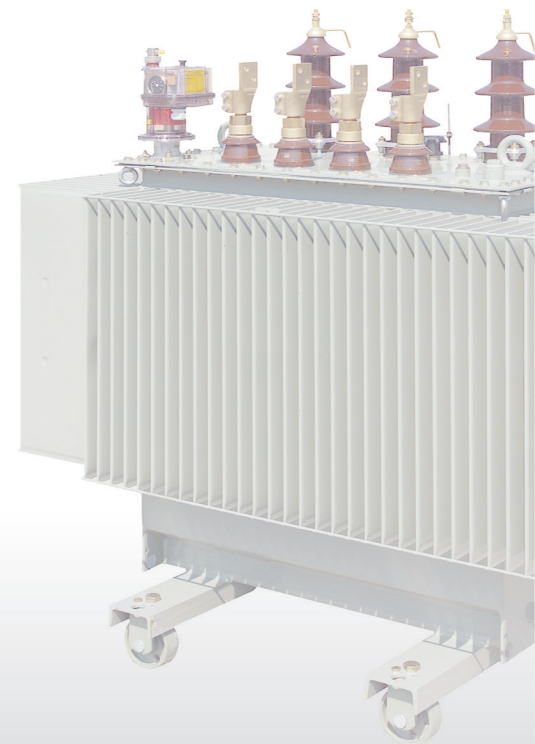


Accessories
For Power
and Distribution
Transformers

ARES
Ares Trafo



Manufacturing your designs into reality

Experience
Innovative
Partner
Quality



www.ares-trafo.com



COMPANY PROFILE

ARES TRAFO has been manufacturing bushings and many accessories for power and distribution transformers almost 20 years and so far it's one of the most well known companies in this energy sector of the market.

ARES TRAFO is exporting more than 74% of its products across the globe. This success has been built up through long-term relationships that have led to ARES TRAFO becoming renowned as being a reliable manufacturer of consistently high-quality products.

Production and logistics are focused on the continuous improvement of effectiveness and efficiency. ARES TRAFO is able to customize almost every product in order to satisfy customer requirements and sharing expertise and experiences to improve customer service.

Today, ARES TRAFO has operation facilities in two locations in Turkey - Kartepe, employs more than 120 people, serving for transformer accessories production and transformer coil windings for transformer manufacturers.

Our sales department and engineering department always able to give a positive answer to the demands of the customers, more and more frequently dealing with the various international requirements; the effectiveness of this service is shown by delivery terms on line with customer needs, good packing, clear documentation.



MAIN PRODUCT PORTFOLIO

- PORCELAIN BUSHINGS
- EPOXY BUSHINGS
- FLAGS CONNECTORS
- BUCHHOLZ RELAYS
- OIL LEVEL GAUGES
- PRESSURE RELIEF DEVICES
- BALL VALVES
- GATE VALVES
- BUTTERFLY VALVES
- AXIAL COOLING FANS
- DRY TRANSFORMER COOLING FANS
- TERMINAL BOXES
- MOISTURE HOLDERS



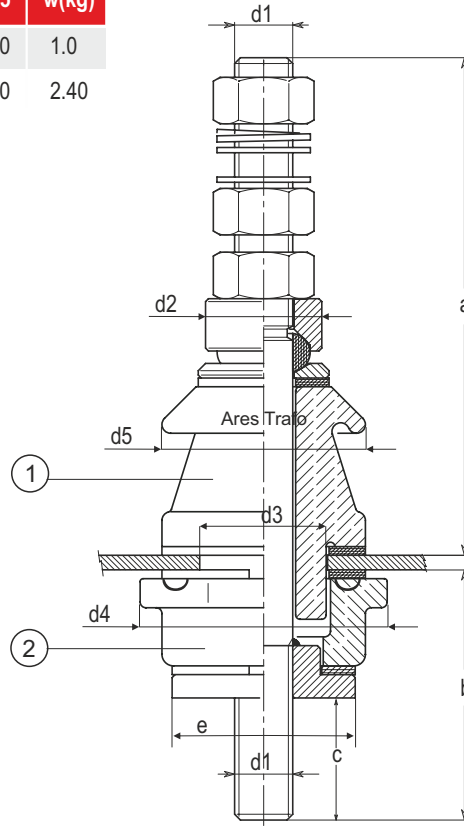
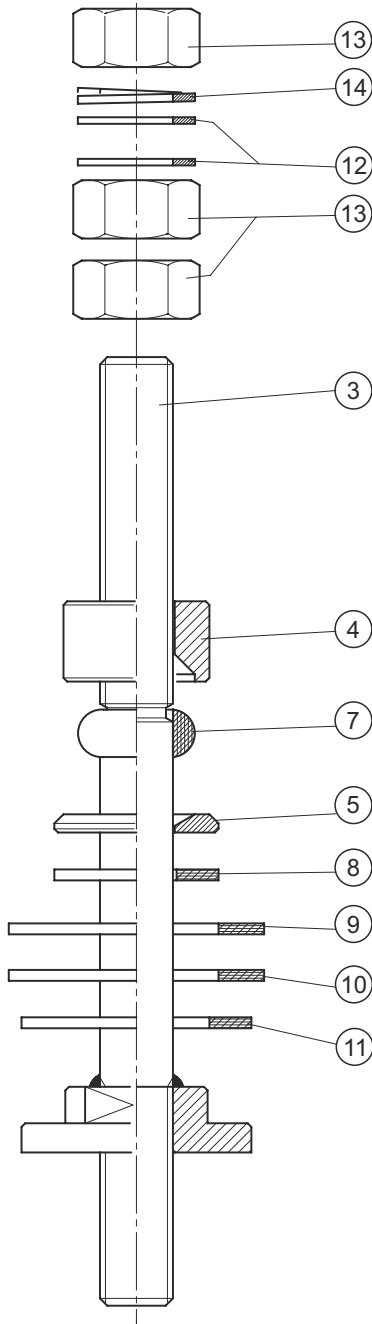
MANUFACTURING FACILITIES

ARES TRAFO has CNC machines enabling the manufacture thousands of high quality products with the latest technology. ARES TRAFO aims the improving reliability day by day and designing new products to satisfy the latest market requirements.

QUALITY AND MANAGEMENT SYSTEM CERTIFICATION

ARES TRAFO quality management system has been ISO 9001 : 2015, ISO 45000 : 2018, ISO 14000 : 2015 certified. ARES TRAFO bushings and accessories are designed and manufactured to satisfy and exceed the requirements of international IEC and EN standards and regulations.

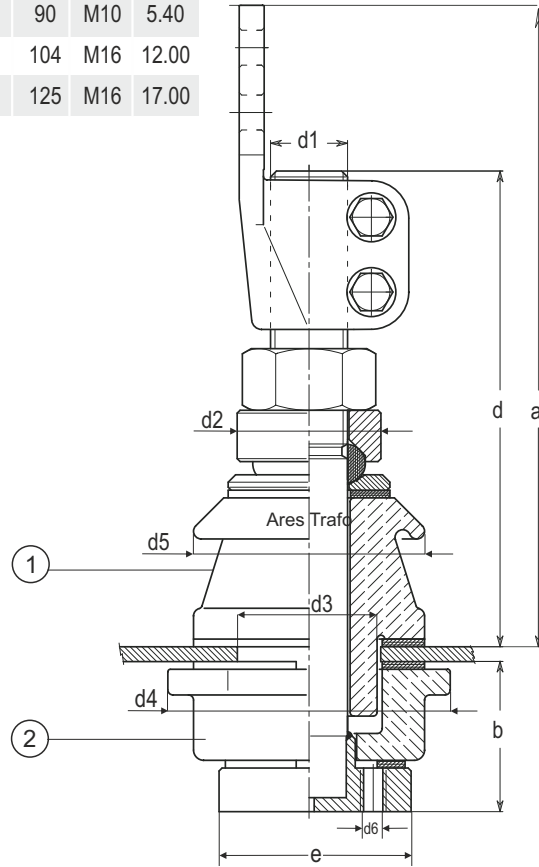
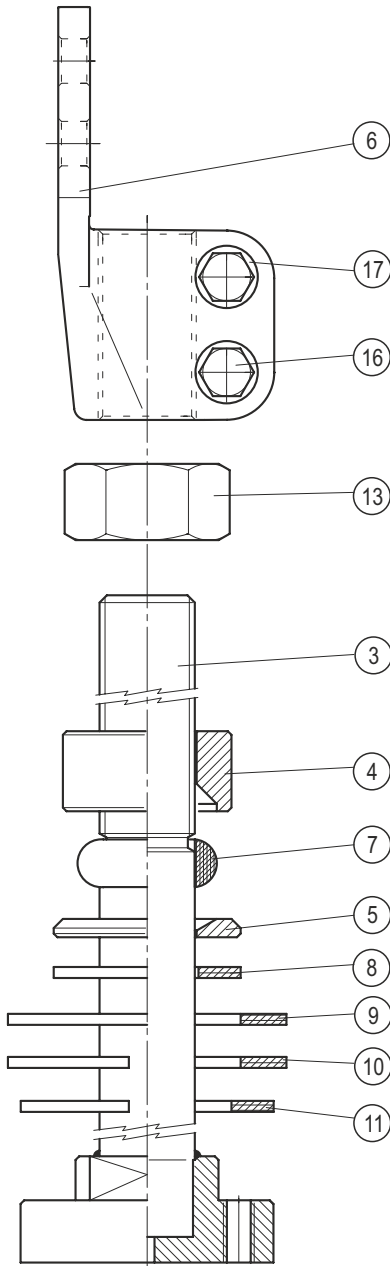
Ref.	a	b	c	e	d1	d2	d3	d4	d5	w(kg)
DT 1 - 250	138	68	25	Ø45	M12	28	28	60	50	1.0
DT 1 - 630	178	82	37	Ø45	M20	40	45	85	70	2.40



Ref.	Description	Material	250A	630A
1	Top Porcelain A1	C110	1	1
2	Bottom Porcelain B1	C110	1	1
3	Stud	CuZn40Pb2	1	1
4	Washer E	CuZn40Pb2	1	1
5	Washer G	CuZn40Pb2	1	1
7	Gasket J	NBR ☐ Viton ☐	1	1
8	Flat Gasket M	NBR ☐ Viton ☐ Cork ☐	1	1
9	Flat Gasket N	NBR ☐ Viton ☐ Cork ☐	1	1
10	Internal Gasket O	NBR ☐ Presspan ☐	1	1
11	Internal Gasket P	NBR ☐ Presspan ☐	1	1
12	Washer 13 - 21 DIN 125	CuZn40Pb2	2	2
13	Brass Nut M12 - M20 DIN 934	CuZn40Pb2	3	3
14	Spring Washer 12 - 20 DIN 43699	St37 zinc ☐ A2-70 ☐	1	1

☐ -60°C FVMQ Gasket (Optional)

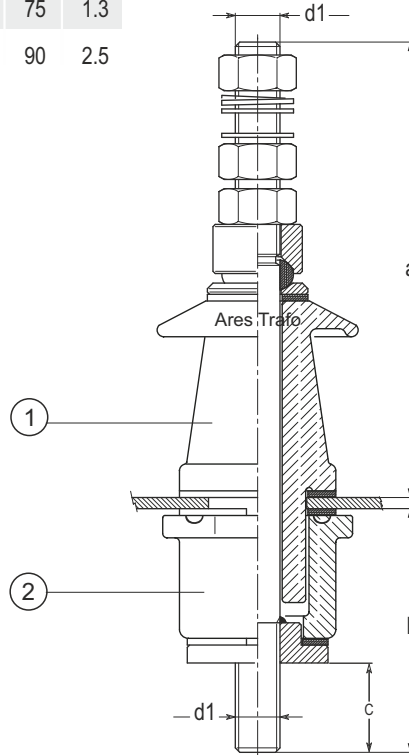
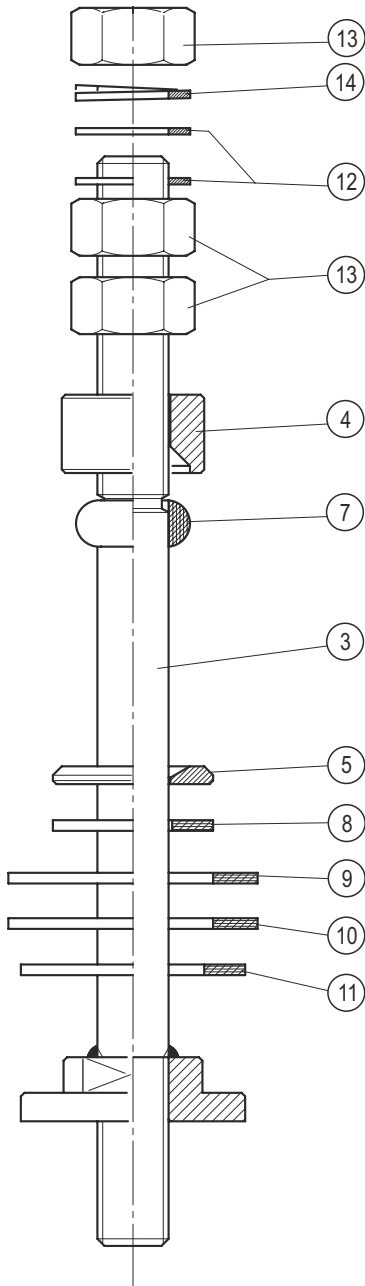
Ref.	a	b	d	e	d1	d2	d3	d4	d5	d6	w(kg)
DT 1 - 1000	263	60	186	Ø70	M30x2	56	56	110	90	M10	5.40
DT 1 - 2000	340	65	223	100	M42x3	70	70	125	104	M16	12.00
DT 1 - 3150	372	70	230	100	M48x3	80	90	150	125	M16	17.00



Ref.	Parts	Material	1000A	2000A	3150A
1	Top Porcelain	C110	1	1	1
2	Bottom Porcelain	C110	1	1	1
3	Connecting Stud Z	Cu-ETP	1	1	1
4	Washer E	CuZn40Pb2	1	1	1
5	Washer G	CuZn40Pb2	1	1	1
6	Connection Flag	CuZn40Pb2	1	1	1
7	Gasket J	NBR ☐ Viton ☐	1	1	1
8	Flat Gasket M	NBR ☐ Viton ☐ Cork ☐	1	1	1
9	Flat Gasket N	NBR ☐ Viton ☐ Cork ☐	1	1	1
10	Internal Gasket X	NBR ☐ Presspan ☐	1	1	1
11	Internal Gasket R	NBR ☐ Presspan ☐	1	1	1
13	Brass Nut	CuZn40Pb2	1	1	1
16	Hexagon Head Screw	St zinc ☐ A2-70 ☐	2	2	2
17	Washer	St zinc ☐ A2-70 ☐	2	2	2

☐ -60°C FVMQ Gasket (Optional)

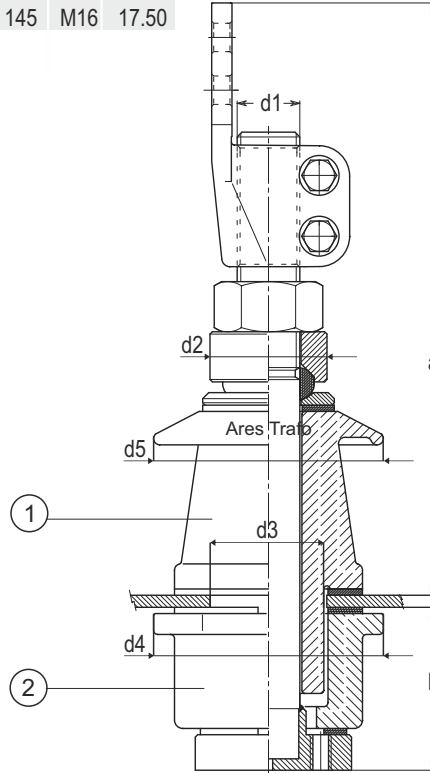
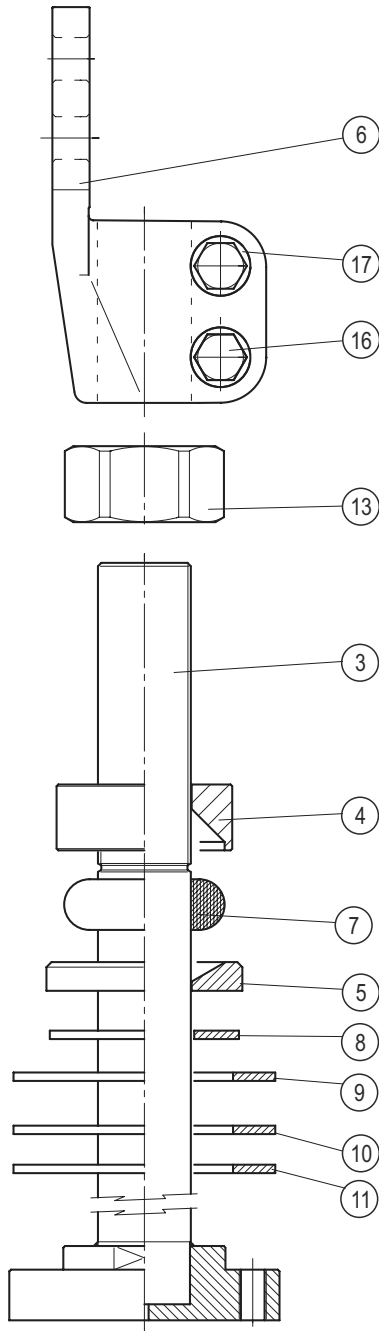
Ref.	a	b	c	d1	d2	d3	d4	d5	w(kg)
DT 3-250	180	94	25	M12	28	39	70	75	1.3
DT 3-630	210	110	37	M20	46	45	85	90	2.5



Ref.	Description	Material	3/250A	3/630A
1	Top Porcelain A1	C110	1	1
2	Bottom Porcelain B1	C110	1	1
3	Connecting Stud C	CuZn40Pb2	1	1
4	Washer E	CuZn40Pb2	1	1
5	Washer G	CuZn40Pb2	1	1
7	Gasket J	NBR ☐ Viton ☐	1	1
8	Flat Gasket M	NBR ☐ Viton ☐ Cork ☐	1	1
9	Flat Gasket N	NBR ☐ Viton ☐ Cork ☐	1	1
10	Internal Gasket O	NBR ☐ Presspan ☐	1	1
11	Internal Gasket P	NBR ☐ Presspan ☐	1	1
12	Washer 13 - 21 DIN 125	CuZn40Pb2	2	2
13	Brass Nut M12 - M20 DIN 934	CuZn40Pb2	3	3
14	Spring Washer 12 - 20 DIN 43699	St37zinc ☐ A2-70 ☐	1	1

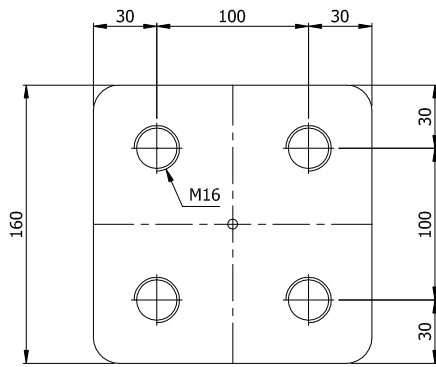
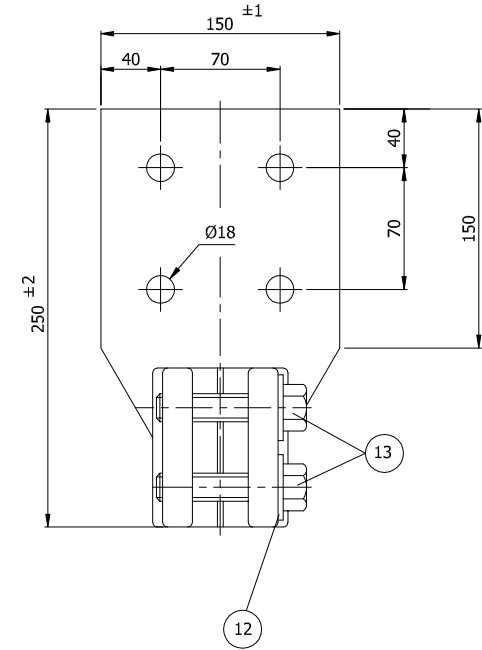
☐ -60°C FVMQ Gasket (Optional)

Ref.	a	b	e	f	d1	d2	d3	d4	d5	d6	w(kg)
DT 3-1000	294	80	Ø50	Ø70	M30x2	56	56	110	110	M10	5.80
DT 3-2000	372	86	60	100	M42x3	70	70	125	125	M16	13.00
DT 3-3150	404	92	70	110	M48x3	90	90	150	145	M16	17.50

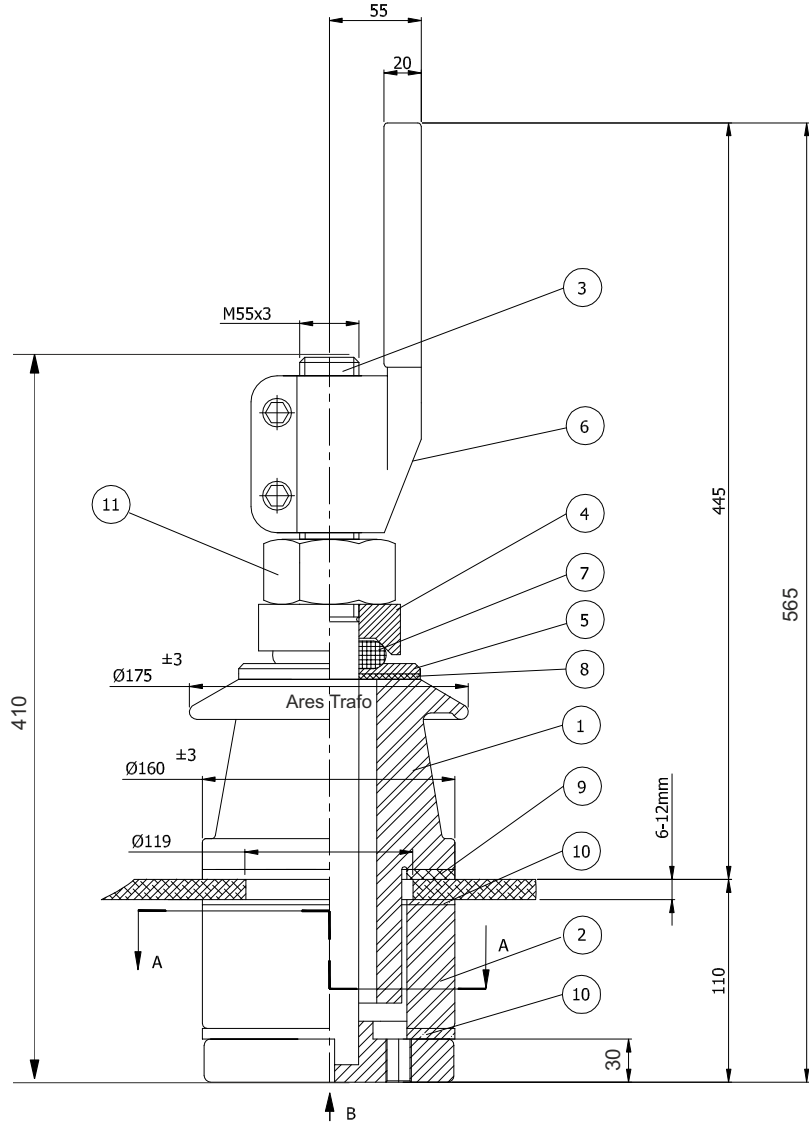


Ref.	Parts	Material	1000A	2000A	3150A
1	Top Porcelain	C110	1	1	1
2	Bottom Porcelain	C110	1	1	1
3	Connecting Stud Z	Cu-ETP	1	1	1
4	Washer E	CuZn40Pb2	1	1	1
5	Washer G	CuZn40Pb2	1	1	1
6	Connection Flag	CuZn40Pb2	1	1	1
7	Gasket J	NBR ☐ Viton ☐	1	1	1
8	Flat Gasket M	NBR ☐ Viton ☐ Cork ☐	1	1	1
9	Flat Gasket N	NBR ☐ Viton ☐ Cork ☐	1	1	1
10	Internal Gasket X	NBR ☐ Presspan ☐	1	1	1
11	Internal Gasket R	NBR ☐ Presspan ☐	1	1	1
13	Brass Nut	CuZn40Pb2	1	1	1
16	Hex. Head Screw	St zinc ☐ A2-70 ☐	2	2	2
17	Washer	St zinc ☐ A2-70 ☐	2	2	2

☐ -60°C FVMQ Gasket (Optional)

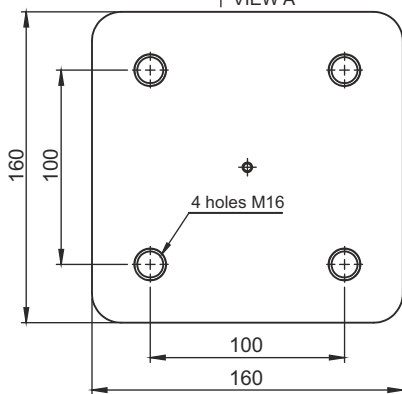
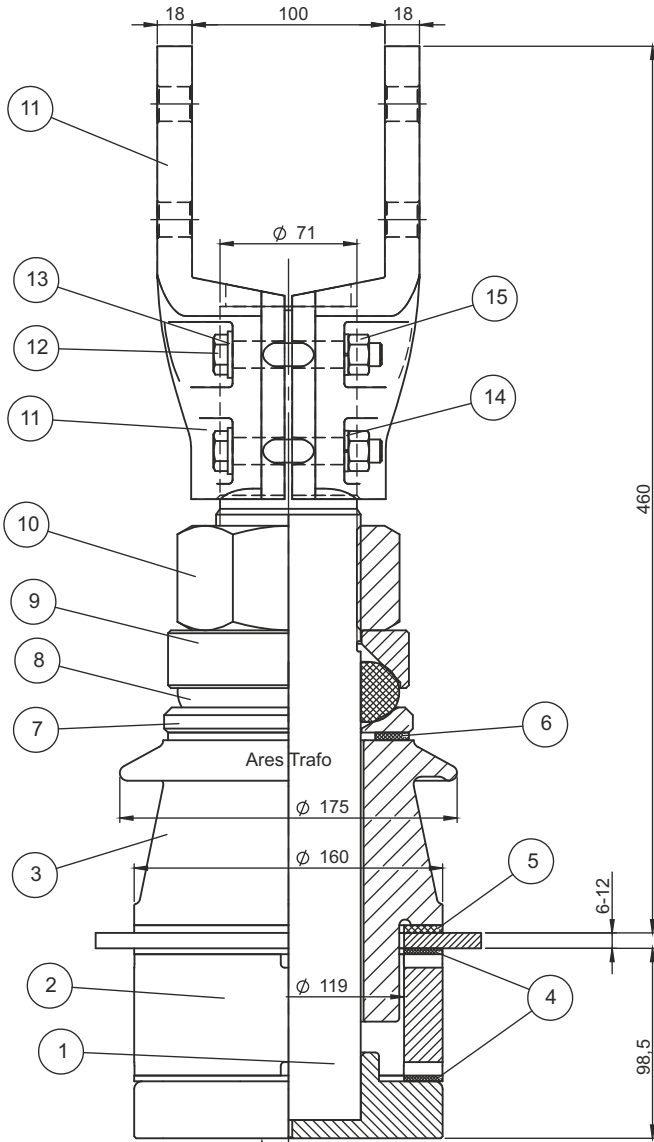


VIEW B

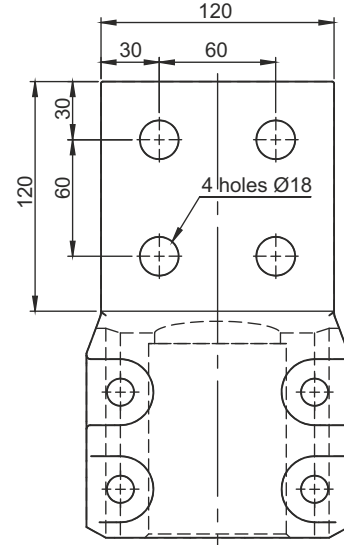


Pos	Description	Material	Qty
1	Top Porcelain "A"	C110	1
2	Bottom Porcelain "B"	C110	1
3	Stud	Cu-ETP	1
4	Brass Washer "E"	CuZn40Pb2	1
5	Brass Washer "G"	CuZn40Pb2	1
6	Brass Flag	CuZn40Pb2	1
7	Gasket "J"	NBR ☐ Viton ☐	1
8	Flat Gasket "M"	NBR ☐ Viton ☐ Cork ☐	1
9	Flat Gasket "N"	NBR ☐ Viton ☐ Cork ☐	1
10	Internal Gasket "X"	NBR ☐ Presspan ☐	2
11	Brass Nut M55 ISO 4032	CuZn40Pb2	1
12	Washer M12	St37 zinc ☐ A2-70 ☐	2
13	Bolt N12x65 DIN EN24017	St37 zinc ☐ A2-70 ☐	2

☐ -60°C FVMQ Gasket (Optional)



VIEW A



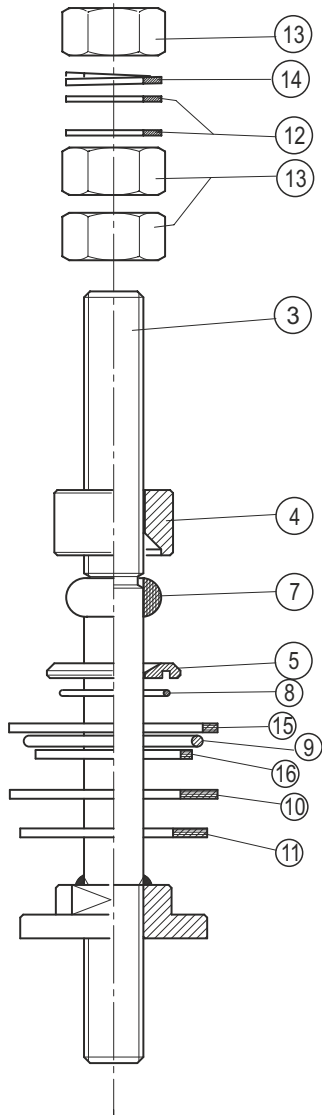
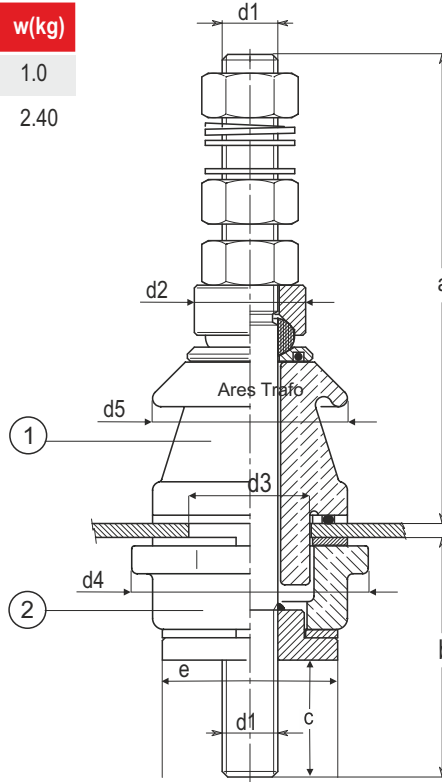
Pos	Description	Material	Qty
1	Stud	Cu-ETP	1
2	Bottom Porcelain	C110	1
3	Top Porcelain	C110	1
4	"X" Gasket	NBR ☐ Presspan ☐	2
5	"N" Gasket	NBR ☐ Viton ☐ Cork ☐	1
6	"M" Gasket	NBR ☐ Viton ☐ Cork ☐	1
7	"G" Washer	CuZn40Pb2	1
8	"J" Gasket	NBR ☐ Viton ☐	1
9	"E" Cap	CuZn40Pb2	1
10	Nut M75x3	CuZn40Pb2	2
11	Spade Connector	CuZn40Pb2	2
12	Bolt M12x80	St37 zinc ☐ A2-70 ☐	4
13	Washer M12	St37 zinc ☐ A2-70 ☐	4
14	Spring Washer	St37 zinc ☐ A2-70 ☐	4
15	Nut M12	St37 zinc ☐ A2-70 ☐	4

☐ -60°C FVMQ Gasket (Optional)

Ref.	a	b	c	e	d1	d2	d3	d4	d5	w(kg)
DT 1 - 250	138	68	25	Ø45	M12	28	28	60	50	1.0
DT 1 - 630	178	82	37	Ø45	M20	40	45	85	70	2.40



O-ring



O-ring Set (Instead of N Gasket)

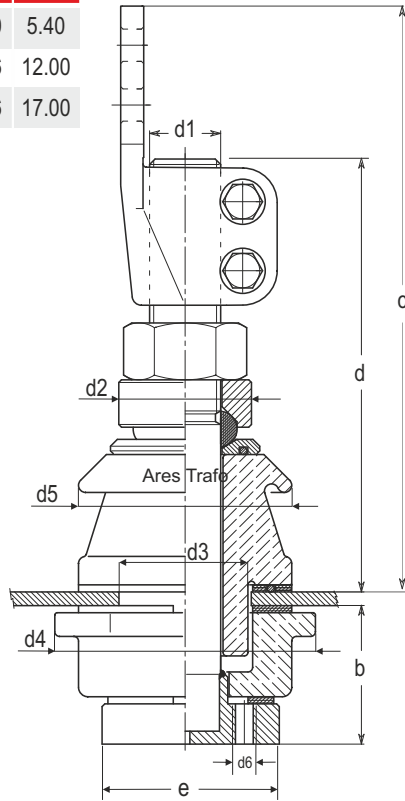
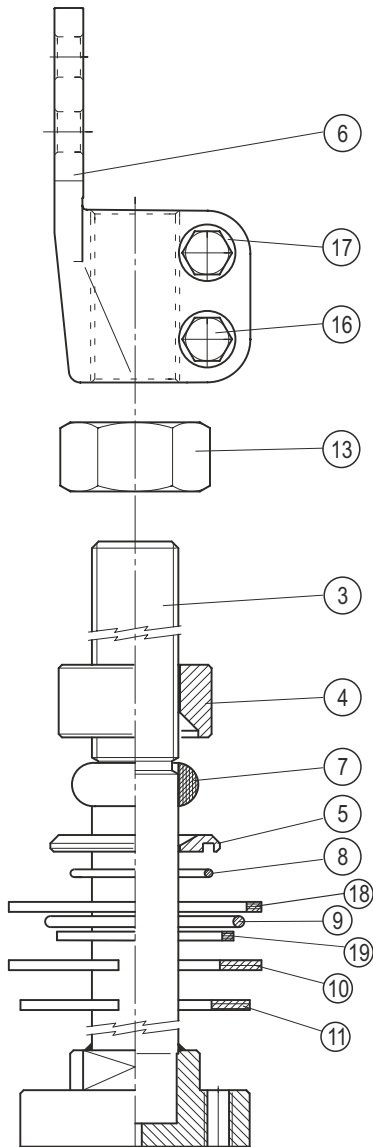
Ref.	Description	Material	250A	630A
1	Top Porcelain A1	C110	1	1
2	Bottom Porcelain B1	C110	1	1
3	Connecting Stud C	CuZn40Pb2	1	1
4	Washer E	CuZn40Pb2	1	1
5	Washer G	CuZn40Pb2	1	1
7	Ring Gasket J	NBR	1	1
8	O-Ring	NBR □ Viton □	1	1
9	O-Ring	NBR □ Viton □	1	1
10	Internal Gasket O	NBR □ Presspan □	1	1
11	Internal Gasket P	NBR □ Presspan □	1	1
12	Washer 13 - 21 DIN 125	CuZn40Pb2	2	2
13	Brass Nut DIN 934	CuZn40Pb2	3	3
14	Spring Washer	St37 zinc □ A2-70 □	1	1
15	Aluminium Spacer 1	Aluminium	1	1
16	Aluminium Spacer 2	Aluminium	1	1

□ -60°C FVMQ Gasket (Optional)

Ref.	a	b	d	e	d1	d2	d3	d4	d5	d6	w(kg)
DT 1 - 1000	263	60	186	Ø70	M30x2	56	56	110	90	M10	5.40
DT 1 - 2000	340	65	223	100	M42x3	70	70	125	104	M16	12.00
DT 1 - 3150	372	70	230	100	M48x3	80	90	150	125	M16	17.00



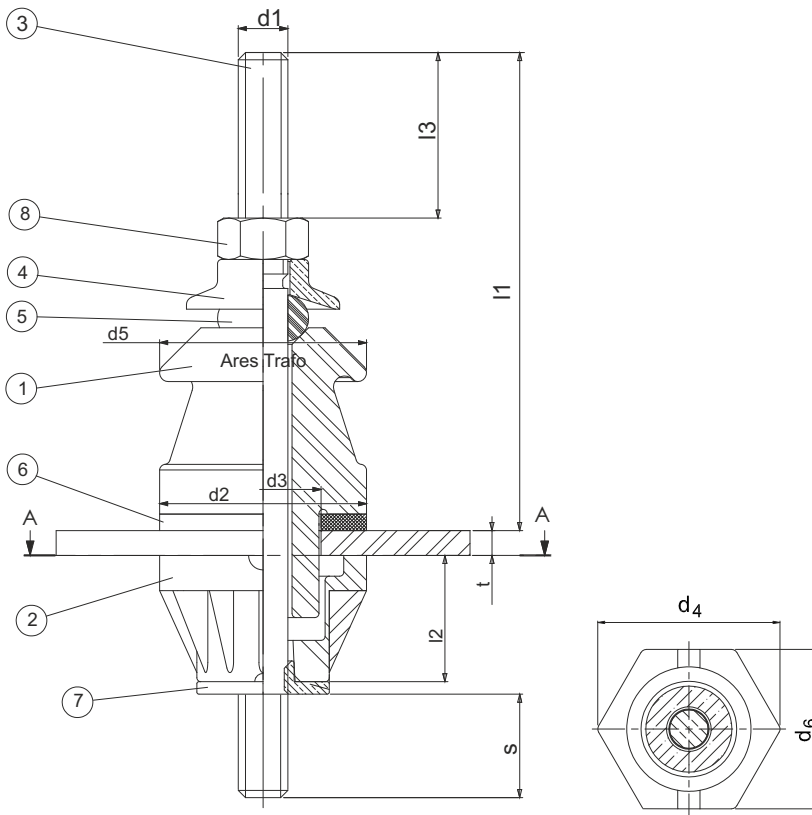
O-ring Set



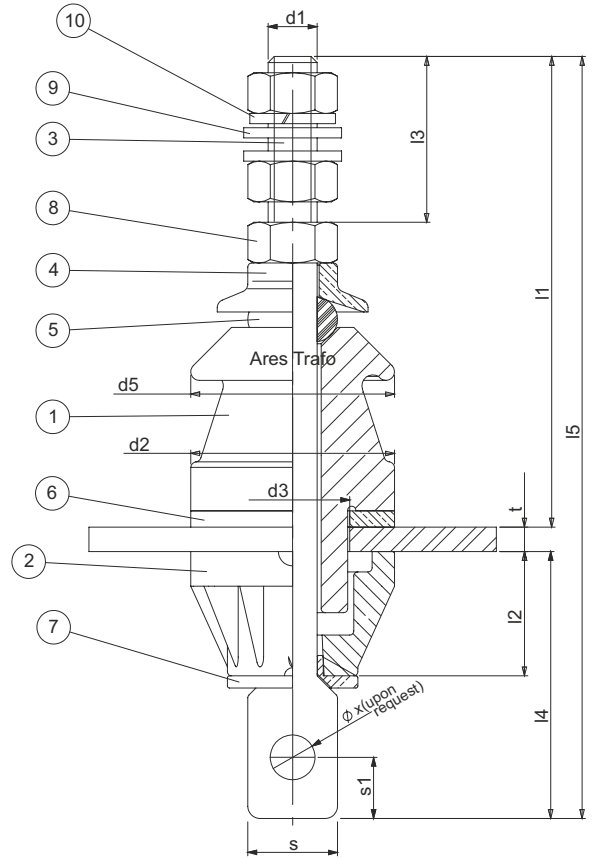
Ref.	Qty.	Parts	Material	1000A	2000A	3150A
1	1	Top Porcelain	C110	1	1	1
2	1	Bottom Porcelain	C110	1	1	1
3	1	Connecting Stud Z	Cu-ETP	1	1	1
4	1	Washer E	CuZn40Pb2	1	1	1
5	1	Washer G	CuZn40Pb2	1	1	1
6	1	Connection Flag	CuZn40Pb2	1	1	1
7	1	Ring Gasket J	NBR ☐ Viton ☐	1	1	1
8	1	O-ring	NBR ☐ Viton ☐	1	1	1
9	1	O-ring	NBR ☐ Viton ☐	1	1	1
10	1	Internal Gasket X	NBR ☐ Presspan ☐	1	1	1
11	1	Internal Gasket R	NBR ☐ Presspan ☐	1	1	1
13	1	Brass Nut	CuZn40Pb2	1	1	1
16	2	Hex. Head Screw	St zinc ☐ A2-70 ☐	2	2	2
17	2	Washer	St zinc ☐ A2-70 ☐	2	2	2
18	1	Aluminium Spacer 1	Aluminium	1	1	1
19	1	Aluminium Spacer 2	Aluminium	1	1	1

☐ -60°C FVMQ Gasket (Optional)

Type A



Type AP



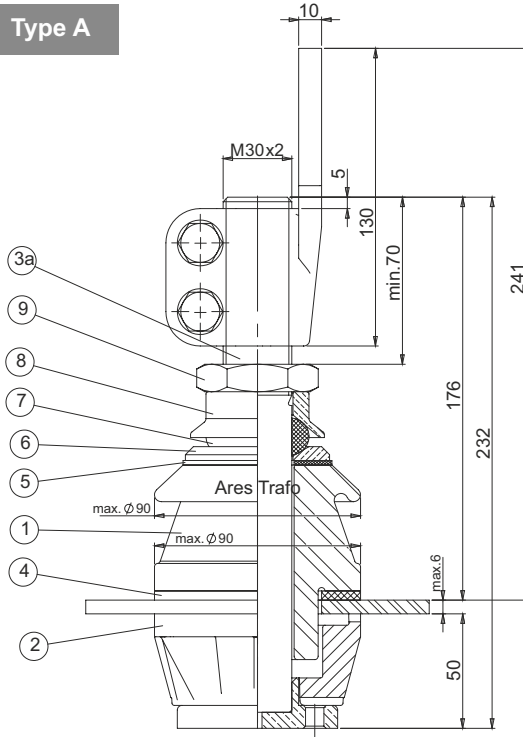
Pos	Description	Material	250A	630A
1	Insulator Top	C110	1	1
2	Insulator Bottom	PA6.6	1	1
3	Stud	CuZn40Pb2	1	1
4	Washer "E"	CuZn40Pb2	1	1
5	Gasket "J"	NBR ☐ Viton ☐	1	1
6	Flat Gasket (N)	NBR ☐ Viton ☐ Cork ☐	1	1
7	Internal Connector	CuZn40Pb2	1	1
8	Hex. Nut	CuZn40Pb2	1	3
9	Washer	CuZn40Pb2	-	2
10	Spring Washer	CuZn40Pb2	-	1

Type A	Amper	l1	l2	s	t	d1	d2	d3	d4	l3	d5	d6	Creepage	kg
1/250	250	115	30	25	6	M12	56	28	58	40	56	50	55	0.5
1/630	630	165	30	37	6	M20	70	45	80	65	70	70	70	1.5

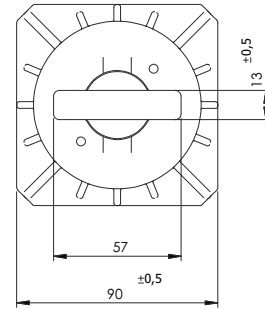
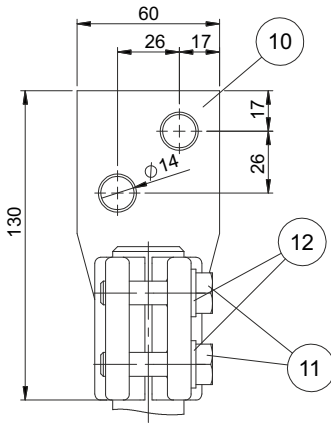
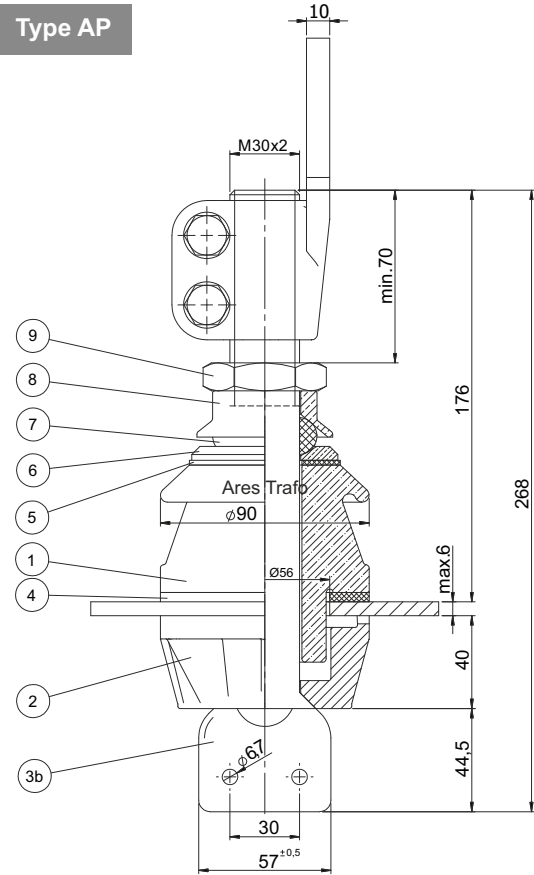
Type AP	Amper	l1	l2	s	t	d1	d2	d3	d4	d6	l3	d5	s1	l4	l5	s2	Creepage	kg
1/250	250	115	30	22	6	M12	56	28	58	50	40	56	15	65	192	5	55	0.5
1/630	630	163	30	32	6	M12	70	45	80	70	65	70	14	67	235	9	70	1.4

☐ -60°C FVMQ Gasket (Optional)

Type A



Type AP

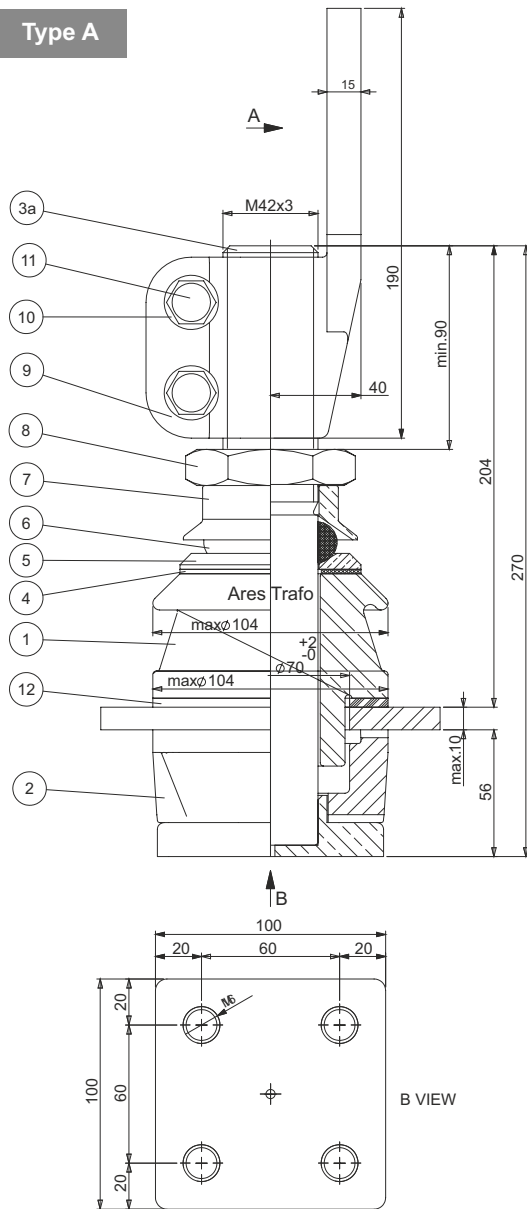


Pos	Description	Material	Qty
1	Top Porcelain	C110	1
2	Bottom Insulator	PA 6.6	1
3a	Stem for Type A	Cu-ETP	1
3b	Stem for Type AP	CuZn40Pb2 □ Cu-ETP □	1
4	"N" Gasket 90x56x4	NBR □ Viton □ Cork □	1
5	"M" Gasket 65x32x2	NBR □ Viton □ Cork □	1
6	"G" Washer	CuZn40Pb2	1

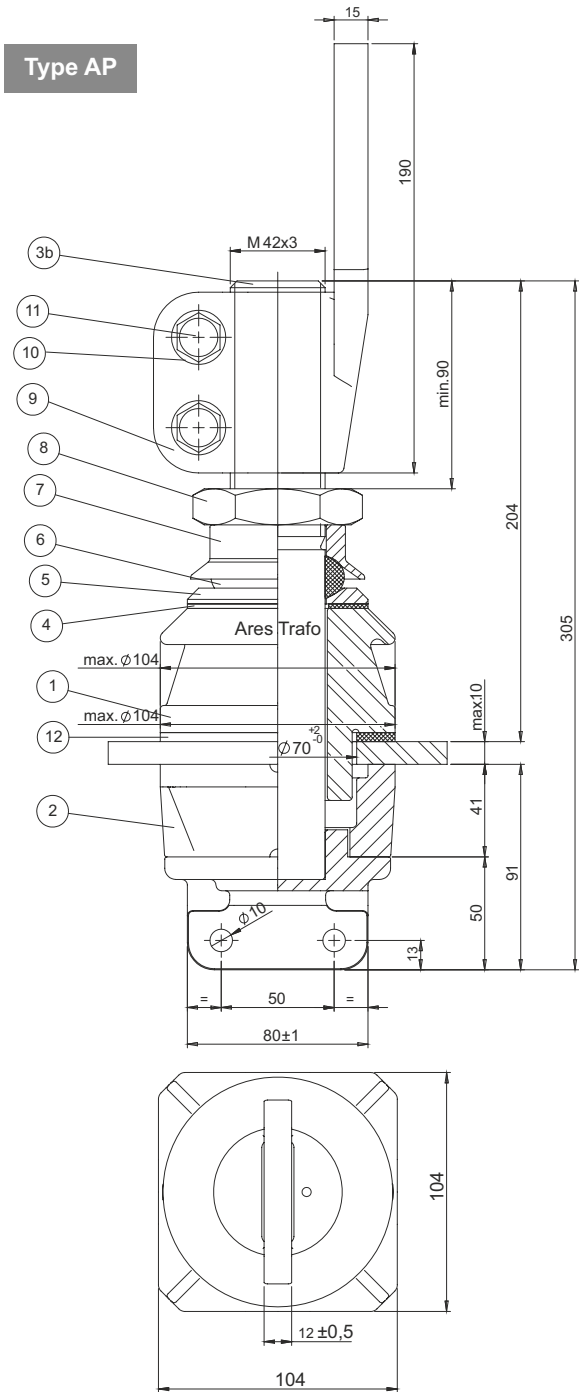
Pos	Description	Material	Qty
7	"J" Gasket 45x30x16	NBR □ Viton □	1
8	"E" Cap	CuZn40Pb2	1
9	Half Nut M30	CuZn40Pb2	1
10	Connection Flag	CuZn40Pb2	1
11	Bolt M10x40	St37 zinc □ A2-70 □	2
13	Washer M10	St37 zinc □ A2-70 □	2

□ -60°C FVMQ Gasket (Optional)

Type A



Type AP

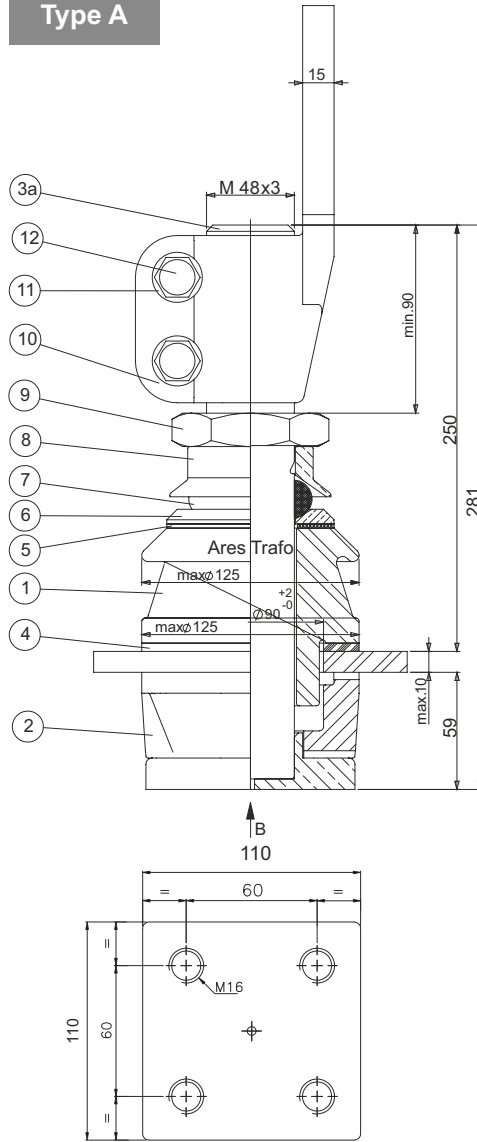


Pos	Description	Material	Qty
1	Top Porcelain	C110	1
2	Bottom Insulator	PA 6.6	1
3a	Stem for Type A	Cu-ETP	1
3b	Stem for Type AP	CuZn40Pb2 □ Cu-ETP □	1
4	"M" Gasket 80x45x2	NBR □ Viton □ Cork □	1
5	"G" Washer	NBR □ Viton □ Cork □	1
6	"J" Gasket 59x42x18	CuZn40Pb2	1

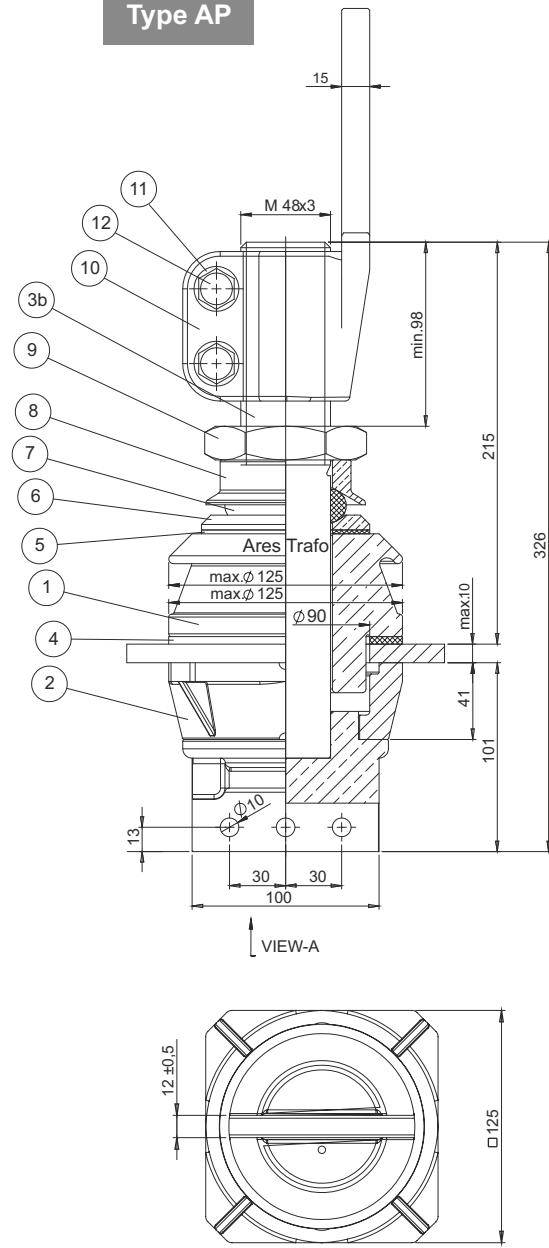
Pos	Description	Material	Qty
7	"E" Cap	NBR □ Viton □	1
8	Half Nut M42	CuZn40Pb2	1
9	Connection Flag	CuZn40Pb2	1
10	Washer M12	CuZn40Pb2	2
11	Bolt M12x50	St37 zinc □ A2-70 □	2
12	"N" Gasket 104x70x4	St37 zinc □ A2-70 □	1

□ -60°C FVMQ Gasket (Optional)

Type A



Type AP

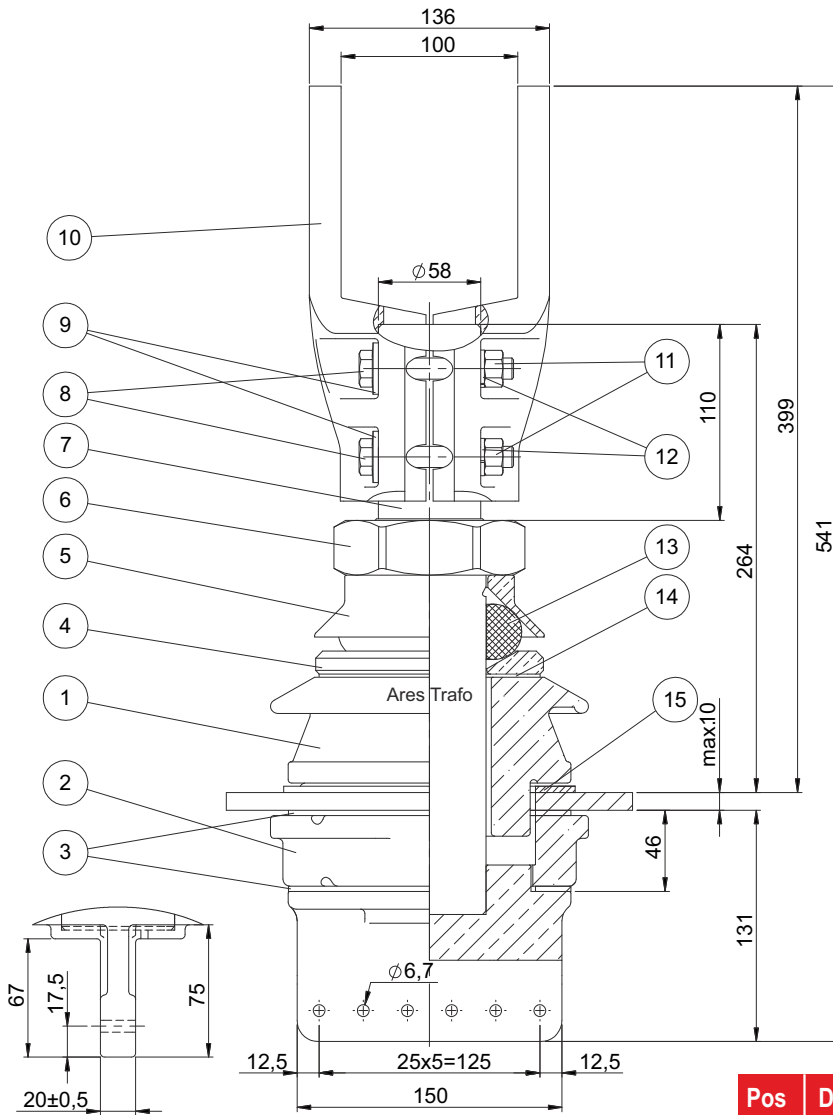


VIEW-A

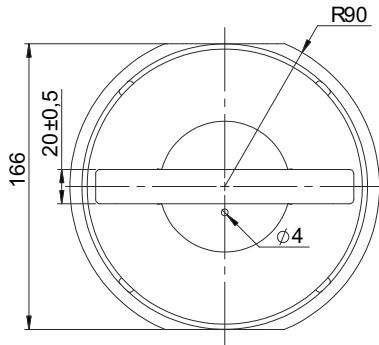
Pos	Description	Material	Qty
1	Top Porcelain	C110	1
2	Bottom Insulator	PA 6.6	1
3a	Stem for Type A	Cu-ETP	1
3b	Stem for Type AP	CuZn40Pb2 □ Cu-ETP □	1
4	"N" Gasket 125x90x4	NBR □ Viton □ Cork □	1
5	"M" Gasket 90x50x2	NBR □ Viton □ Cork □	1
6	"G" Washer	CuZn40Pb2	1

Pos	Description	Material	Qty
7	"J" Gasket 65x48x18	NBR □ Viton □	1
8	"E" Cap	CuZn40Pb2	1
9	Nut 48x3	CuZn40Pb2	1
10	Connection Flag	CuZn40Pb2	1
11	Washer M12	St37 zinc □ A2-70 □	2
12	Bolt M12x65	St37 zinc □ A2-70 □	2

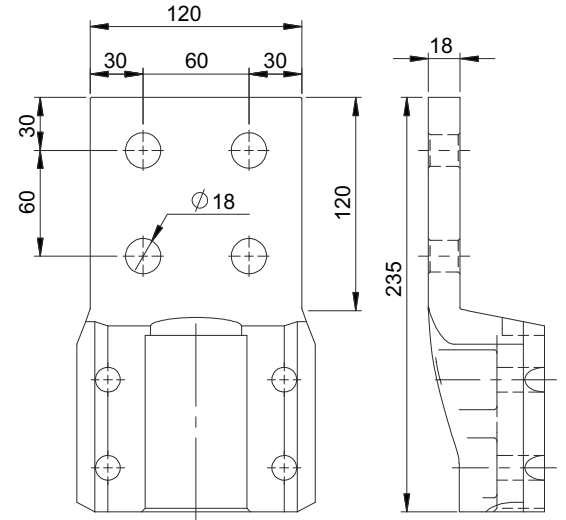
□ -60°C FVMQ Gasket (Optional)



VIEW-A

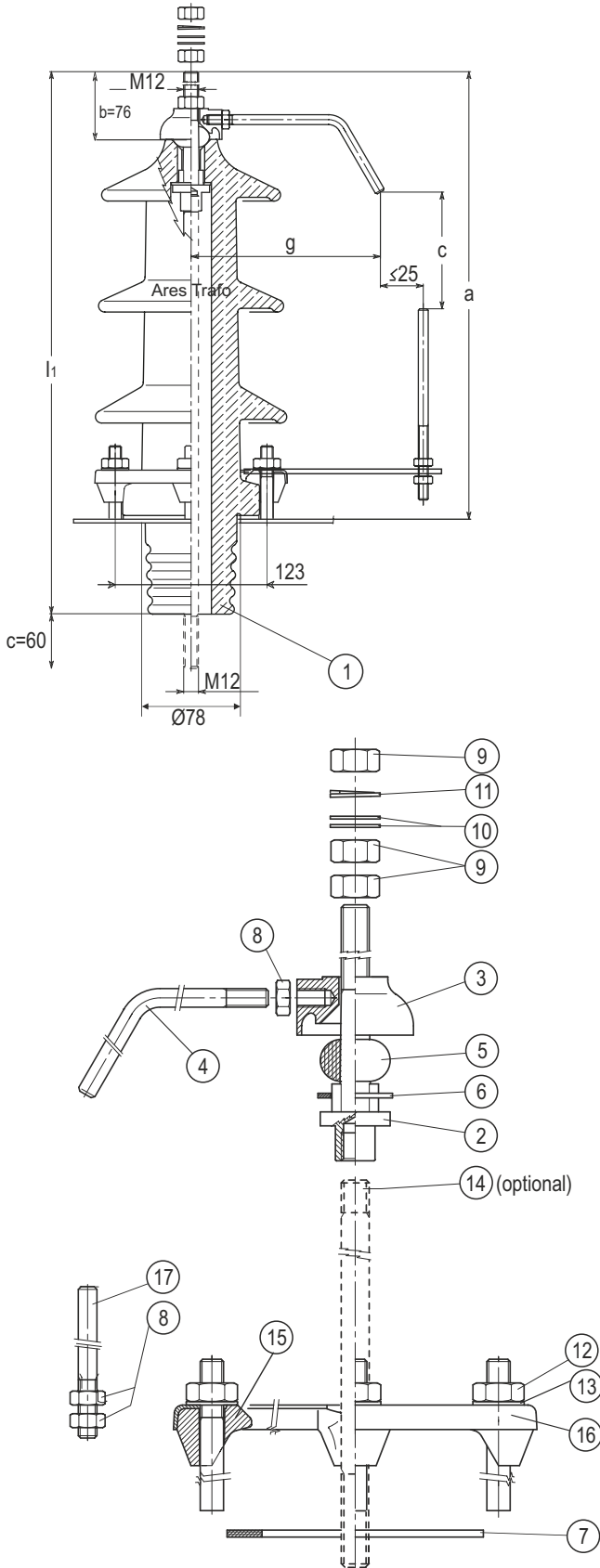


VIEW-A

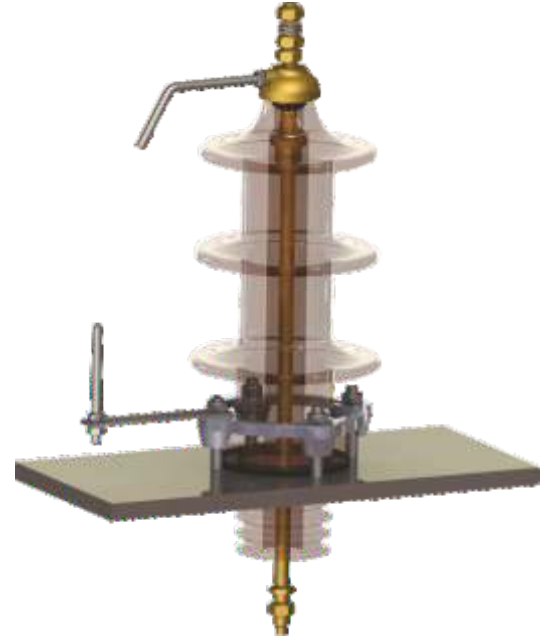


Pos	Description	Material	Qty
1	Top Porcelain	C110	1
2	Bottom Insulator	C110	1
3	"X" Gasket 160x120x3	Presspan	2
4	"G" Washer	CuZn40Pb2	1
5	"E" Cap	CuZn40Pb2	1
6	Half Nut M64x3	CuZn40Pb2	1
7	Stem	Cu-ETP	1
8	Bolt M12x80	St37 zinc □ A2-70 □	4
9	Washer M12	St37 zinc □ A2-70 □	4
10	Connection Flag	CuZn40Pb2	2
11	Nut M12	St37 zinc □ A2-70 □	4
12	Spring Washer	St37 zinc □ A2-70 □	4
13	"J" Gasket 104x64x30	NBR □ Viton □	1
14	"M" Gasket	NBR □ Viton □ Cork □	1
15	"N" Gasket	NBR □ Viton □ Cork □	1

□ -60°C FVMQ Gasket (Optional)

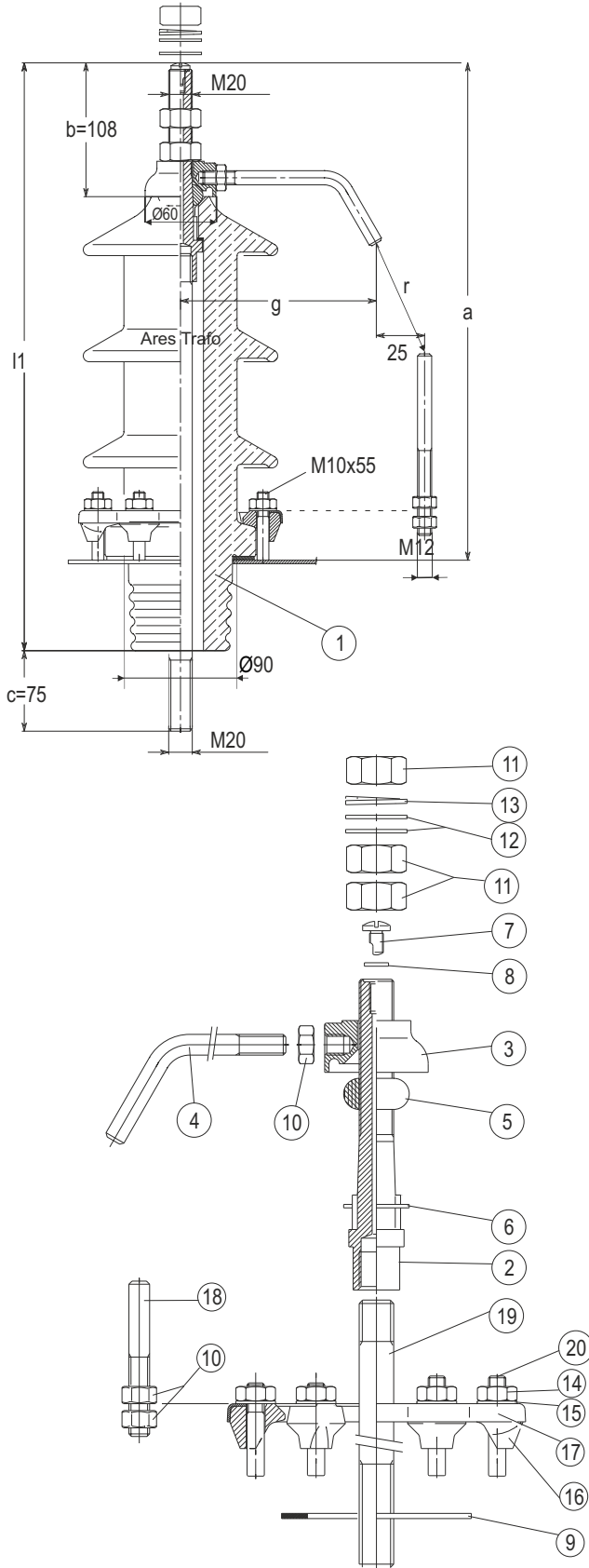


Ref.	a	c	g	l1	w(kg)
10NF 250A	310	85	150	371	4.5
20NF 250A	385	155	150	461	6.1
30NF 250A	485	220	170	561	7.5



Ref.	Parts	Material	250A
1	Porcelain	C110	1
2	Connecting Stud D M12	CuZn40Pb2	1
3	Cap E	CuZn40Pb2	1
4	Top Arcing Horn K M8	St37 zinc □ A2-70 □	1
5	Ring Gasket J	NBR	1
6	Shaped Packing O	NBR □ Presspan □	1
7	Flat Gasket N	NBR □ Cork □	1
8	Nut M8 DIN934	St37 zinc □ A2-70 □	3
9	Nut M12 DIN934	CuZn40Pb2	3
10	Washer 13 DIN125	CuZn40Pb2	2
11	Spring Washer 13 DIN 127	St37 zinc □ A2-70 □	1
12	Nut M10 DIN934	St37 zinc □ A2-70 □	4
13	Washer 10,5 DIN125	St37 zinc □ A2-70 □	4
14	Threaded Bolt M12 (optional)	CuZn40Pb2	1
15	Aluminium Clamp E DIN42538	Aluminium	1
16	Fixing Ring A DIN42538	Alu. □ Steel □ A2-70 □	1
17	Bottom Arcing Horn H M8	St37 zinc □ A2-70 □	1

□ -60°C FVMQ Gasket (Optional)

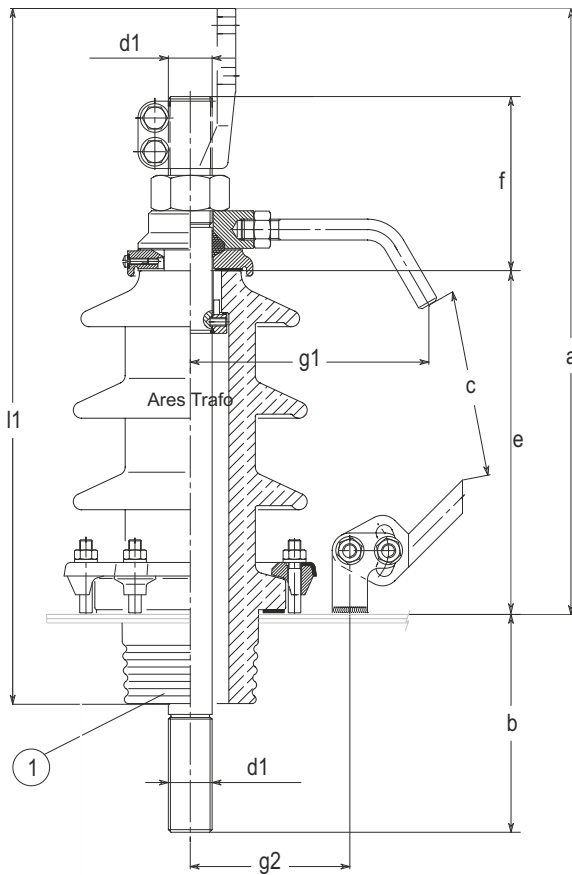


Ref.	a	c	g	l1	w(kg)
10NF 630A	342	85	180	403	7.2
20NF 630A	417	155	180	493	9.2
30NF 630A	522	220	200	618	12.2



Ref.	Parts	Material	630A
1	Porcelain	C110	1
2	Connecting Stud D M20	CuZn40Pb2 □ Cu-ETP □	1
3	Cap E	CuZn40Pb2	1
4	Top Arcing Horn K M12	St37 zinc □ A2-70 □	1
5	Ring Gasket J	NBR	1
6	Shaped Packing O	NBR □ Presspan □	1
7	Vent Screw T M8x15	CuZn40Pb2	1
8	Gasket F	PA6	1
9	Flat Gasket N	NBR □ Cork □	1
10	Nut M12 DIN934	St37 zinc □ A2-70 □	3
11	Nut M20 DIN934	CuZn40Pb2	3
12	Washer 21 DIN125	CuZn40Pb2	2
13	Spring Washer 21 DIN127	St37 zinc □ A2-70 □	1
14	Nut M10 DIN934	St37 zinc □ A2-70 □	6
15	Washer 10,5 DIN125	St37 zinc □ A2-70 □	6
16	Aluminium Clamp E DIN42538	Aluminium	6
17	Fixing Ring B DIN42538	Alu. □ Steel □ A2-70 □	1
18	Bottom Arcing Horn H M12	St37 zinc □ A2-70 □	1
19	Threaded Bolt M20 (optional)	CuZn40Pb2	1
20	Bottom Arcing Horn H M8	St37 zinc □ A2-70 □	1

□ -60°C FVMQ Gasket (Optional)

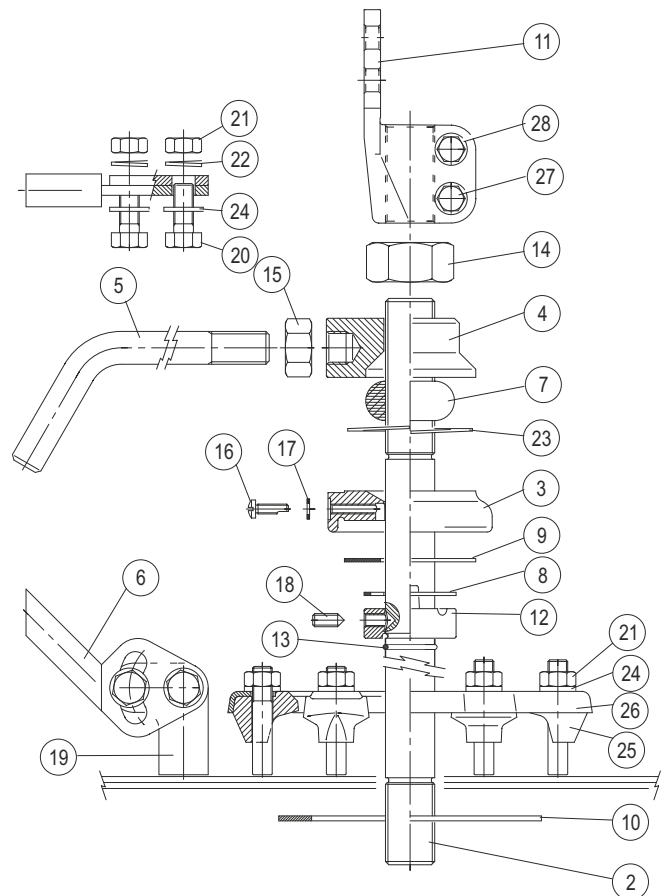


Ref.	a	b	d1	d3	d4	d5	e	f	l1	w(kg)
10 NF 1000	455	158	M30x2	110	100	163	239	148	541	15.2
20 NF 1000	530	168	M30x2	110	100	163	314	148	626	18.20
30 NF 1000	635	198	M30x2	110	100	163	419	148	756	21.90
10 NF 2000	530	158	M42x3	135	120	183	239	178	616	24.90
20 NF 2000	605	168	M42x3	135	120	183	314	178	701	29.00
30 NF 2000	710	198	M42x3	135	120	183	419	178	831	34.70
10 NF 3150	560	158	M48x3	135	120	183	239	183	646	28.50
20 NF 3150	635	168	M48x3	135	120	183	314	183	731	32.60
30 NF 3150	740	198	M48x3	135	120	183	419	183	861	38.80

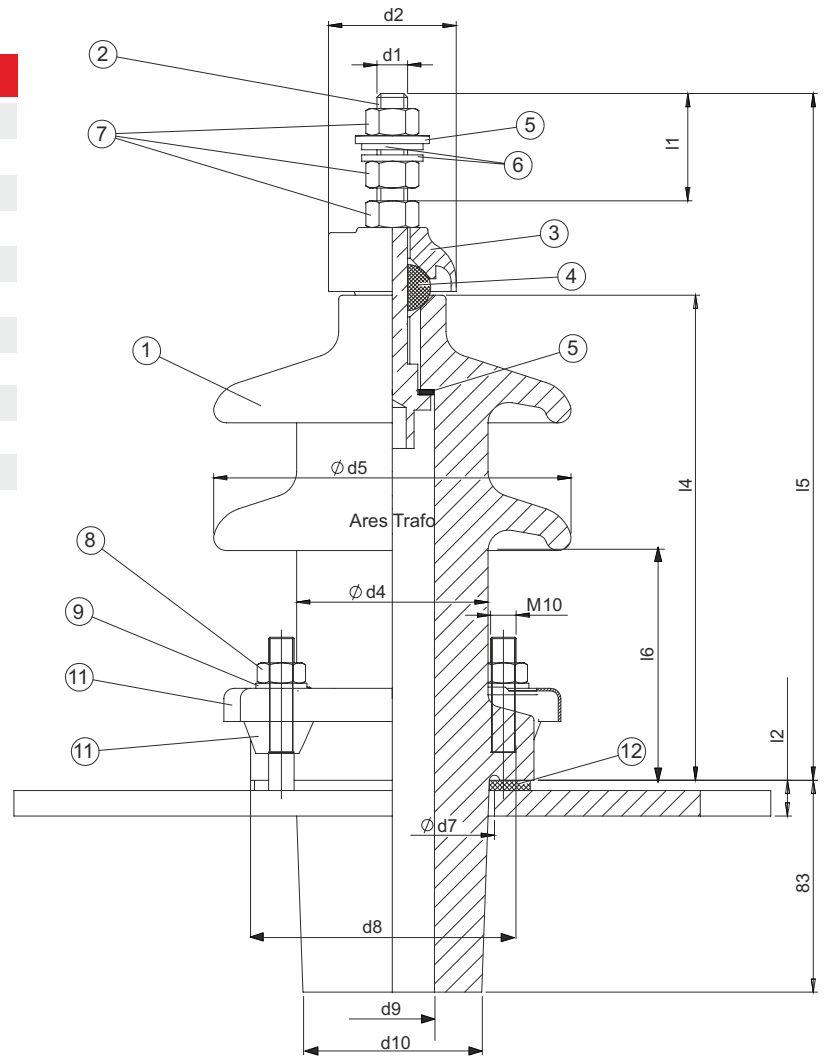
Ref.	a	b	d1	d3	d4	d5	e	f	l1	w(kg)
52 NF 1000	725	253	M30x2	135	120	183	509	148	901	35.20
52 NF 2000	800	253	M42x3	135	120	183	509	178	976	44.90
52 NF 3150	830	253	M48x3	135	120	183	509	183	1006	49.20

Ref.	Parts	Material	Qty.
1	Porcelain	C110	1
2	Connecting Stud D	Cu-ETP	1
3	Cap E	CuZn40Pb2	1
4	Washer F	CuZn40Pb2	1
5	Top Arcing Horn G M20	St37 zinc □ A2-70 □	1
6	Bottom Arcing Horn H M20	St37 zinc □ A2-70 □	1
7	Ring Gasket J	NBR □ Viton □	1
8	Shaped Packing O	NBR □ Viton □ Presspan □	1
9	Plain Gasket M	NBR □ Viton □ Presspan □	1
10	Flange Gasket N	NBR □ Viton □ Cork □	1
11	Connection Flag	CuZn40Pb2	1
12	Press Ring P	CuZn40Pb2	1
13	Ring S	Cu-ETP	1
14	Nut DIN934	CuZn40Pb2	1
15	Nut M20 DIN934	St37 zinc □ A2-70 □	1
16	Vent Screw R M6x15 DIN42533	CuZn40Pb2	1
17	Washer 6.4 / DIN125	PTFE	1
18	Setscrew M8x15 DIN 553	CuZn40Pb2	2
19	Bracket T	St37 zinc □ A2-70 □	1
20	Hexagon Head Screw M12x30 DIN933	St37 zinc □ A2-70 □	2
21	Nut M12 DIN934	St37 zinc □ A2-70 □	8
22	Spring Washer 13 DIN127	St37 zinc □ A2-70 □	2
23	Contact Ring U	Cu-ETP	1
24	Washer 13 DIN125	St37 zinc □ A2-70 □	8
25	Aluminium Clamp F DIN42538	Aluminium	6
26	Fixing Ring C-D DIN42538	Alu. □ Steel □ A2-70 □	1
27	Hexagon Head Screw M12	St37 zinc □ A2-70 □	2
28	Washer 10,5 DIN125	St37 zinc □ A2-70 □	2

□ -60°C FVMQ Gasket (Optional)



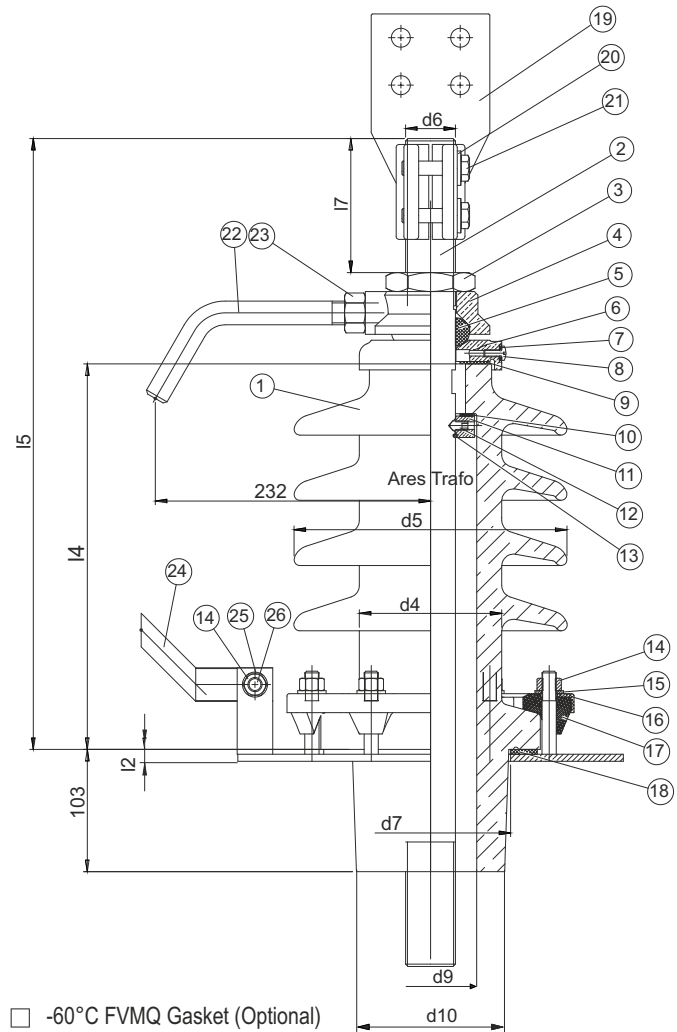
Pos	Description	Material	250A	630A
1	Porcelain	C110	1	1
2	Stem	CuZn40Pb2	1	1
3	Cap "E"	CuZn40Pb2	1	1
4	"J" Gasket	NBR ☐ Viton ☐	1	1
5	"O" Gasket	NBR ☐ Viton ☐	1	1
6	Washer M12	CuZn40Pb2	2	2
7	Nut M12	CuZn40Pb2	3	3
8	Nut M10	St37 zinc ☐ A2-70 ☐	4	6
9	Washer M10	St37 zinc ☐ A2-70 ☐	4	6
10	Bushing Flange	Alu. ☐ St37 zinc ☐ A2-70 ☐	1	1
11	Alu-Clamping	Aluminium	4	6
12	"N" Gasket	NBR ☐ Viton ☐ Cork ☐	1	1



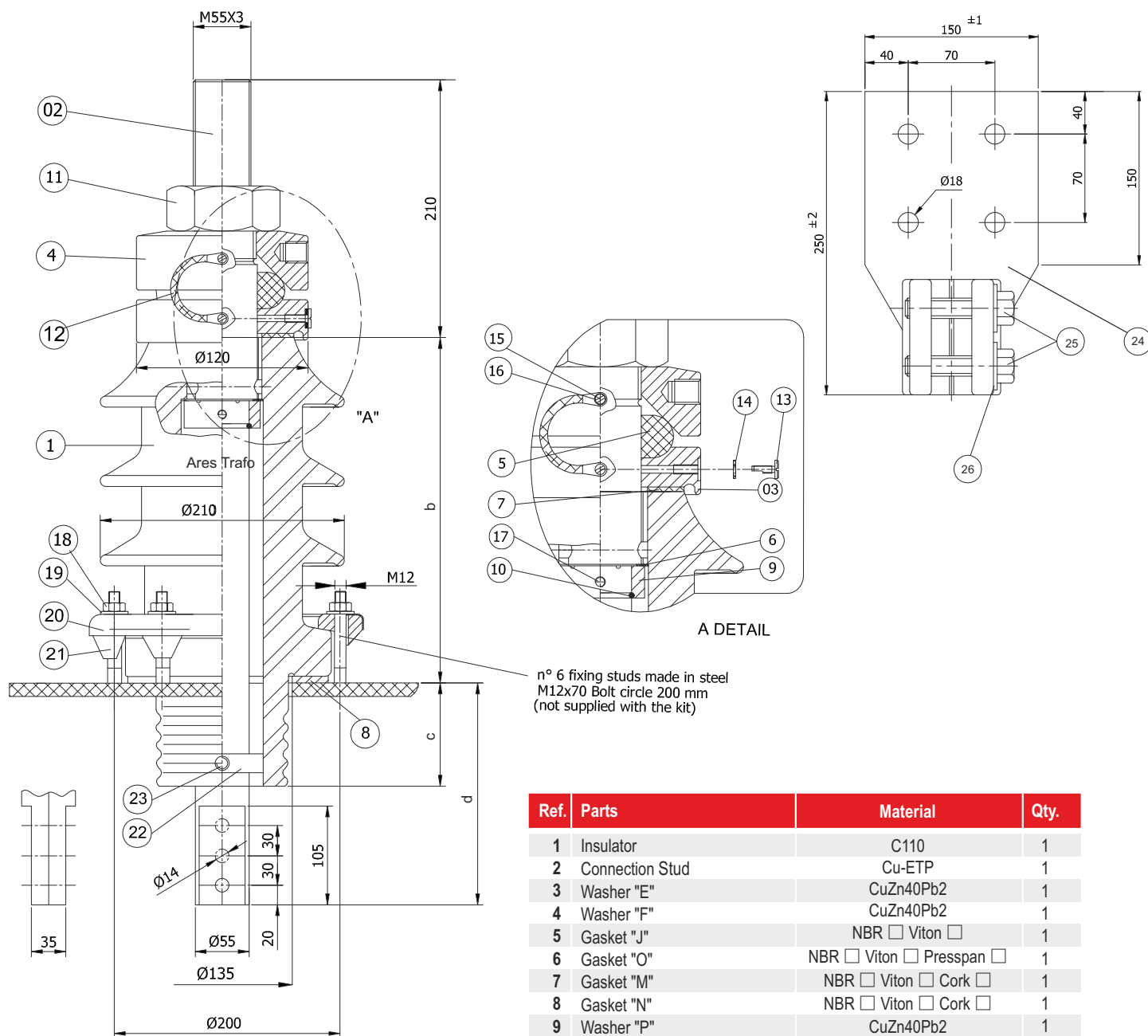
☐ -60°C FVMQ Gasket (Optional)

		Creepage Distance					Arcing Distance																
Type	kV	I	II	III	IV	Type	e	I1	I2	I4	I5	I6	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	w(kg)
12-250/P1	12	192	240			1	145	45	15	190	270	90	M12	50	123	75	140	77	80	111	33	70	7.40
12-250/P2	12					1	145	45	15	190	270	90	M12	50	123	75	140	77	80	111	33	70	7.40
12-250/P4	12			300	372	2	260	45	15	304	384	90	M12	50	123	80	150	77	80	111	33	70	9.50
24-250/P2	24	384	480			2	260	45	15	304	384	90	M12	50	123	80	150	77	80	111	33	70	9.50
24-250/P3	24			600		3	315	45	15	357	437	90	M12	50	123	80	155	77	80	111	33	70	10.60
36-250/P1	36	576				3	315	45	15	357	437	90	M12	50	123	80	155	77	80	111	33	70	10.60
24-250/P4	24				744	4	465	45	15	516	596	90	M12	50	123	80	155	77	80	111	33	70	13.35
36-250/P3	36		720	900		4	465	45	15	516	596	90	M12	50	123	80	155	77	80	111	33	70	13.35
36-250/P4	36				1116	5	485	45	15	516	596	90	M12	50	123	80	190	77	80	111	33	70	16.00
Type	kV	I	II	III	IV	Type	e	I1	I2	I4	I5	I6	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	w(kg)
12-630/P3	12	192	240	300		6	190	70	20	235	350	90	M20	60	140	80	155	87	90	128	39	75	10.35
12-630/P4	12				372	7	285	70	20	325	440	90	M20	60	140	85	170	87	90	128	39	75	12.25
24-630/P2	24	384	480			7	285	70	20	325	440	90	M20	60	140	85	170	87	90	128	39	75	12.25
24-630/P4	24			600	744	8	375	70	20	423	540	100	M20	60	140	85	180	87	90	128	39	75	14.75
36-630/P2	36	576	720			8	375	70	20	423	540	100	M20	60	140	85	180	87	90	128	39	75	14.75
36-630/P4	36			900	1116	9	475	70	20	515	630	100	M20	60	140	85	210	87	90	128	39	75	19.40

Pos	Description	Material	Qty
1	Porcelain	C110	1
2	Stem	Cu-ETP	1
3	Half Nut M48	CuZn40Pb2	1
4	"F" Washer	CuZn40Pb2	1
5	"J" Gasket	NBR ☐ Viton ☐	1
6	"E" Washer	CuZn40Pb2	1
7	Gasket	Klingerid	1
8	"R" Bolt	Brass	1
9	"M" Gasket	NBR ☐ Viton ☐ Cork ☐	1
10	"O" Gasket	NBR ☐ Klingerid ☐	1
11	Presring	CuZn40Pb2	1
12	Setscrew	St37 zinc ☐ A2-70 ☐	2
13	S Ring	Cu-ETP	1
14	Nut M12	St37 zinc ☐ A2-70 ☐	7
15	Washer M12	St37 zinc ☐ A2-70 ☐	6
16	Bushing Flange	Alu. ☐ St37 zinc ☐ A2-70 ☐	1
17	Alu-Clamping DIN 42538	Aluminium	6
18	"N" Gasket	NBR ☐ Viton ☐ Cork ☐	1
19	Connection Flag	CuZn40Pb2	1
20	Washer M12	St37 zinc ☐ A2-70 ☐	2
21	Bolt M12x50	St37 zinc ☐ A2-70 ☐	2
22	Top Arcing Horn	St37 zinc ☐ A2-70 ☐	1
23	Nut M20	St37 zinc ☐ A2-70 ☐	1
24	Bottom Arcing Horn	St37 zinc ☐ A2-70 ☐	1
25	Spring Washer	St37 zinc ☐ A2-70 ☐	1
26	Bolt M12x30	St37 zinc ☐ A2-70 ☐	1

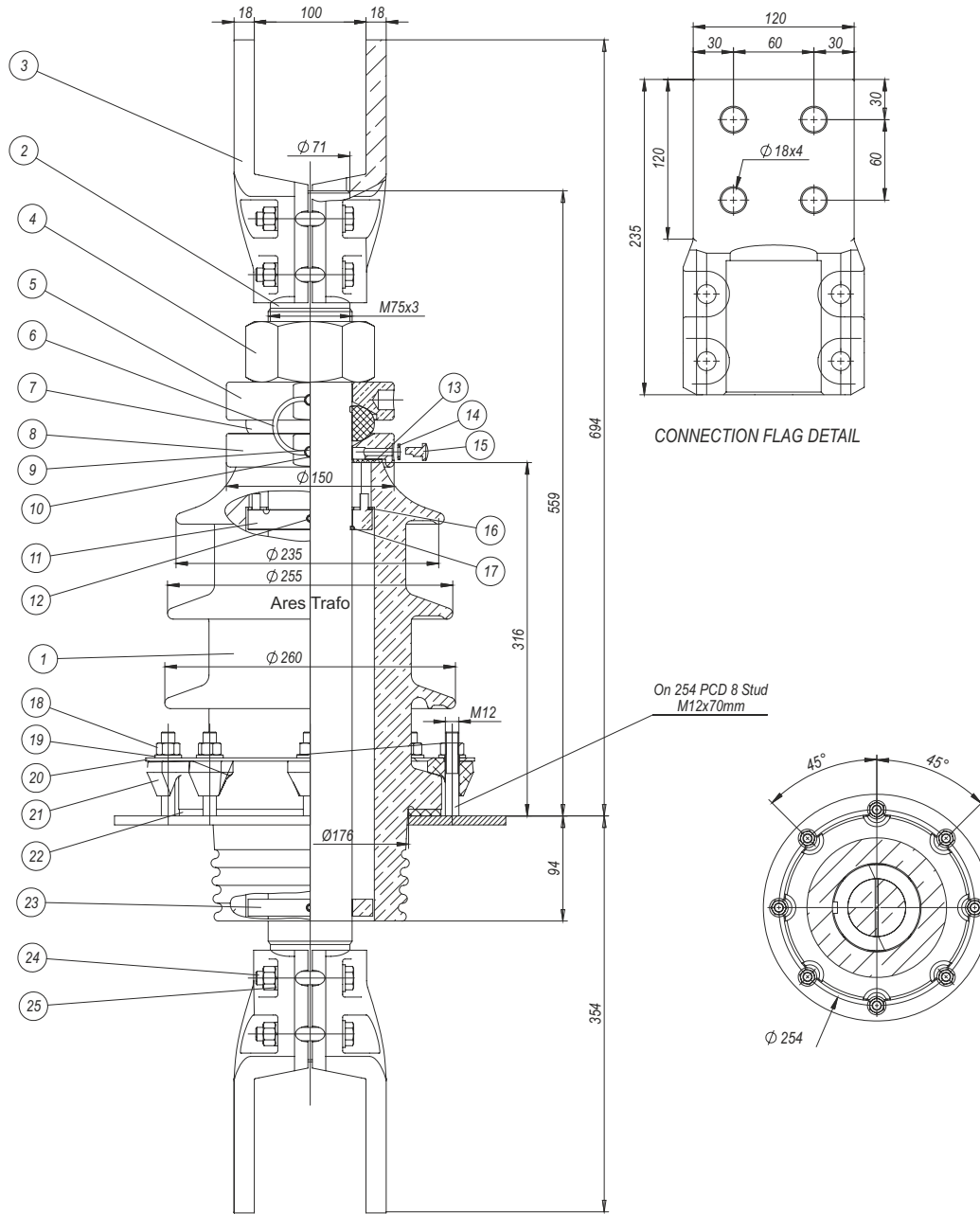


		Creepage Distance						Arcing Distance															
Type	kV	I	II	III	IV	Type	e	I2	I4	I5	I7	d1	d3	d4	d5	Thread	d6	d7	d8	d9	d10	w(kg)	
12-1250/P4	12	192	240	300	372	21	215	25	260	415	80	107	185	100	210	M30x2	107	110	165	58	100	12.40	
24-1250/P3	24	384	480	600		22	280	25	325	480	80	107	185	100	210	M30x2	107	110	165	58	100	13.80	
24-1250/P4	24				744	23	385	25	420	575	80	107	185	100	240	M30x2	107	110	165	58	100	15.50	
36-1250/P3	36	576	720	900		23	385	25	420	575	80	107	185	100	240	M30x2	107	110	165	58	100	15.50	
36-1250/P4	36				1116	24	500	25	535	690	80	107	185	100	240	M30x2	107	110	165	58	100	17.00	
Type	kV	I	II	III	IV	Type	e	I1	I2	I4	I5	I6	d1	d2	d3	d4	d5	d6	d7	d8	d9	d10	w(kg)
12-2000/P4	12	192	240	300	372	25	210	30	260	450	100	132	205	120	230	M42x3	132	135	185	78	125	19.50	
12-3150/P4	12	192	240	300	372	25	210	30	260	470	120	132	205	120	230	M48x3	132	135	185	78	125	22.50	
24-2000/P3	24	384	480	600		26	275	30	325	515	100	132	205	120	230	M42X3	132	135	185	78	125	25.00	
24-3150/P3	24	384	480	600		26	275	30	325	535	120	132	205	120	230	M48X3	132	135	185	78	125	29.50	
24-2000/P4	24				744	27	385	30	420	610	100	132	205	125	260	M42X3	132	135	185	78	125	30.50	
36-2000/P3	36	576	720	900		27	385	30	420	610	100	132	205	125	260	M42X3	132	135	185	78	125	30.50	
24-3150/P4	24				744	27	385	30	420	630	120	132	205	125	260	M48X3	132	135	185	78	125	32.00	
36-3150/P3	36	576	720	900		27	385	30	420	630	120	132	205	125	260	M48X3	132	135	185	78	125	32.00	
36-2000/P4	36				1116	28	495	30	535	725	100	132	205	125	260	M42X3	132	135	185	78	125	32.50	
36-3150/P4	36				1116	28	495	30	535	745	120	132	205	125	260	M48X3	132	135	185	78	125	34.00	



Ref.	Parts	Material	Qty.
1	Insulator	C110	1
2	Connection Stud	Cu-ETP	1
3	Washer "E"	CuZn40Pb2	1
4	Washer "F"	CuZn40Pb2	1
5	Gasket "J"	NBR ☐ Viton ☐	1
6	Gasket "O"	NBR ☐ Viton ☐ Presspan ☐	1
7	Gasket "M"	NBR ☐ Viton ☐ Cork ☐	1
8	Gasket "N"	NBR ☐ Viton ☐ Cork ☐	1
9	Washer "P"	CuZn40Pb2	1
10	"S" Ring	Cu-ETP	1
11	Nut M55	CuZn40Pb2	1
12	Arc Cable	Cable	1
13	Bolt "T" M8	CuZn40Pb2	1
14	Washer for M8	Polyamid	1
15	Bolt M5x8	St37 zinc ☐ A2-70 ☐	2
16	Washer for M5	St37 zinc ☐ A2-70 ☐	2
17	Setscrew M8x15	St37 zinc ☐ A2-70 ☐	2
18	Nut M12 Iso4032	St37 zinc ☐ A2-70 ☐	6
19	Washer for M12	St37 zinc ☐ A2-70 ☐	6
20	Fixing Ring "D"	St37 zinc ☐ Aluminium ☐	1
21	Alu-Clamping Din 42538	Aluminium	6
22	Center Ring	CuZn40Pb2	1
23	Setscrew M8x10	St37zinc ☐ A2-70 ☐	2

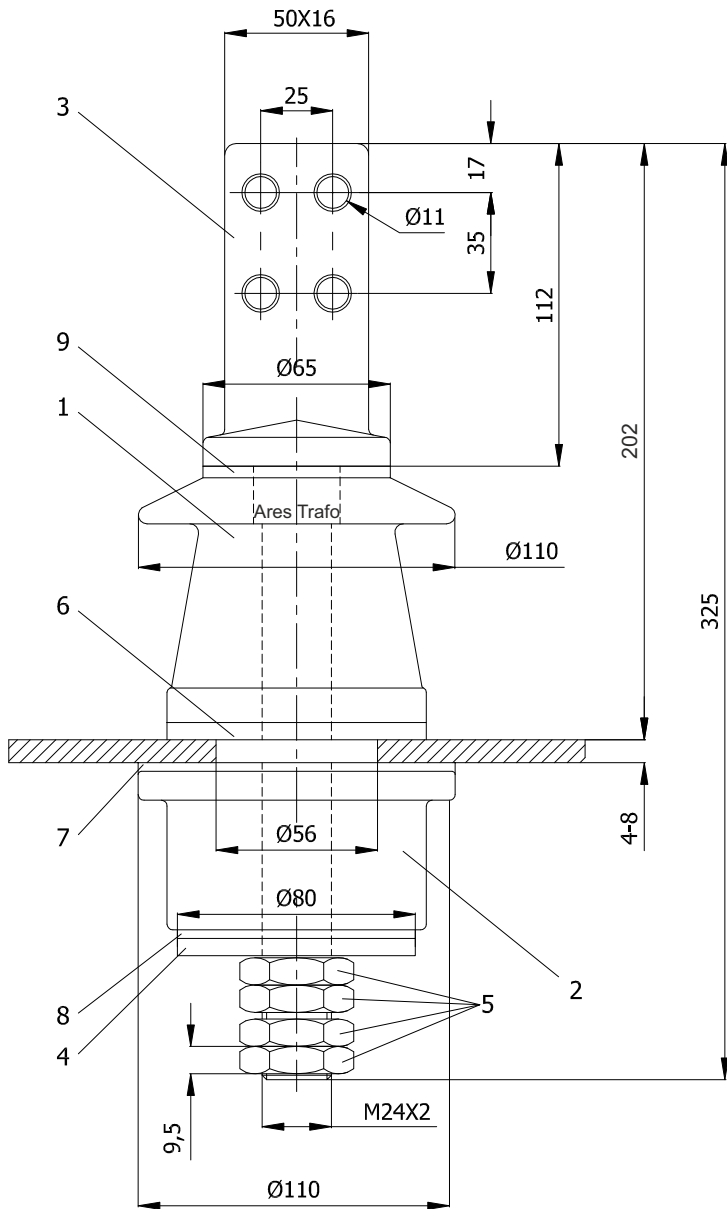
☐ -60°C FVMQ Gasket (Optional)



Pos	Description	Material	Qty
1	Insulator	C110	1
2	Stud	Cu-ETP	1
3	Connection Flag	CuZn40Pb2	4
4	Nut 75x3	CuZn40Pb2	1
5	"F" Washer	CuZn40Pb2	1
6	Arc Cable	Cable	1
7	"J" Gasket 115x75x30	NBR ☐ Viton ☐	1
8	E Washer	NBR ☐ Viton ☐ Cork ☐	1
9	Bolt M5x8	CuZn40Pb2	2
10	Washer For M5	Polyamid	2
11	"P" Ring	Brass	1
12	Setscrew M8x15	St37 zinc ☐ A2-70 ☐	4
13	"M" Gasket 129x77x3	NBR ☐ Viton ☐ Cork ☐	1

	Description	Material	Qty
14	Washer M8	Brass	1
15	Bolt "T" M8	St37 zinc ☐ A2-70 ☐	1
16	"O" Gasket	NBR ☐ Viton ☐ Presspan ☐	1
17	"S" Ring	Cu-ETP	1
18	Nut M12	St37 zinc ☐ A2-70 ☐	16
19	Washer M12	St37 zinc ☐ A2-70 ☐	16
20	"O" Clamp	Cu-ETP	1
21	Alu-Clamping DIN 42538	Aluminium	8
22	"N" Gasket 23x176x6	NBR ☐ Viton ☐ Cork ☐	1
23	Center Ring	Brass	1
24	Bolt M12x80	St37 zinc ☐ A2-70 ☐	8
25	Spring Washer	St37 zinc ☐ A2-70 ☐	8

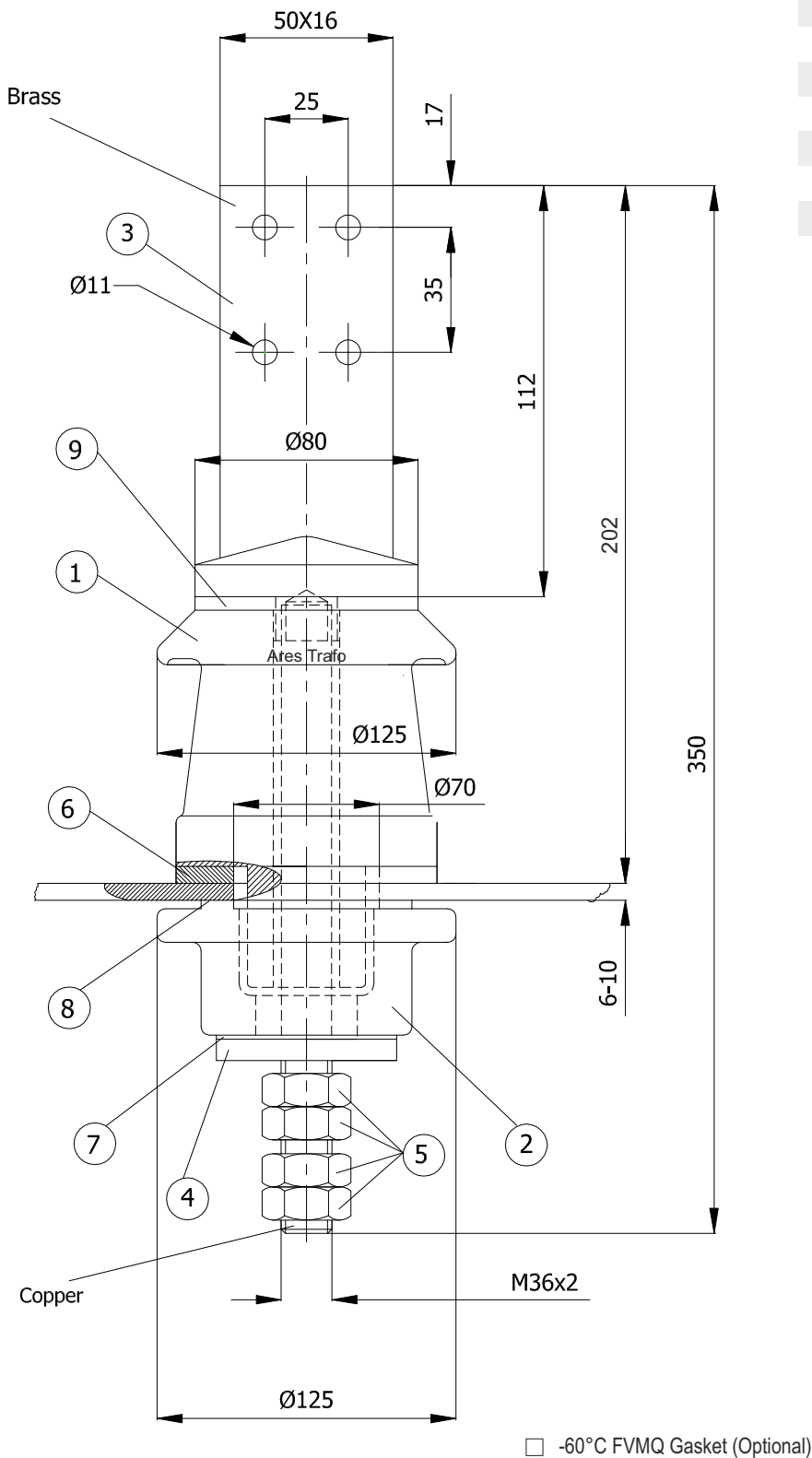
☐ -60°C FVMQ Gasket (Optional)

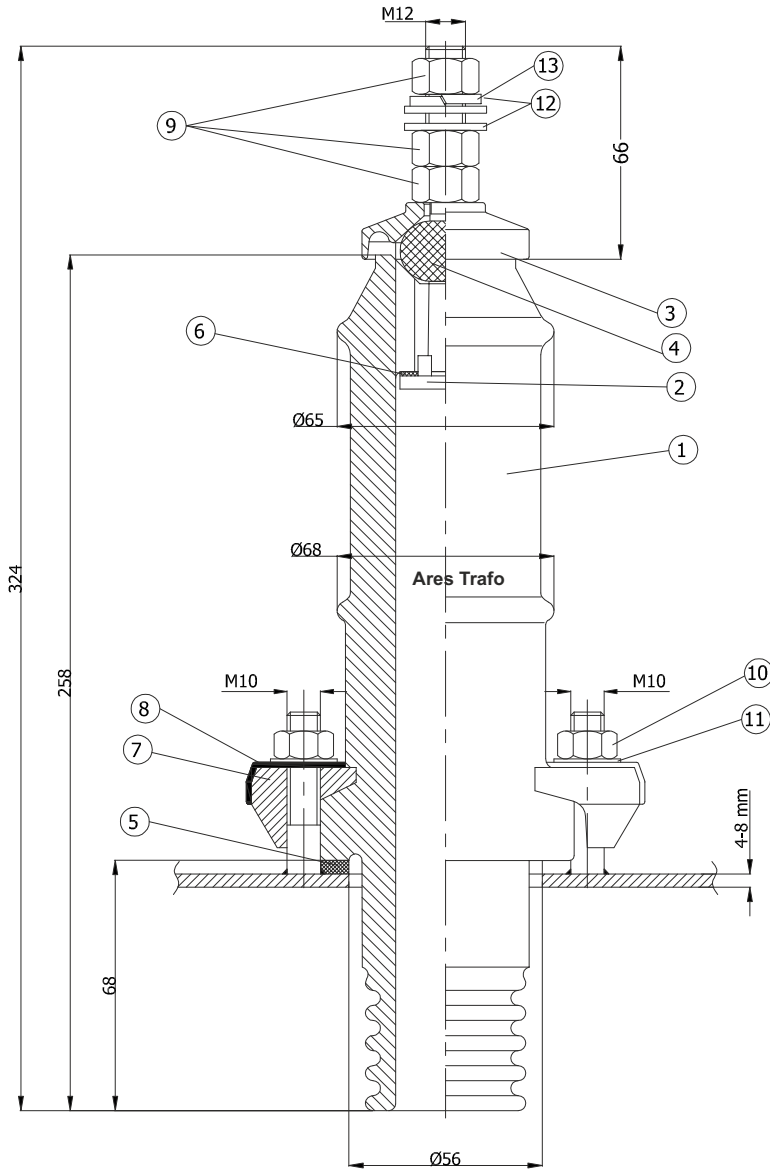


Pos	Description	Material	Qty
1	Porcelain Upper Part	C110	1
2	Porcelain Bottom Part	C110	1
3	Stem+Flag	E-Cu+Brass	1
4	Washer	Brass □ A2-70 □	1
5	Brass Lock Nut M24	Brass	4
6	Flange Gasket "N"	Cork	1
7	Internal Gasket "X"	Presspan	1
8	Internal Gasket "P"	Presspan	1
9	Plain Gasket "M"	Cork	1

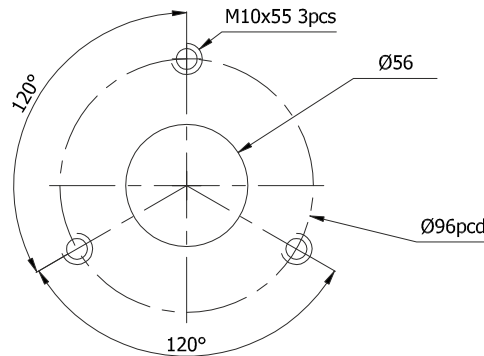
□ -60°C FVMQ Gasket (Optional)

Pos	Description	Material	Qty
1	Porcelain Upper Part	C110	1
2	Porcelain Bottom Part	C110	1
3	Stem+Flag	E-Cu+Brass	1
4	Flat Washer	Brass □ A2-70 □	1
5	Brass Lock Nut M24	Brass	4
6	Flange Gasket "N"	Cork	1
7	Internal Gasket "R"	Presspan	1
8	Internal Gasket "X"	Presspan	1
9	Plain Gasket "M"	Cork	1



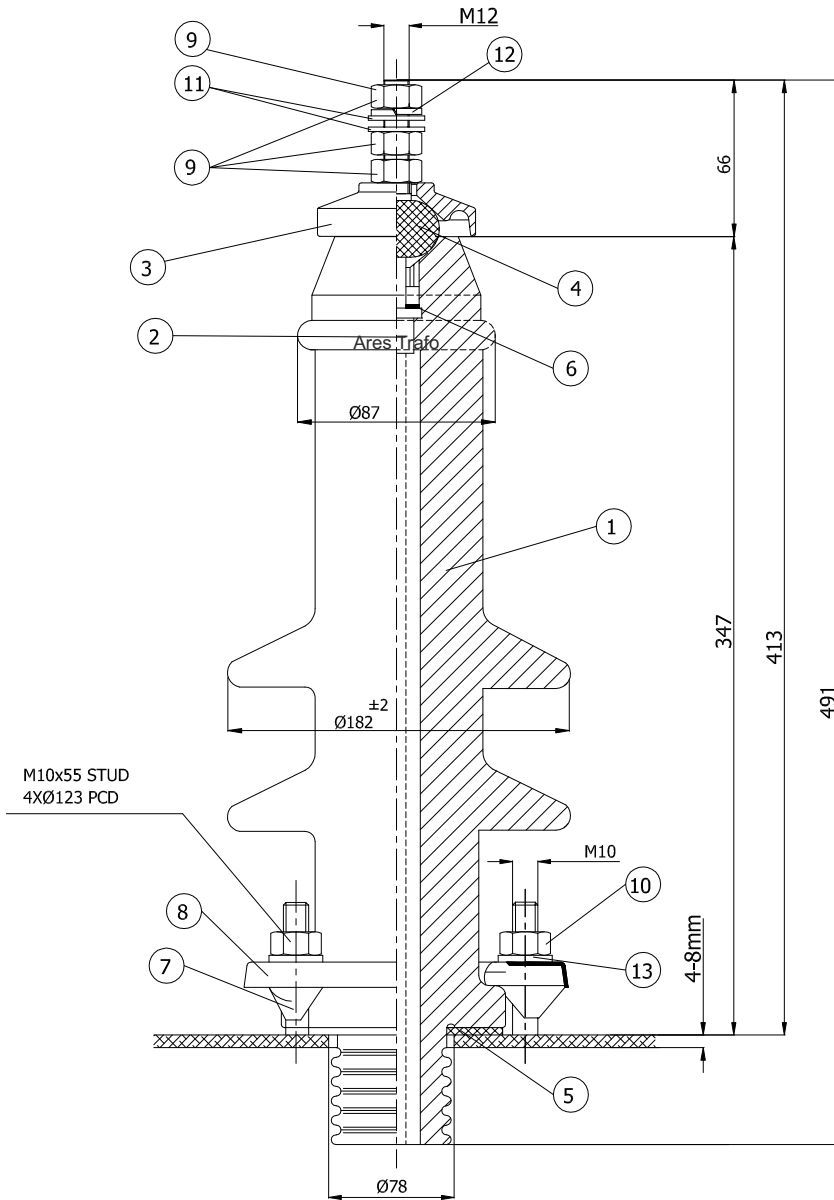


Pos	Description	Material	Qty
1	Porcelain	C110	1
2	Stem	Brass	1
3	Brass Cap "E"	Brass	1
4	"J" Gasket	NBR	1
5	Gasket "N"	Cork	1
6	Gasket "O"	Presspan	1
7	Alu. Clamping	Aluminium	3
8	Fixing Ring	St37 zinc □ A2-70 □	1
9	M12 Nut	Brass	3
10	M10 Nut	St37 zinc □ A2-70 □	3
11	Washer For M10	St37 zinc □ A2-70 □	3
12	Washer For M12	Brass	3
13	Spring Washer For M12	St37 zinc □ A2-70 □	1

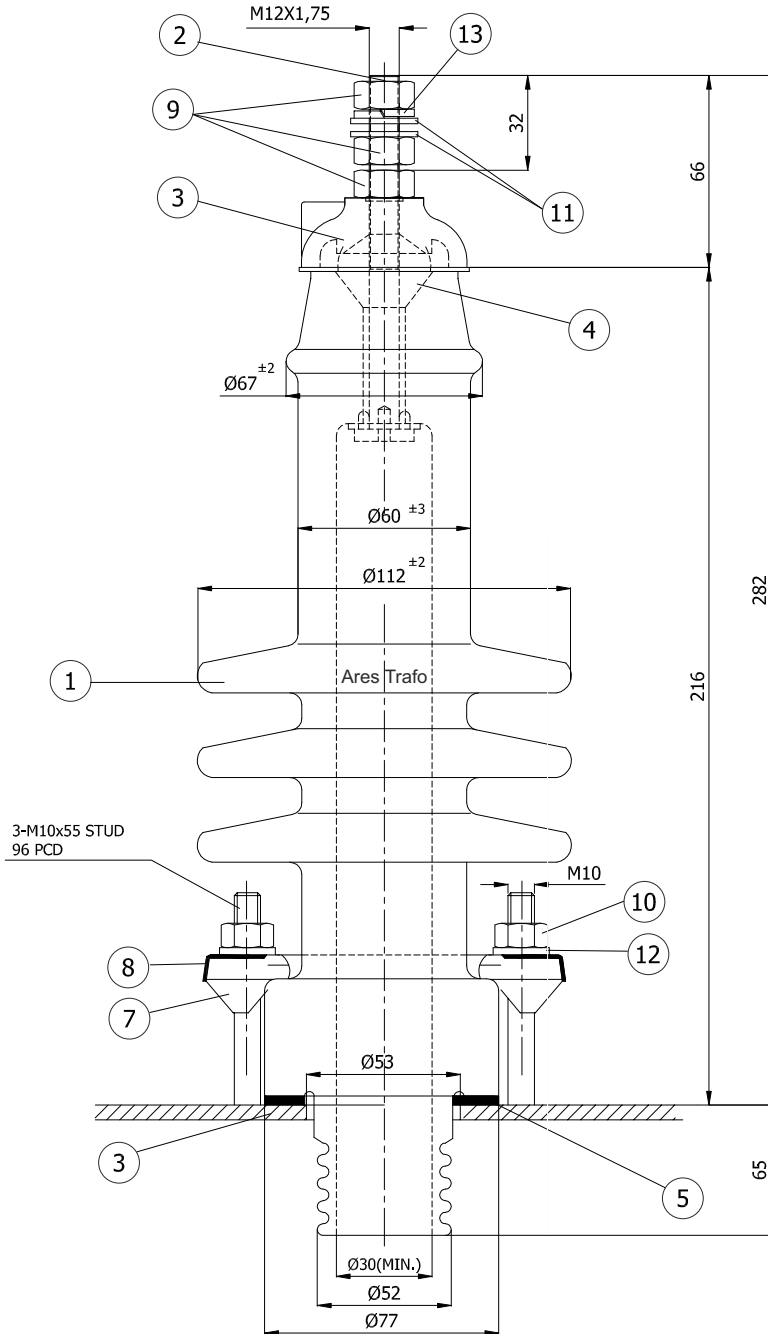


□ -60°C FVMQ Gasket (Optional)

Pos	Description	Material	Qty
1	Porcelain	C110	1
2	Stem	Brass	1
3	Brass Cap "E"	Brass	1
4	"J" Gasket	NBR	1
5	Gasket "N"	Cork	1
6	Gasket "O"	Presspan	1
7	Alu. Clamping	Aluminium	4
8	Fixing Ring	St37 zinc □ A2-70 □	1
9	M12 Nut	Brass	3
10	M10 Nut	St37 zinc □ A2-70 □	4
11	Washer For M12	Brass	2
12	Spring Washer For M12	St37 zinc □ A2-70 □	1
13	Washer For M10	St37 zinc □ A2-70 □	4



□ -60°C FVMQ Gasket (Optional)

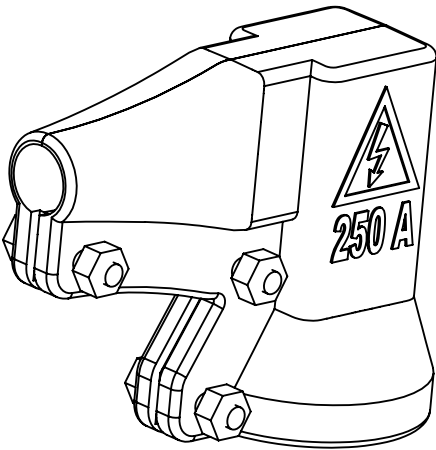


Pos	Description	Material	Qty
1	Porcelain	C110	1
2	Stem	Brass	1
3	Brass Cap "E"	Brass	1
4	"J" Gasket	NBR	1
5	Gasket "N"	Cork	1
6	Gasket "O"	Presspan	1
7	Alu. Clamping	Aluminium	3
8	Fixing Ring	St37 zinc □ A2-70 □	1
9	M12 Nut	Brass	3
10	M10 Nut	St37 zinc □ A2-70 □	3
11	Washer For M12	Brass	2
12	Washer For M10	St37 zinc □ A2-70 □	3
13	Spring Washer For M12	St37 zinc □ A2-70 □	1

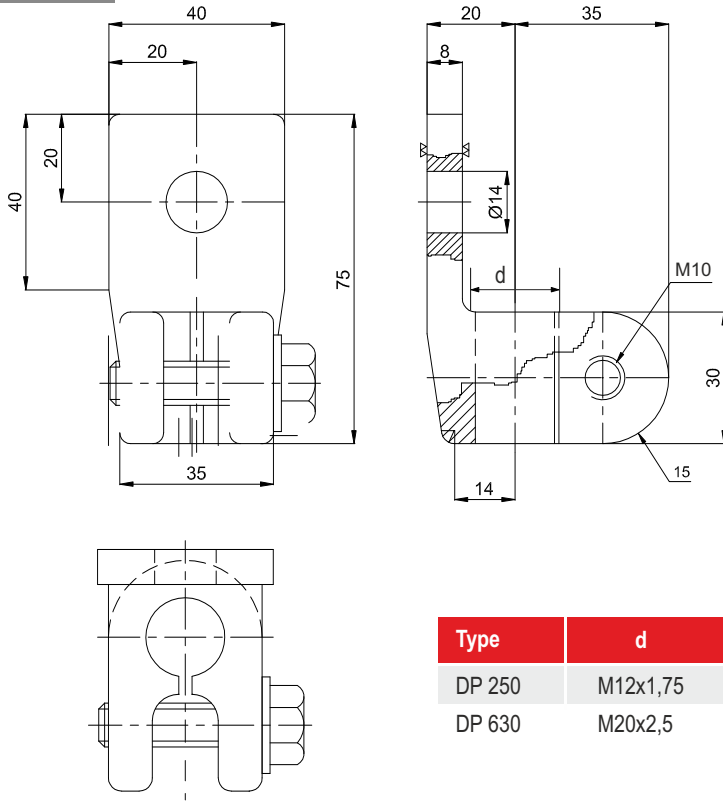
□ -60°C FVMQ Gasket (Optional)

LV BUSHING COVERS

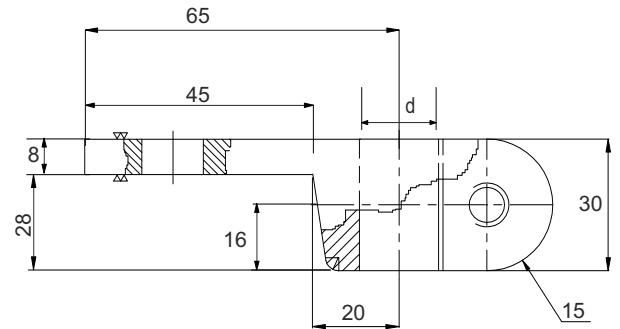
ARS - 250A	: X-160kVA Transformers
ARS - 630A	: 250-400kVA Transformers
ARS - 1250A	: 630-800kVA Transformers
ARS - 2000A	: 1000-1250kVA Transformers
ARS - 3150A	: 1600-2000kVA Transformers



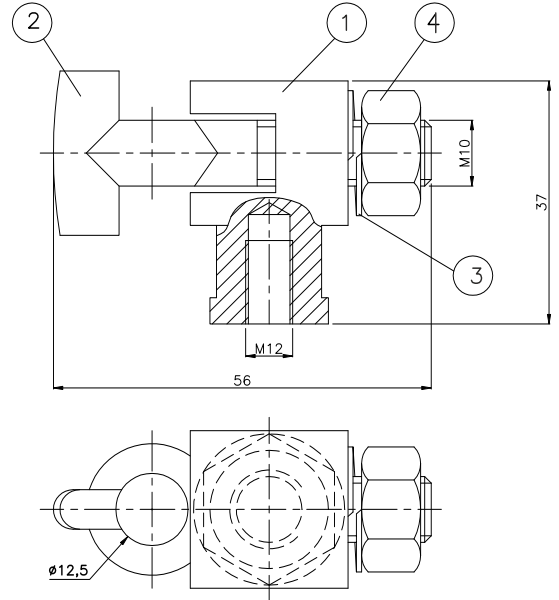
FORM DP



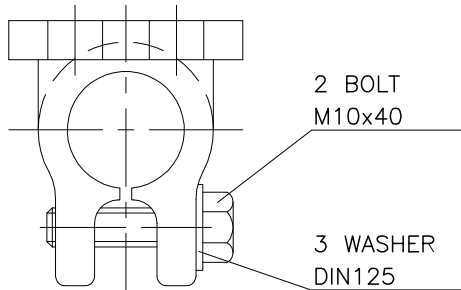
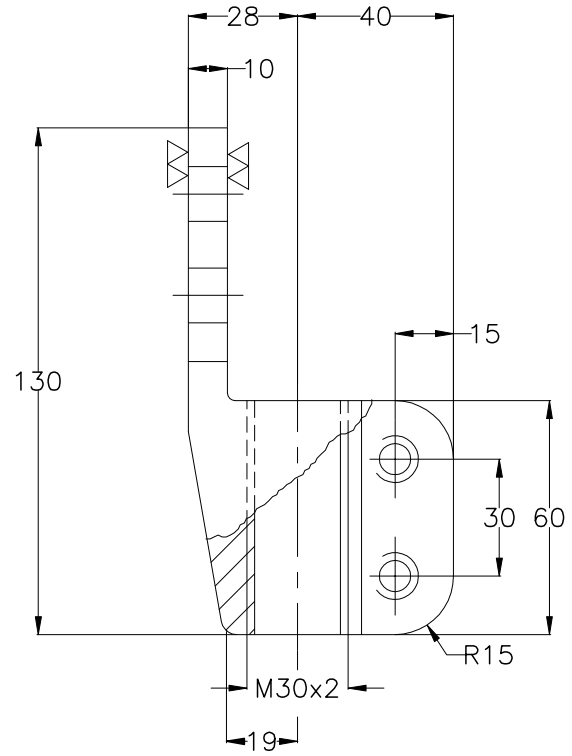
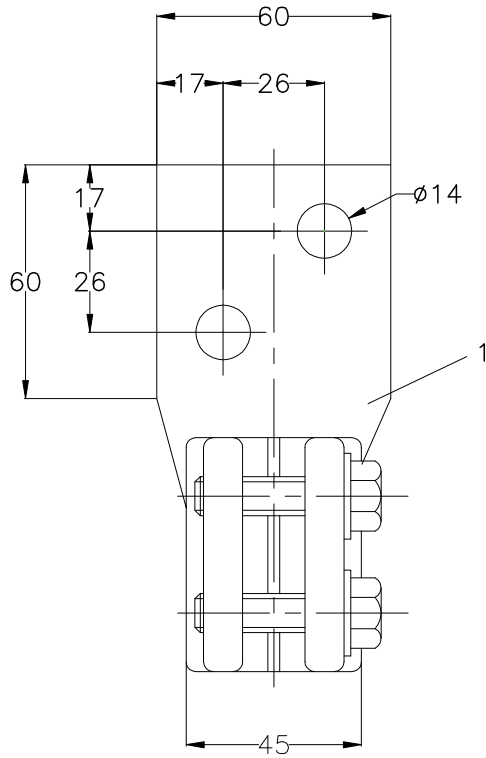
FORM DR



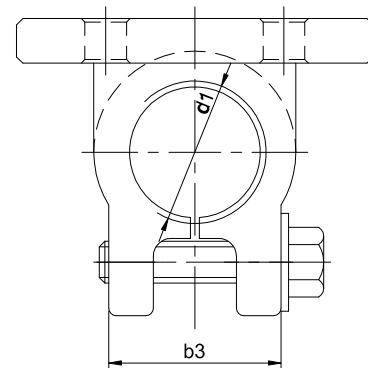
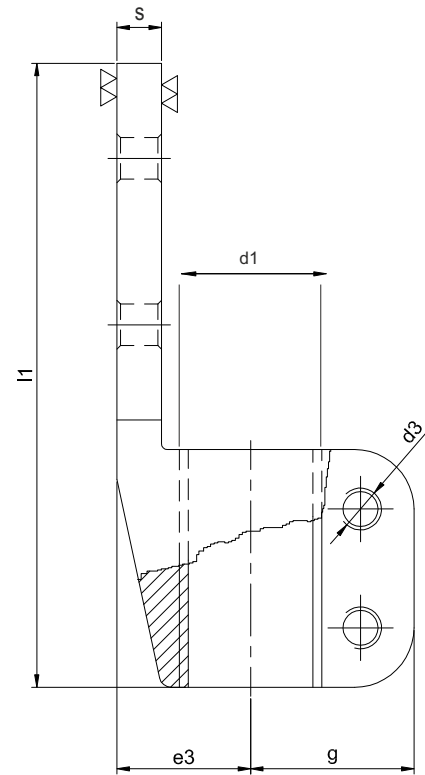
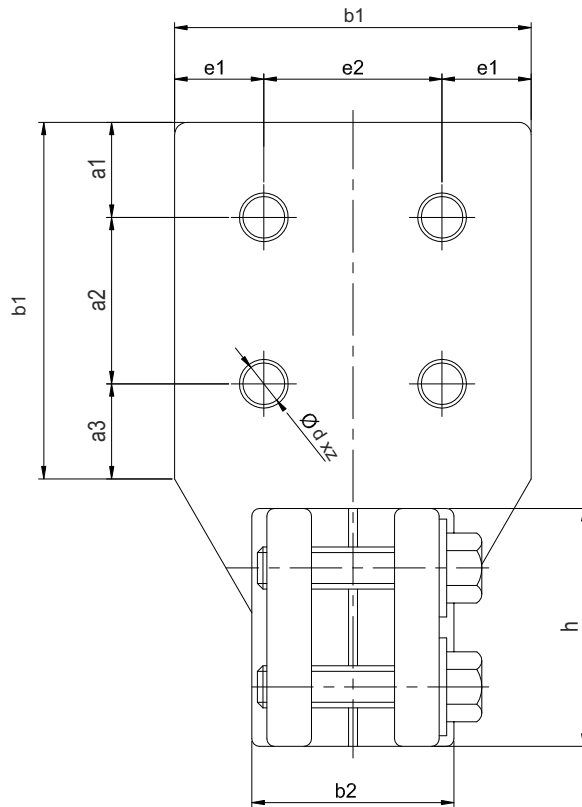
ANSI CLAMP



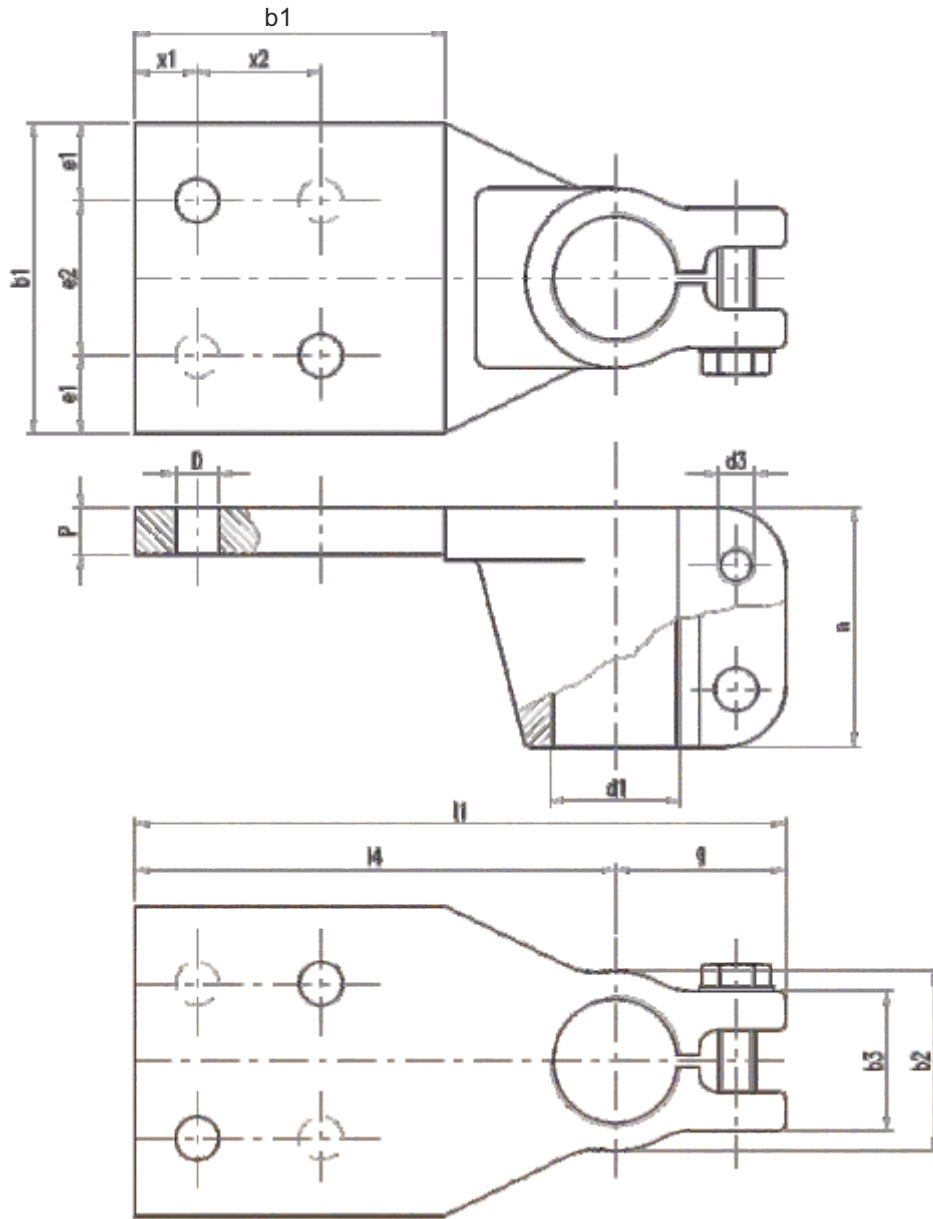
Pos	Description	Material	Qty
1	Ansi Clamp M10	CuZn40Pb2	1
2	Eye Bolt M10	CuZn40Pb2	1
3	Spring Washer	St37 zinc	1
4	Nut M10	CuZn40Pb2	1



Pos	Description	Material	Qty
1	Washer M12	St37 zinc □ A2-70 □	2
2	Bolt M12x65	St37 zinc □ A2-70 □	2
3	Connection Flag	CuZn40Pb2	1

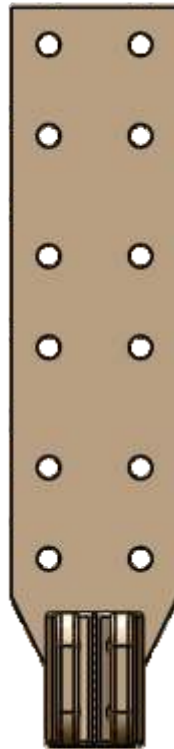
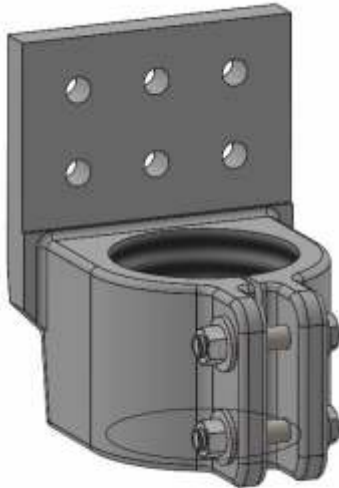
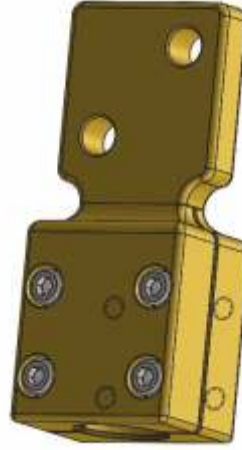
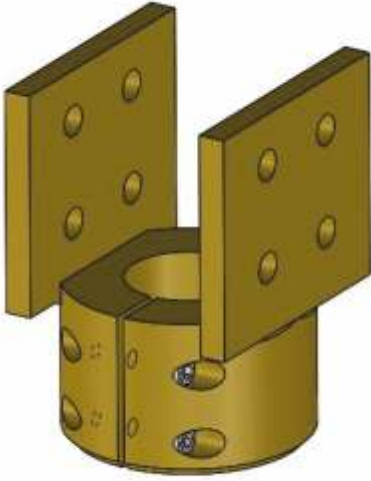


Type	d1	b1	e1	e2	b2	e3	h	a1	l1	a2	s	g	z	D	w(kg)
FP 2000	M42x3	100	25	50	58	40	80	20	190	40	15	55	4	14	3.20
FP 3150	M48x3	120	30	60	68	45	80	20	210	40	15	55	4	14	4.35
FP 4500	M55x3	150	40	75	85	30	90	40	250	70	20	75	4	18	7.55



Type	Current A	b1	b2	b3	d1	d3	e1	e2	g	l1	l4	n	p	x1	x2	z	D
ER 1000	1000	60	45	36	M30x2	M10	17	26	40	135	95	60	10	17	26	2	14
FR 2000	2000	100	58	45	M42x3	M12	25	50	55	210	155	80	15	20	40	4	14
FR 3150	3150	120	68	58	M48x3	M12	30	60	55	230	175	80	15	20	40	4	14

Material: Copper or Brass
Surface : Tin plated or silver plated



HIGHT CURRENT BUSHINGS

Rated Voltage
24 kV ~ 36 kV

Rated Current
4000 ~ 20000 A

Standart
IEC-60137

Types
Oil filled / communicating, OIP Condenser



OIP CONDENSER BUSHINGS

Rated Voltage
Upto 170 kV

Rated Current
Upto 4000 A

Standart
IEC-60137

Connection
Draw lead / Draw Rod / Stem type

Housing
Porcelain / Composite



RIP CONDENSER BUSHINGS

Rated Voltage
Upto 145 kV

Rated Current
Upto 6300 A

Standart
IEC-60137

Connection
Draw lead / Draw Rod / Stem type

Housing
Composite Silicon Rubber



Under technology collaboration with
MOSER GLASER
Current and voltage – our passion
Switzerland



FIBREGLASS CYLINDERS & END RINGS

Range
~2200 mm dia
~3500 mm height

Material
Filament wound cylinders in epoxy / polyester resin

Typical Applications

- Power / Dry type transformers
- EHV test transformers
- Test equipments
- Tap changers



Guard Rings for
Coil winding application
of Power transformers



RETROFIT SOLUTIONS

Inter-changeable solutions with major
International brands.



PERFORMANCE POWERED BY INNOVATION

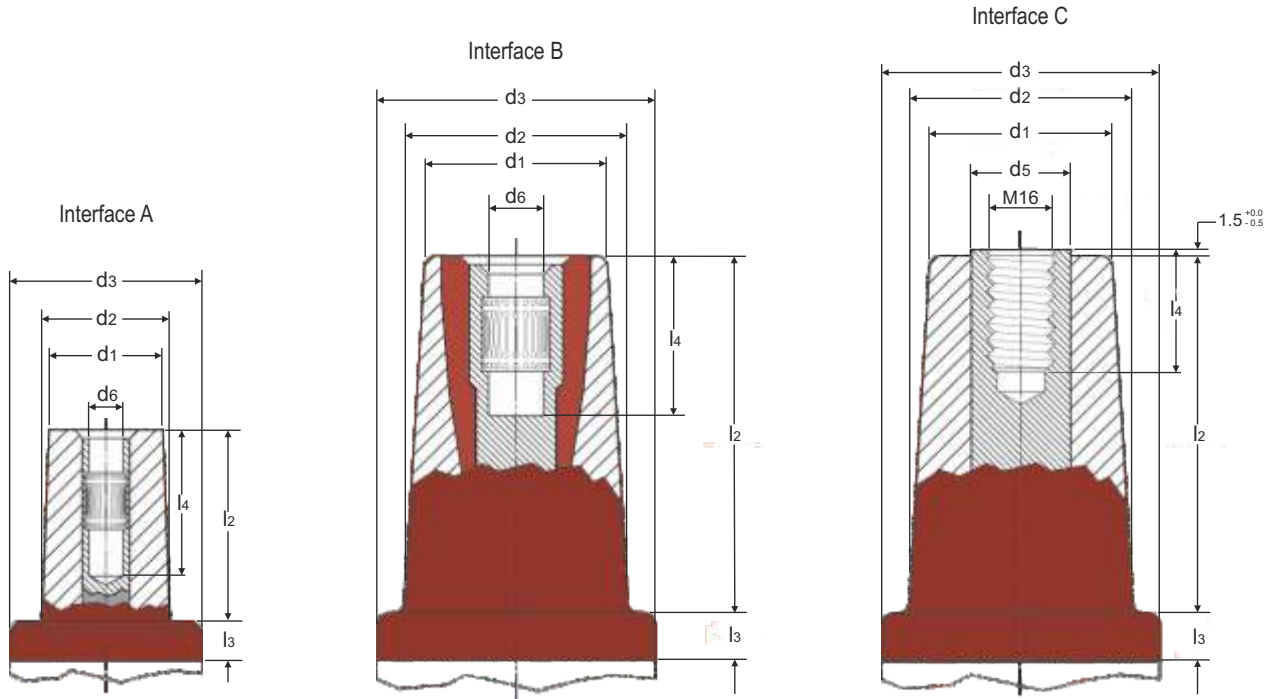




APPLICATION

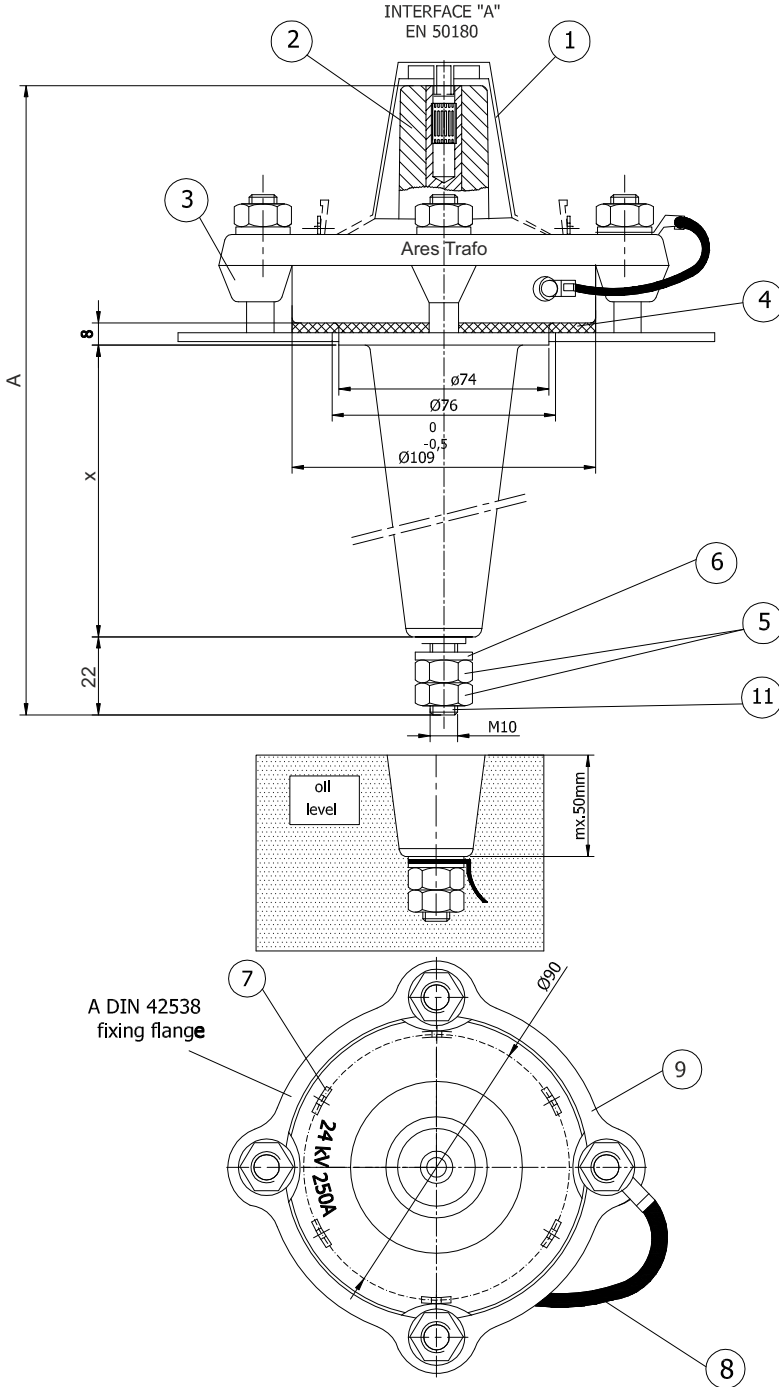
Insulated bushing for oil /dry type transformers, switchgears, capacitors...

Protective Cover ,Earthing jumper and Stainless Steel M5 Bolt ,
1 pcs A DIN 42538 Fixing flange+4 pcs E DIN 42538 Alu clamp support ,
2 pcs Brass washers and 2 pcs Brass Nuts, NBR Gasget and Package

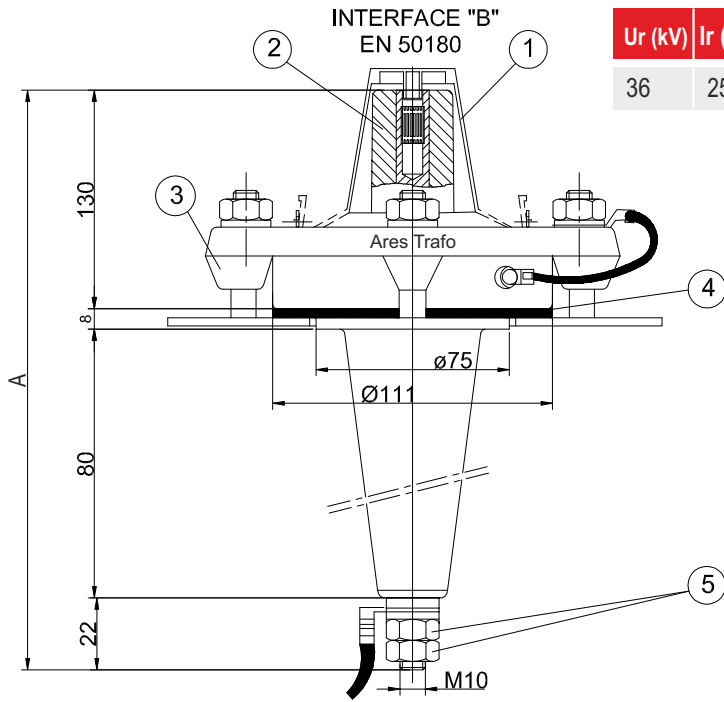


U _i (kV)	I _r (A)	d ₁ (mm)	d ₂ ±0,2 (mm)	d ₃ ±0,2 (mm)	d5 min. (mm)	d6 (mm)	l ₂ (mm)	l ₂ en az (mm)	l4 min. (mm)	contact type	Interface Type
12-24	250	31 ^{+0,1} _{-0,3}	32,5	48,5	-	7,9 ^{+0,02} _{-0,05}	48 ⁰ _{-0,2}	9	32	Interface	A
36	250	46 ± 0,2	56	70	-	14 ^{+0,00} _{-0,04}	90 ± 0,2	11	40	Interface	B
12-24-36	400	46 ± 0,2	56	70	-	14 ^{+0,00} _{-0,04}	90 ± 0,2	11	40	Interface	B
12-24-36	630	46 ± 0,2	56	70	22	-	90 ± 0,2	11	29	M16x2	C

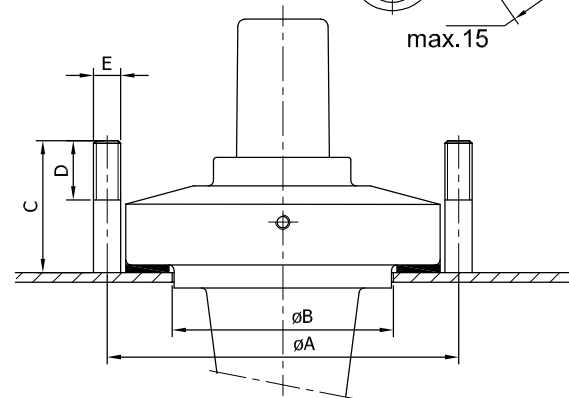
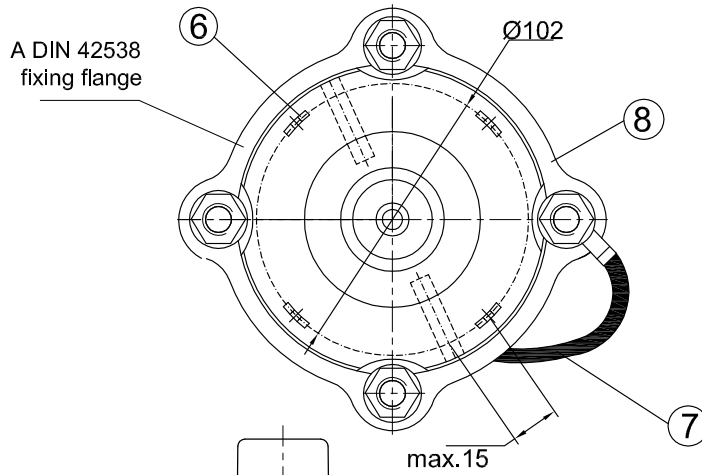
Ur (kV)	Ir (A)	A	X	Ød1 (mm)	Ød2 (mm)	Ød3 (mm)	Ød4 (mm)	L (mm)	L1 (mm)	L2 (mm)	Interface
12-24	250	189	72	14	8.1	9.4	7.9	34	7.5	15	A
		224	108	14	8.1	9.4	7.9	34	7.5	15	A
		284	167	14	8.1	9.4	7.9	34	7.5	15	A



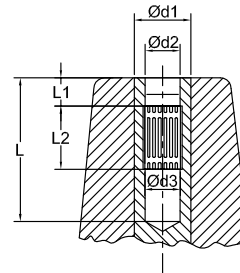
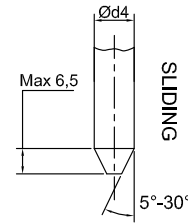
Pos	Description	Material	Qty
1	Protective Cover	PA 6	1
2	Connection Interface	Epoxy	
3	Alu-Clamping E	Aluminium	4
4	Gasket	NBR ☐ Cork ☐	1
5	Connection Nut	Brass	2
6	M10 Washer	Brass	1
7	Fixing Shoe	A2-70	6
8	Earth Jumper		1
9	Fixing Flange A	St37 zinc ☐ A2-70 ☐	1
10	Main Body	Epoxy Resin	1
11	Connection Bolt	Cu-ETP	1



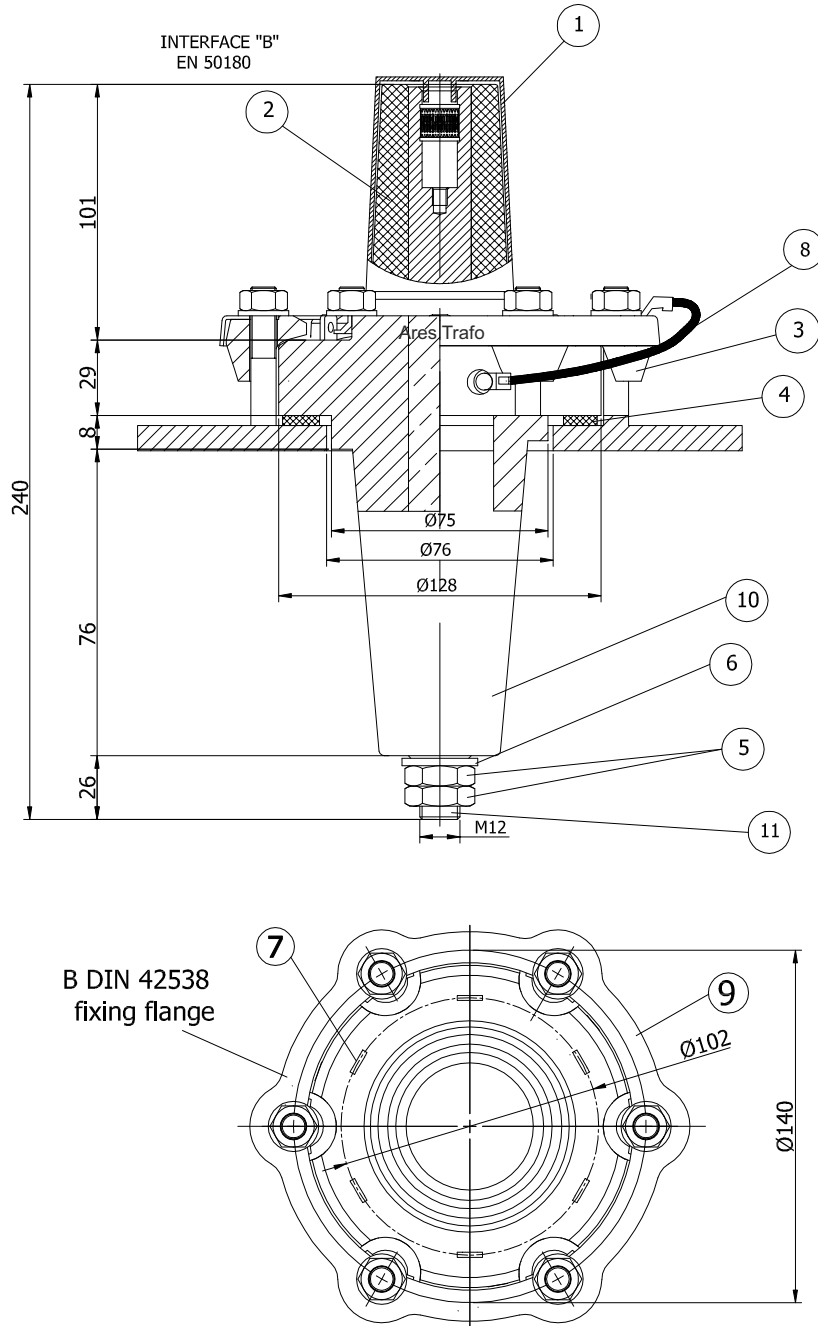
Ur (kV)	Ir (A)	Type	(A)	Ød1 (mm)	Ød2 (mm)	Ød3 (mm)	Ød4 (mm)	L (mm)	L1 (mm)	L2 (mm)	Interface
36	250	Sliding	240	20	14.1	15.3	14-0.04	42	14	15	B



STANDARD	A	B	C	D	E	FIXING STUDS	TYPE
DIN 42538	123	76	55	25	M10	4	A

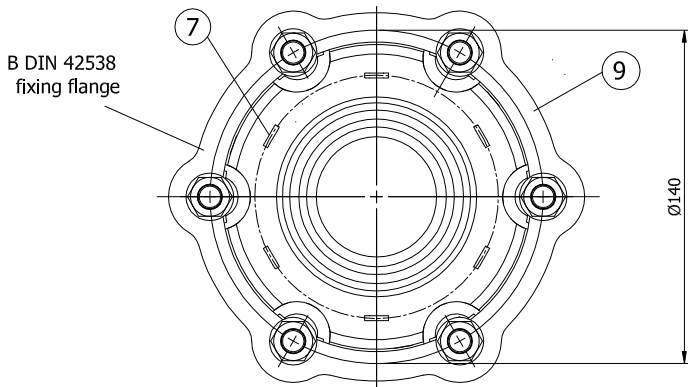
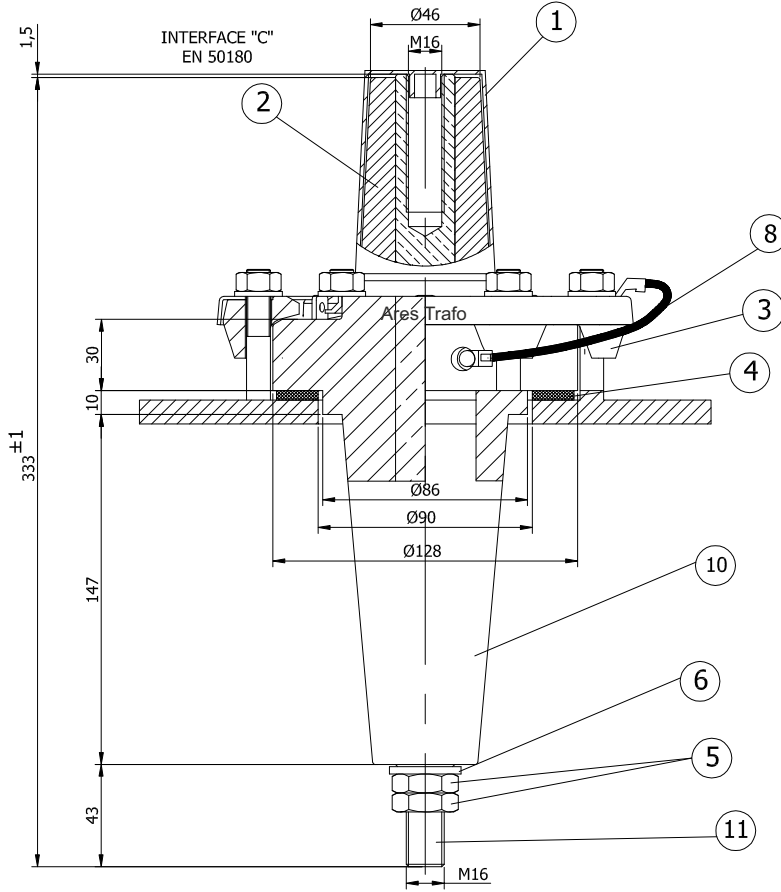


Pos	Description	Material	Qty
1	Protective Cover	PA 6	1
2	Connection Interface	Epoxy	
3	Alu-Clamping E	Aluminium	4
4	Gasket	NBR □ Cork □	1
5	Connection Nut	Brass	2
6	Fixing Shoe	A2-70	4
7	Earth Jumper		1
8	Fixing Flange A	St37 zinc □ A2-70 □	1
9	Main Body	Epoxy Resin	1
10	Connection Bolt	Cu-ETP	1

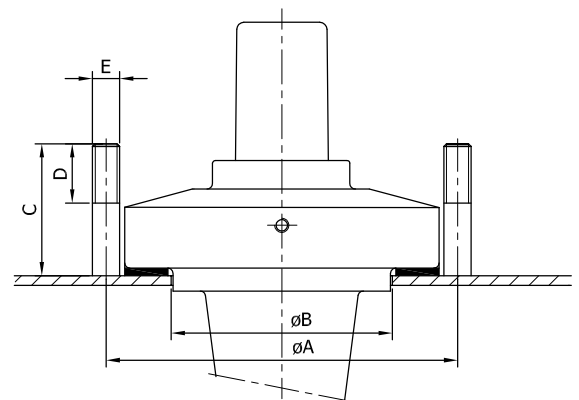


Pos	Description	Material	Qty
1	Protective Cover	PA 6	1
2	Connection Interface	Epoxy	
3	Alu-Clamping E	Aluminium	6
4	Gasket	NBR ☐ Cork ☐	1
5	Connection Nut	Brass	2
6	M10 Washer	Brass	1

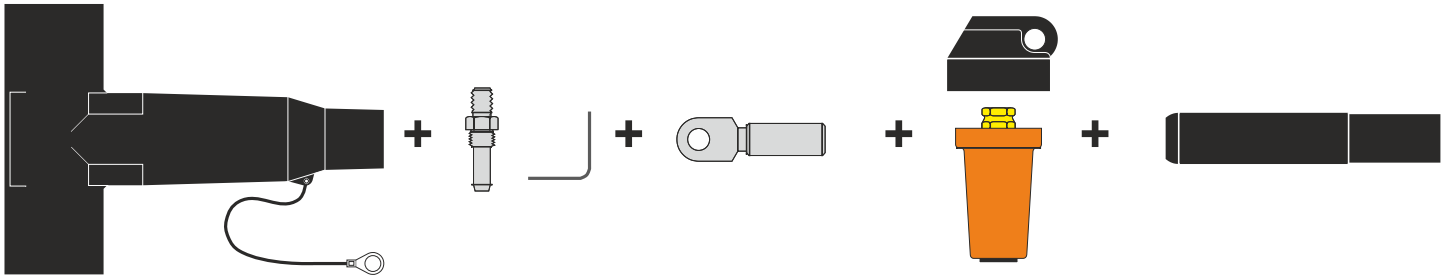
Pos	Description	Material	Qty
7	Fixing Shoe	A2-70	6
8	Earth Jumper		1
9	Fixing Flange A	St37 zinc ☐ A2-70 ☐	1
10	Main Body	Epoxy Resin	1
11	Connection Bolt	Cu-ETP	1



Pos	Description	Material	Qty
1	Protective Cover	PA 6	1
2	Connection Interface	Epoxy	
3	Alu-Clamping E	Aluminium	6
4	Gasket	NBR ☐ Cork ☐	1
5	Connection Nut	Brass	2
6	M16 Washer	Brass	1
7	Fixing Shoe	A2-70	6
8	Earth Jumper		1
9	Fixing Flange A	St37 zinc ☐ A2-70 ☐	1
10	Main Body	Epoxy Resin	1
11	Connection Bolt	Cu-ETP	1



STANDARD	A	B	C	D	E	FIXING STUDS	TYPE
DIN 42538	123	76	55	25	M10	4	A



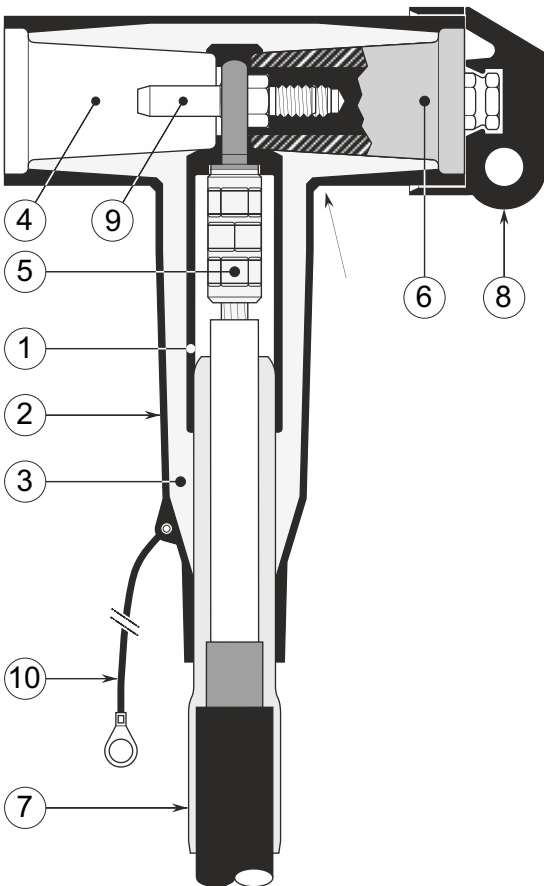
L type cable connector

Contact / "L" wrench

Cable connecting lug

Basic insulating
plug +
rubber cap
(K)(M)400BIPA

Cable adaptor



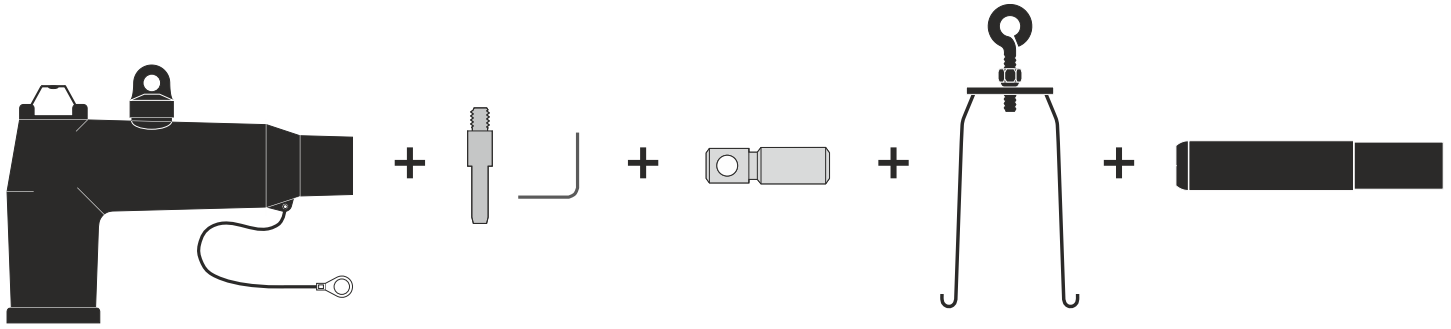
Separable connector comprising

1. Conductive EPDM insert.
2. Conductive EPDM outer surface layer.
3. Insulating EPDM layer
moulded between the insert
and the outer surface layer.
4. Type B - 630 A interface C
as described by CENELEC
EN 50180 and 50181.
5. Conductor lug.
6. Cable adaptor.
7. Earthing lead.

The screen break design
enables cable outer sheath
testing without removing or
dismantling the connector.

	"TEE" Type
Maximum system voltage	19/33 (36) kV
Current	630 A
Interface*	C
Contact type	Bolted
AC Voltage withstand (1 min)	76 kV-peak
Impulse voltage	less than 10 pc at 2 U ₀
Conductor size range	50-240 mm ²
Applied standard	Hd 629.1S2; HD 61442

* According to EN 50180 and EN 50181



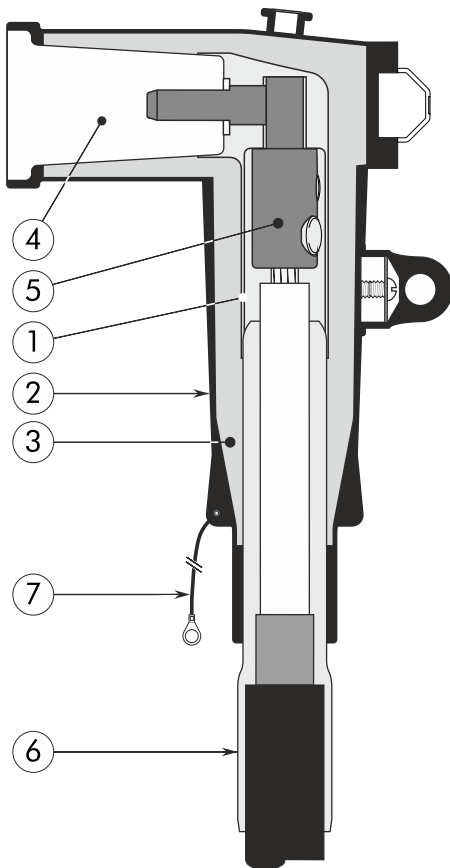
L type cable connector

Contact / "L" wrench

Cable connecting lug

Bail restraint

Cable adaptor



Separable connector comprising

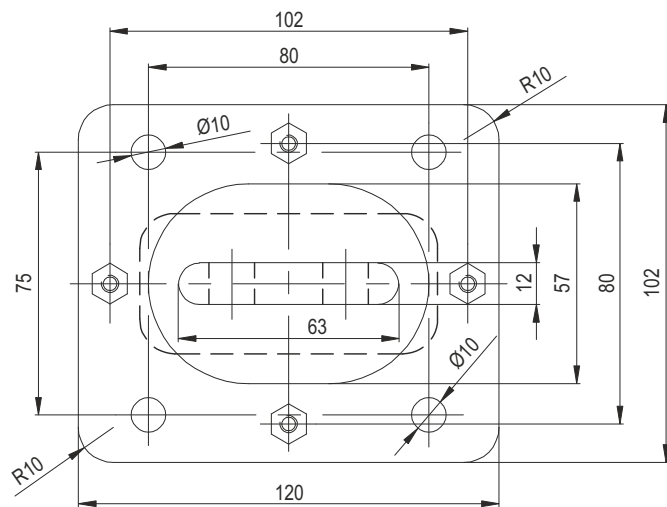
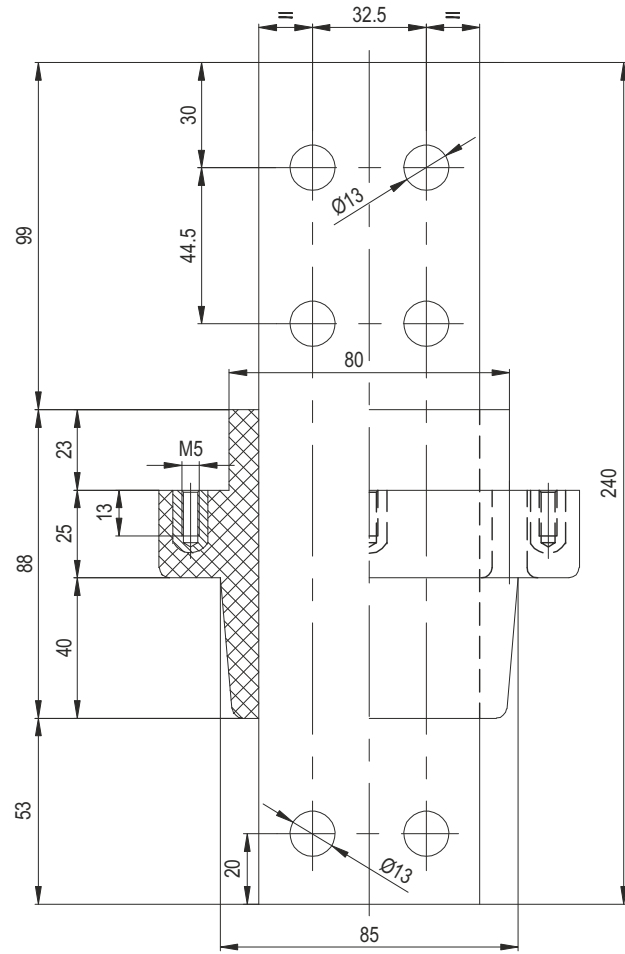
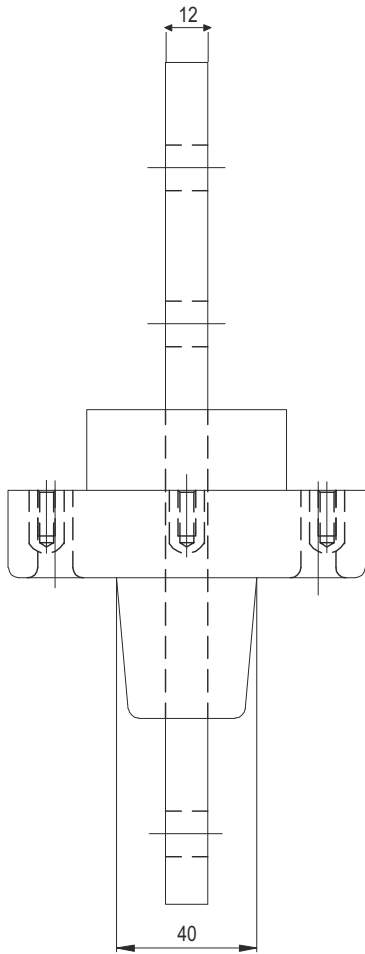
1. Conductive EPDM insert.
2. Conductive EPDM outer surface layer.
3. Insulating EPDM layer moulded between the insert and the outer surface layer.
4. Type B - 400 A interface B as described by CENELEC EN 50180 and 50181.
5. Conductor lug.
6. Cable adaptor.
7. Earthing lead.

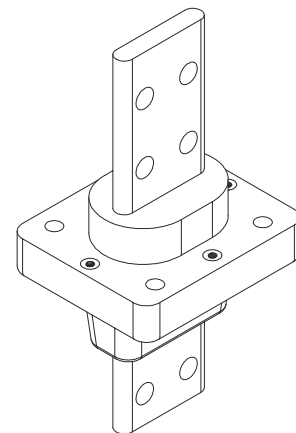
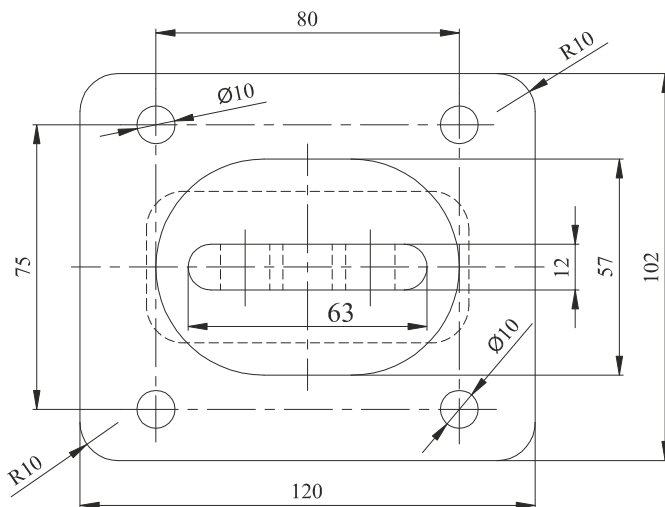
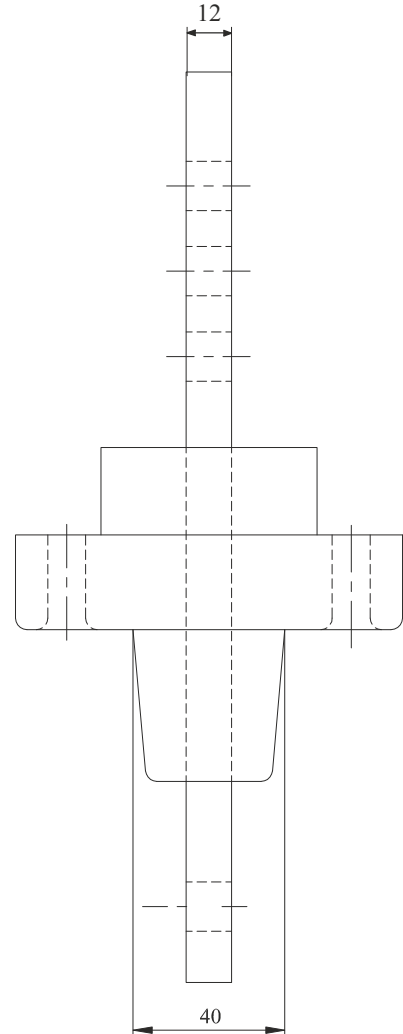
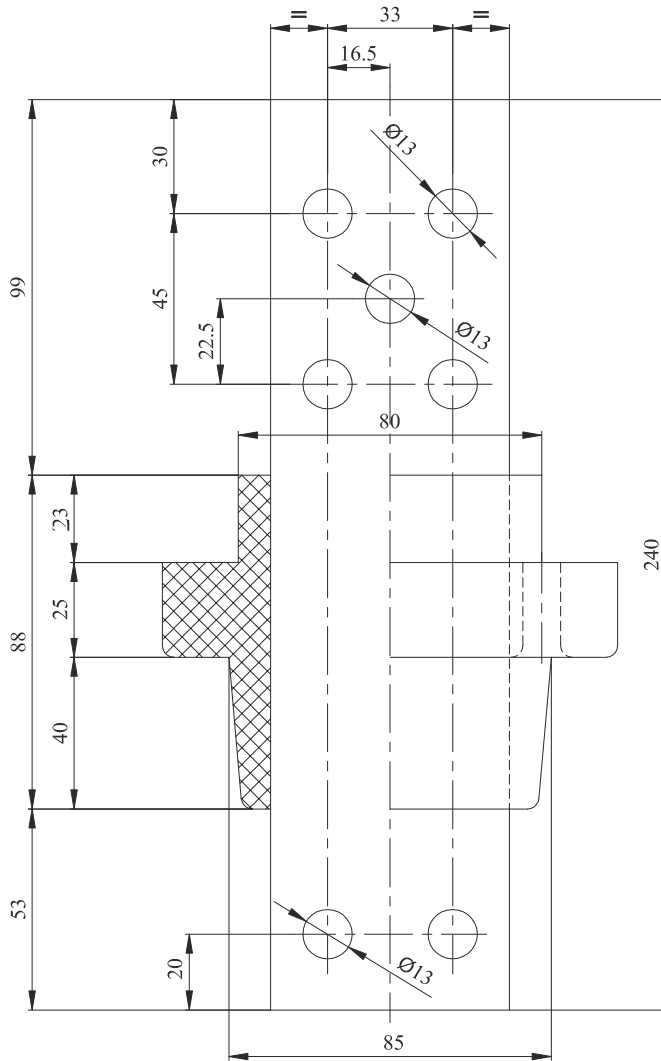
The screen break design enables cable outer sheath testing without removing or dismantling the connector.

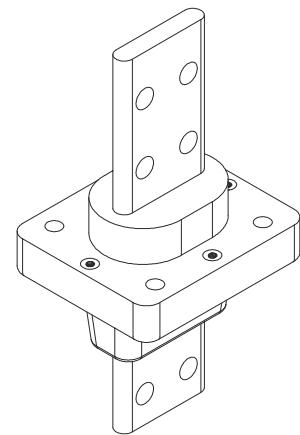
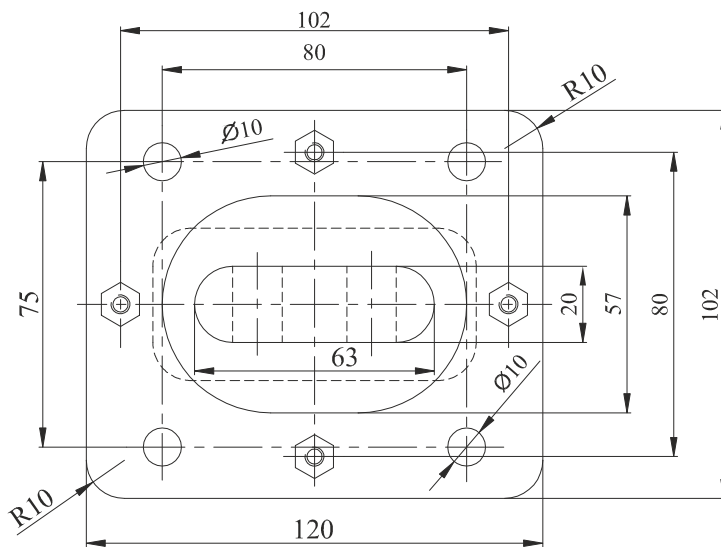
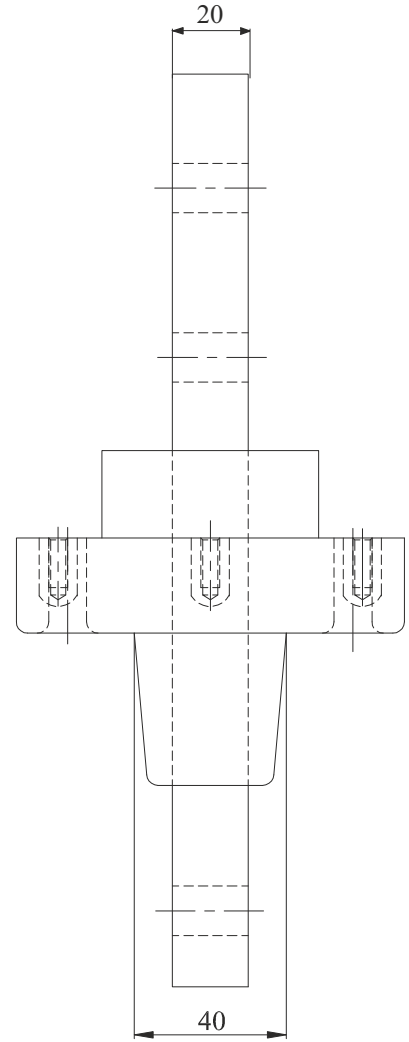
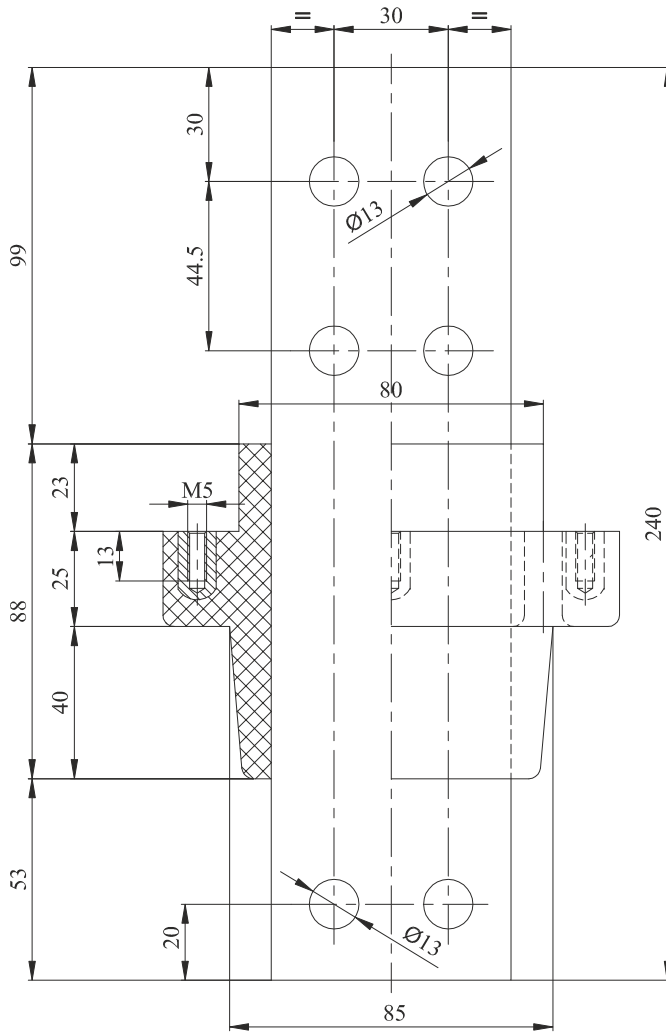
	"ELBOW" Type
Maximum system voltage	19/33 (36) kV
Current	400 A
Interface*	B
Contact type	Sliding
AC Voltage withstand (1 min)	76 kV-rms
Impulse voltage	less than 10 pc at 2 U _o
Conductor size range	50-95 mm ²
Applied standard	Hd 629.1S2; HD 61442

* According to EN 50180 and EN 50181

Insulator bus-bar LT (single phase) in resin for 1kV/1250A
for transformer

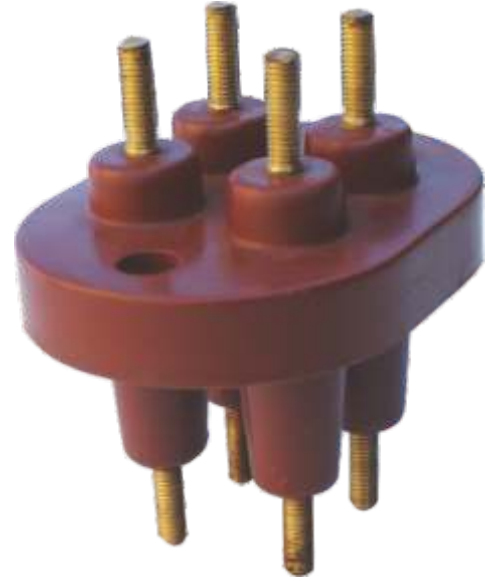
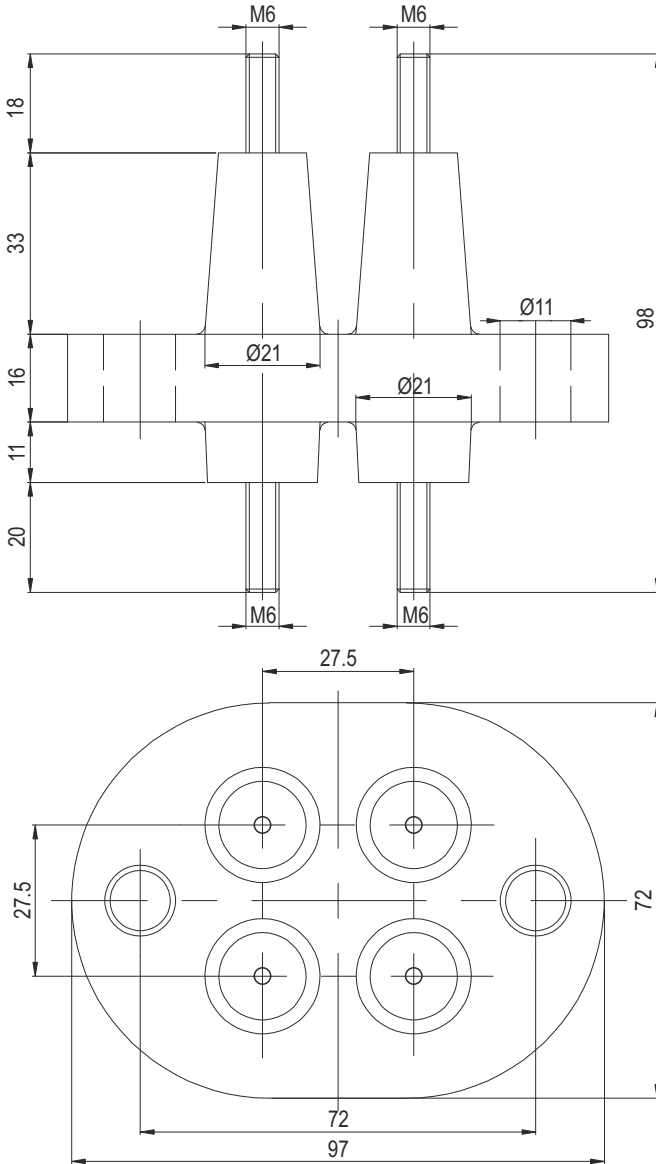






Multi Stud Bushing for 4pins

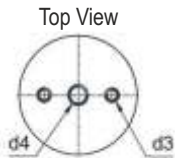
Manufactured from Epoxy Resin with four brass studs M6 on both end, and two chamfered holes to allow it to be bolted to the tank. It is required to use the correct amount of nuts and washers to suit the correct number of CT terminals being used. Tighten nuts to 2lbs/ft of torque using a calibrated torque wrench.



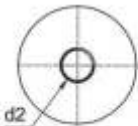


Acc.to VDE 0674 - (1993), VDE 0111 - (1980)

Part No	Type	Um (kV)	Min. Creepage (mm)	Ripples	Bending Strenght (N)	Tensile Strenght (N)	h	e	d1	d2	d3	d4	t1	t2	t3	t4	Weight (kg)	PCS/Box
1000142	A10S-500	7,2	130	2	5000	17.500	95	36	58	M16	M6	M10	26	20	10	38	0,39	16
1000145	B10S-1000		128	2	10000	30.000		46	71	M16	M10	M16	26	30	12	35	0,65	9
1000137	A10N-500	12	165	4	5000	20.000	130	36	56	M16	M6	M10	30	20	10	45	0,52	16
1048515	B10N-1000		187	5	10000	30.000		46	77	M20	M10	M16	35	30	12	47	1,00	9
1052160	C10N-1600	17,5	191	5	16000	40.000	175	66	90	M20	M10	M16	40	33	16	55	1,35	9
1000165	A20S-500		242	6	5000	20.000	175	36	70	M16	M6	M10	30	20	10	42	1,00	16
1000169	B20S-1000	24	237	6	10000	30.000		46	83	M20	M10	M16	35	30	12	47	1,50	9
1000178	A20N-500		303	6	5000	20.000	210	36	70	M16	M6	M10	30	20	10	45	1,10	16
1000181	B20N-1000	36	307	8	10000	30.000		46	85	M20	M10	M16	35	30	12	47	1,90	9
1042542	A30N-500		465	11	5000	20.000	300	36	74	M16	M6	M10	35	20	10	47	2,00	9
1000201	B30N-1000	36	488	11	10000	30.000		46	95	M24	M10	M16	45	30	12	57	3,00	6
1000204	C30N-1600		453	11	16000	40.000		66	115	M30	M10	M16	45	30	12	68	4,80	6



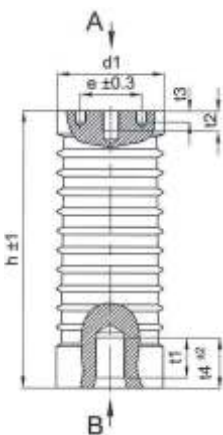
Bottom View

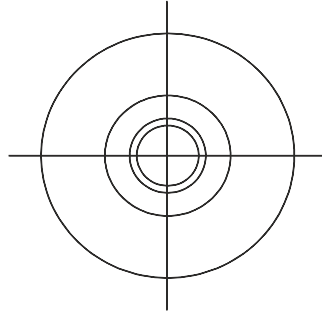
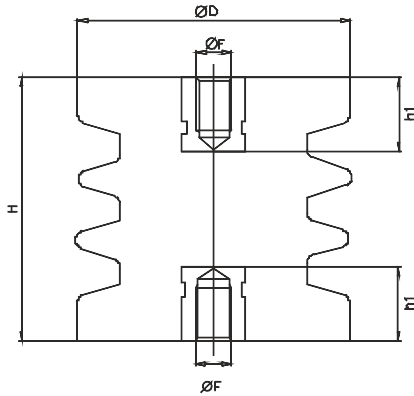


Um: Highest voltage for equipment

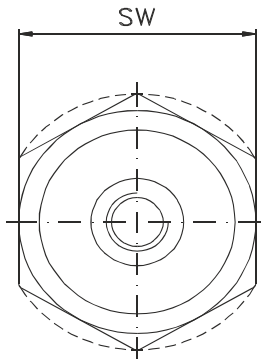
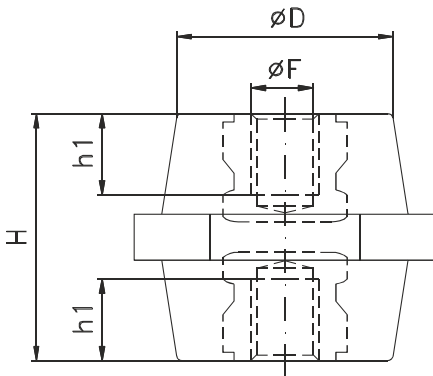
Acc.to IEC 60273 - (1990), IEC 60660 - (1999)

Part No	Type	Um (kV)	Min. Creepage (mm)	Ripples	Bending Strenght (N)	Tensile Strenght (N)	h	e	d1	d2	d3	d4	t1	t2	t3	t4	Weight (kg)	PCS/Box
1000218	J06-60	7,2	130	2	6000	17.500	95	36	58	M16	M6	M12	26	18	9	38	0,38	32
1000145	J010-60		128	2	10000	30.000		46	71	M16	M10	M16	26	30	12	35	0,65	9
1000139	J06-75	12	165	4	6000	20.000	130	36	56	M16	M6	M12	30	18	9	45	0,49	16
1048515	J010-75		187	5	10000	30.000		46	77	M20	M10	M16	35	30	12	47	1,00	9
1000167	J06-95	17,5	242	6	6000	20.000	175	36	70	M16	M6	M12	30	18	9	42	1,00	16
1000169	J010-95		237	6	10000	30.000		46	83	M20	M10	M16	35	30	12	47	1,40	9
1000179	J06-125	24	303	6	6000	20.000	210	36	70	M16	M6	M12	30	18	9	45	1,10	16
1000181	J010-125		307	8	10000	30.000		46	85	M20	M10	M16	35	30	12	47	1,82	9
1042540	J06-170	36	465	11	6000	20.000	300	36	74	M16	M6	M12	35	18	9	47	2,00	9
1000201	J010-170		488	11	10000	30.000		46	95	M24	M10	M16	46	30	12	58	3,00	6
1000203	J016-170		453	11	16000	40.000		66	115	M24	M10	M16	46	30	12	69	4,80	6

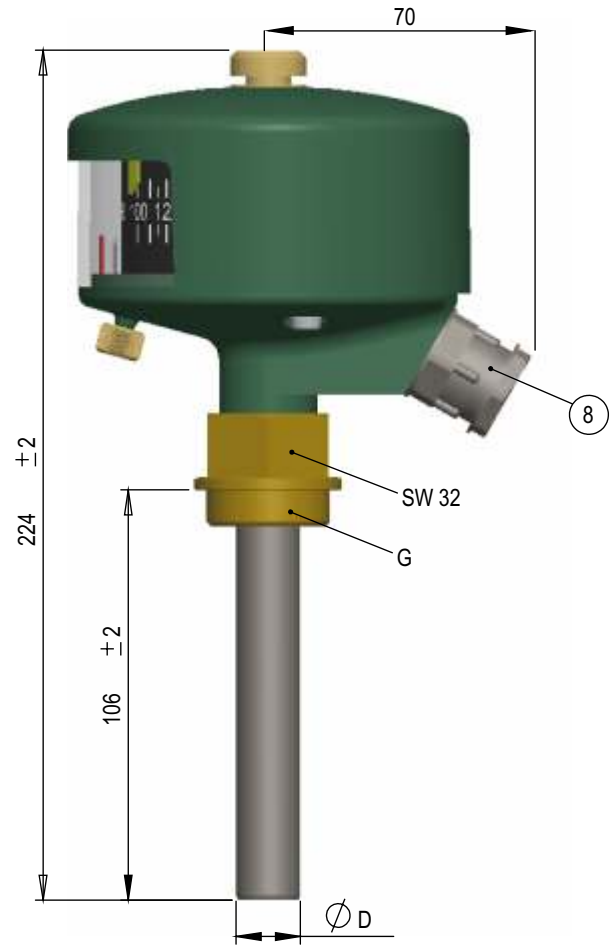
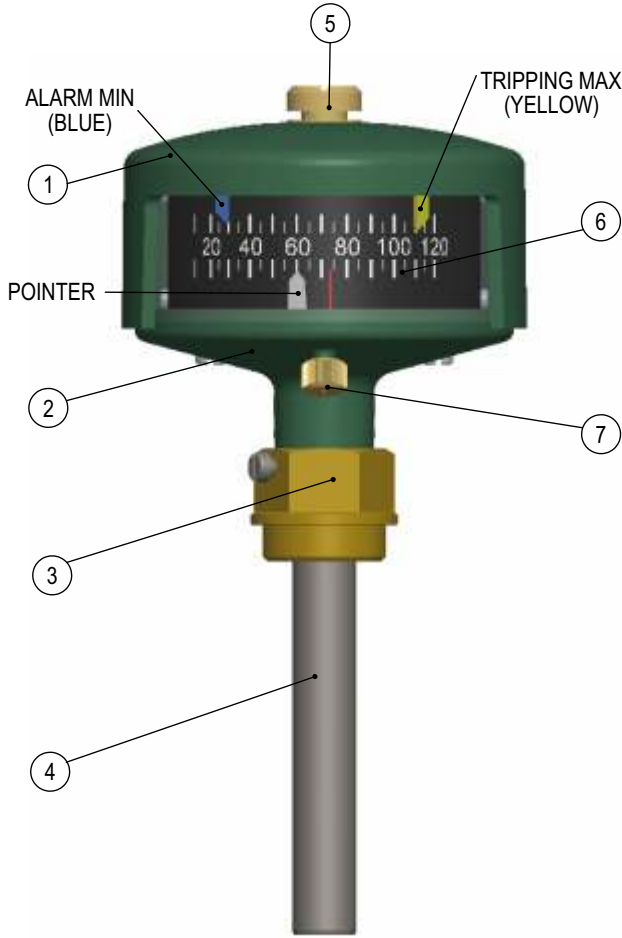




Part No.	H	ØF	ØD	h1	Min. Creepage (mm)	Ripples	Service Voltage ~kV	Test Voltage ~kV	Max. Tightening Torque Nm	Torque Strength Nm	Weight kg/100 pcs.	Box Qty.
1N-500	60	M10	55	14	93	2	3	15	40	75	23.90	50
		M10		18					40	75	63.30	
1N-1000	80	M12	83	20	123	3	5	25	70	75	64.10	8
		M16		20					95	100	64.80	

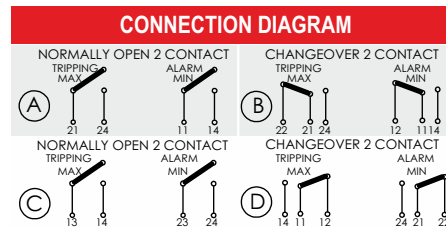


Part No.	H	ØF	SW	ØD	h1	Service Voltage ~kV	Test Voltage ~kV	Cantilever Strength kN	Tensile Strength kN	Max. Tightening Torque Nm	Torque Strength Nm	Weight kg/100 pcs.	Box Qty.
SK-303008	30	M8	30	26	8	1.5	10	3	6	20	40	5.30	80
SK-303010		M10			9			3	6	30	40	5.10	
SK-404008	40	M8	40	35	10	2	15	5	8	20	40	10.70	75
SK-404010		M10			12			6	10	40	75	11.50	
SK-505010	50	N10	50	42	14	2	15	7	14	40	75	19.00	50
SK-505012		M12			15			9	12	70	125	20.10	
SK-606010	60	M10	60	43	14	3	15	6	18	40	75	38.00	24
SK-606012		M12			16			9.5	25	70	105	38.50	



THE ORDERED BI-METAL THERMOMETER IS:

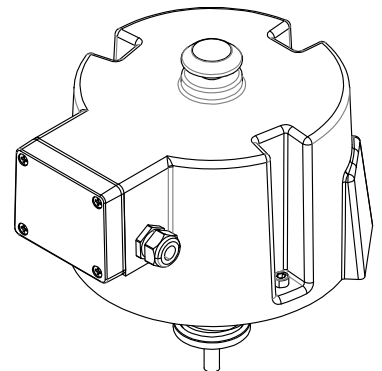
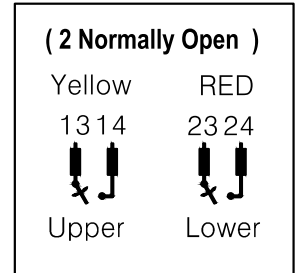
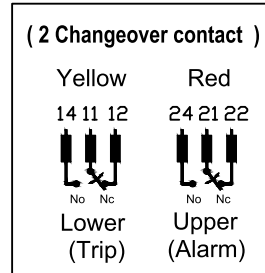
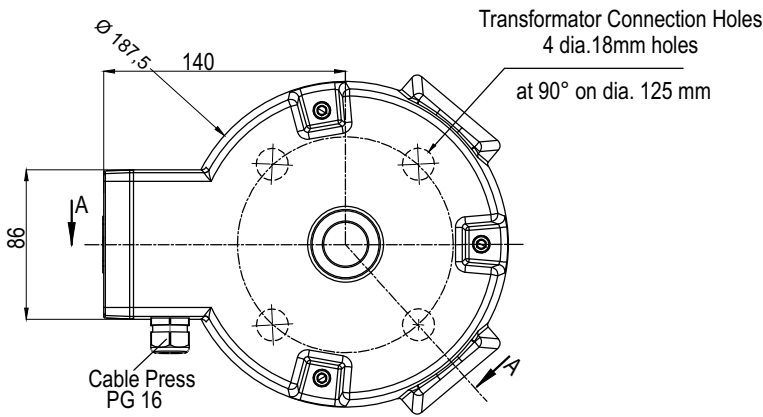
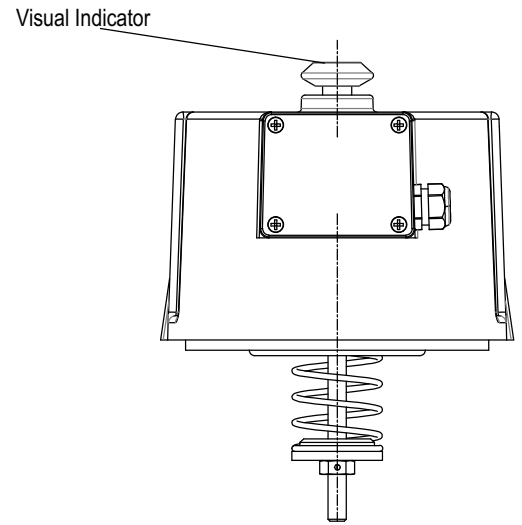
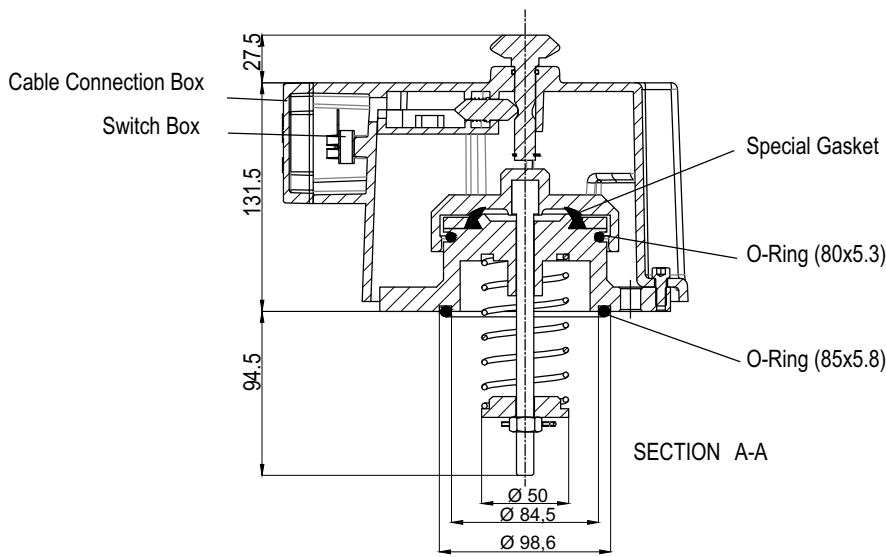
DIMENSION TABLE			
	TYPES	G	Ø D
(A)	TEK14	1/2"	15
(B)	TEK16	1"	17
(C)	TEK16*	3/4"	17



COLOUR SCALE	
(A)	RAL 7033
(B)	RAL 7032
(C)	RAL 7035
(D)	RAL 7001

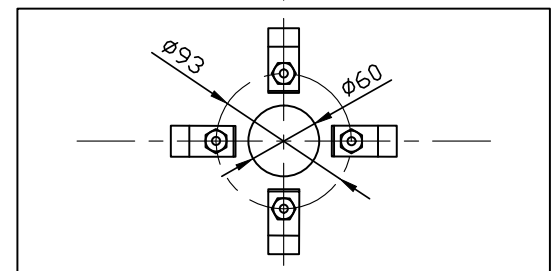
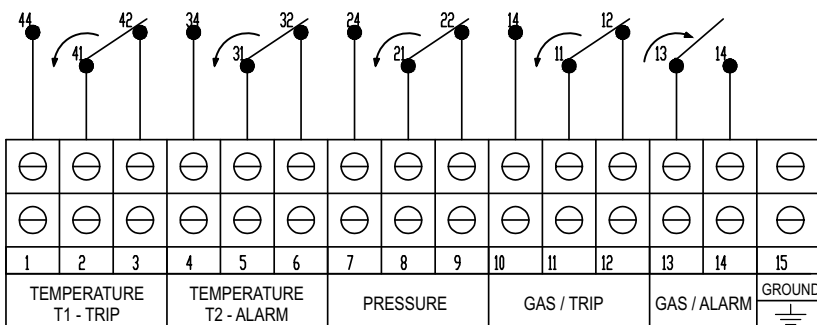
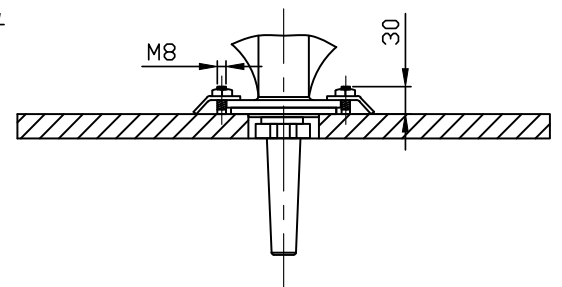
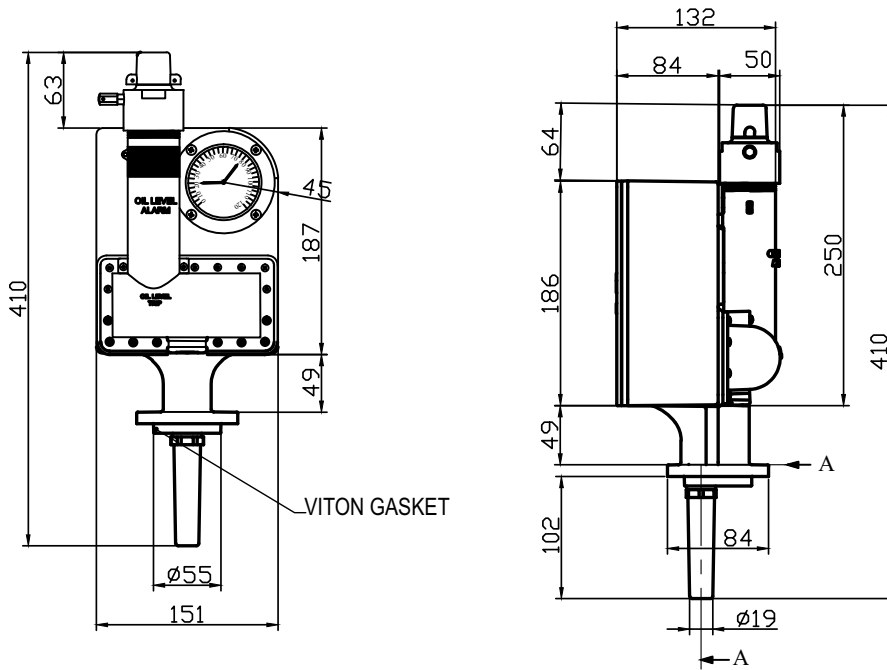
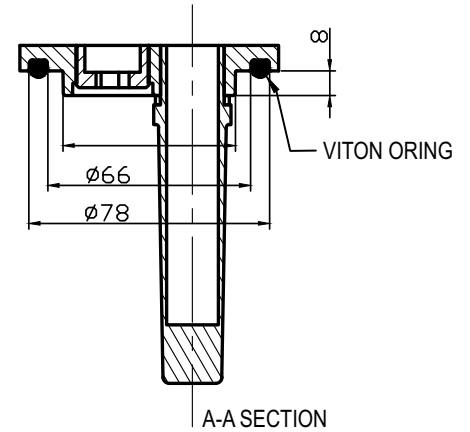
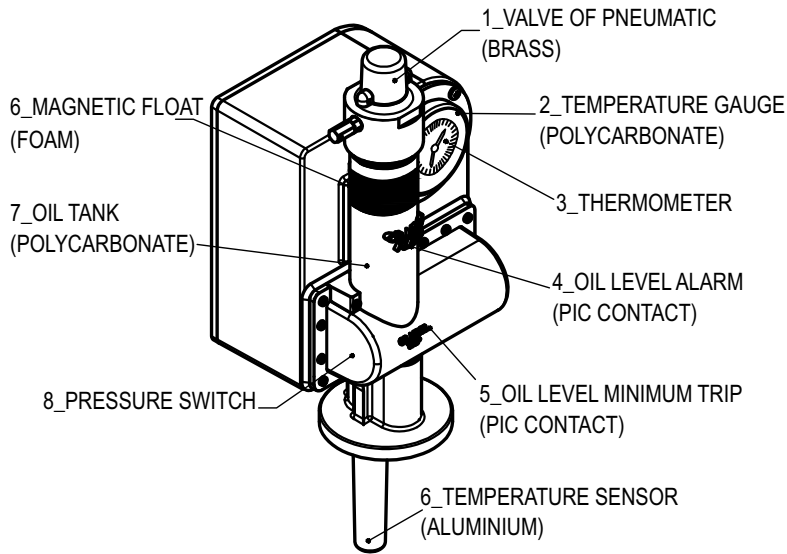
***IP55, ACCUARY: $\pm 5^{\circ}\text{C}$

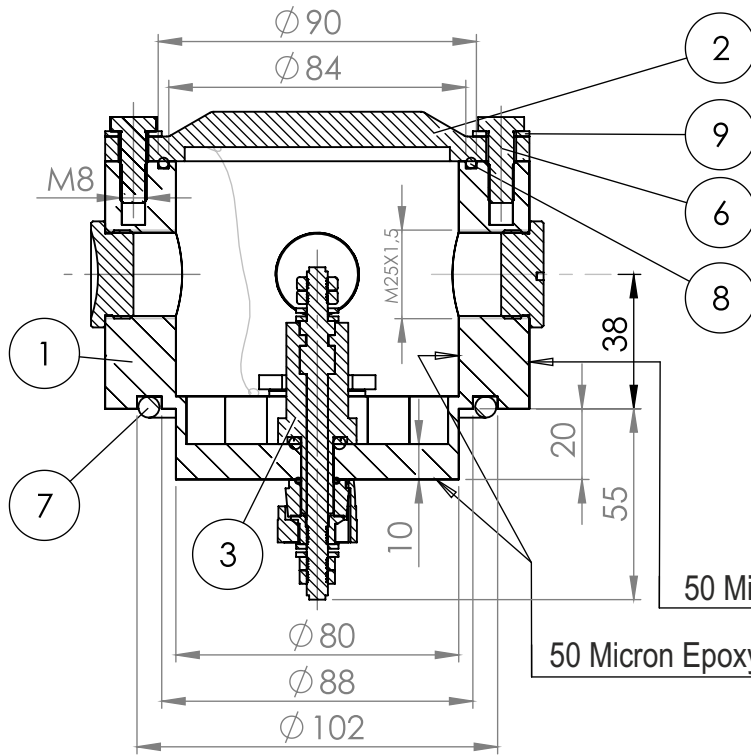
No.	Q'ty	Description	Explanation
1	1	TOP COVER	ALUMINIUM
2	1	BODY	ALUMINIUM
3	1	CONNECTOR	BRASS
4	1	TUBE	STAINLESS TUBE
5	1	COVER FIXING NUT	BRASS
6	1	SCALE	ALUMINIUM
7	1	SETTING NUT	BRASS
8	1	CONNECTOR	PG16, STAINLESS



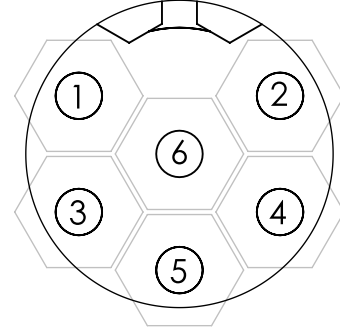
Recommended Maximum Electrical Ratings (Switch Characteristics)

Switch Type	Voltage (V)	Resistive Load (A)	Motor Load (A)	Approvals ENEC		Approvals UL	
				(A)	(V)	(A)	(V)
XCG	250 (AC)	6	2	6 (2)	250 (AC)	5	250 (AC)
XCG	30 (DC)	6	2	6 (2)	30 (DC)	—	—
XCG	125 (AC)	1,5	0,5	1,5 (0,5)	125 (DC)	—	—



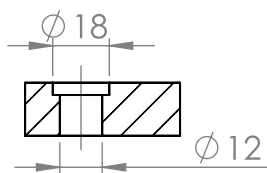
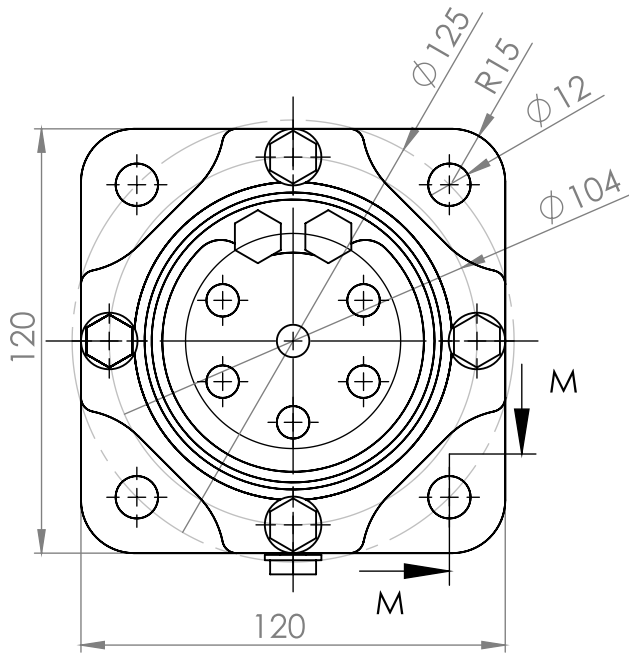


Detail Terminals



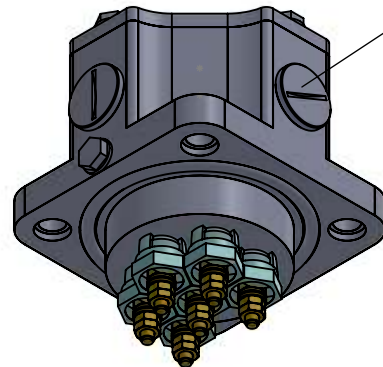
50 Micron Epoxy Paint

50 Micron Epoxy Primer Paint

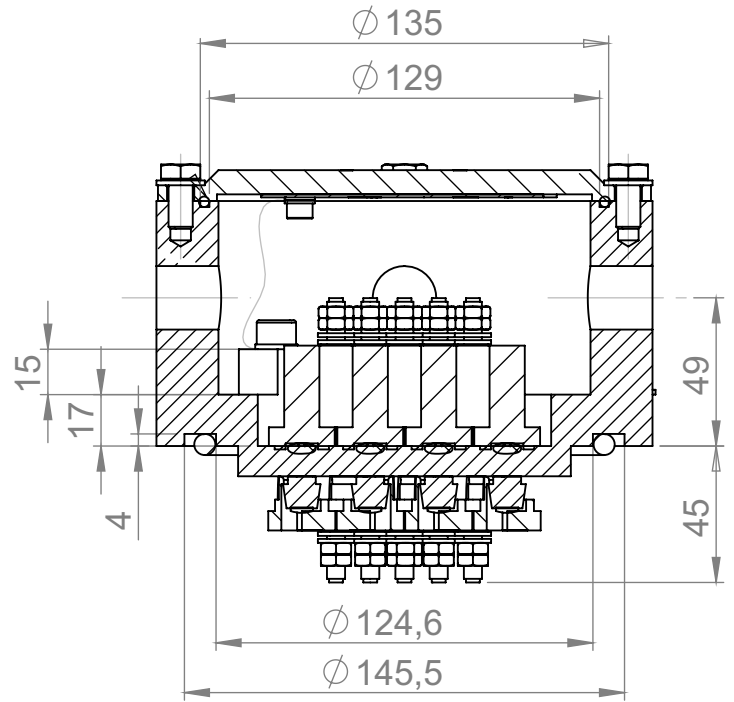
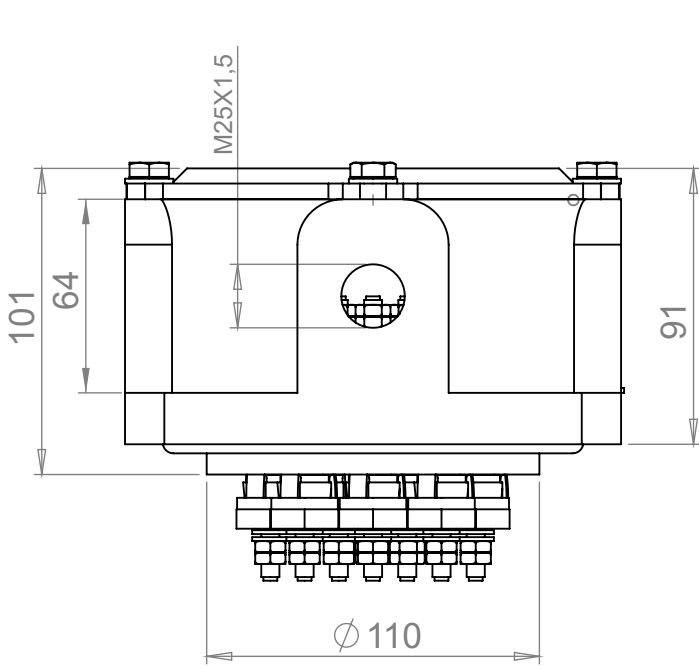


Section M-M

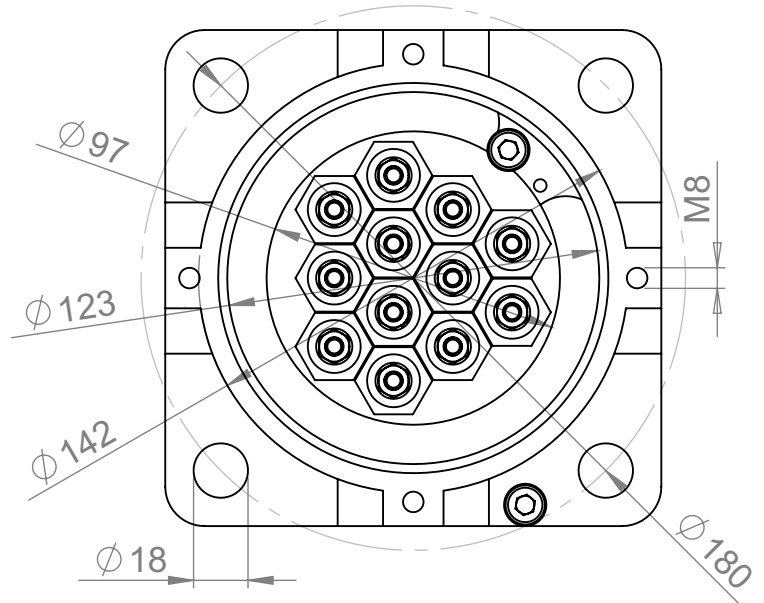
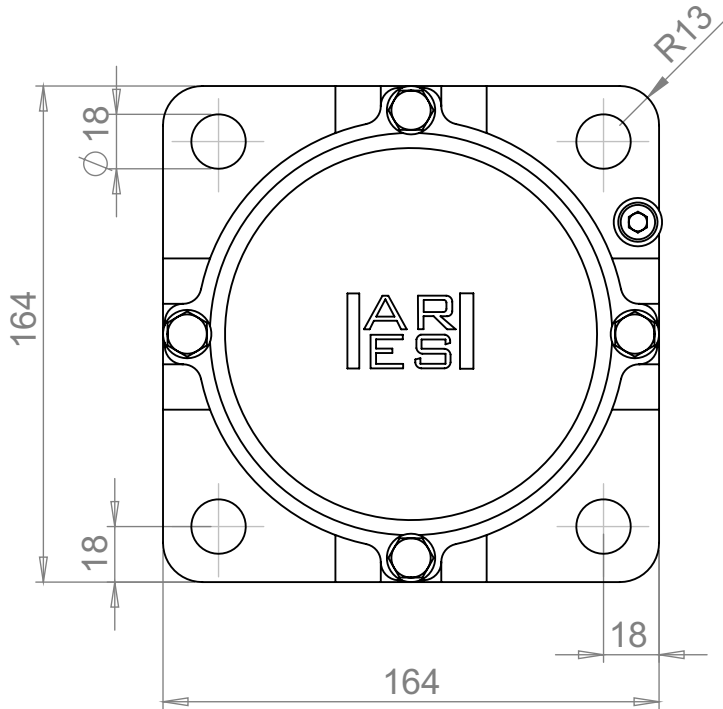
Plug and Glands Optional

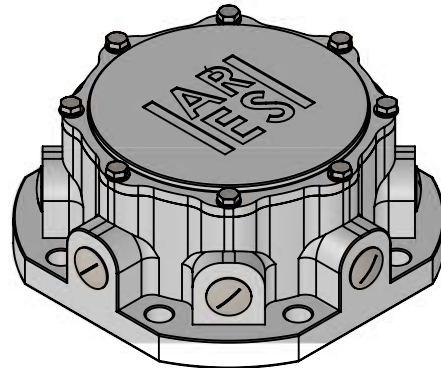
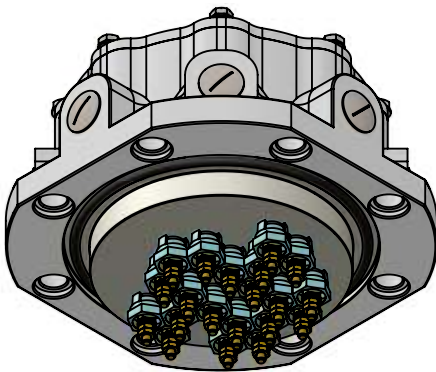
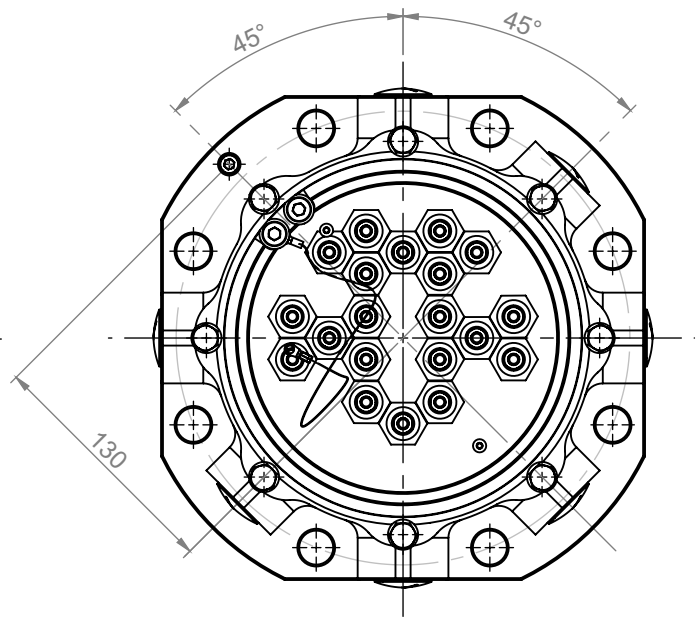
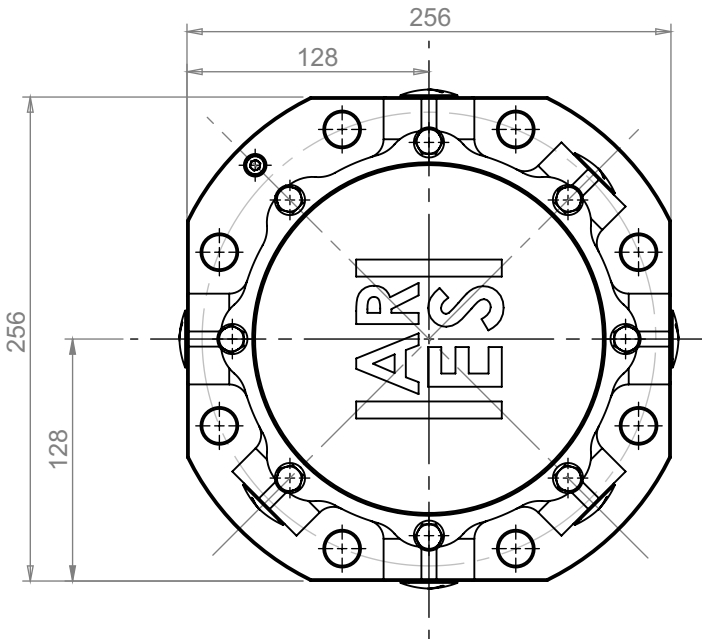
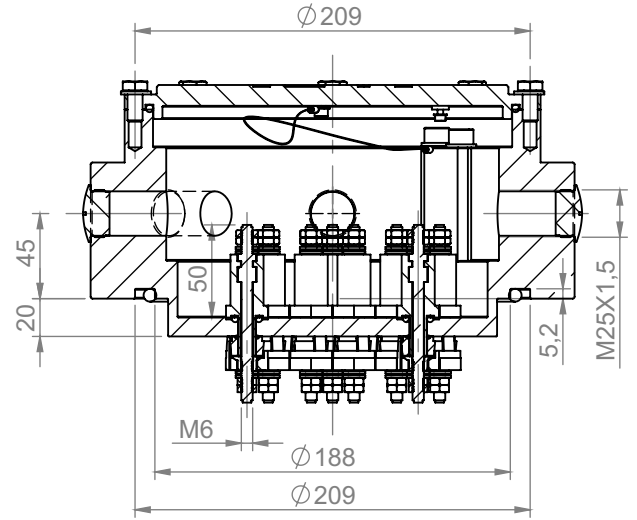
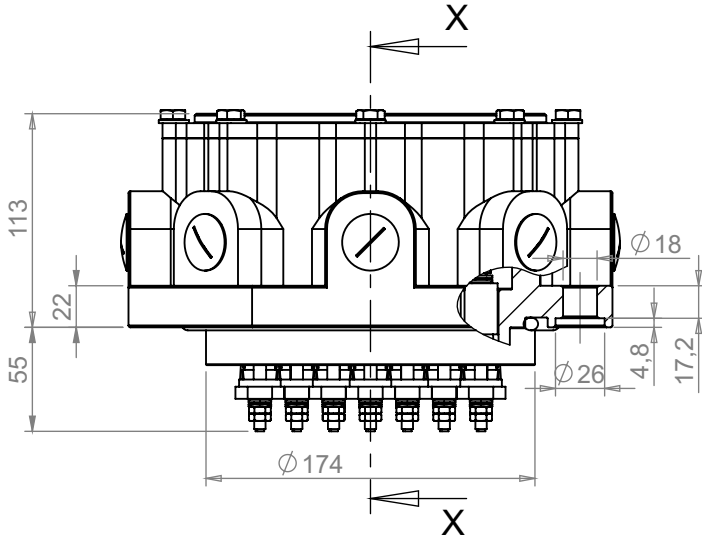


NO	DESCRIPTION	MATERIAL	QTY
1	Terminal Box	Aluminium	1
2	Terminal Box Cover	Aluminium	1
3	Terminals	PA6,6+Glass Fibre %30+Brass M6 Stem	6
4	Plug M25x1,5	PA6,6	2
5	Plug M25x1,5 With O-ring	Nickel Plated Brass	2
6	Cover Screws	A2-70	7
7	Ø 88x5,80 O-ring	NBR	1
8	Ø 84x3,20 O-ring	NBR	1
9	M8 Washer	A2-70	4

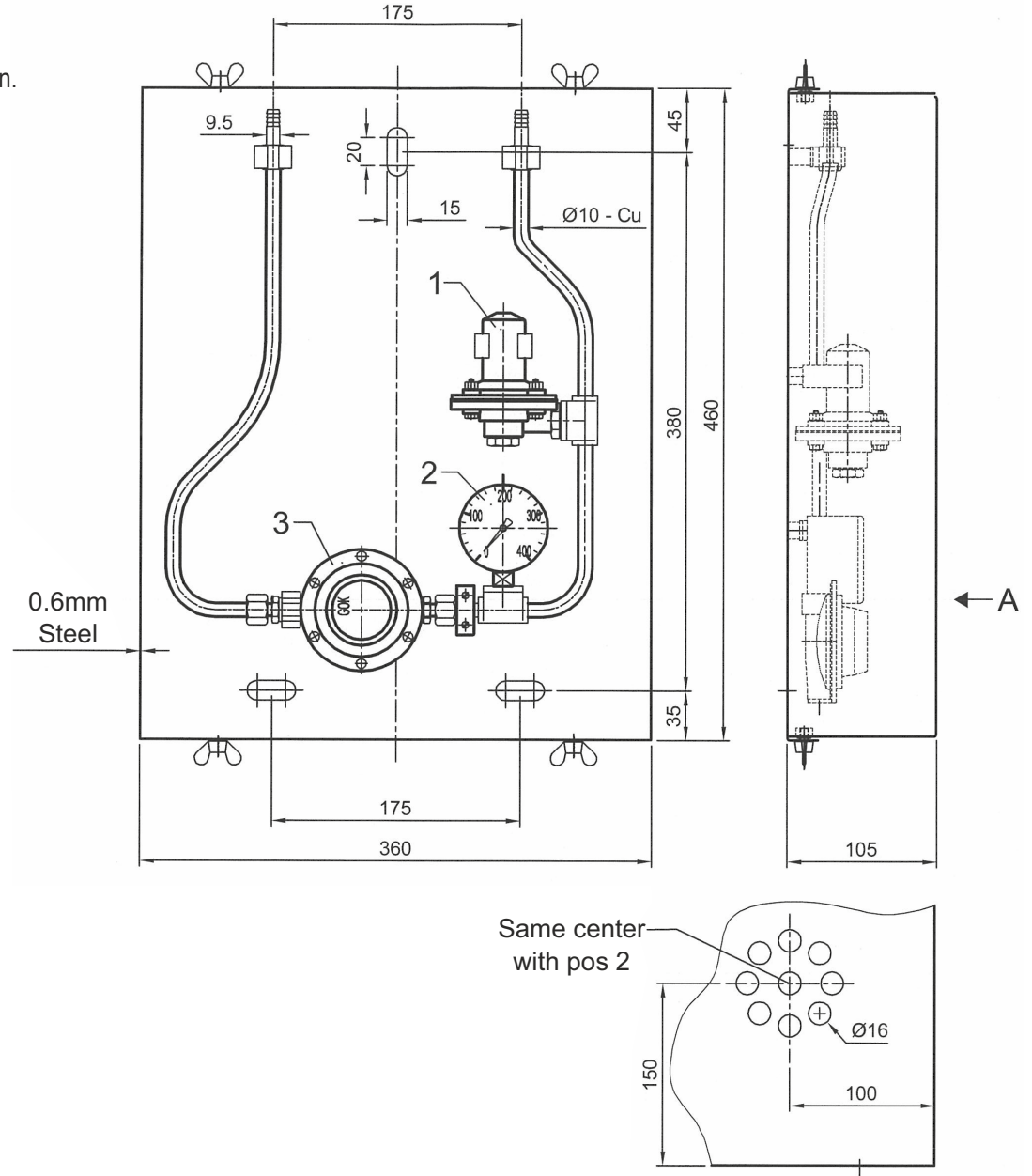


C-C (1 : 2.5)





Air pressure Regulator for transportation of transformers without oil with Dry-Air or Nitrogen.

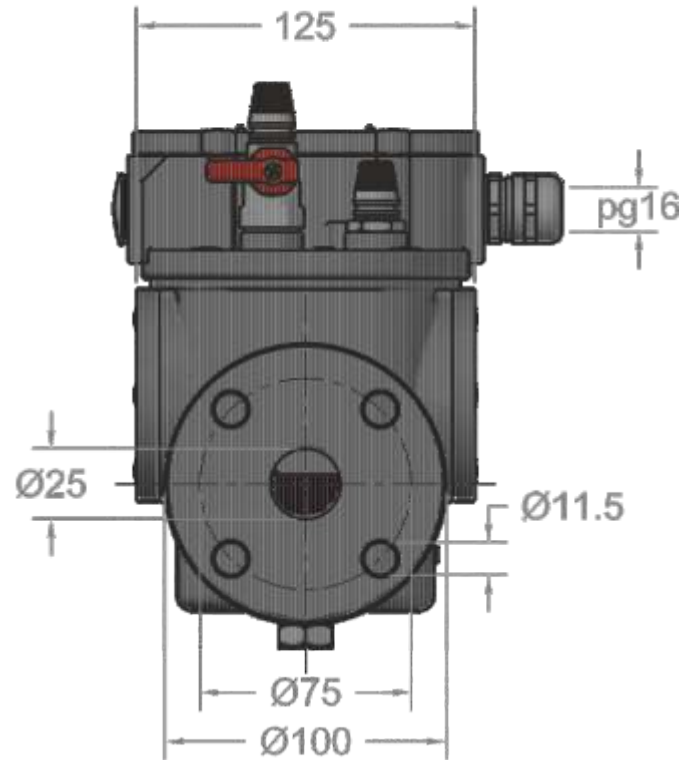
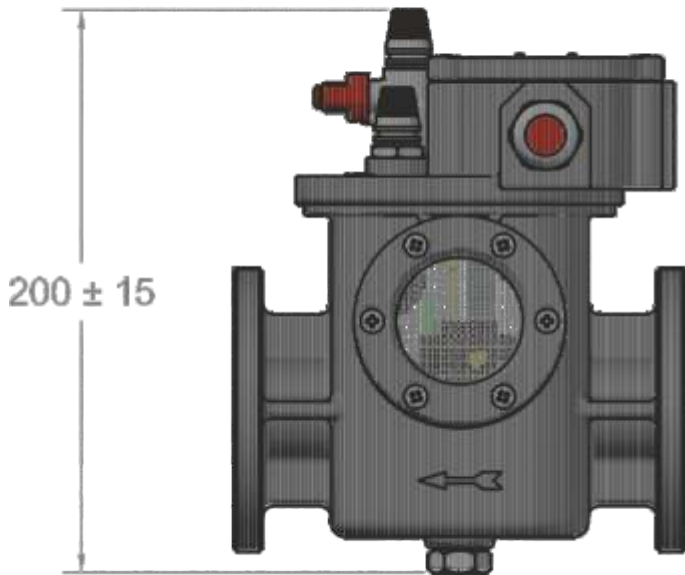
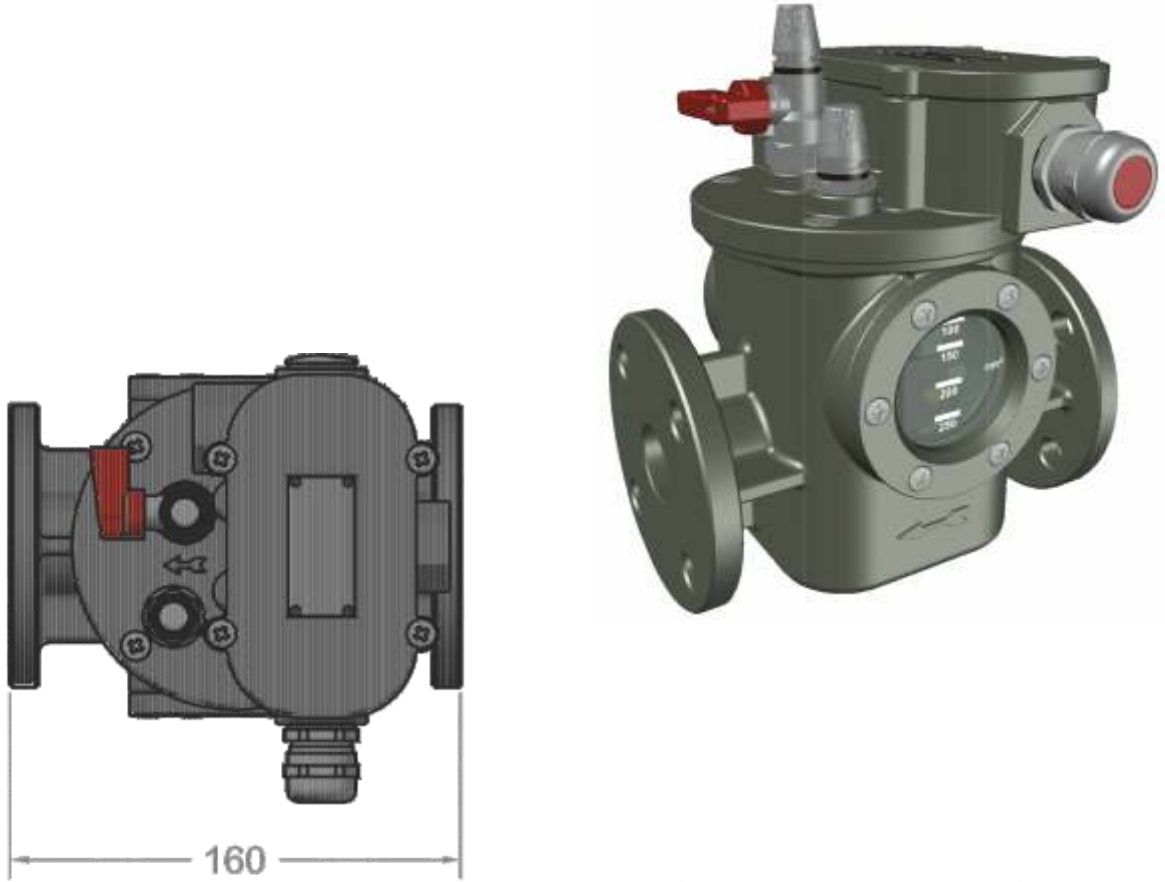


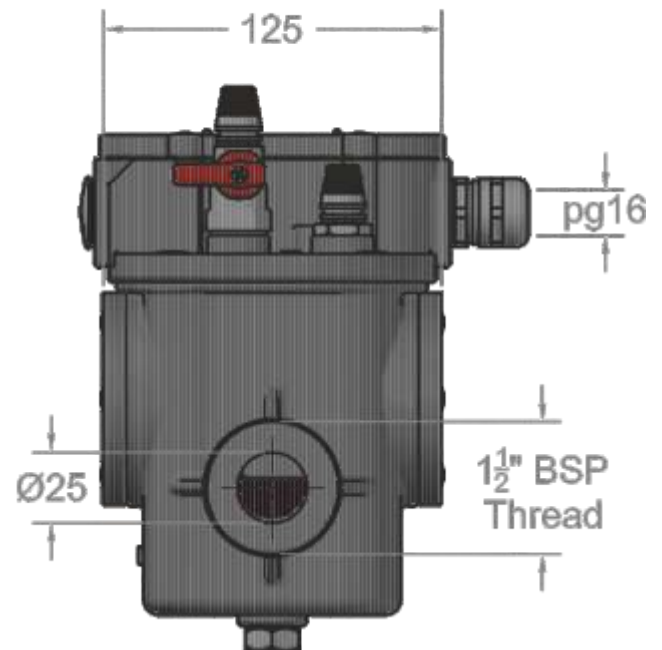
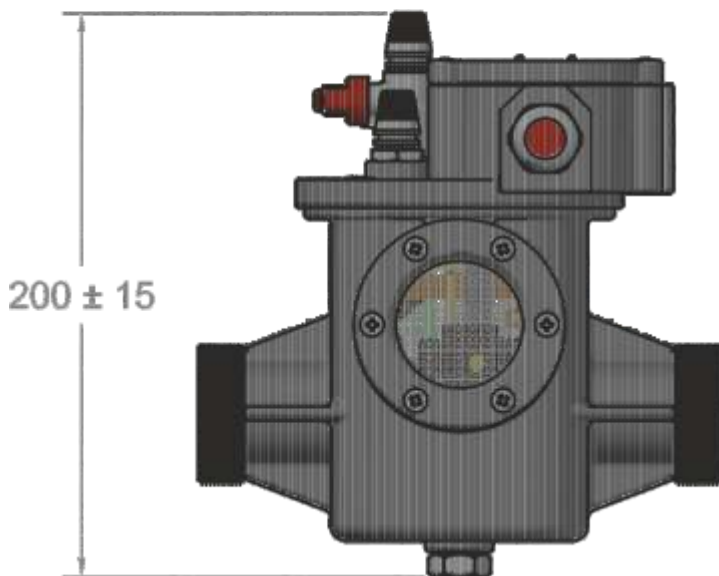
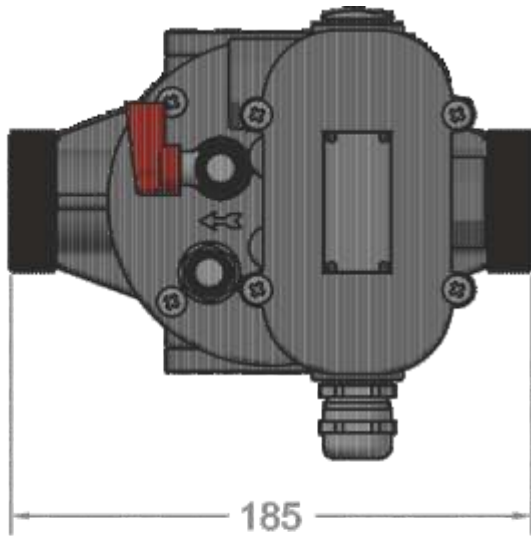
Pos 1 = Safety Valve 0.35 bar
5 N m³/h

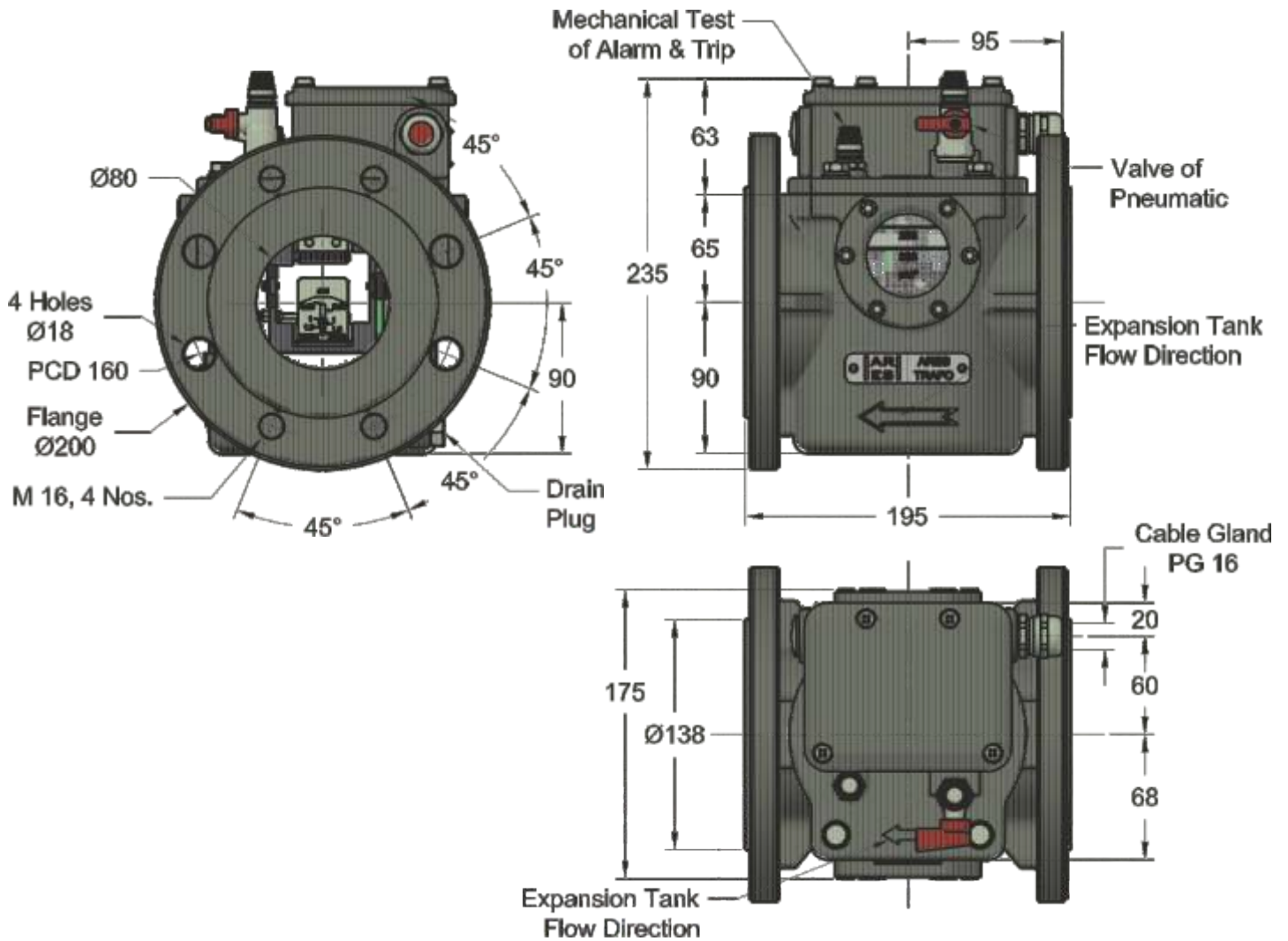
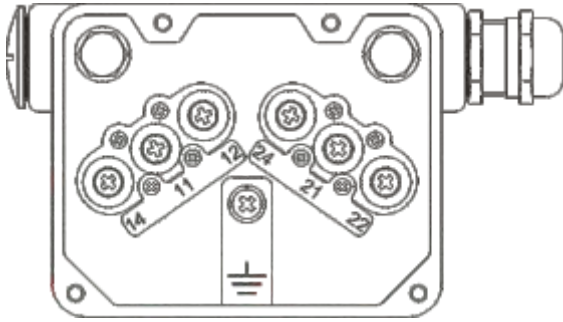
Pos 2 = Manometer
0 - 400 bar

Pos 3 = Pressure Regulator
PN/6 20L/h

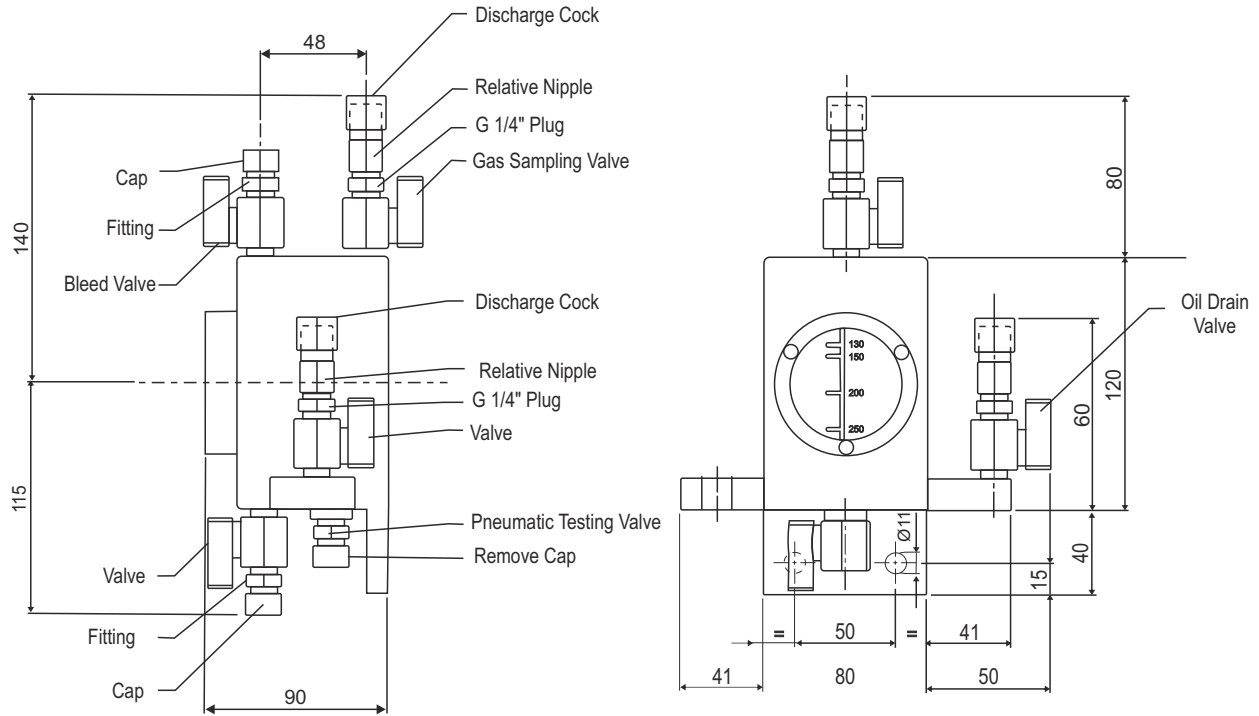
Unit Weight: 4.90kg

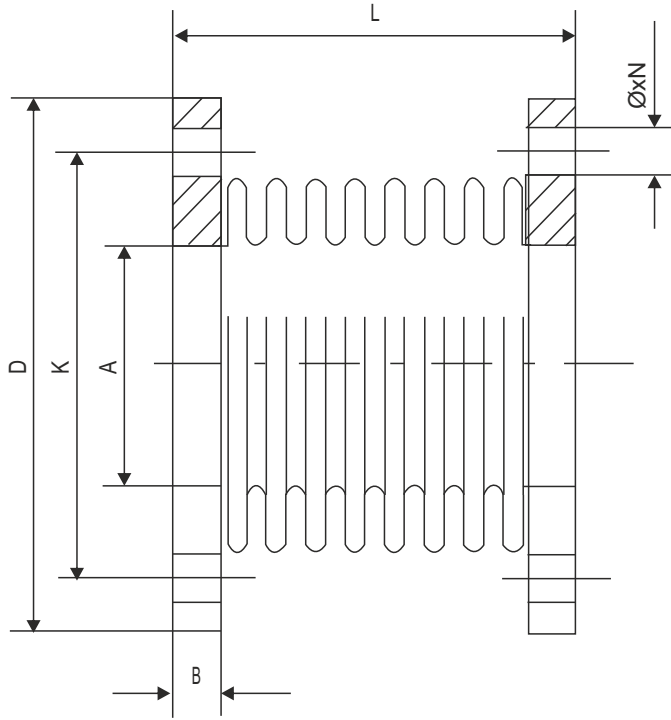






Aluminium alloy casting body with tempered glass inspection window





Stainless Steel AISI 304 Bellow
ST 32 Carbon Steel Flanges
Pn16 DN 25 - DN 150
Welding ends Floating Flanges
-196°C + 600°C



With O-ring Groove or Flat Flange

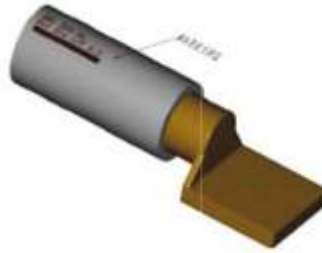
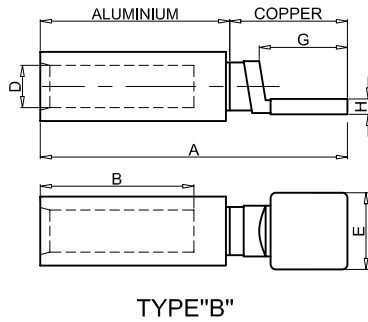
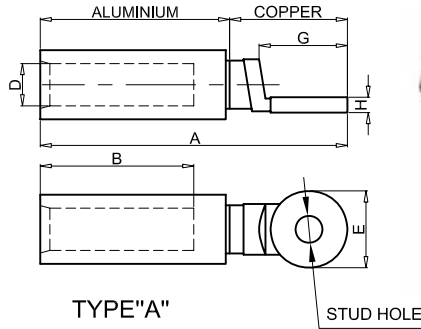
DN A	B	D	K	L	N	Ø	A ırılık Kg/Unit
25	16	115	85	120	4	14	2,4
50	18	165	125	120	4	14	6,1
65	18	185	145	120	4	18	6,9
80	20	200	160	120	8	18	7,7
100	20	220	180	120	8	18	8,3
125	20	250	210	120	8	18	11,2
150	22	285	240	130	8	22	13,6



Stainless Braided



Square Flange



NOTES:

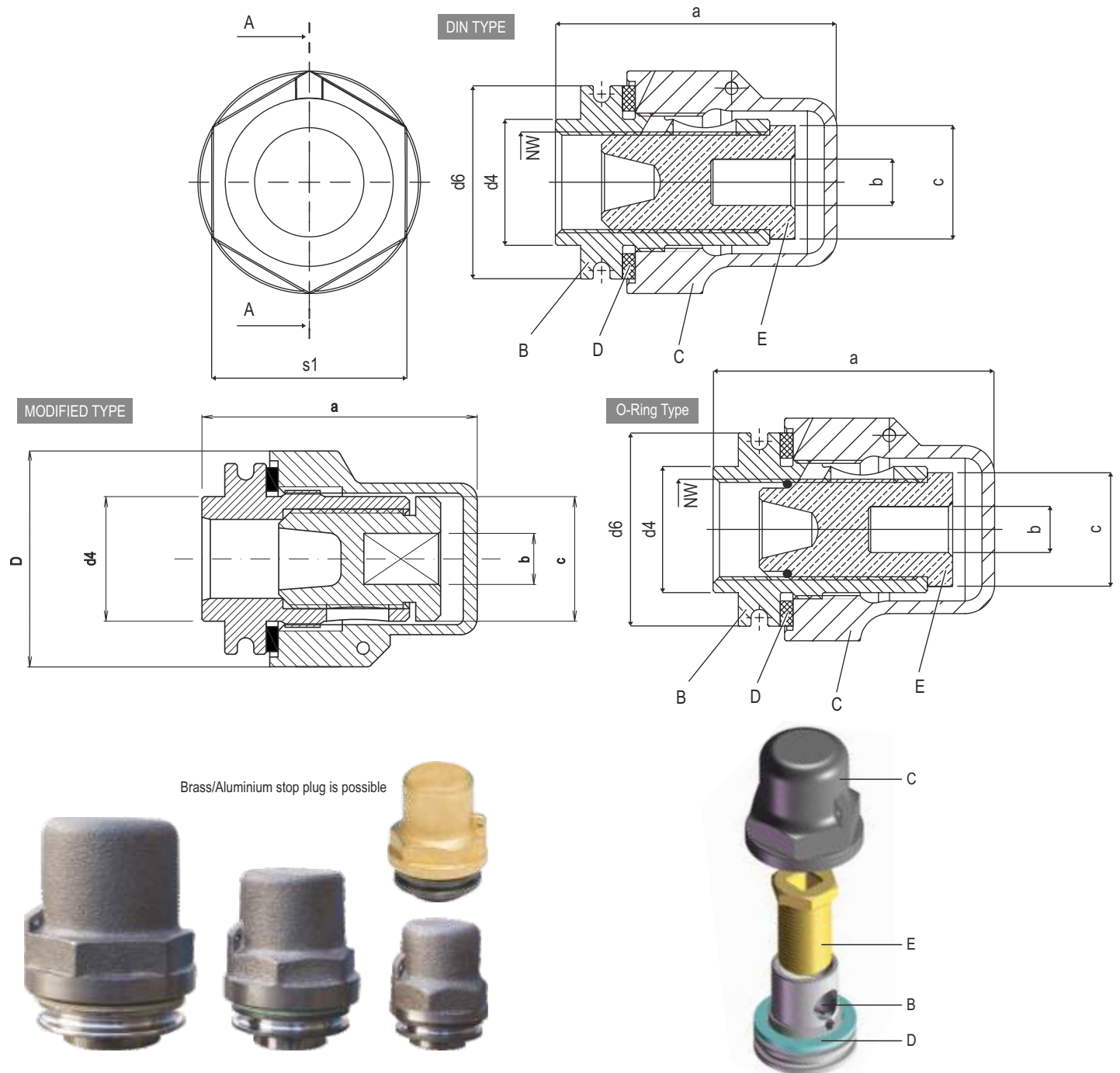
- DIMENSIONS ARE IN MM
- Technical Data;
 - Conductive Material
 - Aluminium Sleeve 99.6% pure
 - Tensile Strength 110Mpa
 - Ductile Rating 28%
 - Final Metal State Fully Annealed inc.joint
 - Joining Method Friction Welding (IEC std)

Electrical Properties

Resistivity 2.6 micro-ohm cm(max):aluminium
 1.1738 micro-ohm cm:copper
 Conductivity 61.8% IACS(min):aluminium
 99.7% IACS: copper
 Operating Temperature
 -40°C to 100°C

CATLOGUE NO	NOMINAL CONDUCT OR	STUD SIZE	STUD HOLE	TYPES	DIMENSIONS (MM)						NO. OF CRIMPS
					A	B	D	E	G	H	
BML16-8	16	8	8.5	"A"	75	32	5.5	20	24	4.5	1
BML16-10	16	10	10.5		75	32	5.5	20	24	4.5	1
BML25-10	25	10	10.5		75	32	7.5	20	24	4.5	1
BML25-12	25	12	12.5		75	32	7.5	20	24	4.5	1
BML35-10	35	10	10.5		75	32	8.5	20	24	4.5	1
BML35-12	35	12	12.5		75	32	8.5	20	24	4.5	1
BML50-10	50	10	10.5		75	32	9.5	24	26	4.5	1
BML50-12	50	12	12.5		75	32	9.5	24	26	4.5	1
BML70-10	70	10	10.5		75	32	11.5	24	26	4.5	1
BML70-12	70	12	12.5		75	32	11.5	24	26	4.5	1
BML95-10	95	10	10.5		115	60	13.5	24	26	6	2
BML95-12	95	12	12.5		115	60	13.5	24	26	6	2
BML120-10	120	10	10.5		115	60	15.5	30	33	6	2
BML120-12	120	12	12.5		115	60	15.5	30	33	6	2
BML150-10	150	10	10.5		120	60	16.5	30	33	7	2
BML150-12	150	12	12.5		120	60	16.5	30	33	7	2
BML185-10	185	10	10.5		120	60	18.5	35	38	7	2
BML185-12	185	12	12.5		120	60	18.5	35	38	7	2
BML240-10	240	10	10.5		135	60	22	35	38	7	2
BML240-12	240	12	12.5		135	60	22	35	38	7	2
BML300-10	300	10	10.5		135	60	23.5	36	38	7	2
BML300-12	300	12	12.5		135	60	23.5	36	38	7	2
BML300BL	300			"B"	135	60	23.5	36	38	7	2
BML400BL	400				160	70	26.5	50	52	10	2
BML500BL	500				160	70	30	50	58	10.5	2

The oil draining device is to be welded in the transformer case. The device is to be used together with the connection pipe F DIN 42551 for draining the transformer case for regeneration purpose of the oil. The oil drain device remains tight even if the oil temperature rises to 100° C (Temperature Resistance: up to 100° C)

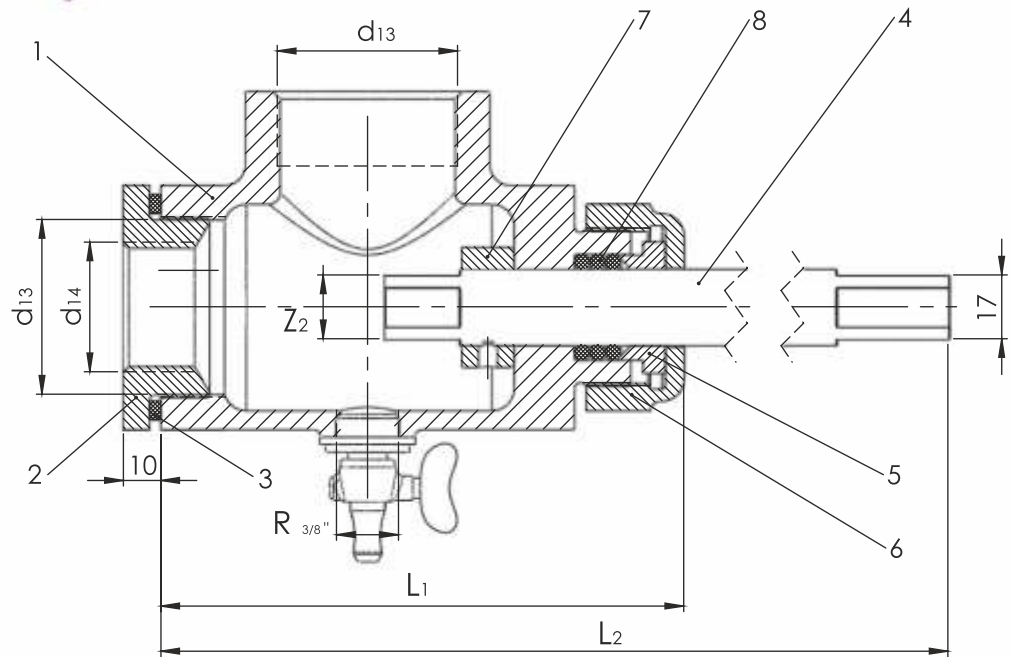


NW	a	d4	b	c	s1 / d6	Weight
NW22	67	30	11	SW27	SW46	0.56 kg.
NW31	93	40	17	SW36	SW65	1.29 kg.
NW40	112	52	17	SW46	SW80	2,25 kg.

Qty	Code	Designation	Material
1	B	Drain Socket	S235JR
1	C	Stop Plug	Gg20
1	D	Gasket	Klingerid
1	E	Inner Bolt	Ms 58



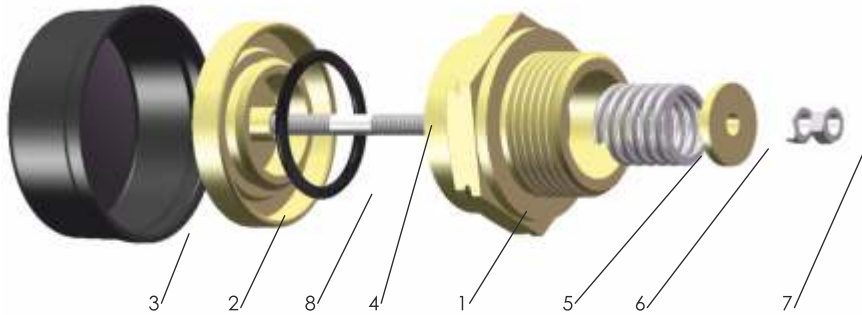
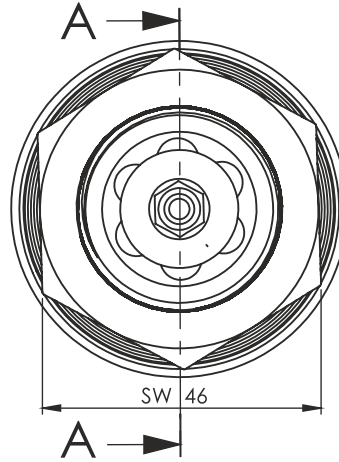
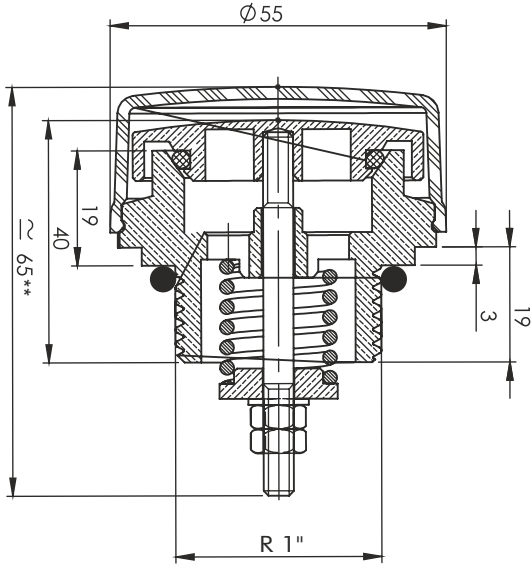
Connection pipe is a tool to connect the oil drain valves A DIN 42551 to an extern oil-system. Connection pipe is manufactured in two sizes and can be reduced of nominal width NW 31 to NW 22 or NW 40 to NW 31



Connection Pipe	NW	d13	d14	Z2	L1	L2	Weight kg.
F22/31 DIN 42 551	22	M 48x1,5	M 33x1,5	11	145	260	2,6
F31/40 DIN 42 551	31	M 60x2	M 48x1,5	17	180	270	2,6
F31 DIN 42 551	31	M 48x1,5	—	17	148	260	2,4
F40 DIN 42 551	40	M 60x2	—	17	180	295	5,2

Part Nr.	Oty	Connection Pipe	F 22/31 DIN 42 551	F 31/40 DIN 42 551	F 31 DIN 42 551	F 40 DIN 42 551	Material
1	1	Housing	G65 DIN 42 551	G80 DIN 42 551	G65 DIN 42 551	G80 DIN 42 551	GG18
2	1	Reduction	H 22/31 DIN 42 551	H31/40 DIN 42 551	—	—	St 34
3	1	Gasket	D31 DIN 42 551	D40 DIN 42 551	—	—	—
4	1	Spindle	K1 DIN 42 551	K2 DIN 42 551	K3 DIN 42 551	K3 DIN 42 551	St 34
5	1	Packing Box	L DIN 42 551				St 34
6	1	Srew Cap	N DIN 42 551 GG20				GG20
7	1	Stop Ring	B20 DIN 705 St34				St 34
8	1	Packing	4x4x320 Free of asbestos				—

The pressure safety valve is used as a safety element in distribution transformers but it is also suitable for hermetically sealed type transformers.



Pressure Safety Valve R 2"

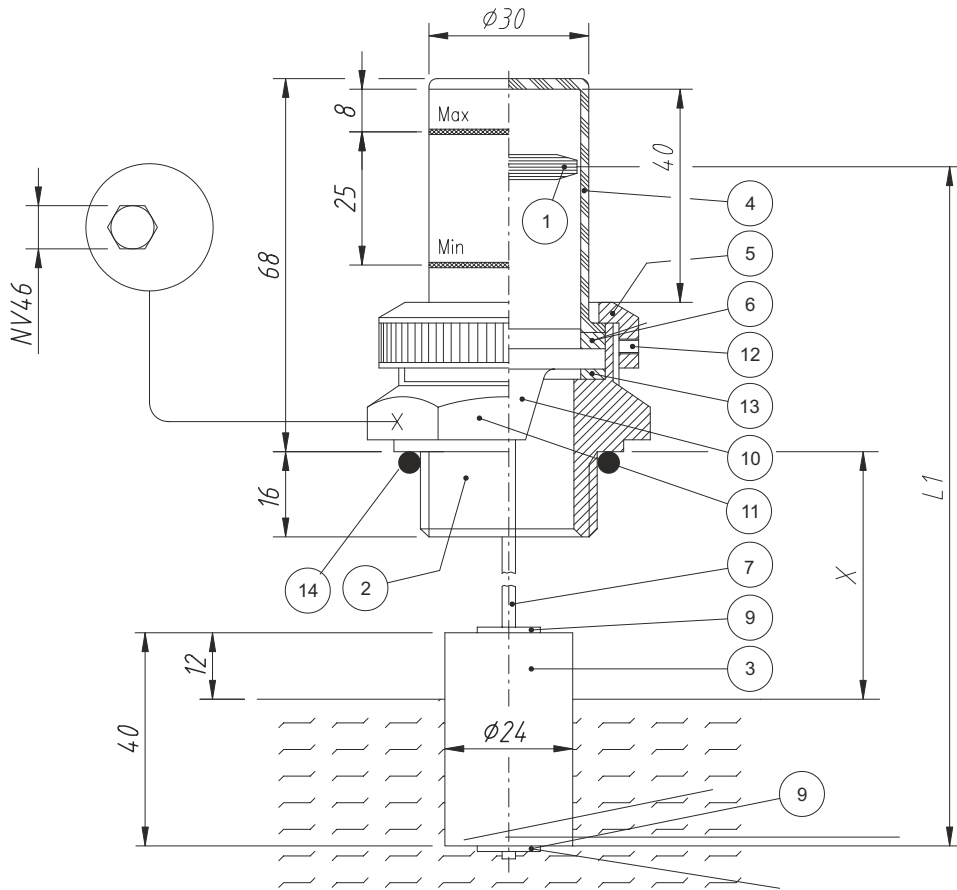
Pos. No.	Qty.	Description	Material
1	1	Body of valve	Cu Zn39 Pb3
2	1	Cap of valve	Cu Zn39 Pb3
3	1	Protection cap	Plastic- Pa6
4	1	Stud bolt	M 5x60 A2
5	1	Spring	Ø19x2x24
6	1	Washer	Cu Zn39 Pb3
7	2	Nut	M5-A2 DIN 934
8	1	O-Ring or Flat Gasket	NBR70

These pressure safety valves are available from operating pressure of 0.2 bar to 0.7 bar. Non-standard pressure setting can also be provided on request. The long type pressure safety valve can also be manufactured with a long coil spring as the customer request.

When pressure rises beyond the preset limit in the transformer tank the shutter moves up with the 'O' ring, thus releasing the excess pressure. When the pressure falls to allowable values, the spring forces the shutter back to its position automatically. The excess pressure must be relieved immediately in order to avoid damage to the transformer tank.

** Longer pressure safety valve is possible

This type of oil level indicator is used in hermetically sealed transformers. The oil level gauge is screwed into the tank without gas cushion. It shows the level of the oil in the filling pipe and thus offers the possibility to monitor for; Gas formation in the transformer, accumulation of air pockets in the tank, indicator of large leaks from the tank. Highly visible red indicator for oil level and each completely assembled unit, pressure tested.

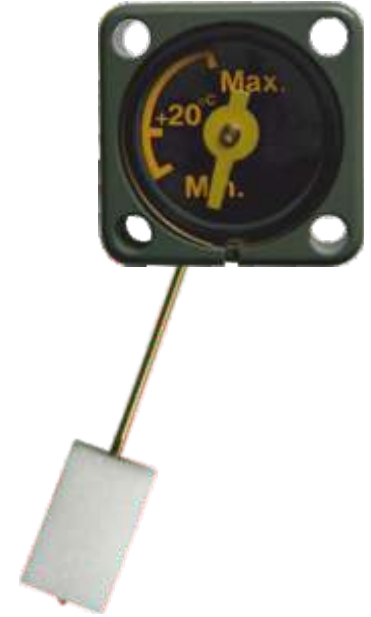
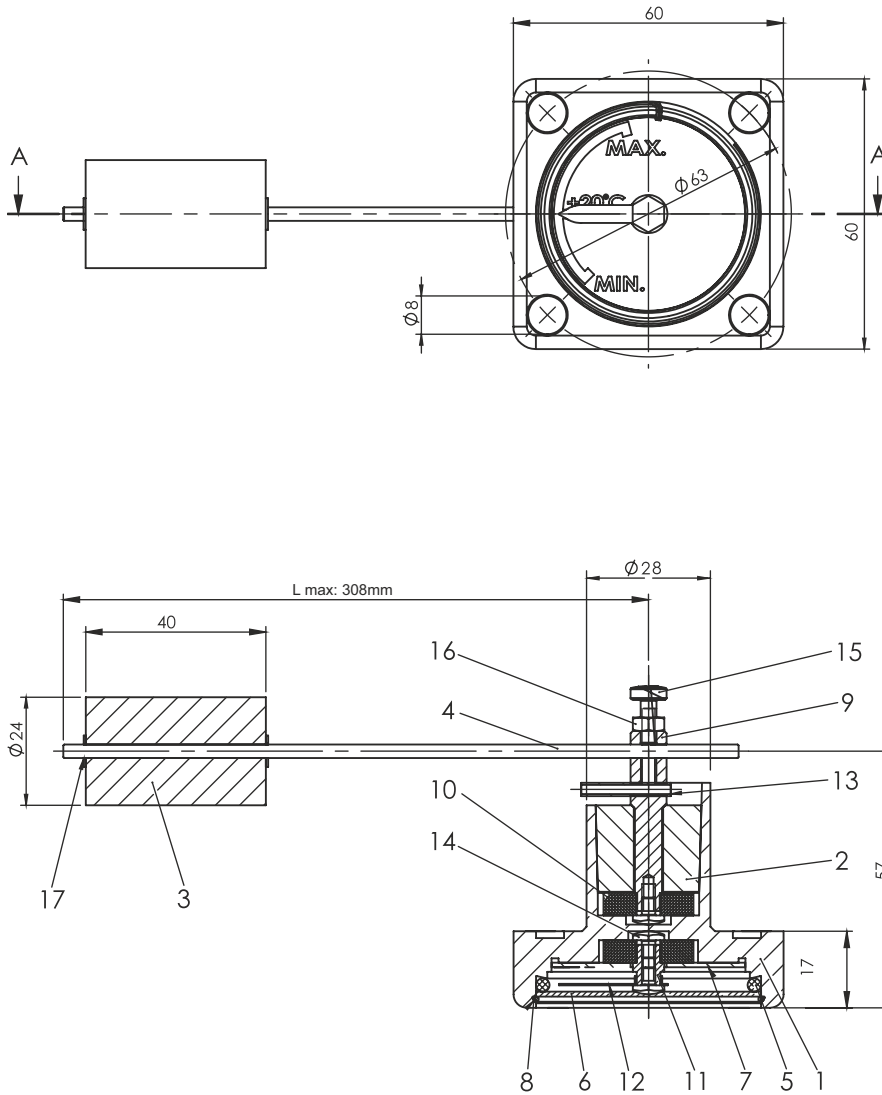


Nr	Part Name
1	Max Pointer
2	Brass Body
3	Float
4	Screen
5	Brass Ring
6	Sealing Or
7	Float Shaft
9	Ring Stopper
10	Center Ring
11	Brass Body
12	Lock Screw
13	Nbr Gasket
14	O-ring or Flat Gasket

Please inform us about required L1 dimension on order



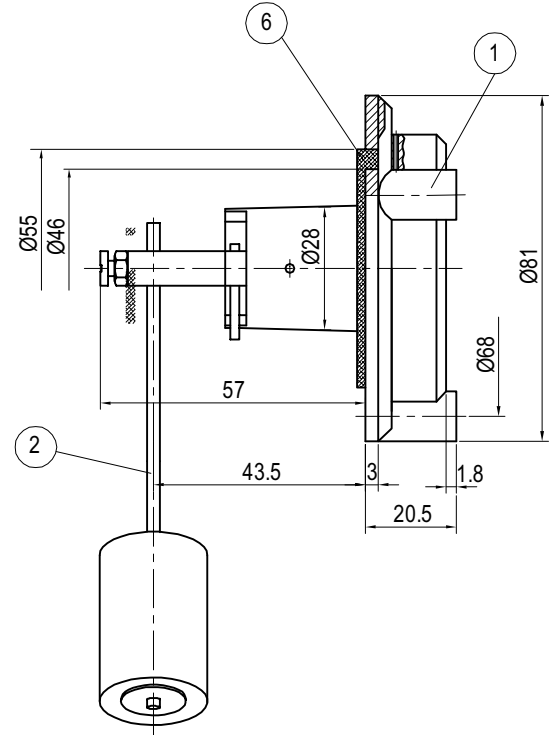
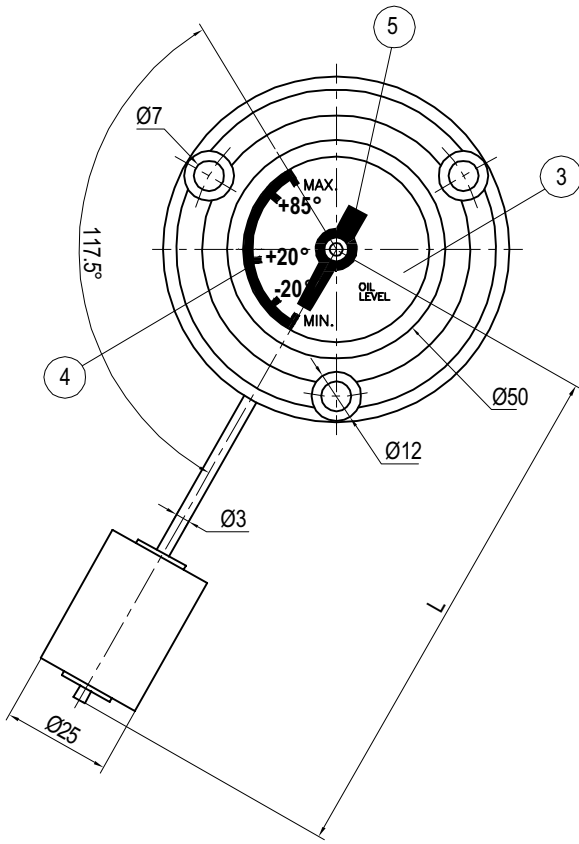
The radial movement of the float is transmitted magnetically to the pointer. The magnet connected to the float-lever mechanism, drives the polarized indicator magnet connected to the pointer.



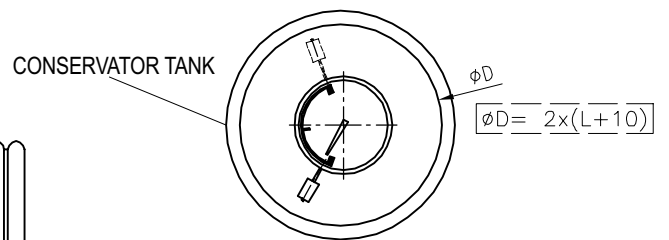
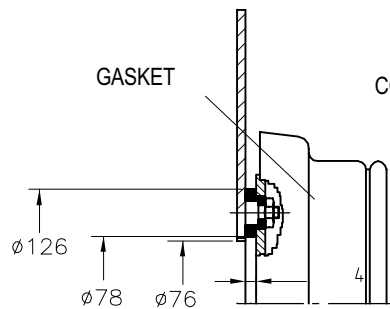
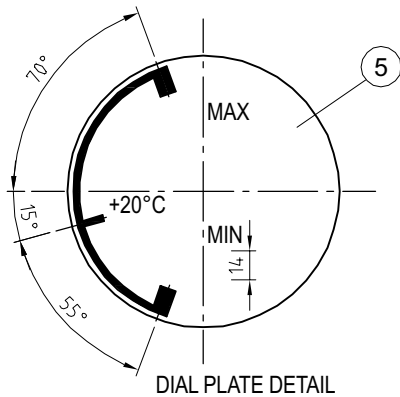
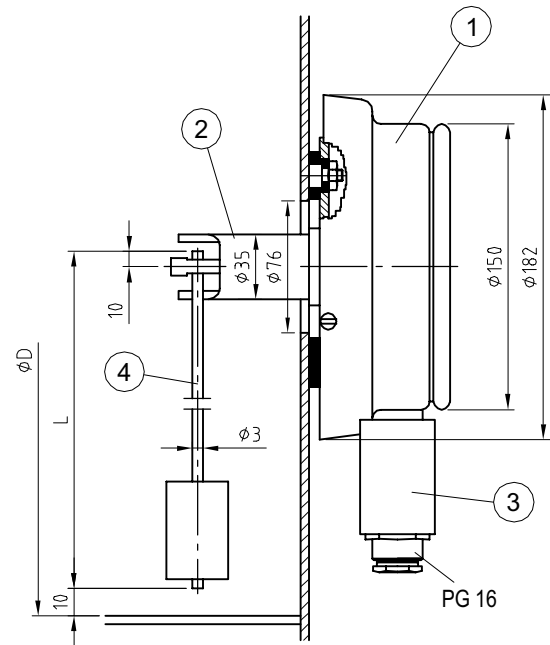
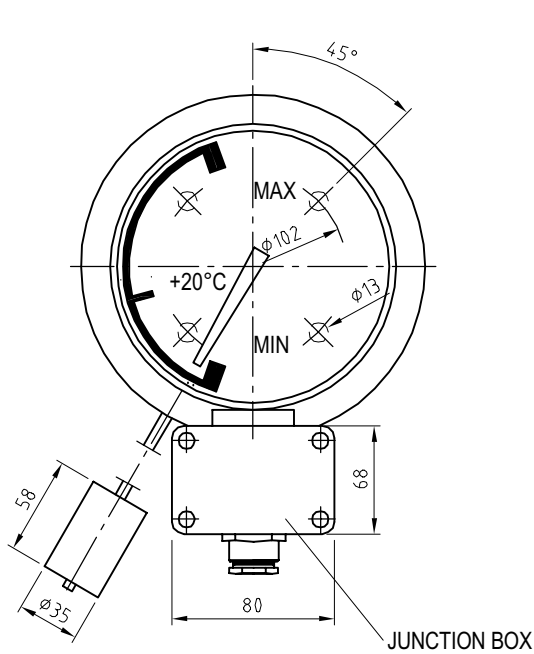
The float lever is delivered with 308 mm length as standard. It's length can be freely adjusted by the customer.

Case	Injected aluminium RAL 7033
Indicator dial	Aluminium sheet
Pointer	Brass
Indicator glass	Polycarbonate
Joint glass	Nitrile rubber
Float	Cellular type plastic foam

Nr	Part Name	Part Number	Material	Qty
1	Body	DIN 42569 A-1	GD-AL lack. RAL 7033	1
2	Roll	DIN 42569 A-2	PA 6	1
3	Fleat	DIN 42569 A-3	Rohacell 51 IG	1
4	Handle for Fleat	DIN 42569 A-4	Ms 70	1

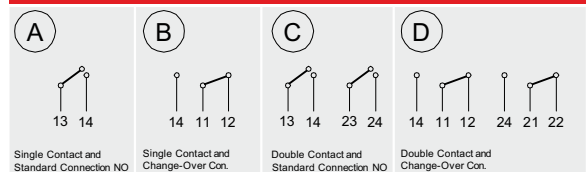


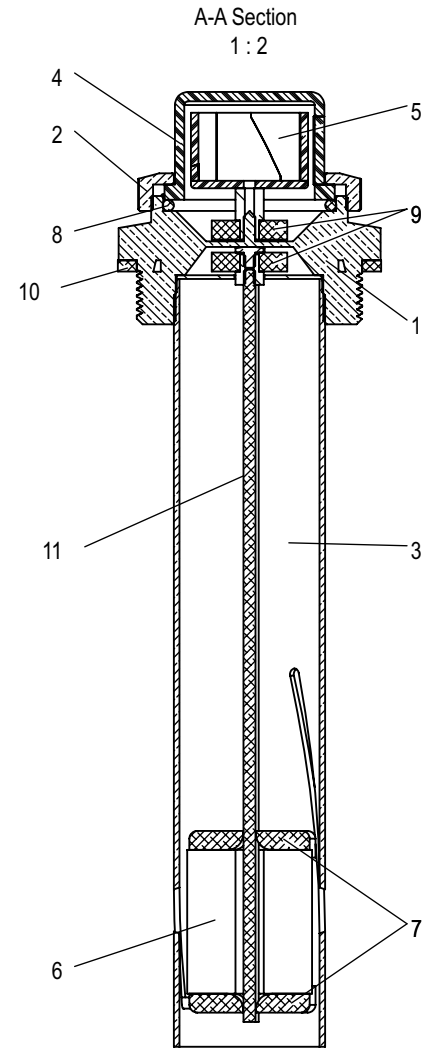
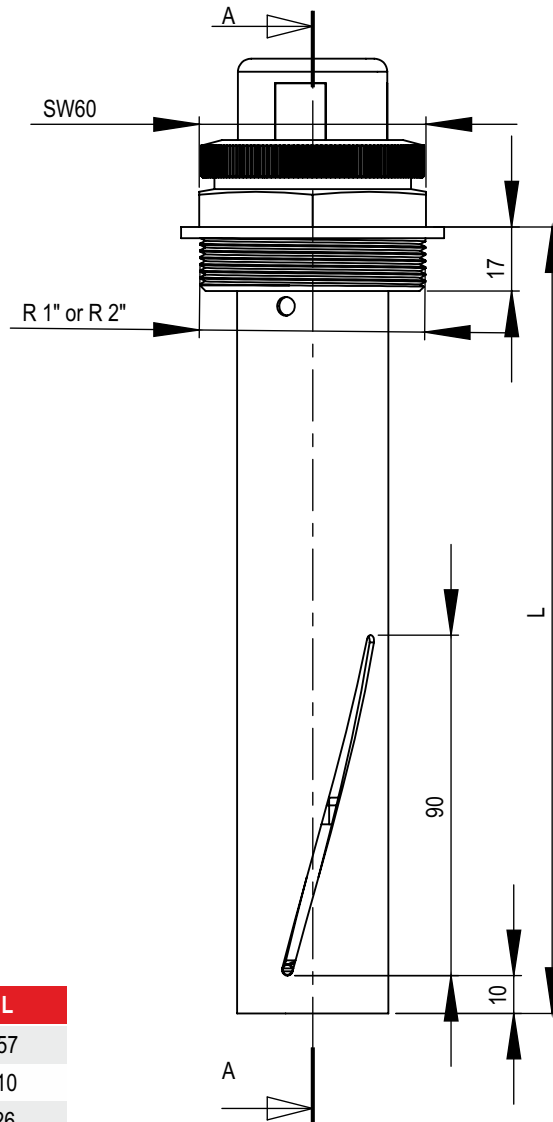
Item	Qty	Description	Technical Date / Designation
6	1	FLAT GASKET	NBR LP 1100
5	1	ARROW	Brass Ms58
4	1	DIAL PLATE	ALUMINIUM
3	1	FRONT GLASS	Polycarbonate 143 R
2	1	FLOAT LEVER	Brass Ms 70
1	1	MAIN BODY	ALUMINIUM



Item	Qty	Description	Technical Date / Designation
6	1	FLAT GASKET	NBR LP 1100
5	1	ARROW	Brass Ms58
4	1	DIAL PLATE	ALUMINIUM
3	1	FRONT GLASS	Polycarbonate 143 R
2	1	FLOAT LEVER	Brass Ms 70
1	1	MAIN BODY	ALUMINIUM

CONNECTION DIAGRAM Acc. to EN 50005

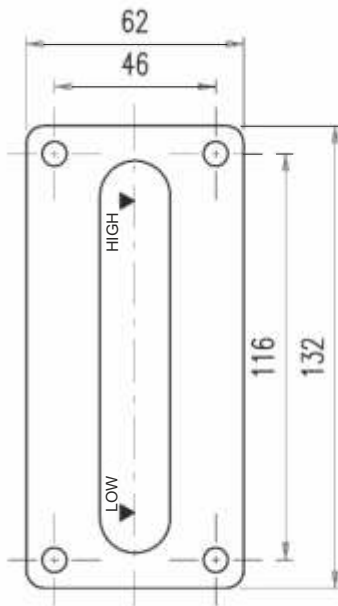




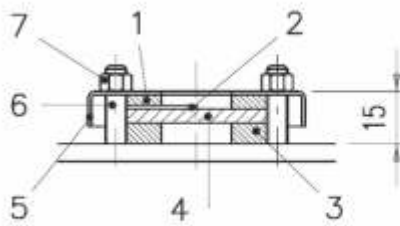
TYPE	L
L1	157
L2	210
L3	226

No.	Q'ty	Description	Explanation
1	1	Body	MS58
2	1	Press Nut	MS58
3	1	Tube	MS58
4	1	Cap	POLIKARBON
5	1	Scale	PA6
6	1	Float	ROHACELL
7	2	Float Handle	Aluminium
8	1	O-ring	NBR70
9	2	Magnet	---
10	1	Flat Gasket	NBR70
11	1	Float Lever	Aluminium

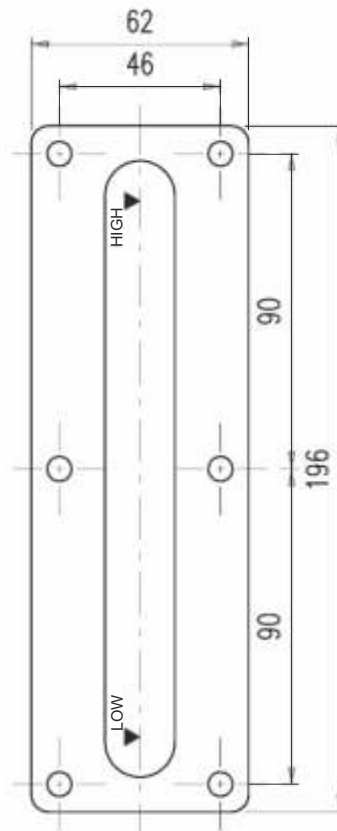
Small



Dimensions in mm.

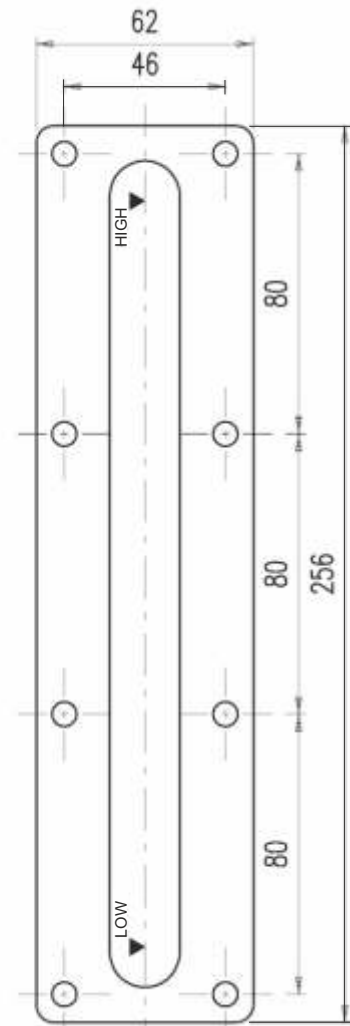


Medium



Dimensions in mm.

Large

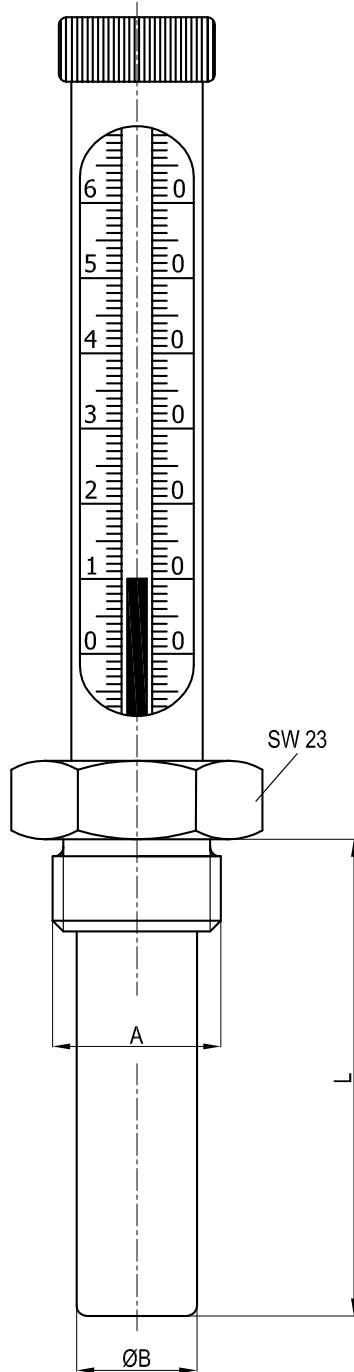


Dimensions in mm.



They give an optic indication of the oil level inside a transformer tank or inside a conservator. The steel frame must be bolted to the wall of an hermetic transformer or to the end of a conservator of a conventional transformer.

No:	Description	Material
1	Gasket outer	NBR
2	Sighting plate	Aluminium
3	Gasket inner	NBR
4	Window plex	Plexiglass
5	Window frame	Cr-Ni 1.5mm
6	Stud M6	(not supplied)
7	Nut M6	(not supplied)



MACHINE - GLASS THERMOMETER

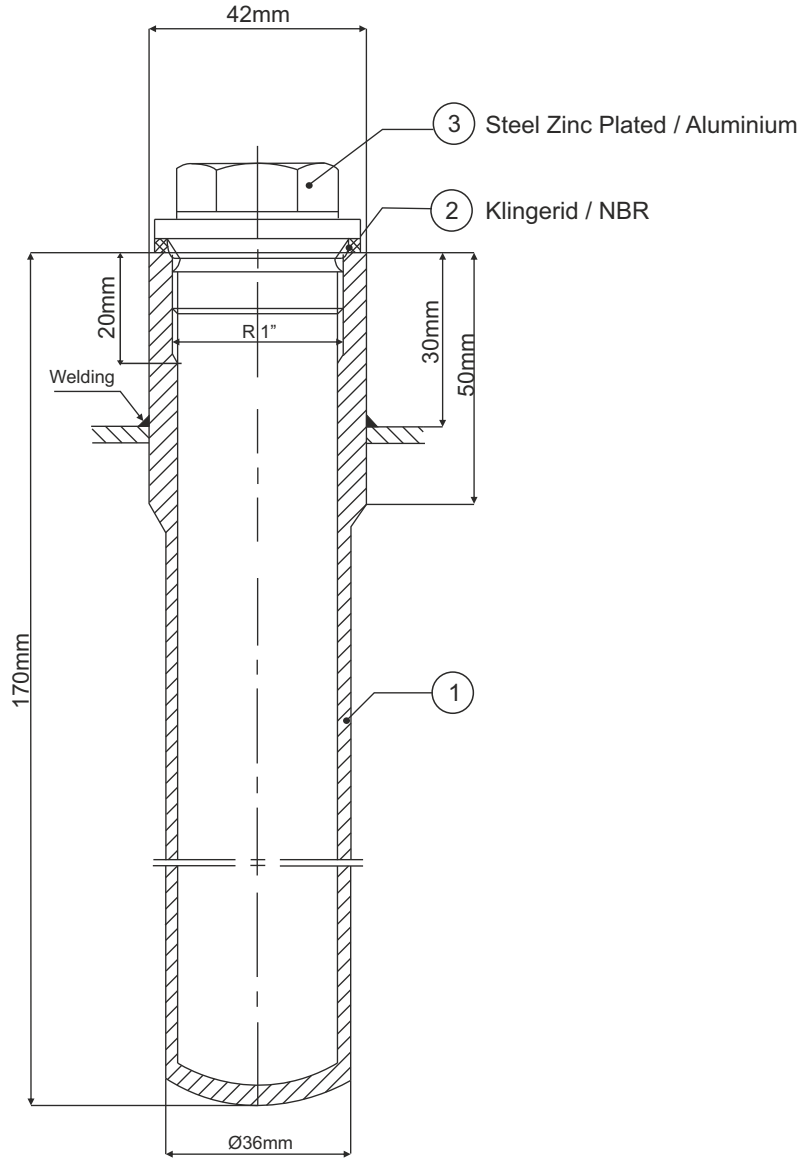
Working liquid	Alcohol
Working limit (C)	0-130°C
Immersion length (L)	63-100mm
Connection diameter (A)	R1 1/2"
Bulb diameter (B)	dia.:12



- These thermometers are for indoor use.

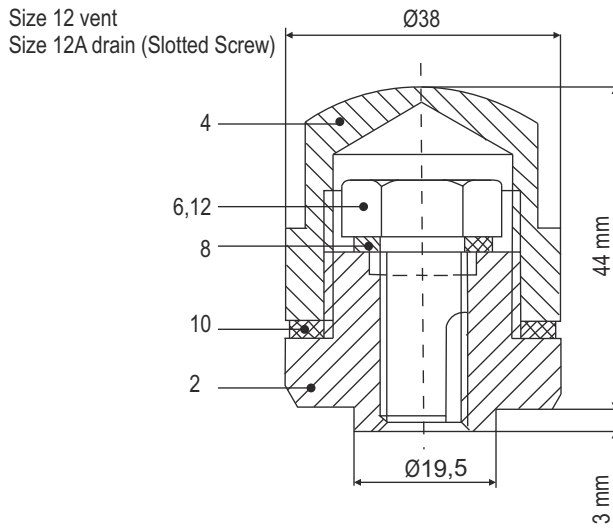
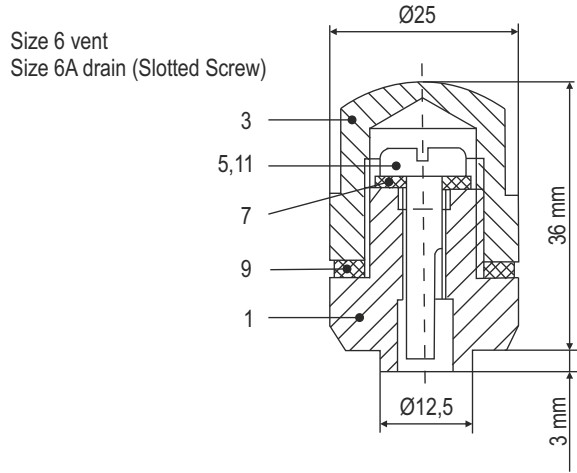
Features

The thermometer pocket is designed to be welded in the top of oil immersed transformers. The pocket is manufactured out of one metal-piece according to DIN 42554. This secured absolute oil-tightness.

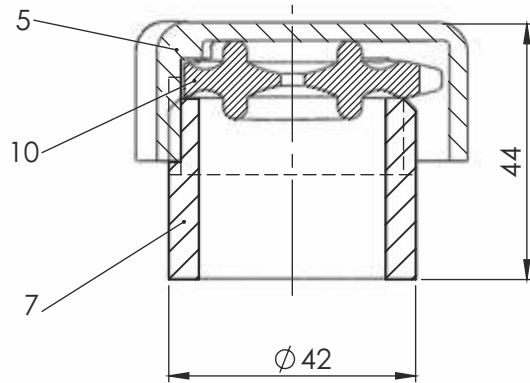


No:	Designation	Remarks	Material
1	Thermometer Pocket	DIN 42554	St 37-2
2	Gasket	39x29x3	Klingerit
3	Plug	R 1" DIN 910	Gal Zn

The closing piece for drain, (not with flattened shank screws) for the discharge of oil from pipes or radiators used. About the closing piece for ventilation (flattened shank screws) may be in the drain portion of air space occur and the refilling with oil, air can escape.

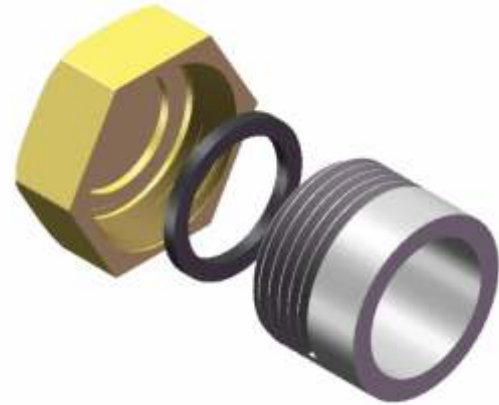
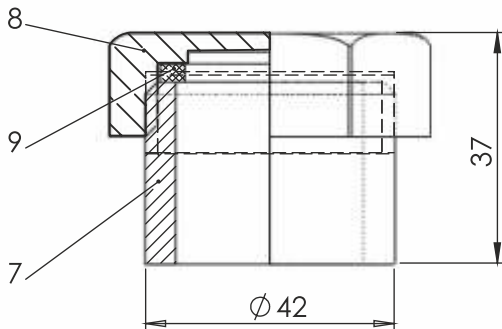


Pos. No.	Qty.				Description	Specification	Material
	6	6A	12	12A			
1	1	1	-	-	Adapter	DIN 42558-1	St 37-2 zinc ☐ A2-70 ☐
2	-	-	1	1	Adapter	DIN 42558-2	St 37-2 zinc ☐ A2-70 ☐
3	1	1	-	-	Cap	DIN 42558-3-A 4G	St 37-2 zinc ☐ A2-70 ☐
4	-	-	1	1	Cap	DIN 42558-4-A 4G	St 37-2 zinc ☐ A2-70 ☐
5	1	-	-	-	Slotted Pan head screw	DIN 42558-5-A 4G	DIN 42558-5-A 4G
6	-	-	1	-	Bolt	DIN 42558-6-A 4G	DIN 42558-6-A 4G
7	1	1	-	-	Gasket	DIN 42558-7	PA 6
8	-	-	1	1	Gasket	DIN 42558-8	PA 6
9	1	1	-	-	Gasket	DIN 42558-9	PA 6
10	-	-	1	1	Gasket	DIN 42558-10	PA 6
11	-	1	-	-	Slotted Pan head screw	DIN 85-A 4G AM 6x25 - 4,8	DIN 85-A 4G AM 6x25-4,8
12	-	-	-	1	Bolt	ISO 4017-A 4G M 12x25 - 8,8	ISO 4017-A 4G M 12x25 - 8,8

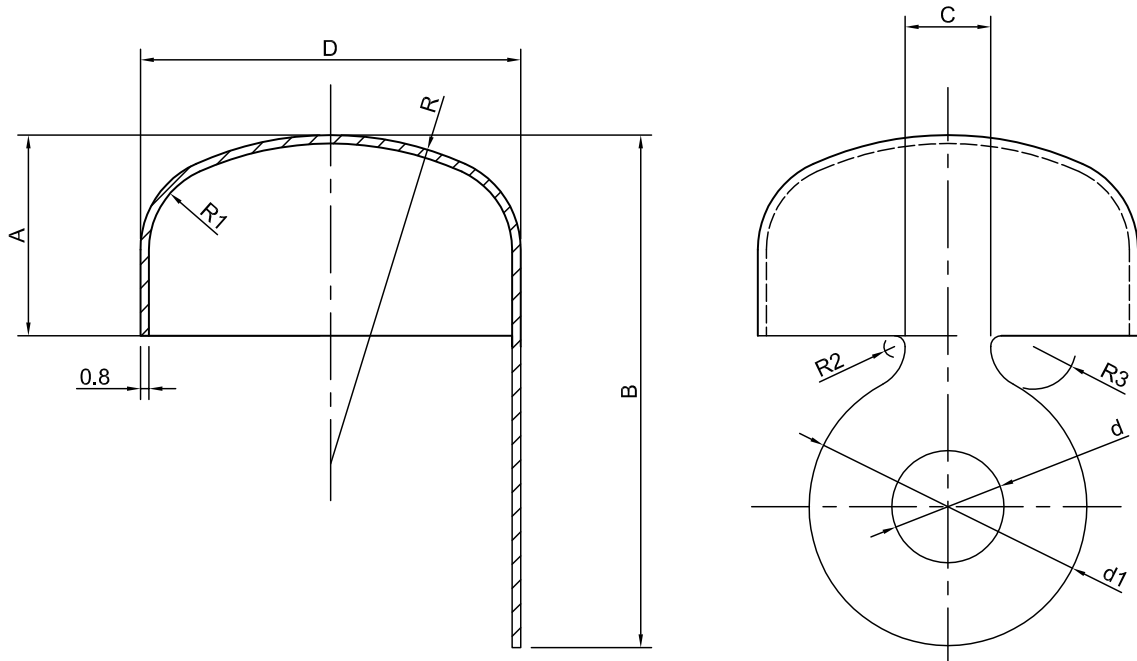


Item Nr.	Part Name	Part Number	Metarial
5	Cap	5 DIN 42 553	GD ZnA14
7	Socket	7 DIN 42 553	St 35
10	Labyrinth-disk	10 DIN 42 553	PA 6

FILLING NOZZLE DIN 42553 FORM D



Item Nr.	Part Name	Part Number	Metarial
7	Socket	7 DIN 42 553	St 35
8	Cap	8 DIN 42 553	GD ZnA14 Galvzn.
9	Gasket	15 DIN2691	Asbestos free



Material : Zinc Plated Steel / SS304

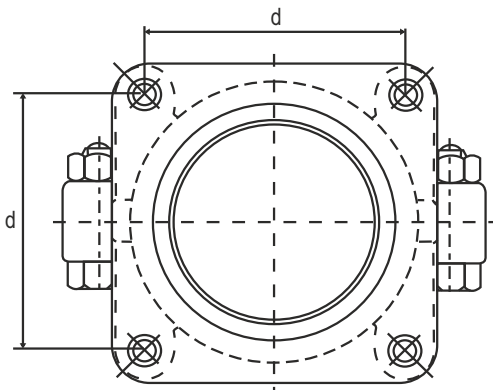
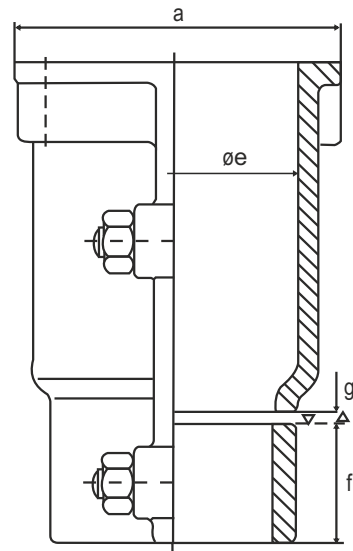
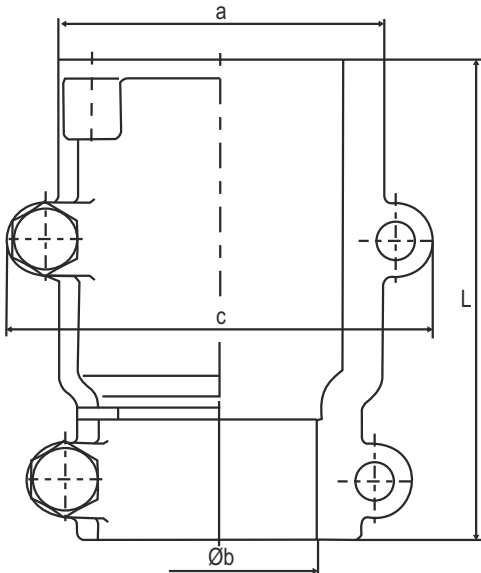


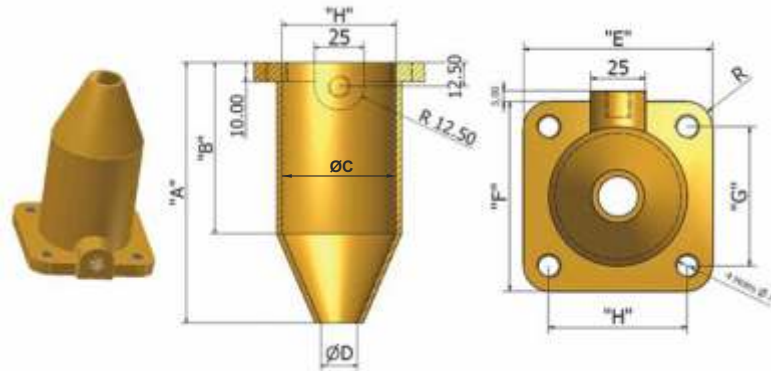
STANDARD DIMENSIONS

Part Number	Size	Material	D	A	d1	B	C	R	R1	R2	R3	D
MEV0066-01	M10	ST-37 A3K	34	18	26	48	30	30	8	2	2	34
-02	M12	ST-37 A3K	34	18	26	48	30	30	8	2	2	34
-03	M16	ST-37 A3K	34	18	28	48	30	30	8	2	2	34
-04	M20	ST-37 A3K	58	27	50	83	60	60	10	2	8	58
-05	M24	ST-37 A3K	58	27	50	83	60	60	12	2	8	58
-11	M8 / M10	ST-37 CR-Plated	30	15	22	40	6	30	3	1	4	30

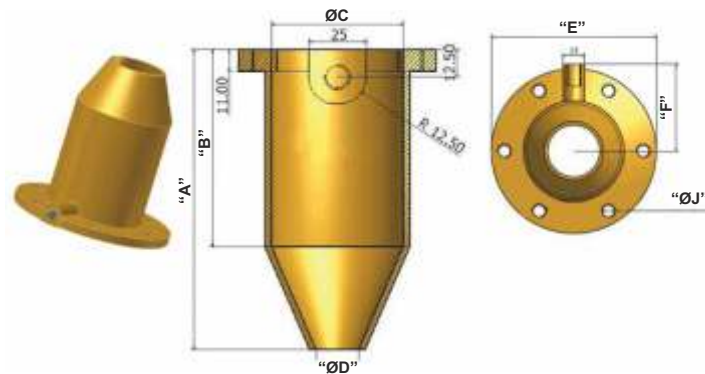
Aluminium injected body (not casted), A2-70 DIN 934 hexagonal nuts and DIN933 bolts 70μ RAL 7033 painted NBR gasket

Types	L	a	Øb	c	d	Øe	g	f
KB 32	75	52	32	65	40	35	2	17
KB 52	120	80	52	102	54	50	3	30
KB 85	200	125	85	150	100	105	5	50



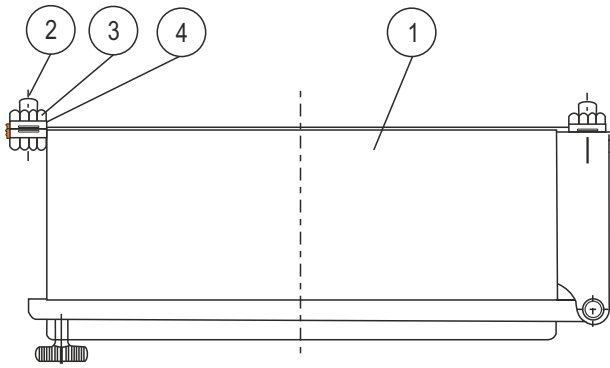
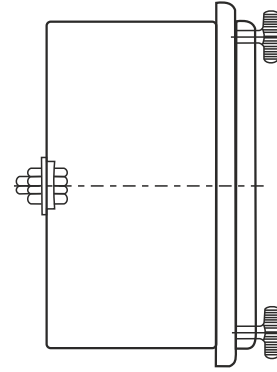
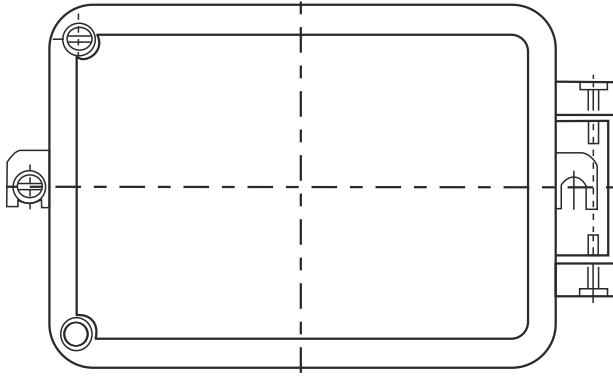


Type	Cable Ø	Dimensions									
		A	B	ØC	ØD	E	F	G	H	Ø1	R
X	12~51	137	90	60	19	90	90	66	66	12	12
Y	25~78	155	95	108	32	114	123	95	86	14	14



Type	Cable Ø	Dimensions						
		A	B	ØC	ØD	E	F	ØJ
Z	25~94	195	140	108	32	190	100	14





No.	Qty	Description	Remarks
1	1	Terminal Box	Aluminium casted
2	2	Bolt	M10x30
3	2	Nut	M10
4	2	Spring Washer	Ø 10.2

What is Cupal?

Cupal consists of copper sheet metal cladded on pure Aluminium (base metal), both metals being diffused together to form an inseparable whole by roll bonding process.

Why Cupal?

It is known that when the Aluminium Terminals are directly connected to Copper Terminals to carry current at a high voltage, a bimetallic galvanic corrosion occurs, resulting in a high resistance at the joint. The heated joints are oxidized and loses contact resulting in sparks, voltage dropout power losses and failure, damage to machinery.

When Cupal bimetal is placed between Aluminium Terminal and Copper Terminal at the joint (with Copper facing and Aluminium facing), bimetallic galvanic corrosion is averted due to absence of air in CUPAL bimetal. CUPAL is thus used at dissimilar metals joints of Aluminium and Copper to make similar metal's contact.

CUPAL has been successfully evaluated and used by many of the world's leading electrical equipment manufacturers.

Applications:

- Substation accessories like Bimetallic clamp and connectors
- Flexible connectors
- Cable clamp and cable end connectors
- Distribution and panel boards
- Isolators and switchgears
- Circuit Breakers

Specifications	Aluminium	Copper
Purity	99.50%	99.90%
Standard Composition By Volume	80%	20%
Standard Composition By Weight	55%	45%
Density at 200C	3,95 gms/cm ³	
Max electrical resistivity at 20°C	2,6 µO/cm	
Min electrical conductivity at 20°C	65% IACS	



**Range of application:**

Press Welding provides the best mechanical & electrical properties at high temperatures. Moreover, the laminated flexibles take less cross section area than braided flexible. These are available in all sizes covering the desired cross section area. Slotted holes can be provided up on request. Our laminated flexible connectors are necessary everywhere where it is impossible to use solid bus bars to transfer the current.

Main applications are:

- Expansion-equilibration in bus bar-systems
- Expansion-equilibration to connect transformers and generators
- Vibration-equilibration
- Moveable current-transfer in machines and devices
- Switching elements in switches

**Description:**

Laminated flexible connectors are made out of copper in case of copper alternatively in tinned configuration. The foil-cutoffs will be stacked and after this united at the contact-areas by using a tuned process for the later application. For this we use foils from 0,05 up to 1 mm thickness. The width and thickness of the connector is chosen by the customers.

Please contact with us for detailed information. We also develop special-designs for your individual applications.

**Procedure:**

We use to produce laminated flexible copper connectors with Press welding

Materials:

In order to optimize the max. load and conductance of our connectors we use exclusively pure and extreme transmittable materials as foils and sheet metal covers.

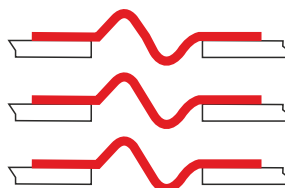
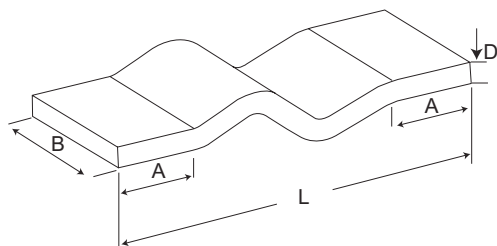
For copper-connectors Cu-ETP (previously E-Cu) and Cu-HCP (previously SE-Cu) according DIN EN 13599

**Form:**

For different applications we offer a wide range of standard shapes and also special designs : S, U and V Form



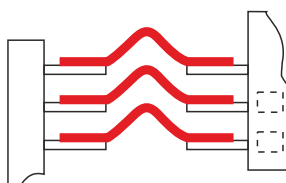
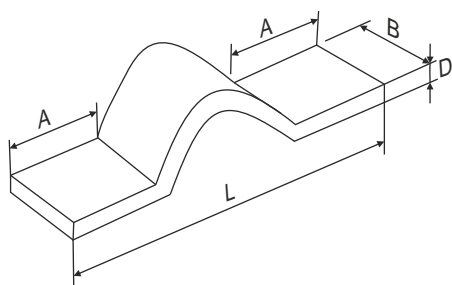
S FORM - Copper flexible, laminated, preswelded, undrilled



Expansion connectors inside of bus bar - systems S form

Part Name	B Width	D Thickness	A Terminal		Dilatation		Nominal Current 35C/65C	Cross Section mm ²
			Lenght	L Length	Lenght	Form		
ARCU 38/5/60/220/S	38	5	60	220	+/- 25	S	490A	240
ARCU 48/5/60/220/S	48	5	60	220	+/- 25	S	590A	380
ARCU 38/10/60/250/S	38	10	60	250	+/- 25	S	720A	480
ARCU 48/10/60/250/S	48	10	60	250	+/- 25	S	860A	580
ARCU 58/10/80/310/S	58	10	80	310	+/- 25	S	990A	780
ARCU 78/10/80/310/S	78	10	80	310	+/- 25	S	1240A	980
ARCU 98/10/100/350/S	98	10	100	350	+/- 25	S	1490A	1180
ARCU 118/10/100/350/S	118	10	100	350	+/- 25	S	1710A	1200

V FORM - Copper flexible, laminated, preswelded, undrilled



Connections between switchgears, transformers or generators and prefabricated power networks V form

Part Name	B Width	D Thickness	A Terminal		Dilatation		Nominal Current 35C/65C	Cross Section mm ²
			Lenght	L Length	Lenght	Form		
ARCU 38/5/50/180/V	38	5	50	180	+/- 20	V	490A	190
ARCU 38/5/50/220/V	38	5	50	220	+/- 20	V	490A	190
ARCU 38/5/80/280/V	38	5	80	280	+/- 20	V	490A	190
ARCU 38/10/50/180/V	38	10	50	180	+/- 20	V	720A	380
ARCU 38/10/50/220/V	38	10	50	220	+/- 20	V	720A	380
ARCU 38/10/80/280/V	38	10	80	280	+/- 20	V	720A	380
ARCU 48/5/50/220/V	48	5	50	220	+/- 20	V	590A	240
ARCU 48/10/80/280/V	48	10	80	280	+/- 20	V	860A	480
ARCU 58/10/70/240/V	58	10	70	240	+/- 20	V	990A	580
ARCU 58/10/80/280/V	58	10	80	280	+/- 20	V	990A	580
ARCU 78/10/90/280/V	78	10	90	280	+/- 20	V	1240A	780
ARCU 78/10/100/320/V	78	10	100	320	+/- 20	V	1240A	780
ARCU 98/10/100/300/V	98	10	100	300	+/- 20	V	1490A	980
ARCU 98/10/100/320/V	98	10	100	320	+/- 20	V	1490A	980
ARCU 98/10/110/360/V	98	10	110	360	+/- 20	V	1490A	980
ARCU 98/15/110/360/V	98	15	110	360	+/- 20	V	2050A	1470
ARCU 118/20/130/400/V	118	10	130	400	+/- 20	V	1710A	1180

Construction and application manufactured out of highly flexible braids with solderless pressed contact areas made out of seamless Cu-ETP-tubes. The crimping process is realized without using additives like tin or soldering and welding additives. We use exclusively materials of same analysis and same conductivity of 57 S (braids and tubes). Suitable as earthing tapes as well as components for current transfer. Everywhere applicable where components with high flexibility and an optimized contact resistance are needed.

Remark :

Manufacturing in large as well as small quantities in length acc. to your wishes. On request also with changed drilling deliverable. When placing an order please specify the wished changes.

Technical data :

Braids made out of annealed Cu-ETP wires surface uncoated or tinned.

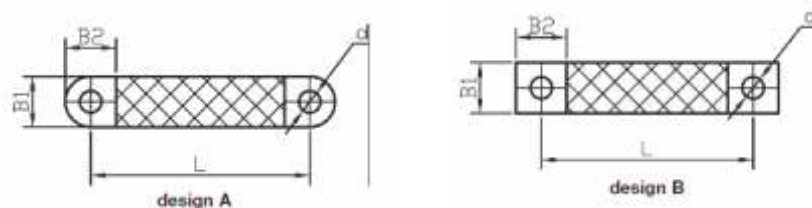
wire-Ø 0,07 mm (10 mm²)

wire-Ø 0,16 mm (14 mm²)

wire-Ø 0,10 mm (16-70 mm²)

Contact areas :

Seamless copper tube made out of Cu-ETP material surface uncoated or tinned, ET10-100/T (tinned)
ET10-100/U (uncoated)



Code	Cross-section mm ²	L	B1xB2	d
ET10-100/T or U	10	100	15x15	6,5
ET10-150/T or U	10	150	15x15	6,5
ET10-200/T or U	10	200	15x15	6,5
ET10-250/T or U	10	250	15x15	6,5
ET10-300/T or U	10	300	15x15	6,5
ET14-100/T or U	14	100	20x20	9
ET14-150/T or U	14	150	20x20	9
ET14-200/T or U	14	200	20x20	9
ET14-250/T or U	14	250	20x20	9
ET14-300/T or U	14	300	20x20	9
ET16-100/T or U	16	100	20x20	9
ET16-150/T or U	16	150	20x20	9
ET16-200/T or U	16	200	20x20	9
ET16-250/T or U	16	250	20x20	9
ET16-300/T or U	16	300	20x20	9
ET25-100/T or U	25	100	25x25	9
ET25-150/T or U	25	150	25x25	9
ET25-200/T or U	25	200	25x25	9
ET25-250/T or U	25	250	25x25	9
ET25-300/T or U	25	300	25x25	9
ET35-100/T or U	35	100	30x30	9
ET35-150/T or U	35	150	30x30	9
ET35-200/T or U	35	200	30x30	9
ET35-250/T or U	35	250	30x30	9
ET35-300/T or U	35	300	30x30	9
ET50-100/T or U	50	100	30x30	9
ET50-150/T or U	50	150	30x30	9
ET50-200/T or U	50	200	30x30	9
ET50-250/T or U	50	250	30x30	9
ET50-300/T or U	50	300	30x30	9
ET70-100/T or U	70	100	40x40	11
ET70-150/T or U	70	150	40x40	11
ET70-200/T or U	70	200	40x40	11
ET70-250/T or U	70	250	40x40	11
ET70-300/T or U	70	300	40x40	11
ET95-100/T or U	95	100	30x30	12,5
ET95-150/T or U	95	150	30x30	12,5
ET95-200/T or U	95	200	30x30	12,5
ET95-250/T or U	95	250	30x30	12,5
ET95-300/T or U	95	300	30x30	12,5
ET185-100/T or U	185	100	30x30	12,5
ET185-150/T or U	185	150	30x30	12,5
ET185-200/T or U	185	200	30x30	12,5
ET185-250/T or U	185	250	30x30	12,5
ET185-300/T or U	185	300	30x30	12,5





For mechanical, electrical, physical and chemical endurance choose Cast polyamide.

A full range of Cast Polyamid Coil Support Blocks in various styles according to customer request from Cast polyamide. Due to the wide number of patterns please let us have your requirements.

Tooling for special requirements is possible and PA 6G is cheaper instead of resin supports. Styles too numerous to mention so please provide us with your specific drawing.

Cast Polyamide PA 6G advantages:

- better mechanical stability
- lower water absorption
- better creep resistance
- better dimensional stability
- higher wear resistance

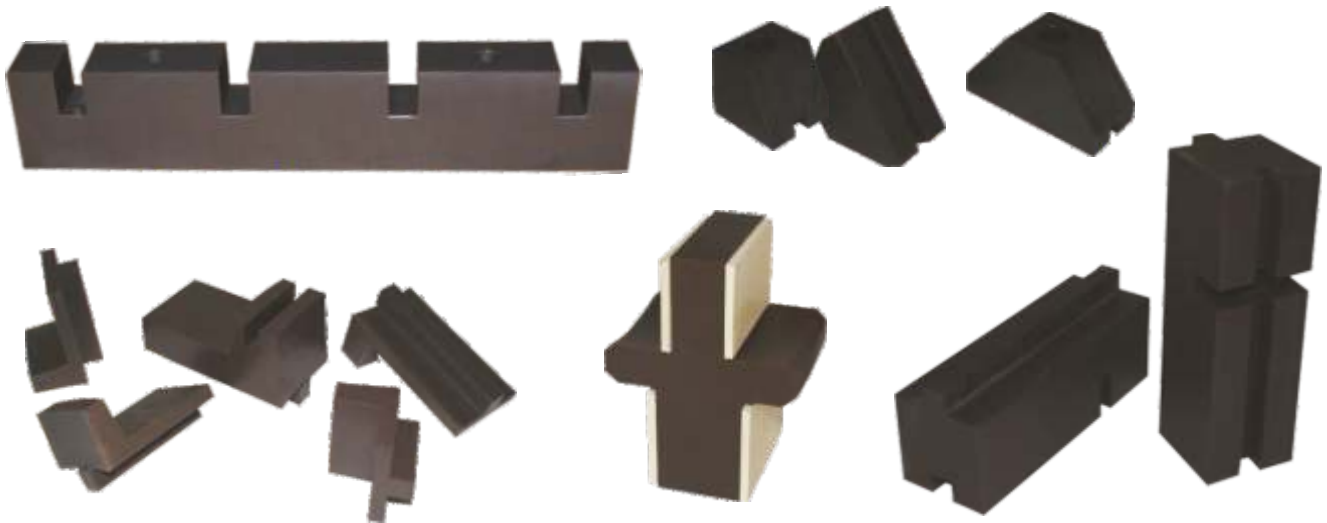
Properties	Value	
Density (g/cm3)	:1,13-1,15	DIN53479
Impact strenght J	:4-25	DIN53453
Hardness shore D	:D85-90	DIN53505
Tensile strenght (kg/cm3)	:600-980	DIN53455
Dielectric strenght (kV/mm)	:30	DIN53481
Service temperature C	:+120/+160	

Good damping properties

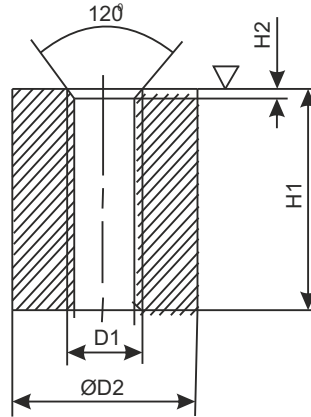
for the reduction of vibration and noise, PA 6G reduces vibration which is transferred from metallic parts. In the same way, PA 6 G allows reduction of the vibration affecting the machine frame. This way the life of transformers and their parts can be extended.

Good machining, dimensional stability, low residual stress

allow production of complex engineered components and application in transformer design areas. Machining can be performed with standard tools and conventional machines.



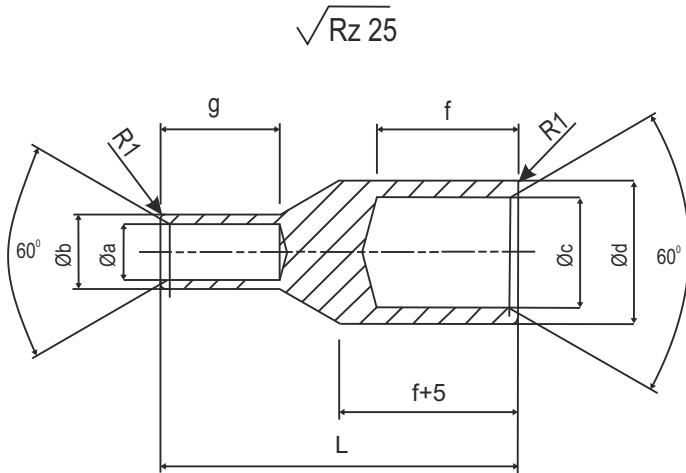
Tooling for special requirements of earthing conductors is possible please provide us with your specific drawing.



No	D1	ØD2	H1	H2	Weight (kg.)
31601	M4	10	15		0,006
31602	M6	10	20		0,012
31603	M8	16	20		0,031
31604	M10	20	15	0,5	0,026
31605	M12	30	25	1	0,120
31606	M12	25	25	2	0,120
31607	M12	20	20	2	0,035
31608	M8	16	20	2	0,029
31609	R1/2"	40	30	1	0,300
31610	R1"	45	50	-	0,220
31611	M16	40	30	1	0,300

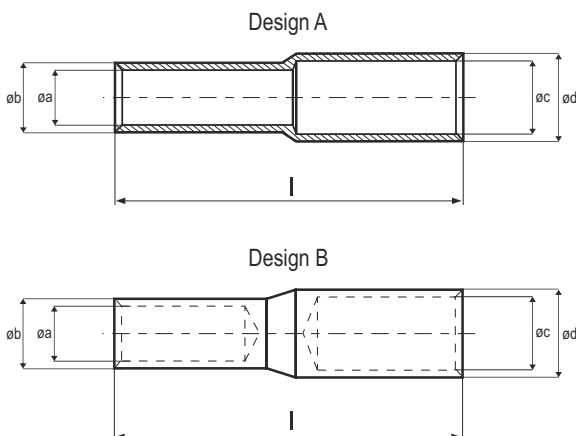


Material: copper, galvanically tinned.
without plating available



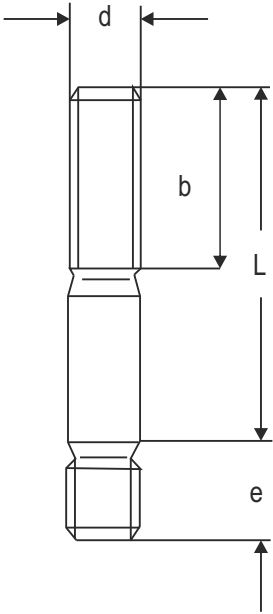
No	conductor diameter	braided section	braided diameter	ØA	ØB	ØC	ØD	F	G	L
A1	8	50	10	8,2	13,5	11,5	17,0	32	24	66
A2	10	70	12	10,2	15,5	13,5	19,0	32	32	74
A3	10	95	14	10,2	15,5	15,5	20,8	32	32	74
A4	12	120	16	12,2	17,5	17,0	23,2	40	32	82
A5	14	150	18	14,2	19,5	19,0	25,3	40	32	82
A6	16	185	20	16,2	21,5	21,5	28,5	40	32	82
A7	18	240	23	18,2	23,5	24,5	32,0	54	40	104
A8	20	300	26	20,2	25,5	27,5	38,0	65	40	115

Material: tin plated Cu-ETP DIN EN 13601



Any order dimensions are available according to individual arrangements

Material: A2-70



d	b	e	L
M5	16	5	acc. to customer request 20mm-220mm
M6	18	6	
M8	22	8	
M10	26	10	
M12	30	12	
M14	34	14	
M16	38	16	
M18	42	18	
M20	46	20	
M22	50	22	
M24	54	24	

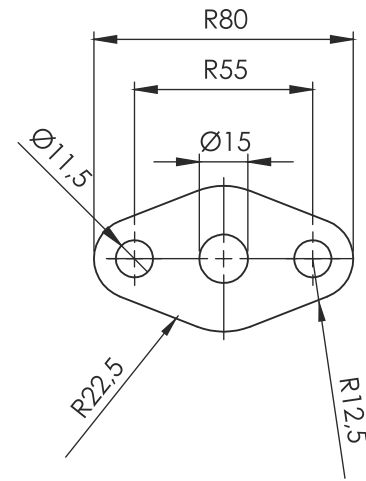
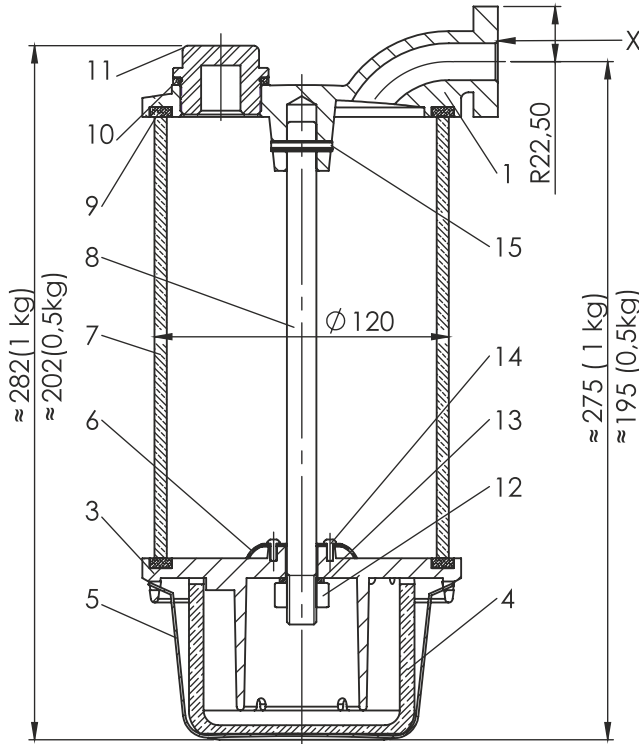
Stud Bolts



1520 different designs of stud bolts we manufacture (DIN 668/ DIN 938/ T0727 / T0729 with M6-M8-M10-M12-M16-M20-M24-M32-M36-M40-M42), We can machine as your specified dimensions for your stud bolts up to 3000 mm. Plating of electrogalvanize, silver, tin, nickel is possible.

Silicagel Capacity	Form	Application	Transformer Oil Capacity
0.5 kg.	A	250 kVA	1800 kg.
1.0 kg.	A	250-5000 kVA	3600 kg.

The top and the bottom sections : Casted aluminium
 Paint : RAL 7033 electrostatic powder
 Shafts : Nickel plated steel
 Container : Glass oil bowl polycarbonate
 Bowl holder : CrNi



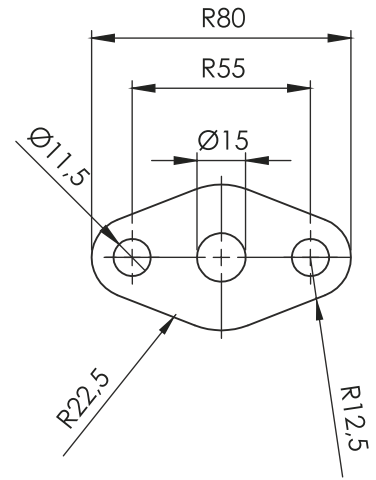
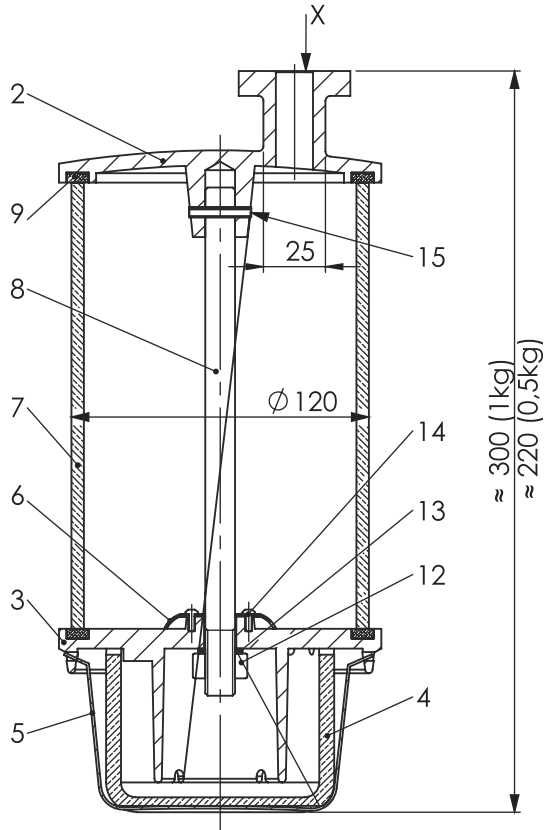
Pos. No.	Qty.	Description	Material
1	1	Top section	GD - AL lack RAL 7033
3	1	Bottom section	GD - AL lack RAL 7033
4	1	Oil bowl	Plexiges, klar
5	1	Holder	X 12 CrNi 177
6	1	Sieve	AL 1.5 Ø
7	1	Glass cylinder	Glass 120x5x100/180
8	1	Bridging plug	St 33 galv. zn M12x125/250
9	2	Gasket	NBR 70
10	1	Gasket	Asbestos free
11	1	Plug	GD - AL lack RAL 7033
12	1	Nut	M12 DIN 934 - 4D
13	1	Spring washer	B12 DIN 127
14	2	Rivet	2,5x4 Alu DIN 1476
15	1	Pin	4x24 DIN 1471



Mh Form A 0.5kg

Silicagel Capacity	Form	Application	Transformer Oil Capacity
0.5 kg.	B	250 kVA	1800 kg.
1.0 kg.	B	250-5000 kVA	3600 kg.

The top and the bottom sections : Casted aluminium
 Paint : RAL 7033 electrostatic powder
 Shafts : Nickel plated steel
 Container : Glass oil bowl polycarbonate
 Bowl holder : CrNi



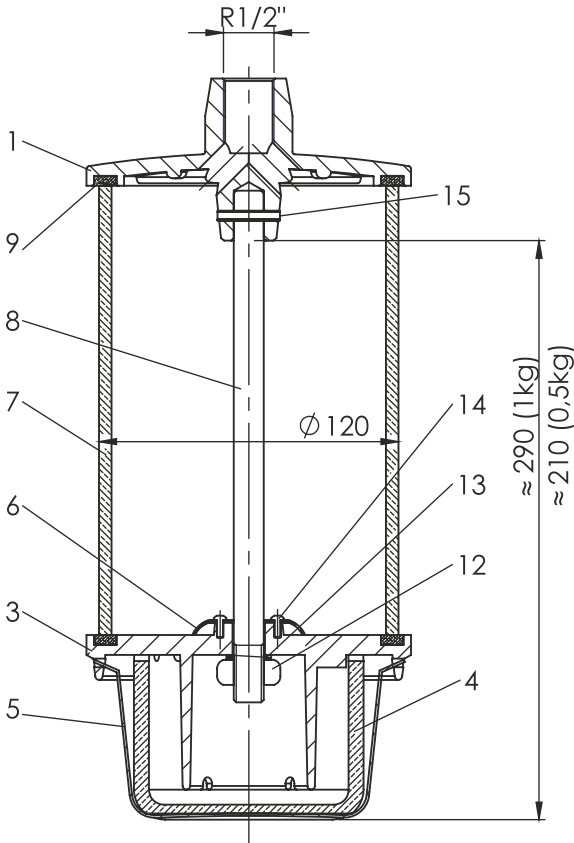
Pos. No.	Qty.	Description	Material
2	1	Top section	GD - AL lack RAL 7033
3	1	Bottom section	GD - AL lack RAL 7033
4	1	Oil bowl	Plexiges, klar
5	1	Holder	X 12 CrNi 177
6	1	Sieve	AL 1.5 Ø
7	1	Glass cylinder	Glass 120x5x100/180
8	1	Bridging plug	St 33 galv. zn M12x125/250
9	2	Gasket	NBR 70
12	1	Nut	M12 DIN 934 - 4D Galv. Zn
13	1	Spring washer	B12 DIN 127 - Galv. Zn
14	2	Rivet	2,5x4 Alu DIN 1476
15	1	Pin	4x24 DIN 1471



Mh Form B 1.0kg

Silicagel Capacity	Form	R diameter	Application	Transformer Oil Capacity
0.5 kg.	C	R 1/2" R 3/4" R 1"	250 kVA	1800 kg.
1.0 kg.	C	R 1/2" R 3/4" R 1"	250-5000 kVA	3600 kg.

The top and the bottom sections : Casted aluminium
 Paint : RAL 7033 electrostatic powder
 Shafts : Nickel plated steel
 Container : Glass oil bowl polycarbonate
 Bowl holder : CrNi



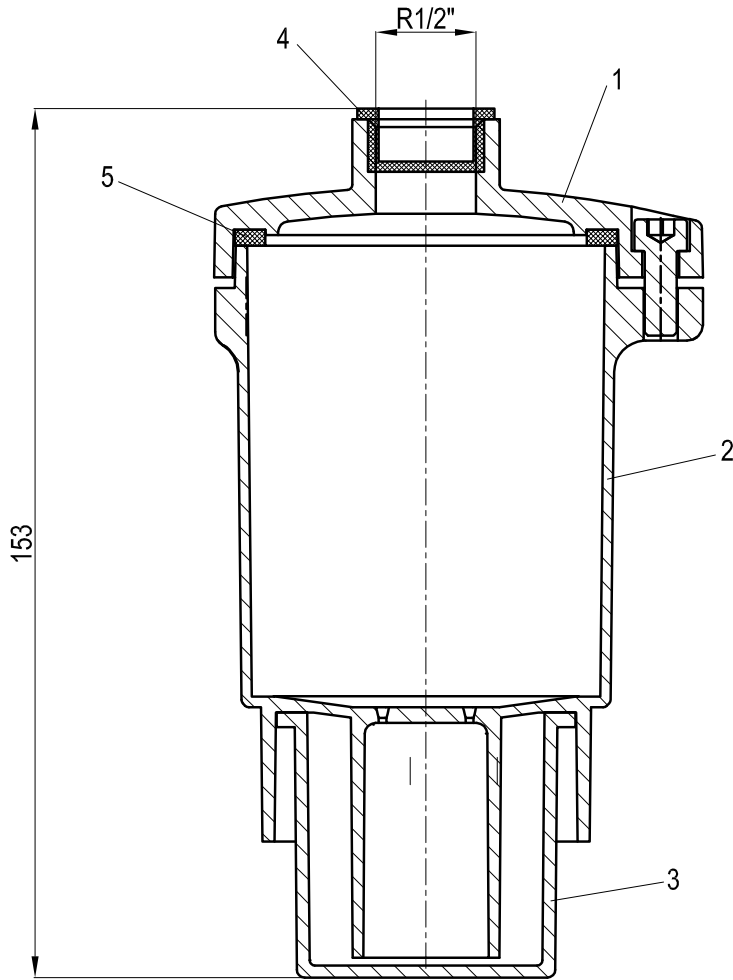
MH Form C 1.0 kg.



MH Form C 0.5 kg.

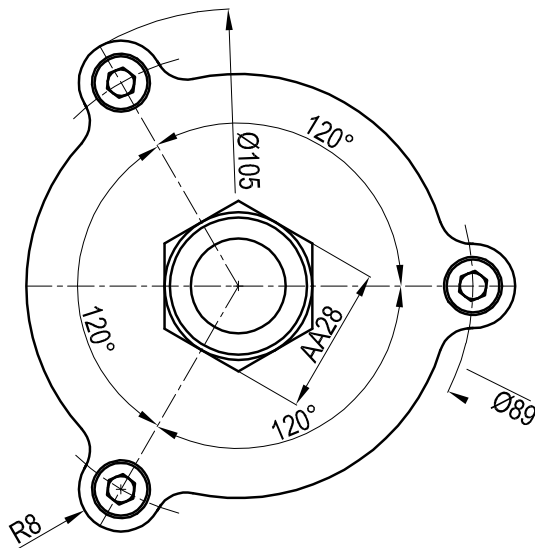
Pos. No.	Qty.	Description	Material
1	1	Top section	GD - AL lack RAL 7033
3	1	Bottom section	GD - AL lack RAL 7033
4	1	Oil bowl	Plexiges, klar
5	1	Holder	X 12 CrNi 177
6	1	Sieve	AL 1.5 Ø
7	1	Glass cylinder	Glass 120x5x100/180
8	1	Bridging plug	St 33 galv. zn M12x125/250
9	2	Gasket	NBR 70
12	1	Nut	M12 DIN 934 - 4D Galv. Zn
13	1	Spring washer	B12 DIN 127 - Galv. Zn
14	2	Rivet	2,3x5 DIN1476
15	1	Pin	4x24 DIN 1471

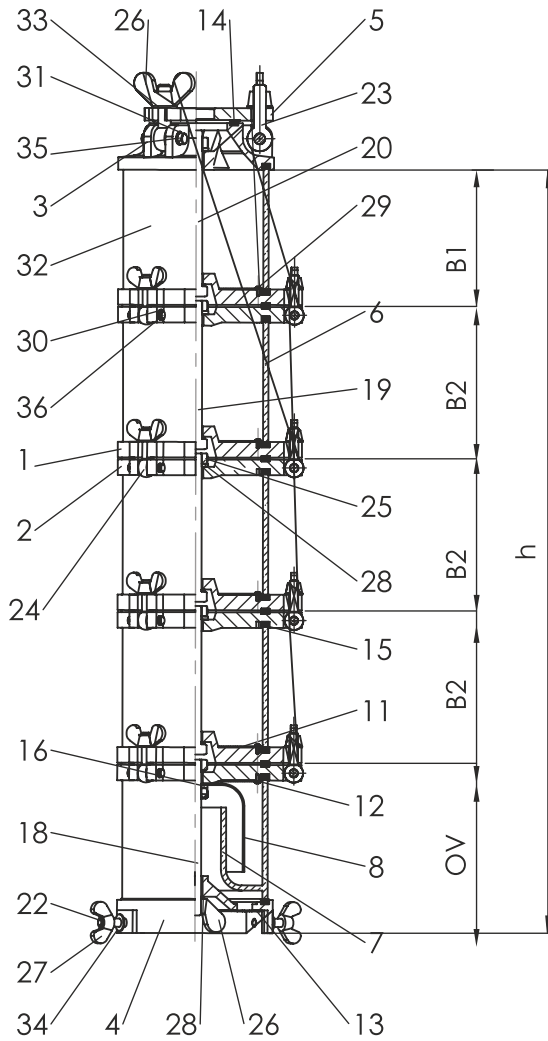




The dehydrating breather removes practically all moisture from the air which flows through it into the conservator when the transformer is cooling down. This has the effect of largely preventing any reduction of the dielectric strength of the insulation due to moisture ambient air and any formation of condensation in the conservator. Thus the dehydrating breather increases the operational integrity of the transformer.

Item No.	Qty.	Description	Material
1	1	Top section	Aluminium, Powder painted
2	1	Cylinder	Polycarbonate
3	1	Oil Bowl	Polycarbonate
4	1	Plug	Polyethylene
5	1	Gasket	Nitrile rubber





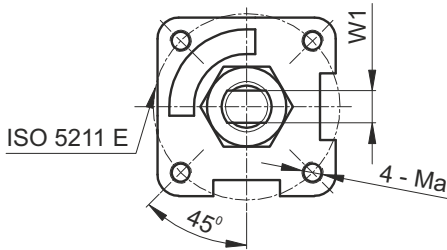
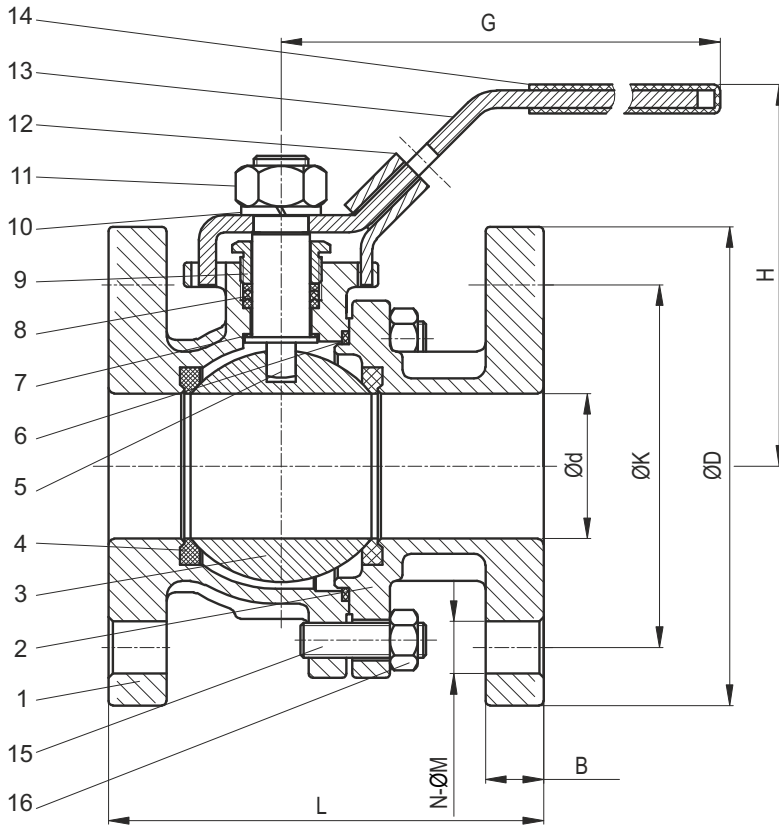
MH L3



MH L2

Pos. No.	Grouping			Description	Remarks
	B1	B2	OV		
1	1	1	-	Partition plate	GG 20 gal. zn
2	-	1	1	Partition plate	GG 20 gal. zn
3	1	-	-	Top section	GG 20 gal. zn
4	-	-	1	Bottom section	GG 20 gal. zn
5	-	-	-	Flange	
6	1	1	1	Glass cylinder	Glass
7	-	-	1	Oil container	Glass
8	-	-	1	Dome	nrSt
11	1	-	-	Perforated plate	A1
12	-	-	1	Perforated plate	A1
13	-	-	1	Perforated plate	A1
14	1	-	-	Gasket	NBR 70
15	2	3	3	Gasket	NBR 70
16	-	-	2	Gasket	M1-250
18	-	-	1	Bolt	M12x150 - A2. 70
19	-	1	-	Bolt	M12x130 - A2. 70
20	1	-	-	Bolt	M12x140 - A2. 70
22	-	-	2	Stud bolt	M8x30 - A2. 70
23	3	-	-	Eyebolt	M12x55 A2. 70
24	-	3	3	Eyebolt	M8x40 A2. 70
25	1	1	2	Hexagon nut	M12 - A2. 70
26	3	-	1	Wing nut	M12-C - A2. 70
27	-	3	5	Wing nut	M8-C - A2. 70
28	1	1	2	Spring washer	12 CrN. - 177
29	3	3	7	Pin	2,5x5 Alu
30	-	6	6	Circlips	8x0,8 - nrSt
31	6	-	-	Circlips	10x1 - nrSt
32	*	*	-	Silicagel	*-1,200 gr.
33	3	-	-	Washer	B13 - nrSt
34	-	3	5	Washer	B8,4 - nrSt
35	3	-	-	Stud	1.4305 nrSt
36	-	3	3	Stud	1.4305 nrSt

Types of moisture holders		L1	L2	L3	L4
Silicagel amount (kg.)		1,2	2,4	3,6	4,8
Height (h) (± 1)		342	489	636	783
Weight of moisture holders without silicagel (no filling) (kg.)		9,2	12,6	16,3	20
Assembly groups	B1	1	1	1	1
	B2	-	1	2	3
	OV	1	1	1	1



Stainless Steel 316/1.4408
Stainless Steel 304/1.4308
Carbon Steel /1.0619 (Painted)

NO	PART NAME	MATERIAL		
1	Body	1.0619	1.4308	1.4408
2	Cap	1.0619	1.4308	1.4408
3	Ball		1.4408	
4	Seat		PTFE	
5	Stem		SS 316	
6	Gasket		PTFE	
7	Thrust washer		PTFE	
8	Packing		PTFE	
9	Gland		SS 304	
10	Spring washer		SS 304	
11	Stem nut		SS 304	
12	Locking device		SS 304	
13	Handle		SS 304	
14	Plastic cover		PLASTIC	
15	Bolt		SS 304	
16	Nut		SS 304	

FEATURES

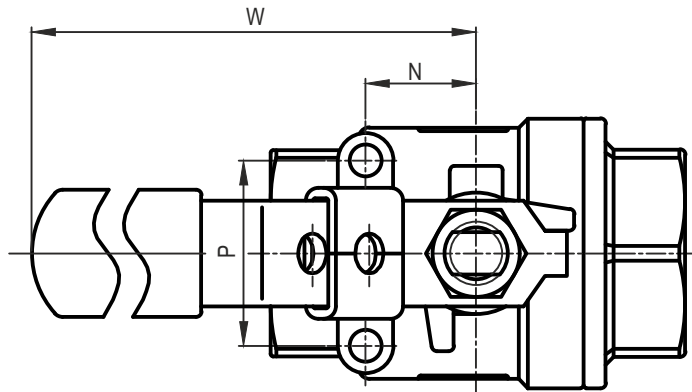
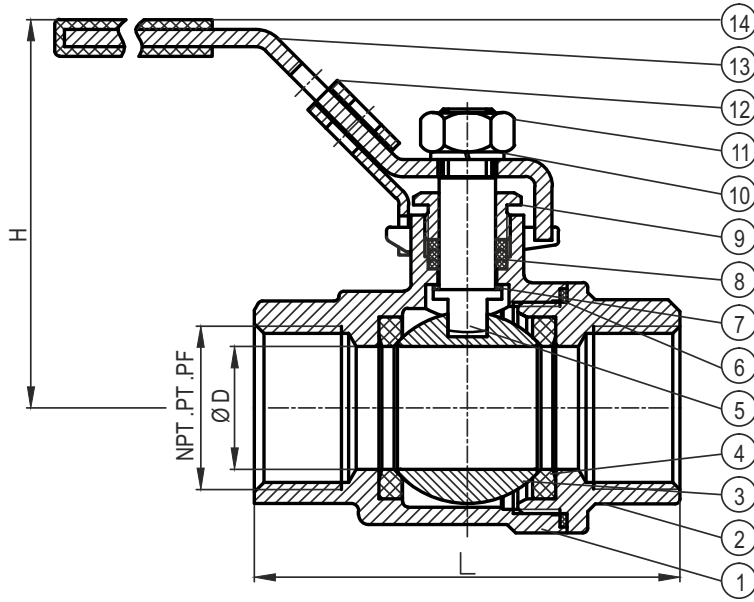
- Face to face dimension: DIN 3202-F4
- Test: EN 12266-1
- With ISO 5211 Mounting pad
- Investment casting body
- Blow-out proof stem
- Full port
- Lever operated
- With lockable device
- Open-Close written on the handle metal

Gaskets : PTFE - Resistant to transformer oil
Temperature Range : -40°C +220°C

DN	L	G	H	ØD	ØK	B	N	d
15	110	140	80	95	65	10	4	Ø14
25	125	160	93	115	85	10	4	Ø14
32	130	160	93	140	100	10	4	Ø18
40	140	185	96	150	110	12	4	Ø18
50	150	185	106	165	125	15	4	Ø18
65	170	185	129	185	145	15	4	Ø18
80	180	190	129	200	160	16	8	Ø18
100	190	230	151	220	180	16	8	Ø18

G and H dimensions can be change with customer request





FEATURES:

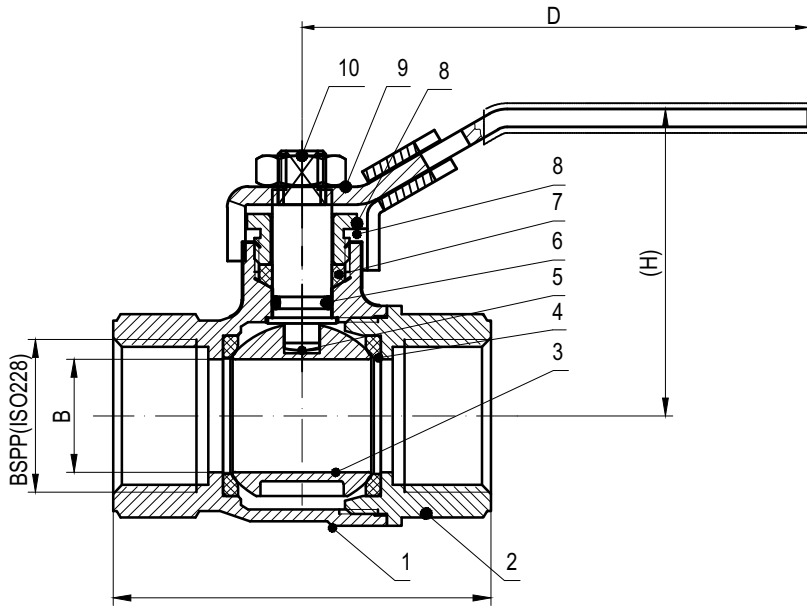
- PIPE THREAD IN ACCORDANCE: NPT, BSPT, DIN259, DIN2999, ISO 228 CLASS A
- FACE TO FACE: DIN-3202-M3
- BLOW-OUT PROOF STEM / FULL PORT
- INVESTMENT CASTING BODY
- 1000PSI(PN63)W.O.G.
- LOCKING DEVICE

Materials List

NO	PART NAME	MATERIAL
1	BODY	SS304 SS3016
2	CAP	SS304 SS3016
3	BALL	CF8 CF8M
4	SEAT	PTFE
5	STEM	SUS304 SUS316
6	GASKET	PTFE
7	THRUST WASHER	PTFE
8	PACKING	PTFE
9	GLAND	SUS304
10	SPRING WASHER	SUS304
11	STEM NUT	SUS304
12	LOCKING DEVICE	SUS304
13	HANDLE	SUS304
14	PLASTIC COVER	PLASTIC

DIMENSIONS:

Size		d	L	H	W	N	P
DN	NPS						
8	1/4"	11.6	50	56	102	12.7	28.5
10	3/8"	12.7	60	56	102	12.7	28.5
15	1/2"	15	75	65	123	12.7	28.5
20	3/4"	20	80	68	123	21	35
25	1"	25	90	79	153	21	35
32	1 1/4"	32	110	84	153	23.5	38
40	1 1/2"	40	120	94	183	23.5	38
50	2"	50	140	100	183	23.5	38
65	2 1/2"	65	185	135	246	35	54
80	3"	80	205	145	246	35	54



TECHNICAL FEATURES

Nominal pressure	600WOG
Shell Test Pressure	4.2MPa
Air Test Pressure	1.31MPa
Working Medium	Transformer Oil
Working Temperature	-20 / +120

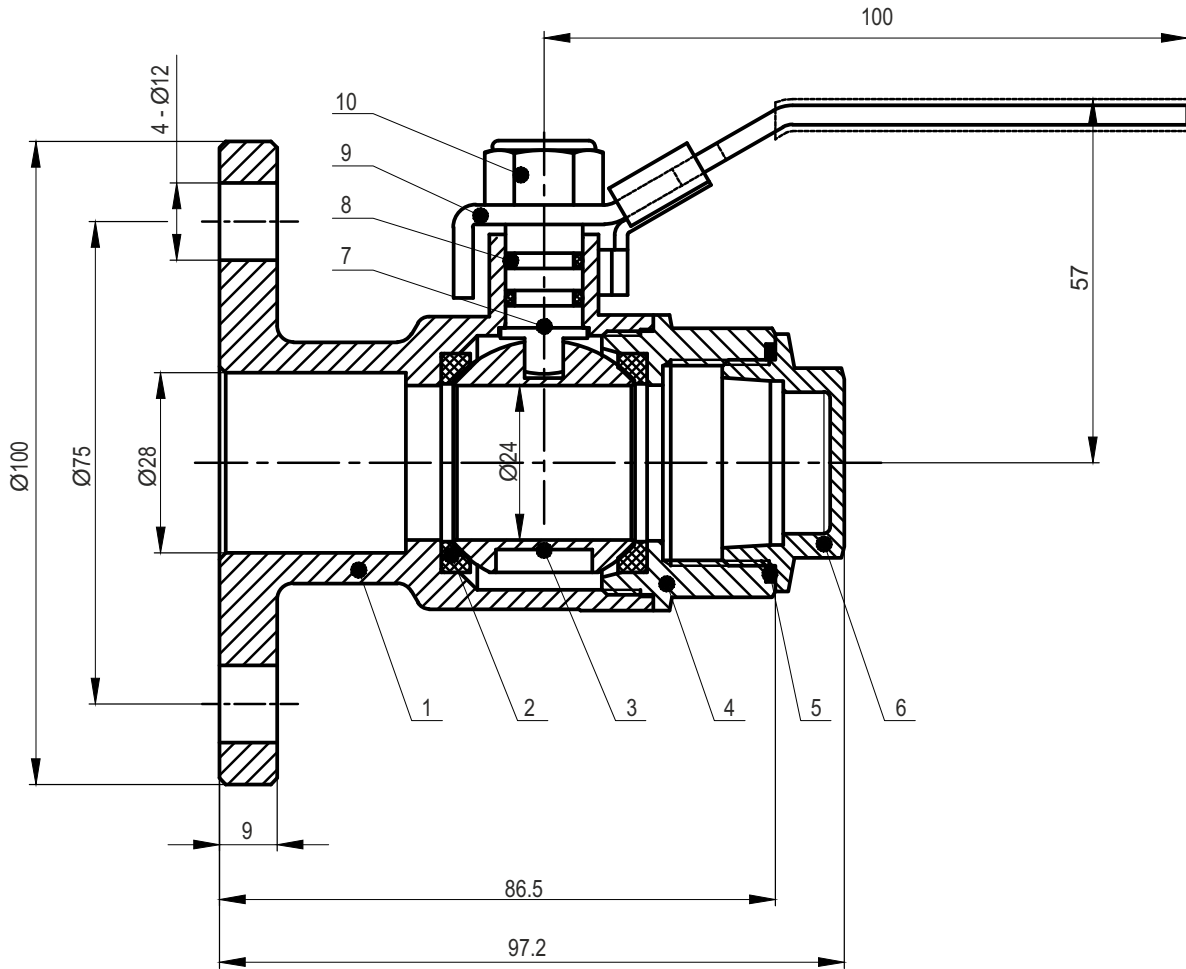
Dimensions in mm

Size	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
L	56	63	75	85	92.5	110
H	46	51	56	57	73	81
D	95	115	115	145	145	165
B	14	19	24	31	31	49

MATERIALS LIST

NO	DESCRIPTION	MATERIAL
1	VALVE BODY	CW617N
2	BONNET	CW617N
3	BALL	BRASS CHROMED PLATING
4	SEAT	PTFE
5	STEM	CW617N
6	O-RING	NBR
7	PACKING	PTFE
8	PACKING NUT	BRASS
9	LOCKING HANDLE	S.S.304
10	HEX NUT	S.S. 304

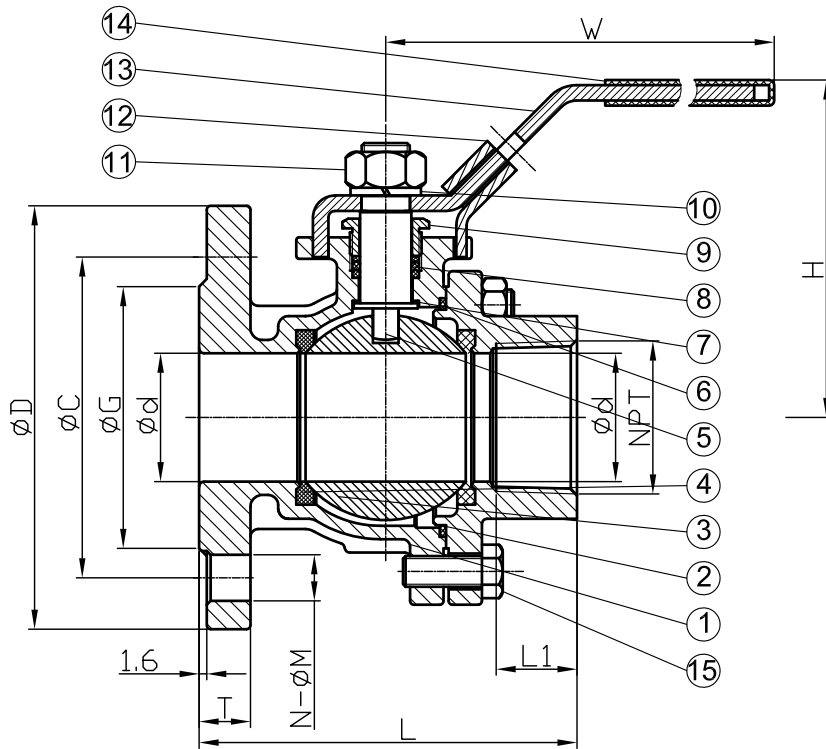




One Piece Body

Materials List

NO	DESCRIPTION	QTY.	MATERIAL
1	Valve body	1	Brass CW617N
2	Valve seat	2	PTFE
3	Ball	1	Brass HPb58-2
4	Bonnet	1	CW617N
5	Gasket	1	PTFE
6	Cap	1	Brass CW617N
7	Stem	1	Brass CW617N
8	O-ring	2	EPDM
9	Handle with locking device	1	SS304
10	Hex nut	1	SS304

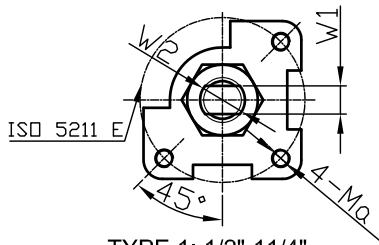


FEATURES:

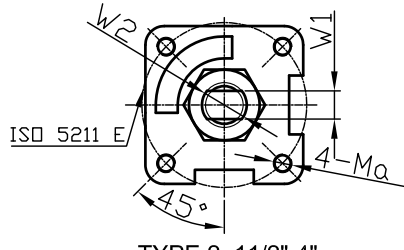
- End Flange Dimension: Asme B16.5
- Design: Asme B16.34
- Test: API 598
- With ISO 5211 Mounting Pad
- Investment Casting Body
- Blow-Out Proof Stem / Full Port
- Lever Operated / Locking Device

MATERIALS LIST

NO	PART NAME	MATERIAL
1	BODY	CF8M
2	CAP	CF8M
3	BALL	CF8M
4	SEAT	PTFE
5	STEM	SUS316
6	GASKET	PTFE
7	THRUST WASHER	PTFE
8	PACKING	PTFE
9	GLAND	SUS304
10	SPRING WASHER	SUS304
11	STEM NUT	SUS304
12	LOCKING DEVICE	SUS304
13	HANDLE	SUS304
14	PLASTIC COVER	PLASTIC
15	BOLT	SUS304



TYPE 1: 1/2"-11/4"



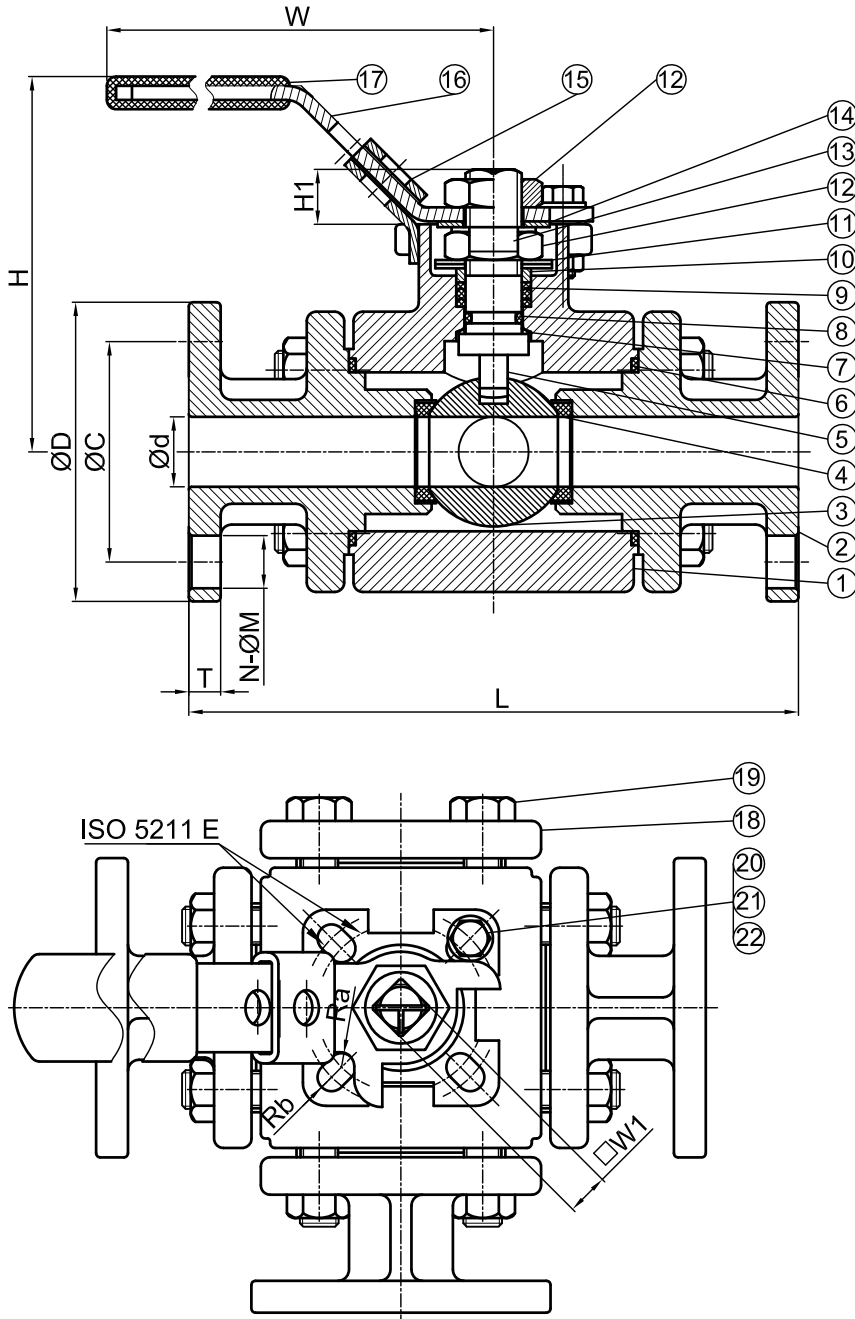
TYPE 2: 11/2"-4"

TEST PRESSURE:

SEAT	SHELL(BY WATER)	450PSI
		32kg/cm ²
	BY WATER	315PSI
		22kg/cm ²
	BY AIR	85PSI
		6kg/cm ²

DIMENSIONS:

SIZE	d	D	C	G	T	N-M	L	L1	H	W	W1	W2	ISO 5211	E	Ma	NPT
1"	25	108	79.5	51	11.1	4-□16	95	17.5	92	188	9.5	14.5	F05	50	M6	1"NPT
11/2"	40	127	98.5	73	14.3	4-□16	123	18.5	126	245	12	19.0	F07	70	M8	11/2"NPT
2"	50	152	120.5	92	15.9	4-□19	137	19.5	132	245	12	19.0	F07	70	M8	2"NPT



FEATURES:

- TEST: EN 12266-1:2003
- INVESTMENT CASTING BODY
- WITH ISO 5211 MOUNTING PAD
- LOCKING DEVICE
- THERE ARE FOUR SEATS
- L-PORT OR T-PORT AVAILABLE / 360° PAD

MATERIALS LIST

NO	PART NAME	MATERIAL
1	BODY	SS304 SS316
2	CAP	SS304 SS316
3	BALL	SS304 SS316
4	SEAT	PTFE
5	STEM	SS316
6	GASKET	PTFE
7	THRUST WASHER	PTFE
8	O-RING	VITON
9	PACKING	PTFE
10	GLAND	SS304
11	SPRING WASHER	SS304
12	STEM NUT	SS304
13	STOP WASHER	SS304
14	HANDLE HEAD	SS304
15	LOCKING DEVICE	SS304
16	HANDLE	SS304
17	PLASTIC COVER	PLASTIC
18	CAP-A	SS316
19	BOLT	SS304
20	STOP PIN	SS304
21	BOLT	SS304
22	NUT	SS304

FLOW PATTERN:

PORT TYPE	1	2	3	4
T	1 2 3 3	1 2 3 3	1 2 3 3	1 2 3 3

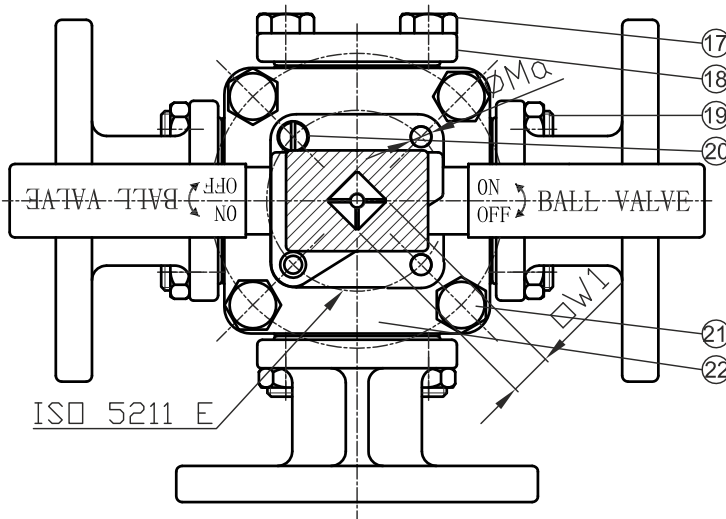
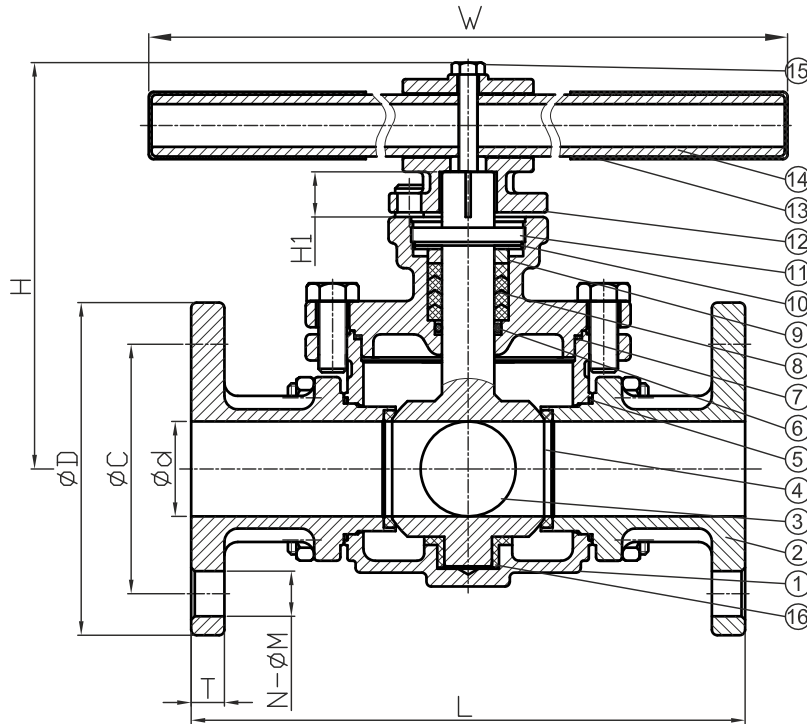
DIMENSIONS:

SIZE DN NPS	d	D	C	T	N	M	L	H	W	ISO 5211	E	H1	W1	Ra	Rb
25 1"	25	108	85	12.1	4	4	165	96	153	F04-F05	42-50	11	11	R3	R3.5



TEST PRESSURE:

SHELL(BY WATER)		EN 12266-1
		450PSI 32kg/cm ²
SEAT	BY WATER	315PSI 22kg/cm ²
	BY AIR	85PSI 6kg/cm ²



DIMENSIONS:

Size	d	D	C	T	N	M	L	H	W	ISO 5211	E	H1	W1	Ma
DN NPS														
80 3"	76	200	160	20	8	18	305	216	504	F10	102	24	22	□12

FEATURES:

- END FLANGE DIMENSION: DIN2633
- TEST:EN 12266-1:2003
- INVESTMENT CASTING BODY
- FIXED BALL / FULL PORT
- WITH ISO 5211 MOUNTING PAD
- THERE ARE FOUR SEATS
- L-PORT OR T-PORT AVAILABLE / 360°PAD

NO	PART NAME	MATERIAL
1	BODY	SS304 SS316
2	CAP	SS304 SS316
3	BALL	SS304 SS316
4	SEAT	R-PTFE
5	GASKET	R-PTFE
6	O-RING	VITON
7	GASKET	R-PTFE
8	PACKING	R-PTFE
9	GLAND	SUS304
10	SPRING WASHER	SUS301
11	CAP-C	1.4308 (SS304)
12	HANDLE HEAD	1.4308 (SS304)
13	PLASTIC COVER	PLASTIC
14	HANDLE POLE	GALVANIZED PIPE
15	HANDLE BOLT	SUS304
16	SLEEVE	R-PTFE
17	CAP-B BOLT	SUS304
18	CAP-B	1.4308
19	BOLD	SUS304
20	STOP PIN	SUS304
21	CAP-A BOLT	SUS304
22	CAP-A	1.4308

FLOW PATTERN:

PORT TYPE	1	2	3	4
L	1/3 2	1/3 2	1/3 2	1/3 2
T	1/3 2	1/3 2	1/3 2	1/3 2

TEST PRESSURE:

SEAT	SHELL(BY WATER)	345PSI
		24kg/cm ²
	BY WATER	250PSI
		17.5kg/cm ²
	BY AIR	85PSI
		6kg/cm ²

Flanged Gate Valves, PN16 nominal pressure, DIN EN 12288

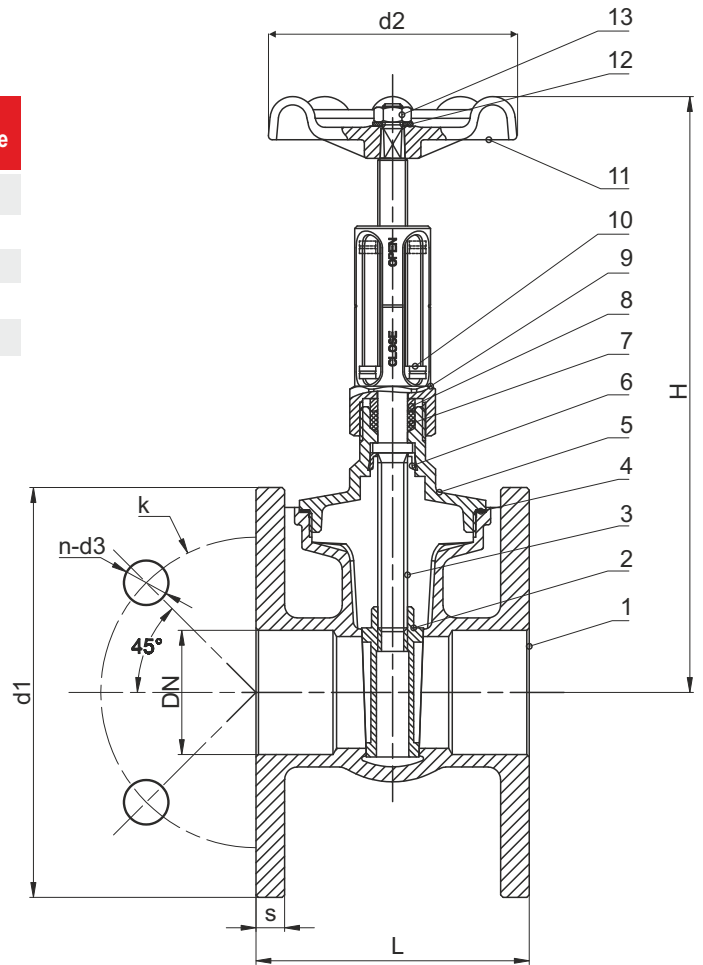
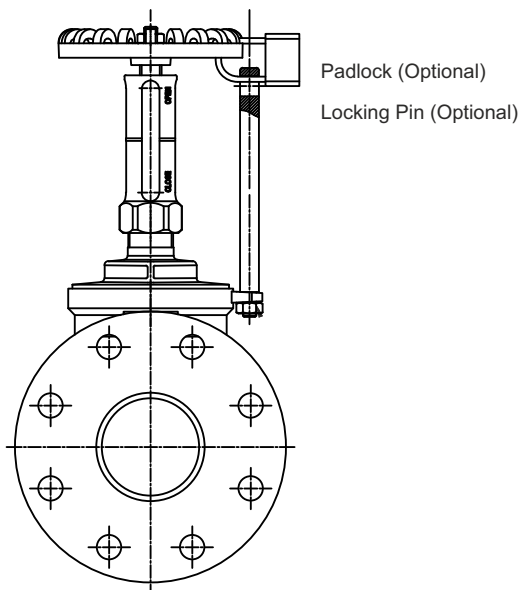
Body and all parts made of brass Ms 58 or RG 5 Bronze (red brass)
with maintenance-free gland packing (PTFE)
and non rising stem,
flanged connection acc. to DIN EN 1092-1

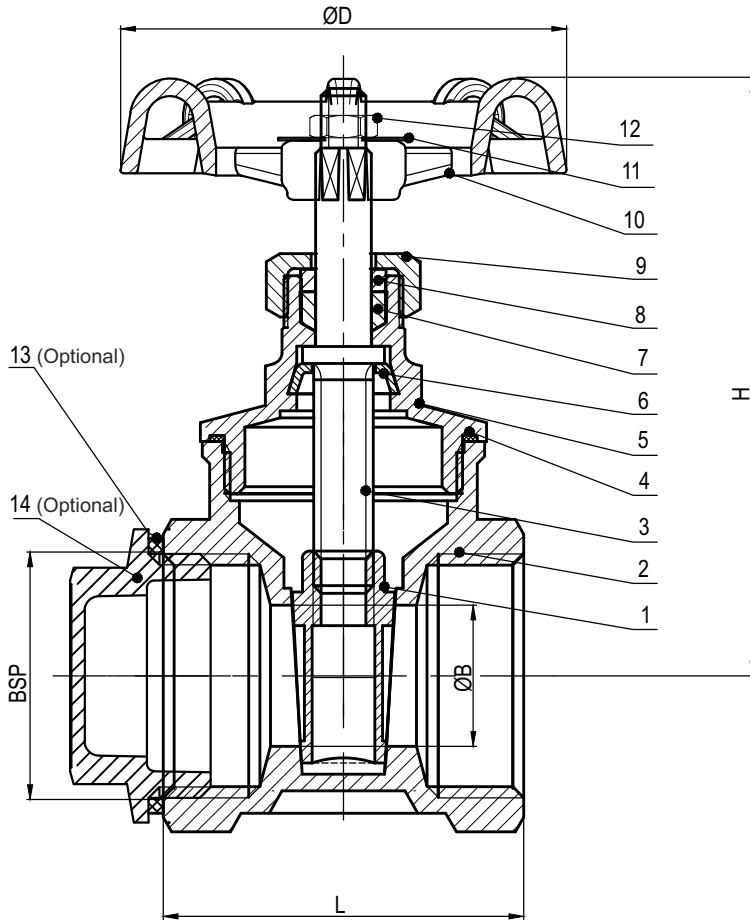


Specifications

Material	: Brass Ms 58 (CuZn40Pb2) or bronze RG 5 (CuSn5ZnPb)
Handwheel	: Brass (Red painted)
Wedge, cap, stem	: Brass Ms 58 (CuZn40Pb2) or bronze RG 5 (CuSn5ZnPb)
Other assembly components	: A2-70 Stainless Steel
Gaskets	: Resistant to Transformer Oil
Temperature	: -25°C, +120 °C
Flange dimensions	: EN 1092-1
Stem	: Moving inner

DN	L	d1	H	d2	s	Holes			W(kg.)	Pressure
						k	n	d3		
25	80	115	80	60	10	85		14	2,3	
40	100	150	100	80	10,5	110	4	18	4,2	
50	110	165	110	100	11,5	125		18	4,8	PN 16
65	130	185	130	120	14	145		18	8.9	
80	150	200	150	140	14	160	8	18	11.4	





Technical Features

Nominal pressure	PN16
Working Medium	Transformer Oil
Working Temperature	-20 +120

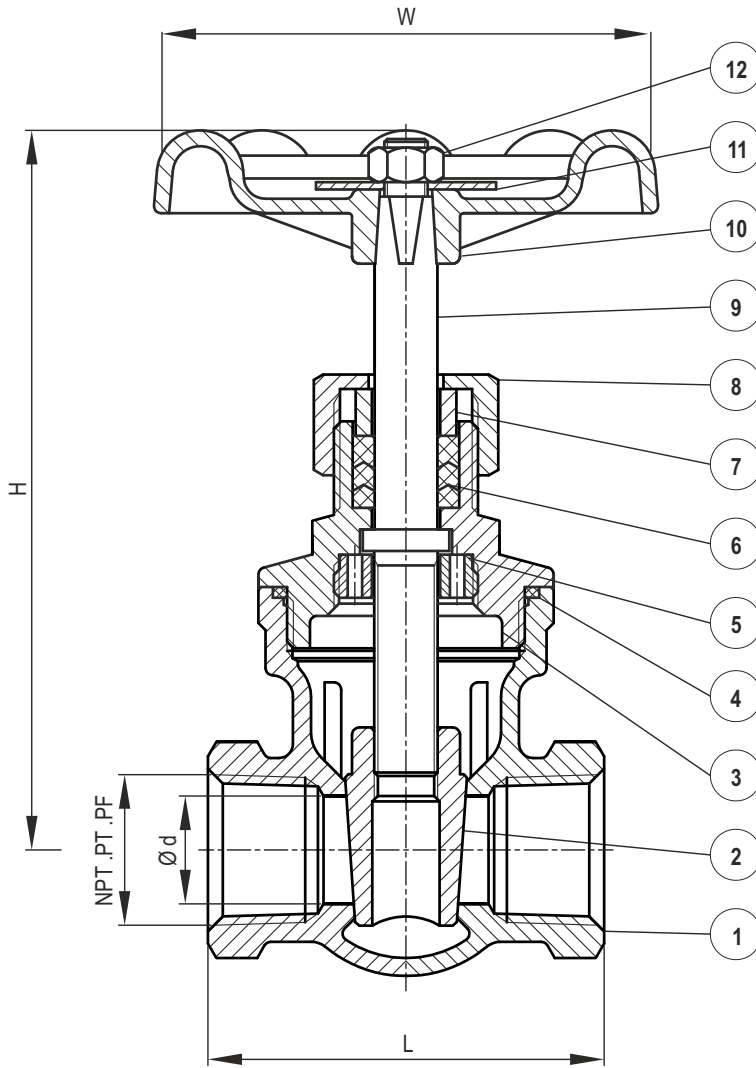
Materials List

NO	DESCRIPTION	MATERIAL
1	Disc	HPb59-2RA
2	Valve body	HPb59-2RA
3	Stem	CW617N
4	Washer ring	PTFE
5	Bonnet	HPb59-2RA
6	Lock nut	HPb59-2RA
7	Packing	PTFE
8	Gland	Brass HPb59-2RA
9	Packing nut	Brass HPb59-2RA
10	Hand Wheel	Steel Zinc plated
11	Nameplate	Aluminum
12	Hex nut	Aluminum
13	Gasket (Optional)	PTFE
14	Plug (Optional)	Brass HPb59-2RA



Dimensions in mm

Size	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
L	42.5	45.5	48.5	56	58	62.5
H	71.5	74	80.5	93.5	108	122
D	55	55	60	72	72	80
B	13	16	19	25	32	39



TC311 SUSU316 A351 Gr-CF8M DIN1.4408

FEATURES:

- PIPE THREAD IN ACCORDANCE: NPT, BSPT, DIN259, DIN2999, ISO 228 CLASS A
- INVESTMENT CASTING BODY
- NON-RISING STEM
- 200 W.O.G.
- MATERIAL:

SUS316/ ASTM A351 Gr-CF8M/DIN1.4408

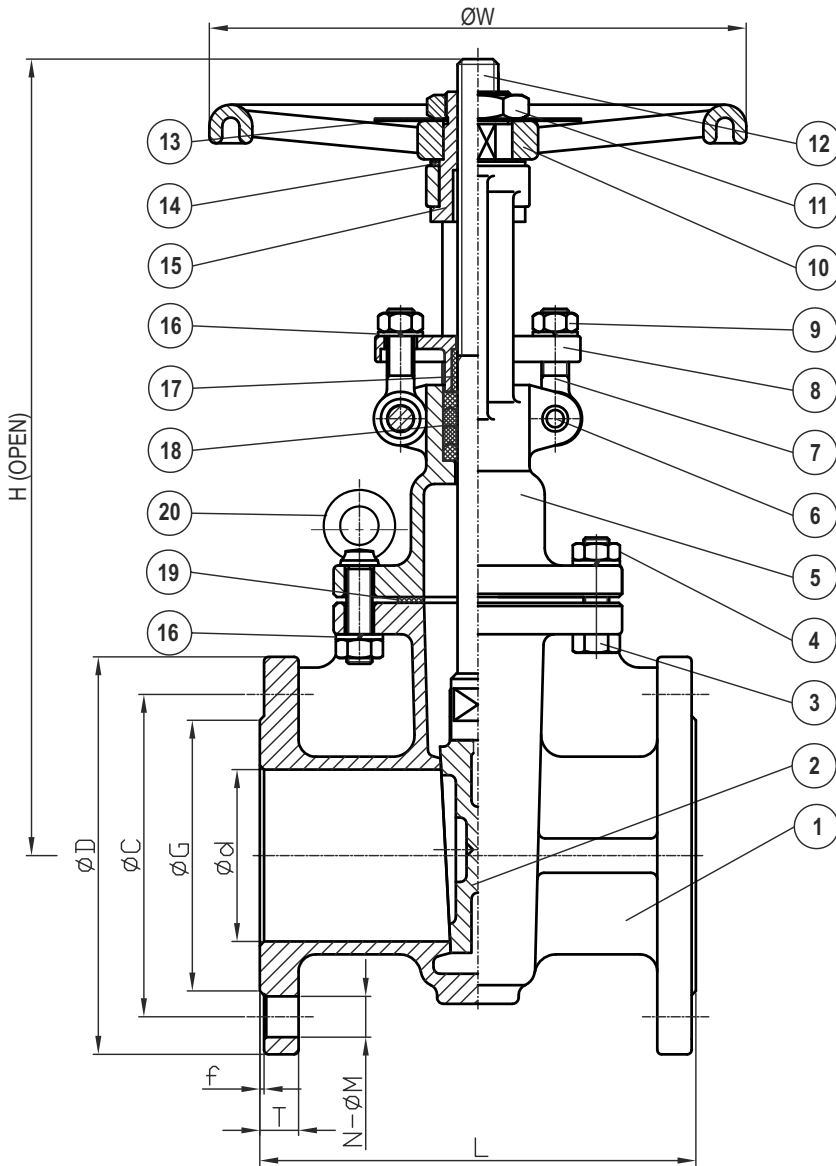
MATERIALS LIST

NO	PART NAME	MATERIAL	
1	BODY	SS304	SS316
2	DISC	SS304	SS316
3	BONNET	SS304	SS316
4	GASKET	PTFE	
5	WHORL GASKET	SUS304	
6	PACKING	PTFE	
7	GLAND	SUS304	
8	CAP NUT	CF8M	
9	STEM	SUS316	
10	HANDLE	ALUMINUM	
11	NAMEPLATE	ALUMINUM	
12	NUT	SUS304	

DIMENSIONS:

Size		d	L	H	W	WEIGHT
DN	NPS					KG
15	1/2"	15	55	101	70	0.42
20	3/4"	20	60	108	70	0.52
25	1"	25	65	115	80	0.70
32	1 1/4"	32	75	132	80	1.01
40	1 1/2"	38	85	149	90	1.54
50	2"	50	95	175	100	2.06
65	2 1/2"	65	116	213	140	5.56
80	3"	80	130	241	140	8.63





FEATURES:

- FACE TO FACE DIMENSION: DIN3202-F4
- END FLANGE DIMENSIONS: DIN2633
- DESING: ASME B16.34
- TEST: EN 12266-1
- INVESTMENT CASTING BODY

MATERIALS LIST

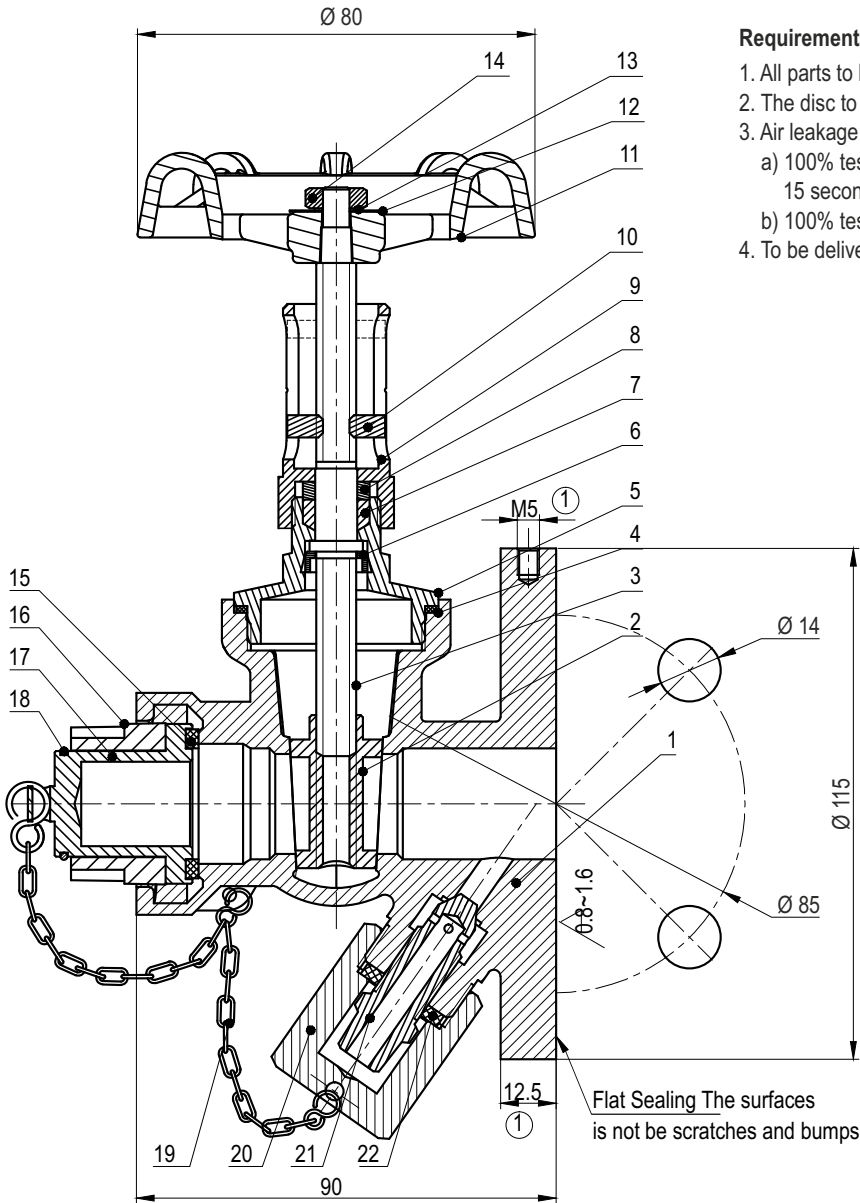
NO	PART NAME	MATERIAL	
1	BODY	1.4308	1.4408
2	DISC	1.4308	1.4408
3	BOLT	SUS304	
4	NUT	SUS304	
5	CAP	1.4308	1.4408
6	HINGE PIN	SUS304	
7	EYE BOLT	SUS304	
8	GLAND	1.4308	
9	EYE NUT	SUS304	
10	HAND WHEEL	FCD	
11	NUT	BRONZE	
12	STEM	SUS304	SUS316
13	NAME PLATE	SUS304	
14	GASKET	BRONZE	
15	YOKE SLEEVE	BRONZE	
16	SPRING WASHERS	SUS304	
17	STEM BUSHING	PTFE	
18	GLAND PACKING	PTFE	
19	GASKET	*PTFE / 304+GRAPHITE	
20	LIFTING RING	SUS304	

* 5"UP GASKET: SS304+GRAPHITE

DIMENSIONS:

Size	d	L	H	W	D	C	G	f	T	N-ØM
2"	50	50	150	331	200	165	125	102	3	18 4-Ø18
2 1/2"	65	65	170	393	200	185	145	122	3	18 4-Ø18
3"	80	80	180	470	250	200	160	138	3	20 8-Ø18
4"	100	100	190	545	250	220	180	158	3	20 8-Ø18
5"	125	125	200	640	300	250	210	188	3	22 8-Ø18
6"	150	150	210	740	300	285	240	212	3	22 8-Ø22
8"	200	200	230	910	350	340	295	268	3	24 8-Ø22





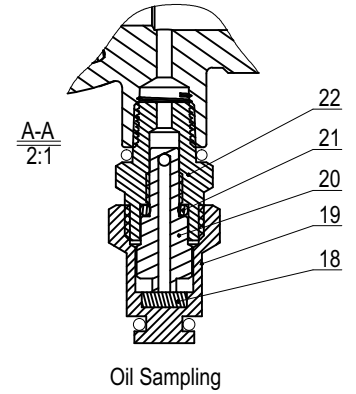
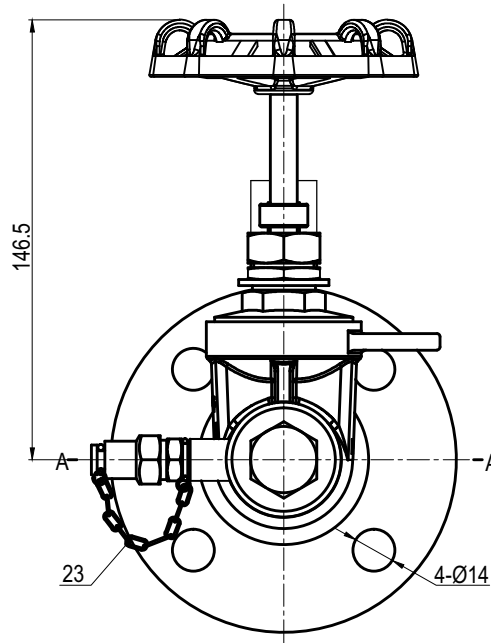
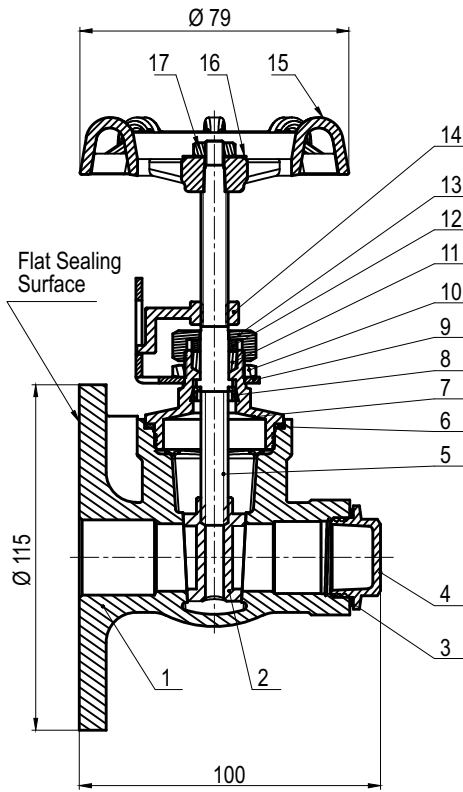
Requirements

1. All parts to be clean and free of oil and other impurities before assembling.
2. The disc to move up and down smoothly with opening and closing the valves
3. Air leakage test according to below
 - a) 100% testing of the external leakage, pressure (air) to be 6bar for min. 15 seconds.
 - b) 100% testing of internal leakage: Pressure (air) to be 6 bar for min. seconds.
4. To be delivered in the closed position.

Materials List

NO	DESCRIPTION	QTY.	MATERIAL
1	Valve body	1	Bronze C83600
2	Disc	1	Bronze C83600
3	Stem	1	Brass CW617N
4	Washer ring	1	PTFE
5	Bonnet	1	Bronze C83600
6	Tightening Ring	1	Brass HPb58-2
7	Sealing Ring	1	PTFE
8	Clamping Nut	1	Brass HPb58-2
9	Guiding holder	1	Bronze C83600
10	Across Slider	1	Bronze C83600
11	Handlewhell	1	BRASS
12	Nameplate	1	Aluminum
13	Gasket	1	SUS 304
14	Hex Nut	1	SUS 304 M6
15	Seal ring	1	NBR
16	Sealing holder	1	Brass CW617N
17	Clamping fitting	1	Bronze C83600
18	Chain	1	Brass
19	Hex cap	1	Brass CW617N
20	Drain disc	1	Brass CW617N
21	Sealing washer	1	PTFE





Requirements

1. All parts to be clean and free of oil and other impurities before assembling.
2. The disc to move up and down smoothly with opening and closing the valves
3. Air leakage test according to below
 - a) 100% testing of the external leakage, pressure (air) to be 6bar for min. 15 seconds.
 - b) 100% testing of internal leakage: Pressure (air) to be 6 bar for min. seconds.
4. To be delivered in the closed position.

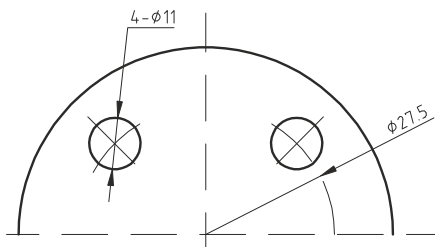
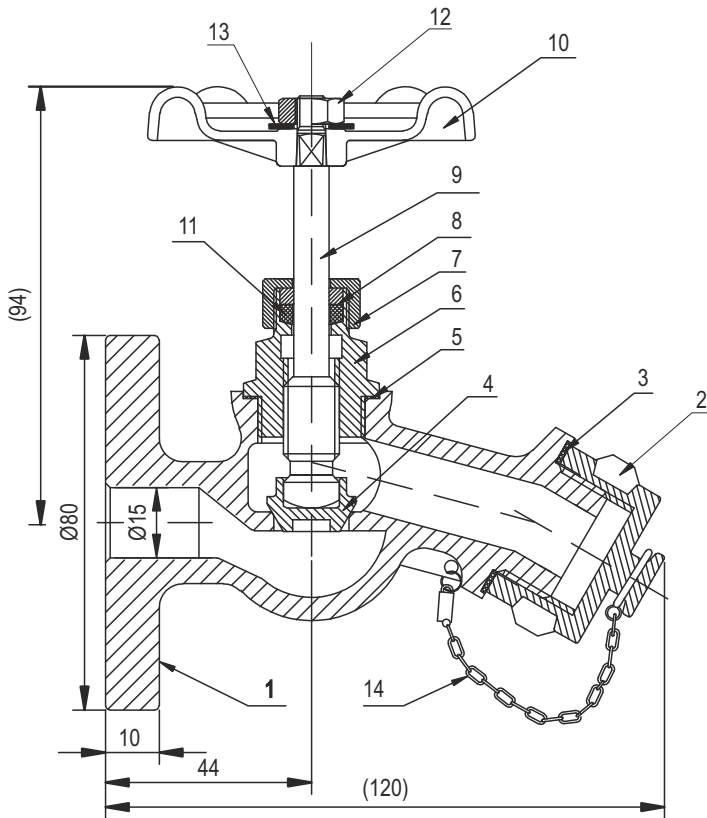
Materials List

NO	DESCRIPTION	QTY.	MATERIAL
1	Body	1	Bronze
2	Disc	1	Bronze
3	Washer ring	1	PTFE
4	Cap	1	HPb58-2
5	Stem	1	CW617N
6	Washer ring	1	PTFE
7	Bonnet	1	C83600
8	Tightening ring	1	HPb58-2
9	Positioning bracket	1	H62
10	Lock nut	1	HPb58-2
11	Packing	1	PTFE
12	Packing ring	1	HPb58-2
13	Packing nut	1	HPb58-2
14	Lift device	1	HPb58-2
15	Handle wheel	1	HPb58-2
16	Nameplate	1	Aluminum
17	Hex Nut	1	S/S304 M6
18	Washer ring	1	EPDM
19	Cap	1	CW617N
20	Small stem	1	CW617N
21	O-ring	1	NBR
22	Adapter	1	CW617N
23	Chain	1	Brass

ARES drain valve for taking samples and drainage from transformer oil.

Brass Ms 58 (CuZn40Pb2)
Bronze RG 5 (CuSn5ZnPb)

Body : Ms 58 or Bronze
Valve stem seal : PTFE gland packing
Seat packing : Metal
Flange connection : Acc. to DIN2501

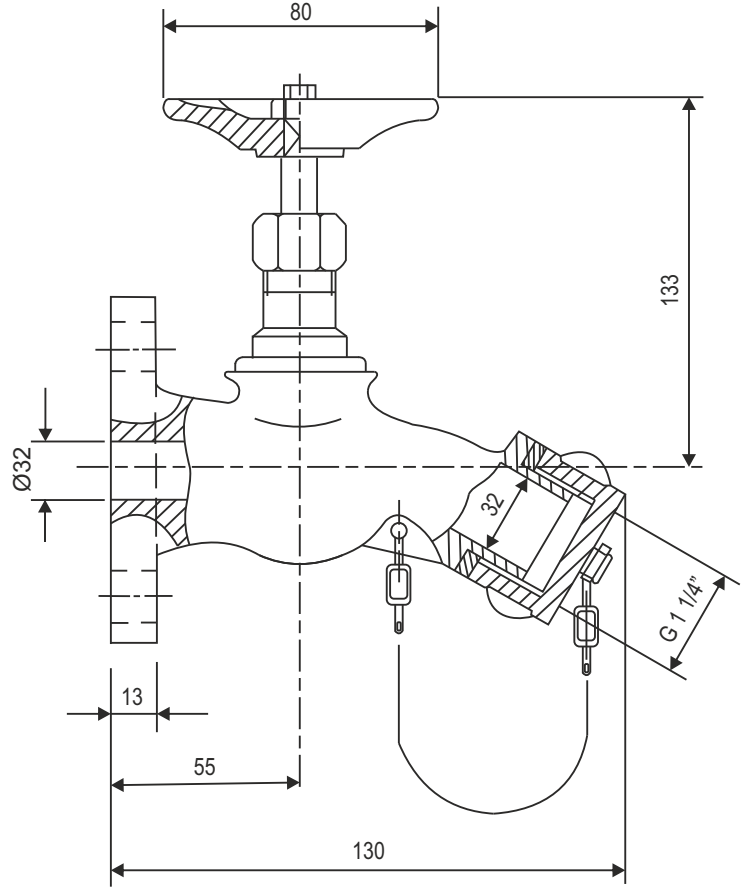
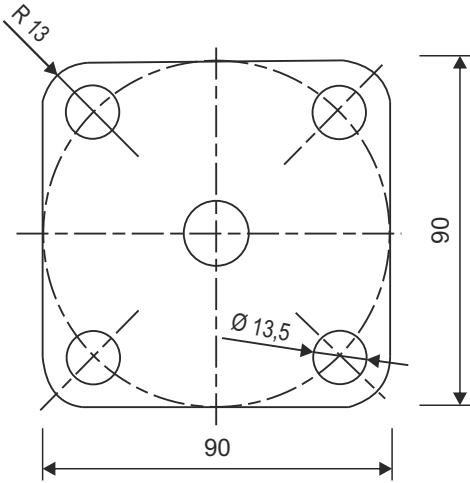


NO	PART NAME	MATERIAL
1	Body	Ms 58 (CuZn40Pb2) or RG 5
2	Closing cap	Ms 58 (CuZn40Pb2) or RG 5
3	Gasket	Teflon
4	Seat	Ms 58 (CuZn40Pb2) or RG 5
5	Gasket	PTFE
6	Upper Cap	Ms 58 (CuZn40Pb2) or RG 5
7	Nut	Ms 58 (CuZn40Pb2) or RG 5
8	Gland	Ms 58
9	Stem	Ms 58
10	Hand wheel	Bakalite or Aluminium casting
11	Packing	PTFE
12	Nut	SS 316
13	Washer	SS 316
14	Chain	SS 316

ARES drain valve for taking samples and drainage from transformer oil.

Brass Ms 58 (CuZn40Pb2)
Bronze RG 5 (CuSn5ZnPb)

Body : Ms 58 or Bronze
Valve stem seal : PTFE gland packing
Seat packing : Metal
Flange connection : Acc. to DIN2501



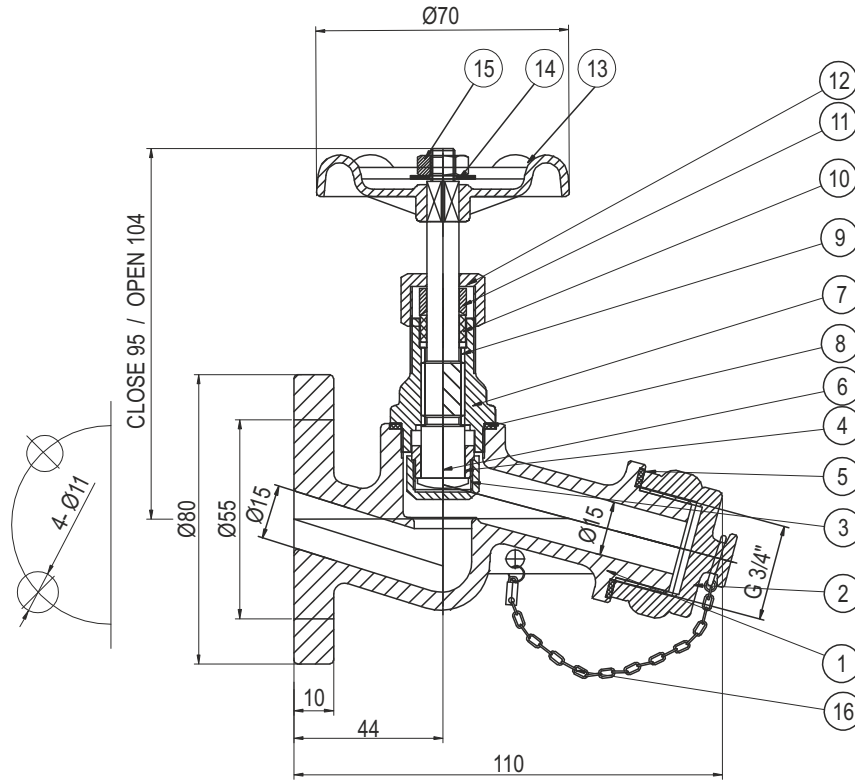
NO	PART NAME	MATERIAL
1	Body	Ms 58 (CuZn40Pb2) or RG 5
2	Closing cap	Ms 58 (CuZn40Pb2) or RG 5
3	Gasket	Teflon
4	Seat	Ms 58 (CuZn40Pb2) or RG 5
5	Gasket	PTFE
6	Upper Cap	Ms 58 (CuZn40Pb2) or RG 5
7	Nut	Ms 58 (CuZn40Pb2) or RG 5
8	Gland	Ms 58
9	Stem	Ms 58
10	Hand wheel	Bakalite or Aluminium casting
11	Packing	PTFE
12	Nut	SS 316
13	Washer	SS 316
14	Chain	SS 316



ARES drain valve for taking samples and drainage from transformer oil.

Stainless Steel 316/1.4408
Stainless Steel 304/1.4308

Body : Stainless steel
Valve stem seal : PTFE gland packing
Seat packing : Metal
Flange connection : Acc. to DIN2501



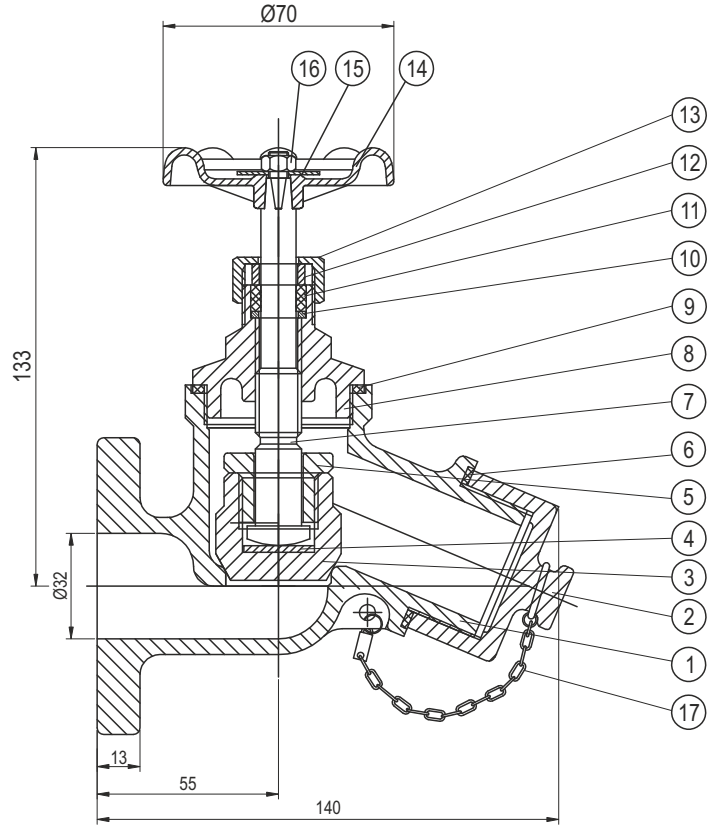
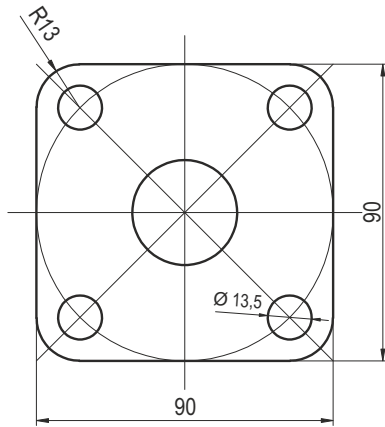
NO	PART NAME	MATERIAL
1	Body	1.4308 - 1.4408
2	Closing cap	1.4308 - 1.4408
3	Disc	SS 304
4	Disc cover	SS 304
5	Gasket	PTFE
6	Stem	SS 304
7	Upper Cap	1.4308 - 1.4408
8	Gasket	PTFE
9	Washer	SS 304
10	Packing	PTFE
11	Gland	SS 304
12	Nut	1.4308 - 1.4408
13	Handle	AL or Bakelite
14	Nut	SS 304
15	Washer	SS 304
16	Chain	SS 304



ARES drain valve for taking samples and drainage from transformer oil.

Stainless Steel 316/1.4408
Stainless Steel 304/1.4308

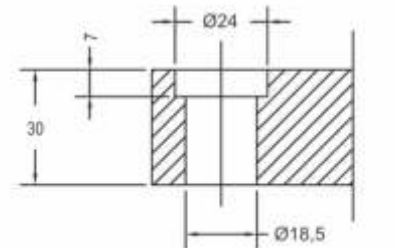
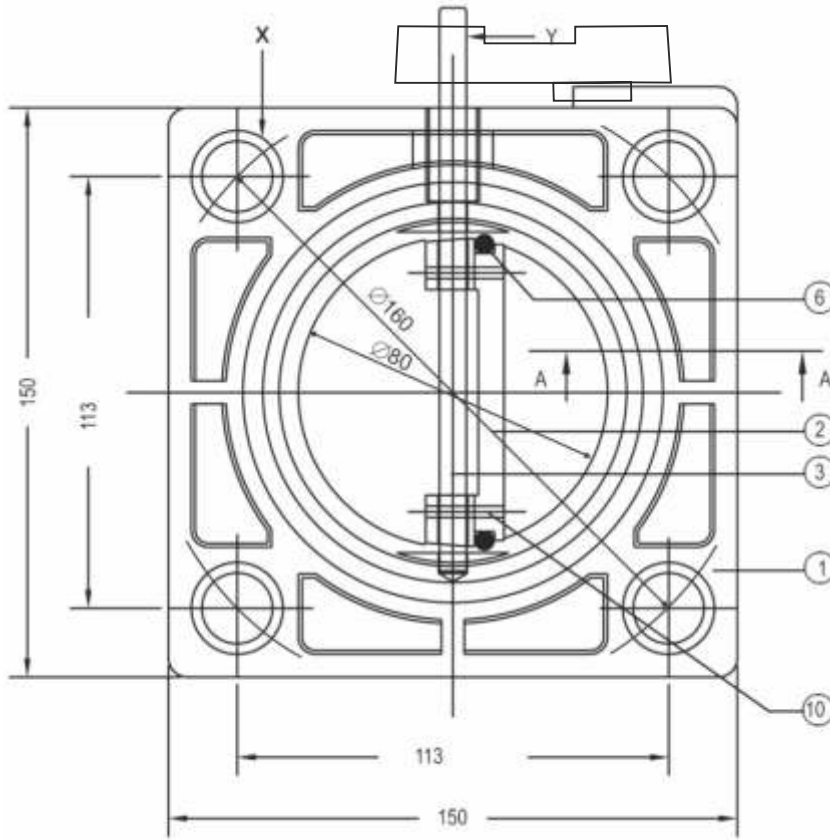
Body : Stainless steel
Valve stem seal : PTFE gland packing
Seat packing : Metal
Flange connection : Acc. to DIN2501



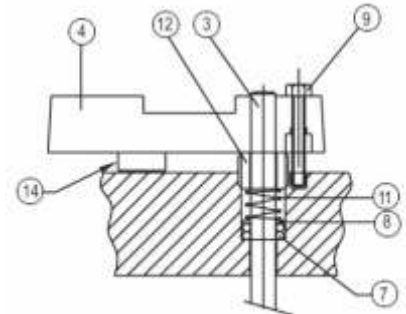
NO	PART NAME	MATERIAL
1	Body	1.4308 - 1.4408
2	Closing cap	1.4308 - 1.4408
3	Disc	SS 304
4	Washer	SS 304
5	Disc cover	SS 304
6	Gasket	PTFE
7	Stem	SS 304
8	Upper Cap	1.4308 - 1.4408
9	Gasket	PTFE
10	Washer	SS 304
11	Packing	PTFE
12	Gland	SS 304
13	Nut	1.4308 - 1.4408
14	Handle	AL or Bakelite
15	Washer	SS 304
16	Nut	SS 304
17	Chain	SS 304



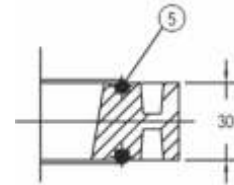
The aluminium die casted valve body, flap and handle. Available for mounting between flanges (wafer type) of transformer tank and radiator. Absolute Zero leakage when valve is closed. Material of sealing O-rings VITON or NBR. The valve can be fixed to the transformer-flange with help of 4 special M 16 bolts.



DETAIL - X



DETAIL - Y



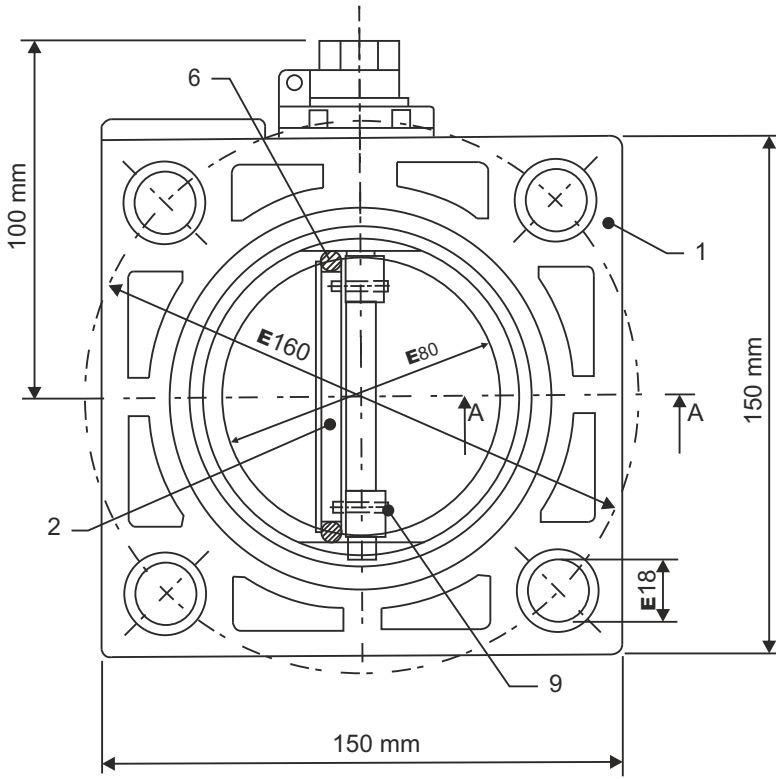
SECT. - AA

No:	Description	Material
1	Body	Aluminium
2	Flap	Aluminium
3	Shaft	St. Steel
4	Latch	Aluminium
5	O-Ring	NBR
6	O-Ring	NBR
7	O-Ring	NBR
8	Washer	A2-70
9	Screw M5x30	A2-70
10	Pin	A2-70
11	Spring	A2-70
12	Prets Screw	A2-70

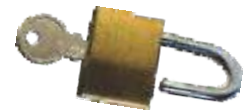
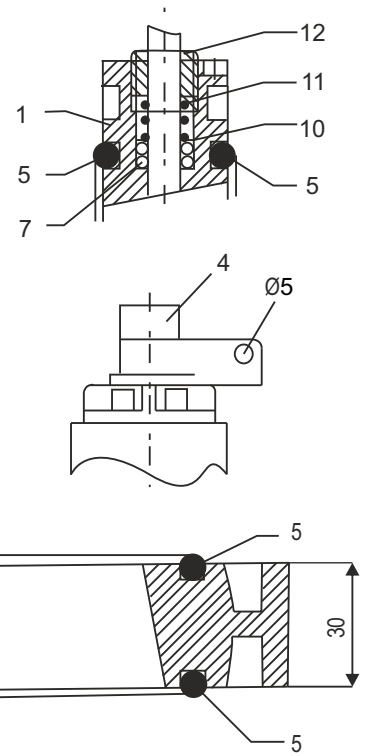


M16x101Bolt
Stainless or St37 zinc
(Optional) Required 4 Pcs for Each Valve

The aluminium die casted valve body, flap and handle. Available for mounting between flanges (wafer type) of transformer tank and radiator. Absolute Zero leakage when valve is closed. Material of sealing O-rings VITON or NBR. The valve can be fixed to the transformer-flange with help of 4 special M 16 bolts.



Dimensions in mm.



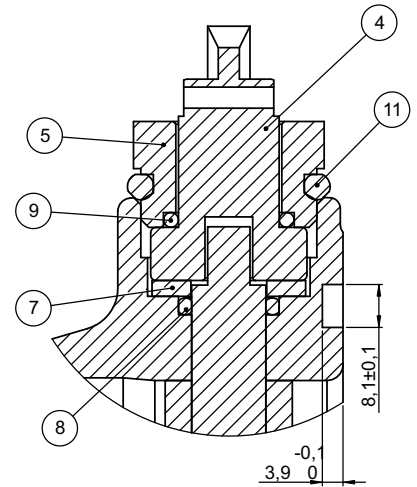
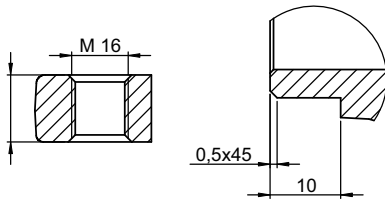
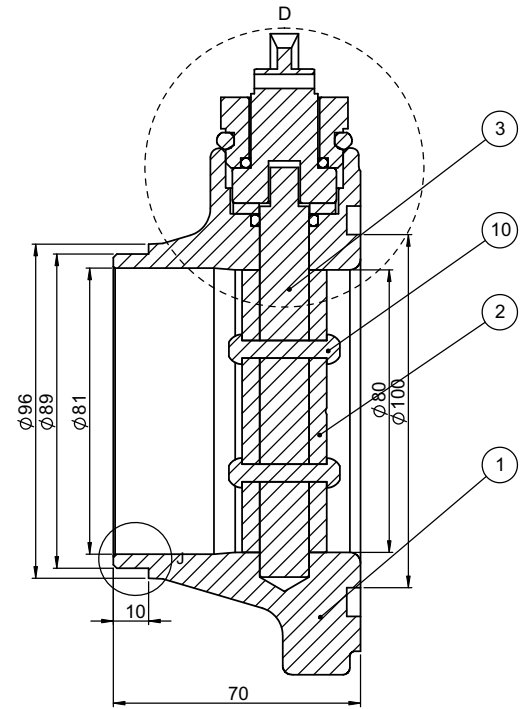
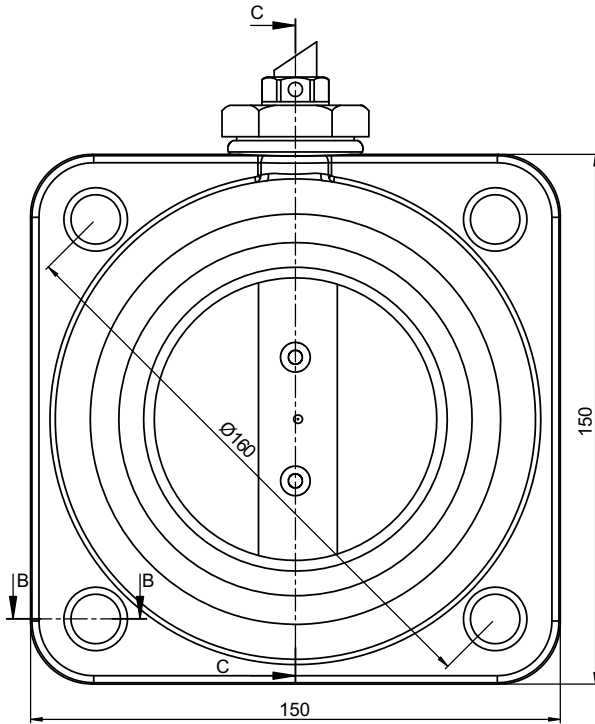
available
to use pad lock

No:	Description	Material
1	Body	Aluminium
2	Flap	Aluminium
3	Shaft	St. Steel
4	Latch	Aluminium
5	O-Ring	NBR
6	O-Ring	NBR
7	O-Ring	NBR
8	Washer	A2-70
9	Screw M5x30	A2-70
10	Pin	A2-70
11	Spring	A2-70
12	Prets Screw	A2-70



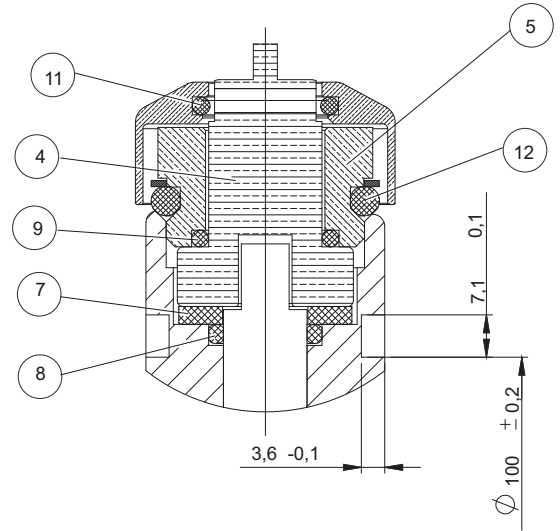
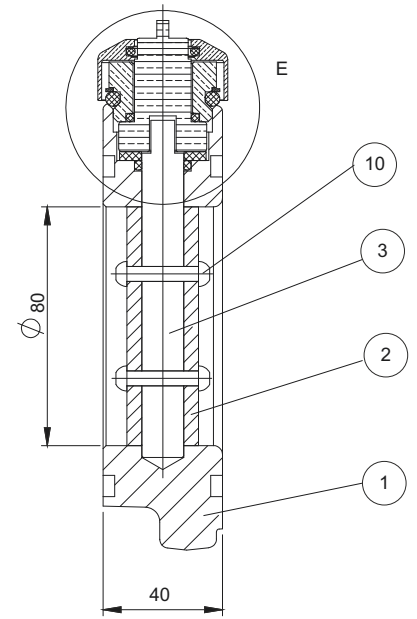
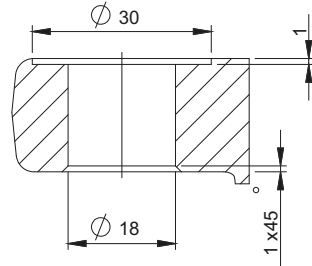
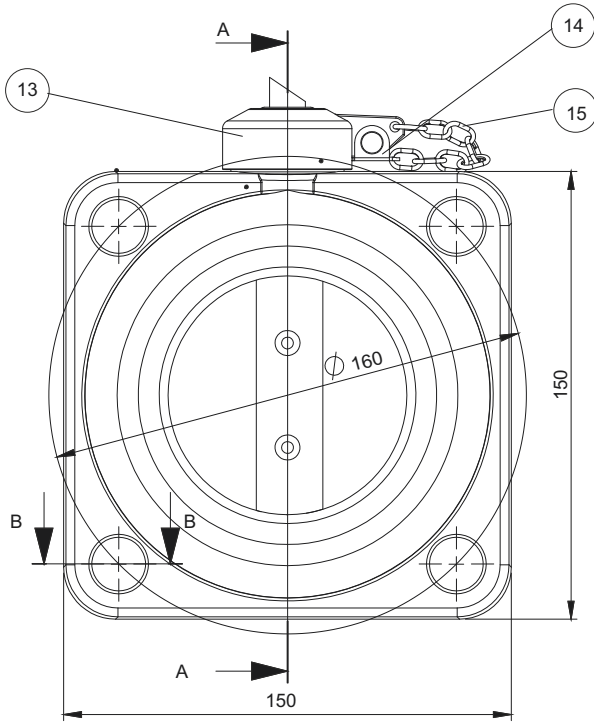
M16x101 Bolt
Stainless or St37 zinc
(Optional) Required 4 Pcs for Each Valve





Item	Description	Material	Qty
1	Flange 42560	S355J2G3	1
2	Clap 42560	GG20	1
3	Spindle	11SMnPb30	1
4	Thrust member	Ms58	1
5	Thrust screw	Ms58	1
7	Gasket DIN 42560	AFM 39,29x14,5x3	1
8	O-ring DIN 42560	14x3 NBR	1
9	O-ring	19x3 VITON	1
10	Pin	S235JR,5x28	2
11	O-ring	28x5 VITON	1

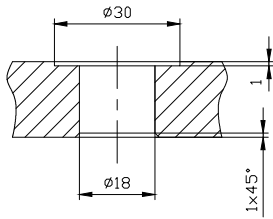
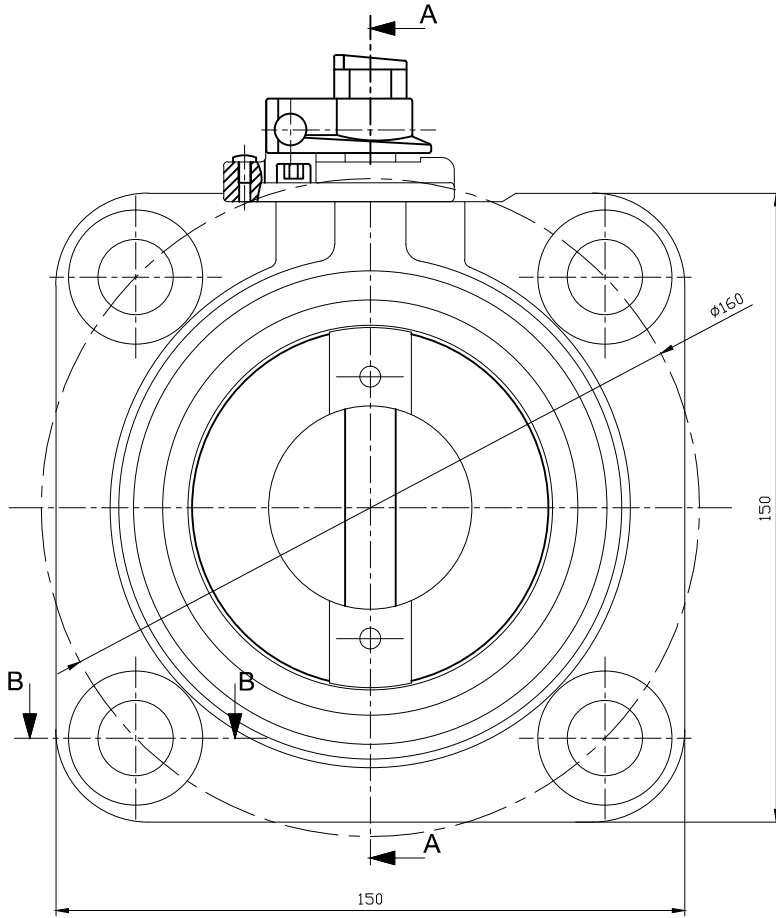




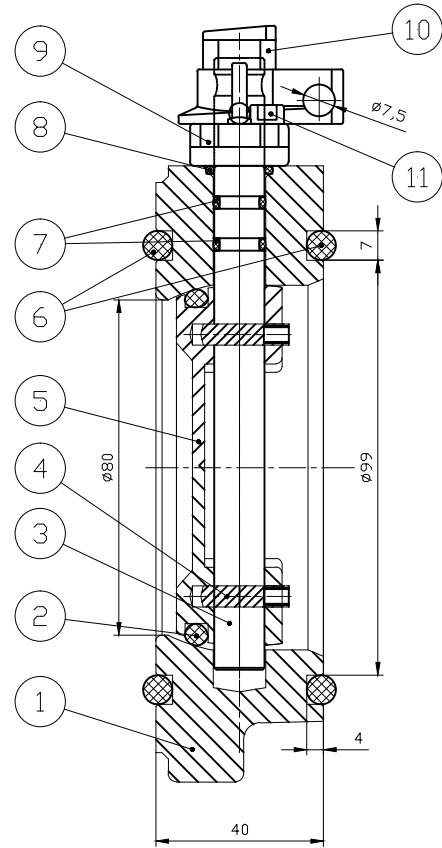
Item	Description	Material	Qty
1	Flange 42560	S355J2G3	1
2	Clap 42560	GG20	1
3	Spindle	11SMnPb30	1
4	Thrust member	Ms58	1
5	Thrust screw	Ms58	1
7	Gasket DIN 42560	AFM 39,29x14,5x3	1
8	O-ring DIN 42560	14x3 NBR	1
9	O-ring	19x3 VITON	1
10	Pin	S235JR,5x28	2
11	O-ring	19x3 VITON	1
12	O-ring (Optional)	28x5 VITON	1
13	Cap (Optional)	MS 58	1
14	Locking-ring (Optional)	Stainless Steel	1
15	Chain (Optional)	Stainless Steel	1

Items 11 - 13 - 14 - 15 - are optional





B - B SECTION

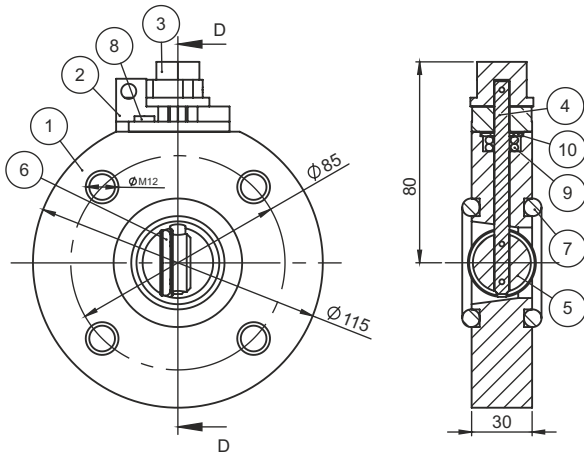


A-A SECTION



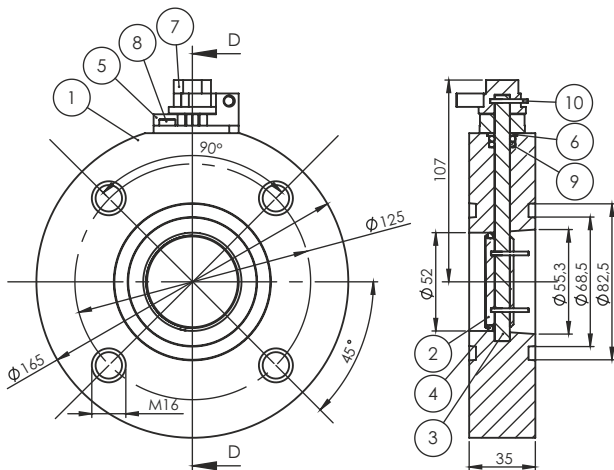
Completly Stainless Steel

DN 25



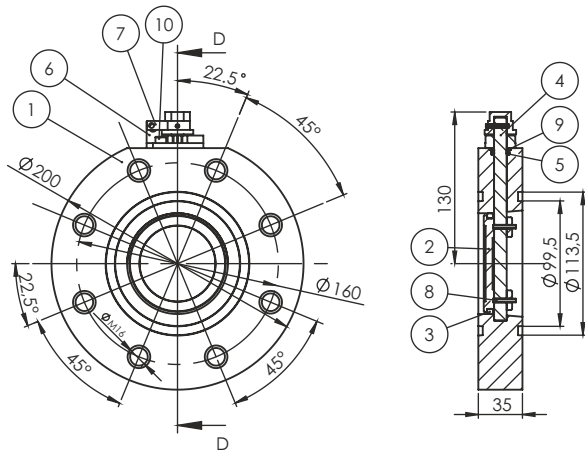
Item	Description	Material	Qty
1	Body	St37 ☐ SS316 ☐ ☐ Aluminium	1
2	Gland	Brass	1
3	Drive	Brass	1
4	Spindle	A2-70	1
5	Throttle Clap	Brass	1
6	O-ring	NBR ☐ Viton ☐	1
7	O-ring	NBR ☐ Viton ☐	2
8	Bolt	A2-70	2
9	O-ring	NBR ☐ Viton ☐	2
10	Washer	A2-70	1

DN 50

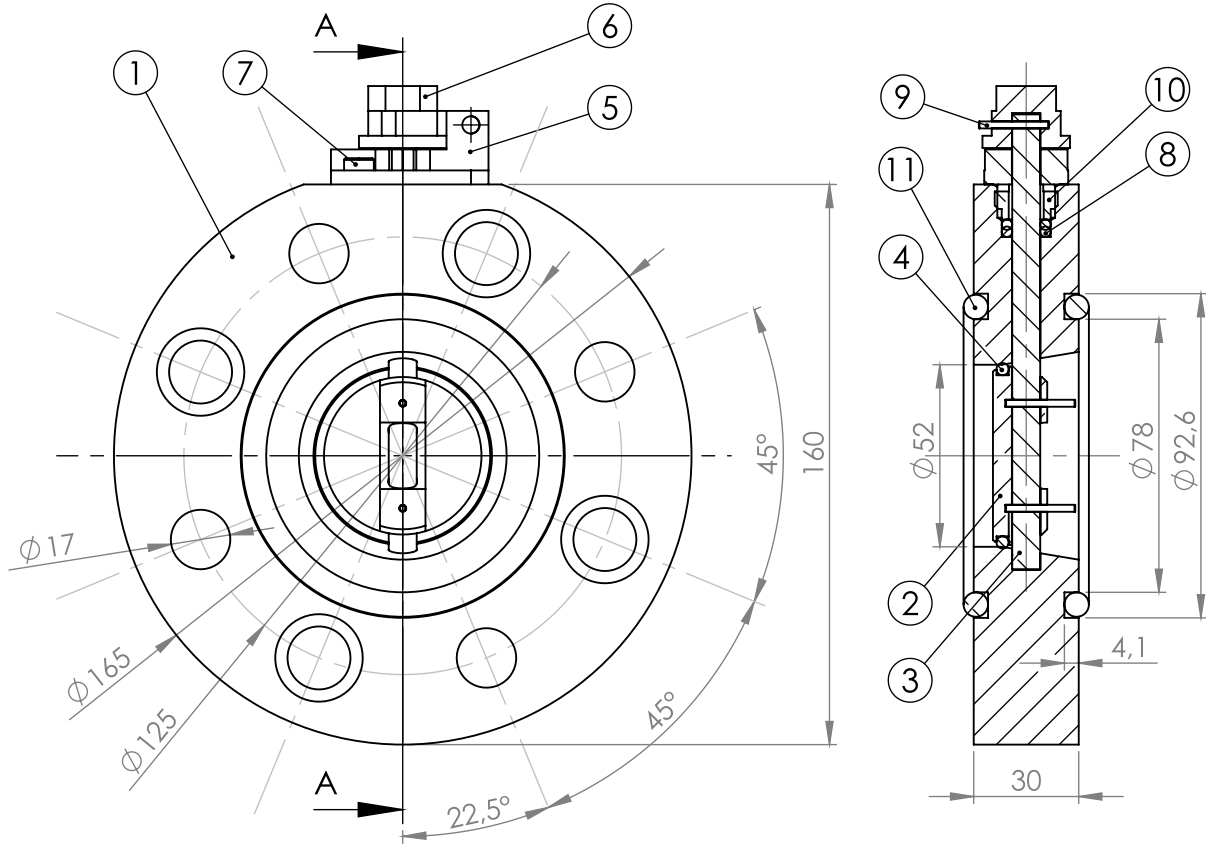


Item	Description	Material	Qty
1	Body	St37 ☐ SS316 ☐ ☐ Aluminium	1
2	Throttle Clap	Brass	1
3	Spindle	A2-70	1
4	O-ring	NBR ☐ Viton ☐	1
5	Gland	Brass	1
6	Washer	A2-70	1
7	Drive	Brass	1
8	Bolt	A2-70	2
9	O-ring	NBR ☐ Viton ☐	2
10	Spring Pin	A2-70	3

DN 80

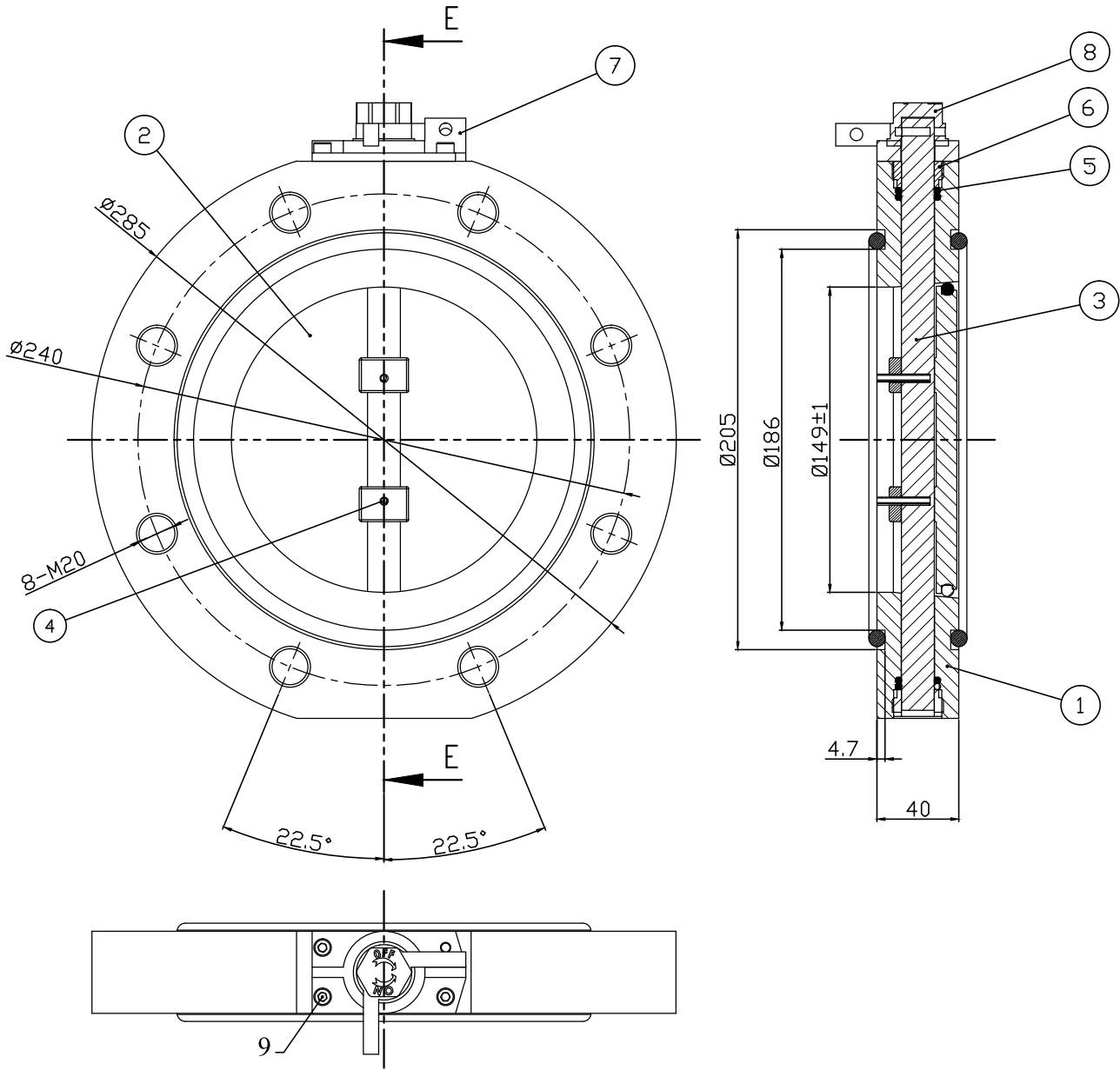


Item	Description	Material	Qty
1	Flange Body	St37 ☐ SS316 ☐ ☐ Aluminium	1
2	Throttle Clap	Brass	1
3	O-ring	NBR ☐ Viton ☐	1
4	Spindle	A2-70	1
5	O-ring	NBR ☐ Viton ☐	2
6	Gland	Brass	1
7	Drive	Brass	1
8	Spring Pin	A2-70	3
9	Washer	A2-70	1
10	Bolt	A2-70	2

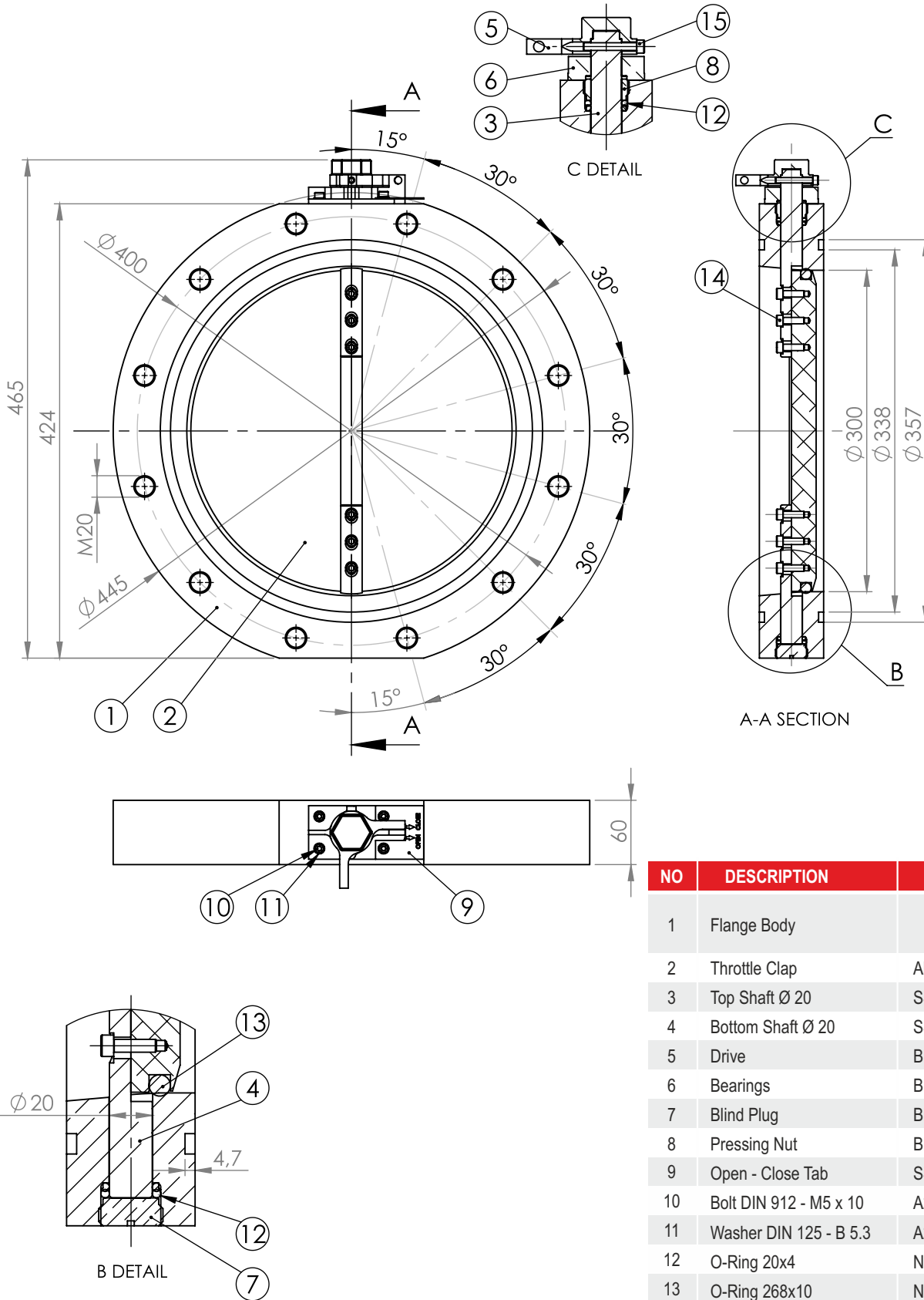


SECTION A-A

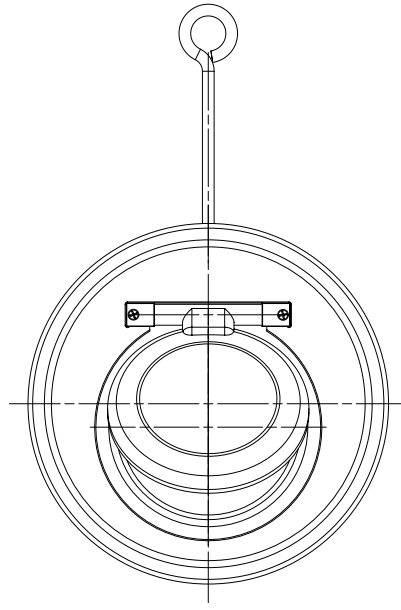
NO	DESCRIPTION	MATERIAL	QTY
1	Flange Body	St37 □ SS316 □ □ Aluminium	1
2	Throttle Clap	Aluminium	1
3	Sheft Ø 8	SS316	1
4	O-Ring 44x3,5	NBR / Viton / FVMQ	1
5	Gland	BRASS	1
6	Drive	BRASS	1
7	DIN 7984 - M5 x20	A2-70	2
8	O-Ring 8x3	NBR / Viton / FVMQ	2
9	Pin	A2-70	3
10	Clap O-Ring Nut	BRASS	1
11	O-Ring 78x7	NBR / Viton / FVMQ	2



NO	DESCRIPTION	MATERIAL	QTY
1	Throttle Clap	St37 □ SS316 □ □ Aluminium	1
2	Clap	Aluminium	1
3	Shaft Ø16	A-70 Staines Steel	1
4	Ø 5 Spring Pin	Staines Steel	2
5	O-Ring Ø 16x3	NBR / Viton / FVMQ	1
6	Pressing Ring	Brass	2
7	Gland	Brass	1
8	Drive	Brass	1
9	Screw M5x10	Staines Steel	4



NO	DESCRIPTION	MATERIAL	QTY
1	Flange Body	St37 □ SS316 □ □ Aluminium	1
2	Throttle Clap	Aluminium	1
3	Top Shaft Ø 20	SS304	1
4	Bottom Shaft Ø 20	SS304	1
5	Drive	BRASS	1
6	Bearings	BRASS	1
7	Blind Plug	BRASS	1
8	Pressing Nut	BRASS	1
9	Open - Close Tab	SS304	1
10	Bolt DIN 912 - M5 x 10	A2-70	4
11	Washer DIN 125 - B 5.3	A2-70	4
12	O-Ring 20x4	NBR / Viton / FVMQ	4
13	O-Ring 268x10	NBR / Viton / FVMQ	1
14	Bolt DIN 912 - M6 x 20	A2-70	6
15	Bolt DIN 912 - M5 x 35	A2-70	1

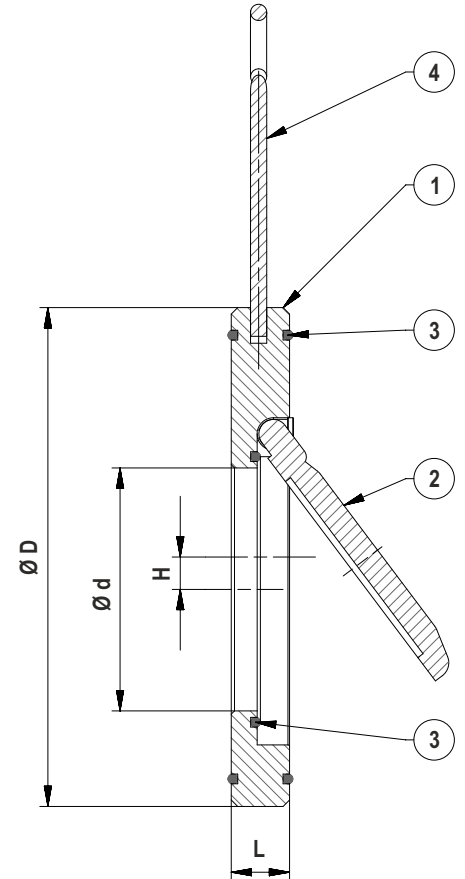


MATERIALS (GS-C 25 - GP240GH)

Parça No	Part Name	Material
1	Body	Cast Carbon Steel + Nickel Plated (T-0430)
2	Disk	Cast Carbon Steel + Nickel Plated (T-0430)
3	O-Ring	EPDM - NBR
4	Eye Bolt	Steel + Nickel Plated

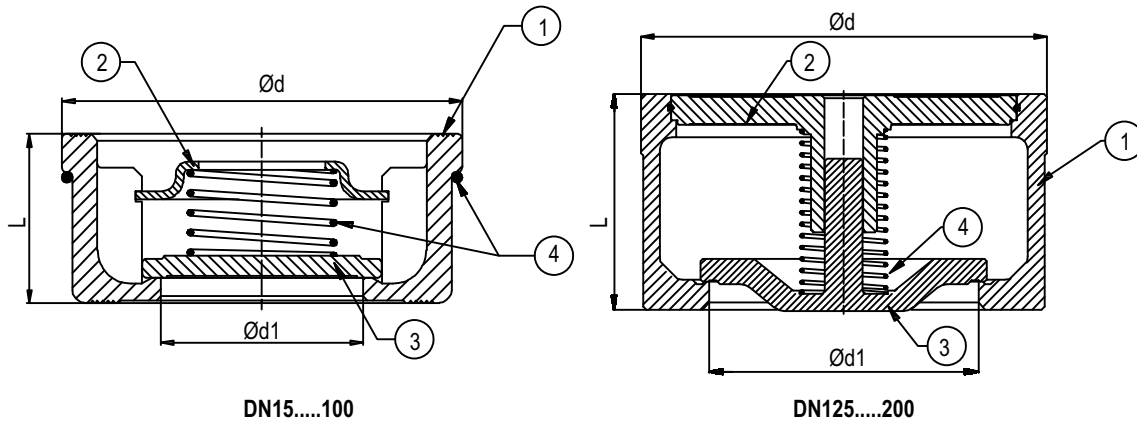
MATERIALS (G-X6CrNi - AISI303)

Parça No	Part Name	Material
1	Body	G-X6CrNi 18 9 - Cast Stainless Steel (T-0450)
2	Disk	G-X6CrNi 18 9 - Cast Stainless Steel (T-0450)
3	O-Ring	EPDM - NBR
4	Eye Bolt	Steel + Nickel Plated



Dimensions

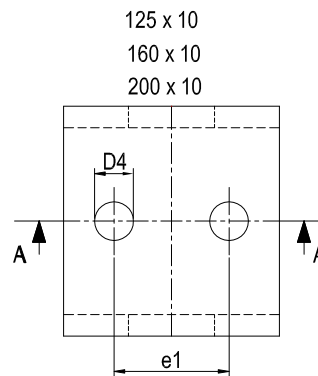
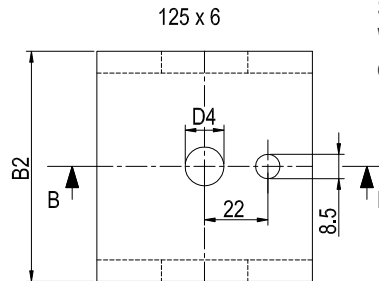
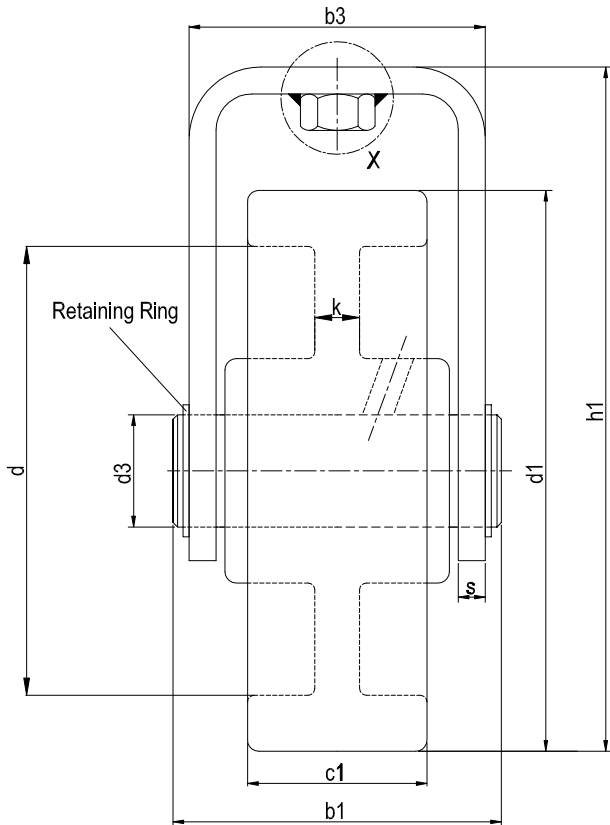
Nominal Pressure	16 Bar														
Nominal Diameter	DN	40	50	65	80	100	125	150	200	250	300	350	400	500	600
Valve Dimensions	ØD	92	107	127	142	162	192	218	273	329	384	444	491	610	724
	Ød	22	32	40	54	70	92	114	154	200	235	280	316	405	486
	L	14				18		20	22	26	28	38	44	56	62
	H	0		2	3	4	5	6	8	9	10	11	12	13	15
Weight	kg	0,7	0.8	1.2	1.5	2.3	4.1	4.1	7	12	18	22	25	30	40



NO	DN	Size			Dimensions %±15			Minimum Opening Pressure mBar				Working Temperature				
								Flow Direction								
								With Spring		With Spring						
↔	↓	↑	↓	°C	PN	Weight ~ kg										
1	15	40	15	16	21	↔	↓	↑	↓	-10 +120	16	0.09				
2	20	47	20	19								17	23	2.6	0.13	
3	25	56	25	22								18.3			0.20	
4	32	72	31.5	28								16.3	3.9		0.46	
5	40	82	39	31.5								16.2	24	4	0.60	
6	50	95	48	40	22	↔	↓	↑	↓	-10 +120	16	0.97				
7	65	115	64	46								16.1	25	4.2	1.36	
8	80	132	74	50								15		5.1	2.07	
9	100	152	89	60								13.7	26	5.6		
10	125	184	112	90								12.5	26.5	7.4	3.00	
11	150	209	132	106								23.5	13	32.5	17	10.00
12	200	264	175	140								26	14.5	35	18.5	20.00

NO	Description	DN15...100	DN125...200
		Material	Material
1	Body	Brass (CuZn40Pb2)	Steel
2	Centering	AISI 316	Steel
3	Throttle	AISI 316	Steel
4	Spring	AISI 316	AISI 316

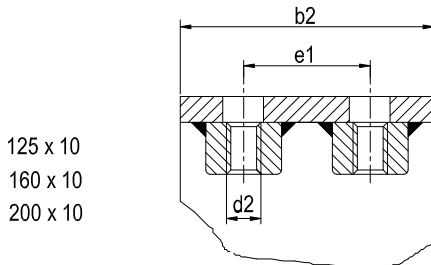
Final Paint : RAL 9006 White alu



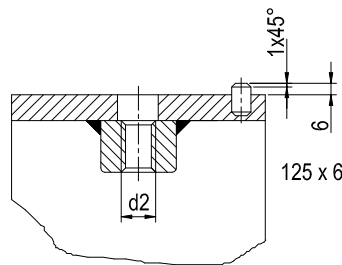
Parts

Wheel Housing	Steel (St-37)
Wheel	Cast Iron (GG-20)
Axle	St-37 or St. Steel

Stainless steel retaining ring is possible.
We can manufacture your specials designs
of wheels with your sample or drawing.



A-A Section



B-B Section

Note: DIN type 125x10 and 160x10 has only 1 nut at center
Different designs are possible to produce

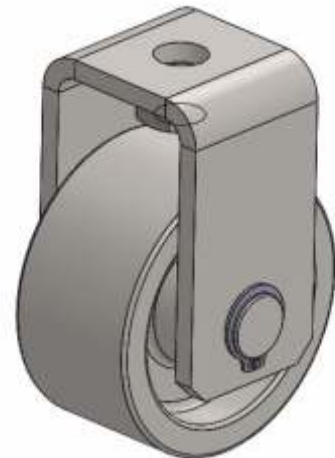
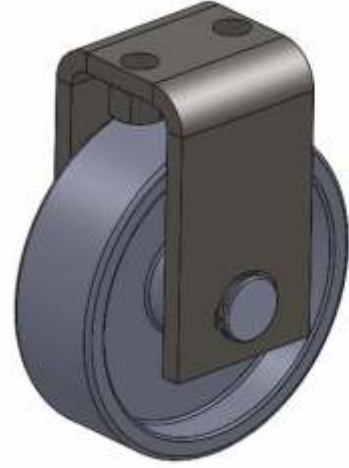
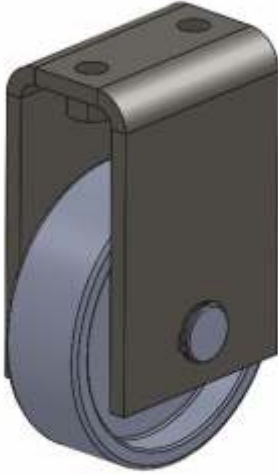
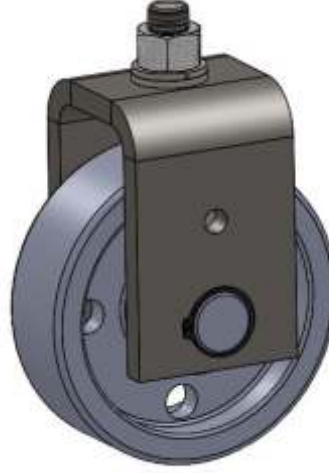
Surface options

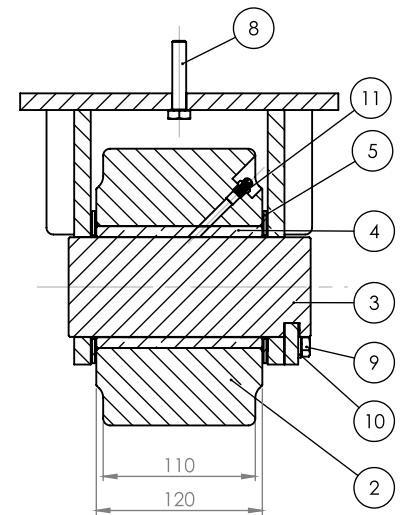
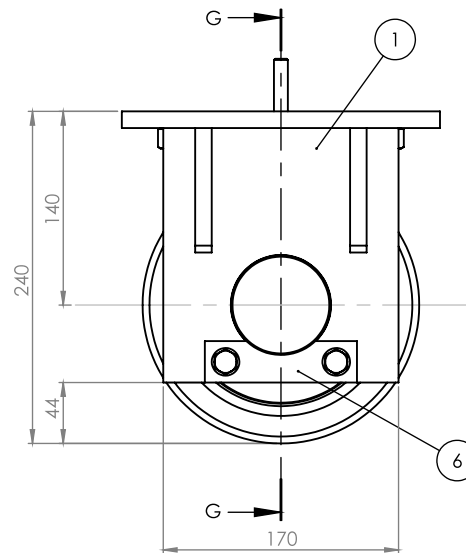
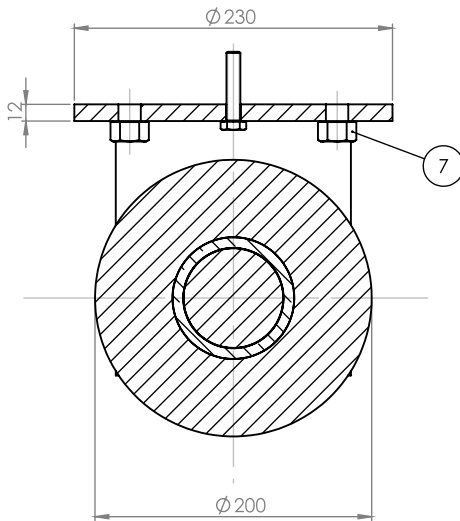
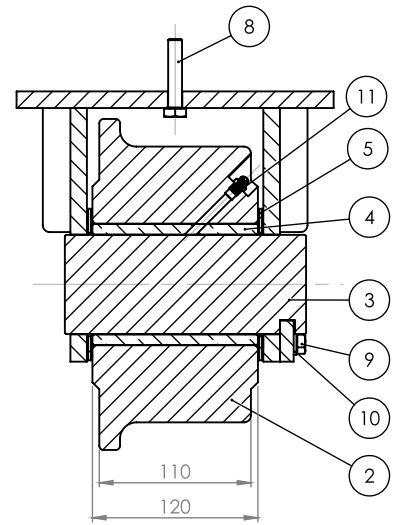
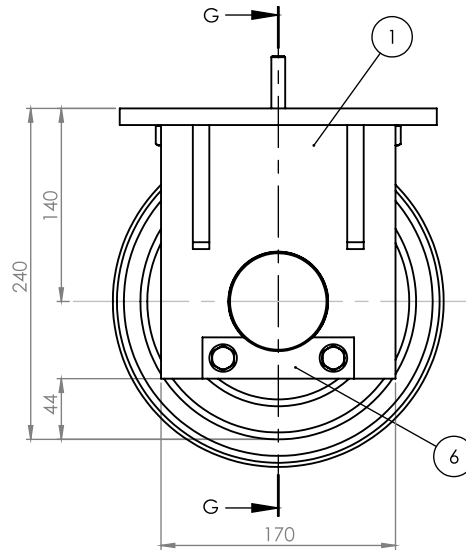
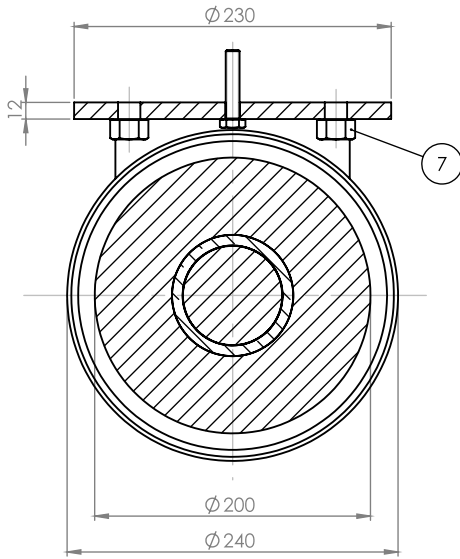
Zinc Plating / Hot dipped galvanizing /
Wet or Electrostatic powder painting
(RAL 7033)

d1	Ød	k	s	b1	b2	b3	c1	d2	d3	e1	h1	capacity	weight
125	100	10	6	75	60	66	40	M12	25	-	152	1200 (kg)	3.20
125	100	10	10	83	70	74	40	M12	25	46	152	2500 (kg)	3.90
160	135	15	10	95	80	84	50	M12	32	56	195	3500 (kg)	6.70
200	160	17.5	10	132	120	105	70	M12	50	80	230	6000 (kg)	15.75

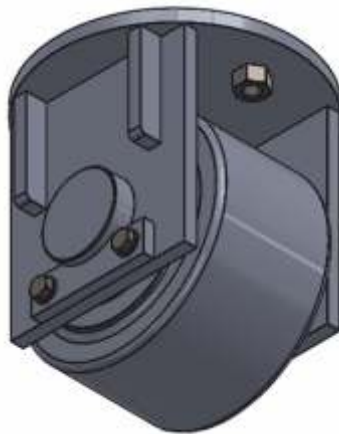
THIN TYPE			
d1	Ød	k	weight
125	109	6	2.50
125	109	6	3.15
160	138	8	5.40
200	175	8	12.00

Material : Steel
Surface : Hot dip galvanizing
C4M paint
C5M paint





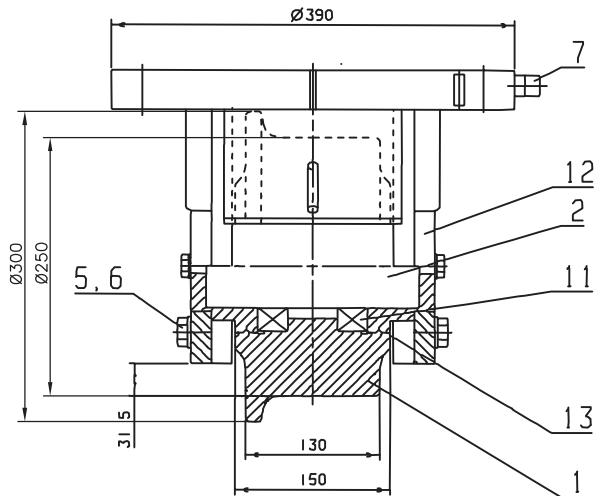
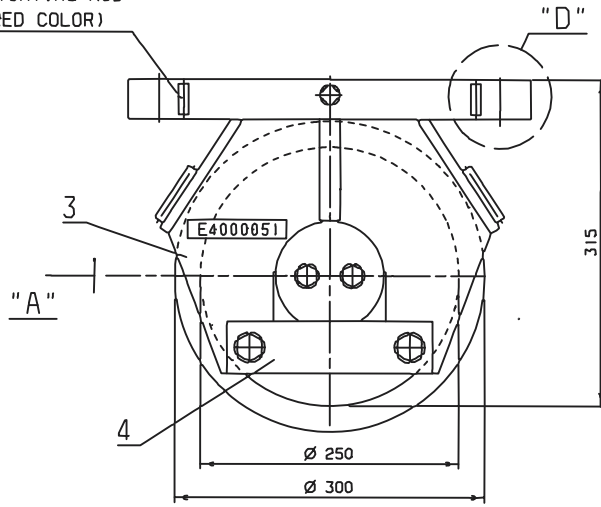
Wheel with Rail



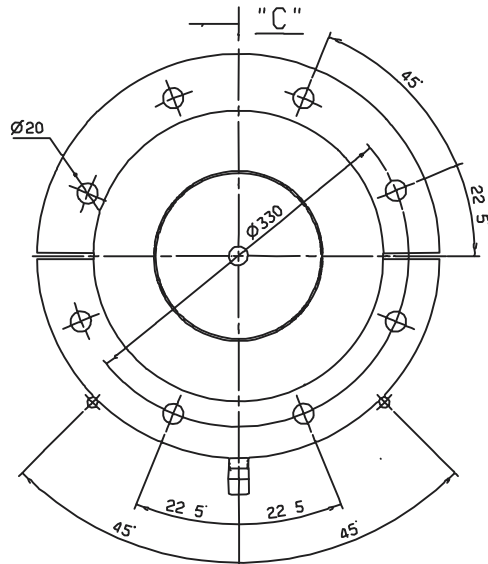
Flat Wheel



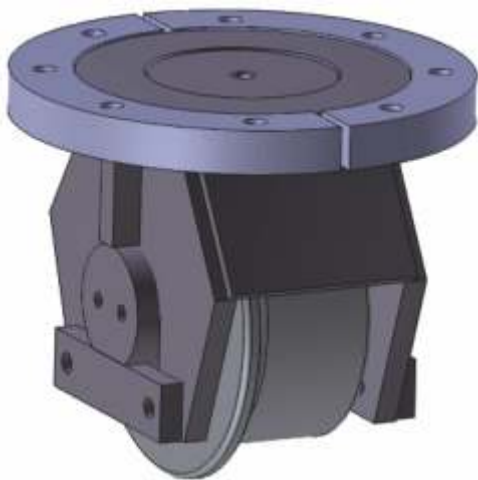
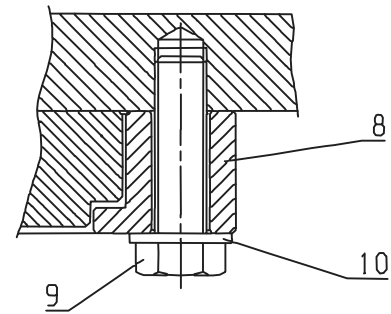
INDICATING ROD
(RED COLOR)



SECTION A-C



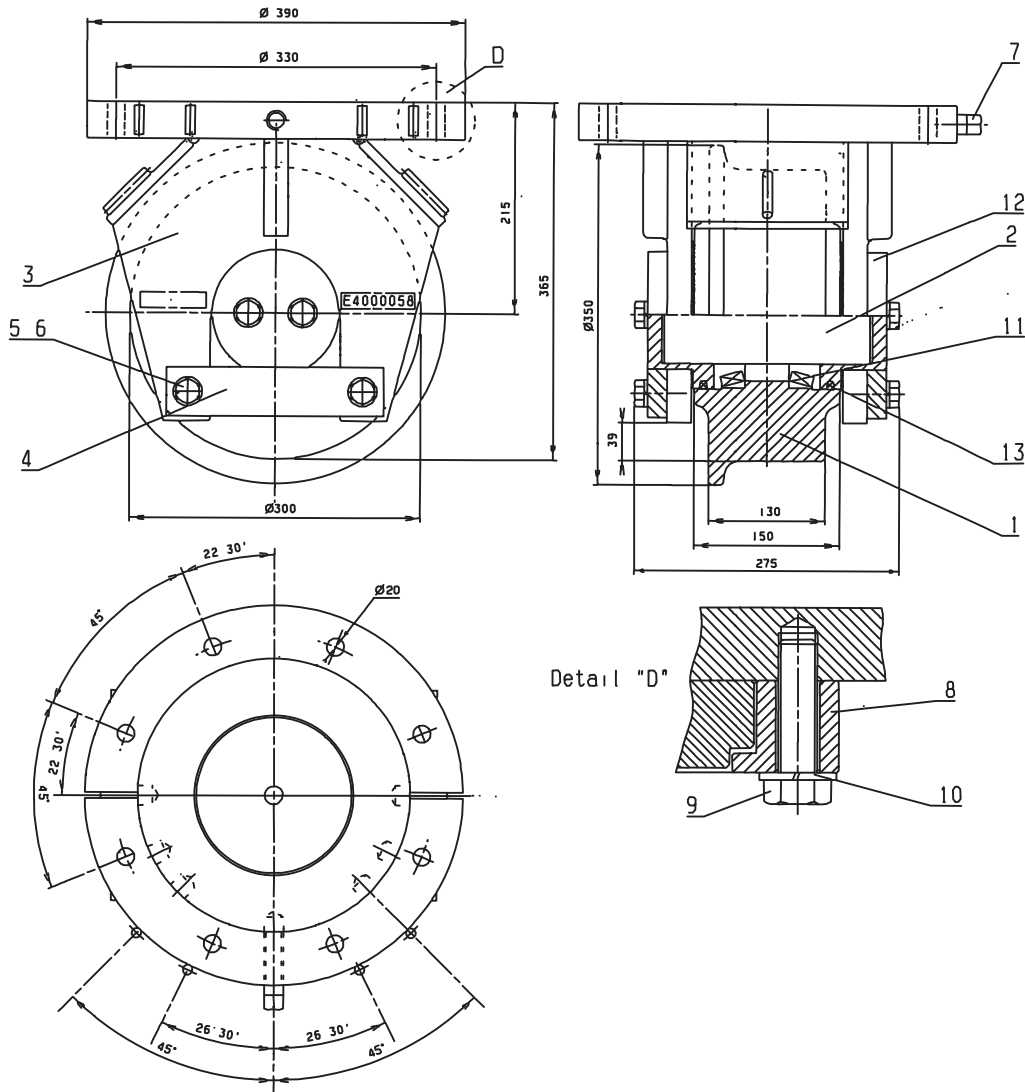
Detail "D"



Loading Capacity : 25 TN
Total Weight : 110 KG



Same Capacity with Different Design

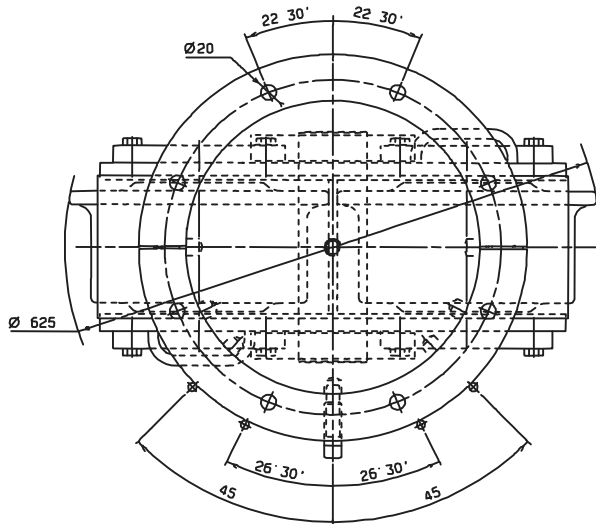
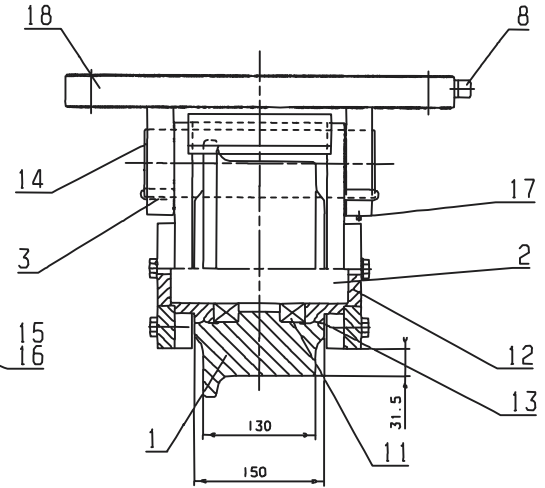
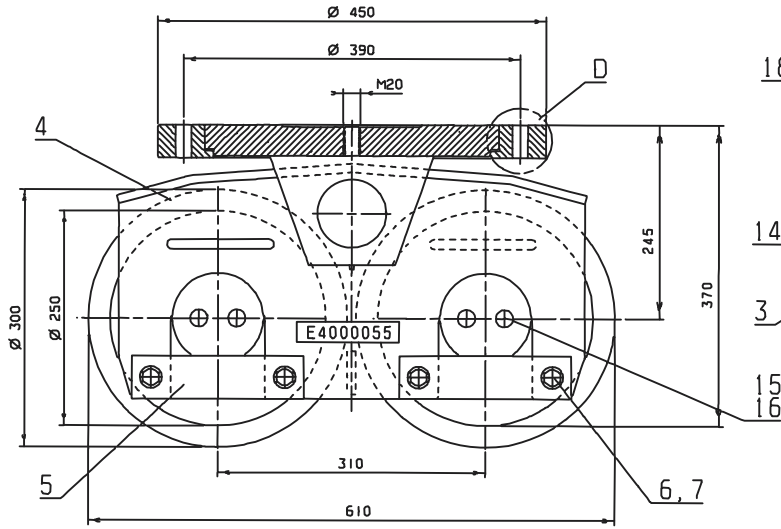


Flat Wheel

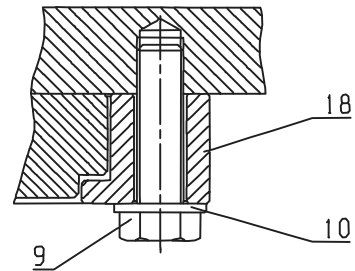


Rail Wheel

Loading Capacity : 32 TN
Total Weight : 163 KG

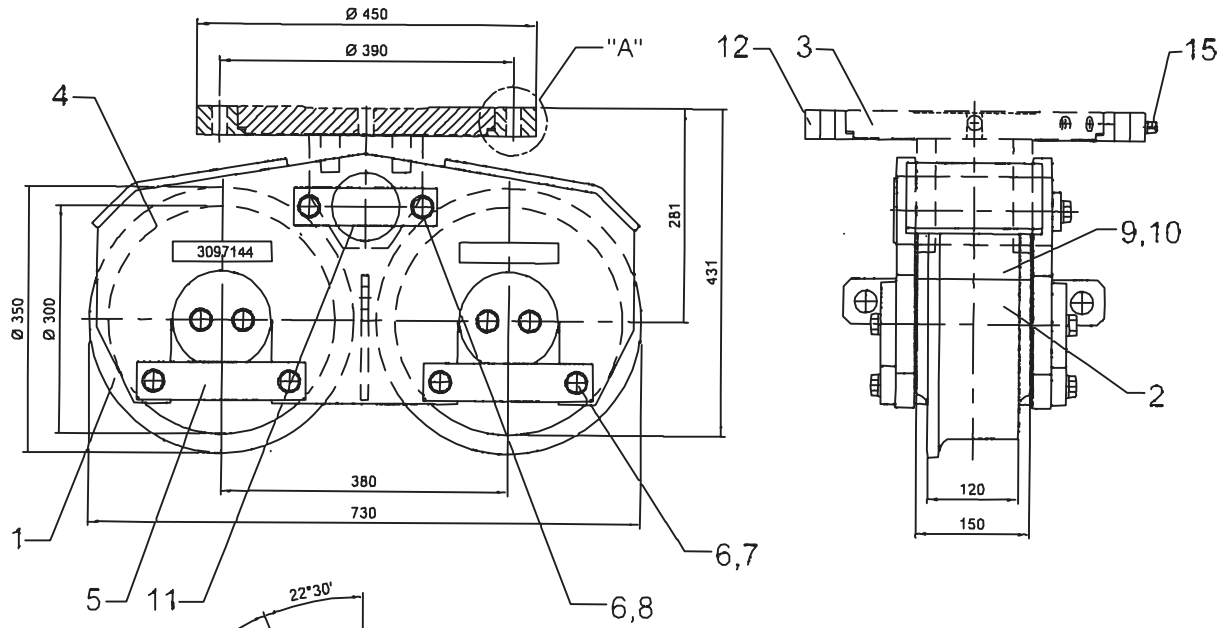


Detail "D"

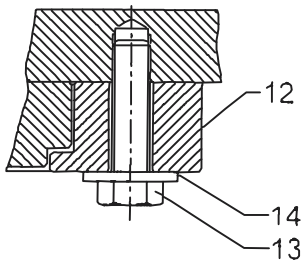


Loading Capacity : 50 TN
Total Weight : 235 KG



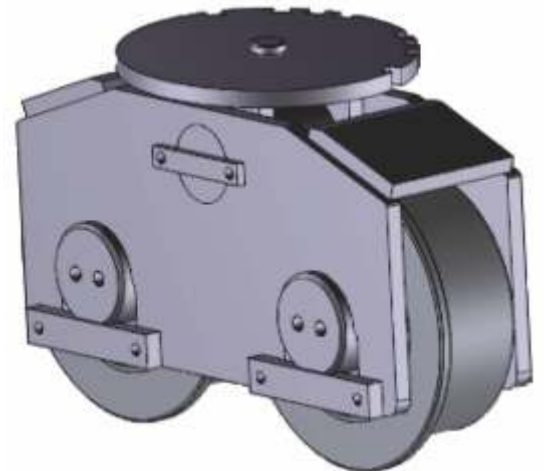
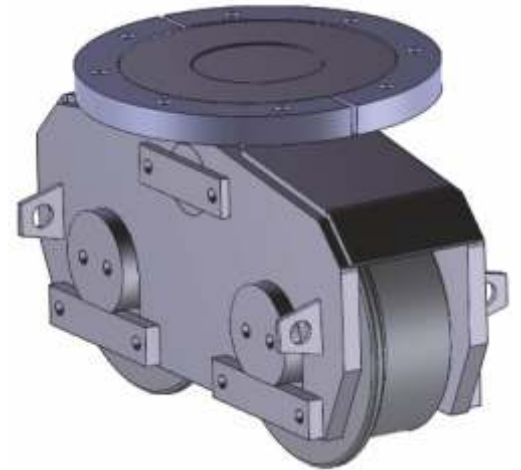


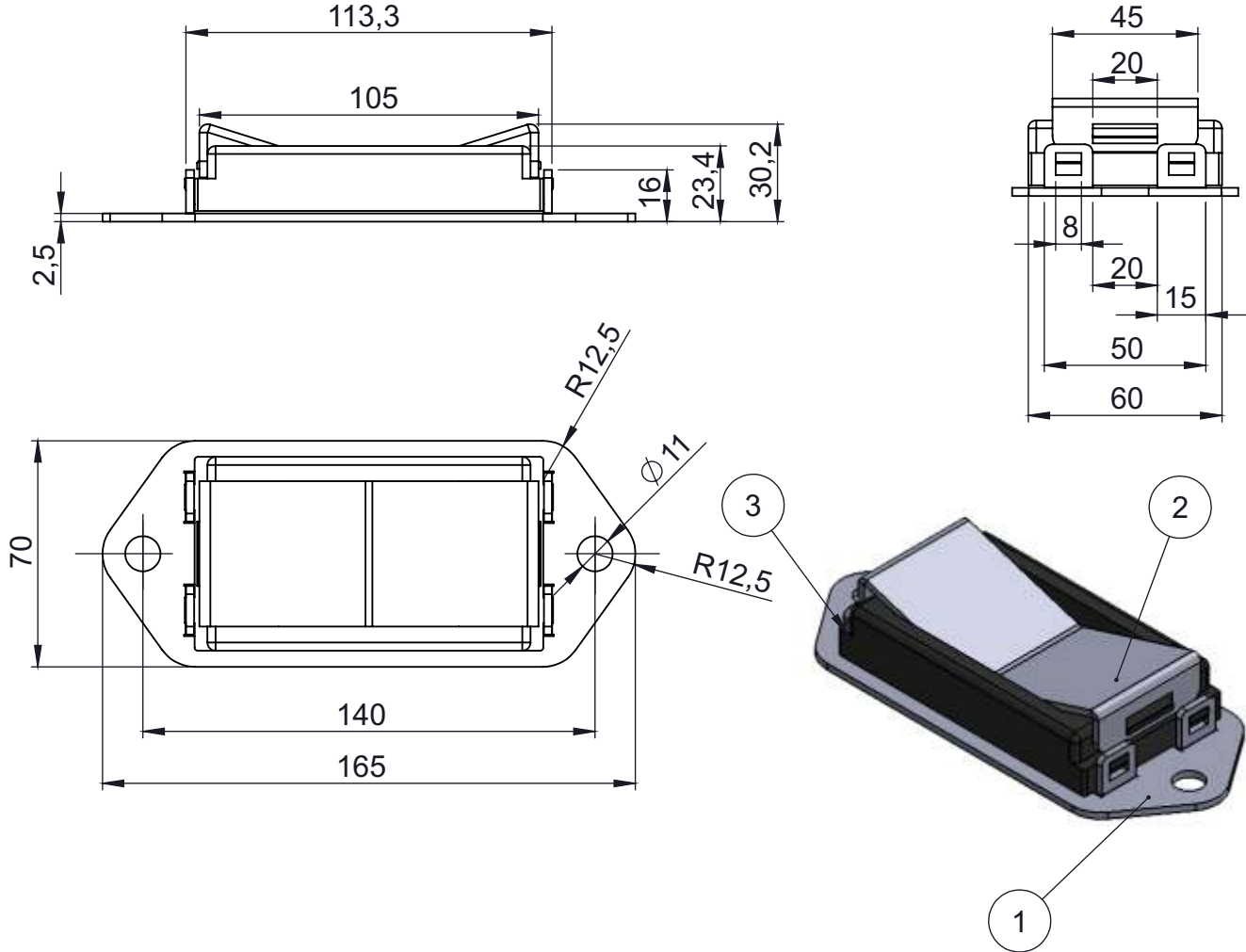
"A" DETAIL



Different Top Flange
Acc. to Customer Design

Loading Capacity : 70 TN
Total Weight : 322 KG

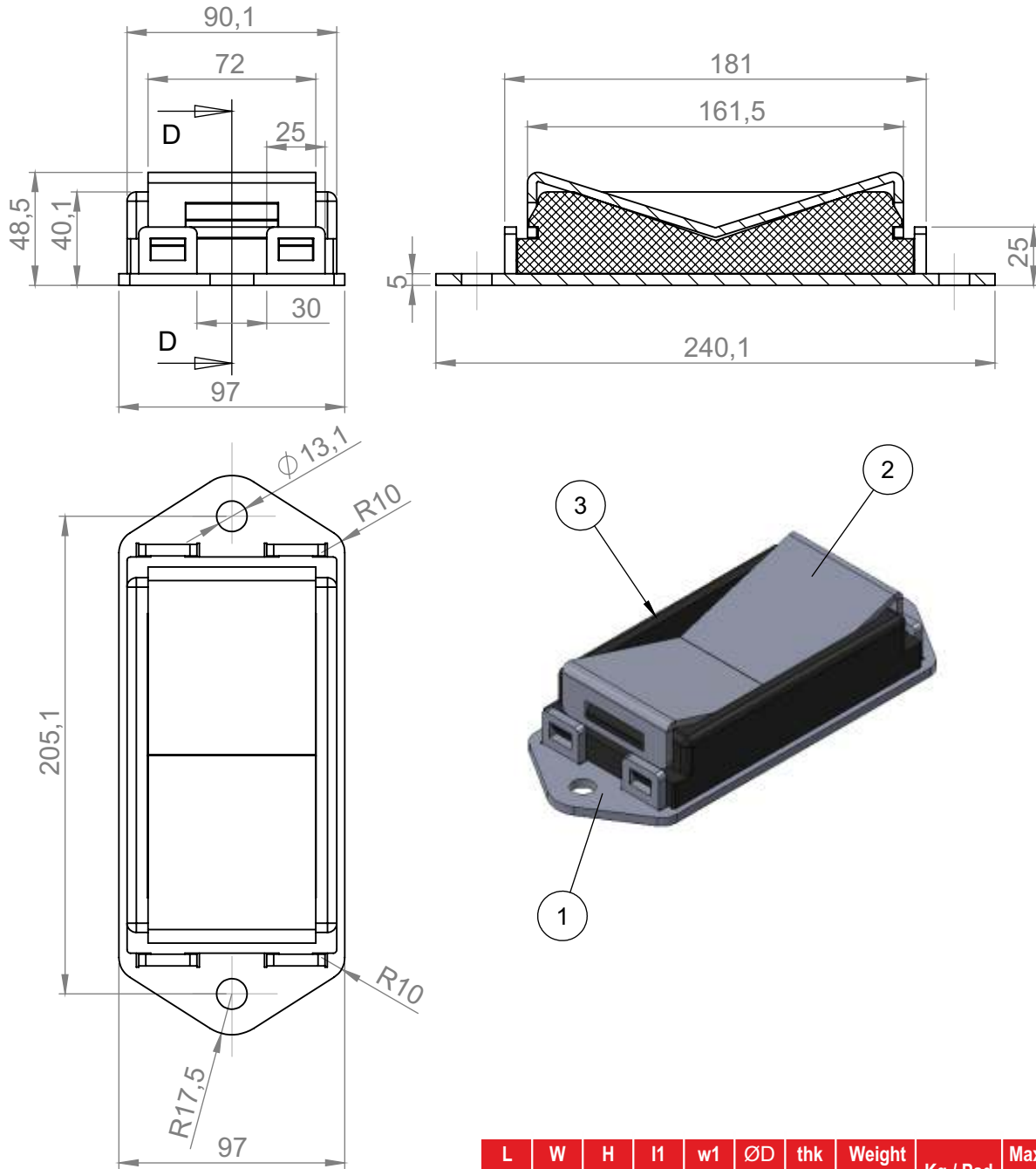




L (mm)	W (mm)	H (mm)	l1 (mm)	w1 (mm)	ØD (mm)	thk (mm)	Weight (mm)	Kg / Pad	Max compression (mm)
165	70	30	140	45	11	3	0,5	800	2

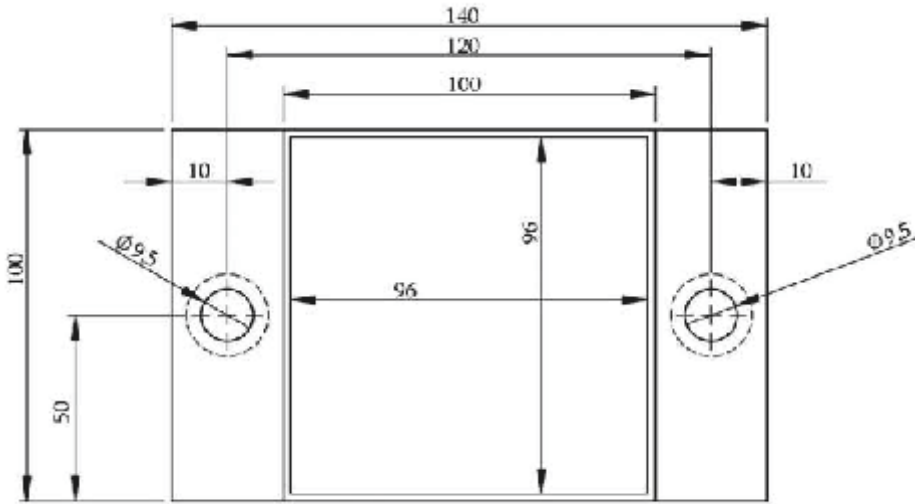
NO	DESCRIPTION	MATERIAL	QTY
1	BOTTOM PART	STEEL	1
2	TOP PART	STEEL	1
3	PAD	HARD RUBBER	1



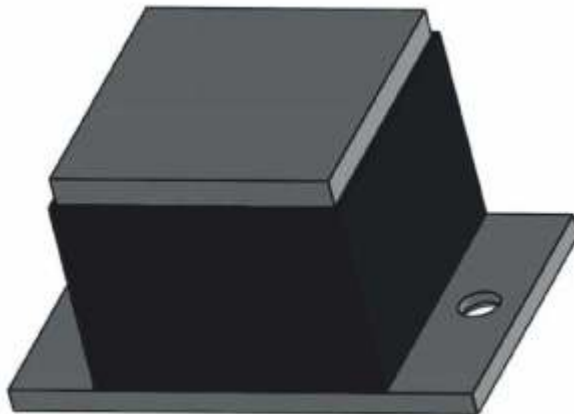
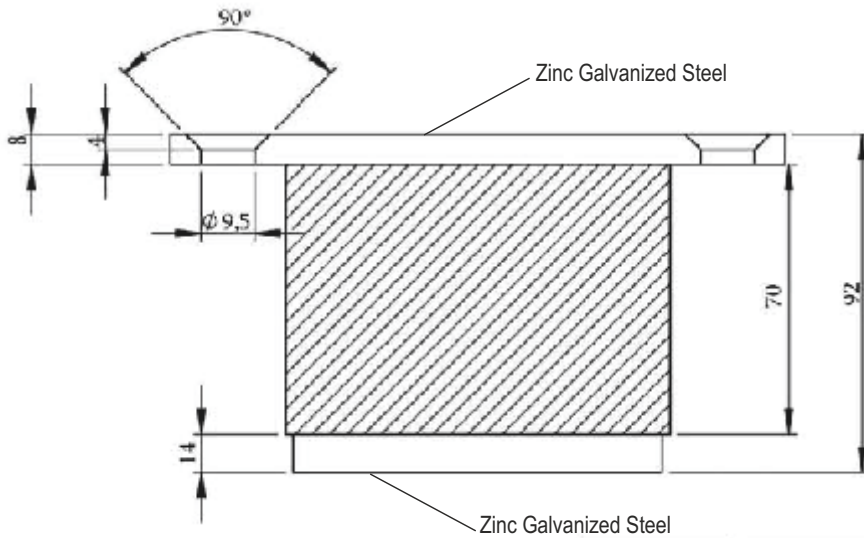


L (mm)	W (mm)	H (mm)	l1 (mm)	w1 (mm)	ØD (mm)	thk (mm)	Weight (mm)	Kg / Pad	Max compression (mm)
240	105	50	205	72	13	5	1,8	1900	3

NO	DESCRIPTION	MATERIAL	QTY
1	BOTTOM PART	STEEL	1
2	TOP PART	STEEL	1
3	RUBBER PAD	HARD RUBBER	1



And Special on Request
Different Vibration Pads



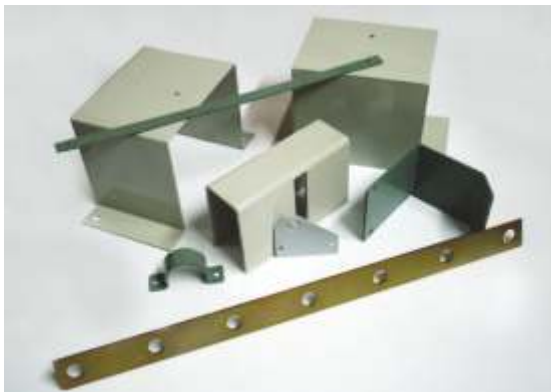
Flanges

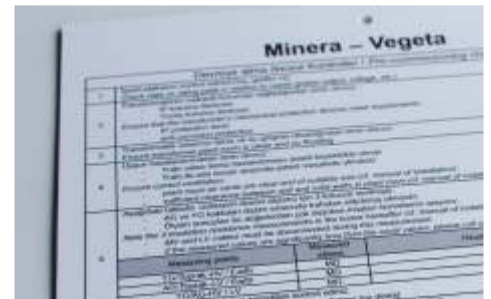
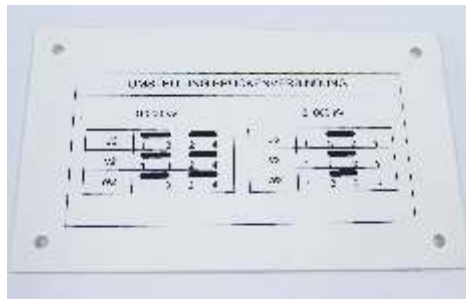
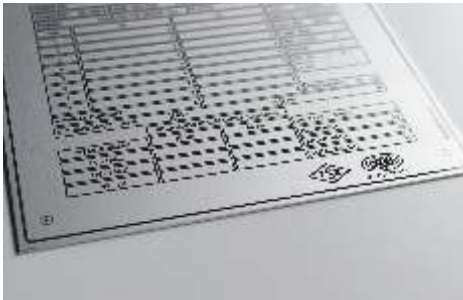


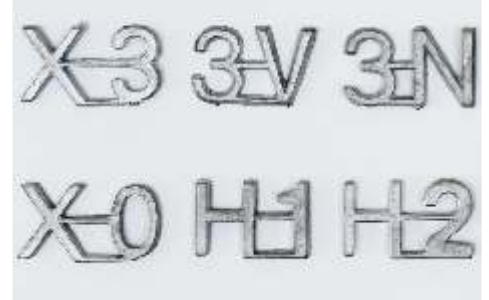
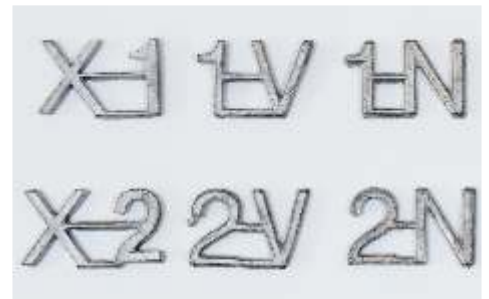
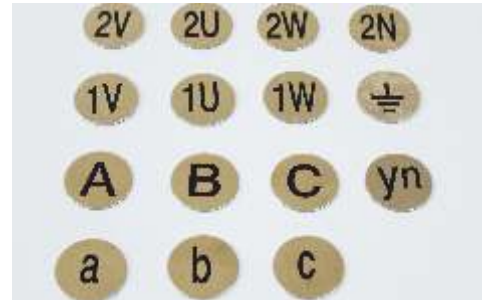
Brass and copper components and nuts



Welded, bended and painted parts







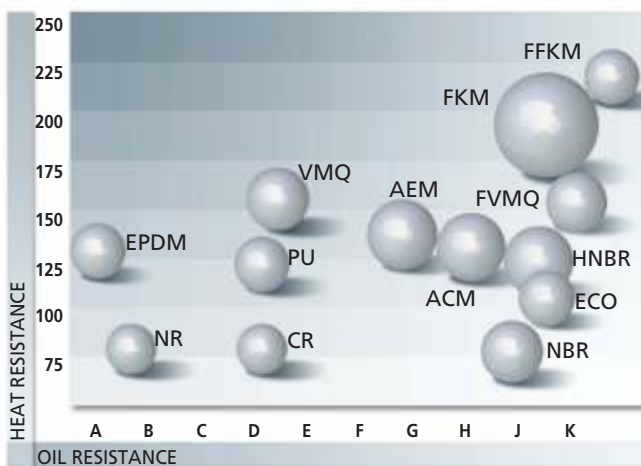
Gaskets and O-rings



We can supply Viton, NBR, Teflon, Epdm, Polyamide, Klingerit gaskets and O-rings. In addition to rubber and plastic moulding, we can provide different choices for tightness.

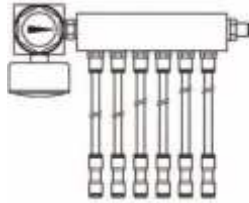
Table of Properties

The Figure shows a detailed classification among different compound families, by the most common requirements of mechanical properties and resistance to chemical agents.

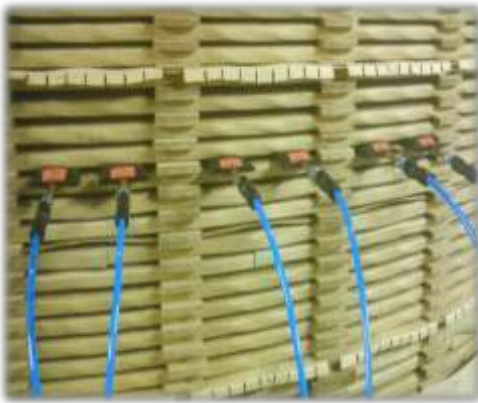


PRONAL'S VTR LIFTING BAG ADVANTAGES

- NBR coated fabric bags (oil resistant)
- All dimensions possible (lifting height (stroke) will be app. Half the width of the bag).
- Thickness deflated 3mm / 5mm
- Inflation pressure up to 5 bar (under load)
- Do not damage the insulation paper
- Easy to install and to use: reduce costs !



GLOBAL OVERVIEW



PURPOSE OF PRONAL OIL TANK

PRONAL's VTR CUSHIONS are optimized solution to lift the core's windings while reducing stresses and damages on the insulation paper. Lifting the winding to adjust / insert spacers. Repairing winding during maintenance operations.

VTR

Pneumatic lifting bags are an alternative lifting method to insert/adjust spacers into the winding of the coil.

VTR are available in several sizes, thicknesses, working pressures. (Contact us for more technical info).

VTR are inserted between the winding and are then inflated. They smoothly lift the winding and allow the spacer insertion/adjustment.

Due to their special features, Pronal lifting bags prevent:

- Stress on the winding that could cause damage.
- Damages to the insulating paperboard.

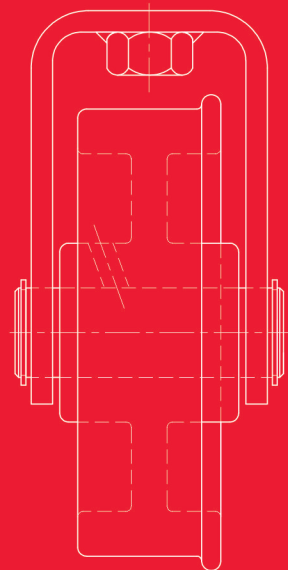
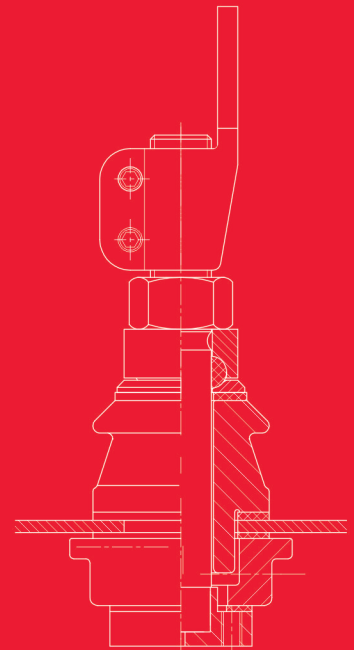


NOTE:



We manufacture your requirements...

This catalogue only shows the most types of products mainly acc to DIN standards; it is possible to make special products (bushings, valves, metal parts) according to customer drawings, please contact with our technical department.



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