

HVAC

Product Guide

Flexibility. Reliability. Value



At Flextech, our team of engineers are committed to manufacturing high quality, durable products that will meet your HVAC specifications.

Head Office / Plant

27424 52nd Avenue
Langley, BC, Canada, V4W 4B2

Phone: 604-381-3100 Fax: 604-381-3101
Toll Free Sales: 1-800-830-3539
Email: sales@flextech-ind.com

Alberta Office / Plant

8904 - 18th Street
Edmonton, AB, Canada, T6P 1K6

Phone: 780-464-7588 Fax: 780-464-7515
Toll Free Sales: 1-877-353-9832
Email: ab.sales@flextech-ind.com

Ontario Office / Plant

3 - 730 South Service Road
Stoney Creek, ON, Canada, L8E 5S7

Phone: 905-643-5553 Fax: 905-643-7558
Toll Free Sales: 1-888-800-6110
Email: ont.sales@flextech-ind.com

At Flextech Industries each day is built on a solid foundation. By forging close and trusted partnerships with our clients, we earn your business by focusing on quality designs, sound fabrication and exceptional customer service. The proof is in the high rate of repeat business and our reputation for quality products since 1988.

The Flextech difference begins with just one principle; we listen to what our customers need and build products to meet those needs. Our strict quality control process ensures that every product meets your stringent performance standards.

Flextech products are designed for customers throughout the world in varied industries from chemical and petrochemical, power generation, pulp and paper, steel, transportation, marine and defense and a variety of OEM markets.

Over the years we have expanded our manufacturing expertise from flexible metal hose products to expansion joints, including metal bellows, fabric, rubber, and PTFE as well as new product innovations along the way such as magnetic strainers.

In 2002 Flextech Industries acquired American Power and Process, one of America's largest independent, facilities-based, competitive industrial damper providers. With the acquisition of APP patents and physical plant, Flextech has achieved the diversified product mix and critical mass necessary to be a major player in the North American market.

Our goal is to build a global company through:

- 1) Consistently excellent performance
- 2) Sophisticated fabrication
- 3) Responsible risk management
- 4) Outstanding customer service
- 5) Rigorous safety training
- 6) Accountability in corporate practice

Flexibility - Reliability - Value

Flextech Industries offers a comprehensive range of products and services to help process industries stay efficient and competitive. We structure our business around our customers' requirements.

Our knowledgeable and responsive team of specialists will work with you to tailor a solution that's right for you. We built our reputation based on "speed to market".

Flextech Industries offers some of the shortest lead times in the industry.

Flextech's dedicated inside sales team supports our agency, distribution network, and company sales representatives with product engineering, customer service and pricing at remarkably quick turnaround times.

The Flextech Mission:

By partnering with our clients and associates, by honouring human potential and by technical innovation, we continually strengthen our position of leadership in mechanical industry fabrication. Our customer relationships are built on integrity, trust and commitment to product excellence.

The Flextech Difference:

Challenge us to deliver the right solution for your expansion joint, flexible hose or damper requirements.

For pre-design or custom engineered components, Flextech has the stock and the production capability to deliver quickly while maintaining the highest level of quality.

Expansion Compensators - Style ECS and ECC

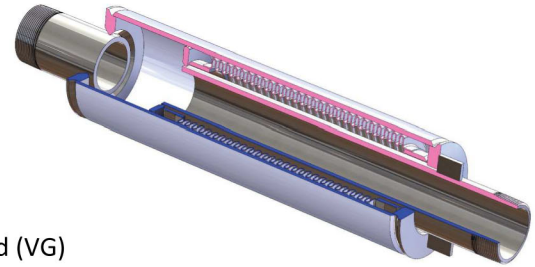


The Flextech ECS and ECC Expansion Compensators are the ideal method of absorbing pipe motion due to thermal expansion in small diameter piping systems. They utilize a 2-Ply Externally Pressurized Bellows providing high flexibility and resistance to bellows buckling.

Available complete with a variety of end fittings.

Steel Piping Systems, Type ECS:

- Stroke: 1-3/4" compression
- 1/4" Extension (Total Stroke - 2.00")
- Max Operating Temp: 750°F
- Max Working Pressure: 200 PSI
- Max Test Pressure: 300 PSI



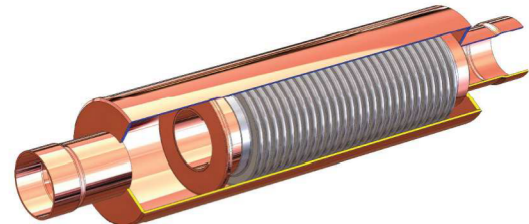
Fittings: Male NPT(MP*), Weld Ends (WE), Flanged (FF), and Grooved (VG)
Stainless steel bellows, steel shroud and steel fittings

Also Available: Model ECS-L for 3" compression and 1/4" extension

Nominal Size	Model Number	OAL	OD	Effective Area (Sq In.)	Spring Rate (Lb/In)	Weight (LBS)
.75"	ECS-075-MP*	12.13"	3"	2.2	204	5.5
1"	ECS-100-MP*	12.13"	3.5"	3.5	237	7
1.25"	ECS-125-MP*	14.13"	4"	4.8	263	10.2
1.5"	ECS-150-MP*	14.13"	4.5"	6.5	228	12.3
2"	ECS-200-MP*	14.13"	4.5"	7.6	530	13.2
2.5"	ECS-250-MP*	15.5"	5.5"	12.9	633	19.6
3"	ECS-300-MP*	15.19"	6.5"	16.1	1264	24.4
4"	ECS-400-MP*	15.19"	7.1"	24.2	2501	27.5

Copper Piping Systems, Type ECC:

- Stroke: 1-3/4" compression
- 1/4" Extension (Total Stroke - 2.00")
- Max Operating Temp: 400°F
- Max Working Pressure: 200 PSI
- Max Test Pressure: 300 PSI



Fittings: Female copper sweat ends

Stainless steel bellows & shroud, copper tube ends.

Nominal Size	Model Number	OAL	OD	Effective Area (Sq In.)	Spring Rate (Lb/In)	Weight (LBS)
.75"	ECC-075-SE	12.5"	2.5"	2.2	168	2.2
1"	ECC-100-SE	12.5"	2.5"	2.2	204	2.4
1.25"	ECC-125-SE	13.81"	3"	3.5	239	3.1
1.5"	ECC-150-SE	13.81"	3"	3.5	433	3.3
2"	ECC-200-SE	13.81"	3.6"	6.5	289	5.5
2.5"	ECC-250-SE	14.44"	4.5"	9.6	537	7.5
3"	ECC-300-SE	14.44"	5"	12.9	606	10.0
4"	ECC-400-SE	14.44"	6"	19	1747	12.5

* **Certified Lead free:** All wetted surfaces of this product contain less than .25% lead content as required by NSF 372 standard specifications.

Externally Pressurized Expansion Joints - EPJ Style



Construction 150 and 300 PSIG Designs

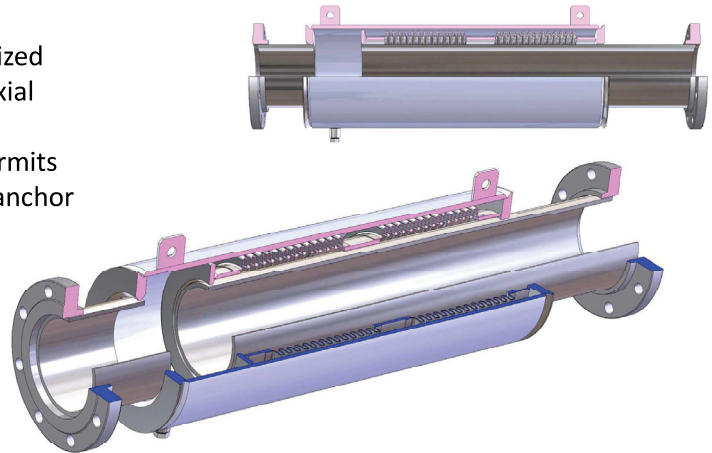
The Flextech EPJ series utilizes an externally pressurized bellows design to accommodate large amounts of axial movements under high pressure applications, while eliminating risk of bellows squirm. The EPJ series permits buried applications and can be modified to include anchor bases and drain ports.

Bellows: SA240-304 or B168 Alloy 600

Flanges:

- A-105
- 2" thru 24" 150 lb RFSO B16.5

Pipe/Shell: A53/106 Gr. B or A516-70



Nominal Size	Model Number	Axial Movement	OAL			Effective Area (Sq In.)	Spring Rate (Lb/in)	Shell OD
			FF	WW	VV			
2.5"	EPJ300C-4-2.5	4.00"	31"	30"	36"	16	711	6.63"
	EPJ300C-8-2.5	8.00"	*	*	*			
3"	EPJ300C-4-3	4.00"	31"	30"	36"	16	1445	6.63"
	EPJ300C-8-3	8.00"	*	*	*			
4"	EPJ300C-4-4	4.00"	31"	30"	36"	35	1699	8.63"
	EPJ300C-8-4	8.00"	47"	46"	52"			
5"	EPJ300C-4-5	4.00"	31"	30"	36"	62	1912	10.75"
	EPJ300C-8-5	8.00"	*	*	*			
6"	EPJ300C-4-6	4.00"	31"	30"	36"	54	5848	10.75"
	EPJ300C-8-6	8.00"	47"	46"	52"			
8"	EPJ300C-4-8	4.00"	34"	32"	38"	88	11714	12.75"
	EPJ300C-8-8	8.00"	49"	48"	54"			
10"	EPJ300C-4-10	4.00"	34"	32"	38"	118	17726	14.5"
	EPJ300C-8-10	8.00"	49"	48"	54"			
12"	EPJ300C-4-12	4.00"	34"	32"	38"	163	11182	16.75"
	EPJ300C-8-12	8.00"	49"	48"	54"			



Fitting Arrangements:

- WW = Weld ends each end
- FF = Forged steel flanges each end
- WF = Weld end one end by flange one end
- VV = Grooved ends

** Available Upon Request: Canadian Registration Number (CRN) and other alloys available upon request. Consult Flextech for larger sizes to 24". Dual units, anchor bases, and pipe guides*

Single Sphere Rubber Connector - Style RC601



For maximum movement with less force, these spherical expansion joints are built for demanding applications

Flextech's RC601 Single Sphere Rubber Expansion Joint is available in Neoprene, EPDM, and Buna Nitrile with integral steel floating flanges each end.

Operating Conditions

Vacuum Rating: Full vacuum

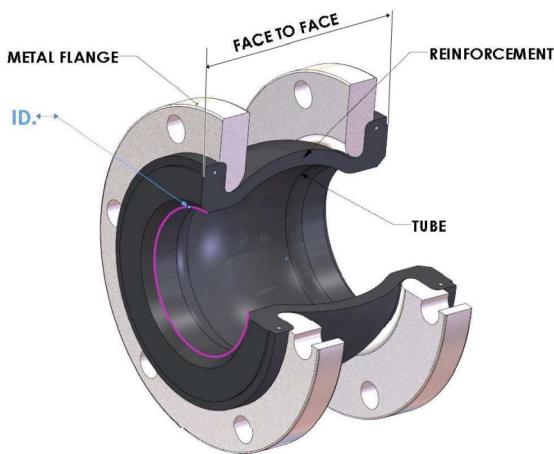
Temperature Rating: - 10°C (14°F) to 105°C (221°F)

Media: Water, hot water, sea water, weak acid, compressed air

For units designed for other media consult Flextech Industries Inc.



Nominal Size	Length Face/Face	Axial Compression	Axial Extension	Lateral Offset	Angular Rotation	Maximum Pressure	Burst Pressure
1"	6"	.5"	.38"	+/- .5"	15°	232	928
1.25"	6"	.5"	.38"	+/- .5"	15°	232	928
1.5"	6"	.5"	.38"	+/- .5"	15°	232	928
2"	6"	.5"	.38"	+/- .5"	15°	232	928
2.5"	6"	.5"	.38"	+/- .5"	15°	232	928
3"	6"	.5"	.38"	+/- .5"	15°	232	928
4"	6"	.63"	.38"	+/- .5"	15°	232	928
5"	6"	.63"	.38"	+/- .5"	15°	232	928
6"	6"	.63"	.38"	+/- .5"	15°	232	928
8"	6"	.63"	.38"	+/- .5"	15°	232	928
10"	8"	.75"	.50"	+/- .75"	15°	232	928
12"	8"	.75"	.50"	+/- .75"	15°	232	928
14"	8"	.75"	.50"	+/- .75"	15°	150	580
16"	8"	.75"	.50"	+/- .75"	15°	150	580
18"	8"	.75"	.50"	+/- .75"	15°	150	580
20"	8"	.75"	.50"	+/- .75"	15°	150	580
24"	10"	.75"	.50"	+/- .75"	15°	150	580



GENERAL OPERATING CONDITIONS		
Temperature Deg F	Pressure: PSI	
	1" to 12"	14" and Up
170°	232	125
180°	200	115
190°	175	105
200°	150	95
210°	125	40
220°	100	35
230°	75	25

Movements are non-concurrent. For concurrent movements and specific operating conditions, consult Flextech. Control rod units available upon request.

Double Sphere Rubber Connector - Style RC602



Flextech's RC602 Double Sphere Rubber Expansion Joint is available in Neoprene, EPDM, and Buna Nitrile with integral steel floating flanges each end.

Operating Conditions

Vacuum Rating: Full vacuum

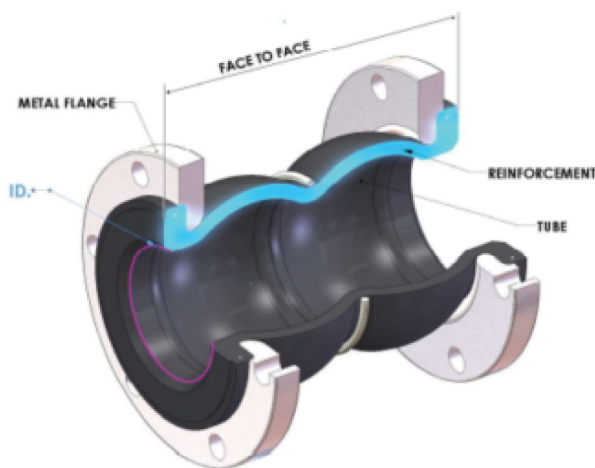
Temperature Rating: - 10°C (14°F) to 105°C (221°F)

Media: Water, hot water, sea water, weak acid, compressed air

For units designed for other media consult Flextech Industries Inc.



Nominal Size	Length Face/Face	Axial Compression	Axial Extension	Lateral Offset	Angular Rotation	Maximum Pressure	Burst Pressure
1"	7"	2"	1.18"	+/- 1.38"	40°	232	928
1.25"	7"	2"	1.18"	+/- 1.38"	40°	232	928
1.5"	7"	2"	1.18"	+/- 1.38"	40°	232	928
2"	7"	2"	1.18"	+/- 1.38"	40°	232	928
2.5"	7"	2"	1.18"	+/- 1.38"	40°	232	928
3"	7"	2"	1.18"	+/- 1.38"	40°	232	928
4"	9"	2.25"	1.25"	+/- 1.5"	35°	232	928
5"	9"	2.25"	1.25"	+/- 1.5"	35°	232	928
6"	9"	2.25"	1.25"	+/- 1.5"	35°	232	928
8"	13"	2.5"	1.25"	+/- 1.5"	30°	232	928
10"	13"	2.5"	1.25"	+/- 1.5"	30°	232	928
12"	13"	2.5"	1.25"	+/- 1.5"	30°	232	928
14"	13.75"	1.5"	1.18"	+/- 1.125"	20°	150	580
16"	13.75"	1.5"	1.18"	+/- 1.125"	20°	150	580
18"	13.75"	1.5"	1.18"	+/- 1.125"	20°	150	580
20"	13.75"	1.5"	1.18"	+/- 1.125"	20°	150	580
24"	13.75"	1.5"	1.18"	+/- 1.125"	10°	150	580



GENERAL OPERATING CONDITIONS		
Temperature Deg F	Pressure: PSI	
	1" to 12"	14" and Up
170°	232	125
180°	200	115
190°	175	105
200°	150	95
210°	125	40
220°	100	35
230°	75	25

Movements are non-concurrent. For concurrent movements and specific operating conditions, consult Flextech. Control rod units available upon request.

Moulded Wide Arch Expansion Joints - RE510 Series



For maximum movement with less force, these spherical expansion joints are built for demanding applications

The Flextech RE510 series utilizes a hand-wrapped tube and cover construction with fibre re-enforcement, offering impressive pressure and temperature ratings with a wide range of motion. The full-face rubber flanges offer an optimum sealing surface. The RE510 series is a highly customizable upgrade in the elastomeric joint marketplace.

Operating Conditions

Vacuum Rating: Full vacuum

Temperature Rating: - 10°C (14°F) to 105°C (221°F)

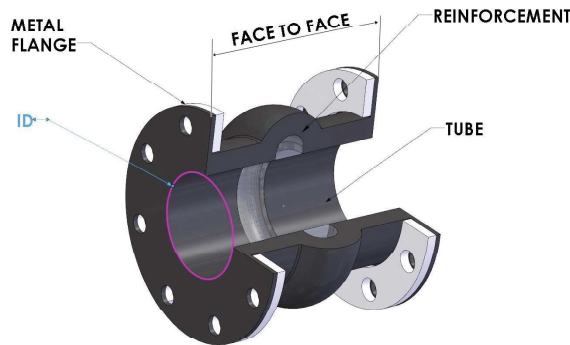
Media: Water, hot water, sea water, weak acid, compressed air, process air, waste/grey water, pulp stock

Available in filled arch and multi-arch configurations.

For units designed for other media consult Flextech Industries Inc.



Size		Pressure		Flanges				Movements				Weights	
ID	F to F	PSI	Vac. HG	OD	BCD	No. Holes	Hole Dia.	Comp.	Ext.	Lat.	Ang.	Joint Lbs.	Rings Lbs.
1"	6"	220	26	4.25"	3.12"	4	0.62"	0.95"	0.95"	0.44"	36°	1.6	1.8
1.25"	6"	220	26	4.62"	3.5"	4	0.62"	0.95"	0.95"	0.44"	30°	1.6	2.3
1.5"	6"	220	26	5"	3.87"	4	0.62"	0.95"	0.95"	0.44"	26°	1.8	2.3
2"	6"	200	26	6"	4.75"	4	0.75"	1.06"	1.06"	0.59"	25°	2.8	3.1
2.5"	6"	200	26	7"	5.5"	4	0.75"	1.06"	1.06"	0.59"	20°	3.1	4.5
3"	6"	200	26	7.5"	6"	4	0.75"	1.06"	1.06"	0.59"	17°	4.3	4.9
4"	6"	200	26	9"	7.5"	8	0.75"	1.06"	1.06"	0.59"	13°	6.5	6.4
5"	6"	200	26	10"	8.5"	8	0.87"	1.06"	1.06"	0.66"	12°	6.5	7.3
6"	6"	200	26	11"	9.5"	8	0.87"	1.06"	1.06"	0.74"	11°	8	7.9
8"	6"	180	26	13.5"	11.75"	8	0.87"	1.06"	1.06"	0.74"	8°	10.8	12.1
10"	8"	150	26	16"	14.25"	12	1"	1"	1.65"	0.89"	8°	18.5	14.8
12"	8"	150	26	19"	17"	12	1"	1"	1.65"	0.96"	7°	25	21.8
14"	8"	130	26	21"	18.75"	12	1.12"	1.12"	1.6"	0.8"	6.5°	26.8	23.8
16"	8"	110	26	23.5"	21.25"	16	1.12"	1.12"	1.65"	1.03"	6°	34.3	27.9
18"	8"	110	26	25"	22.75"	16	1.25"	1.25"	1.65"	1.03"	5°	37.4	29.5
20"	8"	110	26	27.5"	25"	20	1.25"	1.25"	1.65"	1.03"	5°	45.6	32.8
24"	10"	100	26	32"	29.5"	20	1.37"	1.37"	1.97"	1.03"	4°	61.8	42.4
30"	10"	90	26	38.75"	36"	28	1.37"	1.37"	1.97"	1.03"	3°	83	57.3



Movements provided are non-concurrent. For concurrent movements and specific operating conditions, consult Flextech. For filled arch designs all movements shown are reduced by 50% and spring rates are increased fourfold. Sizes over 30" and control rod units available upon request

Flexible Pump Connectors - Male NPT Ends



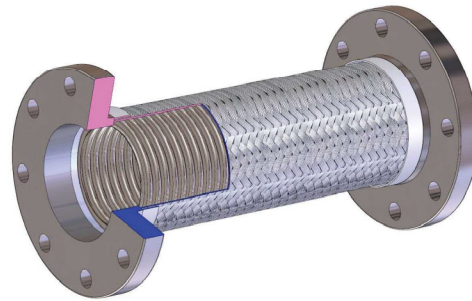
The Flextech MFN / FPA / FFA series pump connectors offer off-the-shelf solutions to common HVAC problems. Offered in standard fittings, sizes, and lengths, these units are readily available and offer a quick and economical solution.



**T321 SS Corrugated Hose and SS Braid
C/W Sch. 40 Steel Males E/E**

Nominal Size	Model Number	OAL	Live Length	Working Pressure @ 70°F (PSI)	Burst Pressure @ 70°F (PSI)
.5"	MFNASY-.5	12"	8.5"	796	3184
.75"	MFNASY-.75	12"	7.75"	597	2388
1"	MFNASY-1	12"	7.5"	455	1820
1.25"	MFNASY-1.25	12"	7"	441	1764
1.5"	MFNASY-1.5	12"	6.5"	488	1840
2"	MFNASY-2	12"	6.5"	450	1800
2.5"	MFNASY-2.5	15"	8"	415	1404
3"	MFNASY-3	15"	8"	334	1336
4"	MFNASY-4	18"	10"	233	932

Flexible Pump Connectors - Plate Steel Flanged Ends

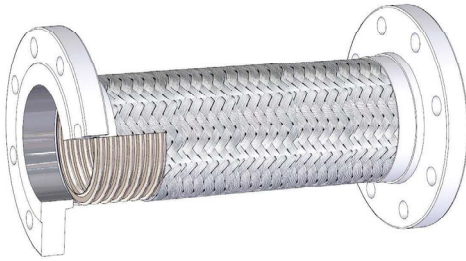


**T321 SS Corrugated Hose and SS Braid
C/W 150LB 44 W Plate Steel Flanges E/E**

Nominal Size	Model Number	OAL	Live Length	Working Pressure @ 70°F (PSI)	Burst Pressure @ 70°F (PSI)
2"	FPASSY-2	12"	8"	175	700
2.5"	FPASSY-2.5	12"	8"	175	700
3"	FPASSY-3	12"	8"	175	700
4"	FPASSY-4	12"	8"	175	700
6"	FPASSY-6	12"	8"	175	700
8"	FPASSY-8	12"	8"	175	700
10"	FPASSY-10	13"	8"	175	700
12"	FPASSY-12	14"	9"	165	660

Consult Flextech Industries for custom lengths and different alloy configuration. Assemblies can be degreased for potable / domestic water service upon request. Canadian Registration Number (CRN) assemblies available upon request.

Flexible Pump Connectors - Forged Steel Flanged Ends

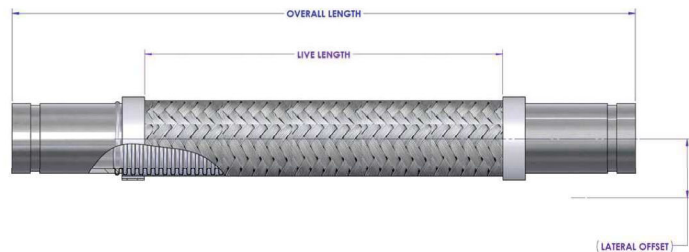


T321 SS Corrugated Hose and SS304 Braid C/W A105N 150LB Raised Face Slip-on Steel Flanges E/E

Pipe Size	Model Number	OAL	Live Length	Working Pressure @ 70°F (PSI)	Burst Pressure @ 70°F (PSI)
2"	FFASSY-2	12"/18"	8"/14"	285	1100
2.5"	FFASSY-2.5	12"/18"	8"/14"	285	1100
3"	FFASSY-3	12"/18"	8"/14"	285	1100
4"	FFASSY-4	12"/18"	7.75"/13.75"	233	1000
5"	FFASSY-5	12"/18"	7.5"/13.5"	238	800
6"	FFASSY-6	12"/18"	7"/13"	176	800
8"	FFASSY-8	12"/18"	7"/13"	237	740
10"	FFASSY-10	14"/18"	8"/12"	257	640
12"	FFASSY-12	14"/18"	8"/12"	165	640

Flexible Connectors - Standard Grooved

* **Certified Lead free:** All wetted surfaces of this product contain less than .25% lead content as required by NSF 372 standard specifications.



SS Corrugated Hose with SS Braid C/W Standard Grooved End Fittings

Nominal Size	Model Number	OAL (XX)	Live Length	Intermittent Lateral Offset	Working Pressure @ 70°F (PSI)	Burst Pressure @ 70°F (PSI)
1.5"	FT301-1.5-47-47-XX	12"/15"/18"/24"	6.5"/8"/10"/16"	0.5"/0.88"/1.25"/3"	415	1660
2"	FT301-2-47-47-XX	12"/15"/18"/24"	6.5"/8"/10"/16"	0.38"/0.63"/1"/2.5"	521	2084
2.5"	FT301-2.5-47-47-XX	15"/18"/24"	8"/10"/16"	0.5"/0.75"/2"	351	1404
3"	FT301-3-47-47-XX	15"/18"/24"	8"/10"/16"	0.45"/0.75"/1.75"	334	1336
4"	FT301-4-47-47-XX	15"/18"/24"	8"/10"/16"	0.38"/0.63"/1.5"	233	932
5"	FT301-5-47-47-XX	18"/24"	10"/16"	0.5"/1.25"	238	952
6"	FT301-6-47-47-XX	18"/24"	10"/16"	0.45"/1.13"	176	1084
8"	FT301-8-47-47-XX	18"/24"	10"/16"	0.38"/1"	237	948
10"	FT301-10-47-47-XX	18"/24"	10"/16"	0.3"/0.75"	257	1028
12"	FT301-12-47-47-XX	18"/24"	10"/16"	0.25"/0.63"	165	660

Consult Flextech Industries for custom lengths, higher pressure and different alloy configuration. Assemblies can be degreased for potable / domestic water service upon request. Canadian Registration Number (CRN) assemblies available upon request.

Loop Connectors - U-Flex & V-Flex



The Flextech U-Flex and V-Flex series addresses a movement towards flex loops in HVAC systems to accommodate piping movements, while meeting seismic requirements for many building regulations. Offering optimum protection against unknown and random seismic movements without thrust loads and minimal or no guiding, the U-Flex and V-Flex series is capable of meeting today's demanding requirements for contractors.

Offered in various materials, sizes and configurations, Flextech's U-Flex and V-Flex series can meet your HVAC and seismic needs.

Benefits include limited amount of space required for installation and the ability to hold in heat compared to traditional large pipe loops.

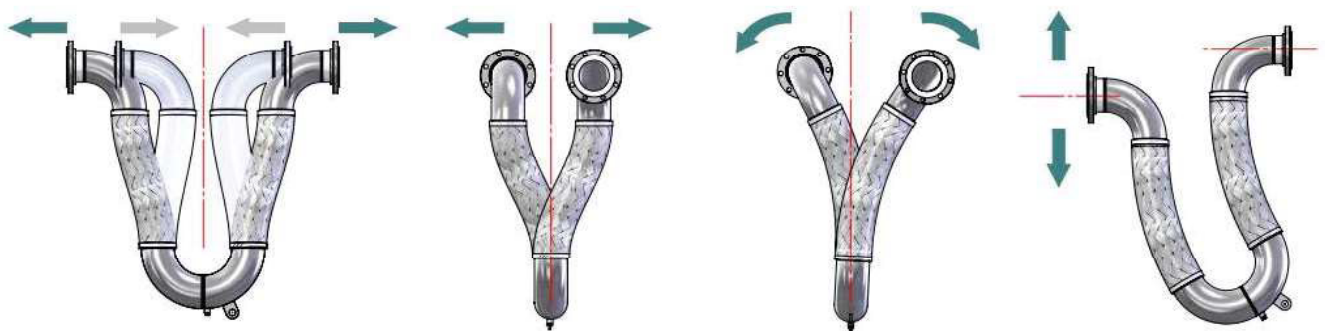
Construction is unique in the fact that it creates a flexible product that does not create pressure thrust forces and exert very small spring forces.

They can be designed in nested configurations with relatively tight centering.

The use of an eyelet can be used for installations outside of the standard installation.

Construction can be manufactured with a variety of end fittings. See spec sheets for more information.

* **Certified Lead free:** All wetted surfaces of this product contain less than .25% lead content as required by NSF 372 standard specifications.



AXIAL COMPRESSION and EXTENSION

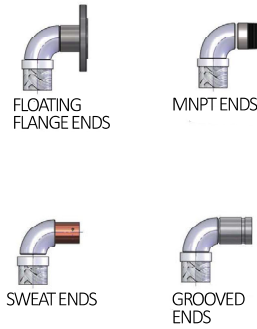
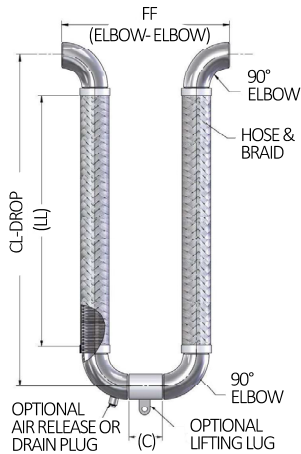
PARALLEL OFFSET Z-AXIS

PARALLEL OFFSET with X-AXIS Rotation

NON-PARALLEL OFFSET with Y-AXIS Rotation

Canadian Registration Number (CRN) and Canadian Standards Association (CSA) listed assemblies available on selected end fitting configuration. Larger movements available if required.

Loop Connectors - FT300 Series U-Flex



Fitting Options

Materials of Construction

Hose: Stainless Steel 321/316

Braid: Stainless Steel 304/316

Elbows/End Fittings: Carbon Steel or Stainless Steel 304/316

Please Note:

- Working pressure (MAWP) may be derated to suit end fittings.
- Assemblies can be degreased upon request for potable/ domestic water applications
- Flextech U-Flex Loops are available in various alloys and custom sizes/rated movements
- Please consult Flextech Industries for higher pressure and custom configurations

± 2 IN Travel Loops

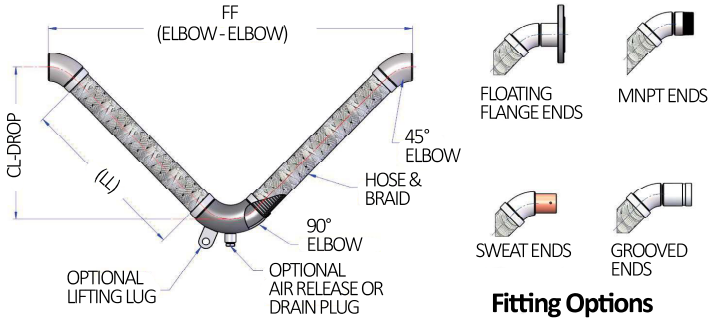
Nominal Size	Model Number	Face to Face (FF)	CL-Drop	Center Pipe Length (C)	Working Pressure @ 70°F (PSI)	Spring Force (Lbs)	OAL FF With End Fittings			
							MNPT	Grooved	Floating Flanges	Copper Sweat
0.75"	2-LOOPU-FT301-.75	8"	12.5"	3"	879	21	12"	13"	12"	11"
1"	2-LOOPU0FT301-1	9.5"	14"	3"	642	36	13.5"	14.5"	13.5"	13.5"
1.25"	2-LOOPU-FT301-1.25	11"	15"	3"	507	42	15"	16"	15"	15"
1.5"	2-LOOPU-FT301-1.5	12.5"	17"	3"	415	60	18.5"	17.5"	16.5"	17"
2"	2-LOOPU-FT301-2	12.5"	19.5"	/	521	56	18.5"	17.5"	16.5"	15.5"
2.5"	2-LOOPU-FT301-2.5	15.5"	22.5"	/	351	77	/	20.5"	20.5"	18.5"
3"	2-LOOPU-FT301-3	18.5"	24.5"	/	334	74	/	23.5"	23.5"	22"
4"	2-LOOPU-FT301-4	24.5"	29"	/	233	96	/	29.5"	30.5"	29"
5"	2-LOOPU-FT301-5	30.5"	33"	/	238	134	/	36.5"	36.5"	/
6"	2-LOOPU-FT301-6	36.5"	37"	/	176	198	/	42.5"	43.5"	/
8"	2-LOOPU-FT301-8	48.5"	44"	/	237	200	/	54.5"	56.5"	/
10"	2-LOOPU-FT301-10	60.5"	52"	/	257	203	/	66.5"	70.5"	/
12"	2-LOOPU-FT301-12	72.5"	62"	/	165	255	/	78.5"	84.5"	/

± 4 IN Travel Loops

Nominal Size	Model Number	Face to Face (FF)	CL-Drop	Center Pipe Length (C)	Working Pressure @ 70°F (PSI)	Spring Force (Lbs)	OAL FF With End Fittings			
							MNPT	Grooved	Floating Flanges	Copper Sweat
0.75"	4-LOOPU-FT301-.75	8"	15.5"	3"	879	18	12"	13"	12"	11"
1"	4-LOOPU-FT301-1	9.5"	17"	3"	642	31	13.5"	14.5"	13.5"	13.5"
1.25"	4-LOOPU-FT301-1.25	11"	19"	3"	507	33	15"	16"	15"	15"
1.5"	4-LOOPU-FT301-1.5	12.5"	20"	3"	415	53	18.5"	17.5"	16.5"	17"
2"	4-LOOPU-FT301-2	15.5"	23"	3"	521	92	21.5"	20.5"	20.5"	18.5"
2.5"	4-LOOPU-FT301-2.5	18.5"	27"	3"	351	59	/	23.5"	23.5"	21.5"
3"	4-LOOPU-FT301-3	18.5"	29"	/	334	59	/	23.5"	23.5"	22"
4"	4-LOOPU-FT301-4	24.5"	34"	/	233	76	/	29.5"	30.5"	29"
5"	4-LOOPU-FT301-5	30.5"	38.5"	/	238	110	/	36.5"	36.5"	/
6"	4-LOOPU-FT301-6	36.5"	43"	/	176	160	/	42.5"	43.5"	/
8"	4-LOOPU-FT301-8	48.5"	50"	/	237	156	/	54.5"	56.5"	/
10"	4-LOOPU-FT301-10	60.5"	59"	/	257	167	/	66.5"	70.5"	/
12"	4-LOOPU-FT301-12	72.5"	67.5"	/	165	204	/	78.5"	84.5"	/

Spring Force: Total theoretical force required to move the assembly to its rated movement

Loop Connectors - FT300 Series V-Flex



Materials of Construction

Hose: Stainless Steel 321/316

Braid: Stainless Steel 304/316

Elbows/End Fittings: Carbon Steel or Stainless Steel 304/316

Please Note:

- Working pressure (MAWP) may be derated to suit end fittings.
- Assemblies can be degreased upon request for potable/ domestic water applications
- Flextech V-Flex Loops are available in various alloys and custom sizes/rated movements
- Please consult Flextech Industries for higher pressure and custom configurations

± 2 IN Travel Loops

Nominal Size	Model Number	Face to Face (FF)	CL-Drop	Working Pressure @ 70°F (PSI)	Spring Force (Lbs)	OAL FF With End Fittings			
						MNPT	Grooved	Floating Flanges	Copper Sweat
0.75"	2-LOOPV-FT301-.75	19"	8.5"	879	18	23"	24"	23"	22"
1"	2-LOOPV-FT301-1	21"	9"	642	31	25"	26"	25"	25"
1.25"	2-LOOPV-FT301-1.25	23"	10"	507	30	27"	28"	27"	27"
1.5"	2-LOOPV-FT301-1.5	25"	10.5"	415	51	31"	30"	29"	29.5"
2"	2-LOOPV-FT301-2	29"	11.5"	521	48	35"	34"	34"	32"
2.5"	2-LOOPV-FT301-2.5	33"	13"	351	68	/	38"	38"	36"
3"	2-LOOPV-FT301-3	36.5"	14"	334	61	/	41.5"	41.5"	40"
4"	2-LOOPV-FT301-4	43"	16"	233	74	/	48"	49"	47.5"
5"	2-LOOPV-FT301-5	48.5"	18"	238	111	/	54.5"	54.5"	/
6"	2-LOOPV-FT301-6	54"	19.5"	176	167	/	60"	61"	/
8"	2-LOOPV-FT301-8	64"	22"	237	162	/	70"	72"	/
10"	2-LOOPV-FT301-10	76"	25.5"	257	166	/	82"	86"	/
12"	2-LOOPV-FT301-12	87.5"	28.5"	165	208	/	93.5"	99.5"	/

± 4 IN Travel Loops

Nominal Size	Model Number	Face to Face (FF)	CL-Drop	Working Pressure @ 70°F (PSI)	Spring Force (Lbs)	OAL FF With End Fittings			
						MNPT	Grooved	Floating Flanges	Copper Sweat
0.75"	4-LOOPV-FT301-.75	24"	11"	879	13	28"	29"	28"	27"
1"	4-LOOPV-FT301-1	26.5"	12"	642	20	30.5"	31.5"	30.5"	30.5"
1.25"	4-LOOPV-FT301-1.25	29"	12.5"	507	23	33"	34"	31"	33"
1.5"	4-LOOPV-FT301-1.5	31.5"	14"	415	34	37.5"	36.5"	35.5"	36"
2"	4-LOOPV-FT301-2	36"	15"	521	32	42"	41"	41"	39"
2.5"	4-LOOPV-FT301-2.5	41.5"	17.5"	351	42	/	46.5"	46.5"	44.5"
3"	4-LOOPV-FT301-3	45"	18.5"	334	40	/	50"	50"	48.5"
4"	4-LOOPV-FT301-4	52"	21"	233	52	/	57"	57"	56.5"
5"	4-LOOPV-FT301-5	58.5"	23"	238	79	/	64.5"	64.5"	/
6"	4-LOOPV-FT301-6	65"	25"	176	111	/	71"	72"	/
8"	4-LOOPV-FT301-8	75.5"	27.5"	237	114	/	81.5"	83.5"	/
10"	4-LOOPV-FT301-10	89"	32"	257	109	/	95"	99"	/
12"	4-LOOPV-FT301-12	101"	35.5"	165	141	/	107"	113"	/

Spring Force: Total theoretical force required to move the assembly to its rated movement

Multi-Ply T316L Bellows - FB26 Series



For higher corrosion resistance and greater flexibility

Rated for 150 PSI working pressure @ 550°F

Sizes Available: 2" - 30" diameter

Sizes over 30" available upon request

The Flextech FB26 series uses CRN registered 316 bellows construction suited for pressure applications.

Accessories:

Stainless Steel Liner

- Reduces turbulence
- Reduces abrasion on bellows element increasing life expectancy

External Shroud

- Protects external bellow element from damage
- Permits insulation of expansion joint without interfering with bellows movements

Limit Rods

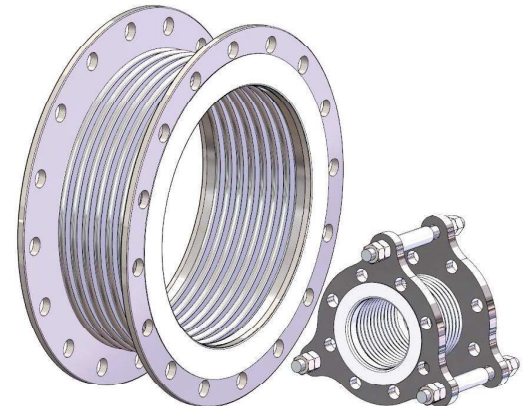
- Restricting compression or extension on the bellows to not exceed the maximum permitted movements

Multi-Ply Bellows Construction

- Constructed from T316L stainless steel
- Movement rated at 3000 plus cycles
- Greater vibration absorption
- Shorter overall length
- Quick and easy installation
- Lightweight, compact design
- Saves space
- High interchangeability

Fitting Arrangements

- WW = Weld Ends
- PP = Plate Flange
- PV = Plate Steel Floating Flanges on Vanstones
- FF = Forged Steel Flanges
- LJF = Forged Steel Floating Flanges
- TF = Plate Steel Tie Rod Flanges
- TV = Plate Steel Tie Rod Floating Flanges
- VV = Groove Fittings



Size		Bellows Specifications Series FB26 Rated for 150 PSI at 550°F									
Bellows		No. Conv.	No. Ply	Material Thickness	Live Length	Neck Length	OAL	Movement		Spring Rate Lbs/In.	
ID	OD							Axial	Lateral	Axial	Lateral
2.00"	2.67"	17	2	0.016"	4.50"	0.500"	5.50"	0.7"	0.5"	802	386
2.375"	3.04"	17	2	0.016"	4.50"	0.500"	5.50"	0.6"	0.4"	1096	684
2.875"	3.80"	12	2	0.016"	4.50"	0.500"	5.50"	0.7"	0.375"	695	674
3.50"	4.42"	12	2	0.016"	4.50"	0.500"	5.50"	0.8"	0.375"	830	1162
4.50"	5.54"	10	2	0.016"	4.50"	0.500"	5.50"	1.0"	0.375"	876	2071
5.56"	6.84"	9	2	0.020"	4.50"	0.500"	5.50"	1.05"	0.3"	1149	4224
6.63"	8.04"	9	2	0.020"	4.50"	0.500"	5.50"	1.13"	0.25"	1125	5862
8.63"	10.11"	6	2	0.020"	4.00"	0.500"	5.00"	0.9"	0.14"	1854	19486
10.75"	12.71"	7	2	0.025"	6.00"	0.500"	7.00"	1.5"	0.27"	1678	12550
12.75"	14.71"	7	2	0.025"	6.00"	0.500"	7.00"	1.45"	0.22"	1948	19753
14.00"	16.28"	6	2	0.030"	5.50"	0.500"	6.50"	1.32"	0.17"	2760	40483
16.00"	18.28"	6	2	0.030"	5.50"	0.500"	6.50"	1.32"	0.15"	3120	58638
18.00"	20.28"	6	2	0.030"	5.50"	0.500"	6.50"	1.3"	0.13"	3495	81570
20.00"	22.28"	6	2	0.030"	5.50"	0.500"	6.50"	1.32"	0.12"	3868	110599
22.00"	24.28"	6	2	0.030"	5.50"	0.500"	6.50"	1.25"	0.11"	4238	143103
24.00"	26.28"	7	2	0.030"	7.00"	0.500"	8.00"	1.55"	0.16"	3878	94865
26.00"	28.75"	6	2	0.037"	7.00"	0.625"	8.00"	1.55"	0.14"	5319	153309
28.00"	30.75"	6	2	0.037"	7.00"	0.625"	8.00"	1.55"	0.13"	5712	189569
30.00"	32.75"	6	2	0.037"	7.50"	0.625"	8.50"	1.5"	0.13"	6010	194765

Multi-Ply T321 Exhaust Bellows - FBX Series



The Flextech FBX / FBXL exhaust series offers affordable, long service life

Rated for exhaust @ 1000°F

Sizes Available: 2" - 24" diameter

Sizes over 24" - 144" available upon request

Accessories:

Stainless Steel Liner

- Reduces turbulence
- Reduces abrasion on bellows element increasing life expectancy

External Shroud

- Protects bellows element from damage
- Permits insulation of expansion joint without interfering with bellows movements

Limit Rods

- Restricting compression or extension on the bellows to not exceed the maximum permitted movements



Multi-Ply Bellows Construction

- Constructed from T321 stainless steel
- Movement rated at 7000 plus cycles
- Greater vibration absorption
- Shorter overall length
- Quick and easy installation
- Lightweight, compact design
- High interchangeability

Fitting Arrangements

- WW = Weld Ends
- PP = Plate Flange
- PV = Plate Steel Floating Flanges on Vanstones
- FF = Forged Steel Flanges
- LJF = Forged Steel Floating Flanges
- TF = Plate Steel Tie Rod Flanges
- TV = Plate Steel Tie Rod Floating Flanges

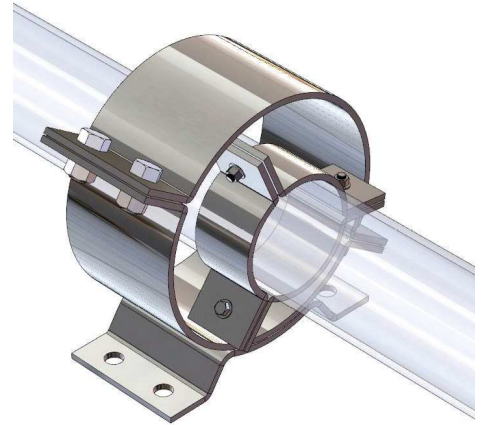
Size		Series FBX 1-1/2" Axial Travel Bellows					Series FBXL 3" Axial Travel Bellows				
ID	OD	No. of Corrugations	Live Length	Lateral Motion	Axial Spring rate (LBS/IN)	Lateral Spring rate (LBS/IN)	No. of Corrugations	Live Length	Lateral Motion	Axial Spring rate (LBS/IN)	Lateral Spring rate (LBS/IN)
3.5"	4.24"	16	6"	0.875"	231	173	24	9"	1.25"	154	48
4.5"	5.5"	14	6"	0.875"	235	295	21	9"	1.25"	96	50
5.56"	7"	12	6"	0.75"	224	422	18	9"	1.125"	149	118
6.63"	8.08"	12	6"	0.625"	164	437	18	9"	1"	109	122
8.63"	10.08"	10	6"	0.5"	194	85	15	9"	1"	129	237
10.75"	12.73"	8	6"	0.45"	160	1089	12	9"	1"	107	304
12.75"	14.73"	8	6"	0.45"	110	1059	11	9"	0.875"	84	335
14"	16.38"	8	6"	0.375"	119	1354	11	9"	0.75"	89	426
16"	18.38"	7	6"	0.312"	106	1566	10	9"	0.75"	166	1033
18"	20.38"	7	6"	0.3"	255	4696	10	9"	0.625"	179	1390
20"	22.58"	7	6"	0.25"	322	7873	10	9"	0.5"	226	2724
22"	24.83"	7	6"	0.2"	292	2535	10	9"	0.5"	189	2752
24"	26.83"	7	6"	0.2"	292	10165	10	9"	0.45"	204	3510

Pipe Alignment Guides - FPG Series

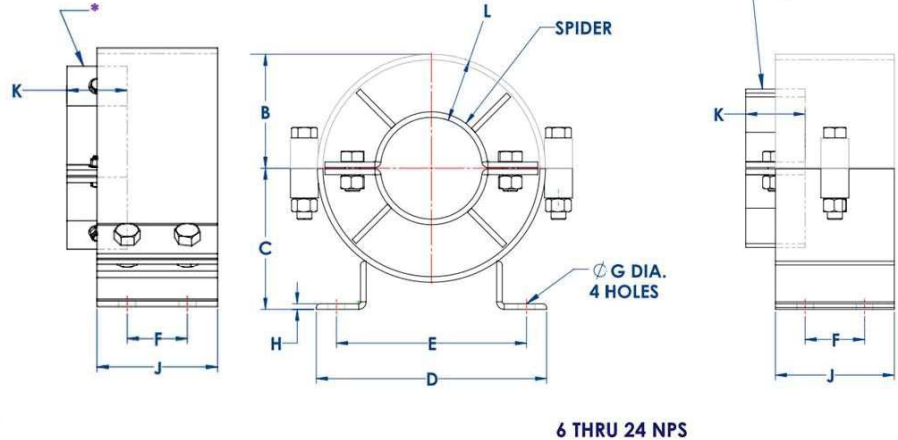
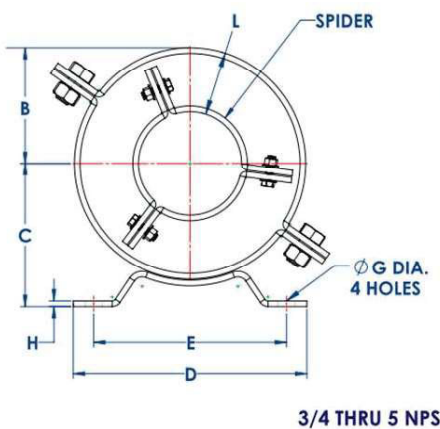


Proper guiding of piping systems is vital to ensure that expansion joints and compensators see only the movements that they are designed for. Pipe alignment guides can greatly increase the service life of flexible components.

Flextech pipe alignment guides consist of a spider rigidly attached to the pipe and housed in a steel sleeve that is also rigidly anchored. Free axial movement of the piping is possible while lateral and angular movement is restricted. Simple pipe hangers can not offer this protection.



Nominal Size	Model Number	General Dimensions (Inches)											Max. Insulation Thickness	Max. Allowable Movement	Spider Fits Into Std. Pipe Size	Wt. (LBS)
		A	B	C	D	E	F	G	H	J	K	L				
.75"	FPG-.75	6.38"	2.25"	3.13"	6.25"	4.75"	1.5"	.63"	.19"	3"	1.5"	1.38"	1.38"	3"	4"	5"
1"	FPG-1	6.38"	2.25"	3.13"	6.25"	4.75"	1.5"	.63"	.19"	3"	1.5"	1.25"	1.25"	3"	4"	5"
1.25"	FPG-1.25	6.38"	2.25"	3.13"	6.25"	4.75"	1.5"	.63"	.19"	3"	1.5"	1.13"	1.13"	3"	4"	5"
1.5"	FPG-1.5	7.38"	2.75"	3.5"	7"	5.5"	2.5"	.63"	.19"	3"	1.5"	1.5"	1.5"	3"	5"	6"
2"	FPG-2	7.38"	2.75"	3.5"	7"	5.5"	2.5"	.63"	.19"	3"	1.5"	1.25"	1.25"	3"	5"	6"
2.5"	FPG-2.5	10.63"	4.25"	4.88"	8.5"	7"	2.5"	.63"	.19"	4"	2"	2.5"	2.5"	4"	8"	12"
3"	FPG-3	10.63"	4.25"	4.88"	8.5"	7"	2.5"	.63"	.19"	4"	2"	2.13"	2.13"	4"	8"	12"
3.5"	FPG-3.5	12.63"	5.25"	5.5"	10.5"	9"	2.5"	.63"	.19"	4"	2"	3"	3"	4"	10"	15"
4"	FPG-4	12.63"	5.25"	5.5"	10.5"	9"	2.5"	.63"	.19"	4"	2"	2.5"	2.5"	4"	10"	15"
5"	FPG-5	12.63"	5.25"	5.5"	10.5"	9"	2.5"	.63"	.19"	4"	2"	2.13"	2.13"	4"	10"	15"
6"	FPG-6	17.63"	7.25"	8.5"	15.5"	12.5"	5.5"	.75"	.38"	8"	4"	2.5"	2.5"	8"	12"	44"
8"	FPG-8	19.13"	8.25"	9.5"	16.25"	13.25"	5.5"	.75"	.38"	8"	4"	3"	3"	8"	16"	50"
10"	FPG-10	21.5"	9.5"	10.5"	17.38"	14.38"	5.5"	.75"	.38"	8"	4"	3"	3"	8"	16"	63"
12"	FPG-12	23.5"	10.5"	11.5"	18.13"	15.13"	5.5"	.88"	.38"	8"	4"	3"	3"	8"	20"	88"
14"	FPG-14	24.75"	11.13"	12.5"	17.5"	14.5"	5.5"	.88"	.38"	8"	4"	3"	3"	8"	20"	93"
16"	FPG-16	26.75"	12.13"	13.75"	17"	14"	5.5"	1"	.38"	8"	4"	3"	3"	8"	24"	100"
18"	FPG-18	30.5"	13.63"	14.75"	19.88"	16.88"	5.5"	1"	.38"	8"	4"	3"	3"	8"	24"	105"
20"	FPG-20	32.63"	14.63"	15.75"	20.38"	17.38"	5.5"	1"	.38"	8"	4"	3"	3"	8"	30"	122"
24"	FPG-24	38"	17.38"	17.75"	24.25"	21.25"	5.5"	1"	.38"	8"	4"	3"	3"	8"	30"	130"



Thermal Expansion of Pipe



Inches per 100 Feet

Saturated Steam	Temperature		Cast Iron	Carbon & Carbon Molybdenum	Wrought Iron	4 - 6% Cr. Alloy Steel	12% Cr. Stainless Steel	18 Cr. - 8 Ni Stainless Steel	Copper	Monel
	(°F)	(°C)								
	-200	-128.9	-1.058	-1.282	-1.289	-1.125	-1.170	-2.030	-1.988	-1.530
	-180	-117.8	-0.982	-1.176	-1.183	-1.130	-1.070	-1.850	-1.785	-1.400
	-160	-106.7	-0.891	-1.066	-1.073	-1.030	-0.970	-1.670	-1.612	-1.270
	-140	-95.6	-0.797	-0.948	-0.955	0.970	-0.870	-1.480	-1.428	-1.120
	-120	-84.4	-0.697	-0.826	-0.833	-0.800	-0.750	-1.300	-1.235	-0.980
	-100	-73.3	-0.593	-0.698	-0.705	-0.700	-0.630	-1.090	-1.040	-0.820
	-80	-62.2	-0.481	-0.563	-0.570	-0.550	-0.520	-0.880	-0.835	-0.680
	-60	-51.1	-0.368	-0.428	-0.435	-0.430	-0.400	-0.670	-0.630	-0.510
	-40	-40.0	-0.248	-0.288	-0.295	-0.290	-0.270	-0.450	-0.421	-0.350
	-20	-28.9	-0.127	-0.145	-0.152	-0.145	-0.130	-0.225	-0.210	-0.180
	0	-17.8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	20	-6.7	0.128	0.148	0.180	0.140	0.140	0.223	0.238	0.200
	32	0.0	0.209	0.230	0.280	0.234	0.234	0.356	0.366	0.300
	40	4.4	0.270	0.300	0.350	0.280	0.280	0.446	0.451	0.370
29.39	60	15.6	0.410	0.448	0.540	0.430	0.430	0.669	0.684	0.550
28.89	80	26.7	0.550	0.580	0.710	0.500	0.550	0.892	0.896	0.740
27.99	100	37.8	0.680	0.753	0.887	0.650	0.690	1.125	1.134	0.920
26.48	120	48.9	0.830	0.910	1.058	0.800	0.820	1.338	1.366	1.110
24.04	140	60.0	0.970	1.064	1.240	0.950	0.960	1.545	1.590	1.300
20.27	160	71.1	1.100	1.200	1.420	1.100	1.090	1.784	1.804	1.500
14.63	180	82.2	1.240	1.360	1.580	1.250	1.230	2.000	1.051	1.700
6.45	200	93.3	1.390	1.520	1.750	1.400	1.380	2.230	2.296	1.880
0	212	100.0	1.480	1.610	1.870	1.500	1.460	2.361	2.428	2.000
2.5	220	104.4	1.530	1.680	1.940	1.550	1.510	2.460	2.516	2.070
10.3	240	115.6	1.670	1.840	2.120	1.720	1.650	2.680	2.756	2.270
20.07	260	126.7	1.820	2.020	2.300	1.880	1.790	2.920	2.985	2.470
34.5	280	137.8	1.970	2.180	2.470	2.050	1.930	3.150	3.218	2.660
52.3	300	148.9	2.130	2.350	2.670	2.200	2.080	3.390	3.461	2.870
74.9	320	160.0	2.268	2.530	2.850	2.370	2.220	3.615	3.696	3.070
103.3	340	171.1	2.430	2.700	3.040	2.530	2.360	3.840	3.941	3.270
138.3	360	182.2	2.590	2.880	3.230	2.700	2.510	4.100	4.176	3.480
180.9	380	193.3	2.750	3.060	3.425	2.860	2.670	4.346	4.424	3.700
232.4	400	204.4	2.910	3.230	3.620	3.010	2.820	4.580	4.666	3.910
293.7	420	215.6	3.090	3.421	3.820	3.180	2.980	4.800	4.914	4.120
366.1	440	226.7	3.200	3.595	4.020	3.350	3.130	5.050	5.154	4.340
451.3	460	237.8	3.410	3.784	4.200	3.530	3.290	5.300	5.408	4.560
550.3	480	248.9	3.570	3.955	4.400	3.700	3.450	5.540	5.651	4.780
664.3	500	260.0	3.730	4.151	4.600	3.860	3.600	5.800	5.906	4.990
795.3	520	271.1	3.900	4.342	4.810	4.040	3.760	6.050	6.148	5.230
945.3	540	282.2	4.080	4.525	5.020	4.200	3.930	6.280	6.410	5.450
1115	560	293.3	4.250	4.730	5.220	4.400	4.090	6.520	6.646	5.690
1308	580	304.4	4.430	4.930	5.430	4.560	4.250	6.780	6.919	5.910
1525	600	315.6	4.600	5.130	5.620	4.750	4.420	7.020	7.184	6.120
1768	620	326.7	4.790	5.330	5.840	4.920	4.580	7.270	7.432	6.380
2041	640	337.8	4.970	5.530	6.050	5.100	4.750	7.520	7.689	6.610
2346	660	348.9	5.150	5.750	6.250	5.300	4.910	7.770	7.949	6.850
2705	680	360.0	5.330	5.950	6.470	5.480	5.080	8.020	8.196	7.070
3080	700	371.1	5.520	6.160	6.670	5.650	5.250	8.280	8.472	7.300
	720	382.2	5.710	6.360	6.880	5.850	5.430	8.520	8.708	7.650
	740	393.3	5.900	6.570	7.100	6.030	5.600	8.780	8.999	7.790