

Expansion joints / flexible connectors for pipe up to 50mm, featuring exclusive forged steel threaded flanges and unique configuration options for connecting steel pipe directly to copper pipe or copper equipment headers. Rugged leak-proof and slippage-proof design. Available for 16 bar or 20 bar working pressure.

Product Application

Installation of Versaflex is recommended as expansion joints within the piping system and at connection points of piping with mechanical equipment. These :

- Compensate for axial, transverse and angular pipe movements - thereby protecting the system from stresses due to thermal pipe expansion / contraction, minor pipe misalignment and hydraulic surge effects.
- Significantly reduce noise and vibration transmitted in the system through pipe walls.
- Allow vibration isolators to function properly, by providing flexibility at equipment connection.
- Cushion water hammer by expanding volumetrically, thus protecting against sudden startup / surge forces.

Typical examples of usage include :

- At inlet and outlet of HVAC equipment - FCUs, small AHUs, Pumps, Condensers, HEX
- In HVAC chilled / hot water piping - risers, circulation lines, across building expansion joints.
- Process Piping, Power Plants, Water Distribution etc.

Product Features

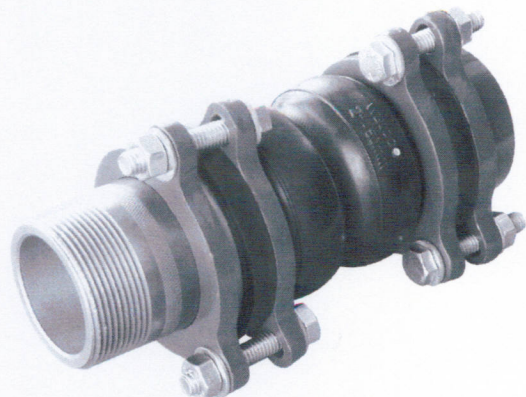
- WEICCO Versaflex have **forged steel flanges**, which are not offered by any other manufacturer. Being much stronger than cast / malleable / ductile iron (supplied by others), forged steel eliminates any possibility of leakage in operation or breakage during tightening.
- **Triangular threaded floating flange design** offers safety, reliability and convenience over union type design (*please see comparison overleaf*).
- Special **extra-wide lips** of bellow prevent slippage.
- Each unit is **individually tested** at 150% of rated maximum working pressure before leaving works.
- Available with sweat-end or threaded bronze couplers at both ends, or at one end with standard FPT steel flange at the other (*please see 'Options' overleaf*). This unique configuration, a WEICCO innovation, serves as **both a flexible connection and a dielectric union**. It is particularly recommended for connecting steel pipe at Fan Coil Unit headers.
- **Rugged and flexible** construction, that eliminates need for any external metal rings or steel reinforcement in the bellows. Versaflex do not require control units, even at peak pressure in unanchored piping systems.
- *As per ASHRAE literature* : Elastomeric joints are **significantly superior to metal hose** since they provide noise attenuation, axial movement and fluid pulsation / hammer cushioning - none of which are given by metal hose (*please see comparison overleaf*).
- **Flanges are epoxy powder coated**.



Versaflex with threaded connections for steel pipe ('VF' - supplied as standard)



Versaflex with bronze couplers for copper pipe (add suffix 'BC')



Versaflex with threaded connection and bronze coupler - for steel to copper pipe (add suffix 'BS')

Please refer overleaf for product specifications, options available etc..

SPECIFICATIONS		
Model	Steel Pipe Nominal	Overall Length
VF20	¾"	150mm
VF25	1"	155mm
VF30	1¼"	155mm
VF40	1½"	165mm
VF50	2"	175mm
Construction		
<u>Bellow</u>		
Inner Tube	Neoprene	
Reinforcement	Multi-ply Nylon tire cord fabric	
Outer Cover	Neoprene	
Threaded Flanges	Forged Steel, threaded to BS21	
<u>Finish</u>		
Flanges	Epoxy powder coated	
Nuts / Bolts	Zinc Electroplated	
Allowable Movements		
Compression	17mm	
Elongation	6mm	
Transverse	15mm	
Angular	25° to 15° (based on increasing size)	
Performance Data		
Working Pressure*	16 kg/cm ² (standard) or 20 kg/cm ²	
Vacuum	650 mmHg	
Temperature Range	-20°C to 105°C	
Burst Pressure	appx. 4 times working pressure	
Working Fluids	Water, weak Acids / Alkalies, Air	

* Applicable till 77°C. Above that, please derate linearly, considering 30% reduction at upper end of temp. range.

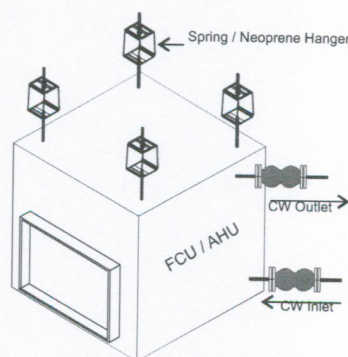
Compliance - ASTM F 1123-87 (2004); all units are tested as per BS 5150 : 1974

Advantages of Elastomeric Expansion Joints / Connectors over Metal Hose

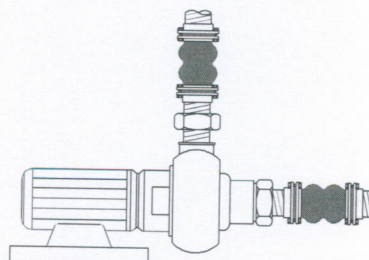
- Elastomeric bellows introduce a discontinuity in the pipe material and are capable of volumetric growth. Both attributes serve to dissipate high frequencies, making the bellows **excellent noise attenuators**. Metal hoses are acoustically ineffective since they sustain metal to metal contact throughout and cannot grow in volume. As a result, they permit noise transmission in the system through pipe walls.
- Elastomeric bellows are **effective as expansion joints** since they permit both axial and transverse movement. Metal hose only accommodates lateral movement perpendicular to length.
- Volumetric expansion ability of elastomeric bellows enhances their efficiency as vibration isolators and helps shield the system from fluid pulsations.

Options Available

- Connections** - Forged steel FPT flanges (standard), Bronze FPT flanges (suffix 'BF'), Bronze sweat-end couplers (suffix 'BC'), Bronze MPT couplers (suffix 'BM'), SS 304 couplers (suffix 'SS'). To order WEICCO Versaflex with any combination of the above, add suffix 'BS' and specify the type and size of connection required at each end.
- Pressure Rating** - 16 kg/cm², tested at 24 bar (standard); 20 kg/cm², tested at 30 bar (suffix '20B').
- Bellow Material** - Neoprene (standard), EPDM (for temperature rating up to 121°C), NR, SBR, CBR, special elastomer suitable for Drinking Water. Suffix name of the elastomer (or 'DW' for drinking water).



Typical Application with FCU / AHU



Typical Application with Pump

Advantages of Flanged over Union type connectors

- A much **larger and firmer gripping area** on the side lips of the bellows. Failure of union type connectors frequently takes place due to slippage of rubber lips. This possibility is eliminated by the triangular flanges.
- Forged flanges are much **stronger than cast or malleable iron unions** and eliminate chances of leakage in operation or breakage during tightening.
- Triangular flanges offer **convenience of assembly / disassembly** by reducing the task to tightening of six small nuts and avoiding the need for large wrenches as needed for unions.

Please refer overleaf for product application and features..