



Quality People. Building Solutions.

Comfort Systems USA (Arkansas), Inc.

P.O. Box 16620

LittleRock, AR 72231

Phone 501-834-3320

Fax 501-834-5416

Date: 4/27/2026

Return Request: 5/8/2026

Project: Hot Springs National Park – Rehabilitate Bathhouses – Maurice Bathhouse

Supplier: Fluid Solutions, Inc.

Manufacturer: Mason Industries

Submittal: HVAC Vibration Isolation (Re-Submittal #1)

Submittal Number: 230548.001

Spec Section: 230548, 3.3

Drawing # and Installation Location: MP1.0 through MP1.3, and MP4.0

ARCHITECT

Strata Architecture

1701 Oak Street, Suite 100

Kansas City, Missouri 64108

(816)474-0900

GENERAL CONTRACTOR

Tepa, LLC

2345 Grand Blvd, Suite 700

Kansas City, Missouri 64108

(816)708-1110

ENGINEER

IMEG Corp.

1600 Baltimore Street, Suite 300

Kansas City, Missouri 64108

(816)842-8437

MECHANICAL SUBCONTRACTOR

Comfort Systems USA (Arkansas), Inc.

9924 Landers Road

North Little Rock, Arkansas 72117

(501)834-3320

Comments:

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CSUSA PROJECT NO.

25-7065

joe@comfortar.com

9924 Landers Road
No. LittleRock, AR 72117



RE-SUBMITTAL DATA

Date: April 27, 2026
Project: Hot Springs Bathhouse Maurice
Contractor: Comfort System USA

This resubmittal is in regards to submittal comments dated 9/1/25.

Comment #1:

Spec Section 230548, 3.3, A.

In regards to the request to use Mason Industries Type ND mounts on the pump pipe support baseplates, please see the following response from Mason below, and the attached submittal sheets.....

Normally we would like to see a full bearing surface under the plate where we are supporting the pump stand. The only way to do that is with pad under the entire section of plate. If possible, we would like to match the deflection of the ND mounts by adding two additional layers of SW pad. When we increase the number of layers, we increase the total deflection of the isolators. To match a ND style isolator, we will need to see (3) layers of pad.

Comment #2:

Spec Section 230548, 3.3, B.

We will utilize single sphere rubber connectors with tie rods on this project. Please see attached submittal for review. These will be provided for boilers and chillers.

6815 Dewaffelbaker Dr., Maumelle, AR 72113

Phone (501) 663-8886 • Fax (501) 663-8738

www.fluidsolutionsinc.com



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LittleRock, AR 72231

Phone 501-834-3320

Fax 501-834-5416

Spec Section 230548, 3.3, A.

**In-Line Pumps Vibration
Isolation**



MASON INDUSTRIES, Inc.

Manufacturers of Vibration Control Products

350 Rabro Drive 2101 W. Crescent Ave., Suite D
Hauppauge, NY 11788 Anaheim, CA 92801
631/348-0282 714/535-2727
FAX 631/348-0279 FAX 714/535-5738
Info@Mason-Ind.com Info@MasonAnaheim.com
www.Mason-Ind.com

JOB NAME _____
CUSTOMER _____
CUSTOMER P.O. _____
MASON M.I. _____
DWG. NO. _____

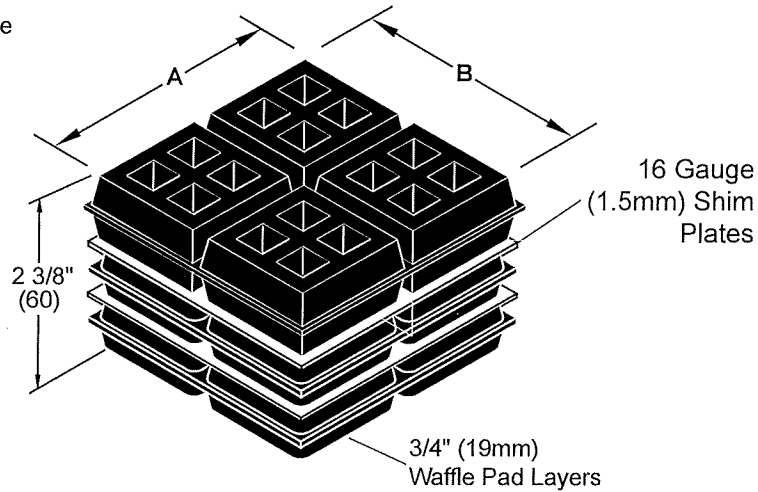
Super WSWSW

Waffle Pad

MATERIAL:

- ☐ Natural Rubber
☐ Standard Neoprene
☐ AASHTO Bridge Bearing Neoprene

Chilled Water & Heating Water Pumps



TYPE SUPER WSWSW LOAD RATINGS PER SQUARE

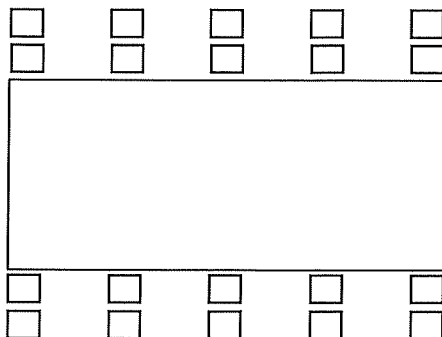
Durometer	Recommended Load per 2x2" sq.		Recommended Load per Area		Maximum Load per Area	
	(lbs)	(kg)	(lbs/in ²)	(kg/mm ²)	(lbs/in ²)	(kg/mm ²)
30	80	35	20	.014	27	.019
40	120	55	30	.021	40	.028
Standard 50	180	80	45	.032	60	.042
60	240	110	60	.042	80	.056
70	360	165	90	.063	120	.084

Actual Pad Sizes are as scheduled below.

PLAN VIEW OF PAD LOCATION

TAG : _____

UNIT : _____



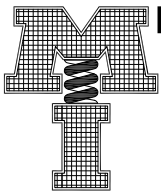
Durometer of Pad Material to be: **DURO**

1 :	6 :
2 :	7 :
3 :	8 :
4 :	9 :
5 :	10 :

Sets Required: _____

Type SUPER WSWSW Dimensions (inches) (mm)

A	B
12	12



MASON INDUSTRIES, Inc.

Manufacturers of Vibration Control Products
350 Rabro Drive 2101 W. Crescent Ave., Suite D
Hauppauge, NY 11788 Anaheim, CA 92801
631/348-0282 714/535-2727
FAX 631/348-0279 FAX 714/535-5738
Info@Mason-Ind.com Info@MasonAnaheim.com
www. Mason-Ind.com

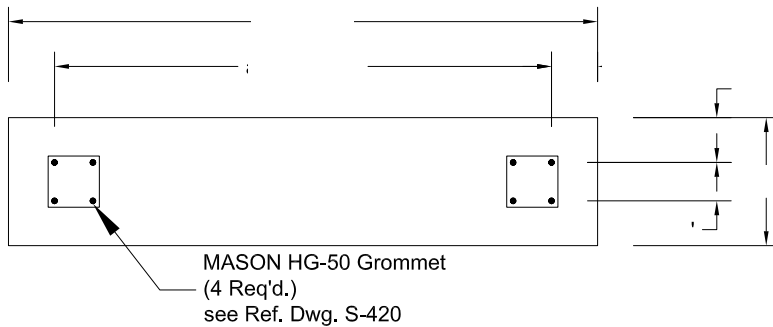
JOB NAME _____
CUSTOMER _____
CUSTOMER P.O. _____
MASON M.I. _____
DWG. NO. _____

Super W Pad

Inline Pump
Support Detail

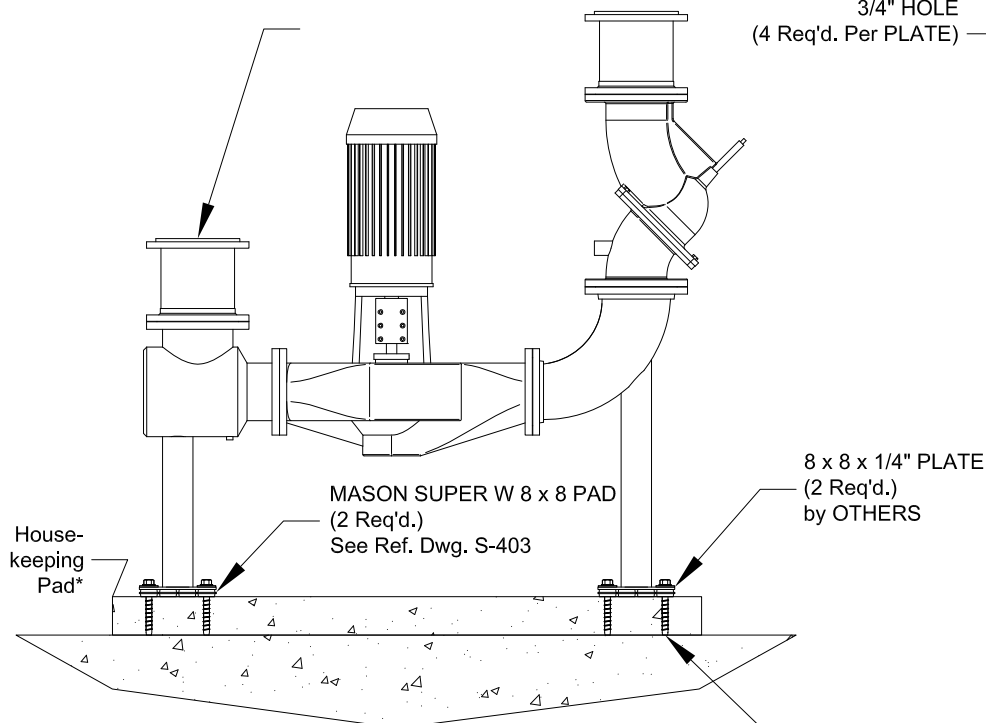
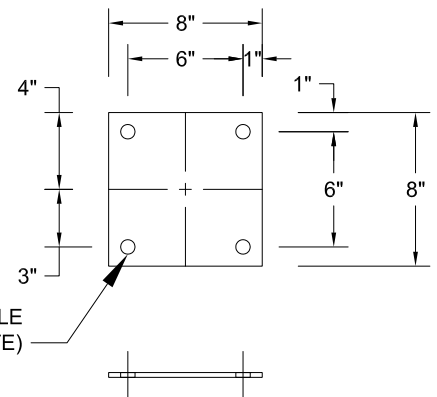
TAG(S) _____
NO. REQ'D. _____
UNIT _____

Chilled Water & Heating Water Pumps



PLAN VIEW OF FOUNDATION BOLTS

*SEE HOUSEKEEPING PAD ANCHORAGE DETAIL PER DWG. F-451956.
IF HPA ANCHORS ARE NOT USED TO SECURE THE HOUSEKEEPING PAD,
RESPONSIBILITY FOR ANCHORAGE IS BY OTHERS.



ELEVATION VIEW OF SYSTEM ACROSS LENGTH

DWN:

CHKD:

DATE:

DWG. NO.



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LittleRock, AR 72231

Phone 501-834-3320

Fax 501-834-5416

Spec Section 230548, 3.3, B.

**Base-Mounted Pumps
Vibration Isolation**

Not Applicable!



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P.O. Box 16620

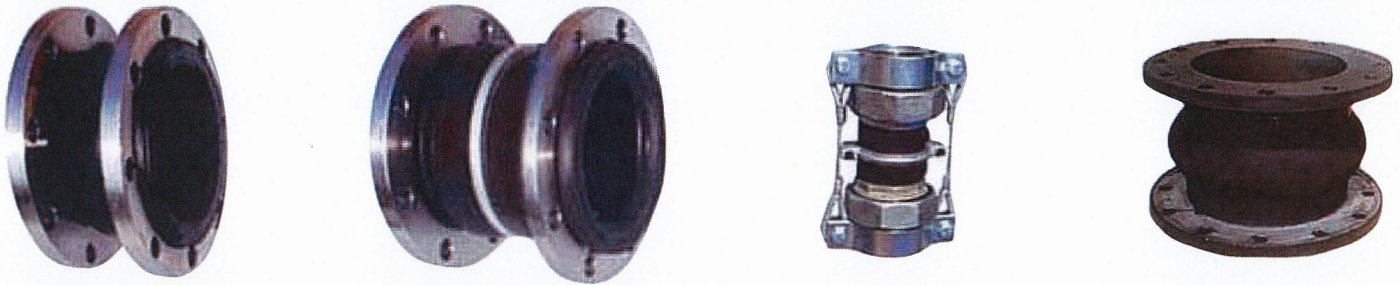
LittleRock, AR 72231

Phone 501-834-3320

Fax 501-834-5416

Spec Section 230548, 3.3, C.

Air-Cooled Chiller Vibration Isolation



Rubber expansion joints are available from Flex-Weld, Inc. / Keflex HVAC Products as standard or custom offerings. We have a wider array of material and configuration types than any other manufacturer.

Our products are designed and engineered to carry a variety of media in pressure or vacuum applications. They absorb harmful system vibration and contract or expand in response to pipe motion induced from thermal expansion and contraction, respectively.

We offer any type of rubber expansion joints from single sphere to triple, floating flange to cable-tied, standard sizes and diameters to custom lengths and reducers. Material ranges from standard Neoprene and EPDM to *Hypalon or Teflon.

MODELS & DESCRIPTION	
<i>Model</i>	<i>Type & Material</i>
SNN	Single Sphere, Neoprene
→ SEE	Single Sphere, EPDM
TNN	Twin Sphere, Neoprene
TEE	Twin Sphere, EPDM
CNN	Twin Sphere w/Female Union, Neoprene
CEE	Twin Sphere w/Female Union, EPDM
MARINE FLEX	Wide Arch, Neoprene

*Hypalon and Teflon, as used throughout this brochure, are registered trademarks of DuPont Dow Elastomers and the DuPont Company, respectively.

RUBBER EXPANSION JOINTS

Rubber Expansion Joints are inexpensive products that provide critical protection of piping and mechanical equipment in a multitude of engineered applications. If designed, manufactured, applied and installed properly, rubber expansion joints can serve to:

- Absorb pump and mechanical equipment vibration
- Absorb and deaden noise generated by the system
- Absorb axial motion in compression and extension
- Accommodate lateral offset induced from transient system movements
- Allow for misalignment in problematic pipe runs
- Reduce stress on mechanical equipment, piping and solid joints and unions.
- Eliminate electrolysis in dissimilar metals employed in the same pipe system Protect piping systems against pressure surges

ADVANTAGES OVER METAL EXPANSION JOINTS

- Noise Reduction
- Low Cost
- Space saving design

FEATURES / SERVICES

- | | | |
|--|---------------------------|---|
| • Higher Pressures | • Engineering Analysis | • Retrofitting |
| • Lower Force to Actuate | • Metallurgical Analysis | • Cross-Reference |
| • Large Stocking Inventory with same day shipping on standards | • On-Site Consultation | • Engineering Staff Available for Consultation 24/7 |
| | • Chemical Media Analysis | |

OPTIONS - STANDARD & CUSTOM

Materials:

- Neoprene
- EPDM
- Teflon
- Butyl
- Hypalon
- Nitrile
- All Domestic

Styles:

- Sphere Type –Single & Dual
- Wide Arch
- Reducing
- Cable-Tied
- Female Union
- Custom Styles & Lengths

Flange Type:

- Floating
- Integrated
- Custom

Drill Pattern:

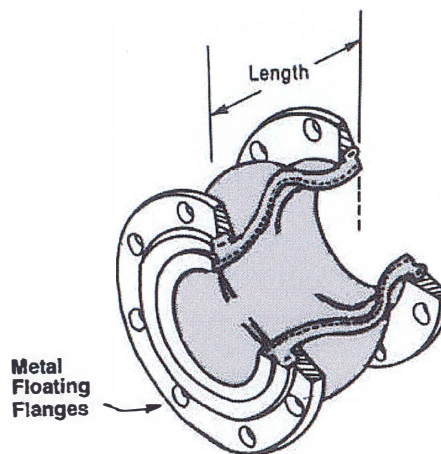
- Standard
- Navy

Shape:

- Round
- Rectangular
- Oval
- Custom

SELECTION APPLICATION GUIDELINES

- Single Sphere - Used in tight spaces
- Twin Sphere - Use when additional movement is necessary
- Wide Arch - Non-clogging
- Neoprene - Cold water
- EPDM - Hot water applications
- Floating Flanges - Problematic bolt hole alignment
- Control Rods - Concerns over pipe anchoring and guiding



SINGLE SPHERE RUBBER EXPANSION JOINTS - SERIES S

Sizes • Movements • Pressure • Weights

Nominal Pipe Size I.D. of E.J.	KEFLEX™ Model Number	F/F Installed Neutral Length	Allowable Movements From Neutral				Pressures @ 170°F		Weights	
			Axial Compression	Axial Extension	± Lateral Deflection	± Angular Deflection	Positive PSIG	Negative In. of Hg.	Joint & Flanges	Control Rod Set
1 1/2"	F014SEE060	6.0	0.5	0.375	0.5	27°	225	26	6.1	4.6
2"	F020SEE060	6.0	0.5	0.375	0.5	20°	225	26	12.3	7.6
2 1/2"	F024SEE060	6.0	0.5	0.375	0.5	17°	225	26	12.3	7.6
3"	F030SEE060	6.0	0.5	0.375	0.5	14°	225	26	14.0	8.3
4"	F040SEE060	6.0	0.75	0.5	0.5	14°	225	26	18.3	7.4
→ 5"	F050SEE060	6.0	0.75	0.5	0.5	11°	225	26	22.8	8.3
6"	F060SEE060	6.0	0.75	0.5	0.5	9°	225	26	26.8	10.4
7"	F080SEE060	6.0	0.75	0.5	0.5	7°	225	26	40.6	13.4
10"	F100SEE080	8.0	1.0	0.625	0.75	7°	225	26	56.6	21.3
12"	F120SEE080	8.0	1.0	0.625	0.75	6°	225	26	83.0	27.0
14"	F140SEE080	8.0	1.0	0.625	0.75	5°	150	26	115.0	28.0
16"	F160SEE080	8.0	1.0	0.625	0.75	4°	125	26	165.0	26.8
18"	F180SEE080	8.0	1.0	0.625	0.75	4°	125	26	168.0	31.4
20"	F200SEE080	8.0	1.0	0.625	0.75	3°	125	26	170.0	32.4
24"	F240SEE100	10.0	1.0	0.625	0.75	3°	110	26	225.0	45.0

SINGLE & TWIN SPHERE RUBBER EXPANSION JOINTS - SERIES S & T

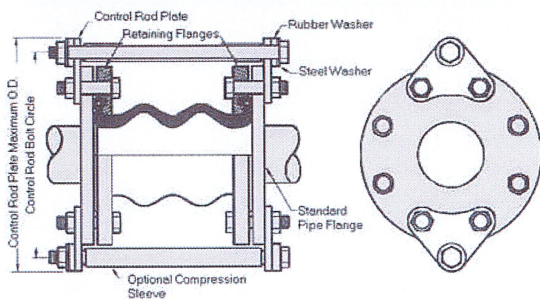
Drilling				
Standard Flange Bolting Dimensions				
Pipe Size	Flange O.D.	Bolt Circle	# of Holes	Bolt Hole Thread
1-1/2"	5.0	3.88	4	1/2 - 13 UNC
2"	6.0	4.75	4	5/8 - 11 UNC
2-1/2"	7.0	5.5	4	5/8 - 11 UNC
3"	7.5	6.0	4	5/8 - 11 UNC
4"	9.0	7.5	8	5/8 - 11 UNC
5"	10.0	8.5	8	3/4 - 10 UNC
6"	11.0	9.5	8	3/4 - 10 UNC
8"	13.5	11.75	8	3/4 - 10 UNC
10"	16.0	14.25	12	7/8 - 9 UNC
12"	19.0	17.0	12	7/8 - 9 UNC
14"	21.0	18.75	12	1 - 8 UNC
16"	23.5	21.25	16	1 - 8 UNC
18"	25.0	22.75	16	1-1/8 - 7 UNC
20"	27.5	25.0	20	1-1/8 - 7 UNC
22"	29.5	27.25	20	1-1/4 - 7 UNC
24"	32.1	29.5	20	1-1/4 - 7 UNC

Drilling meets 125/150 lb. Standards of: ANSI B16.1, B16.24, B16.5; AWWA C-207—Class D & F; MSS-SP 44 & 51

Temperature / Pressure Relationship	
Temperature Degrees Fahrenheit	Pressure Derating Factors
	Series S / Series T
170	1.00
180	0.93
190	0.86
200	0.80
210	0.73
220	0.67
225 (max.)	0.63

CONTROL RODS

Floating Flange and Control Unit



Technical Note: Flex-Weld strongly encourages the use of Control Rods in most, if not all, Rubber EJ applications. Most applications that utilize rubber expansion joints are not anchored properly. A simple pump connector does not protect against extreme stresses and strains produced by water hammer or air induced surge pressure, common to most applications, which greatly exceed normal system operating pressure.

Control Units				
Add On Type				
Pipe I.D.	Plate Width	# Rods	Rod Dia.	Pressure Rating
1-1/2"	0.375	2	0.5	510
2"	0.375	2	0.63	661
2-1/2"	0.375	2	0.63	529
3"	0.375	2	0.63	441
4"	0.375	2	0.63	311
5"	0.375	2	0.63	235
6"	0.5	2	0.63	186
8"	0.5	2	0.75	163
10"	0.75	2	0.88	163
12"	0.75	2	1.0	160
14"	0.75	2	1.0	112
16"	0.75	2	1.13	113
18"	0.75	2	1.13	94
20"	0.75	2	1.13	79
22"	1.0	2	1.25	85
24"	1.0	2	1.25	74



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P.O. Box 16620

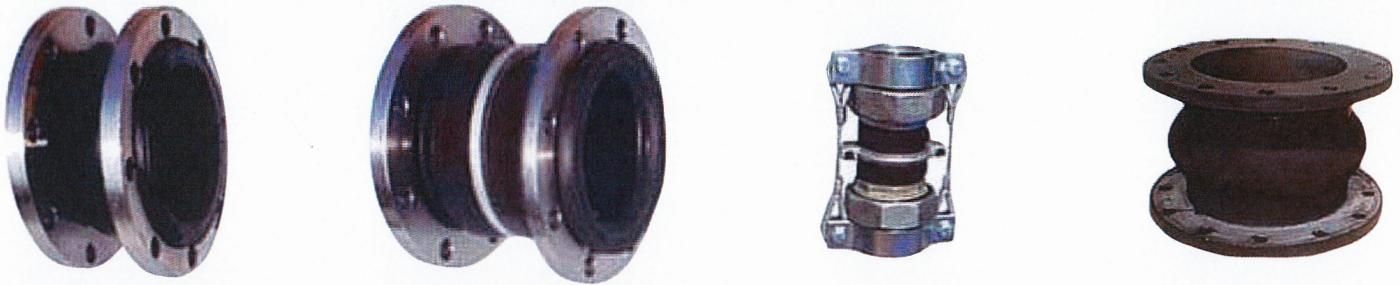
LittleRock, AR 72231

Phone 501-834-3320

Fax 501-834-5416

Spec Section 230548, 3.3, D.

Boiler Vibration Isolation



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We offer any type of rubber expansion joints from single sphere to triple, floating flange to cable-tied, standard sizes and diameters to custom lengths and reducers. Material ranges from standard Neoprene and EPDM to *Hypalon or Teflon.

MODELS & DESCRIPTION	
<i>Model</i>	<i>Type & Material</i>
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→ SEE	Single Sphere, EPDM
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CEE	Twin Sphere w/Female Union, EPDM
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ADVANTAGES OVER METAL EXPANSION JOINTS

- Noise Reduction
- Low Cost
- Space saving design

FEATURES / SERVICES

- | | | |
|--|---------------------------|---|
| • Higher Pressures | • Engineering Analysis | • Retrofitting |
| • Lower Force to Actuate | • Metallurgical Analysis | • Cross-Reference |
| • Large Stocking Inventory with same day shipping on standards | • On-Site Consultation | • Engineering Staff Available for Consultation 24/7 |
| | • Chemical Media Analysis | |

OPTIONS - STANDARD & CUSTOM

Materials:

- Neoprene
- EPDM
- Teflon
- Butyl
- Hypalon
- Nitrile
- All Domestic

Styles:

- Sphere Type –Single & Dual
- Wide Arch
- Reducing
- Cable-Tied
- Female Union
- Custom Styles & Lengths

Flange Type:

- Floating
- Integrated
- Custom

Drill Pattern:

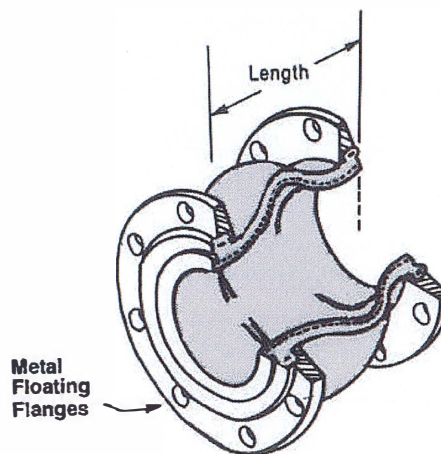
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Sizes • Movements • Pressure • Weights

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12"	F120SEE080	8.0	1.0	0.625	0.75	6°	225	26	83.0	27.0
14"	F140SEE080	8.0	1.0	0.625	0.75	5°	150	26	115.0	28.0
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SINGLE & TWIN SPHERE RUBBER EXPANSION JOINTS - SERIES S & T

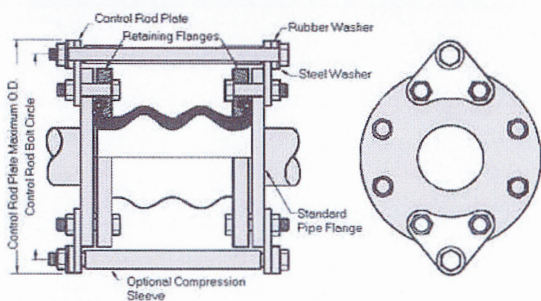
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5"	10.0	8.5	8	3/4 - 10 UNC
6"	11.0	9.5	8	3/4 - 10 UNC
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22"	29.5	27.25	20	1-1/4 - 7 UNC
24"	32.1	29.5	20	1-1/4 - 7 UNC

Drilling meets 125/150 lb. Standards of: ANSI B16.1, B16.24, B16.5; AWWA C-207—Class D & F; MSS-SP 44 & 51

Temperature / Pressure Relationship	
Temperature Degrees Fahrenheit	Pressure Derating Factors
	Series S / Series T
170	1.00
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225 (max.)	0.63

CONTROL RODS

Floating Flange and Control Unit



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16"	0.75	2	1.13	113
18"	0.75	2	1.13	94
20"	0.75	2	1.13	79
22"	1.0	2	1.25	85
24"	1.0	2	1.25	74

Quality People. Building Solutions.

Comfort Systems USA (Arkansas), Inc.

P.O. Box 16620

LittleRock, AR 72231

Phone 501-834-3320

Fax 501-834-5416

Spec Section 230548, 3.3, E.

AHU Fans Vibration Isolation

**See Submittal Number
237313.001 - Indoor Modular
Custom Air-Handling Units**