



SERIES ASM

NEOPRENE/EPMD FLANGED SINGLE SPHERE CONNECTOR

Pressures to 225 PSIG (15.51 barg)
Temperatures to 230°F (110°C)

APPLICATIONS

- Process Industry
- Oil & Gas
- Weak Acids
- Water & Waste
- Alkalies
- Pump suction & discharge
- Compressed Air
- Sea water
- Pulp & Paper
- Chemical lines

MODELS

- ASM - Flanged Connection

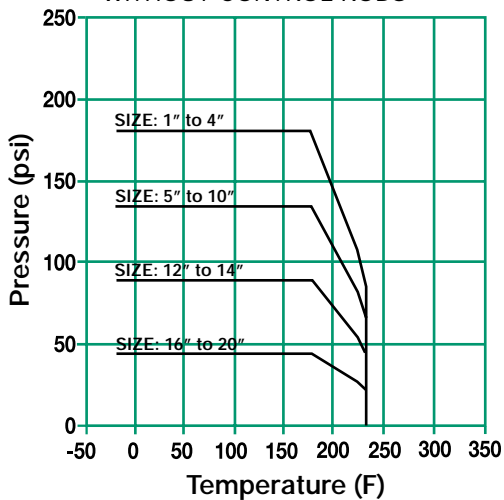
OPTIONS

- Control Rods

- For connection pipes and equipment where flanged ends are preferred
- Flat faced flanged single sphere connectors
- Easy to install floating flanges allow variable pressure, temperature and movement
- Increased acoustic resistance, dampens hydraulic surge and shock
- Accommodates thermal movement and misalignment
- Four way greater movement provides high level of installation flexibility
- Precision molded synthetic rubber reinforced with nylon cord
- Horizontal or vertical mounting

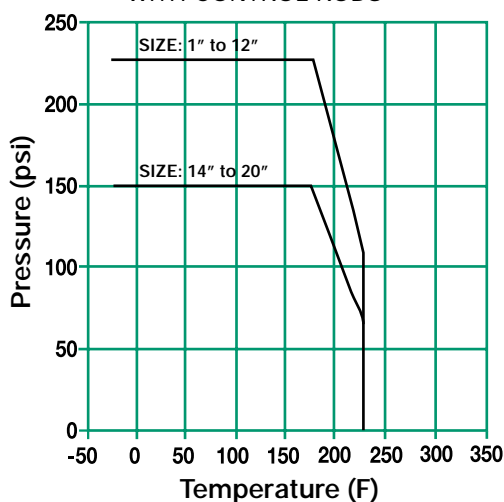
PRESSURE/TEMPERATURE RATINGS

WITHOUT CONTROL RODS

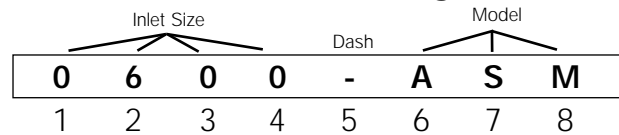


PRESSURE/TEMPERATURE RATINGS

WITH CONTROL RODS



Series ASM Ordering Code



Inlet Size* - Position 1 - 4

0100 - 1"	0600 - 6"
0125 - 1¼"	0800 - 8"
0150 - 1½"	1000 - 10"
0200 - 2"	1200 - 12"
0250 - 2½"	1400 - 14"
0300 - 3"	1600 - 16"
0400 - 4"	1800 - 18"
0500 - 5"	2000 - 20"

Dash - Position 5

Model - Position 6 - 8
ASM - Single Sphere,
FLG, CI, Neoprene

Part Numbers for Ordering Single Sphere Connector Control Rods

ASM	
Size	Part Number
1	0100-ASMROD
1¼	0125-ASMROD
1½	0150-ASMROD
2	0200-ASMROD
2½	0250-ASMROD
3	0300-ASMROD
4	0400-ASMROD
5	0500-ASMROD
6	0600-ASMROD
8	0800-ASMROD
10	1000-ASMROD
12	1200-ASMROD
14	1400-ASMROD
16	1600-ASMROD
18	1800-ASMROD
20	2000-ASMROD

Other sizes available. Consult factory.

SERIES ASM

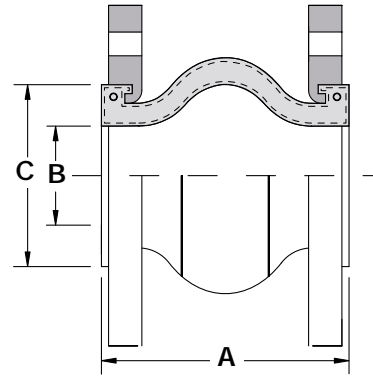
NEOPRENE/EPMD FLANGED SINGLE SPHERE CONNECTOR

SPECIFICATION

Single Sphere Connector body material shall be neoprene cover and tube elastomer with nylon cord fabric reinforcement. The single sphere connector will have Carbon Steel, Zinc Plated flanges and a hard steel wire frame. The twin sphere connector shall be SSI ASM Series.

MATERIALS OF CONSTRUCTION

BodyNeoprene
Reinforcing FabricNylon Cord Fabric
WireHard Steel Wire
Floating FlangesCarbon Steel Zinc Plated RST 37-2



Connections: 1" to 20" Flanged

Burst Pressure 850 PSIG

DIMENSIONS inches (mm) AND WEIGHTS pounds (kg)

Size	A	Allowable Movement				B	C	Weight	
		Axial Compression	Axial Extension	Lateral Deflection	Angular Deflection			Connector Only	With Rods
1 (25)	6 (152)	3/4 (19)	15/32 (12)	9/16 (14)	19/32 (15)	1 ¹¹ / ₃₂ (39)	2 ⁵ / ₁₆ (75)	5 (2.3)	10 (4.7)
1 ¹ / ₄ (32)	6 (152)	3/4 (19)	15/32 (12)	9/16 (14)	19/32 (15)	1 ¹¹ / ₃₂ (39)	2 ⁵ / ₁₆ (75)	7 (3.2)	10 (4.7)
1 ¹ / ₂ (38)	6 (152)	3/4 (19)	15/32 (12)	9/16 (14)	19/32 (15)	1 ¹¹ / ₃₂ (39)	2 ⁵ / ₁₆ (75)	8 (3.6)	12 (5.4)
2 (51)	6 (152)	3/4 (19)	15/32 (12)	9/16 (14)	19/32 (15)	1 ²⁹ / ₃₂ (48)	3 ⁵ / ₁₆ (86)	11 (5.0)	15 (7.0)
2 ¹ / ₂ (64)	6 (152)	3/4 (19)	15/32 (12)	9/16 (14)	19/32 (15)	2 ¹⁵ / ₃₂ (63)	4 ⁵ / ₁₆ (105)	11 (5.0)	19 (8.7)
3 (76)	6 (152)	3/4 (19)	15/32 (12)	9/16 (14)	19/32 (15)	2 ⁷ / ₁₆ (73)	4 ²¹ / ₃₂ (118)	13 (5.9)	23 (10.4)
4 (102)	6 ¹ / ₈ (156)	3/4 (19)	15/32 (12)	9/16 (14)	19/32 (15)	3 ¹⁵ / ₁₆ (100)	5 ²⁷ / ₃₂ (148)	17 (7.7)	25 (11.4)
5 (127)	6 ¹ / ₈ (156)	3/4 (19)	15/32 (12)	9/16 (14)	19/32 (15)	5 (127)	7 ¹ / ₄ (178)	21 (9.5)	30 (13.6)
6 (152)	6 ¹ / ₈ (156)	3/4 (19)	15/32 (12)	9/16 (14)	19/32 (15)	5 ²⁵ / ₃₂ (147)	8 ³ / ₁₆ (210)	25 (11.3)	37 (16.8)
8 (203)	6 ¹ / ₈ (156)	1 (25)	15/32 (12)	7/8 (22)	19/32 (15)	7 ²⁷ / ₃₂ (199)	10 ¹ / ₄ (260)	37 (16.8)	53 (24.0)
10 (254)	8 (203)	1 (25)	5/8 (16)	7/8 (22)	19/32 (15)	9 ³ / ₄ (248)	12 ¹¹ / ₁₆ (322)	58 (26.3)	82 (37.2)
12 (305)	8 (203)	1 (25)	5/8 (16)	7/8 (22)	19/32 (15)	11 ²⁷ / ₃₂ (296)	14 ⁵ / ₁₆ (370)	80 (36.3)	109 (49.4)
14 (356)	8 (203)	1 (25)	5/8 (16)	7/8 (22)	19/32 (15)	13 ⁷ / ₃₂ (336)	16 ¹ / ₄ (413)	101 (45.8)	138 (62.6)
16 (406)	8 (203)	1 (25)	5/8 (16)	7/8 (22)	19/32 (15)	15 ⁵ / ₃₂ (385)	18 ³ / ₃₂ (464)	127 (57.6)	176 (79.8)
18 (457)	8 (203)	1 (25)	5/8 (16)	7/8 (22)	19/32 (15)	17 ⁷ / ₁₆ (440)	20 ⁵ / ₁₆ (524)	136 (61.7)	183 (83.0)
20 (508)	8 (203)	1 (25)	5/8 (16)	7/8 (22)	19/32 (15)	19 ⁹ / ₃₂ (490)	22 ⁵ / ₁₆ (573)	158 (71.7)	212 (96.1)

Other sizes available. Consult factory.

Dimensions are subject to change. Consult factory for certified drawings when required.

Installation Note:

For correct Installation & Maintenance instructions see page 244



SERIES ATM

NEOPRENE FLANGED TWIN SPHERE CONNECTOR

Pressures to 225 PSIG (15.51 barg)
Temperatures to 230°F (110°C)

APPLICATIONS

- Process Industry
- Oil & Gas
- Weak Acids
- Water & Waste
- Alkalies
- Pump suction & discharge
- Compressed Air
- Sea water
- Pulp & Paper
- Chemical lines

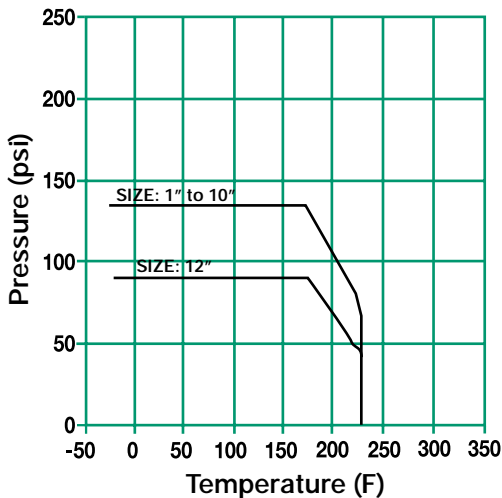
MODELS

- ATM - Flanged Connection

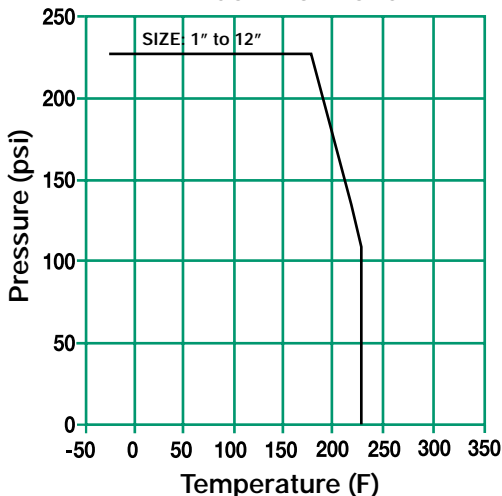
OPTIONS

- Control Rods

PRESSURE/TEMPERATURE RATINGS WITHOUT CONTROL RODS



PRESSURE/TEMPERATURE RATINGS WITH CONTROL RODS



- For connection pipes and equipment where flanged ends are preferred
- Flat faced flanged double sphere connectors
- Easy to install floating flanges allow variable pressure, temperature and movement
- Increased acoustic resistance, dampens hydraulic surge and shock
- Accommodates thermal movement and misalignment
- Four way greater movement provides high level of installation flexibility.
- Precision molded synthetic rubber reinforced with nylon cord.
- Horizontal or vertical mounting

Series ATM Ordering Code

Inlet Size				Dash	Model		
0	6	0	0	-	A	T	M
1	2	3	4	5	6	7	8

Inlet Size* - Position 1 - 4

0100 - 1"	0400 - 4"
0125 - 1¼"	0500 - 5"
0150 - 1½"	0600 - 6"
0200 - 2"	0800 - 8"
0250 - 2½"	1000 - 10"
0300 - 3"	1200 - 12"

Dash - Position 5

Model - Position 6 - 8
ATM - Twin Sphere,
FLG, CI, Neoprene

Part Numbers for Twin Sphere Connector Control Rods

ATM	
Size	Part Number
1	0100-ATMROD
1¼	0125-ATMROD
1½	0150-ATMROD
2	0200-ATMROD
2½	0250-ATMROD
3	0300-ATMROD
4	0400-ATMROD
5	0500-ATMROD
6	0600-ATMROD
8	0800-ATMROD
10	1000-ATMROD
12	1200-ATMROD

Other sizes available. Consult factory.

SERIES ATM

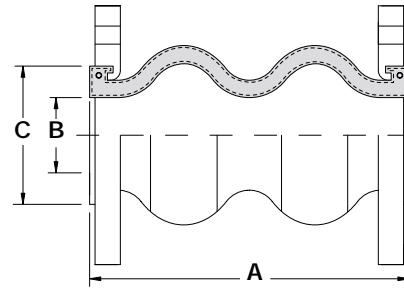
NEOPRENE FLANGED TWIN SPHERE CONNECTOR

SPECIFICATION

Twin Sphere Connector body material shall be neoprene cover and tube elastomer with nylon fabric reinforcement. The twin sphere connector will have Carbon Steel, Zinc Plated flanges and a steel wire frame. The twin sphere connector shall be SSI ATM Series.

MATERIALS OF CONSTRUCTION

BodyNeoprene
Reinforcing FabricNylon Cord Fabric
WireHard Steel Wire
Floating FlangesMild Steel Zinc Plated RST 37-2



Connections: 1" to 12"

Burst Pressure 854 PSIG

DIMENSIONS inches (mm) AND WEIGHTS pounds (kg)

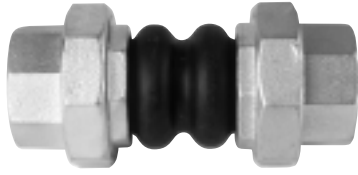
Size	A	Allowable Movement				B	C	Weight	
		Axial Compression	Axial Extension	Lateral Deflection	Angular Deflection			Connector Only	With Rods
1 (25)	4 $\frac{1}{4}$ (121)	2 $\frac{3}{32}$ (53)	1 $\frac{1}{16}$ (27)	1 $\frac{25}{32}$ (45)	1 $\frac{19}{32}$ (40)	1 $\frac{17}{32}$ (39)	2 $\frac{61}{64}$ (75)	5 (2.3)	10.6 (4.8)
1 $\frac{1}{4}$ (32)	7 (178)	2 $\frac{3}{32}$ (53)	1 $\frac{1}{16}$ (27)	1 $\frac{25}{32}$ (45)	1 $\frac{19}{32}$ (40)	1 $\frac{17}{32}$ (39)	2 $\frac{61}{64}$ (75)	5 (2.3)	10.6 (4.8)
1 $\frac{1}{2}$ (38)	7 (178)	2 $\frac{3}{32}$ (53)	1 $\frac{1}{16}$ (27)	1 $\frac{25}{32}$ (45)	1 $\frac{19}{32}$ (40)	1 $\frac{17}{32}$ (39)	2 $\frac{61}{64}$ (75)	5 (2.3)	12.1 (5.5)
2 (51)	7 (178)	2 $\frac{3}{32}$ (53)	1 $\frac{1}{16}$ (27)	1 $\frac{25}{32}$ (45)	1 $\frac{19}{32}$ (40)	1 $\frac{29}{32}$ (48)	3 $\frac{11}{32}$ (85)	8 (3.6)	15.9 (7.2)
2 $\frac{1}{2}$ (64)	7 (178)	2 $\frac{3}{32}$ (53)	1 $\frac{1}{16}$ (27)	1 $\frac{25}{32}$ (45)	1 $\frac{19}{32}$ (40)	2 $\frac{15}{32}$ (63)	4 $\frac{1}{8}$ (105)	10 (4.5)	19.6 (8.9)
3 (76)	7 (178)	2 $\frac{3}{32}$ (53)	1 $\frac{1}{16}$ (27)	1 $\frac{25}{32}$ (45)	1 $\frac{19}{32}$ (40)	2 $\frac{1}{8}$ (73)	4 $\frac{21}{32}$ (118)	13 (5.9)	23.1 (10.5)
4 (102)	9 (229)	2 $\frac{3}{32}$ (53)	1 $\frac{1}{32}$ (31)	1 $\frac{19}{32}$ (40)	1 $\frac{3}{8}$ (35)	3 $\frac{15}{16}$ (100)	5 $\frac{27}{32}$ (148)	19 (8.6)	26.7 (12.1)
5 (127)	9 (229)	2 $\frac{3}{32}$ (53)	1 $\frac{1}{32}$ (31)	1 $\frac{19}{32}$ (40)	1 $\frac{3}{8}$ (35)	5 (127)	7 (178)	22 (10.0)	31.5 (14.3)
6 (152)	9 (229)	2 $\frac{1}{16}$ (65)	1 $\frac{1}{32}$ (31)	1 $\frac{19}{32}$ (40)	1 $\frac{3}{8}$ (35)	5 $\frac{25}{32}$ (147)	8 $\frac{5}{32}$ (210)	27 (12.2)	39.2 (17.8)
8 (203)	13 (330)	2 $\frac{1}{16}$ (65)	1 $\frac{3}{16}$ (30)	1 $\frac{3}{8}$ (35)	1 $\frac{3}{8}$ (30)	7 $\frac{27}{32}$ (199)	10 $\frac{1}{4}$ (260)	42 (19.0)	59.5 (27.0)
10 (254)	13 (330)	2 $\frac{1}{16}$ (65)	1 $\frac{3}{16}$ (30)	1 $\frac{3}{8}$ (35)	1 $\frac{3}{8}$ (30)	9 $\frac{3}{4}$ (248)	12 $\frac{11}{16}$ (322)	58 (26.3)	88 (39.9)
12 (305)	13 (330)	2 $\frac{1}{16}$ (65)	1 $\frac{3}{16}$ (30)	1 $\frac{3}{8}$ (35)	1 $\frac{3}{8}$ (30)	11 $\frac{21}{32}$ (296)	14 $\frac{1}{16}$ (370)	84 (38.1)	117.9 (53.5)

Other sizes available. Consult factory.

Dimensions are subject to change. Consult factory for certified drawings when required.

Installation Note:

For correct Installation & Maintenance instructions see page 244



SERIES AUM

NEOPRENE NPT END CONNECTION DOUBLE SPHERE CONNECTORS

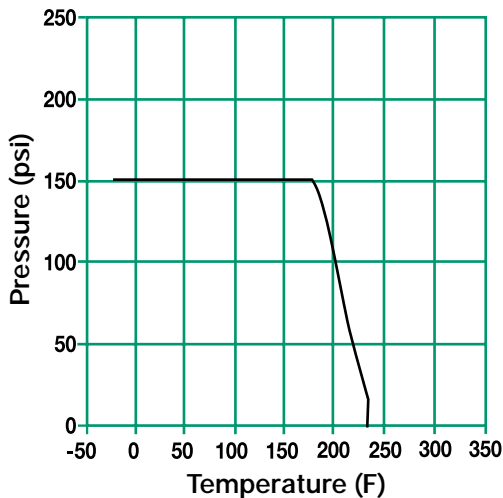
Pressures to 150 PSIG (10.34 barg)
Temperatures to 230°F (110°C)

APPLICATIONS

- Process Industry
- Weak Acids
- Alkalies
- Compressed Air
- Pulp & Paper
- Oil & Gas
- Water & Waste
- Pump suction & discharge
- Chemical lines

- For connection pipes and equipment where threaded union ends are preferred
- Accommodates thermal movement and misalignment
- Four way greater movements provide high level of installation flexibility.
- Precision molded of synthetic rubber reinforced with nylon cord.
- Excellent ability to absorb vibrations, sounds and withstand high pressures.
- Easy to install.

PRESSURE/TEMPERATURE RATINGS



MODELS

- AUM - NPT Connection

APPLICABLE CODES

- ASME/ANSI B1-20.1

Series AUM Ordering Code

Inlet Size				Dash	Model		
0	2	0	0	-	A	U	M
1	2	3	4	5	6	7	8

Inlet Size* - Position 1 - 4
 0050 - 1/2"
 0075 - 3/4"
 0100 - 1"
 0125 - 1 1/4"
 0150 - 1 1/2"
 0200 - 2"

Dash - Position 5
Model - Position 6 -8
 AUM - Twin Sphere,
 NPT, CI, Neoprene

SERIES AUM

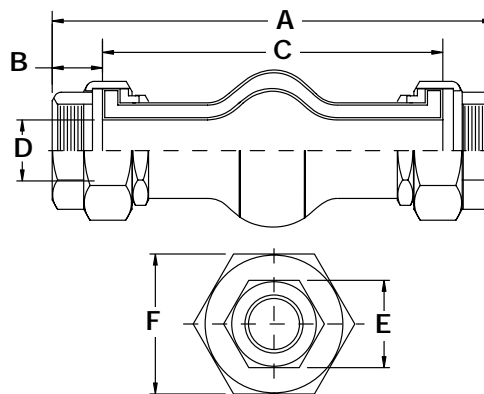
NEOPRENE NPT END CONNECTION DOUBLE SPHERE CONNECTORS

SPECIFICATION

Union End Connector body material shall be neoprene cover and tube elastomer with nylon cord fabric reinforcement. The twin sphere connector will have Cast Ductile Iron threaded union ends. The twin sphere connector shall be SSI AUM Series.

MATERIALS OF CONSTRUCTION

BodyNeoprene
Reinforcing FabricNylon Cord Fabric
WireHard Steel Wire
Threaded Union EndsCast Ductile Iron



Connections: 1/2" to 2"

Burst Pressure 570 PSIG

DIMENSIONS inches (mm) AND WEIGHTS pounds (kg)

Size	Installed Length				Travel		Allowable Movement			Dimensions						Weight
	Neutral Length	Minimum Installed	Maximum Installed	Recommended Pipe Opening	Total Compressed	Total Extended	Axial Compression	Lateral Deflection	Angular Deflections	"B" Length of Fittings	"C" Length of Rubber	"D" Connector	Inner Diameter	"E" Width of Fitting Hex Head	"F" Width of Union Hex Head	
1/2 (13)	8 (203)	7 ¹ / ₂ (187)	8 ¹ / ₈ (206)	7 ⁵ / ₁₆ (186)	7 ¹ / ₈ (181)	8 ¹ / ₂ (209)	7/8 (22)	1/4 (6)	7/8 (22)	32	29/32 (23)	6 ¹ / ₂ (155)	17/32 (13)	1 ¹ / ₆ (27)	1 ¹ / ₆ (43)	1 (0.5)
3/4 (19)	8 (203)	7 ¹ / ₂ (187)	8 ¹ / ₈ (206)	6 ¹ / ₈ (175)	7 ¹ / ₈ (181)	8 ¹ / ₂ (209)	7/8 (22)	1/4 (6)	7/8 (22)	32	1 (25)	5 ²⁹ / ₃₂ (150)	3/4 (19)	1 ¹ / ₂ (34)	1 ³ / ₂ (50)	1 (0.5)
1 (25)	8 (203)	7 ¹ / ₂ (187)	8 ¹ / ₈ (206)	6 ¹ / ₈ (168)	7 ¹ / ₈ (181)	8 ¹ / ₂ (209)	7/8 (22)	1/4 (6)	7/8 (22)	25	1 ³ / ₆ (30)	5 ¹⁷ / ₃₂ (140)	1 (25)	1 5/8 (41)	2 ¹ / ₂ (64)	2 (0.9)
1 ¹ / ₄ (32)	8 (203)	7 ¹ / ₂ (187)	8 ¹ / ₈ (206)	6 ¹ / ₈ (168)	7 ¹ / ₈ (181)	8 ¹ / ₂ (209)	7/8 (22)	1/4 (6)	7/8 (22)	25	1 ³ / ₆ (30)	5 ¹⁷ / ₃₂ (140)	1 ¹ / ₄ (32)	1 ³ / ₂ (50)	2 ²⁷ / ₃₂ (72)	3 (1.5)
1 ¹ / ₂ (38)	8 (203)	7 ¹ / ₂ (187)	8 ¹ / ₈ (206)	6 ¹ / ₈ (168)	7 ¹ / ₈ (181)	8 ¹ / ₂ (209)	7/8 (22)	1/4 (6)	7/8 (22)	20	1 ³ / ₈ (35)	5 ¹ / ₈ (130)	1 ¹⁷ / ₃₂ (39)	2 ¹ / ₄ (57)	3 ²³ / ₃₂ (94)	4 (2.0)
2 (51)	8 (203)	7 ¹ / ₂ (187)	8 ¹ / ₈ (206)	6 ¹ / ₈ (168)	7 ¹ / ₈ (181)	8 ¹ / ₂ (209)	7/8 (22)	1/4 (6)	7/8 (22)	15	2 (40)	4 ²³ / ₃₂ (120)	1 ²⁷ / ₃₂ (47)	2 3/4 (70)	3 ²³ / ₃₂ (94)	6 (2.6)

Dimensions are subject to change. Consult factory for certified drawings when required.

Installation Note:

For correct Installation & Maintenance instructions see page 244

CONNECTORS (EXPANSION JOINTS)

INSTALLATION AND MAINTENANCE INSTRUCTIONS

TYPICAL INSTALLATION

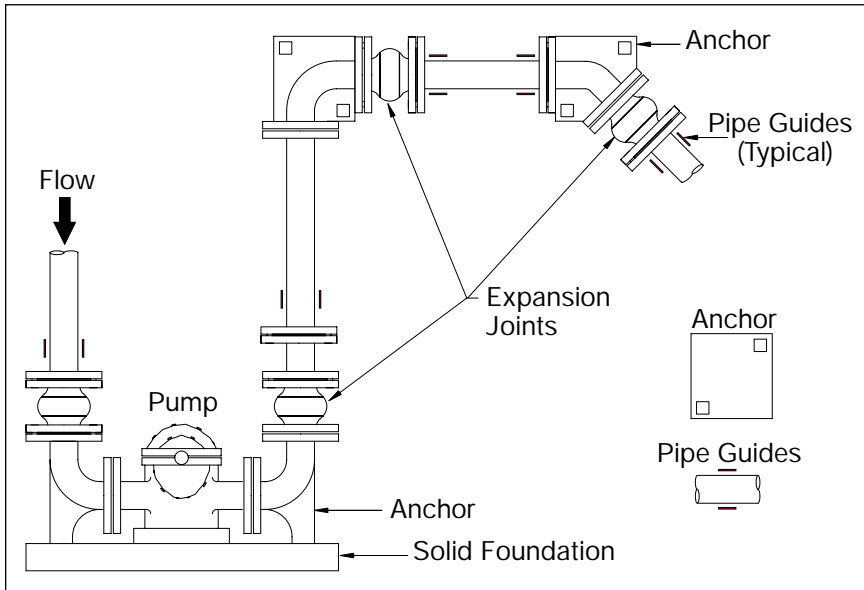
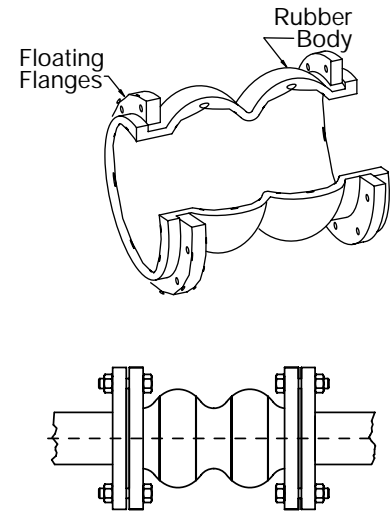


Figure 1. Typical piping layout utilizing Expansion Joints and the proper use of anchors in branch locations.



Series ATM Twin Sphere
Expansion Joint

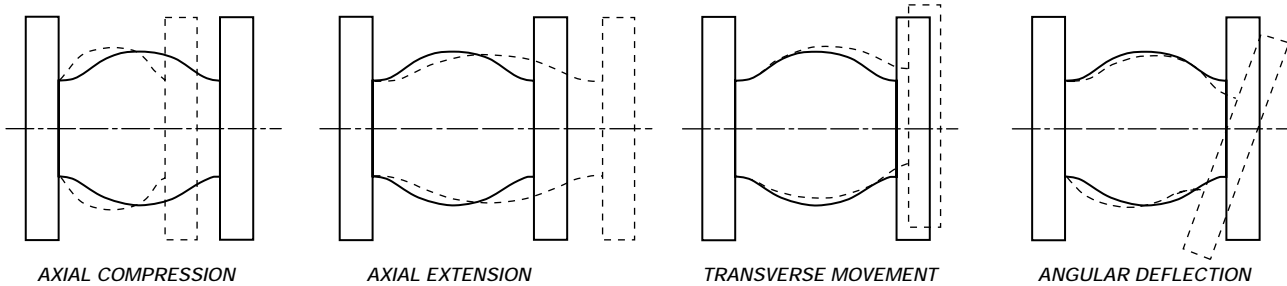
WARNING

Expansion joints may operate in pipelines or equipment carrying fluids and or gases at elevated temperatures and pressures. Precaution should be taken to make sure these

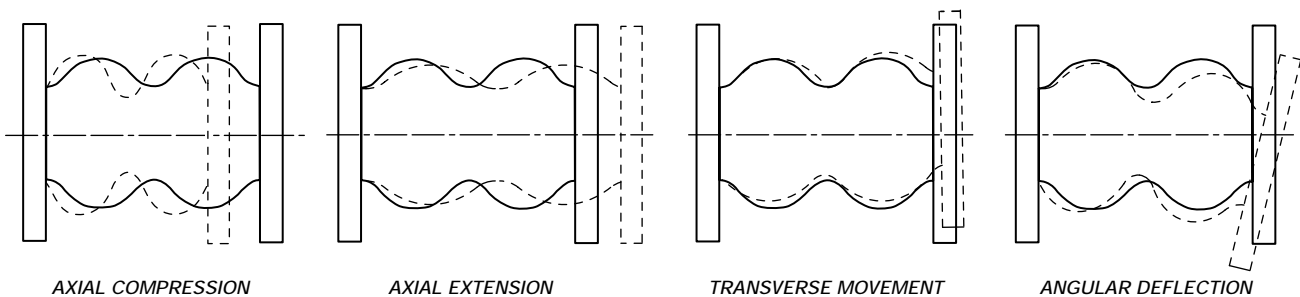
parts are installed correctly and inspected regularly. Caution should be taken to protect personnel in the event of leakage of fluids or gases.

ALLOWABLE MOVEMENT

SERIES ASM

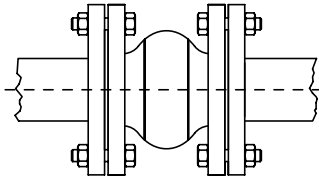


SERIES ATM

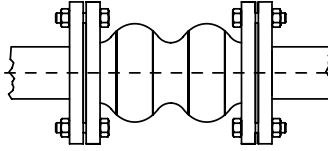


CONNECTORS (EXPANSION JOINTS)

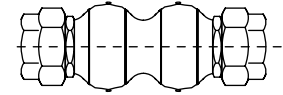
INSTALLATION AND MAINTENANCE INSTRUCTIONS



Series ASM Single Sphere Connector



Series ATM Single Sphere Connector



Series AUM Connector

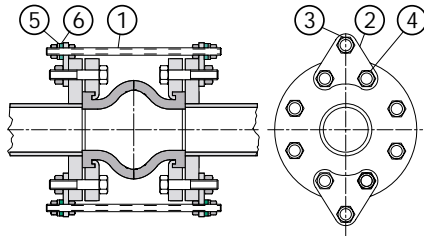
CONNECTOR (EXPANSION JOINT) MOUNTING INSTRUCTIONS

- Make sure that the expansion joint rating, for temperature, pressure, vacuum, movement and elastomeric materials, matches the systems requirements.
 - Anchors are required whenever a piping system changes direction. Expansion joints should be located as close as possible to anchor points (See Figure 1).
 - For piping that is not anchored, control rods must be used to prevent excessive movement from occurring (See Installation & Maintenance Instructions Control Rod For Expansion Joints).
 - Expansion joints are not designed to make up for piping misalignment errors. Piping misalignments of more than 1/8", in any direction, will reduce the rated movement, stress the materials and reduce service life of the expansion joint.
 - Before installation, check the interior, exterior and flange faces of the expansion joint for cuts and gouges.
 - Piping must be supported so that expansion joint does not carry any weight. Make sure that the rubber expansion joints do not support compression or extension due to the weight of the upstream or downstream pipe.
 - When installing the rubber expansion joint, make sure that the connector not be twisted in any case (especially for Series AUM).
 - To determine end thrust, multiply thrust factor by PSIG.
 - Vacuum rating is based on installed length, without external load. Product should not be installed "extended" on vacuum applications.
 - Install at the face to face dimension shown on the drawing. Make sure the mating flanges are clean and are standard steel flat faced or no more than the 1/16" raised face type (See Figure 2).
 - Joints must be pre-compressed approximately 1/8" to 3/16" in order to obtain a correct installed fact-to-face dimension.
 - Floating metallic flanges freely rotate on the bellow to compensate for mating flange misalignment.
 - Install the expansion joint against the mating pipe flanges and install bolts so that the bolt head is against the expansion joint flange.
 - Flange-to-flange dimensions of the expansion joint must match the breech opening.
 - Make sure mating flanges are clean and are FLAT FACED TYPE. When attaching beaded end flange expansion joints to raised face flanges, a ring gasket is required to prevent metal flange faces from cutting rubber bead during installation.
 - Never install expansion joints next to wafer type check or butterfly valves. Serious damage to the rubber flange bead can result due to lack of flange mating surface and/or bolt connection.
 - Do not use gaskets. Care must be taken when pushing the joint into the breach between the mating flanges so as not to roll the leading edge of the joint out of its flange groove.
 - Do not bolt directly to another component with an elastomer face or to a specialty flange such as the Victualic® type without inserting a solid full-face metallic gasket.
 - Cross tighten the bolts. Minimum recommended flange bolt torque foot pounds for the following joint sizes are: 1" to 2" – 28.90ft-lbm 2-1/2" to 8" – 43.40 ft-lb., 10" to 20" – 57.90 ft-lb.
 - Do not over tighten to the point where there is metal to metal contact between the joint flange and the mating flange. Never tighten an expansion joint to the point that there is metal-to-metal contact between the expansion joint flange and the mating flange. NOTE: Over torquing bolts can cause deformation of the rubber expansion joint flanges, this resulting in possible premature failure.
- NOTE: Due to rubber's tendency to relax after initial tightening, it is necessary to retighten the flange bolts, typically within 1 week of initial installation.
- If bolt threads are facing the joint, trim the length of the bolts so they do not extend past the nut more than 1/8" to avoid contact with the joint.
 - Insulation over expansion joints is not recommended. However, if insulation is required, it should be a design that is easy to remove to allow access to the flanges.
 - Store expansion joints face down, in a cool dry location on a wooden pallet.
 - Check the tightness of retaining rings two or three weeks after installation and re-tighten as necessary.

CONTROL RODS FOR EXPANSION JOINTS

INSTALLATION AND MAINTENANCE INSTRUCTIONS

Series ASM With Control Rods



1. ROD
2. PLATE
3. NUT
4. HEAD NUT
5. STEEL WASHER
6. RUBBER WASHER

Series ATM With Control Rods

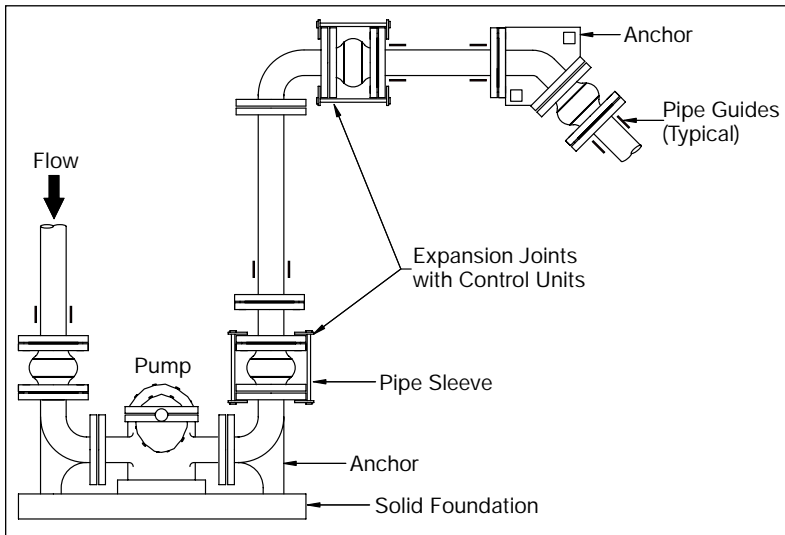
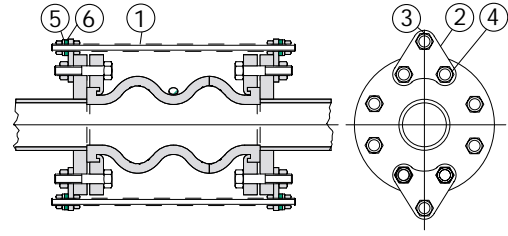
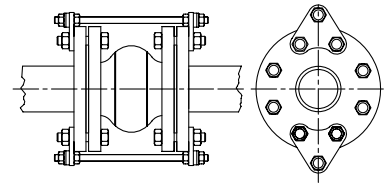
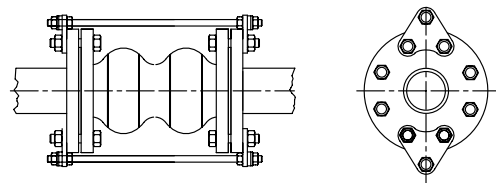


Figure 1. Typical piping layout showing the use of Control Rods with Expansion Joints, when proper system anchoring is limited.



Series ASM with Control Rods



Series ATM with Control Rods

WARNING

Expansion joints may operate in pipelines or equipment carrying fluids and or gases at elevated temperatures and pressures. Normal precautions should be taken to make

sure these parts are installed correctly and inspected regularly. Caution should be taken to protect personnel in the event of leakage of fluids or gasses.

FUNCTION

Expansion joints are not designed to withstand excessive end thrusts, wide temperature fluctuations or high pressure changes (i.e. starting a pump). When pressures or temperatures exceed the unit's design capability, premature failure of the expansion joint will occur. To prevent excessive movement, Expansion joints must be installed in an anchored system, between two fixed anchor points in a piping system, to control expansion or contraction of the line. Piping anchors must be capable of withstanding the line thrust generated by internal pressure or wide temperature fluctuations. The failure of these anchors can cause excessive pipeline motion. When proper anchoring cannot be provided, control rods are required (See Figure 1).

A control rod assembly is a set of two or more control rods placed across an expansion joint, from flange to flange, to minimize or prevent damage to the expansion joint caused by excessive extension, compression or motion of a pipeline and to absorb static pressure thrust. Control rods allow specified expansion joint movement (axial extension) and pipe contraction (axial compression) which will then preclude the possibility of motion that would over-elongate and damage the joint. The control rod assembly can also be set at the maximum allowable expansion and or contraction of the expansion joint. Control rods are not required in systems that are anchored. However, when used in this manner, control units are an additional safety factor and minimizes possible damage to adjacent equipment. Control rods are always required in unanchored systems.

CONTROL RODS FOR EXPANSION JOINTS

INSTALLATION AND MAINTENANCE INSTRUCTIONS

CONTROL RODS MOUNTING INSTRUCTIONS

- Anchors are required whenever a piping system changes direction. Expansion joints should be located as close as possible to anchor points. If an anchoring system is not used, it is recommended that control rods be installed on the expansion joint to prevent excessive movement from occurring due to pressure thrust in the line (See Figure 1).
- To determine end thrust, multiply thrust factor by operating pressure of system. This is the end thrust in PSIG.
- Vacuum rating is based on installed length, without external load. Product should not be installed "extended" on vacuum applications.
- Joints must be precompressed approximately 1/8" to 3/16" in order to obtain a correct installed face-to-face dimension. During installation, the precompression should not exceed 3/16" (5 mm).
- The alignment of the piping system should be adjusted and secured with fixation points as close as possible on each side of the expansion joint at a distance less than three times the pipe's nominal diameter.
- These fixation points must be installed when mounting an expansion joint with control rods or an elbow pipe. If there is considerable distance between two fixation points, guiding points can be installed in order to support and guide the pipe (cf. installation scheme).
- Before installation, check the interior, exterior and flange faces of the expansion joint for cuts and gouges.
- When installing, make sure that the rubber expansion joints do not support compression or extension due to the weight of the upstream or downstream pipe.
- When installing the rubber expansion joint, make sure that the connector is not twisted (especially for Series AUM).
- Mounting order: (1) upstream pipe – anchor, (2) downstream pipe – anchor, (3) expansion joint.
- Verify that the upstream and downstream pipe alignment does not deviate more than 1/8" (3 mm) and that the expansion joint does not support heavy weight.
- To prevent damage to the expansion joint surface, verify that the surfaces, coming in contact with the expansion joint, are clean and without cutting edges (pipe).
- Avoid direct contact with the expansion joint rubber surface by inserting the bolts on the arch side of the joint.
- If welding is carried out within close range, cover or dismount the expansion joint.
- Do not paint or coat the joint with insulation.
- Store the joint in a flat position avoiding humidity and extreme temperatures.
- Bolt tightness should be checked daily within the first month after services and checked periodically.

NOTES: