

# BV3L/BV3LZ 600 PSI DIVERTER

## Premium Quality 3-Way Aluminum Diverter Valve

*Standard PTFE Ball Seals ; L-Bore ; Sizes from ¼" to 3"*

*Designed as an "L-Bore" Diverter ; Optional "Near Zero Leakage" BV3LZ model.*



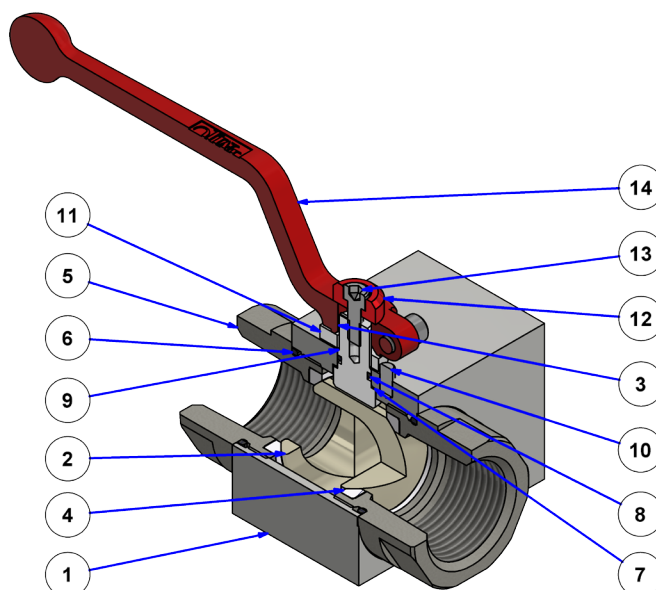
The **BV3L** is an economical U.S. made diverter valve for Filter Duplexing type applications where one input is directed to one of two outputs. Standard "L-Bore" ball with slight port overlap prevents upstream pressure spikes during phase change.

- Straight, non-spherical ball passage improves laminar flow
- Large "L-bore" standard ball porting for low  $\Delta p$  & improved Cv
- Engineered for reliable operation in hydraulic return line applications
- Derived from field-proven **BVAL** for 600 PSI service, Made in U.S.A.
- Standard with Teflon™ (PTFE) Ball Seals for wide fluid applicability
- Accepts full array of DMIC Pre-Engineered Accessories
- Fully serviceable o-ring sealed design, optional EPR for Skydrol systems
- ¼" to 2" rated at 600 PSI, 2½" + rated at 400 PSI.
- Valve series rating valid for near zero leak design.

## Valve Cutaway View and Service Parts BOM

| BV3L  |     | SERVICE PARTS BOM        |  |
|-------|-----|--------------------------|--|
| Index | Qty | Description              |  |
| 1     | 1   | Valve Body               |  |
| 2     | 1   | Ball                     |  |
| 3     | 1   | Spindle                  |  |
| 4     | 2   | Ball Seal                |  |
| 5     | 2*  | End Connection(s)        |  |
| 6     | 2*  | End Connection O-Ring(s) |  |
| 7     | 1   | Internal Thrust Washer   |  |
| 8     | 1   | Spindle O-Ring(s)        |  |
| 9     | 1   | External Glide Washer    |  |
| 10    | 1   | Stop Pin                 |  |
| 11    | 1   | Stop Washer              |  |
| 12    | 1   | Color Code Cap           |  |
| 13    | 1   | Handle Screw             |  |
| 14    | 1   | Handle                   |  |

\*Quantity depends on size and configuration



# BV3L/BV3LZ 600 PSI DIVERTER

## Ordering Codes

See page 14 for accessory codes

**BV3LZ**  
or  
**BV3L**

\*\*\*\* S A 4 3 2 1 \* \* \* \* \*

| Size Codes |           |
|------------|-----------|
| Code       | Port Size |
| 0250       | 1/4"      |
| 0375       | 3/8"      |
| 0500       | 1/2"      |
| 0750       | 3/4"      |
| 1000       | 1"        |
| 1250       | 1 1/4"    |
| 1500       | 1 1/2"    |
| 2000       | 2"        |
| 2500       | 2 1/2"    |
| 3000       | 3"        |

Call Factory for larger sizes 18"+

<sup>1</sup>Aluminum or Stainless Steel may be substituted for 2 1/2"+

| Connection Types |                   |
|------------------|-------------------|
| Imperial Threads |                   |
| Code             | Description       |
| S                | SAE ORB           |
| N                | NPT               |
| Metric Threads   |                   |
| B                | BSPP              |
| ISO Threads      |                   |
| IU               | ISO6149           |
| Welded           |                   |
| W*               | Socket Weld       |
| Flanged          |                   |
| A*               | ANSI Flanges      |
| F*               | SAE 4-Bolt UNC    |
| G*               | SAE 4-Bolt Metric |
| S*               | SAE Split         |

| Ball Pattern |                    |
|--------------|--------------------|
| Code         | Description        |
| A            | L-Bore Diverter    |
| C            | T-Bore 90° Action  |
| D            | T-Bore 180° Action |

| O-Ring Material |                   |
|-----------------|-------------------|
| Code            | Description       |
| 1               | Buna-N (Standard) |
| 2               | EPR               |
| 3               | Viton™            |

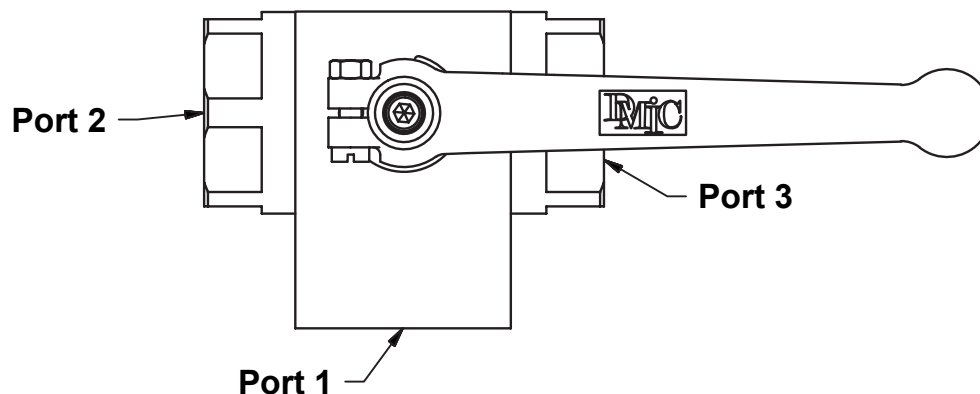
| Ball Seal Material |              |
|--------------------|--------------|
| Code               | Description  |
| 2                  | PTFE Teflon™ |

| Ball & Spindle Mat'l |                 |
|----------------------|-----------------|
| Code                 | Description     |
| 3 <sup>1</sup>       | Brass           |
| 2                    | Stainless Steel |

| Body Material |             |
|---------------|-------------|
| Code          | Description |
| 4             | Aluminum    |

**Note:** Changes from Standard Materials may result in changes to temperature and/or pressure rating.

**Note:** Please refer to page 10 for customizing valve port connections



**Q: Can I use a Diverter Valve or do I need a True Multi-Way Valve?**

A: The "BV3LZ" version of our diverter valve can take the place of a true multi way valve in many circuits.

Specifically, the question you must ask your application is: "Will pressure ever be applied at port 2 or 3 when the valve is blocked?"

If YES, you must use a "real" 3-way valve, or the "BV3LZ" model. If NO, a Diverter such as "BV3L" or "BV3D" is acceptable.

*Due to our policy of continual product improvement, the specifications in this catalog may change without notice. When designing by spec, please request a certified print.*



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ISO 9001 CERTIFIED

# BV3L/BV3LZ 600 PSI DIVERTER

**BV3L/  
BV3LZ**

## Dependent Dimensions

### Threaded Connection

| Dimension (Inches)   | A         | B              |
|----------------------|-----------|----------------|
| Port Code(s)         | Port Size | Overall Length |
| N<br>S<br>B<br>IU    | ¼"        | 2.64           |
|                      | ⅜"        | 2.64           |
|                      | ½"        | 2.64           |
|                      | ¾"        | 3.27           |
|                      | 1"        | 3.47           |
| Threaded Connections | 1¼"       | 3.89           |
|                      | 1½"       | 4.31           |
|                      | 2"        | 4.90           |

### SAE 4-Bolt Flange Connection

| Dimension (inches)                                          | A <sub>FM</sub> | A <sub>FL</sub> | B <sub>FM</sub> | B <sub>FL</sub> |
|-------------------------------------------------------------|-----------------|-----------------|-----------------|-----------------|
| Port Code(s)                                                | Port Size       | Overall Length  | Width Port 1    | Width Port 1    |
| FM/GM<br>FL<br>SAE 4-Bolt<br>Comp/Std<br>Flange Connections | ¾"              | 7.59            | 8.84            | 4.64            |
|                                                             | 1"              | 7.80            | 9.04            | 5.52            |
|                                                             | 1¼"             | 8.46            | 9.71            | 6.39            |
|                                                             | 1½"             | 8.88            | 9.88            | 6.44            |
|                                                             | 2"              | 9.47            | 11.22           | 7.29            |

### SAE Split Flange Connection

| Dimension (inches)                    | A         | B              |
|---------------------------------------|-----------|----------------|
| Port Code(s)                          | Port Size | Overall Length |
| SM<br>SAE Split<br>Flange Connections | ¾"        | 8.14           |
|                                       | 1"        | 8.26           |
|                                       | 1¼"       | 9.32           |
|                                       | 1½"       | 9.76           |
|                                       | 2"        | 10.85          |

### ANSI & DIN Flange Connection

| Dimension (inches)              | A         | B                                                                                                                                  |
|---------------------------------|-----------|------------------------------------------------------------------------------------------------------------------------------------|
| Port Code(s)                    | Port Size | Overall Length                                                                                                                     |
| AA / D*<br>ANSI & DIN<br>Flange | 1"        | Because BV3L is a low pressure valve, DMIC offers only ANSI Class 150 as a BV3L option. Please contact DMIC for a certified print. |
|                                 | 1¼"       |                                                                                                                                    |
|                                 | 1½"       |                                                                                                                                    |
|                                 | 2"        |                                                                                                                                    |

### Swivel Socket Weld Connection

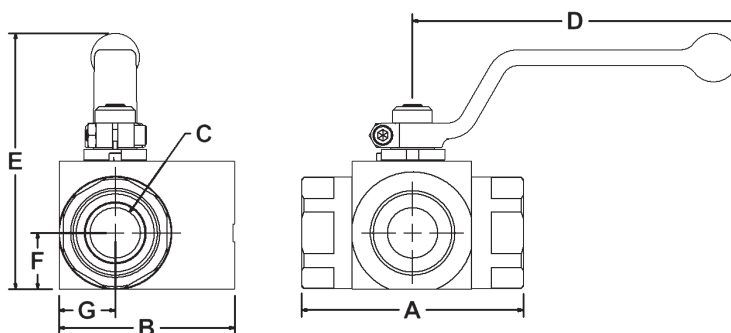
| Dimension (inches)               | A         | B              |
|----------------------------------|-----------|----------------|
| Port Code(s)                     | Port Size | Overall Length |
| W4<br>Socket Weld<br>Connections | ¾"        | 5.84           |
|                                  | 1"        | 6.04           |
|                                  | 1¼"       | 6.71           |
|                                  | 1½"       | 7.13           |
|                                  | 2"        | 7.72           |

**BV3L/  
BV3LZ**

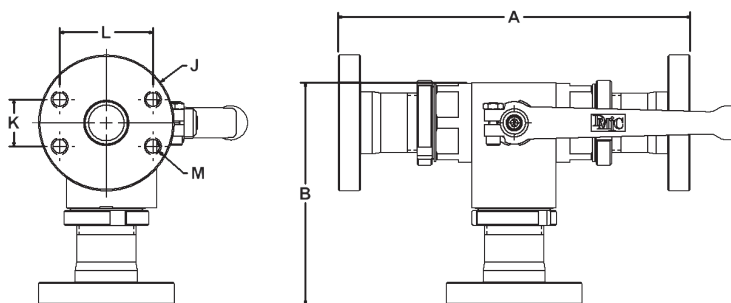
## Common Dimensions

| Part Number    | Port Size | Rated Pressure PSI | Dimensions IN |                 |                  |                   |                                  |
|----------------|-----------|--------------------|---------------|-----------------|------------------|-------------------|----------------------------------|
|                |           |                    | C Valve Bore  | D Handle Length | E Overall Height | F Bot to Port Ctr | G Back of Body to Center of Port |
| BV3L-0250****  | ¼"        | 600                | 0.38          | 3.35            | 2.70             | 0.63              | 0.63                             |
| BV3LZ-0250**** | ¼"        |                    |               |                 |                  |                   |                                  |
| BV3L-0375****  | ⅜"        |                    | 0.44          | 3.35            | 2.70             | 0.63              | 0.63                             |
| BV3LZ-0375**** | ⅜"        |                    |               |                 |                  |                   |                                  |
| BV3L-0500****  | ½"        |                    | 0.44          | 3.35            | 2.70             | 0.63              | 0.63                             |
| BV3LZ-0500**** | ½"        |                    |               |                 |                  |                   |                                  |
| BV3L-0750****  | ¾"        |                    | 0.67          | 5.09            | 3.76             | 0.76              | 0.81                             |
| BV3LZ-0750**** | ¾"        |                    |               |                 |                  |                   |                                  |
| BV3L-1000****  | 1"        |                    | 0.79          | 5.09            | 4.01             | 0.88              | 0.88                             |
| BV3LZ-1000**** | 1"        |                    |               |                 |                  |                   |                                  |
| BV3L-1250****  | 1¼"       |                    | 1.06          | 6.81            | 5.59             | 1.53              | 1.28                             |
| BV3LZ-1250**** | 1¼"       |                    |               |                 |                  |                   |                                  |
| BV3L-1500****  | 1½"       |                    | 1.34          | 6.81            | 6.27             | 2.00              | 1.48                             |
| BV3LZ-1500**** | 1½"       |                    |               |                 |                  |                   |                                  |
| BV3L-2000****  | 2"        |                    | 1.69          | 6.81            | 6.91             | 2.31              | 1.74                             |
| BV3LZ-2000**** | 2"        |                    |               |                 |                  |                   |                                  |

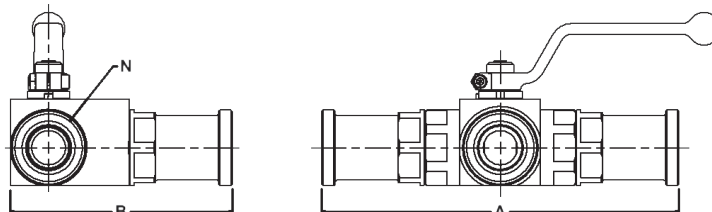
N, S, B, IU THREADED



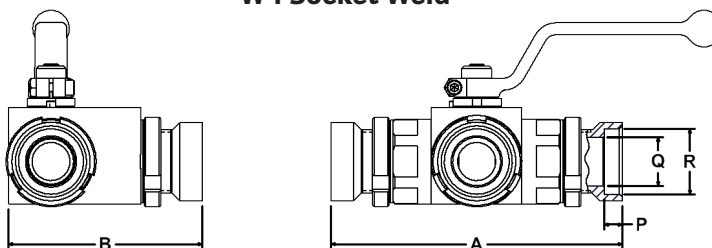
### FM/GM/FL SAE 4 BOLT FLANGE (COMP & STD)



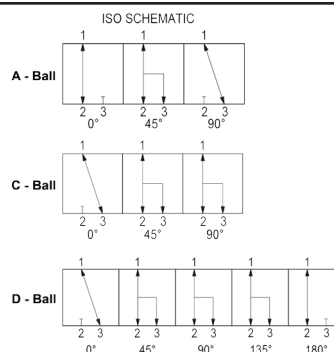
### SM SAE SPLIT FLANGE HEAD



### W4 Socket Weld

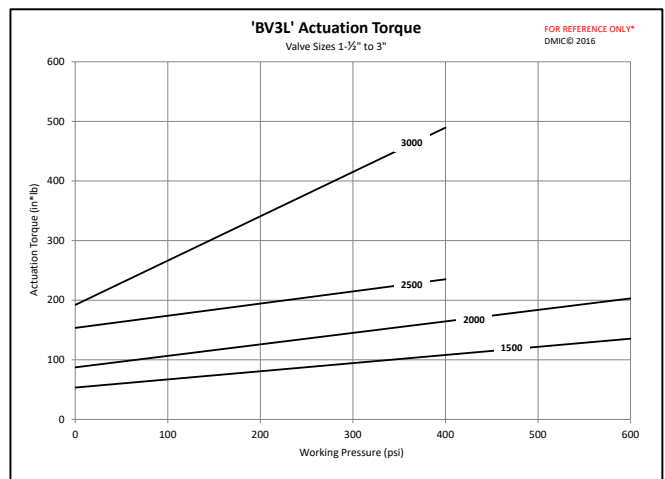
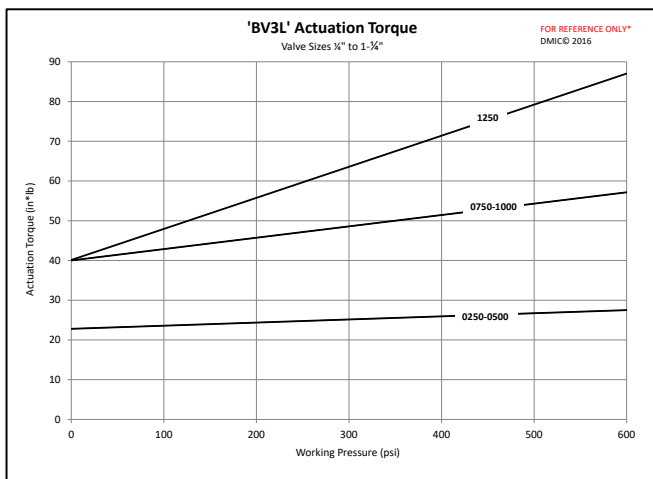
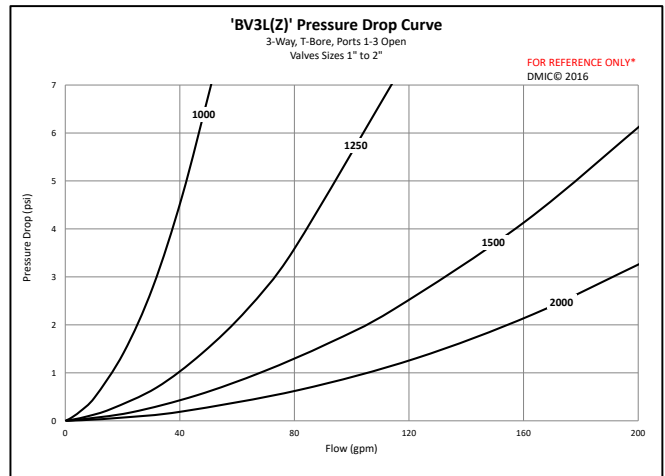
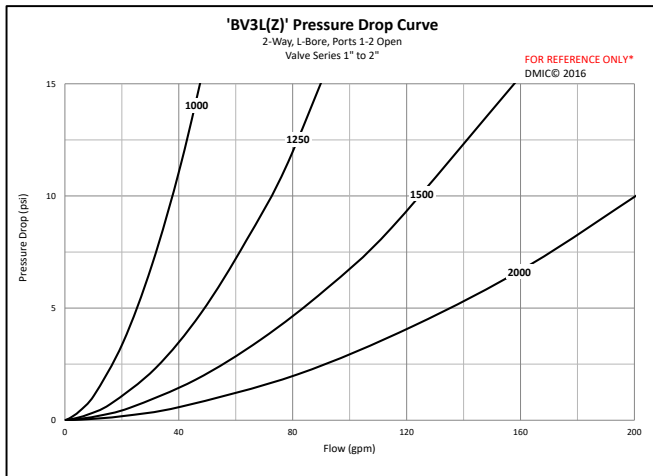
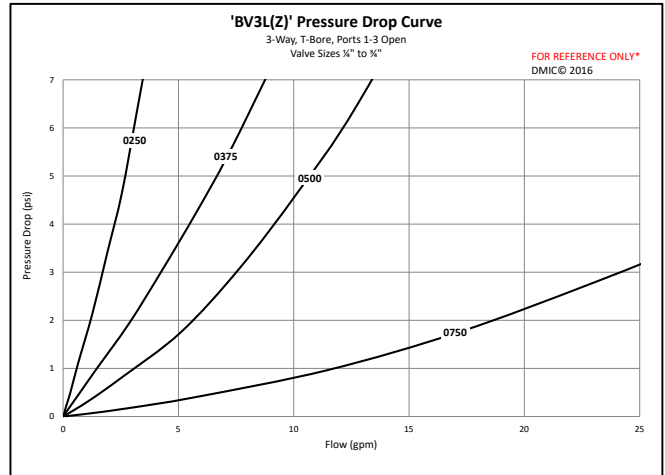
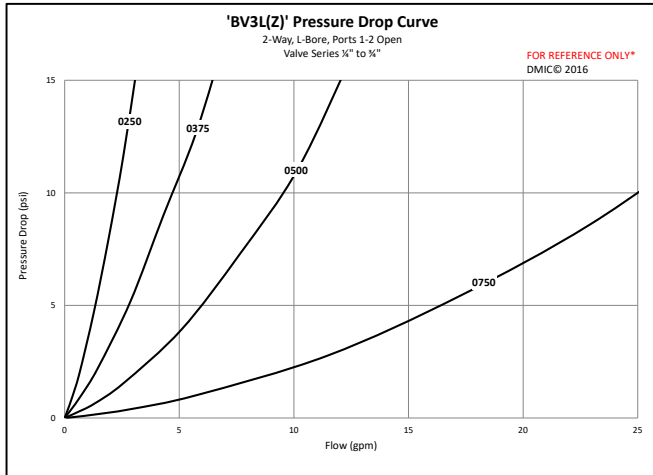


## BV3LZ & BV3L for 600 PSI Ball Pattern Schematic



# BV3L/BV3LZ 600 PSI DIVERTER

## Flow Characteristic and Actuation Torque Curves



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