

9.2 Sub-Racks

Up to S/N 200,000

From S/N 200,000

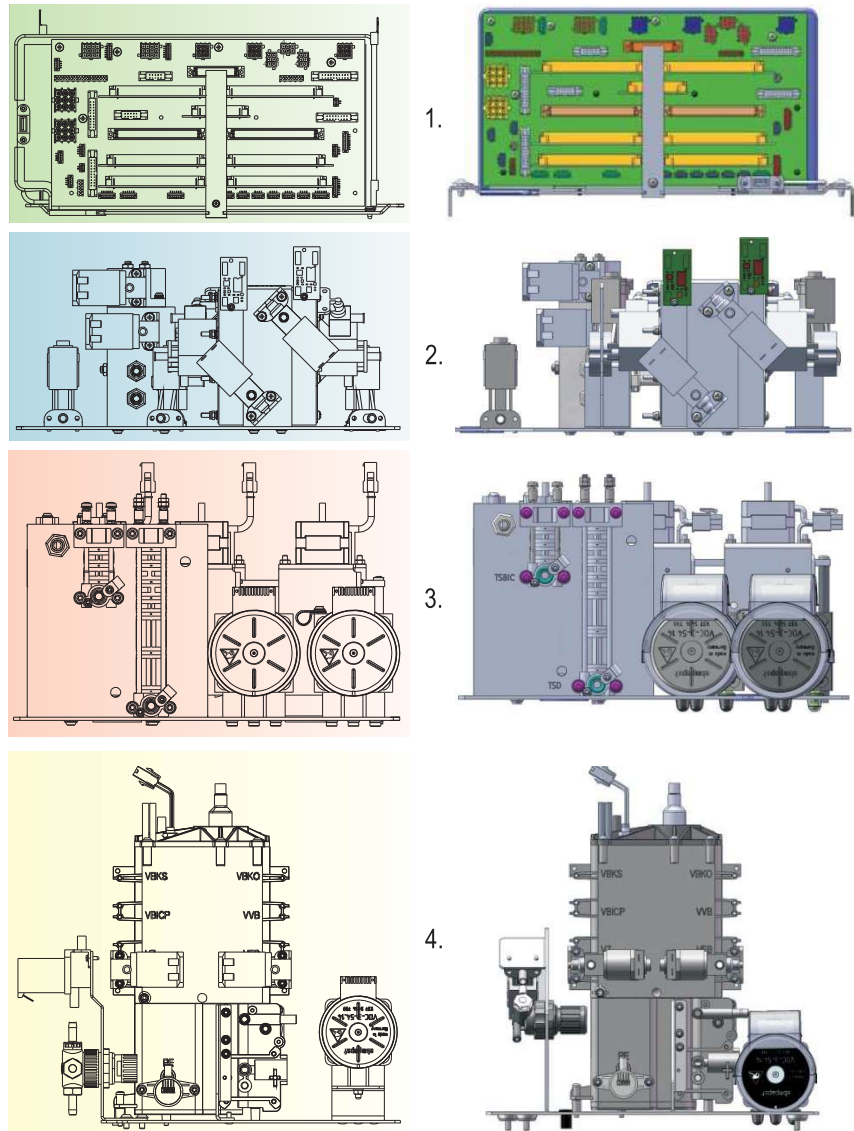


Fig. 9-1 Sub racks

Pos.	Art.No	Qty.	Description	Comments
1	-	-	Top level sub-rack	see paragraph 9.7 for single parts
2	-	-	UF sub-rack	see paragraph 9.6 for single parts
3	-	-	DF sub-rack	see paragraph 9.5 for single parts
4	-	-	Water sub-rack	see paragraph 9.4 for single parts

9.3 Solenoid Valves

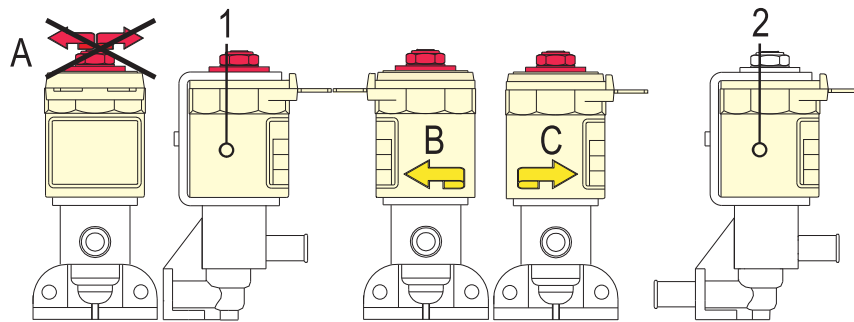


Fig. 9-2 Solenoid valves

Pos.	Art.No	Qty.	Description	Comments
1	3451902C	1	Solenoid valve 2/2 way	Connector/flange (AMK) (pay attention to above notes)
2	3451906C	1	Solenoid valve 2/2 way	Connector/Connector (AMK)

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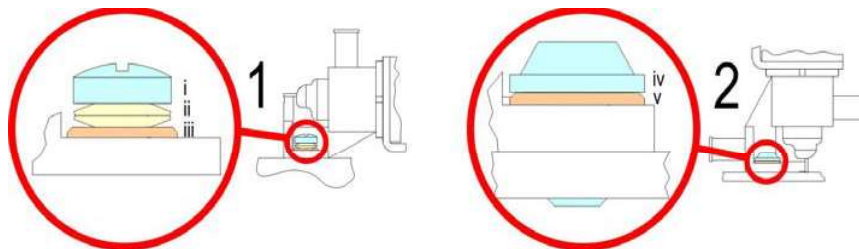


Fig. 9-3 Solenoid valves detail

Legend	
I	1 x Screw M4
II	2 x Spring Washer 4.2
III	1 x Washer 4.2
IV	1 x Screw 40 x 10
V	1 x Washer 4.2



Notes for Solenoid Valve 3451902C

Self-Locking Nut A

Do Not readjust the self-locking nut **A**, because the nut is assembled with a defined torque (1.3 Nm ±10 %)

The position of the magnet coil can be adapted to the assembly location, i.e. the coil can be carefully turned (**B** or **C**) without loosening the self-locking nut **A**. The procedure is only permissible if the coil can be turned without much effort.

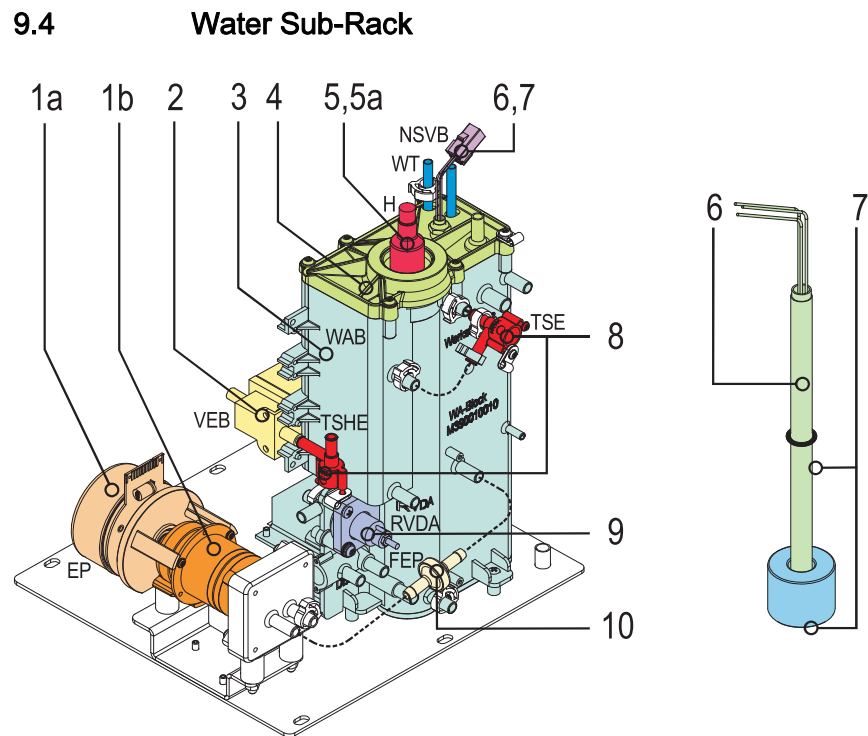


Fig. 9-4 Water sub rack up to serial number 200,000

Pos.	Art.No	Qty.	Description	Comments
1a	34560718	1	Motor for gear pump (SW 1.7.4)	see chapter 9.4.1 Gear Pump for EP (755)
1b	34560319	1	Gear pump (Micropump V2) with magnet, without motor	see chapter 9.4.1 Gear Pump for EP (755)
1	34770950	20	O-Ring 8.0 x 1.6	–
2	34561609	1	Solenoid valve 2/2 way with bypass	–
3	34561315	1	Water block without lid	–
4	34561323	1	Lid for water block	–
5	3456021B	1	Heater element 120 V/2x900 W	incl. two seals
5	3456020B	1	Heater element 240 V/2x900 W	incl. two seals
5a	34560467	1	Seal	seal only
6	34560459	1	Level sensor complete	with float ball
7	34560246	1	Float ball incl. O-ring	–
8	3451614B	1	Temperature sensor	without connector
8	34570730	1	Housing complete for temperature sensor	–
9	34561706	1	Pressure Controller 0.4 bar (RVDA)	standard machine
9	34561714	1	Pressure Controller 0.5 bar (RVDA)	HDF-online
10	34561501	5	Disposable filter 4.6 mm	–

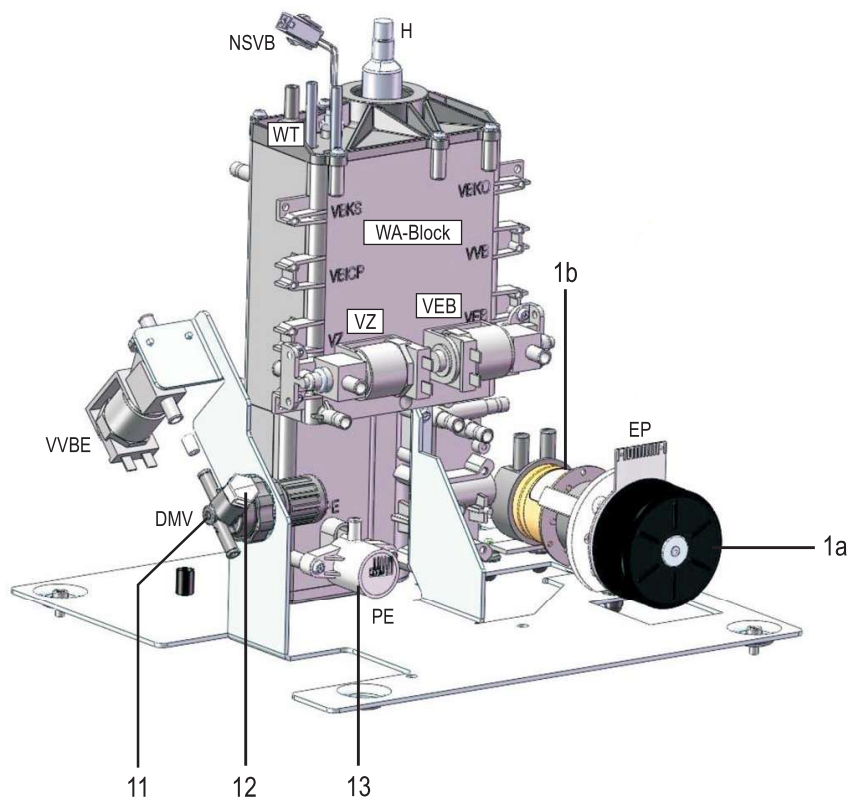


Fig. 9-5 Water sub rack from serial number 200,000

Pos.	Art.No	Qty.	Description	Comments
1a	34560718	1	Motor for gear pump (SW 1.7.4)	see chapter 9.4.1 Gear Pump for EP (755)
1b	34561919	1	Gear pump (Micropump V2) with magnet and integrated tubing connectors, without motor	see chapter 9.4.1 Gear Pump for EP (755)
11	3456168A	1	Pressure reducing valve DMV	incl. tubing and clamps
11	34565256	2m	Silicon tubing 6.0 x 1.75/ red	connection to external water supply
11	34570918	10	Single ear clamp 14.0/13.3	for secure silicon tubing red
12	3451357A	1	Stop screw	–
13	3456124A	1	Pressure sensor	–
13	34773762	10	O-ring 9.25 x 1.78	–

9.4.1 Gear Pump for EP

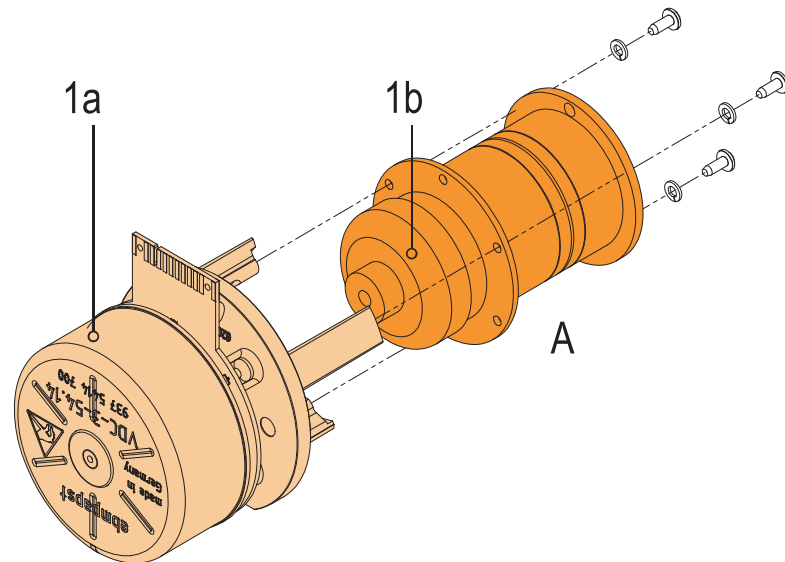


Fig. 9-6 Gear pump for EP version A

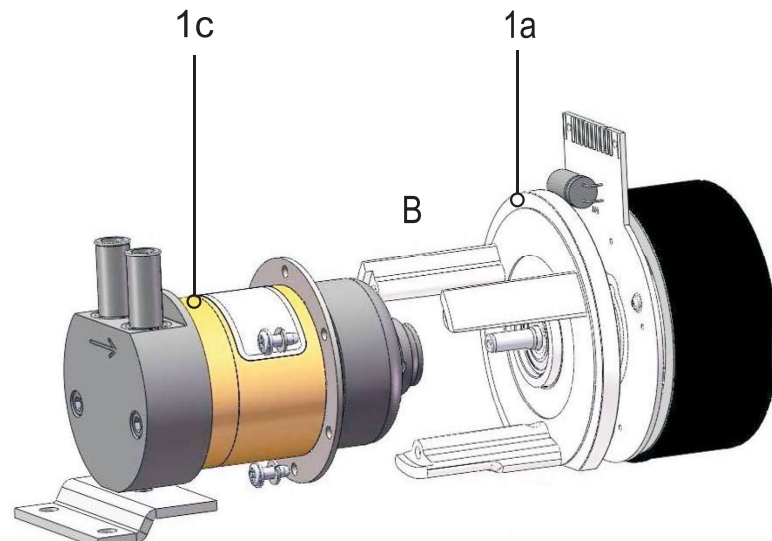


Fig. 9-7 Gear pump for EP version B

Pos.	Art.No	Qty.	Description	Comments
1a	34560718	1	Motor for gear pump (SW 1.7.4)	–
1b	34560319	1	Gear pump (Micropump V2) with magnet, without motor	Micropump Version 2 for EP only (see A in figure)
1c	34561919	1	Gear pump (Micropump V2) with magnet and integrated tubing connectors, without motor	Micropump Version 2 for EP only (see B in figure) from SN 203659; 300767

9.5 DF Sub-Rack

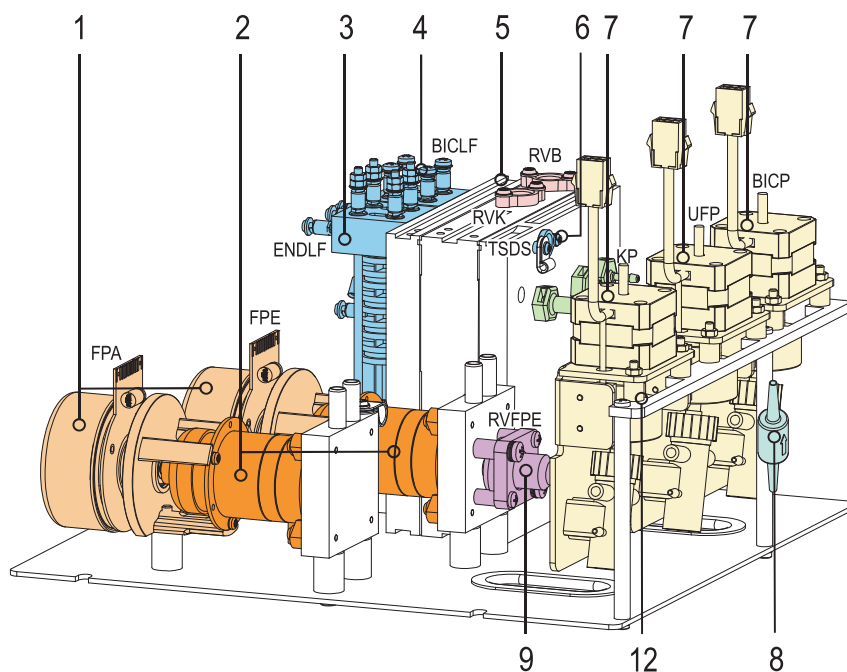


Fig. 9-8 DF sub rack up to serial number 200,000

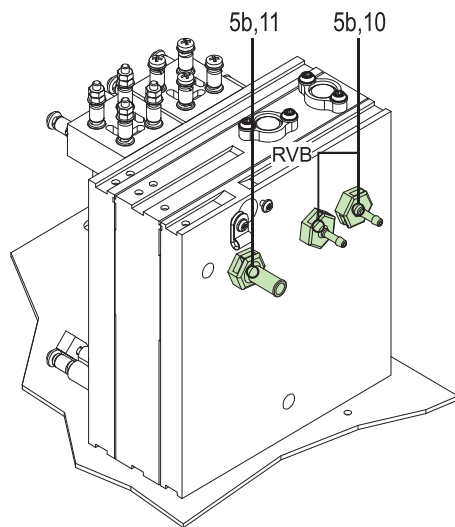


Fig. 9-9 DF block

Pos.	Art.No	Qty.	Description	Comments
1	34560718	1	Motor for gear pump (SW 1.7.4)	see chapter 9.5.1 Gear Pump for FPE/FPA (761)
2	34515330	1	Gear pump (Micropump V1) with magnet, without motor	see chapter 9.5.1 Gear Pump for FPE/FPA (761)
2a	34770950	20	O-ring 8.0 x 1.6	-
2b	34771140	20	O-ring 3.1 x 1.6	-
3	3456103A	1	END conductivity sensor version 2	with temperature sensor

Pos.	Art.No	Qty.	Description	Comments
4	3456102A	1	Bicarbonate conductivity sensor version 2	with temperature sensor
5	34561765	–	DF Block	–
5a	34770925	5	Plug	–
5b	34770852	5	O-ring 11.1 x 1.6	–
5c	34771050	10	Pressure spring 500 mmHg	–
5d	34772928	3	Centre disc	–
5e	34771085	5	Seal	–
6a	34570373	10	Plug (long)	–
6b	3451614B	1	Temperature sensor	without connector
6c	3477104A	10	O-ring 8.3 x 2.4	–
7	–	–	Piston pumps	see chapter 9.5.2 Piston Pumps (763)
8	34514988	1	Nonreturn valve, incl. 2 x tubing clamps, 2 x cable ties	nonreturn valve RV necessary for UFP
9	34561722	1	Pressure Controller 1.3 Bar	–
9	34570683	10	O-Ring 4.47 x 1.78	–
10	3477103A	2	Tubing connector \varnothing 3.5 x 1/8"	plastic
11	3451916A	5	Tubing connector \varnothing 8 x 1/8"	plastic
12	34570799	2	Vibration damper	–

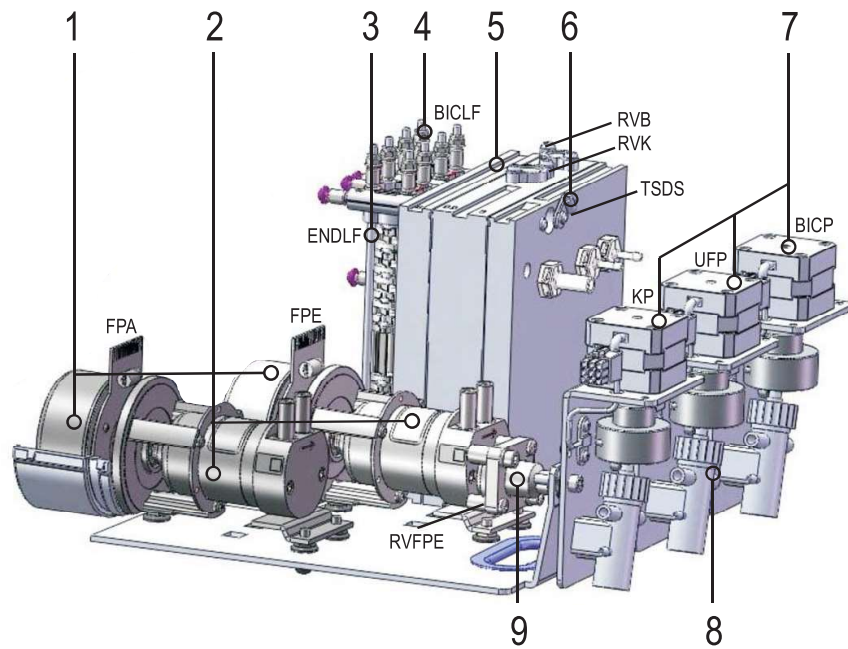


Fig. 9-10 DF sub rack from serial number 200,000 side view

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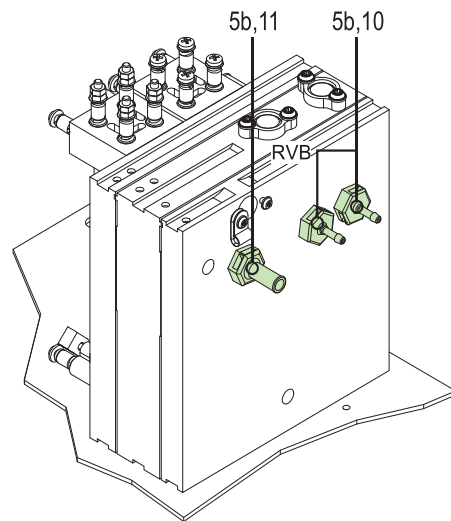


Fig. 9-11 DF block

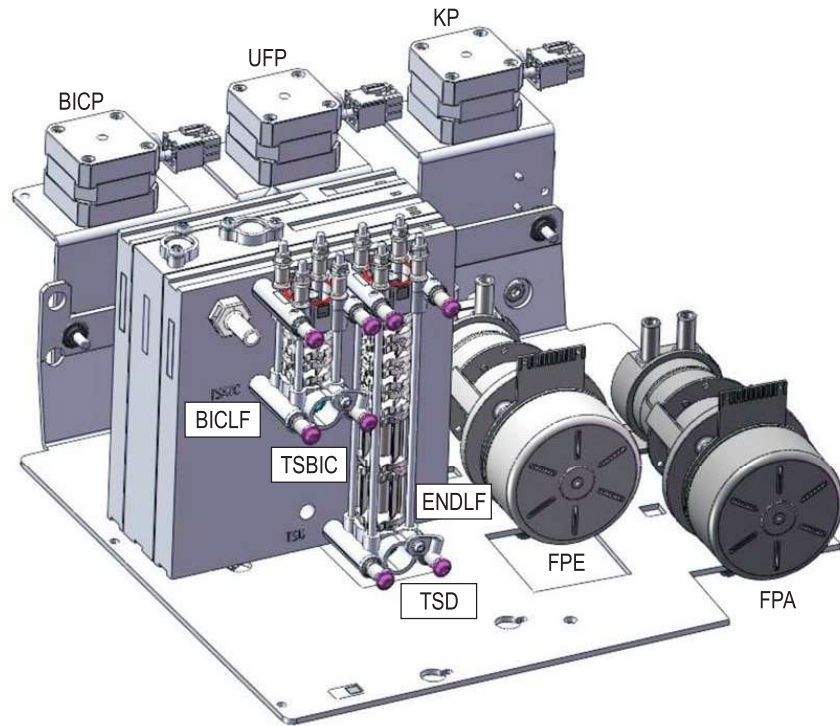


Fig. 9-12 DF sub rack from serial number 200,000 front view

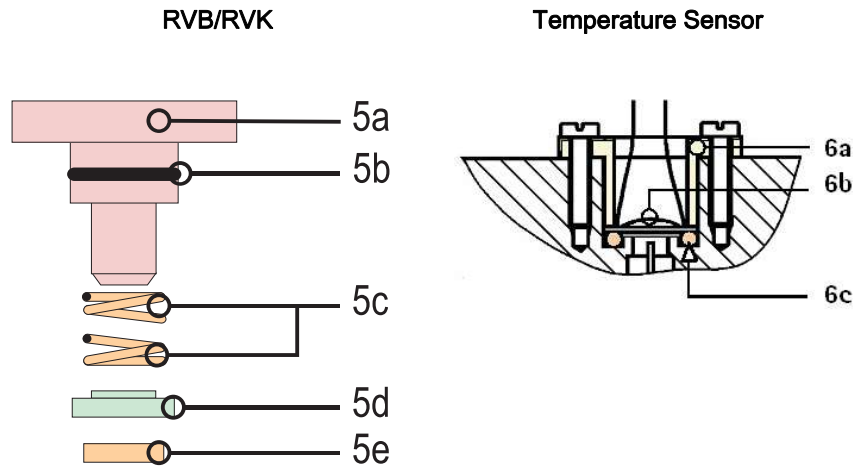


Fig. 9-13 RVB/RVK and temperature sensor

Pos.	Art.No	Qty.	Description	Comments
1	34560718	1	Motor for gear pump (SW 1.7.4)	see chapter 9.5.1 Gear Pump for FPE/FPA (761)
2	34561927	1	Gear pump (Micropump V1) FPE only with magnet and tubing connector, without motor	see chapter 9.5.1 Gear Pump for FPE/FPA (761)
2	34561935	1	Gear pump (Micropump V1) FPA only with magnet and tubing connector, without motor	see chapter 9.5.1 Gear Pump for FPE/FPA (761)
2a	34770950	20	O-ring 8.0 x 1.6	-
2b	34771140	20	O-ring 3.1 x 1.6	-

Pos.	Art.No	Qty.	Description	Comments
3	3456103A	1	END conductivity sensor version 2	with temperature sensor
4	3456102A	1	Bicarbonate conductivity sensor version 2	with temperature sensor
5	34561765	–	DF block	–
5a	34770925	5	Plug	–
5b	34770852	5	O-ring 11.1 x 1.6	–
5c	34771050	10	Pressure spring 500 mmHg	–
5d	34772928	3	Centre disc	–
5e	34771085	5	Seal	–
6a	34570373	10	Plug (long)	–
6b	3451614B	1	Temperature sensor	without connector
6c	3477104A	10	O-ring 8.3 x 2.4	–
7	–	–	Piston pumps	see chapter 9.5.2 Piston Pumps (763)
8	34514988	1	Nonreturn valve RV, incl. 2 x tubing clamps, 2 x cable ties	Nonreturn valve RV necessary for UFP
9	34561722	1	Pressure Controller 1,3 bar	–
9	34570683	10	O-Ring 4.47 x 1.78	–
10	3477103A	2	Tubing connector Ø 3.5 x 1/8"	plastic
11	3451916A	5	Tubing connector Ø 8 x 1/8"	plastic

9.5.1 Gear Pump for FPE/FPA

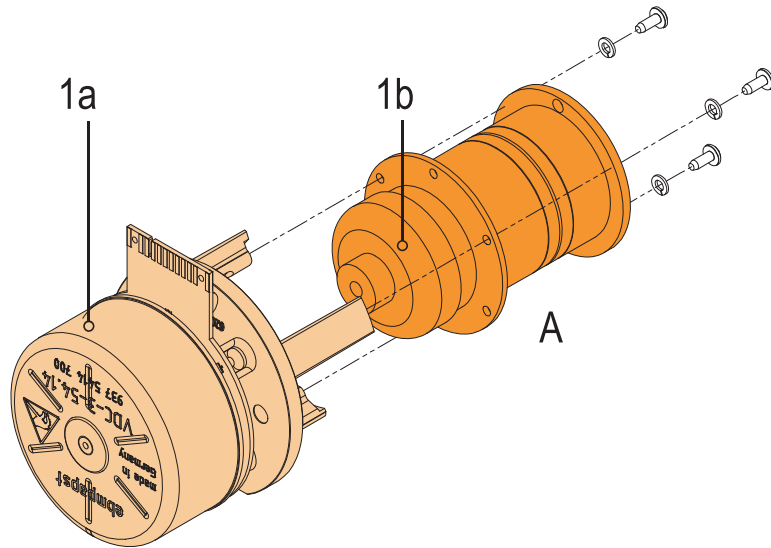


Fig. 9-14 Gear pump (Micropump V1) FPE/FPA

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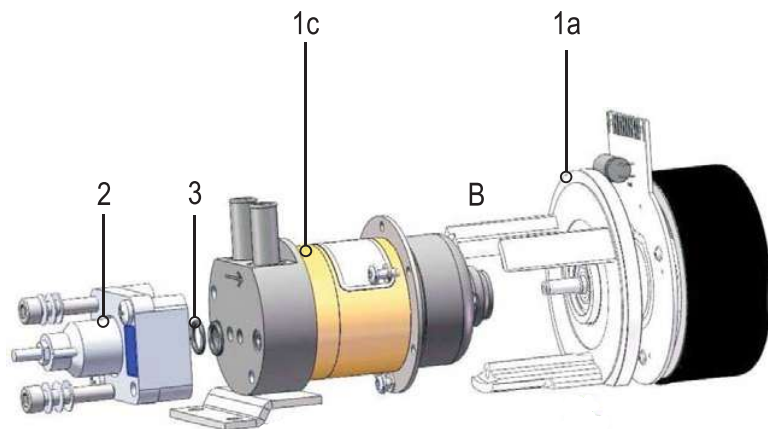


Fig. 9-15 Gear pump (Micropump V1) FPE only

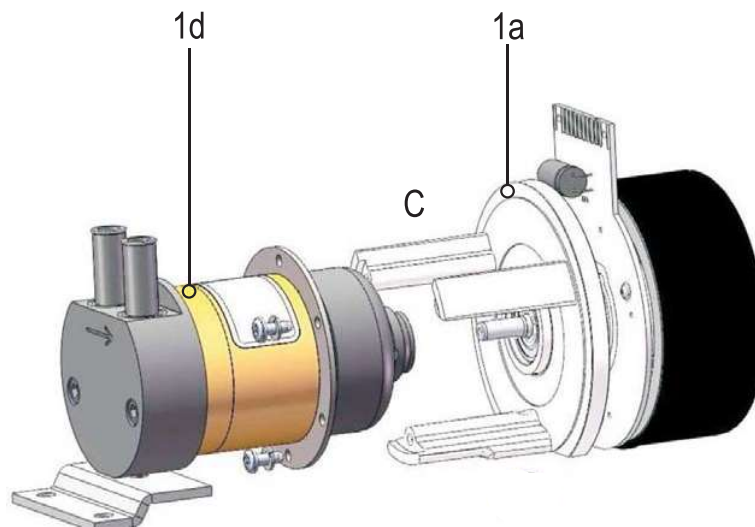


Fig. 9-16 Gear pump (Micropump V1) FPA only

Pos.	Art.No	Qty.	Description	Comments
1a	34560718	1	Motor for gear pump (SW 1.7.4)	–
1b	34515330	1	Gear pump (Micropump version 1) FPE/FPA with magnet, without motor	See A in figure
1c	34561927	1	Gear pump (Micropump V1) FPE only with magnet and tubing connector, without motor	See B in figure from SN 203659; 300767
1d	34561935	1	Gear pump (Micropump V1) FPA only with magnet and tubing connector, without motor	See C in figure from SN 203659; 300767
2	34561722	1	Pressure Controller 1.3 bar	–
3	34570683	10	O-ring 4.47 x 1.78	–

9.5.2 Piston Pumps

Reed sensor in machines up to serial numbers 100413/150224

Hall sensor in machines from serial numbers 100414/150225

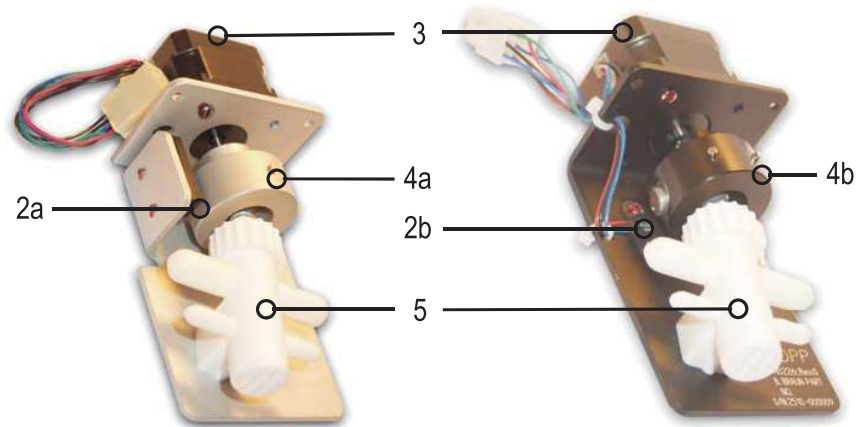


Fig. 9-17 Reed/Hall sensor

Pos.	Art.No	Qty.	Description	Comments
1	-	1	Piston pump	only separate parts available
2a	34519246	1	Reed sensor complete	-
2b	34561480	1	Hall sensor	-
3	3456055B	1	Motor for piston pump	-
4a	34560572	1	Bell joint for piston pump (Reed sensor)	1 magnet
4b	34561471	1	Bell joint for piston pump (Hall sensor)	2 magnets
5	34560602	1	Pump body for piston pump	-
-	7703848	1	Assembly jig (motor piston pump)	required for motor assembly

9.6 UF Sub-Rack

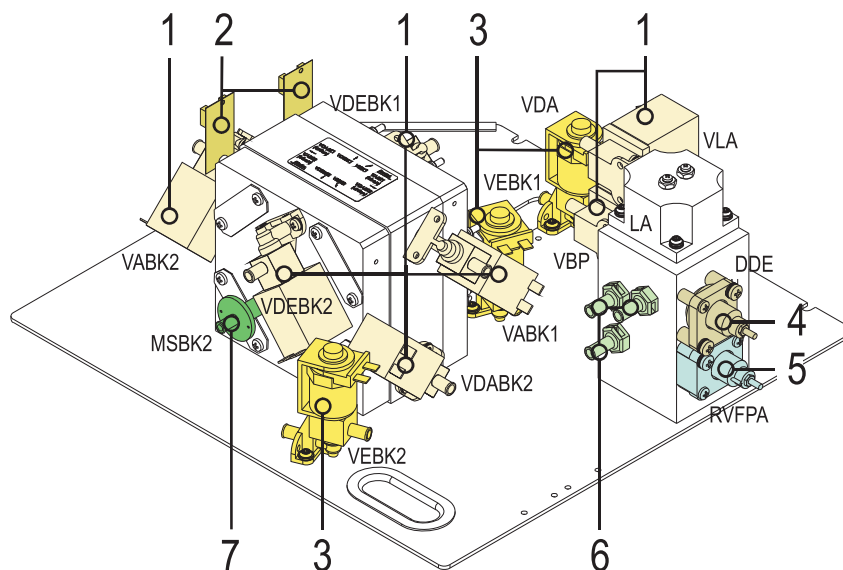


Fig. 9-18 UF sub-rack up to serial number 200,000

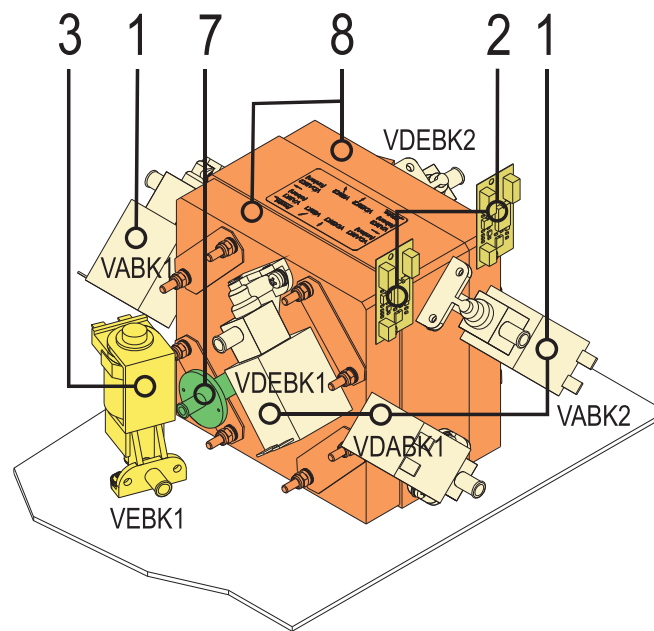


Fig. 9-19 UF block up to serial number 200,000

Pos.	Art.No	Qty.	Description	Comments
1	3451902C	1	Solenoid valve 2/2 way	connector/flange (AMK)
1	34770852	5	O-ring 11.1 x 1.6	-
2	3451665A	1	Membrane position sensor board	single exchange possible
3	3451906C	1	Solenoid valve 2/2 way	connector/connector (AKM)

Pos.	Art.No	Qty.	Description	Comments
4/5/6	-	-	-	see chapter 9.6.1 Air Separator Assembly Group (767)
7	3451909A	1	Coil	from serial numbers <200,000 or <300,000
7	34770976	10	O-ring 15.6 x 1.78	-
8	34519203	1	Balance chamber outer part	from serial numbers <200,000 or <300,000
-	3451897A	1	Repair kit balance chamber	for complete replacement of both membranes, incl. all O-rings/assembly parts (self-locking nuts, screws, springs etc.)
-	3451615A	2	Membrane for balance chamber	-
-	34570195	20	Tubing clamp SNP-1.5 Ø 7-8 mm	plastic
-	34570209	20	Tubing clamp SNP-4 Ø 10-11 mm	plastic

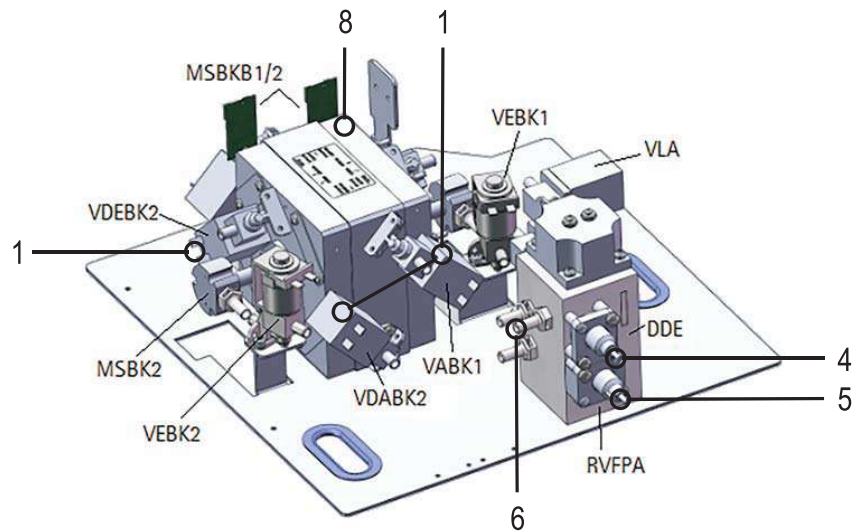


Fig. 9-20 UF sub-rack from serial number 200,000, view 1

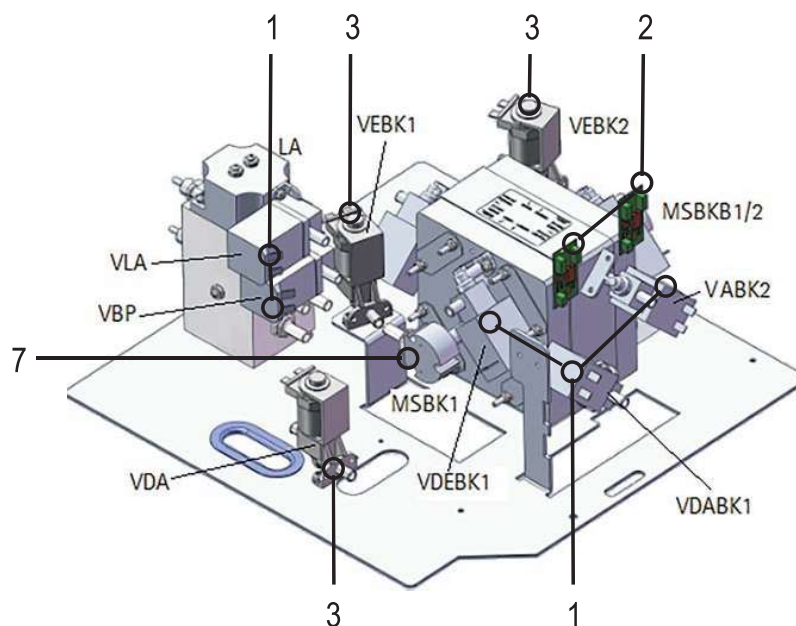


Fig. 9-21 UF sub-rack from serial number 200,000, view 2

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Pos.	Art.No	Qty.	Description	Comments
1	3451902C	1	Solenoid valve 2/2 way	connector/flange (AKM)
1	34770852	5	O-ring 11.1 x 1.6	–
2	3451665A	2	Membrane position sensor board	exchange as pair only
3	3451906C	1	Solenoid valve 2/2 way	connector/connector (AKM)
4/5/6	–	–	–	see chapter 9.6.1 Air Separator Assembly Group (767)
7	34561889	1	Coil	from serial number 200,000 or 300,000
7	34770976	10	O-ring 15.6 x 1.78	–
8	34561625	1	Balance chamber outer part	from serial number 200,000 or 300,000
–	3451897A	1	Repair kit balance chamber	for complete replacement of both membranes, incl. all O-rings/assembly parts (self-locking nuts, screws, springs etc.)
–	3451615A	2	Membrane for balance chamber	–
–	34570195	20	Tubing clamp SNP-1.5 Ø 7-8 mm	plastic
–	34570209	20	Tubing clamp SNP-4 Ø 10-11 mm	plastic

9.6.1 Air Separator Assembly Group

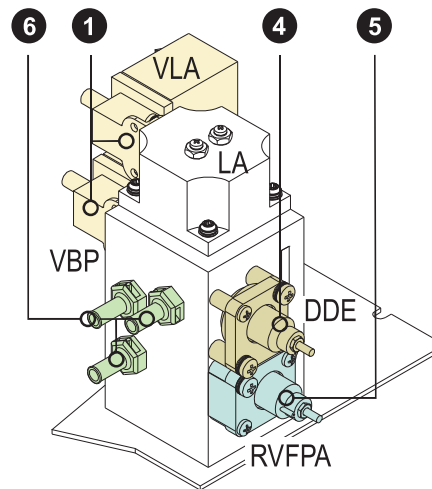


Fig. 9-22 Air separator assembly group, front view

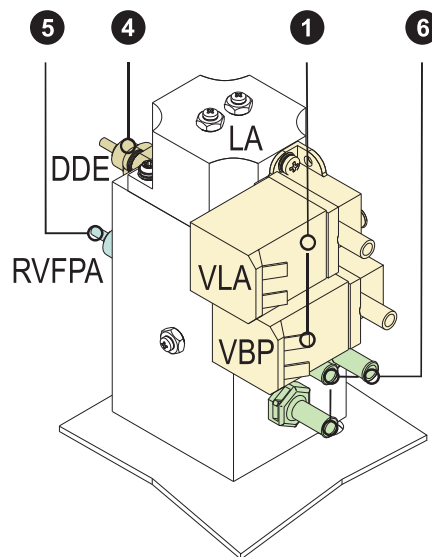


Fig. 9-23 Air separator assembly group, rear view

Pos.	Art.No	Qty.	Description	Comments
1	3451902C	1	Solenoid valve 2/2 way	connector/flange (AKM)
1/6	34770852	5	O-ring 11.1 x 1.6	-
4	34561706	1	Pressure controller 0.4 bar (DDE)	-
4/5	34570683	10	O-ring 4.47 x 1.78	-
5	34561722	1	Pressure controller 1.3 bar (RVFPA)	-
6	3451916A	5	Tubing connector 8 x 1/8"	plastic

9.7 Top Level Sub-Rack

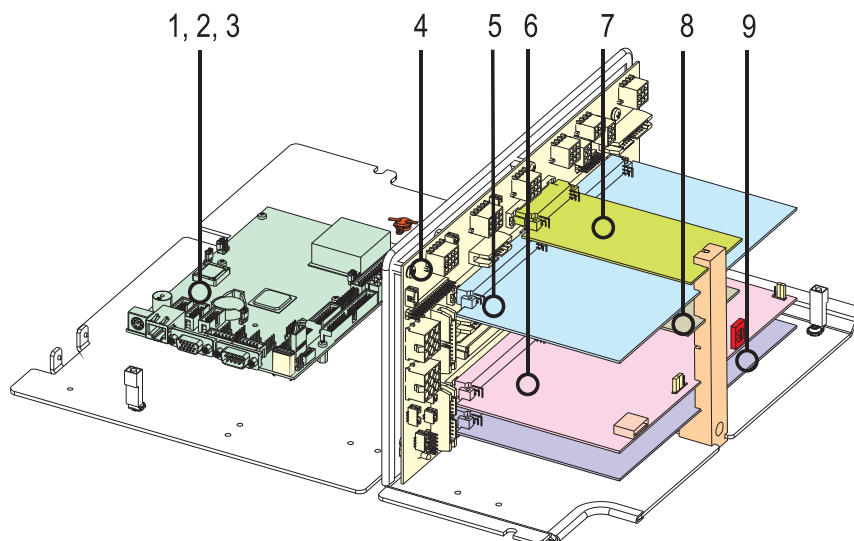


Fig. 9-24 Top level sub-rack

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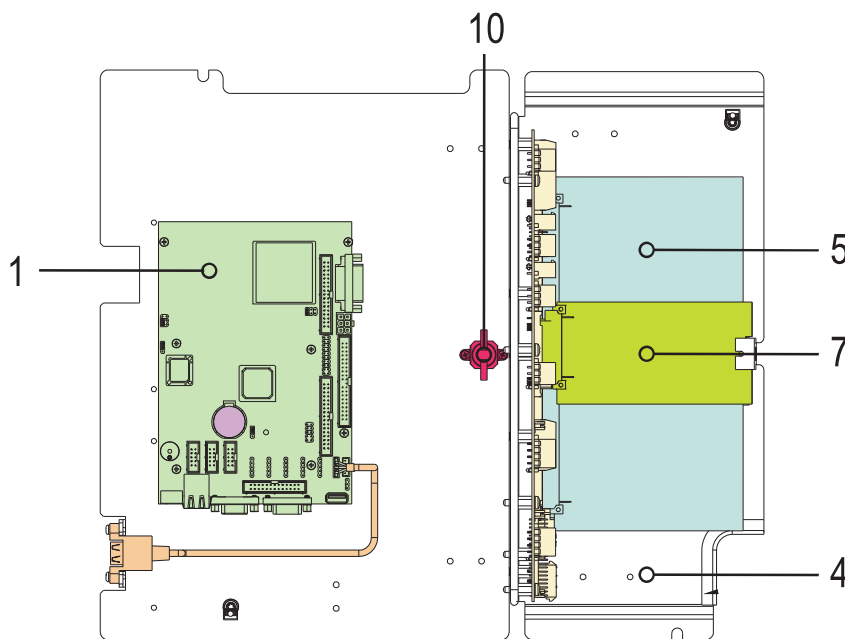


Fig. 9-25 Temperature switch

Pos.	Art.No	Qty.	Description	Comments
1	34560610	1	LX800 motherboard	see chapter 9.7.1 LX800 Motherboard (770)
2	34519327	1	Battery 2032, 3 V	see chapter 9.7.1 LX800 Motherboard (770)
3	3456088A	1	Compact flash card 1 GB	see chapter 9.7.1 LX800 Motherboard (770)
4	34562168	1	Basic board	-
5	34562150	1	Power board valves	-

Pos.	Art.No	Qty.	Description	Comments
6	3456074B	1	Digital board	up to SW 9.12
6	34562141	1	Digital board, version 5	from SW 9.1A
7	34560866	1	HDF online board	for HDF online machines only
8	34560750	1	Power board motors	–
9	34560734	1	Analog board	–
10	3456127A	1	Temperature switch	assemble temperature switch on TL sub-rack with heat sink paste
–	34561897	1	USB cable	alternatively at the front or back (from serial number 200,000 until June 2016)

9.7.1 LX800 Motherboard

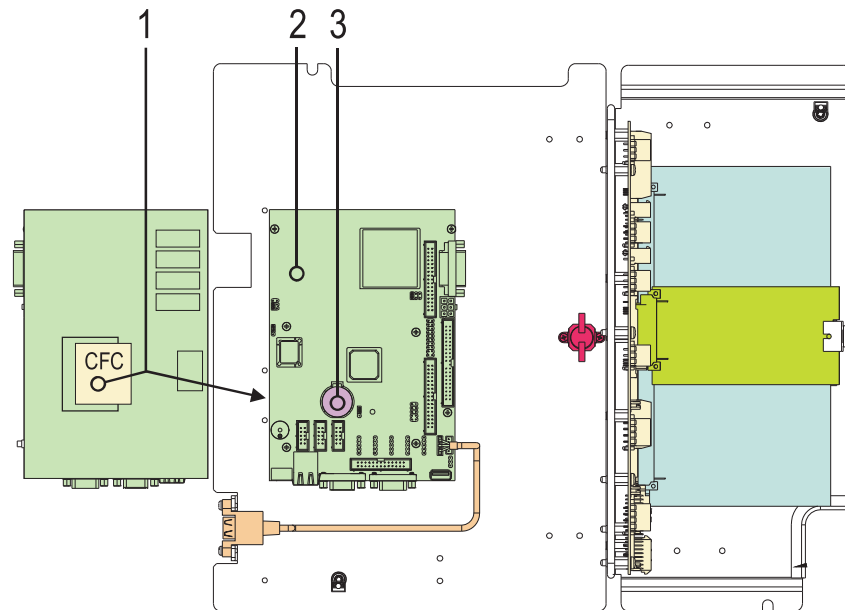


Fig. 9-26 LX800 Motherboard

Pos.	Art.No	Qty.	Description	Comments
1	3456088A	1	Compact flash card 1 GB	The SW for the machine has to be installed again after replacing the CFC
2	34560610	1	LX800 Motherboard	–
3	34519327	1	Battery 2032, 3 V	–
–	34562221	1	Ribbon cable 10 conductors (TCB – Motherboard)	–
–	34562225	1	Ribbon cable 26 conductors (FPB – Motherboard)	–

9.7.2 LX800 Settings for LCD Display/CFC

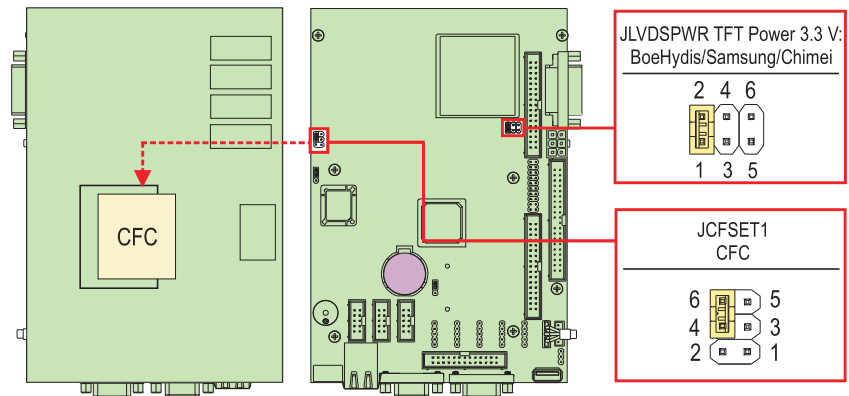


Fig. 9-27 LX800 settings for TFT display/CFC

9.8 Rear Door

Rear Door
up to serial number 200,000

Rear Door
from serial number 200,000

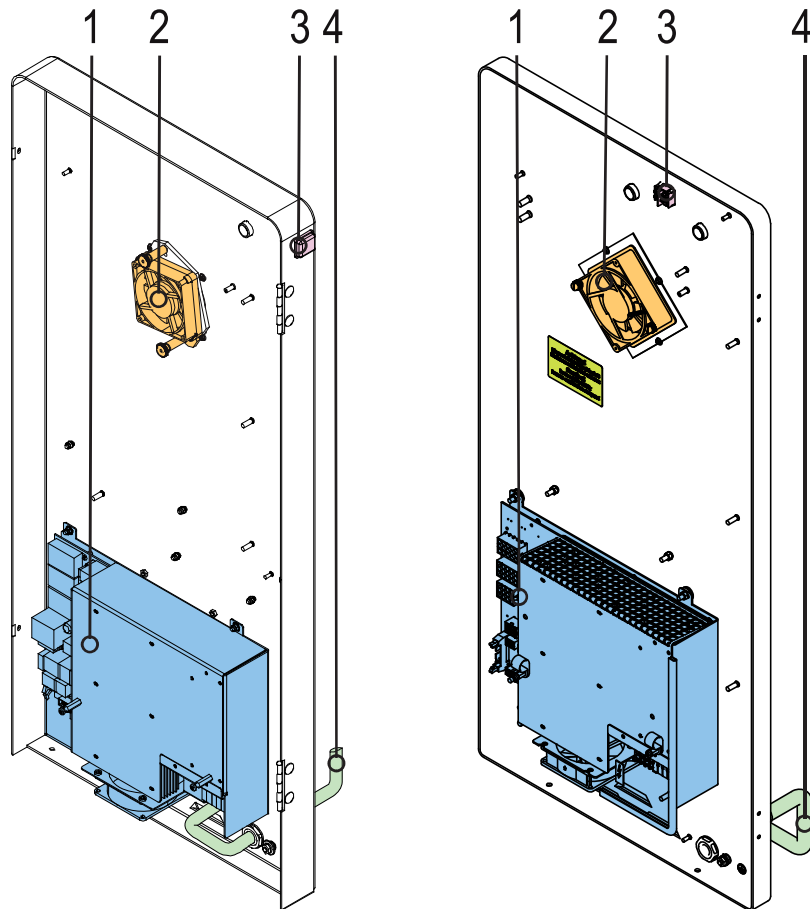


Fig. 9-28 Rear door inside view

Pos.	Art.No	Qty.	Description	Comments
1	3461076	1	Switch Mode Power Supply-MC2	-
2	3456130A	1	Fan 92 x 92 mm with connector	-
2	3457028A	5	Dust filter	-
3	3451059A	1	Mains switch	-
3	34770003	5	Protection cap for mains switch	-
4	-	-	Mains cord	see chapter 9.8,1 Mains Cord (775)

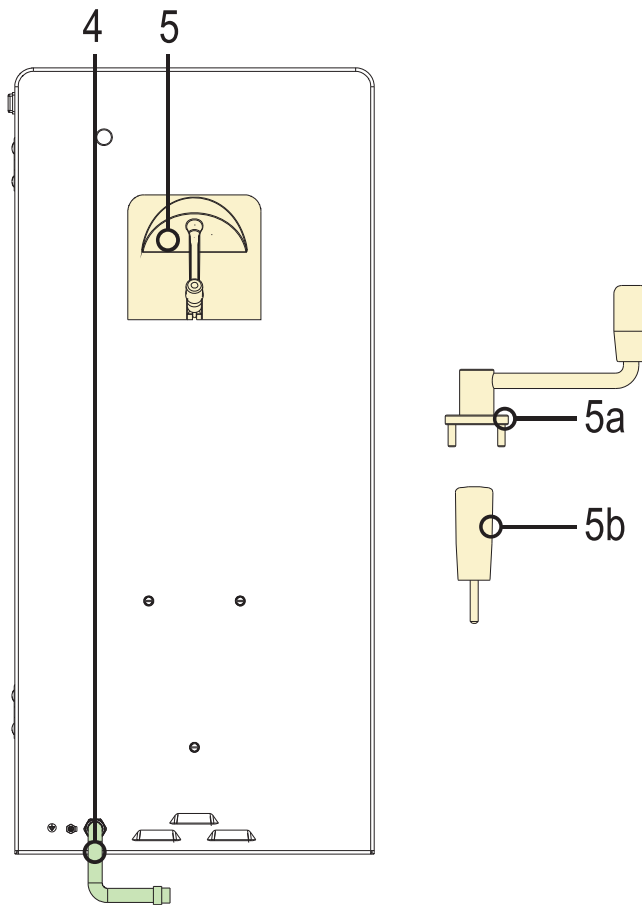


Fig. 9-29 Rear door outside view

Pos.	Art.No	Qty.	Description	Comments
4	34518029	1	Strain relief	-
5	3451441A	1	Tubing holder/fan cover	compatible to crank 5a/5b
5a	3451835A	1	Crank for blood pump	-
5b	34560157	1	Crank to blood pump	-

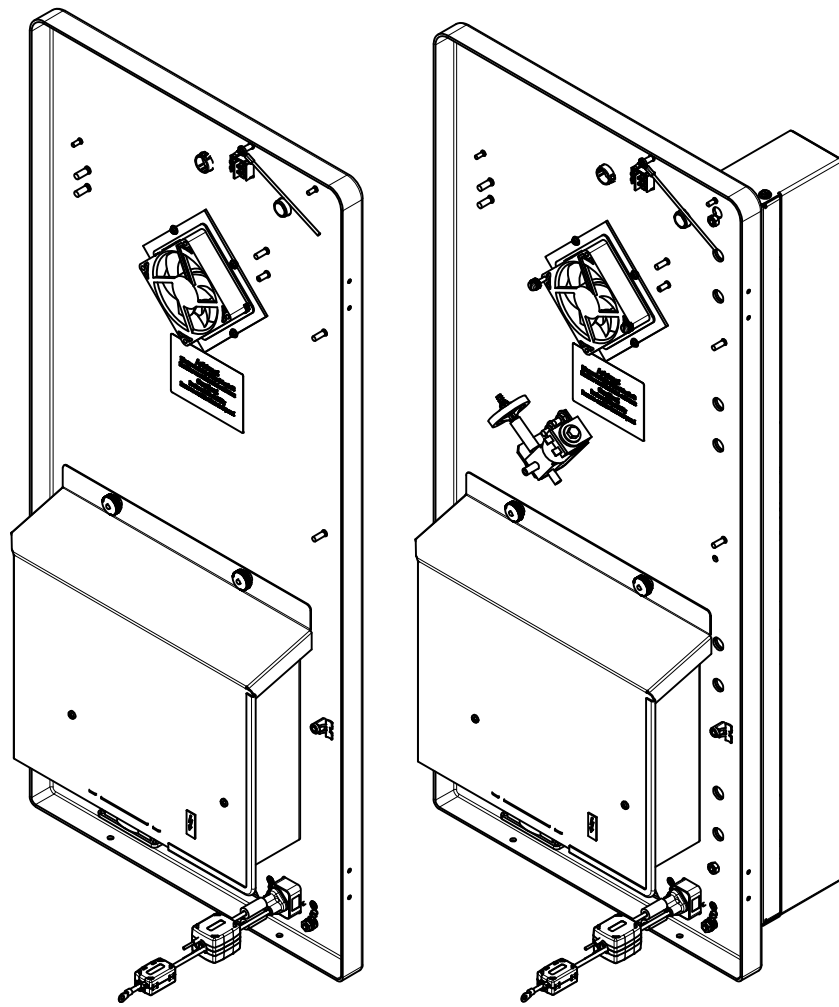


Fig. 9-30 Rear Door Standard Machine (left) and HDF-Online (right)

9.8.1 Mains Cord

9.8.1.1 Mains Cord for Clamp Terminal

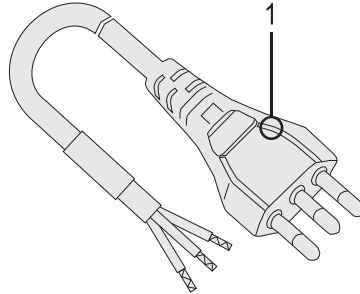


Fig. 9-31 Mains Cord Brazil

Pos.	Art.No	Qty.	Description	Comments
1	34561218	1	Mains cord (Brazil)	-

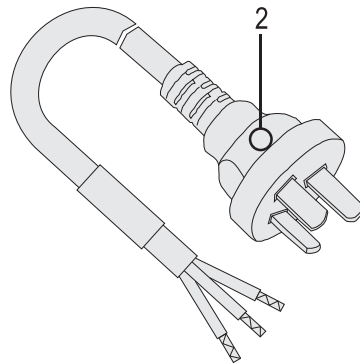


Fig. 9-32 Mains Cord China

Pos.	Art.No	Qty.	Description	Comments
2	34561226	1	Mains cord (China)	-

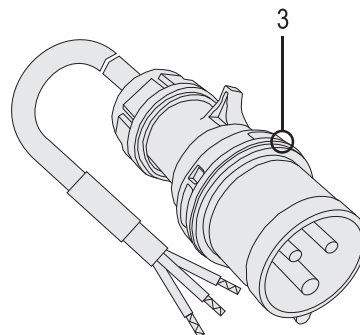


Fig. 9-33 Mains Cord Germany, CeKon

Pos.	Art.No	Qty.	Description	Comments
3	34561145	1	Mains cord (Germany, CeKon)	-

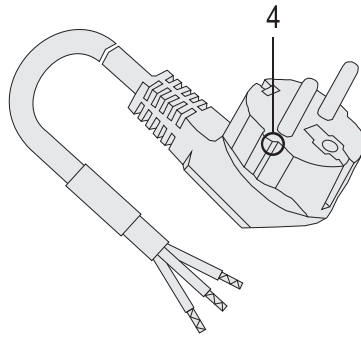


Fig. 9-34 Mains Cord Germany, Schuko

Pos.	Art.No	Qty.	Description	Comments
4	34561153	1	Mains cord (Germany, Schuko)	–

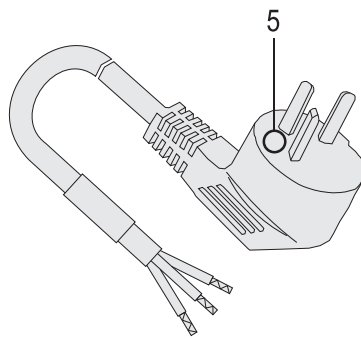


Fig. 9-35 Mains Cord Israel

Pos.	Art.No	Qty.	Description	Comments
5	34561200	1	Mains cord (Israel)	–

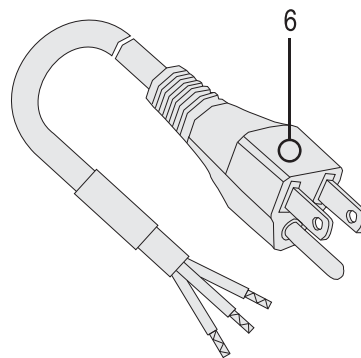


Fig. 9-36 Mains Cord Philippines

Pos.	Art.No	Qty.	Description	Comments
6	34561170	1	Mains cord (Philippines)	–

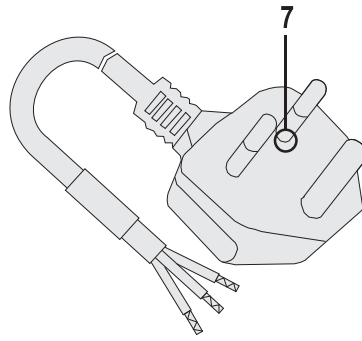


Fig. 9-37 Mains Cord South Africa/India

Pos.	Art.No	Qty.	Description	Comments
7	34561196	1	Mains cord (South Africa/India)	-

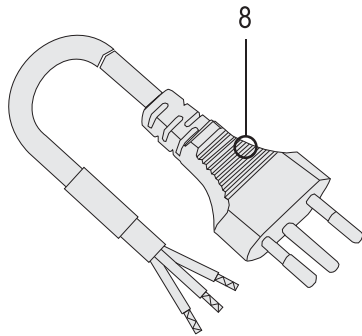


Fig. 9-38 Mains Cord Switzerland

Pos.	Art.No	Qty.	Description	Comments
8	34562264	1	Mains cord (Switzerland)	-

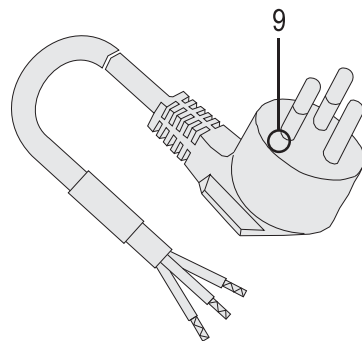


Fig. 9-39 Mains Cord Thailand

Pos.	Art.No	Qty.	Description	Comments
9	34561234	1	Mains cord (Thailand)	-

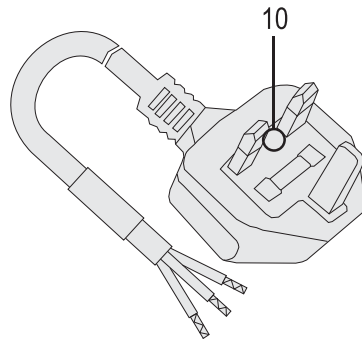


Fig. 9-40 Mains Cord U.K.

Pos.	Art.No	Qty.	Description	Comments
10	34561188	1	Mains cord (U.K.)	-

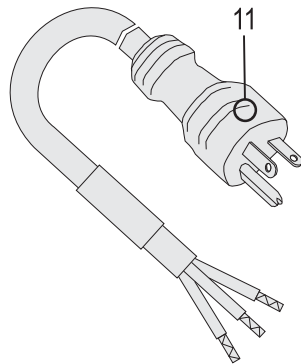


Fig. 9-41 Mains Cord U.S.A.

Pos.	Art.No	Qty.	Description	Comments
11	34561161	1	Mains cord (U.S.A.)	-

9.8.1.2 Mains Cord for Mains Socket

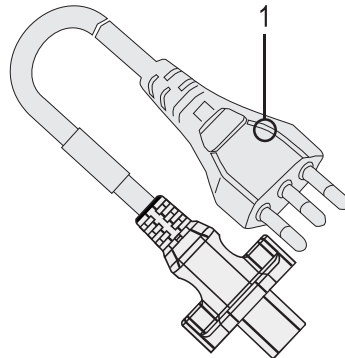


Fig. 9-42 Mains Cord Brazil for Mains Socket

Pos.	Art.No	Qty.	Description	Comments
1	3461068	1	Mains cord (Brazil), incl. all seals	–

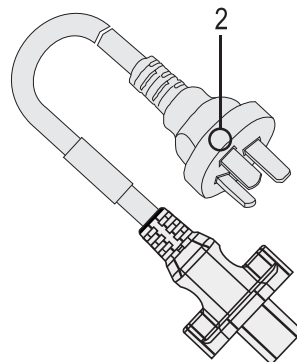


Fig. 9-43 Mains Cord China for Mains Socket

Pos.	Art.No	Qty.	Description	Comments
2	3461085	1	Mains cord (China), incl. all seals	–

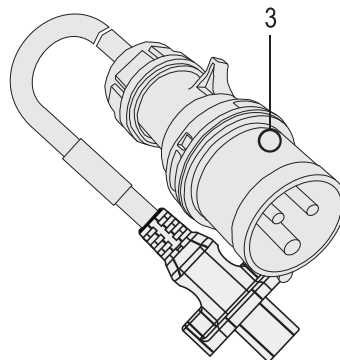


Fig. 9-44 Mains Cord Germany, CeKon for Mains Socket

Pos.	Art.No	Qty.	Description	Comments
3	3461065	1	Mains cord (Germany, CeKon), incl. all seals	–

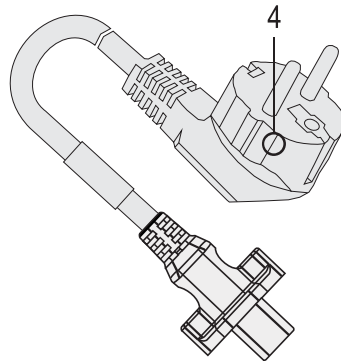


Fig. 9-45 Mains Cord Germany, Schuko for Mains Socket

Pos.	Art.No	Qty.	Description	Comments
4	3461066	1	Mains cord (Germany, Schuko), incl. all seals	–

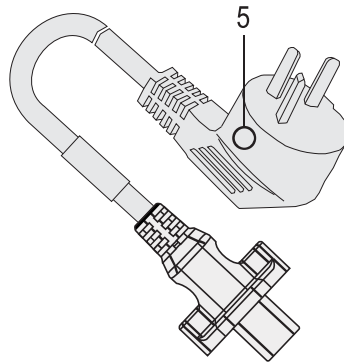


Fig. 9-46 Mains Cord Israel for Mains Socket

Pos.	Art.No	Qty.	Description	Comments
5	3461084	1	Mains cord (Israel), incl. all seals	–

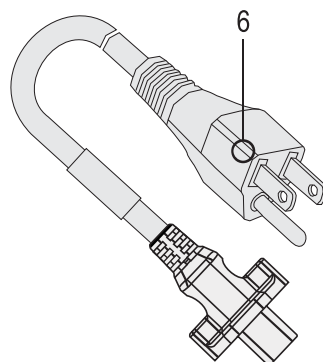


Fig. 9-47 Mains Cord Philippines for Mains Socket

Pos.	Art.No	Qty.	Description	Comments
6	3461086	1	Mains cord (Philippines), incl. all seals	–

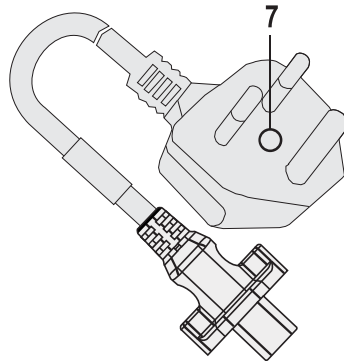


Fig. 9-48 Mains Cord South Africa/India for Mains Socket

Pos.	Art.No	Qty.	Description	Comments
7	*	1	Mains cord (South Africa/India), incl. all seals	* upon request

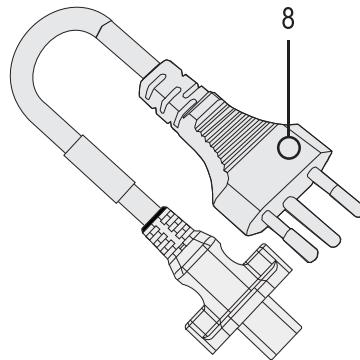


Fig. 9-49 Mains Cord Switzerland for Mains Socket

Pos.	Art.No	Qty.	Description	Comments
8	3461074	1	Mains cord (Switzerland), incl. all seals	–

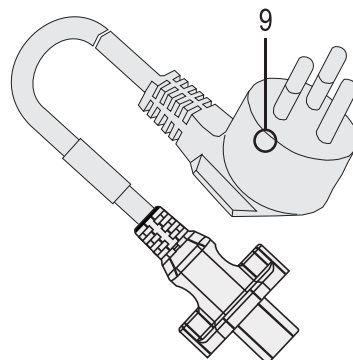


Fig. 9-50 Mains Cord Thailand for Mains Socket

Pos.	Art.No	Qty.	Description	Comments
9	3461070	1	Mains cord (Thailand), incl. all seals	–

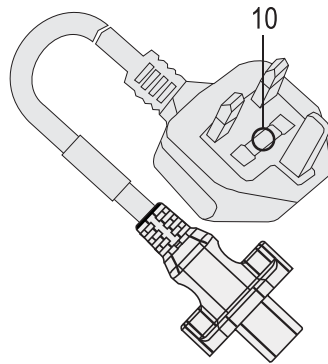


Fig. 9-51 Mains Cord U.K. for Mains Socket

Pos.	Art.No	Qty.	Description	Comments
10	3461067	1	Mains cord (U.K.), incl. all seals	-

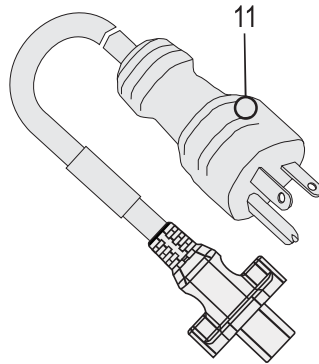


Fig. 9-52 Mains Cord U.S.A. for Mains Socket

Pos.	Art.No	Qty.	Description	Comments
11	3461069	1	Mains cord (U.S.A.), incl. all seals	-

9.8.1.3 Connection Mains Cord to SMPS-MC2

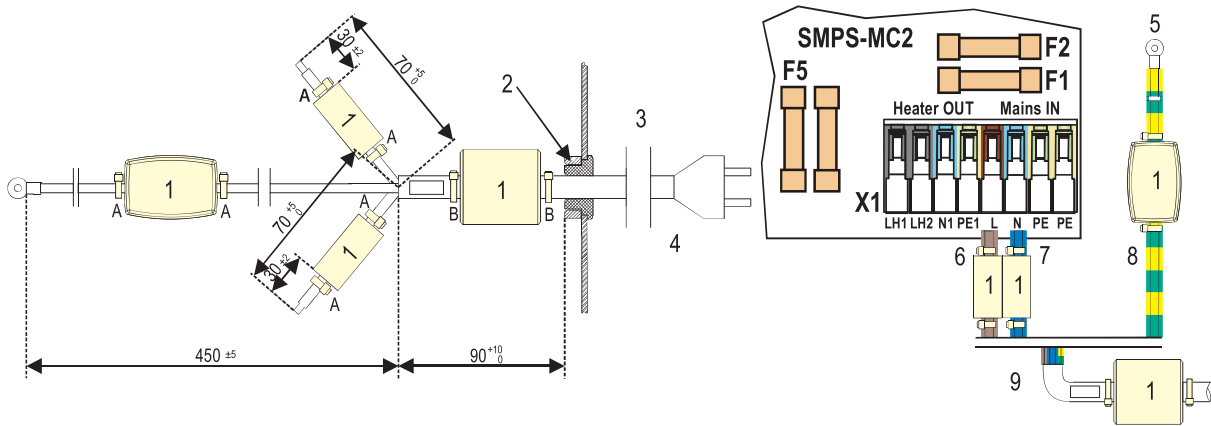


Fig. 9-53 Connection mains cord to SMPS-MC2

Legend	
A/B	Cable Ties
1	Ferrite
2	Cable Gland with Lock Nut
3	Rear Door
4	Mains Cord with Mains Plug
5	Central Earth
6	Brown
7	Blue
8	Green/Yellow
9	Mains Cord

9.8.2 Compatibility Table for Boards

	Modification Matrix		Hardware Modification	
	Art.No.	Compatibility with	ex Factory	Retrofitting
Digital Board DB Version 4	3456074B	any SW version 9.xx	–	–
Power Board Valves PBV Version 2	34560769	any SW version 9.xx	–	–
Power Board Valves PBV Version 3	34562150	any SW version 9.xx	from serial numbers 218,832 304,349	–
Power Board Motors BPM	34560750	any SW version 9.xx	–	–
Basic Board BB Version 2	34560726	any SW version 9.xx	–	–
Basic Board BB Version 3	34562168	any SW version 9.xx	from serial numbers 218,832 304,349	–
Analog Board AB	34560734	any SW version 9.xx	–	–
HDF Online Board HOB	34560866	any SW version 9.xx	–	–
MSBK Board	3451665A	any SW version 9.xx	–	–

9.8.3 Switch Mode Power Supply Microcontroller SMPS-MC2

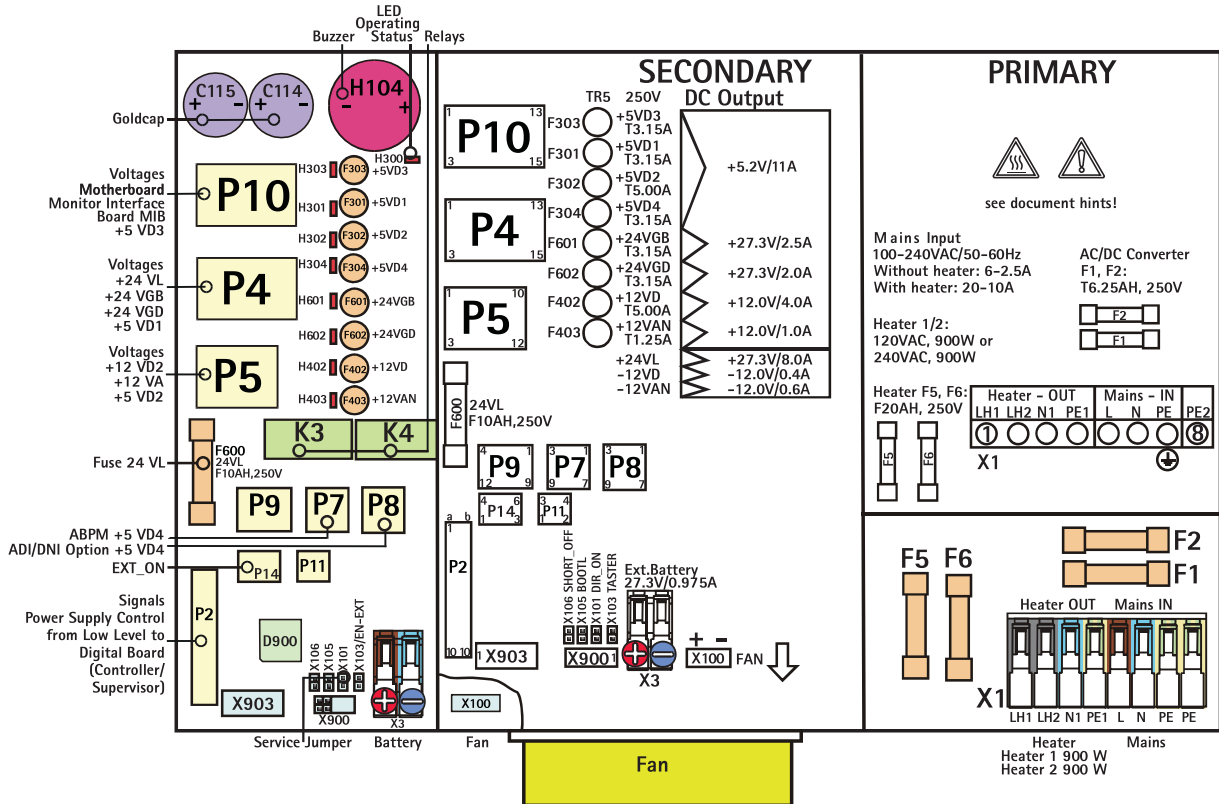


Fig. 9-54 Switch mode power supply microcontroller SMPS-MC2

Pos.	Art.No	Qty.	Description	Comments
1	3461076	1	Switch mode power supply microcontroller SMPS-MC2, 110/240V	-
F1/F2	34570462	10	Fuse T6.25 A (6.3 x 32 mm)	-
F5A/ F5B	34570462	10	Fuse T6.25 A (6.3 x 32 mm)	for 230 V
F5A/ F5B	34771328	10	Fuse F12 A (6.3 x 32 mm)	for 110/120 V
F6	34771328	10	Fuse F12 A (6.3 x 32 mm)	for 230 V
F6	34570187	10	Fuse M20 A (6.3 x 32 mm)	for 110/120 V
F301	34570160	10	Fuse T3.15 A (TR5)	-
F302	34570470	10	Fuse T5 A (TR5)	-
F303	34570160	10	Fuse T3.15 A (TR5)	-
F304	34570160	10	Fuse T3.15 A (TR5)	-
F401	34570160	10	Fuse T3.15 A (TR5)	-
F402	34570470	10	Fuse T5 A (TR5)	-
F403	34518819	10	Fuse T1.25 A (TR5)	-
F600	34570179	10	Fuse M10 A (6.3 x 32 mm)	-
F601	34570160	10	Fuse T3.15 A (TR5)	-
F602	34570160	10	Fuse T3.15 A (TR5)	-

Pos.	Art.No	Qty.	Description	Comments
K3/ K4	34514775	2	Relay (12 V)	-
C114/ C115	34519912	2	Capacitor 1F	-
H104	34560580	1	Buzzer	-
F5/F6	34570187	10	Fuse M20 A (6.3 x 32 mm)	for any mains voltage
-	34560416	10	Plug for buzzer	muting of the buzzer

9.9 Front Door up to SN 500,000

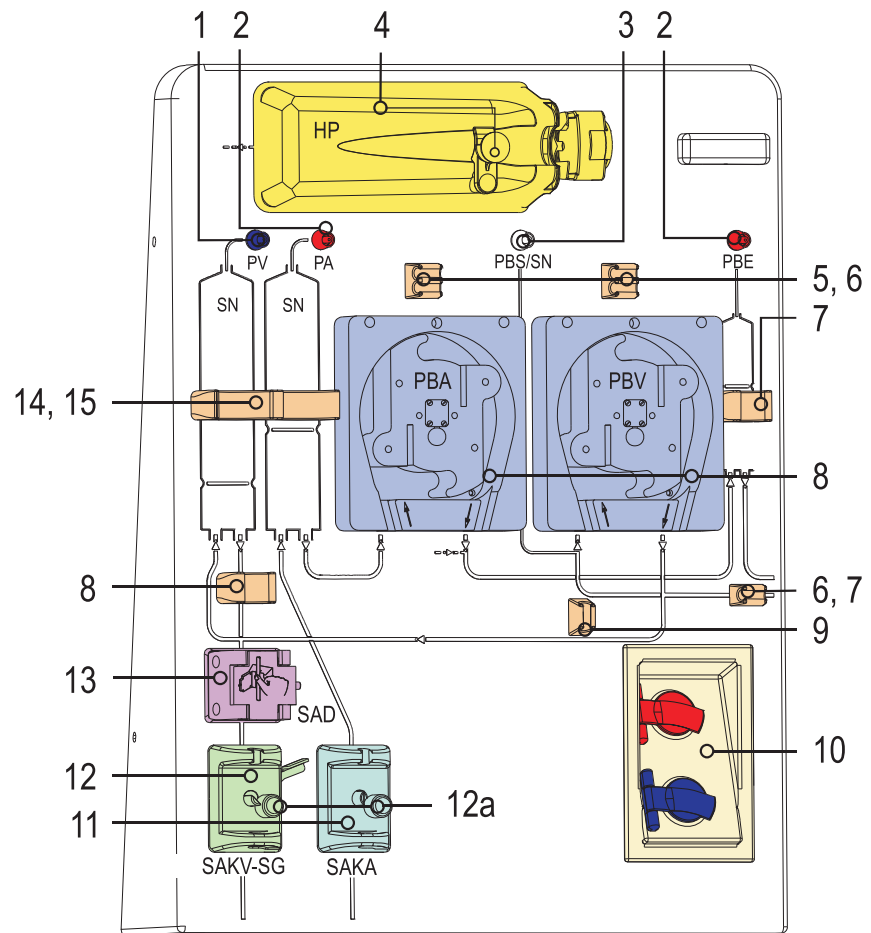


Fig. 9-55 Front door up to serial number 500,000, outside view

Pos.	Art.No	Qty.	Description	Comments
1	34570845	5	Luer-Lock connector, blue, for PV	see chapter 9.9.2 Luer-Lock Connector (793)
2	34570853	5	Luer-Lock connector, red, for PA/PBE	see chapter 9.9.2 Luer-Lock Connector (793)
3	34570837	5	Luer-Lock connector, white, for PBS/SN	see chapter 9.9.2 Luer-Lock Connector (793)
4	3451432D	1	Heparin pump Compact	–
4	34514732	1	Syringe holder	–
4	34570640	5	Dummy plug	–
4	34570667	1	Clamp	–
4	34570659	1	Unlocking lever set	–
5	34570535	1	Single tubing holder	6.8 mm
6	34570543	1	Double tubing holder	6.8 mm
7	34570527	1	Single holder, small	–
8	3456079A	1	Blood pump without roller	see chapter 9.9.4 Blood Pump (795)

Pos.	Art.No	Qty.	Description	Comments
8	3456080A	1	Roller 8 x 12 for blood pump	-
8	34570616	5	Latch	-
8	3451669F	1	Cover for blood pump	see chapter 9.9.4 Blood Pump (795)
8	34560025	1	Magnet Ø 5 mm	for cover
8	3456003B	1	Metal disc Ø 10 mm	for cover
8	34519823	1	Hinge pin with interior thread	hinge pin
8	34516670	1	Seal for blood pump	-
8	34517138	1	Reed sensor with contact pins and O-ring 3,68 x 1,78	-
9	34570560	1	Single tubing holder	Ø 6 mm
10	3451415A	1	Cover complete	-
11	34570578	1	Cover with tubing holder	for SAKA
12	34514317	1	Cover with tubing holder	for SAKV-SG
12a	34570896	20	Cover cap for SAKA and SAKV	-

9

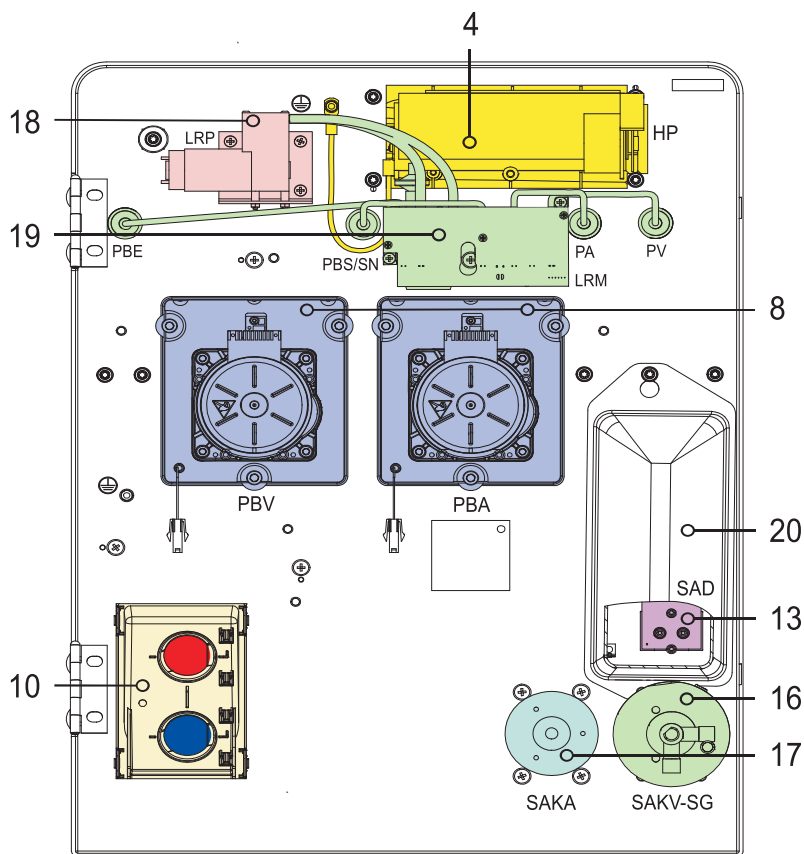


Fig. 9-56 Front door up to serial number 500,000, inside view

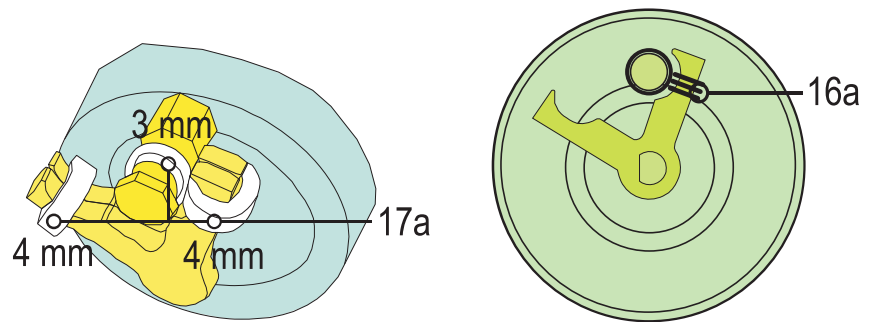


Fig. 9-57 Front Door up to Serial Number 500,000, SAKA, SAKV-SG

Pos.	Art.No	Qty.	Description	Comments
13	3456005E	1	SAD version 4 with red detector	see chapter 9.9.5 Safety Air Detector SAD (797)
14	34570551	1	Double holder, big	–
15	34570519	1	Single holder, big	–
16	34514107	1	Rotary magnet (currentless closed)	for SAKV-SG
16a	34570624	9	O-ring 7.0 x 1.5	for SAKV-SG
17	3456000A	1	Rotary magnet	for SAKA
17a	34570675	10	Soft stopper	for SAKA, set for 10 rotary magnets, with 20 x 4 mm and 10 x 3 mm
18	34560823	1	Diaphragm pump	with assembly elbow
19	3456081B	1	Valve block level regulation (single pump)	see chapter 9.9.6
19	3456083B	1	Valve block level regulation (double pump)	see chapter 9.9.6
20	34561803	1	SAD cover	–
–	34561641	1	Pressure Monitoring Module PA/PV	for machines without level regulation

9.9.1 Front Door from SN 500,000

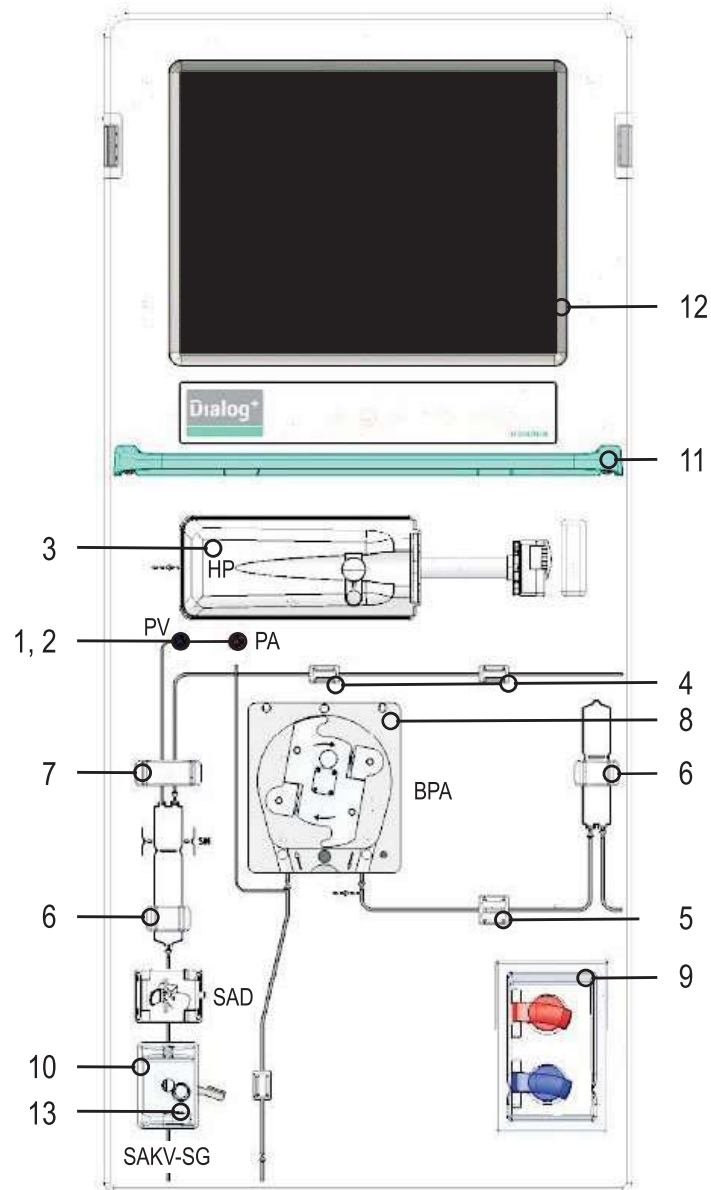


Fig. 9-58 Front door from serial number 500,000, outside view

Pos.	Art.No	Qty.	Description	Comments
1	34570845	5	Luer-Lock connector, blue, for PV	see chapter 9.9.2 Luer-Lock Connector (793)
2	34570853	5	Luer-Lock connector, red, for PA	see chapter 9.9.2 Luer-Lock Connector (793)
3	3451432D	1	Heparin pump Compact	–
3	34514732	1	Syringe holder	–
3	34570640	5	Dummy plug	–
3	34570667	1	Clamp	–
3	34570659	1	Unlocking lever set	–
4	34570535	1	Single tubing holder	6.8 mm

Pos.	Art.No	Qty.	Description	Comments
5	34570543	1	Double tubing holder	6.8 mm
6	34570527	1	Single holder, small	–
7	34570519	1	Single holder, big	–
8	3456079A	1	Blood pump without roller	see chapter 9.9.4 Blood Pump (795)
8	3456080A	1	Roller 8 x 12 for blood pump	with 2 magnets
8	34570616	5	Latch	–
8	3451669F	1	Cover for blood pump	see chapter 9.9.4 Blood Pump (795)
8	34560025	1	Magnet Ø 5 mm	for cover
8	3456003B	1	Metal disc Ø 10 mm	for cover
8	34519823	1	Hinge pin with interior thread	hinge pin
8	34516670	1	Seal for blood pump	–
8	34517138	1	Reed sensor with contact pins and o-ring 3.68 x 1.78	–
9	3451415A	1	Cover complete	–
10	34514317	1	Cover with tubing holder	for SAKV-SG
11	34562236	1	Front tray	green
12	–	–	LCD-Monitor	see chapter 9.11.1 LCD Monitor from SN 500,000 (818)
13	34570896	20	Cover cap for SAKA and SAKV	–

9

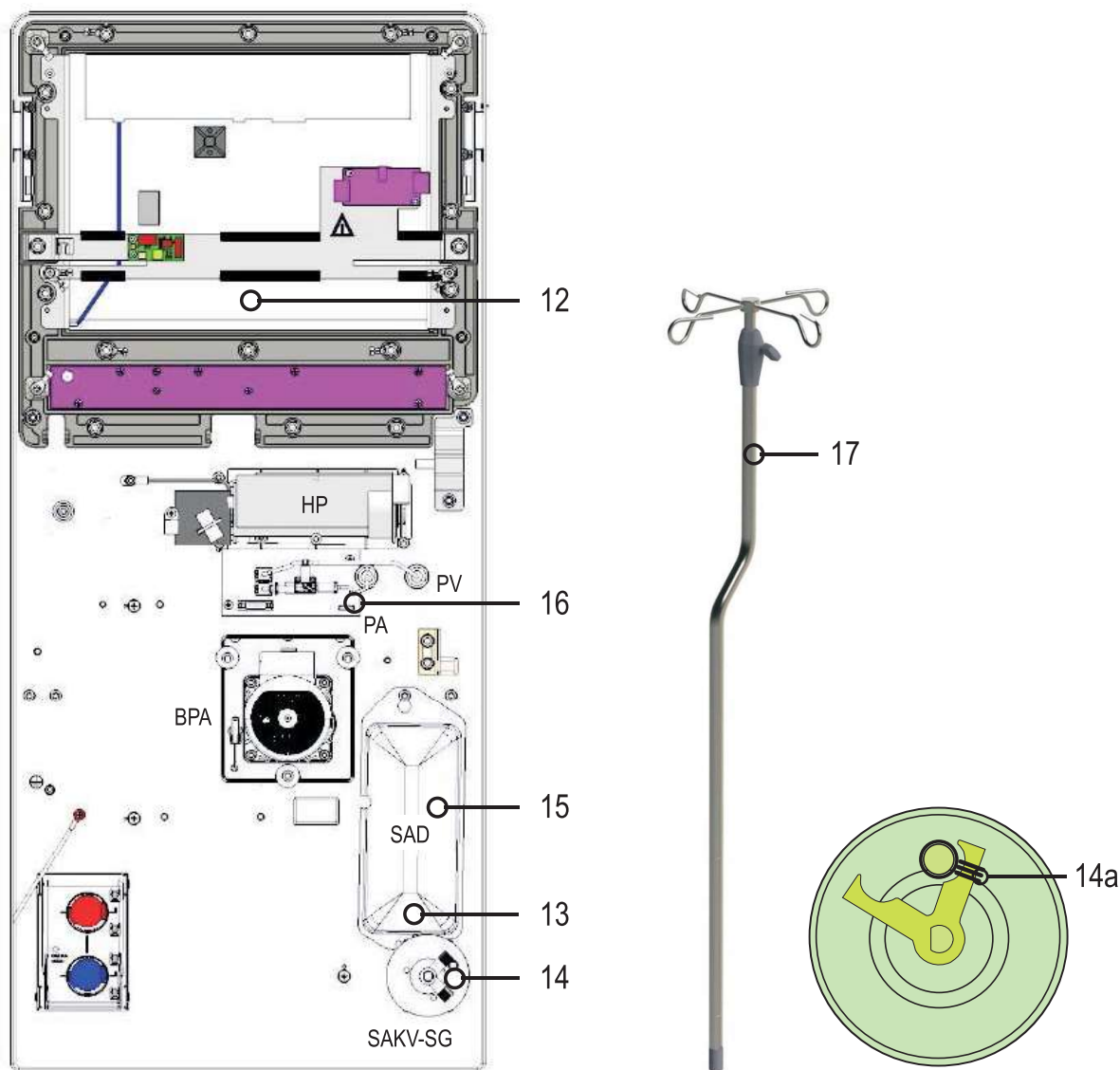


Fig. 9-59 Front door from serial number 500,000, inside view

Pos.	Art.No	Qty.	Description	Comments
13	3456005E	1	SAD version 4 with red detector	see chapter 9.9.5 Safety Air Detector SAD (797)
14	34514107	1	Rotary magnet (currentless closed)	for SAKV-SG
14a	34570624	9	O-ring 7.0 x 1.5	for SAKV-SG
15	34561803	1	SAD cover	-
16	34561641	1	Pressure Monitoring Module PA/PV	for machines without level regulation
17	34562237	1	IV pole	from serial number 500.000
-	34562235	1	Door opening limit	from serial number 500.000

9.9.2 Luer-Lock Connector

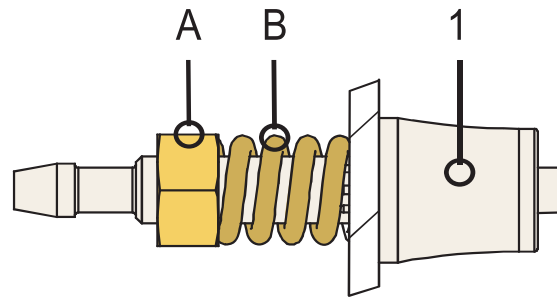


Fig. 9-60 Luer-Lock connector spring, loaded

Pos.	Art.No	Qty.	Description	Comments
1	34570845	5	Luer-Lock connector, blue, for PV	A: Nut; B: Spring
1	34570853	5	Luer-Lock connector, red, for PA/PBE	A: Nut; B: Spring
1	34570837	5	Luer-Lock connector, white, for PBS/SN	A: Nut; B: Spring

9.9.3 Heparin Pump

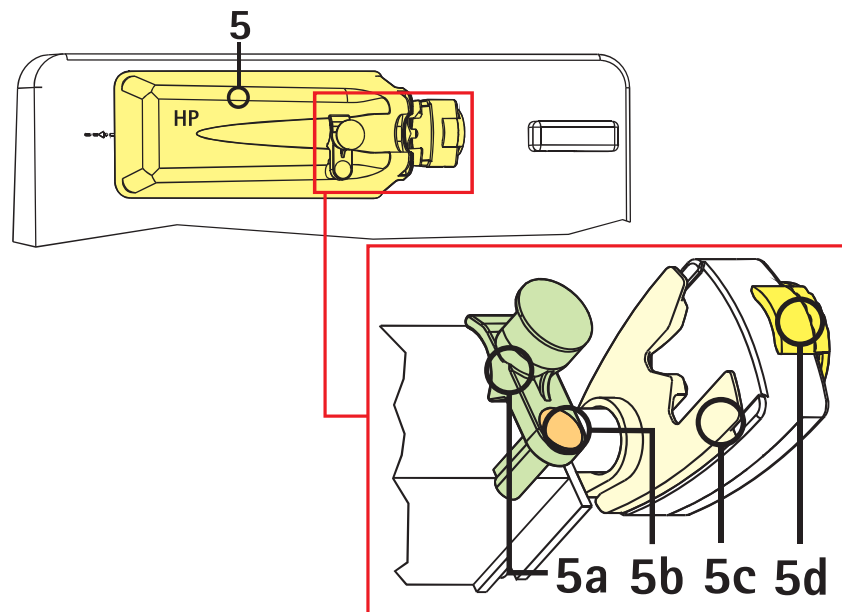


Fig. 9-61 Heparin pump compact

Pos.	Art.No	Qty.	Description	Comments
5	3451432D	1	Heparin pump compact	—
5a	34514732	1	Syringe holder	—
5b	34570640	5	Dummy plug	—
5c	34570667	1	Clamp	—
5d	34570659	1	Unlocking lever set	—

9.9.4 Blood Pump

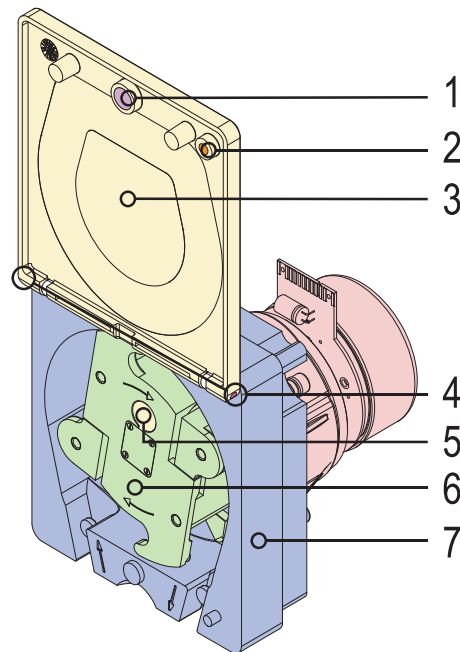


Fig. 9-62 Blood pump, front view

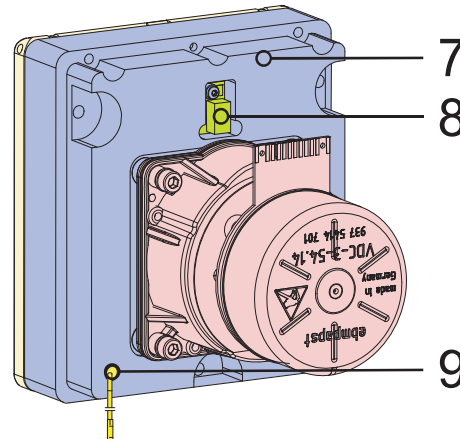


Fig. 9-63 Blood pump, rear view

Pos.	Art.No	Qty.	Description	Comments
1	3456003B	1	Metal disc \varnothing 10 mm	for cover
2	34560025	1	Magnet \varnothing 5 mm	for cover
3	3451669F	1	Cover for blood pump	–
4	34519823	1	Hinge pin with interior thread	hinge pin
5	34570616	5	Latch	–
6	3456080A	1	Roller 8 x 12 for blood pump	with 2 magnets
7	3456079A	1	Blood pump without roller	–
8	34561358	1	Direction of rotation board for blood pump	–

Pos.	Art.No	Qty.	Description	Comments
9	34517138	1	Reed sensor with contacts and O-ring 3.68 x 1.78	-
-	34516670	1	Seal for blood pump	-
-	7703708	1	Grease S.K.D. 4002	100g tube (to lubricate the shaft of the blood pump)

9.9.5 Safety Air Detector SAD

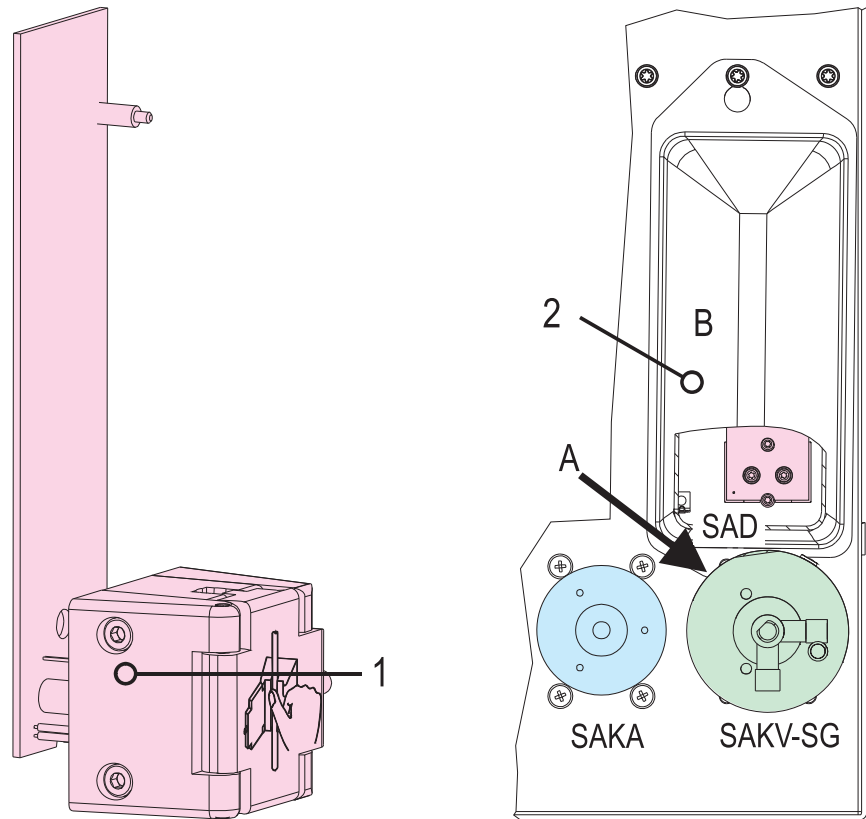


Fig. 9-64 Safety air detector SAD

Pos.	Art.No	Qty.	Description	Comments
1	3456005E	1	SAD version 4 with red detector	only replace completely (calibrated SAD unit)
2	34561803	1	SAD cover	A ball head Allen key 2.5/3 is required for bottom screw A behind rotary magnet to remove cover for SAD B
-	34562228	1	Ribbon cable 20-pin (SAD, BB)	-

9.9.6 Level Regulation (Option) and Pressure Monitoring

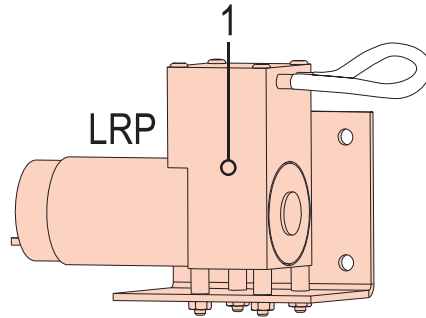


Fig. 9-65 Level regulation pump

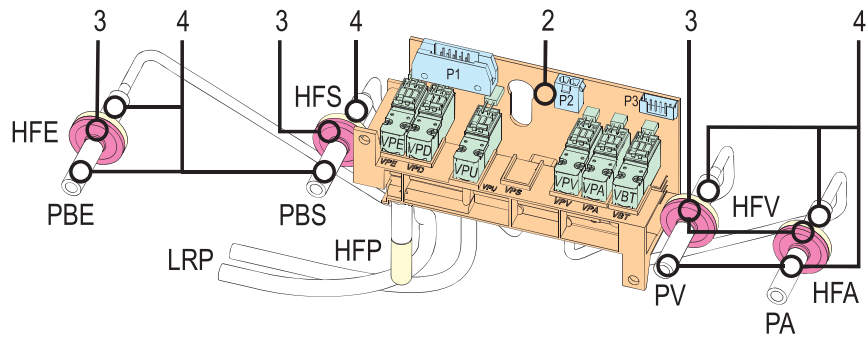


Fig. 9-66 Level regulation module

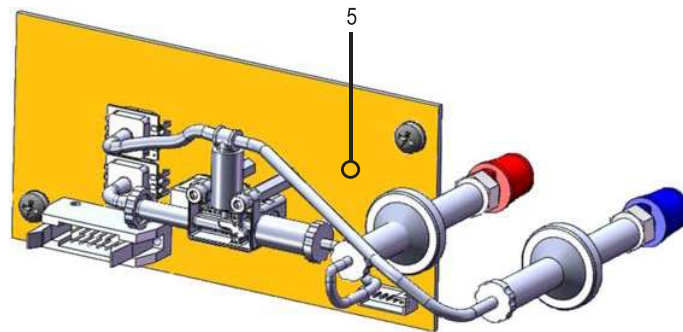


Fig. 9-67 Pressure monitoring module

Pos.	Art.No	Qty.	Description	Comments
1	34560823	1	Diaphragm pump	LRP with assembly bracket
2	3456081B	1	Valve block level regulation (single pump)	complete with 3 pressure sensors (for PA, PV, PBE), 5 valves, incl. filter and tubing
2	3456083B	1	Valve block level regulation (double pump)	complete with 4 pressure sensors (for PA, PV, PBE, PBS), 6 valves, incl. filter and tubing
3	34516409	1	Filter	pay attention to the assembly position of the filter: transparent side towards the block
4	34565299	3 m	Silicon tubing 3 x 2 mm	for Luer-Lock connector (filter)

Pos.	Art.No	Qty.	Description	Comments
5	34561641	1	Pressure monitoring module	for machines without level regulation only
–	34562224	1	Ribbon cable 10-pin (LR, P11)	–

9.10 Basic Housing

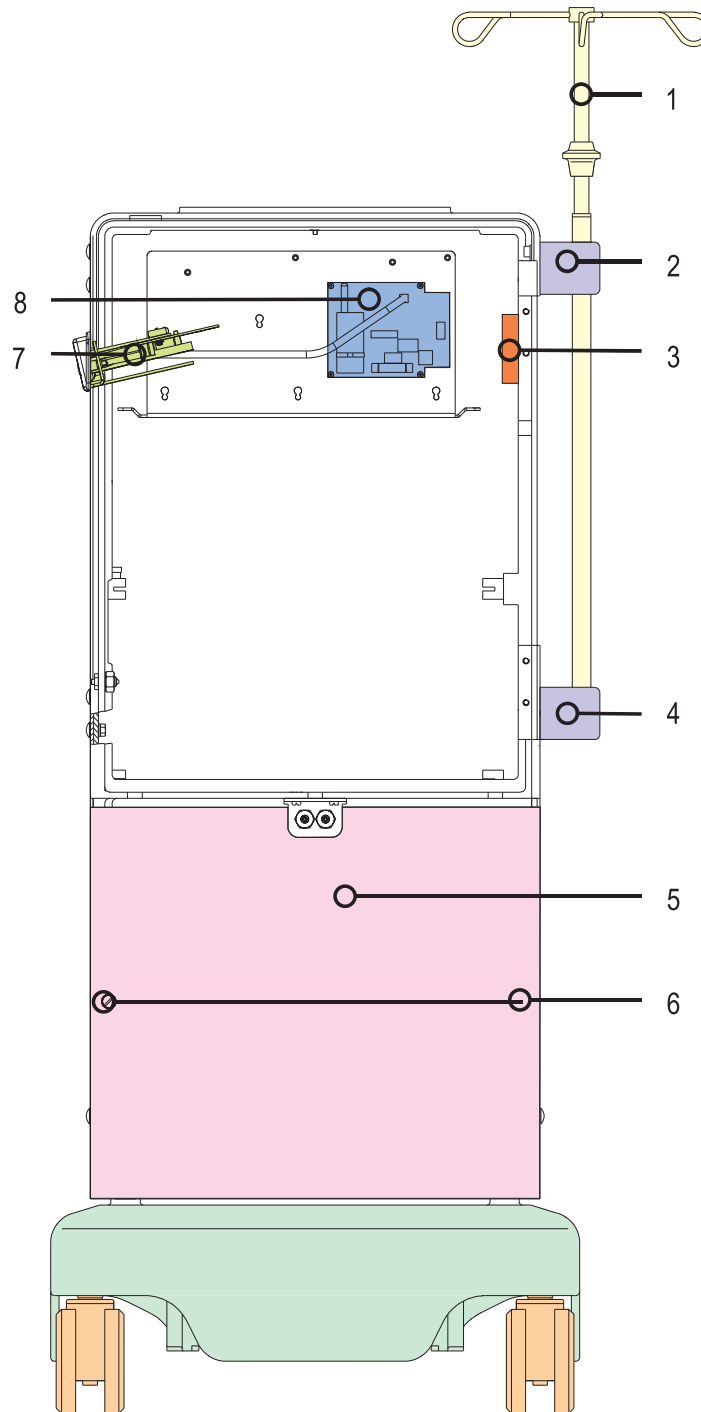


Fig. 9-68 Basic Housing

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Pos.	Art.No	Qty.	Description	Comments
1	3451962C	1	IV pole	height adjustable
2	3451439A	1	Holder, top	–
3	34514929	1	Loud speaker	–
4	3451438A	1	Holder, bottom	–
5	34561595	1	Front panel, bottom	–
6	34570772	6	Countersunk screw M 4 x 30 (Torx)	–
7	34560548	1	Card-Reader-Board	see chapter 9.22 Card Reader (Option) (845)
8	3451487D	1	ABPM module M2015 with filter	see chapter 9.19 Automatic Blood Pressure Measurement ABPM Module M2015 (Option) (839)

9.10.1 Base Platform 2 Swivel Casters with Brakes

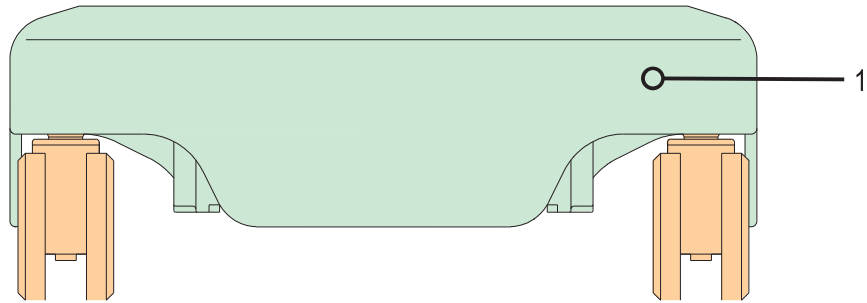


Fig. 9-69 Base Platform, 2 Swivel Caster with Brake, Front View

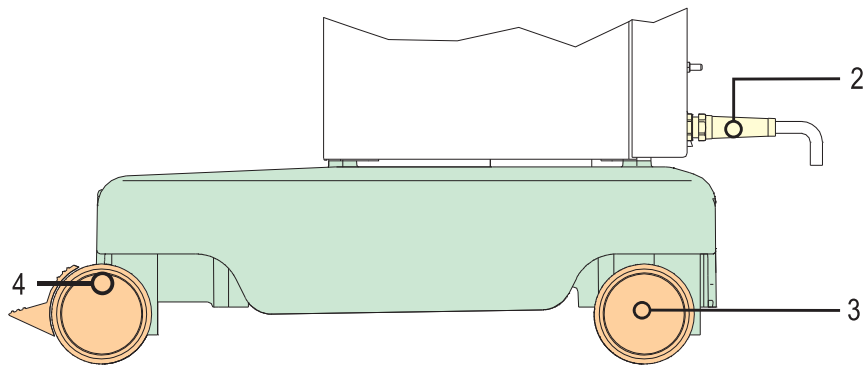


Fig. 9-70 Base Platform, 2 Swivel Caster with Brake, Side View

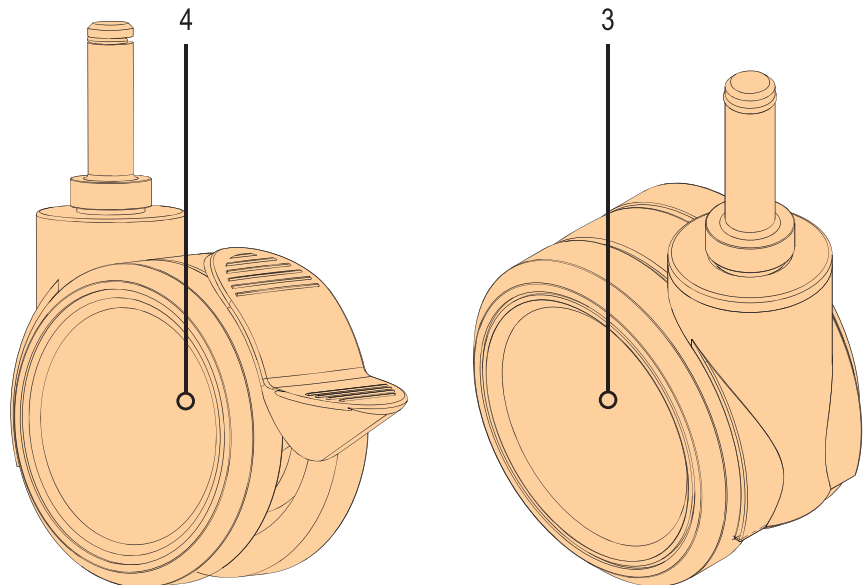


Fig. 9-71 Swivel Caster, with and without brake

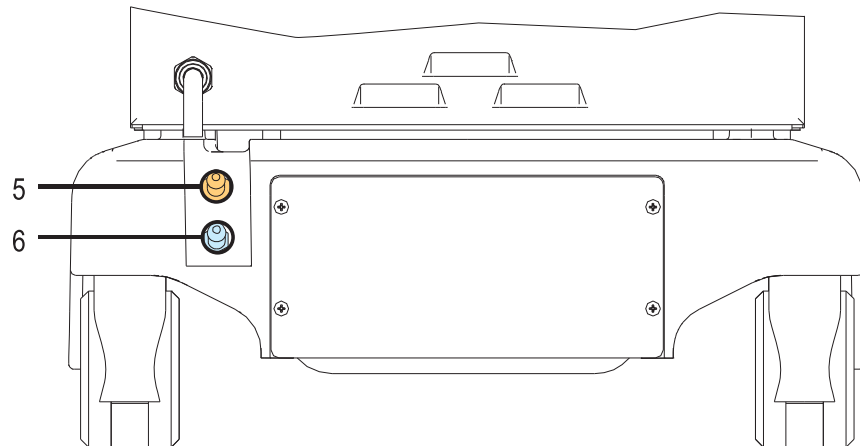


Fig. 9-72 Tubing Connectors on Base Platform

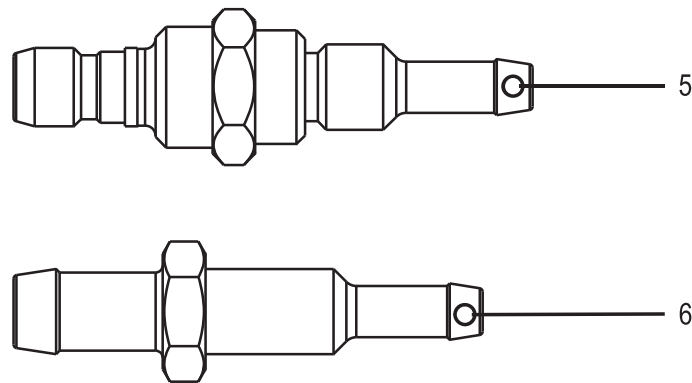


Fig. 9-73 Double Tubing Connector 3456012A and 34560130

Pos.	Art.No	Qty.	Description	Comments
1	34561781	1	Base platform	-
2	34518029	1	Strain relief	-
3	3451489A	1	Swivel caster	-
4	3451490A	1	Swivel caster with brake	-
5	3456012A	1	Double tubing connector 11 x M12	stainless steel, for water inlet
6	34560130	1	Double tubing connector 11 x M12	plastic, for dialysate outlet
-	34770852	5	O-ring 11.1 x 1.6	-
-	34771271	10	Tubing clamp 15/9	-
-	34565140	50 m	PVC tubing 10 x 3, red	for water inlet, cold
-	3456517A	3 m	PVC tubing 10 x 3, red, with two single ear clamps 19.5	for water inlet, cold
-	34565159	50 m	PVC tubing 10 x 3, black	for dialysate outlet
-	3456518A	3m	PVC tubing 10 x 3, black, with a single ear clamps 19.5 and a tubing clamp 12-20 mm	for dialysate outlet
-	3456516A	3m	Silicone tubing 8 x 3.2, red, with two single ear clamps 17.5	external high temperature tubing
-	34561749	50m	Silicone tubing 8 x 3.2, red	external high temperature tubing

9.10.2 Base Platform 4 Swivel Casters with Brakes

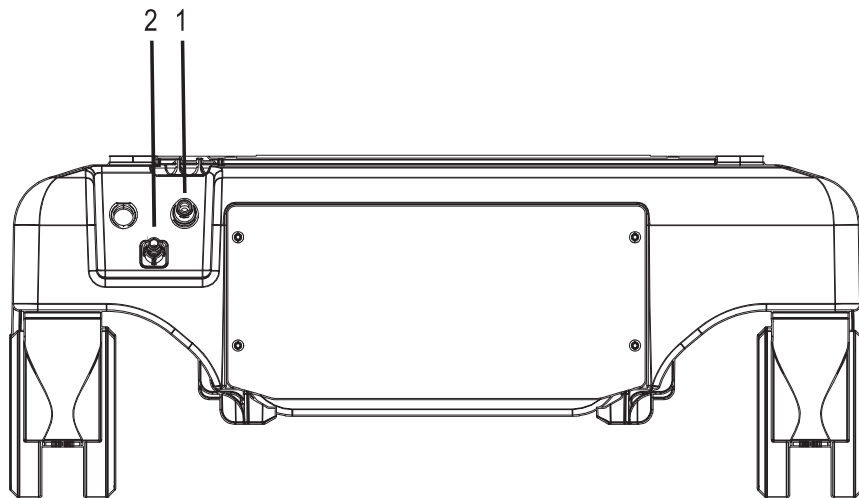


Fig. 9-74 Base Platform, 4 Swivel Caster with Brake, Back View

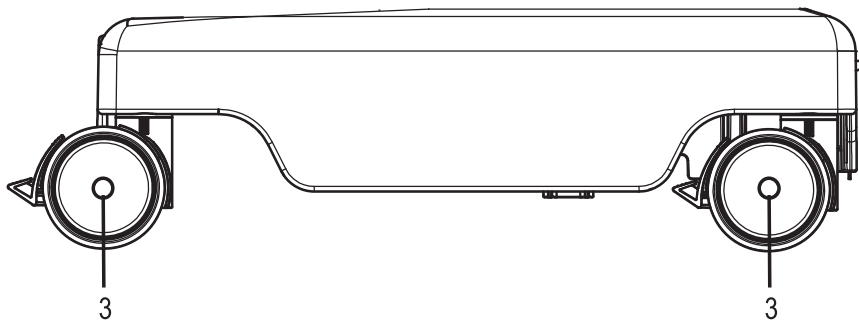


Fig. 9-75 Base Platform, 4 Swivel Caster with Brake, Side View

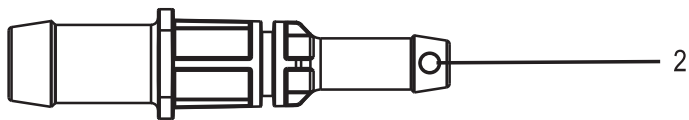
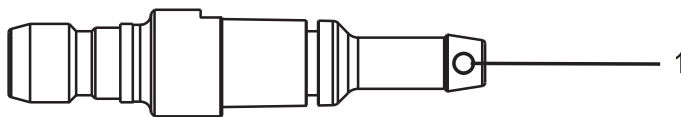


Fig. 9-76 Double Tubing Connector 34562278 and 34562279

Pos.	Art.No	Qty.	Description	Comments
1	34562278	1	Double tubing connector, for Base Platform, 4 Swivel Caster with Brake	for water inlet
2	34562279	1	Double tubing connector, for Base Platform, 4 Swivel Caster with Brake	for dialysate outlet
3	3451490A	1	Swivel caster with brake	-

9.10.3 Concentrate Suction Rods

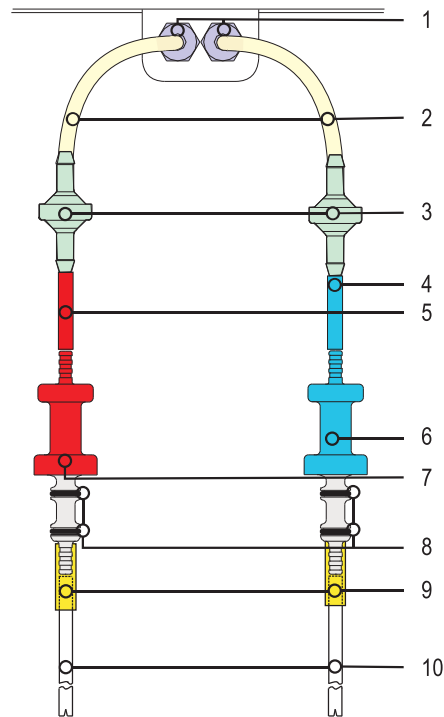


Fig. 9-77 Concentrate suction rods

Pos.	Art.No	Qty.	Description	Comments
1	3451726A	1	Feed-through connector	—
2	34565213	10 m	Silicone tubing 2.9 x 3	—
3	34561498	5	Disposable filter 2.6 mm	—
4	34565248	10 m	Silicone tubing 5 x 1.5, blue	—
5	34565230	10 m	Silicone tubing 5 x 1.5, red	—
6	3451475A	1	Male connector (blue) with O-rings	—
7	3451476A	1	Male connector (red) with O-rings	—
8	34570004	5	O-ring 9.3 x 2.4	—
9	34565280	3 m	Silicone tubing 3.2 x 1.6	—
10	3451728A	1	PE tube 4 x 1	with silicone tubing

9.10.4 Rinsing Bridge for Concentrate Suction Rods

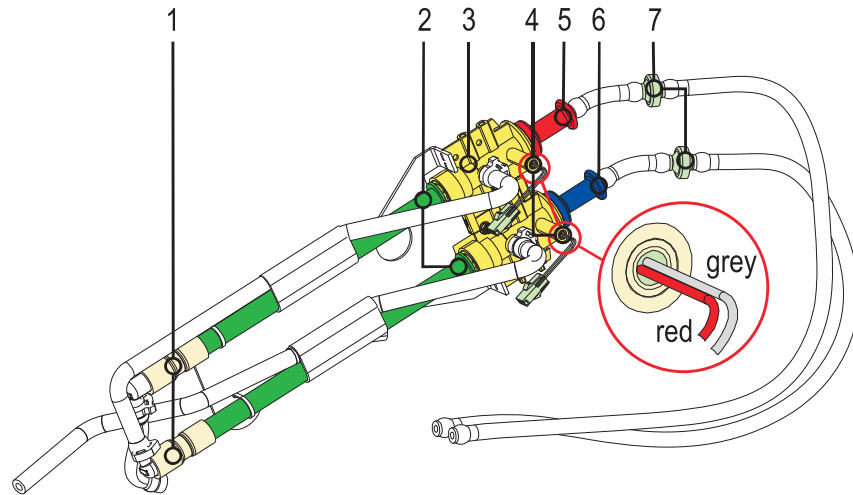


Fig. 9-78 Rising chambers for concentrate suction rods

9

Pos.	Art. No.	Qty.	Description	Comments
1	34565345	1 m	Silicone tubing 12 x 2,5	–
2	3456077A	1	Retainer tubes (green) for suction rods	1 x 260 mm and 1 x 280 mm
3	34514120	1	Retainer for suction rods	–
4	34517138	1	Reed sensor with contacts and O-ring 3,68 x 1,78	Pay attention to the assembly position of the Reed sensors (red left/gray right)
5	3451476A	1	Male connector (red) with O-rings	–
6	3451475A	1	Male connector (blue) with O-rings	–
7	34561498	5	Disposable filter 2.6 mm	–

9.10.5 Central Concentrate Supply (Option)

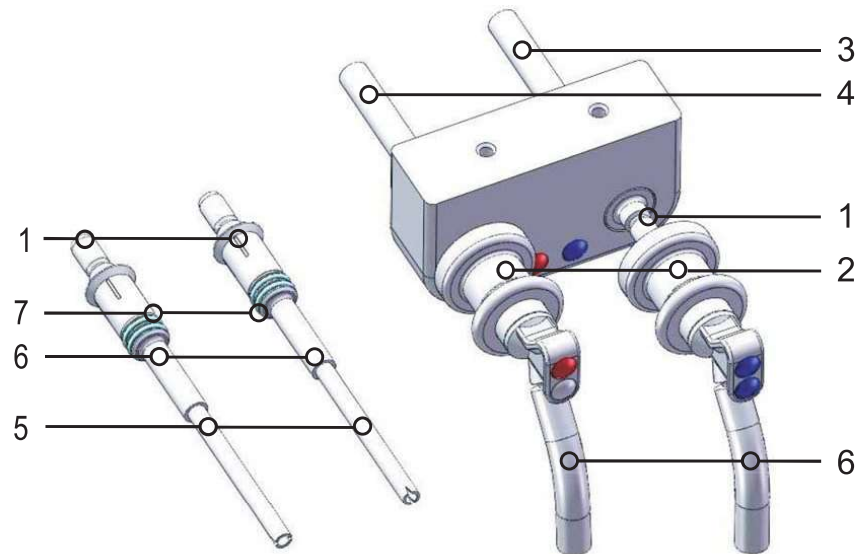


Fig. 9-79 Central concentrate supply, option

9

Pos.	Art.No	Qty.	Description	Comments
1	34560939	1	Suction nipple with O-rings 9.3 x 2.4	-
2	34560920	1	Suction coupling	-
2	34570438	5	O-ring 8.0 x 1.25	-
3	34565248	10 m	Silicone tubing 5 x 1.5, blue	-
4	34565230	10 m	Silicone tubing 5 x 1.5, red	-
5	3451728A	1	PE tube 4 x 1	with silicone tubing
6	34565280	3 m	Silicone tubing 3.2 x 1.6	-
7	34570004	5	O-ring 9.3 x 2.4	-

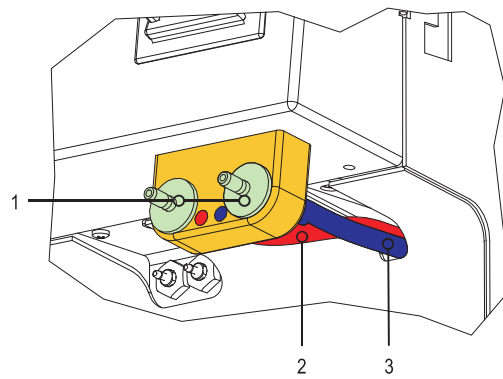


Fig. 9-80 Suction nipple with O-rings

9

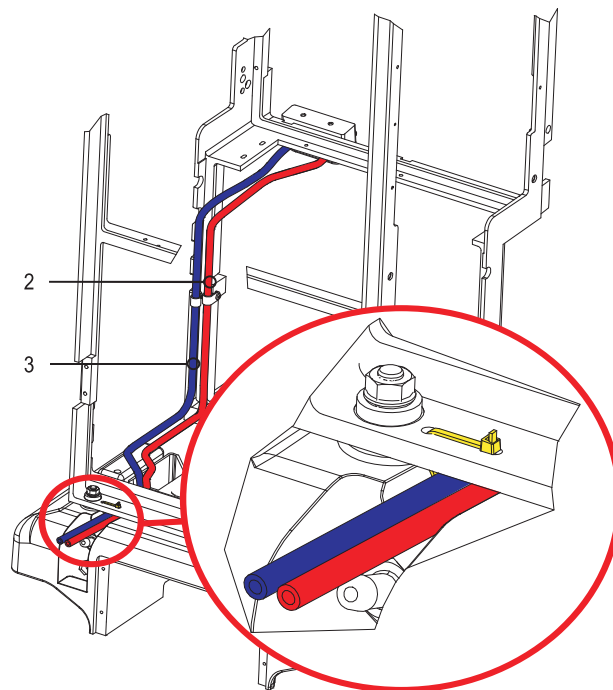


Fig. 9-81 Silicone tubing

Pos.	Art.No	Qty.	Description	Comments
1	34650939	1	Suction nipple with O-rings 9.3 x 2.4	—
2	34565230	10 m	Silicone tubing 5 x 1.5, red	—
3	34565248	10 m	Silicone tubing 5 x 1.5, blue	—

9.10.6 Rinsing Bridge Version 4

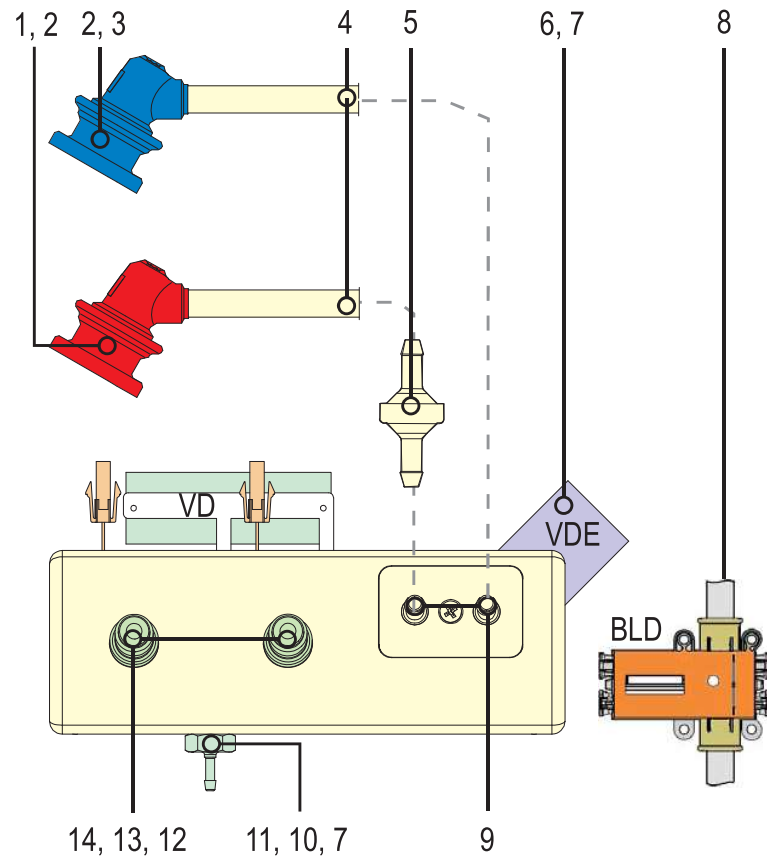


Fig. 9-82 Rinsing bridge version 4, view 1

Pos.	Art.No	Qty.	Description	Comments
1	34561382	1	Dialyzer coupling, red	without sampling port
2	34990445	5	O-ring 12.37 x 2.62	for dialyzer coupling
3	34561390	1	Dialyzer coupling, blue	without sampling port
4	34565191	10 m	Silicone tubing 5 x 3	-
5	34561501	5	Disposable filter 4.6 mm	-
6	3451902C	1	Solenoid valve 2/2 way	connector/flange (AKM)
7	34770852	5	O-ring 11.1 x 1.6	-
8	34561692	1	Blood leak detector, version 4	-
9	34773762	10	O-ring 9.25 x 1.78	-
10	34517251	1	Tubing connector 3.5 x 1/8"	stainless steel
11	34517294	1	Suction set with tubing, suction port and black lid	for disinfection
11	34514562	1	Suction set with tubing, suction port and yellow lid	for disinfection
11	34565272	10 m	PVC tubing 3,5 x 1	for disinfection
11	34512675	1	Suction port	for suction tubing
12	34511792	1	Tubing connector	-
13	34517138	1	Reed sensor with contacts and O-ring 3.68 x 1.78	without housing

Pos.	Art.No	Qty.	Description	Comments
14	34771255	20	O-ring 14 x 1.5	-
-	3456173A	1	Sample port	-

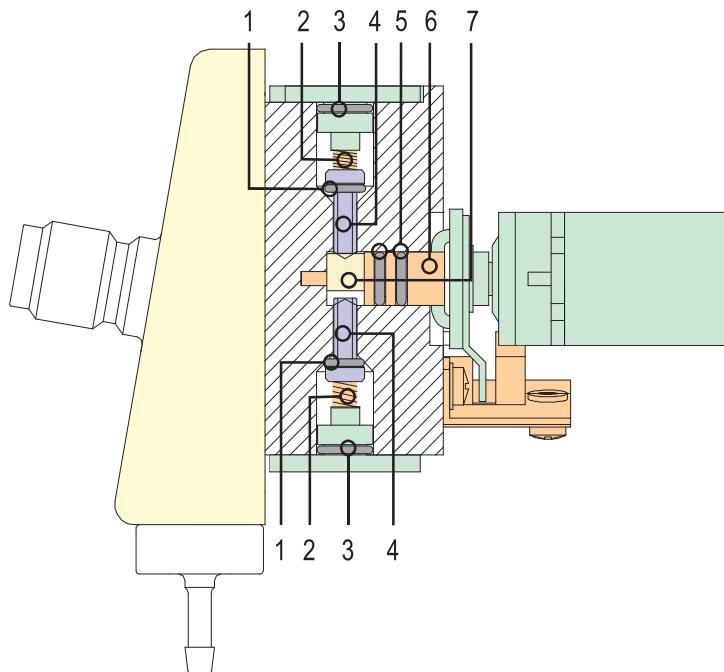


Fig. 9-83 Rinsing bridge version 4, view 2

Pos.	Art.No	Qty.	Description	Comments
-	34561382	1	Repair kit disinfection valve consisting of: 2 x O-ring 2.7 x 1.5 2 x O-ring 5 x 1.6 3 x O-ring 6.4 x 1.3 2 x Cover 4 x Countersunk screw M 3 x 8 2 x Valve tappet 2 x Pressure spring 1 x Eccentric roller 1 x Eccentric shaft	for the complete replacement of all small parts in the disinfection valve
1	34570012	10	O-ring 2.7 x 1.5	for valve tappet
2	34517332	2	Pressure spring	for valve tappet
3	3477106A	5	O-ring 6.4 x 1.3	for cover valve tappet
4	34517324	2	Valve tappet	for VD
5	34570457	10	O-ring 5.0 x 1.6	for eccentric shaft
6	34560840	1	Eccentric shaft	-
7	34560858	1	Eccentric roller	-

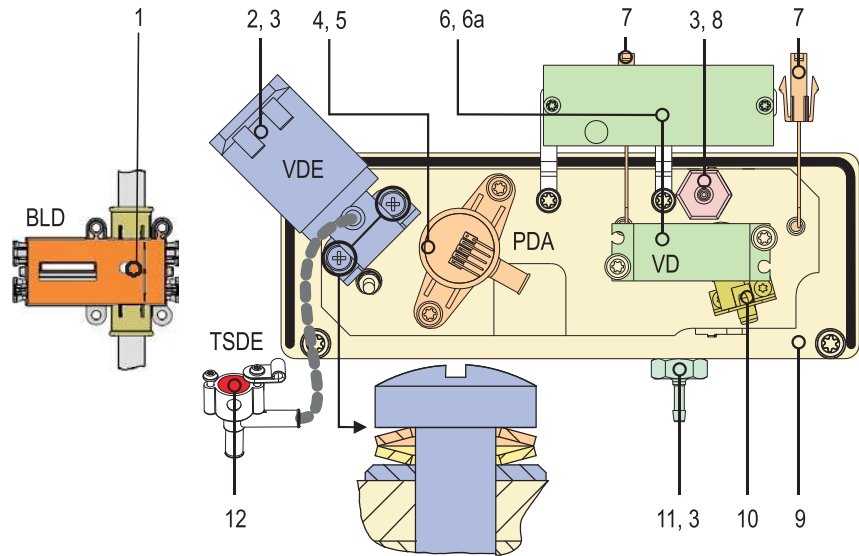


Fig. 9-84 Rinsing bridge version 4, view 3

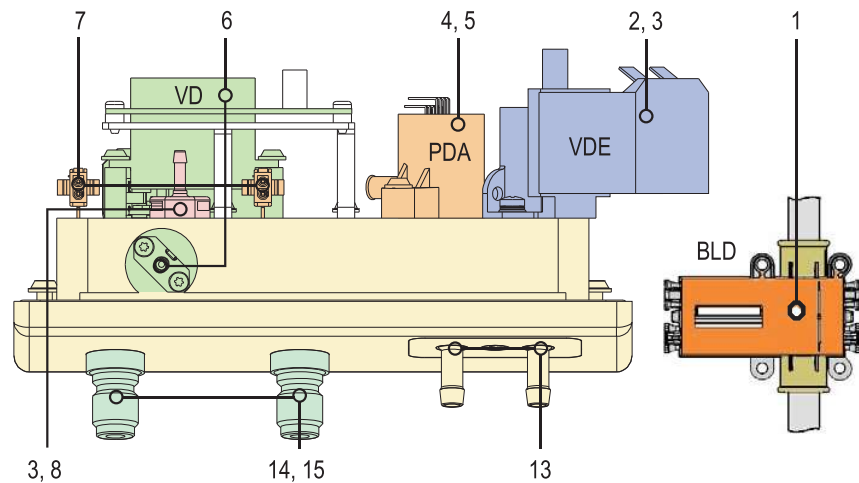


Fig. 9-85 Rinsing bridge version 4, view 4

Pos.	Art.No	Qty.	Description	Comments
1	34561692	1	Blood leak detector version 4	–
2	3451902C	1	Solenoid valve 2/2 way	connector/flange AKM
3	34770852	5	O-Ring 11.1 x 1.6	–
4	3456124A	1	Pressure sensor	–
5	34773762	10	O-ring 9.25 x 1.78	–
6	3456182A	1	Servomotor incl. flags	without disinfection-valve board
6a	34561838	1	Disinfection-valve board	without servomotor
7	34517138	1	Reed sensor with contacts and O-ring 3.68 x 1.78	without housing
8	3477103A	2	Tubing connector \varnothing 3.5 x 1/8"	–
9	3451462A	1	Rinsing bridge housing, version 4	–
10	3451660A	1	Fork light barrier for servomotor	–
11	34517251	1	Tubing connector \varnothing 3.5 x 1/8"	–

Pos.	Art.No	Qty.	Description	Comments
12	3451614B	1	Temperature sensor	with shrinking tube, without connector/housing
12	34570730	1	Housing complete for temperature sensor	–
13	34773762	10	O-ring 9.25 x 1.78	–
14	34511792	1	Tubing connector	–
15	34771255	20	O-ring 14 x 1.5	–

9.10.6.1 Rinsing Bridge Version 5 from Serial Number 201,787/
300,384

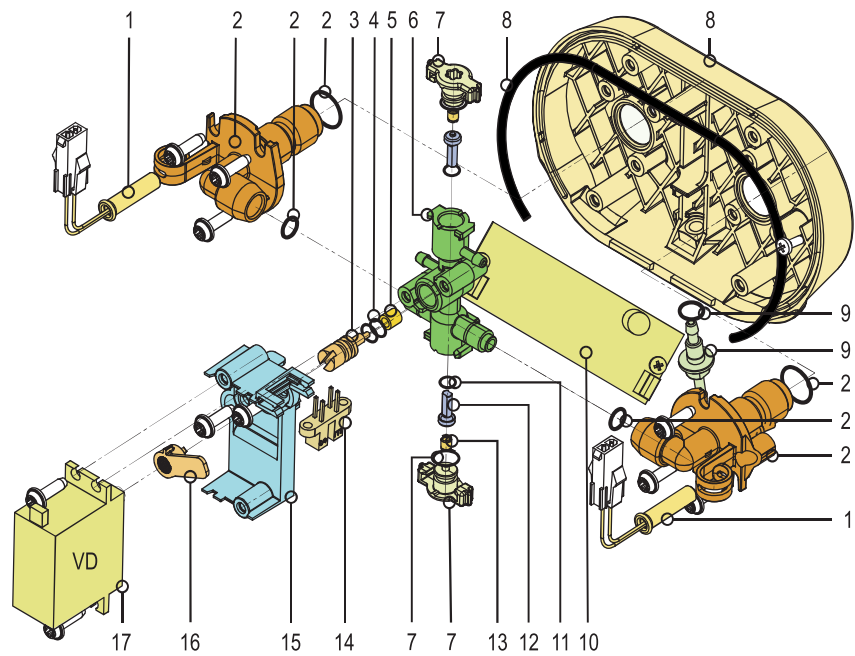


Fig. 9-86 Rinsing bridge version 5, view 01

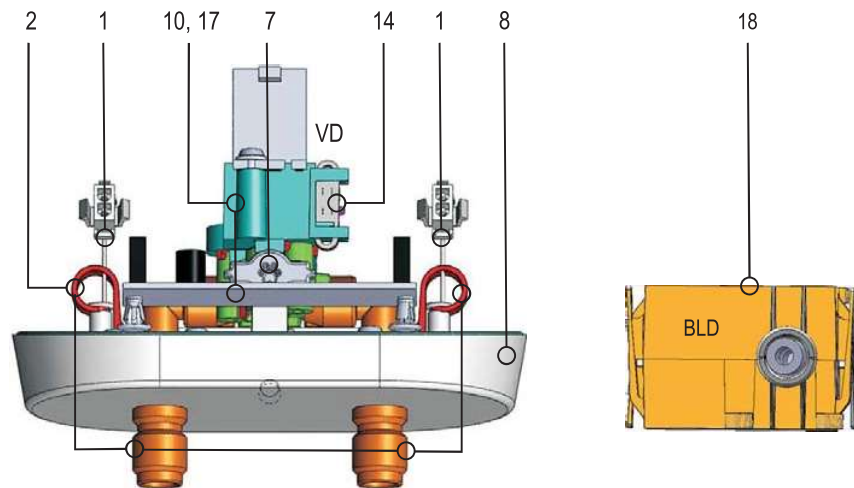


Fig. 9-87 Rinsing bridge version 5, view 02

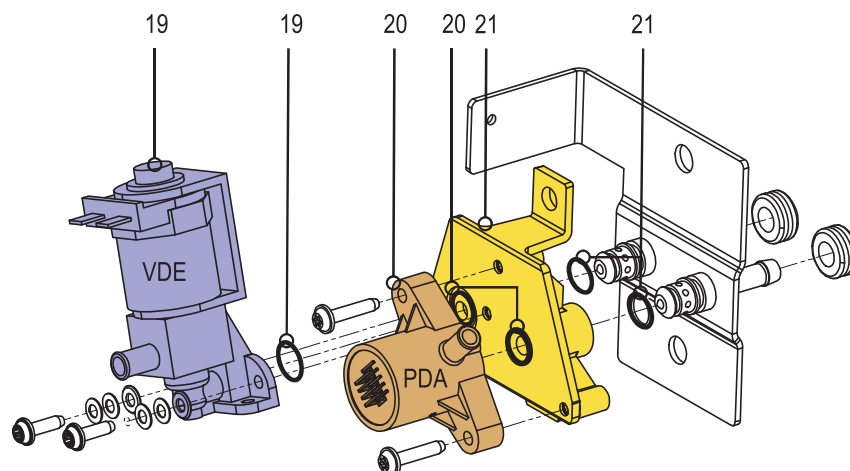
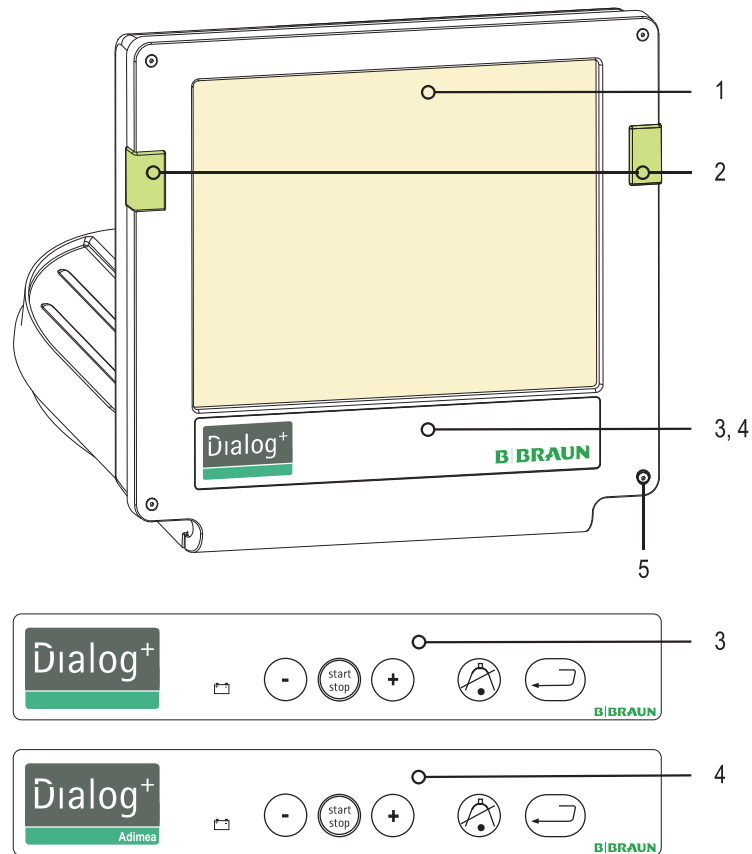


Fig. 9-88 Rinsing bridge version 5, view 03

Pos.	Art.No	Qty.	Description	Comments
1	34517138	1	Reed sensor with contacts and O-ring 3.68 x 1.78	without housing
2	34561862	1	Tubing connector (male), incl. O-ring 12.5 x 1.5 and O-ring 5.6 x 1.8	rinsing bridge
3	34560840	1	Eccentric shaft	–
4	34570457	10	O-ring 5.0 x 1.6	–
5	34560858	1	Eccentric roller	–
6	34561994	1	Valve housing	–
7	34561986	1	Valve housing lid with O-ring 6.4 x 1.3	–
8	34561846	1	Rinsing bridge housing version 5, incl. seal	–
9	34561854	1	Tubing connector 3,5 x 1/8", incl. O-ring 6.4 x 1.3	disinfection port
10	34561838	1	Disinfection-valve board	without servomotor
11	34570012	10	O-ring 2.7 x 1.5	–
12	34517324	2	Valve tappet	for VD
13	34517332	1	Pressure spring	for valve tappet
14	3451660A	1	Fork light barrier for servomotor	–
15	34562001	1	Servomotor holder	–
16	34570870	5	Flag Servomotor	–
17	3456182A	1	Servomotor incl. flags	without disinfection-valve board
18	34561692	1	Blood leak detector version 4	modified calibration for BLD V4
19	3451902C	1	Solenoid valve 2/2 way	connector/flange AKM
19	34770852	5	O-ring 11.1 x 1.6	–
20	3456124A	1	Pressure sensor	–
20	34773762	10	O-ring 9.25 x 1.78	–
21	34562010	1	Plastic holder, incl. 2 x O-ring 9.25 x 1.78	–

9.11 LCD Monitor up to SN 500,000



9

Fig. 9-89 TFT monitor outside, front view

Pos.	Art.No	Qty.	Description	Comments
1	34514260	1	Touch screen for LCD	-
2	3457069A	2	OSD cover	complete with seal and screws
3	34561285	1	Membrane	-
4	34561366	1	Membrane for Adimea option	-
5	34570772	6	Countersunk screw M4 x 30 (Torx)	-
-	34515755	1	Seal cord 1100 mm	-

9

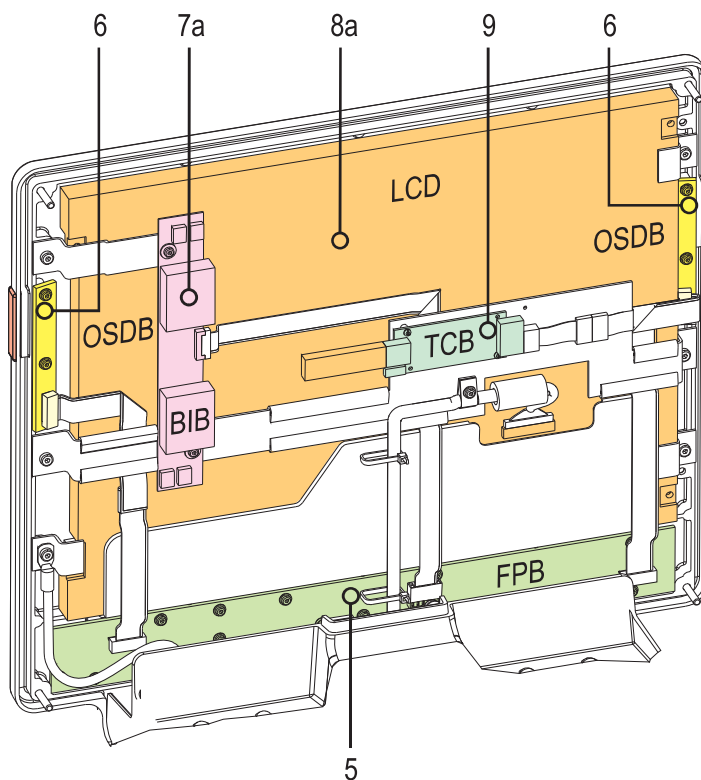


Fig. 9-90 LCD monitor inside, rear view

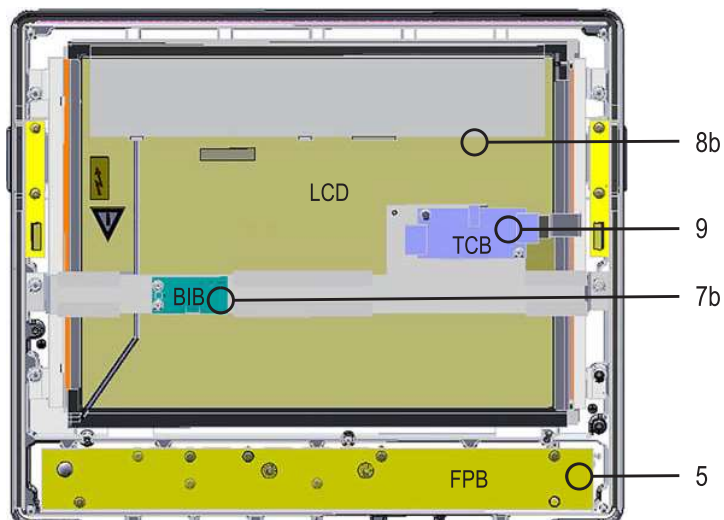


Fig. 9-91 LCD monitor inside, front view

Pos.	Art.No	Qty.	Description	Comments
5	3451428A	1	Front-Panel-Board (FPB)+	Version I
5	34562176	1	Front-Panel-Board	Version II from SN: 219320 und 304481
5	34562282	1	Front-Panel-Board (FPB inkl. BIB)	Version III from SN: 510431
6	3451429A	1	OSD-Board+	-
7a	34514686	1	Backlight inverter board BIB for Boe Hydis/Samsung LCD	up to serial number 105217/151934

Pos.	Art.No	Qty.	Description	Comments
7b	34561773	1	Backlight inverter board BIB for G150XGE LCD	from serial number 105218/151935
8a	3451463B	1	LCD display 15" (Boe Hydix or Samsung)	up to serial number 105217/151934
8b	3461013B	1	TFT display 15"	from serial number 105218/151935
9	3451460A	1	Touch controller board TCB version 3	–
–	34561757	1	Retrofit kit LCD – display G150XGE, consists of: <ul style="list-style-type: none"> • backlight inverter board for G150XGE • cables, brackets and screws • cleaning cloth 	for the retrofitting of Boe Hydix/Samsung to Chimei/Tianma display display to be ordered separately
–	34562221	1	Ribbon cable 10 conductors (TCB – Motherboard COM4)	–
–	34560912	1	Ribbon cable 12 conductors (FPB – OSD)	–
–	34560971	1	Ribbon cable 10 conductors (FPB – BIB)	–
–	34562225	1	Ribbon cable 26 conductors (FPB – Motherboard)	–

9.11.1 LCD Monitor from SN 500,000

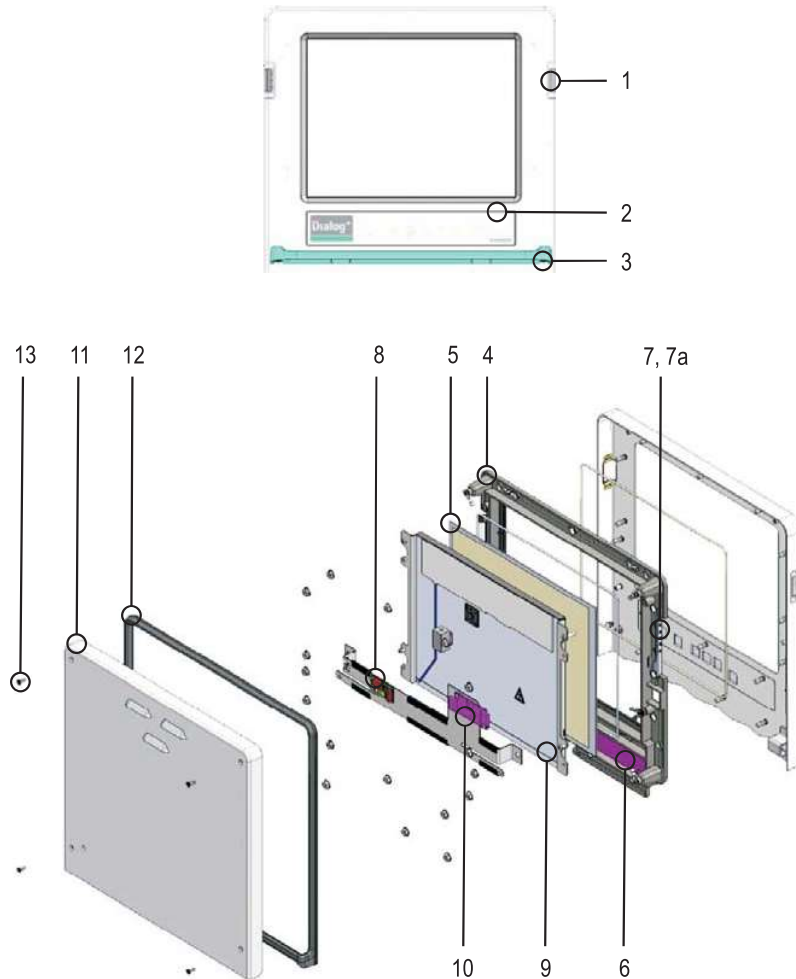


Fig. 9-92 LCD monitor

Pos.	Art.No	Qty.	Description	Comments
1	34562231	2	OSD cover	incl. seal, spring nut and expanding rivet
2	34561285	1	Membrane	-
3	34562236	1	Front filling	green
4	34562230	1	Monitor frame	incl. seal, EMC cords and insert sleeves
5	34514260	1	Touch screen for LCD	-
6	3451428A	1	Front panel board (FPB)+	Version I
6	34562176	1	Front panel board	Version II from SN: 219320 and 304481
6	34562282	1	Front panel board (FPB inkl. BIB)	Version III from SN: 510431
7	3451429A	1	OSD-Board+	-
7a	34562232	20	Expanding rivet	fastening for OSD board
8	34561773	1	Backlight inverter board BIB for G150XGE LCD	from SN: 105218/151935
9	3461013B	1	TFT display 15"	-

Pos.	Art.No	Qty.	Description	Comments
10	3451460A	1	Touch controller board TCB version 3	-
11	34562233	1	Monitor back	incl. seal
12	34562234	1	Seal monitor back	-
13	34570772	6	Countersunk screw M4 x 30 (Torx)	-
-	34562238	1	Ribbon cable 20 conductors (LVDS – LCD)	-
-	34562241	1	Ribbon cable (TCB – COM4)	-
-	34562239	1	Ribbon cable 12 conductors (FPB – OSD)	-
-	34562240	1	Ribbon cable 16 conductors (FPB – BB)	-
-	34562242	1	Ribbon cable 26 conductors (FPB – Motherboard)	-

9.12 Test and Calibration Equipment and Tools

**Inspection for Calibration Equipment**

Calibration equipment is subject to inspection and must be checked and calibrated in regular intervals.

Pos.	Art. No.	Qty.	Description	Comments
#	7701357	1	Manometer 0 – 4 bar	–
#	34511571	1	Manometer 2.5 bar	–
–	770085A	1	Flow meter 1.1 l/min	–
–	7700911	1	Reference solution (red)	for calibration of blood leak detector
#	7702493	1	Template 1.4/1.5	for tubing clamps
#	–	*	Dialysis measurement instrument, e.g. HDM97BQ or HDM99XP For example manufacturer: IBP Medical GmbH Internet: www.ibpmedical.com	for temperature, conductivity, flow and pressure measurement for detailed informations contact the manufacturer directly
–	–	–	Crossover cable RS 232 For example manufacturer: Rigel Medical Internet: www.rigelmedical.com	for HDM99 RS 232 interface for detailed informations contact the manufacturer directly
#	–	*	Electrical safety analyzer, e.g. Rigel 288 For example manufacturer: Rigel Medical Internet: www.rigelmedical.com	for electrical safety check according to IEC 62353/ EN 60601-1/IEC 601-1 for detailed informations contact the manufacturer directly
#	–	*	Balance, e.g. pocket balance CM 320-1N For example manufacturer: Kern & Sohn GmbH Internet: www.kern-sohn.com	for calibration of UFP, BICP and KP for detailed informations contact the manufacturer directly
–	7701756	1	Extraction tool set (AMP)	for pin removal from connectors
–	770203A	1	Stopcock system with five stopcocks, incl. lines	for the common calibration of the blood pressure sensors (5 x original Perfusor lines 50 cm)
–	7703090	1	Expansion chamber 500 ml	for function test of ABPM module and LRP
–	7703589	1	Crossover cable RJ45	for network
–	7703597	1	Coupling RJ45	for network
–	7703635	1	Extension cable D-sub 9 pin	for network
–	7703643	1	Chip card for BSL-Nexadia	for network
–	7703473	1	Test plug RS 232	for network
–	7703856	1	Chip card for card reader	–

Pos.	Art. No.	Qty.	Description	Comments
-	7703805	1	Male to male connector	Adapter to connect both dialyzer couplings for the measurement of the patient leakage current
-	770284A	1	DCI cable, external	-
-	7703848	1	Assembly jig (motor for piston pump)	required for motor assembly
-	7704090	1	Door latch	to keep front door open during service

* not in the product range of B. Braun Avitum AG

9.13 Service Kits

Pos.	Art. No.	Qty.	Description	Comments
–	3451897A	1	Repair kit balance chamber	for complete replacement of both membranes, incl. all o-rings and assembly parts (self-locking nuts, screws, springs etc.)
–	34561757	1	Retrofit Kit LCD-Display G150XGE, consists of: <ul style="list-style-type: none"> • Backlight Inverter Board for G150XGE • Cables, brackets and screws • Cleaning cloth 	for retrofitting of Boe Hydix/Samsung to Chimei display display is not included
–	3451898B	1	Repair kit disinfection valve, consists of: 2 x O-ring 2,7 x 1,5 2 x O-ring 5 x 1,6 3 x O-ring 6,4 x 1,3 2 x Cover 4 x Countersunk screw M 3 x 8 2 x Valve tappet 2 x Pressure spring 1 x Eccentric roller 1 x Eccentric shaft	for the complete replacement of all small parts in the disinfection valve
–	3451893H	1	Maintenance kit	contains all parts as per Preventive Maintenance Check List for standard machine
–	3456068B	1	Maintenance kit/supplement HDF Online	contains all parts as per Preventive Maintenance Check List, required additionally for HDF Online machines
–	34562274	1	Retrofit kit relocation temperature sensors	–

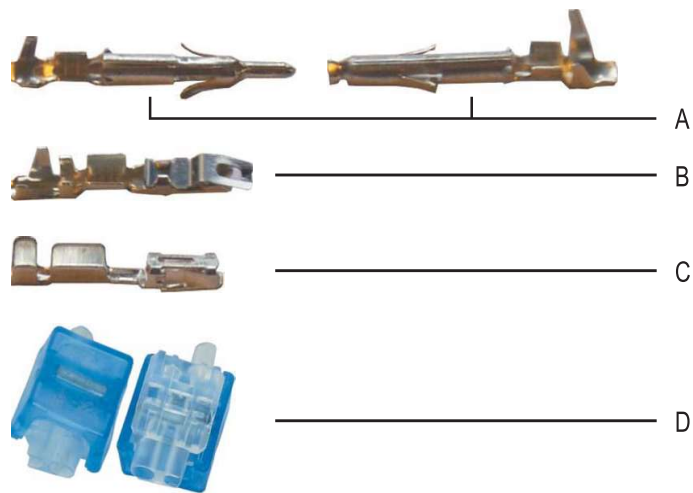


Fig. 9-93 Wire repair kit

Pos.	Art. No.	Qty.	Description	Comments
-	34561811	1	Wire repair kit, consisting of:	for repairs on wire harness where crimping contact pins are damaged
			A 10 x 30 cm wire 0.25 mm ² with MMNL ST/BU 0.25 male/female (tin-plated)	
			10 x 30 cm wire 0.25 mm ² with MMNL ST/BU 0.25 male/female (gold-plated)	
			10 x 30 cm wire 0.5 mm ² with MMNL ST/BU 0.25 male/female (tin-plated)	
			B 10 x 30 cm wire 0.25 mm ² with locking clip both female (tin-/gold-plated)	
			C 10 x 30 cm wire 0.5 mm ² with MODU 4 both female (tin-/gold-plated)	
			D 30 x 3M Scotchlok wire connector UB2A	

9.14 Software

Pos.	Art. No.	Qty.	Description	Comments
-	770912A	1	Software 9.12	USB-Stick with TLC/LLS/LLC
-	770913	1	Software 9.13	USB-Stick with TLC/LLS/LLC
-	7703562	1	CD WAN-BSL firmware version 1.0.4.8	for WAN-BSL only
-	7703864	1	Field service utility FSU version 2.00	-
-	7704089	1	BIOS update USB stick version 1,08	for BIOS update only
-	77091A	1	Software 9.1A	USB-Stick with TLC/LLS/LLC
-	77091B	1	Software 9.1B	USB-Stick with TLC/LLS/LLC

9.14.1 Software Compatibility Table

Software (ex Works)	BIOS	Dialog		Dialog Advanced		Dialog Advanced	Dialog ⁺ ≤SW 8.XX	Dialog ⁺ SW 9.XX
		POS-460	GX1LCD	POS-460	GX1LCD	GX1LCD (ex Works)	*GX1LCD # LX800	LX800
Software 3.46 (QNX2)	-	X	-	-	-	-	-	-
Software 3.48 (QNX2)	1.8	-	X	-	-	-	-	-
Software 5.35 (QNX2)	-	-	-	X	-	-	-	-
Software 5.36 (QNX2)	1.8	-	-	-	X	-	-	-
Software 6.XX (QNX4)	1.8	-	-	-	-	X	-	-
Software 7.21 to 7.53 (QNX4)		-	-	-	-	-	X	-
Software-Update 7.53 (Linux) Diskettes with TLC/LLS SW only if SW 7.52 is present	*1.8/1.9 #1.01/1.04	-	-	-	-	-	X	-
Software 7.58 (Linux)		-	-	-	-	-	X	-
Software 7.59 (Linux)		-	-	-	-	-	X	-
Software-Update 7.59 (Linux) USB Stick with TLC/LLS SW only if SW 7.52 is present	*1.9 #1.01/1.04	-	-	-	-	-	X	-
Software ≥8.20 (Linux)		-	-	-	-	-	X	-
Software 9.02 (Linux)	1.04	-	-	-	-	-	-	X
Software 9.03/9.04 (Linux)	1.04	-	-	-	-	-	-	X
Software 9.12 (Linux)	1.04–1.07	-	-	-	-	-	-	X
Software 9.13 (Linux)	1.04–1.07	-	-	-	-	-	-	X
Software 9.1A (Linux)	1.08	-	-	-	-	-	-	X
Software 9.1B (Linux)	1.08	-	-	-	-	-	-	X

9.15 Miscellaneous

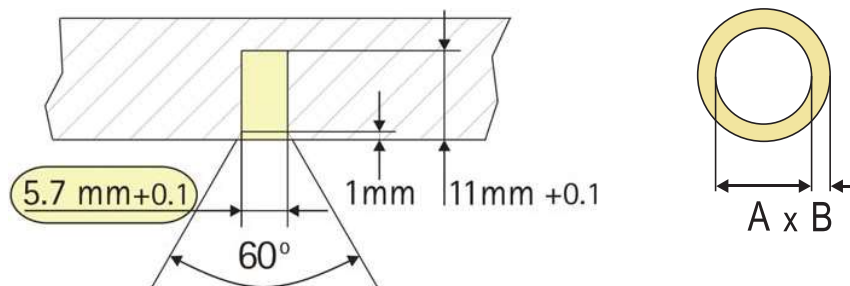


Fig. 9-94 Tubing dimension and diameter

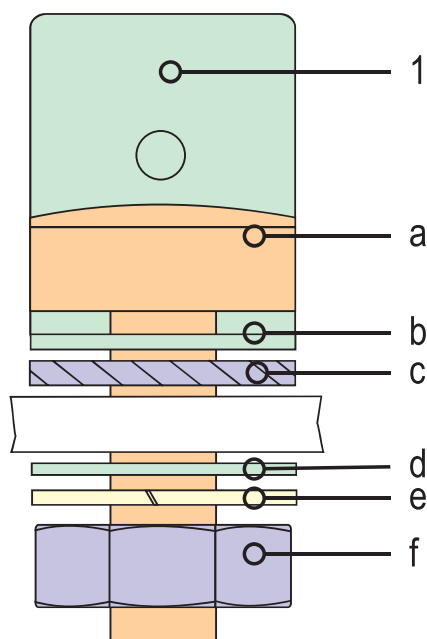


Fig. 9-95 Grounding for sub racks

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Pos.	Art. No.	Qty.	Description	Comments
-	34570900	10	Threaded insert M4	Note: max. drilling depth 11 mm +0.1 Drill with \varnothing 5.7 mm is required
-	34565329	1 m	Tubing 12 x 2/RAL 9001	-
-	34565337	2 m	Silicone tubing 8 x 2	see 8 Flow, Wiring and Tubing Diagrams (705)
-	34565221	10 m	Silicone tubing 6 x 3	-
-	34565256	2 m	Silicone tubing 6 x 1.75/red	internal high temperature tubing
-	3456516A	3 m	Silicone tubing 8 x 3.2/red, with two single ear clamps 17.5	external high temperature tubing
-	34561749	50 m	Silicone tubing 8 x 3.2/red	external high temperature tubing

Pos.	Art. No.	Qty.	Description	Comments
-	34565264	2 m	Silicone tubing 6 x 1.75	-
-	34562265	2 m	Silicone tubing 6 x 1.75/blue	for DF filter option
-	34565256	2 m	Silicone tubing 6 x 1.75/red	for DF filter option
-	34565191	10 m	Silicone tubing 5 x 3	-
-	34565248	10 m	Silicone tubing 5 x 1.5/blue	-
-	34565230	10 m	Silicone tubing 5 x 1.5/red	-
-	34565272	10 m	PVC tubing 3,5 x 1	-
-	34565213	10 m	Silicone tubing 2.9 x 3	-
-	34565280	3 m	Silicone tubing 3.2 x 1.6	-
-	34565299	3 m	Silicone tubing 2 x 3	transparent
-	34565302	5 m	Silicone tubing 2 x 1.5	-
-	34565140	50 m	PVC tubing 10 x 3/red	for water inlet
-	3456517C	1	PVC tubing 10 x 3/red, with two single ear clamps 19.5	for water inlet
-	34565159	50 m	PVC tubing 10 x 3/black	for dialysate outlet
-	3456518A	3 m	PVC tubing 10 x 3/black, with one single ear clamp 19.5 and one tubing clamp 12-20 mm	for dialysate outlet
-	34565345	1 m	Silicone tubing 12 x 2.5	-
-	34570195	20	Tubing clamp SNP-1.5 Ø 7-8 mm	plastic
-	34570209	20	Tubing clamp SNP-4 Ø 10-11 mm	plastic
-	34570365	20	Tubing clamp SNP-6 Ø 11.4-13 mm	plastic
-	34517766	10	Canister lid, red	with retainer for suction rod
-	34517774	10	Canister lid, blue	with retainer for suction rod
-	34773770	5	Y-Tubing connector 6 mm	-
-	34570705	5	Y-Tubing connector 8 mm	-
-	7703619	1	Touch-up pen, pale green	-
-	7703627	1	Touch-up pen, light gray	-
-	7702345	1	Silicone grease 410	(Renolit) 100 g tube
-	7702353	1	Silicone rubber adhesive (white) RTV 162	for securing connectors
-	7702388	1	Silicone rubber adhesive (transparent) RTV118	must not be used for electronic components
-	7703708	1	Grease SKD 4002	100 g tube (to lubricate shaft of blood pump)
-	34562220	1	Harness pumps/valves	-
1	34570322	10	Grounding for sub-racks, consisting of: a: screw b: terminal c: tooth lock, washer d: spring, washer f: nut	Pay attention to correct assembly sequence

9.16 Staff Call (Option)

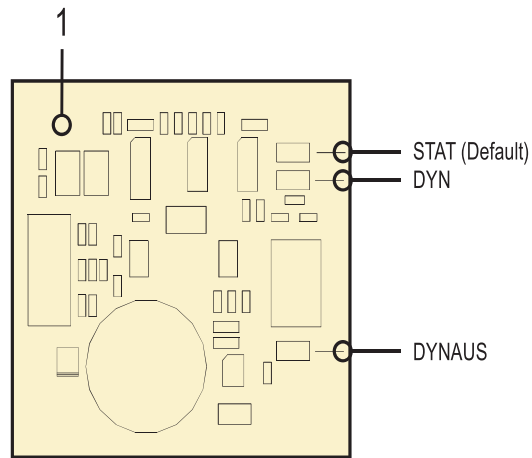


Fig. 9-96 Staff call, option

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Pos.	Art. No.	Qty.	Description	Comments
1	34517685	-	Staff call board	-

9.17 Bicarbonate Cartridge Holder (Option)

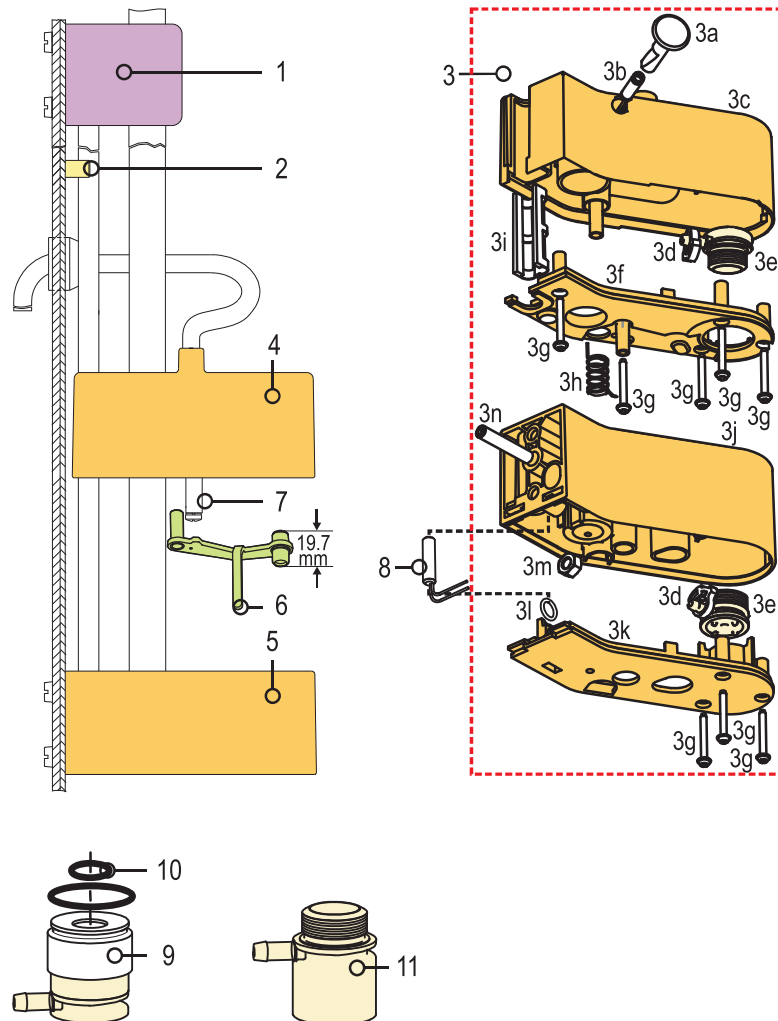


Fig. 9-97 Bicarbonate cartridge holder, option

Pos.	Art.No	Qty.	Description	Comments
1	3451439A	1	Holder, top	-
2	34570748	5	Stop position for BIC holder	-
3	34562079	1	Top/bottom housings including: 3a: push button; 3b: pressure spring; 3c: top housing; 3d: two tubing clamps SNP1.5; 3e: two short lids incl. o-rings, without valves with piercing spikes; 3f: top lid; 3g: eight screws 35x25; 3h: torsion spring; 3i: slide rail (conical); 3j: bottom housing; 3k: bottom lid incl. o-ring (pos. 3l); 3l: o-ring 8.0 x 1.6; 3m: nut M6; 3n: socket set screw M6x35 (to fasten infusion pole)	without valves and swivel arm, not backward compatible to previous version
3h	34570420	5	Torsion spring	-
4	34562087	1	Top housing	incl. lid and screws
5	34562095	1	Bottom housing	incl. lid and screws

Pos.	Art.No	Qty.	Description	Comments
6	3456009A	1	Swivel arm version 2	pay attention to dimension
7	34562252	1	Eccentric for swivel arm	for all housing versions
8	34517138	1	Reed sensor with contacts and o-ring 3.68 x 1.78	bottom BIC cartridge holder, o-ring 3.68 x 1.78 not required
9	34562109	1	Short valve lid incl. valve with piercing spike	complete with o-rings
10	34570594	10	O-ring 9.2 x 2.7	alternative (silicone) for
10	34570241	5	O-ring 9.19 x 2.62	alternative (black)
11	34562117	1	Long valve lid	for previous housing version, complete with o-ring
-	34519866	1	Slide ring	for previous housing version (IV pole)
-	34561498	5	Disposable filter 2.6 mm	filter FBIC
-	34570780	5	Y-piece 4-6-4	-

9.17.1 Solenoid Valves and Throttle

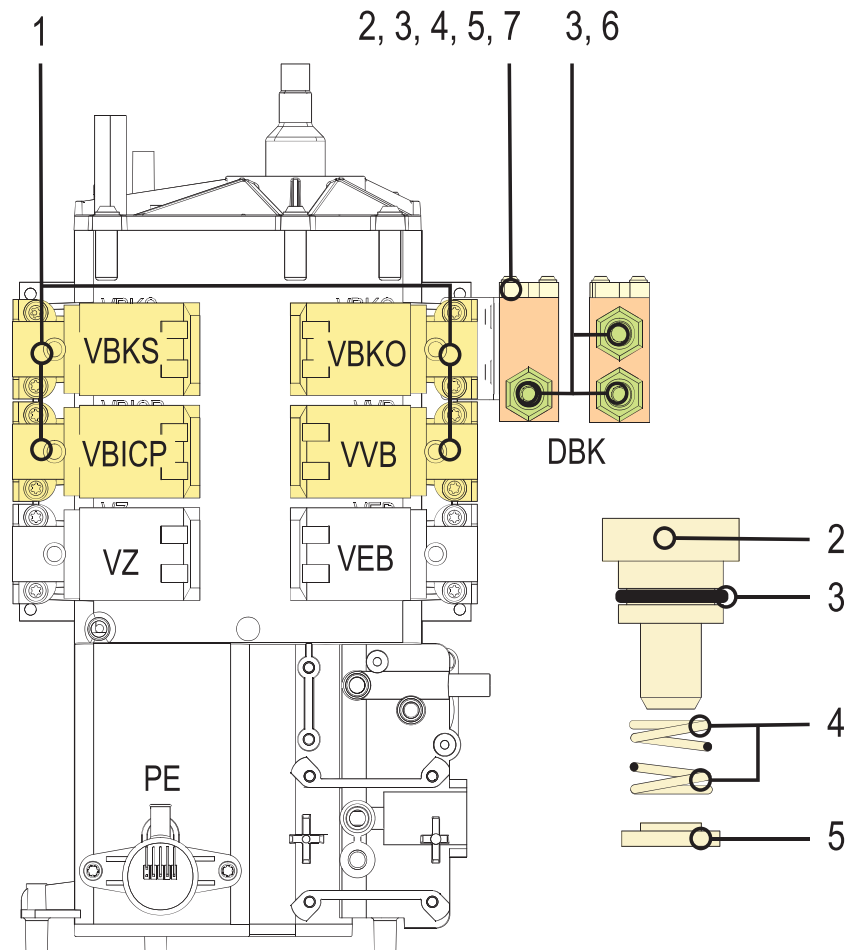


Fig. 9-98 Solenoid valves and throttle

Pos.	Art.No	Qty.	Description	Comments
1	3451906C	1	Solenoid valve 2/2 way	connector/connector (AKM)
2	34770925	5	Plug	-
3	34770852	5	O-ring 11,1 x 1,6	-
4	34771050	10	Pressure spring 500 mmHg	-
5	34570888	3	Centre disc	-
6	3451916A	5	Tubing connector \varnothing 8 x 1/8"	plastic
7	34562219	1	DBK housing	-

9.18 HDF Online (Option)

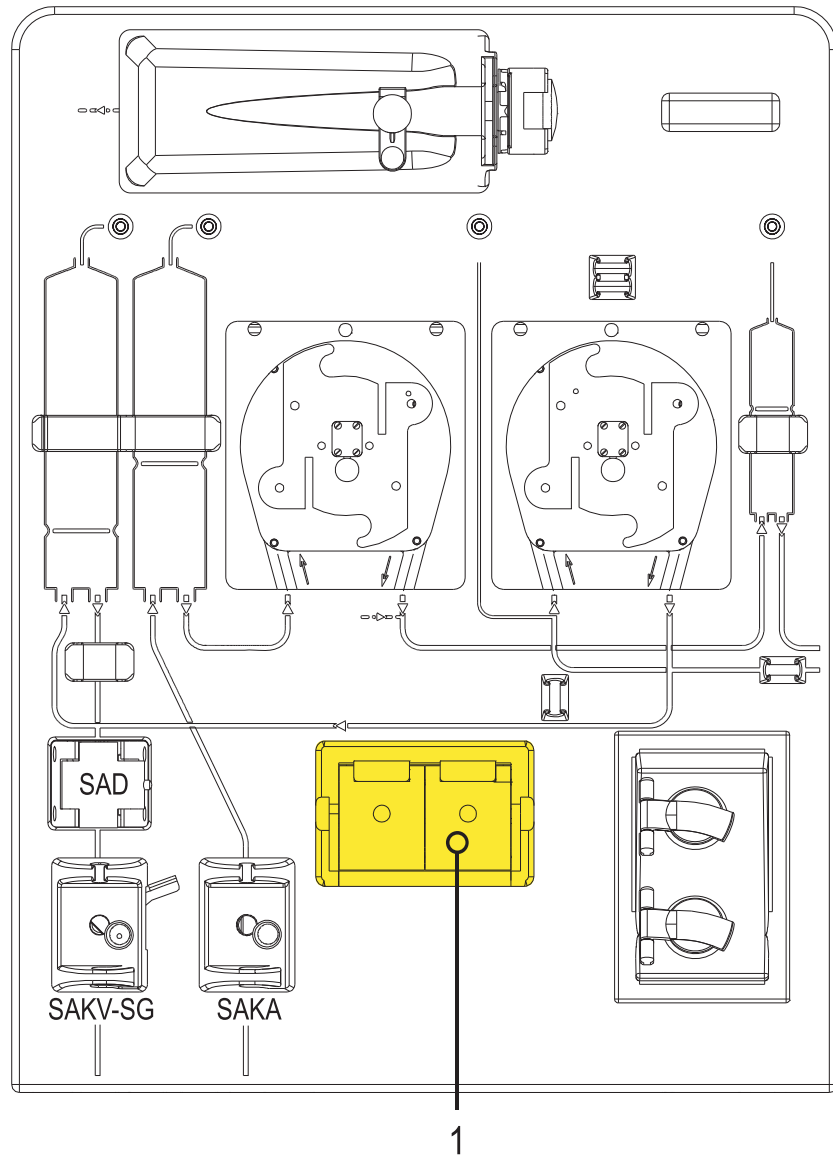


Fig. 9-99 HDF online, option

Pos.	Art.No	Qty.	Description	Comments
1	-	-	Substitution port	see chapter 9.18.1 Substitution Port (833)
-	-	-	UF sub-rack	see chapter 9.18.2 UF Sub-Rack HDF Online (835)

9.18.1 Substitution Port

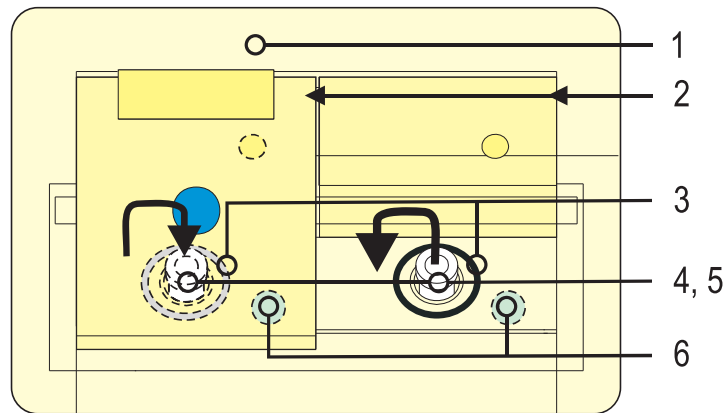


Fig. 9-100 Substitution port complete

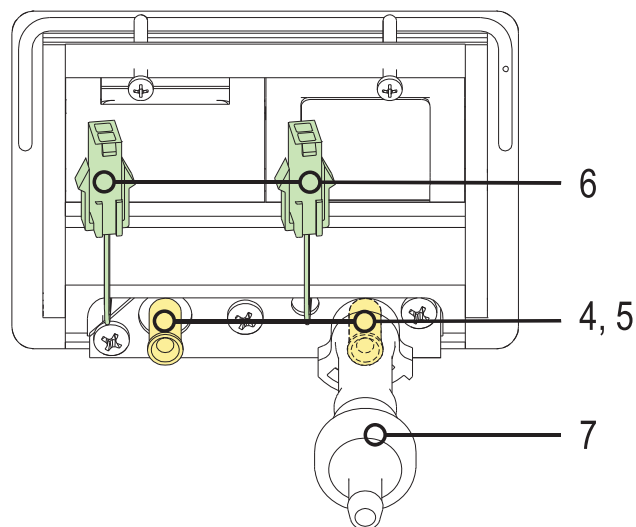
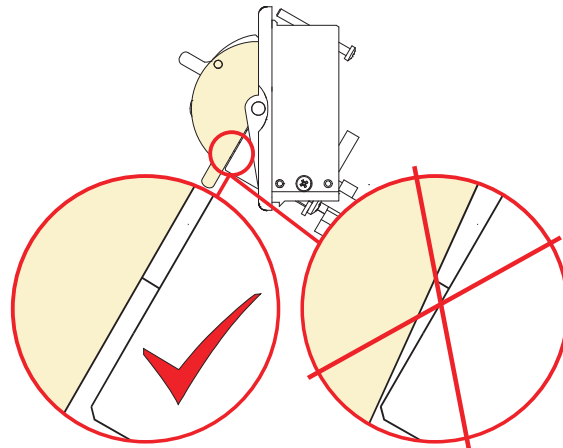


Fig. 9-101 Reed sensor with disposable filter

Pos.	Art. No.	Qty.	Description	Comments
1	3451448A	1	Substitution port complete	–
2	3457034A	5	Pressure spring \varnothing 4,6 x 14 mm	–
3	3457035A	2	Quadring 12.37 x 2.62 incl. spacer	–
4	34560017	1	Substitution connector	stainless steel, without o-ring
5	3477106A	5	O-ring 6,4 x 1,3	–
6	34517138	1	Reed sensor with contacts and o-ring 3,68 x 1,78	–
7	34561501	5	Disposable filter 4,6 mm	–



A or A+B (A = Quadring; B = Spacer)

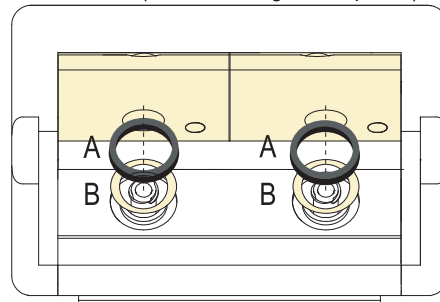


Fig. 9-102 Quadring and spacer for substitution port

9.18.2 UF Sub-Rack HDF Online

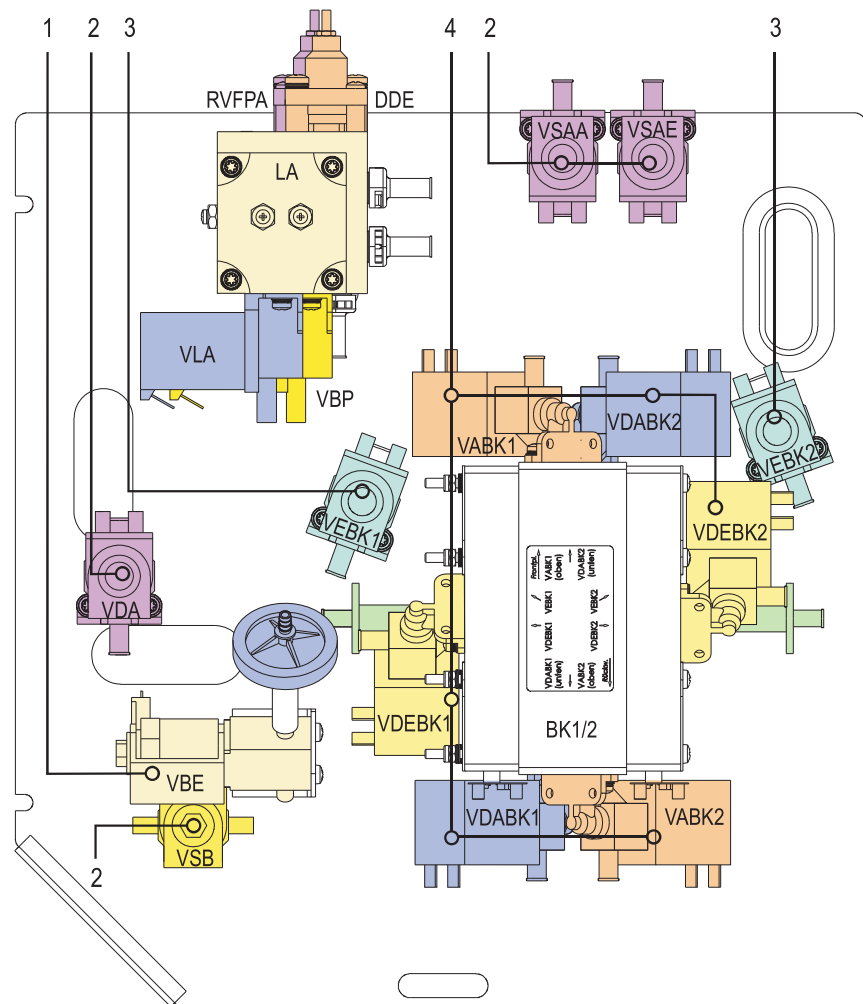


Fig. 9-103 UF sub rack HDF online

Pos.	Art. No.	Qty.	Description	Comments
1	-	-	Valve block	see chapter 9.18.3 Valve Block HDF Online (836)
3	3451906C	1	Solenoid valve 2/2 way	manuf. AKM only, connector/connector
2, 4	3451900A	1	Solenoid valve 3/2 way	manuf. AKM only, connector/flange
4	34770852	5	O-ring 11.1 x 1.6	-

9.18.3 Valve Block HDF Online

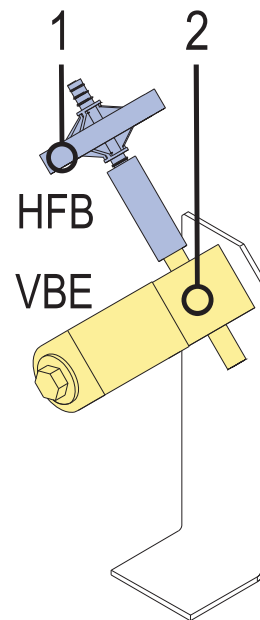


Fig. 9-104 Valve block HDF online

Pos.	Art.No	Qty.	Description	Comments
1	34560661	1	Hydrophobic filter	with tubing adapter
2	3451900A	1	Solenoid valve 3/2 way	–

9.18.4 DF/HDF Filter Holder HDF Online

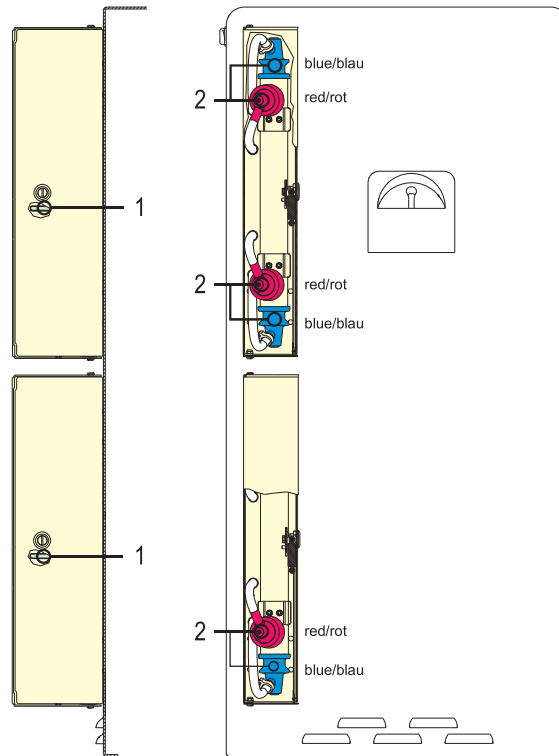


Fig. 9-105 DF/HDF filter holder up to serial number 200,000

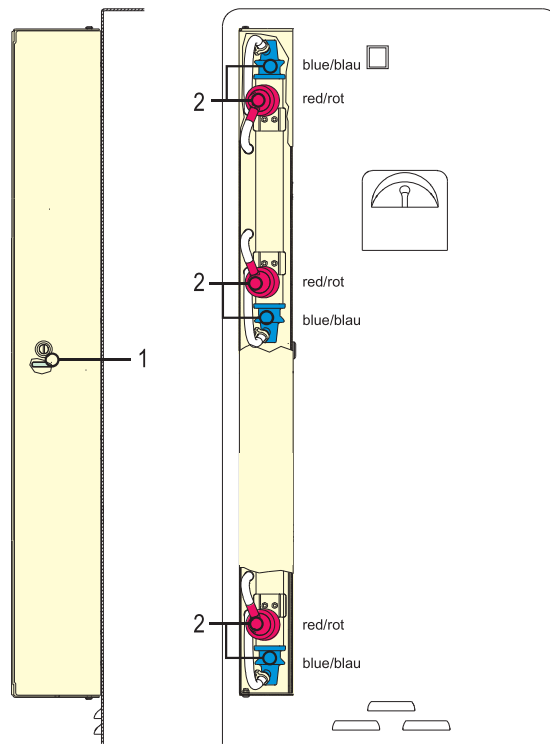


Fig. 9-106 DF/HDF filter holder, HDF online from serial number 200,000

Pos.	Art.No	Qty.	Description	Comments
1	34517138	1	Reed sensor with contacts and o-ring 3.68 x 1.78	–
2	34561633	1	Coupling without magnet	color coding by colored wire ties
2	34990445	5	O-ring 12.37 x 2.62	–

9.19 Automatic Blood Pressure Measurement ABPM Module M2015 (Option)

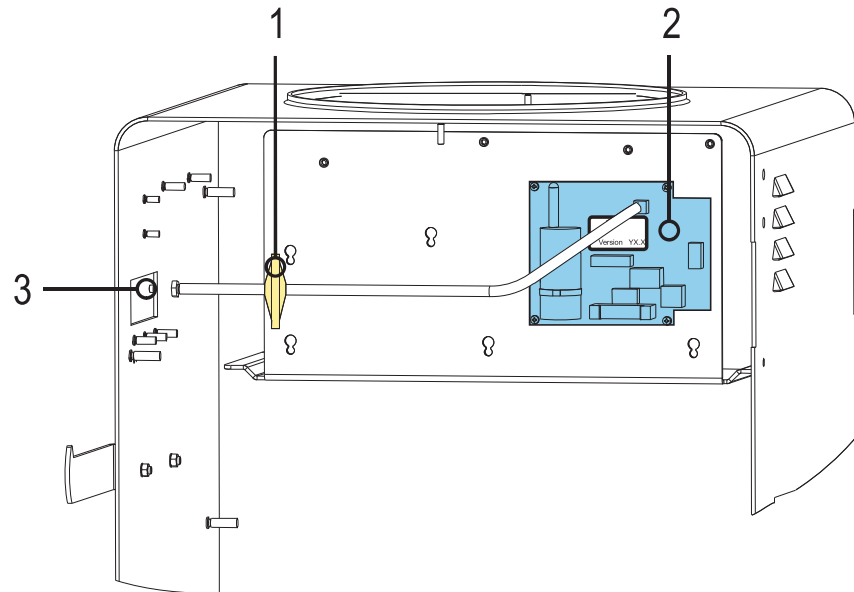


Fig. 9-107 ABPM module M2015, option

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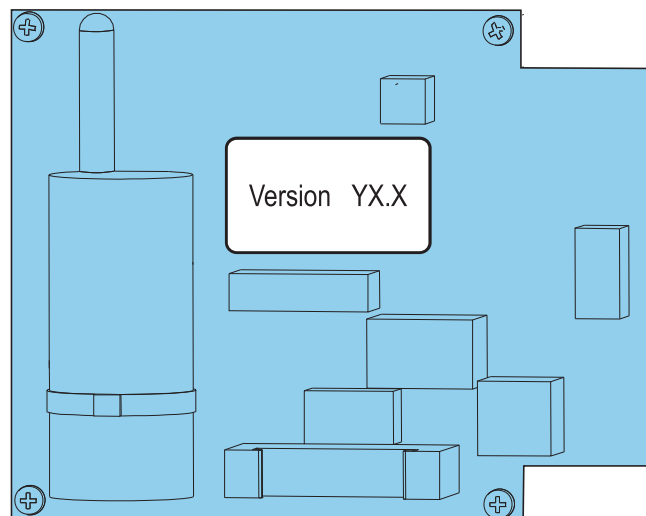
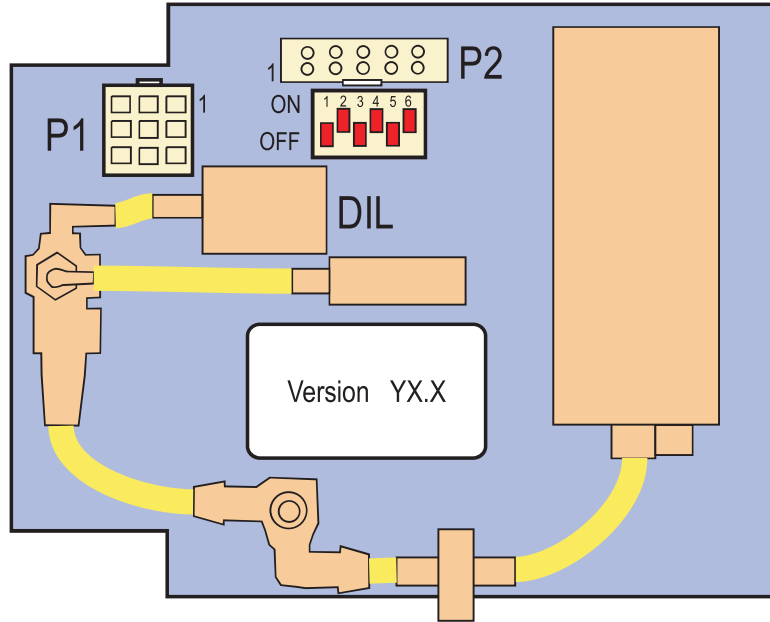


Fig. 9-108 ABPM module M2015 version number

Pos.	Art.No	Qty.	Description	Comments
1	34560955	1	Filter, ABPM module	–
2	3451487E	1	ABPM module M2015 with filter	firmware version of ABPM module on sticker: Version Y (FW): X.X
3	34562044	1	Connector, ABPM Cuff	–

9.19.1 Default Settings ABPM Module M2015

DIL Switch: Default LX800 (ex Works)



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Fig. 9-109 Default settings ABPM module M2015

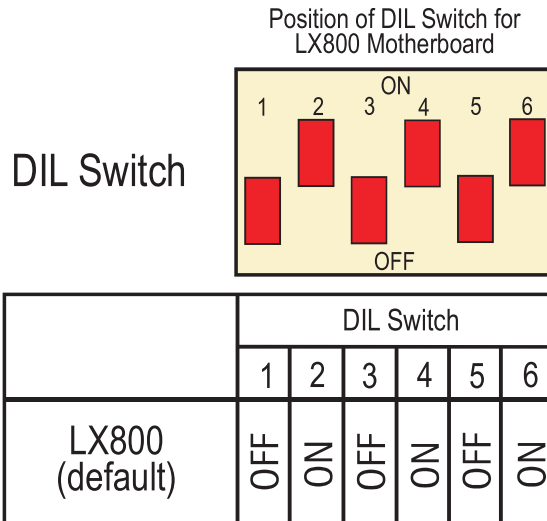


Fig. 9-110 Position of DIL switch for LX800 motherboard

9.20 Emergency Power Supply (Option)

NOTICE!

The battery (rechargeable) contains diluted sulphuric acid, a very toxic substance.

- If the battery leaks and the liquid inside spills on the skin or clothing, immediately wash it off with plenty of clean water.
- If the liquid splashes into the eyes, immediately flush the eyes with plenty of clean water and consult a doctor. Sulphuric acid in the eyes may cause loss of eyesight and acid on the skin will cause burns.
- Pay attention to the included documentation of the battery supplier!

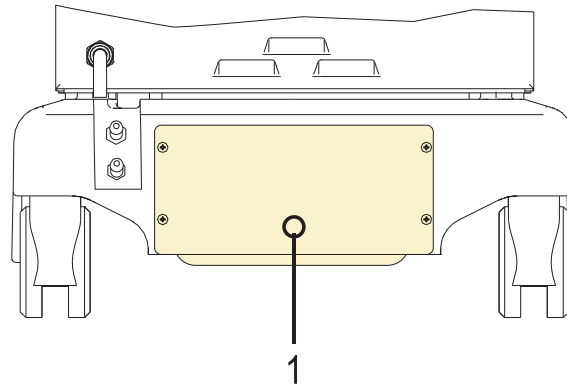


Fig. 9-111 Emergency power supply, option

Pos.	Art. No.	Qty.	Description	Comments
1	-	-	Battery sub-rack	see chapter 9.20.1 Battery Sub-Rack (842)