FREE! Tri-Flex Loop Auto-Cad Sizing Program... See inside for details!

Tri-Flex Loop
A World of Difference...
IN CRITICAL PIPING CONNECTIONS
The Tri-Flex Loop’s superior design is the only flexible pipe loop that absorbs and compensates pipe movement in six degrees of freedom. (three coordinates axes, plus rotation about those axes simultaneously.)

The multiplane movement design can reduce expansion devices required in a piping system by up to 50%. It is the safest and most reliable means of absorbing movement resulting from thermal changes and random seismic shifts in a piping system.

Simplifies Piping Design
The Tri-Flex Loop does not impose pressure thrust on the piping system. The braid is designed to take the stress of pressurization containing the core, reducing anchor loads by 93% compared to mechanical pipe loops and 98% less than expansion joints.

Tri-Flex Loops also eliminate pipe guides required by traditional pipe designs such as mechanical pipe loops or expansion joints.

Compact Design
increases useable space and reduces system cost
The Tri-Flex Loop uses 64% less space than a mechanical pipe loop, and eliminates six welds. Fewer fittings and welds can be achieved in the piping system by positioning the Tri-Flex Loop at directional changes and rotating one of the Tri-Flex elbows during manufacturing to incorporate directional change, eliminating 90° elbows in the field. It can also be designed to incorporate elevation changes in the piping system, saving space, fewer fittings and welds.

Applications
Flex-Hose Co.’s UL536 listed Tri-Flex Loop and seismic connectors are approved for compressed and combustible gases. Other common applications for the Tri-Flex Loop include steam, condenser water, hot water, domestic hot water and chilled water.

Tri-Flex Loop makes a world of difference in your critical piping connections. They are designed to handle working pressures up to 1325 psi, or full vacuum and operating temperatures of -400°F to 1500°F.

Tri-Flex Loops are manufactured with 321 (ASTM A240) grade stainless steel or bronze (ASTM C51000) grade annular corrugated close pitch metal flexible hose.

Tri-Flex Loops are available with flanged ends, steel male NPT ends, weld ends, grooved ends, copper female sweat, or press fit ends.

Passing the Test!
The Tri-Flex Loop’s superior capabilities for withstanding large and irregular movements caused by seismic activities in a piping system were proven by independent, third party testing at The New York State Center for Advanced Technology (CAT) at Rensselaer Polytechnic Institute.

The Tri-Flex Loop’s unique design of three flexible sections allow it to compensate pipe movement in six degrees of freedom (three coordinates axes, plus rotation about those axes simultaneously). It is the safest and most reliable means of absorbing movement resulting from random seismic shift.

Quality Assurance...
Precision Manufacturing
Tri-Flex Loop units are pressure tested prior to release for shipment and have a five (5) year product replacement warranty.

Tri-Flex Loops are UL Listed, CSA Certified and FM Approved and are manufacturing utilizes state-of-the-art welding technology. Flex-Hose Co. welders are ASME (American Society of Mechanical Engineers) Section IX certified.

Tri-Flex Loops are 100% dye penetrant tested at the seal welds. The seal weld joins the hose, braid, and collar. It is one of the most critical welds in the manufacturing process.

Standard Sizes
1⁄2” to 24” I.D.
Custom sizes available to 30” I.D.
Other alloys and custom styles available. Please consult factory.

Visit us on the web www.flexhose.com
The Tri-Flex Loop® Seismic Connection System meet the requirements of Chapter 17.1.1 of ASCE Standard 7-16 code for total displacement.

Applications
Flex-Hose Co.’s UL536 listed Tri-Flex Loop and seismic connectors are approved for compressed and combustible gases. Other common applications for the Tri-Flex Loop include steam, condenser water, hot water, domestic hot water, and chilled water. Tri-Flex Loop multi-plane movement simplifies piping design and reduces system installation cost by eliminating mechanical pipe loops, expansion joints, and anchor loads by 93%. The multi-plane design can reduce expansion devices required in a piping system by 50%. The UL536 listed Tri-Flex Loop makes a world of difference in your critical piping connections.

2018 International Building Code (IBC) (16.1 Scope)
Every structure, and portion thereof, including non-structural components that are permanently attached to structures and their supports and attachments, shall be designed and constructed to resist the effects of earthquake motions in accordance with Chapters 11, 12, 13, 15, 17, and 18 of ASCE 7 as applicable. The seismic design category for a structure is permitted to be determined in accordance with Section 1613 or ASCE 7.

Flex-Hose Co., Inc.’s Tri-Flex Loop provides the most complete engineering solution for the IBC’s most stringent specifications.

Tri-Flex Loop® Movement Capabilities
Tri-Flex Loop design is capable of handling the following movements simultaneously:

- **Axial Compression**
- **Axial Extension**
- **Parallel Offset “Z” Axis**
- **Non-Parallel Offset “Y” Axis**
- **Parallel Offset with “X” Axis Rotation**

Standard Sizes 1⁄2” to 24” I.D.
Custom sizes available to 30” I.D. Other alloys and custom styles available. Please consult factory.

Tri-Flex Loop stainless steel flexible loops have a UL536 listing having a nominal inside diameter from 1 to 4 inches intended for use in piping systems carrying compressed and combustible gases at pressures not exceeding 175 psi at ambient temperature.

Note: The terms compressed and combustible gases, as used herein, mean gases such as liquefied petroleum gases and manufactured and natural fuel gases.

Visit us on the web: www.flexhose.com

**Listed Tri-Flex Loop® for compressed and combustible gases** 33NB

20,000 CYCLE TESTED FOR cycles

For Fire Protection Systems

CSA standard B51 certified.

Inspected and tested by the Technical Standards and Safety Authority of Canada.

UL536 listed Tri-Flex Loop and seismic connectors are approved for compressed and combustible gases.
Tri-Flex Loop® Seismic Connectors

The Tri-Flex Loop’s superior capabilities for withstanding large and irregular movements caused by seismic activities in a piping system were proven by independent, third party testing at The New York State Center for Advanced Technology (CAT) at Rensselaer Polytechnic Institute.

The Tri-Flex Loop’s design of three flexible sections allow it to accommodate pipe movement in six degrees of freedom (three coordinates axes, plus rotation about those axes simultaneously). It is the safest and most reliable means of absorbing movement resulting from random seismic shift.

The Tri-Flex Loop is capable of accommodating seismic displacements for vertical piping between floors of the building, where pipes pass through or bridge building seismic joints. It is also used for horizontal piping across building seismic and expansion joints to accommodate the resultant drift of each building unit, or where rigidly supported pipes connect to equipment mounted on vibration isolators.

Tri-Flex Loop’s superior capabilities were proven in computer-controlled, rigorous robotic testing at The New York State Center for Advanced Technology (CAT) at Rensselaer Polytechnic Institute and are available on a DVD.

For a complimentary copy call us toll free 1-877-TRI-FLEX.

LISTED
Tri-Flex Loop® stainless steel 1”-4” for compressed and combustible gases at 175°F at ambient temperature 33NB

Tri-Flex Loop®: Saves Valuable Space

CSA standard B51 certified. Inspected and tested by the Technical Standards and Safety Authority of Canada.

FREE Auto-Cad Sizing Program Calculates Nesting of Loops!

Applications with multiple parallel pipe runs may require nesting of the Tri-Flex Loop to reduce dimensional requirements within a limited space. Any number of Tri-Flex Loops and styles may be accommodated within a nest, Tri-Flex Loops can be designed to go around obstructions i.e. building support columns, duct work, etc. If an installation requires nesting, please utilize our free Tri-Flex Loop sizing software. The necessary modifications will automatically be made in order to assure each Tri-Flex Loop is free to move as per its intended design.

Seismic Horizontal Displacement

Seismic Vertical Displacement

Insulating Tri-Flex Loop

Tri-Flex Loops can be field insulated. A flexible insulating material should be used. Caution should be taken when insulating not to impede the performance.

Traditional Nesting

Diagonal Nesting

Over/under Pipe Nesting

Visit us on the web www.flexhose.com
**Tri-Flex Loop® Expansion Loops and Seismic Connections Design Specifications**

### Tri-Flex Loop TFLSMN
- **Threaded ends** (Sch 40 Carbon Steel Male N.P.T.)
- **Length** (in.): 321.5
- **Pressure (psi)**: 125
- **Nominal Diameter**: 3/4
- **Nominal Wall Thickness**: .065
- **Nominal ID**: 1.0
- **Temperature**: 0°F to 200°F

### Tri-Flex Loop TFLSMP
- **Flanged ends** (Plate Steel Flange #150 Drilling)
- **Nominal Diameter**: 3/4
- **Nominal Wall Thickness**: .065
- **Temperature**: 0°F to 200°F

### Tri-Flex Loop TFLSWN
- **Weld ends** (Sch 40 Steel)
- **Nominal Diameter**: 3/4
- **Nominal Wall Thickness**: .065
- **Temperature**: 0°F to 200°F

### Tri-Flex Loop TFLSVG
- **Grooved ends** (Sch 40 Carbon Steel)
- **Nominal Diameter**: 3/4
- **Nominal Wall Thickness**: .065
- **Temperature**: 0°F to 200°F

### Tri-Flex Loop TFLBSW
- **Sweat ends** (Female Copper Tube Ends)
- **Nominal Diameter**: 3/4
- **Nominal Wall Thickness**: .065
- **Temperature**: 0°F to 200°F

### Tri-Flex Loop TFLBPP
- **Press Fit ends** (Copper Press Fit Ends)
- **Nominal Diameter**: 3/4
- **Nominal Wall Thickness**: .065
- **Temperature**: 0°F to 200°F

### Design Specifications
- **Temperature**: 70°F to 200°F
- **Steel Elbows**: Annular Corrugated Hose
- **321ss Close Pitch**
- **Movement Capabilities**
  - **Parallel (in.)**
  - **Compression (in.)**
  - **Extension (in.)**
  - **Rotation “X” Axis (°)**
  - **Rotation “Y” Axis (°)**
  - **Spring Rate @ 125 PSI**

### Correction for Temperatures above 70°F
- Temperature °F
  - 70
  - 200
  - 300
  - 400
  - 500
  - 600
- Factor S.S.
  - 1.00
  - .94
  - .88
  - .83
  - .78
  - .74
- Factor Bronze
  - 1.00
  - .89
  - .83
  - .78

### Other sizes available. Please consult factory.
PROGRAM FEATURES

• Calculates pipe thermal expansion; various alloys for chilled water, condenser water, hot water, domestic hot water, saturated steam
• Calculates nesting of expansion seismic loops
• Building seismic joints
• Calculates spring rates of expansion seismic loops
• Automatically selects UL® Listed hanger assemblies
• Creates detailed schedule or submittals
• Allows saving of projects, opening new projects, and editing of projects
• Industry terminology
• Application examples
• Specifications

AND BEST OF ALL IT SAVES DESIGN TIME!
Compatible with all Auto CAD programs allowing input directly into your piping drawings!

The complete seismic system solution.

The UL Listed Seismic Wire Rope/Cable™ used in our hanger assemblies conform to the requirements of the ASCE (American Society of Civil Engineers) guidelines for structural applications of wire rope, in that the cable is pre-stretched and the permanent end fittings maintain the breakstrength of the cable with a safety factor of two.

Color coded, factory cable cutter & crimper to meet cable specifications
Color coded for Tri-Flex Loop installations of 10" and larger in diameter
Color coded for Tri-Flex Loop installations of up to 8" diameter

Save Labor Costs with these Tri-Flex Loop Accessories!

Tri-Flex Loop® Factoy Cable Anchor Kit
It’s simple, reliable & it reduces pipe anchoring costs!

The TriFlex Loop Factory Cable Anchor Kit saves valuable time on TriFlex Loop installation, making it easy to anchor the piping system when using the revolutionary Tri-Flex Loop.

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UL Listed • Factory Assembled • Simply install over pipe & fasten to above structure
• Color Coded • Pre-stretched • Breakstrength Certified

* UL EX26895 Vibration & Seismic Technologies

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