

INGENIA

Coating System

Spare parts catalog



ærlikon
balzers

INGENIA

Coating System

Spare Parts Catalog

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Spare Parts Category

The parts are classified in four categories

E-parts (E = Emergency)

E-parts are emergency parts, i.e. parts that cause immediate downtime of your coating system in case of defect or failure. We guarantee that E-parts are always available from our warehouse centre at Oerlikon Balzers in Liechtenstein. We highly recommend customers to keep such E-parts in stock for immediate replacement.

W-parts (W = Wear)

W-parts are wear and consumable parts. If a W-part fails and is absent from your stock, this may cause downtime of your coating system. We recommend that you keep these W-parts in your own stock. We cannot guarantee immediate delivery of W-parts from our stock in Liechtenstein, i.e. W-parts require some delivery time.

S-parts (S = Stock)

S-parts are parts that fall neither in the E-parts nor in the W-parts category. S-parts are always available from our warehouse centre at Oerlikon Balzers in Liechtenstein. S-parts are parts that are usually important for equipment availability.

Non-categorised parts

Some parts are not categorised. They are available on request. If you cannot find a certain part in our illustrated parts catalogue, please contact our spare parts team. Non-categorised parts are not available from our warehouse centre at Oerlikon Balzers in Liechtenstein and are therefore subject to some delivery time. All parts in our illustrated parts catalogues are categorised according to the above mentioned groups.

Die Ersatzteile werden in vier Gruppen klassifiziert:

E-Teile (E = Emergency)

E-Teile sind Notfallteile. D.h. bei Defekt oder Ausfall führen Sie unweigerlich zu einem Anlagenstillstand. E-Teile sind garantiert ab dem Warenlager in Oerlikon Balzers in Liechtenstein verfügbar. Weiter empfehlen wir, sich diese E-Teile je nach Kundenbedürfnis für einen sofortigen Austausch selbst ans Lager zu legen.

W-Teile (W = Wear)

W-Teile sind Verbrauchs- und Verschleißteile. Sollte ein W-Teil ausfallen oder nicht mehr an Ihrem Lager liegen, könnte dies unter Umständen zu einem Anlagenstillstand führen. Deshalb empfehlen wir, dass Sie diese W-Teile selbst disponieren. Für W-Teile können wir keine Lieferbereitschaft ab unserem Warenlager in Oerlikon Balzers in Liechtenstein garantieren, d.h. W-Teile haben eine entsprechende Lieferzeit.

S-Teile (S = Stock)

S-Teile sind Teile, die weder unter Kategorie E noch W fallen. Sie sind ab unserem Warenlager in Oerlikon Balzers in Liechtenstein verfügbar. S-Teile sind Teile, die meistens einen wesentlichen Beitrag zur Anlagenverfügbarkeit leisten.

Keine Codierung

Es gibt auch Ersatzteile ohne Codierung. Diese sind auf Anfrage erhältlich. D.h. wenn Sie ein bestimmtes Ersatzteil in Ihrem Ersatzteilkatalog nicht finden, kontaktieren Sie bitte unser Parts-Team. Ersatzteile ohne Codierung sind nicht ab unserem Warenlager in Oerlikon Balzers in Liechtenstein erhältlich, d.h. nur mit einer entsprechenden Lieferzeit lieferbar. In den illustrierten Ersatzteilkatalogen sind alle Teile in diese Gruppen unterteilt aufgelistet.

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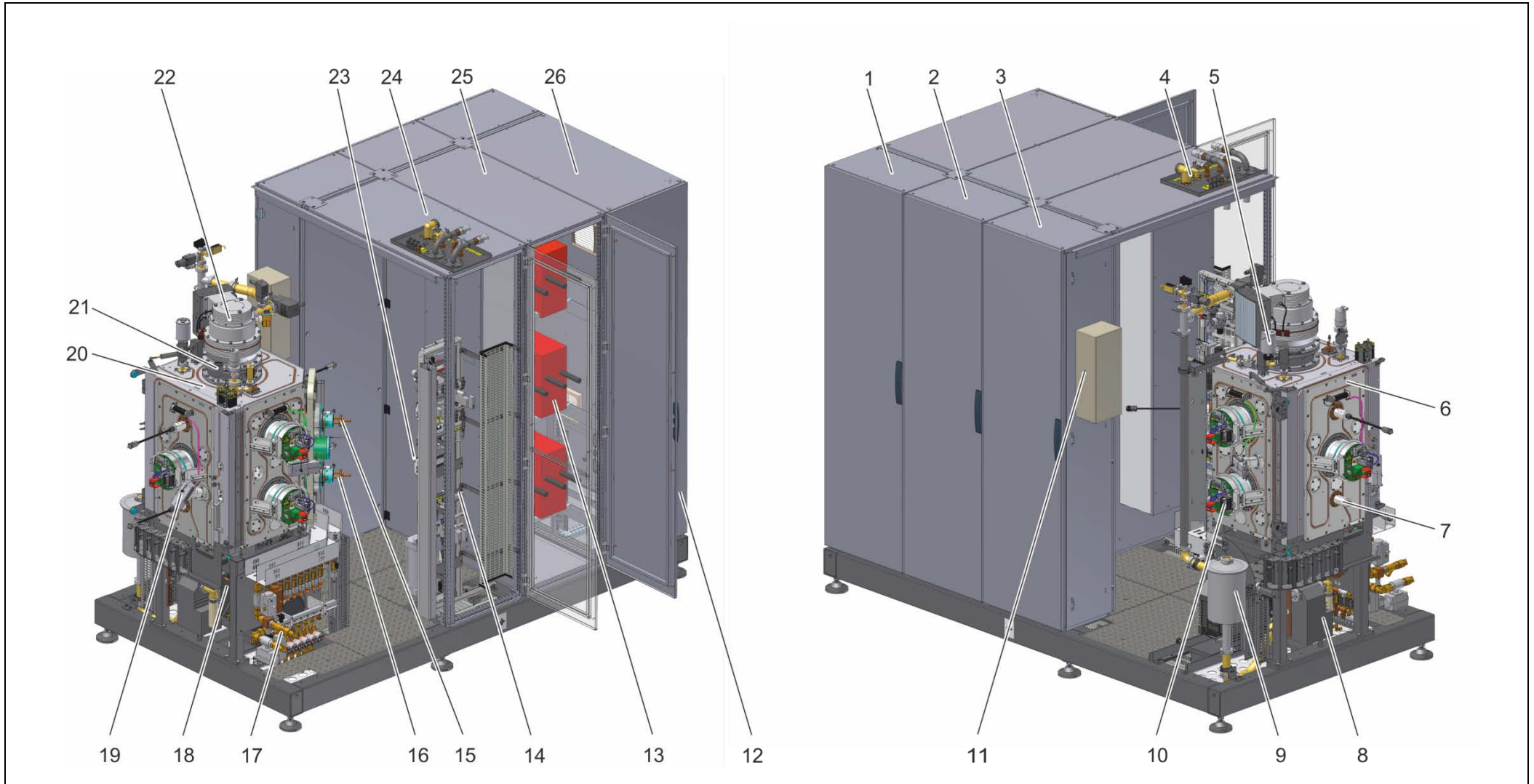
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1. System Overview

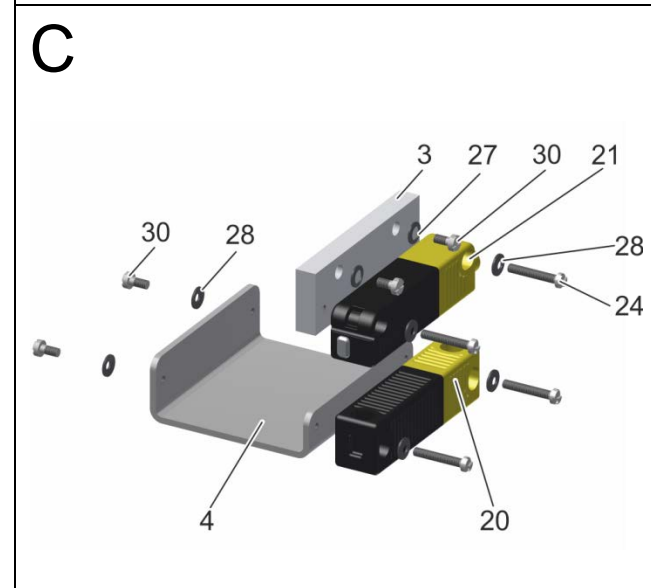
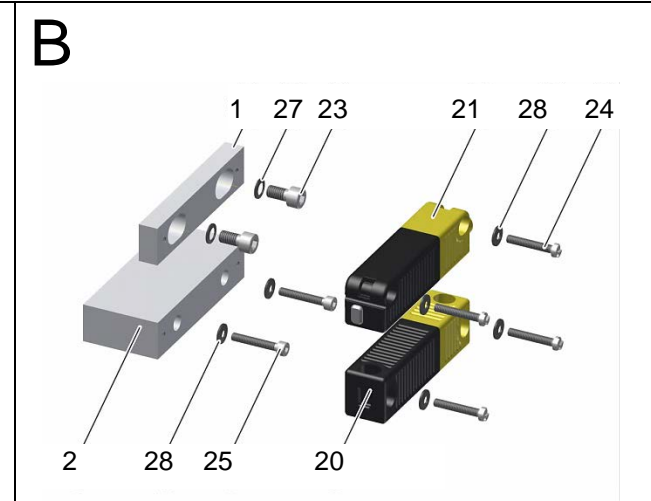
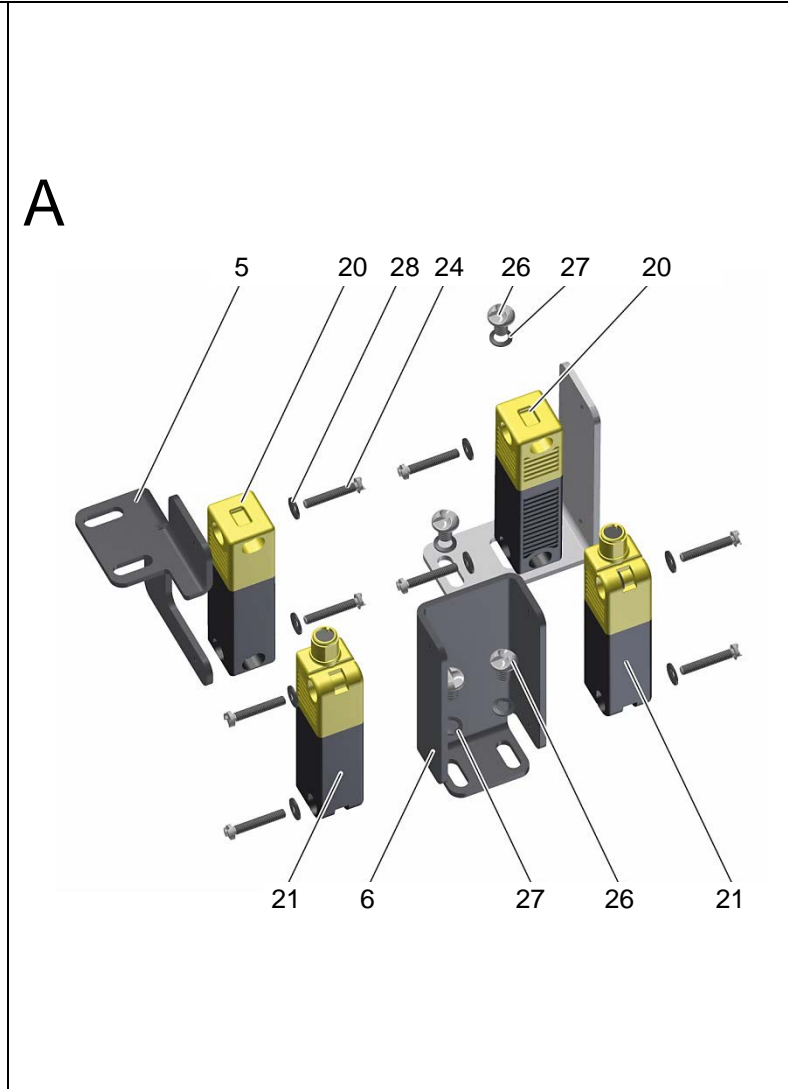
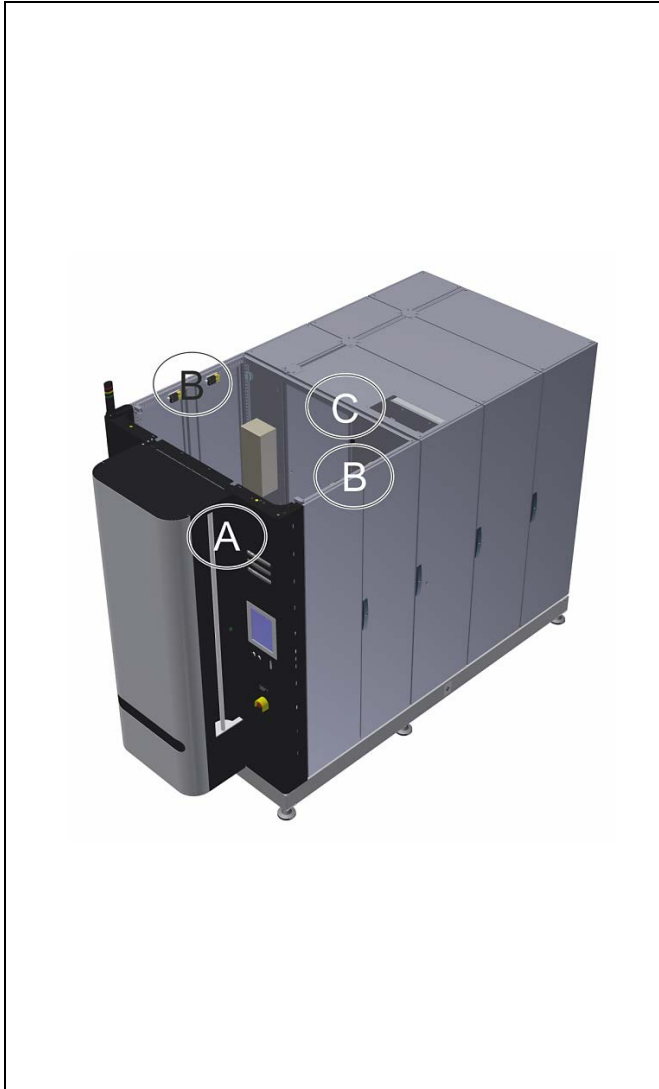


BB534898-Z

1.1. System Overview

Item – Drawing	Code	Part. No	Description	Qty
			System Overview (Drawing: BB534898-Z)	
1			Power cabinet 1	
2			Power cabinet 2	
3			Power cabinet 3	
4			Media platform	
5			Process pressure gauge	
6			Door	
7			Radiation heaters	
8			Exhaust filter	
9			Dust separator	
10			VMS sources 1 to 6	
11			Cooling device for power cabinet 1-3	
12			Power supply for DC bias / pulsed bias voltage	
13			Power supplies for arc sources 1-6 and ion sources	
14			Gas distributor	
15			Ion sources (up)	
16			Ion sources (down)	
17			Water battery	
18			Fore pump	
19			Trigger finger unit	
20			Process chamber	
21			Gas safety gauge	

2. Ingenia safety equipment



BB534898-Z

2.1. Ingenia safety equipment

Item – Drawing	Code	Part. No	Description	Qty
		BB534899-T	Ingenia safety equipment (Drawing: BB534898-Z)	
1		BB534894	Safety switch fastener	2
2		BB534895	Safety actuator fastener	2
3		BB534896	Safety switch fastener	1
4		BB534897	Safety actuator fastener	1
5		BB534644	Mounting bracket sensor	1
6		BB534040	Mounting bracket sensor	1
7		BB534658	Sensor fastener	1
8		BB534626	Sheet angle	1
20	E	K4701001	Actuator to safety switch RFID	7
21	E	K4701002	Safety switch RFID	7
22		K3400072	Cage nut M6 for 19" rack	10
23		N3059335X	Panhead screw, hexsock, M6x12	8
24		K3000407	Safety screw	28
25		N3059264X	Sch cap screw, sst M 4X 25	8
26		K3000410	Safety screw	8
27		B3547143X	Lock washer, inox M6	18
28		B3547139X	Ribbed lock washer 4,3/ 7	38
29		K3400151	Shear Nuts	2
30		K3000409	Safety screw	2
		K5700038	Screw driver	

3. Ingenia casing



BB534898-Z

3.1. Ingenia casing

Item – Drawing	Code	Part. No	Description	Qty
			Ingenia Casing (Drawing: BB534898-Z)	
1		BB526377-T	LED red w. cable 1m	
1		BB526379-T	LED yellow w. cable 1m	
1		BB526378-T	LED green w. cable 1m	
2		K5200447	"Monitor 12,1"" LED-XGA"	
3		K4700985	Service box RJ45 plug/plug	
4		K4700986	Service box USB w.0.6m cable	
5		K4700665	Permission switch, JSHD4H2	
6		K4700338	Emergency off button	

4. Process chamber

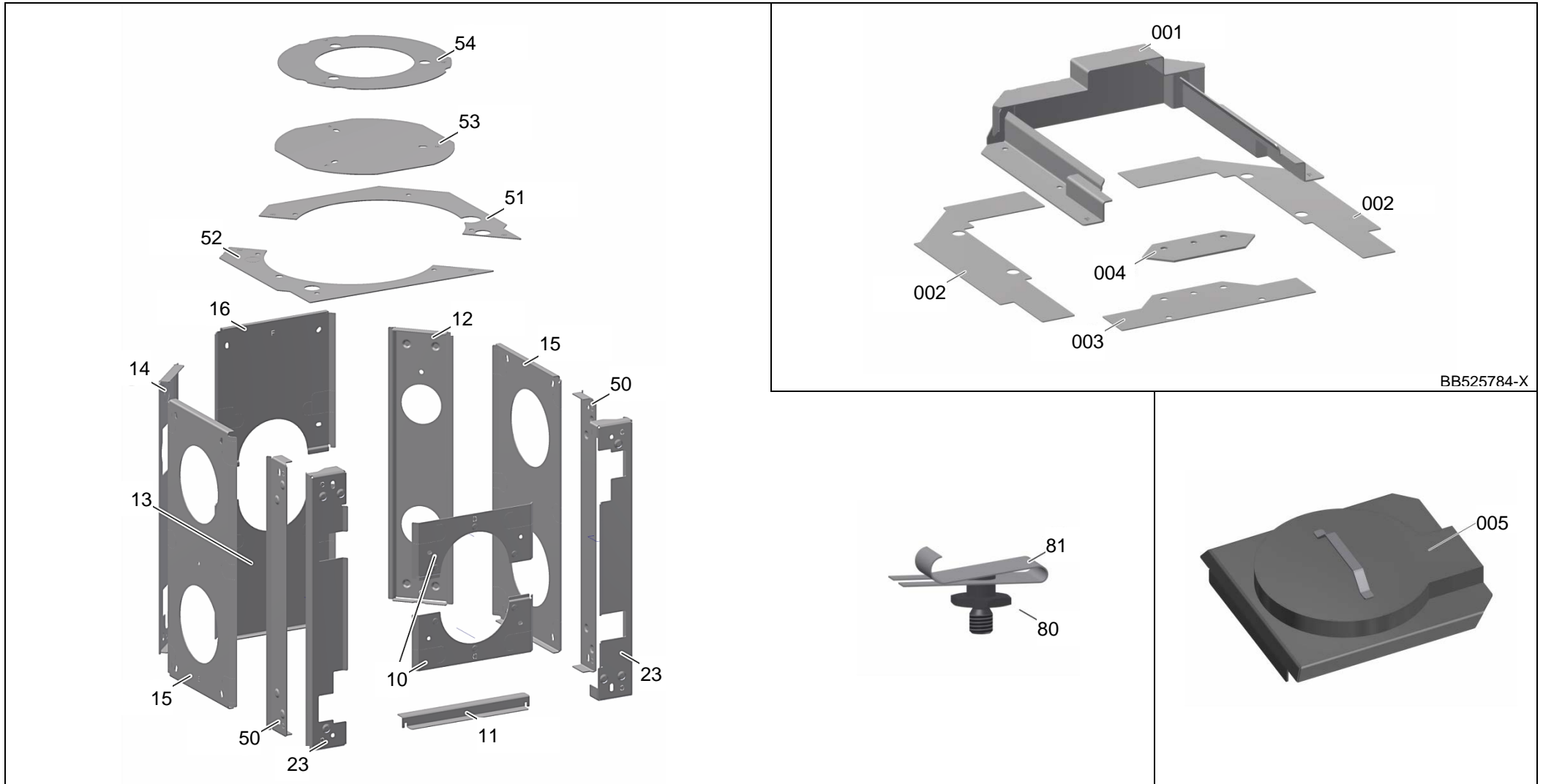


BB534006-Z

4.1. Process chamber

Item – Drawing	Code	Part. No	Description	Qty
			Process chamber (Drawing: BB534006-Z)	
20	E	K4000290	O-ring FKM 60.05-01, di900x10	
25	W	K3700154	Stop buffer cyl.	2
26	S	K3800207	Gas spring Ø8/28 Stroke 70	

5. Shielding



BB525784-X

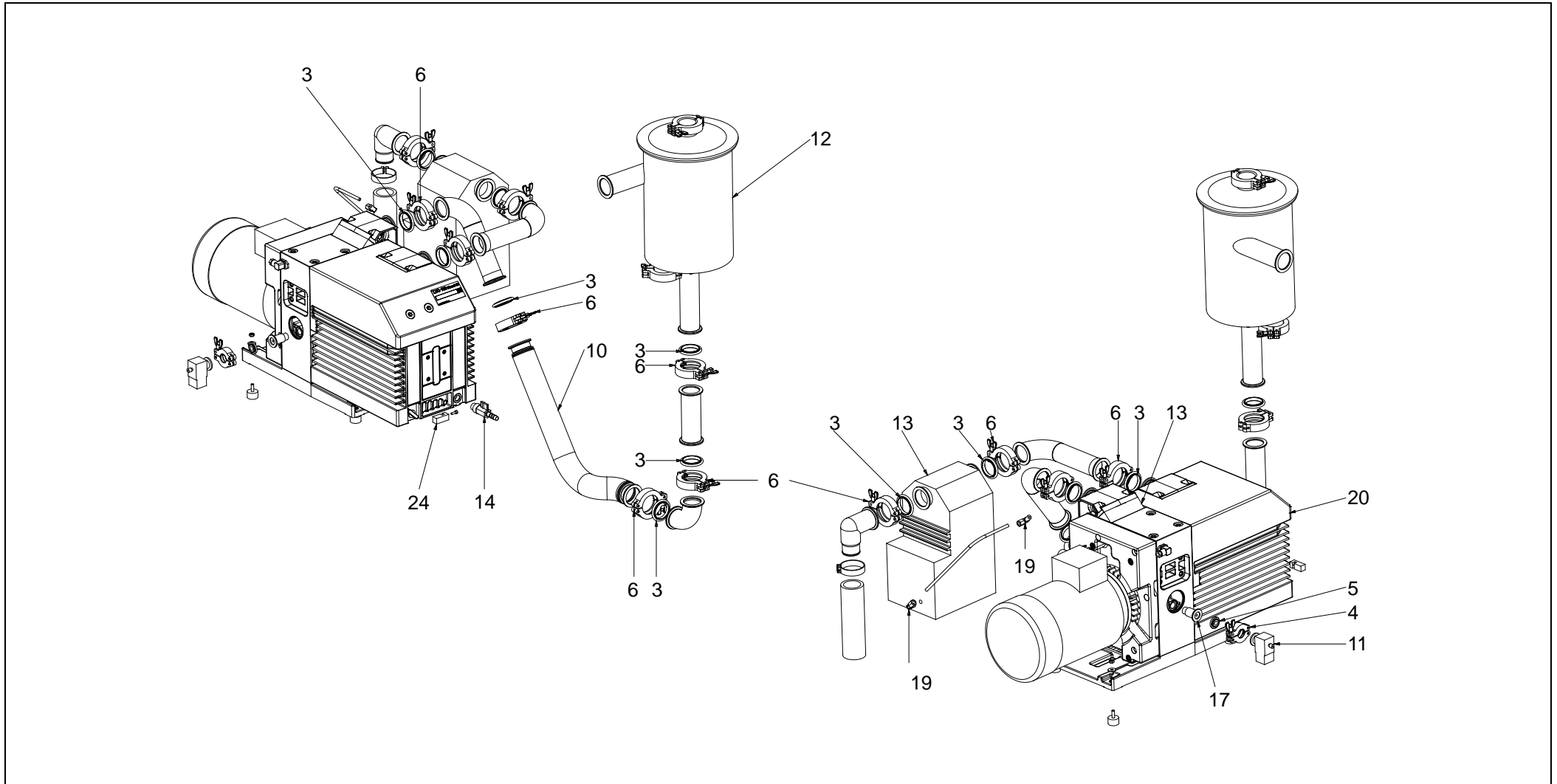
BB534700-Z

BB534140-X

5.1. Shielding

Item – Drawing	Code	Part. No	Description	Qty
		BB534701-T	Shielding cpl. (Drawing: BB534700-Z)	
10		BB534348	Sputtering cover 1Q "D"	2
11		BB534789	Shielding sheet bottom door	1
12		BB534734	Sputtering shield 45° (Ion Sources) "C"	1
13		BB534347	Sputtering cover 1Q "E"	1
14		BB534774	Reflector sheet 45° (heater) "C"	1
15		BB534346	Sputtering cover 2Q "E"	2
16		BB534349	Sputtering cover 1Q "F"	1
23		BB534730	Shielding left/right "C"	2
50		BB534731	Shielding side wall front "C"	2
51		BB534739	Cover sheet 1 "B"	1
52		BB534738	Cover sheet 2 "B"	1
53		BB534769	Cover sheet "F"	1
54		BB534715	Center cover sheet "A"	1
80		BB534708	Fixing pin	49
81		BB383570	Spring	49
		BB525729-T	Shielding set bottom (Drawing: BB525784-X)	
001		BB525784-X	Shielding carousel fixture type 2	1
002		BB534733	Sheet plate basement	2
003		BB534902	Bottom shielding sheet	2
004		BB525640	Front centering sheet	2
005		BB534140-X	Carousel blind shielding (Drawing: BB534140-X)	

6. Pre-vacuum pumping system

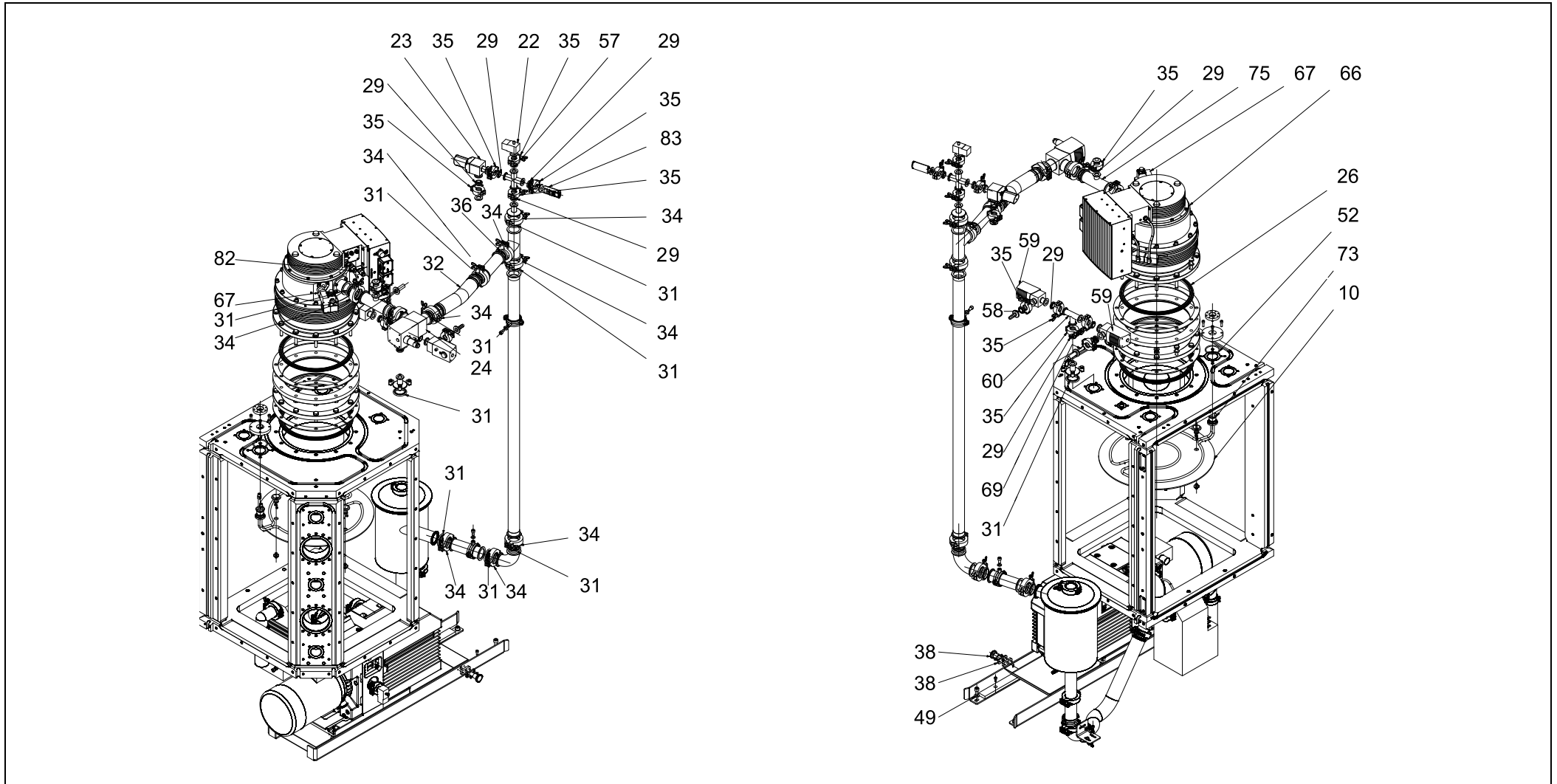


BB534578-Z

6.1. Pre-vacuum pumping system

Item – Drawing	Code	Part. No	Description	Qty
		BB534577-T	Pre-pumping station Leybold cpl (Drawing: BB534578-Z)	
3	S	211-063	Centering ring, DN 40 ISO-KF	
4	S	211-001	Clamping ring, DN10-16 ISO KF	
5	S	211-075	Red. centering ring DN16/10	
6	S	211-003	Clamping ring, DN32-40 ISO KF	
10		211-344	Flexible metal hose	
11	S	B8117448	Power failure vent valve	
12		B8118616	Dust collector AS30-60	
13		B8118922	Exhaust filter AR40-65	
14		B8119090	Oil drain valve	
17		K4100060	Adapter piece	
19		K4100874	Male adaptor elbow union M10x1	
20	E	BN846880-T	Trivac, D65BCS	
24		BB481257	Barage gas ballast	

7. High vacuum pumping system



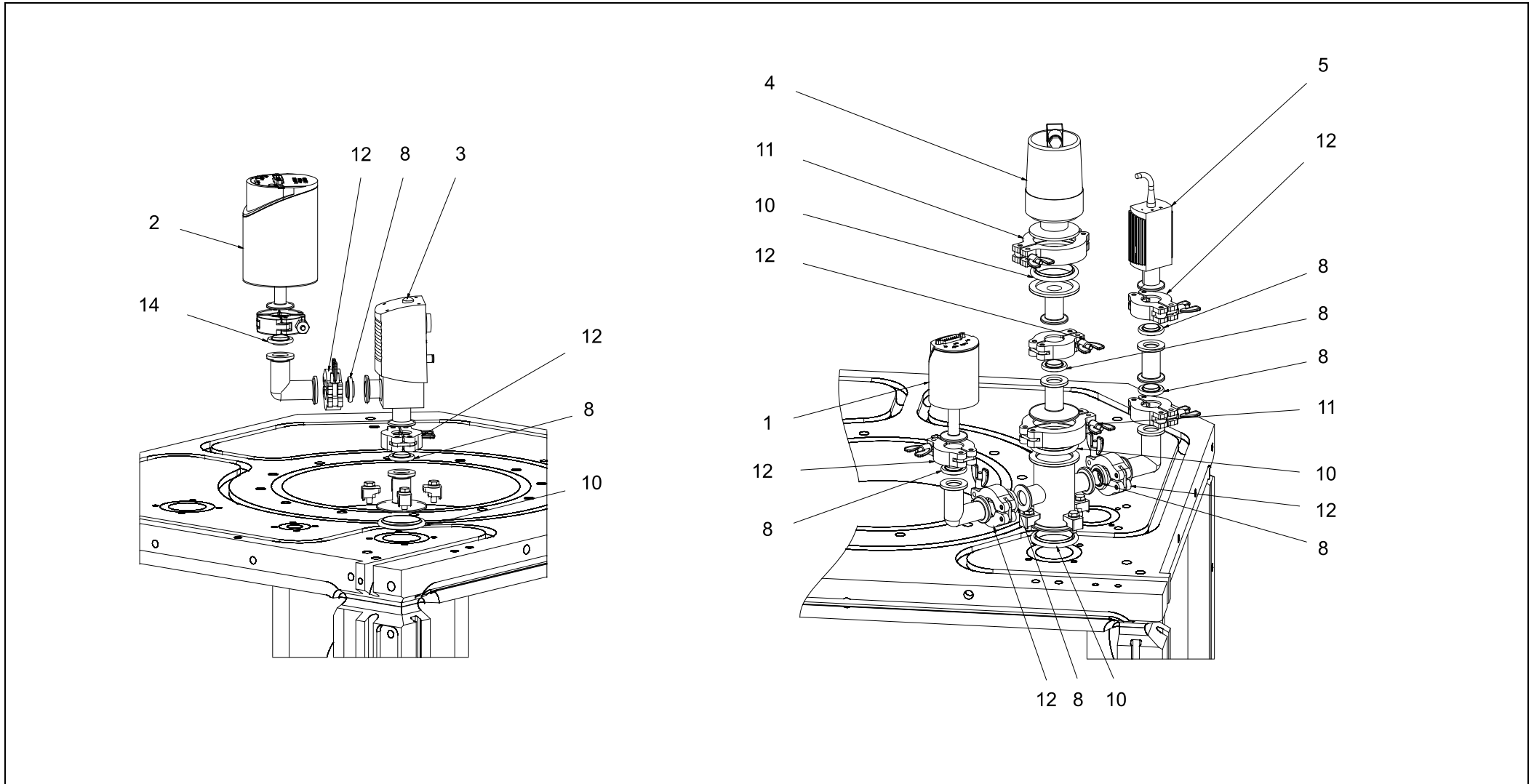
BB534573-Z

7.1. High vacuum pumping system

Item – Drawing	Code	Part. No	Description	Qty
		BB534572-T	High vacuum pumping system cpl. (Drawing: BB534573-Z)	
10	S	BB534716-X	Shielding cooled	
22	S	B8117448	Power failure vent valve	
23	E	253-200	Angle Valve DN16 ISO KF	
24	E	253-410	Angle Valve DN40 ISO KF	
26	S	212-265	Centering ring, DN 250 ISO	
29	S	211-059	Centering ring Al/Vi	
31	S	211-063	Centering ring, DN 40 ISO-KF	
32		211-343	Metal Hose DN 40 ISO-KFx250	
34	S	211-003	Clamping ring, DN32-40 ISO KF	
35	S	211-001	Clamping ring, DN10-16 ISO KF	
36		BB534370	Butterfly control valve	
38		K3700148	Locking pin GN 608	
52	E	B4070780PV	O-ring, Vi, 50.39 x 3.53	
57	S	211-075	Red. centering ring DN16/10	
58		211-090	Centering ring with filter	
59	E	253-210	Angle Valve DN16 ISO KF	
60	S	211-262	T-piece Al DN 16 ISO-KF	
66	E	K4200080	MAG W 1700 iP; DN 250 ISO-F	
67	E	K4100820	Pruge gas valve 36sccm / 24V	
69	W	B41612104F	Filter, Bz, Ø11/14x33	
73	E	B4070499PV	O-ring, VI, 29.82x2.62	

Item – Drawing	Code	Part. No	Description	Qty
75		211-317	T-piece Al DN 16 ISO-KF	
80		211-121	Centering ring	
82		K4100866	Straight union M14x1 - M12x1	
83	E	350-060	Pirani standard gauge	

8. Several measuring instruments



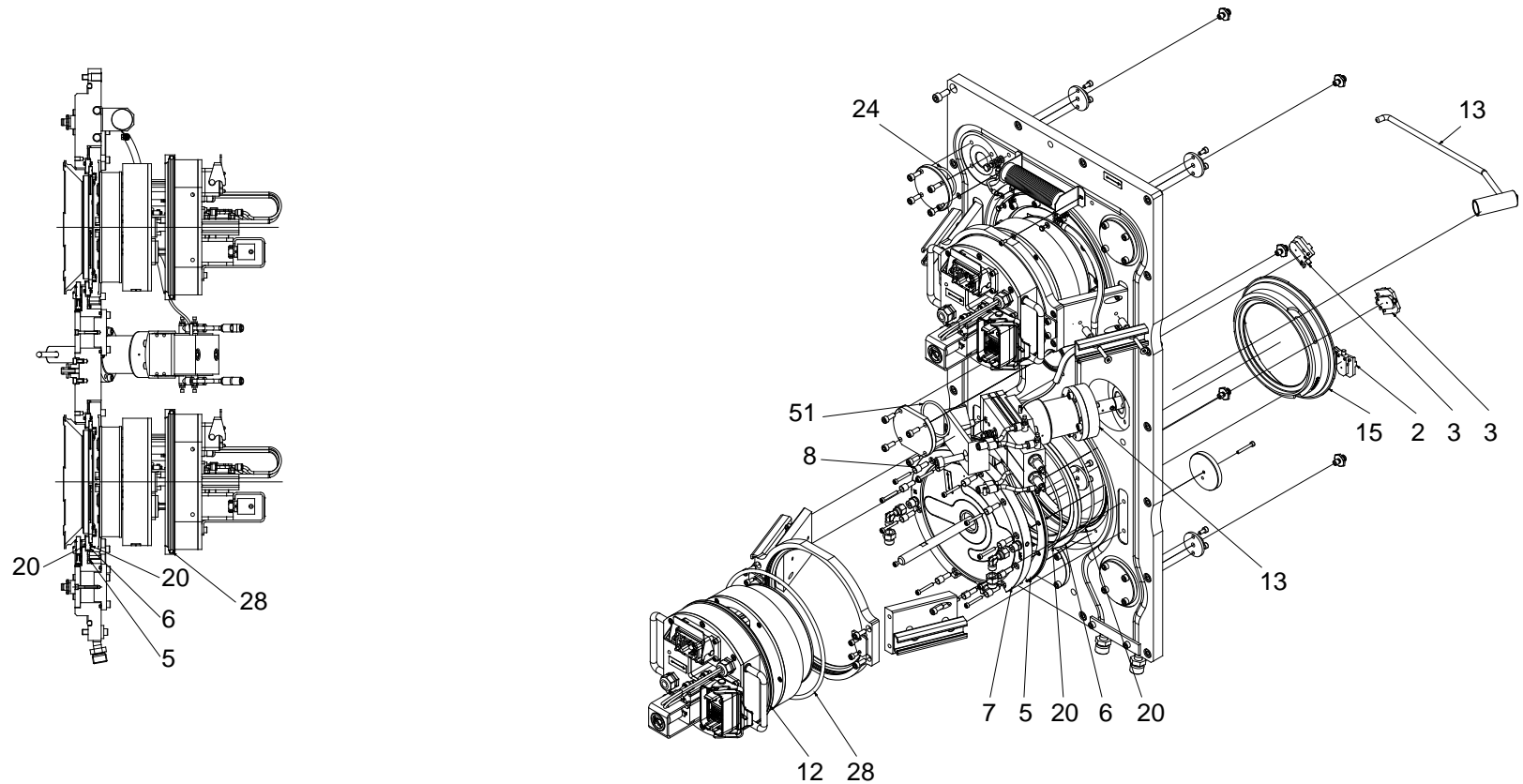
BB534684-Z

8.1. Several measuring instruments

Item – Drawing	Code	Part. No	Description	Qty
		BB534683-T	Several measuring instruments (Drawing: BB534684-Z)	
1	E	377-501	Capacitance diaphragm gauge	
2	E	361-2300	CDG100D, 0.1mbar, ISO-KF16	
3	E	253-210	Angle Valve DN16 ISO KF	
4	E	BGG25501	IKR 251 DN 40 ISO-KF	
5	E	K5200478	PCG550 Pirani capacitance gauge	
8	S	211-059	Centering ring Al/Vi	
10	S	211-063	Centering ring, DN 40 ISO-KF	
11	S	211-003	Clamping ring, DN32-40 ISO KF	
12	S	211-001	Clamping ring, DN10-16 ISO KF	
14	E	K8000179	Centering ring DN 16KF, PTFE	

9. Ingenia DC2 Sourceflange

9.1. Flange +/-195 cpl.

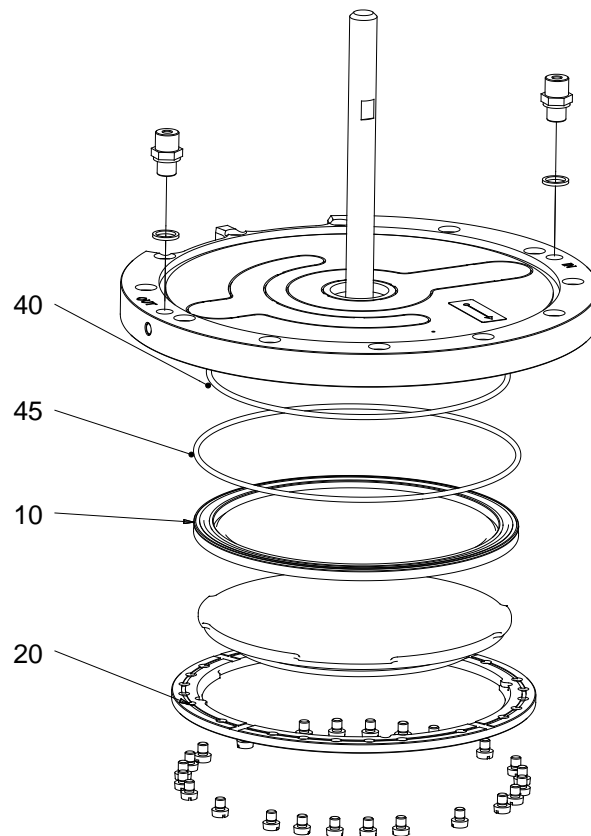


BB534201-Z

9.1.1. Flange +/-195 cpl.

Item – Drawing	Code	Part. No	Description	Qty
		BB534200-T	Flange +/-195 cpl. (Drawing: BB534201-Z)	
2	E	BB534248-T	Holder spring- loaded 0.6	2
3	E	BB534249-T	Holder spring- loaded 1.6	4
For item 2 and 3	E	BB515212	Ceramic pin GPSN	
5	E	BB525012	Compression insulator 5mm	2
6	E	BB525014	Insulator seal ring KI160	2
7	W	BN846998-T	Cooling plate Set GEN2	2
8	W	BB502191	Insulation spout	24
12	E	BB514140-T	VMS 2.0, cpl.	2
13		BB534266-T	Trigger cpl. +/-195	
15	W	BB534243	Confinement ring	2
20	E	B4071601PV	O-ring, Vi, 183.74 x 3.53	4
24	E	B4070673PV	O-ring, Vi, 42.86 x 3.53	5
28	W	B0199603	BAL-SEAL 107LCA(228,56)-316-2	2
51	E	B4070813PV	O-ring, Vi, 53.98 x 3.53	2

9.2. KI160 Cooling plate

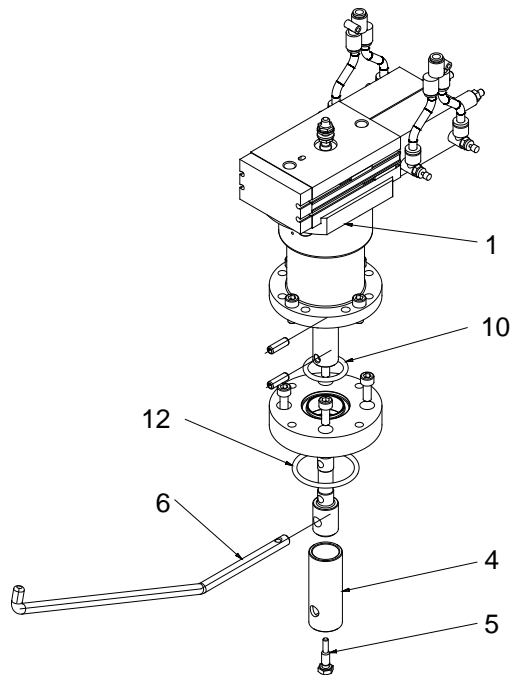


BB525001-Z

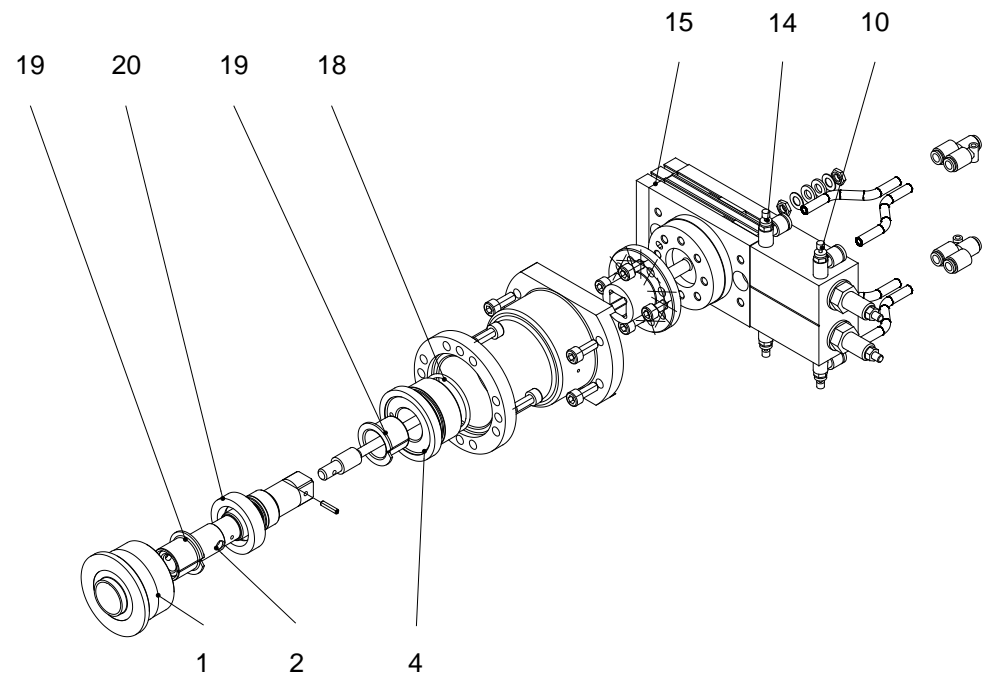
9.2.1. KI160 Cooling plate

Item – Drawing	Code	Part. No	Description	Qty
	W	BN846998-T	Cooling plate Set GEN2 (Drawing: BB525001-Z)	
10	W	BN846994-T	Spare parts KI160-membrane	
40		K4000255	O-Ring, FKM75, 145.73 x 2.62 contained in BN846994-T	
45	E	K4000074	O-ring, FPM75, 158.43 x 2.62 contained in BN846994-T	
20	W	BN846995-T	Spare parts KI160-bayonet ring	

9.3. Trigger cpl. +/195



BB534267-Z



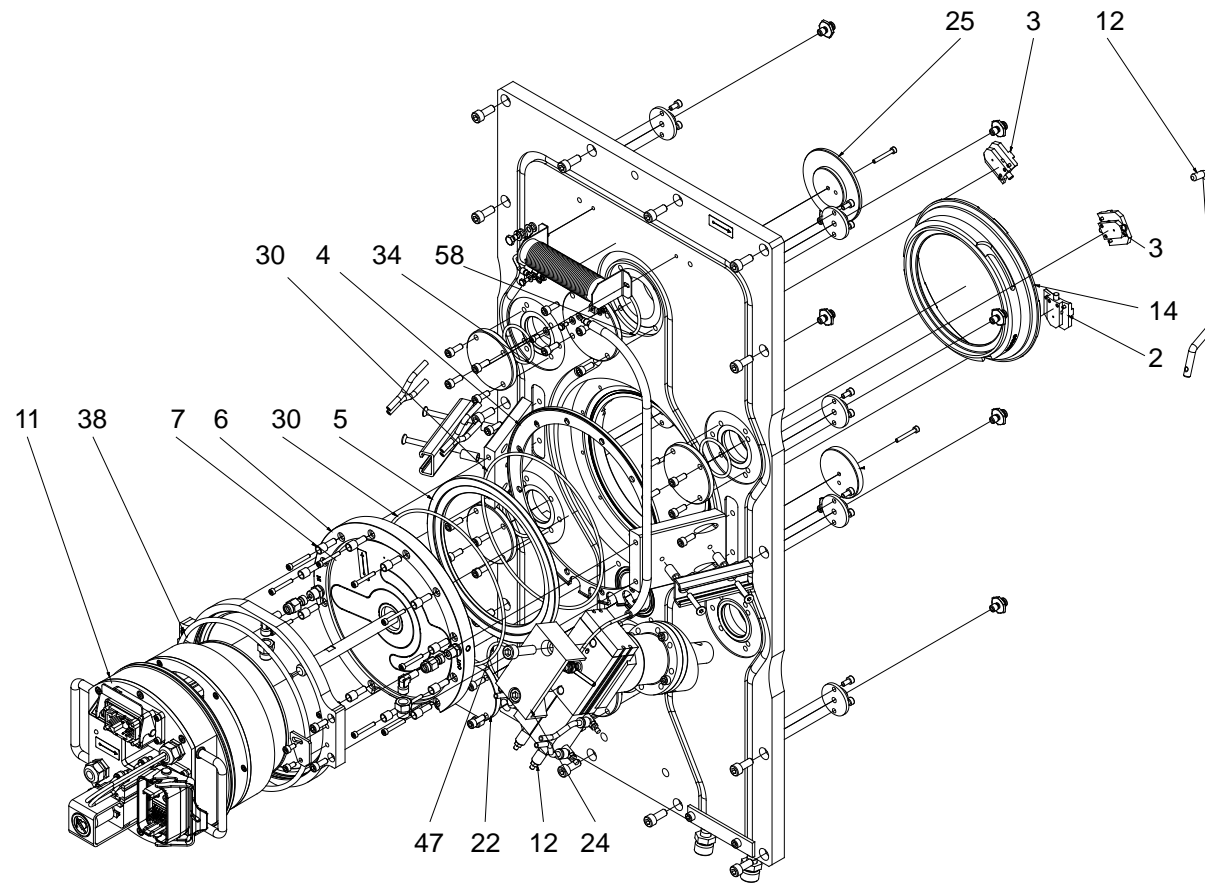
BB534256-Z

9.3.1. Trigger cpl. +/-195

Item – Drawing	Code	Part. No	Description	Qty
		BB534266-T	Trigger cpl. +/-195 (Drawing: BB534267-Z)	
1	S	BB534255-T	Trigger cpl.	
4	W	BB504310	Cover	
5	W	BB504312	Special-screw M6, A2	
6	W	BB534227	Starting rod +/-195	
10	E	B4070455PV	O-ring, Vi, 26.58 x 3.53	
12	E	B4070673PV	O-ring, Vi, 42.86 x 3.53	
		BB534255-T	Trigger cpl. (Drawing: BB534256-Z)	
1	E	BB534257	Insulating ring	
2	E	BB534282	Shaft basic	
4	E	BB534259	Insulator	
10	E	K4100542	One way restrictor air in	2
14	E	K4100541	One way restrictor air out	2
15	S	K4200052	3-Position rotary table	
18	E	B4070596PV	O-ring, Vi, 36.14 x 2.62	
19	E	K4000148	DU-bushing Ø20xØ23x21.75	
20	W	N4083390VD	Rotary shaft seal VI,A25/40x10	

10. Ingenia DC 1 Sourceflange

10.1. Flange +/-0 cpl.

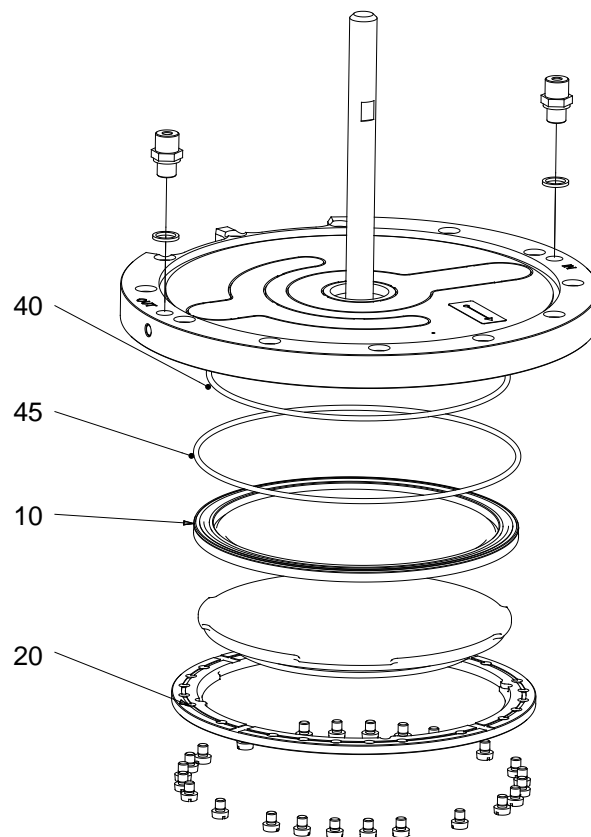


BB534203-Z

10.1.1. Flange +/-0 cpl.

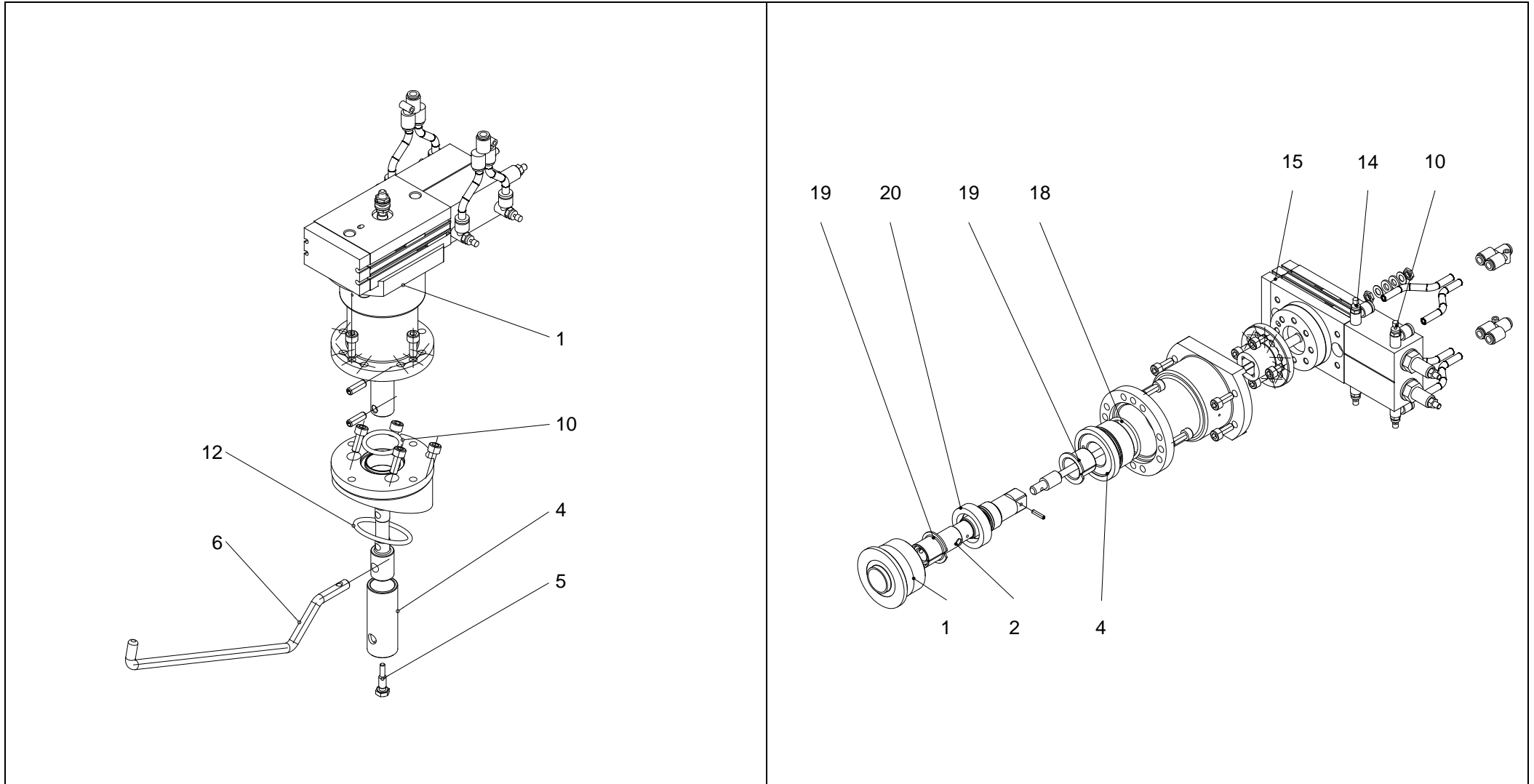
Item – Drawing	Code	Part. No	Description	Qty
		BB534202-T	Flange +/-0 cpl. (Drawing: BB534203-Z)	
2	E	BB534248-T	Holder spring- loaded 0.6	1
3	E	BB534249-T	Holder spring- loaded 1.6	2
For item 2 and 3	E	BB515212	Ceramic pin GPSN	
4	E	BB525012	Compression insulator 5mm	
5	E	BB525014	Insulator seal ring KI160	
6	W	BN846998-T	Cooling plate Set GEN2	
7	W	BB502191	Insulation spout	12
11	E	BB514140-T	VMS 2.0, cpl.	
12		BB534262-T	Trigger +/-0 cpl.	
14	W	BB534243	Confinement ring	
30	E	B4071601PV	O-ring, Vi, 183.74 x 3.53	2
34	E	B4070673PV	O-ring, Vi, 42.86 x 3.53	3
38	W	B0199603	BAL-SEAL 107LCA(228,56)-316-2	
47	E	B4070813PV	O-ring, Vi, 53.98 x 3.53	
58	W	B4070925PV	O-ring, Vi, 63.09 x 3.53	2

10.2. KI160 Cooling plate



BB525001-Z

10.3. Trigger +/-0 kpl.



BB534263-Z

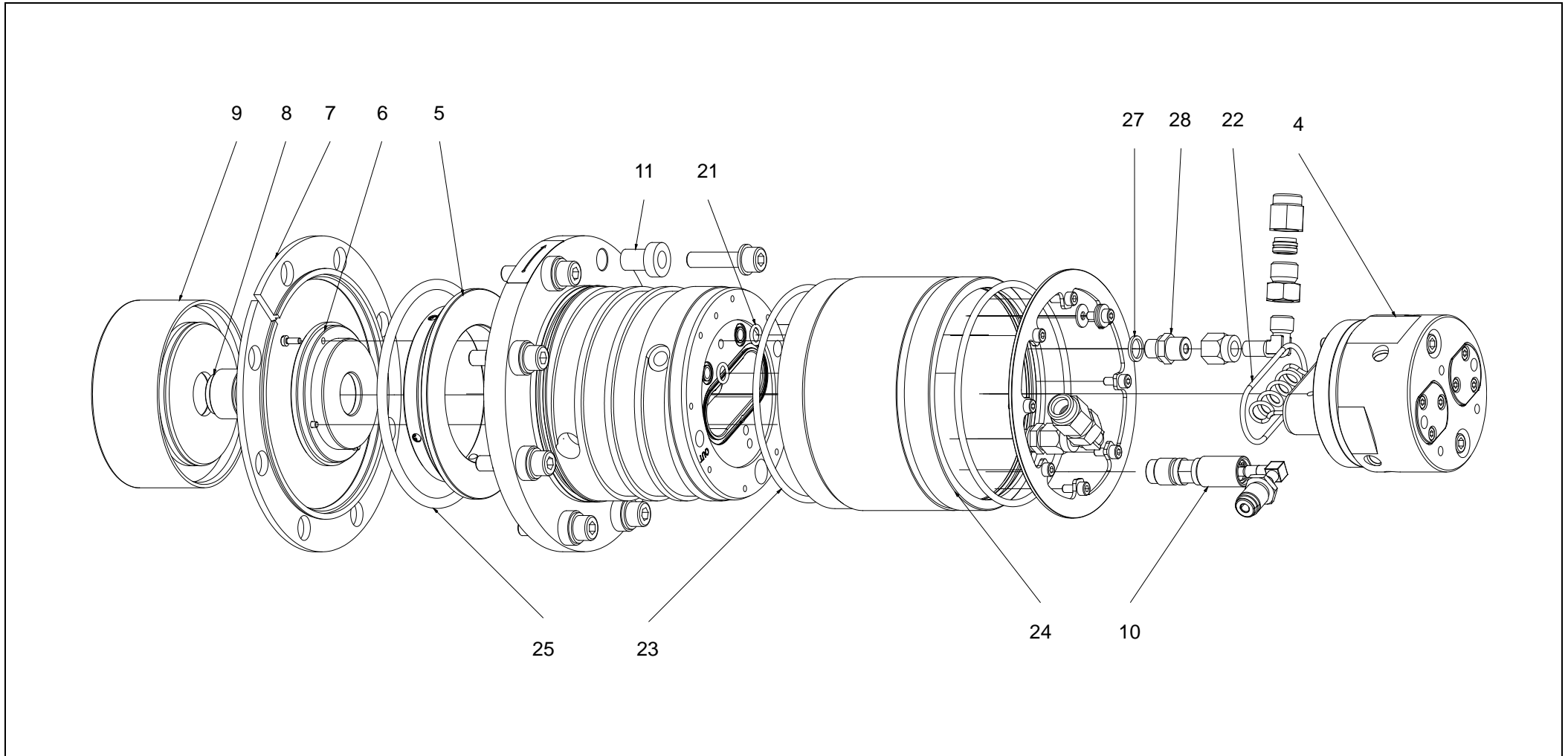
BB534256-Z

10.3.1. Trigger +/-0 kpl.

Item – Drawing	Code	Part. No	Description	Qty
		BB534262-T	Trigger +/-0 cpl. (Drawing: BB534263-Z)	
1	E	BB534255-T	Trigger cpl.	
4	W	BB504310	Cover	
5	W	BB504312	Special-screw M6, A2	
6	W	BB534258	Starting rod +/-0	
10	E	B4070455PV	O-ring, Vi, 26.58 x 3.53	
12	E	B4070673PV	O-ring, Vi, 42.86 x 3.53	
		BB534255-T	Trigger cpl. (Drawing: BB534256-Z)	
1	E	BB534257	Insulating ring	
2	E	BB534282	Shaft basic	
4	E	BB534259	Insulator	
10	E	K4100542	One way restrictor air in	
14	E	K4100541	One way restrictor air out	2
15	S	K4200052	3-Position rotary table	2
18	E	B4070596PV	O-ring, Vi, 36.14 x 2.62	
19	E	K4000148	DU-bushing Ø20xØ23x21.75	
20	W	N4083390VD	Rotary shaft seal VI,A25/40x10	

11. Ingenia DC Etchequipment

11.1. Pocket Source 2 cpl.

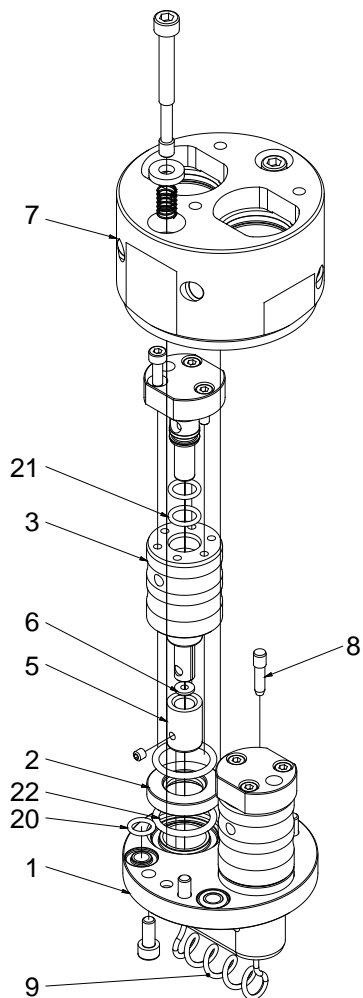


BB525341-Z

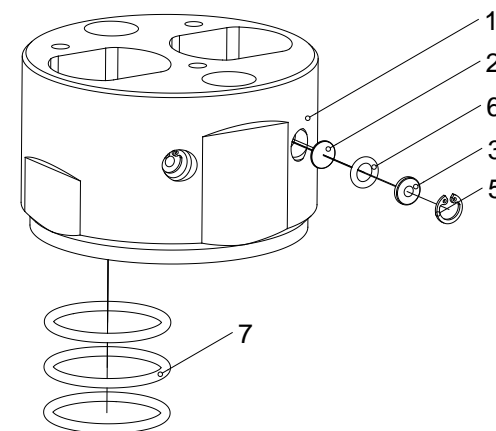
11.1.1. Pocket Source 2 cpl.

Item – Drawing	Code	Part. No	Description	Qty
	E	BB525340-T	Pocket Source 2 cpl. (Drawing: BB525341-Z)	
4	S	BB525137-T	Filamentholder 2 cpl.	
5	E	BB525345-T	Centering isolator DN100 cpl.	
6		BB525343	Orifice adapter	
7	E	BB525067	Compression isolator DN100	
8	W	BB525344	BN orifice Ø13	
9		BB525136	Shielding PS2	
10	S	BB525061-T	Gasfeedthrough isolated	
11	E	BB525073	Bushing	
20	S	B4070066PV	O-ring, Vi, 5.28 x 1.78	
21	E	B4070104PV	O-ring, VI, 7 x 3	
22	E	K4000263	O-ring FPM 75 50.47x2.62	
23	E	B4071238PV	O-ring, Vi, 104.37 x 3.53	
24	E	B4071271PV	O-ring, Vi, an 244,107,55x 3,53	
25	E	B4071274PV	O-ring, Vi, 107.2 x 5.34	
27	S	K4000171	Seal for external thread 1/8"	
28	S	K4100444	Double nipple M 12x1 / G1/8"	

11.2. Filamentholder 2 cpl.



BB525138-Z

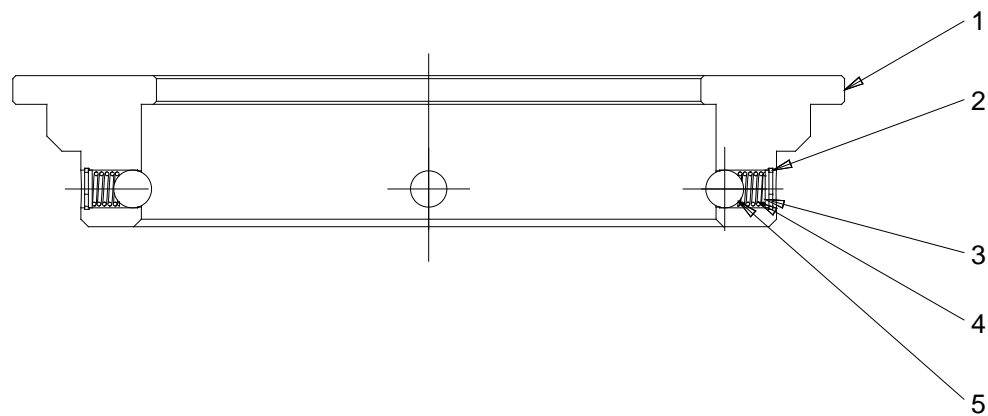


BB525144-Z

11.2.1. Filamentholder 2 cpl.

Item – Drawing	Code	Part. No	Description	Qty
	S	BB525137-T	Filamentholder 2 cpl. (Drawing: BB525138-Z)	
1		BB525139	Basic flange 2	
2	E	BB525140	Isloator FH	2
3	W	BB525141	Filament holder 2	2
5	S	BB525058	Clamping ring	2
6	W	BB525075	Protection ring	2
7	S	BB525143-T	Housing FH cpl.	
8		BB525147	Position pin	
9	W	BB525123	PS Filament - W	
20	E	B4070104PV	O-ring, Vi, 7.66 x 1.78	
21	E	B4070144PV	O-ring, Vi, 9.25 x 1.78	
22	E	B4070351PV	O-ring, Vi, 20.24 x 2.62	
		BB525143-T	Housing FH cpl. (Drawing: BB525144-Z)	
1		BB525145	Housing FH	
2		BB525148	Sealing Disc	5
3		BB525149	Sealing Insert	5
5		K3800173	Retaining ring Inox 8x0,8	5
6	S	B4070066PV	O-ring, Vi, 5.28 x 1.78	5
7	E	B4070499PV	O-ring, VI, 29.82x2.62	6

11.3. Centering isolator DN100 cpl.

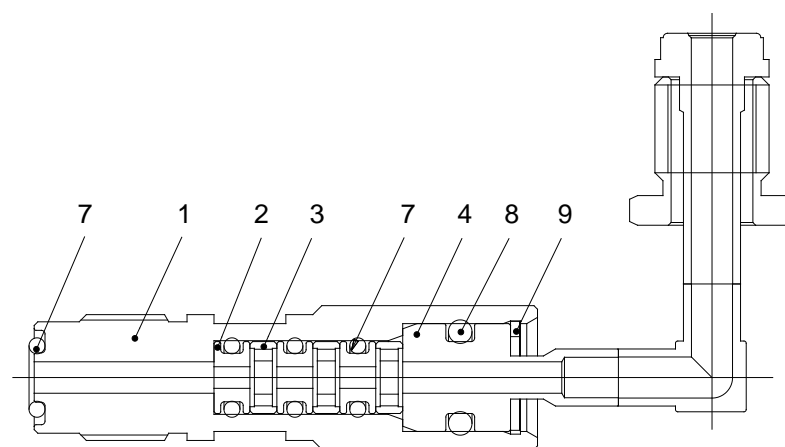


BB525346-Z

11.3.1. Centering isolator DN100 cpl.

Item – Drawing	Code	Part. No	Description	Qty
	E	BB525345-T	Centering isolator DN100 cpl. (Drawing: BB525346-Z)	
1		BB525127	Centering isolator	
2		BB525129	Circlip B5	
3		BB525130	Disc	
4		K3800195	Pressure spring, Inox, 0,5x4,5	
5		N4040041X	Ball sst Ø 5	

11.4. Gasfeedthrough isolated



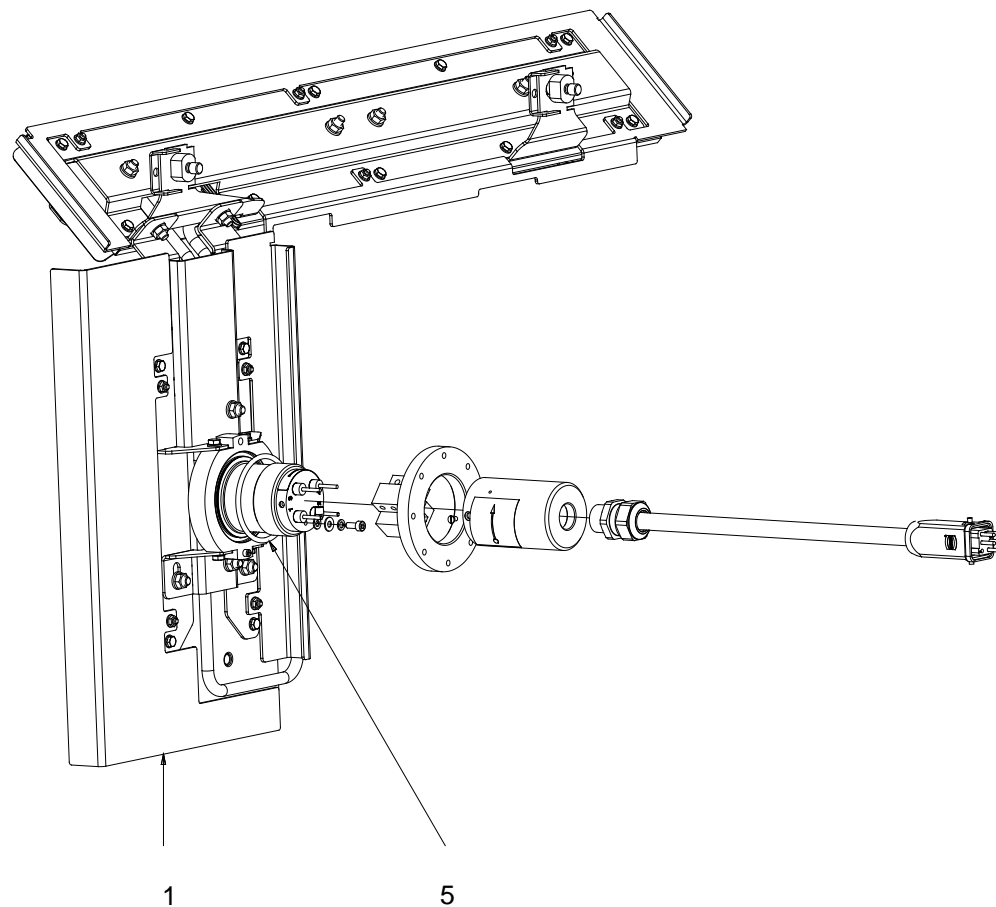
BB525062-Z

11.4.1. Gasfeedthrough isolated

Item – Drawing	Code	Part. No	Description	Qty
	S	BB525061-T	Gasfeedthrough isolated (Drawing: BB525062-Z)	
1		BB525131	Gasfeedthrough I2	
2		BB525132	Insert L	
3		BB525133	Insert NL	
4		BB525134-X	Gas connection	
7	S	B4070066PV	O-ring, Vi, 5.28 x 1.78	
8	E	B4070112PV	O-ring, Vi, 7.59 x 2.62	
9		K3800194	Retaining ring J 12X1,1	

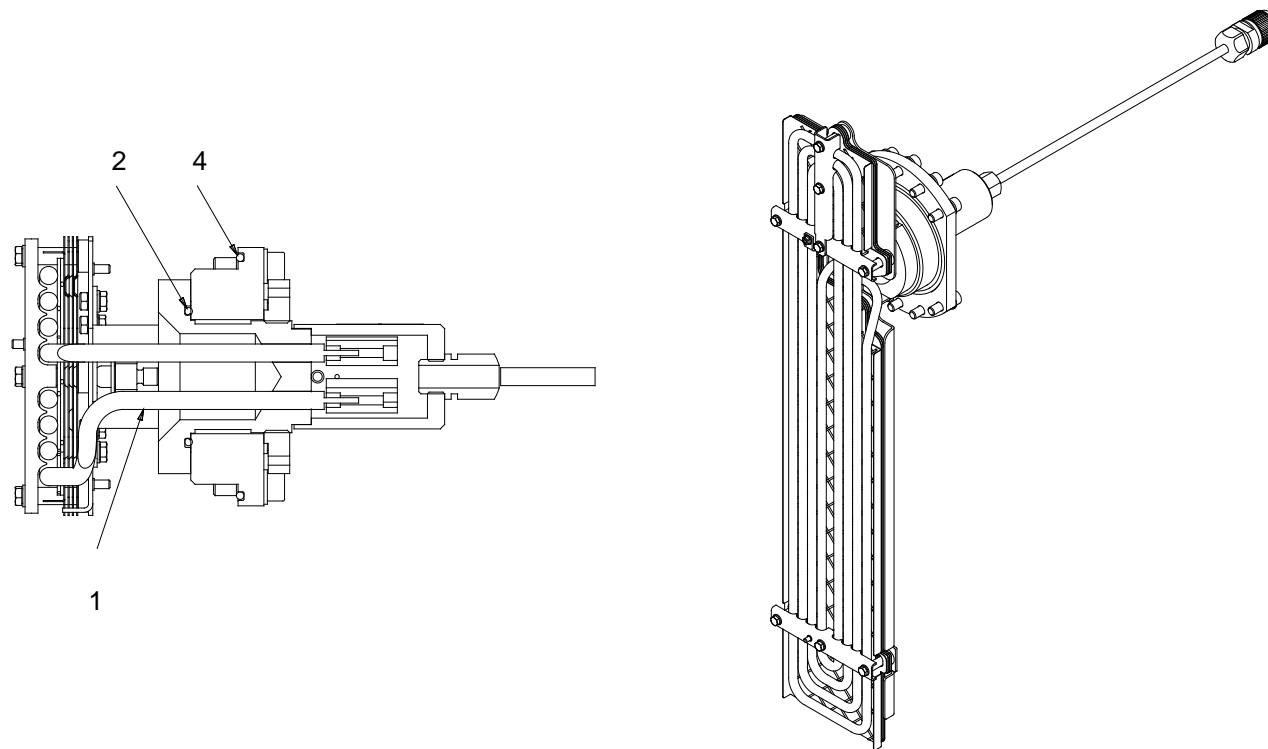
12. Ingenia DC heater

12.1. Heater 2.6kW/4.1kW cpl.



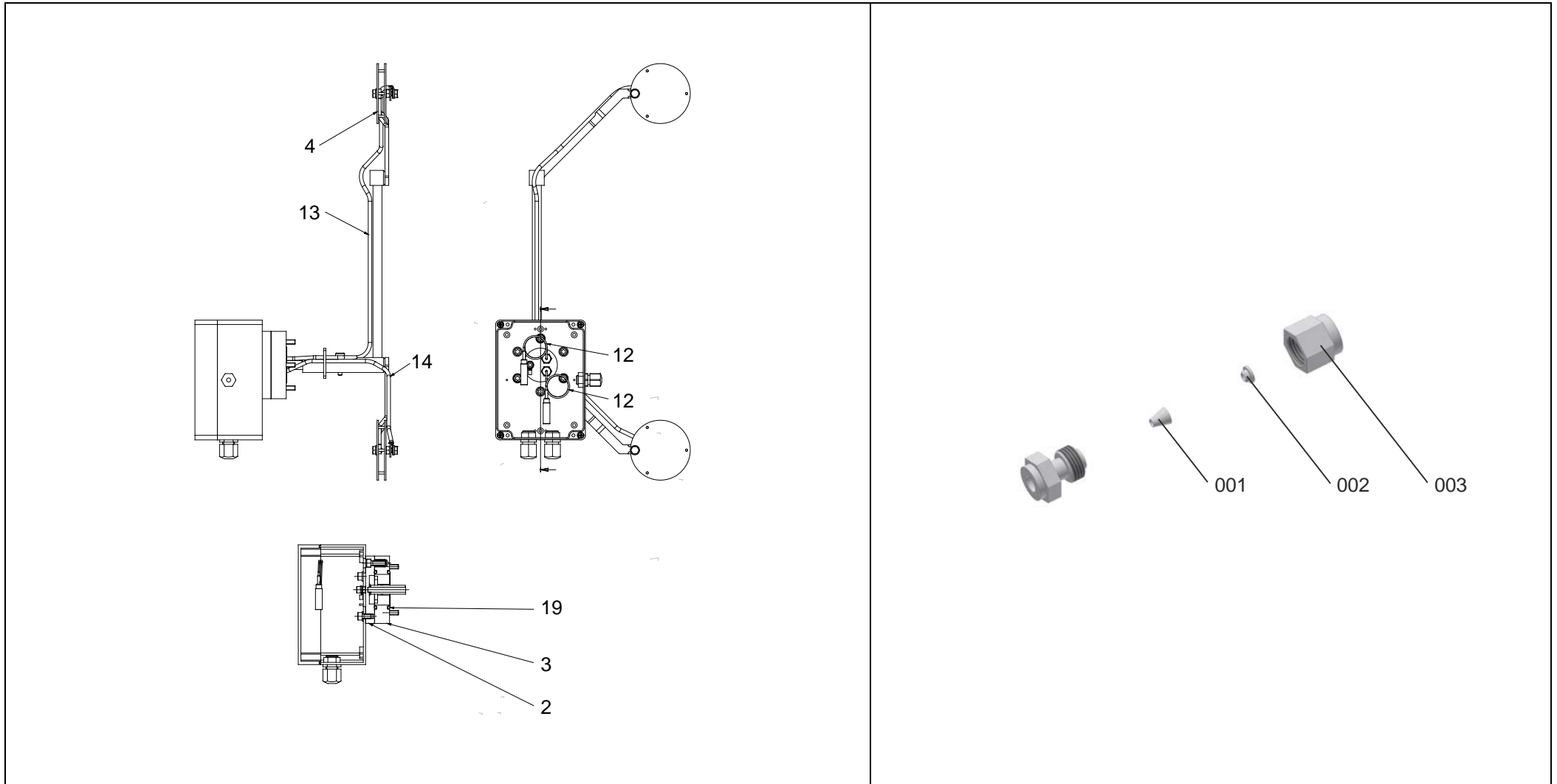
BB525653-Z

12.2. Heater 4kW cpl.



BB503431-Z

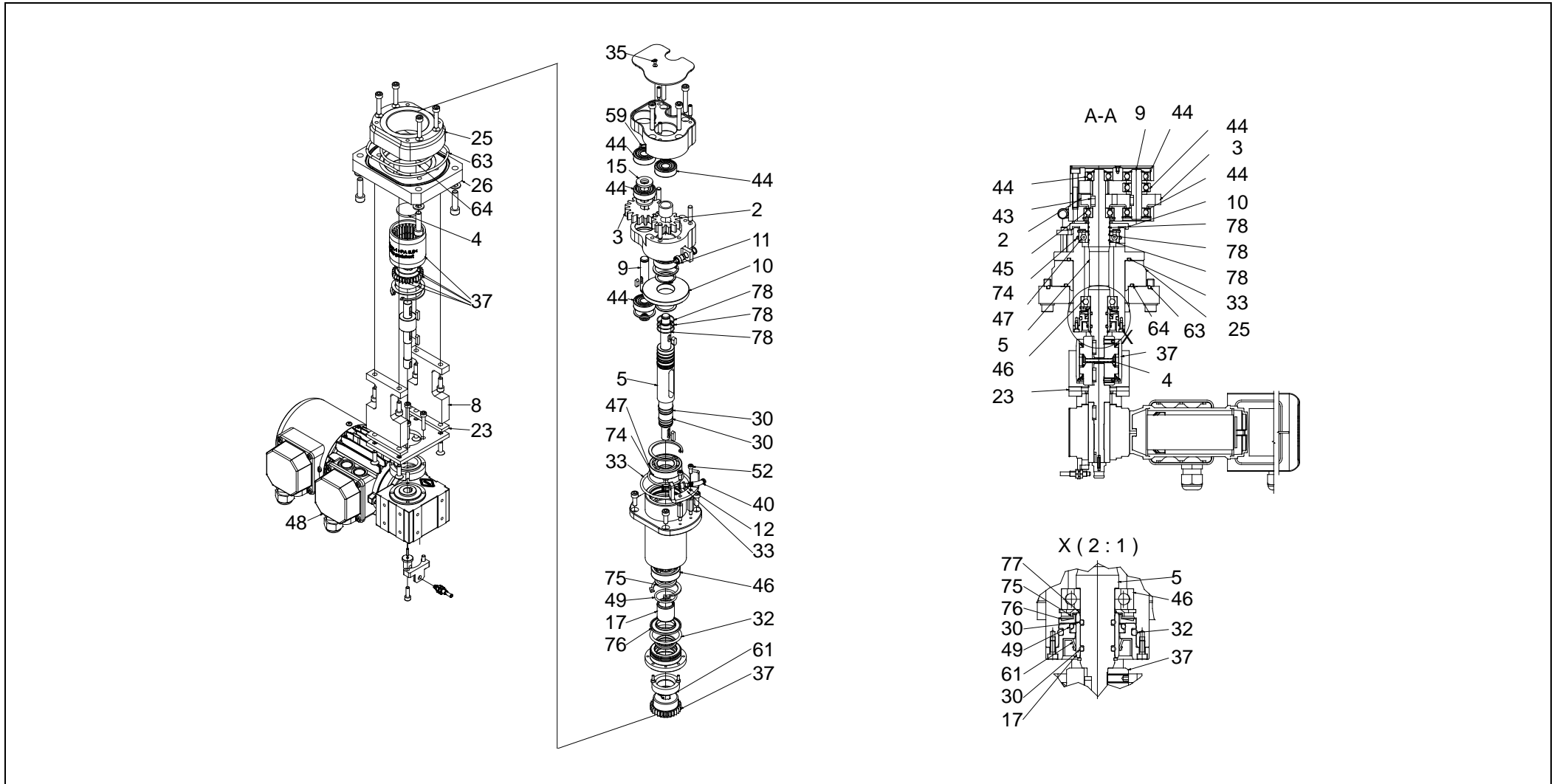
13. Temperature measurement cpl.



BB534750-Z

K4100407

14. Rotary drive cpl.



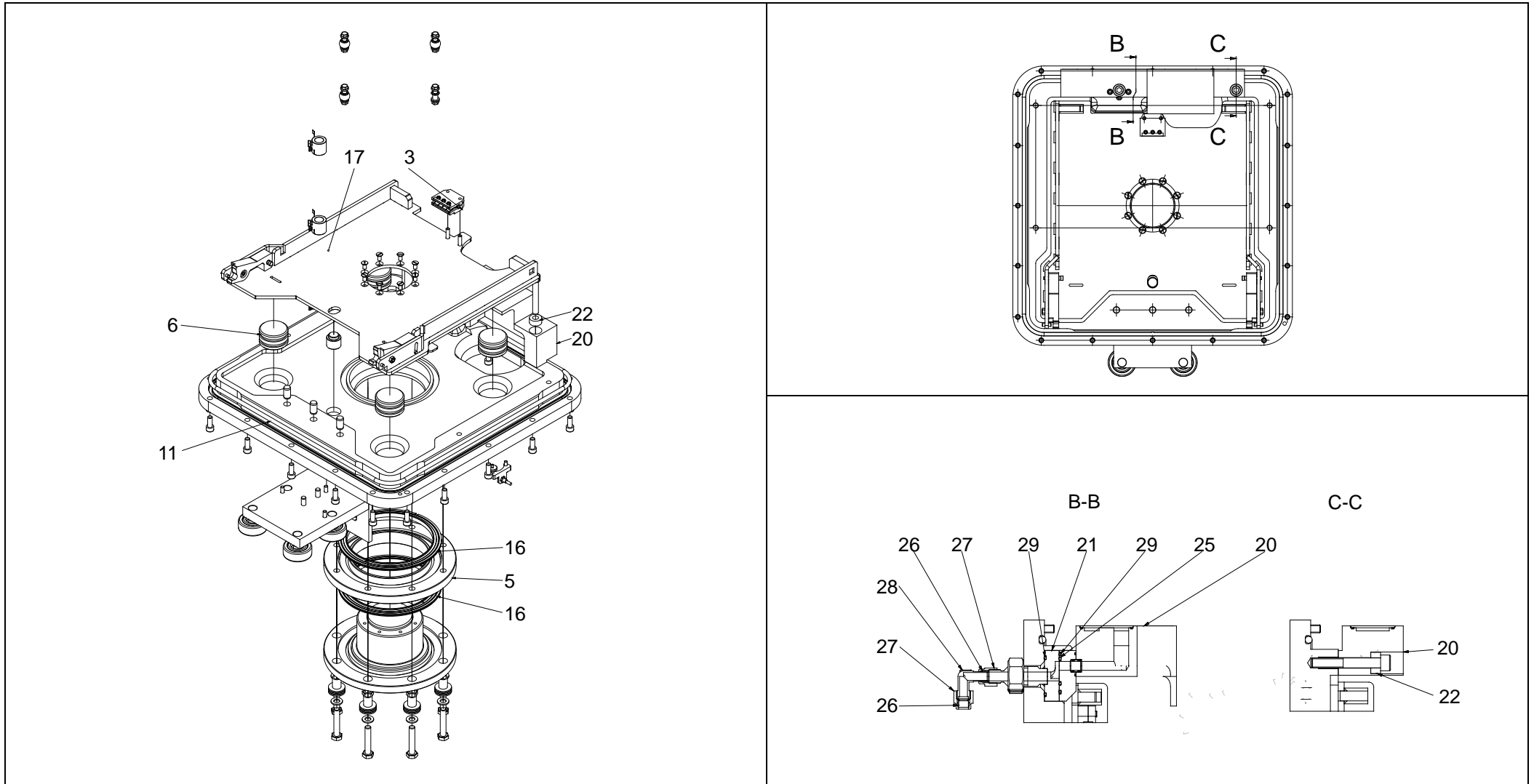
BB534485-Z

14.1. Rotary drive cpl.

Item – Drawing	Code	Part. No	Description	Qty
		BB534400-T	Rotary drive cpl. (Drawing: BB534485-Z)	
2	S	BB534403	Spur gear z12 m3	
3	S	BB534404	Spur gear z17 m3	
4		BB534405	Insulation disk	
5		BB534399	Feedthrough shaft 2	
9		BB534410	Axis	
10	S	BB534411	Cover disk	
11	S	BB534412	Spring mandrel 1	
12	S	BB534413	Spring mandrel 2	
17	E	BB534418	Slide ring	
23		BB534477	Heat shield	
25		BB525636	Rotary drive insulator	
30	E	B4070256PV	O-ring, VI, 15.54 x 2.62	
32	E	B4070610PV	O-ring, Vi, 37.69 x 3.53	
33	W	B4070925PV	O-ring, Vi, 63.09 x 3.53	
37	S	K3800209	Curved tooth coupling d12-d12	
40	E	K3800220	Compr. spring d6.3x33/0.8	
44	E	K4000292	Ball bearing 6201-2Z/VA228	
45	E	K4000293	Ball bearing 6201-2Z/VA228	
46	E	K4000294	Ball bearing 6004 full ceramic	
47	E	K4000323	Ball bearing 6005 full ceramic	
48	E	K5100128	Gear motor with ext. cooling	

Item – Drawing	Code	Part. No	Description	Qty
49	E	K4000011	O-ring, FPM75, 26.65 x 2.62	
61	W	N4083390VD	Rotary shaft seal VI,A25/40x10	
63	E	B4071271PV	O-ring, Vi, an 244,107,55x 3,53	
64	S	B4070991PV	O-ring, Vi, 69.44 x 3.53	
74		K4000324	O-Ring, KALREZ, 45.69 x 2.62	
75		BB534396	Upper particle shielding	
76		BB534397	Lower particle shielding	
77		K4000326	O-ring, FKM75, 18x1	
78		K4300192	BAL-SEAL 506X-22.50-276 JBC30365	

15. Carousel support chamber



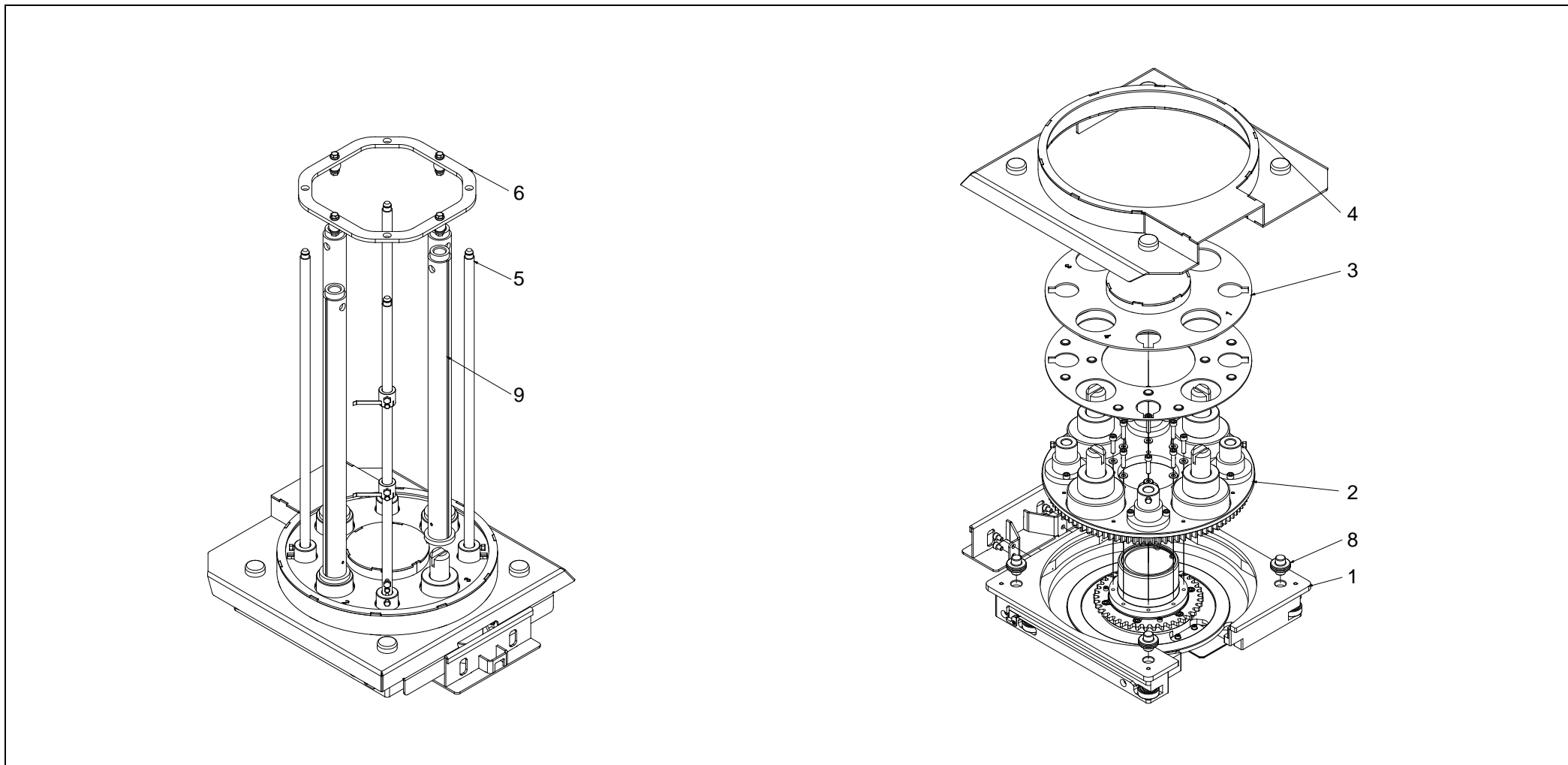
BB534485-Z

15.1. Carousel support chamber

Item – Drawing	Code	Part. No	Description	Qty
		BB534484-T	FP bottom with carousel support (Drawing: BB534485-Z)	
3		BB534144-T	Connector	
For item 3		BB534148	Spring contact 3mm	2
5	E	BB525641	Insulating flange bottom	
6	S	BB525642	Ceramic bearing plate	
11	E	K4000271	O-Ring, FPM75, 545 x 7	
16	S	212-263	Centering ring DN 160 ISO	
20		BB525788-X	Cooling element cpl.	
21		BB525789-X	Water connector cpl.	
22		BB525787	Pressure seleeve	2
25	E	B4070296PV	O-ring, Vi, 17.13 x 2.62	2
26		K4100561	Compression ferrule Ms, M 10	4
27		K4100562	Union nut, M14x1	4
28		K4100580	Adjustable elbow 10-A10	2
29	E	B4070527PV	O-ring, VI, 31.42 x 2.62	4

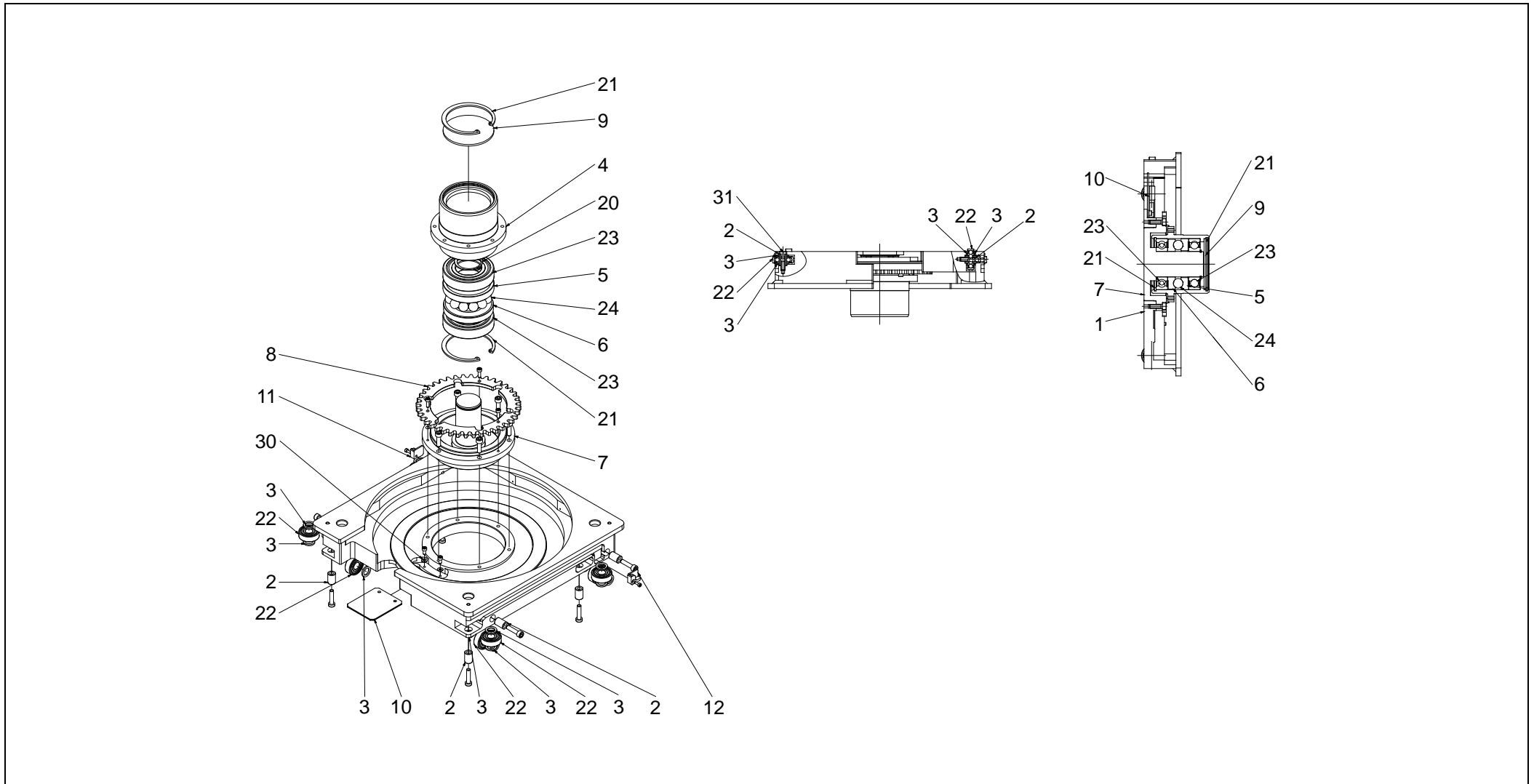
16. Ingenia Carousel

16.1. Carousel 4 spindles D135



BB534426-Z

16.2. Base frame carousel

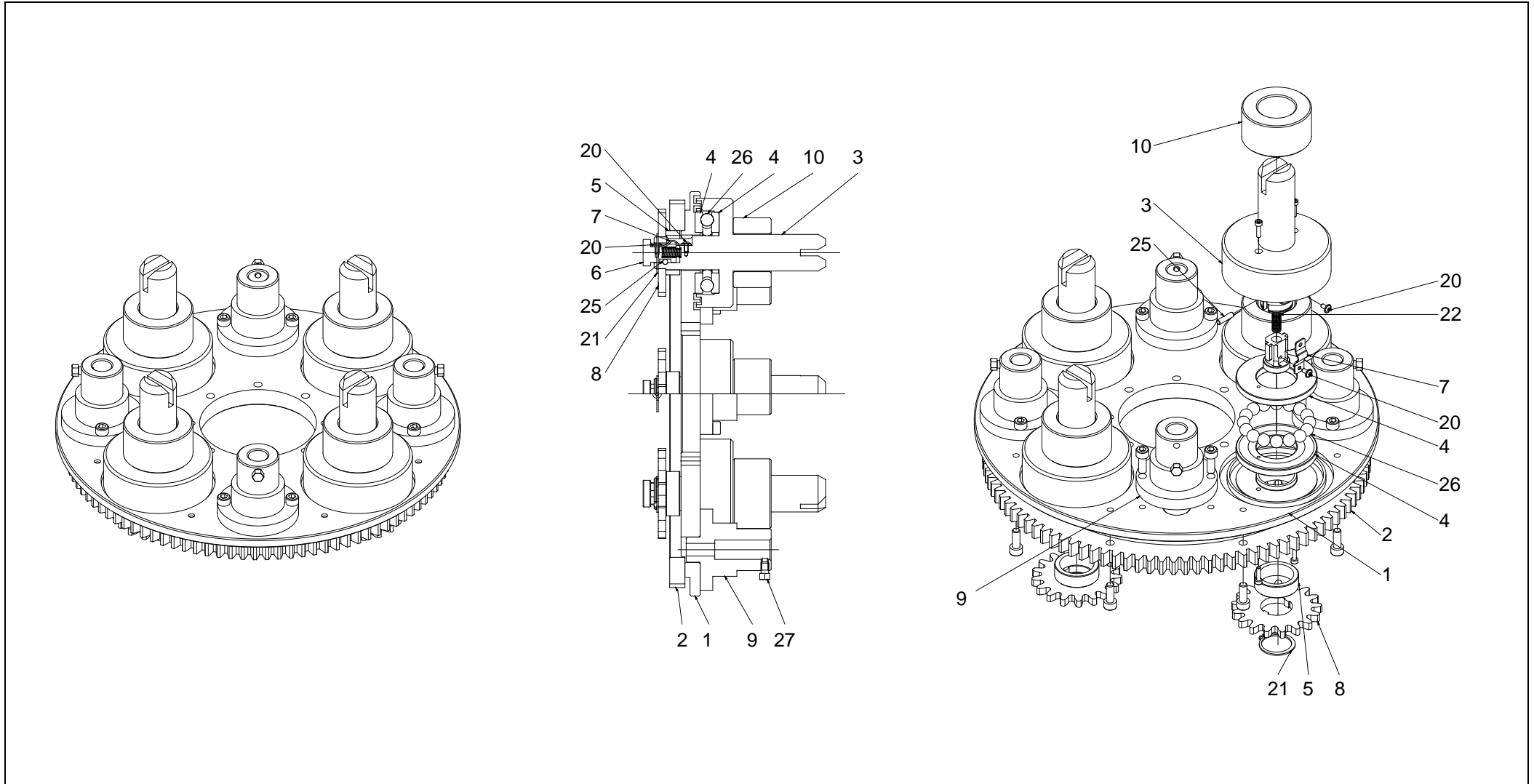


BB534430-Z

16.2.1. Base frame carousel

Item – Drawing	Code	Part. No	Description	Qty
		BB534429-T	Base frame carousel cpl. (Drawing: BB534430-Z)	
1		BB534435-X	Chassis cpl.	1
2		BB534427	Bearing bushing	8
3		BB534428	Spacer	16
4		BB534441	Bearing housing	1
5	S	BB534442	Race 1	1
6	S	BB534443	Race 2	1
7		BB534440	Bearing pin	1
8		BB534438	Pinion z40	1
9		BB534439	Cover	1
10	S	BB534444	Contact latch	1
11		BB534445	Arrester right	1
12		BB534446	Arrester left	1
20		K3800216	Circlip, inox, 40x1.75	1
21		K3800217	Circlip, inox, 80x2.5	2
22	E	K4000292	Ball bearing 6201-2Z/VA228	8
23	S	K4000297	Ball bearing 6208-2Z/VA228	2
24	S	K4300156	Carbide metal ball d15 G50	12

16.3. Carousel body

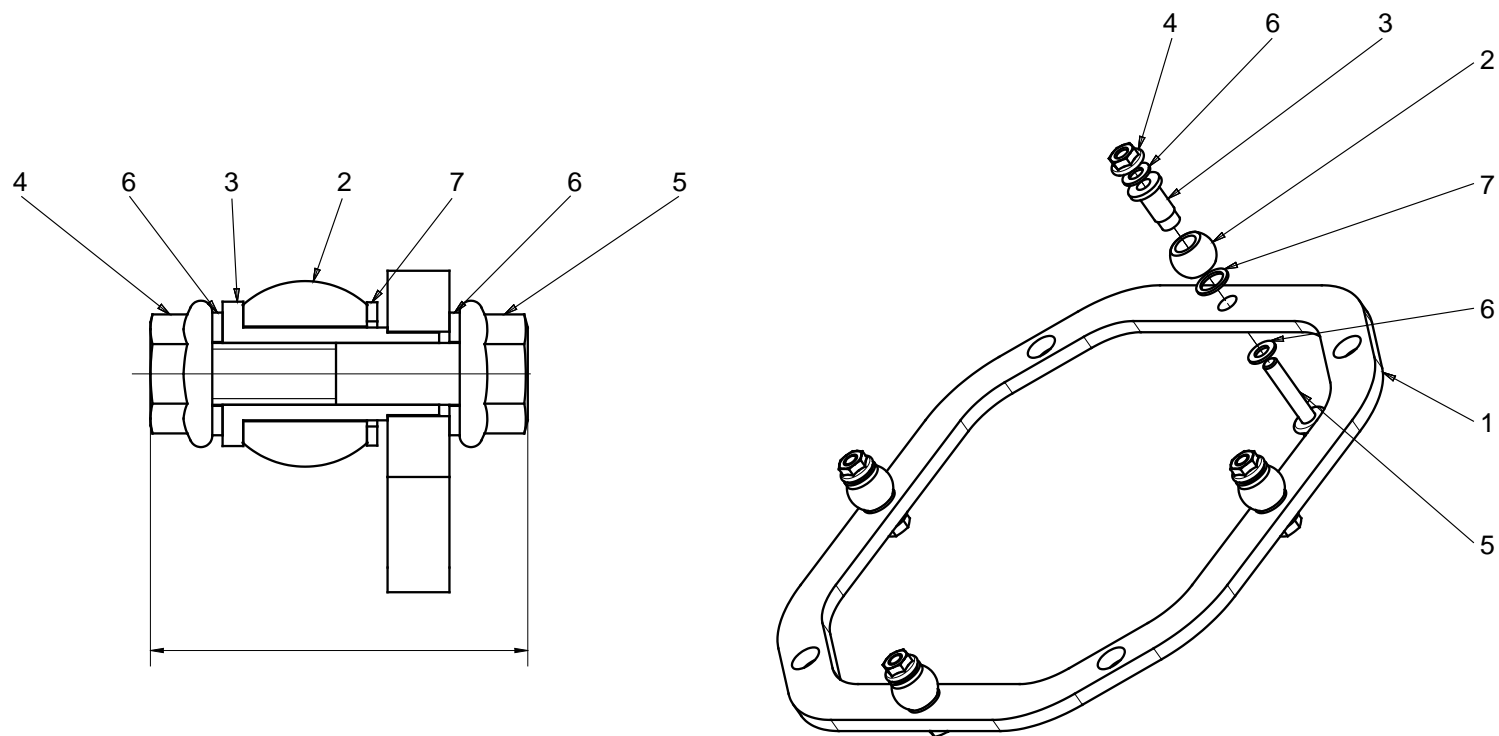


BB534432-Z

16.3.1. Carousel body

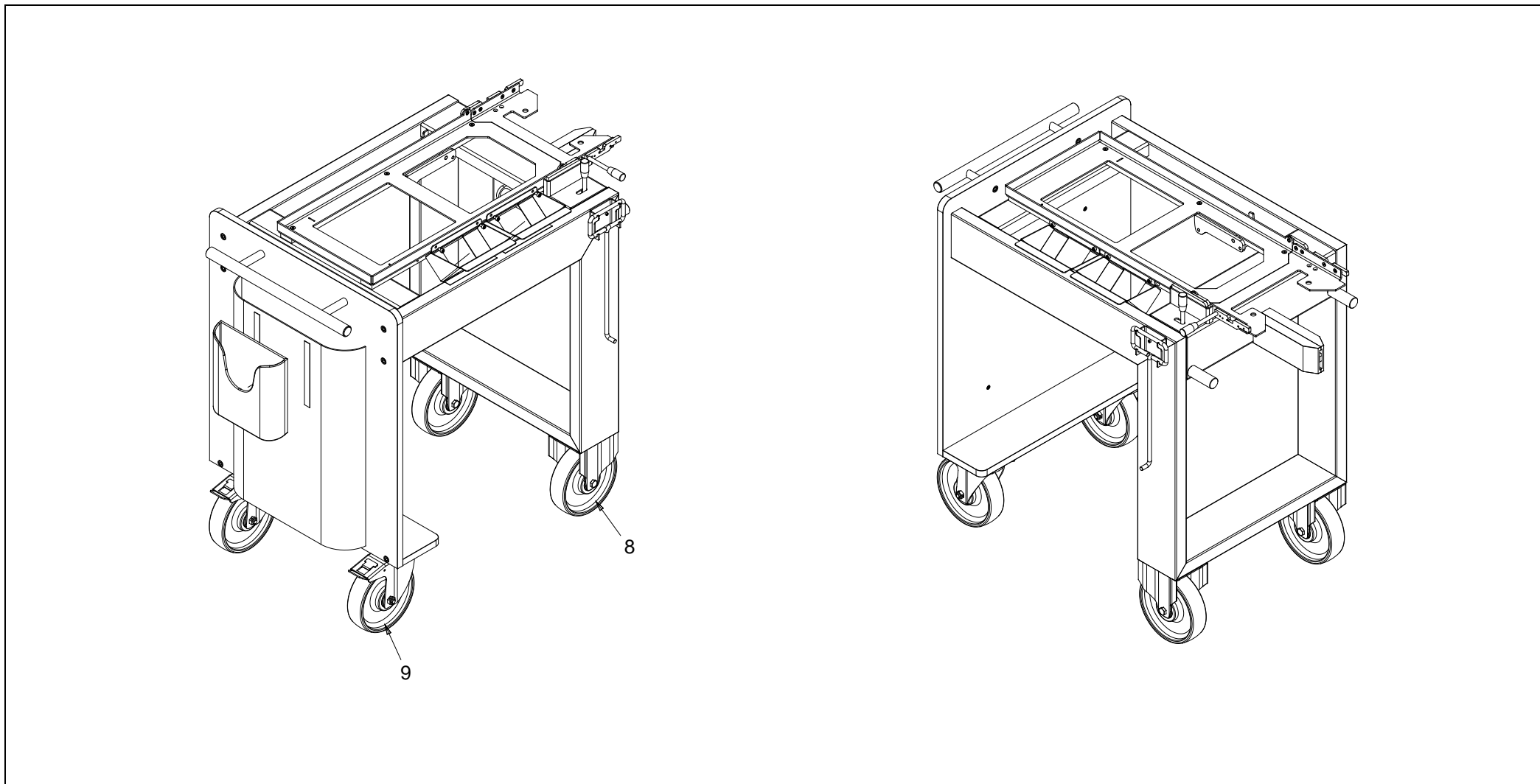
Item – Drawing	Code	Part. No	Description	Qty
		BB534431-T	Carousel body (Drawing: BB534432-Z)	
1		BB534472	Rotary table	1
2		BB534473	Crown gear z100 m3	1
3		BB534469	Guide pin D86	4
4	S	BB534468	Race D64	8
5		BB534471	Spacer	4
6	W	BB534464	Carbon brush	4
7	S	BB534476	Copper band	4
8		BB534463	Planet gear z17	4
9		BB534470	Spring support bar	4
10		BB534467	Spacer	4
20		K3000391	Lens head screw flange, M3x6	8
21		K3800218	Circlip, inox, 25x1.2	4
22		K3800219	Compr. spring d6.3x23/0.8	4
25		N3565259X	Parallel pin h8, stl 4 X 16	4
26	W	N4040051HM	Ball hard metal G50 Ø 10	64

16.4. Tree holder cpl.



BB534475-Z

17. Carrousel changing system



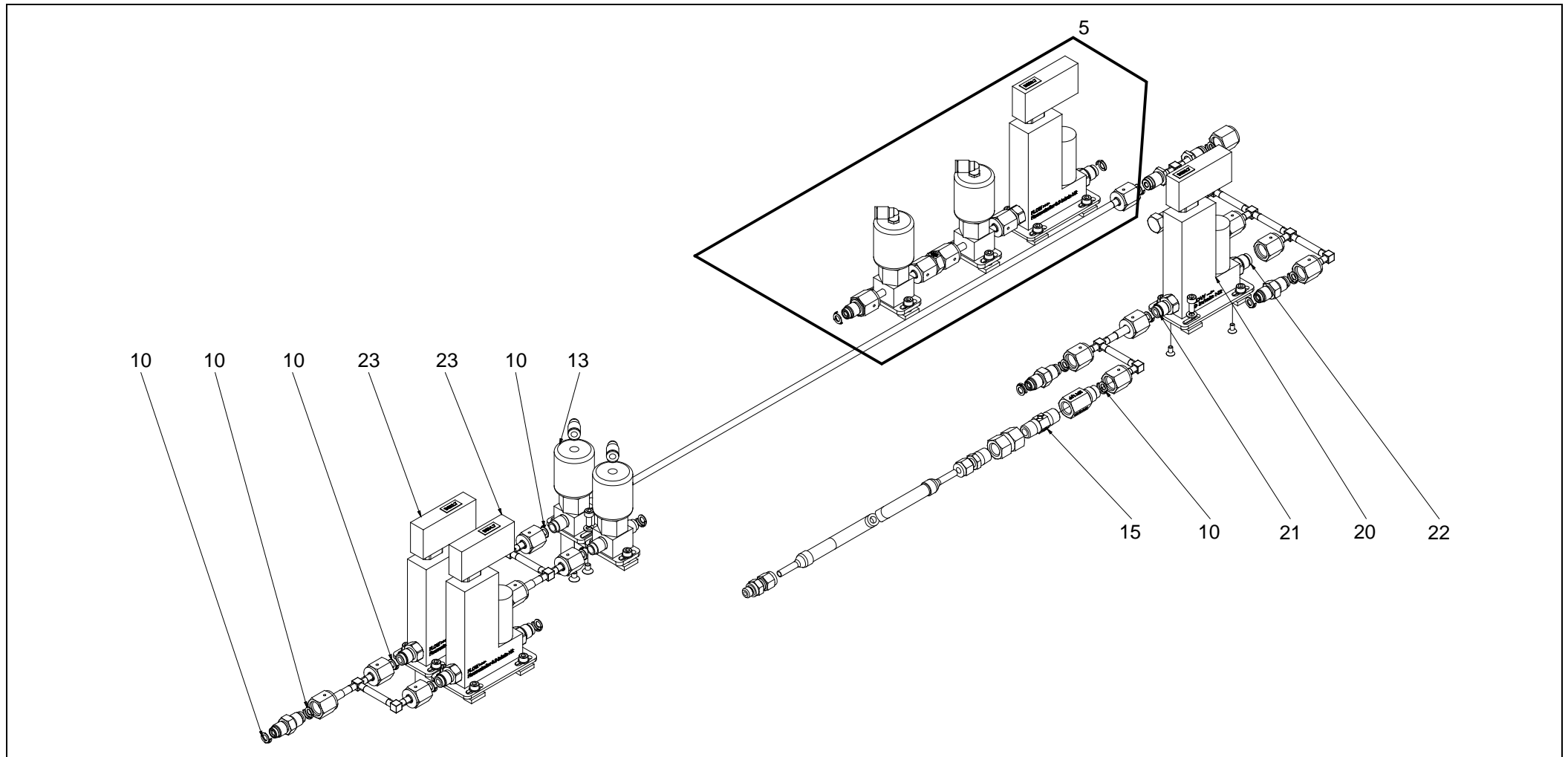
BB520301-Z

17.1. Carrousel changing system

Item – Drawing	Code	Part. No	Description	Qty
		BB520300-T	Carrusel changing system cpl. (Drawing: BB520301-Z)	
8		K4300161	Fixed roller 200	
9		K4300162	Castor wheel d200	

18. Ingenia DC gas supply

18.1. Gas supply basic system

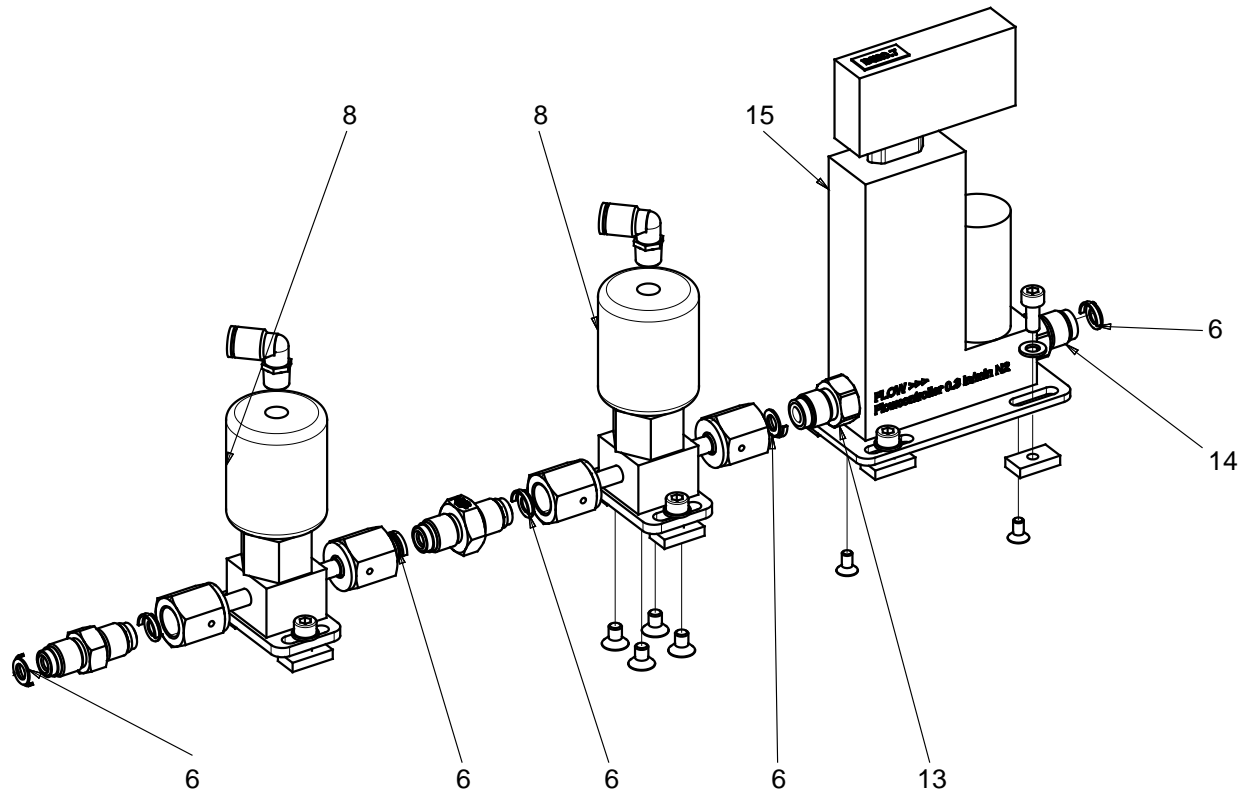


BB534801-Z

18.1.1. Gas supply basic system

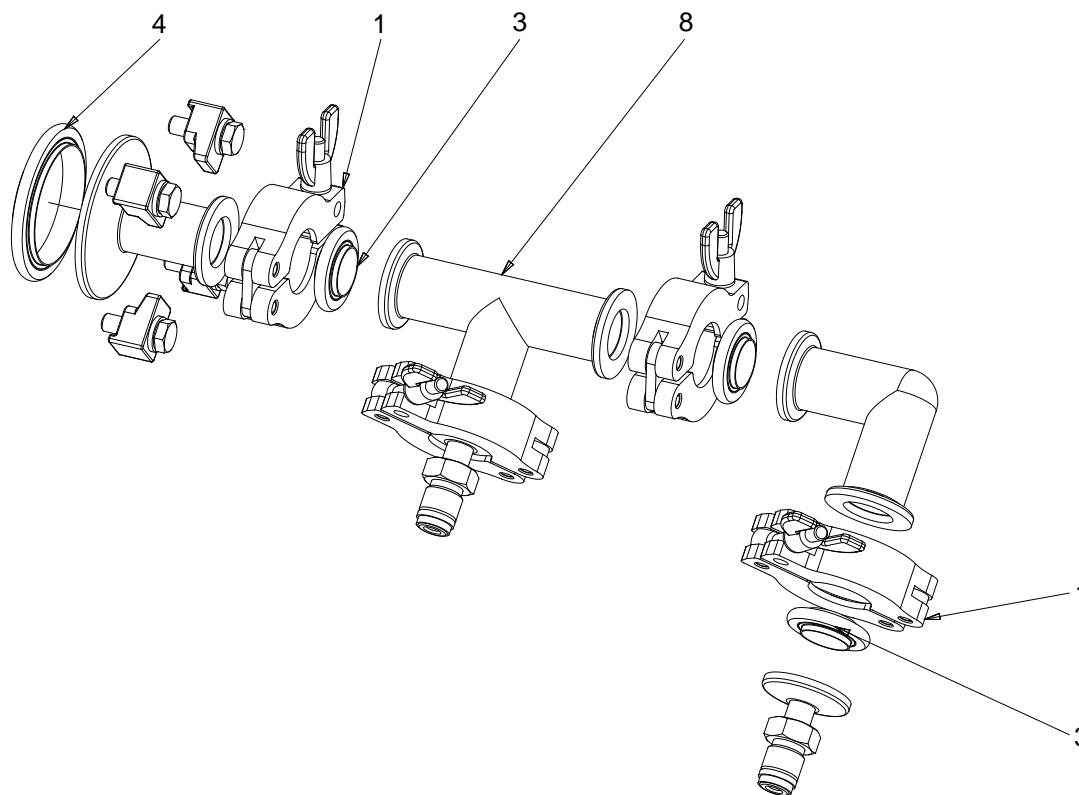
Item – Drawing	Code	Part. No	Description	Qty
		BB534800-T	Gas supply basic system cpl. (Drawing: BB534801-Z)	
5		BB534802-T	Gas line hydrogen (H2)	
10	W	K4100101	Sealing disc, NI-4-VCR-2-ZC-VS	
13	E	K4100538	Membrane valve male	
15	S	K4100864	Check valve NPT1/4-NPT1/4	
20	E	K4700372	Flow controller 1.0 l/min N2	
21	S	K7400010	Inlet connection, VCR 6mm-1/4"	
22	S	K7400011	Outlet connection VCR 6mm-1/8"	
23	E	K7400043	Flowcontroller 0.3 l/min N2	

18.2. Gas line hydrogen (H₂)



BB 534 803-Z

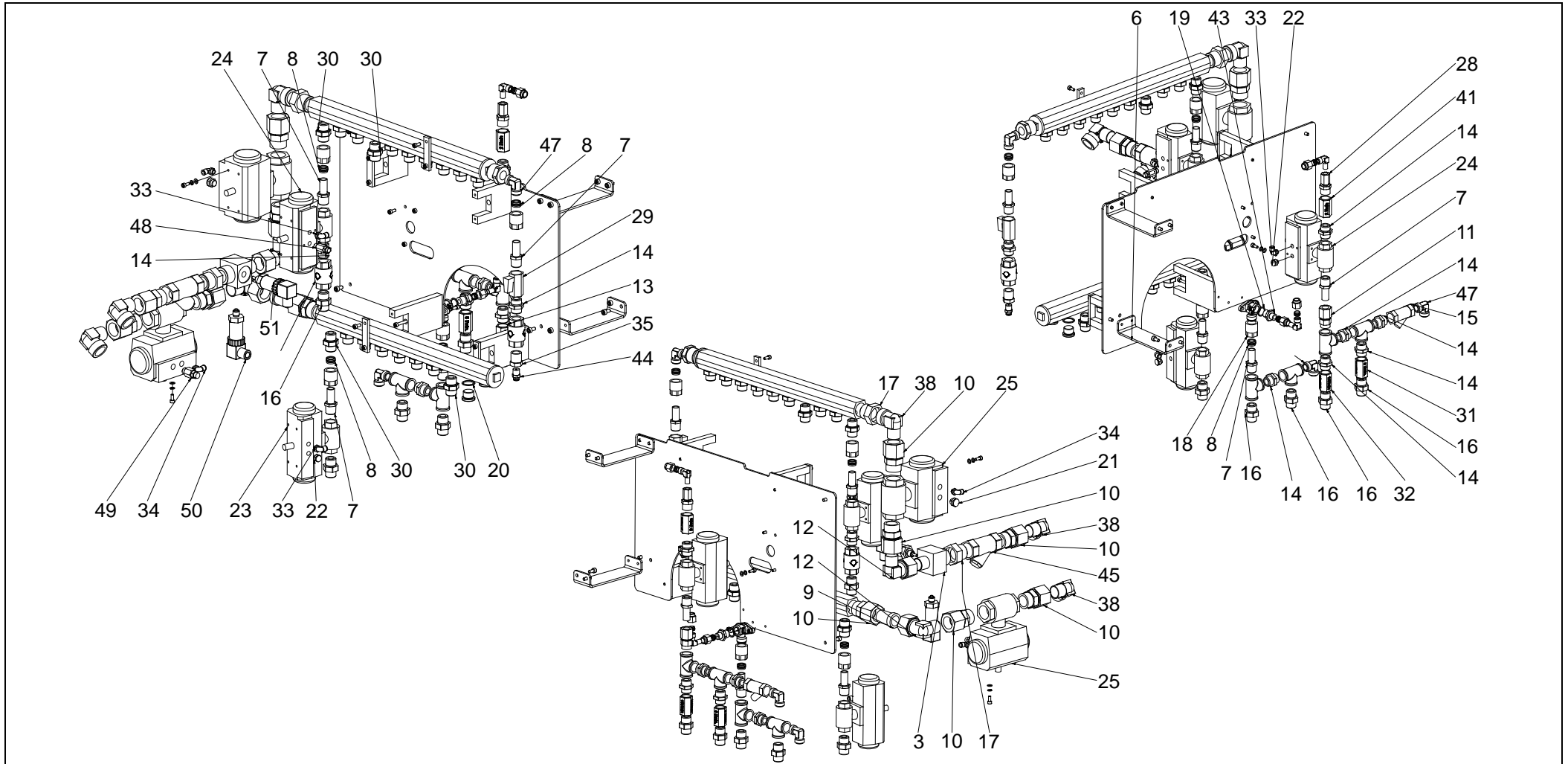
18.3. Gas inlet DN40-VCR1/4



BB534835-Z

19. Water supply cpl.

19.1. Water supply basic



BB534819-Z

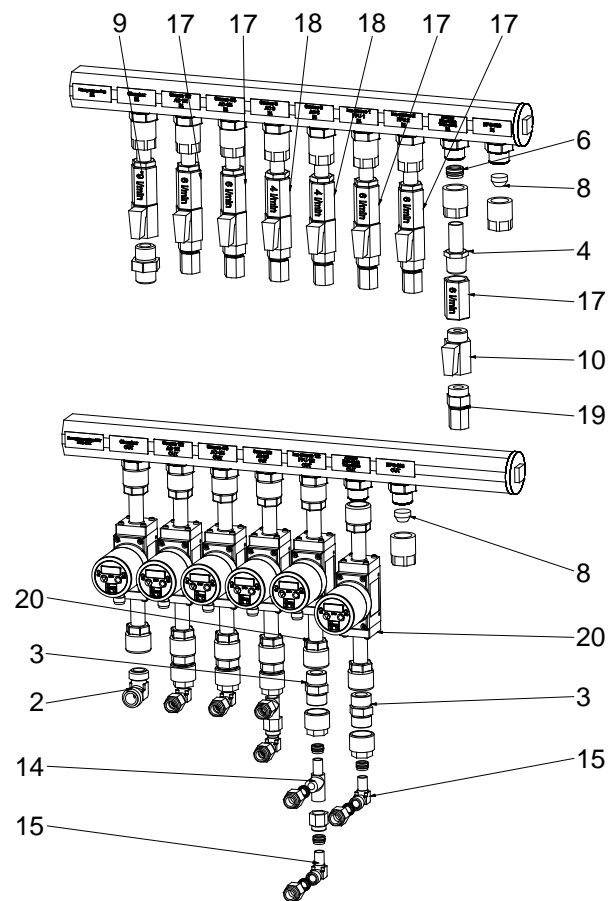
19.1.1. Water supply basic

Item – Drawing	Code	Part. No	Description	Qty
		BB525957-T	Water supply cpl. Ingenia DC (Drawing: BB534819-Z)	
3		BB506451	TD-Adapter	
7		B4118517RM	Adjustable male adapter, brs	5
8		B4119373-M	Clamping ring, brs SO 00001-15	4
9		B4133453-M	Connection nipple, brs, 28	1
10		B41351401Y	Male adapter union, brs, 28-1"	6
11		B4135140RP	Male adapter union, 15- 1/2	1
12		B41351901	Adjustable elbow union, brass	2
13	S	B4149501EC	Non-return valve, IT-100-1/2"	2
14		B0199596	Double nipple, conic 1/2"-1/2"	8
15		B0199752	"Dirt trap, G 1/2"	1
16		B4101544CM	Male adaptor nipple	6
17		B4113388MM	Union adapter, brs, 28-G1"	2
19		K4000113	Washer, male thread G3/8"	1
20		K4000161	"Washer, Cu, male thread G1/2"	2
21		K4100148	Exhaust silencer	1
22		K4100149	Insert filter, F 1/8"	2
23	E	K4100207	Ball valve TVM-G-015-1/2-SR0/050	1
24	E	K4100210	Ball valve TVM-E-015-1/2-SR0/050	2
25	E	K4100212	Ball valve TVM-G-025-1-SR0/63	2
28		K4100456	Male adaptor union	1
29		K4100490	Mini-ball valve 1/2 female	1

Item – Drawing	Code	Part. No	Description	Qty
30		K4100520	Male adaptor nippel paral. 1/2	18
31	E	K4100551	Flow restrictor REG-1105D	1
32	E	K4100552	Flow restrictor REG-1110D	1
33		K4100554	Elbow connection	3
34		K4100558	Male adaptor turnable	2
35		K4100559	Male reduction nipple 1/4-1/2	1
38		K4100568	Adjustable elbow 28-A28	3
41	E	K4100908	Flow restrictor REG-1102D	1
43		K4100584	Male adaptor 10-3/8	1
44		K4100610	Connector R1/4-Ø6	1
45		K4100619	Filtering valve G1"	1
47		K4100872	Coude cylindrique/conique	3
48		K4100876	Flow control valve G1/8	1
49		K4100875	Flow control valve G1/4	1
50	E	K7400034	Press. sensor w. ceramic cell	1
51	E	K7400035	Screw in thermo meter	1
		BB534823-T	Hose set water supply	
		B4164566ZS	Sleeve joint hose union, M36x2	
		B4164566ZF	Sleeve joint hose union, 1/2"	
		B4164566ZA	Sleeve joint hose union, 1/4"	
		B2355655KN	Water hose Ø 25/37.	
		B2355326KN	Water hose Ø 13/22	
		B2355114KN	Water hose Ø 6/14.	

Item – Drawing	Code	Part. No	Description	Qty
		K2300086	Industrial hose Ø12.7 / Ø21.5 NBR	

19.2. Extension kit water Ingenia DC



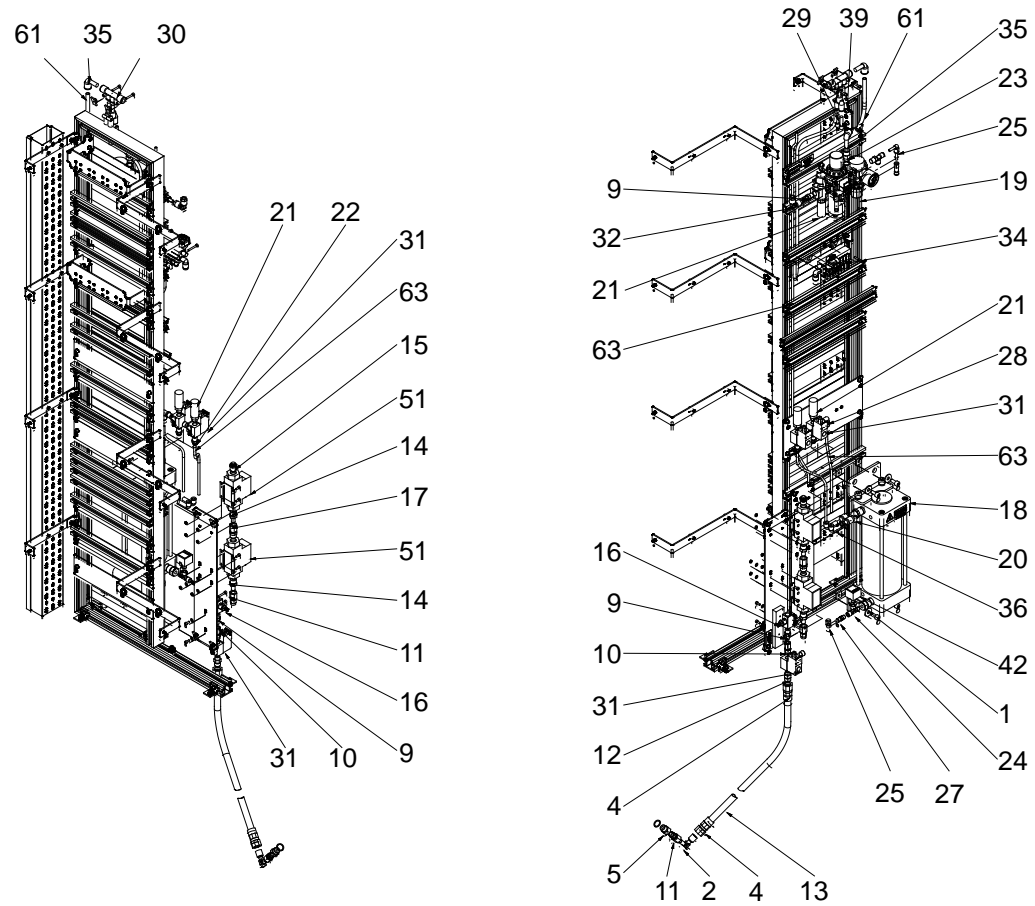
BB525951-Z

19.2.1. Extension kit water Ingenia DC

Item – Drawing	Code	Part. No	Description	Qty
		BB525952-T	Extension kit water Ingenia DC (Drawing: BB525951-Z)	
2		B4106423GM	Elbow rdcn union, brs, 14/15	1
3		B4118476GM	Straight union, brs, 12/14/15	5
4		B4118517RM	Adjustable male adapter, brs	8
6		B4119373-M	Clamping ring, brs SO 00001-15	8
8		B4117578GM	Union nut, brs, 15-G1/2	10
9	E	K4100715	Flow restrictor REG-1109D	1
10		K4100557	Mini-ball valve 1/2	8
14		K4100579	Adjustable L union A10-10-10	2
15		K4100580	Adjustable elbow 10-A10	7
17	E	K4100732	Flow restrictor REG-1106D	5
18	E	K4100716	Flow restrictor REG-1104D	2
19		K4100871	Union male	7
20	E	K7400027	Flowmeter	6
30	W	K2300047	Hose PTFE 10/7x1.5	50

20. Pneumatic cpl.

20.1. Pneumatic basic



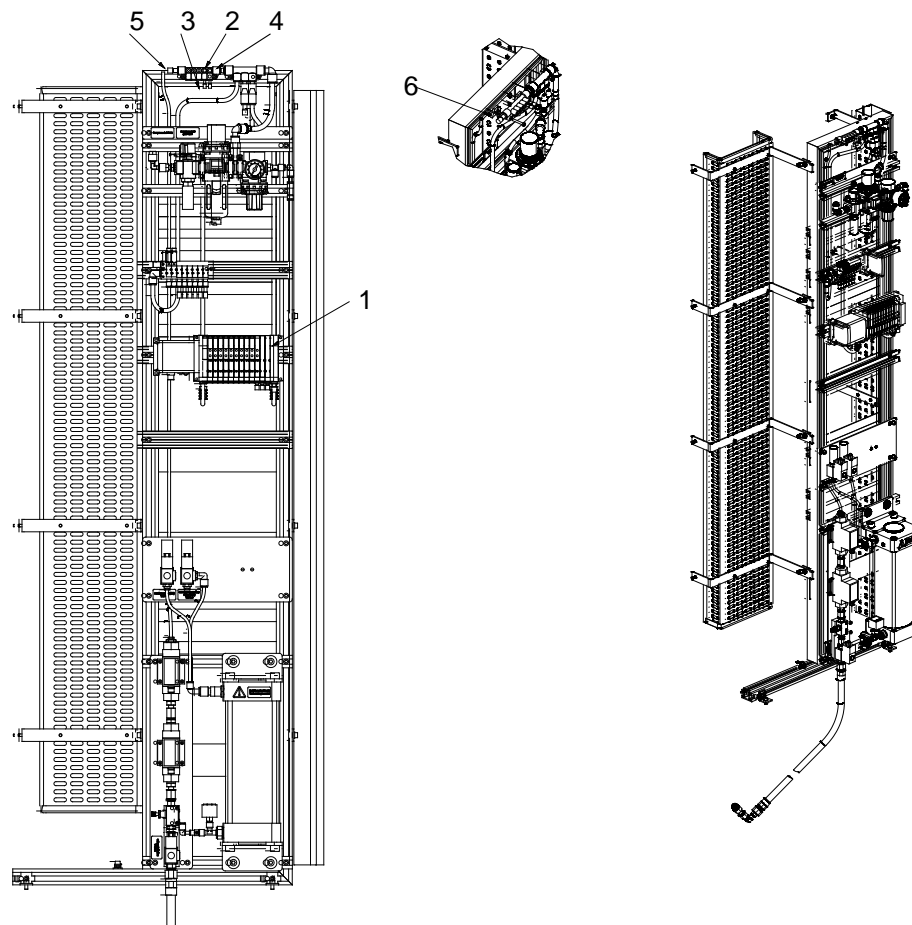
BB534811-Z

20.1.1. Pneumatic basic

Item – Drawing	Code	Part. No	Description	Qty
		BB534814-T	Pneumatic basic (Drawing: BB534811-Z)	
1		B4113358CM	Union adapter, brs, 1/8-1/2	1
2		B4133405GM	Adjust.elbow union, brs,10-A10	1
4		B4164566ZB	Sleeve joint hose union, 3/8"	2
5		BB502003	Adapter M16x1.5 / G1/4"	2
9		K4100309	Adjustable mal adaptor A8-1/4"	2
10		K4100311	Straight union 8-R1/4"	1
11		K4100383	Straight union 8-R1/4"	2
12		K4100385	Male adaptor nipple G3/8-R1/4	1
13		K4100393	UNIPRESS Industrial hose	1
14		K4100515	Adjustable adapter m 10 - 3/8	1
15		K4100569	Connector 6 3/8	2
16	S	K4100571	One-way restrictor	1
17		K4100574	Straight screwed coupling	1
18		K4100595	Pressure tank	1
19		K4100598	Service unit	1
20		K4100601	Connector	1
21		K4100609	Exhaust silencer R1/4	3
22		K4100610	Connector R1/4-Ø6	2
23		K4100611	Connector R1/4-Ø10	1
24		K4100614	T-Piece kon.MFF	1
25		K4100615	Elbow connector Ø6	3

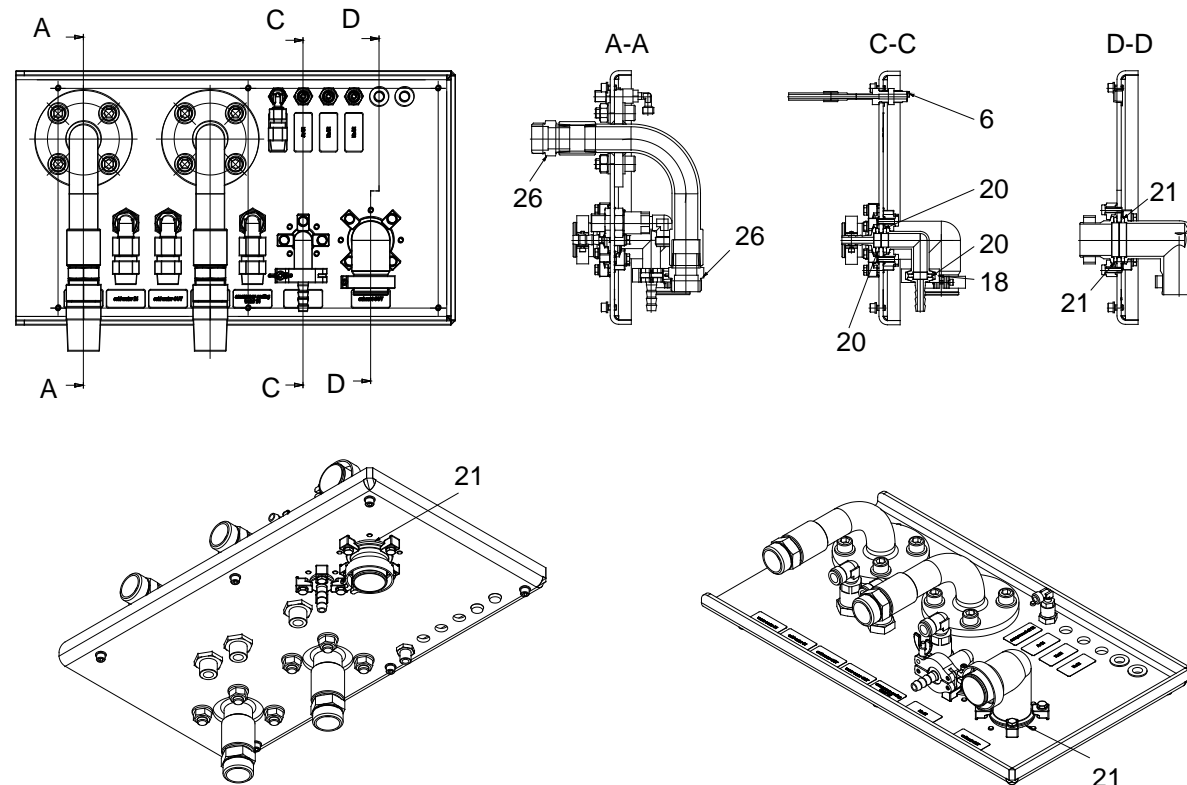
Item – Drawing	Code	Part. No	Description	Qty
27	S	K4100617	Check valve R1/8-Ø6	1
28		K4100618	Elbow connector R1/4-Ø6	1
29		K4100625	Connection red. Ø8-Ø6	1
30		K4100628	Distributor Ø10/Ø8	1
31	E	K4100638	3/2-way valve	3
32		K4100645	Elbow connection G1/4-G1/4	1
34		K4100902	Valve cluster gas safety	1
35		K4100830	Angle connector Ø10/Ø10	2
36		K4100831	Angle reduce connector Ø10/Ø6	2
39		K4100868	Push-in connection	2
42	E	K5200442	Press. switch with screen	1
51	E	K7400033	Digital flow switch	2
61		K2300053	Hose natural Ø6.5 / 10	
62		K2300052	Hose natural Ø5 / 8	
63		K2300077	Hose, THP, BU, 0.7MPa, Ø 4 / 6	
64		K2300078	Hose, THP, GN, 0.7MPa, Ø 4 / 6	
65		K2300073	Hose TPH, BK, 0.7MPa, Ø4 / 6	
66		K2300079	Hose, THP,BU,0.7MPa, Ø 2.5 / 4	

20.2. Extension kit pneu. Ingenia DC



BB534858-Z

21. Ingenia medium interfaces

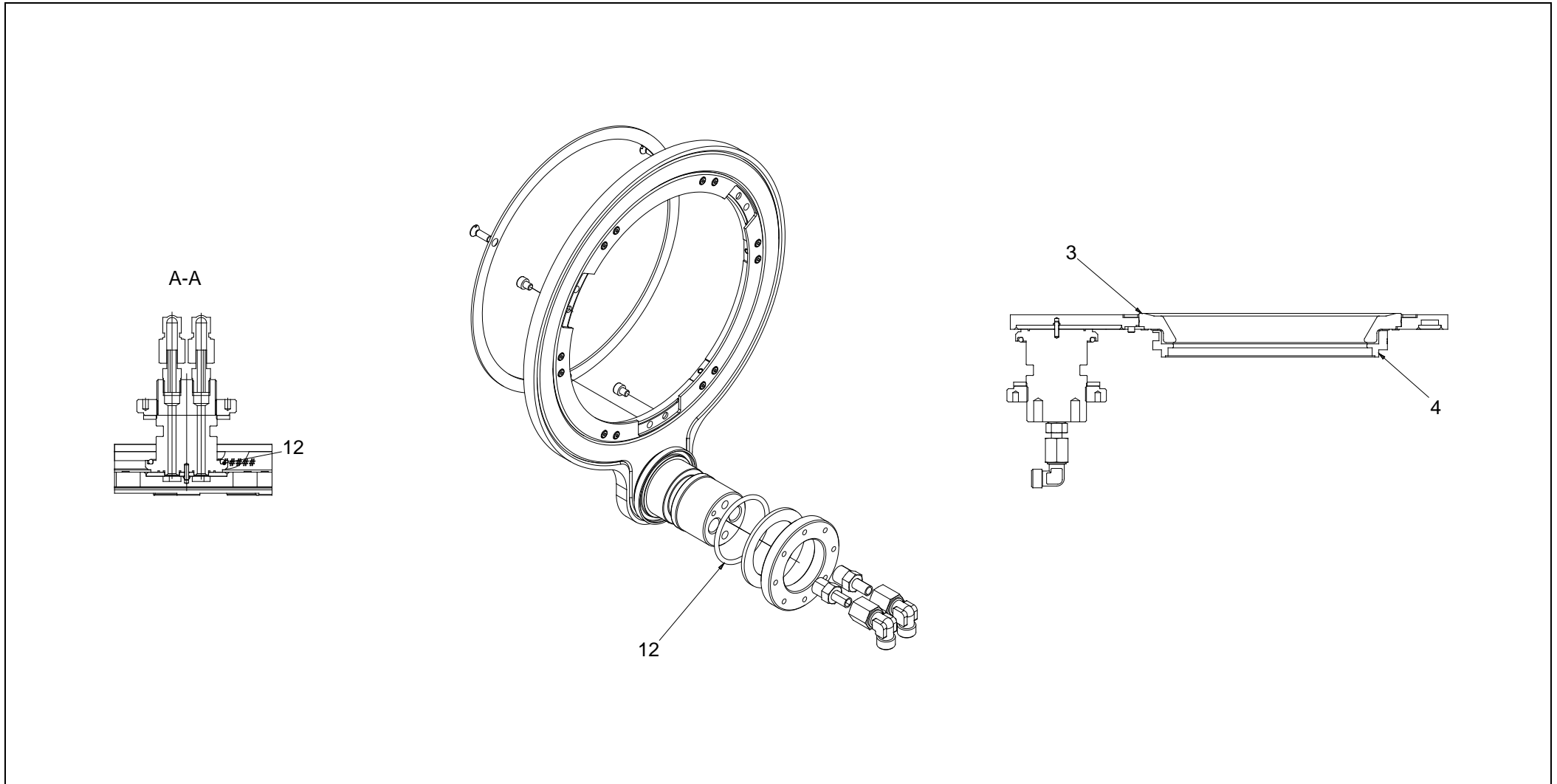


BB534839-Z

21.1. Ingenia medium interfaces

Item – Drawing	Code	Part. No	Description	Qty
		BB534838-T	Top connection plate cpl. (Drawing: BB534839-Z)	
6	S	K4100101	Sealing disc, NI-4-VCR-2-ZC-VS	10
18	S	211-001	Clamping ring, DN10-16 ISO KF	1
20	S	211-059	Centering ring DN16 ISO-KF	3
21	S	211-063	Centering ring, DN 40 ISO-KF	2
26	S	B4101592AM	Male adapter, brs, 28-1"	4
		BB534843-T	Hose set connection pl.	
		B4164566ZS	Sleeve joint hose union, M36x2	
	S	B4164566ZF	Sleeve joint hose union, 1/2"	
		B4164566ZA	Sleeve joint hose union, 1/4"	
	S	B2355655KN	Water hose Ø 25/37.	
	S	B2355326KN	Water hose Ø 13/22	
	W	B2355114KN	Water hose Ø 6/14.	
		K2300054	Hose, PVC,tr, 4bar,	

22. APO – Advanced Plasma Optimizer



BB53316-Z

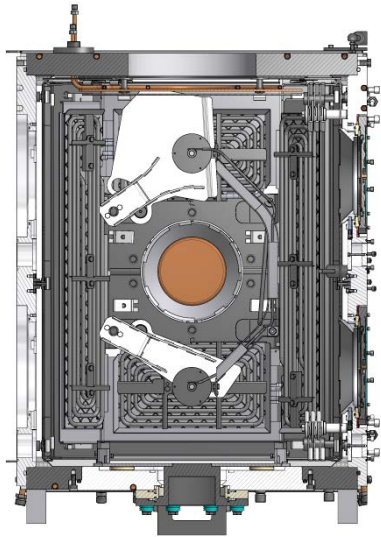
22.1. APO - Advanced Plasma Optimizer

Item – Drawing	Code	Part. No	Description	Qty
		BB534315-T	APO - Advanced Plasma Optimizer (Drawing: BB53316-Z)	
3	S	BB534322	Anode circle	1
4	W	BB514598	Confinement ring	
12	E	B4070780PV	O-ring, Vi, 50.39 x 3.53	
		K2300047	Hose PTFE 10/7x1.5	

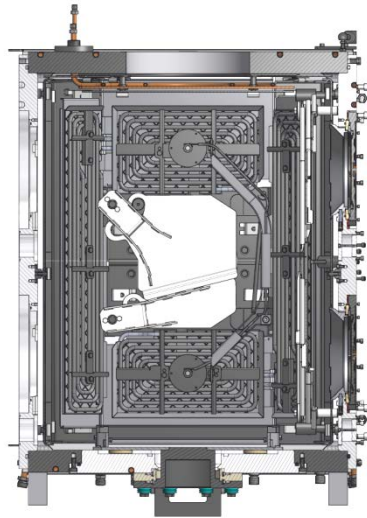
23. Shutter Q1/Q2

Q1

open

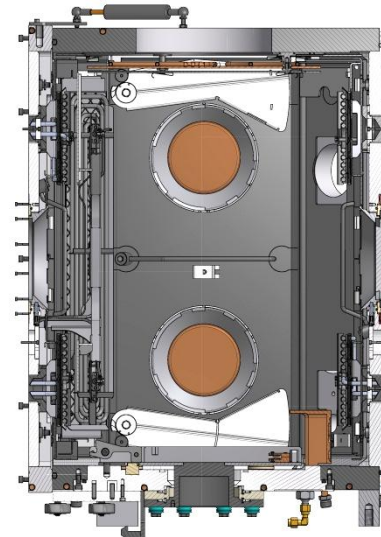


close

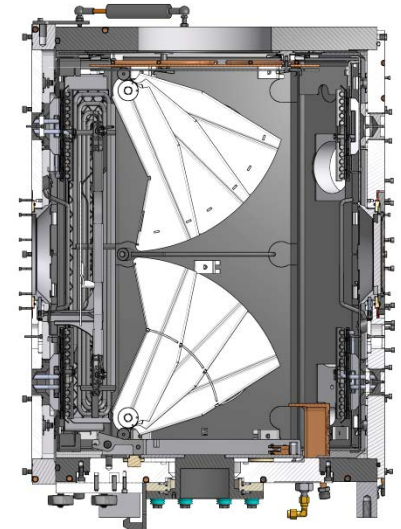


Q2

open

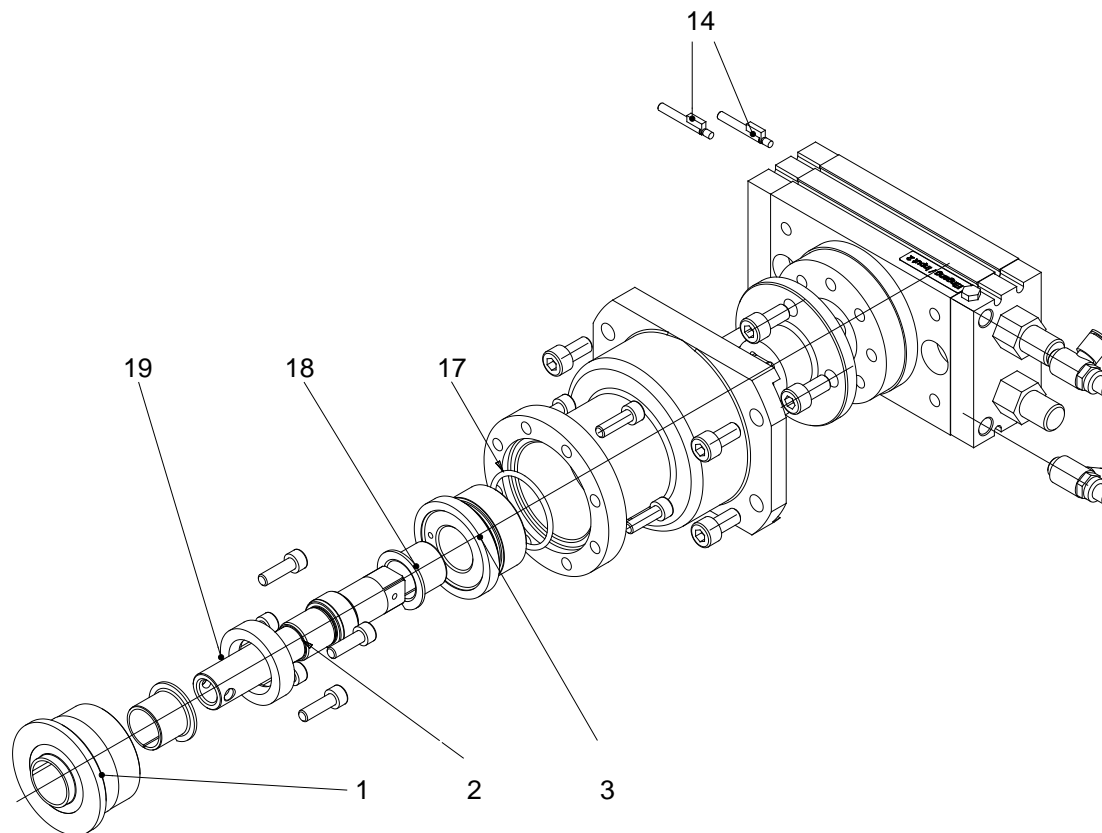


close



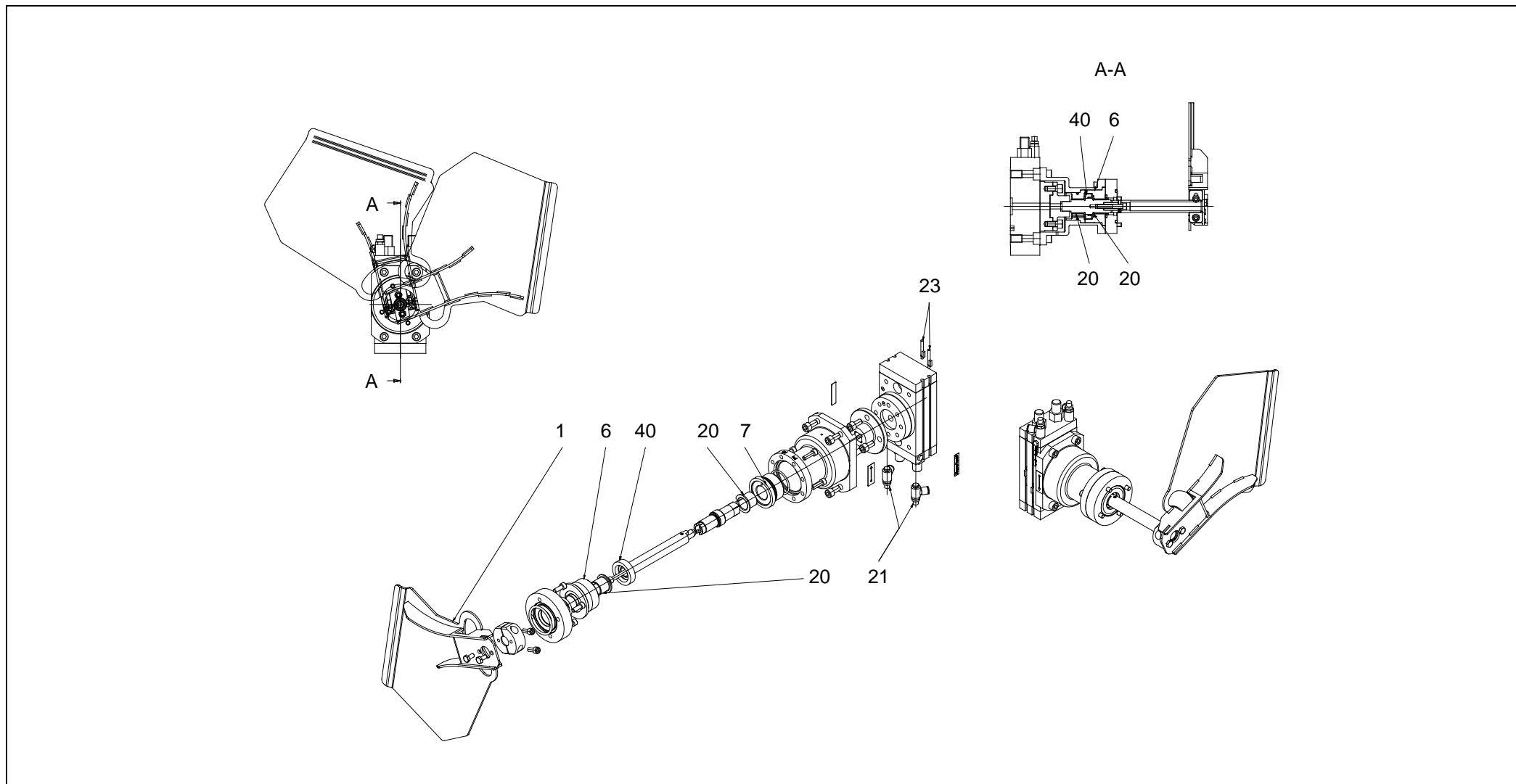
Shutter

23.1. Shutter basic



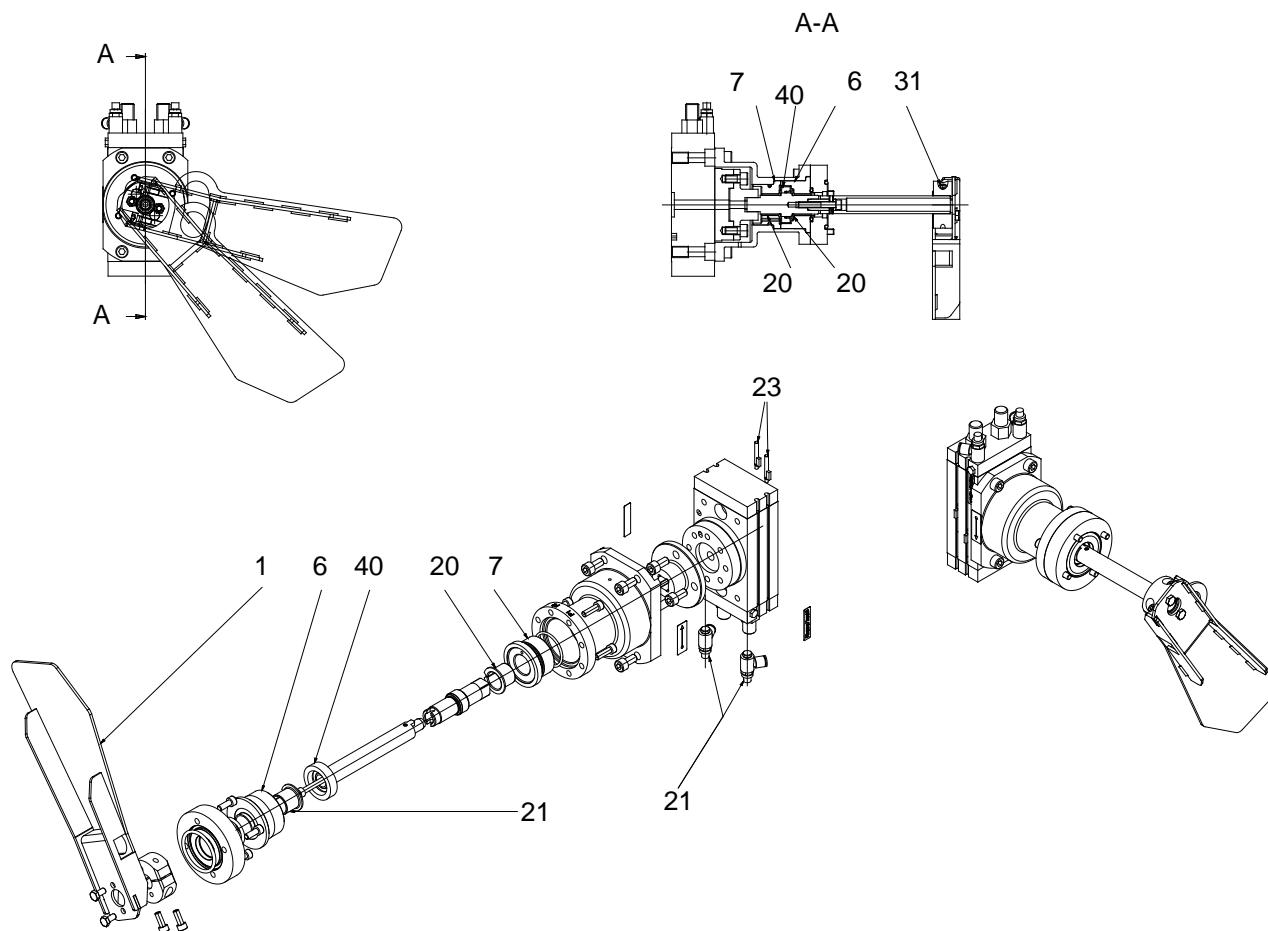
BB534205-Z

23.2. Shutter 1Q top cpl.



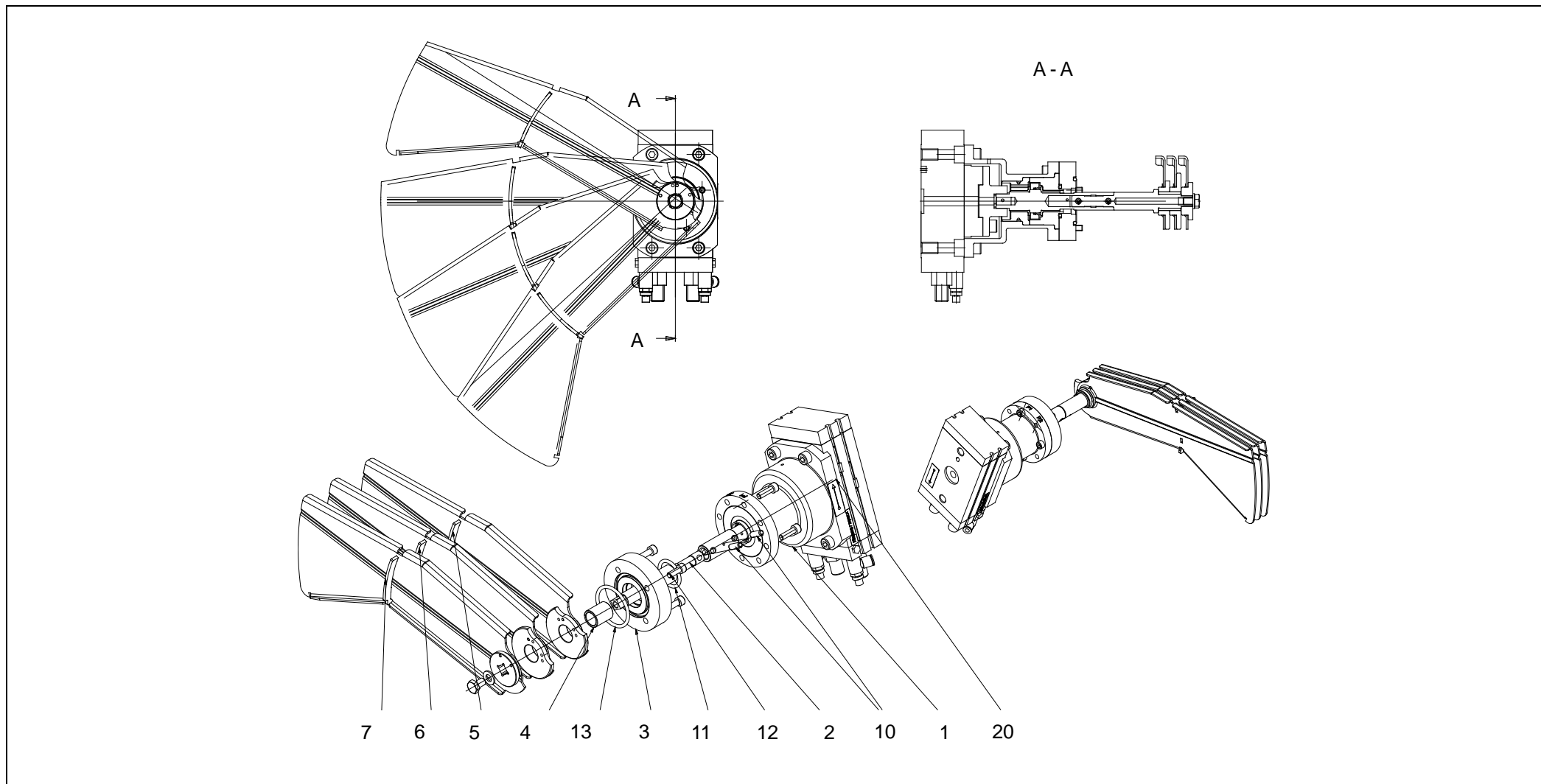
BB534269-Z

23.3. Shutter 1Q bottom cpl.



BB525985-Z

23.4. Shutter 2Q top cpl.

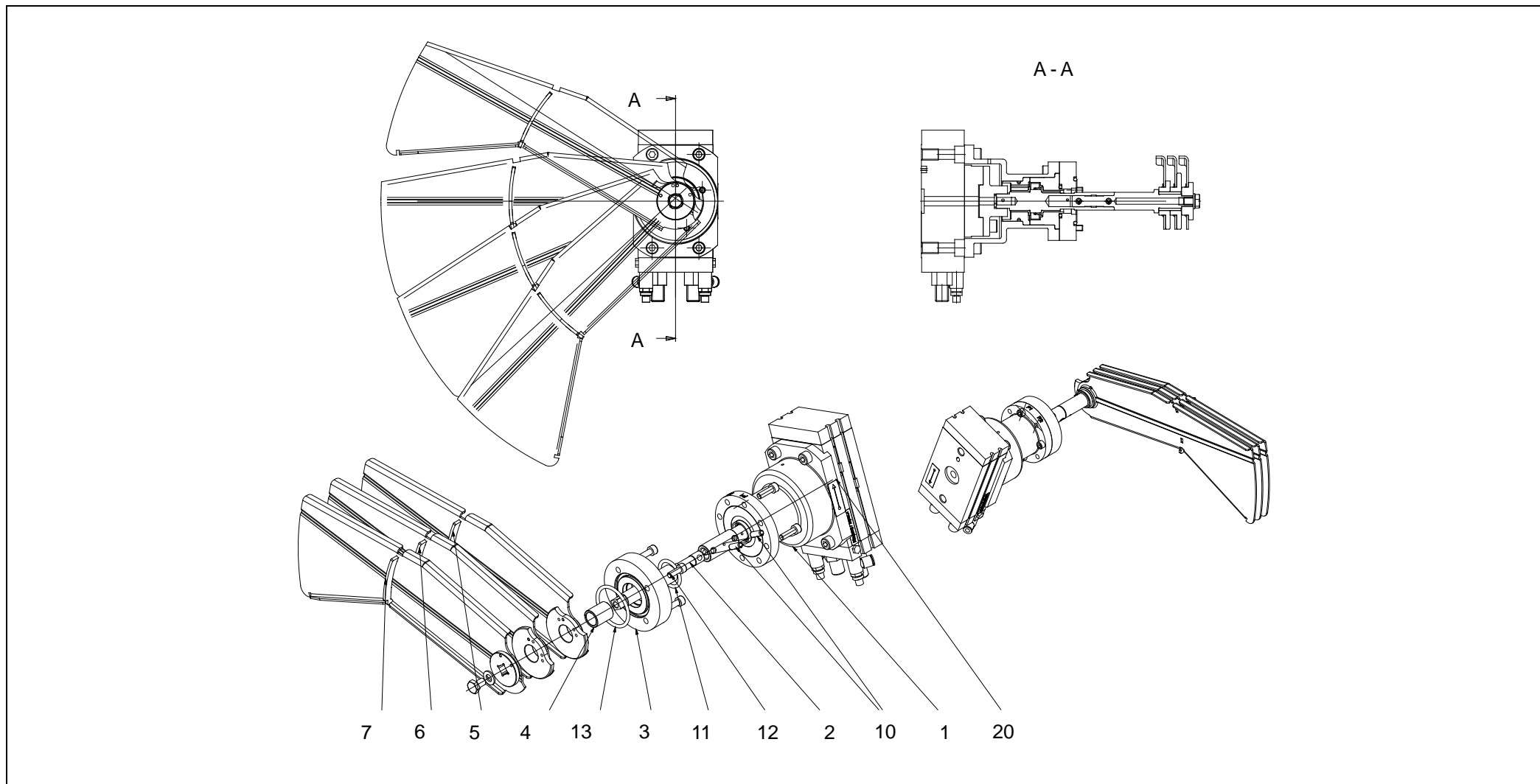


BB534207-Z

23.4.1. Shutter 2Q top cpl

Item – Drawing	Code	Part. No	Description	Qty
		BB534208-T	Shutter 2Q top cpl. (Drawing: BB534207-Z)	
1		BB534204-T	Shutter basic	1
2		BB534286	Shaft adapter shutter	1
3		BB534265	Flange	1
4		BB534292	Slide bearing	1
5		BB534296-X	Shutter sheet top 2 cpl.	1
6		BB534295-X	Shutter sheet top 1 cpl.	1
7		BB525847-X	Shutter sheet top 3 cpl.	1
10		K3500344	Spring pin	2
11	E	B4070455PV	O-ring, Vi, 26.58 x 3.53	1
13	E	B4070673PV	O-ring, Vi, 42.86 x 3.53	1

23.5. Shutter 2Q bottom cpl.

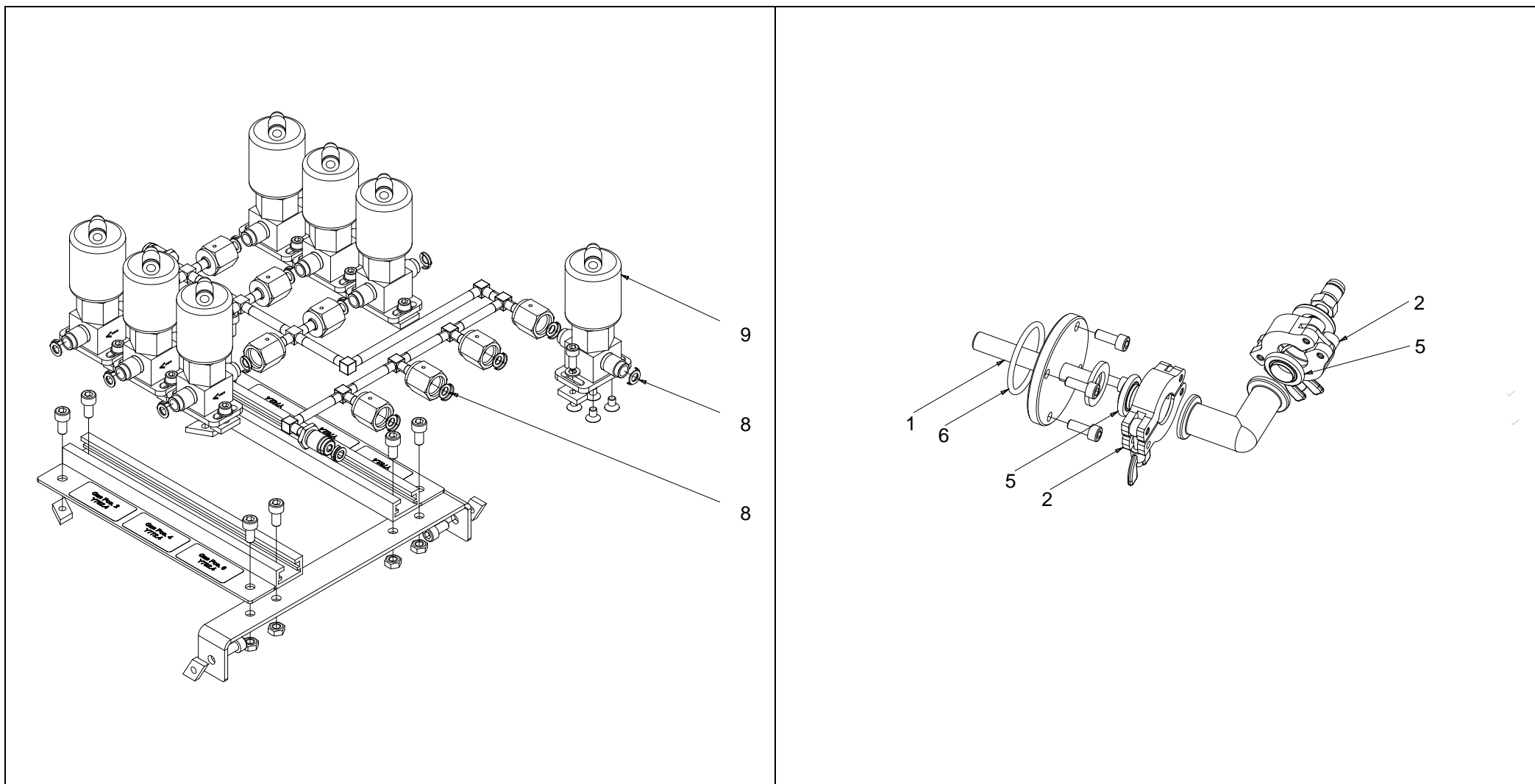


BB534207-Z

23.5.1. Shutter 2Q bottom cpl.

Item – Drawing	Code	Part. No	Description	Qty
		BB534206-T	Shutter 2Q bottom cpl. (Drawing: BB534207-Z)	
1		BB534204-T	Shutter basic	1
2		BB534286	Shaft adapter shutter	1
3		BB534265	Flange	1
4		BB534292	Slide bearing	1
5		BB534291-X	Shutter sheet bottom 3 cpl.	1
6		BB534290-X	Shutter sheet bottom 2 cpl.	1
7		BB534289-X	Shutter sheet bottom 1 cpl.	1
10		K3500344	Spring pin	2
11	E	B4070455PV	O-ring, Vi, 26.58 x 3.53	1
13	E	B4070673PV	O-ring, Vi, 42.86 x 3.53	1

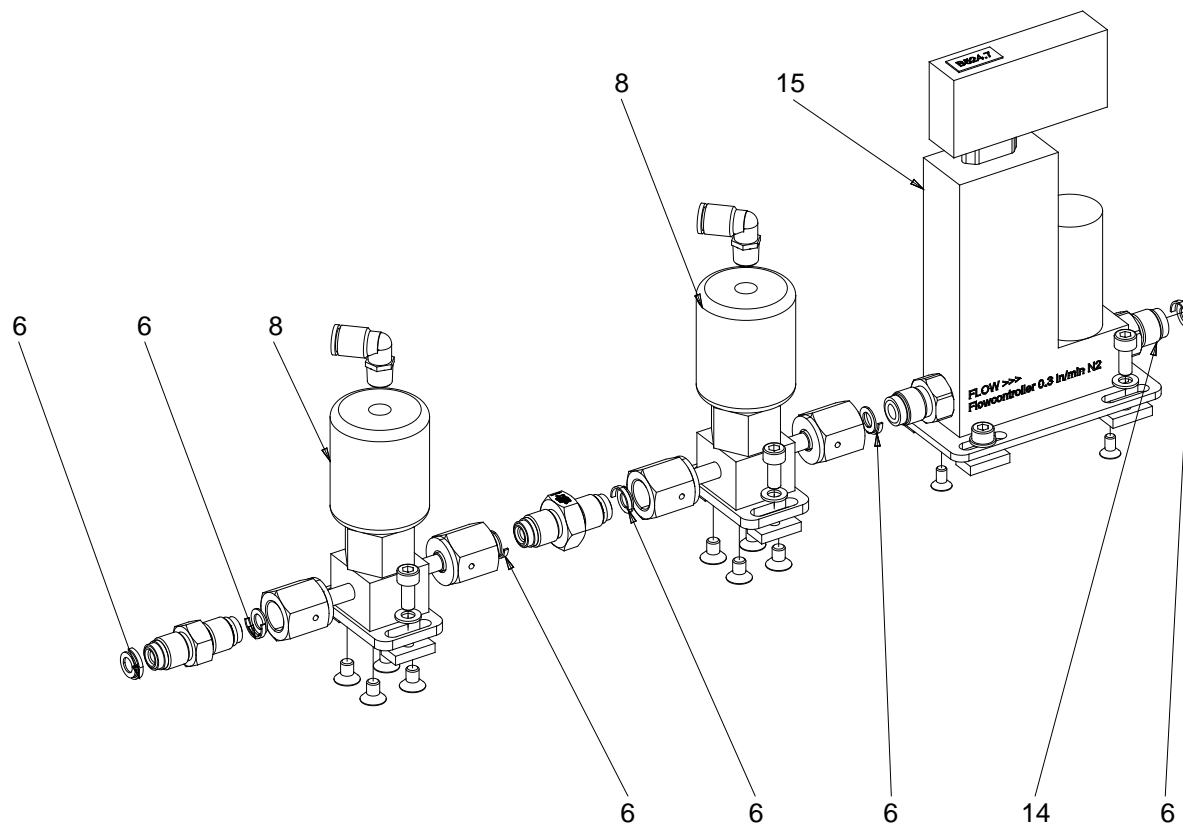
24. Installation set gas distribution



BB534825-Z

BB705537-Z

25. Installation set gas O2



BB534805-Z

25.1. Installation set gas O2

Item – Drawing	Code	Part. No	Description	Qty
		BB534804-T	Gas line oxygen (O2) (Drawing: BB534805-Z)	
6	W	K4100101	Sealing disc, NI-4-VCR-2-ZC-VS	6
8	E	K4100539	Membrane valve female	2
13	S	K7400010	"Inlet connection, VCR 6mm-1/4""	1
14	S	K7400011	"Outlet connection VCR 6mm-1/8""	1
15	E	K7400043	Flowcontroller 0.3 l/min N2	1
		BB705461-T	Connection set gas extension	
	W	K4100101	Sealing disc, NI-4-VCR-2-ZC-VS	2
		K4101011	Flexible hose 4m VCR 1/4	1
		K4100958	Solenoid valve SYJ314-5WOZ-Q	2

26. Common Lubricant & Consumables

26.1. Lubricant

Item – Drawing	Code	Part. No	Description	Qty
Leybold	W	K2500016	LEYBONOL LVO 100, 5 Liter	
Leybold	W	K2500002	LEYBONOL LVO 100, 20 Liter	
Leybold	W	K2500013	Diester-oil, ANDEROL 555 (5 Litre)	
Leybold	W	K2500023	Diester-oil, ANDEROL 555 (20 Litre)	
Edwards	W	K2500017	Gear oil Mobil SHC629 4 Litre	
Edwards	W	K2500018	Ultra grade 20 Oil 4 Litre	
Edwards	W	K2500021	Fomblin grease RT	
Pfeiffer	W	PM006032-T	Oil TL11 0.5 Litre	
Pfeiffer	W	PM006033-T	Oil TL11 1 Litre	
Pfeiffer	W	K5200120	Fomblin oil F3 0.25Litre	
Pfeiffer	W	PK001107-T	Oil P3, 5 litres	
Pfeiffer	W	PK001108-T	Oil P3 20 litres	
Diffusion pump	W	260-391	Mineral oil 66A, 2 Litre	
Diffusion pump	W	260-392	Mineral oil 66A, 5 Litre	
Diffusion pump	W	BD480093-T	Synthetic oil DC 704 2 Litre	
Diffusion pump	W	BD480094-T	Synthetic oil DC 704 5 Litre	
BAI 900	W	B2745125-5	Hydraulic oil DTE 25 2 Litre	
	W	B2753121MG	Mobil grease special pat. 400	
	W	K2500024	Extreme pressure grease	
	W	K4000077	Molykote grease PG 602	

Item – Drawing	Code	Part. No	Description	Qty
	W	B2751057AE	High temperature grease 200gr.	
	W	B801007028	Apiezon-M grease 25 g	

26.2. Consumables

Item – Drawing	Code	Part. No	Description	Qty
	W	BD489060-T	Molybdenum sulphide powder 50g	
	W	B2704101FD	Boron nitride powder 50 g	
	W	K2500000	Bornitrid-Spray BN-S, 500ml	
	W	B2753087-3	Molykote 321 R, box, 300 g	
	W	BN845295-T	Contact paste Dif heater 20 g	
	W	BD481912-T	Roll of aluminium foil, 0,1 x 500 mm	
	W	BD481913-T	Roll of aluminium foil, 0,1 x 650 mm	
	W	BD481914-T	Roll of aluminium foil, 0,1 x 950 mm	
	W	BD481915-T	Roll of aluminium foil, 0,03 x 100 mm	
	W	BB481345	Al-protection foil 0.1x145x950 100 St.	
	W	BB489699-T	Protection set for BAI 1200	
	W	BB487078-T	Graphite contact foil (6 pcs.)	
	W	K2500033	Graphite powder, purity >99% / 25g	
	W	K2500057	Graphite powder, 1 kg	
	W	K2500020	Loctite 3888	
	W	B2221360-W	Wire, Ta, tender,blk, ø 2	
	W	B6137168	Finger gloves, nomex white	
	W	B6137164N2	Finger gloves, cotton, nr.10	
	S	BD10047718	Grey filter	

27. Ingenia DC electrical

27.1. Power cabinet CMS DC cpl.

Item – Drawing	Code	Part. No	Description	Qty
Q100.1	E	K4700632	Power switch NZMN3-VE250	
Q100.1		K4700534	Door coupling rotary handle	
Z100.1		K5100075	Net filter FN3280H-200-40	
B100.4		K5000029	Smoke detector RM200	
Q120.1	E	K4700617	Motor prot. switch PKZM0-12	
K120.8	S	K4700340	Monitoring relay, 3-phase	
G128.1	E	K5100076	Power supply 230Vac/2x15Vdc/3.5A	
G130.2	E	K5100105	PowerSupply, 230Vac-24Vdc/5.0A	
F130.2; F146.3; F146.6	S	K4600125	TMC- Safety switch, M4A	
Q134.2; Q164.2; Q166.1; Q200.1	E	K4700031	Motor prot. switch PLZM0-16	
B134.0		K5200239	Temperature regulator	
F134.3 F164.4	E	K4700300	Circuit breaker FAZ-C4/1	
F134.8, F190.1; F580.1	E	K4700302	Circuit breaker FAZ-C10/1	
Q140.2		K4700231	Circuit breaker PKZMO-4-T	
T140.2	E	K5100099	Transformer 400V/230V 1.3kVA	
F140.1	E	K4700301	Circuit breaker FAZ-C6/1	
Q142.2; Q148.2	E	K4700028	Motor prot. switch PLZM0-4	
G142.2; G148.2	E	K5100079	Power supply 400V-24Vdc/20A	
F142.5; F144.1	S	K4600122	TMC safety switch, M2A	
F142.8; F144.8	S	K4600126	TMC safety switch, M5A	

Item – Drawing	Code	Part. No	Description	Qty
F144.3; F144.6	S	K4600124	TMC safety switch, M3A	
F144.7; F512.1	S	K4600120	TMC safety switch, M1A	
F146.1	S	K4600127	TMC- Safety switch, M6A	
F148.5; F148.6	S	K4600129	TMC- safety switch, M10A	
S158.6		K4700435	Push button	
S158.6	E	K4700436	Control element	
S158.6		K4601245	Single LED 24VAC/DC ws T3/BA9s	
K160.5		K4701017	Contacteur DILM115 RAC240	
K160.5; Q170.1 Q200.1	S	K4700635	Starters PKZM0-XDM12	
K160.7; K162.7; K200.4; K200.7	E	K4700696	Power switch DILM7-01 (24V)	
K162.5	E	K4700685	Power contactor DILM250-S/22	
K164.8; K166.8	E	K4700610	Contacteur DILM17-01	
K164.8; K166.8		K4700611	RC suppressor DILM32-XSPR240	
F166.1; F166.3	E	K4700945	Power protective switch FAZ-Z6/3	
Q170.1	E	K4700029	Motor prot. switch PLZM0-6.3	
K170.8	E	K4700649	Contacteur DILM12-01	
K170.8		K4700626	Auxiliary switch DILA-XHI11	
K170.8		K4700637	RC suppressor DILM12-XSPR240	
A202.1	E	K5200165	Micromaster 420 250W	
Z202.1		K5100101	Power choke 1ph, 3.4A, 9.5mH	
A202.1	E	K5200142	Operator panel Micromaster 420	
A202.4	S	K5200090	Profibus module	
K202.3	S	B4782101HC	Plug-in relay, 11-pole, 24VDC	

Item – Drawing	Code	Part. No	Description	Qty
K202.3		K4700382	Socket, 11-pole	
K202.3	S	K4700383	Diode for 700-HN205	
A202.6	S	K4700498	Light guide unit	
W202.6	E	K4700499	Optical fibers	
Q210.1	S	K4700624	Motor prot. switch PKZM4-58	
K210.8	E	K4700641	Contacteur DILM65	
K210.8; K230.6; K240.8; K242.8; K244.8; K246.8; K248.8; K250.8		K4700627	Auxiliary switch DILM150-XHI11	
K210.8; K230.6; K240.8; K242.8; K244.8; K246.8; K248.8; K250.8		K4700609	RC suppressor DILM95-XSPR240	
F210.5; F212.2; F212.5; F214.2; F214.5; F216.2; F216.5	E	K4700584	Act. prot. holder FAZ-Z16/2	
F210.5; F212.1; F212.5; F214.1; F214.5; F216.1; F216.5	E	K4700158	Semicond. relay 25A 48-530V	
F210.5; F212.1; F212.5; F214.1; F214.5; F216.1; F216.5		K4800010	Varistor V480LA40A	
A210.6; A212.2; A212.6; A214.2; A214.6; A216.2; A216.6	E	K4700395	Monitoring relay DIA53	
Q230.1; Q240.1; Q242.1; Q244.1; Q246.1; Q248.1; Q250.1	E	K4700622	Motor prot. switch PKZM4-40	
K230.6; K240.8; K242.8; K244.8; K246.8; K248.8; K250.8	E	K4700650	Contacteur DILM40	
A400.0	S	K5200247	Interfacemodul IM151-1standard	
A400.2; A404.0; A410.0; A414.0; A418.0; A650.2; A654.3	E	K5200241	Terminal module	

Item – Drawing	Code	Part. No	Description	Qty
A400.2; A404.0; A410.0; A414.0; A418.0; A650.2; A654.3	E	K5200243	Power module ET200S 24VDC	
A420.0; A420.2; A420.5; A420.7; A422.0; A422.2; A422.5; A430.0; A430.2; A430.5; A430.7; A432.0; A432.2; A440.0; A440.2; A440.5; A440.7; A442.0; A442.2; A442.5; A470.0; A470.2; A470.5; A470.7; A472.2; A472.5; A472.7; A474.0; A474.2; A474.5; A474.7; A476.2; A476.5; A476.7; A490.0; A490.2; A490.5 A490.7; A492.0; A664.0; A664.2; A670.2; A670.5; A680.2; A680.5; A680.7; A682.0; A682.2	E	K5200242	Terminal module	
A420.0; A420.2; A420.5; A420.7; A422.0; A422.2; A422.5;	E	K5200431	Electronic module 8DI DC24V ST	
A440.2; A440.5; A440.7; A442.0; A442.2; A442.5; A670.2; A670.5; A680.2; A680.5; A680.7; A682.0; A682.2	E	K5200245	Electric module 2RO NO DC24..	
A430.0; A430.2; A430.5; A430.7; A432.0; A432.2	E	K5200432	Electronic module 8DO DC24V ST	
A470.0; A470.2; A472.7; A474.0; A474.2; A474.5; A474.7; A664.0	E	K5200244	Electric module 2AI U ST	
A470.5; A470.7	E	K5200258	Electric module 2AI U - 15Bit	
A472.2; A472.5; A476.2; A664.2	E	K5200300	Electronic module 2AI I- 15Bit	
A476.5, A476.7	E	K5200433	Electronic module 4AI I ST	
A490.0; A490.2; A490.5; A490.7; A492.0	S	K5200251	Electric module 2AO U ST	
F566.1	E	K4700298	Circuit breaker FAZ-C2/1	

Item – Drawing	Code	Part. No	Description	Qty
A600.0	E	BB475959-T	VMS2.0 CPU Beckhoff	
A600.2; A620.5; A622.2; A622.5; A624.2; A624.5	E	K5200304	Stepper Motor Terminal 50V 5A	
A630.0; A630.2; A630.5	E	K5200320	DI Input Beckhoff 8 channels	
A640.0; A640.2	E	K5200156	DO Output Beckhoff 8 channel	
A650.0		K5200470	Interface IM 151-1 HF ET200S	
A660.0; A660.2; A660.5; A660.7; A672.0; A672.2; A672.5		K5200463	Terminalmodul 30mm	
A660.0; A660.2; A660.5; A660.7		K5200462	Electronic modul 4/8F-DI DC24V	
A670.0; A680.0		K5200468	Terminal module profisafe	
A670.0; A680.0		K5200467	Powermodul PM-E F pm profisafe K5200463	
A672.0; A672.2; A672.5		K5200464	Electronicmodul 4F-DO DC24V/2A	
F710.1; F712.1	W	B4666261B3	Fuse 10.3x38, 690V 30A	
F710.1; F712.1		K4600738	Fuse carrier, 2p 10x38	
A710.1; A712.1	E	K5200091	Thyristor controller TE10A	
A710.3; A712.3	E	BB467830	Filament control (true RMS)	
A738.0; A738.3; A738.6; A744.0; A754.0; A764.0; A774.0; A784.0; A794.0	E	BB475965-T	CCS-2Amp. Coil current supply	

27.2. Power cabinet el. CMS4

Item – Drawing	Code	Part. No	Description	Qty
A240.3; A242.3; A244.3; A246.3; A248.3; A250.3	E	K5200441	Interface rob TSt TP3500	
A722.0		BB526341-T	Switch box	
K722.1	E	K4700354	Contacto el-ma 320uhbc/24V	
B804.0		K5200239	Temperature regulator	
A810.0	S	K5200247	Interface module IM151-1standard	
A810.2	E	K5200241	Terminal module	
A810.2	E	K5200243	Power module ET200S 24VDC	
A820.0; A824.0; A830.0; A830.2; A830.5; A830.7; A832.0; A832.2; A838.0; A838.2; A838.5	E	K5200242	Terminal module	
A820.0	E	K5200431	Electronic module 8DI DC24V ST	
A824.0	E	K5200432	Electronic module 8DO DC24V ST	
A830.0; A830.2; A830.5; A830.7; A832.0; A832.2	E	K5200244	Electric module 2AI U ST	
A838.0; A838.2; A838.5	S	K5200251	Electric module 2AO U ST	
G890.0	E	K5100105	Power supply, 230Vac-24Vdc/5.0A	
A890.0.1	E	K5200331	SITOP DC UPS MODULE 24V/6A	
A890.3	E	K5200332	SITOP battery module 24V/1.2Ah	

27.3. Power cabinet el. CMS5

Item – Drawing	Code	Part. No	Description	Qty
B100.8		K5000029	Smoke detector RM200	
B134.5		K5200239	Temperature regulator	
S158.4		K4700435	Push button	
S158.4	E	K4700436	Control element	
S158.4		K4601245	Single LED 24VAC/DC ws T3/BA9s	

27.4. Power supply DC cpl.

Item – Drawing	Code	Part. No	Description	Qty
A240.1; A242.1; A244.1; A246.1; A248.1; A250.1	E	K5100127	Power supply TransPocket 3500	
A230.0	E	K5200236	Bias 300 Plasma (Profibus)	

27.5. PC-Components

Item – Drawing	Code	Part. No	Description	Qty
A890.5	E	BB527048-T	Industrial Server PC	
A890.0.2	E	BB526825-T	Microbox Safety Controller with Setup	
A890.0	S	K5200449	APC Smart-UPS 750VA	

27.6. External mount. equipment CMS7

Item – Drawing	Code	Part. No	Description	Qty
A.580.1		BB475975-T	Arc Interrupter AI2x250	
A710.0 / A712.0		BB526898-T	Filament power supply	
T710.1,T712.1	E	K5100092	K5100092	
U710.1,U712.1	E	B5136115JB	Curr. transf. MAK 86/60 500/5A	
R710.3,R710.4,R712.3,R712.4		K4800004	Resistance 1.0 Ohm/1%/10W	
C710.1,C712.1		K4900009	Capacitor 650v, 20% 220nf	
A566.0		BB526342-T	Thermo converter box	
	E	K5200196	E-Emergency	
	E	B5181066EN	Power supply ng4 24VDC 0,04A	
	S	K5200197	A/A-converter	

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