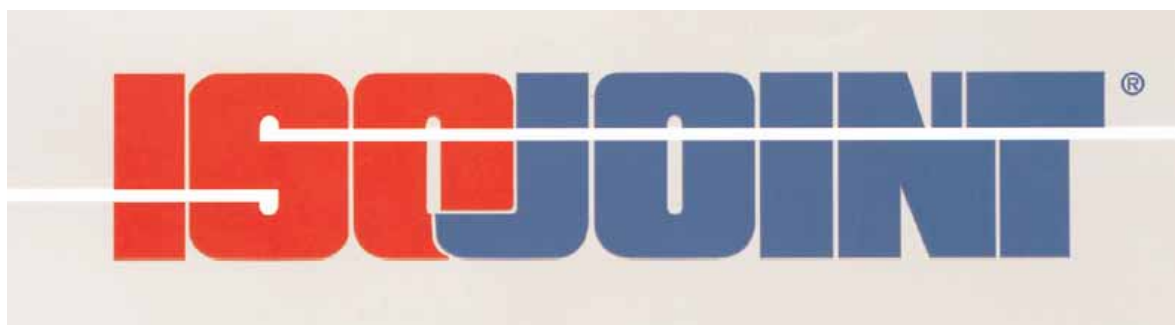


Tecnología Total, su mejor opción para Juntas Monolíticas.

Somos Distribuidores Autorizados de:



Tecnología Total Ltda

Tel. 57-1-215-9934, Fax. 57-1-214-3230

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San Isidro, Lima- Perú

tts@tecnologitotal.net

www.tecnologitotal.net

**Patented Seal Design and Closure Weld...
That's What Makes Us Different.**



With all the choices in insulating joints, why choose ISOJOINT®?

ISOJOINT® is a true monolithic isolating joint. The most up-to-date, patented joint on the market, ISOJOINT® does not depend on the use of insulating sleeves and washers for bolts nor insulating gaskets or O-rings between flanges. Why? These insulating gasket kits require critical, even surface to provide regular and variable crushing and must be maintained over the life of the insulator. External pressure, causing an uneven load on the flange area, can result in loss of insulating properties as well as the transported fluid.

ISOJOINT® employs a unique, preassembled pressure seal which envelops the insulating ring. Unlike insulating gasket kits, ISOJOINT® does not depend on installer's actual fitting of the joint's insulating gasket, sleeves and washers and the possible loss or damage to any one of the number of these materials which would result in the complete breakdown of the insulated flange. One lost or damaged part will render these flanges useless. The monobloc design of the ISOJOINT® allows the joint to be welded into place as one piece, virtually eliminating any field problems.



Unless a meticulous on-site assembly and over-wrapping is undertaken in the installation of the insulating gasket kits, gradual penetration of moisture will erode the electrical resistance. This problem, along with the others above, make

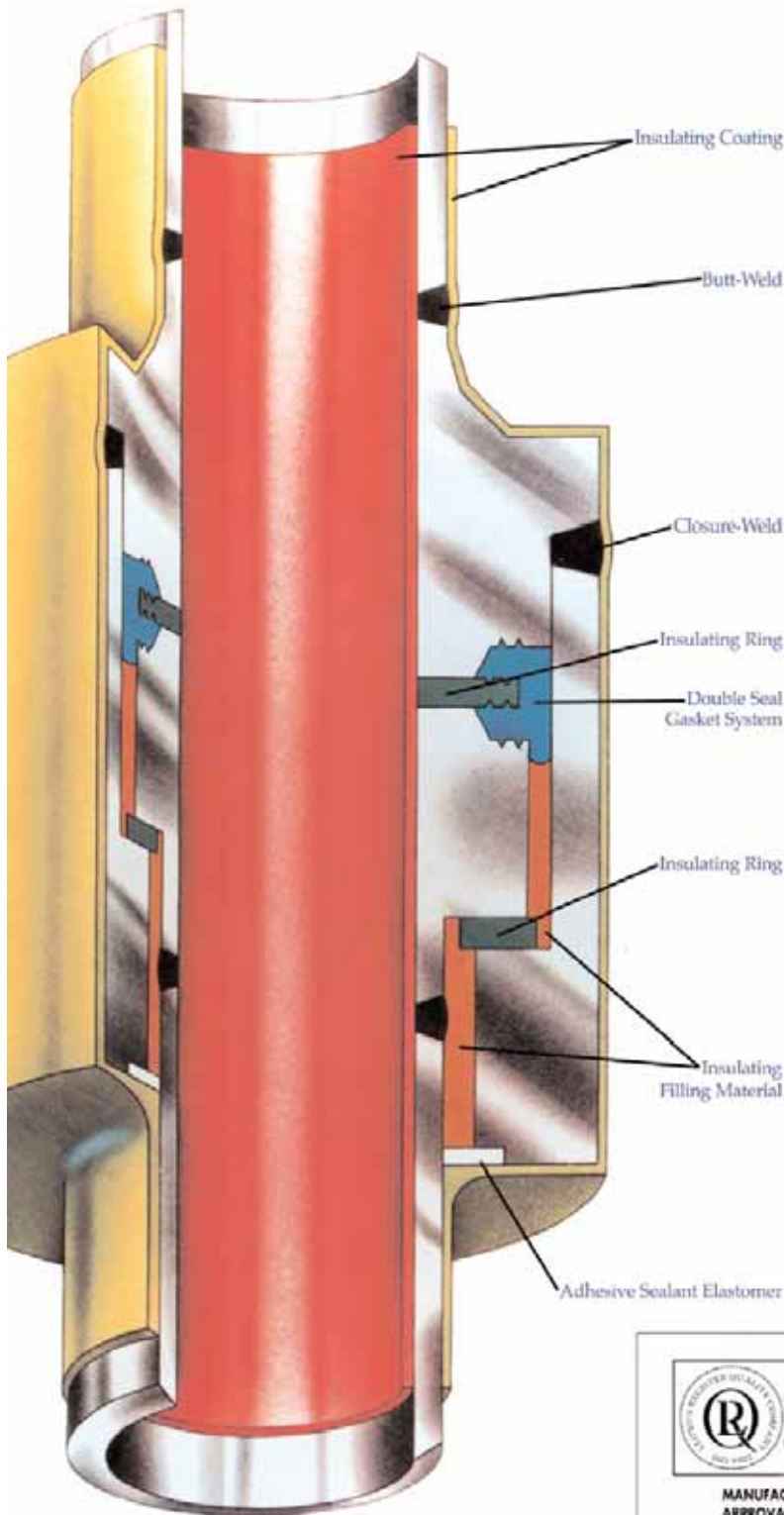


inspection or maintenance necessary. Contrary to this inconvenience, ISOJOINT's® technique and design of the pressure seal, coupled with the closure weld, guarantees that the specified mechanical and electrical properties will always be maintained allowing for direct burial and requiring no maintenance.

At first glance, flange gasket kits seem to be the economical route to take to the insulating problem but when coupled with the expense of components, labor and maintenance, ISOJOINT® has proven itself to be the productive solution.

The ISOJOINT® provides for current control by separating pipework into distinct zones as part of a cathodic protection system and effectively eliminating long-line currents. This assures increased plant and equipment life by reducing or eliminating corrosion damage. Effective control can be realized by placing ISOJOINTS® at pipeline entry points to processing plants or gas compressor stations, where a branch is connected to the mainline, where two pipelines of different material connect or where well coated pipe meets a poorly coated system. Optimum cathodic protection can be achieved for each section of pipeline... maximizing savings and minimizing costs.





Sealing and Construction Materials:

- **Rigid Insulating Ring** (*in contact with the fluid*)
— glass, epoxy plate, type NEMA G10 or G11 or FR5
- **Internal Insulating Ring**
— glass, polyester plate, type NEMA G10 or G11 or FR5
- **Seal Gasket**
— Buna-N-Rubber ASTM D2000 According to NACE TM0187-92
- **Filling Material** (*in contact with the seal gasket*)
— polyurethane
- **Filling Material** (*in contact with the silicon*)
— Epoxy Resin
- **Adhesive Sealant Elastomer**
— Silicon
- **External and Internal Coatings**
— Epoxy Resin

API 5 L grade B Steel is standard use in construction of the ISOJOINTS®, but x42, x52, x60, x65 and x70 grades are available. ISOJOINTS® are available in all nominal pipe sizes up to 96" in diameter. Higher pressure ratings, up to ANSI 2500# and over, temperature ratings over 160°F, or voltages over 5 KV, are available upon request.

Alternate materials for custom application can be requested.



MANUFACTURE OF MONOLITHIC INSULATING JOINTS
APPROVAL CERTIFICATE No.: 910641



ISOJOINT®

*Eliminates Short Circuits
Eliminates Field Assembly
Eliminates Maintenance*

ISOJOINTS® are manufactured in accordance with the highest technical standards which guarantee:

- *Mechanical requirements (torque, traction, bending, etc.) are met for the specific needs of a plant – Full technical details should be supplied.*
- *Specific hydraulic internal pressures are maintained.*
- *Insulating requirements are met and surpassed in regard to the electrical characteristics of the product carried in the pipeline*

• *ISOJOINTS® are designed according to ASME VIII, Division I*

• *All testing is done in-house. Hydrostatic and electrical are standard. Ultrasonic, X-ray and dye penetrant testing can be done if requested. Testing voltage 3,000 v-50 Hz. Electrical resistance – 5 Mohm minimum. Test Pressure: 1.5 times working pressure. Working temperature up to 160°F. Customers may require special test values.*

• *All coatings are applied in-house. Standard joints are coated internally and externally with epoxy-resin coatings. Different standards as per customer's requirements.*

A strict QA/QC system assures conformity with ISO 9002/EN 29002/BS5750 p.2 standards. ISOJOINTS® are pre-fabricated, tested and guaranteed, monobloc units and can be directly buried, easily overwrapped, and require no maintenance.

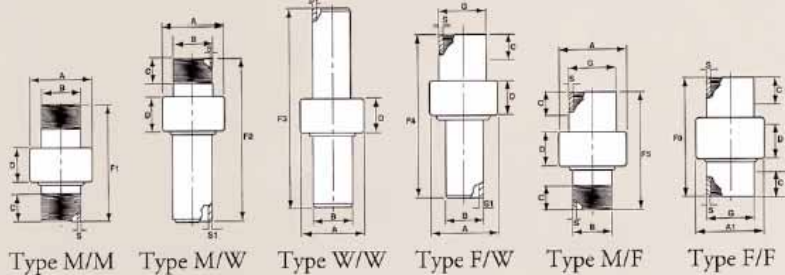
ISOJOINTS® can be provided for:

- Superheated water, used in heating systems, up to a temperature of 320° F, steel-copper joints and custom specified joints
- Oil, gas and water pipelines, for temperature over 160°F
- Temperature lower than 14°F



Meter Service Joints (Up to 150 PSI)

Internally lined to give a high degree of electrical insulation, meter service ISOJOINTS® effectively separate the consumer electrically from the main service trunklines. Special design and construction of joints with particular sizes and characteristics are available.



Inside Dia.	A	A1	B	C	D	F1	F2	F3	F4	F5	F6	G	S	S1
1/2"	1 13/16	1	13/16	3/4	1 1/8	3 11/16*	5 7/16*	8 3/16*	5 7/16*	3 3/4	1	1 1/16	5/32	1/8
3/4"	1 15/16	2 1/16	1 1/16	3/4	1 3/16	3 15/16	6 5/8	9 3/8	6 5/8	3 15/16	3 1/16	1 1/4	5/32	1/8
1"	2 3/16	2 3/8	1 5/16	3/4	1 1/4	4 11/16	7 1/4	9 1/2	7 1/4	4 3/16	3 7/16	1 1/2	5/32	5/32
1 1/4"	2 1/2	2 3/4*	1 11/16	7/8	1 3/8	5 1/4	8 3/16	10 1/2	8 3/16	4 7/16	3 13/16*	1 15/16	5/32	5/32
1 1/2"	2 13/16	3 3/16*	1 7/8	7/8	1 7/16	5 5/8	8 3/8	10 15/16	8 3/8	4 13/16	4 1/2*	2 1/8	5/32	5/32
2"	3 5/16	3 1/2	2 3/8	7/8	1 1/2	5 7/8	8 1/2	11 1/8	8 1/2	5 7/16	4 3/4	2 1/2	3/16	5/32
2 1/2"	4 7/16	1	2 15/16	1 3/16	2 1/4	7 13/16	10 1/2	14 1/16	10 1/2	7	1	3 1/2	3/16	3/16
3"	4 7/8	1	3 1/2	1 3/8	2 3/8	8 1/2	11 3/4	15 5/8	11 3/4	7 7/8	1	3 15/16	3/16	3/16

The dimensions marked with asterisk (*) can be supplied according to quantity.

Mainline Joints (ANSI 150 through 2500)

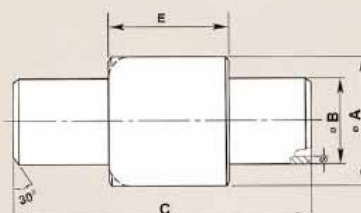
These joints are normally used to electrically separate a main pipeline from its source. Without ISOJOINTS®, the pipeline which is usually buried would draw the cathodic protection current away from the main system.

ISOJOINTS® also limit the influence of stray currents or subdivide the main pipeline cathodic protection system.

The following standard types are available:

- ANSI 150
- ANSI 300/400
- ANSI 600

DIA.	ANSI 150				ANSI 300/400				ANSI 600				
	B	S	A	C	E	S	A	C	E	S	A	C	E
1/2	0.128	1.930	15.74	1.338	0.147	2.756	15.74	3.150	0.147	3.268	15.74	3.701	
3/4	0.128	2.008	19.68	1.378	0.154	2.756	19.68	3.150	0.154	3.346	19.68	3.701	
1	0.154	2.283	19.68	1.457	0.154	3.150	19.68	3.543	0.154	3.465	19.68	3.937	
1 1/4	0.154	2.598	19.68	1.575	0.154	3.346	19.68	3.543	0.154	3.583	19.68	3.937	
1 1/2	0.154	2.953	21.65	1.653	0.154	3.740	21.65	3.543	0.154	3.740	21.65	3.937	
2	0.154	3.464	27.50	2.362	0.154	4.252	27.50	3.622	0.154	4.488	27.50	4.094	
2 1/2	0.188	4.449	27.50	2.559	0.216	4.724	27.50	3.701	0.216	5.197	27.50	4.606	
3	0.188	5.000	27.50	2.559	0.216	5.315	27.50	3.780	0.216	6.102	27.50	4.842	
4	0.188	5.945	27.50	2.953	0.237	6.693	27.50	4.252	0.237	7.480	27.50	5.039	
5	0.188	7.559	27.50	3.622	0.258	7.638	27.50	4.882	0.258	8.661	27.50	5.945	
6	0.219	8.543	27.50	3.819	0.280	9.449	27.50	5.354	0.280	9.921	27.50	6.575	
8	0.250	10.708	27.50	4.173	0.322	10.748	27.50	6.220	0.322	12.717	27.50	7.362	
10	0.250	12.677	31.50	4.528	0.365	13.780	31.50	7.323	0.365	14.488	31.50	8.307	
12	0.250	14.961	39.37	6.024	0.375	15.748	39.37	8.110	0.375	17.323	39.37	9.134	
14	0.281	16.929	39.37	7.807	0.406	17.323	39.37	8.976	0.500	17.913	39.37	9.803	
16	0.281	18.504	39.37	6.890	0.500	19.291	39.37	9.606	0.500	21.260	39.37	11.024	
18	0.281	20.394	39.37	7.874	0.500	21.496	39.37	10.512	0.562	23.622	39.37	11.417	
20	0.281	24.016	39.37	9.055	0.500	23.780	47.24	11.417	0.625	26.929	47.24	12.126	
22	0.312	25.984	39.37	9.213	0.562	25.787	47.24	12.244	0.688	28.740	47.24	13.465	
24	0.312	27.835	39.37	9.842	0.625	27.795	47.24	13.189	0.750	31.890	47.24	14.606	
26	0.312	30.157	39.37	9.842	0.625	29.921	47.24	13.937	0.750	33.268	47.24	15.276	
28	0.320	32.283	47.24	9.842	0.688	32.010	51.18	14.803	0.750	35.039	51.18	15.748	
30	0.344	34.252	47.24	10.630	0.750	34.016	51.18	15.669	0.750	38.189	51.18	16.575	
32	0.374	38.41	51.18	12.00	-	38.18	51.18	16.14	-	40.35	51.18	17.32	
36	0.393	40.15	55.11	12.6	-	41.33	55.11	18.80	-	44.09	55.11	19.80	
40	0.438	44.88	60.23	14.56	-	47.24	62.99	19.88	-	49.00	62.99	21.25	
42	0.438	47.24	62.20	15.15	-	50.00	62.99	20.86	-	52.35	62.99	22.83	
48	0.562	53.14	68.40	15.74	-	55.51	70.86	24.01	-	58.26	70.86	26.37	
56	0.562	62.20	75.98	16.53	-	64.17	78.74	27.75	-	67.32	78.74	31.10	
60	0.562	65.74	79.92	17.32	-	69.29	84.67	30.70	-	72.44	84.64	31.64	



Ordering Information:

When ordering, please give the following information:

1. *Diameter of pipe*
2. *ANSI rating*
3. *Grade of pipe material*
4. *Wall thickness*
5. *Product to be transported*
6. *Temperature of transported material (160°F is standard. Higher temperature materials available upon request)*
7. *Additional X-ray, ultrasonic and dye penetrant testing requested? Electrical and hydrostatic testing is standard. (Please state requirements)*

References:

AGIP
ALGONQUIN GAS
ARAMCO
BECHTEL
BRITISH GAS
CHEVRON OIL COMPANY
COLUMBIA GAS DISTRIBUTION
ELF AQUITAINE
EQUITABLE GAS
EXXON
FOSTER WHELLER
IROQUOIS GAS TRANSMISSION
LAVALIN ENGINEERING
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TRANSOK GAS
WASHINGTON GAS
WILBROS