

## SMITH PRECISION BYPASS VALVES FOR LIQUEFIED GASES AND LIQUIDS

### CHOICE OF MODELS FOR:

Truck Delivery  
Plant Operations  
High Volume Transfer  
Refinery Operations  
Circulating Loops  
Hydraulic Applications  
Processing Systems  
Cylinder Filling

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### ALL MODELS HAVE THESE IMPORTANT ADVANTAGES:

- Chatter free
- No periodic maintenance
- U.L. listed for LP-GAS
- Adjustable while in service
- Superior materials for long life
- Minimal overpressure
- Stainless steel springs

**SMITH**  
**PRECISION PRODUCTS COMPANY**

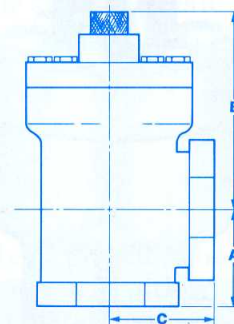
1299 LAWRENCE DRIVE, NEWBURY PARK, CALIFORNIA 91320



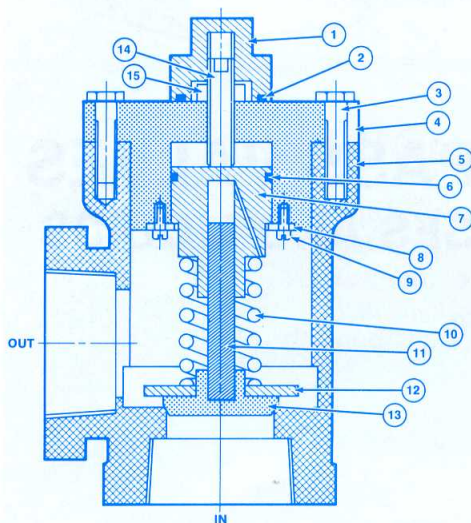
# SMITH BYPASS VALVES

## DIMENSIONS

MODEL	SIZE	A	B	C
WW-120	1/2 x 1/2	1-5/8	5-7/16	1 3/4
WW-340	3/4 x 3/4	1-5/8	5-7/16	1 3/4
WW-100	1 x 1	1-7/8	5-5/8	2-5/8
WW-114	1 1/4 x 1 1/4	1-7/8	5-5/8	2-5/8
WW-112	1 1/2 x 1 1/2	1-7/8	5-5/8	2-5/8
WW-200	2 x 2	3	6-1/8	3 1/4
WW-212	2 1/2 x 2 1/2	3	6-1/8	3 1/4

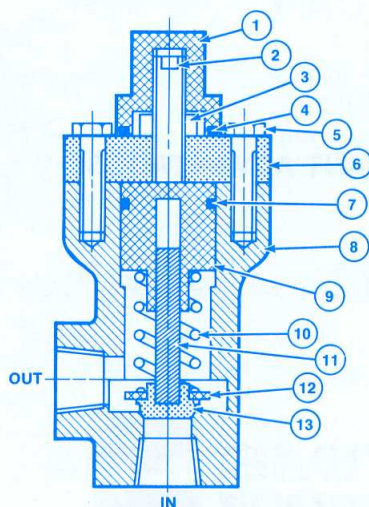


All dimensions in inches.  
All models FPT.



### FOR MODELS WW-200 AND WW-212

- |                  |                                 |
|------------------|---------------------------------|
| 1 VALVE CAP      | 9 FILLISTER HEAD MACHINE SCREWS |
| 2 O-RING         | 10 SPRING                       |
| 3 CAP SCREWS     | 11 GUIDE PIN                    |
| 4 COVER          | 12 VALVE PLATE                  |
| 5 MAIN HOUSING   | 13 VALVE                        |
| 6 O-RING         | 14 ADJUSTING SCREW              |
| 7 SPRING COLLAR  | 15 ADJUSTING SCREW NUT          |
| 8 RETAINER PLATE |                                 |



### FOR MODELS WW-120, WW-340, WW-100, WW-114 AND WW-112

- |                            |                 |
|----------------------------|-----------------|
| 1 VALVE CAP                | 8 MAIN HOUSING  |
| 2 ADJUSTING SCREW          | 9 SPRING COLLAR |
| 3 ADJUSTING SCREW NUT      | 10 SPRING       |
| 4 O-RING FOR VALVE CAP     | 11 GUIDE PIN    |
| 5 CAP SCREWS               | 12 VALVE PLATE  |
| 6 COVER                    | 13 VALVE        |
| 7 O-RING FOR SPRING COLLAR |                 |

# SMITH BYPASS VALVES

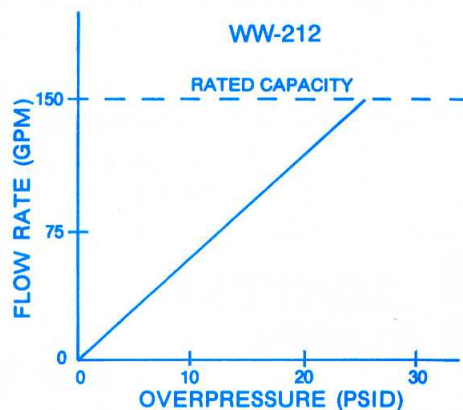
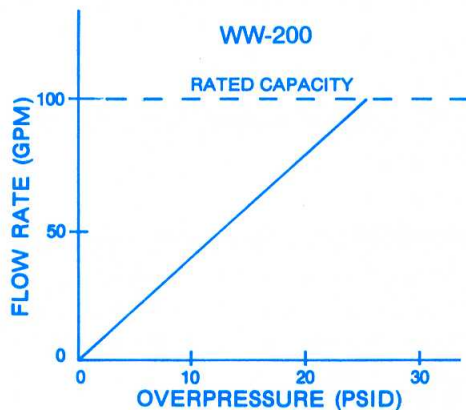
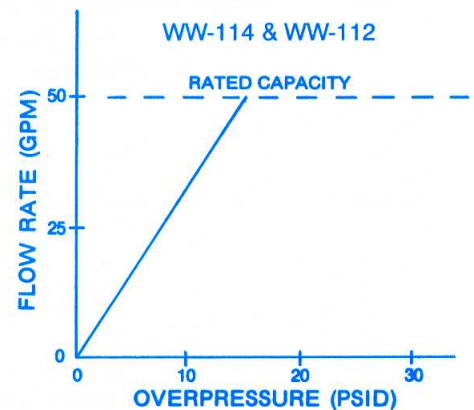
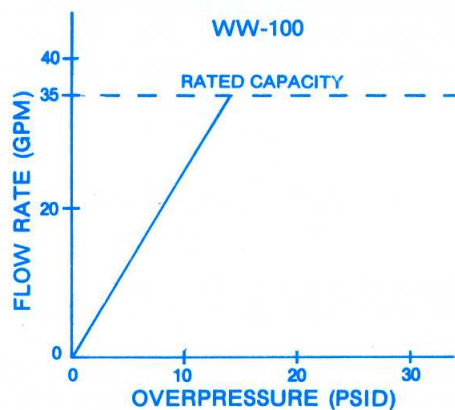
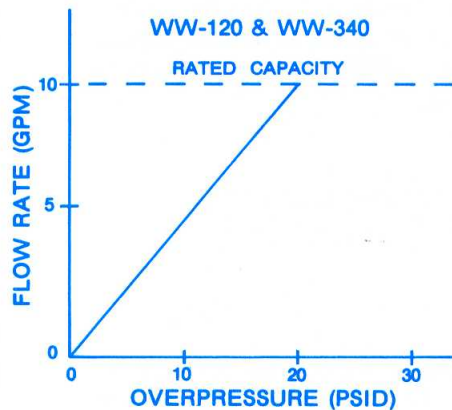
## VALVE SELECTION

MODEL	SIZE	PUMP RECOMMENDED	FLOW (GPM)
WW-120	1/2 x 1/2	DW-1Z, EG-1Z, MC-1, GC-1	5-10
WW-340	3/4 x 3/4	DW-HZ, EC-HZ	10-15
WW-100	1 x 1	MC-1044, MC-1044H, TC-1044H	20-35
WW-114	1 1/4 x 1 1/4	MC-2, MCAT-2, MC-2H, TC-2	35-50
WW-112	1 1/2 x 1 1/2	MC-3, MCAT-3, MC-3H, TC-3	50-100
WW-200	2 x 2	MC-4, MC-4H	100-150
WW-212	2 1/2 x 2 1/2	MC-5, MC-5H	150-250

Smith Bypass Valves can be used for a whole host of liquefied gases or liquids. Write for Sheet AL-46 for a list of suitable liquefied gases/liquids. When ordering, please specify the type of service that the valve will be used for.

Any other questions as to the suitability of the Smith Bypass Valve for a particular application should be directed to our Engineering Department.

## FLOW DATA



Overpressure is defined as the differential pressure required after the valve cracks to attain a specific flow rate.  
Graphs based on fluid viscosity of 1 cp.



The Smith Bypass Relief Valve is designed for continuous duty service and can be used to meter flow. The piston design enables the valve to work chatterfree and minimizes overpressure. The Smith valve is a simple spring loaded differential bypass valve that does not require a separate vapor phase connection.

Standard applications involve pump protection. Since we have been manufacturing pumps since 1938, our experience has greatly enhanced the design of our bypass valve. The table below lists the most common liquids/liqefied gases for which Smith bypass valves have been used.

## FLUID TABLE

Acetaldehyde	Methyl Napthalene
Alcohols	Methyl Vinyl Ether
Anhydrous Ammonia	Methylene Chloride
Binarys	Molasses
Butadiene	Monomethylamine
Butane	Naptha
Carbon Dioxide	Nitrous Oxide
Caustic Sodas	Pentane
Chlorine	Polyesters
Chlorothene	Propane
Coconut Oil	Propylene
Cottonseed Oil	Refrigerants: 11, 12, 13, 13B1,
Epoxy Resin	21, 22, 113, 114, PCA, 114B2,
Esthers	TF, 502, E3, TMC
Ethylene Glycol	Shortening
Ethylene Oxide	Sodium Hydroxide
Ethylene Propylene	Stoddards Solvent
Dielectric Coolants	Sugar
Fats	Sulfur
Fluorocarbon Oils	Sulfur Dioxide
Freons (see Refrigerants)	Sulfuric Acid
Gasoline	Synthetic Oils
Heptane	Tallow
Hexane	Tequila
Honey	Toluene
Hylene	Trichloroethylene
Mapp Gas	Trimethanolamine
Methanol	Vinyl Chloride
Methyl Bromide	Water
Methyl Chloride	

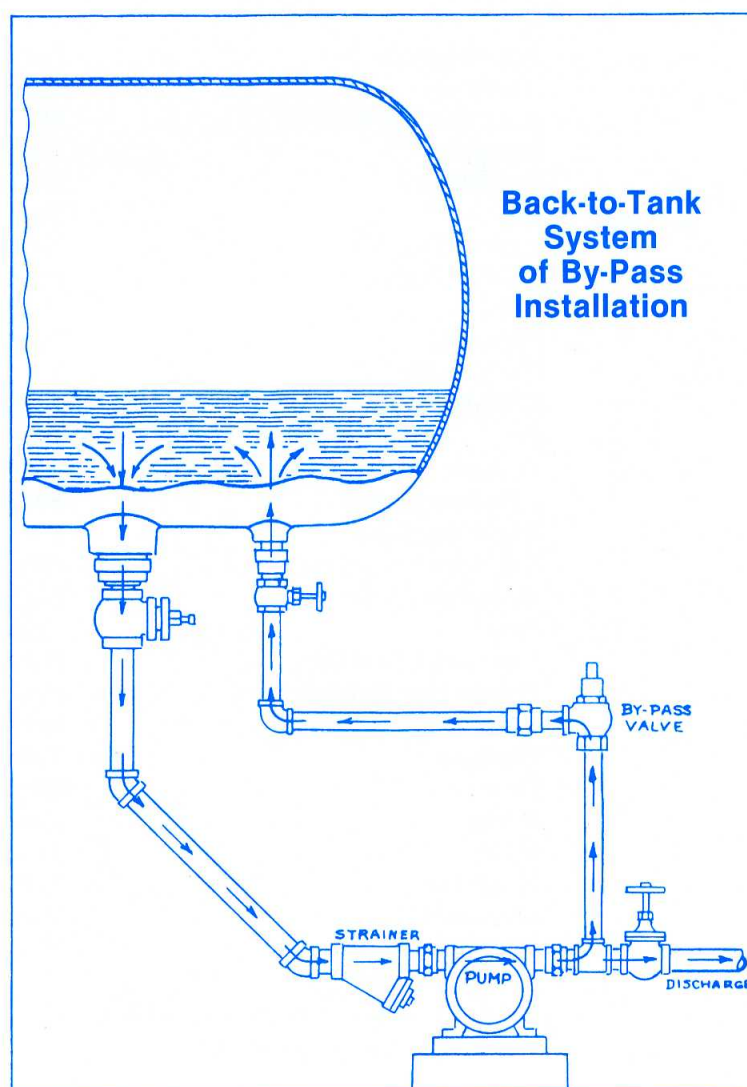


## VALVE SPECIFICATIONS – STANDARD

- Spring is 302 S/S
- Valve adjustable for 25-125 psid
- Castings are ductile iron
- Guide pin is 316 S/S
- Temperatures from  $-150$  to  $+450^{\circ}\text{F}$ .
- Six sizes available:  $\frac{1}{2}$ " to 2" FPT
- Pressures to 1000 psi
- Other materials of construction available.
- Higher spring settings available.

### OPERATION

Operation of the Smith valve is simple. As shipped, the valve will be set for your specified differential pressure. To increase this setting simply remove the valve cap, loosen the adjusting screw nut, and turn the adjusting screw in a *clockwise* direction. To decrease the setting, turn the adjusting screw in a *counterclockwise* direction. Periodic inspection of all working parts of the valve is very important to assure maximum life and safety.



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## **SAFETY FIRST**

Smith Precision Bypass Valves are designed for safety. The valve case is manufactured of the strongest, longest wearing and highest temperature resistant materials available. No soft aluminum or bronze alloys with low melting points are used for pressure-resistant parts. You know your system is safe with a Smith Precision Valve.

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## **QUALITY**

The precision machining in Smith Precision Bypass Valves provides built-in quality. Only the finest materials are used in the production of Smith Valves. Our machinists are craftsmen, our fabrication men are specialists; their skills are reflected in the quality of Smith Precision Valves. No expense or effort is spared to ensure that exacting Smith specifications are met. The engineering-design is proven and backed by years of experience, all to assure that you have the quality you demand for satisfaction.

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## **ECONOMY**

Smith Precision Bypass Valves are economical from all standpoints; initial cost, cost of operation, and cost of repair or replacement. No lubrication or day-to-day servicing of any kind is required. With proper installation in an efficient piping system, Smith Precision Valves perform consistently under the most exacting conditions, and always at the very lowest over-all cost.

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## **FAST SERVICE**

Large stocks of new Bypass Valves, and parts are kept at the factory at all times. Same-day shipment is made when requested. In rush periods, replacement valves and parts take priority over other work. You will not be out of service because parts are not available for your Smith Precision Bypass Valve.

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**SMITH PRECISION PRODUCTS COMPANY**

P.O. Box 276, Newbury Park, CA 91319 USA

1299 Lawrence Drive, Newbury Park, CA 91320 USA

Telephone: 805/498-6616 FAX: 805/499-2867

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