

Victaulic® Series 159 **Flexible Loop for Steam**



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⚠ WARNING



- Read and understand all instructions before attempting to install, remove, adjust, or maintain any Victaulic piping products.
- Depressurize and drain the piping system before attempting to install, remove, adjust, or maintain any Victaulic piping products.
- Wear safety glasses, hardhat, and foot protection.
- The Series 159 Flexible Loop is suitable for use in saturated steam service. Use extreme caution when working around steam systems. For complete product ratings and applications, always refer to Victaulic publication 100.13, which can be downloaded at victaulic.com.
- DO NOT impact the flexible loop, pipe, couplings, or fittings when the system is pressurized.
- The Series 159 Flexible Loop shall be installed ONLY with Series 870 Rigid Couplings and pipe or fittings that are prepared to Victaulic OGS-200 Specifications. DO NOT install the Series 159 Flexible Loop with any other coupling or with pipe/fittings that are prepared to any other groove specification.

Failure to follow these instructions may cause joint failure, resulting in death or serious personal injury and property damage.

INTRODUCTION

- The Series 159 Flexible Loop is designed to accommodate piping movement due to thermal changes, seismic activity, and building settlement and can handle movement up to the limits specified in Victaulic publication 100.13, which can be downloaded at victaulic.com. Always refer to Victaulic publication 100.13 for complete product ratings and applications.
- The system designer shall specify installation of the Series 159 Flexible Loop in an orientation that will prevent trapped condensate.

HANDLING

⚠ WARNING



- DO NOT use the shipping bar for lifting purposes.
- Remove the shipping bar AFTER the Series 159 Flexible Loop is installed (prior to hydrostatic testing).

Failure to follow these instructions may cause joint failure, resulting in death or serious personal injury and property damage.

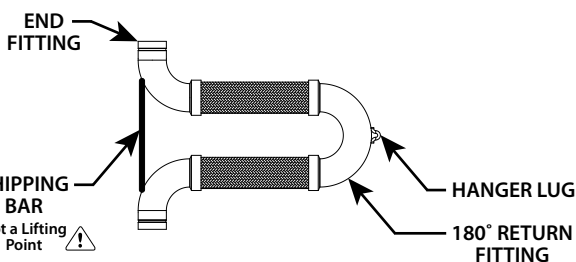
- To prevent damage to the sealing surface of the end fittings, the plastic shipping caps shall remain in place until the time of installation.
- DO NOT twist, bend, or flex the sections of flexible hose past their designed movement capabilities.

STORAGE

- Victaulic strongly recommends indoor storage of Series 159 Flexible Loops. If outdoor storage is required, the product shall be stored in the original shipping container and then covered completely with a weatherproof tarp. Failure to store the Series 159 Flexible Loop properly will result in product damage.
- The end fittings shall remain sealed with the plastic shipping caps to prevent debris from entering the flexible loop during storage. The plastic shipping caps shall remain in place until the time of installation.
- When stacking product, DO NOT support the weight of the Series 159 Flexible Loops by the sections of flexible hose. Reuse the shipping blocks to support the weight from end fitting to end fitting.

MAINTENANCE

- The Series 159 Flexible Loop does not contain serviceable components. Perform periodic visual inspections on the sections of flexible hose to verify that no damage or leaks from the corrugated hose have occurred. **NOTE:** Inspection of piping system components shall be conducted after any seismic event to verify that no braids have broken, that no weld damage/cracks have occurred, and that hangers have not broken. Any damaged components shall be replaced immediately.

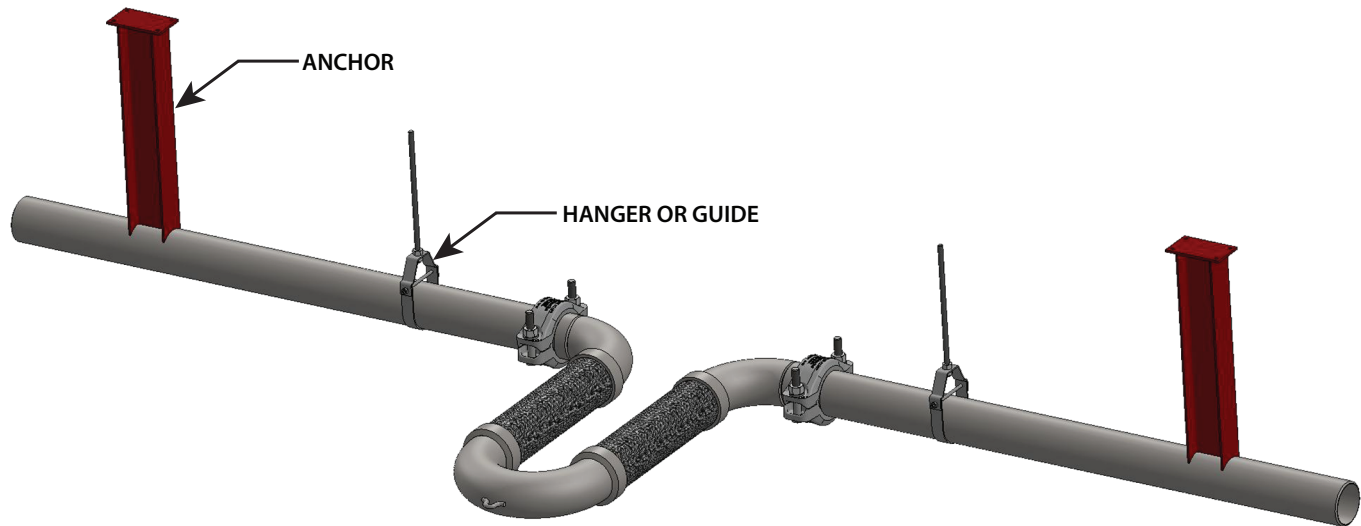


TOP VIEW INSTALLATION ORIENTATION

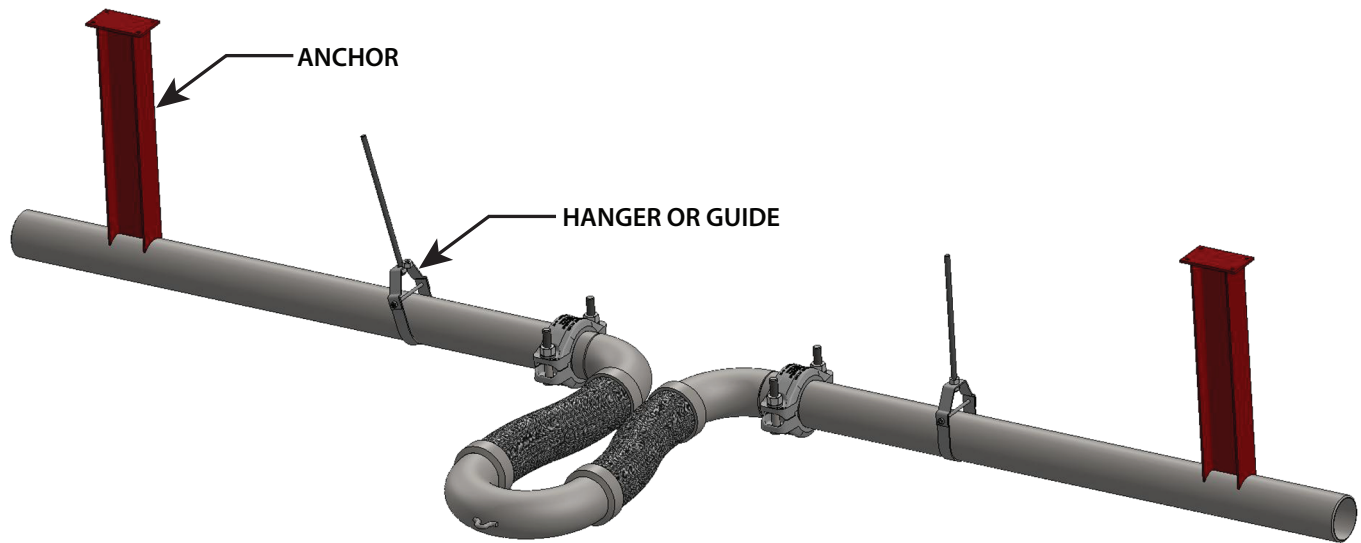
- Series 159 Flexible Loops are shipped with a bar that is welded between the end fittings in order to maintain the neutral installation position. The shipping bar shall be removed **AFTER** installation but prior to hydrostatic testing. If the shipping bar comes loose prior to installation, the installer shall use caution to ensure that the Series 159 Flexible Loop is installed in the neutral position.
- When handling a Series 159 Flexible Loop, lift only by the hanger lug or from the 180° return fitting. **DO NOT lift the Series 159 Flexible Loop from the sections of flexible hose or from the shipping bar.**

INSTALLATION

- 1. Prior to installation, check the sections of flexible hose for any damage. Verify that the outer braid is distributed evenly around the hose. Use caution to prevent anything from catching on and snagging the braid. DO NOT use a Series 159 Flexible Loop if any damage is present.
- 2. Remove the plastic shipping cap from each end fitting. To prevent damage to the sealing surface of the end fittings, DO NOT use any sharp instruments to remove the shipping caps.
- 3. Using two Series 870 Rigid Couplings, install the Series 159 Flexible Loop in the horizontal orientation between two anchors. Refer to the I-870 installation instructions for complete installation requirements. The I-870 is shipped with the coupling and can be downloaded at victaulic.com.



NOTE: The Series 159 Flexible Loop does not need to be centered between the two anchors. When installed properly, the Series 159 Flexible Loop will self equalize.



ANCHOR LOADS

Nominal Size inches/DN	Actual Out. Diameter inches/mm	Anchor Load pounds force/ Newtons
2 DN50	2.375 60.3	85 378
2½	2.875 73.0	95 423
DN65	3.000 76.1	95 423
3 DN80	3.500 88.9	100 445
4 DN100	4.500 114.3	130 578

Nominal Size inches/DN	Actual Out. Diameter inches/mm	Anchor Load pounds force/ Newtons
DN125	5.500 139.7	205 912
6 DN150	6.625 168.3	225 1001
	6.500 165.1	225 1001
8 DN200	8.625 219.1	290 1290

WELDING NEAR FLEXIBLE LOOPS

When welding in proximity to Series 159 Flexible Loops, cover the sections of flexible hose to prevent weld spatter from damaging the hose.

INSULATION

When insulation is specified, Series 159 Flexible Loops shall be insulated with flexible unicellular, mineral wool, or fiberglass insulation. DO NOT use rigid insulation on the sections of flexible hose.

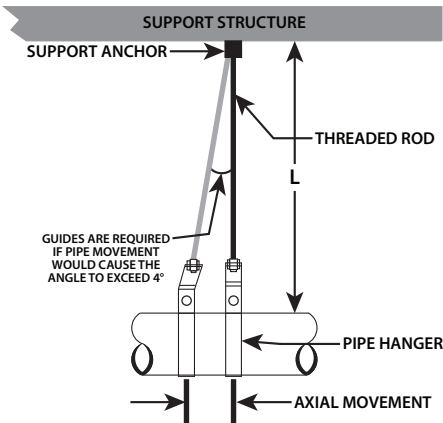
NESTED INSTALLATIONS

Contact Victaulic regarding applications that require nesting of Series 159 Flexible Loops.

GUIDING

Guides are not required as long as design parameters are not exceeded. However, since movement will be absorbed in the Series 159 Flexible Loop, Victaulic recommends using a guide on each side of the loop to ensure that the piping will remain in place.

If pipe hangers will swing more than 4° from vertical during pipe movement, guides shall be used at those locations to ensure that movement is directed as expected. A pipe guide is recommended to be installed anywhere within 15 pipe diameters on each side of the Series 159 Flexible Loop. Loops that are anchored on one side require only one guide on the traveling side.



Minimum "L" Required to Eliminate Guides	
Axial Movement inches/mm	"L" Rod Length inches/mm
1	14
25	356
2	28
51	711
4	57
102	1448

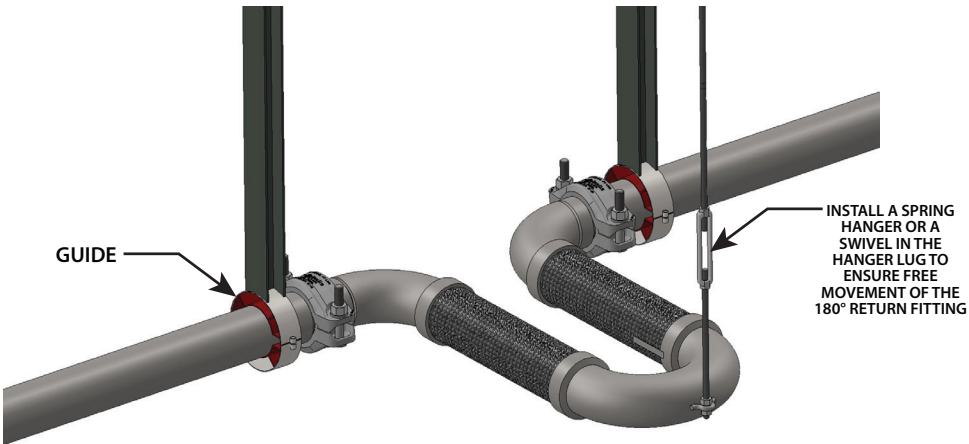
NOTE: Contact Victaulic if axial movement greater than 4 inches/ 102 mm is needed.

SUPPORTING

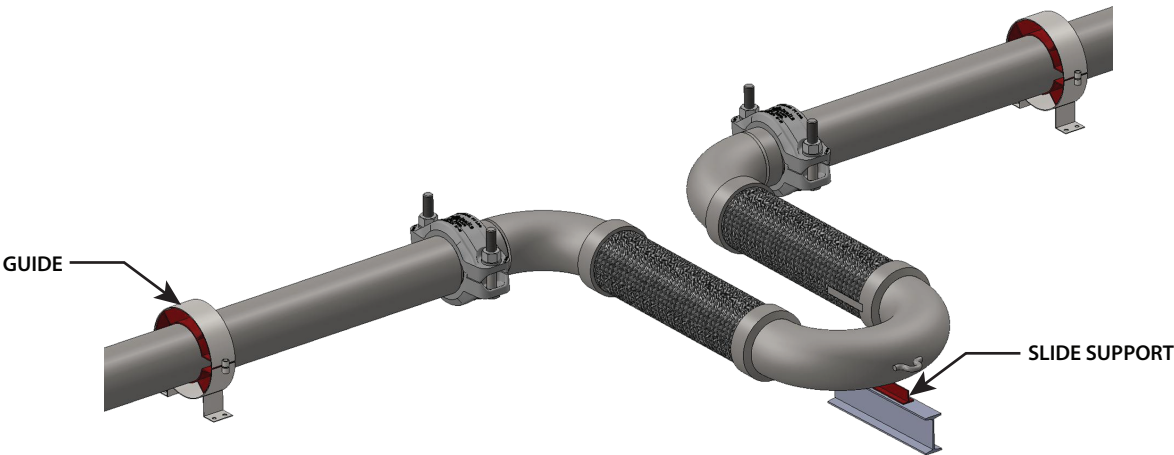
WARNING

- To prevent the Series 159 Flexible Loop from sagging and becoming a collection point for condensate, the 180° return fitting shall be supported properly in accordance with these installation instructions.
 - DO NOT support adjacent piping or equipment with a Series 159 Flexible Loop.
- Failure to follow these instructions may cause joint failure, resulting in death or serious personal injury and property damage.

The 180° return fitting shall be supported in such a way that permits lateral/horizontal movement. Install a spring hanger or a swivel from the hanger lug that is provided on the 180° return fitting, as shown below. The spring hanger or swivel shall be specified at an appropriate length to allow the 180° return fitting to move 10% of the designed movement capability of the Series 159 Flexible Loop. The Series 159 Flexible Loop's designed movement capability is +/- 4 inches/102 mm; therefore, the 180° return fitting will move 0.4 inch/10 mm. NOTE: The sections of flexible hose do not require support.



As an alternative, a slide support may be used under the 180° return fitting, as shown below.



Victaulic® Series 159 Flexible Loop for Steam

For complete contact information, visit victaulic.com

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