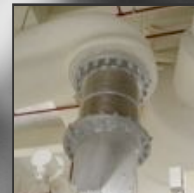


Multipurpose Expansion Joints



Certificate Number
08-HS396968/1-PDA

ABS Product Type Approved For Marine and Offshore Applications



Multipurpose Expansion Joints - 150 PSI 2" through 12" I.D.

Qualifies for:

- Class 2 & 3 of ABS Pressure Ratings
- Steel Vessel Rules 2008
- Steel Vessel Under 90 Meters
- Mobile Offshore Drilling Units 2008
- Fixed Platform

ABS Expansion Joint Features

- ABS Approved
- Designed for Long Service Life
- Standard and Customized Lengths
- Greatest Axial and Lateral Movement Capabilities
- T321 and T316 Stainless Steel Alloys
- ISO 9001:2000 Registered Quality System
- ASME IX Certified Welders
- Standard and Customized End Connections

ABS Expansion Joint Applications

- ABS Class 2 & 3 Piping Systems
- Shipbuilding
- Gas Turbines
- Power Generation
- OEM Replacement Engine Parts
- Workboat and Barge Repair
- Offshore Drilling Platform
- Bulkhead Seals
- Multiple Marine Applications



HOSE MASTER Inc.

1233 East 222nd Street • Cleveland, Ohio 44117
(800) 221-2319 • Fax: (216) 481-7557 • www.hosemaster.com
Locations: **Cleveland • Houston**

ISO 9001 : 2000
Registered Quality System



150 PSI Multipurpose Expansion Joint Products 150 PSI

Variable Skirt* Lengths (*skirt, cuff and tangent are defined as the straight un-convoluted portions at the end of the bellows)
 Hose Master offers variable skirt lengths on pre-engineered expansion joints - allowing any overall length (OAL) up to a 1/8 in. of the next pre-engineered length.

Pipe Size (in)	OAL			Total Movement		Spring Rates	
	Bellows Live Length OAL (in)	150# Fixed or Floating Plate Flanges OAL (in)	Weld Nipples OAL (in)	Axial (in)	Lateral (in)	Axial (lbs/in)	Lateral (lbs/in)
2	1.000	3.125 to 3.750	4.000 to 4.625	0.188	0.029	719	7394
	1.750	3.875 to 4.000	4.750 to 4.875	0.375	0.063	440	1476
	2.000	4.125 to 4.500	5.000 to 5.375	0.313	0.063	995	2592
	2.500	4.625 to 5.125	5.500 to 6.000	0.500	0.125	317	522
	3.125	5.250 to 6.000	6.125 to 6.875	0.563	0.188	370	390
	4.000	6.125 to 6.625	7.000 to 7.500	0.625	0.313	432	278
	4.625	6.750 to 7.500	7.625 to 8.375	0.688	0.375	522	245
	5.500	7.625 to 8.250	8.500 to 9.125	0.750	0.500	587	201
2.5	1.125	3.500 to 4.250	4.125 to 4.875	0.250	0.031	787	10287
	2.000	4.375 to 5.000	5.000 to 5.625	0.313	0.063	1078	4421
	2.750	5.125 to 5.875	5.750 to 6.500	0.625	0.125	341	747
	3.625	6.000 to 6.875	6.625 to 7.500	0.688	0.250	414	518
	4.625	7.000 to 7.500	7.625 to 8.125	0.750	0.313	490	420
	5.250	7.625 to 8.750	8.250 to 9.375	0.813	0.375	566	337
	6.500	8.875 to 10.125	9.500 to 10.750	1.063	0.688	813	316
	3	1.375	3.875 to 4.125	4.625 to 4.875	0.313	0.031	1001
1.750		4.250 to 4.625	5.000 to 5.375	0.438	0.031	818	6334
2.250		4.750 to 5.500	5.500 to 6.250	0.500	0.063	599	2749
3.125		5.625 to 6.375	6.375 to 7.125	0.750	0.188	427	1017
4.000		6.500 to 7.000	7.250 to 7.750	0.813	0.250	451	655
4.625		7.125 to 7.625	7.875 to 8.375	0.913	0.080	436	497
5.250		7.750 to 8.625	8.500 to 9.375	1.250	0.500	607	512
6.250		8.750 to 9.875	9.500 to 10.625	1.313	0.688	718	426
7.500	10.000 to 11.000	10.750 to 11.750	1.500	0.938	839	343	
4	1.500	4.250 to 5.000	4.625 to 5.375	0.313	0.031	1239	19694
	2.375	5.125 to 5.500	5.500 to 5.875	0.500	0.063	743	4709
	2.875	5.625 to 6.000	6.000 to 6.375	0.625	0.063	757	3301
	3.375	6.125 to 7.250	6.500 to 7.625	0.750	0.125	531	1667
	4.625	7.375 to 8.250	7.750 to 8.625	0.938	0.250	498	937
	5.625	8.375 to 9.375	8.750 to 9.750	1.250	0.500	710	804
	6.750	9.500 to 10.875	9.875 to 11.250	1.375	0.625	844	663
	8.250	11.000 to 12.250	11.375 to 12.625	1.500	0.875	913	480
5	1.750	4.750 to 5.625	6.500 to 7.375	0.313	0.031	2225	41387
	2.750	5.750 to 6.875	7.500 to 8.625	0.688	0.063	713	5362
	4.000	7.000 to 7.250	8.750 to 9.000	0.813	0.125	953	3393
	4.375	7.375 to 8.000	9.125 to 9.750	1.000	0.188	740	1987
	5.125	8.125 to 9.750	9.875 to 11.500	1.063	0.250	741	1608
	6.875	9.875 to 11.000	11.625 to 12.750	1.375	0.500	1348	1624
	8.125	11.125 to 12.875	12.875 to 14.625	1.625	0.688	1140	984
	10.000	13.000 to 14.750	14.750 to 16.500	2.000	1.000	1466	841
6	1.750	5.000 to 6.000	6.375 to 7.375	0.313	0.028	2603	66529
	2.875	6.125 to 7.125	7.500 to 8.500	0.563	0.063	1562	14790
	4.000	7.250 to 7.500	8.625 to 8.875	0.813	0.125	1100	5389
	4.375	7.625 to 8.250	9.000 to 9.625	0.938	0.188	877	3231
	5.125	8.375 to 9.375	9.750 to 10.750	1.000	0.188	868	2586
	6.250	9.500 to 11.250	10.875 to 12.625	1.250	0.313	710	1423
	8.125	11.375 to 12.500	12.750 to 13.875	1.625	0.625	1207	1440
	9.375	12.625 to 13.875	14.000 to 15.250	1.875	0.813	1069	957
8	2.000	5.625 to 6.750	6.625 to 7.750	0.375	0.031	2356	76479
	3.250	6.875 to 7.375	7.875 to 8.375	0.688	0.063	1414	17379
	3.875	7.500 to 8.125	8.500 to 9.125	0.813	0.063	1192	9316
	4.625	8.250 to 9.375	9.250 to 10.375	1.000	0.125	1010	6129
	5.875	9.500 to 11.250	10.500 to 12.250	1.250	0.250	786	2955
	7.750	11.375 to 12.625	12.375 to 13.625	1.750	0.438	1311	2845
	9.125	12.750 to 14.375	13.750 to 15.375	2.063	0.625	1110	1737
	10.875	14.500 to 16.250	15.500 to 17.250	2.125	0.813	1464	1626

• Angular movement for all designs is 5 degrees.

• EJMA cycle life 10,000 non-concurrent.

150 PSI

Multipurpose Expansion Joint Products

150 PSI

Variable Skirt* Lengths (*skirt, cuff and tangent are defined as the straight un-convoluted portions at the end of the bellows)
 Hose Master offers variable skirt lengths on pre-engineered expansion joints - allowing any overall length (OAL) up to a 1/8 in. of the next pre-engineered length.

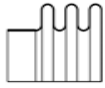
Pipe Size (in)	OAL			Total Movement		Spring Rates	
	Bellows Live Length OAL (in)	150# Fixed or Floating Plate Flanges OAL (in)	Weld Nipples OAL (in)	Axial (in)	Lateral (in)	Axial (lbs/in)	Lateral (lbs/in)
10	2.250	6.250 to 7.625	7.375 to 8.750	0.438	0.031	3089	122185
	3.750	7.750 to 8.250	8.875 to 9.375	0.750	0.063	1853	26392
	4.375	8.375 to 9.000	9.500 to 10.125	0.938	0.063	1303	13390
	5.125	9.125 to 9.750	10.250 to 10.875	1.063	0.125	1327	10119
	5.875	9.875 to 10.500	11.000 to 11.625	1.063	0.180	1625	9269
	6.625	10.625 to 12.500	11.750 to 13.625	1.438	0.250	1032	4707
	8.625	12.625 to 14.250	13.750 to 15.375	2.250	0.563	1052	2835
	10.375	14.375 to 15.875	15.500 to 17.000	2.438	0.688	1321	2480
12	12.000	16.000 to 17.625	17.125 to 18.750	2.563	0.875	1363	1896
	2.500	7.000 to 8.500	6.375 to 7.875	0.563	0.031	2853	127109
	4.125	8.625 to 10.250	8.000 to 9.625	0.875	0.063	2079	34026
	5.875	10.375 to 11.750	9.750 to 11.125	1.250	0.125	1332	11166
	7.375	11.875 to 13.875	11.250 to 13.250	1.688	0.250	952	4876
	9.500	14.000 to 16.125	13.375 to 15.500	1.875	0.438	1002	3088
	11.750	16.250 to 18.500	15.625 to 17.875	2.750	0.750	1366	2752
	14.125	18.625 to 20.750	18.000 to 20.125	3.000	0.875	2079	2899



In addition to the products highlighted here, Hose Master Inc. designs and manufactures custom and specialty expansion joints for any application. Please consult Hose Master's Customer Service Department for details.

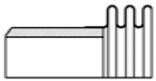


Expansion Joint Fitting and Liner Options



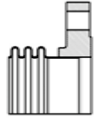
Banded Bellows

Ideal for slipping over pipe and welding in place or into a flange. They are available in 321 or 316 stainless steel.



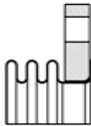
Weld Nipples

Weld ends are beveled to facilitate pipe-to-pipe welding. They are available in all commonly available schedules in carbon steel, 304, and 316 stainless steel alloys.



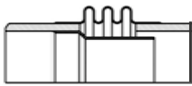
Fixed Flange

Fixed flanges are recommended for ease of replacement. They require correct bolt hole alignment. They are available in carbon steel, 304, and 316 stainless steel.



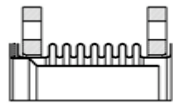
Floating Flange

A floating flange is an economical solution for piping systems with misaligned bolt holes. They are available in carbon steel, 304, and 316 stainless steel.



Single Welded Liner

Single Welded Liners are the most common type of internal liner and offer maximum durability on flange and weld end expansion joints. Welded liner is fixed. Liner alloy matches bellows alloy.



Single Drop-In Liner

Single Drop-In Liners are a standard option on floating "Vanstone" flanges. They are also available on Fixed Flanges. Liner alloy matches bellows alloy. Drop-In-Liner ring is 304 for 321 bellows and liner material and 316 for 316 bellows and liner material. Liner can be removed for cleaning. Add 1/4" to OAL for Liner. Gaskets for Drop-In-Liners are **not** included. A 1/16" gasket allowance is provided.

Expansion Joint Design Information

Company Name _____ Contact Name _____

Date _____ Contact Phone Number _____

Quantity _____ Nominal Diameter (in/mm) _____

Bellows Material (321 / 316) _____

End Fittings: Fitting 1 _____

Fitting 2 _____

Flow Direction (ONLY if using liner) _____

Axial Movement (in/mm) _____ Axial Spring Rate (lbs/in) _____

Lateral Movement (in/mm) _____ Lateral Spring Rate (lbs/in) _____

Tie Rods (Yes / No) _____

Limit Rods (Yes / No) _____

Protective Cover (Yes / No) _____

Distributed By

Upon completion please fax request to (216) 481-7557
or e-mail to insidesales@hosemaster.com



HOSE MASTER Inc.

1233 East 222nd Street • Cleveland, Ohio 44117
(800) 221-2319 • Fax: (216) 481-7557 • www.hosemaster.com
Locations: **Cleveland • Houston**

ISO 9001 : 2000
Registered Quality System

