

North American Laminated Expansion Joints

Bulletin 8782A

8782A Flanged, Expansion Joints are for use on low pressure air and exhaust. They allow for deviation in pipe length and provide protection to pipe and equipment from stresses caused by vibration and thermal expansion.

A standard version (8782A-C) and a high temperature version (8782A-S) are available. The 8782A-C can be special ordered with a corrosion resistant epoxy coating (8782A-E) for use in applications that are corrosive to 321 stainless steel.

Expansion joints are designed for axial movements. The standard lengths offered allow for 4" compression movement, 2" extension movement.

8782A have fabricated steel flat faced flange ends and are offered in pipe sizes from 4" to 30". ANSI class 150 type drilling fixed (or floating) fabricated flange ends are available in all sizes. A floating flange allows one flange end to be rotated to simplify installation and easily align bolt holes with a mating flange without imposing torque on the expansion joint. RPM "type" fabricated flanges are available in pipe sizes from 8" to 30" and are also offered as a fixed (or floating) flange.

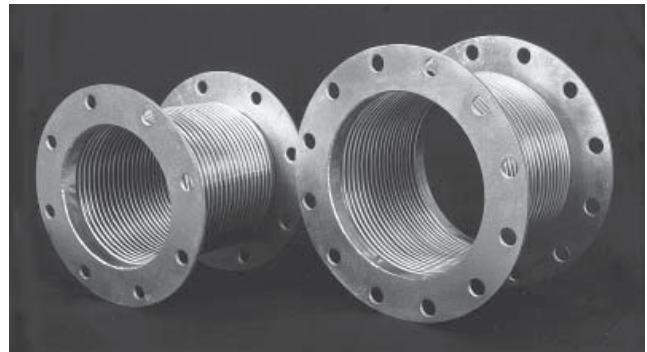
8782A expansion joints can be ordered with both flange ends having the same drilling pattern, ANSI both ends or RPM both ends. They can also be ordered with mixed drilling pattern ends, ANSI one end and RPM one end. When an ANSI type floating flange is selected for one end, the other flanged end will be a fixed flange whether it is ANSI or RPM.

SPECIFICATIONS

Temperature Ratings

- 8782A-C** (standard) series are for use up to 700 F service.
- 8782A-S** (high temp) series are for use up to 1250 F service.
- 8782A-E** (corrosion resistant) epoxy coated series are limited for use up to 250 F service

Minimum Service Temperature: -50 F.



Materials of Construction

All 8782A expansion joints are fabricated from one-ply, corrugated 321 SST (4" to 6" - .012" thick, 8" - .016" thick and 10" to 30" - .022" thick), rolled and welded (unbraided) tubing with fabricated flanges at each end.

The standard **8782A-C** and **8782A-E** have carbon steel flanges.

The **8782A-S** high temp series have 304 SST flanges.

ANSI and RPM flanges are flat faced so use flat face companion flanges and full face gaskets when installing this equipment. Raised face flanges and ring gaskets may damage expansion joint flange ends. FLOATING flanges have a stub end and a flange and are considered raised face so ring gaskets (raised face type) should be used.

SERVICE

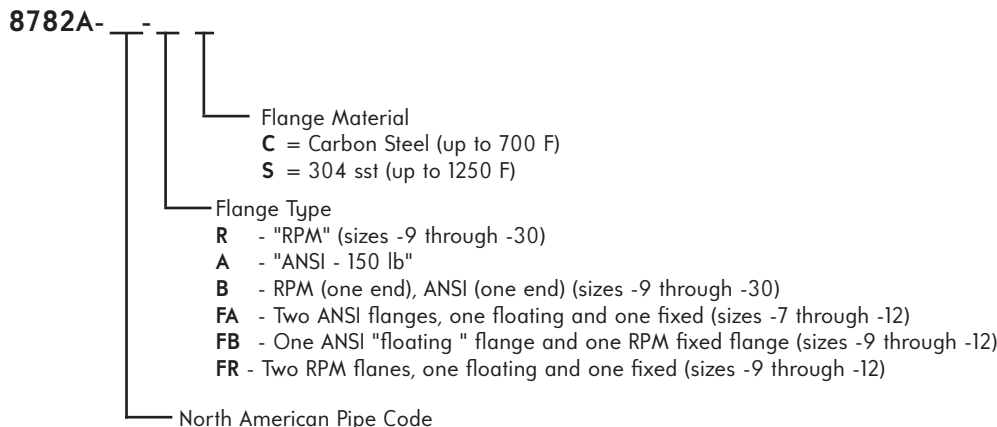
8782A expansion joints used on low pressure air and exhaust are applicable for the majority of combustion systems and when installed and used properly can last many years. Life expectancy will vary per application and is dependent upon variables such as installation technique, temperature, pressure, movement, vibration, cycle count, external damage, fluid type, and the amount of corrosives in the fluid.

The corrosion resistance of the 321 SST material must be considered when exposure to "dirty" gases is possible. The products of combustion from fluxed aluminum melters contain water vapors, chlorides and fluorides and are known to attack the uncoated 321 SST expansion joints when used in such applications - for which the 8782 -"E" epoxy coated expansion joints are appropriate. Care should be taken not to compromise the epoxy coating during installation and handling.

In applications that are highly corrosive and are also combined with high service temperatures that exceed the maximum 8782A-E service temperature of 400 F, special expansion joints made from Hastelloy C-276 corrugated tubing with special lap joint 304 stainless steel plate flanges can be special ordered.

ORDERING INFORMATION

To order, specify:



Examples: 8782A-14-RC 14" Flanged One Ply Expansion Joint with nipples and carbon steel RPM pattern flanges.
8782A-10-FAS 10" Flanged One Ply Expansion Joint with ANSI pattern sst flanges, one floating.

PRESSURE RATINGS and PERFORMANCE

The standard lengths offered allow for 4" compression movement and 2" extension movement except the -7 and -8 sizes which allow 2" compression movement and 1" extension movement. These products are not intended for use with offset pipe or torsional movements.

Adjacent piping must support the axial forces generated by the internal pressure acting on the effective thrust area. Maximum working pressure is equal for positive pressure or vacuum service.

Pressure drop through an 8782A expansion joint is approximately three times that in comparable size and length of standard steel pipe.

Maximum working pressure varies with pipe size and service temperature. See Table.

*For higher pressure applications see **8773 braided metal hose**.*

Maximum Working Pressure, psig

Pipe Code	70 F	500 F	1250 F	Effective Area (sq. in.)
7	5	3	2.5	20
8	5	3	2.5	39
9	5	3	2.5	68
10	5	3	2.5	108
12	5	3	2.5	149
14	9.5	5.7	5	177
16	8.7	5.3	4.7	227
18	6.7	4	3.6	284
20	7.9	4.8	4.3	346
24	8.4	5.1	4.6	415
26	9.7	5.9	5.3	491
30	11	6.7	6	574

DIMENSIONS (inches)

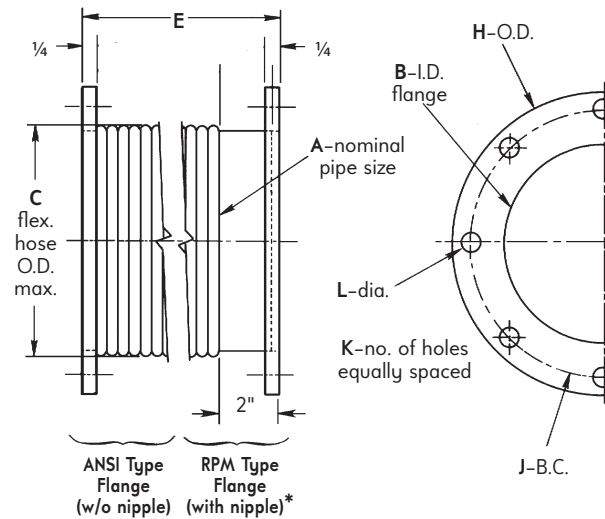


Table 2

Designation	A	B	C	Type 'RPM' Flange Pattern					wt, lb	Type '150 ANSI' Flange Pattern					wt, lb	Type 'B'†	
				E _R	H _R	J _R	K _R	L _R		E _A	H _A	J _A	K _A	L _A		E _b	wt, lb
8782A-7- —	4	4 ⁹ / ₁₆	5 ¹ / ₁₆	—	—	—	—	—	—	12	9	7 ¹ / ₂	8	3/4	13	—	—
8782A-8- —	6	6 ¹ / ₁₆	7 ¹ / ₁₆	—	—	—	—	—	—	12	11	9 ¹ / ₂	8	7/8	15	—	—
8782A-9- —	8	8 ¹ / ₁₆	10 ³ / ₁₆	14	11	10	8	5/8	21	14	13 ¹ / ₂	11 ³ / ₄	8	7/8	18	14	17
8782A-10- —	10	10 ¹ / ₁₆	12 ⁵ / ₁₆	14	14	12 ¹ / ₄	12	3/4	29	14	16	14 ¹ / ₄	12	1	23	14	22
8782A-12- —	12	12 ¹ / ₁₆	14 ⁵ / ₁₆	14	16	14 ¹ / ₄	12	3/4	35	14	19	17	12	1	30	14	29
8782A-14- —	14	14 ¹ / ₈	16 ³ / ₈	14	18	16 ¹ / ₄	12	3/4	59	14	21	18 ³ / ₄	12	1 ¹ / ₈	43	14	42
8782A-16- —	16	16 ¹ / ₈	18 ¹⁹ / ₃₂	14	21 ¹ / ₄	19 ¹ / ₄	16	3/4	51	14	23 ¹ / ₂	21 ¹ / ₄	16	1 ¹ / ₈	49	14	48
8782A-18- —	18	18 ¹ / ₈	20 ¹⁷ / ₃₂	14	23 ¹ / ₄	21 ¹ / ₄	16	3/4	49	14	25	22 ³ / ₄	16	1 ¹ / ₄	47	14	46
8782A-20- —	20	20 ¹ / ₈	22 ¹⁵ / ₃₂	14	25 ¹ / ₄	23 ³ / ₈	20	3/4	56	14	27 ¹ / ₂	25	20	1 ¹ / ₄	54	14	53
8782A-24- —	24	24 ¹ / ₈	26 ³ / ₈	14	30	27 ³ / ₄	20	3/4	68	14	32	29 ¹ / ₂	20	1 ³ / ₈	66	14	65
8782A-26- —	26	26 ¹ / ₈	28 ³ / ₈	14	32	29 ³ / ₄	24	7/8	74	14	34 ¹ / ₄	31 ³ / ₄	24	1 ³ / ₈	72	14	71
8782A-30- —	30	30 ¹ / ₈	32 ¹ / ₄	14	36	33 ³ / ₄	28	7/8	80	14	38 ³ / ₄	36	28	1 ³ / ₈	78	14	77

* Due to the smaller bolt circle of RPM flanges a 2" long nipple is used for bolt hole clearance.
† ANSI flange on one end with RPM flange and nipple on other end.

DIMENSIONS SHOWN ARE SUBJECT TO CHANGE. PLEASE OBTAIN CERTIFIED PRINTS FROM FIVES NORTH AMERICAN COMBUSTION, INC. IF SPACE LIMITATIONS OR OTHER CONSIDERATIONS MAKE EXACT DIMENSION(S) CRITICAL.

WARNING: Situations dangerous to personnel and property may exist with the operation and maintenance of any combustion equipment. The presence of fuels, oxidants, hot and cold combustion products, hot surfaces, electrical power in control and ignition circuits, etc., is inherent with any combustion application. Parts of this product may exceed 160F in operation and present a contact hazard. Fives North American Combustion, Inc. urges compliance with National Safety Standards and Insurance Underwriters' recommendations, and care in operation.



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