

MONOLITHIC JOINTS FOR ELECTRICALLY ISOLATING PIPELINES

Global Supply Line can supply monolithic insulating joints from stock in ANSI 150 to 2500 up to 300 NB (12"). Special configurations can be supplied ex our European and USA manufacturers in short delivery times.

Insulated Joints

Triple Protection

- 1) Insulated gaskets prevent metal-to-metal contact across the insulated joint.
- 2) All internal cavities of the insulated joints are filled with a special dielectric compound to provide an additional electrical barrier.
- 3) Each metal component is individually coated with two coats of epoxy paint.

Standard Material

ASTM A694/ASME SA105 or SA 106 Gr.C (Minimum Yield 52,000 psi) High Yield X52, X60, X65, ASTM 707, etc. on request.

Elastomer O-rings

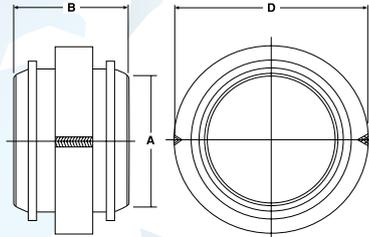
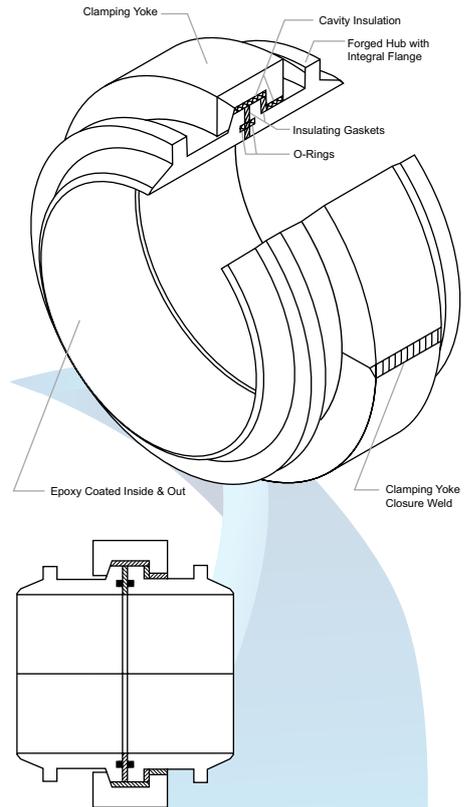
Viton O-rings are standard in each insulated joint. Other O-ring compounds are available upon request.

Insulated Gasket Material

Epoxy base/glass fiber reinforced high strength laminate.

Coating

Epoxy base paint. Coal tar epoxy available upon request.



All dimensions are in inches (mm)

Nominal Pipe Size	**Diameter at Weld Bevel A	Overall Length B	CL 600 W			CL 900 W		
			Maximum Diameter D	Approximate Weight Lbs. (kg)	Overall Length B	Maximum Diameter D	Approximate Weight Lbs. (kg)	
4 (100)	4.500 (114.3)	7.88 (200.2)	7.75 (196.9)	40 (18.1)	10.250(260.4)	8.725(221.6)	65(29.4)	
6 (150)	6.625 (168.3)	10.00 (254.0)	10.50 (266.7)	70 (31.8)	12.250(311.2)	11.812(300.00)	138(62.6)	
8 (200)	8.625 (219.1)	11.13 (282.7)	13.25 (336.6)	150 (68.0)	13.750(349.3)	14.625(371.5)	235(107.0)	
10 (250)	10.750 (273.1)	13.00 (330.2)	16.25 (412.8)	250 (113.4)	16.750(425.5)	17.375(441.3)	366(166.3)	
12 (300)	12.750 (323.9)	13.88 (352.6)	19.00 (482.6)	350 (158.8)	17.250(438.2)	20.062(509.6)	533(242.2)	
14 (350)	14.000 (355.6)	14.63 (371.6)	20.69 (525.5)	425 (192.8)	19.250(489.0)	21.688(550.9)	671(305.1)	
16 (400)	16.000 (406.4)	15.88 (403.4)	23.00 (584.2)	525 (238.1)	21.500(546.1)	24.688(627.1)	963(437.9)	
18 (450)	18.000 (457.2)	17.63 (452.4)	25.69 (652.5)	675 (306.2)	23.250(590.6)	27.375(695.3)	1276(579.8)	
20 (500)	20.000 (508.0)	17.75 (450.9)	27.75 (704.9)	850 (385.6)	24.500(622.3)	30.125(765.2)	1634(742.6)	
22 (550)	22.000 (558.8)	19.13 (485.9)	31.00 (787.4)	1150 (521.6)	26.500(673.1)	32.750(831.9)	2060(936.3)	
24 (600)	24.000 (609.6)	20.50 (520.7)	34.00 (863.6)	1450 (657.7)	29.500(749.3)	35.750(908.1)	2689(1222.2)	
26 (650)	26.000 (660.4)	21.88 (555.8)	36.00 (914.4)	1675 (759.8)	31.250(793.8)	38.500(977.9)	3183(1446.7)	
28 (700)	28.000 (711.2)	23.13 (587.5)	38.38 (974.9)	2000 (907.2)	33.000(838.2)	41.125(1044.6)	3835(1743.4)	
30 (750)	30.000 (762.0)	24.13 (612.9)	41.25 (1047.8)	2425 (1100.0)	35.000(889.0)	44.125(1120.8)	4682(2128.3)	
32 (800)	32.000 (812.8)	26.25 (666.8)	43.75 (1111.3)	2900 (1315.4)	36.500(927.1)	46.750(1187.5)	5438(2471.7)	
34 (850)	34.000 (863.6)	27.38 (695.5)	46.56 (1182.6)	3450 (1564.9)	38.250(971.6)	49.500(1257.3)	6435(2925.0)	
36 (900)	36.000 (914.4)	28.63 (727.2)	49.75 (1263.7)	3700 (1678.3)	41.000(1041.4)	52.938(1344.6)	7910(3595.6)	
38 (950)	38.000 (965.2)	28.13 (714.5)	52.75 (1339.9)	4650 (2109.2)	42.750(1085.9)	55.688(1414.5)	9095(4134.2)	
40 (1000)	40.000 (1016.0)	29.25 (743.0)	55.50 (1409.7)	5325 (2415.4)	44.500(1130.3)	58.375(1482.7)	10443(4746.7)	
42 (1050)	42.000 (1066.8)	30.00 (762.0)	57.88 (1470.2)	6000 (2721.6)	43.750(1111.3)	61.125(1552.6)	11476(5216.5)	

** Diameters shown are based on matching pipe with yield strength of 52,000 psi or less. When matching higher yield strength pipe, diameter at weld bevel can be increased to meet piping code requirements such as ASME B31.8 Figure I5 or higher yield materials can be used.

Welded Insulated Joint Dimensions

When ordering, please specify bore required. Insulated joints are normally thru bored to the same ID as the matching pipe. One or both ends can be taper bored at customer request. Joints also available in sizes not listed and for higher pressure ratings.

Example Specifications

1.0 Scope

This specification applies to the purchase of butt-welding insulated joints used for electrical isolation and cathodic protection of pipelines.

2.0 Codes and Standards

ANSI/ASME B31.8 gas transmission and distribution piping systems. ANSI/ASME B31.4 liquid petroleum transportation piping systems. ASME section IX qualification standards for welding and brazing procedures. ASTM - applicable material standards.

3.0 Materials

Hubs & yokes - ASTM A105, A105 or A694 with 52,000 psi minimum yield strength. O-ring gaskets - non-conductive Viton per Mil-R-83248 Type I. Insulating gaskets - Epoxy base/glass fiber reinforced capable of meeting a minimum electrical strength of 15,000 volts.

4.0 Design

The insulated joints shall be designed to sustain an internal pressure of 1480 psi or 2220 psi in addition to an externally applied bending load which will produce a maximum bending strength of 72% of the minimum yield strength of the attached pipe.

5.0 Testing

Each insulated joint shall be hydrostatically pressure tested to 2225 psi or 350 psi for a minimum of 15 minutes. Each insulated joint shall be subjected to and pass an electrical resistance test of 25 megohms minimum at 1000 VDC.

6.0 Welding

All welders and welding procedures used in the fabrication of the insulated joints shall be qualified in accordance with ASME section IX.

7.0 Clear Bore

The insulated joints shall have a smooth, clear bore suitable for the uninterrupted passage of pigs, spheres and on-line inspection tools (intelligent pigs).

8.0 Weld and Preparation

Internal diameter to match that of the attached pipe and the weld end shall be beveled to an angle of 30°, +5°/-0°, 1/16" land.

9.0 Marking

Each insulated joint shall be marked by low stress steel stencil on the outside of the yoke with the following: manufacturer's name or trademark, insulating joint serial number, pressure class, material heat number (also mark material heat number on the hub on the outside of hub).

10. Coating

All insulated joints shall be blast cleaned and coated with a prime coat and top coat of epoxy base paint.

11.0 Material Test Reports

The manufacturer shall provide certified material test reports of the physical and chemical properties for each heat and steel used in the manufacture of the hubs and yokes. These properties shall conform to the applicable ASTM specification.

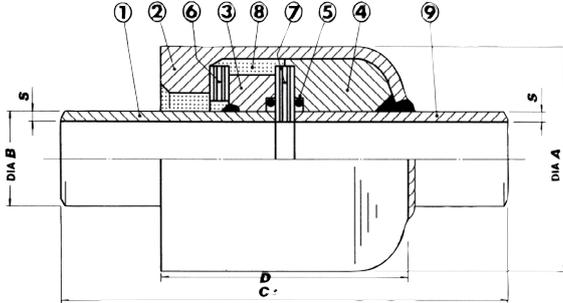
Typical Bill of Materials

ANSI 150 TO 2500

Fast track delivery

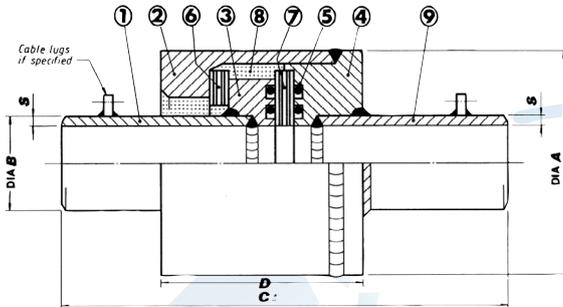
TYPE 1

For PN25 3" - 12" and PN64/100 1/2" - 2".



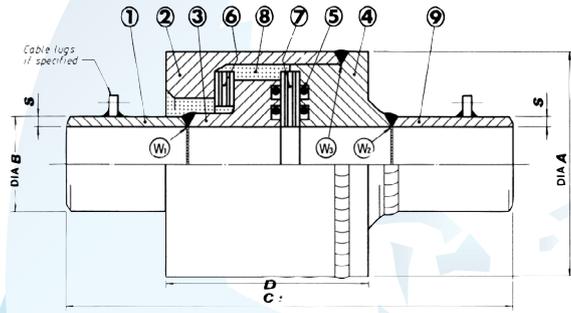
TYPE 2

For PN25 above 12" and above 2" in all other pressure ratings. Generally not used for ANSI 900 and above.



TYPE 3

For all pressure ratings 3" and above.



Materials for Standard Joints

Item	Description	Specification
1	Pipe Pups	API 5L (X52 in larger sizes)
2	Steel Sections	Forgings or Steel Rings to ASTM A694 (F52), DIN 1629 (St 52) or UNI 7729 (Fe 510)
3	Steel Sections	
4	Steel Sections	
5	Sealing Gasket	Nitrile O-Rings
6	Insulating Rings	Glass or Fabric reinforced epoxy
7	Insulating Rings	Glass or Fabric reinforced epoxy
8	Dielectric Filler	Epoxy Resin
9	Pipe Pups	API 5L (see table)
10	External Coating, Internal Lining	Epoxy Resin, 150 microns DFT
11	External Coating, Internal Lining	Epoxy Resin, 150 microns DFT