



FLEXIBILITY. END TO END.

Products / Special Market Focus / Heating, Ventilating & Air Conditioning (HVAC) / Unisource V-Loops for Seismic & Thermal

Series 420 V-Loops - Flanged

Series 420 is a flanged end loop with carbon steel Class 150 plate flanges as standard ends. Raised face flanges Series 421) or virtually any other flange configuration can also be ordered. Schedule 40 carbon steel elbows are also standard, but can be specified in other materials. As in other configurations of Unisource V-Loops, choose from either 2" or 4" of motion from center-line. Pre-designed in sizes from 1-1/2 inch through 12 inch. Available in custom construction up to 18 inch diameter and in movements as great as 24 inch.



Series 425 Threaded & Series 430 Weld End V-Loops

Series 425 is a loop with carbon steel male *NPT threaded ends* as standard. Female union ends can also be specified (Series 426). As in other configurations of Unisource V-Loops, choose from either 2" or 4" of motion from center-line.



Series 435 V-Loops - Grooved Ends

Series 435 loops are constructed with carbon steel standard grooved ends for easy installation.

As in other configurations of Unisource V-Loops, choose from either 2", 3" or 4" of motion from center-line. Unisource can also add an eyelet at the 90 degree elbow to accommodate a support rod or cable.



Series 440 V-Loops - Copper Sweat

Series 455 loops are designed specifically for copper piping systems. They are constructed with copper female sweat ends and copper elbows and either stainless steel braided hose or bronze braided hose, depending on size. Those loops using stainless steel braided hose will also utilize stainless steel 90-degree return elbows. As in other configurations of Unisource V-Loops, choose from either 2", 3" or 4" of motion from center-line.



Series 445 & Series 450 - CSA Rated For Natural Gas - Threaded & Weld End

Unisource Series 445 threaded and Series 450 weld-end V-Loops are designed specifically for natural gas piping and are certified by CSA International for gas piping applications (Certification Report No. 190623-1131571).



Series 455 - "MedFlex" Medical Gas Loops

Series 455 "MedFlex" loops are produced specifically for medical gas applications and are documented, purged, and brazed to NFPA (National Fire Protection Association) standards. In addition, "MedFlex" loops are cleaned, capped,

and bagged in accordance with CGA (Compressed Gas Association) G-4.1



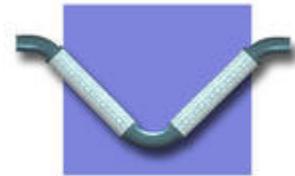
Unisource "FireU" U-SF21UL U.L. Rated U-Shaped Loops for Fire Sprinkler Systems

A tried-and-true stainless steel braided flexible seismic loop for fire sprinkler systems.



Unisource "FireV" V-SF21UL U.L. Rated Loops for Fire Sprinkler Systems

An innovative and engineering friendly stainless steel braided flexible seismic loop for fire sprinkler systems.



Unisource V-Loop Description

Specified by consulting engineers and building owners and installed by contractors throughout the world for many years, *Unisource V-Loops* solve the problems of pipe motion caused by thermal pipe growth and the unpredictable movements associated with seismic activity. Unisource V-Loops can perform the functions of large pipe loops or expansion joints, and in addition, can provide protection and flexibility in multiple planes during potentially catastrophic earthquakes.



Unlike large pipe loops, Uni-Loops take up a minimum of space, providing pipe motion accommodation solutions in limited space situations such as indoor piping. The small configuration of the Uni-Loops are also far less susceptible to the heat loss that must be dealt with in the case of large pipe loops.

Whereas metal bellows or rubber expansion joints will impose substantial anchor loads due to the effects of static pressure thrust, *Unisource V-Loops will not introduce any thrust loads on the piping system.* The unique construction of the braided V-shaped loop creates a flexible product that does not expand when pressurized. A welded-on braid acts as a restraining device, even at extended pressures, yet allows tremendous flexibility. Anchor loads in regard to the Uni-Loops are confined to the relatively small spring forces required to deflect the flexible legs within the loop. Unlike expansion joints, a minimum of pipe guiding is required.

Unisource V-Loops are extremely easy to design in nested configurations. Due to the inherent V-design, standard Uni-Loops can simply be nested within each other with relatively tight centering. A substantial amount of space can be saved, and since no additional pipe extensions need to be installed in the Unisource V-Loops, standard models can be used, saving cost and reducing delivery time.

The standard position for the Uni-Loop is in a horizontal pipe run, with the elbow pointing straight down. Positioning is versatile, however, and the loops can be installed in many other positions such as laying the loop horizontal, positioning the elbow straight up, or positioning for vertical pipe run. In installations other than the standard position, Unisource can provide a support eyelet to allow a cable or rod to support the weight of the loop and its contents.

Unisource V-Loops can be used for a variety of fluids and gases. Loops can be constructed using stainless steel hose and braid with carbon steel end fittings and elbows, or with bronze hose and braid with copper end fittings and elbows. End fitting options include flanges, male threads, beveled weld ends, grooved ends, and copper sweat. Use

Uni-Loops for applications such as heating and cooling water in HVAC systems; moderate velocity steam; natural gas; medical gases; fire sprinkler piping; and selected process applications. Drain ports can be added where required.

For higher pressure applications, Uni-Loops can be constructed using double braided hose legs. Consult Unisource for specific pressure ratings.

Standard Unisource V-Loops are offered for either 2", 3" or 4" of motion from center-line in axial and offset planes. Loops for even greater motions can be constructed upon request.

All Uni-Loops are shipped complete with installation instructions wire tagged to each product. Unisource offers loops for applications under the auspices of the CSA/AGA, NFPA, and U.L.

Unisource V-Loops for Thermal Pipe Movements

Unisource V-Loops are an ideal option for compensating for thermal pipe growth. Often, thermal pipe growth must be absorbed in piping systems where the substantial anchoring systems that bellows expansion joints would require are not present. Since these "V" shaped flexible hose loops do not impose pressure thrust forces on the anchoring system, anchor loads are very low. The only forces involved are the spring forces required to flex the loops. Unisource V-Loops are an in-line connector and consist of a 90-degree pipe elbow with a flexible stainless steel or bronze hose leg connecting to each end of the elbow. 45-degree pipe elbows are located at the ends of the flex leg and end fittings are welded to the 45-degree elbows.

