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Коломна (4966)23-41-49
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Орел (4862)44-53-42
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Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
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Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
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Ульяновск (8422)24-23-59
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

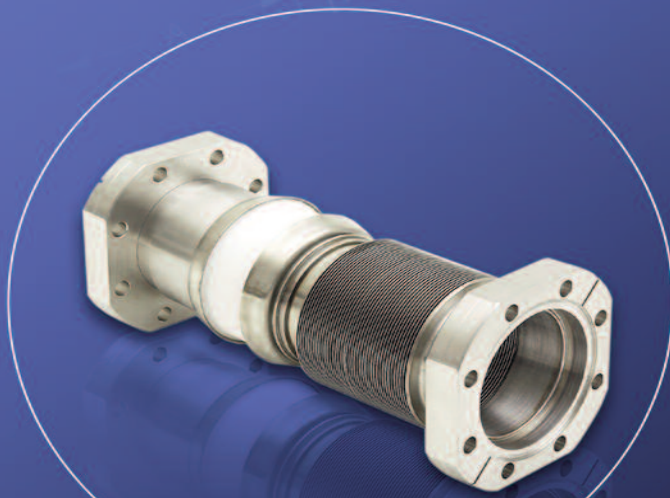
Киргизия +996(312)96-26-47

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Изоляторы Ceramaseal



CUSTOM ISOLATOR ASSEMBLIES



Feedthrough

Multipin Connector

Coaxial

Thermocouple

Isolator

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Pressure

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Technical Reference

Description

Electrical isolators, sometimes referred to as 'breaks' or 'envelopes', consist of metal sleeves brazed to each end of an insulating ceramic tube. These assemblies provide electrical isolation of system components that operate within a common environment. They can also be used to act as a conduit to introduce gases or liquids into hermetic systems.

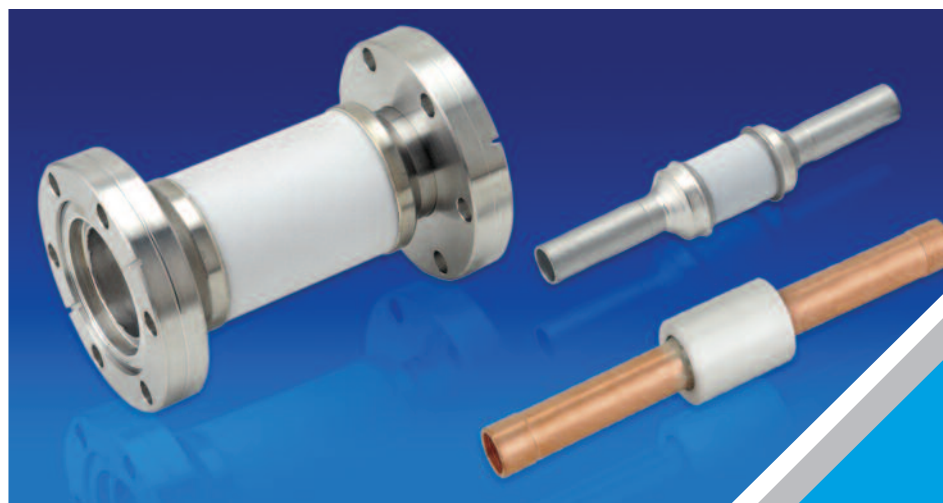
- Cryogenic isolators are used to introduce cryogenic fluids into a system and to provide electrical isolation of line components.
- Water isolators are used to introduce water or other fluids into a system and to provide electrical isolation of line components.
- Vacuum isolators are used to provide an electrical break between the vacuum system and other external components.

Standard Specifications

- Voltages up to 75 kV DC
- Temperature Range: -269°C to 450°C
- Internal IDs to 8 inches
- Internal Pressure 1×10^{-10} torr to 1000 psig

Extreme / Custom Design

- Voltages in excess of 180 kV
- Pressures to 10,000 psig
- Insulator IDs in excess of 15 inches
- Special fittings
- Radiation resistant
- Non-circular geometries
- Fluted configurations



Installation

Standard installation mountings include:

- Weld (Pulse-TIG, TIG, Laser, E-Beam)
- ISO KF flange
- ConFlat flange

Applications

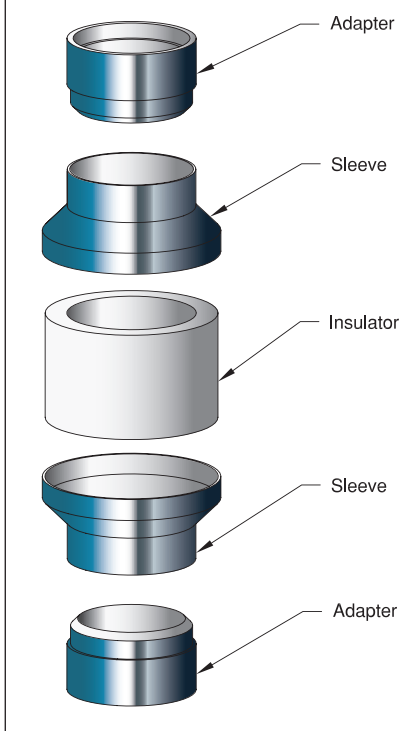
A few of the many applications in which these isolators are commonly used are:




- Semiconductor processing equipment
- Particle accelerators
- Furnaces
- Analytical equipment
- Beam line tubes
- Aerospace
- Telecommunications

New Products

- Newly designed water isolators with higher pressure ratings
- Standard non-magnetic isolators

Typical Isolator Construction



Type	Voltage DC	Pressure Rating (@ 20° C)	Temperature Range	Isolator ID (inches)	Sub-section	Section Pages
	to 13 kV	to 1000 psig	-269°C to 450°C	.11 to .41	Cryogenic	E.1 154-155
	5 kV	to 450 psig	0°C to 100°C	.32 to .57	Water	E.2 156-157
	to 75 kV	to 900 psig	-269°C to 450°C	.31 to 8.0	Vacuum	E.3 158-165

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Specifications

Materials

Tube:

.11 ID: 321 Stainless steel

.25 ID: 304 Stainless steel

.41 ID: 304 Stainless steel

Cap: 42 Nickel iron

Insulation: Alumina ceramic

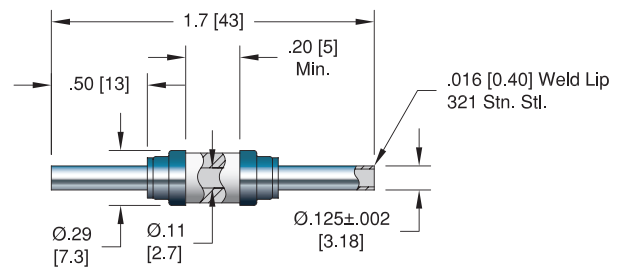
Magnetic Materials: Yes

Voltage Rating See table

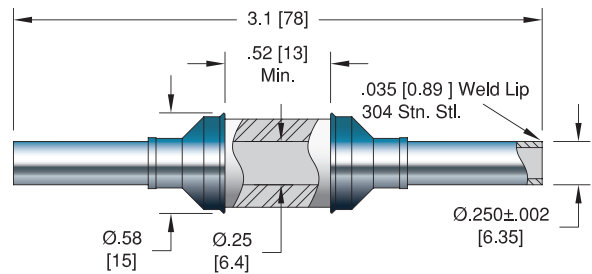
Temperature Range -269°C to 450°C

Pressure @ 20°C See table

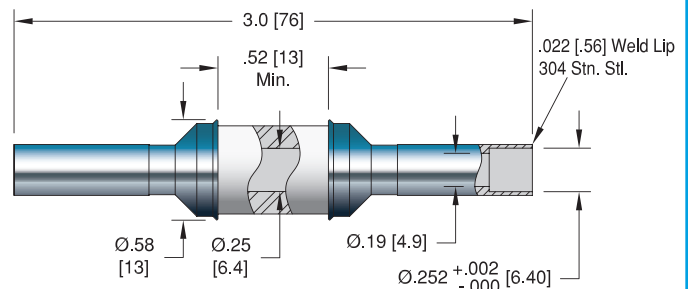
Cryogenic - ID: .11 [2.7]



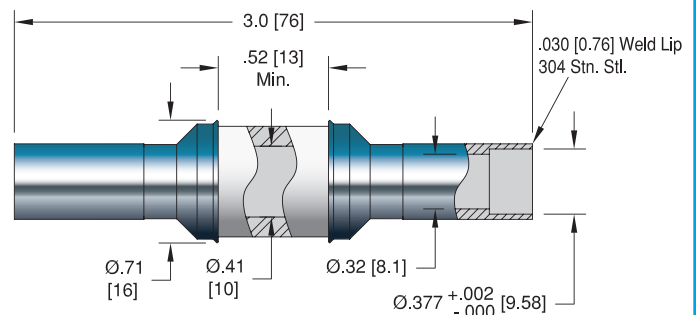
Cryogenic - ID: .25 [6.4]



Cryogenic - ID: .25 [6.4]



Cryogenic - ID: .41 [10]



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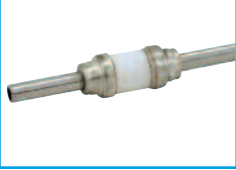
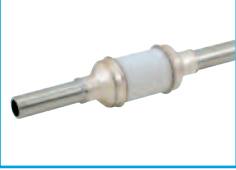
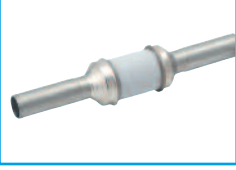
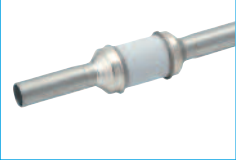
Isolator

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Cryogenic ID: .11 [2.7]	VOLTAGE	INSTALLATION	PRESSURE		PART NUMBER
	DC		PSIG	BAR	
	6 kV	Weld	1000	68	0858-01-W
Cryogenic ID: .25 [6.4]	13 kV	Weld	900	61	17108-01-W
					
Cryogenic ID: .25 [6.4]	13 kV	Weld	900	61	8002-01-W
					
Cryogenic ID: .41 [10]	13 kV	Weld	400	27	8002-02-W
					

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Materials

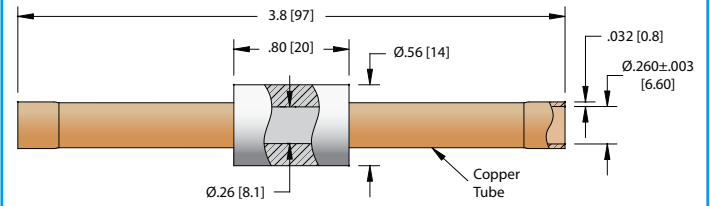
Tube: Copper
 Insulation: Alumina ceramic
 Magnetic Materials: No

Voltage Rating 5 kV DC

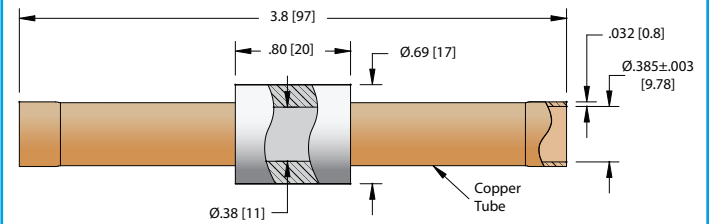
Temperature Range 0°C to 100°C

Pressure @ 20°C See table

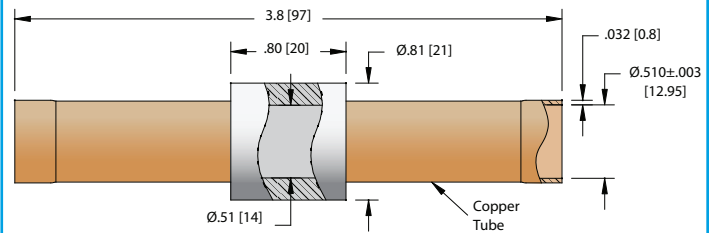
Water - ID: .26 [8.1]



Water - ID: .38 [11]



Water - ID: .51 [14]



Feedthrough

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Thermocouple

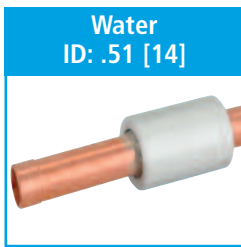
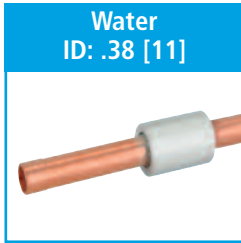
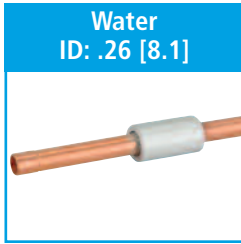
Isolator

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VOLTAGE DC	INSTALLATION	PRESSURE @ 20°C		PART NUMBER
		PSIG	BAR	
5 kV	Braze or Solder	450	30	17228-01-B
5 kV	Braze or Solder	300	20	17229-01-B
5 kV	Braze or Solder	200	13	17230-01-B

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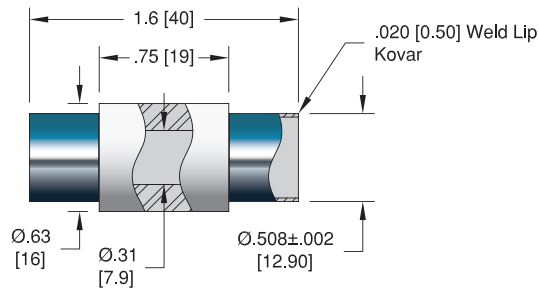
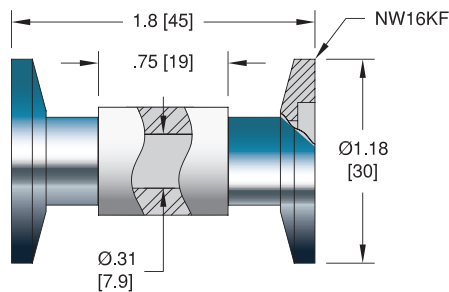
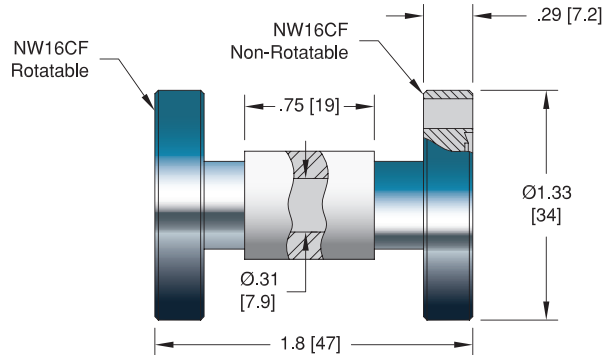
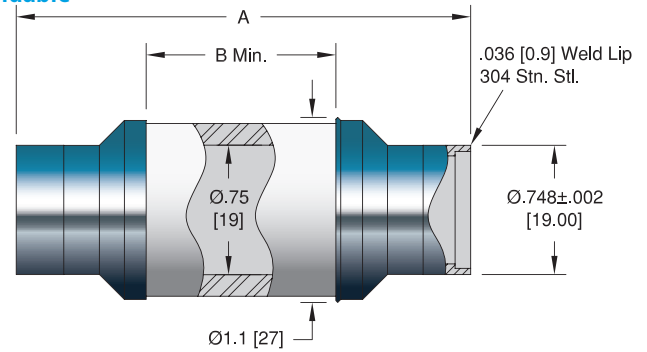
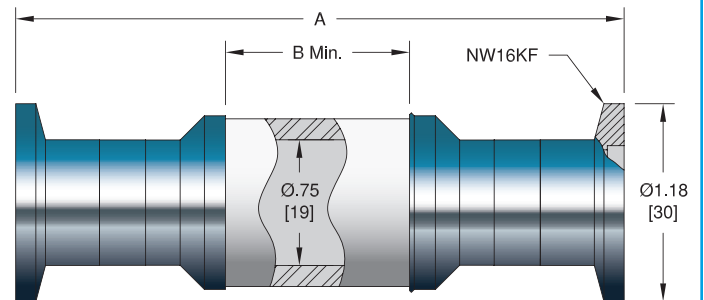
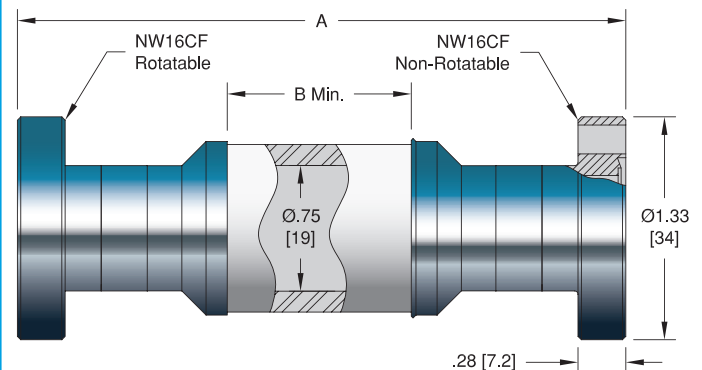
Isolator

Viewport

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Technical Reference

Insulator ID: .31 [7.9]**Weldable****ISO KF****ConFlat****Insulator ID: .75 [19]****Weldable****ISO KF****ConFlat****Specifications - Insulator ID: .31 [7.9]****Materials**

Tube: Kovar
 Insulation: Alumina ceramic
 Magnetic Materials: Yes

Voltage Rating 15 kV DC**Temperature Range** -55°C to 450°C, ISO KF -25°C to 205°C**Pressure @ 20°C** See table**Specifications - Insulator ID: .75 [19]****Materials**

Tube: Stainless steel
 Insulation: Alumina ceramic
 Magnetic Materials: See table

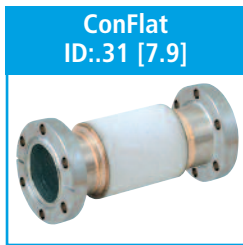
Voltage Rating See table**Temperature Range** See table**Pressure @ 20°C** See table



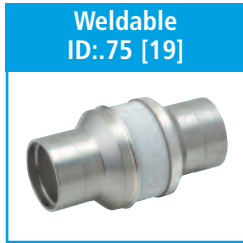
VOLTAGE DC	INSTALLATION	PRESSURE @ 20 °C PSIG BAR		PART NUMBER
15 kV	Weld	900	61	9997-05-W



ISO FLANGE				
15 kV	NW16KF	-	-	17235-01-KF



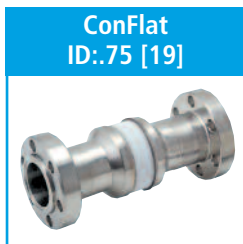
CONFLAT FLANGE				
15 kV	1 1/3" (NW16CF)	900	61	4511-01-CF



VOLTAGE DC	INSTALLATION	DIMENSIONS A B		PRESSURE @ 20 °C PSIG BAR		TEMP °C MIN MAX		MAGNETIC MATERIALS	PART NUMBER
6 kV	Weld	1.9 [48]	0.25 [6.3]	500	34	-55	450	Yes	9998-04-W
20 kV	Weld	2.6 [67]	1.0 [25]	500	34	-55	450	Yes	9998-01-W
35 kV	Weld	3.6 [92]	2.0 [51]	500	34	-55	450	Yes	9998-03-W
6 kV	Weld	1.9 [48]	0.25 [6.3]	350	24	-269	450	No	9998-06-W
20 kV	Weld	2.6 [67]	1.0 [25]	350	24	-269	450	No	9998-07-W
35 kV	Weld	3.6 [92]	2.0 [51]	350	24	-269	450	No	9998-08-W



ISO FLANGE									
6 kV	NW16KF	2.9 [73]	0.25 [6.3]	-	-	-25	205	Yes	17236-01-KF
20 kV	NW16KF	3.6 [92]	1.0 [25]	-	-	-25	205	Yes	17236-02-KF
35 kV	NW16KF	4.6 [118]	2.0 [51]	-	-	-25	205	Yes	17236-03-KF
6 kV	NW16KF	2.9 [73]	0.25 [6.3]	-	-	-25	205	No	17236-04-KF
20 kV	NW16KF	3.6 [92]	1.0 [25]	-	-	-25	205	No	17236-05-KF
35 kV	NW16KF	4.6 [118]	2.0 [51]	-	-	-25	205	No	17236-06-KF



CONFLAT FLANGE									
6 kV	1 1/3" (NW16CF)	2.9 [73]	0.25 [6.3]	500	34	-55	450	Yes	8000-04-CF
20 kV	1 1/3" (NW16CF)	3.6 [92]	1.0 [25]	500	34	-55	450	Yes	8000-02-CF
35 kV	1 1/3" (NW16CF)	4.6 [118]	2.0 [51]	500	34	-55	450	Yes	8000-03-CF
6 kV	1 1/3" (NW16CF)	2.9 [73]	0.25 [6.3]	350	24	-269	450	No	8000-06-CF
20 kV	1 1/3" (NW16CF)	3.6 [92]	1.0 [25]	350	24	-269	450	No	8000-07-CF
35 kV	1 1/3" (NW16CF)	4.6 [118]	2.0 [51]	350	24	-269	450	No	8000-08-CF

Feedthrough

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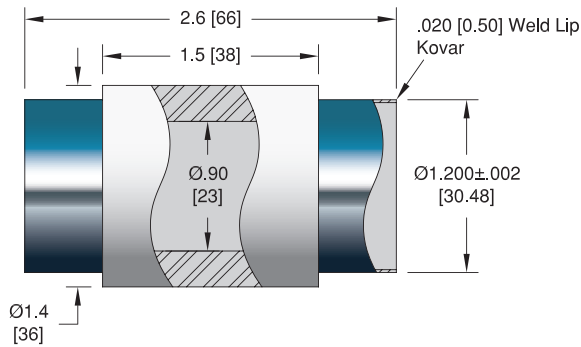
Viewport

Pressure

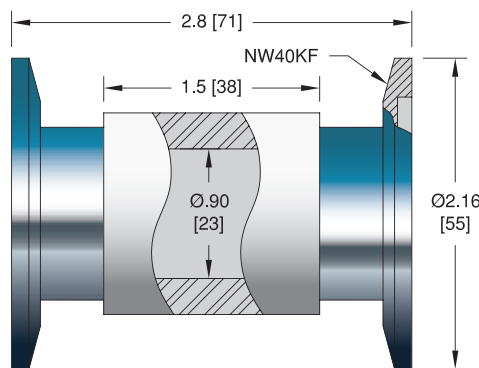
Accessories

Technical Reference

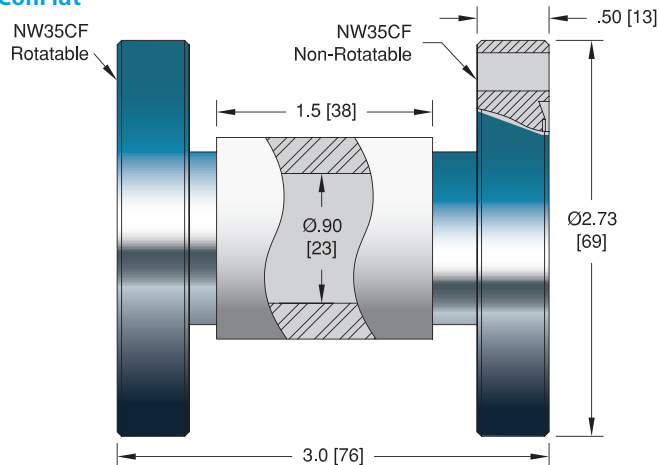
Insulator ID: .90 [23] Weldable



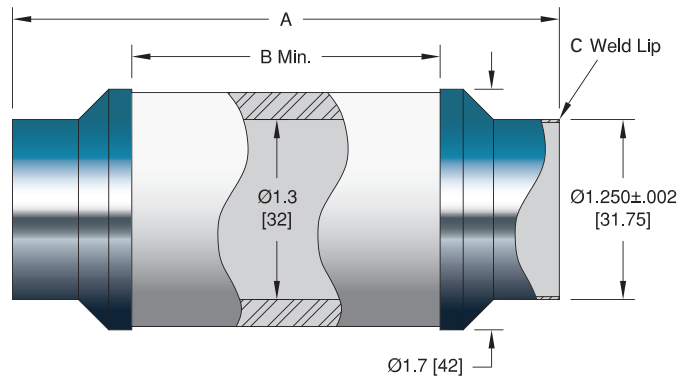
ISO KF



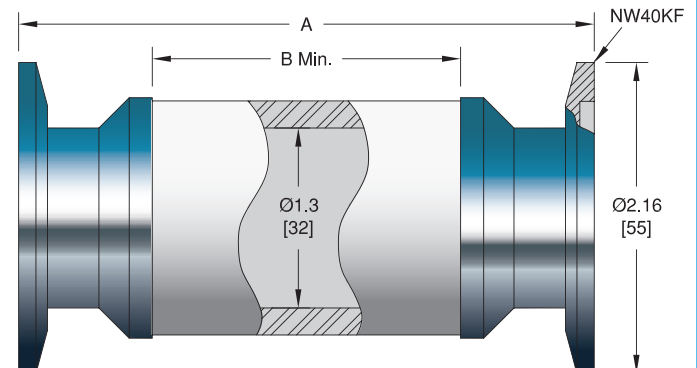
ConFlat



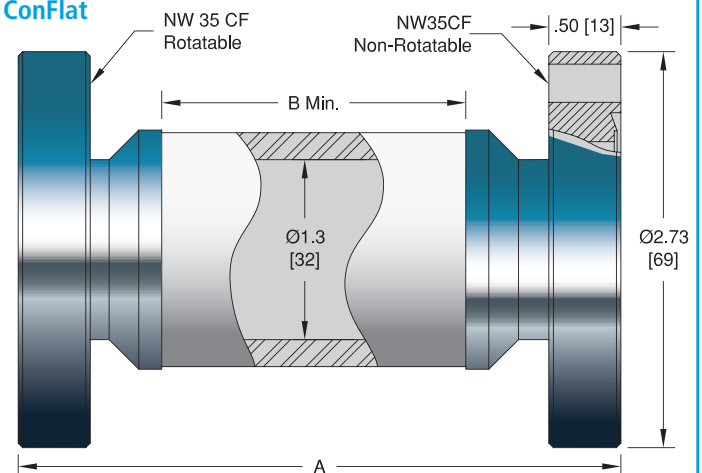
Insulator ID: 1.3 [32] Weldable



ISO KF



ConFlat



Specifications - Insulator ID: .90 [23]

Materials

Tube: Kovar
Insulation: Alumina ceramic
Magnetic Materials: Yes

Voltage Rating 30 kV DC

Temperature Range -55°C to 450°C, ISO KF -25°C to 205°C

Pressure @ 20°C See table

Specifications - Insulator ID: 1.3 [32]

Materials

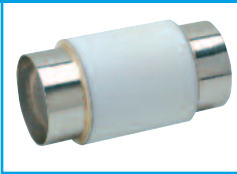
Tube: Kovar or 304 stainless steel
Insulation: Alumina ceramic
Magnetic Materials: See table

Voltage Rating See table

Temperature Range See table

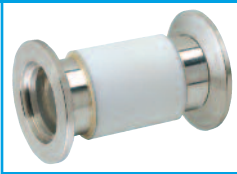
Pressure @ 20°C See table

Weldable
ID: .90 [23]



VOLTAGE DC	INSTALLATION	PRESSURE @ 20 °C PSIG BAR		PART NUMBER
30 kV	Weld	360	24	9997-09-W

ISO KF
ID: .90 [23]



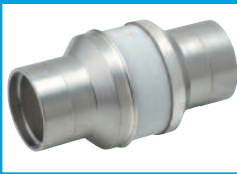
ISO FLANGE					PART NUMBER
30 kV	NW40KF	-	-		17237-01-KF

ConFlat
ID: .90 [23]



CONFLAT FLANGE					PART NUMBER
30 kV	2 3/4" (NW35CF)	360	24		4511-02-CF

Weldable
ID: 1.3 [32]



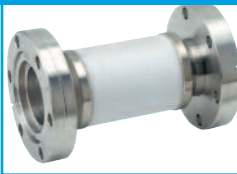
VOLTAGE DC	INSTALLATION	A	DIMENSIONS B C		PRESSURE @ 20 °C PSIG BAR	TEMP °C MIN MAX	MAGNETIC MATERIALS	PART NUMBER	
5 kV	Weld	1.9 [49]	0.6 [4.0]	.020 [0.50]	Kovar	350 24	-55 450	Yes	9999-03-W
35 kV	Weld	3.8 [96]	2.0 [50]	.020 [0.50]	Kovar	350 24	-55 450	Yes	9999-01-W
65 kV	Weld	5.7 [144]	3.9 [99]	.020 [0.50]	Kovar	350 24	-55 450	Yes	9999-04-W
5 kV	Weld	1.9 [49]	0.6 [4.0]	.035 [0.90]	Stn.Stl.	250 17	-269 450	No	17199-01-W
35 kV	Weld	3.8 [96]	2.0 [50]	.035 [0.90]	Stn.Stl.	250 17	-269 450	No	17199-02-W
65 kV	Weld	5.7 [144]	3.9 [99]	.035 [0.90]	Stn.Stl.	250 17	-269 450	No	17199-03-W

ISO KF
ID: 1.3 [32]



ISO FLANGE										
5 kV	NW40KF	2.1 [54]	0.16 [4.0]	-	-	-	-25	205	Yes	17238-01-KF
35 kV	NW40KF	4.0 [101]	2.0 [50]	-	-	-	-25	205	Yes	17238-02-KF
65 kV	NW40KF	5.9 [149]	3.9 [99]	-	-	-	-25	205	Yes	17238-03-KF
5 kV	NW40KF	2.1 [54]	0.16 [4.0]	-	-	-	-25	205	No	17238-04-KF
35 kV	NW40KF	4.0 [101]	2.0 [50]	-	-	-	-25	205	No	17238-05-KF
65 kV	NW40KF	5.9 [149]	3.9 [99]	-	-	-	-25	205	No	17238-06-KF

ConFlat
ID: 1.3 [32]



CONFLAT FLANGE										
5 kV	2 3/4" (NW35CF)	2.3 [59]	0.16 [4.0]	-	350	24	-55	450	Yes	8001-03-CF
35 kV	2 3/4" (NW35CF)	4.2 [107]	2.0 [50]	-	350	24	-55	450	Yes	8001-02-CF
65 kV	2 3/4" (NW35CF)	6.1 [155]	3.9 [99]	-	350	24	-55	450	Yes	8001-04-CF
5 kV	2 3/4" (NW35CF)	2.3 [59]	0.16 [4.0]	-	250	17	-269	450	No	8001-06-CF
35 kV	2 3/4" (NW35CF)	4.2 [107]	2.0 [50]	-	250	17	-269	450	No	8001-07-CF
65 kV	2 3/4" (NW35CF)	6.1 [155]	3.9 [99]	-	250	17	-269	450	No	8001-08-CF

Feedthrough

Multi-pin Connector

Coaxial

Thermocouple

Isolator

Viewport

Pressure

Accessories

Technical Reference

Feedthrough

Multipin Connector

Coaxial

Thermocouple

Isolator

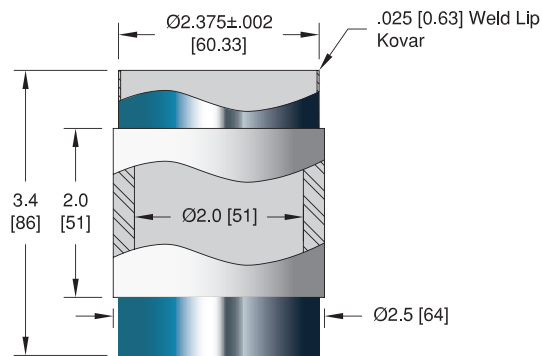
Viewport

Pressure

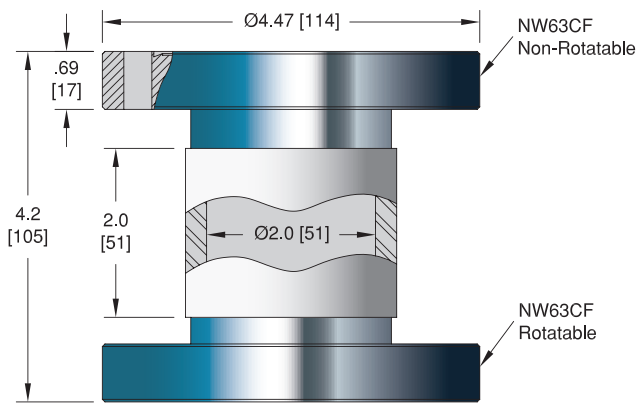
Accessories

Technical Reference

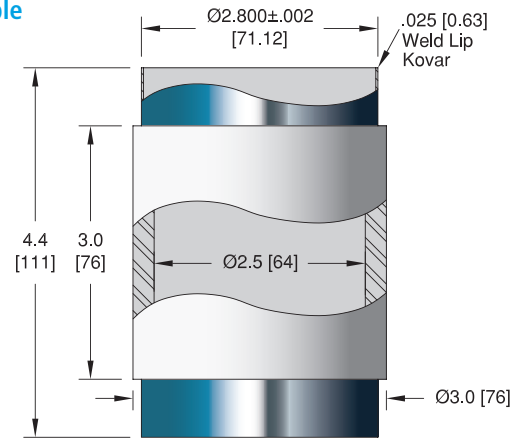
Insulator ID: 2.0 [51] Weldable



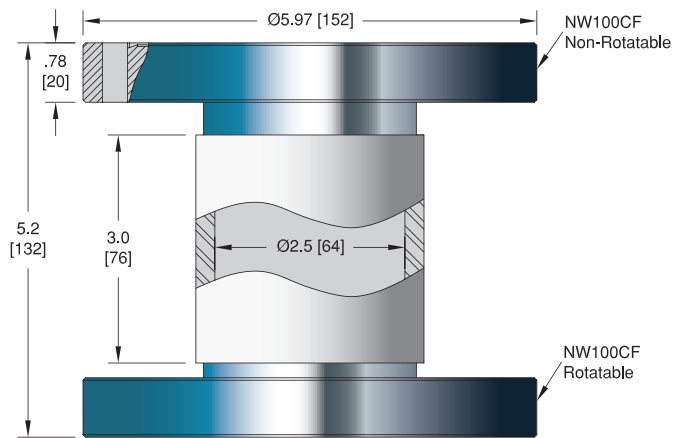
ConFlat



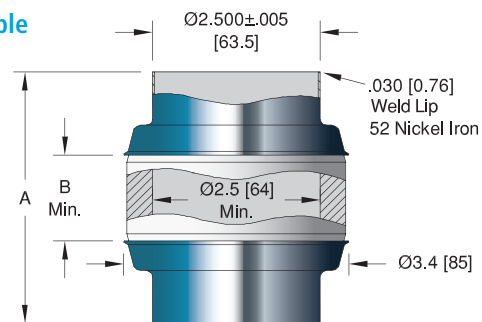
Insulator ID: 2.5 [64] Weldable



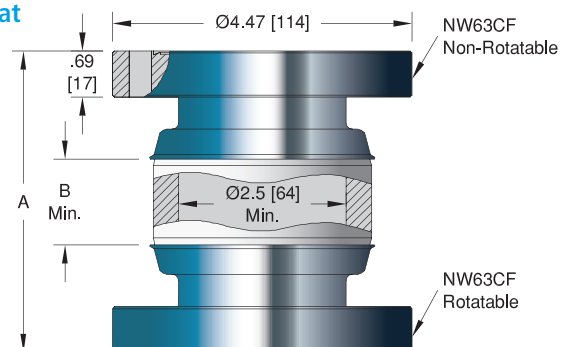
ConFlat



Weldable



ConFlat



Specifications - Insulator ID: 2.0 [51]

Materials

Tube: Kovar
Insulation: Alumina ceramic
Magnetic Materials: Yes

Voltage Rating 40 kV DC

Temperature Range -55°C to 450°C

Pressure @ 20°C 180 PSIG (12 Bar)

Specifications - Insulator ID: 2.5 [64]

Materials

Tube: Kovar or 52 Nickel iron
Insulation: Alumina ceramic
Magnetic Materials: Yes

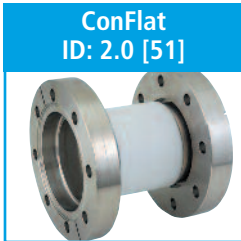
Voltage Rating See table

Temperature Range See table

Pressure @ 20°C See table



VOLTAGE DC	INSTALLATION	PART NUMBER
40 kV	Weld	9997-21-W



CONFLAT FLANGE

40 kV	4 1/2" (NW63CF)	4511-03-CF
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VOLTAGE DC	INSTALLATION	PRESSURE @ 20 °C		TEMP °C		PART NUMBER
		PSIG	BAR	MIN	MAX	
60 kV	Weld	150	10	-55	450	9997-25-W

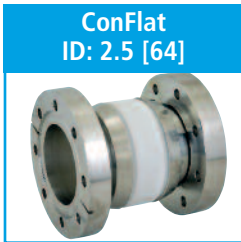


CONFLAT FLANGE

60 kV	6" (NW100CF)	150	10	-55	450	4511-05-CF
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VOLTAGE DC	INSTALLATION	DIMENSIONS		PRESSURE @ 20 °C		TEMP °C		PART NUMBER
		A	B	PSIG	BAR	MIN	MAX	
20 kV	Weld	3.7 [95]	0.90 [22.8]	80	5	-269	450	17140-01-W
60 kV	Weld	6.5 [165]	3.65 [92.7]	80	5	-269	450	17140-02-W



CONFLAT FLANGE

20 kV	4 1/2" (NW63CF)	4.5 [114]	0.90 [22.8]	80	5	-269	450	17144-01-CF
60 kV	4 1/2" (NW63CF)	7.3 [184]	3.65 [92.7]	80	5	-269	450	17144-02-CF

Feedthrough

Multi-pin Connector

Coaxial

Thermocouple

Isolator

Viewport

Pressure

Accessories

Technical Reference

Feedthrough

Multipin Connector

Coaxial

Thermocouple

Isolator

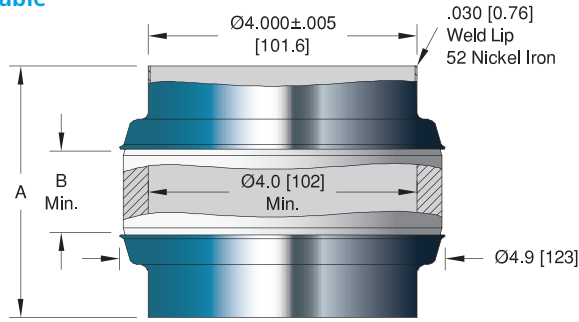
Viewport

Pressure

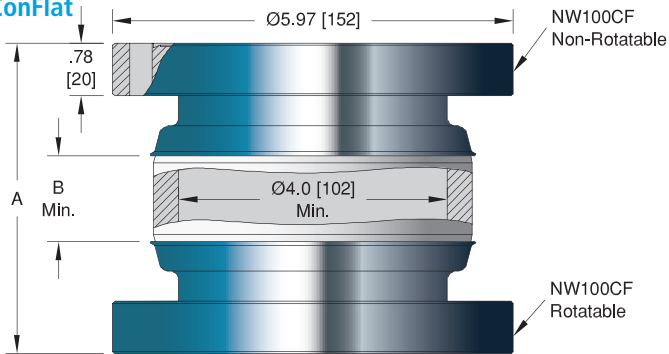
Accessories

Technical Reference

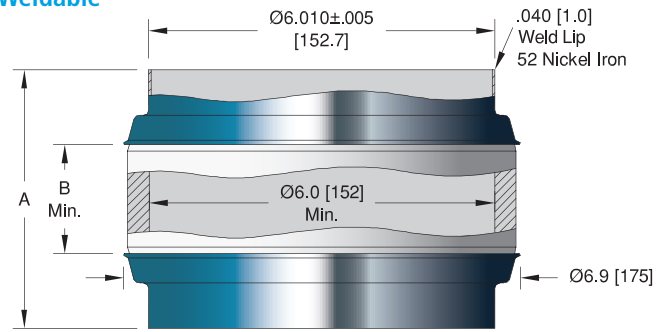
Insulator ID: 4.0 [102] Weldable



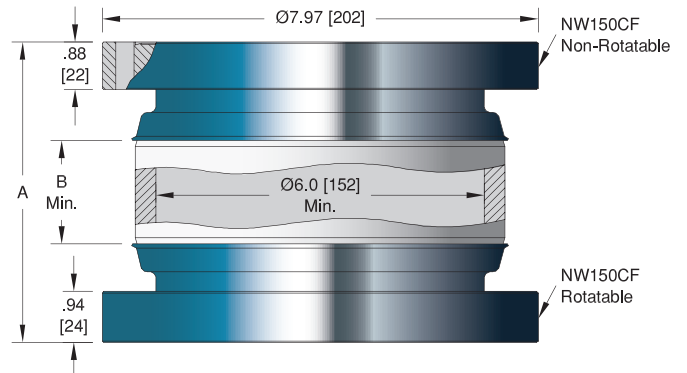
ConFlat



Insulator ID: 6.0 [152] Weldable



ConFlat



Specifications

Materials

Tube: 52 Nickel iron
Insulation: Alumina ceramic
Magnetic Materials: Yes

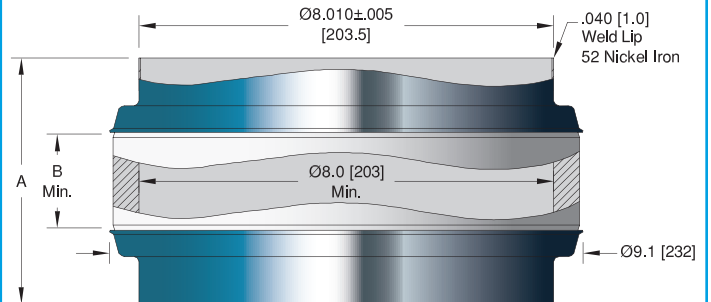
Voltage Rating See table

Temperature Range -269°C to 450°C

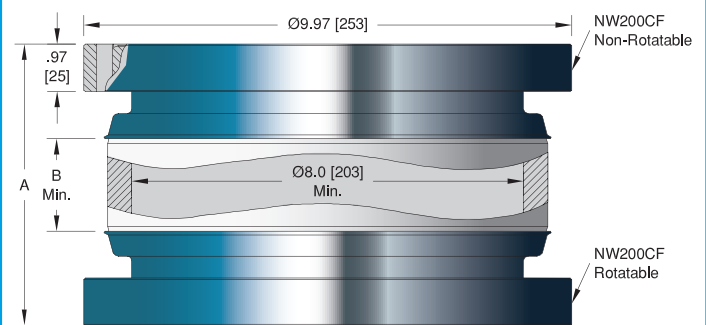
Pressure @ 20°C

Insulator ID: 4.0 [102] – 60 PSIG (4 Bar)
Insulator ID: 6.0 [152] – 40 PSIG (2.7 Bar)
Insulator ID: 8.0 [203] – 30 PSIG (2 Bar)

Insulator ID: 8.0 [203] Weldable



ConFlat





DC	INSTALLATION	A	B	NUMBER
20 kV	Weld	3.7 [95]	0.90 [22.8]	17141-01-W
60 kV	Weld	6.5 [165]	3.65 [92.7]	17141-02-W



CONFLAT FLANGE

20 kV	6" (NW100CF)	4.6 [117]	0.90 [22.8]	17145-01-CF
60 kV	6" (NW100CF)	7.4 [187]	3.65 [92.7]	17145-02-CF



VOLTAGE DC	INSTALLATION	DIMENSIONS A B		PART NUMBER
30 kV	Weld	4.5 [114]	1.5 [38]	17142-01-W
55 kV	Weld	6.0 [152]	3.0 [76]	17142-02-W
75 kV	Weld	7.5 [191]	4.5 [114]	17142-03-W



CONFLAT FLANGE

30 kV	8" (NW150CF)	5.5 [140]	1.5 [38]	17146-01-CF
55 kV	8" (NW150CF)	7.0 [178]	3.0 [76]	17146-02-CF
75 kV	8" (NW150CF)	8.5 [216]	4.5 [114]	17146-03-CF



VOLTAGE DC	INSTALLATION	DIMENSIONS A B		PART NUMBER
30 kV	Weld	4.75 [121]	1.5 [38]	17143-01-W
55 kV	Weld	6.25 [159]	3.0 [76]	17143-02-W
75 kV	Weld	7.75 [197]	4.5 [114]	17143-03-W



CONFLAT FLANGE

30 kV	10" (NW200CF)	5.8 [146]	1.5 [38]	17147-01-CF
55 kV	10" (NW200CF)	7.3 [184]	3.0 [76]	17147-02-CF
75 kV	10" (NW200CF)	8.8 [222]	4.5 [114]	17147-03-CF

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