

ENGLISH



POSEIDON 5 - NA5 SERVICE MANUAL

Nilfisk
ALTO
works for you



This service manual contains detailed description of the main repair work on the cold HPW POSEIDON 5 - NA5.

Repair work requires a suitable testing workplace with the necessary water and power supply.

If operating errors are evident, refer the customer to the operating instructions.

A fault in the cleaner can have several causes as described in the section on troubleshooting.

Refer to the illustrated spare parts lists during repairs. They show the assembly position and the sequence in which the individual components should be assembled.

See "Technical Service Bulletin (TSB) sheets. They include information on technical modifications that have been made after this repair manual was printed.

"Technical Service Bulletin" sheets are also valid as a supplement to the spare parts list until publication of a new edition.

Repair manuals and "Technical Service Bulletin" sheets should be available at the site where repairs are carried out.

It is not permitted to give them to third parties.

Use original **Nilfisk-ALTO** spare parts only.

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For your own safety



Repair work should be carried out by persons instructed in electrical installations or by trained electricians only.

Observe valid safety regulations for electrical equipment. In particular, observe the following regulations:

IEC 60335-2-79

EN 60335-2-79

Additionally:

Also see national regulations

Before using the cleaner, always read the operating instructions and keep them readily available.

ESD measures
(electrostatic discharge)

Take the following ESD precautions before carrying out any repairs to the electronics:

- Touch the earth conductor before repairing the cleaner (to discharge electrostatic charge from your body).
- Wear wrist band if necessary.
- Use a conductive floor covering or a conductive table cover.
- Never touch the printed circuit board or electronic components (always hold on to plastic).
- Transport electronic components in conductive packaging (e.g. ESD bag).

Parent item no:		Description:	
107146700		POSEIDON 5-32 PA 230/1/50 UK	
Service data	Unit	Value	
Model		POSEIDON 5-32 PA	
Item no. →		107146700	
Technical Data ↓			
Pump:			
Pump pressure water	bar		
Pressure pump outlet @ Qiec	bar	91	
Pressure gun outlet @ Qiec	bar	82	
Retaining pressure*	bar	145	
Flow. Qiec	l/min	9,7	
Suction height dry	m	1	
Suction height primed	m	2,5	
Pump type		NA5 v2	
Number of pistons		3	
Piston type		Full Ceramic	
Stroke	mm	0	
Pump oil type		Castrol ALPHASyn 150	
Pump oil amount	l	0,73	
Electric:			
Electric data			
Control voltage	V		
Highvoltage (HV) test voltage	V	1,5	
HV Insulation resistance		1	
Earth circuit resistance		0,2	
Pump revolutions		1450	
Electrical diagram no.		106420558	
Unit Data:			
Nozzle size, water		NT 0475	
Max. Inlet temp. (primed)	°C	-	
Max. Inlet temp. (suction)	°C	40	
Max. Inlet temp. (pressure fed)	°C	60	
Gun Type		ERGO 2000 STD INCL. SWIVEL NILFISK	
Primary Lance Type		TORNADO PLUS LANCE 1120 BEND	
Secondary Lance Type		None	
Hose		10 M WIRE HOSE 5/16 DN8	
Guarantied sound power		82	
Impactfactor calculated		2,6	
Vibration ISO 5349, lance 1 / lance 2		<1,5 ±1	
Protection Class		IPX5	
Machine incl. standard acc.	kg	68	
Size - Machine alone L x W x H	mm	735x570x1020	

Parent item no: 107146701		Description: POSEIDON 5-32 PAXT 230/1/50 UK	
Service data	Unit	Value	
Model		POSEIDON 5-32 PAXT	
Item no. →		107146701	
Technical Data ↓			
Pump:			
Pump pressure water	bar		
Pressure pump outlet @ Qiec	bar	94	
Pressure gun outlet @ Qiec	bar	82	
Retaining pressure*	bar	145	
Flow. Qiec	l/min	9,7	
Suction height dry	m	1	
Suction height primed	m	2,5	
Pump type		NA5 v2	
Number of pistons		3	
Piston type		Full Ceramic	
Stroke	mm	0	
Pump oil type		Castrol ALPHASyn 150	
Pump oil amount	l	0,73	
Electric:			
Electric data			
Control voltage	V		
Highvoltage (HV) test voltage	V	1,5	
HV Insulation resistance		1	
Earth circuit resistance		0,2	
Pump revolutions		1450	
Electrical diagram no.		106420558	
Unit Data:			
Nozzle size, water		NT 0475	
Max. Inlet temp. (primed)	°C	-	
Max. Inlet temp. (suction)	°C	40	
Max. Inlet temp. (pressure fed)	°C	60	
Gun Type		ERGO 2000 STD INCL. SWIVEL NILFISK	
Primary Lance Type		TORNADO PLUS LANCE 1120 BEND	
Secondary Lance Type		TURBOHAMMER PLUS 1040 STRAIGHT W/O NOZZ.	
Hose		DN8 x 15 m	
Guarantied sound power		82	
Impactfactor calculated		2,6	
Vibration ISO 5349, lance 1 / lance 2		<1,5 ±1	
Protection Class		IPX5	
Machine incl. standard acc.	kg	73	
Size - Machine alone L x W x H	mm	890x570x1020	

Parent item no: 107146702		Description: POSEIDON 5-47 PA 200/3/50 JP	
Service data	Unit	Value	
Model		POSEIDON 5-47 PA	
Item no. →		107146702	
Technical Data ↓			
Pump:			
Pump pressure water	bar		
Pressure pump outlet @ Qiec	bar	157	
Pressure gun outlet @ Qiec	bar	141	
Retaining pressure*	bar	230	
Flow. Qiec	l/min	13,6	
Suction height dry	m	1	
Suction height primed	m	2,5	
Pump type		NA5 v2	
Number of pistons		3	
Piston type		Full Ceramic	
Stroke	mm	0	
Pump oil type		BP Energol GR-XP220	
Pump oil amount	l	0,73	
Electric:			
Electric data			
Control voltage	V		
Highvoltage (HV) test voltage	V	1,5	
HV Insulation resistance		1	
Earth circuit resistance		0,2	
Pump revolutions		1450	
Electrical diagram no.		106420554	
Unit Data:			
Nozzle size, water		NT 0500	
Max. Inlet temp. (primed)	°C	-	
Max. Inlet temp. (suction)	°C	40	
Max. Inlet temp. (pressure fed)	°C	60	
Gun Type		ERGO 2000 STD INCL. SWIVEL NILFISK	
Primary Lance Type		TORNADO PLUS LANCE 1120 BEND	
Secondary Lance Type		None	
Hose		10 M WIRE HOSE 5/16 DN8	
Guarantied sound power		88	
Impactfactor calculated		4,7	
Vibration ISO 5349, lance 1 / lance 2		<1,5 ±1	
Protection Class		IPX5	
Machine incl. standard acc.	kg	71	
Size - Machine alone L x W x H	mm	735x570x1020	

Parent item no: 107146703		Description: POSEIDON 5-47 PA 200/3/60 JP	
Service data	Unit	Value	
Model		POSEIDON 5-47 PA	
Item no. →		107146703	
Technical Data ↓			
Pump:			
Pump pressure water	bar		
Pressure pump outlet @ Qiec	bar	157	
Pressure gun outlet @ Qiec	bar	141	
Retaining pressure*	bar	230	
Flow. Qiec	l/min	13,6	
Suction height dry	m	1	
Suction height primed	m	2,5	
Pump type		NA5 v2	
Number of pistons		3	
Piston type		Full Ceramic	
Stroke	mm	0	
Pump oil type		BP Energol GR-XP220	
Pump oil amount	l	0,73	
Electric:			
Electric data			
Control voltage	V		
Highvoltage (HV) test voltage	V	1,5	
HV Insulation resistance		1	
Earth circuit resistance		0,2	
Pump revolutions		1740	
Electrical diagram no.		106420554	
Unit Data:			
Nozzle size, water		NT 0500	
Max. Inlet temp. (primed)	°C	-	
Max. Inlet temp. (suction)	°C	40	
Max. Inlet temp. (pressure fed)	°C	60	
Gun Type		ERGO 2000 STD INCL. SWIVEL NILFISK	
Primary Lance Type		TORNADO PLUS LANCE 1120 BEND	
Secondary Lance Type		None	
Hose		10 M WIRE HOSE 5/16 DN8	
Guarantied sound power		88	
Impactfactor calculated		4,7	
Vibration ISO 5349, lance 1 / lance 2		<1,5 ±1	
Protection Class		IPX5	
Machine incl. standard acc.	kg	71	
Size - Machine alone L x W x H	mm	735x570x1020	

Parent item no: 107146705		Description: POSEIDON 5-41 PA 400/3/50 EU	
Service data	Unit	Value	
Model		POSEIDON 5-41 PA	
Item no. →		107146705	
Technical Data ↓			
Pump:			
Pump pressure water	bar		
Pressure pump outlet @ Qiec	bar	173	
Pressure gun outlet @ Qiec	bar	162	
Retaining pressure*	bar	230	
Flow. Qiec	l/min	11,6	
Suction height dry	m	1	
Suction height primed	m	2,5	
Pump type		NA5 v2	
Number of pistons		3	
Piston type		Full Ceramic	
Stroke	mm	0	
Pump oil type		BP Energol GR-XP220	
Pump oil amount	l	0,73	
Electric:			
Electric data			
Control voltage	V		
Highvoltage (HV) test voltage	V	1,5	
HV Insulation resistance		1	
Earth circuit resistance		0,2	
Pump revolutions		1450	
Electrical diagram no.		106420550	
Unit Data:			
Nozzle size, water		NT 0400	
Max. Inlet temp. (primed)	°C	-	
Max. Inlet temp. (suction)	°C	40	
Max. Inlet temp. (pressure fed)	°C	60	
Gun Type		ERGO 2000 STD INCL. SWIVEL NILFISK	
Primary Lance Type		FLEXOPOWER PLUS 1120 BEND W/O NOZZLE	
Secondary Lance Type		None	
Hose		DN6 x 10m	
Guarantied sound power		88	
Impactfactor calculated		4,1	
Vibration ISO 5349, lance 1 / lance 2		<1,5 ±1	
Protection Class		IPX5	
Machine incl. standard acc.	kg	66	
Size - Machine alone L x W x H	mm	735x570x1020	

Parent item no:		Description:	
107146706		POSEIDON 5-41 PA 220;440/3/60 EXPT	
Service data	Unit	Value	
Model		POSEIDON 5-41 PA	
Item no. →		107146706	
Technical Data ↓			
Pump:			
Pump pressure water	bar		
Pressure pump outlet @ Qiec	bar	171	
Pressure gun outlet @ Qiec	bar	160	
Retaining pressure*	bar	230	
Flow. Qiec	l/min	11,5	
Suction height dry	m	1	
Suction height primed	m	2,5	
Pump type		NA5 v2	
Number of pistons		3	
Piston type		Full Ceramic	
Stroke	mm	0	
Pump oil type		BP Energol GR-XP220	
Pump oil amount	l	0,73	
Electric:			
Electric data			
Control voltage	V		
Highvoltage (HV) test voltage	V	1,5	
HV Insulation resistance		1	
Earth circuit resistance		0,2	
Pump revolutions		1740	
Electrical diagram no.		106420564	
Unit Data:			
Nozzle size, water		NT 0400	
Max. Inlet temp. (primed)	°C	-	
Max. Inlet temp. (suction)	°C	40	
Max. Inlet temp. (pressure fed)	°C	60	
Gun Type		ERGO 2000 STD INCL. SWIVEL NILFISK	
Primary Lance Type		FLEXOPOWER PLUS 1120 BEND W/O NOZZLE	
Secondary Lance Type		None	
Hose		DN6 x 10m	
Guarantied sound power		88	
Impactfactor calculated		4,1	
Vibration ISO 5349, lance 1 / lance 2		<1,5 ±1	
Protection Class		IPX5	
Machine incl. standard acc.	kg	69	
Size - Machine alone L x W x H	mm	735x570x1020	

Parent item no:		Description:	
107146708		POSEIDON 5-41 PAXT 400/3/50 EU	
Service data	Unit	Value	
Model		POSEIDON 5-41 PAXT	
Item no. →		107146708	
Technical Data ↓			
Pump:			
Pump pressure water	bar		
Pressure pump outlet @ Qiec	bar	178	
Pressure gun outlet @ Qiec	bar	161	
Retaining pressure*	bar	230	
Flow. Qiec	l/min	11,6	
Suction height dry	m	1	
Suction height primed	m	2,5	
Pump type		NA5 v2	
Number of pistons		3	
Piston type		Full Ceramic	
Stroke	mm	0	
Pump oil type		BP Energol GR-XP220	
Pump oil amount	l	0,73	
Electric:			
Electric data			
Control voltage	V		
Highvoltage (HV) test voltage	V	1,5	
HV Insulation resistance		1	
Earth circuit resistance		0,2	
Pump revolutions		1450	
Electrical diagram no.		106420550	
Unit Data:			
Nozzle size, water		NT 0400	
Max. Inlet temp. (primed)	°C	-	
Max. Inlet temp. (suction)	°C	40	
Max. Inlet temp. (pressure fed)	°C	60	
Gun Type		ERGO 2000 STD INCL. SWIVEL NILFISK	
Primary Lance Type		FLEXOPOWER PLUS 1120 BEND W/O NOZZLE	
Secondary Lance Type		TURBOHAMMER PLUS 1040 STRAIGHT W/O NOZZ.	
Hose		HP-Hose o6x15m Quick 3/8"	
Guarantied sound power		88	
Impactfactor calculated		4,1	
Vibration ISO 5349, lance 1 / lance 2		<1,5 ±1	
Protection Class		IPX5	
Machine incl. standard acc.	kg	72	
Size - Machine alone L x W x H	mm	890x570x1020	

Parent item no:		Description:	
107146710		POSEIDON 5-56 PA 230;400/3/50 NO	
Service data	Unit	Value	
Model		POSEIDON 5-56 PA	
Item no. →		107146710	
Technical Data ↓			
Pump:			
Pump pressure water	bar		
Pressure pump outlet @ Qiec	bar	182	
Pressure gun outlet @ Qiec	bar	163	
Retaining pressure*	bar	230	
Flow. Qiec	l/min	14,7	
Suction height dry	m	1	
Suction height primed	m	2,5	
Pump type		NA5 v2	
Number of pistons		3	
Piston type		Full Ceramic	
Stroke	mm	0	
Pump oil type		BP Energol GR-XP220	
Pump oil amount		0,73	
Electric:			
Electric data			
Control voltage	V		
Highvoltage (HV) test voltage	V	1,5	
HV Insulation resistance		1	
Earth circuit resistance		0,2	
Pump revolutions		1450	
Electrical diagram no.		106420564	
Unit Data:			
Nozzle size, water		NT 0500	
Max. Inlet temp. (primed)	°C	-	
Max. Inlet temp. (suction)	°C	40	
Max. Inlet temp. (pressure fed)	°C	60	
Gun Type		ERGO 2000 STD INCL. SWIVEL NILFISK	
Primary Lance Type		TORNADO PLUS LANCE 1120 BEND	
Secondary Lance Type		None	
Hose		10 M WIRE HOSE 5/16 DN8	
Guarantied sound power		89	
Impactfactor calculated		5,5	
Vibration ISO 5349, lance 1 / lance 2		<1,5 ±1	
Protection Class		IPX5	
Machine incl. standard acc.	kg	75	
Size - Machine alone L x W x H	mm	735x570x1020	

Parent item no:		Description:	
107146711		POSEIDON 5-56 PA 400/3/50 EU	
Service data	Unit	Value	
Model		POSEIDON 5-56 PA	
Item no. →		107146711	
Technical Data ↓			
Pump:			
Pump pressure water	bar		
Pressure pump outlet @ Qiec	bar	182	
Pressure gun outlet @ Qiec	bar	163	
Retaining pressure*	bar	230	
Flow. Qiec	l/min	14,7	
Suction height dry	m	1	
Suction height primed	m	2,5	
Pump type		NA5 v2	
Number of pistons		3	
Piston type		Full Ceramic	
Stroke	mm	0	
Pump oil type		BP Energol GR-XP220	
Pump oil amount	l	0,73	
Electric:			
Electric data			
Control voltage	V		
Highvoltage (HV) test voltage	V	1,5	
HV Insulation resistance		1	
Earth circuit resistance		0,2	
Pump revolutions		1450	
Electrical diagram no.		106420550	
Unit Data:			
Nozzle size, water		NT 0500	
Max. Inlet temp. (primed)	°C	-	
Max. Inlet temp. (suction)	°C	40	
Max. Inlet temp. (pressure fed)	°C	60	
Gun Type		ERGO 2000 STD INCL. SWIVEL NILFISK	
Primary Lance Type		TORNADO PLUS LANCE 1120 BEND	
Secondary Lance Type		None	
Hose		10 M WIRE HOSE 5/16 DN8	
Guarantied sound power		89	
Impactfactor calculated		5,5	
Vibration ISO 5349, lance 1 / lance 2		<1,5 ±1	
Protection Class		IPX5	
Machine incl. standard acc.	kg	73	
Size - Machine alone L x W x H	mm	735x570x1020	

Parent item no:		Description:	
107146713		POSEIDON 5-56 PA 220/440/3/60 EXPT	
Service data	Unit	Value	
Model		POSEIDON 5-56 PA	
Item no. →		107146713	
Technical Data ↓			
Pump:			
Pump pressure water	bar		
Pressure pump outlet @ Qiec	bar	181	
Pressure gun outlet @ Qiec	bar	162	
Retaining pressure*	bar	230	
Flow. Qiec	l/min	14,6	
Suction height dry	m	1	
Suction height primed	m	2,5	
Pump type		NA5 v2	
Number of pistons		3	
Piston type		Full Ceramic	
Stroke	mm	0	
Pump oil type		BP Energol GR-XP220	
Pump oil amount	l	0,73	
Electric:			
Electric data			
Control voltage	V		
Highvoltage (HV) test voltage	V	1,5	
HV Insulation resistance		1	
Earth circuit resistance		0,2	
Pump revolutions		1740	
Electrical diagram no.		106420564	
Unit Data:			
Nozzle size, water		NT 0500	
Max. Inlet temp. (primed)	°C	-	
Max. Inlet temp. (suction)	°C	40	
Max. Inlet temp. (pressure fed)	°C	60	
Gun Type		ERGO 2000 STD INCL. SWIVEL NILFISK	
Primary Lance Type		TORNADO PLUS LANCE 1120 BEND	
Secondary Lance Type		None	
Hose		10 M WIRE HOSE 5/16 DN8	
Guarantied sound power		89	
Impactfactor calculated		5,5	
Vibration ISO 5349, lance 1 / lance 2		<1,5 ±1	
Protection Class		IPX5	
Machine incl. standard acc.	kg	74	
Size - Machine alone L x W x H	mm	735x570x1020	

Parent item no: 107146714		Description: POSEIDON 5-56 FA 400/3/50 EU	
Service data	Unit	Value	
Model		POSEIDON 5-56 FA	
Item no. →		107146714	
Technical Data ↓			
Pump:			
Pump pressure water	bar		
Pressure pump outlet @ Qiec	bar	182	
Pressure gun outlet @ Qiec	bar	163	
Retaining pressure*	bar	-	
Flow. Qiec	l/min	14,7	
Suction height dry	m	1	
Suction height primed	m	2,5	
Pump type		NA5 v1	
Number of pistons		3	
Piston type		Full Ceramic	
Stroke	mm	0	
Pump oil type		BP Energol GR-XP220	
Pump oil amount	l	0,73	
Electric:			
Electric data			
Control voltage	V		
Highvoltage (HV) test voltage	V	1,5	
HV Insulation resistance		1	
Earth circuit resistance		0,2	
Pump revolutions		1450	
Electrical diagram no.		106420552	
Unit Data:			
Nozzle size, water		NT 0500	
Max. Inlet temp. (primed)	°C	-	
Max. Inlet temp. (suction)	°C	40	
Max. Inlet temp. (pressure fed)	°C	60	
Gun Type		ERGO 2000 STD INCL. SWIVEL NILFISK	
Primary Lance Type		TORNADO PLUS LANCE 1120 BEND	
Secondary Lance Type		None	
Hose		10 M WIRE HOSE 5/16 DN8	
Guarantied sound power		89	
Impactfactor calculated		5,5	
Vibration ISO 5349, lance 1 / lance 2		<1,5 ±1	
Protection Class		IPX5	
Machine incl. standard acc.	kg	73	
Size - Machine alone L x W x H	mm	735x570x1020	

Parent item no:		Description:	
107146715		POSEIDON 5-56 PAXT 230;400/3/50 NO	
Service data	Unit	Value	
Model		POSEIDON 5-56 PAXT	
Item no. →		107146715	
Technical Data ↓			
Pump:			
Pump pressure water	bar		
Pressure pump outlet @ Qiec	bar	188	
Pressure gun outlet @ Qiec	bar	162	
Retaining pressure*	bar	230	
Flow. Qiec	l/min	14,6	
Suction height dry	m	1	
Suction height primed	m	2,5	
Pump type		NA5 v2	
Number of pistons		3	
Piston type		Full Ceramic	
Stroke	mm	0	
Pump oil type		BP Energol GR-XP220	
Pump oil amount	l	0,73	
Electric:			
Electric data			
Control voltage	V		
Highvoltage (HV) test voltage	V	1,5	
HV Insulation resistance		1	
Earth circuit resistance		0,2	
Pump revolutions		1450	
Electrical diagram no.		106420564	
Unit Data:			
Nozzle size, water		NT 0500	
Max. Inlet temp. (primed)	°C	-	
Max. Inlet temp. (suction)	°C	40	
Max. Inlet temp. (pressure fed)	°C	60	
Gun Type		ERGO 2000 STD INCL. SWIVEL NILFISK	
Primary Lance Type		TORNADO PLUS LANCE 1120 BEND	
Secondary Lance Type		TURBOHAMMER PLUS 1040 STRAIGHT W/O NOZZ.	
Hose		DN8 x 15 m	
Guarantied sound power		89	
Impactfactor calculated		5,5	
Vibration ISO 5349, lance 1 / lance 2		<1,5 ±1	
Protection Class		IPX5	
Machine incl. standard acc.	kg	80	
Size - Machine alone L x W x H	mm	890x570x1020	

Parent item no:		Description:	
107146716		POSEIDON 5-56 PAXT 400/3/50 EU	
Service data	Unit	Value	
Model		POSEIDON 5-56 PAXT	
Item no. →		107146716	
Technical Data ↓			
Pump:			
Pump pressure water	bar		
Pressure pump outlet @ Qiec	bar	188	
Pressure gun outlet @ Qiec	bar	162	
Retaining pressure*	bar	230	
Flow. Qiec	l/min	14,6	
Suction height dry	m	1	
Suction height primed	m	2,5	
Pump type		NA5 v2	
Number of pistons		3	
Piston type		Full Ceramic	
Stroke	mm	0	
Pump oil type		BP Energol GR-XP220	
Pump oil amount	l	0,73	
Electric:			
Electric data			
Control voltage	V		
Highvoltage (HV) test voltage	V	1,5	
HV Insulation resistance		1	
Earth circuit resistance		0,2	
Pump revolutions		1450	
Electrical diagram no.		106420550	
Unit Data:			
Nozzle size, water		NT 0500	
Max. Inlet temp. (primed)	°C	-	
Max. Inlet temp. (suction)	°C	40	
Max. Inlet temp. (pressure fed)	°C	60	
Gun Type		ERGO 2000 STD INCL. SWIVEL NILFISK	
Primary Lance Type		TORNADO PLUS LANCE 1120 BEND	
Secondary Lance Type		TURBOHAMMER PLUS 1040 STRAIGHT W/O NOZZ.	
Hose		DN8 x 15 m	
Guarantied sound power		89	
Impactfactor calculated		5,5	
Vibration ISO 5349, lance 1 / lance 2		<1,5 ±1	
Protection Class		IPX5	
Machine incl. standard acc.	kg	78	
Size - Machine alone L x W x H	mm	890x570x1020	

Parent item no:		Description:	
107146718		POSEIDON 5-62 PA 400/3/50 EU	
Service data	Unit	Value	
Model		POSEIDON 5-62 PA	
Item no. →		107146718	
Technical Data ↓			
Pump:			
Pump pressure water	bar		
Pressure pump outlet @ Qiec	bar	197	
Pressure gun outlet @ Qiec	bar	174	
Retaining pressure*	bar	241	
Flow. Qiec	l/min	16,2	
Suction height dry	m	1	
Suction height primed	m	2,5	
Pump type		NA5 v2	
Number of pistons		3	
Piston type		Full Ceramic	
Stroke	mm	0	
Pump oil type		BP Energol GR-XP220	
Pump oil amount	l	0,73	
Electric:			
Electric data			
Control voltage	V		
Highvoltage (HV) test voltage	V	1,5	
HV Insulation resistance		1	
Earth circuit resistance		0,2	
Pump revolutions		1450	
Electrical diagram no.		106420550	
Unit Data:			
Nozzle size, water		NT 0530	
Max. Inlet temp. (primed)	°C	-	
Max. Inlet temp. (suction)	°C	40	
Max. Inlet temp. (pressure fed)	°C	60	
Gun Type		ERGO 2000 STD INCL. SWIVEL NILFISK	
Primary Lance Type		TORNADO PLUS LANCE 1120 BEND	
Secondary Lance Type		None	
Hose		10 M WIRE HOSE 5/16 DN8	
Guarantied sound power		88	
Impactfactor calculated		6,2	
Vibration ISO 5349, lance 1 / lance 2		<1,5 ±1	
Protection Class		IPX5	
Machine incl. standard acc.	kg	78	
Size - Machine alone L x W x H	mm	735x570x1020	

Parent item no:		Description:	
107146719		POSEIDON 5-62 PA 220;440/3/60 EXPT	
Service data	Unit	Value	
Model		POSEIDON 5-62 PA	
Item no. →		107146719	
Technical Data ↓			
Pump:			
Pump pressure water	bar		
Pressure pump outlet @ Qiec	bar	197	
Pressure gun outlet @ Qiec	bar	174	
Retaining pressure*	bar	242	
Flow. Qiec	l/min	16,2	
Suction height dry	m	1	
Suction height primed	m	2,5	
Pump type		NA5 v2	
Number of pistons		3	
Piston type		Full Ceramic	
Stroke	mm	0	
Pump oil type		BP Energol GR-XP220	
Pump oil amount	l	0,73	
Electric:			
Electric data			
Control voltage	V		
Highvoltage (HV) test voltage	V	1,5	
HV Insulation resistance		1	
Earth circuit resistance		0,2	
Pump revolutions		1740	
Electrical diagram no.		106420564	
Unit Data:			
Nozzle size, water		NT 0530	
Max. Inlet temp. (primed)	°C	-	
Max. Inlet temp. (suction)	°C	40	
Max. Inlet temp. (pressure fed)	°C	60	
Gun Type		ERGO 2000 STD INCL. SWIVEL NILFISK	
Primary Lance Type		TORNADO PLUS LANCE 1120 BEND	
Secondary Lance Type		None	
Hose		10 M WIRE HOSE 5/16 DN8	
Guarantied sound power		88	
Impactfactor calculated		6,2	
Vibration ISO 5349, lance 1 / lance 2		<1,5 ±1	
Protection Class		IPX5	
Machine incl. standard acc.	kg	80	
Size - Machine alone L x W x H	mm	735x570x1020	

107146721 POSEIDON 5-62 FA 400/3/50 EU		
Service data	Unit	Value
Model		POSEIDON 5-62 FA
Item no. →		107146721
Technical Data ↓		
Pump:		
Pump pressure water	bar	
Pressure pump outlet @ Qiec	bar	197
Pressure gun outlet @ Qiec	bar	174
Retaining pressure*	bar	-
Flow. Qiec	l/min	16,2
Suction height dry	m	1
Suction height primed	m	2,5
Pump type		NA5 v1
Number of pistons		3
Piston type		Full Ceramic
Stroke	mm	0
Pump oil type		BP Energol GR-XP220
Pump oil amount	l	0,73
Electric:		
Electric data		
Control voltage	V	
Highvoltage (HV) test voltage	V	1,5
HV Insulation resistance		1
Earth circuit resistance		0,2
Pump revolutions		1450
Electrical diagram no.		106420552
Unit Data:		
Nozzle size, water		NT 0530
Max. Inlet temp. (primed)	°C	-
Max. Inlet temp. (suction)	°C	40
Max. Inlet temp. (pressure fed)	°C	60
Gun Type		ERGO 2000 STD INCL. SWIVEL NILFISK
Primary Lance Type		TORNADO PLUS LANCE 1120 BEND
Secondary Lance Type		None
Hose		10 M WIRE HOSE 5/16 DN8
Guarantied sound power		88
Impactfactor calculated		6,2
Vibration ISO 5349, lance 1 / lance 2		<1,5 ±1
Protection Class		IPX5
Machine incl. standard acc.	kg	79
Size - Machine alone L x W x H	mm	735x570x1020

Parent item no: 107146722		Description: POSEIDON 5-62 PAXT 400/3/50 EU	
Service data	Unit	Value	
Model		POSEIDON 5-62 PAXT	
Item no. →		107146722	
Technical Data ↓			
Pump:			
Pump pressure water	bar		
Pressure pump outlet @ Qiec	bar	206	
Pressure gun outlet @ Qiec	bar	172	
Retaining pressure*	bar	241	
Flow. Qiec	l/min	16,2	
Suction height dry	m	1	
Suction height primed	m	2,5	
Pump type		NA5 v2	
Number of pistons		3	
Piston type		Full Ceramic	
Stroke	mm	0	
Pump oil type		BP Energol GR-XP220	
Pump oil amount	l	0,73	
Electric:			
Electric data			
Control voltage	V		
Highvoltage (HV) test voltage	V	1,5	
HV Insulation resistance		1	
Earth circuit resistance		0,2	
Pump revolutions		1450	
Electrical diagram no.		106420550	
Unit Data:			
Nozzle size, water		NT 0530	
Max. Inlet temp. (primed)	°C	-	
Max. Inlet temp. (suction)	°C	40	
Max. Inlet temp. (pressure fed)	°C	60	
Gun Type		ERGO 2000 STD INCL. SWIVEL NILFISK	
Primary Lance Type		TORNADO PLUS LANCE 1120 BEND	
Secondary Lance Type		TURBOHAMMER PLUS 1040 STRAIGHT W/O NOZZ.	
Hose		HP-HOSE DN8X20M 250bar 150°C G3/8	
Guarantied sound power		88	
Impactfactor calculated		6,2	
Vibration ISO 5349, lance 1 / lance 2		<1,5 ±1	
Protection Class		IPX5	
Machine incl. standard acc.	kg	85	
Size - Machine alone L x W x H	mm	890x570x1020	

Parent item no:		Description:	
107146724		POSEIDON 5-52 FA 220-240/1/60 USA	
Service data	Unit	Value	
Model		POSEIDON 5-52 FA	
Item no. →		107146724	
Technical Data ↓			
Pump:			
Pump pressure water	bar		
Pressure pump outlet @ Qiec	bar	148	
Pressure gun outlet @ Qiec	bar	121	
Retaining pressure*	bar	210	
Flow. Qiec	l/min	16,3	
Suction height dry	m	1	
Suction height primed	m	2,5	
Pump type		NA5 v1	
Number of pistons		3	
Piston type		Full Ceramic	
Stroke	mm	0	
Pump oil type		BP Energol GR-XP220	
Pump oil amount		0,73	
Electric:			
Electric data			
Control voltage	V		
Highvoltage (HV) test voltage	V	1,5	
HV Insulation resistance		1	
Earth circuit resistance		0,2	
Pump revolutions		1740	
Electrical diagram no.		106420566	
Unit Data:			
Nozzle size, water		NT 0650	
Max. Inlet temp. (primed)	°C	-	
Max. Inlet temp. (suction)	°C	40	
Max. Inlet temp. (pressure fed)	°C	60	
Gun Type		ERGO 2000 STD INCL. SWIVEL NILFISK	
Primary Lance Type		TORNADO PLUS LANCE 1120 BEND	
Secondary Lance Type		None	
Hose		DN8 x 15 m	
Guarantied sound power		88	
Impactfactor calculated		5,2	
Vibration ISO 5349, lance 1 / lance 2		<1,5 ±1	
Protection Class		IPX5	
Machine incl. standard acc.	kg	84	
Size - Machine alone L x W x H	mm	735x570x1020	

Parent item no:		Description:	
107146725		GERNI POSEIDON 5-30 PA 240/1/50 AU	
Service data	Unit	Value	
Model		POSEIDON 5-30 PA	
Item no. →		107146725	
Technical Data ↓			
Pump:			
Pump pressure water	bar		
Pressure pump outlet @ Qiec	bar	105	
Pressure gun outlet @ Qiec	bar	97	
Retaining pressure*	bar	145	
Flow. Qiec	l/min	9,6	
Suction height dry	m	1	
Suction height primed	m	2,5	
Pump type		NA5 v2	
Number of pistons		3	
Piston type		Full Ceramic	
Stroke	mm	0	
Pump oil type		Castrol ALPHASyn 150	
Pump oil amount	l	0,73	
Electric:			
Electric data			
Control voltage	V		
Highvoltage (HV) test voltage	V	1,5	
HV Insulation resistance		1	
Earth circuit resistance		0,2	
Pump revolutions		1450	
Electrical diagram no.		106420559	
Unit Data:			
Nozzle size, water		NT 0435	
Max. Inlet temp. (primed)	°C	-	
Max. Inlet temp. (suction)	°C	40	
Max. Inlet temp. (pressure fed)	°C	60	
Gun Type		ERGO 2000 ST GUN W. HOSE SWIVEL - GERNI	
Primary Lance Type		TORNADO PLUS LANCE 1120 BEND	
Secondary Lance Type		None	
Hose		10 M WIRE HOSE 5/16 DN8	
Guarantied sound power		82	
Impactfactor calculated		2,7	
Vibration ISO 5349, lance 1 / lance 2		<1,5 ±1	
Protection Class		IPX5	
Machine incl. standard acc.	kg	68	
Size - Machine alone L x W x H	mm	735x570x1020	

Parent item no:		Description:	
107146726		GERNI POSEIDON 5-56 PAXT 415/3/50	
Service data	Unit	Value	
Model		POSEIDON 5-56 PAXT	
Item no. →		107146726	
Technical Data ↓			
Pump:			
Pump pressure water	bar		
Pressure pump outlet @ Qiec	bar	188	
Pressure gun outlet @ Qiec	bar	162	
Retaining pressure*	bar	230	
Flow. Qiec	l/min	14,6	
Suction height dry	m	1	
Suction height primed	m	2,5	
Pump type		NA5 v2	
Number of pistons		3	
Piston type		Full Ceramic	
Stroke	mm	0	
Pump oil type		BP Energol GR-XP220	
Pump oil amount		0,73	
Electric:			
Electric data			
Control voltage	V		
Highvoltage (HV) test voltage	V	1,5	
HV Insulation resistance		1	
Earth circuit resistance		0,2	
Pump revolutions		1450	
Electrical diagram no.		106420550	
Unit Data:			
Nozzle size, water		NT 0500	
Max. Inlet temp. (primed)	°C	-	
Max. Inlet temp. (suction)	°C	40	
Max. Inlet temp. (pressure fed)	°C	60	
Gun Type		ERGO 2000 ST GUN W. HOSE SWIVEL - GERNI	
Primary Lance Type		TORNADO PLUS LANCE 1120 BEND	
Secondary Lance Type		TURBOHAMMER PLUS 1040 STRAIGHT W/O NOZZ.	
Hose		HP-Hose O8x15m quick 3/8" nozzle grey	
Guarantied sound power		89	
Impactfactor calculated		5,5	
Vibration ISO 5349, lance 1 / lance 2		<1,5 ±1	
Protection Class		IPX5	
Machine incl. standard acc.	kg	78	
Size - Machine alone L x W x H	mm	890x570x1020	

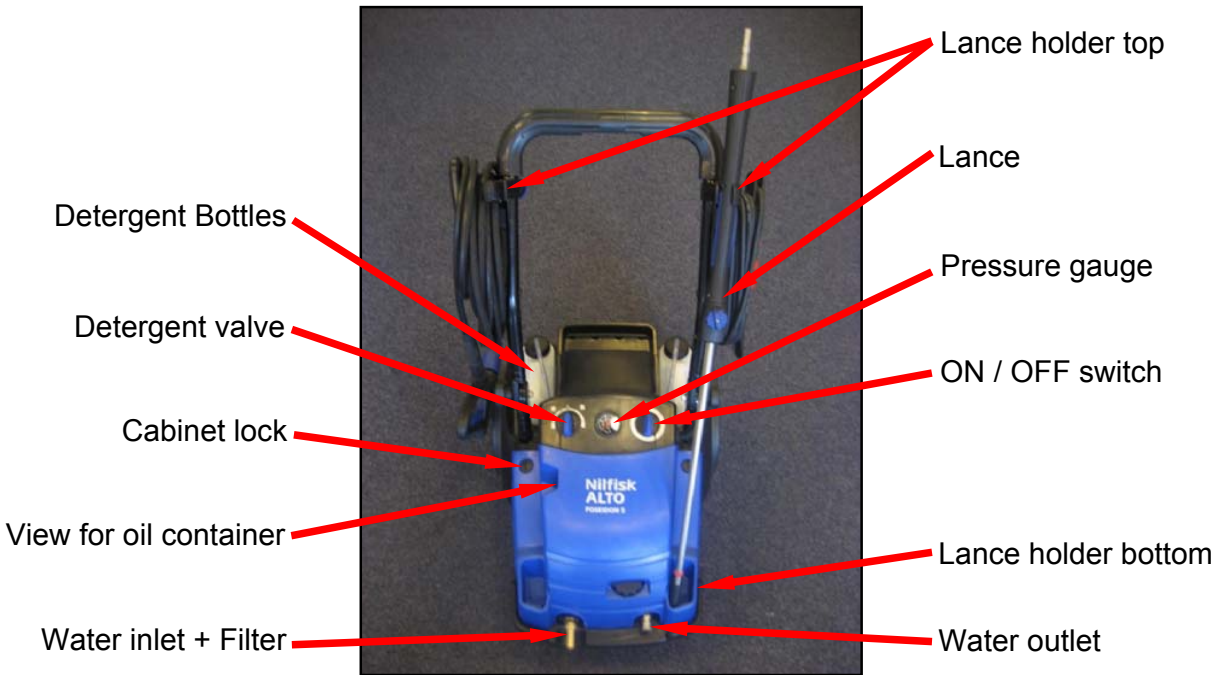
Parent item no: 107146727		Description: POSEIDON 5-53 PA 400/3/50 EU	
Service data	Unit	Value	
Model		POSEIDON 5-53 PA	
Item no. →		107146727	
Technical Data ↓			
Pump:			
Pump pressure water	bar		
Pressure pump outlet @ Qiec	bar	182	
Pressure gun outlet @ Qiec	bar	163	
Retaining pressure*	bar	230	
Flow. Qiec	l/min	14,7	
Suction height dry	m	1	
Suction height primed	m	2,5	
Pump type		NA5 v2	
Number of pistons		3	
Piston type		Full Ceramic	
Stroke	mm	0	
Pump oil type		BP Energol GR-XP220	
Pump oil amount		0,73	
Electric:			
Electric data			
Control voltage	V		
Highvoltage (HV) test voltage	V	1,5	
HV Insulation resistance		1	
Earth circuit resistance		0,2	
Pump revolutions		1450	
Electrical diagram no.		106420550	
Unit Data:			
Nozzle size, water		NT 0500	
Max. Inlet temp. (primed)	°C	-	
Max. Inlet temp. (suction)	°C	40	
Max. Inlet temp. (pressure fed)	°C	60	
Gun Type		ERGO 2000 STD INCL. SWIVEL NILFISK	
Primary Lance Type		FLEXOPOWER PLUS 1120 BEND W/O NOZZLE	
Secondary Lance Type		None	
Hose		DN6 x 10m	
Guarantied sound power		89	
Impactfactor calculated		5,4	
Vibration ISO 5349, lance 1 / lance 2		<1,5 ±1	
Protection Class		IPX5	
Machine incl. standard acc.	kg	71	
Size - Machine alone L x W x H	mm	735x570x1020	

Parent item no:		Description:	
107146728		POSEIDON 5-53 PAXT 400/3/50 EU	
Service data	Unit	Value	
Model		POSEIDON 5-53 PAXT	
Item no. →		107146728	
Technical Data ↓			
Pump:			
Pump pressure water	bar		
Pressure pump outlet @ Qiec	bar	190	
Pressure gun outlet @ Qiec	bar	162	
Retaining pressure*	bar	230	
Flow. Qiec	l/min	14,6	
Suction height dry	m	1	
Suction height primed	m	2,5	
Pump type		NA5 v2	
Number of pistons		3	
Piston type		Full Ceramic	
Stroke	mm	0	
Pump oil type		BP Energol GR-XP220	
Pump oil amount	l	0,73	
Electric:			
Electric data			
Control voltage	V		
Highvoltage (HV) test voltage	V	1,5	
HV Insulation resistance		1	
Earth circuit resistance		0,2	
Pump revolutions		1450	
Electrical diagram no.		106420550	
Unit Data:			
Nozzle size, water		NT 0500	
Max. Inlet temp. (primed)	°C	-	
Max. Inlet temp. (suction)	°C	40	
Max. Inlet temp. (pressure fed)	°C	60	
Gun Type		ERGO 2000 STD INCL. SWIVEL NILFISK	
Primary Lance Type		FLEXOPOWER PLUS 1120 BEND W/O NOZZLE	
Secondary Lance Type		TURBOHAMMER PLUS 1040 STRAIGHT W/O NOZZ.	
Hose		HP-Hose o6x15m Quick 3/8"	
Guarantied sound power		89	
Impactfactor calculated		5,4	
Vibration ISO 5349, lance 1 / lance 2		<1,5 ±1	
Protection Class		IPX5	
Machine incl. standard acc.	kg	76	
Size - Machine alone L x W x H	mm	890x570x1020	

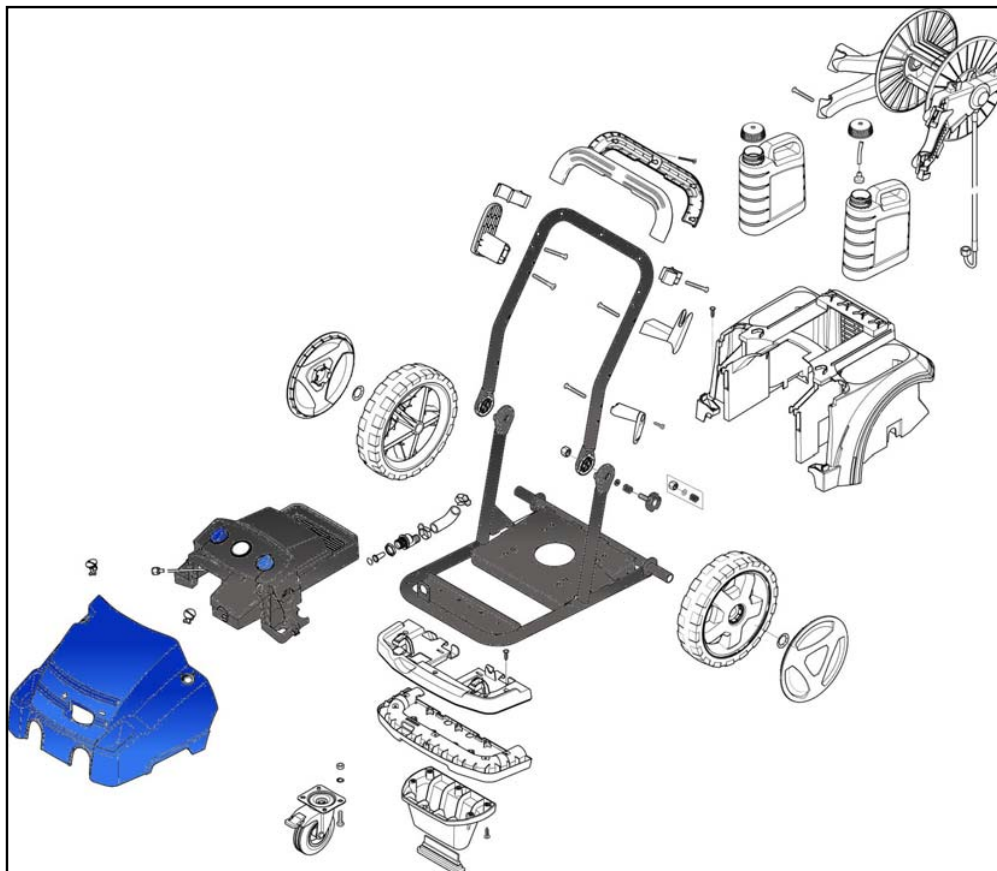
Parent item no:		Description:	
107146734		POSEIDON 5-41 PA 400/3/50 EU Sondi Line	
Service data	Unit	Value	
Model		POSEIDON 5-41 PA	
Item no. →		107146734	
Technical Data ↓			
Pump:			
Pump pressure water	bar		
Pressure pump outlet @ Qiec	bar	174	
Pressure gun outlet @ Qiec	bar	162	
Retaining pressure*	bar	230	
Flow. Qiec	l/min	11,6	
Suction height dry	m	1	
Suction height primed	m	2,5	
Pump type		NA5 v2	
Number of pistons		3	
Piston type		Full Ceramic	
Stroke	mm	0	
Pump oil type		BP Energol GR-XP220	
Pump oil amount	l	0,73	
Electric:			
Electric data			
Control voltage	V		
Highvoltage (HV) test voltage	V	1,5	
HV Insulation resistance		1	
Earth circuit resistance		0,2	
Pump revolutions		1450	
Electrical diagram no.		106420550	
Unit Data:			
Nozzle size, water		NT 0400	
Max. Inlet temp. (primed)	°C	-	
Max. Inlet temp. (suction)	°C	40	
Max. Inlet temp. (pressure fed)	°C	60	
Gun Type		ERGO 2000 STD INCL. SWIVEL NILFISK	
Primary Lance Type		FLEXOPOWER PLUS 1120 BEND W/O NOZZLE	
Secondary Lance Type		None	
Hose		10 M WIRE HOSE 5/16 DN8	
Guarantied sound power		88	
Impactfactor calculated		4,1	
Vibration ISO 5349, lance 1 / lance 2		<1,5 ±1	
Protection Class		IPX5	
Machine incl. standard acc.	kg	68	
Size - Machine alone L x W x H	mm	735x570x1020	

Parent item no:		Description:	
107146735		POSEIDON 5-56 PAXT 400/3/50 EU Sondi Line	
Service data		Unit	Value
Model			POSEIDON 5-56 PAXT
Item no. →			107146735
Technical Data ↓			
Pump:			
Pump pressure water	bar		
Pressure pump outlet @ Qiec	bar		186
Pressure gun outlet @ Qiec	bar		162
Retaining pressure*	bar		230
Flow. Qiec	l/min		14,7
Suction height dry	m		1
Suction height primed	m		2,5
Pump type			NA5 v2
Number of pistons			3
Piston type			Full Ceramic
Stroke	mm		0
Pump oil type			BP Energol GR-XP220
Pump oil amount			0,73
Electric:			
Electric data			
Control voltage	V		
Highvoltage (HV) test voltage	V		1,5
HV Insulation resistance			1
Earth circuit resistance			0,2
Pump revolutions			1450
Electrical diagram no.			106420550
Unit Data:			
Nozzle size, water			NT 0500
Max. Inlet temp. (primed)	°C		-
Max. Inlet temp. (suction)	°C		40
Max. Inlet temp. (pressure fed)	°C		60
Gun Type			ERGO 2000 STD INCL. SWIVEL NILFISK
Primary Lance Type			TORNADO PLUS LANCE 1120 BEND
Secondary Lance Type			TURBOHAMMER PLUS 1040 STRAIGHT W/O NOZZ.
Hose			DN10 x 15m - Grey
Guarantied sound power			89
Impactfactor calculated			5,5
Vibration ISO 5349, lance 1 / lance 2			<1,5 ±1
Protection Class			IPX5
Machine incl. standard acc.	kg		81
Size - Machine alone L x W x H	mm		890x570x1020

Overview Poseidon 5 NA5

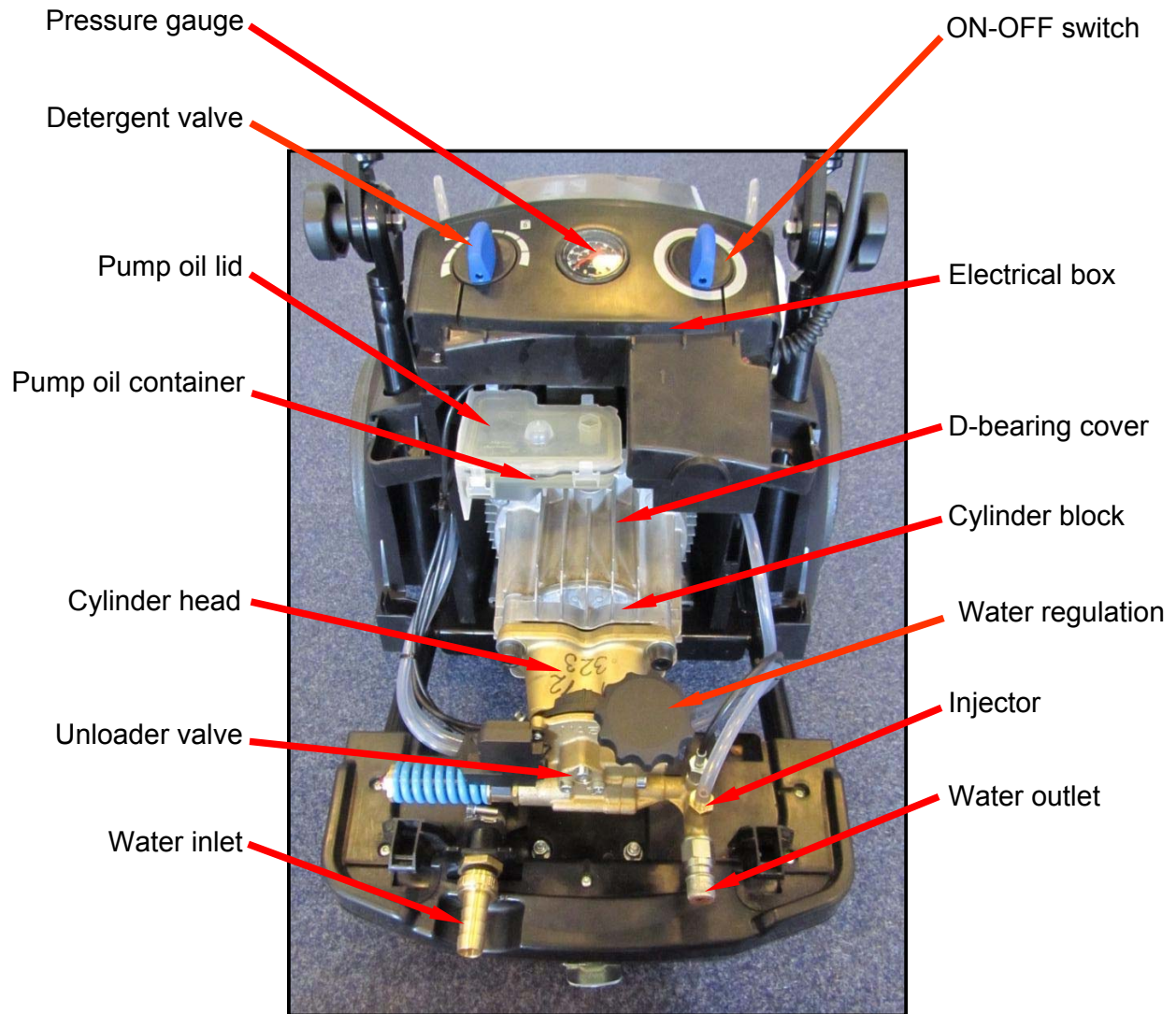


Pic. C1: POSEIDON 5 NA5



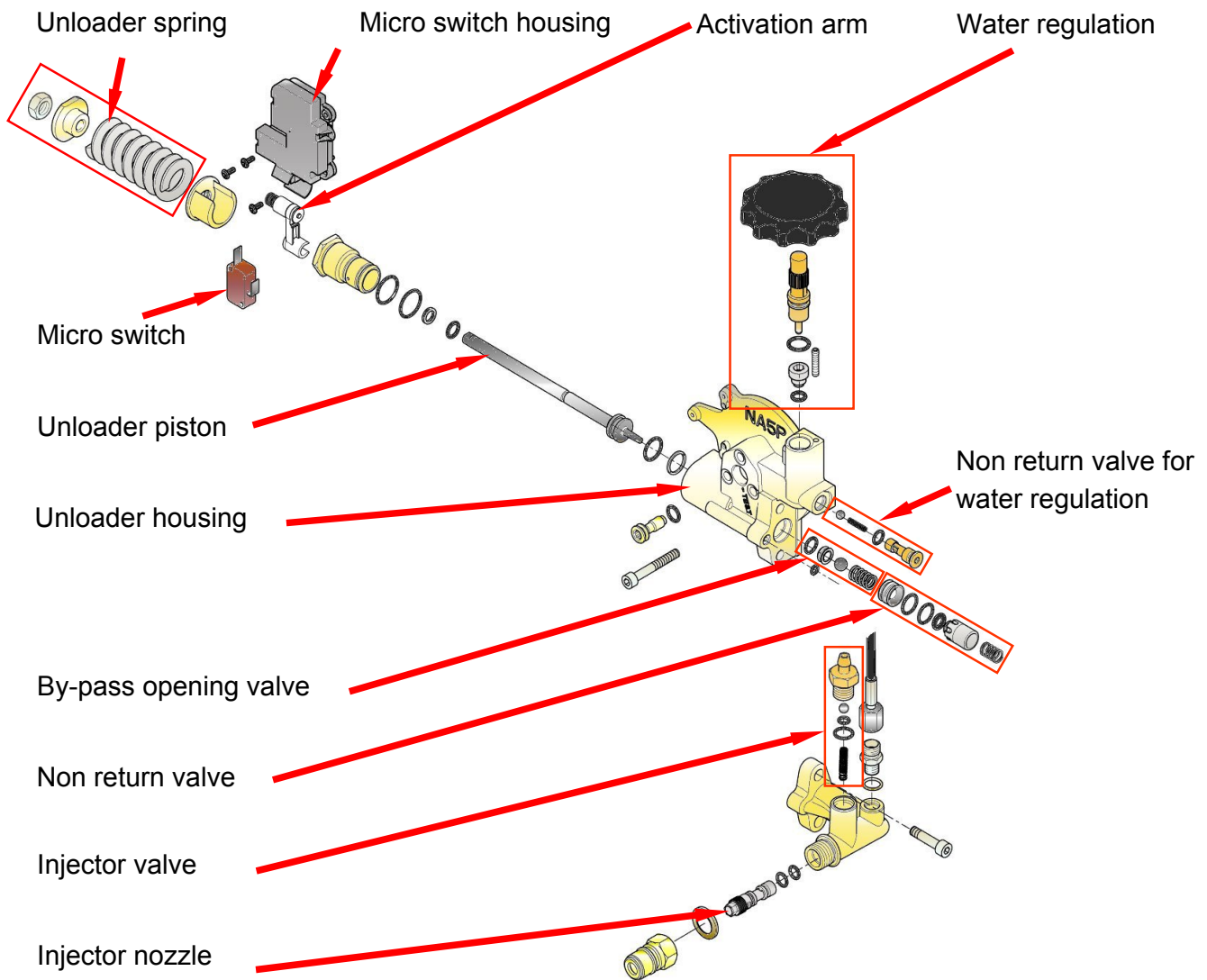
Pic. C2: POSEIDON 5 Cabinet & frame parts

Overview Poseidon 5 NA5



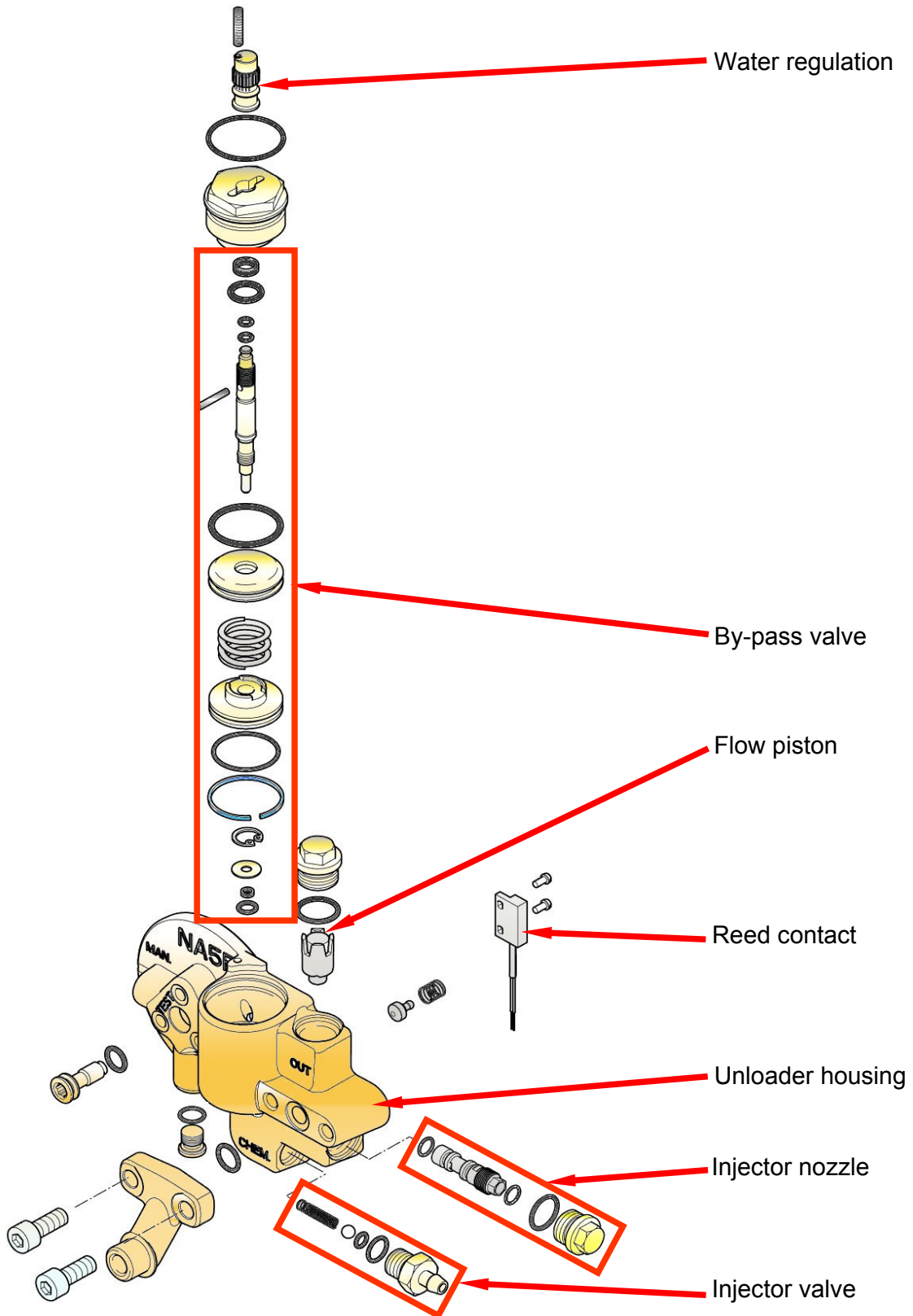
Pic. C3: Poseidon 5 NA5 without cabinet

Overview Poseidon 5 NA5 unloader- PA Models



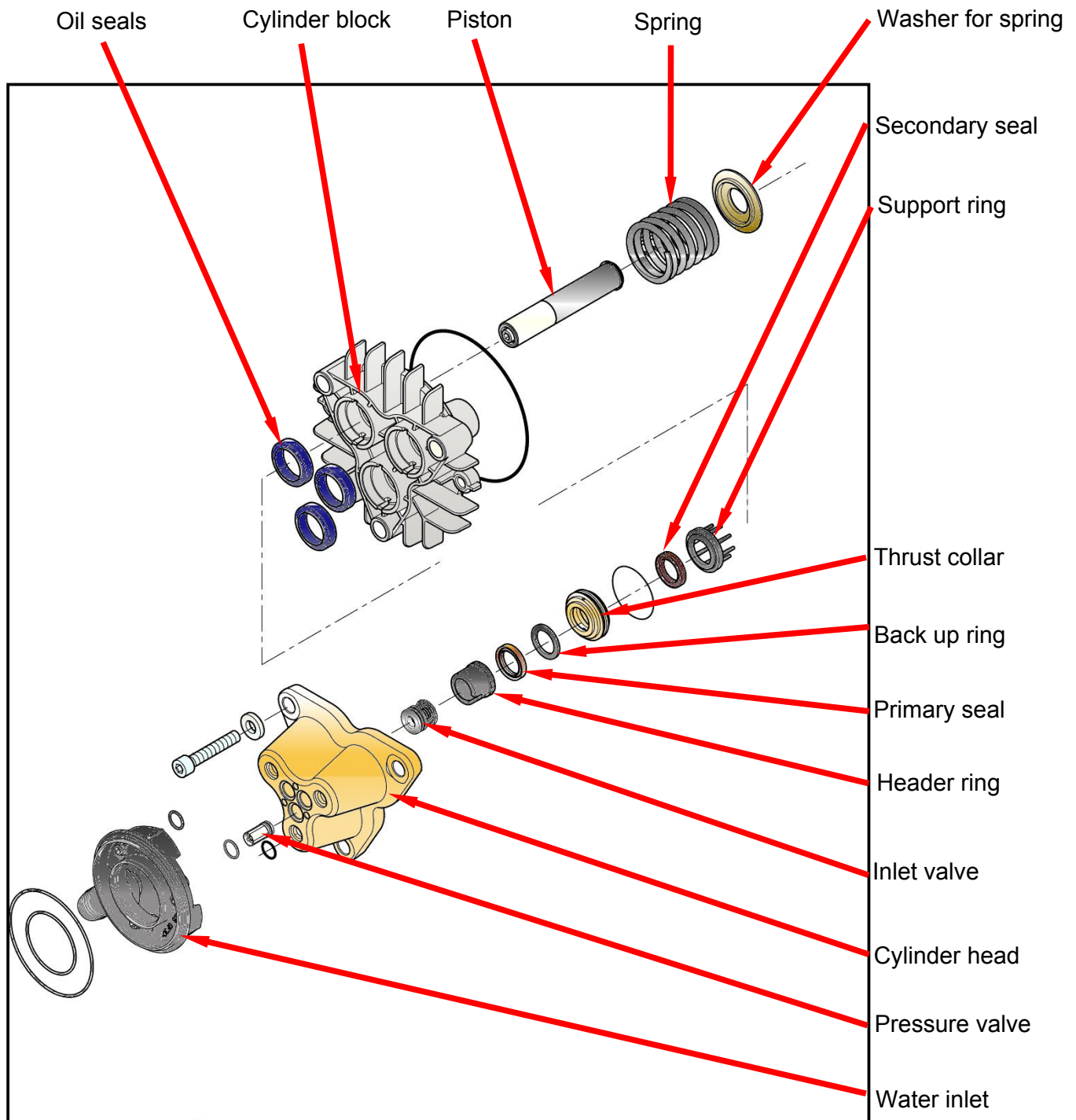
Pic. C4: Unloader

Overview Poseidon 5 NA5 By-pass valve– FA Models



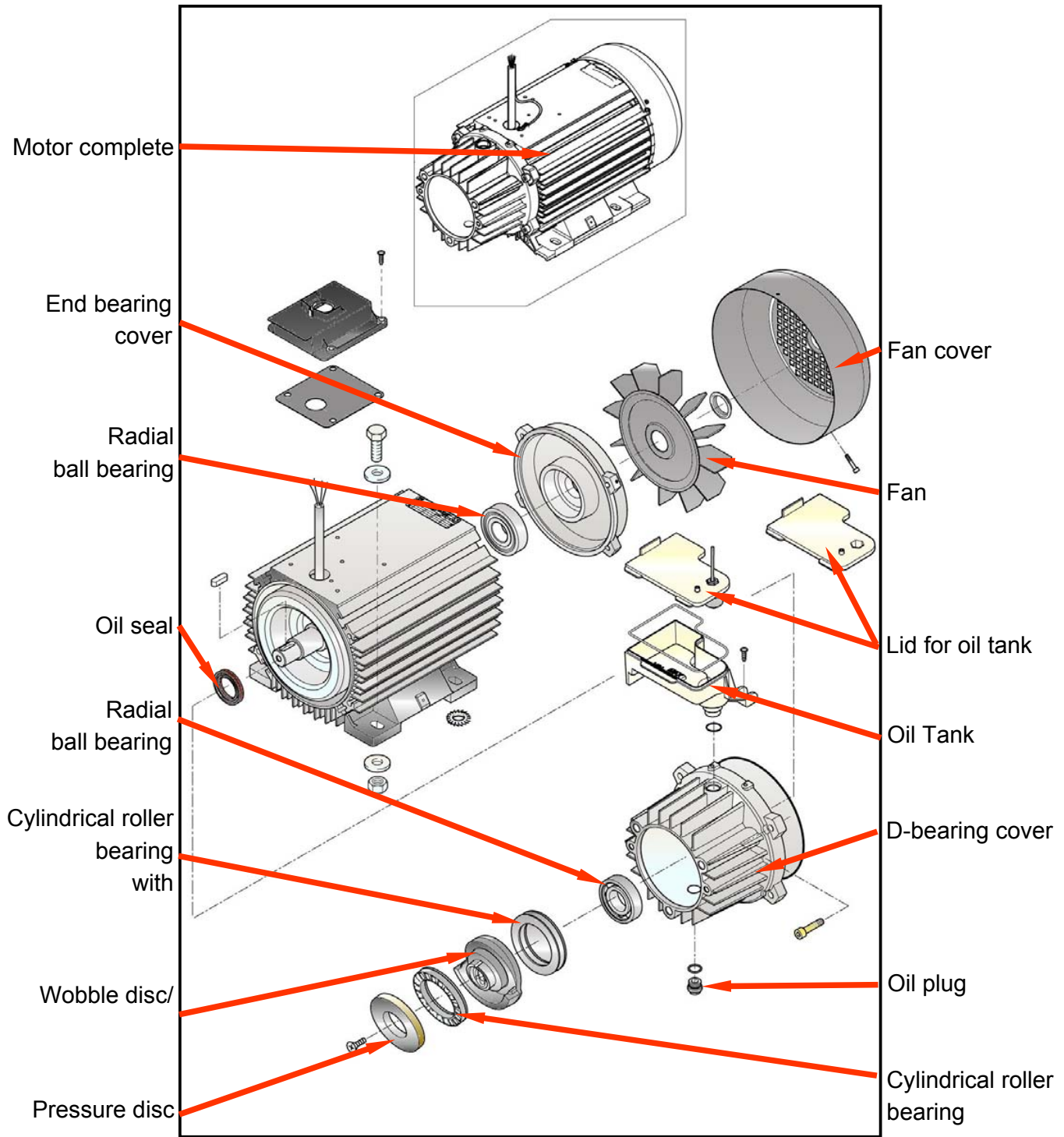
Pic. C5: By-pass valve

Overview NA 5 pump unit



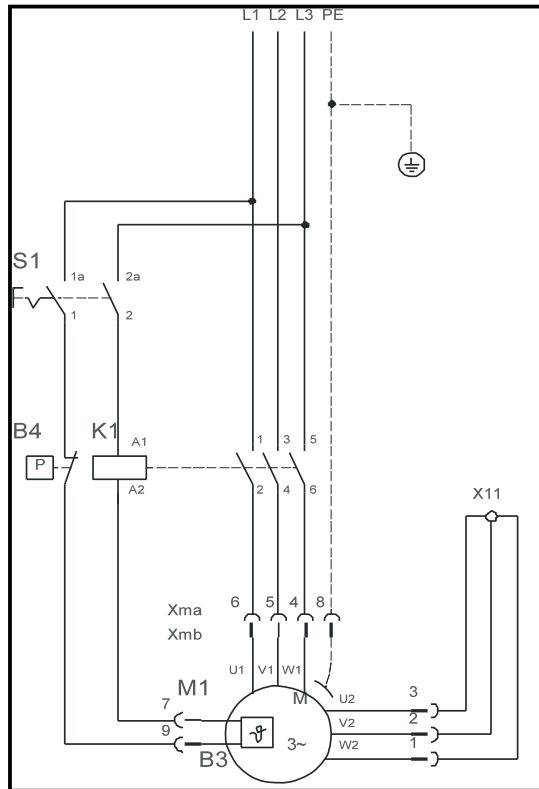
Pic. C6: Pump parts

Overview NA 5 Motor/Pump



Pic. C7: Motor/pump unit

Operation electrical system



- B3 Motor thermal switch.
- B4 Micro switch.
- K1 Contactor.
- M1 Motor.
- S1 Main switch ON/OFF.

Pic. D1: Wiring diagram.

Operation of Poseidon PA 5:

Pre-conditions: Machine hooked up to adequate water and power supply. Right Spray gun, hose and lance/nozzle is used.

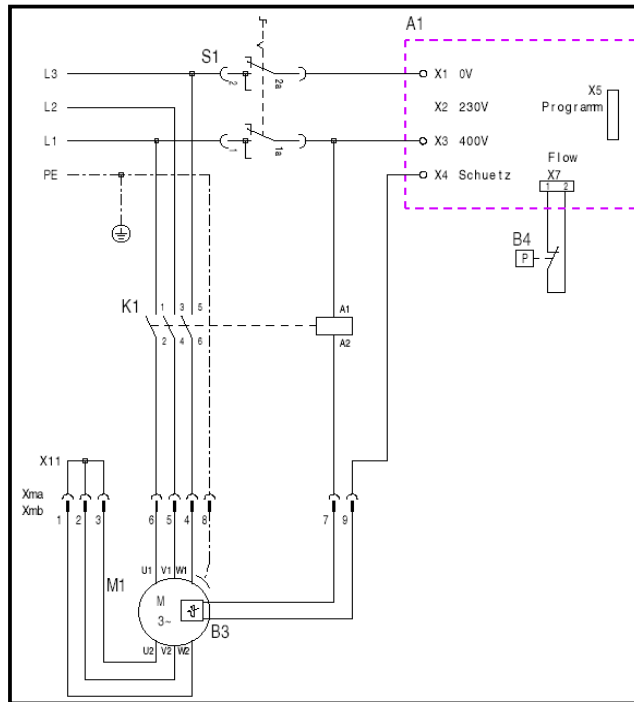
Main switch in position "0" (OFF):

- There is main voltage at the contacts of S1 and K1.
- Machine is still off.

Main switch S1 in position "1" (ON):

- Spray gun is closed; machine builds up pressure, if B4 (cut off pressure not reached) and B3 (motor winding temp. Below < 160°C or < 320°F; automatic reset of B3) are closed; if cut off pressure is reached B4 opens and the machine stops.
- If spray gun is activated pressure in unloader drops, B4 closes and starts the motor, water flows at working pressure.
- Closing spray gun; working pressure increase in unloader till cut off pressure is reached; B4 opens, machine stops.

Operation electrical system



Pic. D2: Wiring diagram.

A1	Control PCB
B3	Motor thermal switch.
B4	Reed contact.
K1	Contactora.
M1	Motor.
S1	Main switch ON/OFF.

Operation of Poseidon 5 FA:

The PCB has following functions:

1. To start the motor when starting the machine.
2. To stop the motor when operation of the machine is finished.
3. To run the motor in by-pass for 20 sec. after flow stop was reached and B4 opened.
4. To record and store data concerning the machines work situations, operation and by-pass.

The PCB is protected ————— by a fuse (6.3A—slow) placed on the board.

Pre-conditions: Machine hooked up to adequate water and power supply.

Main switch S1 in position "0" (OFF):

- There is mains voltage at the contacts of S1 and K1, but no power at the PCB
- Machine is still off.

Function PCB 301001104



Pic. D3: PCB.

RUN – Mode

Motor runs — Micro switch closed; water run through the gun..

Closing the gun — Switching to “By-pass” mode.

BYPASS – Mode

Motor runs — Micro switch open; water runs by-pass.

If gun not activated within 20 sec. — Motor stops in “Stand-by” mode.

STAND BY – Mode

Motor is switched off — Micro switch open.

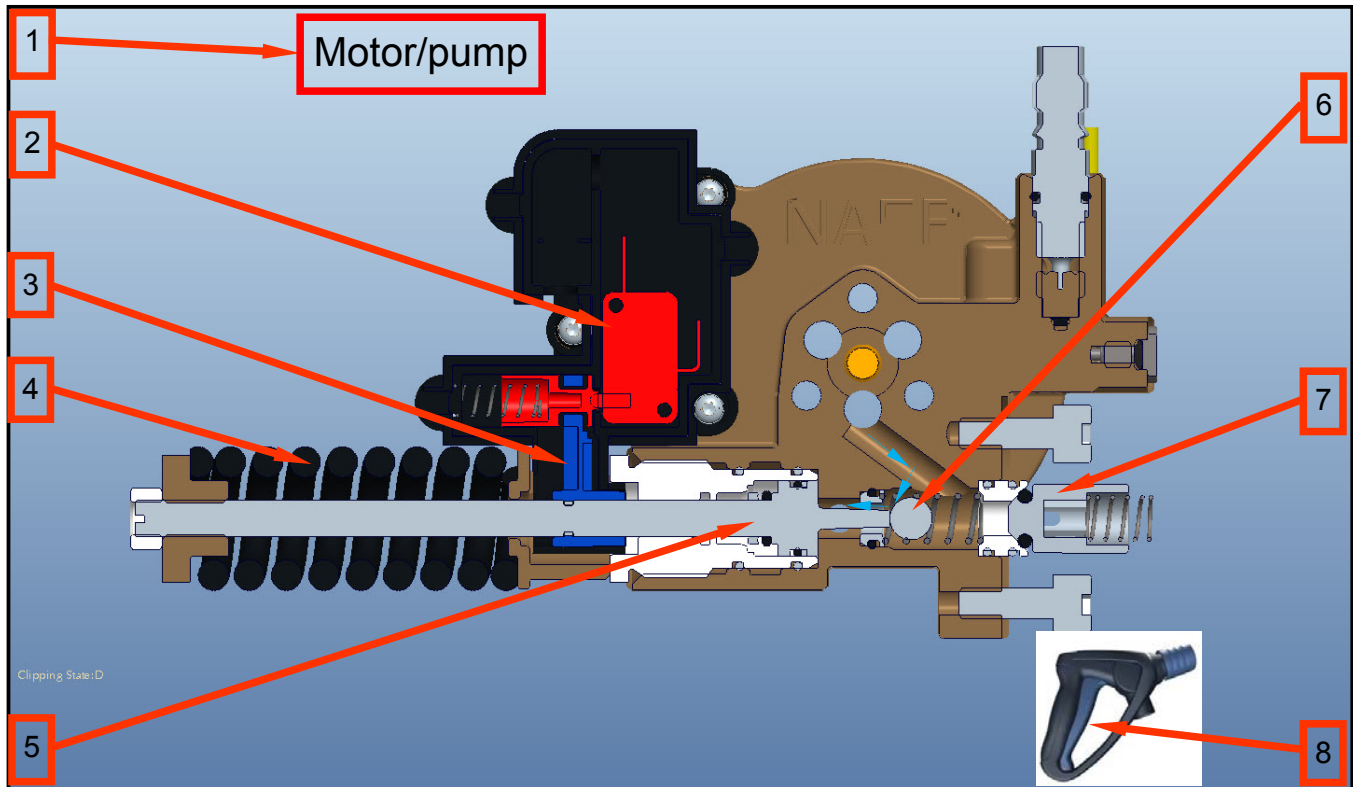
If the gun is activated — The motor starts and goes to “Run mode”

SLEEP – Mode

If the gun isn't activated within 30 minutes; the unit will not restart automatically. It has to be restarted at the main switch.

If the micro switch closes in time intervals $t < 1,5$ sec. it is recognised as a leakage, as an activation

Pressure Activated Unloader— by pass (closed gun)



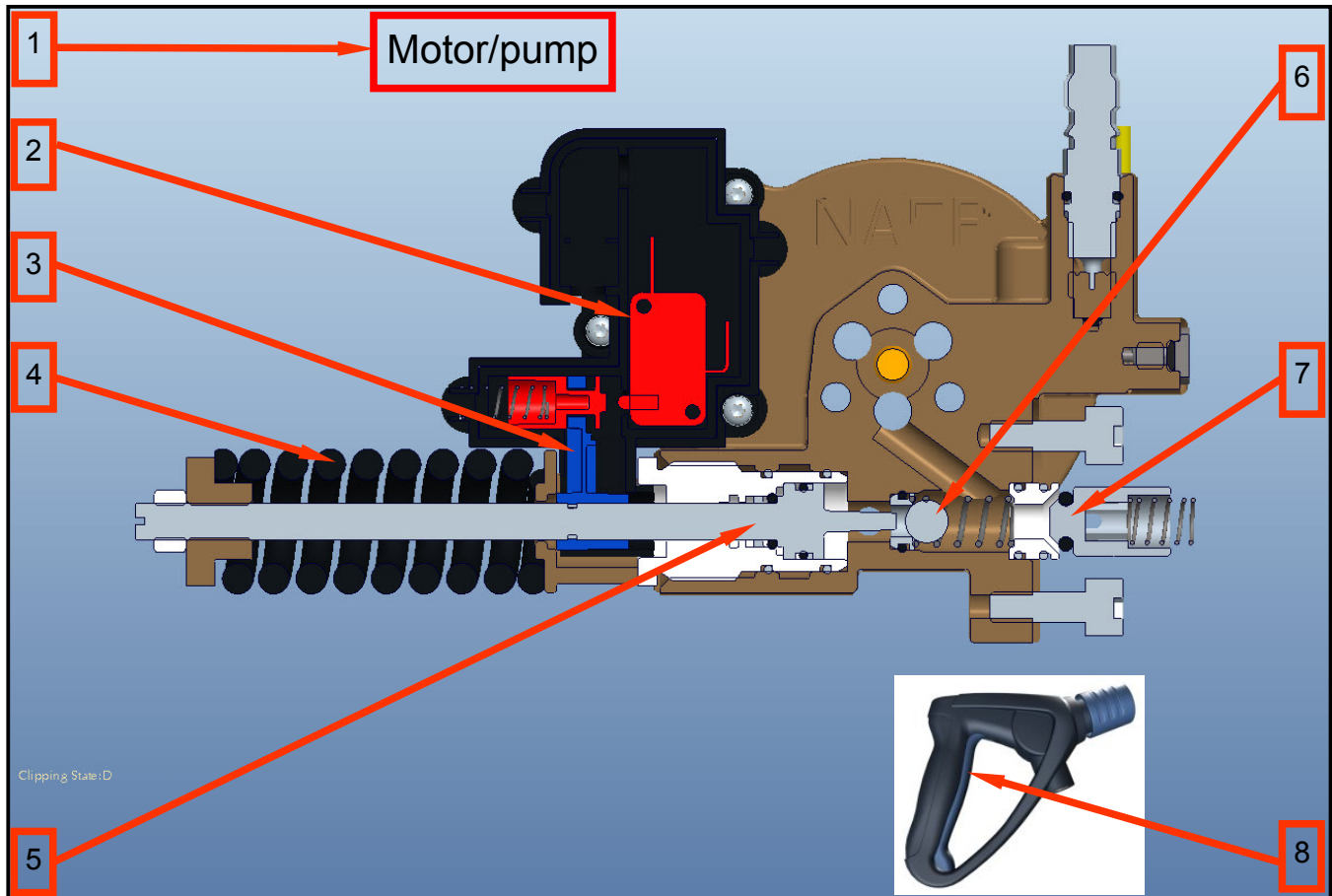
Pic. D4: Unloader—Closed gun.

- | | |
|---------------------|----------------------|
| 1. Motor/pump Unit. | 6. Ball for by-pass. |
| 2. Micro switch. | 7. Non return valve. |
| 3. Activation arm. | 8. Ergo gun. |
| 4. Unloader spring. | |
| 5. Unloader piston. | |

The machine is started with closed spray gun (8).

The pressure rises until the cut-off pressure is reached. The unloader piston (5) is pressed forward caused by the outlet pressure exceeding the pressure from the unloader spring → the By-pass ball (6) is moved forward and opens the connection between the water inlet and the water outlet (blue arrows). The micro switch (2) is activated by the activation arm (3) and the motor/pump (1) stops. Now the non return valve piston (7) is pressed against its seat, which keeps the pressure high in the hose and on the backside of the unloader piston. The pressure in the pump is released to "0" due to open connection between pump inlet and outlet (blue arrows).

Pressure Activated Unloader— working pressure (open gun)



Pic. D5: Unloader—Open gun.

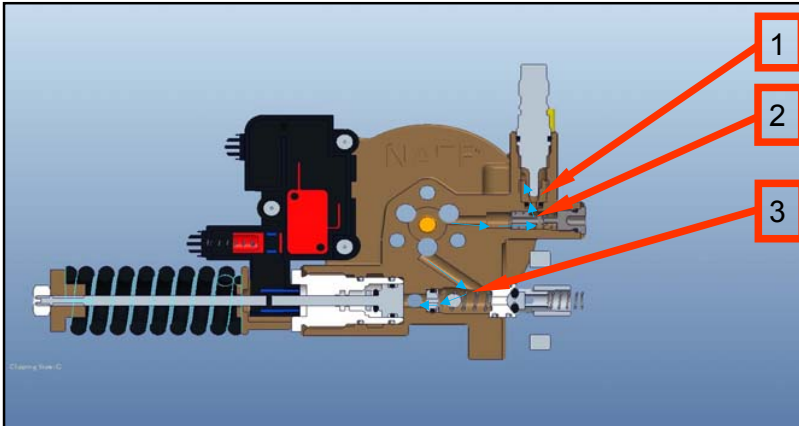
- | | |
|---------------------|----------------------|
| 1. Motor/pump Unit. | 6. Ball for by-pass. |
| 2. Micro switch. | 7. Non return valve. |
| 3. Activation arm. | 8. Ergo gun. |
| 4. Unloader spring. | |
| 5. Unloader piston. | |

Mounted with a lance and high pressure nozzle the spray gun (8) is now activated.

The non return valve (7) opens, the pressure in the hose drops and release the pressure on the backside of the unloader piston (5). The unloader spring (4) presses the unloader piston (5) backwards and drags the activation arm (3) away from the micro switch (2) and the motor/ pump (1) starts.

The pressure rises to working pressure and remains constant during operation.

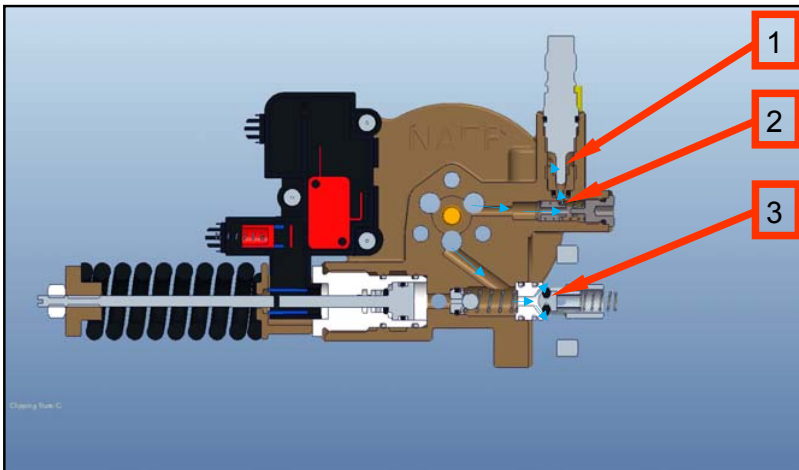
Pressure Activated Unloader— by pass (closed gun) and reduced water volume



1. Valve for water reduction open.
2. Water can pass through non return valve.
3. Water can pass through connection from water inlet to water outlet

Pic. D6: Unloader— Closed gun.

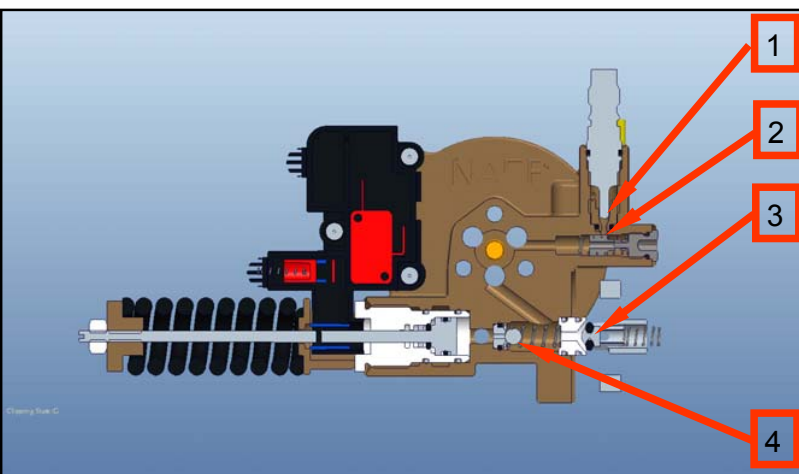
Pressure Activated Unloader— working pressure (open gun) and reduced water volume



1. Valve for water reduction open.
2. Water can pass through non return valve.
3. Water can pass through water outlet

Pic. D7: Unloader—Open gun.

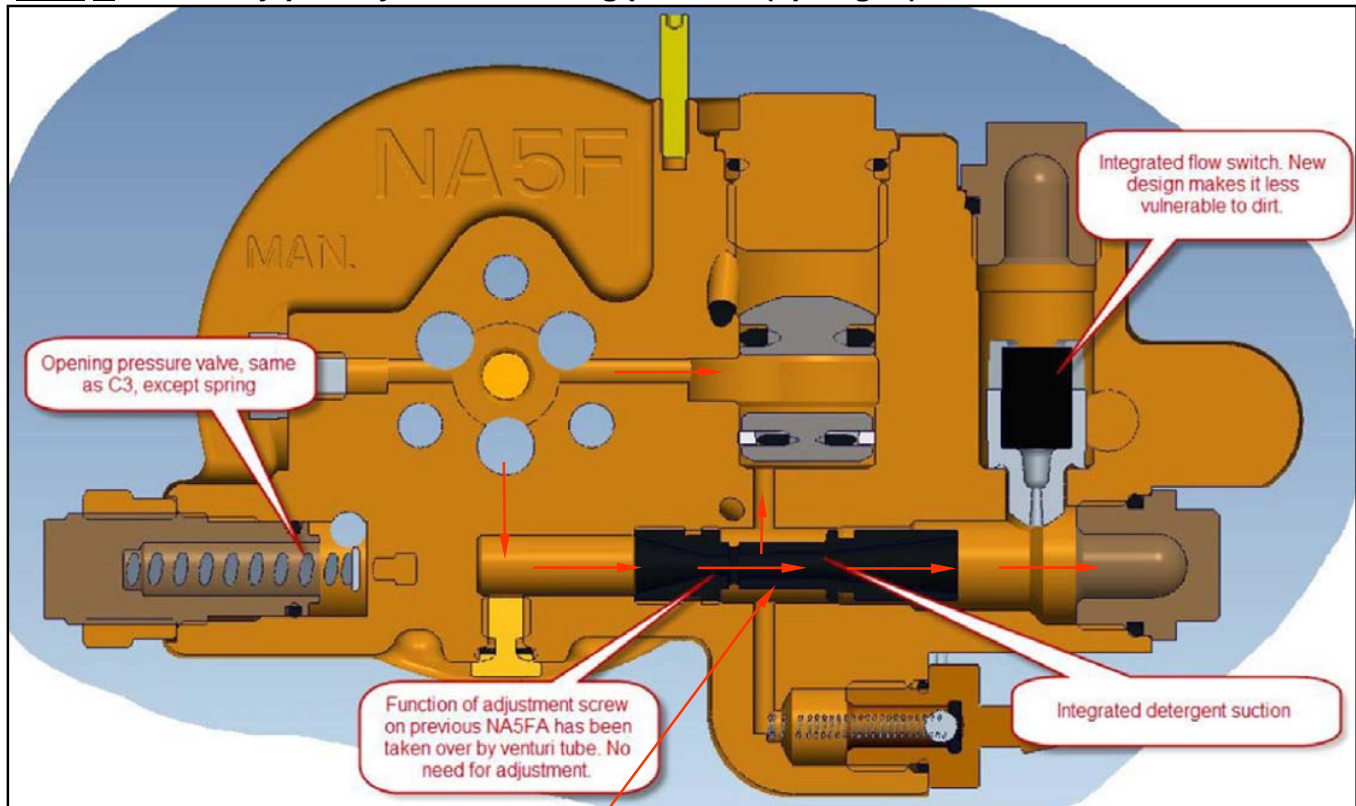
Pressure Activated Unloader— closing gun and reduced water volume



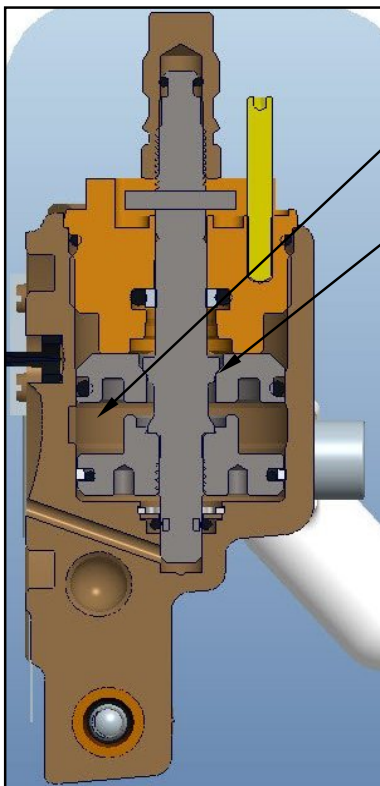
1. Valve for water reduction open.
2. Non return valve is closing.
3. Non return valve in outlet is closing.
4. Connection between water inlet and water outlet is opening.

Pic. D8: Unloader— Closing gun.

Flow Activated By-pass system— working pressure (open gun)



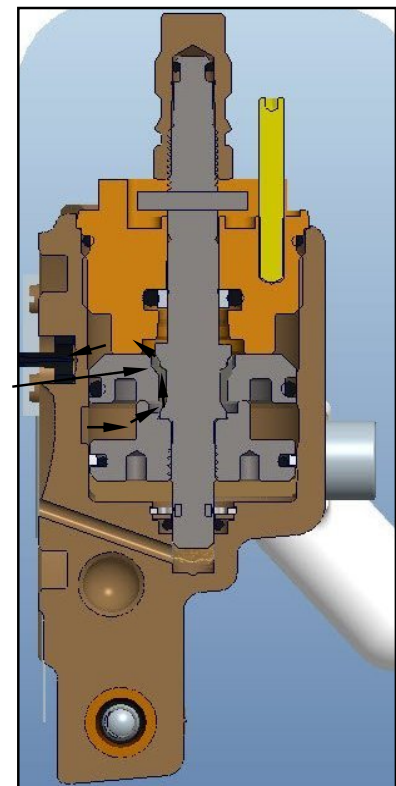
Pic. D9: — By-pass valve open gun.



Water runs under pressure from the pump through the injector nozzle, where there is a pressure drop made. Water also enters the chamber between the by-pass pistons. Due to a higher pressure between the pistons than under the lower piston, the by-pass valve is closed and the machine runs in working mode.

When the spray gun is closing the flow shortly stops and the pressure rises.

The opening pressure valve shortly opens, the pressure on both sides of the lower piston equalizes and the lower by-pass piston lifts up and opens the by-pass



Pic. D10: By-pass valve — open gun.

Pic. D11: By-pass valve — closed gun.

General failures.

Fault	Cause	Remedy
Pressure drop	<ul style="list-style-type: none"> - Air in the system. - High pressure nozzle blocked / worn. - Pressure control on the spray lance is not set correctly. - Detergent container empty. - Water inlet temperature too high. 	<ul style="list-style-type: none"> • Vent the system by operating the spray gun several times at short intervals .If necessarily operate the cleaner for a short time without the High pressure hose connected. • Clean / replace the high pressure nozzle. • Set the required working pressure. • Change container or close detergent valve. • See technical data part "B".
Pressure fluctuations	<ul style="list-style-type: none"> - Lack of water - Water inlet hose is too long or its cross-section too small. - Lack of water caused by blocked water filter. - Lack of water because max. permissible suction height has not been heeded. - Pump sucks in air (suction mode) 	<ul style="list-style-type: none"> • Open water tap. • Use specified water inlet hose(Refer to user manual). • Clean the water filter in the water connection. (Never work without water filter). • See technical data part "B" • Check that the suction set is air tight.
The motor does not start when the cleaner is switched on.	<ul style="list-style-type: none"> - The plug is not inserted properly, i.e. there is no current. - The main fuse is switched off. 	<ul style="list-style-type: none"> • Check the plug, lead and switch.If necessary have them replaced by a trained electrician. • Switch on the main fuse.

General failures.

Fault	Cause	Remedy
When the cleaner is switched on the motor buzzes without starting.	<ul style="list-style-type: none"> - The main voltage is too low or there is a phase failure (3 ph model). - The pump is blocked or frozen. - Incorrect cross-section or length of the extension lead. 	<ul style="list-style-type: none"> • Have the electrical connections checked. • Pump needs service (see part "F"). • Use lead with correct cross section and length.
The motor switches off.	<ul style="list-style-type: none"> - The overload protection has been activated due to overheating or overloading of the motor. - High pressure nozzle is dirty. 	<ul style="list-style-type: none"> • Check that the main voltage and the cleaner voltage are the same. Switch off the cleaner and allow it to cool for at least 3 minutes. • Change the high pressure
Cleaner starts / stops by itself.	<ul style="list-style-type: none"> - Leakage on high pressure side. 	<ul style="list-style-type: none"> • Locate the leak and repair it. (See next page).
No detergents drawn in.	<ul style="list-style-type: none"> - Injector is dirty or suction hose is blocked. - Detergent container empty. - The cap on the nozzle is not set at low pressure. 	<ul style="list-style-type: none"> • Clean. • Top up/change the container. • Turn cap of the FlexoPower nozzle towards "CHEM" up to the stop.
<p>Working pressure too low.</p> <p>Working pressure too low and loud noise coming from pump .</p>	<ul style="list-style-type: none"> - Suction - and pressure valves leaking. - Piston U-sleves in pump worn. - Piston stocked in pump. 	<ul style="list-style-type: none"> • Replace parts. • Check pump for damaged parts — demount and reassemble pump housing with the right torque.

Unloader failures.

Symptom: Machine does not stop when releasing the spray gun.

Cause: Defective spring (1), or defective activation arm (3), or defective micro switch housing (4), or defective micro switch (5).

Remedy: Replace defective parts.

Symptom: Machine does not stop when releasing the spray gun. Pump runs in by-pass mode with very high pressure — approx 180bar.

Cause: Non return valve piston (12) - O-ring (11) - Seat (13) defective → System leaks internally or piston (12) closes too slowly caused by dirt/chalk.

Remedy: Replace Non return valve kit or clean dirty parts.

Symptom: Machine starts by itself and stops right away.

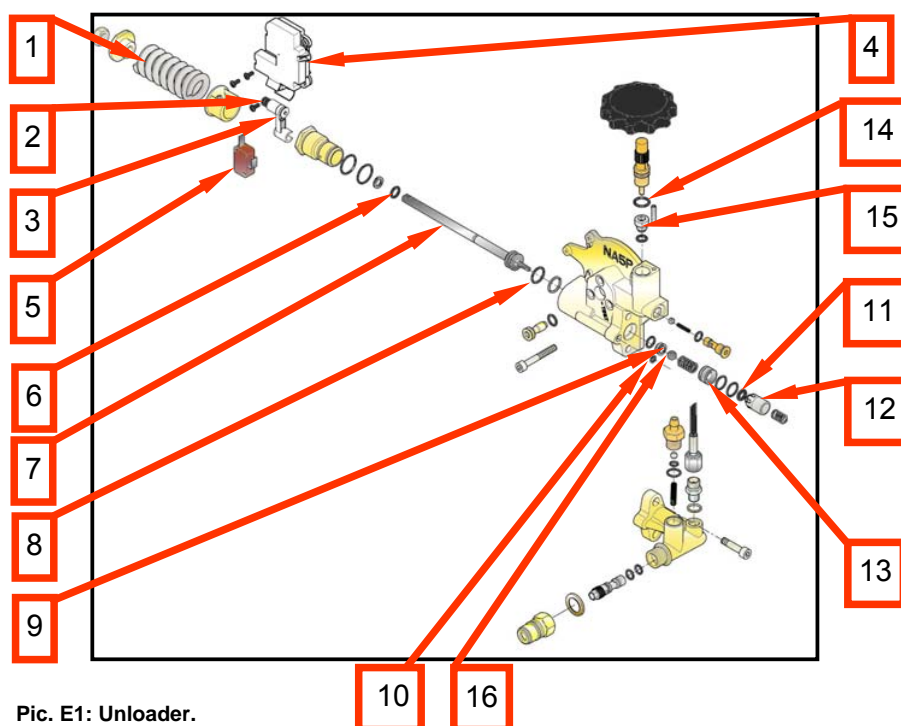
Cause: Pressure system leaks between spray gun and pump → Cut-off pressure drops and the activation arm (3) releases the micro switch (5), or leaks at gaskets 6, 8, 10, 11.

Remedy: Check gaskets in spray gun - Check gaskets 6, 8, 10, 11 and replace if necessary.

Symptom: Working pressure too low.

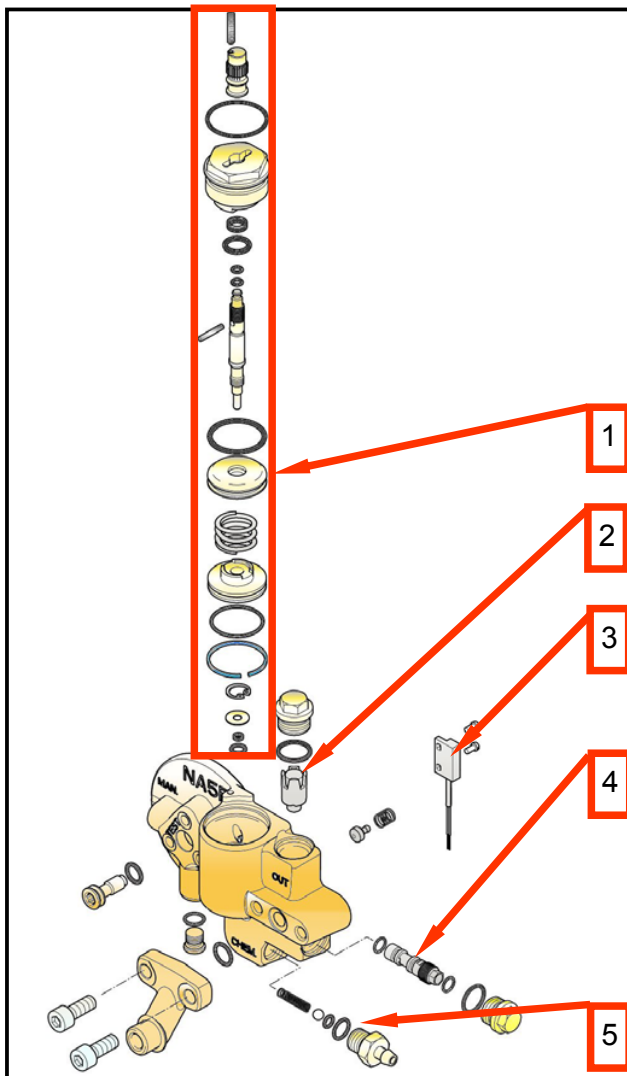
Cause: Machine by-passes water.

Remedy: Spring (1) tension too low or leakage between ball (16) and seat.



Pic. E1: Unloader.

By-pass valve failures.



Pic. E2: By-pass valve..

Symptom: Machine doesn't start when activating the spray gun.

Cause: Defective reed contact (3) or piston (2) is stuck.

Remedy: Replace defective parts.

Symptom: Irregular working pressure.

Cause: Injector nozzle (4) is worn.

Remedy: Replace injector nozzle.

Symptom: Low working pressure

Cause: By-pass valve kit worn and leaks water.

Remedy: Replace By-pass valve kit.

Symptom: Suction inlet for detergent leaks water.

Cause: Non return valve (5) defective.

Remedy: Replace non return valve.



Pic. F1: Data Plate

- Identify the machine version at the dataplate.
- Find the technical data for the machine version in this manual chapter "A".



Pic. F2: Cabinet

The cabinet is demounted by turning the two lock screws (1) on top of the cabinet.

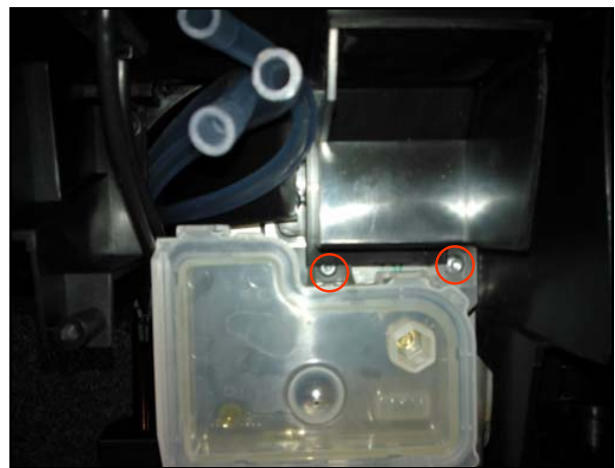
Open the cabinet and pull forward.



Pic. F3: E- box

The lid for the electrical box is fitted with 2 x torx T20 screws.

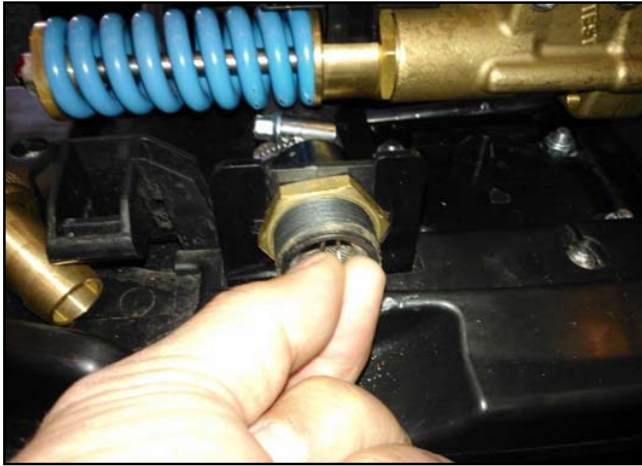
Remove the screws and push the lid backwards to open the E-box.



Pic. F4: Oil container

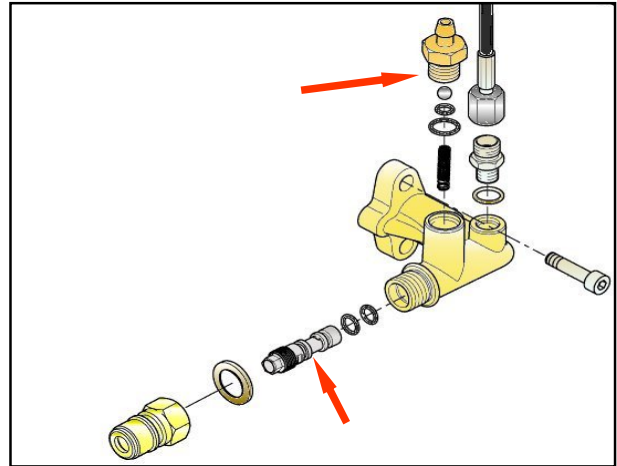
The oil container is fitted to the pump by the 2x Torx 20 screws.

Unloader.



Pic. F5: Water inlet filter

Water inlet filter is placed in the housing for hose connector. Remove the circlip and filter check for impurities.

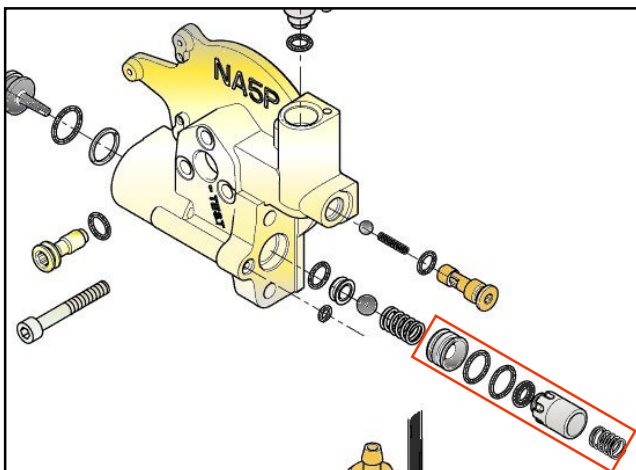


Pic. F6: Water outlet/ Injector

The injector nozzle is placed in the water outlet and is demounted with a 10mm socket wrench.

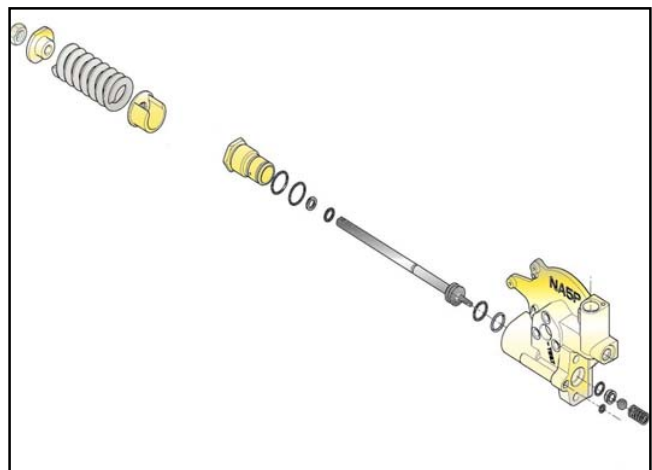
Inside the hose tail the seat for injector non retaining valve is integrated.

Hose tail is demounted with a 14mm spanner.



Pic. F7: Non return valve

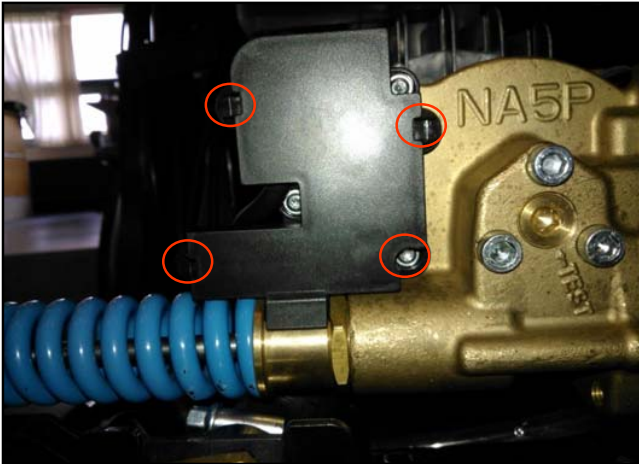
When the non return valve is defective, replace the complete repair kit to ensure all related parts are in a proper condition. When the non return valve seat is mounted - use silicon grease to protect the o-rings against damages.



Pic. F8: Unloader piston

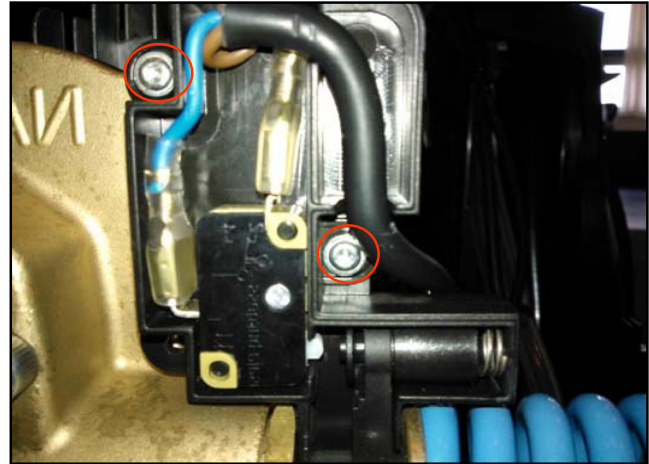
When the unloader piston is defective, replace the complete repair kit to ensure all related parts are in a proper condition. Use silicon grease to protect gaskets against damages.

Micro switch housing



Pic. F9: Micro switch box

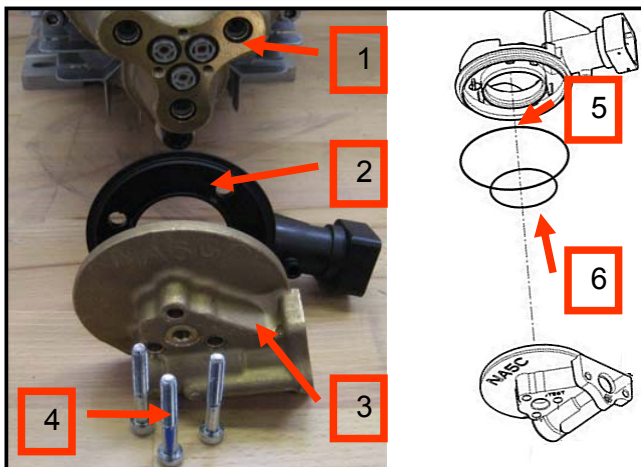
Remove the lid from micro switch housing by removing 1 x torx 10 screw and flip the three hinges on the lid.



Pic. F10: Micro switch box

Micro switch box is fixed to the unloader by 2 x torx 20 screws.

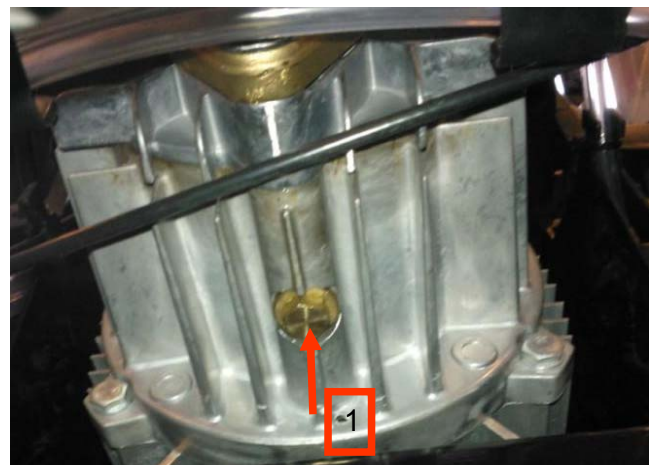
Unloader housing.



Pic. F11: Unloader housing

Dismount the unloader housing (3) from the valve housing (1) by the three M6 bolts (4). By reassembling mount the smallest o-ring (6) in the unloader (3) and the biggest o-ring (5) in the water inlet part (2). Use silicone grease and stretch the o-rings over the parts - do not roll the o-rings.

Oil drain and filling.

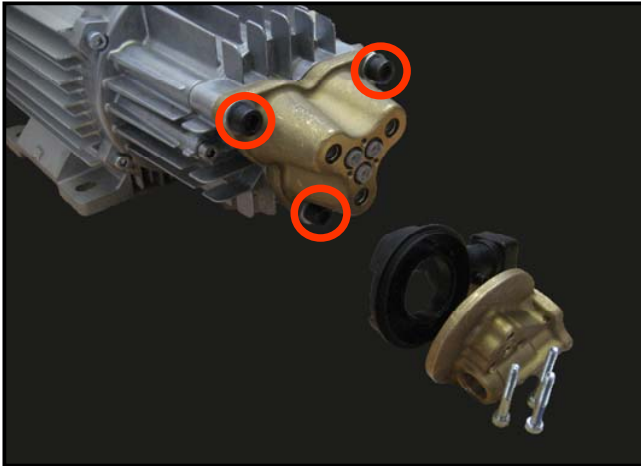


Pic. F12: Oil drain/fill

Drain off the oil by dismounting the 14mm oil plug (1).

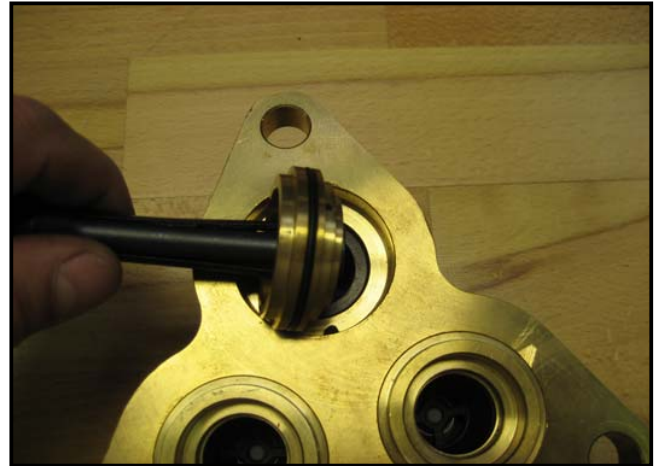
After repair refill pump with new oil.

Valves



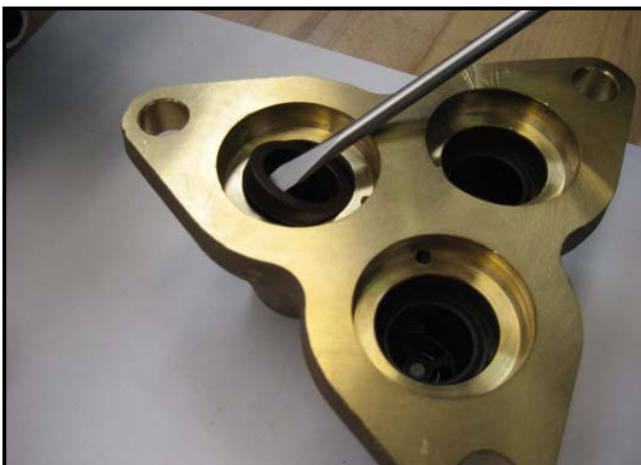
Pic. F13: Valve housing

- Dismount the valve housing from the cylinder block by the three M12 bolts.
- Be aware of the o-rings and valve parts.



Pic. F14: Thrust collar

- Be careful not to damage the surface inside when dismantling the thrust collar.
- Inspect the thrust collar for damages before mounting.



Pic. F15: Valve housing

- Carefully tip out the sleeves with an adequate puller or screwdriver and replace them. Be careful not to scratch the surface.



Pic. F16: Valve housing

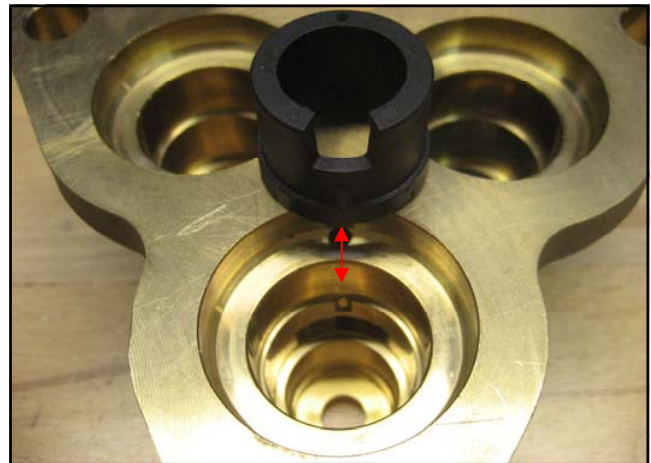
- Knock carefully on the back side of the valve seat to demount it or use an 8mm threaded pin and pull it out.
- Replace with new parts.

Valves



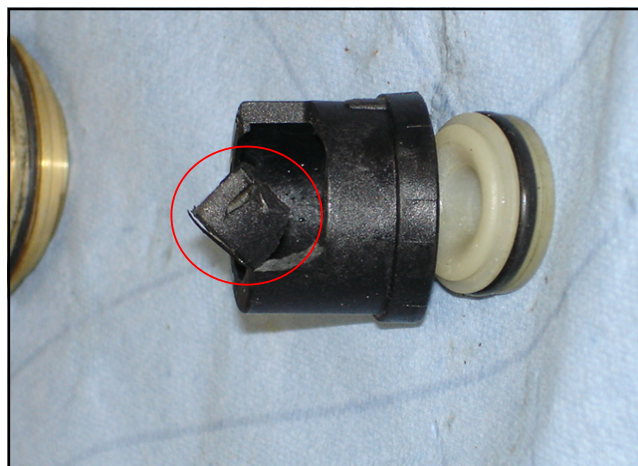
Pic. F.17: Suction valves

- Overview of the placement of suction valve parts.



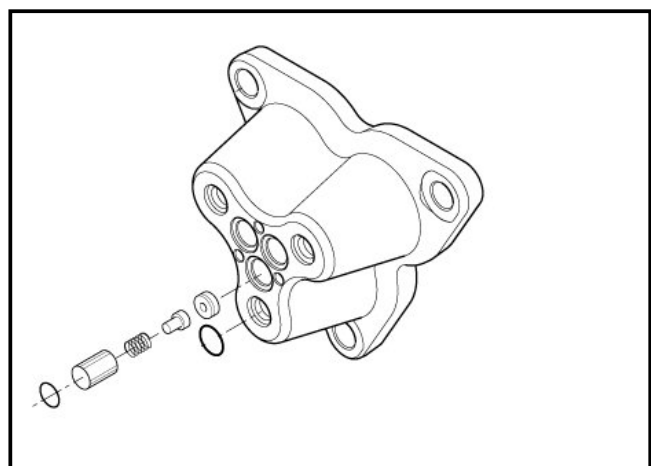
Pic. F.18: Header ring

Assemble header ring in right position. Knob on header ring must be placed in groove in cylinderhead. Drop —do not knock it into the right position.



Pic. F.19: Header ring

If the header ring is mounted wrongly and not according to instruction, there is a big risk of damaging the header ring and parts of it will block pistons and valves in the pump or get stuck in the non return valve in the unloader.



Pic. F.20: Pressure valves

- Overview of the placement of pressure valve parts

Valves



Pic. F21: Pressure valves

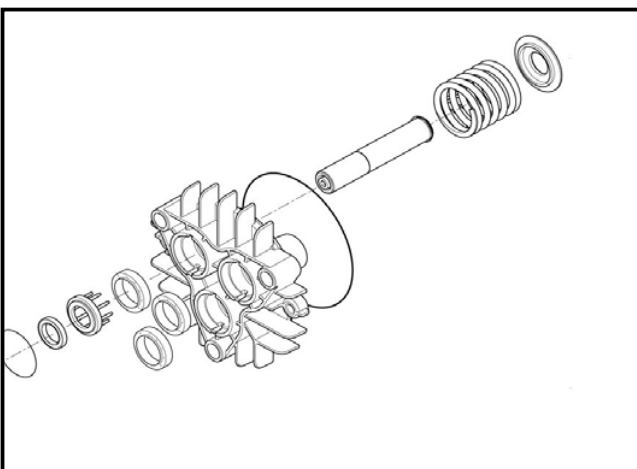
- The pressure valves can easily be taken out of the cylinder head.
- Replace with new parts if necessary.



Pic. F22: Pressure valve seat

- Take out the pressure valve seats with an adequate puller or use an 8mm threaded pin.
- Replace with new parts if necessary.

Cylinder Block



Pic. F23: Cylinder block

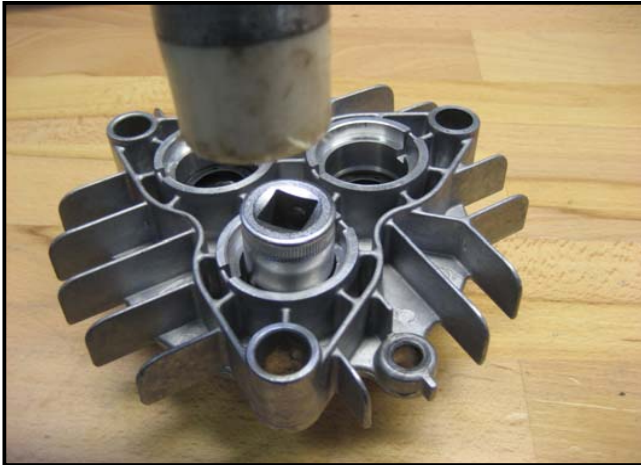
- Overview of the placement of the parts in the cylinder block.



Pic. F24: Oil Sleeves

- Take out the oil sleeves using an adequate puller or a screwdriver.
- Be careful not to damage the surface of the cylinder block.

Oil seal and piston



Pic. F25: Valve Kit 3~ - Exploded View

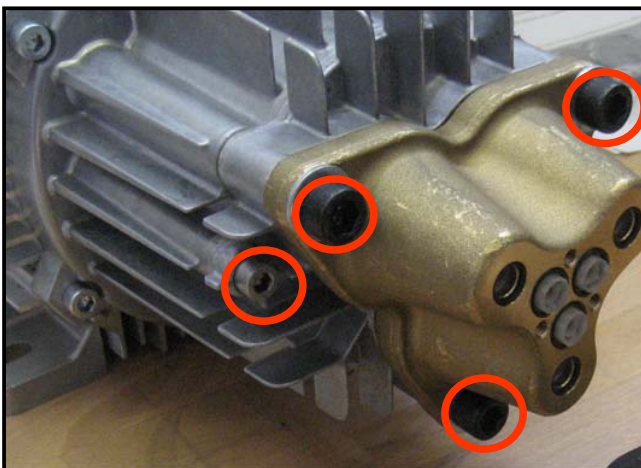
- To make replacement easier moisten the sleeves with soapy water.
- Mount the sleeves using a 19mm box spanner and a fiber hammer.



Pic. F26: Pistons

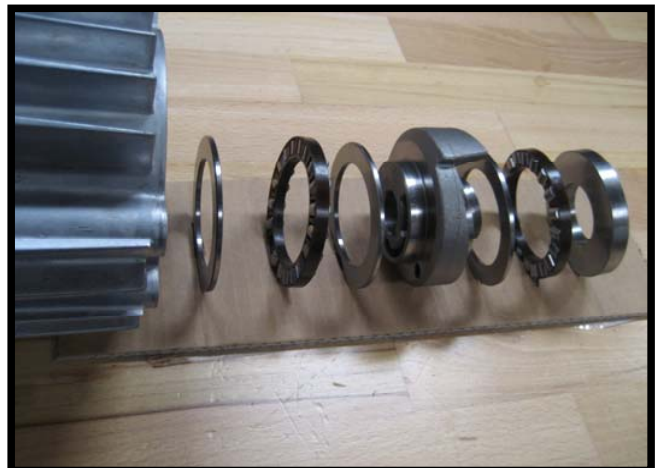
- Place sleeves, pistons and springs as shown.
- Mount the cylinder block to the D-bearing cover by the two 6mm mounting screws.

Wobble disc



Pic. F27: Pump head

- The cylinder head and the cylinder block is fastend to the D-bearing cover by two 6mm mounting bolts for the cylinder block and three 12mm bolts for the cylinder head.



Pic. F28: D-bearing cover and wobble disc

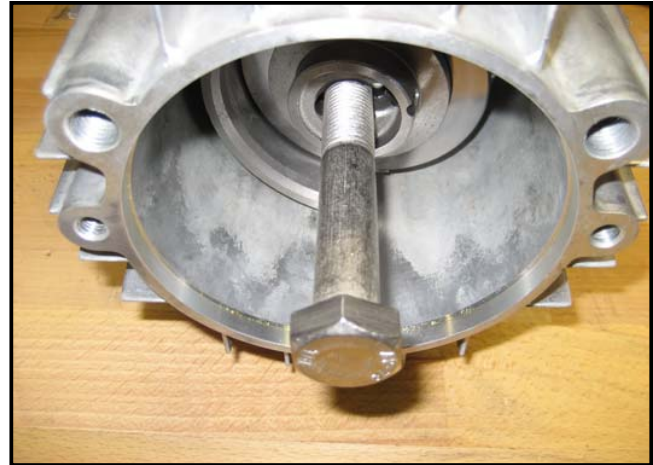
- Overview of the parts inside the D-bearing cover.

Wobble disc



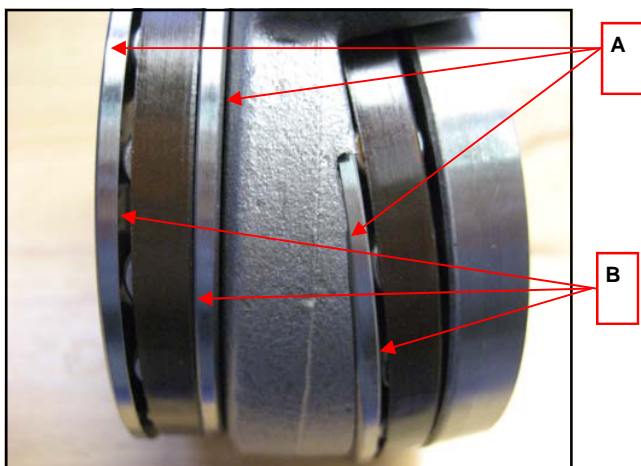
Pic. F29: Wobble disc

- The center bolt is fixing the wobble disc to the motor shaft and ensure the rotor to be kept in the right position in proportion to the stator.



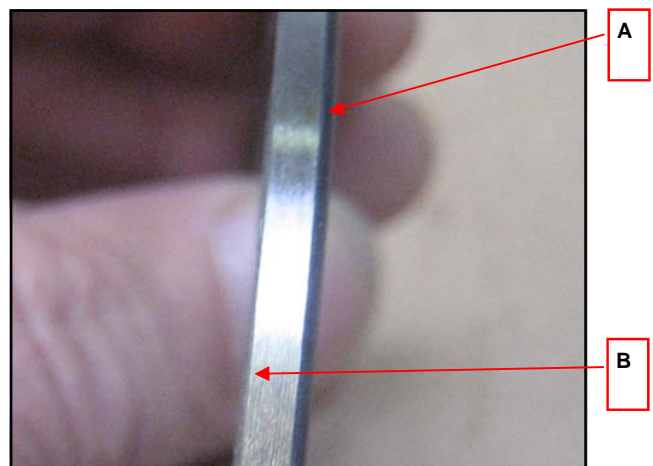
Pic. F30: Wobble disc removal

- Demount the wobble disc screwing a 1 6mm bolt into the threads. Tighten the bolt against the motorshaft and pull the wobble disc out.



Pic. F31: Wobble disc

Pic.16. Replace the complete wobble disc system and make sure parts are assembled according to instructions pic.17. & pic.18. pos. A & B

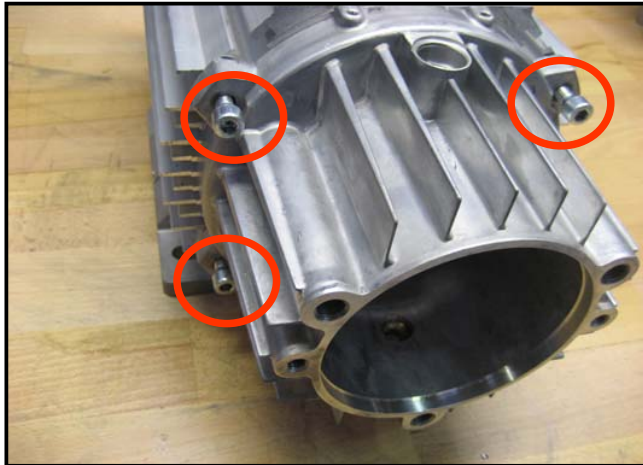


Pic. F32: Bearing track

Pic.17. The curved edge (A) of the bearing tracks must be mounted against the D-bearing cover and the wobble disc.

Pic.18. The sharpe edge (B) of the bearing track must be mounted against the bearings

D-bearing cover



Pic. F33: D-bearing cover

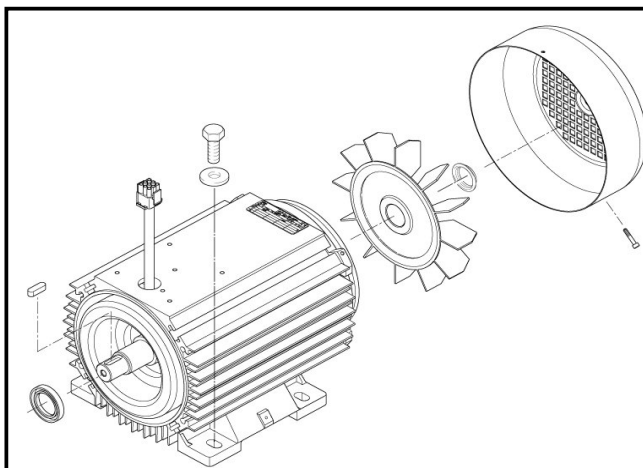
- The D-bearing cover is mounted to the Motor by four 6mm bolts.
- When the bearing is damaged, always replace the complete D-bearing cover.



Pic. F34: Oil sleeve

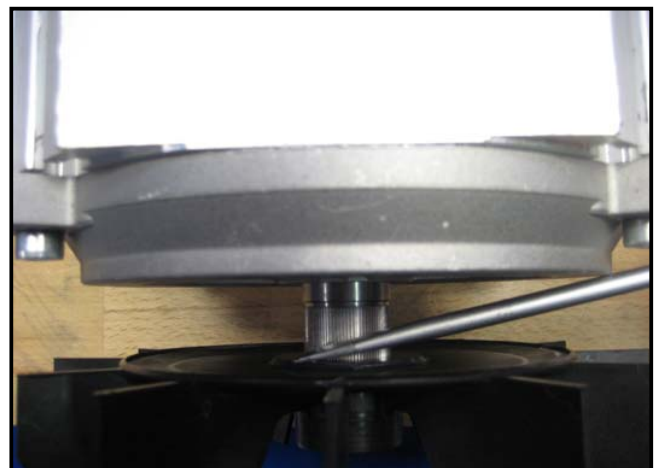
- The oil sleeve in the D-bearing cover can be demounted carefully using a screwdriver.
- Mount the oil sleeve by using an adequate box spanner and a fiber

Electrical motor



Pic. F35: Electrical Motor

- Overview of the motor parts.



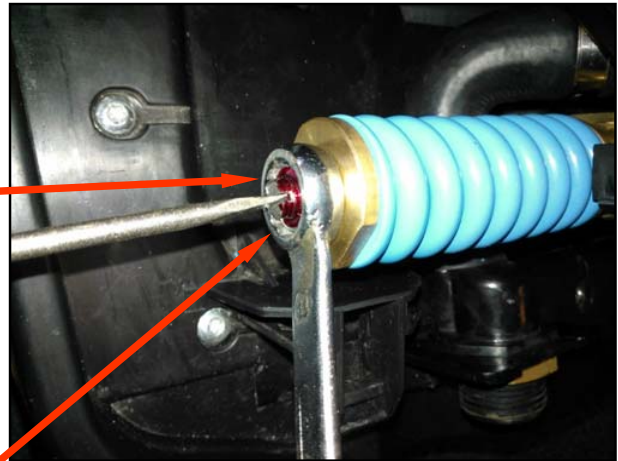
Pic. F36: fan

- The fan can be demounted by taking off the lock ring and carefully push the fan with a screwdriver.

Unloader - Retaining pressure settings.



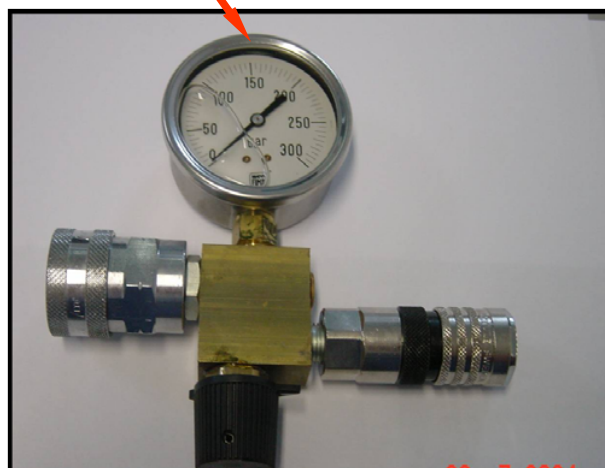
Pic. G1: Unloader spring



Pic. G2: Adjustment of unloader spring

The retaining pressure is adjusted by tightening or loosening the unloader spring.

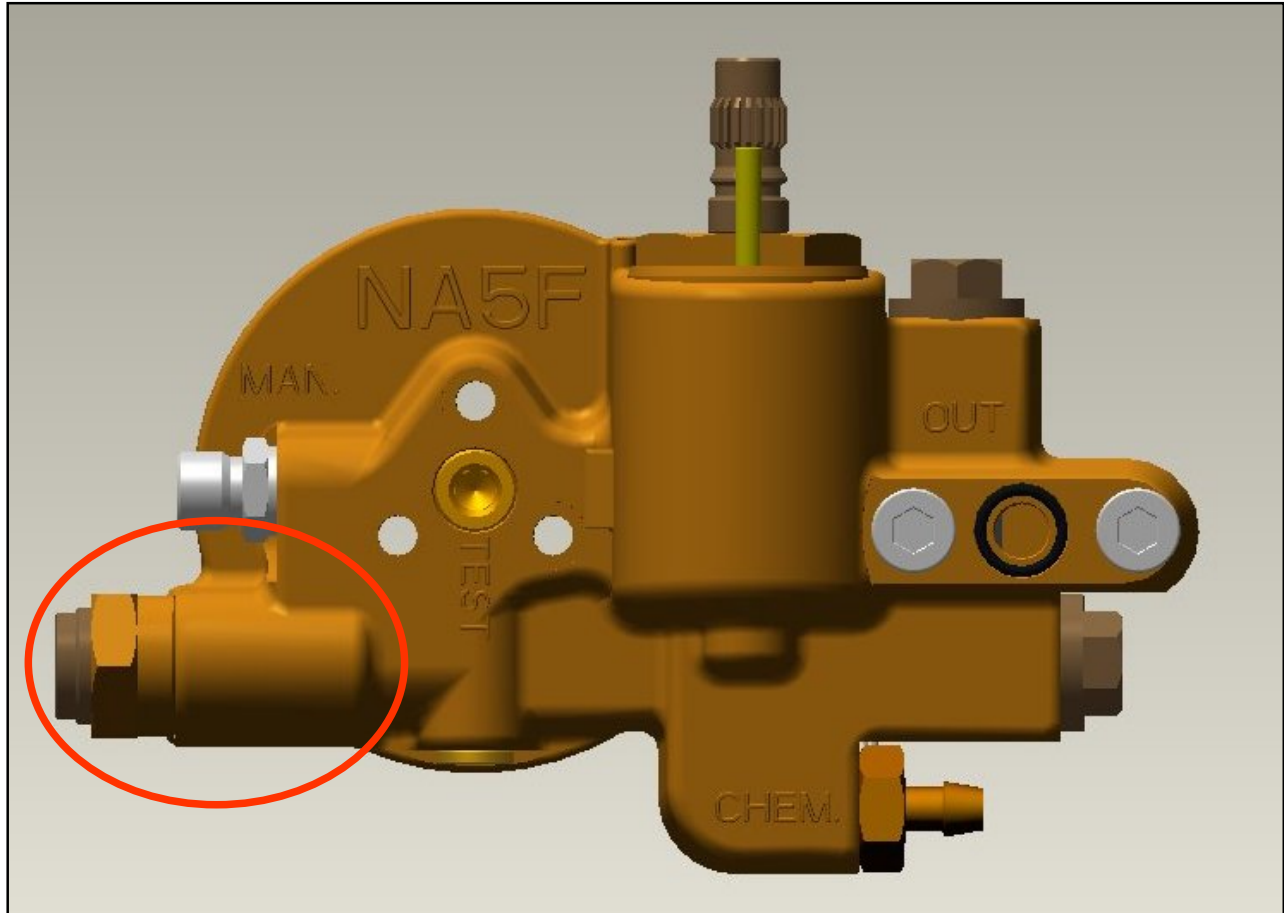
Follow the pressure values stated in the Technical data sheets in chapter B and read out the pressure on the pressure gauge with valve mounted on the pump outlet.



Pic. G3: Pressure gauge with valve.

Special tool no. 1206358

Unloader - Retaining pressure settings.



Pic. G4: Opening pressure valve.

The only Adjustment to be made on the by-pass system is the opening pressure valve (Safety valve). Always adjust the pressure to be approx 25 - 30 bar higher than normal pressure.

IMPORTANT: When torque settings are made, all parts — Pump, screws etc. must have a temperature at max. 20°C or as the surroundings.

Tool & Torque List for NA5 MPU

Pump

Description	Tool	Torque
Unloader Valve PA		
3 M6 screws for unloader valve	Unbracho 5	10 Nm
2 M8 screws for outlet fitting	Unbracho 6	20 Nm
Lock Nut	NV 13	10 Nm
Spring adjustment	NV 27	N/A
Plug/Stem assy	NV 27	40 Nm
Screws for microswitch box	Torx TX10	1 Nm
Seat for holding pressure valve	M8 screw	N/A
Seat for by pass	Mandrel and hammer	N/A
Seat for water regulation	Unbracho 6	14 Nm
Seat for pressure build up valve	Unbracho 4	10 Nm
Test Screw	Unbracho 6	14 Nm
M4 pointed screw	Unbracho 4	5 Nm

Outlet fitting

Detergent studs	NV 17	20 Nm
Venturi	NV 8	1,4 Nm

Pump Head

3 M12 screws for pump assy	Unbracho 10	65 Nm
Thrust collar	Pull out tool	N/A
Outlet valves	Pull out tool	N/A
Inlet valves	Mandrel and hammer	N/A
Primary seals	ø20 seal tool	N/A

Cylinderblock

2 M8 service screws	Unbracho 6	20 Nm
Oil seals	Ring and hammer	N/A

Wobble disc assy

M8 Screw	Unbracho 6	20 Nm
Wobble disc	M16 screw	N/A
Bearing washer	Pull tool	N/A

Motor

D-bearing cover

4 M8 stay-bolt for D-bearing cover	NV 13	20 Nm
Oil plug outlet	NV 14	10 Nm

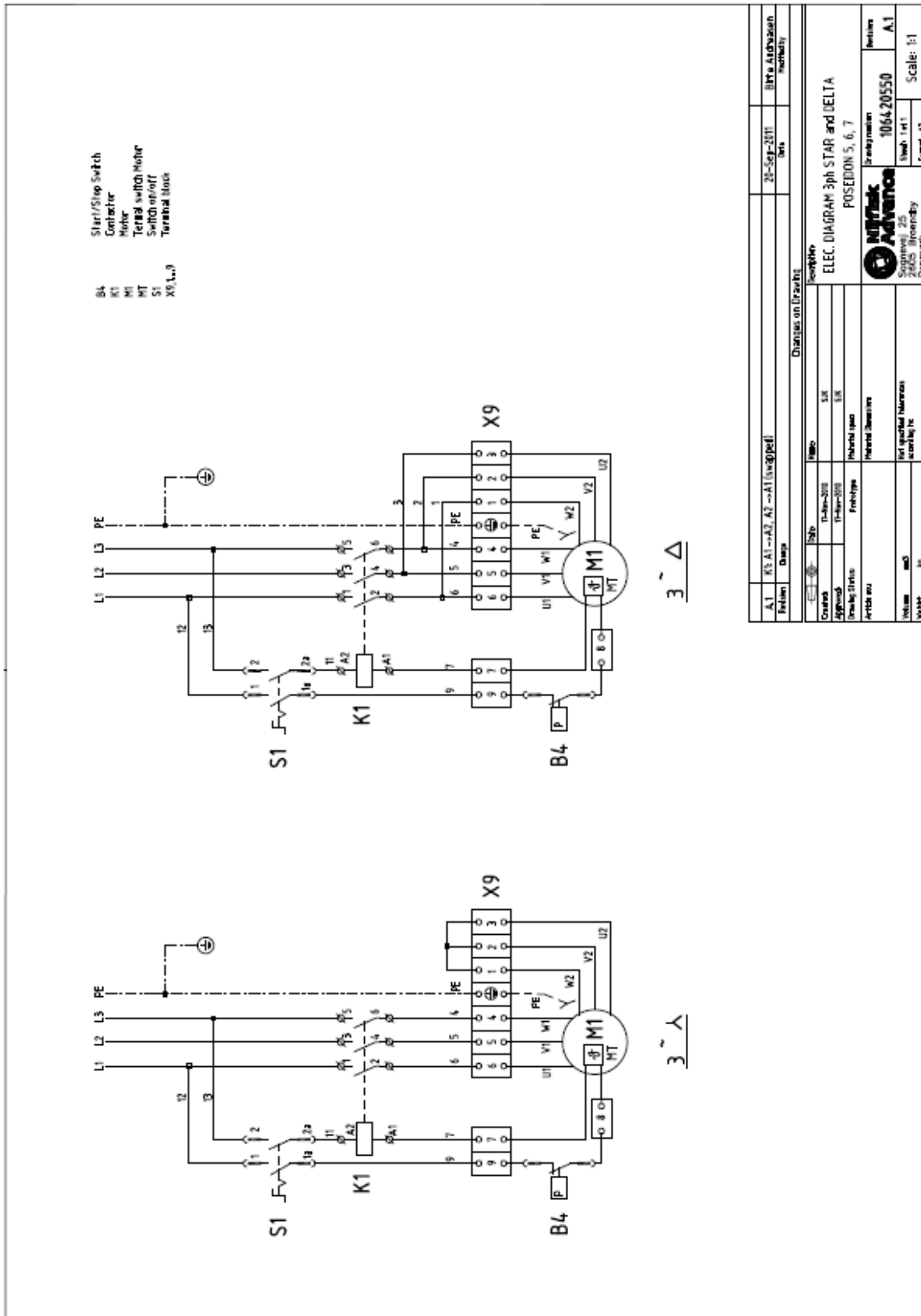
Fan

4 screws for fan cover	Screw driver *	1 Nm
Lock ring	Pliers	N/A
Fan		N/A

N-bearing cover

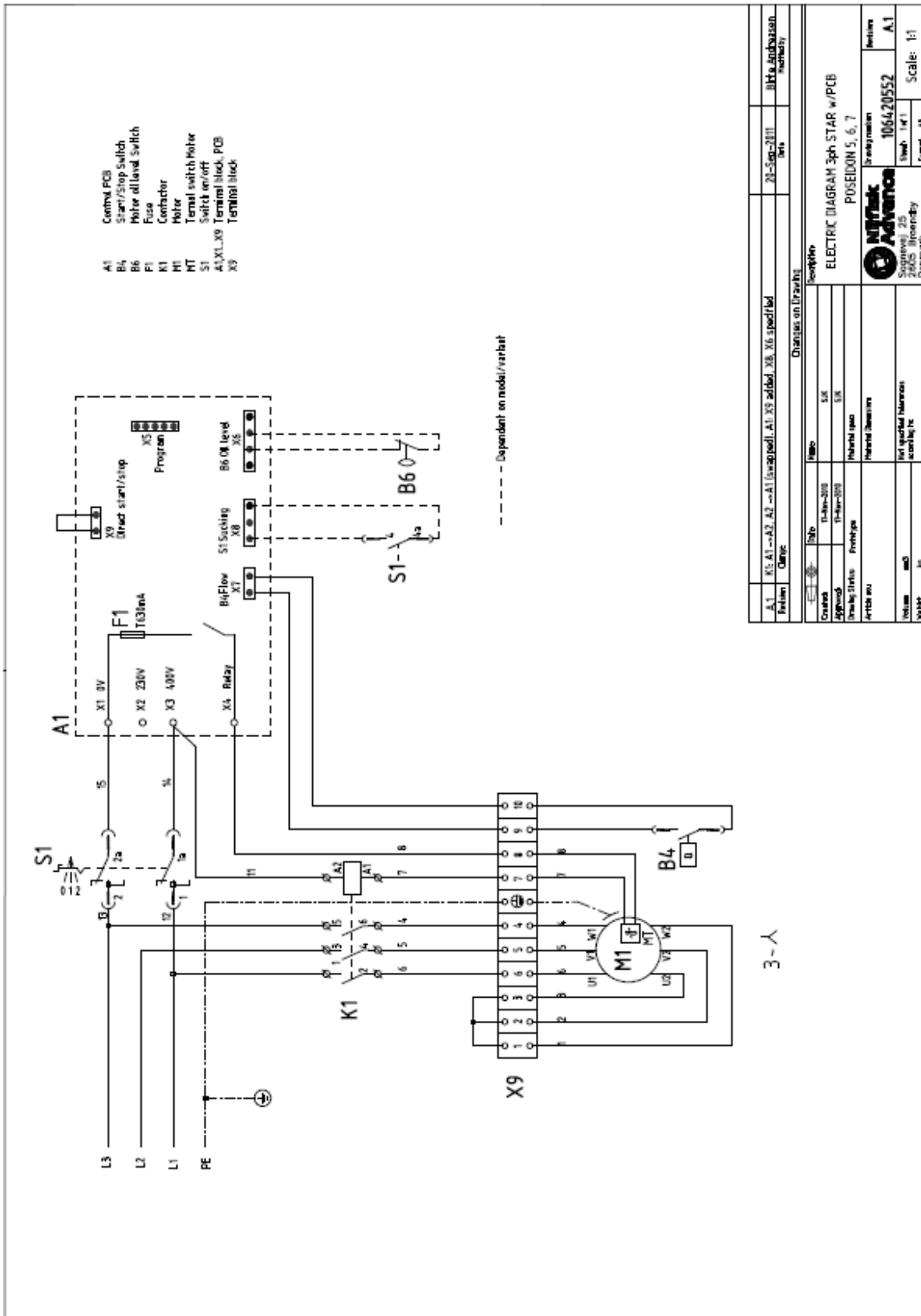
4 M8 stay-bolt for N-bearing cover	NV13	20 Nm
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106420550



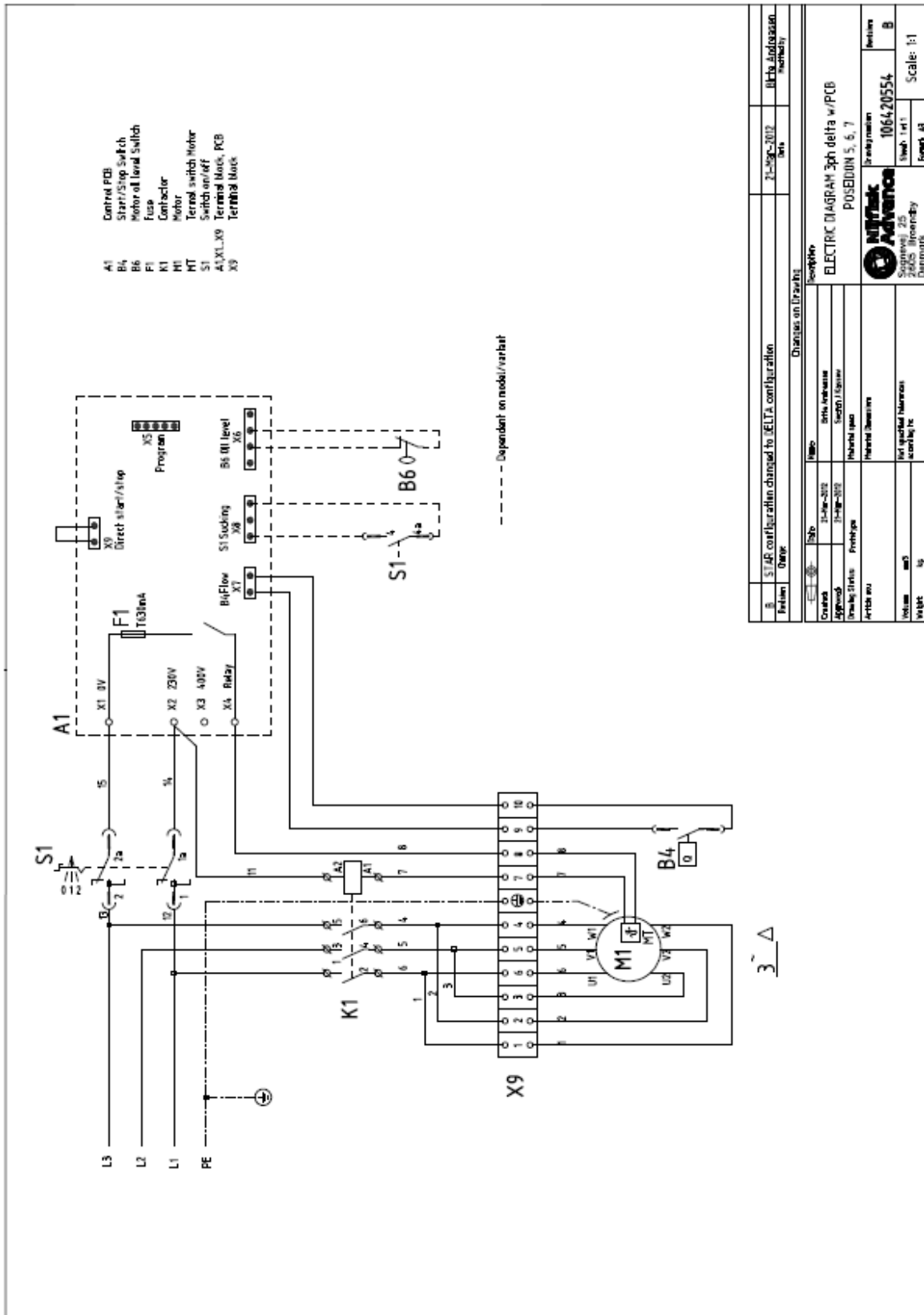
Revision		Date		Author	
A.1	R5 A1 → A2, A2 → A1 (single)	20-Sep-2011		Björn Adhvaran	Electrician
Changes on Previous					
Description					
ELEC. DIAGRAM 3ph STAR and DELTA					
POSEIDON 5, 6, 7					
Approved: 25/09/11 Drawn: 14/09/11 Checked: 14/09/11 Date: 14/09/11					
Part Number: 106420550 Scale: 1:1					

106420552

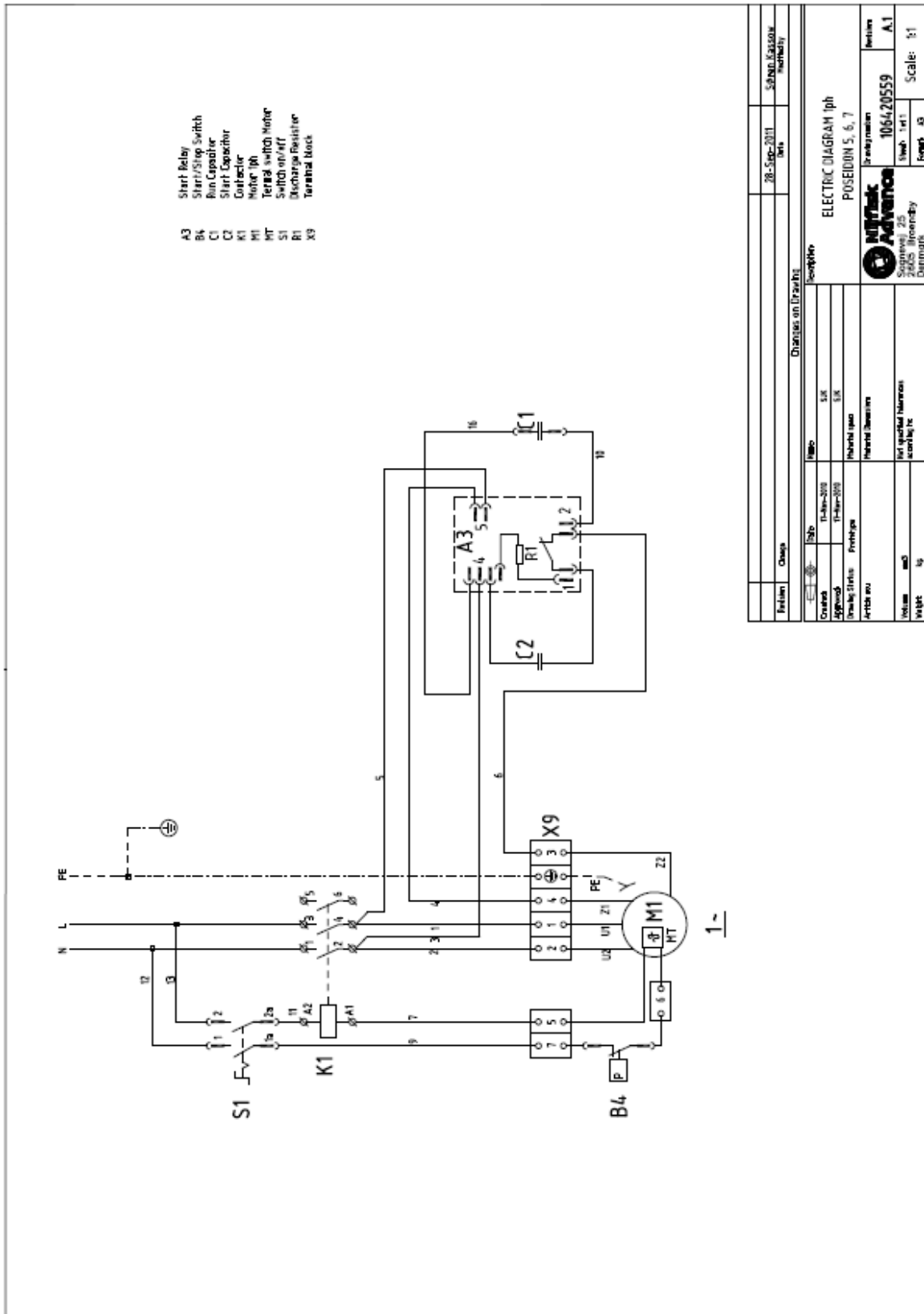


Part No.	106420552	Date	20-Sep-2011	Rev.	1.0
Part Name	Electric Diagram 3ph STAR w/PCB	Part No.	106420552	Rev.	1.0
Part No.	106420552	Date	20-Sep-2011	Rev.	1.0
Part Name	Electric Diagram 3ph STAR w/PCB	Part No.	106420552	Rev.	1.0
Part No.	106420552	Date	20-Sep-2011	Rev.	1.0
Part Name	Electric Diagram 3ph STAR w/PCB	Part No.	106420552	Rev.	1.0

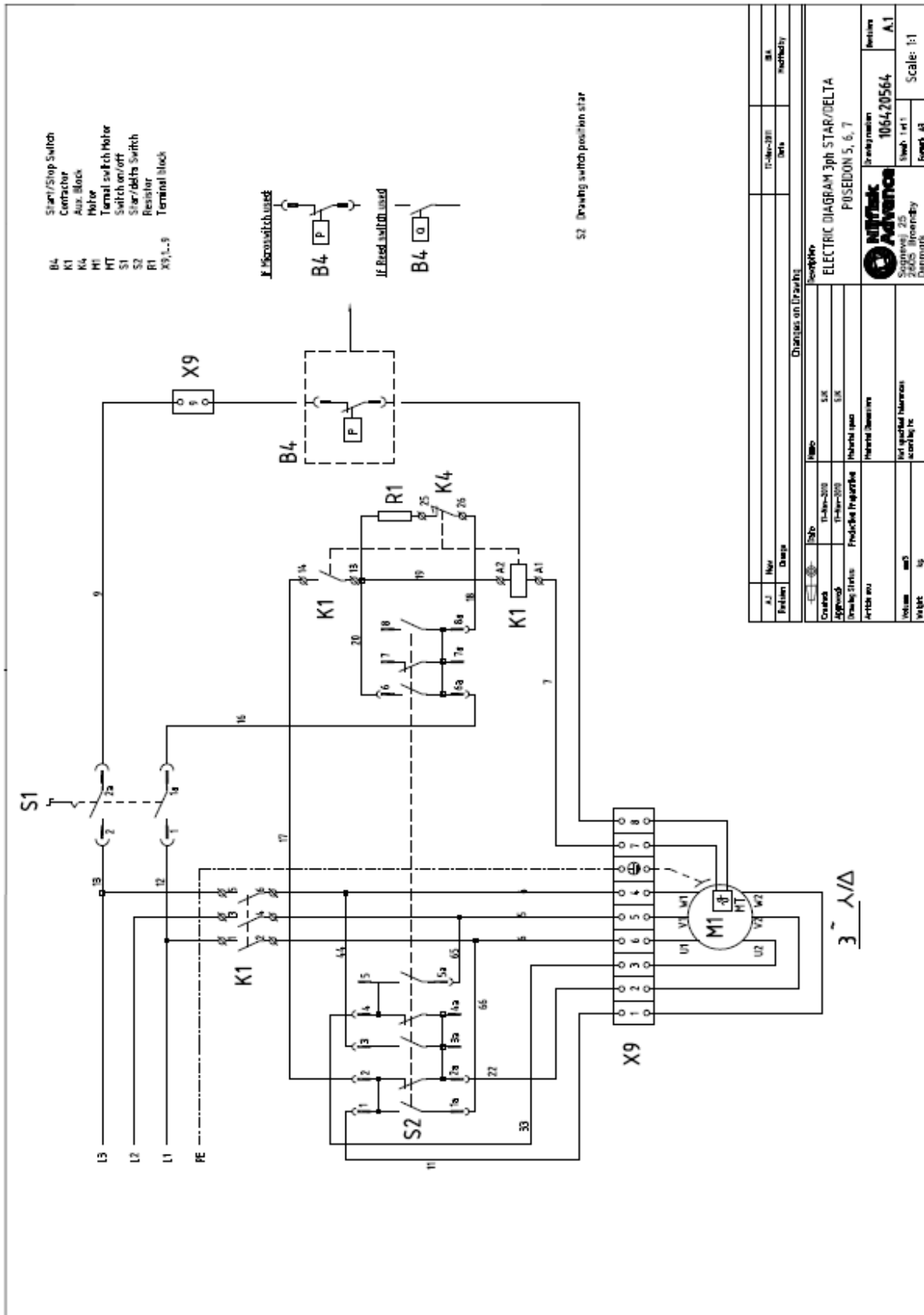
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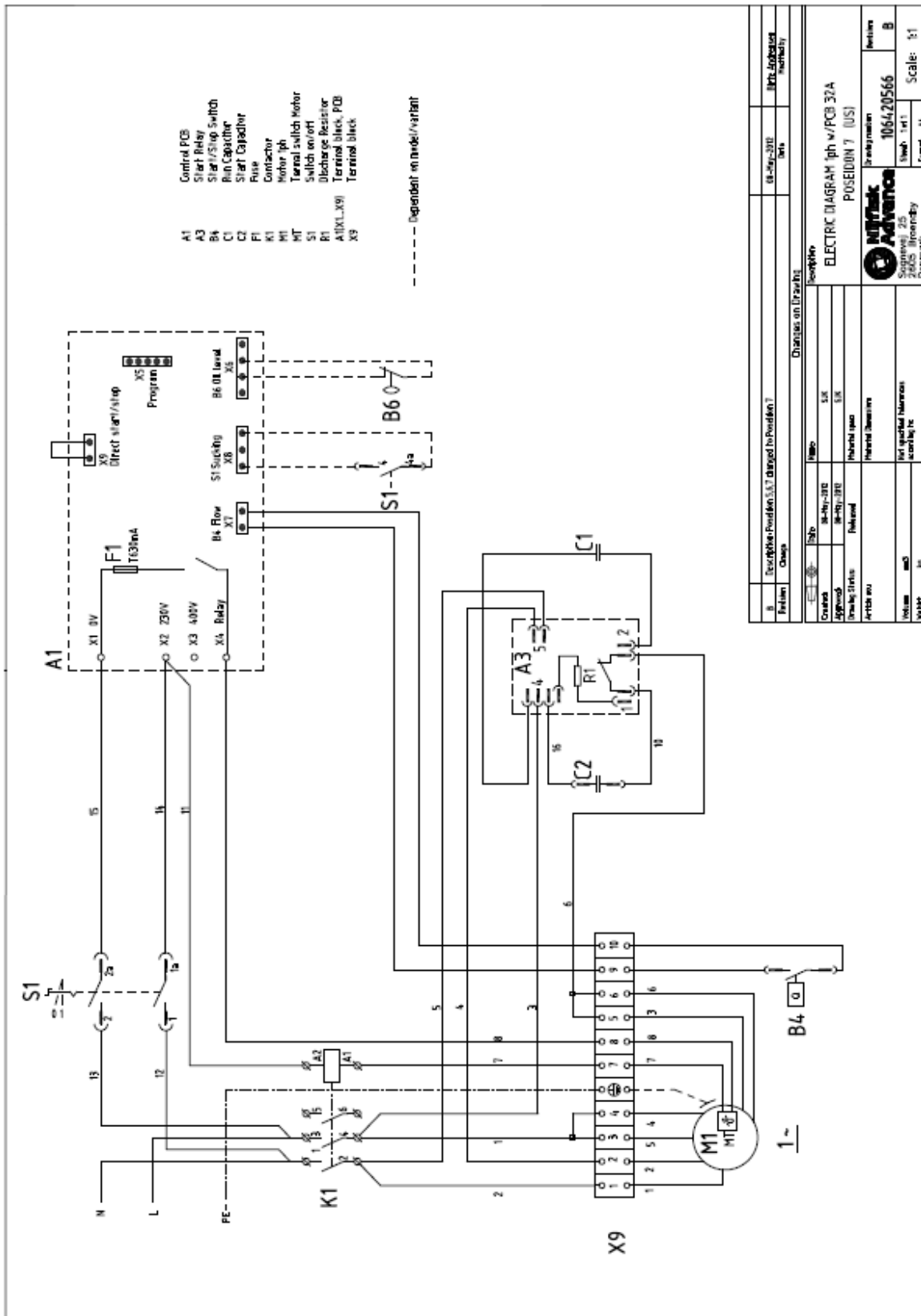
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