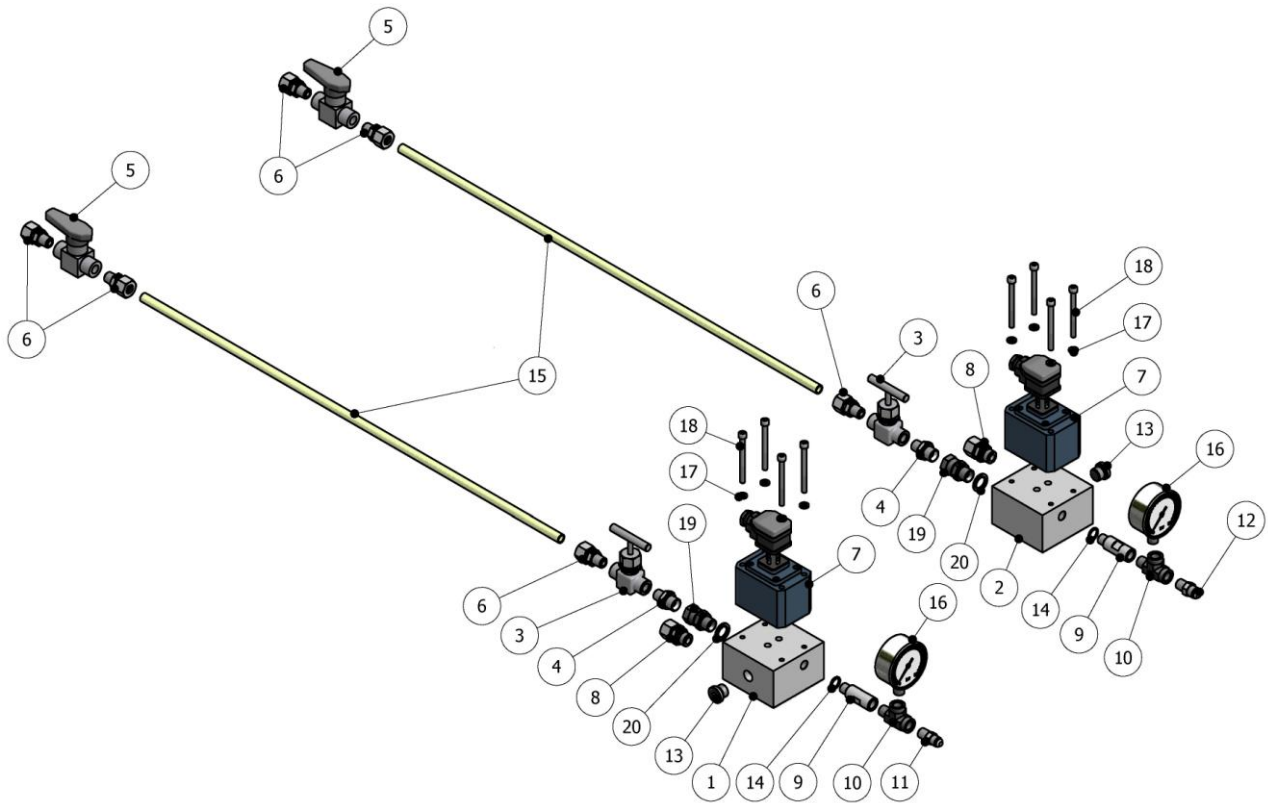


Figure 14. Manual Recirculation Kit # KT-00054

Table 30. Manual Recirculation Kit, Parts List

Ref.	Description	Part Number	Qty.
1	A Base Plate	MQ-05007	1
2	R Base Plate	MQ-05008	1
3	Manual Valve	RA-00264	2
4	Hex Nipple	RA-00160	2
5	Ball Valve	RA-00189	2
6	Male Stud Connector	RA-00033	6
7	Flow Meter	EL-00079-01	2
8	Male Stud Connector	RA-00036	2
9	Swivel Union	RA-00100	2
10	Pipe Tee	RA-00018	2



Ref.	Description	Part Number	Qty.
11	Hose Nipple	RA-00146	1
12	Hose Nipple	RA-00147	1
13	Plug	RA-00049	2
14	Seal	OR-00054	2
15	Tube	HI-00010	2
16	Liquid Fill Gauge	HI-00035	2
17	Lock Washer	TN-00025	8
18	Socket Head Cap Screw	TN-00178	8
19	Swivel union	RA-00089	2
20	Seal	OR-00018	2

N.B.:

Optionally this recirculation kit will be completed up to the tanks with the KT-00038-06.

Table 31. Flow Meter Model List

Ref.	Description	Part Number	Qty.
7	Flow Meter Model 1 (Fa. VSE)	EL-00079	2
	Flow Meter Model 2 (Fa. Kracht)	EL-00079-01	2

N.B.:

When you need a spare of the flow meter element, you will have to identify which model equips your unit and then request the suitable reference.

AUTOMATIC RECIRCULATION KIT # KT-00055

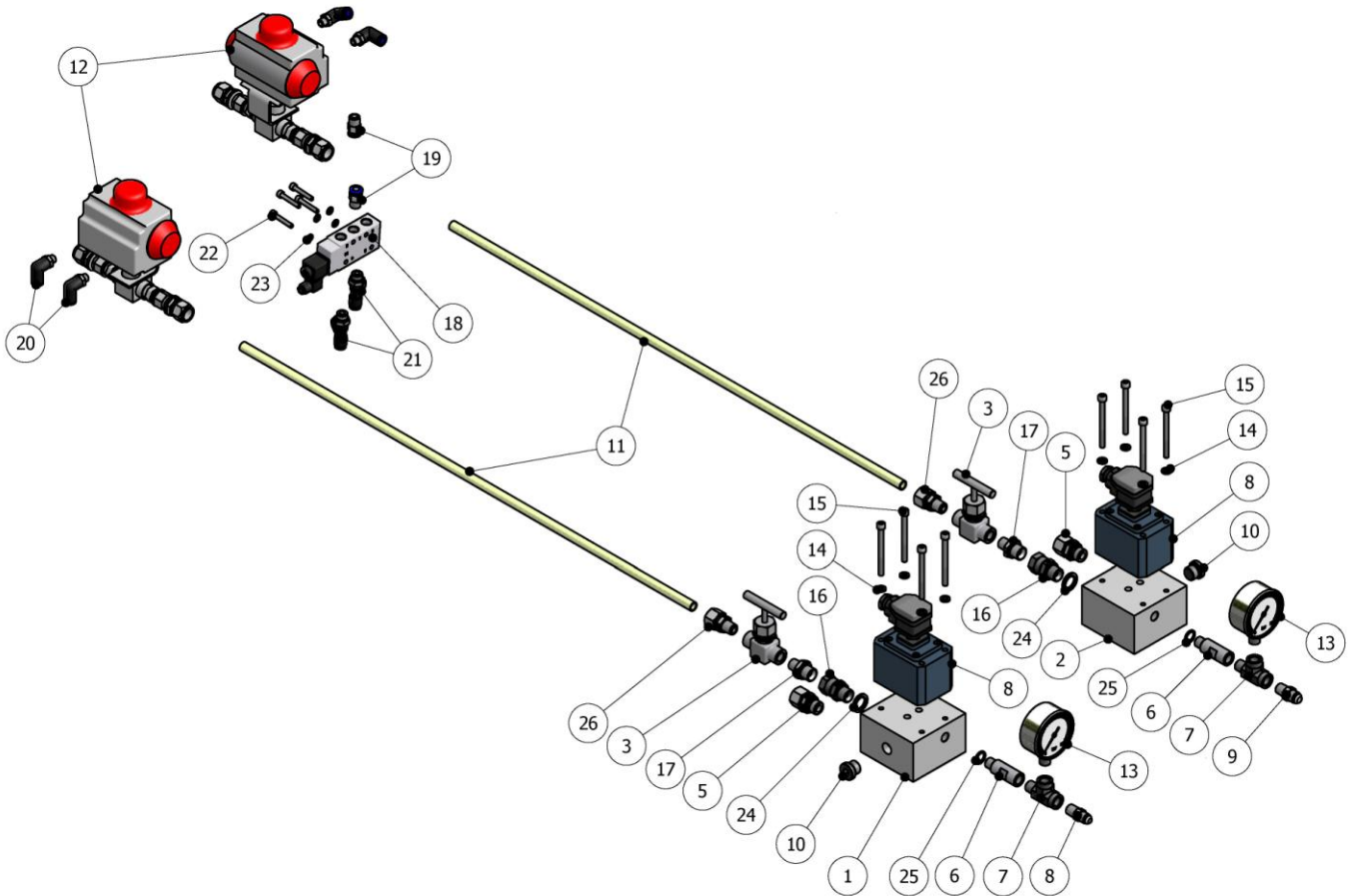


Figure 15. Automatic Recirculation Kit # KT-00055

Table 32. Automatic Recirculation Kit, Parts List

Ref.	Description	Part Number	Qty.
1	A Base Plate	MQ-05007	1
2	R Base Plate	MQ-05008	1
3	Manual Valve	RA-00264	2
4			
5	Male Stud Connector	RA-00036	2
6	Swivel Union	RA-00100	2
7	Pipe Tee	RA-00018	2



Ref.	Description	Part Number	Qty.
8	Flow Meter	See Table 31	1
8	Hose Nipple	RA-00146	1
9	Hose Nipple	RA-00147	1
10	Plug	RA-00049	2
11	Tube	HI-00010	2
12	Ball Valve with Tube Connection and Pneumatic Actuator	NE-00023	2
13	Liquid Fill Gauge	HI-00035	2
14	Lock Washer	TN-00025	8
15	Socket Head Cap Screw	TN-00178	8
16	Swivel Union	RA-00089	2
17	Hex Nipple	RA-00160	2
18	Solenoid Valve with Coil	NE-00042	1
19	Tube Fitting	RA-00150	2
20	Push-in L-Fitting	RA-00248	4
21	Push-in T-Fitting	RA-00249	2
22	Screw	TN-00148	4
	Screw for Recirculation + Timer	TN-00111	4
23	Washer	TN-00103	4
24	Seal	OR-00018	2
25	Seal	OR-00054	2
26	Male Stud Connector	RA-00033	2

N.B.:

Optionally this recirculation kit will be completed up to the tanks with the KT-00038-06.

MANUAL RECIRCULATION KIT WITHOUT FLOW METERS # KT-00056

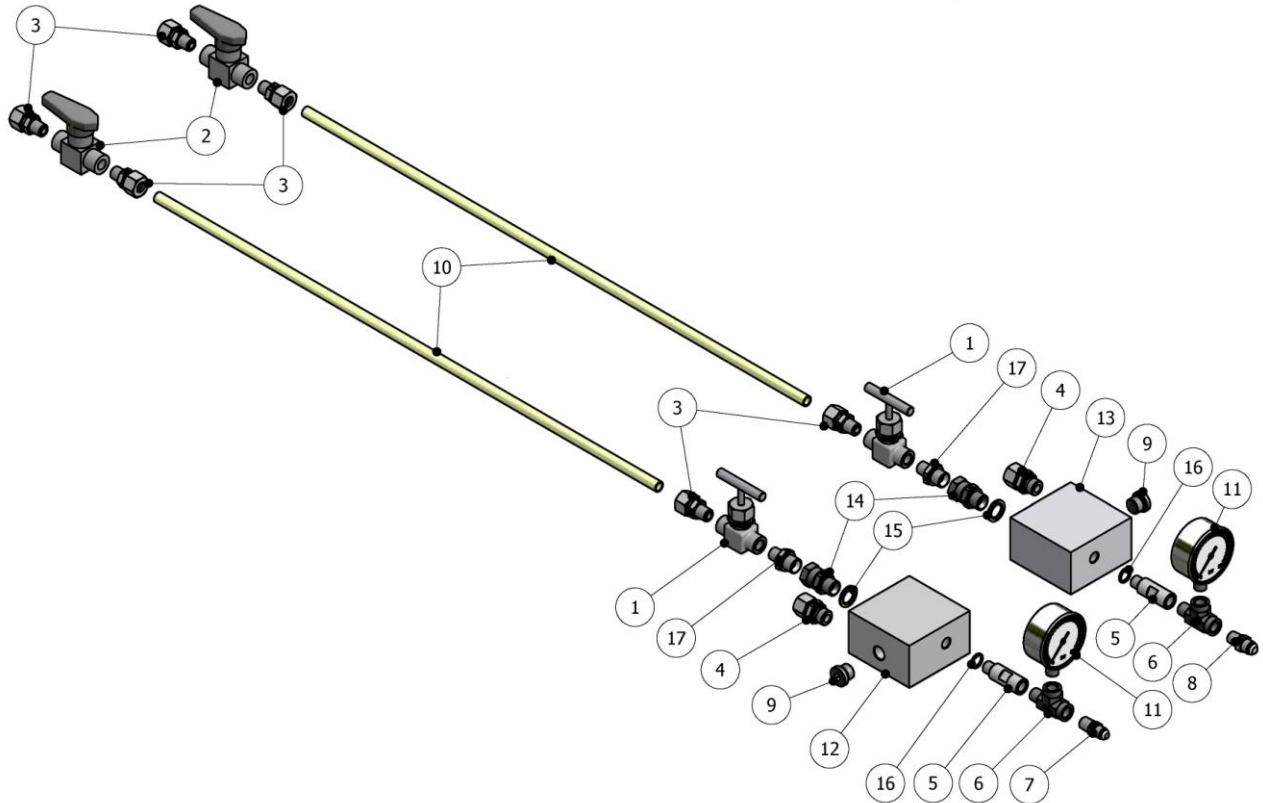


Figure 16. Manual Recirculation Kit Without Flow Meters # KT-00054

Table 33. Manual Recirculation Kit Without Flow Meters, Parts List

Ref.	Description	Part Number	Qty.
1	Manual Valve	RA-00264	2
2	Ball Valve	RA-00189	2
3	Male Stud Connector	RA-00033	6
4	Male Stud Connector	RA-00036	2
5	Swivel Union	RA-00100	2
6	Pipe Tee	RA-00018	2
7	Hose Nipple	RA-00146	1
8	Hose Nipple	RA-00147	1



Ref.	Description	Part Number	Qty.
9	Plug	RA-00049	2
10	Tube	HI-00010	2
11	Liquid Fill Gauge	HI-00035	2
12	Base Plate without Flow Meter (ISO)	MQ-05015	1
13	Base Plate without Flow Meter (POL)	MQ-05016	1
14	Swivel Union	RA-00089	2
15	Seal	OR-00018	2
16	Seal	OR-00054	2
17	Hex Nipple	RA-00160	2

N.B.:

Optionally this recirculation kit will be completed up to the tanks with the KT-00038-06.

GENERIC RECIRCULATION KIT # KT-00038-06 (OPTIONAL)

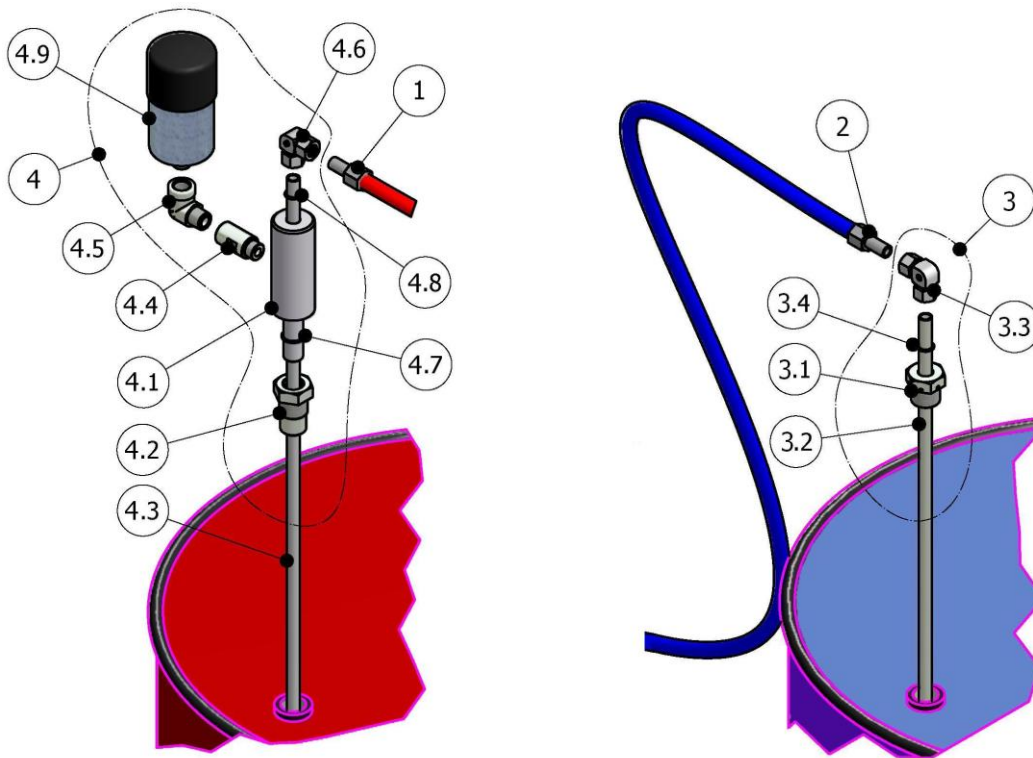


Figure 17. Generic Recirculation Kit Ref. KT-00038-06 (optional)

Table 34. Generic Recirculation Kit, Parts List

item.	Description	Part Number	Qty.
1	A-Hose 3 mts	MA-00049-01	1
2	R-Hose 3 mts	MA-00049-02	1
3	Assy. Connection to Tank without Filter	MQ-05010-00	1
3.1	Connection Tank	MQ-05009-A	1 (#)
3.2	Pipe	HI-00075	1 (#)
3.3	Elbow for Pipe	RA-00200	1 (#)
3.4	O-Ring	OR-00011	1 (#)

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item	Description	Part Number	Qty.
4	Assy. Connection to Tank with Filter	MQ-05009-00	1
4.1	Body Connection	MQ-05010	1 (*)
4.2	Connection Tank	MQ-05009	1 (*)
4.3	Pipe	HI-00075	1 (*)
4.4	Extension	RA.00256	1 (*)
4.5	Elbow	RA-00257	1 (*)
4.6	Elbow for Pipe	RA-00200	1 (*)
4.7	O-Ring	OR-00055	2 (*)
4.8	O-Ring	OR-00011	1 (*)
4.9	Deshumidifier Filter	NE-00045	1 (*)

N.B.:

(*) Parts included in item 4

(#) Parts included in item 3

This Optional kit, connects the recirculation from the rear side of the machine up to the tanks of product and it complements itself with the kits KT-00054/55 and 56.

TRANSFER PUMPS SUPPORT (OPTIONAL)

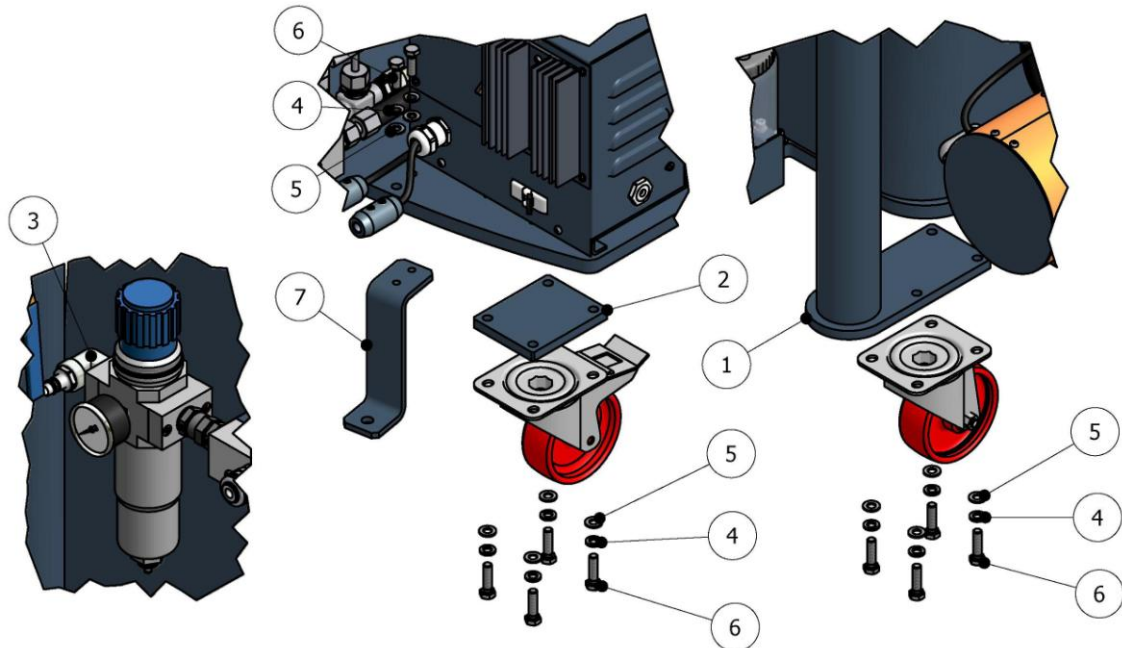
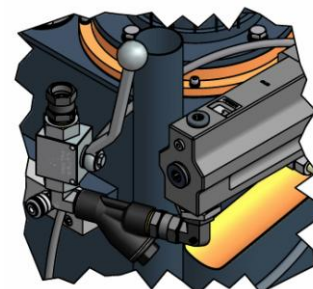


Figure 18. Transfer Pumps Support (optional)

Table 35. Transfer Pumps Support; Parts List (optional)

Ref.	Description	Part Number	Qty.
1	Transfer Pumps Support	MQ-01015-00	2
	Plug	RA-00013	2
2	Supplement Plate	MQ-01015-03	2
3	Elbow	RA-00257	1
4	Lock Washer	TN-00028	20
5	Washer	TN-00119	20
6	Hex Head Cap Screw	TN-00054	20
7	"Z" Bracket with Transfer Pumps Bracket	MQ-02014	2

Note: When transfer pump supports are fixed to the machine, the connectors in the product inlets must be re-orientated towards the corresponding proportioning pumps, as shown in the image.





HOSES THERMOCOUPLES DETAIL

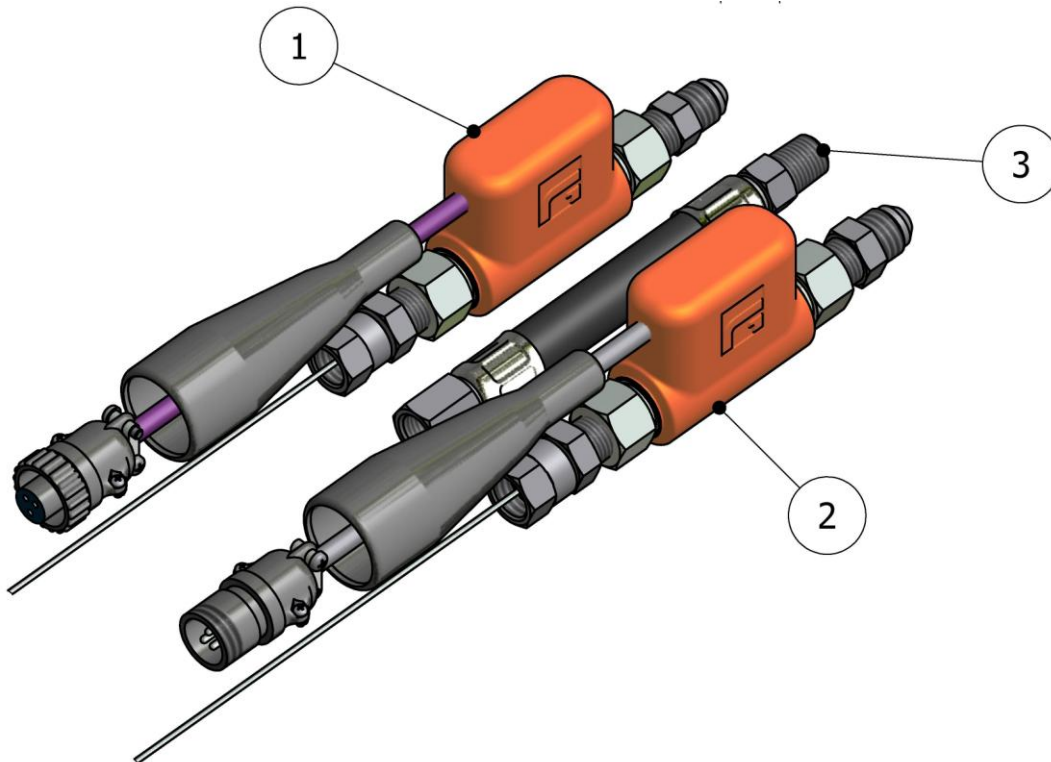


Figure 19. Hoses Thermocouples Detail

Table 36. Hoses Thermocouples, Parts List

Ref.	Description	Part Number	Qty.
1	ISO Thermocouple Assy	EL-00051-02	1
1.1	ISO Thermocouple	EL-00051-01	1
1.2	Swivel Union	RA-00148	1
1.3	Nipple	RA-00146	1
2	POL Thermocouple Assy.	EL-00052-02	1
2.1	POL Thermocouple	EL-00052-01	1
2.2	Swivel Union	RA-00149	1
2.3	Nipple	RA-00147	1
3	Connect Air Supplement	MA-00156	1

Electrical Schematic Diagram 3 x 400 v. - Neutral 50/60Hz

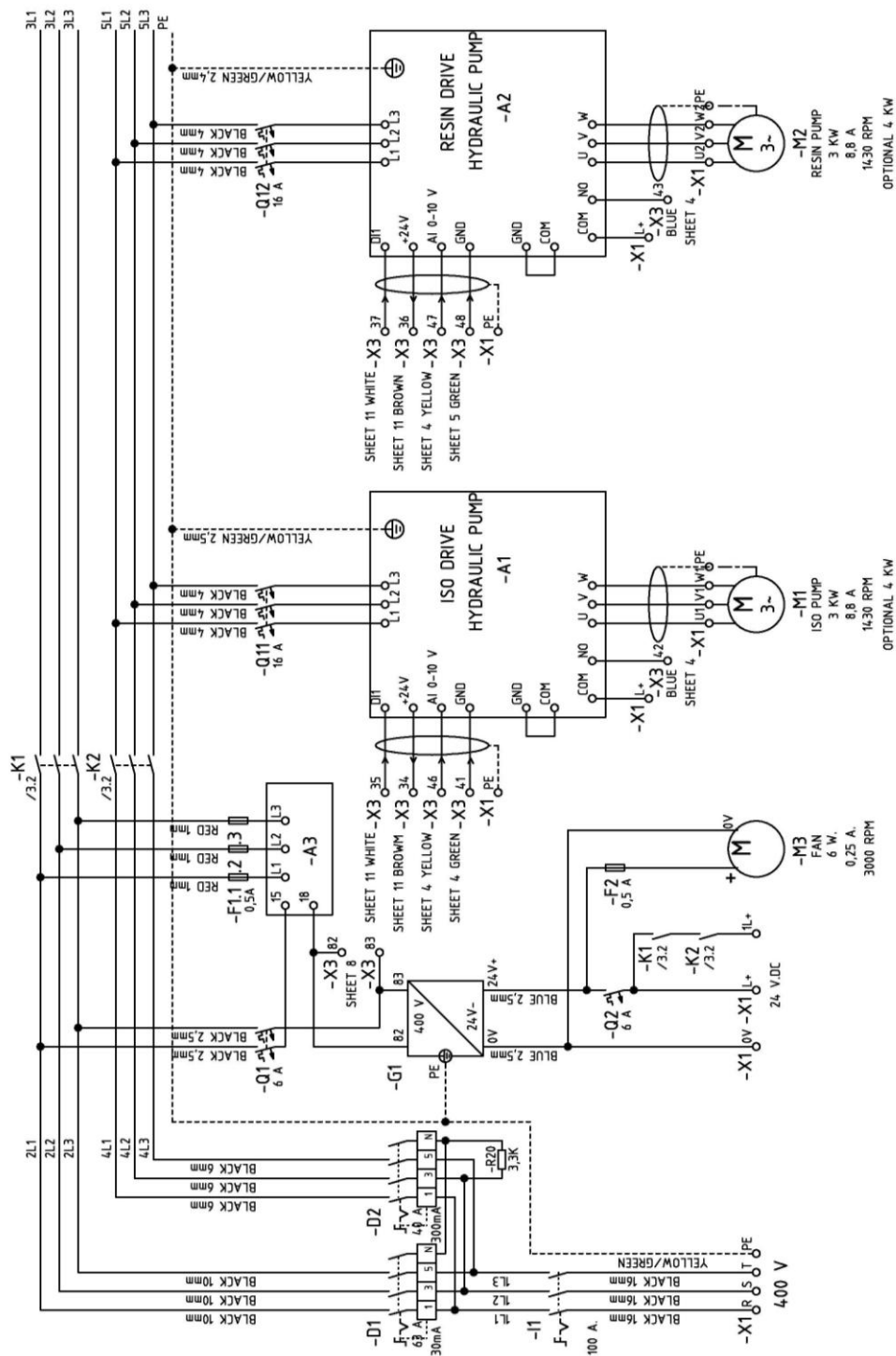


Figure 20. Electrical Schematic Diagram 3 x 400 v. - Neutral (Sheet 1 de 12)

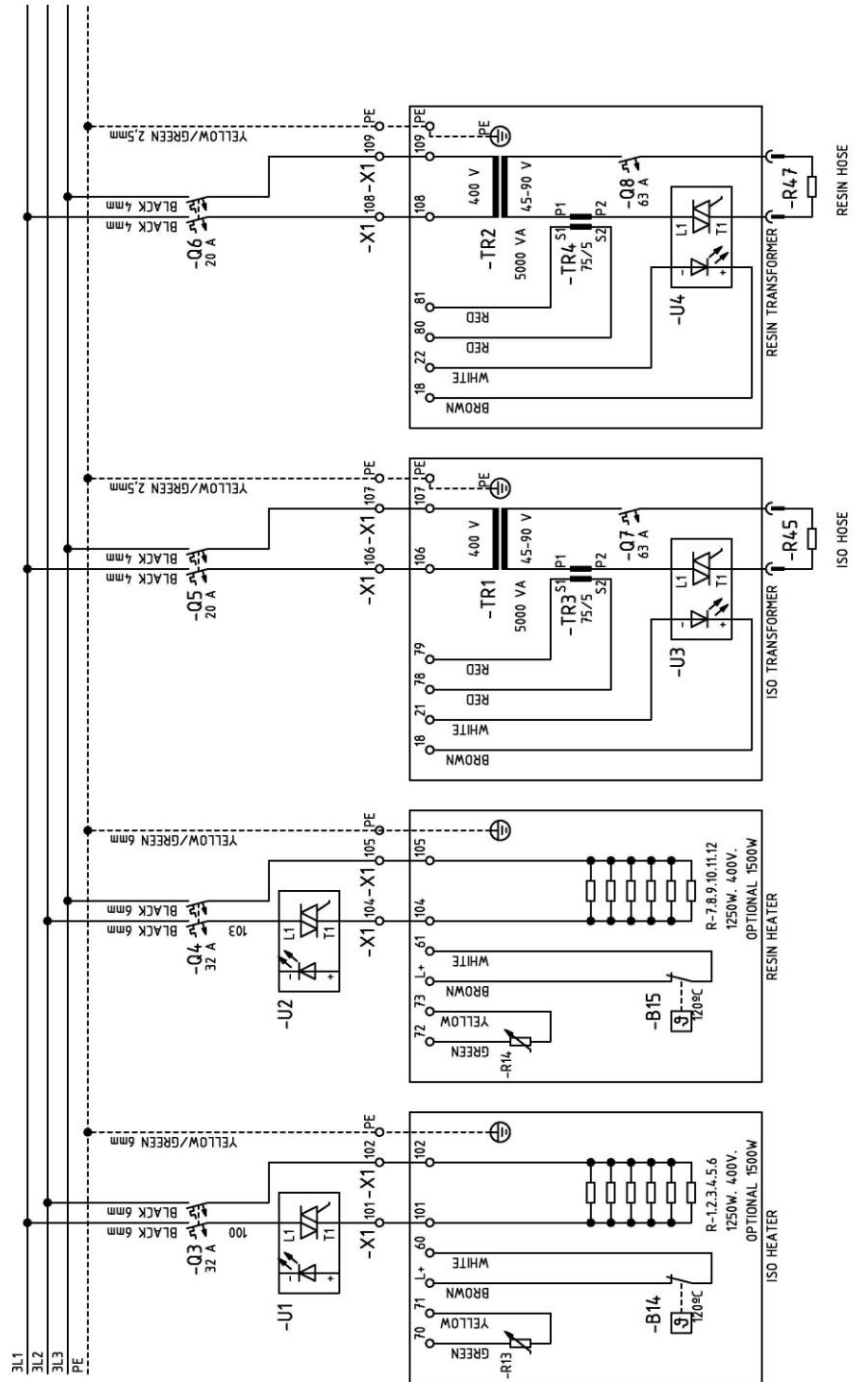


Figure 21. Electrical Schematic Diagram 3 x 400 v. - Neutral (Sheet 2 de 12)

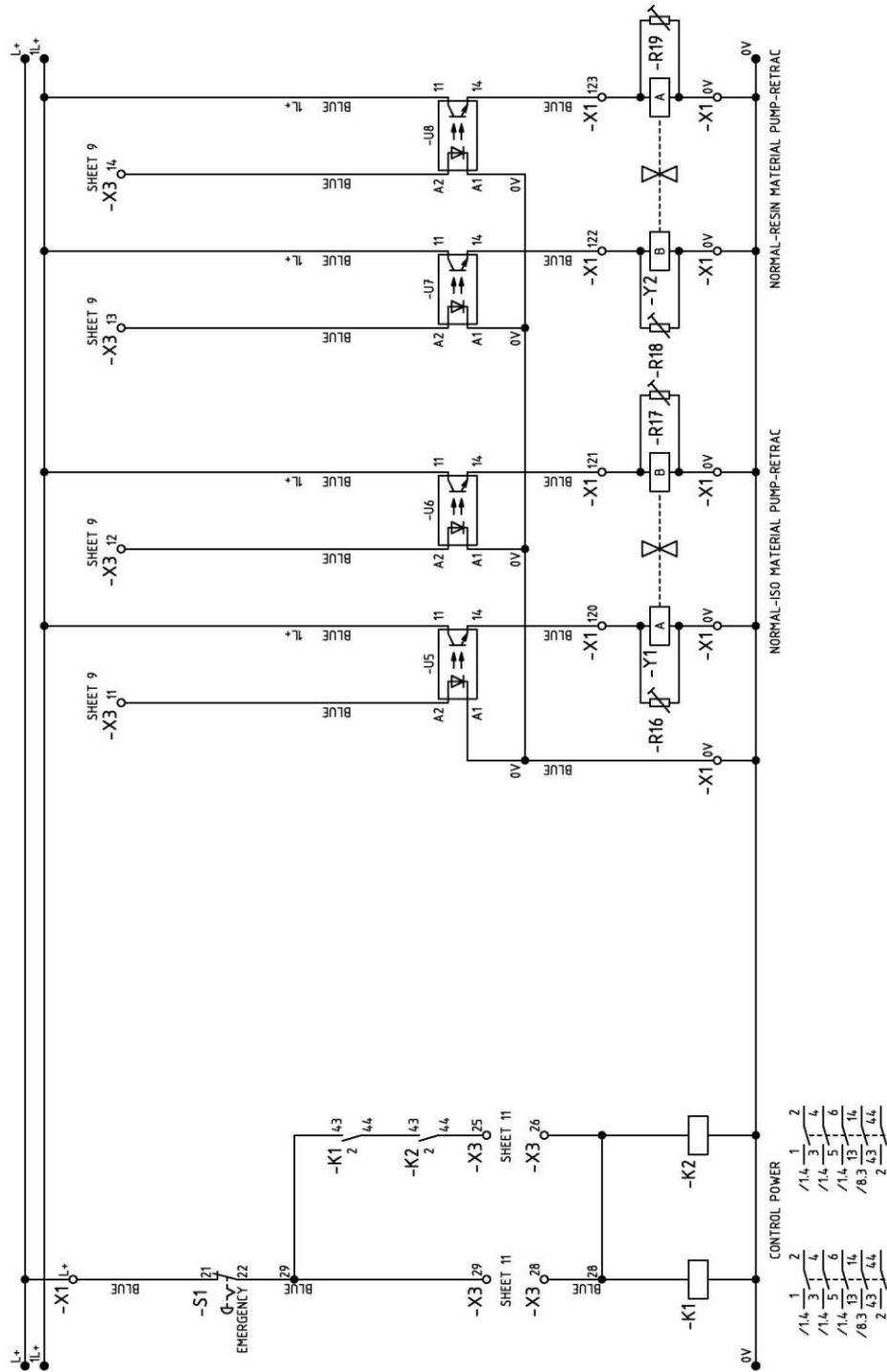


Figure 22. Electrical Schematic Diagram 3 x 400 v. - Neutral (Sheet 3 de 12)

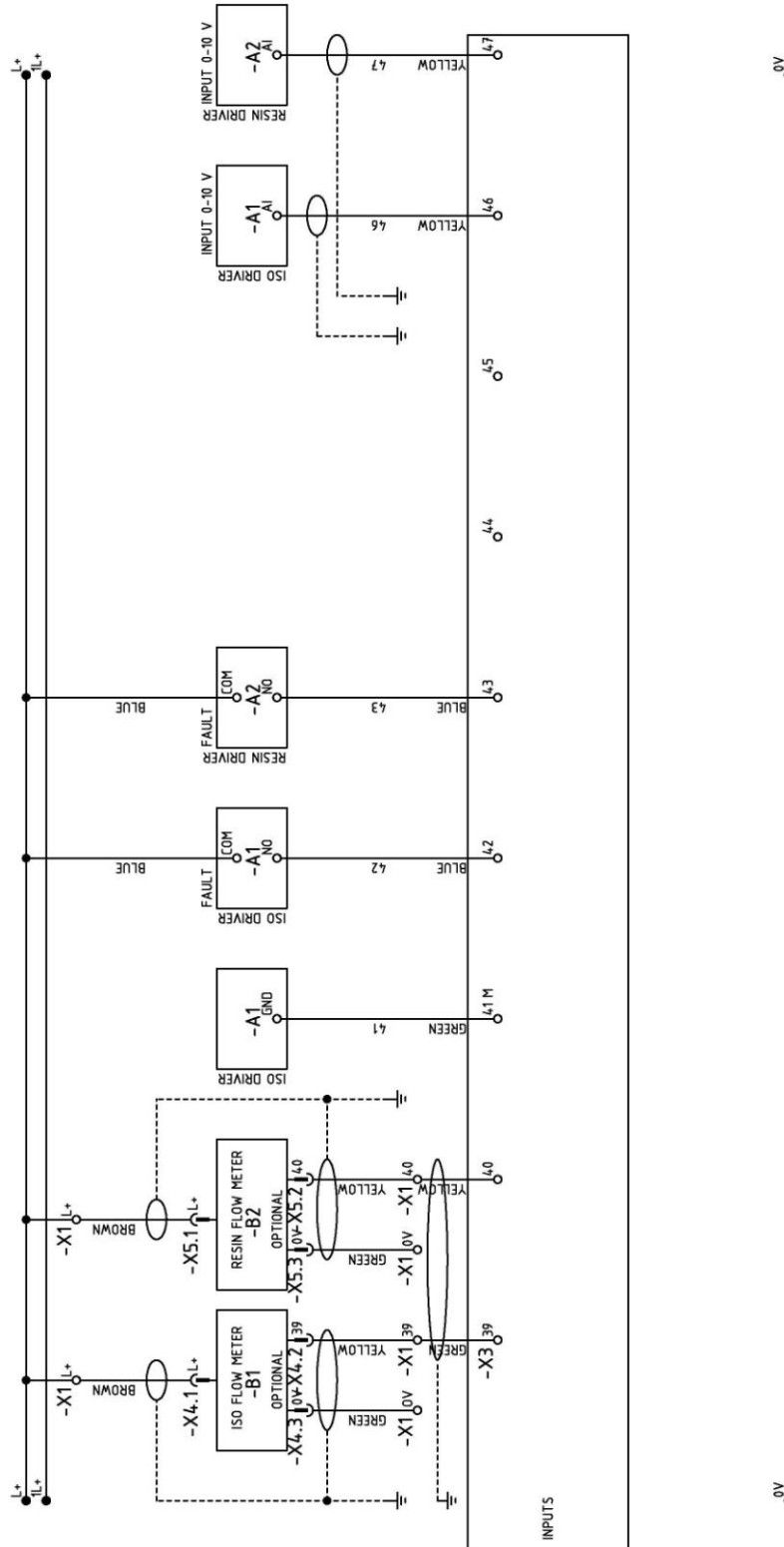


Figure 23. Electrical Schematic Diagram 3 x 400 v. - Neutral (Sheet 4 de 12)

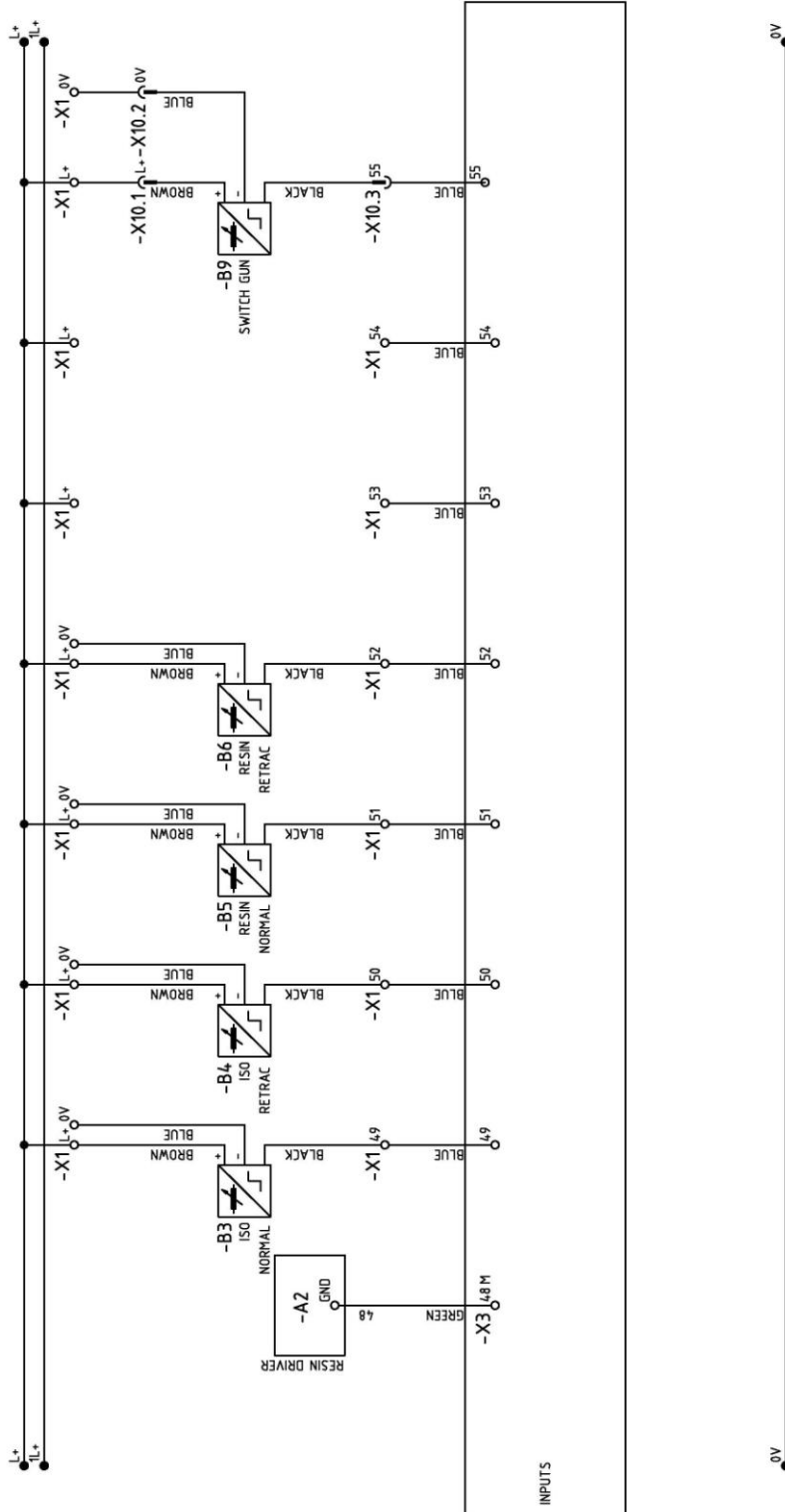


Figure 24. Electrical Schematic Diagram 3 x 400 v. - Neutral (Sheet 5 de 12)

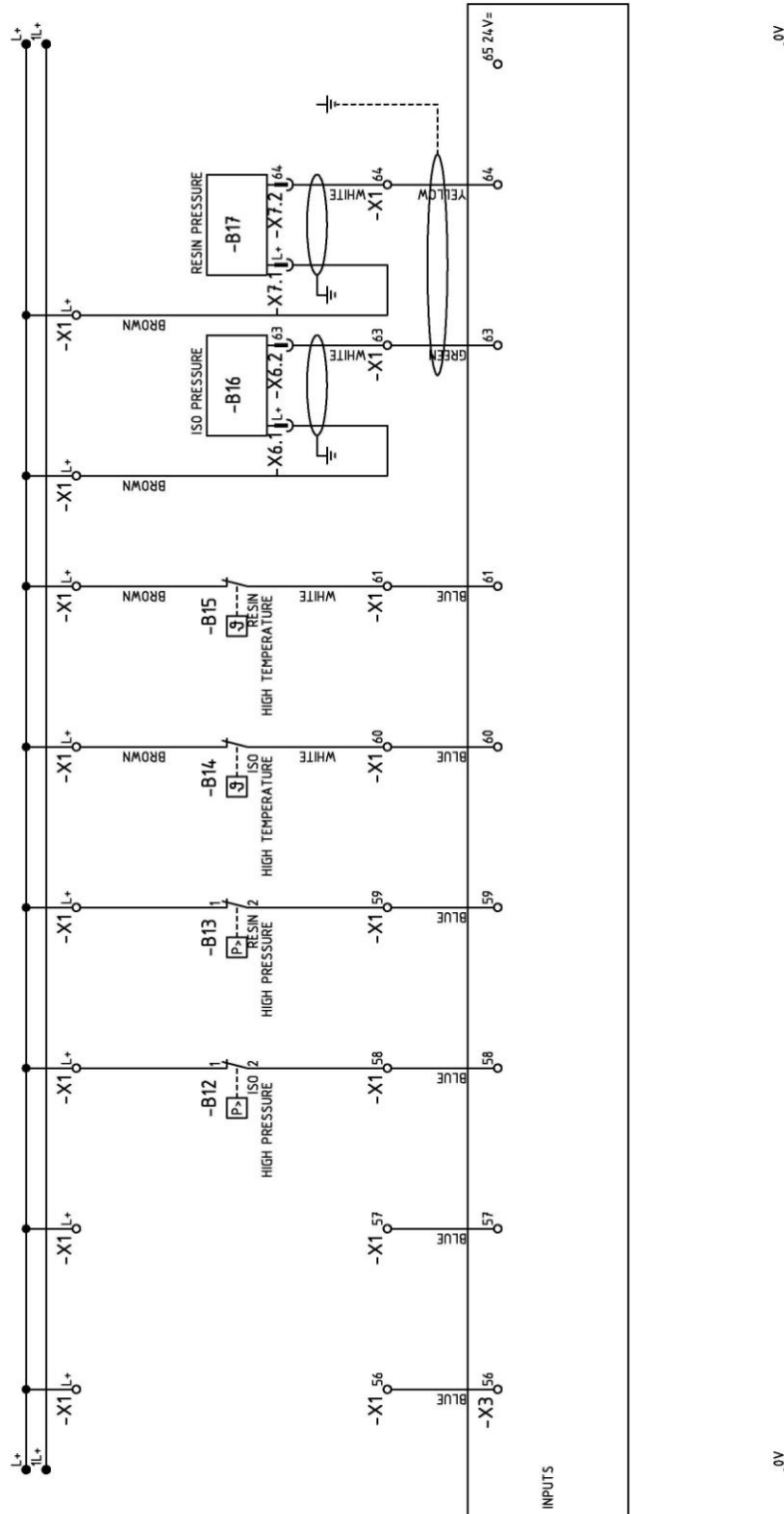


Figure 25. Electrical Schematic Diagram 3 x 400 v. - Neutral (Sheet 6 de 12)

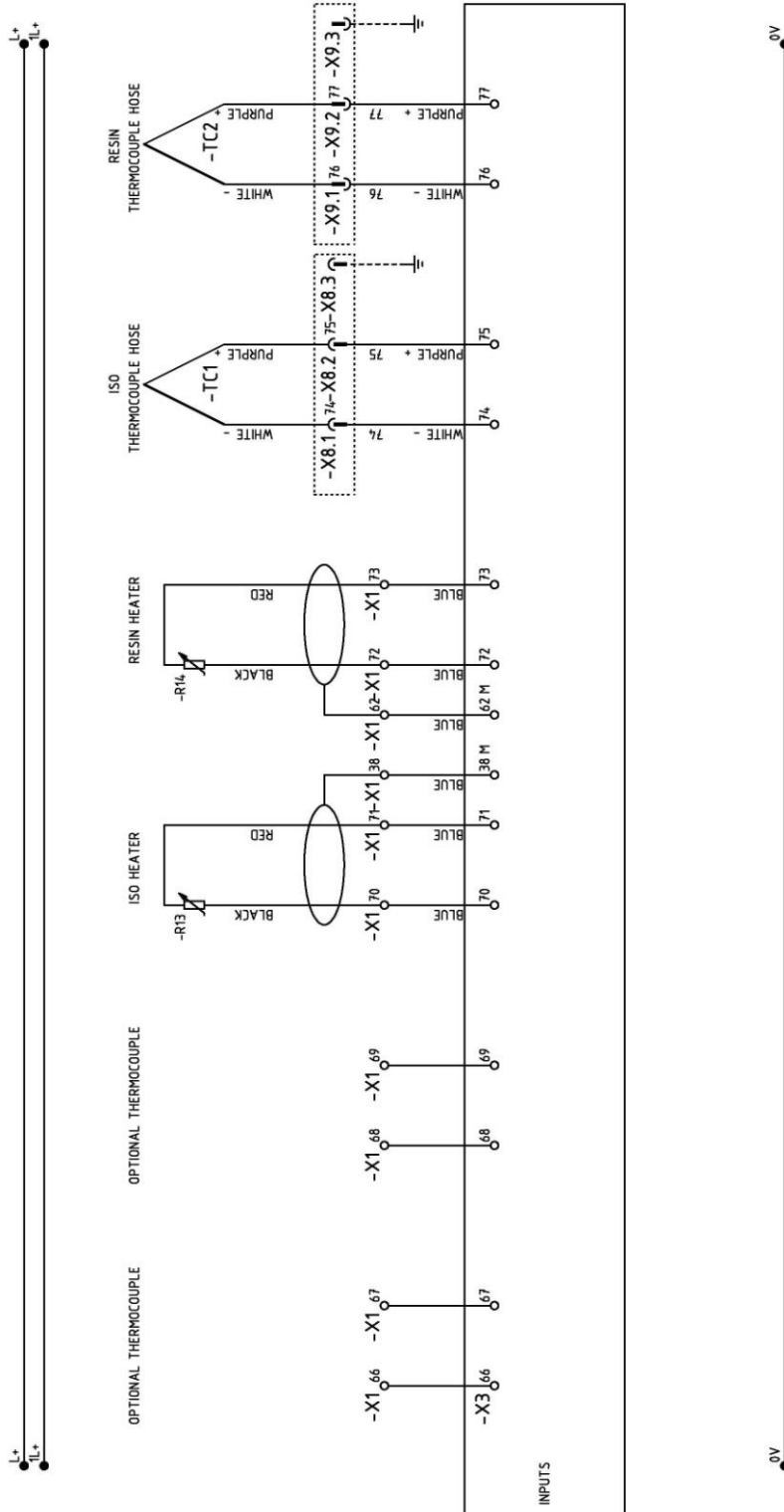


Figure 26. Electrical Schematic Diagram 3 x 400 v. - Neutral (Sheet 7 de 12)

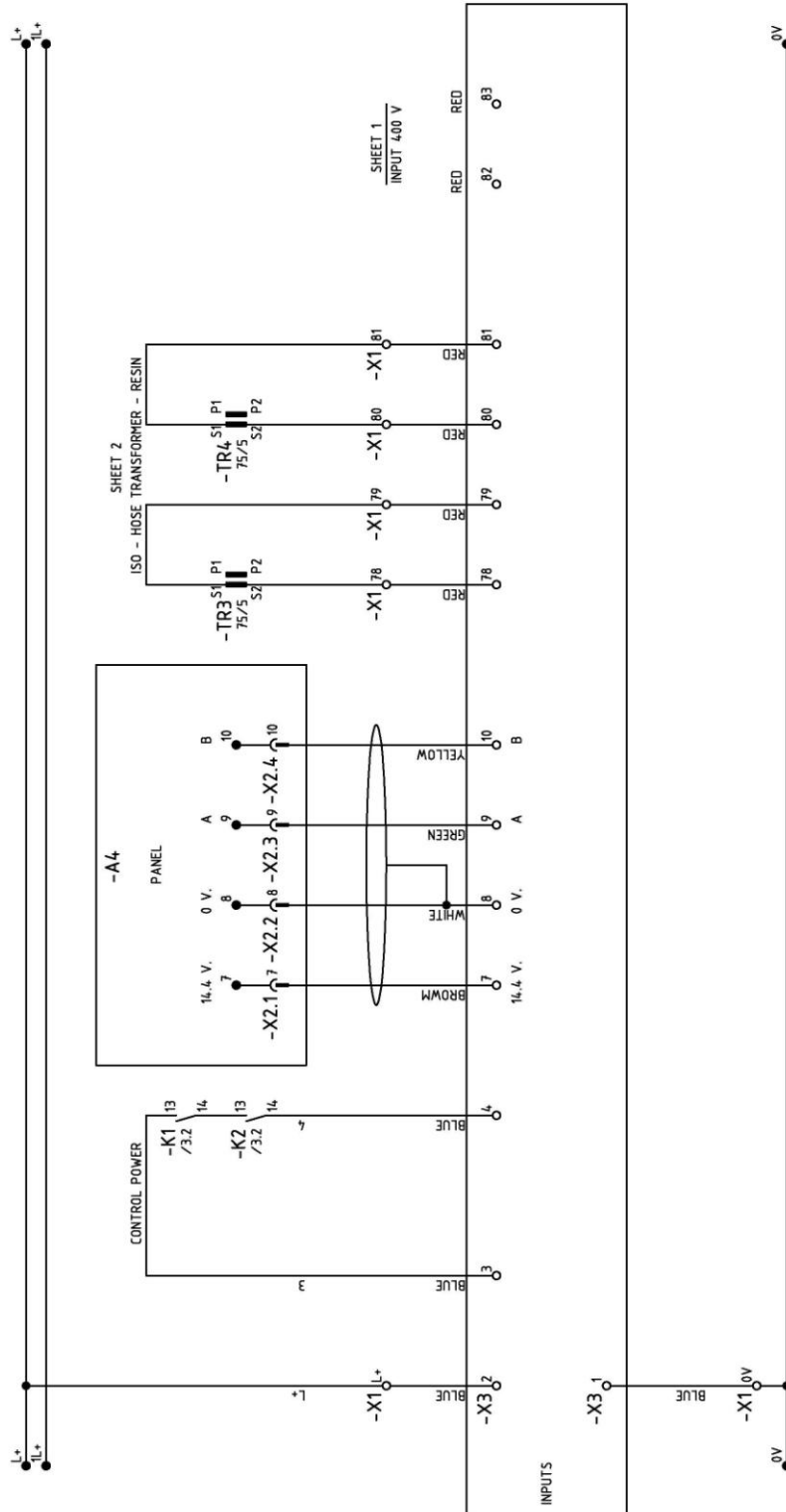


Figure 27. Electrical Schematic Diagram 3 x 400 v. - Neutral (Sheet 8 de 12)

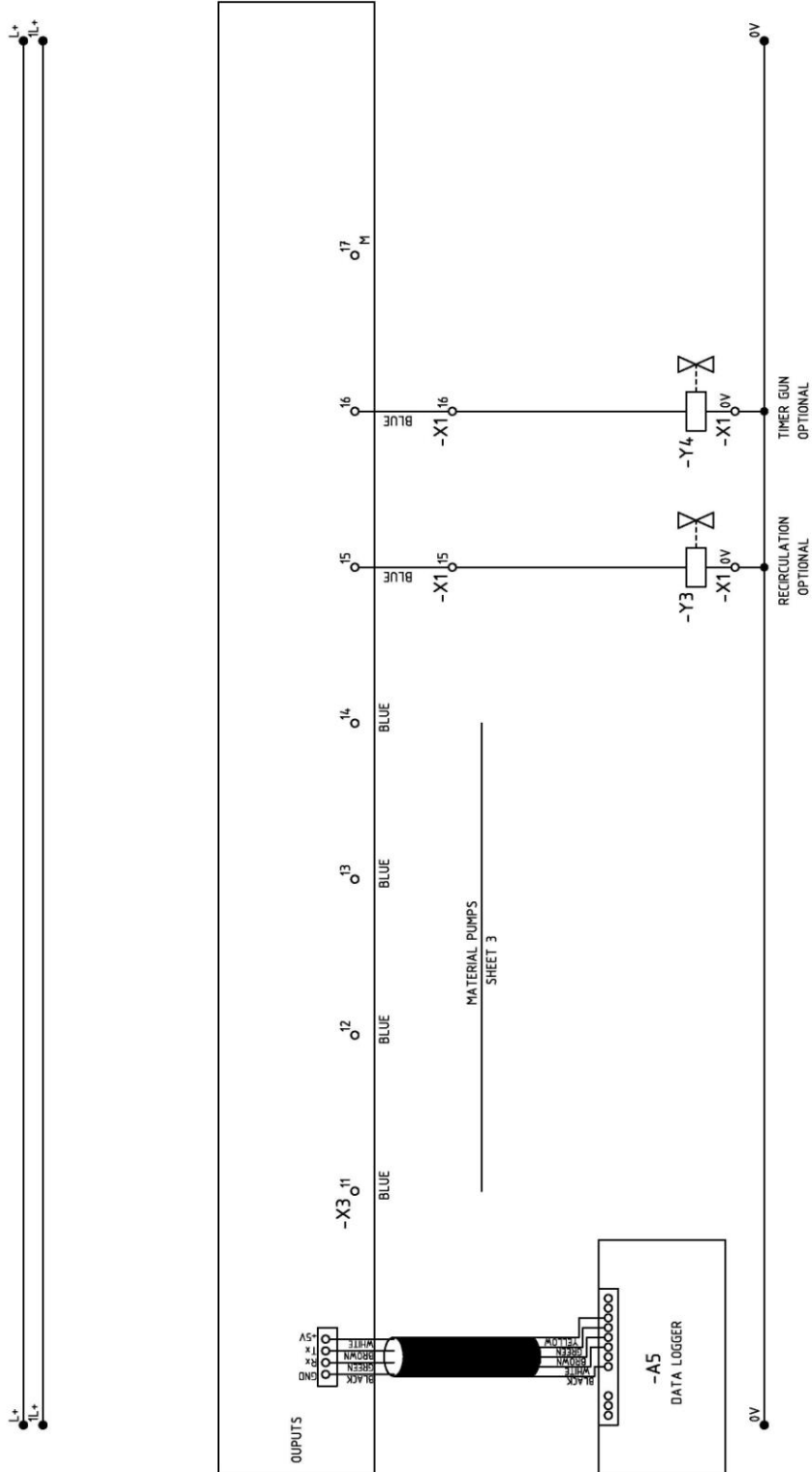


Figure 28. Electrical Schematic Diagram 3 x 400 v. - Neutral (Sheet 9 de 12)

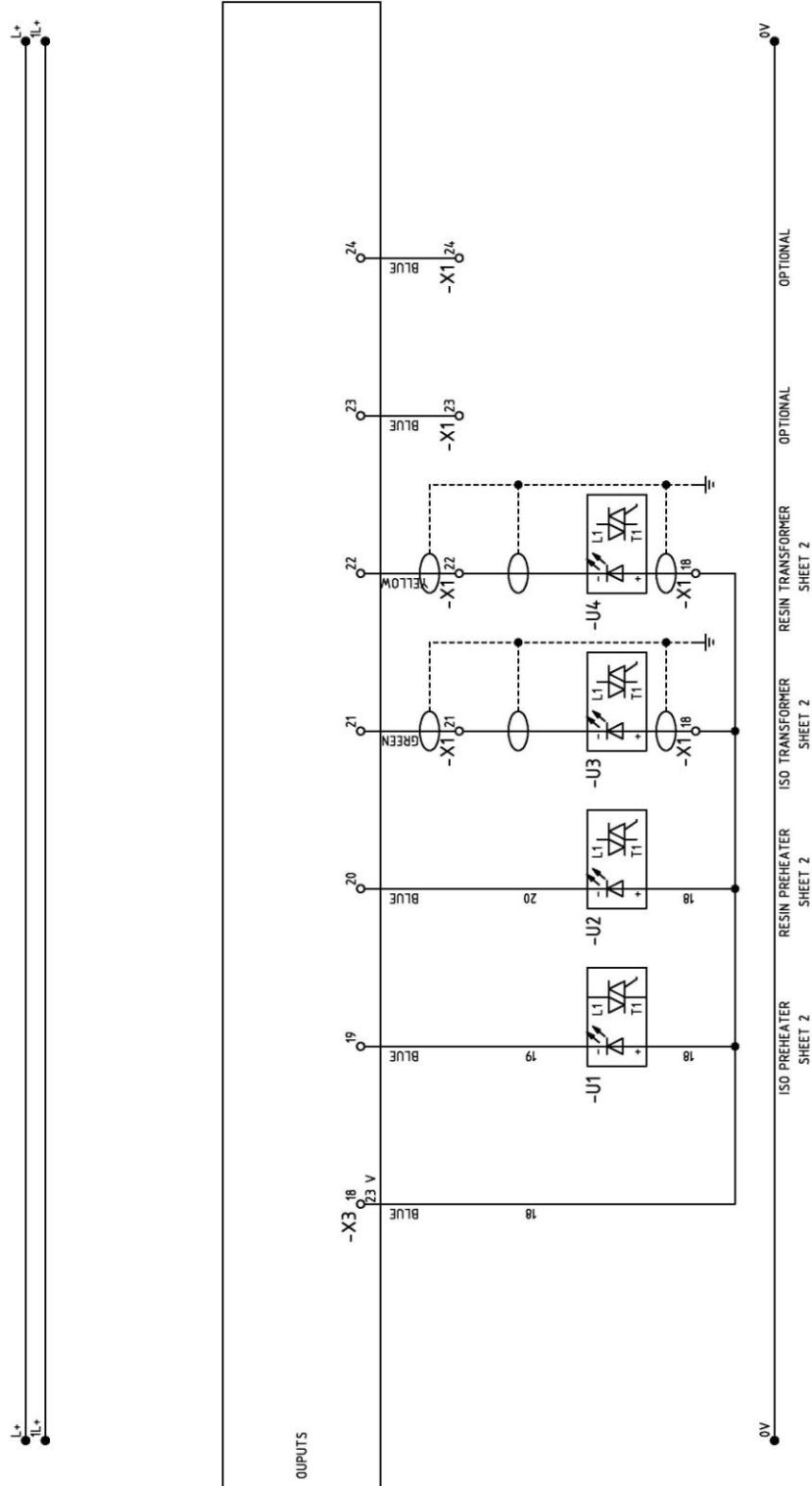


Figure 29. Electrical Schematic Diagram 3 x 400 v. - Neutral (Sheet 10 de 12)

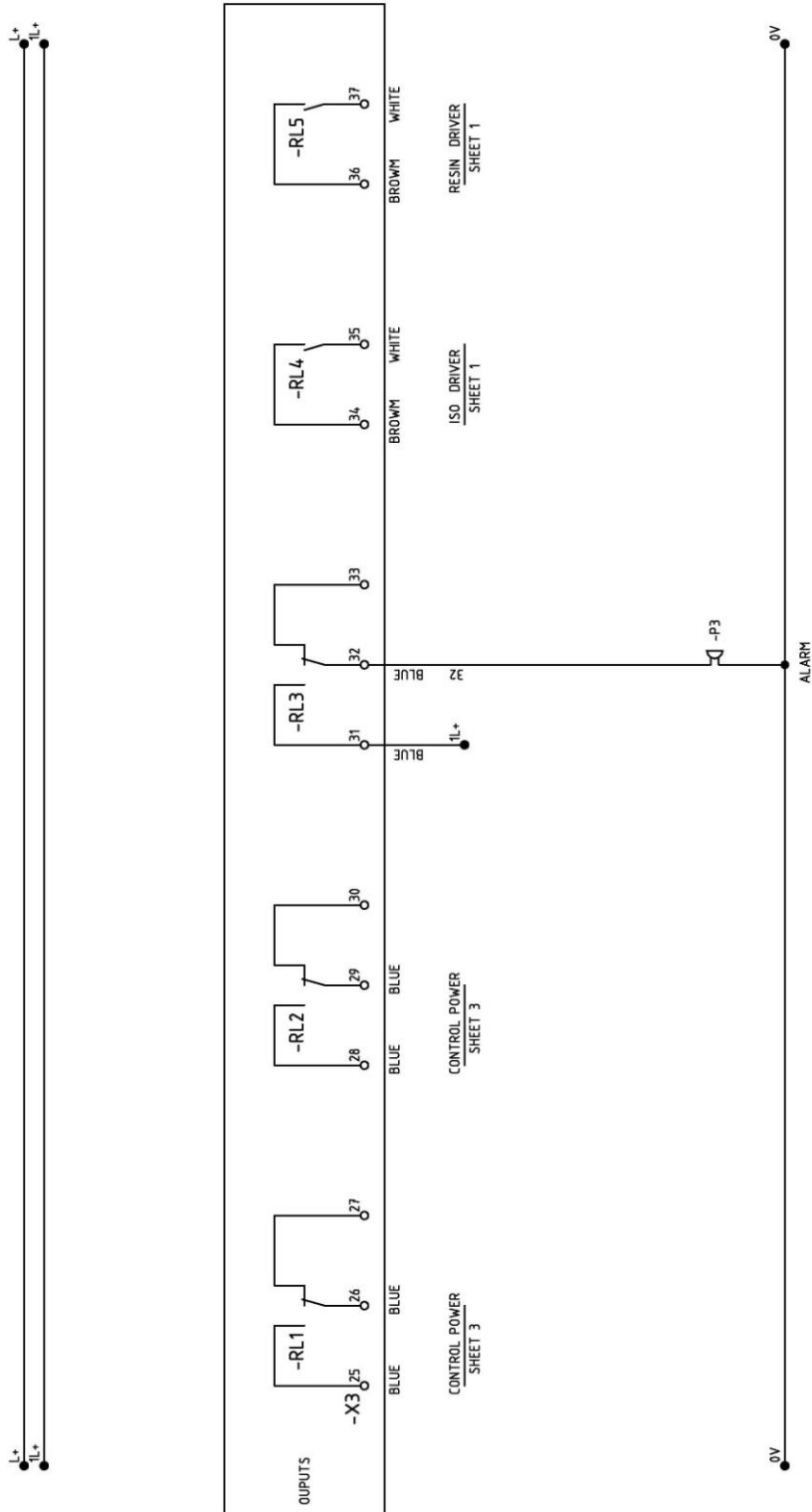


Figure 30. Electrical Schematic Diagram 3 x 400 v. - Neutral (Sheet 11 de 12)

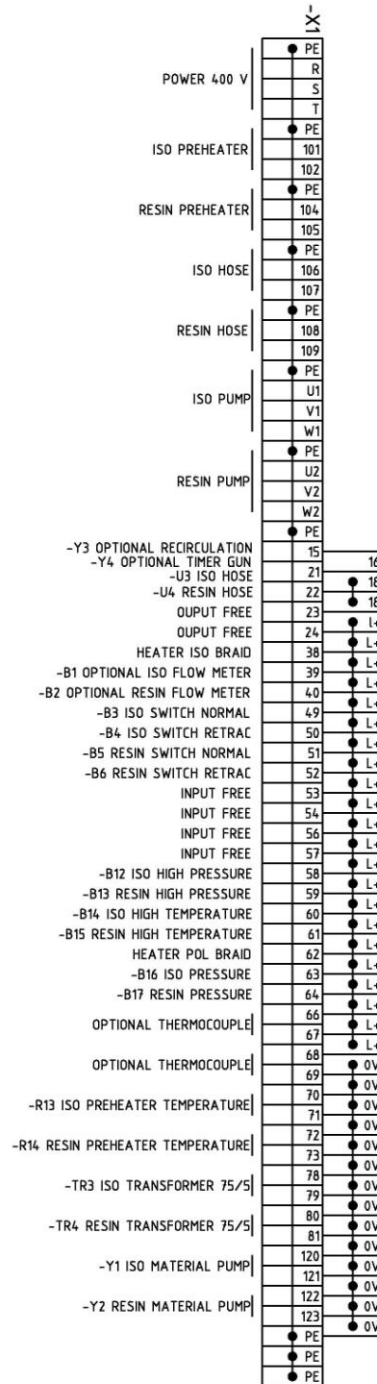


Figure 31. Electrical Schematic Diagram 3 x 400 v. - Neutral (Sheet 12 de 12)

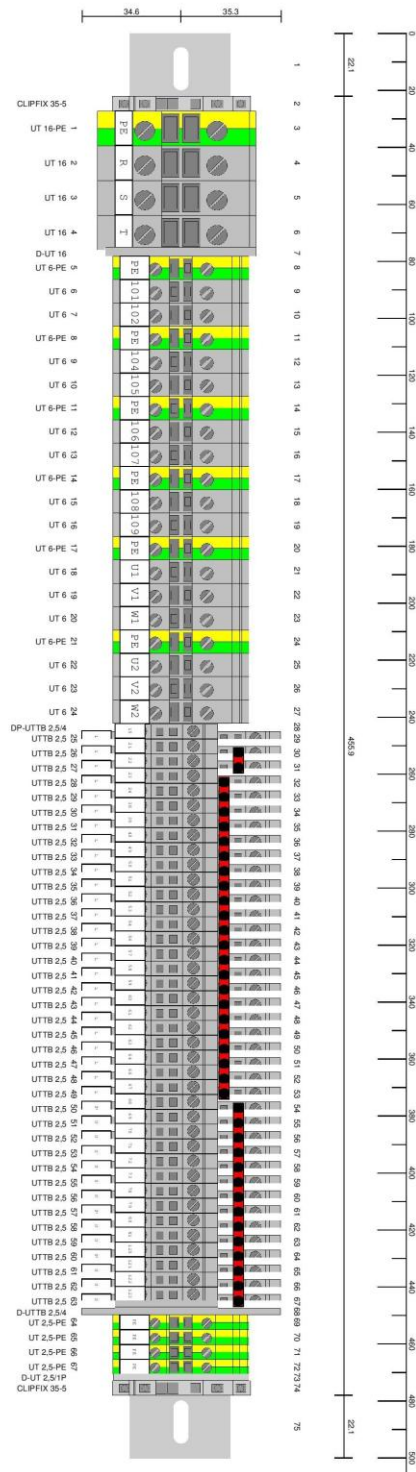


Figure 32. Electrical Schematic Distribution



Table 37. Electrical Schematic Diagram 3 x 400v+Neutral, Parts List

Ref.	Description	Part Number	Qty.
K1.2	CONTACTOR	EL-00123-02	2
K1.2	ADITIONAL CONTACT	EL-00120-05	2
	EMERGENCY BUTTON	EL-00131-00	1
A3	FASE CONTROL	EL-00164-00	1
U1 U2	STATIC RELAY	EL-00126-03	2
I1	SWITCH 100 A.	EL-00107-08	1
I1	DRIVER	EL-00107-06	1
U5.6.7 .8	SOLID RELAY	EL-00126-06	4
U5.6.7 .8	SOLID RELAY SUPPORT	EL-00126-07	4
P3	ACUSTIC	EL-00130-00	1
	GROUND TERMINAL 6	EL-00104-08	7*
	GROUND TERMINAL 2,5	EL-00104-11	4*
	BEIGE TERMINAL 6	EL-00104-06	14*
	GROUND TERMINAL 16	EL-00104-05	1*
	BEIGE TERMINAL 16	EL-00104-03	3*
	DOUBLE TERMINAL 2,5	EL-00104-18	39*
	BOLSA SEÑALIZADOR	EL-00104-19	1*
	END SQUARE	EL-00104-17	1*
	SUPPORT 45°	EL-00106-01	3*
	UNION PLATE	EL-00104-15	4*
D1	DIFFERENTIAL SWITCH 4P 63A 0,03A	EL-00108-04	1
D2	DIFFERENTIAL SWITCH 4P 40A 0,3A	EL-00108-07	1
	CONNECTION SET 4P-2EL	EL-00120-08	1
	CONNECTION SET 3P-2EL	EL-00120-09	1
F1.2	FUSE POINT	EL-00104-13	4
G1	SUPPLY 10 A.	EL-00135-00	1
F1.2	FUSE	EL-00128-00	8
Q3 Q4	CIRCUIT BREAKER 32A	EL-00115-03	2
Q1	CIRCUIT BREAKER 6A	EL-00110-04	1



Ref.	Description	Part Number	Qty.
Q11 Q12	CIRCUIT BREAKER 16A	EL-00112-02	2
Q5 Q6	CIRCUIT BREAKER 20A	EL-00113-04	2
Q2	CIRCUIT BREAKER 6A	EL-00110-00	1
U3 U4	TRIAC	EL-00126-02	2
A1 A2	FREQUENCY CONVERTER	EL-00134-02	2
	FILTERS	EL-00132-00	2
M3	FAN	EL-00133-01	1
R20	RESISTENCE 3,3 K. ? 6 W.	EL-00129-01	1
	CHANNEL	EL-00106-04	2
	PROFIL	EL-00106-00	2
TR1 TR2	HOSE TRANSFORMER	EL-00127-15	2
TR3 TR4	INTENSITY TRANSFORMER	EL-00127-03	2
R16.1 7.18.1 9	VARISTOR	EL-00129-00	4
X10	BASEBOARD	EL-00096-04	1
X10	CONTACTOR BLOCK	EL-00096-05	1
	MALE CONNECTOR 3 pins	EL-00142-00	1
	FEMALE CONNECTOR 3 pins	EL-00143-00	1
	RUBBER PLUG		2
B3.4.5 .6	SWITCH	EL-00136-03	4
B3.4.5 .6	SWITCH WIRE	EL-00137-03	4
	CONNECTOR M12	EL-00096-23	2**
X1	TERMINAL	EL-00105-07	1
	GROUND TERMINAL 2,5	EL-00104-11	2
	BEIGE TERMINAL 2,5	EL-00104-09	1
	CIRCUIT SPACER Ø4,5	EL-00094-03	7

HYDRAULIC SCHEMATIC DIAGRAM

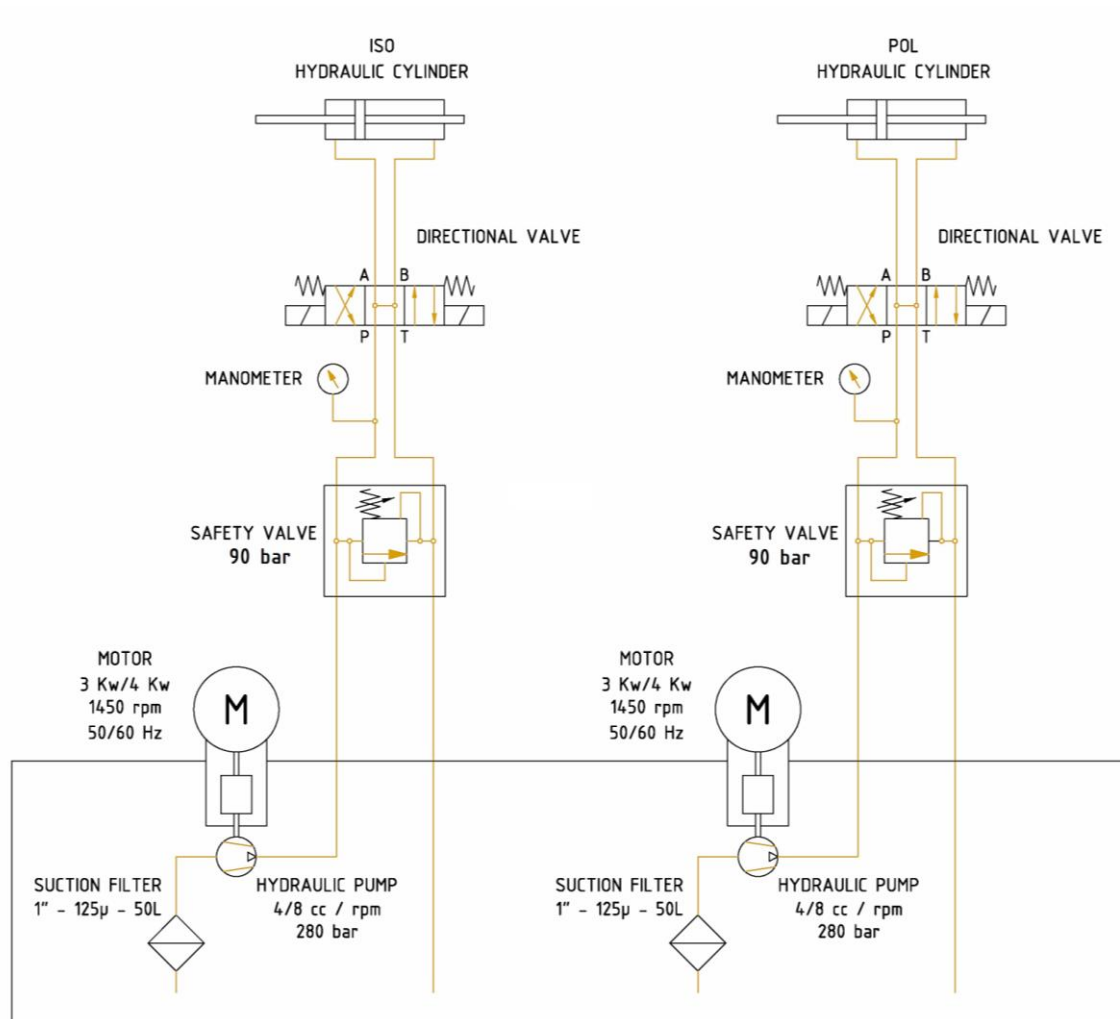


Figure 33. Hydraulic Schematic Diagram evolution VR

PNEUMATIC SCHEMATIC DIAGRAM

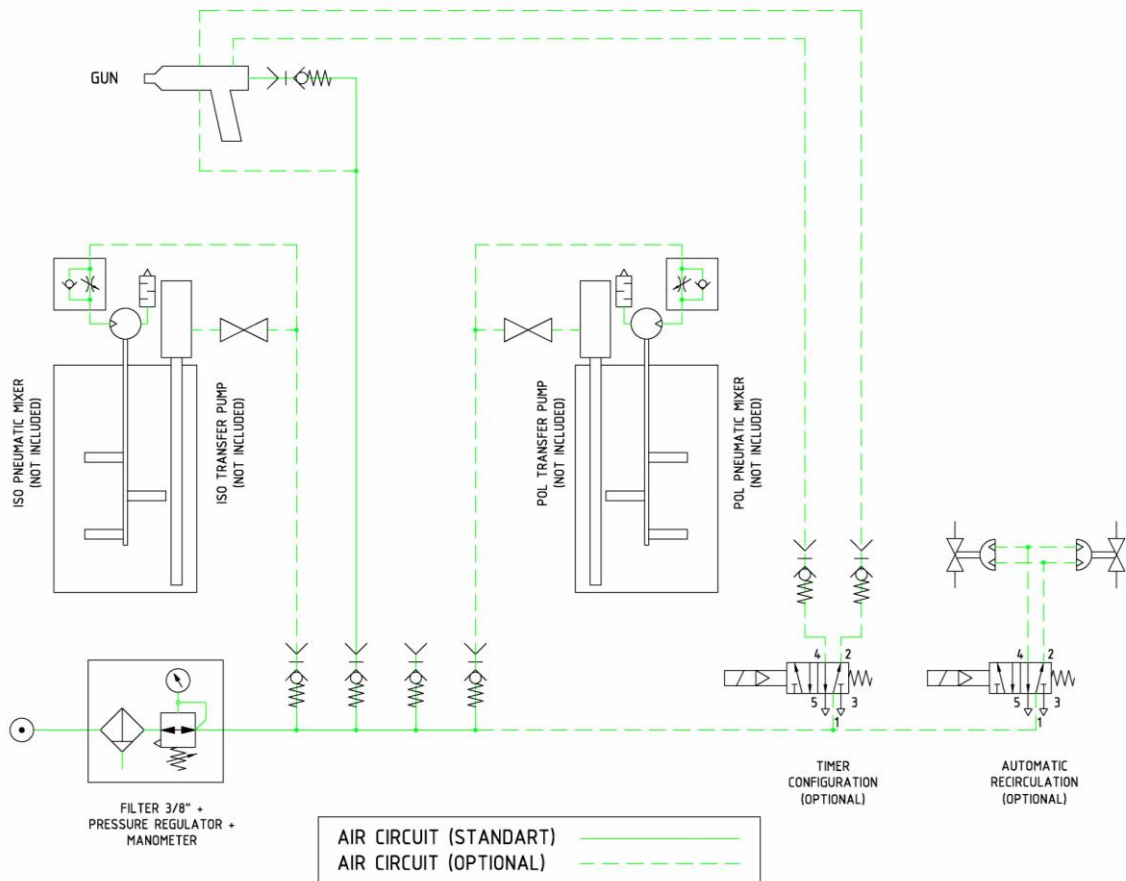


Figure 34. Pneumatic Schematic Diagram evolution VR

FUNCTIONING SCHEMATIC DIAGRAM

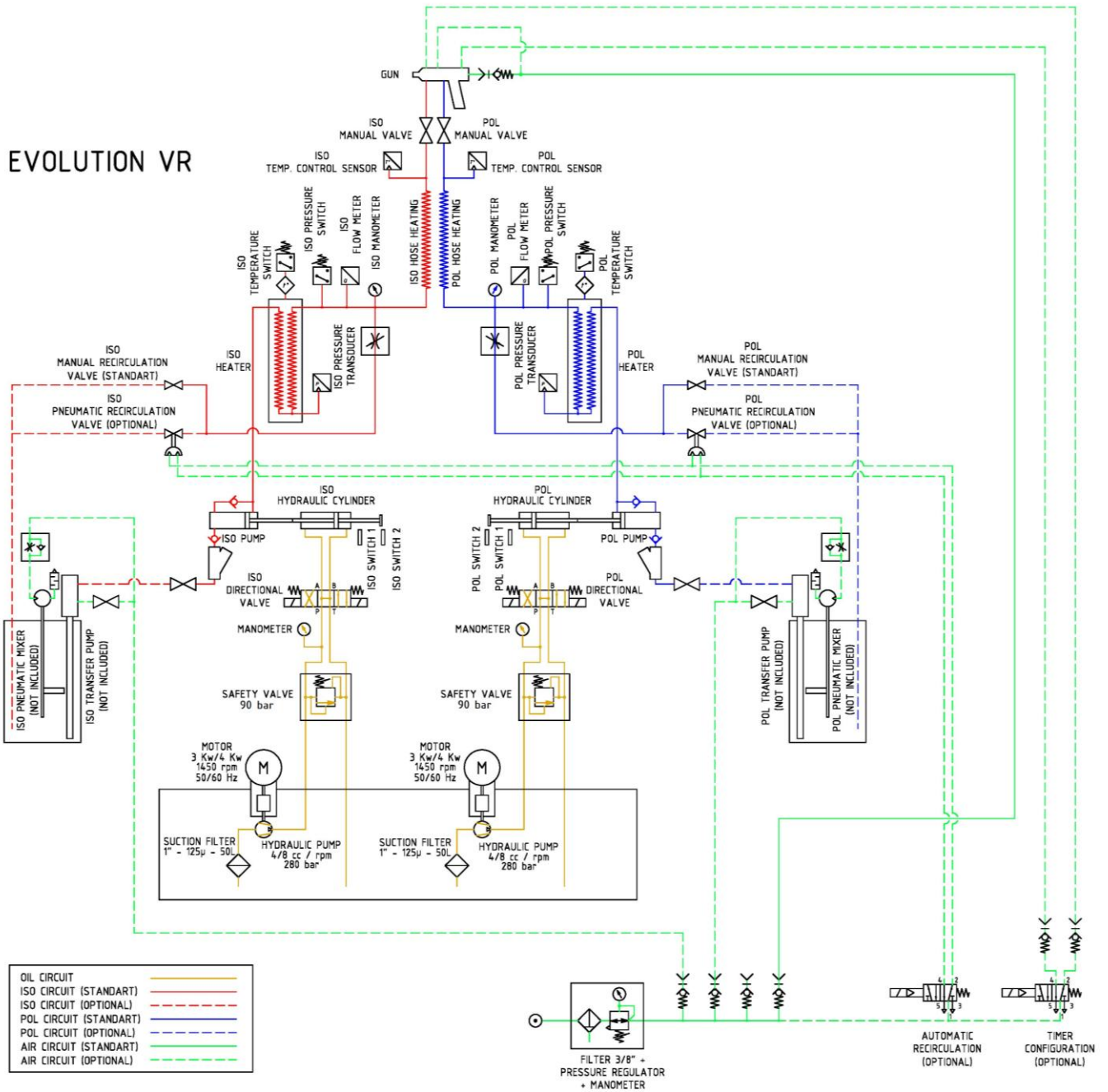


Figure 35. Functioning Schematic Diagram evolution VR



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