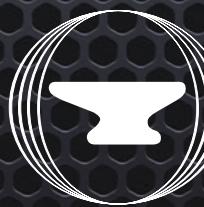
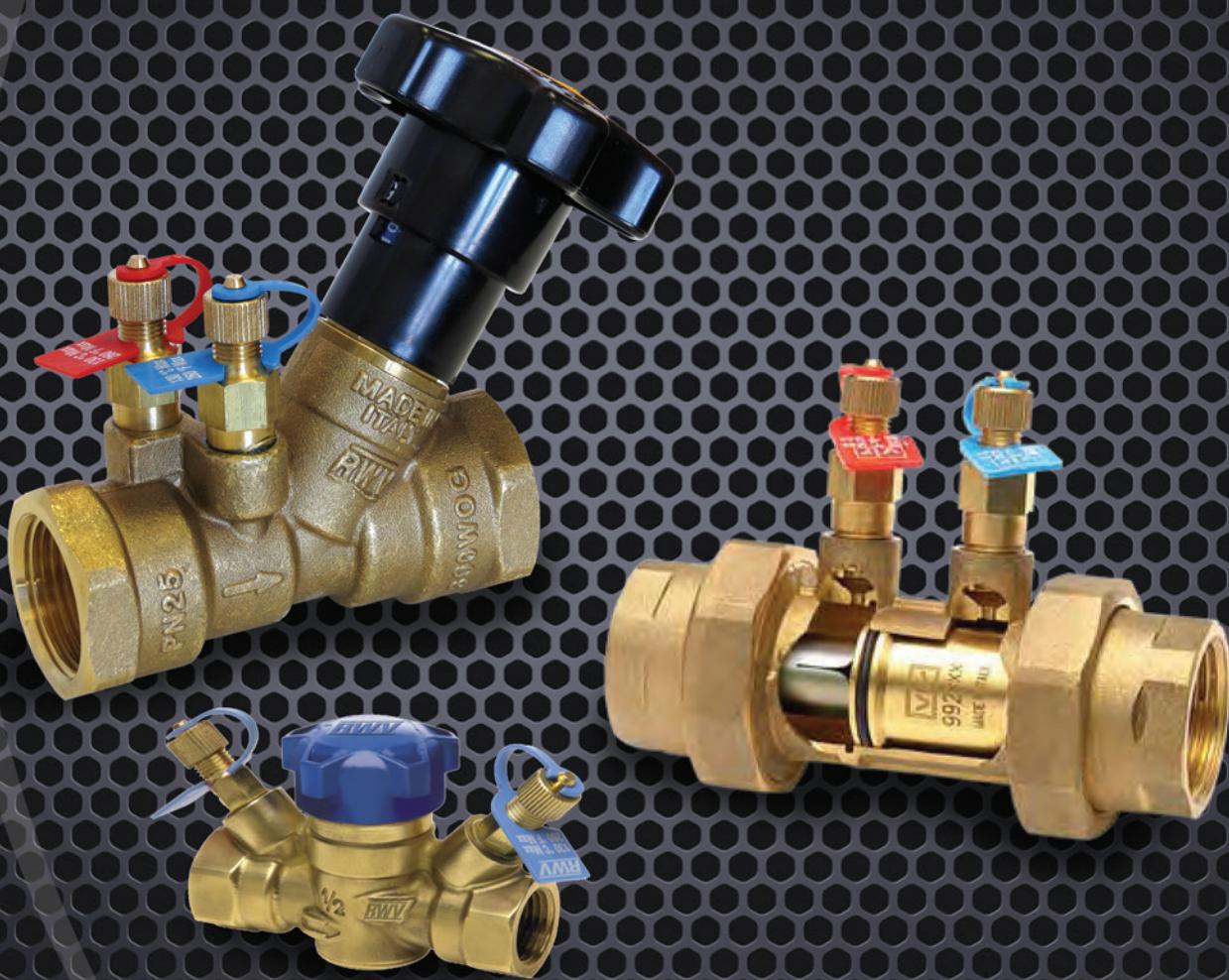




Hydronic Solutions

www.anvilintl.com



ANVIL®
INTERNATIONAL
Building Connections That Last

APRIL 2015

For the most current product/pricing information on Anvil products, please visit our website at www.anvilintl.com

ABV-9900 Series Automatic Balancing Valves

Features

- Automatically maintains desired flow rate
- Efficient "in-line" body design
- Interchangeable flow cartridges
- Stainless steel spring and laser cut flow head for longer life and accuracy
- Integral isolation valve for positive shut-off
- Multiple connections
- DZR brass construction - corrosion resistant
- 300WOG maximum pressure
- 300psi at ambient conditions to 160°F
- 150psi maximum pressure rating at 260°F
- Thread & Solder connections
- Cartridge is DZR brass with stainless cone and spring

Models

ABV-T-9907V - Female NPT union ends with mounted PT ports

ABV-S-9909V - Solder union ends with mounted PT ports

Flow Range

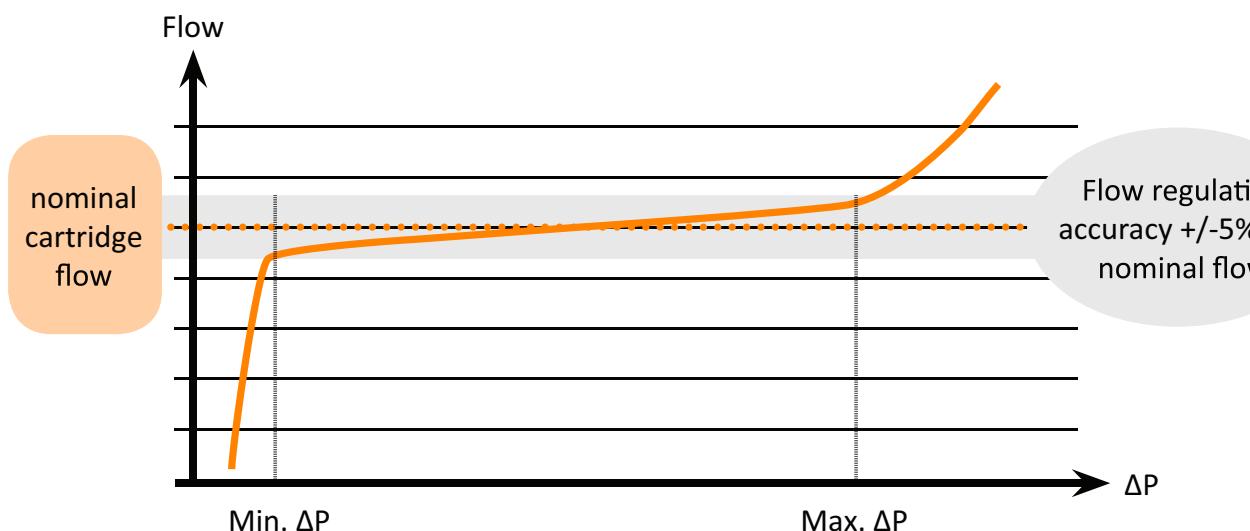
| | |
|---------------|-------------------------------|
| 1/2" & 3/4"-L | 0.32GPM to 3.17GPM (Low flow) |
| 3/4" & 1" | 2.06GPM to 15.1GPM |
| 3/4" & 1" | 4.91GPM to 41.2GPM |
| 2"-H | 25.4GPM to 105GPM |

*Working ΔP dependant on cartridge selection



Cartridges

Cartridges available in different ranges of working differential pressure, the minimum and maximum working ΔP therefore depend on the specific cartridge model. A numeric code is marked on the cartridge body identifying it (example KRR992215.1880).



½" ¾"-L
Low Flow

| RWV Code | Flow (GPM) | RangeΔP (psi) |
|----------------|------------|---------------|
| KRR991202.1880 | 0.32 | 2.2-25 |
| KRR991203.1880 | 0.48 | 2.3-32 |
| KRR991204.1880 | 0.63 | 2.3-32 |
| KRR991205.1880 | 0.79 | 2.3-32 |
| KRR991206.1880 | 0.95 | 2.3-32 |
| KRR991207.1880 | 1.11 | 2.3-32 |
| KRR991208.1880 | 1.27 | 2.3-32 |
| KRR991209.1880 | 1.43 | 2.3-32 |
| KRR991210.1880 | 1.59 | 2.3-32 |
| KRR991211.1880 | 1.74 | 2.5-32 |
| KRR991212.1880 | 1.90 | 2.5-32 |
| KRR991213.1880 | 2.06 | 2.5-32 |
| KRR991214.1880 | 2.22 | 2.5-32 |
| KRR991215.1880 | 2.38 | 2.5-32 |
| KRR991216.1880 | 2.54 | 2.5-32 |
| KRR991218.1880 | 2.85 | 2.6-32 |
| KRR991220.1880 | 3.17 | 2.8-32 |

¾" 1"
Standard Flow

| RWV Code | Flow (GPM) | RangeΔP (psi) |
|----------------|------------|---------------|
| KRR992213.1880 | 2.06 | 2.5-35 |
| KRR992215.1880 | 2.38 | 2.5-35 |
| KRR992217.1880 | 2.69 | 2.5-35 |
| KRR992219.1880 | 3.01 | 2.5-35 |
| KRR992221.1880 | 3.33 | 2.6-35 |
| KRR992224.1880 | 3.80 | 2.6-35 |
| KRR992227.1880 | 4.28 | 2.6-35 |
| KRR992230.1880 | 4.76 | 2.6-35 |
| KRR992233.1880 | 5.23 | 2.6-35 |
| KRR992236.1880 | 5.71 | 2.6-35 |
| KRR992240.1880 | 6.34 | 2.6-35 |
| KRR992245.1880 | 7.13 | 2.8-35 |
| KRR992250.1880 | 7.93 | 2.8-35 |
| KRR992255.1880 | 8.72 | 3.0-35 |
| KRR992260.1880 | 9.51 | 3.2-35 |
| KRR992266.1880 | 10.5 | 3.5-35 |
| KRR992272.1880 | 11.4 | 3.5-35 |

¾" 1"
High Pressure

| RWV Code | Flow (GPM) | RangeΔP (psi) |
|----------------|------------|---------------|
| KRR992318.1880 | 2.85 | 4.2-64 |
| KRR992320.1880 | 3.17 | 4.6-64 |
| KRR992323.1880 | 3.65 | 4.8-64 |
| KRR992327.1880 | 3.96 | 4.8-64 |
| KRR992329.1880 | 4.60 | 4.8-64 |
| KRR992332.1880 | 5.07 | 4.8-64 |
| KRR992336.1880 | 5.71 | 4.8-64 |
| KRR992340.1880 | 6.34 | 4.8-64 |
| KRR992345.1880 | 7.13 | 4.8-64 |
| KRR992350.1880 | 7.93 | 4.8-64 |
| KRR992355.1880 | 8.72 | 4.9-64 |
| KRR992361.1880 | 9.67 | 5.2-64 |
| KRR992368.1880 | 10.8 | 5.2-64 |
| KRR992375.1880 | 11.9 | 5.2-64 |
| KRR992380.1880 | 12.7 | 5.2-64 |
| KRR992386.1880 | 13.6 | 5.8-64 |
| KRR992395.1880 | 15.1 | 5.8-64 |

1¼" 1½" 2"
Standard Flow

| RWV Code | Flow (GPM) | RangeΔP (psi) |
|----------------|------------|---------------|
| KRR994231.1880 | 4.91 | 1.9-33 |
| KRR994234.1880 | 5.39 | 1.9-33 |
| KRR994237.1880 | 5.86 | 1.9-33 |
| KRR994240.1880 | 6.34 | 2.0-33 |
| KRR994246.1880 | 7.29 | 2.0-33 |
| KRR994250.1880 | 7.93 | 2.0-33 |
| KRR994255.1880 | 8.72 | 2.0-33 |
| KRR994258.1880 | 9.19 | 2.0-33 |
| KRR994262.1880 | 9.83 | 2.0-33 |
| KRR994267.1880 | 10.6 | 2.2-33 |
| KRR994274.1880 | 11.7 | 2.2-33 |
| KRR994283.1880 | 13.2 | 2.2-33 |
| KRR994290.1880 | 14.3 | 2.2-33 |
| KRR994297.1880 | 15.4 | 2.2-33 |
| KRR994210.1880 | 16.6 | 2.2-33 |
| KRR994212.1880 | 19.0 | 2.2-33 |
| KRR994213.1880 | 20.6 | 2.3-33 |
| KRR994214.1880 | 22.8 | 2.5-33 |
| KRR994216.1880 | 24.7 | 2.5-33 |
| KRR994217.1880 | 26.6 | 2.6-33 |
| KRR994218.1880 | 28.5 | 2.8-33 |
| KRR994220.1880 | 31.1 | 2.8-33 |

1¼" 1½" 2"
High Pressure

| RWV Code | Flow (GPM) | RangeΔP (psi) |
|----------------|------------|---------------|
| KRR994341.1880 | 6.50 | 3.8-61 |
| KRR994346.1880 | 7.29 | 3.8-61 |
| KRR994351.1880 | 8.08 | 3.8-61 |
| KRR994355.1880 | 8.72 | 3.9-61 |
| KRR994362.1880 | 9.83 | 3.9-61 |
| KRR994368.1880 | 10.8 | 3.9-61 |
| KRR994374.1880 | 11.7 | 3.9-61 |
| KRR994379.1880 | 12.5 | 3.9-61 |
| KRR994383.1880 | 13.2 | 3.9-61 |
| KRR994391.1880 | 14.4 | 4.1-61 |
| KRR994310.1880 | 15.9 | 4.1-61 |
| KRR994311.1880 | 17.6 | 4.1-61 |
| KRR994312.1880 | 19.0 | 4.2-61 |
| KRR994313.1880 | 20.6 | 4.2-61 |
| KRR994314.1880 | 22.0 | 4.2-61 |
| KRR994316.1880 | 26.0 | 4.4-61 |
| KRR994318.1880 | 27.7 | 4.5-61 |
| KRR994319.1880 | 30.1 | 4.5-61 |
| KRR994321.1880 | 32.7 | 4.6-61 |
| KRR994322.1880 | 35.4 | 4.9-61 |
| KRR994324.1880 | 38.0 | 5.1-61 |
| KRR994326.1880 | 41.2 | 5.5-61 |

2"-H
Large

| RWV Code | Flow (GPM) | RangeΔP (psi) |
|----------------|------------|---------------|
| KRR996216.1880 | 25.4 | 2.0-33 |
| KRR996218.1880 | 28.5 | 2.0-33 |
| KRR996220.1880 | 31.7 | 2.0-33 |
| KRR996222.1880 | 34.9 | 2.2-33 |
| KRR996224.1880 | 38.0 | 2.2-33 |
| KRR996227.1880 | 42.8 | 2.2-33 |
| KRR996230.1880 | 47.6 | 2.3-33 |
| KRR996233.1880 | 52.3 | 2.3-33 |
| KRR996236.1880 | 57.1 | 2.3-33 |
| KRR996240.1880 | 63.4 | 2.5-33 |
| KRR996245.1880 | 71.3 | 2.5-33 |
| KRR996250.1880 | 79.3 | 2.8-33 |
| KRR996255.1890 | 87.2 | 2.8-33 |
| KRR996260.1880 | 95.1 | 3.0-33 |
| KRR996266.1880 | 105 | 3.0-33 |



MBV-9510 Series Fixed Orifice Static Balancing Valves

Features

- Fixed orifice for constant Cv for max. performance
- Fast & easy calibration with manometer
- Double regulating for optimal accuracy $\pm 3\%$
- Integral Memory Stop
- Can be used as shut off without resetting position
- Wide range of flow available
(0.27 gpm - 56.63 gpm)
- Intended for HVAC & domestic water use
- DZR brass construction - corrosion resistant
- 300WOG maximum pressure
- 300psi at ambient conditions to 160°F
- 150psi maximum pressure rating at 260°F
- Thread & Solder connections
- Available in Lead Free configurations
- Upstream and downstream test ports standard



Models

MBV-T-9517 - Thread Connections

MBV-S-9519 - Solder Connections

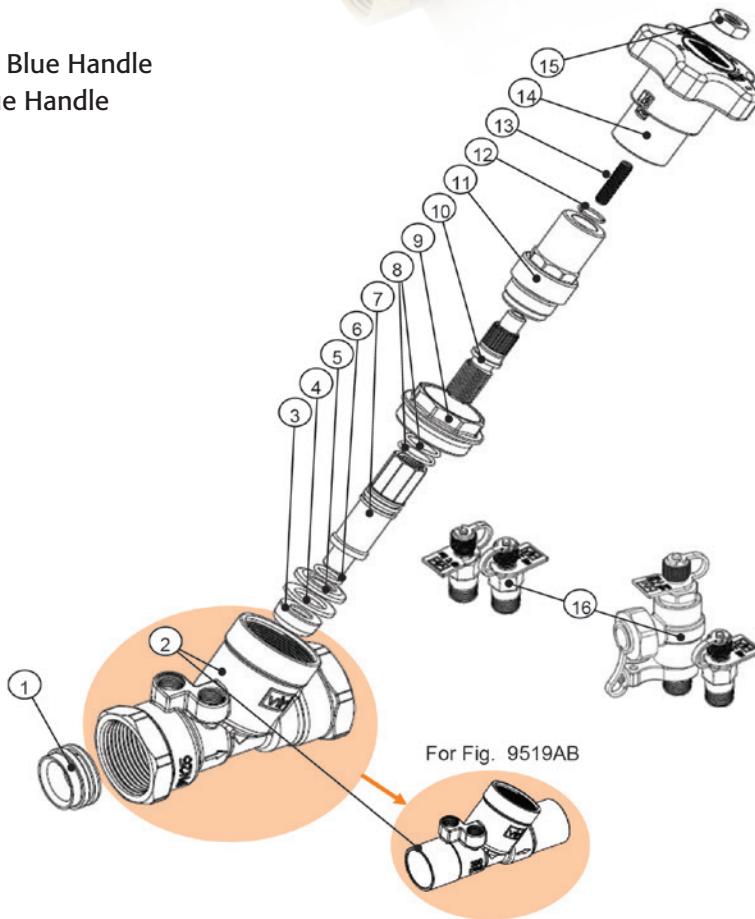
MBV-T-9517AB - Threaded connections, Lead Free – Blue Handle

MBV-S-9519AB - Solder connection, Lead Free – Blue Handle

Flow Range

0.27 gpm - 56.63 gpm

| Part | Material |
|------|--------------------|
| 1 | Venturi insert |
| 2 | DZR Brass/Low Lead |
| 3 | Body |
| 4 | DZR Brass/Low Lead |
| 5 | Gasket disc |
| 6 | PTFE |
| 7 | Disc |
| 8 | EPDM Perox |
| 9 | Disc stem |
| 10 | Stem O-ring |
| 11 | Union |
| 12 | Stem |
| 13 | Bonnet |
| 14 | Brass |
| 15 | Stop spring ring |
| 16 | Steel |
| 17 | Handwheel |
| 18 | ABS (blue) |
| 19 | Nut |
| 20 | Zinc plated steel |
| 21 | Test point |
| 22 | DZR Brass/Low Lead |



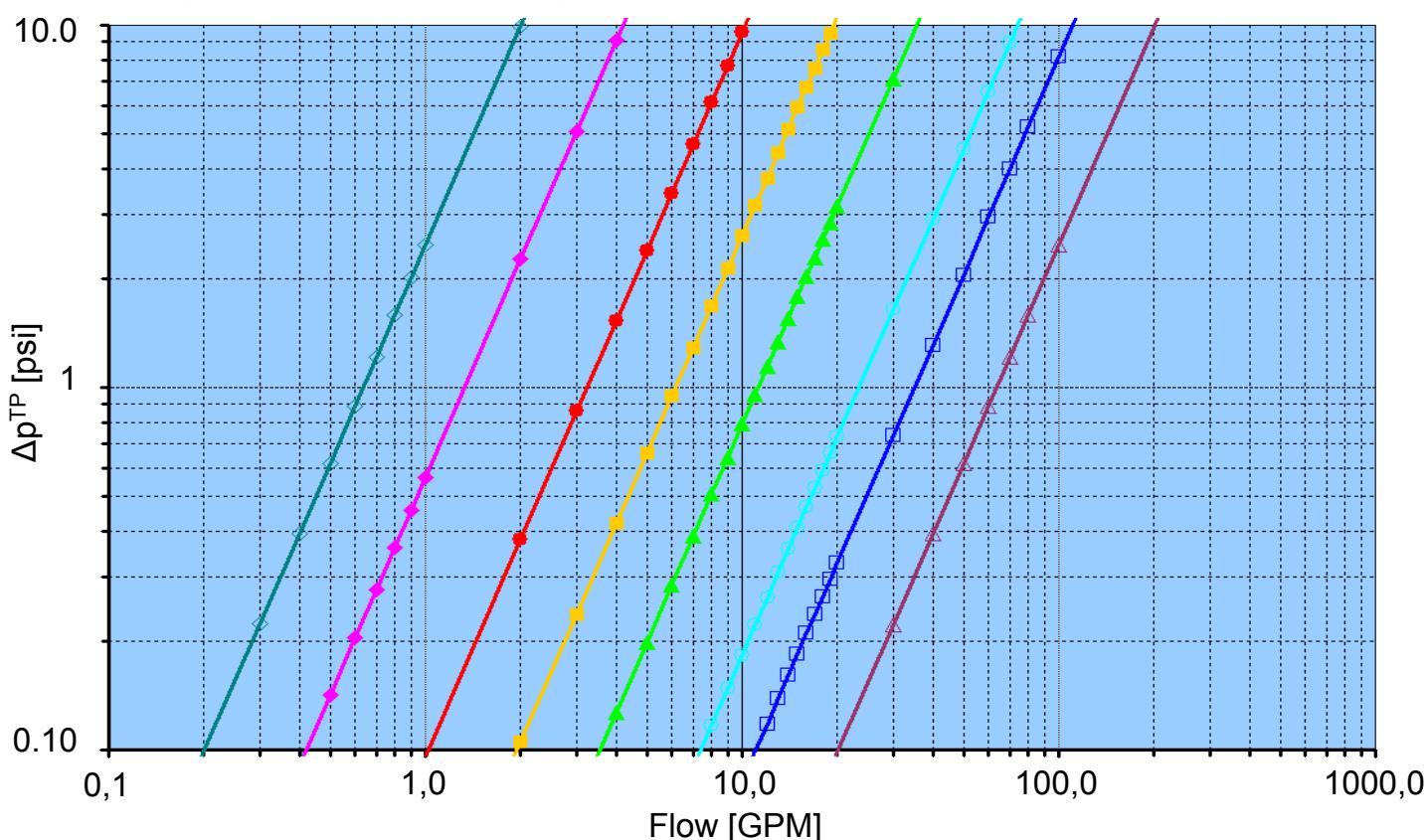
*See spec sheet for Lead Free materials

| Size | 1/2" _{ULF} | 1/2" _{LF} | 1/2" | 3/4" | 1" | 1-1/4" | 1-1/2" | 2" |
|------------------|---------------------|--------------------|-------------|-------------|-------------|--------------|---------------|---------------|
| Flow range (GPM) | 0.27 - 0.71 | 0.49 - 1.17 | 0.98 - 2.35 | 2.19 - 5.15 | 4.09 - 9.56 | 8.56 - 19.81 | 12.84 - 29.80 | 24.09 - 55.63 |

Min. Flow: Flow to generate a positive signal at the venturi

Max. Flow: Flow to go through without noise or cavitation

- 1/2" _{ULF} Cv 0.64
- 1/2" _{LF} Cv 1.33
- 1/2" Cv 3.24
- 3/4" Cv 6.16
- 1" Cv 11.24
- 1-1/4" Cv 23.41
- 1-1/2" Cv 34.95
- 2" Cv 63.67

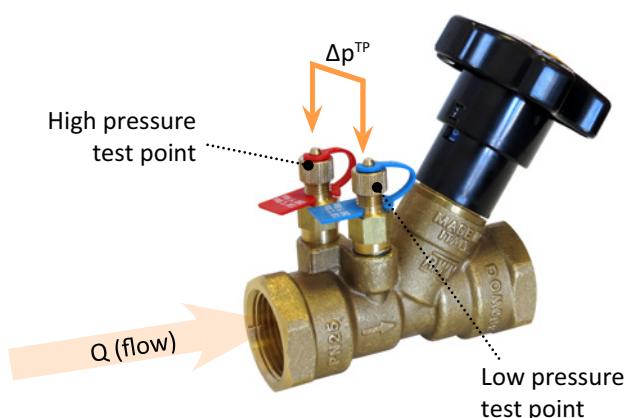


$$Q = C_v \cdot \sqrt{\Delta p^{TP}}$$

Q = flow rate in GPM

Δp = differential pressure signal generated through the pressure test points

Cv = flow coefficient



Features

- Variable orifice terminal balancing valve
- Globe style valve for greater accuracy
- Can be used as shut off without resetting position
- Intended for HVAC & domestic water use
- DZR brass construction - corrosion resistant
- 300WOG maximum pressure
- 300psi at ambient conditions to 160°F
- 150psi maximum pressure rating at 260°F
- Thread & Solder connections
- Lead Free standard
- Upstream and downstream test ports standard

Models

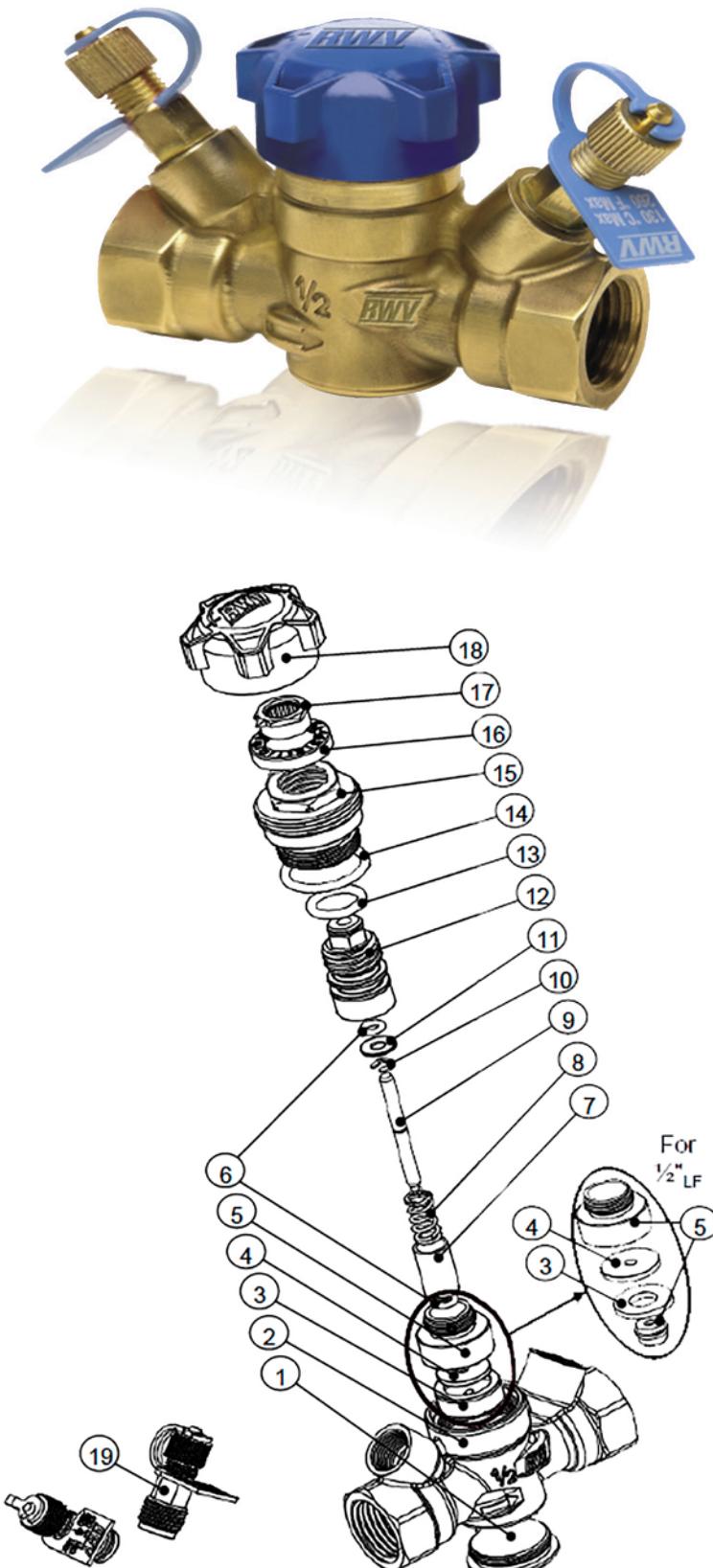
CSV-T-9527AB - Threaded connections LEAD FREE

CSV-S-9529AB - Solder connections LEAD FREE

Flow Range

0.49 gpm - 9.56 gpm

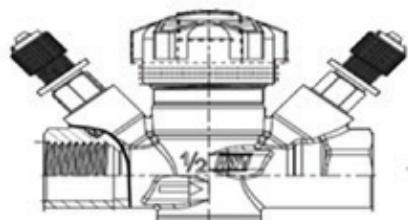
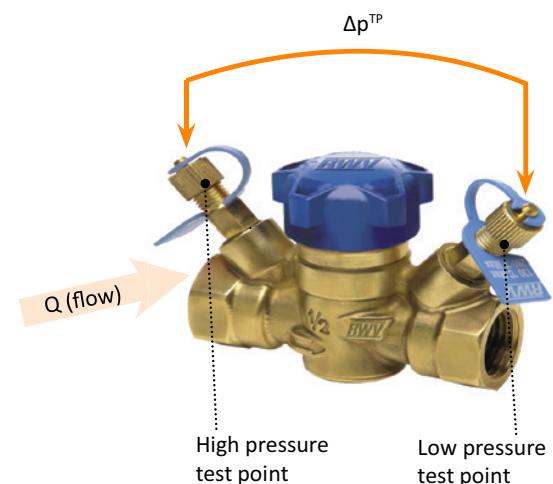
| Part | Material |
|------|-------------------|
| 1 | Plug |
| 2 | Body |
| 3 | Disc gasket |
| 4 | Gasket washer |
| 5 | Disc |
| 6 | Stem O-ring |
| 7 | Spring cartridge |
| 8 | Spring |
| 9 | Disc stem |
| 10 | Stop ring |
| 11 | Washer |
| 12 | Stem |
| 13 | Stem O-ring |
| 14 | Bonnet O-ring |
| 15 | Bonnet |
| 16 | Graduated scale |
| 17 | Reg. indicator |
| 18 | ON/OFF cap |
| 19 | Test point / plug |



| Regulating position | Cv (GPM/psi ^{0.5}) | | | | | | |
|---------------------|------------------------------|-------|-------|-------|--------|--------|-------|
| | L-1/2" | 1/2" | 3/4" | 1" | 1 1/4" | 1 1/2" | 2" |
| 0.5 | 0.127 | 0.578 | 0.798 | 1.538 | 2.324 | 2.486 | 4.416 |
| 1.0 | 0.173 | 0.879 | 1.237 | 2.405 | 4.058 | 4.451 | 6.960 |
| 1.5 | 0.220 | 1.098 | 1.584 | 3.121 | 5.376 | 6.474 | 9.283 |
| 2.0 | 0.254 | 1.260 | 1.896 | 3.665 | 6.081 | 7.757 | 10.47 |
| 2.5 | 0.289 | 1.399 | 2.197 | 4.162 | 6.844 | 8.682 | 11.91 |
| 3.0 | 0.335 | 1.514 | 2.451 | 4.509 | 7.561 | 9.677 | 12.95 |
| 3.5 | 0.382 | 1.607 | 2.671 | 4.844 | 8.116 | 10.47 | 14.22 |
| 4.0 | 0.428 | 1.699 | 2.856 | 5.226 | 8.786 | 11.46 | 15.49 |
| 4.5 | 0.486 | 1.769 | 3.017 | 5.491 | 9.191 | 12.14 | 16.53 |
| 5.0 | 0.543 | 1.838 | 3.179 | 5.723 | 9.896 | 12.95 | 17.69 |
| 5.5 | 0.601 | 1.884 | 3.306 | 5.942 | 10.27 | 13.41 | 18.61 |
| 6.0 | 0.659 | 1.931 | 3.422 | 6.127 | 10.96 | 13.99 | 19.42 |
| 6.5 | 0.717 | 1.965 | 3.526 | 6.312 | 11.45 | 14.34 | 20.23 |
| 7.0 | 0.775 | 2.000 | 3.619 | 6.555 | 12.14 | 14.80 | 21.04 |
| 7.5 | 0.832 | 2.035 | 3.700 | 6.740 | 12.60 | 15.26 | 21.85 |
| 8.0 | 0.879 | 2.058 | 3.792 | 6.937 | 12.95 | 15.72 | 22.66 |
| 8.5 | 0.925 | 2.081 | 3.873 | 7.087 | 13.30 | 16.07 | 23.47 |
| 9.0 | 0.960 | 2.104 | 3.942 | 7.145 | 13.76 | 16.76 | 24.16 |
| 9.5 | 0.994 | 2.116 | 4.012 | 7.283 | 14.34 | 17.34 | 24.97 |
| 10.0 | - | - | - | - | - | - | 25.55 |
| 10.5 | - | - | - | - | - | - | 26.24 |
| 11.0 | - | - | - | - | - | - | 26.59 |
| 11.5 | - | - | - | - | - | - | 27.17 |
| 12.0 | - | - | - | - | - | - | 27.40 |
| 12.5 | - | - | - | - | - | - | 27.86 |
| 13.0 | - | - | - | - | - | - | 28.09 |
| 13.5 | - | - | - | - | - | - | 28.79 |
| 14.0 | - | - | - | - | - | - | 29.13 |
| 14.5 | - | - | - | - | - | - | 29.83 |
| 15.0 | - | - | - | - | - | - | 30.17 |

$$Q = C_v \cdot \sqrt{\Delta p^{TP}}$$

Δp measured at test points
Cv depends on regulating position
as indicated on table



| Size | 1/2" LF | 1/2" | 3/4" | 1" | 1 1/4" | 1 1/2" | 2" |
|------------------|-----------|-----------|-----------|-----------|------------|-------------|-------------|
| Flow range (GPM) | 0.49-1.17 | 0.98-2.35 | 2.19-5.15 | 4.09-9.56 | 8.56-19.81 | 12.84-29.80 | 24.09-55.63 |

Min. Flow: Flow to generate a positive signal at the venturi
Max. Flow: Flow to go through without noise or cavitation

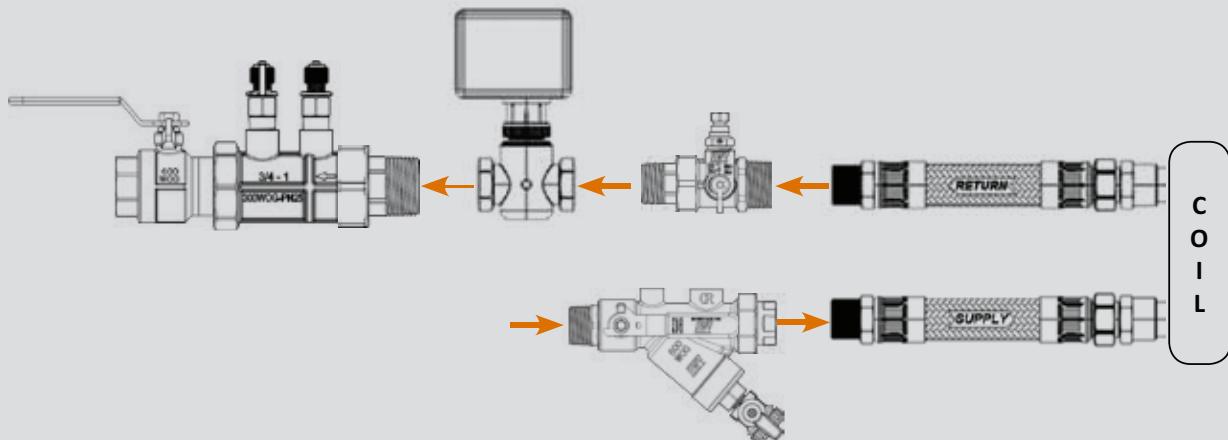
Features

- Memory capacity up to 20,000 records
- Anti-freeze media correction
- Working with projects
- Project measuring with the possibility of printed balancing report
- Li-ion rechargeable battery with USB charger
- Mini USB PC interface
- Ergonomic device case
- QVGA RGB 2.2 inch, 240 x 320 pixel backlight display
- Memory capacity up to 1,200 valves
- Simple valve detection by valve image
- Programmable recording of measured values
- IP65 cover

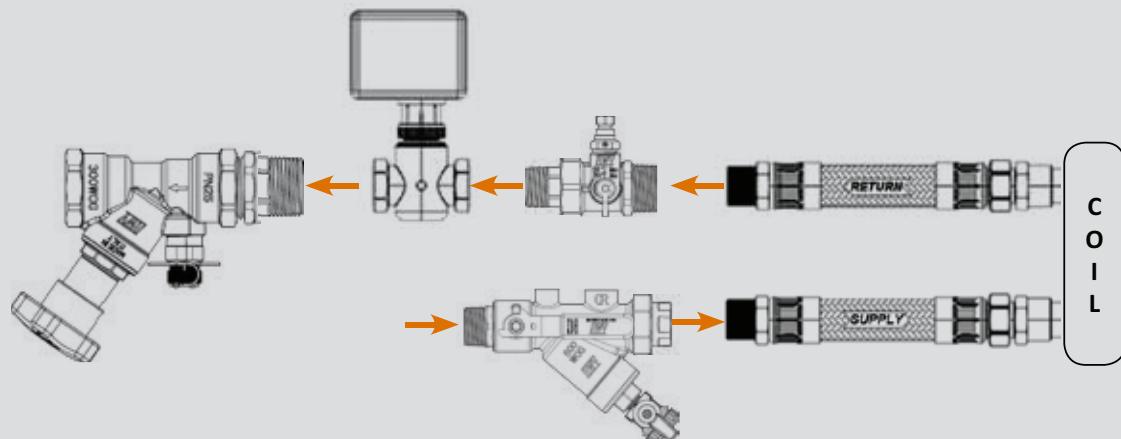


Standard Coil Hook Up Kit Configuration

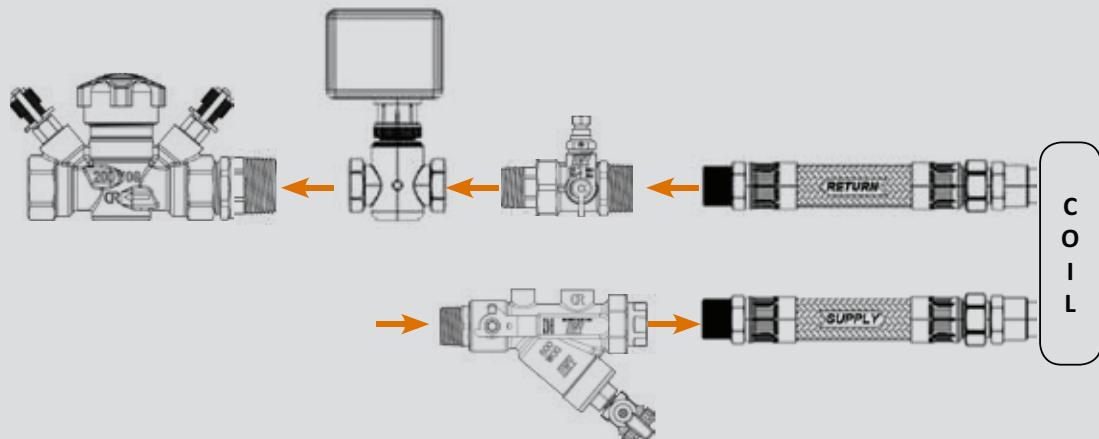
Automatic 2-Way



Manual 2-Way



Circuit Setter 2-Way



Multiple configurations available.

Product will be seal packed and labeled per the mechanical schedule provided.

BRANDS OF ANVIL INTERNATIONAL



Anvil product lines include malleable and cast iron fittings, unions and flanges; seamless and welded steel pipe nipples; steel pipe couplings; universal anvillets; forged steel fittings and unions; pipe hangers and supports; threaded rod; and engineered hangers.



The Gruvlok product line consists of couplings for grooved and plain-end fittings, butterfly valves and check valves; flanges; pump protection components; pipe grooving tools; as well as copper and stainless steel system components.



The SPF/Anvil product line includes a variety of internationally sourced products such as grooved couplings, fittings, cast iron, malleable iron and ductile iron threaded fittings, steel pipe nipples, as well as tee-lets.



Catawissa NACE and API approved wing unions for Standard Service are offered in non-pressure seal ends as well as threaded and butt weld, and are interchangeable with most leading union manufacturers. Fully traceable and available with complete mill certifications, Catawissa's oilfield wing union product line includes the standard ball-and-cone design plus our unique Figure 300 Flat Face design, where space and pipe line separation are a consideration.



Anvil EPS-Engineered Pipe Supports are products used to support piping systems under thermal, seismic, and other dynamic loading conditions. The product line encompasses variable spring hangers, constant supports, sway struts and snubbers as well as standard and special design clamps. Anvil EPS brings the highest quality products and innovative engineering solutions to common and uncommon piping system problems.



JB Smith is the leading manufacturer of oil country tubular fittings, swages and bull plugs – all meeting API specifications. Offering tubing nipples, casing nipples as well as a full line of traditional line pipe and oil country threads in every schedule, JB Smith is the resource for all your oilfield needs.



The Merit product line includes a variety of tee-lets and drop nipples for fire protection applications. Most Merit products are UL/ULC Listed, FM Approved, and rated from 175 to 300 psi.



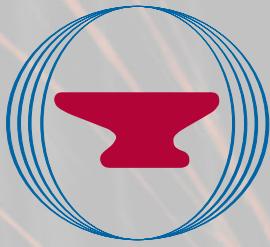
Steel pipe nipples and steel pipe couplings are manufactured in accordance with the ASTM A733 Standard Specification for Welded and Seamless Carbon Steel and Stainless Steel Pipe Nipples. Steel pipe couplings are manufactured in accordance with the ASTM A865 Standard Specification for Threaded Couplings, Steel, Black or Zinc-Coated (Galvanized) Welded or Seamless, for Use in Steel Pipe Joints. API couplings are manufactured in accordance with the API Specification for line pipe.



Anvil-Strut products include a complete line of channel in stock lengths of 10 and 20 feet, with custom lengths available upon request. A variety of fittings and accessories are also offered. All products can be ordered in an assortment of finishes and material choices including SupR-Green™, Zinc Trivalent Chromium, pre-galvanized, hot-dipped galvanized, electro-galvanized, aluminum, plain, and stainless steel.



Founded in 1983, NAP is a manufacturer of fabrication equipment, including automatic welders, plasma cut-off equipment, hole cutting equipment, make-on machines and pipe threaders. NAP, innovators of pipe fabrication equipment.



ANVIL[®]
INTERNATIONAL
Building Connections That Last

Anvil International is building the most advanced Grooved Piping Resource in the industry. We seek to set a new standard in Product Performance, Customer Service, and Technical Support. Our Value Proposition is clear. The Gruvlok team will meet and surpass Industry Requirements in Manufacturing, Distribution, and Service in Support of Every Customer – Every Time.



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Fax: 708-534-5441

Toll Free: 1-800-301-2701

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Regional Distribution & Customer Service Center

1401 Valley View Lane, Suite 150, Irving, TX 75061

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Fax: 972-641-8946

Toll Free: 1-800-451-4414

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B U I L D I N G C O N N E C T I O N S T H A T L A S T

