



Expansion Joint Specification Sheet

Primary Information

Quantity: _____ Size Ø: _____
Length (in./mm.): _____ (hot___ or cold ___)
Configuration: Single___ Dual Anchor Base___
Universal___ Hinge___ Gimbal___
Pressure Balanced___ Ball___ Slip___ Hose___
Pressure: Design: ___ Op. ___ (psig ___ or ___)
Temperature: °F. _____ °C. _____ °K. _____
System Location: Hanging___ Ground___
Tunnel___ Pipe Rack___ Other___
Service: (select those that apply)
Thermal Expansion___
Stress Reduction___
(including seismic or settling)
Vibration___ (which plane___)
(RPM___ frequency___ amplitude___)
Motions: (values in inches or millimeters)
Compression: _____
Extension: _____
Lateral: _____
Angular: _____
Torsional: _____ (ball & slip joints)
Media flowing through joint: _____
Flow Velocity___(fps, fpm, cfm, scfm)
System materials of Construction: _____
Pipe___ Wall thickness___
Duct___ OD___ or ID___
End fittings:
Flanges: ___ Rating___ Type___
Fixed___ Rotating___ Grade___
Weld Ends: ___ Sch. ___ Grade___
Grooved Ends: ___ Sch. ___ Grade___
Square cut pipe or duct: _____
Other: _____
Orientation: Horizontal ___ Vertical ___
Options: Rods___ Liner___ Shroud___
Anchor Base___ (main___ intermediate___)
Limit Stops___ Pantograph Linkage___

Additional Information

Specification: ___ (EJMA, ASME: B31.1, B31.3,
B31.5, B31.9, Section VIII; PED/CE, CRN, ASTM
F1120, GOST, API, other___)
New: ___ or Replacement: ___
Delivery date required: _____
Current manufacturer: _____
Current part number: _____
Current life/Comments: _____
Frequency of system cycling: _____
Special test pressure: psig _____ or _____
Special spring rates and effective area desired:
Effective Pressure Area: _____ sqr. in.
Axial (Comp. or Ext.): _____ lbs./in.
Lateral: _____ lbs./in.
Angular: _____ in.-lbs./degree
Torsional: _____ in.-lbs./degree
Special paint/coating: _____
(Enamel: High Temp Aluminum & Gloss Black std.)
Special surface preparation: _____
Special packaging: _____ export crate___
Carrier: _____ Terms: _____ Divy: _____
History, Quality Information, Additional Needs:

COMPANY: _____
NAME: _____
PHONE: _____
EMAIL: _____

(Rev F)

General Considerations

- 1. Do not use pressure thrust force inducing expansion joints on hanging, rack, or rooftop mounted piping systems.** The available structures cannot typically react pressure forces. Low-pressure air and exhaust systems excepted.
- 2. Steam requires internal flow liners.** EJMA requires liners when flow exceeds 25 feet per second on gas and 10 feet per second on liquids. Steam flows around 100 feet per second.
- 3. Use slip and/or ball joints when water hammer is suspected.** Water hammer can increase system pressures 9 to 29 times the operating pressure at time of occurrence. Bellows and hose assemblies have an approximate 4 to 1 burst factor. Slip and ball joints are much stronger than bellows.
- 4. Always get the flow velocities, especially on lines carrying compressed air or other gasses.** Frequently, these services require special liner thickness because of very high (300 to 700 feet per second) flow rates. Standard EJMA liners are rated to 100 feet per second. Use ball joints or slip joints on very high velocities.
- 5. Safety Relief Valves and ultra-high velocity vent lines need thick liners.** These systems can flow supersonically--over 1127 feet per second. Pipe liners, not reducing in bore are common. Ball Joints are best, then the 3500SRV. Consult the factory for this service.
- 6. Series 4500 straight connectors should be installed perpendicular to the vibration or thermal motions.** Braided straight connectors cannot absorb axial motion.
- 7. Anchor connector applications for best vibration reduction.** Most systems do not anchor piping near the connector. Anchors greatly assist in reducing vibration and noise transmission through the piping.
- 8. Advise factory equipment RPM on vibration applications** especially if there is a history of connector problems. Bellows natural frequencies can be designed to avoid equipment frequencies on pumps, compressors, blowers, fans, engines, etc. If bellows and equipment frequencies coincide, bellows may fail immediately.
- 9. Use laminated bellows on vibration applications.** Three-ply bellows allow greater deflection without fatigue. Multi-ply bellows typically last 4 to 100+ times longer in vibration service.
- 10. Use laminated bellows on high cycling applications.** Three-ply bellows typically offer three to one hundred times the cycle life of single-ply bellows on thermal expansion applications.
- 11. Series 3500 & 6500 drain ports are not large enough to trap pipe runs.** These ports allow draining of the expansion joints or small traps for condensate from the joint only. System traps should be located just upstream of expansion joints if practical and sized per system requirements.
- 12. Series 4500 V-Flex connectors should have the center elbow supported when located above the 5 and 7 O'clock positions.**
- 13. Consider the 5500 series for short axial motion requirements.** Popular sizes are usually in stock.
- 14. Consider ball joints for applications with torsion.** Metal bellows typically can accept only very small amounts of torsion, generally less than 0.02 degrees.
- 15. Tank Settlement should use multiplane connectors** such as Ball Joints, Gimbal Joints, or V-Flex Connectors without pressure thrust. Ball Joints are best, as they accept torsion.

(Rev I)