

kajaaniKAPPA Q

Technical manual

PART 1 (KAPPAQ_TM_part1.pdf)

- kajaaniKAPPAQ analyzer
- Measurement principle
- Operating sequences
- Password-secured parameters
- Remote operation of analyzer
- Electronics
- Troubleshooting
- Service notes (document code)
 - Acquiring Kajaani Interface key code from Metso (D05166)
 - Kajaani Interface registration & upgrade (D05212)
 - Contact for LabView software (D05413)
 - kajaaniKAPPA Q software versions (D05187)
 - Software upgrade procedure (D05366)
 - Configuring analyzer setup (D05365)
 - Change in FEP connectors (D05198)
 - Opening problems with ball valve K02448 (D05207)
 - Replacing gaskets of ball valve 262360 (D05208)
 - Replacing the ModNet50 CPU module on MasterCPU board (D05294)
 - PowerFail function for MasterCPU board (D05297)
 - Safety valve blockages (D05367)
 - Error in the software of Binary IO board K02848 (D05379)
 - RS232 cable (D05364)
 - Safety valve upgrade (D05412)
 - Fiber-Shive module: service of optical assembly (D05421)
 - Analyzer shutdown procedure (D05493)

PART 2 (KAPPAQ_TM_part2.pdf)

- Options:
- Installing the shive screen
 - Installing the brightness cell
 - Installing the sweep module

PART 3 (KAPPAQ_TM_part3.pdf)

- Construction drawings
- Measuring unit
 - Sweep module
 - Ejector assembly
 - Valve assembly
 - Screen assembly
 - Sample unit
 - Kappa measuring unit
 - Brightness measuring unit
- Electronics block diagram

The Technical Manual is intended only for Metso Automation's authorized service personnel.

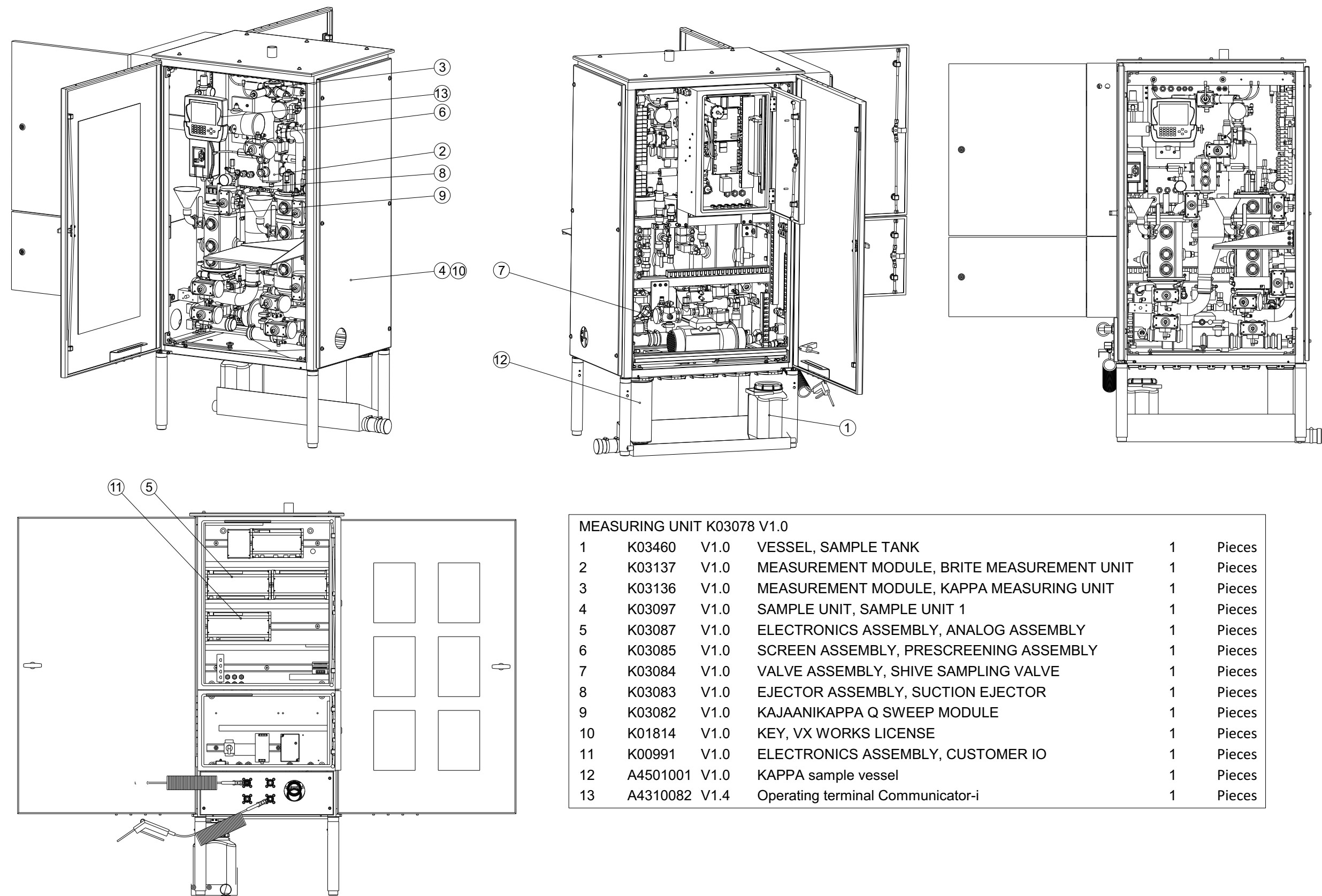
The material has been divided into several pdf files in order to keep the file size manageable. The cover lists the contents of each section.

The manual will be updated a few times a year. All updates will be indicated on this cover page, together with the date of the latest update.

This version released: July 2008

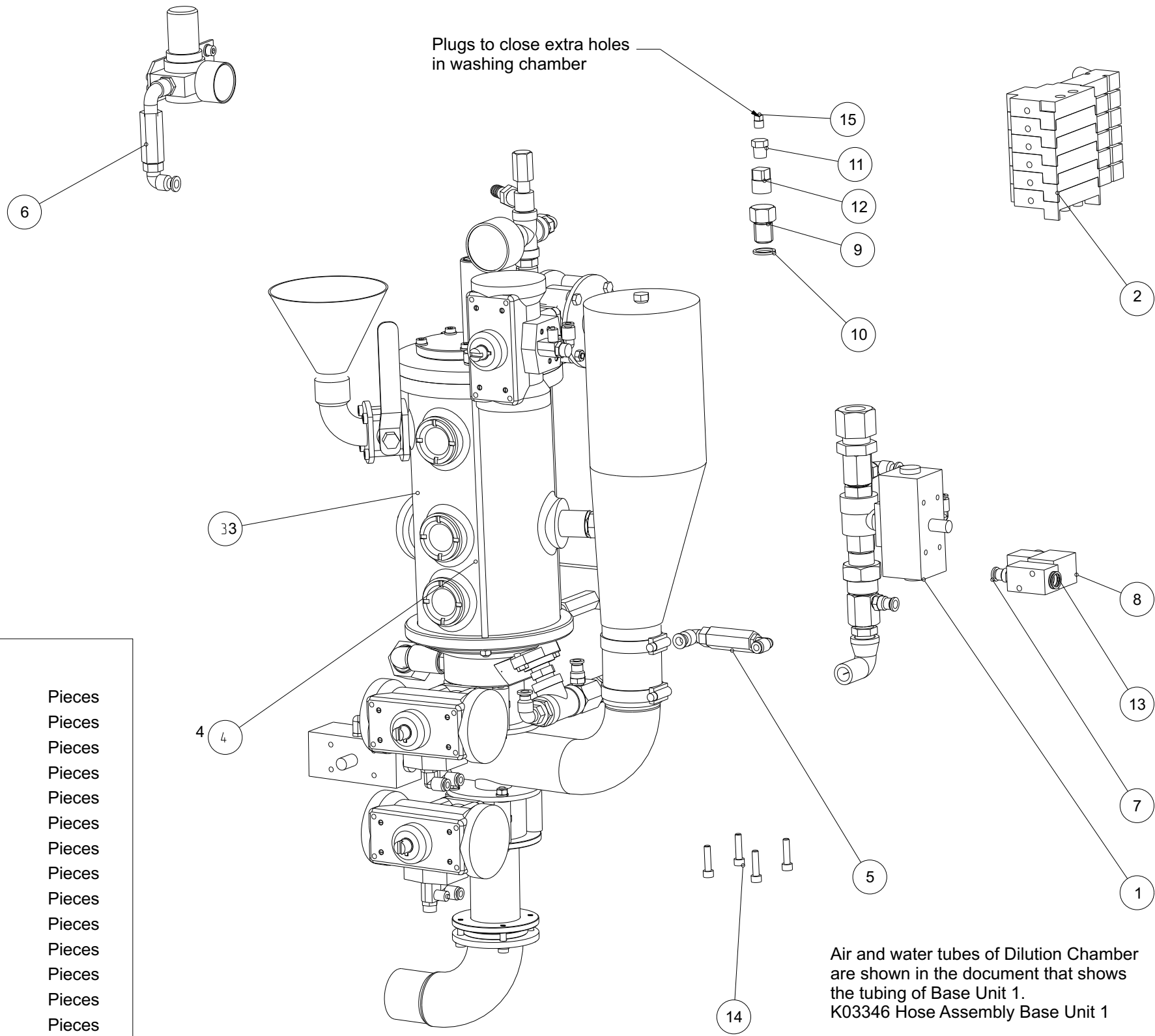
Construction

Measuring unit K03078 V1.0



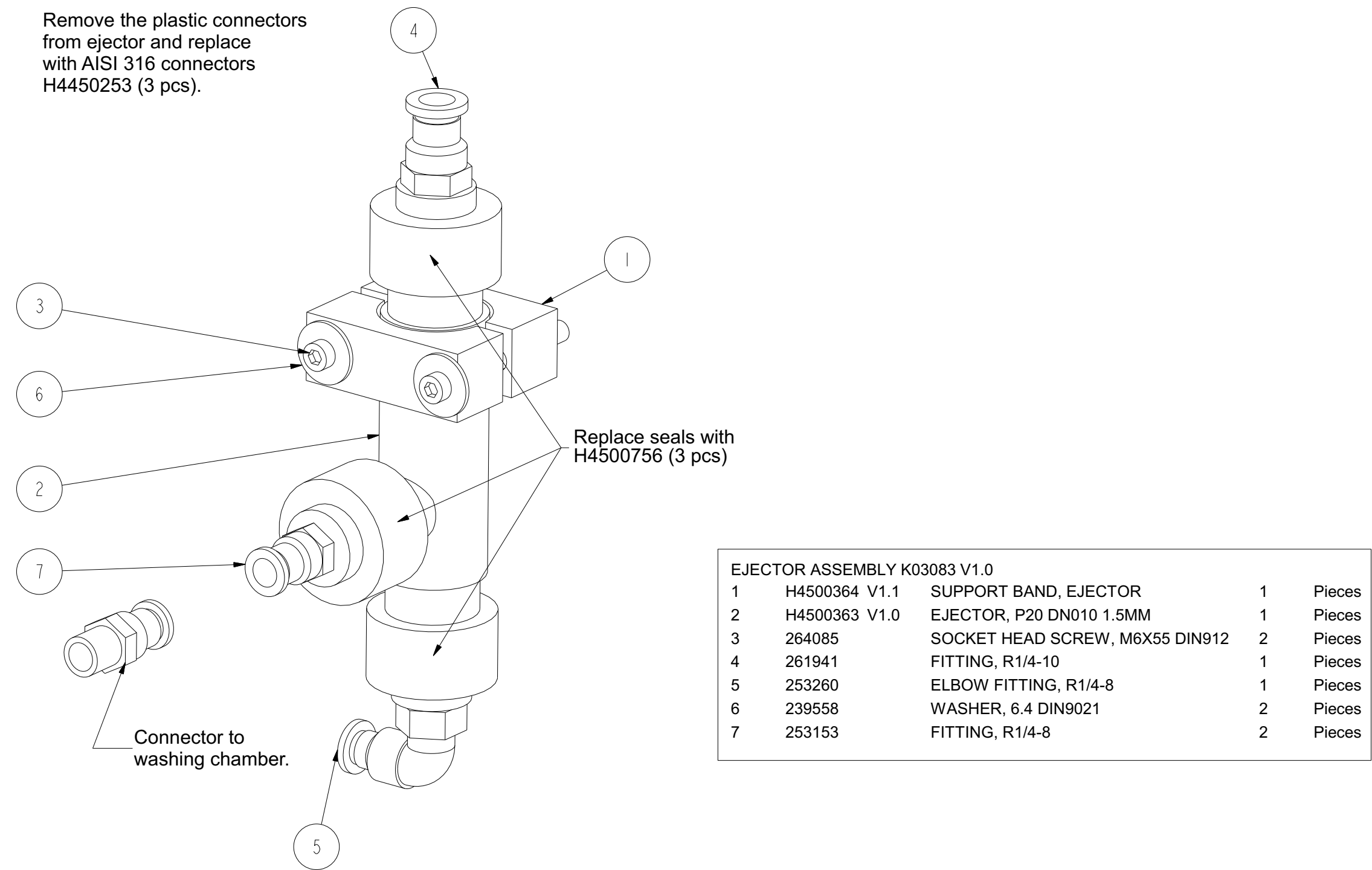
MEASURING UNIT K03078 V1.0

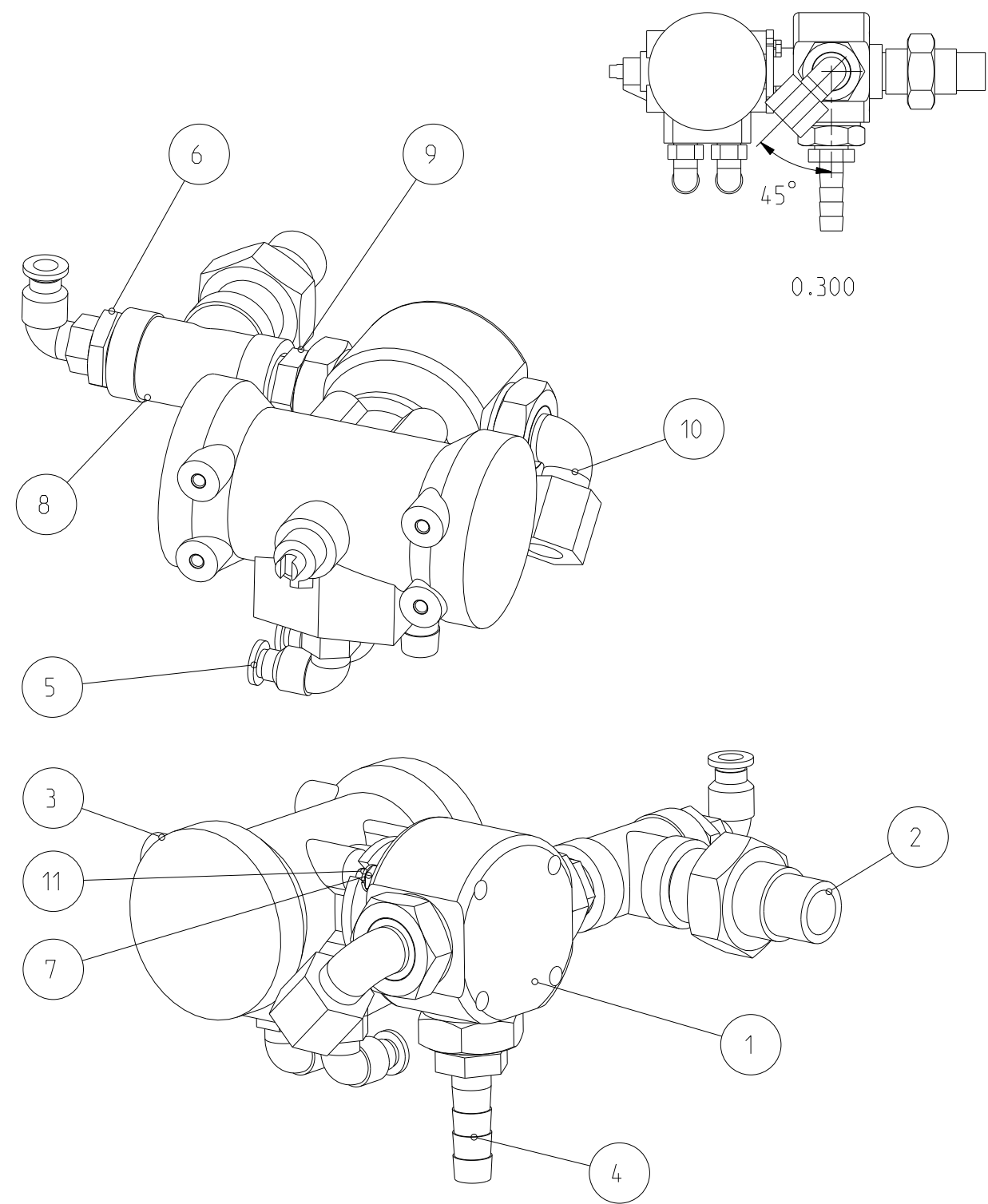
1	K03460	V1.0	VESSEL, SAMPLE TANK	1	Pieces
2	K03137	V1.0	MEASUREMENT MODULE, BRITE MEASUREMENT UNIT	1	Pieces
3	K03136	V1.0	MEASUREMENT MODULE, KAPPA MEASURING UNIT	1	Pieces
4	K03097	V1.0	SAMPLE UNIT, SAMPLE UNIT 1	1	Pieces
5	K03087	V1.0	ELECTRONICS ASSEMBLY, ANALOG ASSEMBLY	1	Pieces
6	K03085	V1.0	SCREEN ASSEMBLY, PRESCREENING ASSEMBLY	1	Pieces
7	K03084	V1.0	VALVE ASSEMBLY, SHIVE SAMPLING VALVE	1	Pieces
8	K03083	V1.0	EJECTOR ASSEMBLY, SUCTION EJECTOR	1	Pieces
9	K03082	V1.0	KAJAANIKAPPA Q SWEEP MODULE	1	Pieces
10	K01814	V1.0	KEY, VX WORKS LICENSE	1	Pieces
11	K00991	V1.0	ELECTRONICS ASSEMBLY, CUSTOMER IO	1	Pieces
12	A4501001	V1.0	KAPPA sample vessel	1	Pieces
13	A4310082	V1.4	Operating terminal Communicator-i	1	Pieces



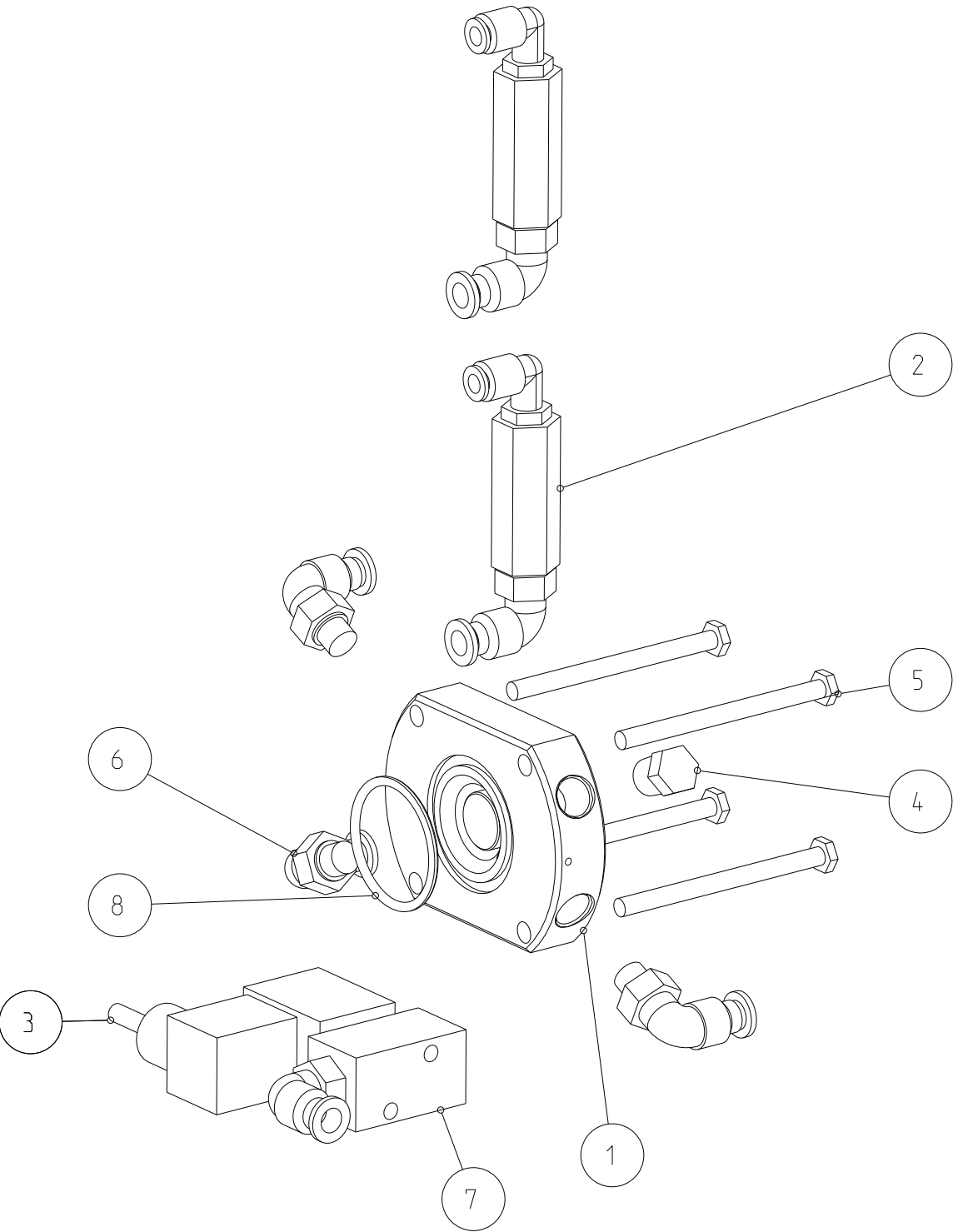
SWEEP MODULE K03082 V1.0

1	K03444	V1.0	PLUG	1	Pieces
2	K03222	V1.0	VALVE ASSEMBLY, EXCHANGE VALVE	1	Pieces
3	K03221	V1.0	VALVE ASSEMBLY, BURKERT 5470 x 6	1	Pieces
4	K03218	V1.0	TANK ASSEMBLY, DILUTION TANK	1	Pieces
5	K03197	V1.0	CABLE ASSEMBLY, DILUTION CHAMBER	1	Pieces
6	K03131	V1.0	CHECK VALVE, ASSEMBLY 1	1	Pieces
7	K03070	V1.0	REGULATOR ASSEMBLY, PRESSURE REGULATOR	1	Pieces
8	261925		SEAL RING, O-3/8 FESTO	1	Pieces
9	261057		PLUG, CONICAL THREAD R1/4	1	Pieces
10	253153		FITTING, R1/4-8	1	Pieces
11	242792		PLUG, R1/2	1	Pieces
12	239517		SEAL RING, O-1/4	2	Pieces
13	239483		SOLENOID VALVE R1/4"	1	Pieces
14	218479		SOCKET HEAD SCREW, M6X25 DIN912	4	Pieces
15	204339		PLUG, R1/8 12019	1	Pieces

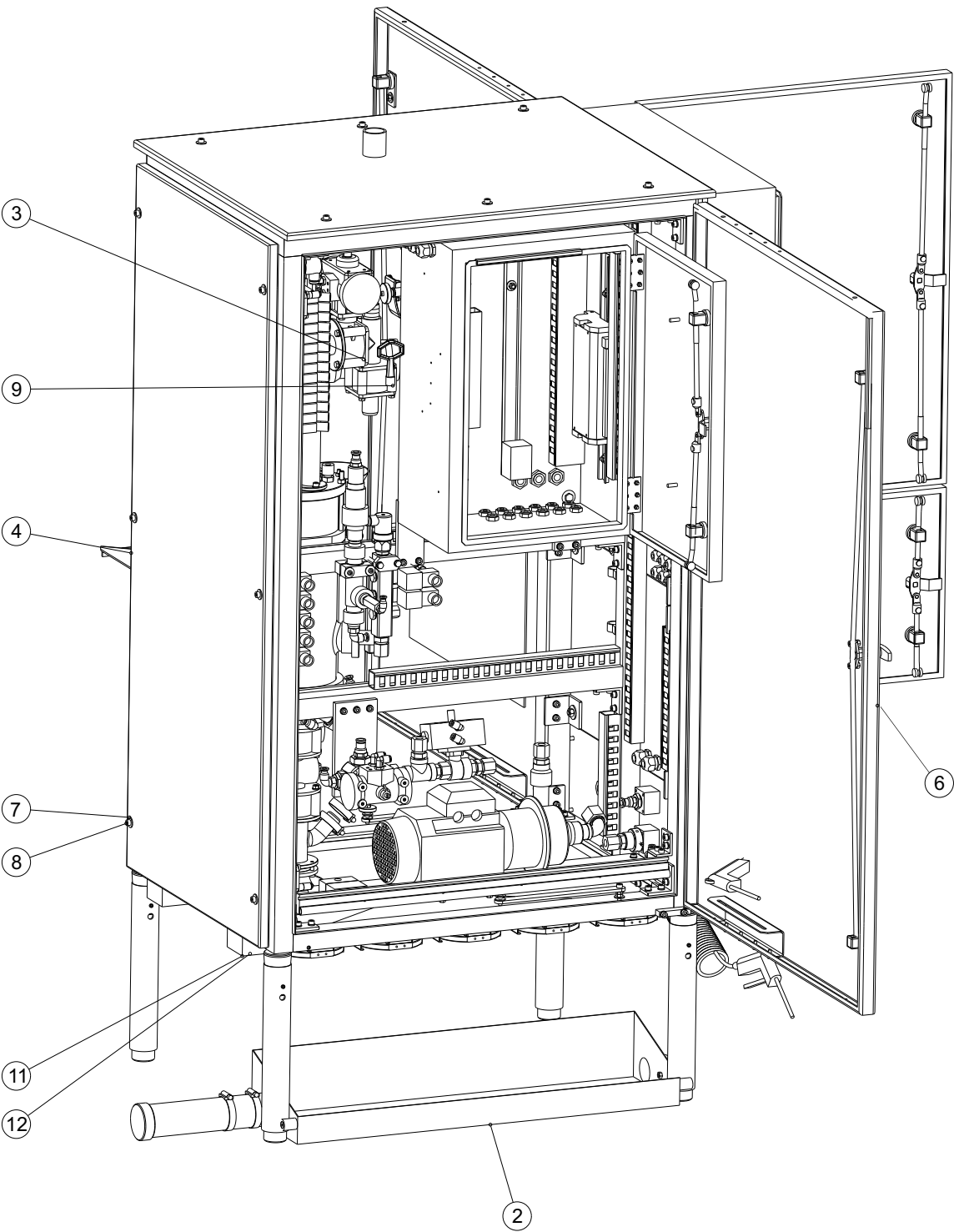
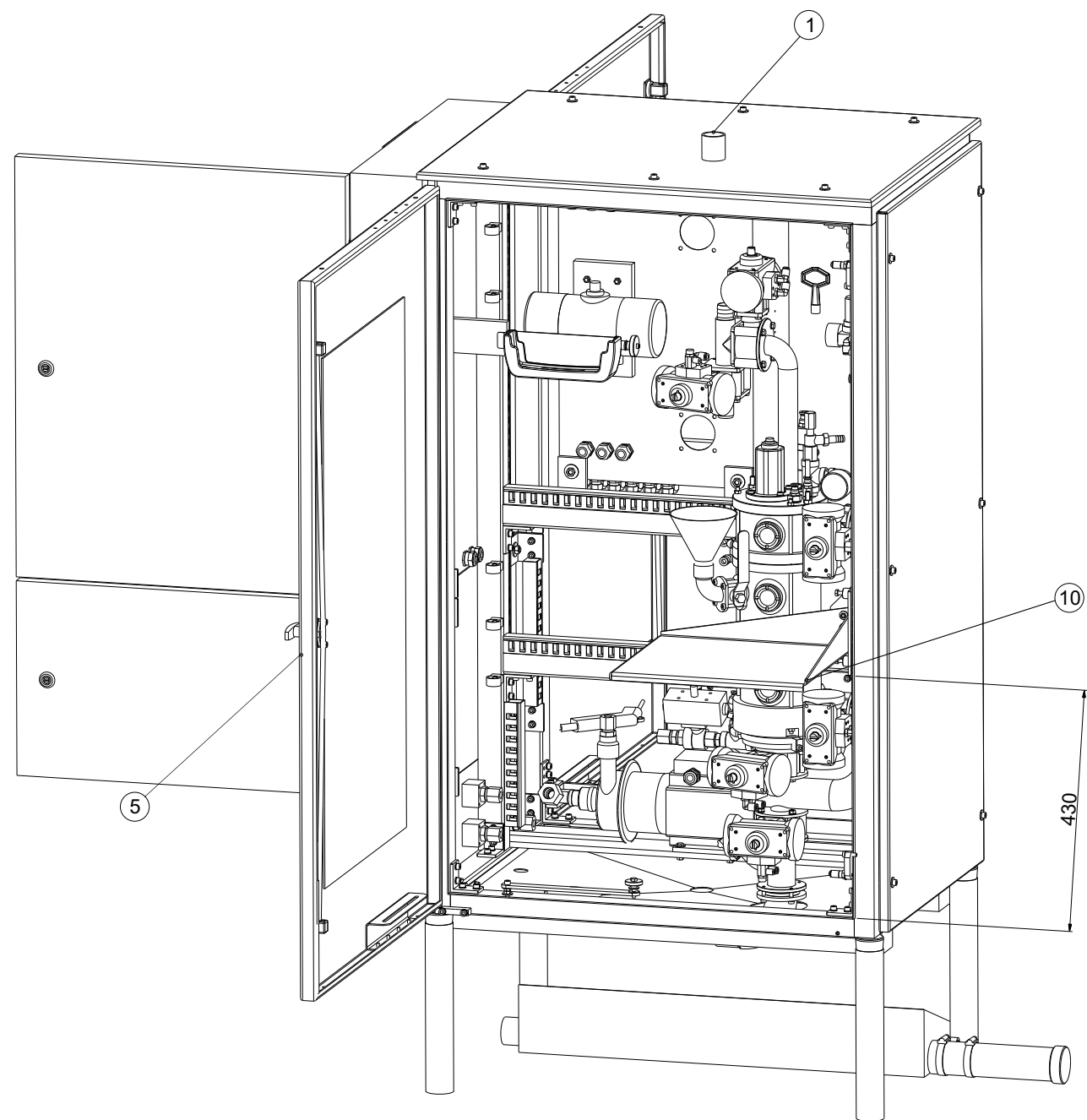




VALVE ASSEMBLY K03084 V1.0					
1	K03225	V1.0	VALVE, 2-WAY VALVE	1	Pieces
2	K03104	V1.0	COUPLING, TASOLIITIN R1/2"	1	Pieces
3	K00898	V1.0	PNEUMATIC ACTUATOR, PW SF03700 F03 + HOLKKI	1	Pieces
4	256206		HOSE COUPLING, R1/2-13MM	1	Pieces
5	253260		ELBOW FITTING, R1/4-8	3	Pieces
6	243758		REDUCING NIPPLE, R1/2-1/4	1	Pieces
7	243527		HEXAGON SCREW, M5X12 DIN933	4	Pieces
8	242479		TEE, FTT-1/2	1	Pieces
9	239665		DOUBLE-NIPPLE, R1/2	1	Pieces
10	214312		ELBOW FITTING, 40-8-8-P-PG	1	Pieces
11	204974		LOCK WASHER, M5.1 DIN127B	4	Pieces

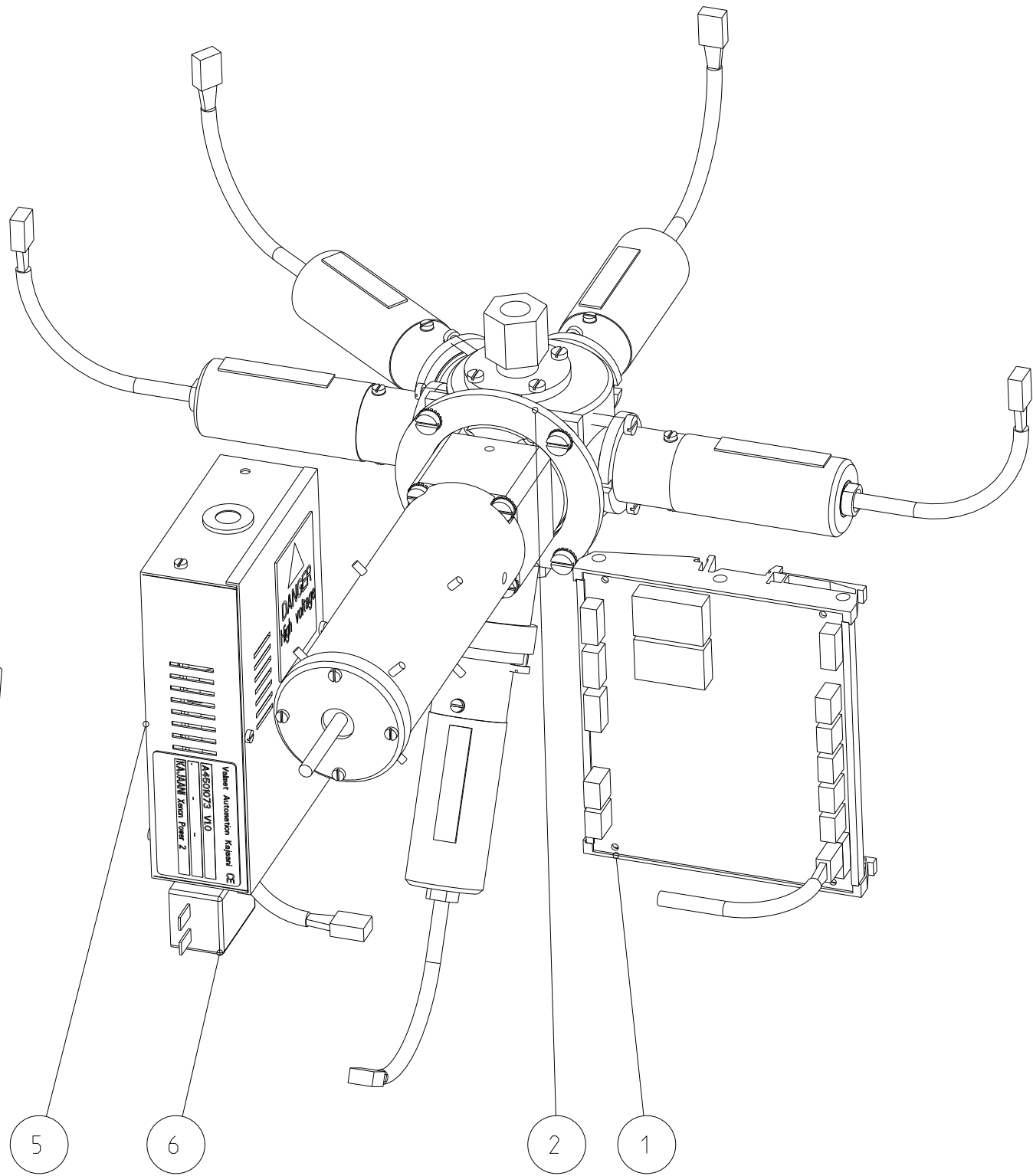
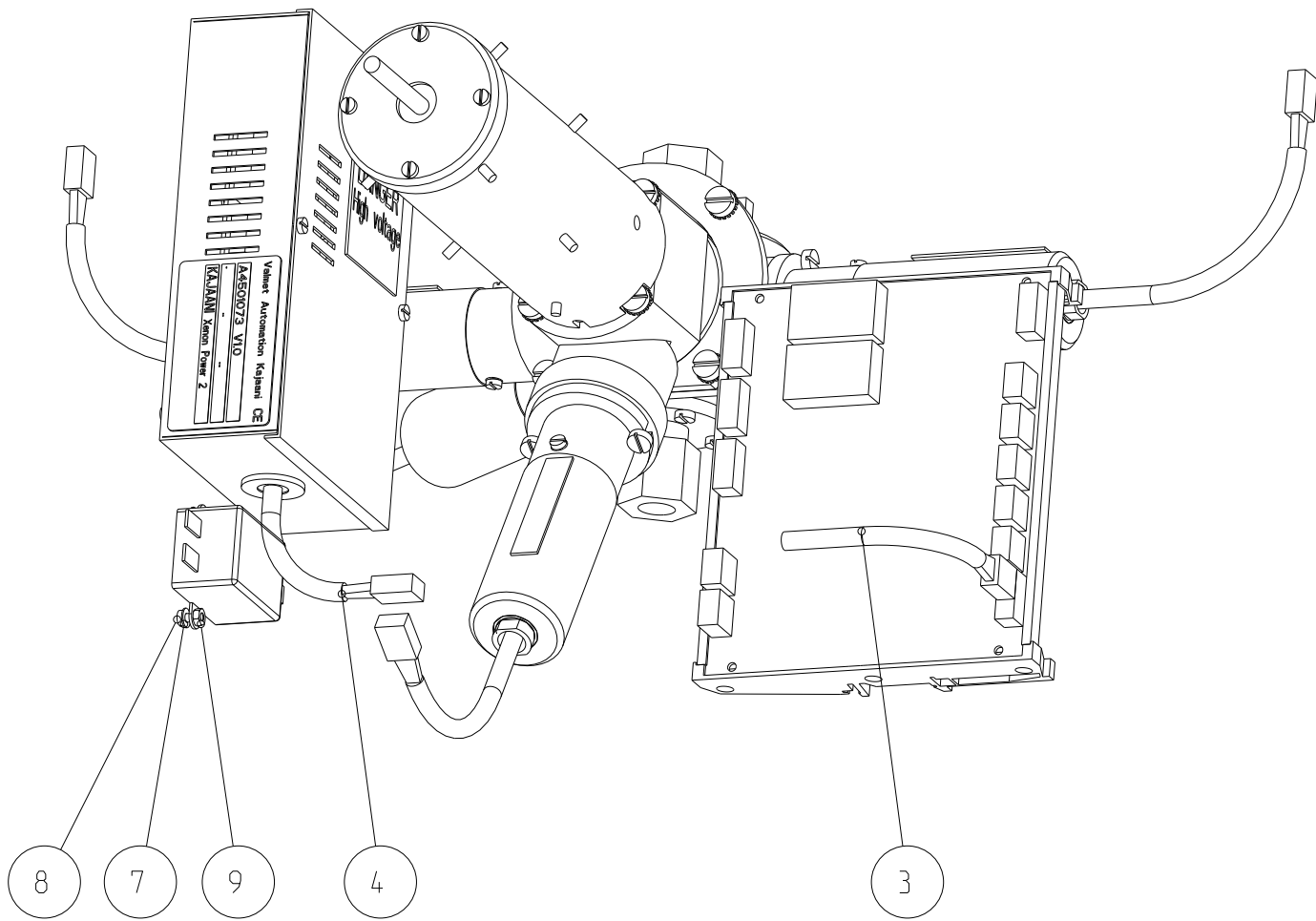


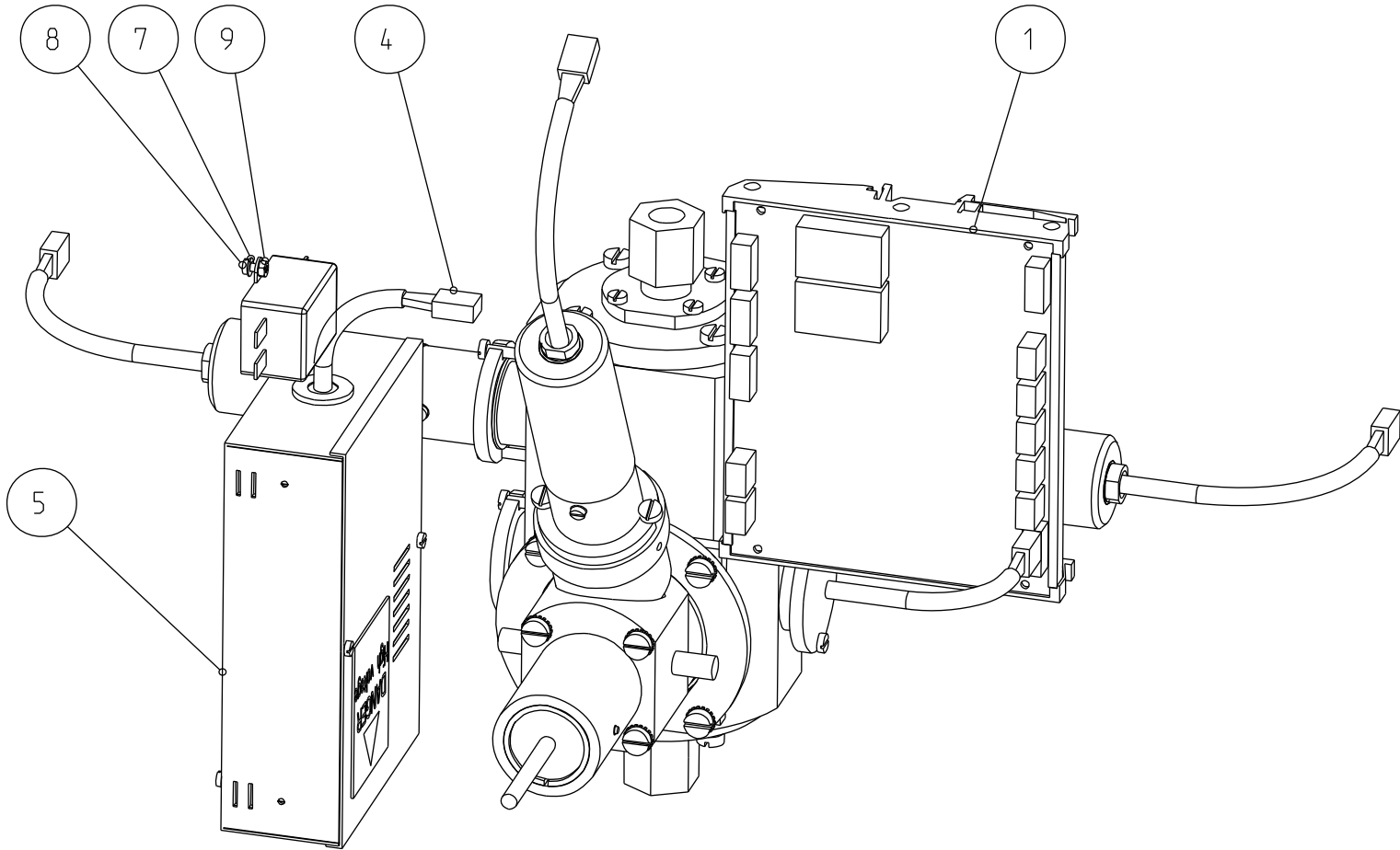
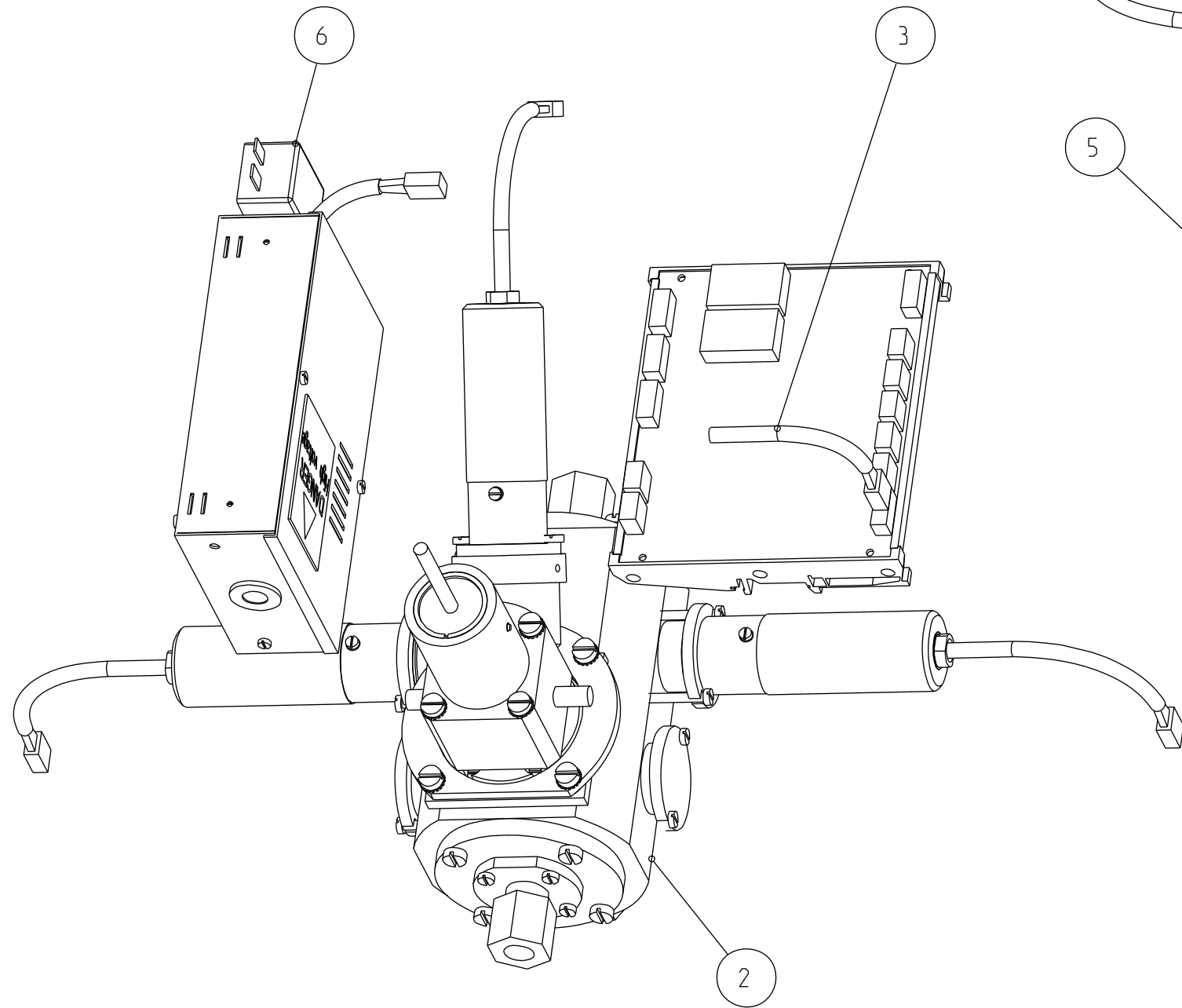
SCREEN ASSEMBLY K03085 V1.0				
1	K03227	V1.0	SCREEN	1 Pieces
2	K03131	V1.0	CHECK VALVE, ASSEMBLY 1	2 Pieces
3	K03076	V1.0	CABLE ASSEMBLY, WARM WATER VALVE CABLE 2	1 Pieces
4	261057		PLUG, CONICAL THREAD R1/4	1 Pieces
5	256180		HEXAGON SCREW, M6X80 DIN933	4 Pieces
6	253260		ELBOW FITTING, R1/4-8	4 Pieces
7	239483		SOLENOID VALVE R1/4"	1 Pieces
8	K203018		O-RING, 38X3	1 Pieces



SAMPLE UNIT K03097 V1.0				
1	K03550	V1.0	KEY, S&N 29111 NELIÖ 8MM	1 Pieces
2	K03476	V1.0	SUB ASSEMBLY, WORKTOP	1 Pieces
3	K03434	V1.0	BEAM	2 Pieces
4	K03192	V1.0	COVER ASSEMBLY, ROOF ASSEMBLY	1 Pieces
5	K03100	V1.0	SUB ASSEMBLY, LAB SAMPLER SINK	1 Pieces
6	K03080	V1.0	BASE UNIT, BASE UNIT 1	1 Pieces
7	K02601	V1.1	COVER PLATE, SIDE WALL	1 Pieces
8	K02599	V1.0	DOOR ASSEMBLY, FRONT DOOR ASSEMBLY	1 Pieces
9	K02595	V1.0	DOOR ASSEMBLY, BACK DOOR ASSEMBLY	1 Pieces
10	263269		HEXAGON SCREW, M6X50 DIN933	4 Pieces
11	239558		WASHER, 6.4 DIN9021	10 Pieces
12	218479		SOCKET HEAD SCREW, M6X25 DIN912	6 Pieces

KAPPA MEASURING UNIT K03136 V1.0					
1	K03236	V1.0	ELECTRONICS ASSEMBLY, DCPU	1 Pieces	
2	K03216	V1.0	MEASUREMENT MODULE, KAPPA	1 Pieces	
3	K03149	V1.0	WIRE ASSEMBLY, DCPU KAPPA POWER	1 Pieces	
4	K02846	V1.0	CABLE ASSEMBLY, KAPPA XENON POWER	1 Pieces	
5	A4501073	V1.0	POWER SUPPLY ASSEMBLY, XENON	1 Pieces	
6	225425		FILTER, EFBF-10 EVOX	1 Pieces	
7	206623		WASHER, 3.2 DIN125	4 Pieces	
8	197574		SLOTTED HEAD SCREW, M3X6 DIN84	4 Pieces	
9	135699		HEXAGON NUT, M3 DIN934	2 Pieces	





BRITE MEASUREMENT UNIT K03137 V1.0					
1	K03236	V1.0	ELECTRONICS ASSEMBLY, DCPU	1	Pieces
2	K03215	V1.0	MEASUREMENT MODULE, BRIGHTNESS	1	Pieces
3	K03119	V1.0	WIRE ASSEMBLY, DCPU BRITE POWER	1	Pieces
4	K02847	V1.0	CABLE ASSEMBLY, BRITE XENON POWER	1	Pieces
5	A4501073	V1.0	POWER SUPPLY ASSEMBLY, XENON	1	Pieces
6	225425		FILTER, EFBF-10 EVOX	1	Pieces
7	206623		WASHER, 3.2 DIN125	4	Pieces
8	197574		SLOTTED HEAD SCREW, M3X6 DIN84	4	Pieces
9	135699		HEXAGON NUT, M3 DIN934	2	Pieces

Electronics block diagram

The diagram contains the following operational units:

- Analyzer Electronix Box
- Measurement Unit 1 (Cabinet 1), module electronics box
- Measurement Unit 2, as measurement unit 1
- Fiber-Shive module electronics

The block diagram illustrates the electric cabling and CAN-bus connections between the units.

The device has two CAN-buses:

CAN1 = analyzer's interior bus,

CAN2 = external, for Customer IO Box (option).

Also the connections and sensors/valves/units connected to each unit are shown in the diagram.

