

# 'BV3L' 400 PSI Diverter

**Premium Quality 3-Way Aluminum Diverter Valve**  
**Standard PTFE Ball Seals ; L-Bore ; Sizes from 1/4" to 2"**  
 Designed as an "L-Bore" diverter, optional "Near Zero Leakage" sealing.



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 ΔP & improved C<sub>v</sub>
- ☑ Engineered for reliable operation in hydraulic return line applications
- ☑ Derived from field-proven 'BVAL' for 400 PSI service, Made in U.S.A.
- ☑ 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
- ☑ **New for 2001 - Near zero leakage 'BV3LZ' model !**

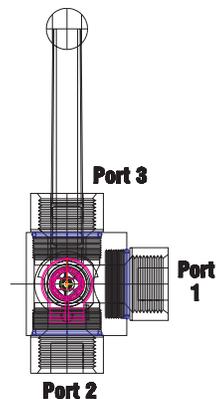
## About 'BV3L' Series

DMIC's 'BV3L' serves the quality oriented OEM by eliminating an internally marginal and/or "cheap" brass diverter valve from the failure loop.

Derived from the acclaimed DMIC 'BVAL' series, this full bore L-bore diverter is rated to 400 PSI and features full compatibility with DMIC options.

**The 'BV3LZ' model utilizes DMIC's innovative internal design for near zero internal leakage and unrestricted port pressurization.**

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



The 'BV3DZ' version of our diverter valve can take the place of a true multiway valve in many circuits.

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

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

## Common Dimensions

The following specifications are common to all 'BV3L' series valves regardless of connection style. For valve length 'A' and other specific dimensions, please see Dependent Dimensions table adjacent page.

'BV3L' is manufactured in threaded styles only but can be factory equipped with 'SSW' System adapters to achieve **Split & 4-Bolt Flange, Socket Weld, ANSI Class 150/DIN Flange, and Hose Barb Connection(s) on one or more ports**. We provide dimensions for common 3-like port valves in the Dependent Dimension tables, but this product is highly suited to customization and we invite you to call your Distributor or DMIC for application assistance.

BV3L	Common Dimensions					
	Part Number	Port Size	Rated Pressure PSI (bar)	DIMENSIONS in (mm)		
Width P1 (Thrd) B				Valve Bore C	Handle Length D	
	<b>BV3L-0250**-4321</b>	1/4"	<b>400</b> 27.6	<b>2.25</b> 57.2	<b>0.25</b> 6.4	<b>3.37</b> 85.5
	<b>BV3L-0375**-4321</b>	3/8"	<b>400</b> 27.6	<b>2.25</b> 57.2	<b>0.31</b> 7.9	<b>3.37</b> 85.5
	<b>BV3L-0500**-4321</b>	1/2"	<b>400</b> 27.6	<b>2.25</b> 57.2	<b>0.44</b> 11.2	<b>3.37</b> 85.5
	<b>BV3L-0750**-4321</b>	3/4"	<b>400</b> 27.6	<b>2.81</b> 71.5	<b>0.69</b> 17.5	<b>5.12</b> 130.0
	<b>BV3L-1000**-4321</b>	1"	<b>400</b> 27.6	<b>3.19</b> 81.0	<b>0.79</b> 20.1	<b>5.12</b> 130.0
	<b>BV3L-1250**-4321</b>	1 1/4"	<b>400</b> 27.6	<b>3.88</b> 98.4	<b>1.06</b> 26.9	<b>6.81</b> 173.0
	<b>BV3L-1500**-4321</b>	1 1/2"	<b>400</b> 27.6	<b>4.08</b> 103.5	<b>1.34</b> 34.0	<b>6.81</b> 173.0
	<b>BV3L-2000**-4321</b>	2"	<b>400</b> 27.6	<b>5.13</b> 130.2	<b>1.69</b> 42.9	<b>6.81</b> 173.0



# 'BV3L' 400 PSI Diverter

## Dependent Dimensions

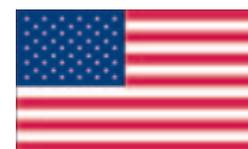
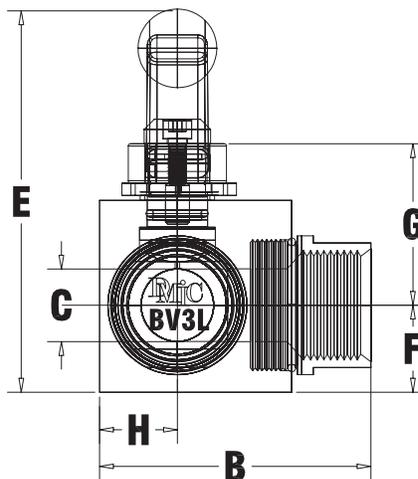
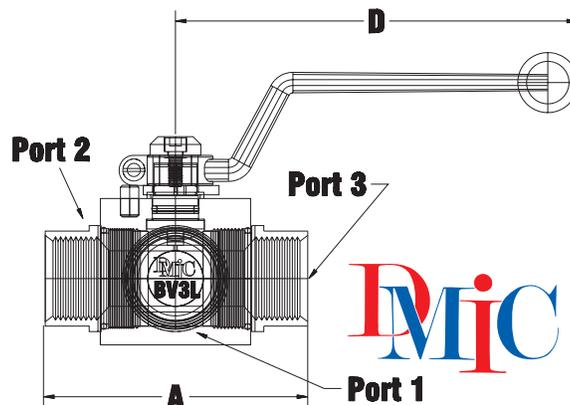
These are the valve dimensions that vary based on your selection of a connection style. Some connection styles provide additional dimensions to those published at left; see supplemental sketches next page.

'BV3L' valves with flange and socket weld connections are composite valves, built using threaded valves and 'SSW' adapters.

To harness the full capabilities of DMIC's 'SSW' Power Unit Layout system please call DMIC Helpline at 1-800-248-3642 to obtain the Designer's Guide.

BV3L		Dependent Dimensions				
THREADED CONNECTION						
Dimension (inches)		A	E	F	G	H
Port Code(s)	Port Size	Overall Length	Overall Height	Bot to Port Ctr	PortCtr to Top	Back to 2-3 Ctrln
<b>N</b> <b>S</b> <b>B</b> <b>IU / IA</b> Threaded Connections	1/4"	2.63	2.59	0.63	1.31	0.63
	3/8"	2.63	2.59	0.63	1.31	0.63
	1/2"	2.63	2.59	0.63	1.31	0.63
	3/4"	3.28	3.79	0.76	1.43	0.75
	1"	3.48	4.02	0.88	1.56	0.88
	1 1/4"	3.90	5.13	1.15	2.12	1.15
1 1/2"	4.32	5.63	1.42	2.36	1.42	
2"	4.90	6.25	1.74	2.65	1.74	
SAE 4-BOLT FLANGE CONNECTION						
Dimension (inches)		A <sub>FM</sub>	A <sub>FL</sub>	E	F	G
Port Code(s)	Port Size	Overall Length	Overall Length	Overall Height	Bot to Port Ctr	PortCtr to Top
<b>FM / GM</b> <b>FL</b> SAE 4-B Comp/Std Flange Conn	3/4"	7.65	8.78	8.78	0.76	1.43
	1"	7.85	9.09	9.09	0.88	1.56
	1 1/4"	8.50	9.76	9.76	1.15	2.12
	1 1/2"	8.92	10.68	10.56	1.42	2.36
2"	9.52	11.15	11.15	1.74	2.65	
SAE SPLIT FLANGE CONNECTION						
Dimension (inches)		A	E	F	G	A <sub>CM</sub>
Port Code(s)	Port Size	Overall Length	Overall Height	Bot to Port Ctr	PortCtr to Top	Length A (Combo)
<b>SM</b> <b>CM</b> SAE Split & Combo Flg Conn	3/4"	8.08	3.77	0.76	1.43	7.86
	1"	8.28	4.02	0.88	1.56	8.06
	1 1/4"	9.34	5.11	1.15	2.12	8.92
	1 1/2"	9.76	5.60	1.42	2.36	9.34
2"	10.84	6.27	1.74	2.65	10.18	
ANSI & DIN FLANGE CONNECTION						
Dimension (inches)		-	-	-	-	-
Port Code(s)	Port Size	For complete ANSI and DIN Flange selection specs, please see the 'BVAH' section. Because 'BV3L' is a low pressure valve DMIC offers only ANSI Class 150 as a 'BV3L' option.				
<b>A* / D*</b> ANSI & DIN Flange	1"					
	1 1/4"					
	1 1/2"					
	2"					
SWIVEL SOCKET WELD CONNECTION						
Dimension (inches)		A	E	F	G	-
Port Code(s)	Port Size	Overall Length	Overall Height	Bot to Port Ctr	PortCtr to Top	
<b>W4</b> Socket Weld Connections	3/4"	5.78	3.77	0.76	1.43	
	1"	5.98	4.02	0.88	1.56	
	1 1/4"	6.65	5.11	1.15	2.12	
	1 1/2"	7.07	5.60	1.42	2.36	
	2"	7.65	6.27	1.74	2.65	

## Dimensional Sketches



Made in U.S.A.

Hecho en USA

Fabriquée aux E.U.

## 'BV3L' for 400 PSI Ball Pattern Schematic

BALL CODE	ISO CIRCUIT SCHEMATIC	BALL PATTERN	+90°	+45°	0°	-45°	-90°	STOP WASHER TYPE
A		L-Bore Port Overlap						
C		T-Bore 90°						
D		T-Bore 180°						

**NOTE:** The 'BV3L' is intended by DMIC to be a high quality yet economical product offering with standard L-bore ball pattern. For override to "C" or "D" ball pattern on 'BV3L' an OEM production order quantity is required. Please call DMIC

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.



# 'BV3L' 400 PSI Diverter

BV3L	Physical Construction
Parameter	Material
BODY	Aluminum Body & Connections
BALL	Brass, Chrome Plated
SPINDLE	Brass
STD HANDLE	Forged Aluminum, Anodized
BALL SEALS	Teflon, optional High Temperature
O-RINGS	Buna-N standard, EPR/Viton quick del.
TEMP RANGE	-22°F to 212°F (-30°/100°C)
LIFE EXPECTANCY	Over 1,000,000 cycles

## 'BV3L' Accessories

DMIC 'BV3L' can be equipped with the industry's widest array of labor and cost-saving Ball Valve accessories, including:

- ☑ Locking Handles, OSHA type and Security
- ☑ Limit Switch Brackets, with one or two switches, and optional locking capability
- ☑ Various Panel and Substrate mounting options
- ☑ Turnkey Actuation Packages for Pneumatic, Electric, and Hydraulic applications

## New Simplified Accessory Codes

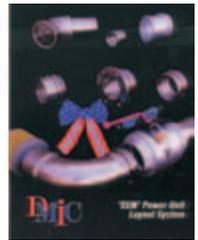
For 2001, we've made it even easier to get exactly the Ball Valve you need for rapid delivery. Please see page 12.



BV3L		Service Parts BOM
Index	Qty	Description
014	1	Valve Body, Aluminum
023A	1	L-Bore Ball, Code A, see table
033	1	Spindle, Brass
042	2	Ball Seal, Teflon
061	3	Connection O-Ring
071	1	Spindle O-Ring
091	1	Stop Pin
101	1	Stop Washer
111	1	Internal Glide Brg
124**	3	Connection End, add code
142	1	Spindle Glide Brg
154	1	Color Code Cap
162	1	Handle Bolt

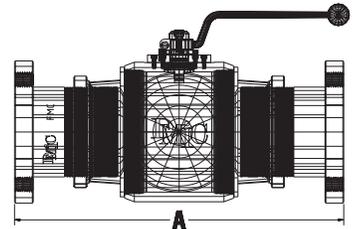
## 'SSW' Possibilities

'BV3L' from 3/4" to 2" size can be configured with Hose Barb, 4-Bolt/Split /ANSI Flange, and Swivel Socket Weld connections. You can route mechanically rigid 'SSW' adapters in **Inline, 45°, and 90° degree** directions with dimensional tolerances previously only dreamed of. Also, you can interchangeably assemble Imperial and Metric standard power units to the same layout dimensions. **Please see Page 8 for an example of customizing 'BV3L' Ball Valve connections using "2+2 codes".**



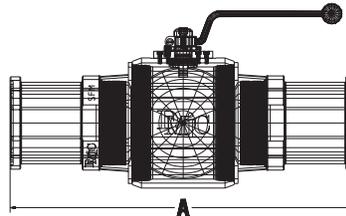
### 'BV3L' WITH C.61 4-BOLT FLANGE

Order 'BV3L' with connection code FM to receive Code 61 SAE 4-Bolt Companion connections. Order code GM for metric bolt holes, or code FL for C.61 Std. Flange (through bolt holes).



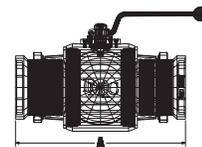
### 'BV3L' C.61 SPLIT FLANGE

Order connection code SM to receive Code 61 Split Flange Head connections rated to 400 PSI. Rapid order a Split Flange kit with suffix /SFK.

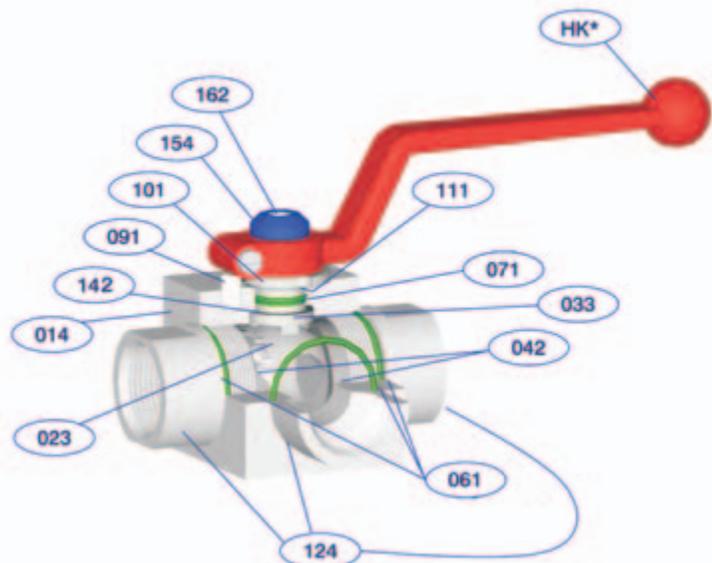


### SWIVEL SOCKET WELD 'BV3L'

Order connection code W4 to receive adjustable "swivel" socket weld connections for Sch. 40 pipe. Rated to 400 PSI.

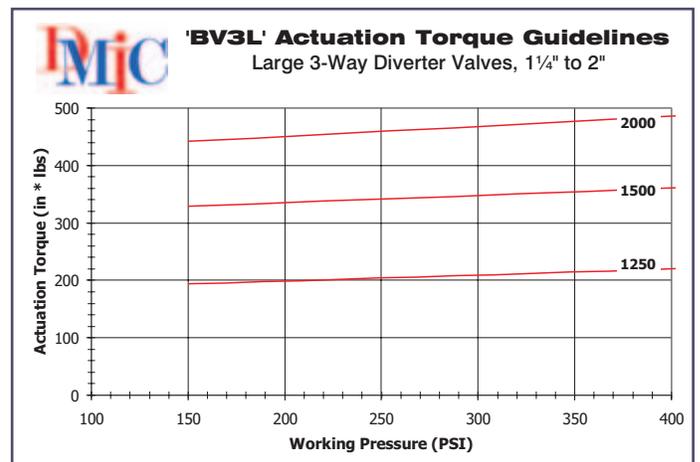
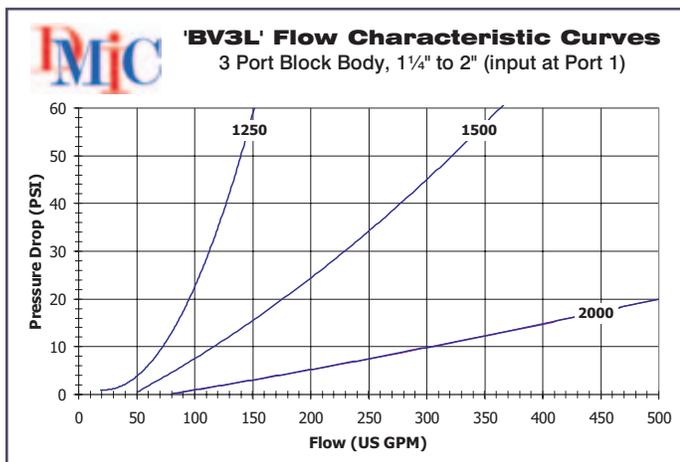
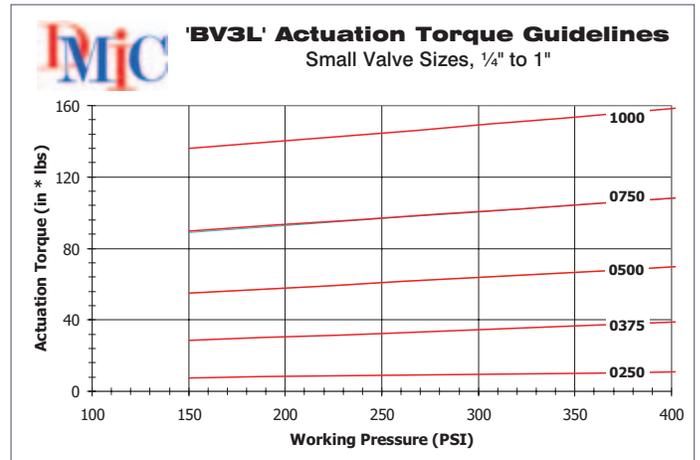
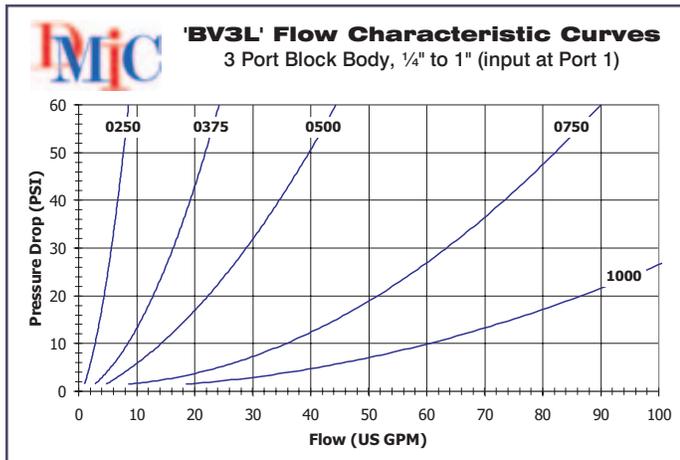


## 'BV3L' Service Parts BOM



# 'BV3L' 400 PSI Diverter

## 'BV3L' Performance Curves



## 'BV3L' Ordering Codes Summary

**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"

Connection Types	
IMPERIAL THREADS	
Code	Desc
S	SAE ORB
N	NPT
METRIC THREADS	
Code	Desc
B	BSPP
T	BSPT - special
ISO THREADS	
Code	Desc
IU	ISO6149
IA	ISO1179

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	Brass / Brass
2	Stainless Steel / Brass

Body Material	
Code	Description
4	Aluminum (standard)

