

# User's Guide



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**WARNING:** These products are not designed for use in, and should not be used for, human applications.

## MATERIALS OF CONSTRUCTION

**BODY:** Brass - ASTM B-16, or 316 Stainless Steel - ASTM A276

**BALL AND STEM:** 316 Stainless Steel

**SEATS AND STEM SEAL:** Glass Reinforced P.T.F.E. (Teflon®)

## CONNECTION / STYLE SIZES

Pipe / N.P.T.F. 1/4" - 2"  
(Dryseal National Pipe Taper)

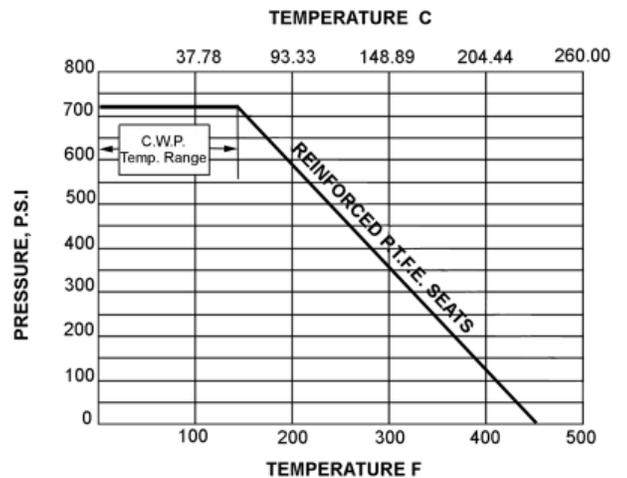
## RATINGS

**TEMPERATURE:** -50 F to 450 F  
(also see Pressure Temperature Chart)

**PRESSURE:** 720 p.s.i. C.W.P. (Cold Working Pressure to 150 F)  
(also see Pressure Temperature Chart)

**VACUUM:** 20 Micron

**SATURATED STEAM:** 150 p.s.i.



## FLOW CHARACTERISTICS

The approximate flow rate through a valve can be calculated as follows:

$$Q = C_v \sqrt{\frac{\Delta P}{G}}$$

where;

- Q = flow rate in gallons (U.S. Std.) per minute
- C<sub>v</sub> = valve constant
- P = pressure drop across the valve in pounds per square inch
- G = specific gravity of the media of relative to water

Note: The values derived from the flow equation are for estimating purposes only. Product variances or systemic factors may alter actual performance.

Size	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2
C <sub>v</sub>	5.5	5.5	8	12	32	46	82	120

## INSTALLATION INSTRUCTIONS

The following serves as a guideline for those experienced in pipe joint makeup. Otherwise, services of a certified pipe fitter should be utilized for installation.

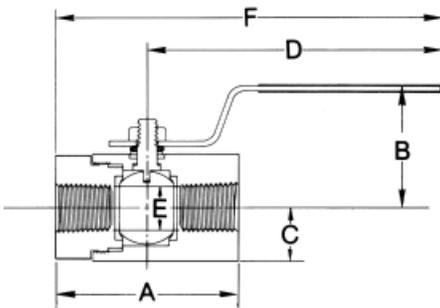
1. Ensure that both the male pipe and female valve threads are free from dirt, debris and corrosion. Wire brushing of the male pipe threads is recommended to ensure a good metal-to-metal joint.
2. Apply a good quality thread lubricant (pipe dope) on the male threads. Lubricant reduces friction when pulling up the pipe joint. Note, thread lubricant is not intended to seal the joint and will not compensate for poor quality male pipe or fitting threads.
3. Turn the female valve threads onto the male pipe threads by hand. Upon free engagement of the threads, continue to turn the valve as far up as it will go (by hand). With the use of a wrench continue to tighten the valve onto the pipe. The pipe joint seal should occur within 1 to 3 turns after wrenching begins. Care should be taken not to exceed 3 turns in which damage to the threads can occur.
4. The pipe joint should be tested for leakage to ensure the pipe joint has been achieved.

## MAINTENANCE

The BV80 Series utilizes our self compensating stem seal design. This design automatically compensates for wear as well as thermal expansion and contraction resulting in a leak tight, maintenance free, service life.

Once the stem seal has worn beyond the compensation afforded by the Belleville springs adjustment of the stem nut may enable valve to be returned to service. Holding the 'flats' of the stem, tighten the stem nut until Belleville springs become fully compressed (flattened); the torque required to tighten the nut further increases sharply when this point is reached. Do not tighten the stem nut beyond this point to avoid damage of the stem seal.

## DIMENSIONS



Size	Dimensions - Inches						Dimensions - Millimeters					
	A	B	C	D	E	F	A	B	C	D	E	F
1/4 & 3/8	2.22	1.75	0.50	4.00	0.36	5.09	56.4	44.4	12.7	101.6	9.1	129.3
1/2	2.61	1.84	0.59	4.00	0.49	5.30	66.3	46.7	15.0	101.6	12.4	134.6
3/4	2.94	2.00	0.75	5.38	0.62	6.85	74.7	50.8	19.0	136.7	15.8	174.0
1	3.32	2.28	1.00	5.38	0.80	7.04	84.3	58.0	25.4	136.7	20.3	179.0
1-1/4	3.70	2.93	1.06	6.75	0.97	8.60	94.0	74.4	26.9	171.4	24.6	218.4
1-1/2	4.25	3.19	1.31	6.75	1.25	8.87	108.0	81.0	33.3	171.4	31.8	225.3
2	4.57	3.37	1.50	6.75	1.50	9.41	116.1	85.6	38.1	171.4	38.1	239.0



## WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **13 months** from date of purchase. OMEGA's WARRANTY adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

**OMEGA is pleased to offer suggestions on the use of its various products. However, OMEGA neither assumes responsibility for any omissions or errors nor assumes liability for any damages that result from the use of its products in accordance with information provided by OMEGA, either verbal or written. OMEGA warrants only that the parts manufactured by the company will be as specified and free of defects. OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, EXCEPT THAT OF TITLE, AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. LIMITATION OF LIABILITY: The remedies of purchaser set forth herein are exclusive, and the total liability of OMEGA with respect to this order, whether based on contract, warranty, negligence, indemnification, strict liability or otherwise, shall not exceed the purchase price of the component upon which liability is based. In no event shall OMEGA be liable for consequential, incidental or special damages.**

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## RETURN REQUESTS/INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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