BULLETIN NO. 4005
JUNE, 2017

PureFlex®
an ANDRONACO INDUSTRIES company

BlueLine™

Blueline™ is a trademark of PUREFLEX INC.

INSTALLATION INSTRUCTIONS

INSPECTION

After inspection, return the BlueLine to its carton until time for installation so that the white PTFE flares at each end (which act as gaskets) will remain flat.

FLARES

During installation, protect the PTFE flares from abrasion, cutting, paint, welding splatter, etc.

BOLT TIGHTENING

When installing flanged BlueLine's, prevent over-tightening by limiting bolt torque to:

IPS	Torque ft. - lbs.	IPS	Torque ft. - lbs.	IPS	Torque ft. - lbs.	IPS	Torque ft. - lbs.
½	**5**	2	**25**	5	**40**	14	**70**
¾	**5**	2½	**30**	6	**45**	16	**65**
1	**10**	3	**40**	8	**60**	18	**90**
1¼	**10**	3½	**25**	10	**50**	20	**80**
1½	**15**	4	**30**	12	**60**	24	**90**

ANCHORING

Most fluid conducting systems are subject to a variety of forces such as thermal, mechanical, and hydraulic, which produce unwanted pipe movement. Safe installation of BlueLine's and similar devices of rubber, metal, and plastic requires that the components to which they are connected be anchored, guided, or otherwise restrained so that these forces do not flex or distort the BlueLine or similar device beyond the limits for which it was designed. The limits for BlueLine's are shown on the other side of this sheet. It is also important to remember, that when a BlueLine or similar device is pressurized internally it tends to expand. This expanding force can be great enough to create unsafe stresses. If pipe movement caused by forces in the piping system or by the BlueLine itself is not provided for, please consult your design engineer or PureFlex before installation.

DANGER

Safety shield must be wrapped around expansion joint at all times to protect against serious personal injury if expansion joint fails.

Liner sleeve must be placed inside expansion joint if abrasives or sharp edged solids are present. Removal of liner sleeve can result in expansion joint failure and personal injury. Liner sleeve sealing flare must be installed upstream.

Do not exceed pressure/temperature ratings per BlueLine Product Brochure (*www.pureflex.com/PDF/BlueLine.pdf*)

Follow sound installation procedures: see ASME B31.3 Code for Pressure Piping, Chemical Plant and Refinery Piping.

FAILURE TO FOLLOW ABOVE RECOMMENDATIONS CAN CAUSE EXPANSION JOINT FAILURE AND PERSONAL INJURY OR DEATH.

VERTICAL PIPE SUPPORT

Provide support for vertical piping at any point where the weight of the piping might cause the BlueLine to be flexed beyond the limits shown on the other side of this sheet.

ALIGNMENT

For greatest BlueLine life, keep misalignment to a minimum. Maximum limits are shown on the other side of this sheet.

FLANGE SPACING

Piping systems should be designed so that when BlueLine's are bolted in place, and before the system is put on stream, their lengths from contact face to contact face are as close as practical to the normal lengths shown on the other side of this sheet.

MAINTENANCE

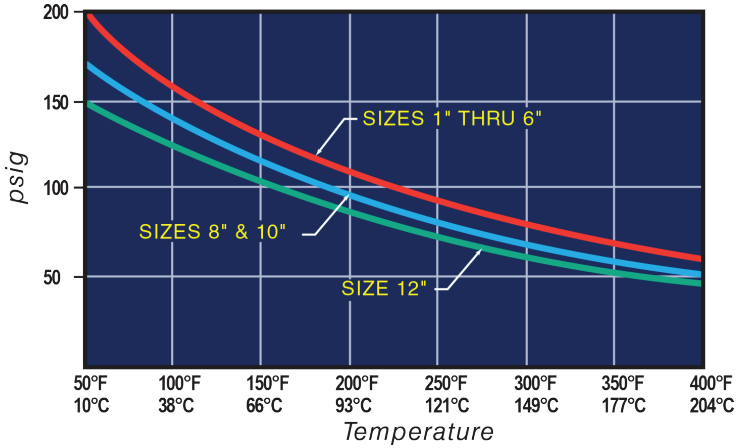
No maintenance is necessary. It is recommended, however, that BlueLine's be inspected at appropriate intervals to determine whether they have reached the limits of flexure shown on the other side of this sheet. If one or more of the Limitbolts® is in tension, or if the convolutions are touching each other, the limit of flexure has been reached, and stresses being generated elsewhere in the system are threatening failure. Steps should be taken immediately to relieve them.

BlueLine™
Travel & Operating Limits

Flexible Couplings (2 Convolutions)

Nom. Size	Neutral Length **A**	Maximum Travel + or -	Flare Diameter **B**	Maximum Misalignment	Weight Lbs.
1”	1-5/16”	1/4”	2”	1/8”	2.6
1-1/2”	1-1/2”	1/4”	2-7/8”	1/8”	3.9
2”	1-7/8”	1/4”	3-5/8”	1/8”	7.8
2-1/2”	1-15/16”	5/16”	4-1/8”	1/8”	10.8
3”	2-7/16”	3/8”	5”	3/16”	13.1
4”	2-5/8”	1/2”	6-3/16”	1/4”	18.2
5”	3-1/16”	11/16”	7-5/16”	1/4”	22.4
6”	2-13/16”	1/2”	8-1/2”	1/4”	27.7
8”	3-11/16”	13/16”	10-5/8”	1/4”	41.0
10”	4”	1”	12-3/4”	1/4”	60.1
12”	4-1/8”	1”	15”	1/4”	89.7

Maximum Operating Pressure vs. Temperature (2 Convolutions)



PureFlex®
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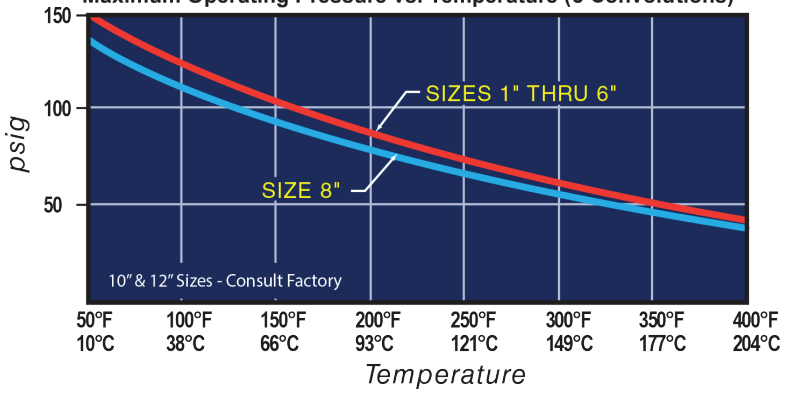
Expansion Joints (3 Convolutions)

Nom. Size	Neutral Length **A**	Maximum Travel + or -	Flare Diameter **B**	Maximum Misalignment	Weight Lbs.
1”	1-13/16”	1/2”	2”	1/4”	2.7
1-1/2”	2”	1/2”	2-7/8”	1/4”	4.1
2”	2-3/4”	3/4”	3-5/8”	3/8”	8.1
2-1/2”	3”	1”	4-1/8”	3/8”	11.2
3”	3-5/8”	1”	5”	1/2”	13.6
4”	3-3/4”	1-1/8”	6-3/16”	1/2”	18.9
5”	4”	1-1/8”	7-5/16”	1/2”	23.4
6”	4”	1-1/8”	8-1/2”	5/8”	29.1
8”	5-7/16”	1-11/16”	10-5/8”	5/8”	43.0

Maximum Operating Pressure vs. Temperature (3 Convolutions)



Bellows (5 Convolutions)

Nom. Size	Neutral Length **A**	Maximum Travel + or -	Flare Diam-eter **B**	Maximum Misalign-ment	Weight Lbs.
1”	2-11/16”	13/16”	2”	1/2”	2.9
1-1/2”	3-13/16”	1-1/16”	2-7/8”	1/2”	4.3
2”	3-15/16”	1-1/16”	3-5/8”	1/2”	8.7
3”	4-15/16”	1-1/16”	5”	1/2”	14.8
4”	5-3/16”	1-5/16”	6-3/16”	5/8”	20.4
6”	5-11/16”	1-9/16”	8-1/2”	5/8”	31.8

Maximum Operating Pressure vs. Temperature (5 Convolutions)