UNIFLEX COUPLINGS AND GENERAL USE VALVES
UNIFLEX
CARBON/STAINLESS STEEL PIPE COUPLINGS
Pressures To 3000 PSIG
Temperatures to 850°F

Applications
- Steam Systems (up to 1500 PSIG superheat)
- Dowtherm
- Manifolds on Steam Traps, Valves, Pumps & Compressors
- Process Fluids & gases to 3000 PSIG CWP (ie: Acids, Caustics Nitrogen, etc.)
- Nuclear Power Plants
- Hydraulic Fluids/Hot Oils

Reduced Energy Costs
Spiral wound gasket assures long life and leak tight seal.

Accepted where Standard Unions are Inadequate
Seal equivalent to flange connections meets fugitive emissions needs.

Suitable for Most Services
Carbon steel and 316L stainless steel housings and a variety of gasket materials available to meet demands of most applications.

No Welding Damage to Seal
Because seal is installed after welding, the danger of damaging seal is eliminated.

Sizes to Meet Most Requirements
Available in 1/2" to 2", socketweld or threaded for a wide variety of piping needs.

Reduced Labor Costs
No need to replace union housing or spring pipe during make-up or disassembly which reduces time by more than 60%.

Reduced Cost of Materials
Only a change of gasket is required when disassembled.

Reduced Dollars in Inventory
Only a few gasket kits required. Components may be stocked and replaced individually because mated parts are not needed.

Components Interchangeable
All components within each size class are fully interchangeable.
End connections can be socket weld, threaded or a combination of both.

Meets MSS-SP-83 for 3000 pound unions.
UNIFLEX
STEEL/STAINLESS PIPE COUPLINGS

Pressures To 3000 PSIG (207 barg)
Temperatures to 850°F (454°C)

No Energy Losses - from expensive steam and process fluid leaks. A spiral-wound gasket ensures a leak-tight seal.

Lower Maintenance/Labor Costs - Replacement of the union housing is eliminated. Only a change of gasket is required when the Uniflex Coupling is disassembled. No need to spring the pipe during make-up or disassembly. It is less costly to make and break than flanges.

Lower Inventory Costs - Only a few Uniflex Pipe Couplings and gasket kits in each size are required to back up installations. One Uniflex satisfies all pressure series of flanges in pipe sizes 1/2" to 2".

Ease of Installation - The gasket is held firmly in place with a retainer. There is no danger of damaging the seal during installation as it is fully protected from overtorquing.

Welded Piping Systems - With the gasket removed while welding coupling into the piping, the danger of damaging the seal is eliminated. Costly removal of sections of pipe to replace leaky unions is eliminated.

Component Interchangeability - All components of the Uniflex Couplings, in each size class, are fully interchangeable. End connections can be socket weld, threaded, or a combination of both.

Installation Tip: Use UNIFLEX in all Regulator and Trap Stations through 2" to simplify future changeouts.

MODELS

- SUA-T—Threaded Carbon Steel
- SUA-SW—Socketweld Carbon Steel
- SUASS-T—Threaded Stainless Steel
- SUASS-SW—Socketweld Stainless Steel
- SUG—Gasket Kit includes 10 gaskets.
- SUGR—Gasket Kit includes 10 gaskets and 10 retaining rings

Call or visit our website for FREE sample and cost savings spreadsheet.

Canadian Registration # 0A0583.9C

Operation

The Uniflex Pipe Coupling (SUA) has successfully solved frequent leakage, intensive maintenance and stocking difficulties associated with ground joint-pipe unions.

The SUA is a modified forged steel or stainless steel pipe union utilizing a Spiral-Wound Gasket to provide a leak-tight joint. This design, similar in principle to flange joints, has been proven in the field for many years. Because the joint seal is formed by the replaceable gasket (not a ground joint finish), failures caused by poor mating surfaces are eliminated. Components may be stocked and replaced individually because mated parts are not required for sealing.

Applications

- Steam Systems–up to 1500 PSIG Superheat
- Dowtherm
- Variety of process fluids and gases to 3000 PSIG CWP, i.e.: Acids, Caustics, Nitrogen, etc.
- Steam Trap, Valve, Pump & Compressor
- Manifolds
- Nuclear Power Plants
- Hydraulic Fluids/Hot Oils

Options

- Teflon Gasket Filler
- Type 347 SS, Type 316 SS, Monel, Inconel 600, Hastalloy, Nickel Gasket Windings (other materials available on request)
UNIFLEX
STEEL/STAINLESS PIPE COUPLINGS

SPECIFICATION

Union shall be of the straight-through design with connections oppositely aligned, suitable for either horizontal or vertical piping installations. Union shall meet standards of MSS SP-83 for 3000 lb. unions. Connections shall be either screwed or socketweld and union shall have threaded nut. Gasket shall be of the spiral wound design and a retainer shall be utilized to locate and hold gasket during installation.

Union housing shall be forged steel ASTM A105 and have a pressure rating of 3000 PSIG at 100°F or type 316L stainless steel and have a pressure rating of 2430 PSIG at 100°F. Gasket winding shall be type 304 stainless steel with filler material of graphite. Gasket retainer shall be of type 316 stainless steel.

Maximum operating conditions

PMO: Max. Operating Pressure see Chart
TMO: Max. Operating Temperature see Chart

Materials of construction

Housing: Forged Carbon Steel, ASTM-A-105 or Type 316L SS
Gasket: Spiral wound 304 Stainless
graphite filler
Gasket Retainer: Type 316 Stainless Steel

Temperature/Pressure Ratings†

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Pressure (PSIG) Carbon Steel</th>
<th>Pressure (PSIG) 316L SS</th>
</tr>
</thead>
<tbody>
<tr>
<td>100°F</td>
<td>3000 (-20°F*)</td>
<td>2430 (-325°F*)</td>
</tr>
<tr>
<td>200°F</td>
<td>2735</td>
<td>2050</td>
</tr>
<tr>
<td>300°F</td>
<td>2655</td>
<td>1835</td>
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<tr>
<td>400°F</td>
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<td>1670</td>
</tr>
<tr>
<td>500°F</td>
<td>2425</td>
<td>1545</td>
</tr>
<tr>
<td>600°F</td>
<td>2220</td>
<td>1460</td>
</tr>
<tr>
<td>700°F</td>
<td>2155</td>
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<tr>
<td>800°F</td>
<td>—</td>
<td>1330</td>
</tr>
<tr>
<td>850°F</td>
<td>—</td>
<td>1300</td>
</tr>
</tbody>
</table>

Average weights listed–actual weights may vary slightly

ORDERING NOTE: If ordering different connection types (SW and NPT) on each end, the female end should be specified first.

Ex.: SUA-T (SW / NPT) = SW female / NPT male.
PIPING SPECIALTIES
BIG BLOCK UMT VALVE STATION

Pressures To 1440 PSIG
Temperatures to 750°F

Applications
- Unit Heaters
- Steam Tracing
- Drip Legs
- Heating
- Tire Presses
- Cooking Equipment
- Laundry Equipment
- Plating Tanks
- Platent Presses
- Refinery
- Process

Zerk Cap Nut
standard grease fitting for lubrication and flushing of contaminants through one-way external seals

Snap Ring
prevents accidental removal and/or overtorque in an open position

Slip Clutch
prevents overtorque in the closed position

Packing Nut
can be tightened to prevent leaks

Adjustable Grafoil Packing
simultaneously seals stem and valve body

Blowout Proof Lower Assembly
remains intact if upper assembly is damaged

Hardened 440 Stainless Steel Ball Tip
floats for tight seal and proper alignment

Minimum 1/4" Ports Throughout
assures high flow capacity

Inner and Outer Stems
isolate rotation from packing, reducing wear

One-Way Teflon® Seals
allow lubrication and cleaning of all components while protecting from contaminants

Test Port
provides visual indication of trap function and backflow

Faceplate
illustrates operation and flow direction

Connections
available in 1/2" and 3/4" NPT or Socketweld

Ventilation Fins
disperse heat and protect valve during welding

Stainless Steel Screen with Blowdown Valve
for easy cleaning

Compact Size
for easy installation
BIG BLOCK
UNIVERSAL MOUNT TRAP VALVE STATION

Pressures to 1440 PSIG (99 bar)
Temperatures to 750°F (399°C)

Compact Size - Isolation valves, test ports, strainer and blowdown valve combined in one “Big Block” for easy installation.

Universal Mount - Universal two bolt swivel trap mount installs permanently into system, simplifying installation and removal of trap.

Highest Pressure and Temperature Ratings - Suitable for virtually all applications.

All Stainless Steel - Body, internal wetted parts and polished inner stem are durable and corrosion resistant.

Blowout Proof Isolation Valves - Feature grease fittings to lubricate one way Teflon® seals and flush contaminants. Protected from overtorque.

Adjustable Grafoil Packing - Simultaneously seals stem and valve body.

Inner and Outer Valve Stems - Reduce wear.

Hardened 440 Stainless Steel Ball Tip - provides tight seal and proper alignment.

High Capacity - All internal ports at least 1/4”.

MODELS
- UMTVS-BB

OPTIONS
- SW - Socketweld Connections

Applications
- Unit Heaters
- Steam Tracing
- Drip Legs
- Heating
- Tire Presses
- Cooking Equipment
- Laundry Equipment
- Plating Tanks
- Platen Presses
- Refinery
- Process

CODES
- Designed per ASME B16.5, Class 600

Operation

The UMTVS Big Block may be used in conjunction with any two-bolt universal mount steam trap. It combines a universal mount connector block with isolation valves, strainer, blowdown valves and test port to permit fast and easy testing, maintenance, and repair or replacement of a universal mount steam trap.

Integral Strainer and Blowdown Valve
The built-in strainer captures dirt and scale. The blowdown valve at the bottom of the connector block may be used periodically to clean out the strainer.

1st Inlet Isolation Valve (left)
Turning the first isolation valve to the off position (clockwise) stops the flow before it reaches the universal mount steam trap, strainer and blowdown valve. If the first isolation valve is opened (counterclockwise) flow will be directed through the strainer and blowdown valve ports and to the universal mount steam trap.

Test port (on face)
Condensate exiting the universal mount steam trap is directed to the test port. Fully open the test port by loosening the larger test port valve located on the face of the block (counter-clockwise). This will provide a visual indication of the trap discharge pattern to determine the steam trap functionality.

2nd Outlet Isolation Valve (right)
Turning the second isolation valve to the off position (clockwise) stops the flow to the outlet connection. The flow still may be exhausted through any of the previously mentioned ports. When the second isolation valve is open (counterclockwise), flow to the outlet connection will continue. Downstream backflow discharge may be observed through the open test port by closing the first Inlet Isolation Valve and blowdown valve and opening the second Outlet Isolation Valve.
BIG BLOCK
UNIVERSAL MOUNT TRAP VALVE STATION

SPECIFICATION
Big Block Universal Mount Trap Valve Station shall be a universal mount connector block with integral strainer, blowdown valve, test ports, and dual isolation valves. Body shall be 304L stainless steel. It shall be suitable for pressures to 1440 PSIG. End connections shall be NPT or Socketweld and accommodate connection sizes of 1/2” and 3/4”. It shall function in any orientation. It shall accept universal mount steam traps. The isolation valves shall be bonnetless and blowout proof with a relubrication system.

Maximum operating conditions

<table>
<thead>
<tr>
<th>Class 600 -</th>
<th>Pressure</th>
<th>Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>855 psig</td>
<td>750°F</td>
</tr>
<tr>
<td></td>
<td>1440 psig</td>
<td>100°F</td>
</tr>
</tbody>
</table>

Materials of construction

- **Body**: Investment Cast 304L Stainless Steel
- **Blowdown Valve**: 304 Stainless Steel
- **Strainer**: 304 Stainless Steel .033 Perf
- **Test Port & Lock Nut**: 303 Stainless Steel
- **Internal Components**: Stainless Steel
- **External Seals**: Teflon®
- **Packing**: Grafoil

*Per ASME B16.5, Class 600

** Per ASTM A351-CF

DIMENSIONS - INCHES (MM)
WEIGHT: 6 LBS. (2.7 KG)

Connections: 1/2” & 3/4” NPT or Socketweld
STV SERIES
FLOATING LEVER AIR DRAINER

Pressures To 250 PSIG (17.2 barg)
Temperatures to 406°F (208°C)

Visual Steam Trap Test - Provides for quick visual examination of steam trap discharge.
Compact Body - Small size facilitates installation and operation in tight spaces.
Stainless Steel Internals - High quality materials provide long service life and protection against corrosion.
Repairable - All parts are easily replaceable.
Large Size Test Vent - Vent passage in ball is large enough to provide true determination of trap discharge.
Safety Designed - Bottom loaded, pressure retaining stem and packing nut threaded to body provides extra margin of safety.
Reduces Labor Costs - Eliminates need to install and maintain separate blocking and test valves.
Minimizes Risk of Connection Leaks - Eliminates the need for numerous fittings.

Applications
- Test Steam Traps
- Sample Fluids or Gases from Process Lines

OPTIONS
- Stainless Steel Latch-loc Handle
Canadian Registration # OCO591.97

Operation

STV test/block valve is installed on downstream side of steam trap. During normal operation, valve is in open position with unrestricted flow through trap into the return system. One quarter turn (90°) of STV blocks flow from return and vents trap discharge to atmosphere. Provides quick, visual check of trap operation.
STV SERIES
COMBINATION TRAP TEST & BLOCKING STEAM VALVE

Maximum operating conditions

<table>
<thead>
<tr>
<th>Condition</th>
<th>Pressure</th>
<th>Temperature</th>
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</thead>
<tbody>
<tr>
<td>PMO: Max. Operating Pressure</td>
<td>250 psig (17 barg)</td>
<td></td>
</tr>
<tr>
<td>TMO: Max. Operating Temperature</td>
<td>406°F (208°C)</td>
<td></td>
</tr>
<tr>
<td>PMA: Max. Allowable Pressure</td>
<td>250 psig (17 barg)</td>
<td></td>
</tr>
<tr>
<td>TMA: Max. Allowable Temperature</td>
<td>406°F (208°C)</td>
<td></td>
</tr>
</tbody>
</table>

Materials of construction

Body: ...................... ASTM A216 WCB Carbon Steel (Blk oxide & oil coat)
Adapter: ................... 12L14C.R.S. (Blk oxide & oil coat)
Ball: ....................... 316 Stainless Steel
Seat: ....................... 25% Mineral Fill Virgin Teflon
Stem: ..................... 316 Stainless Steel
Insulator: .................. Plastisol (Vinyl grip)
Packing Gland: .......... Carbon Reinforced Teflon
Packing Nut: ............ 12L14 C.R.S. (Blk oxide & oil coat)
Handle Nut: .............. Steel (Zinc plated)
Handle: .................... 11 Ga. C.R.S. (Zinc plated)
Thrust Washer: .......... Glass Reinforced Teflon
Body Seal: ................ Virgin Teflon

<table>
<thead>
<tr>
<th>Size</th>
<th>Inches (mm)</th>
<th>Weight Lbs. (kg)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>.375 (10)</td>
<td>.156 (4)</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>.531 (13)</td>
<td>.218 (6)</td>
</tr>
</tbody>
</table>

Connections: 1/4" NPT Blowdown 1/2" and 3/4" NPT Inlet & Outlet
SS600 SERIES
NOISE DIFFUSER

Pressures To 600 PSIG (41.3 barg)
Temperatures to 750°F (400°C)

**Diffuses Blast Discharge** - Diffuses the high velocity discharge from steam traps.

**Reduces Noise** - Dampens the level of noise associated with steam trap cycles.

**Corrosion Resistant** - All stainless steel construction provides excellent protection from corrosion.

**Causes No Back Pressure** - Porous stainless steel baffle allows condensate discharge without back pressure.

**Compressed Air Capabilities** - Diffuser works as a muffler for compressed air exhaust.

**Repairable in-line** - Snap ring design allows for easy element replacement.

**Applications**
- Steam Traps
- Blowdown Valves
- Air Cylinders

**Operation**

The SS600 Diffuser is installed on the outlet side of steam traps, valves or other equipment that discharges high velocity steam, condensate or air to the atmosphere. The baffle is constructed of a fine stainless steel wire mesh, similar to steel wool. This porous mesh breaks down the high velocity discharge which dampens the sound significantly.
SS600 SERIES
NOISE DIFFUSER

Maximum operating conditions

PMO: Max. Operating Pressure 600 psig (41.3 barg)
TMO: Max. Operating Temperature 750°F (400°C)
PMA: Max. Allowable Pressure 600 psig (41.3 barg)
TMA: Max. Allowable Temperature 750°F (400°C)
TMA: Max. Allowable Temperature 1000 psig (69 barg)

Materials of construction

Body: ..................ASTM A351 Grade CF3M (316L)
Retaining Ring: ........302 Stainless Steel
Element: ...............304 Stainless Steel

Dimensions

<table>
<thead>
<tr>
<th>NPT Size</th>
<th>Inches (mm)</th>
<th>Weight Lbs. (kg)</th>
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<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>3⁄8&quot;</td>
<td>2 ⁷⁄₈</td>
<td>1 ⁷⁄₈</td>
</tr>
<tr>
<td>1⁄2&quot;</td>
<td>2 ⁷⁄₈</td>
<td>1 ⁷⁄₈</td>
</tr>
<tr>
<td>3⁄₄&quot;</td>
<td>2 ⁷⁄₈</td>
<td>1 ⁷⁄₈</td>
</tr>
</tbody>
</table>

Connections: 3⁄8" – 3⁄₄" NPT

Noise Three Feet from Trap Discharge
PNEUMATIC MUFFLERS

Pressures To 600 PSIG (41.4 barg)
Temperatures to 220°F (104°C)

Reduces Noise to Acceptable Levels - Specifically designed to reduce the noise of exhaust.
Compact and Lightweight - Adds minimal space and weight to installation.
Durable Construction - Will provide years of service.
Corrosion Proof - Nylon and felt construction will not corrode in most services.

Applications
- 2, 3 and 4-way Valves
- Pneumatic Cylinders
- Air Motors
- Air Tools
- Instrumentation
- Bench Fixtures
- Test Panels
- Relief Valves

Operation
The muffler housing and plug are made of nylon. Compressed exhaust air enters the muffler as shown by the flow arrows. It is then diverted by a plastic insert sleeve through a packing of sound deadening felt and out through exit slots. A fine mesh screen shields the felt packing and retains it in position.
PNEUMATIC MUFFLERS

Maximum operating conditions

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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<th></th>
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<tbody>
<tr>
<td>PMO: Max. Operating Pressure</td>
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<td>(41.3 barg)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TMO: Max. Operating Temperature</td>
<td>220°F</td>
<td>(104°C)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PMA: Max. Allowable Pressure</td>
<td>600 psig</td>
<td>(41.3 barg)</td>
<td></td>
<td></td>
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<td>220°F</td>
<td>(104°C)</td>
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</table>

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>A NPT Size</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
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<tbody>
<tr>
<td>¹⁄₈&quot;</td>
<td>.63</td>
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<td></td>
</tr>
</tbody>
</table>

Materials of construction

Housing: .................Nylon
Screen: .................Aluminum
Media: .................Felt

Air Flow and Sound Measurements of Nicholson Pneumatic Mufflers

Using Graph

Condition: Exhaust of air at 90 PSI produces a noise level of 100 dbA. Noise must be reduced to an acceptable level.

Solution: 1/2" Muffler will reduce level 29%. Muffled discharge will be at 71 dbA.