

## MECHANICAL DIRECTIONAL CONTROLS



<b>DIRECT ACTING CHECK VALVES</b> .....	MD3
<b>PILOT TO OPEN AND DOUBLE PO CHECK VALVES</b> .....	MD37
<b>MANUAL VALVES</b> .....	MD55
<b>PILOT TO SHIFT VALVES</b> .....	MD77
<b>SHUTTLE VALVES</b> .....	MD95
<b>ROTARY VALVES</b> .....	MD105



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1800-645765

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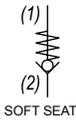
[sales@oilsolutions.com.au](mailto:sales@oilsolutions.com.au)

**WARNING:** *the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.*

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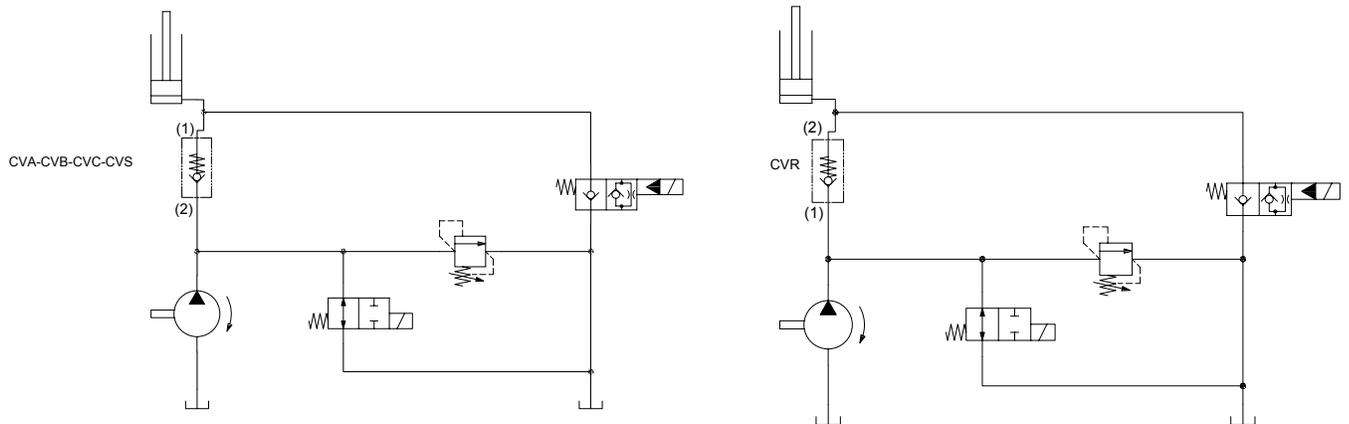
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**DIRECT ACTING CHECK VALVES**

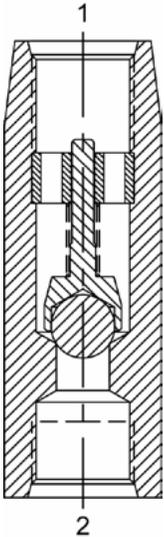
	GPM	PSI	LPM	BAR	CAVITY	MODEL	PAGE
	8	3000	30	207	5/8-18	<b>IM-CVA</b>	MD4
	5	3500	19	241	5/8-18	<b>MA-CVA</b>	MD6
	10	4350	38	300	3/4-16	<b>HB-CVA</b>	MD8
	15	3500	57	241	7/8-14	<b>DE-CVA</b>	MD10
	15	5000	57	345	7/8-14	<b>HE-CVA</b>	MD12
	35	5000	132	345	1 1/16-12	<b>HT-CVA</b>	MD14
	40	3500	151	241	1 5/16-12	<b>SJ-CVA</b>	MD16
	10	3500	38	241	7/8-14	<b>DE-CVB</b>	MD18
	10	3500	38	241	3/4-16	<b>PB-CVC</b>	MD20
	8	3500	30	241	7/8-14	<b>DE-CVC</b>	MD22
	1	3500	4	241	Special	<b>QS-CVL</b>	MD24
 SOFT SEAT	2.5	1500	9.5	103	5/8-18	<b>MA-CVS</b>	MD26
	5	3500	19	241	3/4-16	<b>PB-CVS</b>	MD28
	10	1000	38	70	7/8-14	<b>DE-CVS</b>	MD30
	15	3500	57	241	7/8-14	<b>DE-CVR</b>	MD32
	35	5000	132	345	1 1/16-12	<b>HT-CVR</b>	MD34

**TYPICAL SCHEMATIC**

Typical application for the CVA, CVB, CVC, CVR, and CVS is load holding in a lift, check, or dump circuit.



**IM-CVA INLINE CHECK VALVE**



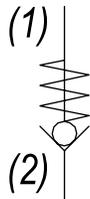
**DESCRIPTION**

#8 SAE, inline check valve.

**OPERATION**

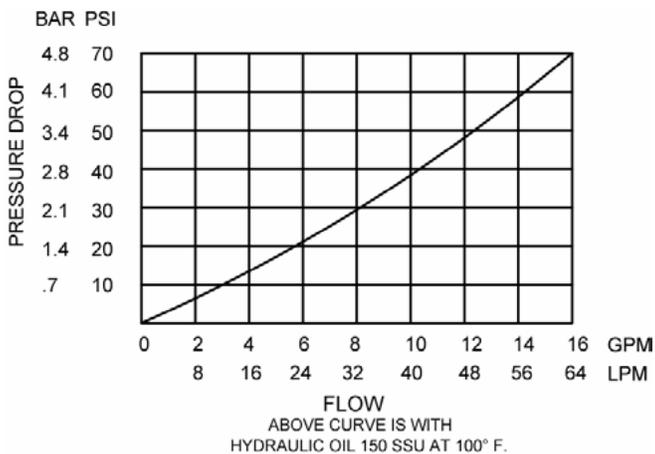
The IM-CVA allows flow from (2) to (1), while normally blocking oil flow from (1) to (2). The valve has a guided check ball, which is spring-biased closed until sufficient pressure is applied at (2) to open to (1).

**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)

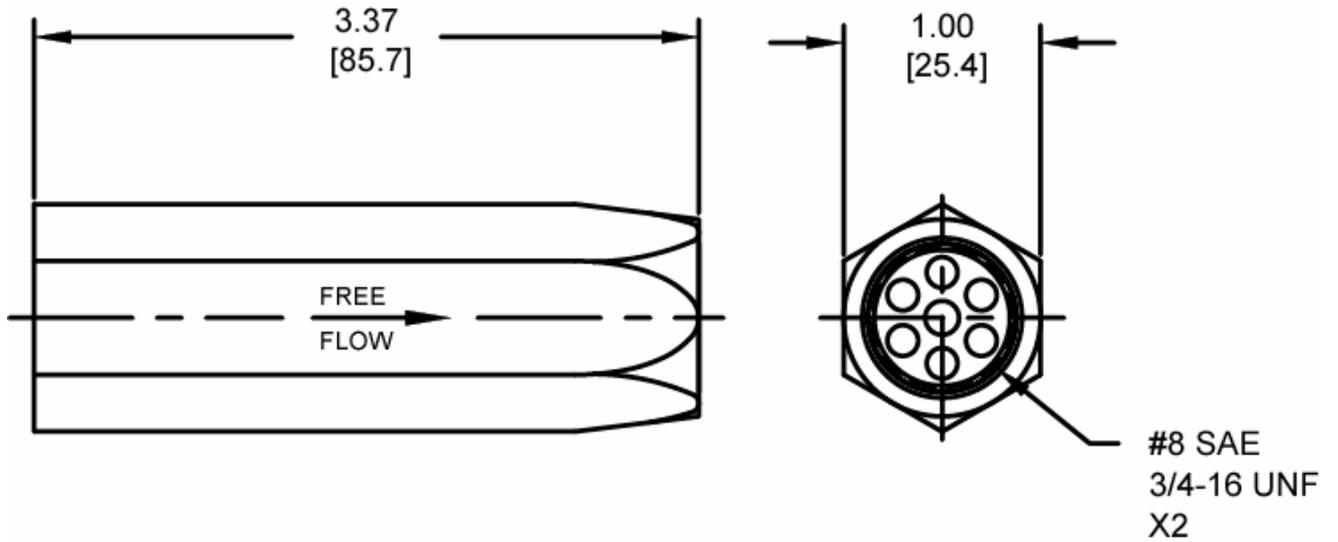


**VALVE SPECIFICATIONS**

Nominal Flow	8 GPM (30 LPM)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	0-5 drops/min
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.53 lbs (.24 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid

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**DIMENSIONS**



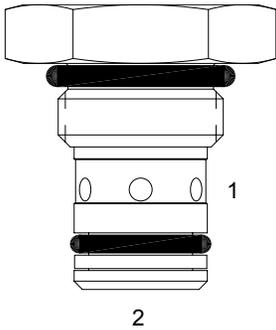
**ORDERING INFORMATION**

IM-CVA -		-	
<u>OPTIONS</u>			<u>CRACK PRESSURE</u>
Buna Standard	00		<b>0005</b> 5 PSI
			<b>0025</b> 25 PSI
			<b>0050</b> 50 PSI
			<b>0075</b> 75 PSI

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**MA-CVA DIRECT ACTING CHECK VALVE, POPPET**



**DESCRIPTION**

7 size, 5/8-18 thread, "Mini" series, direct acting check valve.

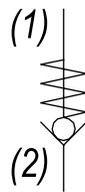
**OPERATION**

The MA-CVA allows flow passage from (2) to (1), while normally blocking oil flow from (1) to (2). The cartridge has a fully guided poppet, which is spring-biased closed, until sufficient pressure is applied at (2) to open to (1).

**FEATURES**

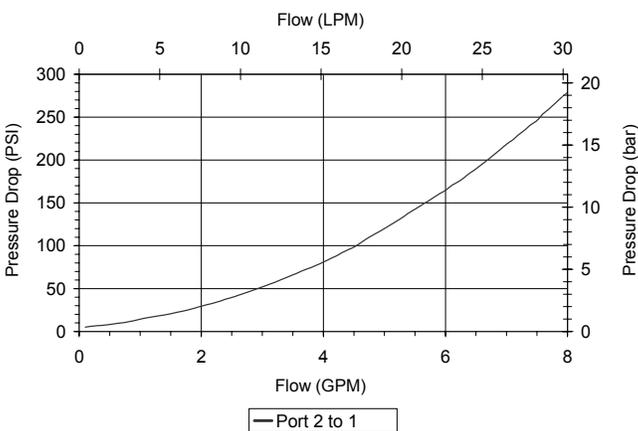
- Hardened parts for long life and low leakage.
- Optional bias springs for backpressure application flexibility.
- Fully guided poppet.
- Industry common cavity.

**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)

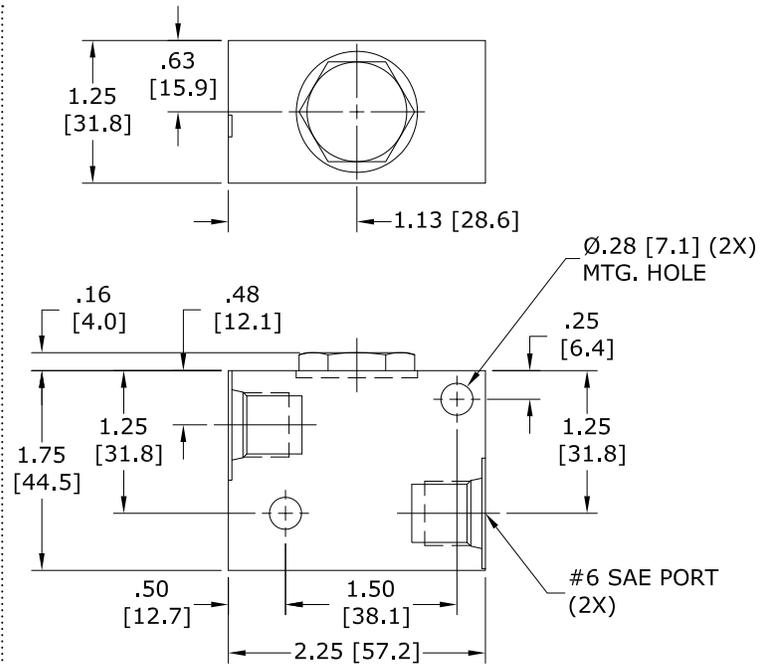
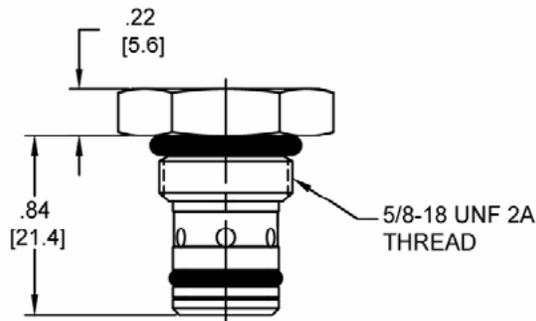
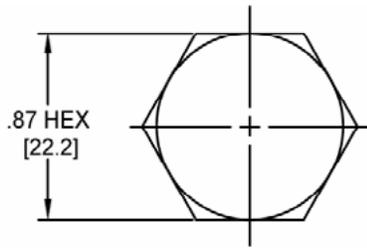


**VALVE SPECIFICATIONS**

Nominal Flow	5 GPM (19 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	0-5 drops/min
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.08 lbs (.03 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	15 ft-lbs (20.3 Nm)
Cavity	MINI 2W
Cavity Form Tool (Finishing)	40500003
Seal Kit	21191000

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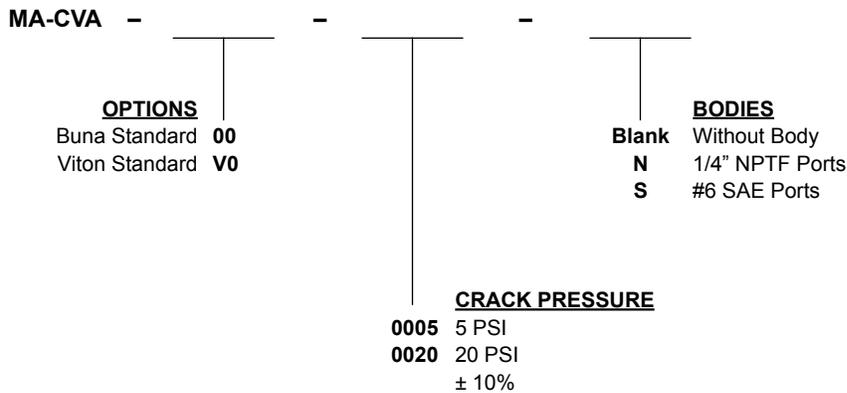
DIMENSIONS



BODY WEIGHT: .40 lbs [.18 kg.]

Body Weight: .29 lbs (.13 kg)

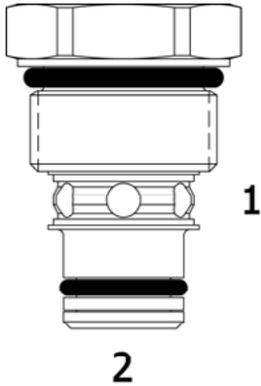
ORDERING INFORMATION



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**HB-CVA DIRECT ACTING CHECK VALVE, POPPET**



**DESCRIPTION**

“High Pressure” 8 size, 3/4-16 thread, “Power” series, direct acting check valve.

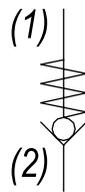
**OPERATION**

The HB-CVA allows free flow passage from (2) to (1), and blocks flow from (1) to (2). The cartridge has a fully guided check poppet, which is spring-biased closed until sufficient pressure is applied at (2) to open to (1).

**FEATURES**

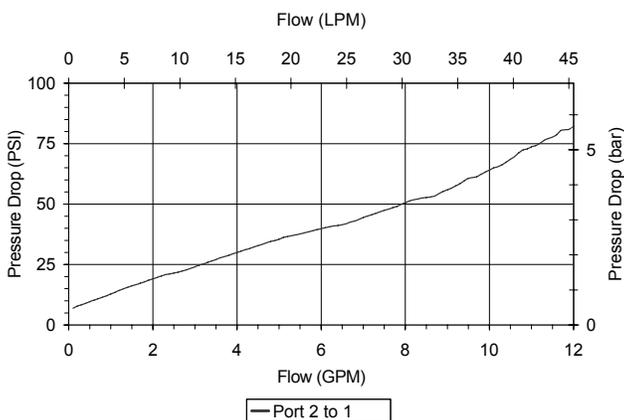
- Hardened parts for long life and low leakage.
- Optional bias springs for backpressure application flexibility.
- Fully guided poppet assembly.
- Industry common cavity.

**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)

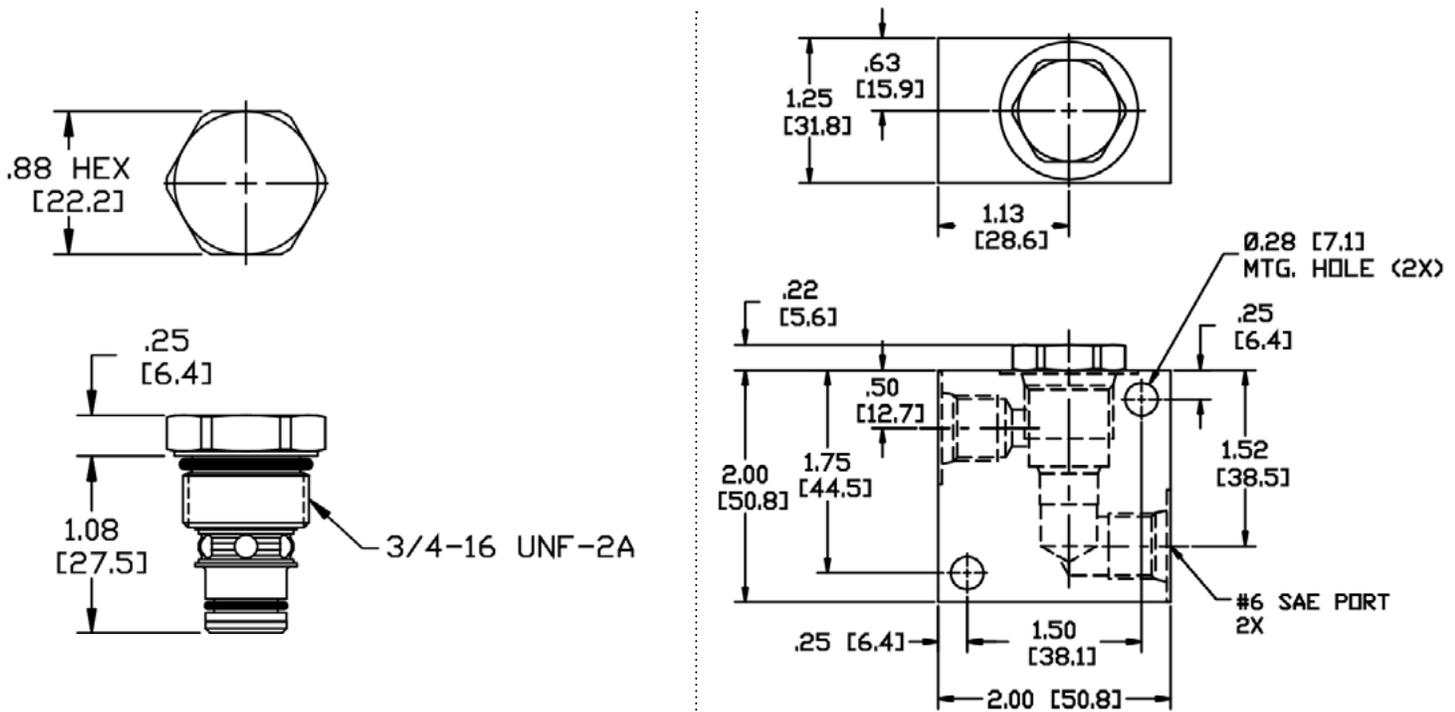


**VALVE SPECIFICATIONS**

Nominal Flow	10 GPM (38 LPM)
Rated Operating Pressure	4350 PSI (300 bar)
Typical Internal Leakage (150 SSU)	0-5 drops/min
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.10 lbs (.05 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	35 ft-lbs (47 Nm)
Cavity	POWER 2W
Cavity Form Tool (Finishing)	40500005
Seal Kit	21191100

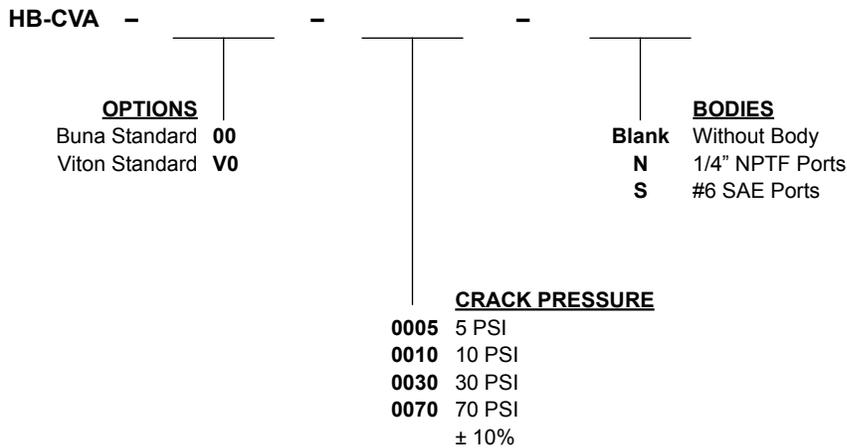
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DIMENSIONS



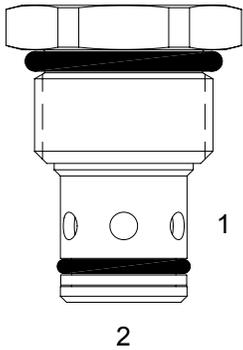
Body Weight: .40 lbs (.18 kg)

ORDERING INFORMATION



Note: Aluminum, NOT durability rated for 4350 PSI. Consult factory for options.

**DE-CVA** DIRECT ACTING CHECK VALVE, POPPET



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, direct acting check valve.

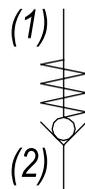
**OPERATION**

The DE-CVA allows free flow passage from (2) to (1), and blocks flow from (1) to (2). The cartridge has a fully guided check poppet, which is spring-biased closed, until sufficient pressure is applied at (2) to open to (1).

**FEATURES**

- Hardened parts for long life and low leakage.
- Optional bias springs for backpressure application flexibility.
- Fully guided poppet assembly.
- Industry common cavity.

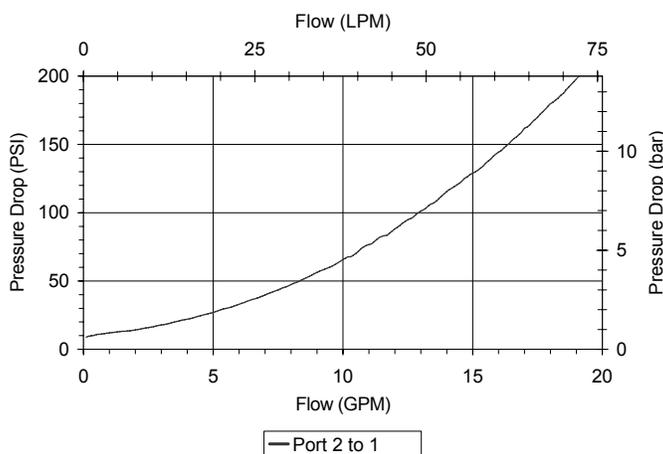
**HYDRAULIC SYMBOL**



Drop-In pilot pistons can be used (except the 135 and 150 PSI version) to create P.O. Check Valve Function, see the Hydraulic Integrated Circuits section for details.

**PERFORMANCE**

Actual Test Data (Cartridge Only)

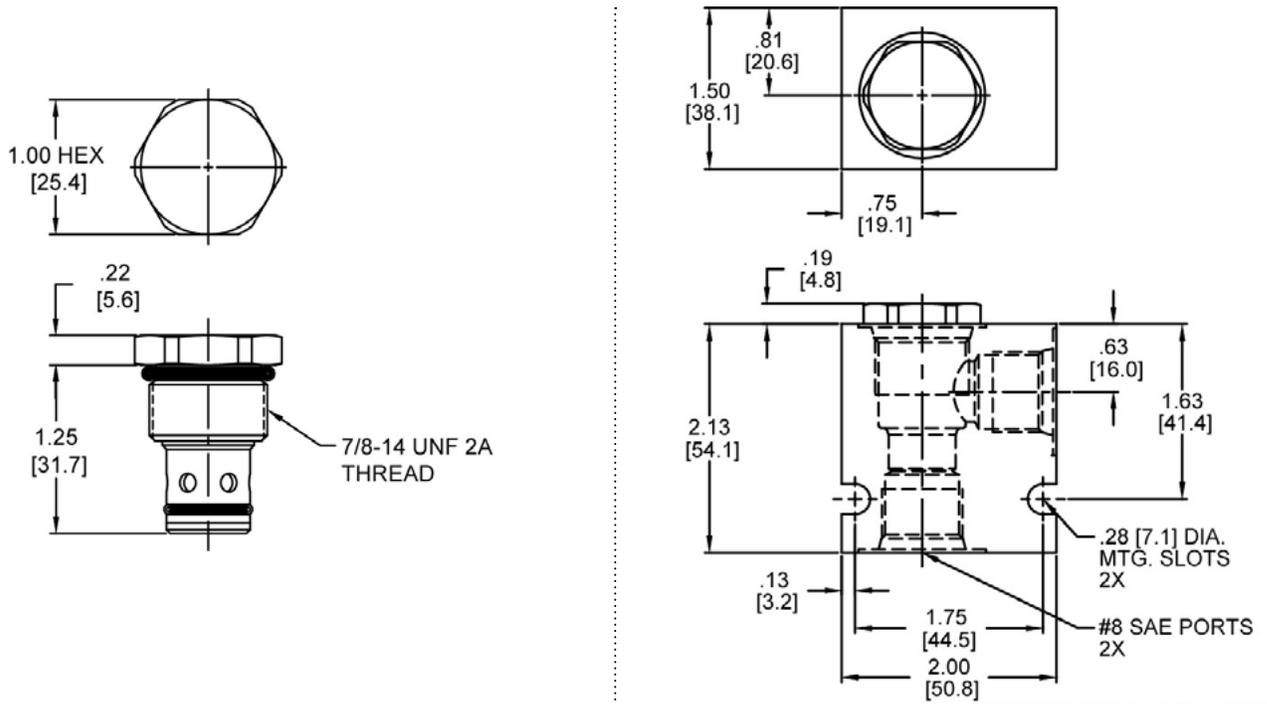


**VALVE SPECIFICATIONS**

Nominal Flow	15 GPM (57 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	0-5 drops/min
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.15 lbs (.07 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191200

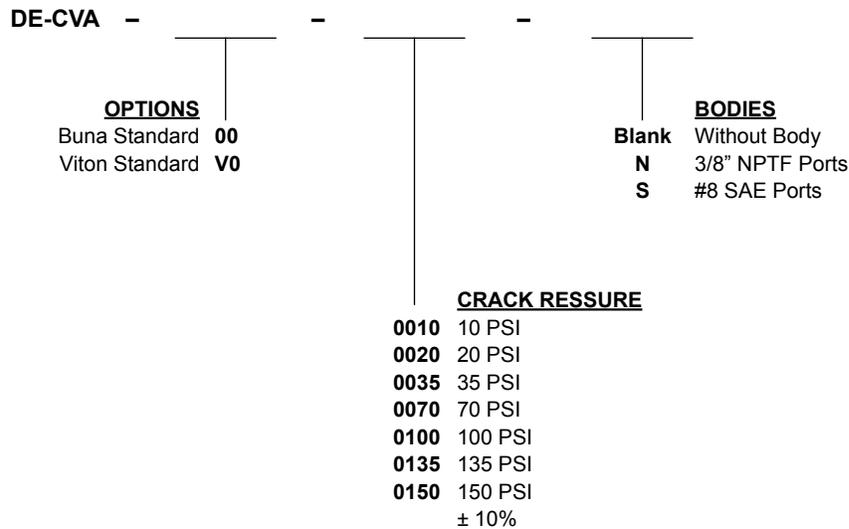
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**DIMENSIONS**



Body Weight: .47 lbs (.21 kg)

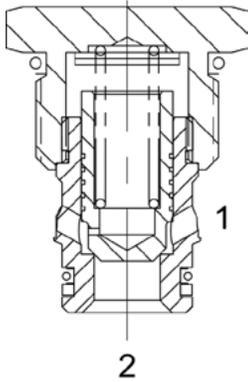
**ORDERING INFORMATION**



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**HE-CVA DIRECT ACTING CHECK VALVE, POPPET**



**DESCRIPTION**

“High Pressure” 10 size, 7/8-14 thread, “Delta” series, direct acting check valve.

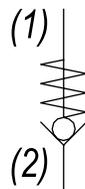
**OPERATION**

The HE-CVA allows free flow passage from (2) to (1), and blocks flow from (1) to (2). The cartridge has a fully guided check poppet, which is spring-biased closed, until sufficient pressure is applied at (2) to open to (1).

**FEATURES**

- Hardened parts for long life and low leakage.
- Optional bias springs for backpressure application flexibility.
- Fully guided poppet assembly.
- Industry common cavity.

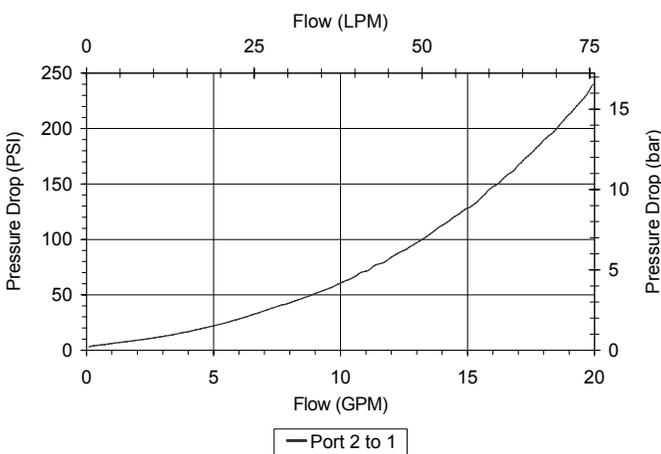
**HYDRAULIC SYMBOL**



Drop-In pilot pistons can be used (except the 135 and 150 PSI version) to create P.O. Check Valve Function, see the Hydraulic Integrated Circuits section for details.

**PERFORMANCE**

Actual Test Data (Cartridge Only)

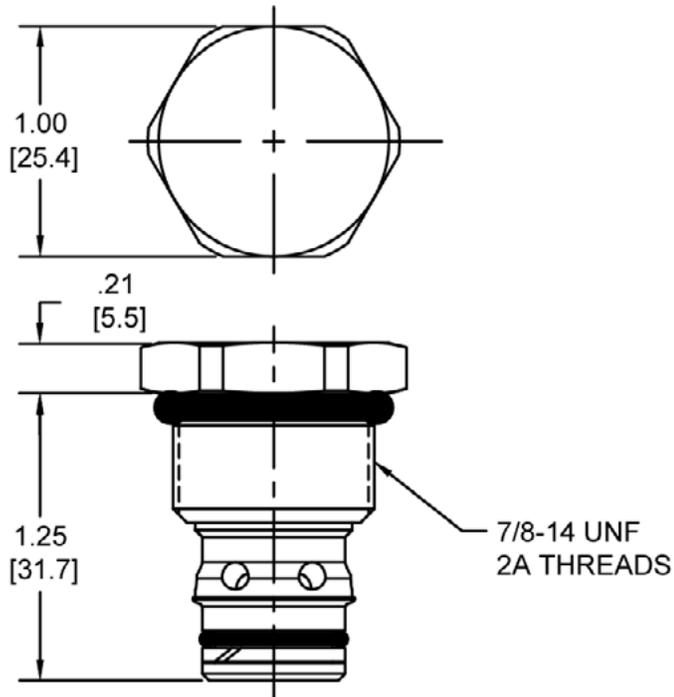


**VALVE SPECIFICATIONS**

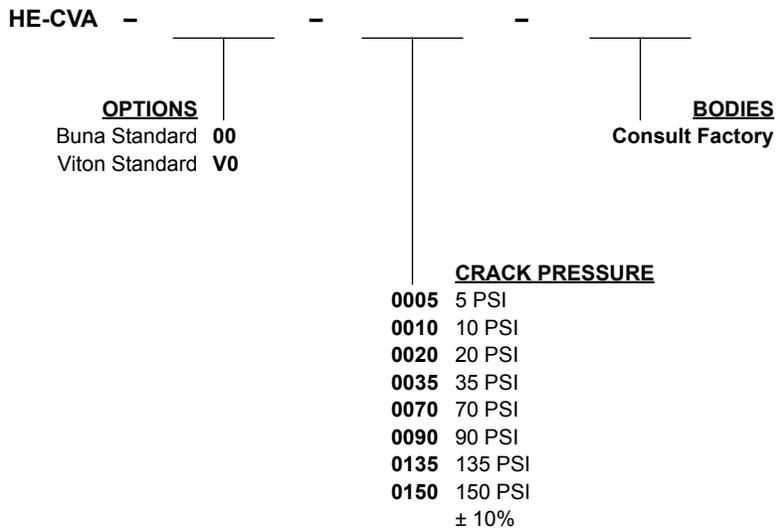
Nominal Flow	15 GPM (57 LPM)
Rated Operating Pressure	5000 PSI (345 bar)
Typical Internal Leakage (150 SSU)	0-5 drops/min
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	1.23 lbs (.56 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	50 ft-lbs (67.8 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191200

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**DIMENSIONS**



**ORDERING INFORMATION**

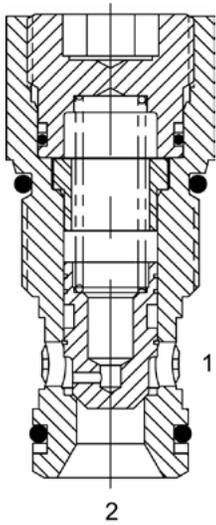


**WARNING**  
**DO NOT USE ALUMINUM BODY**  
**HIGH PRESSURE (5000 PSI) PRODUCT**

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**HT-CVA DIRECT ACTING CHECK VALVE, POPPET**



**DESCRIPTION**

“High Pressure” 12 size, 1 1/16-12 thread, “Tecnord” series, direct acting check valve.

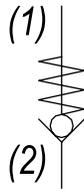
**OPERATION**

The HT-CVA allows flow passage from (2) to (1), while normally blocking oil flow from (1) to (2). The cartridge has a fully guided poppet, which is spring biased closed, until sufficient pressure is applied at (2) to open to (1).

**FEATURES**

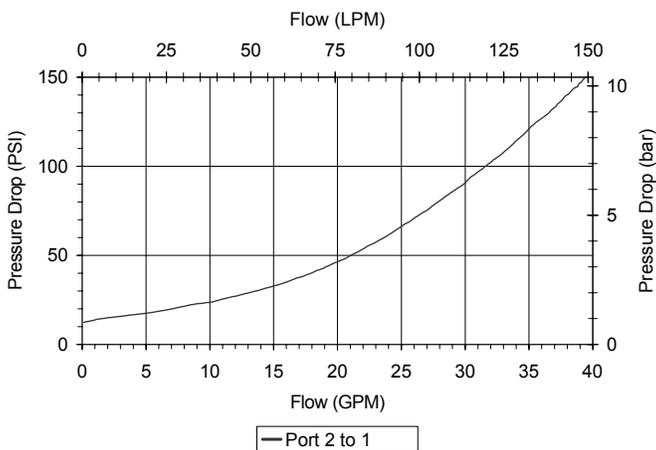
- Hardened parts for long life and low leakage.
- Industry common cavity.
- Optional bias springs for backpressure application flexibility.

**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)

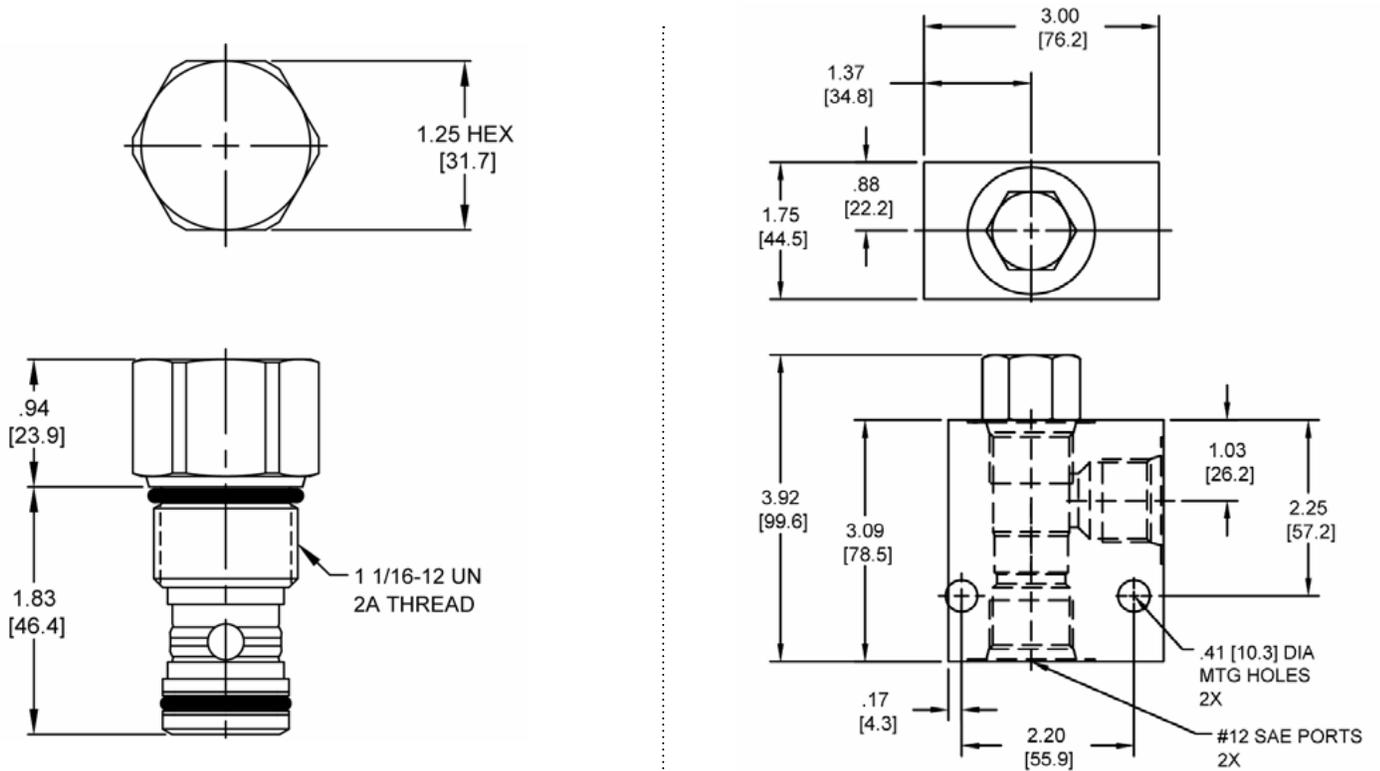


**VALVE SPECIFICATIONS**

Nominal Flow	35 GPM (132 LTR/M)
Rated Operating Pressure	5000 PSI (345 bar)
Typical Internal Leakage (150 SSU)	0-5 drops/min
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.55 lbs (.25 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	70 ft-lbs (95 Nm)
Cavity	TECNORD 2W
Cavity Form Tool (Finishing)	40500032
Seal Kit	21191300

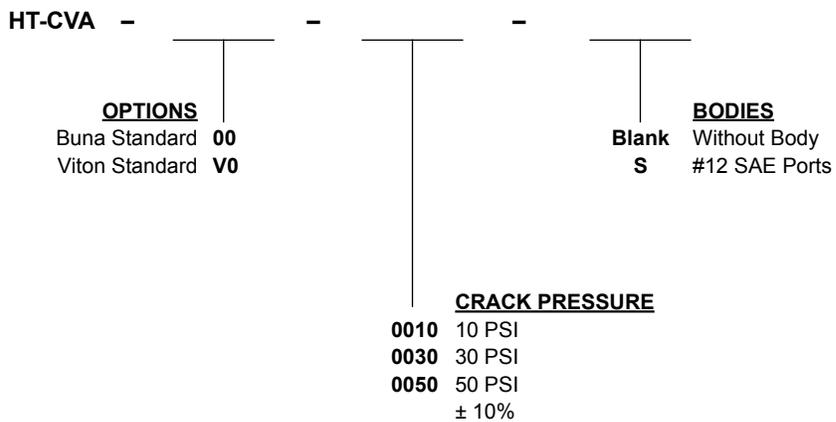
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DIMENSIONS

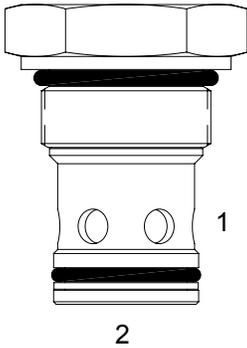


Body Weight: 3.71 lbs (1.68 kg)

ORDERING INFORMATION



**SJ-CVA DIRECT ACTING CHECK VALVE, POPPET**



**DESCRIPTION**

16 size, 1 5/16-12 thread, "Super" series, direct acting check valve.

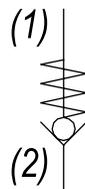
**OPERATION**

The SJ-CVA allows free flow from (2) to (1) and blocks flow from (1) to (2). The cartridge has a fully guided poppet, which is spring-biased closed, until sufficient pressure is applied at (2) to open to (1).

**FEATURES**

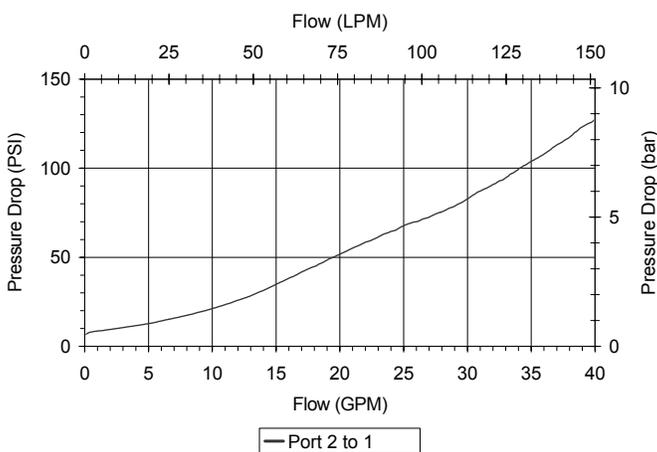
- Hardened parts for long life and low leakage.
- Industry common cavity.
- Optional bias springs for backpressure application flexibility.

**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)

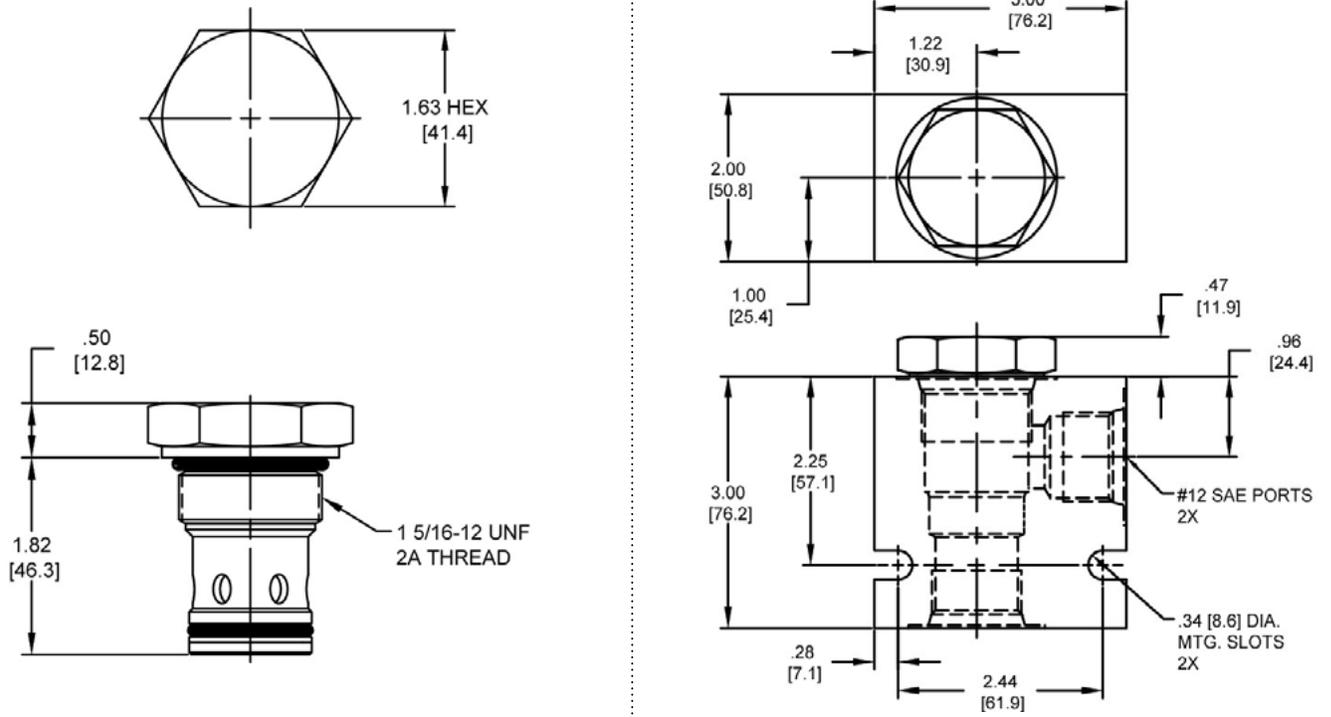


**VALVE SPECIFICATIONS**

Nominal Flow	40 GPM (151 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	0-5 drops/min
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.67 lbs (.30 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	90 ft-lbs (122 Nm)
Cavity	SUPER 2W
Cavity Form Tool (Finishing)	40500017
Seal Kit	21191400

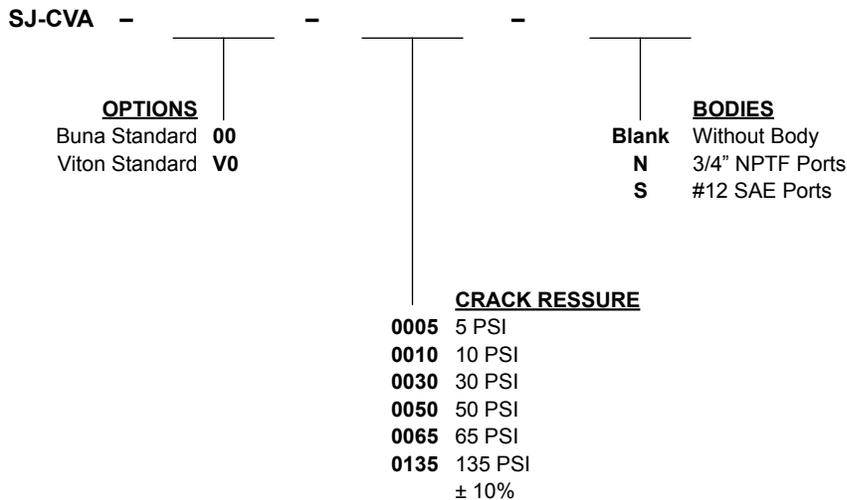
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DIMENSIONS

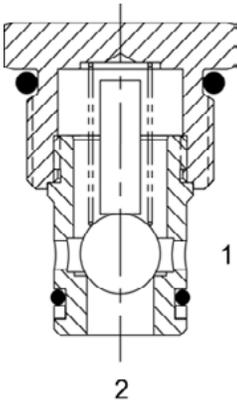


Body Weight: 1.29 lbs (.58 kg)

ORDERING INFORMATION



**DE-CVB** DIRECT ACTING CHECK VALVE, BALL



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, direct acting, check valve.

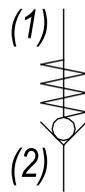
**OPERATION**

The DE-CVB allows free flow passage from (2) to (1), and blocks flow from (1) to (2). The cartridge has a hardened ball, which is spring-biased closed, until sufficient pressure is applied at (2) to open to (1).

**FEATURES**

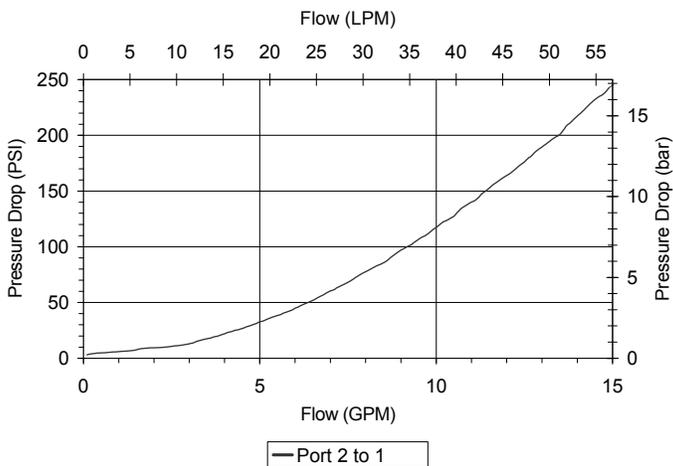
- Hardened seat for long life and low leakage.
- Optional bias springs for backpressure application flexibility.
- Industry common cavity.

**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)

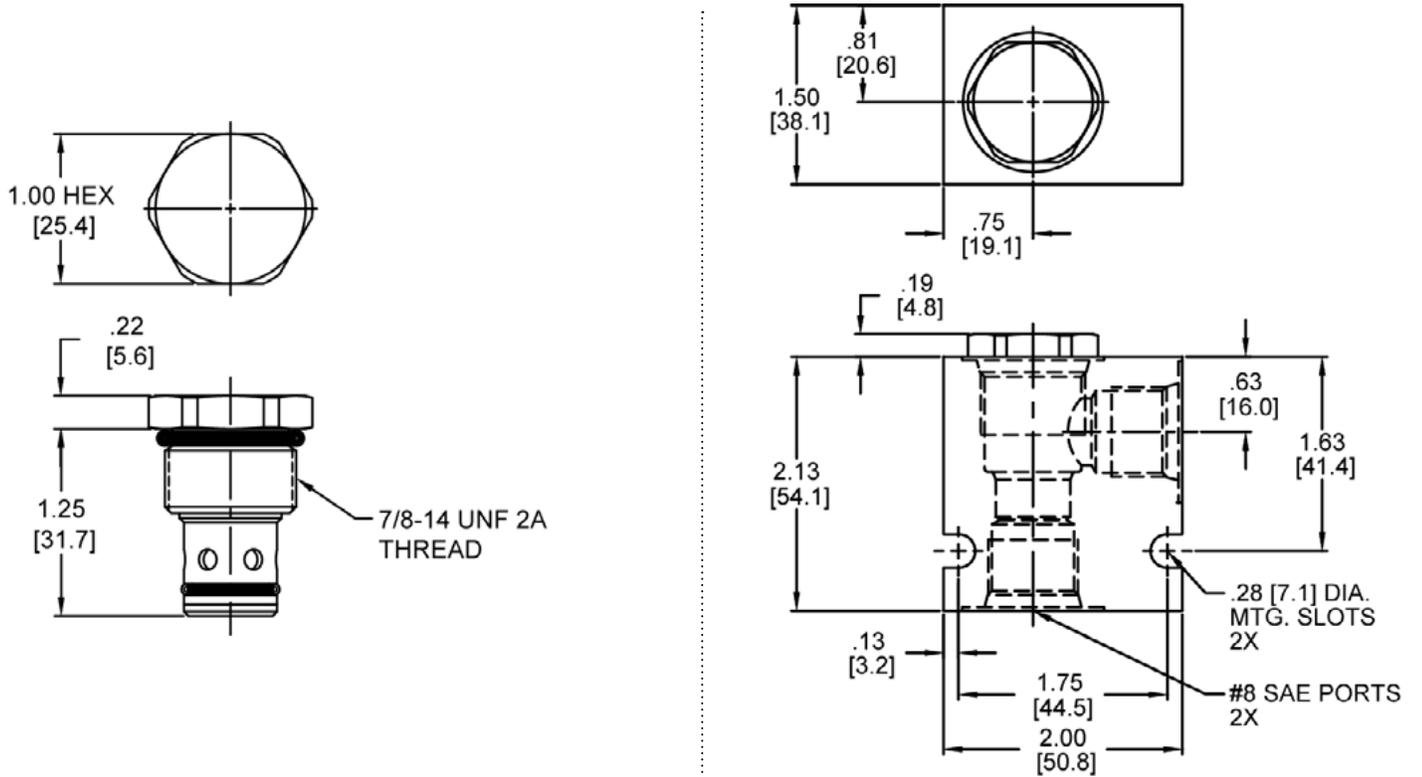


**VALVE SPECIFICATIONS**

Nominal Flow	10 GPM (38 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	0-5 drops/min
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.14 lbs (.06 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191000

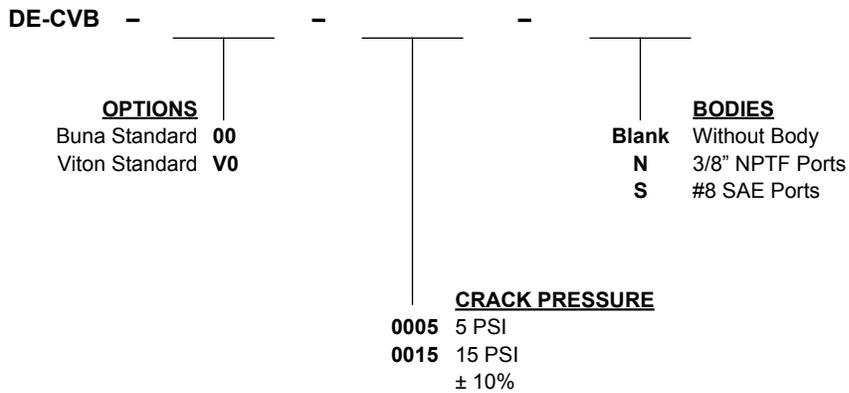
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**



Body Weight: .47 lbs (.21 kg)

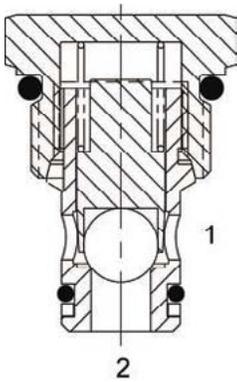
**ORDERING INFORMATION**



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**PB-CVC DIRECT ACTING CHECK VALVE, GUIDED BALL**



**DESCRIPTION**

8 size, 3/4-16 thread, "Power" series, direct acting check valve.

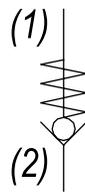
**OPERATION**

The PB-CVC allows free flow passage from (2) to (1), and blocks flow from (1) to (2). The cartridge has a fully guided hardened ball, which is spring-biased closed, until sufficient pressure is applied at (2) to open to (1).

**FEATURES**

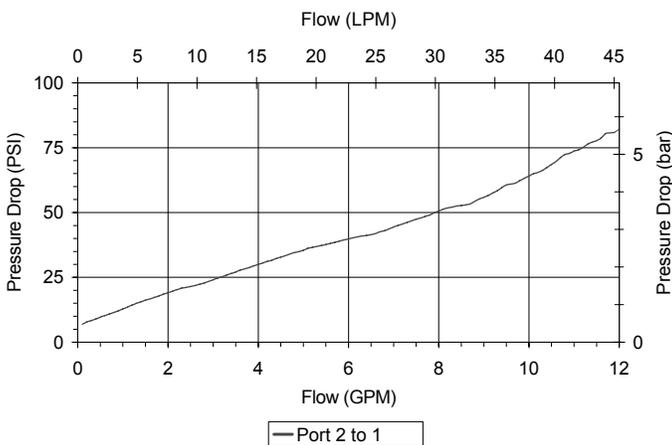
- Hardened parts for long life and low leakage.
- Optional bias springs for backpressure application flexibility.
- Fully guided ball assembly.
- Industry common cavity.

**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)

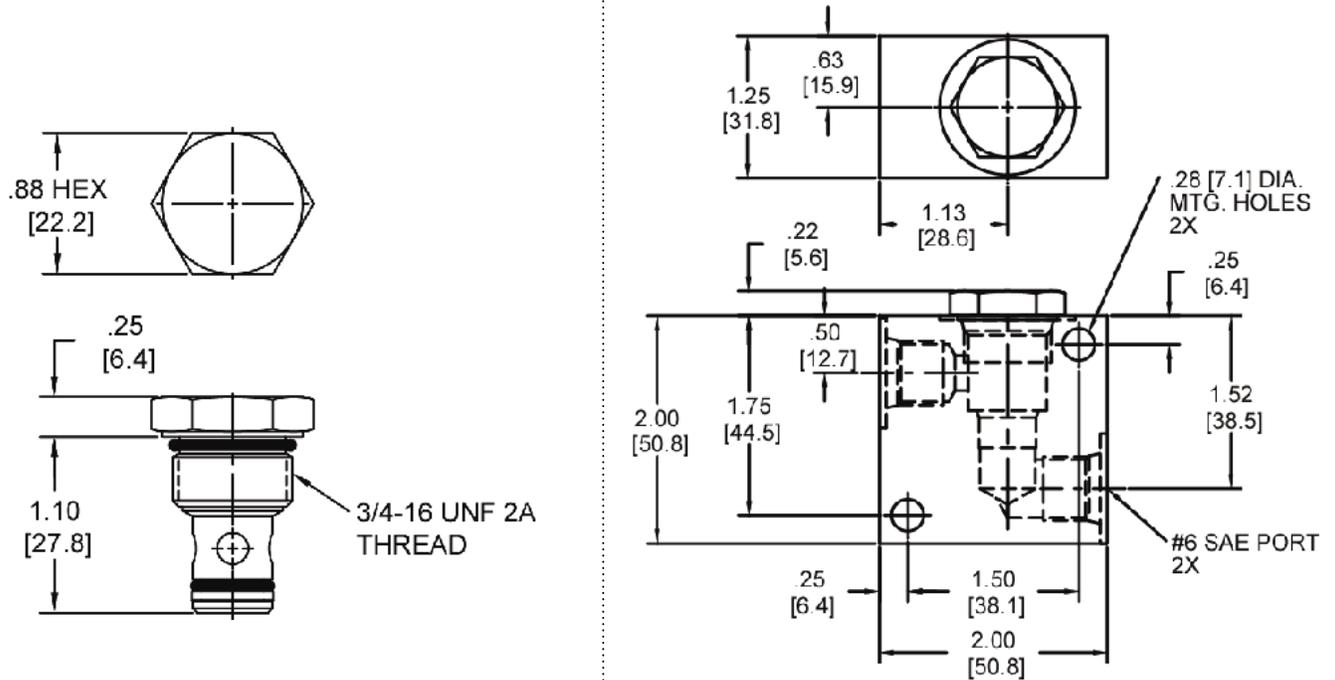


**VALVE SPECIFICATIONS**

Nominal Flow	10 GPM (38 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	0-5 drops/min
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.10 lbs (.05 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Cavity	POWER 2W
Cavity Form Tool (Finishing)	40500005
Seal Kit	21191100

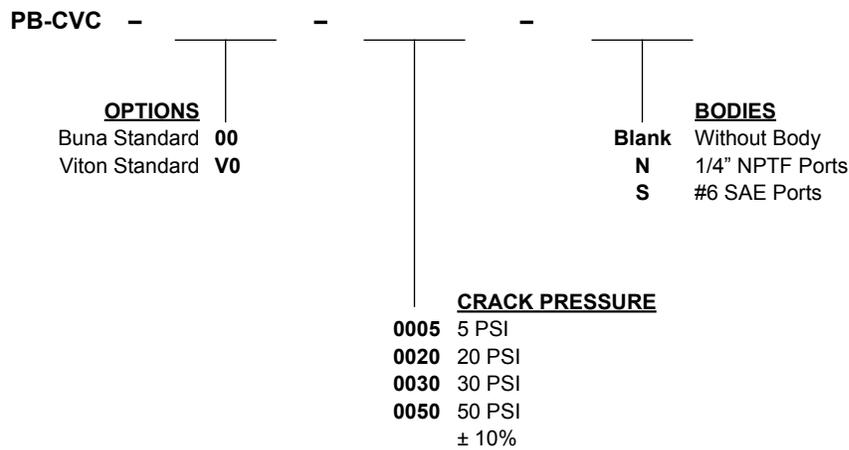
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

DIMENSIONS

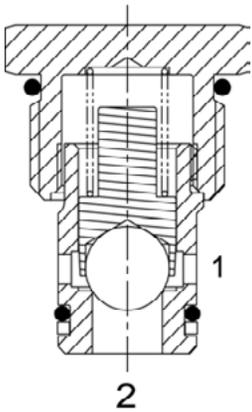


Body Weight: .39 lbs (.18 kg)

ORDERING INFORMATION



**DE-CVC** DIRECT ACTING CHECK VALVE, GUIDED BALL



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, direct acting check valve.

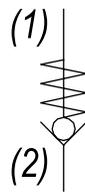
**OPERATION**

The DE-CVC allows free flow passage from (2) to (1), and blocks flow from (1) to (2). The cartridge has a fully guided hardened ball, which is spring-biased closed, until sufficient pressure is applied at (2) to open to (1).

**FEATURES**

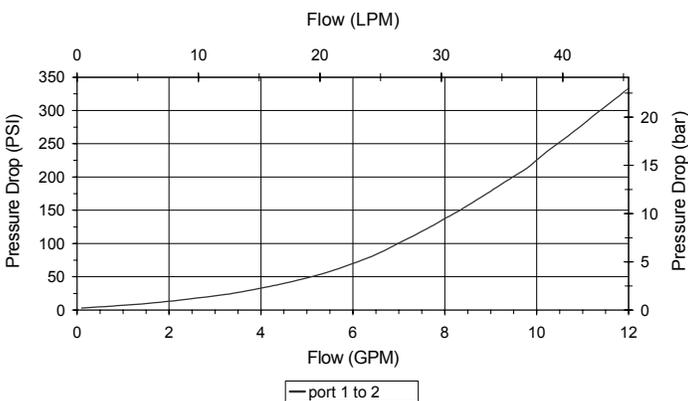
- Hardened parts for long life and low leakage.
- Optional bias springs for backpressure application flexibility.
- Fully guided ball assembly.
- Industry common cavity.

**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)

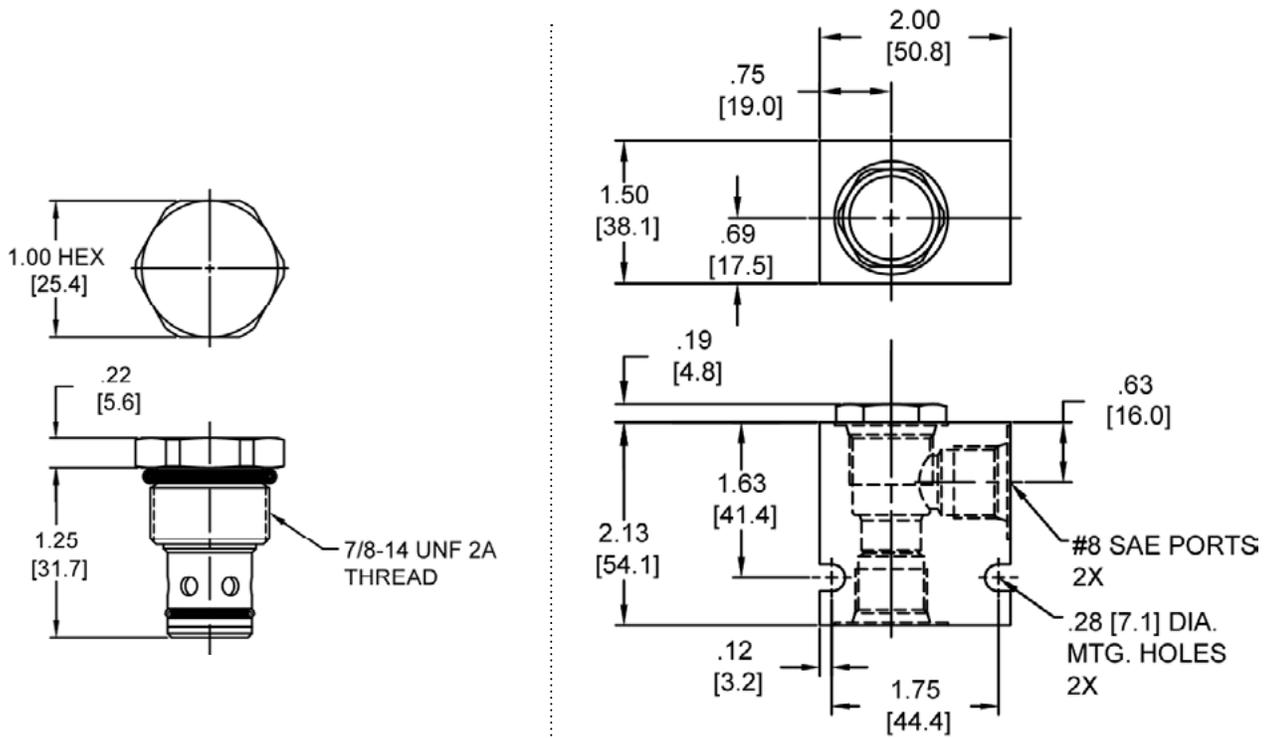


**VALVE SPECIFICATIONS**

Nominal Flow	8 GPM (30 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	0-5 drops/min
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.15 lbs (.07 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191200

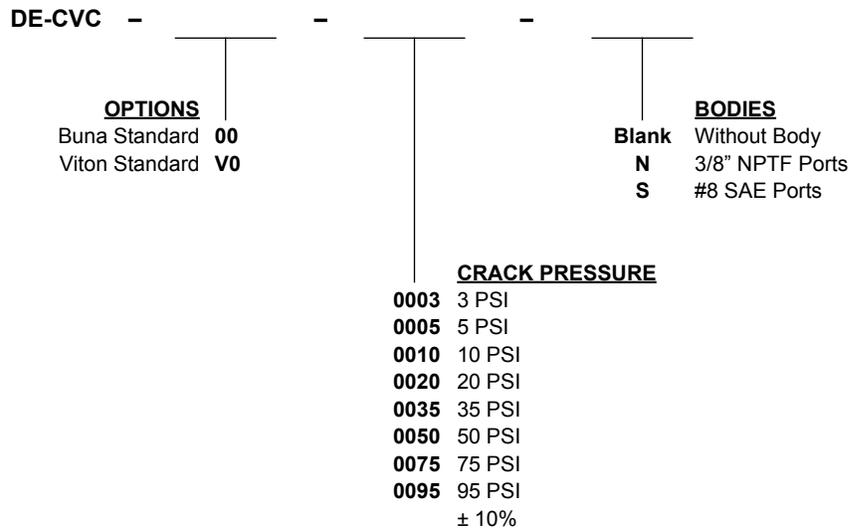
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**

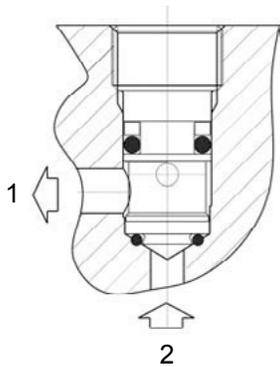


Body Weight: .47 lbs (.21 kg)

**ORDERING INFORMATION**



**QS-CVL CHECK VALVE, INSERT TYPE**



**DESCRIPTION**

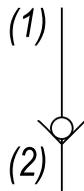
Special cavity, insert type, direct acting check valve.

**OPERATION**

The QS-CVL allows free flow passage from (2) to (1).

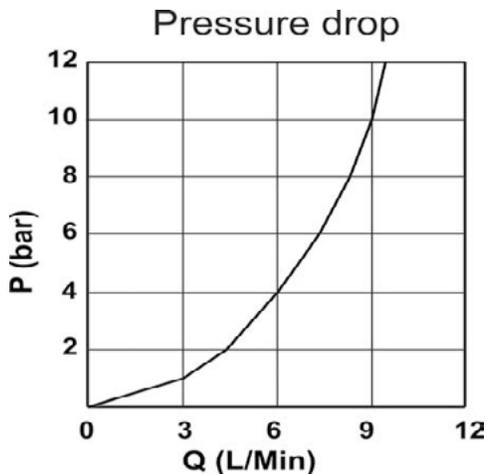
The valve is commonly used on load sensing lines to sense the working pressure of the functions of the circuit. The check valve is without spring inside.

**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)

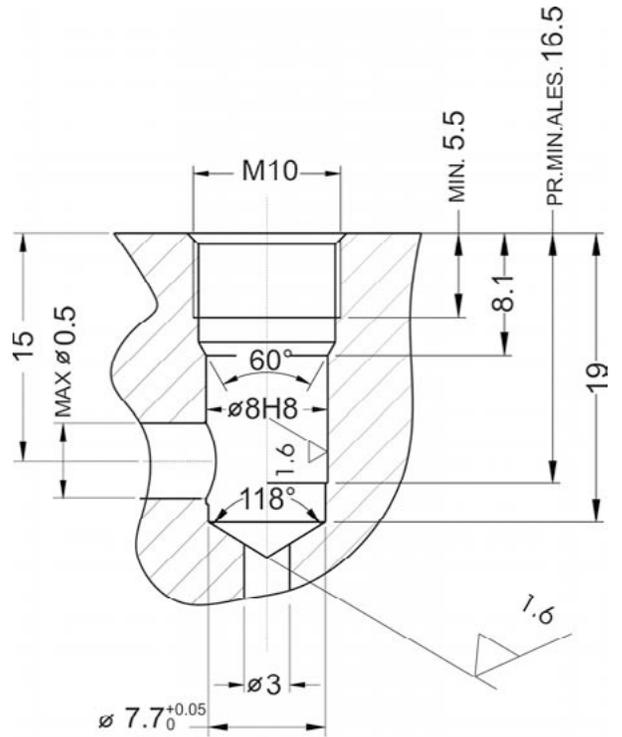
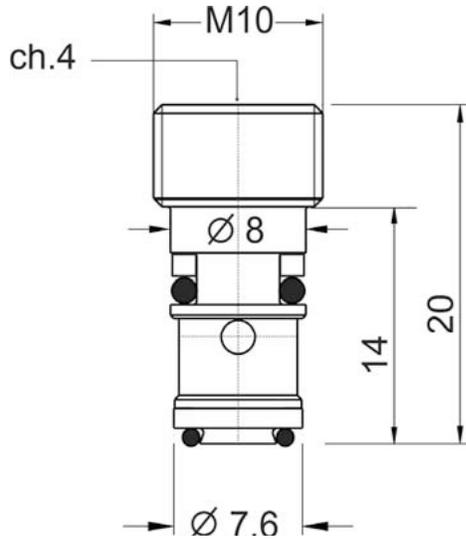


**VALVE SPECIFICATIONS**

Nominal Flow	1 GPM (4 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	1 cu in/min (16 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.16 lbs (.07 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	10 - 12 Nm
Cavity	T151
Cavity Tools Kit (form tool, reamer, tap)	K-T151

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DIMENSIONS



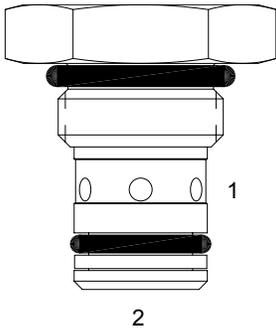
ORDERING INFORMATION

QS-CVL - - 00

OPTIONS

Buna Standard 00  
 Viton Standard V0

**MA-CVS DIRECT ACTING CHECK VALVE, SOFT SEAT, POPPET**



**DESCRIPTION**

7 size, 5/8-18 Thread, "Mini" series, direct acting check valve, soft seat, poppet.

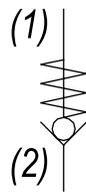
**OPERATION**

The MA-CVS allows free flow (2) to (1) and blocks flow from (1) to (2). The cartridge has a fully guided poppet, which is spring-biased closed, until sufficient pressure is applied at (2) to open (1).

**FEATURES**

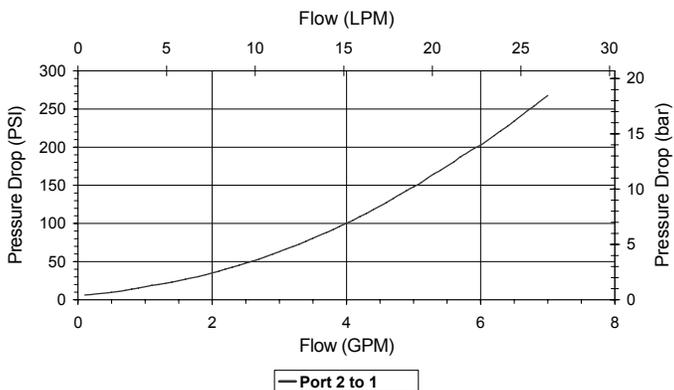
- Soft seat for ultra low leakage.
- Industry common cavity.
- Optional bias springs for backpressure application flexibility.
- Fully guided poppet.

**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)

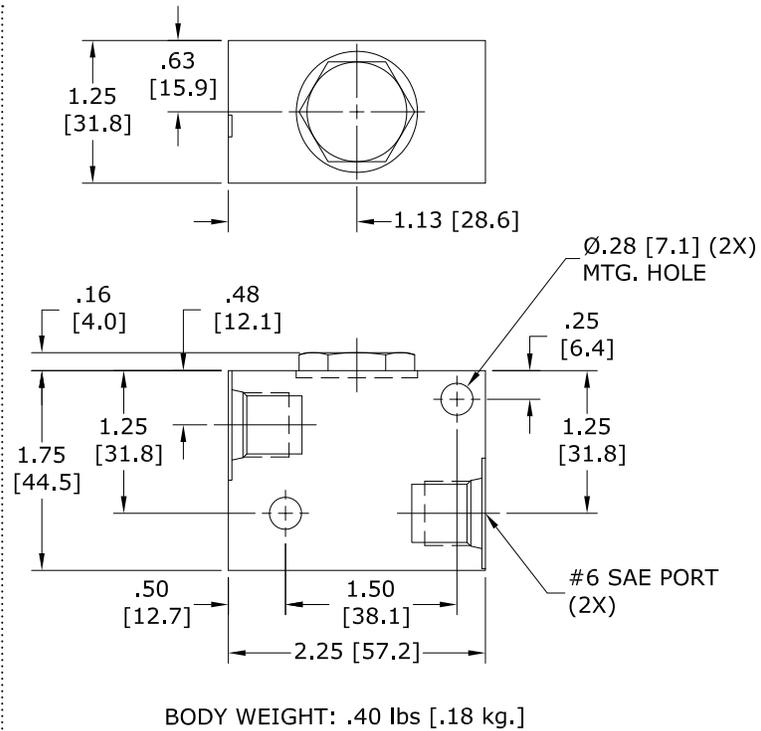
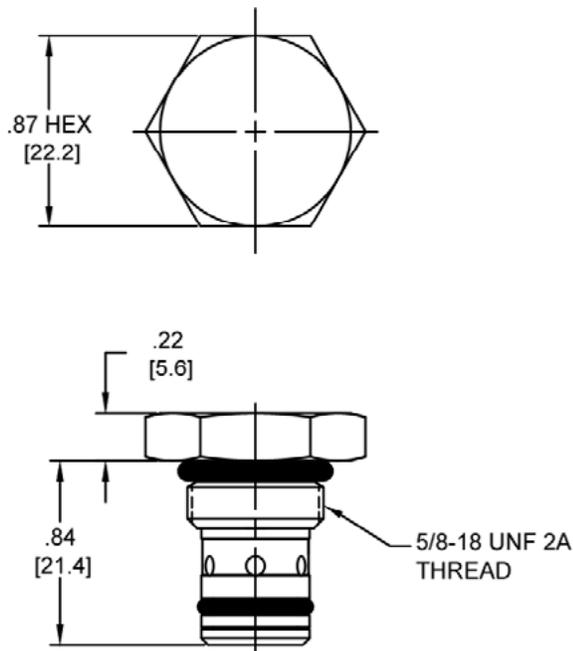


**VALVE SPECIFICATIONS**

Nominal Flow	2.5 GPM (9.5 LPM)
Rated Operating Pressure	1500 PSI (103 bar)
Typical Internal Leakage (150 SSU)	Negligible
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-32° to 160°F (0° to 70°C)
Weight	.08 lbs (.03 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	15 ft-lbs (20.3 Nm)
Cavity	MINI 2W
Cavity Form Tool (Finishing)	40500003
Seal Kit	21191000

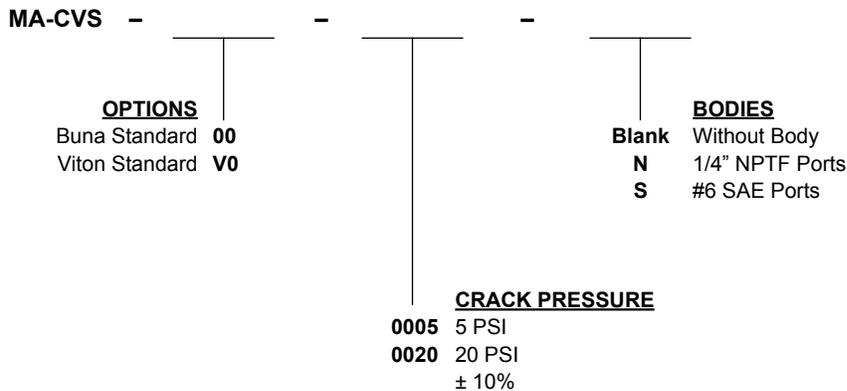
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

DIMENSIONS



Body Weight: .29 lbs (.13 kg)

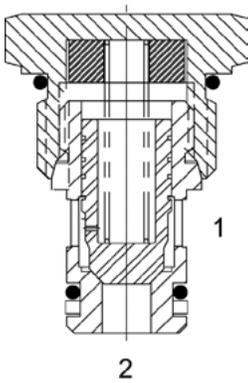
ORDERING INFORMATION



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**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**PB-CVS** DIRECT ACTING CHECK VALVE, SOFT SEAT, POPPET



**DESCRIPTION**

8 size, 3/4-16 thread, "Power" series, direct acting check valve, soft seat, poppet.

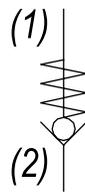
**OPERATION**

The PB-CVS allows free flow passage from (2) to (1), and blocks flow from (1) to (2). The cartridge has a fully guided poppet, which is spring-biased closed, until sufficient pressure is applied at (2) to open to (1).

**FEATURES**

- Soft seat for ultra low leakage.
- Optional bias springs for backpressure application flexibility.
- Fully guided poppet assembly.
- Industry common cavity.

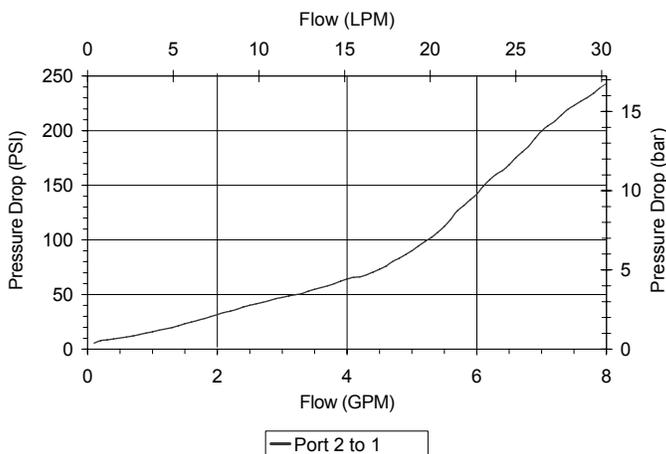
**HYDRAULIC SYMBOL**



*Drop-in Pilot Pistons are NOT RECOMMENDED for this valve.*

**PERFORMANCE**

Actual Test Data (Cartridge Only)

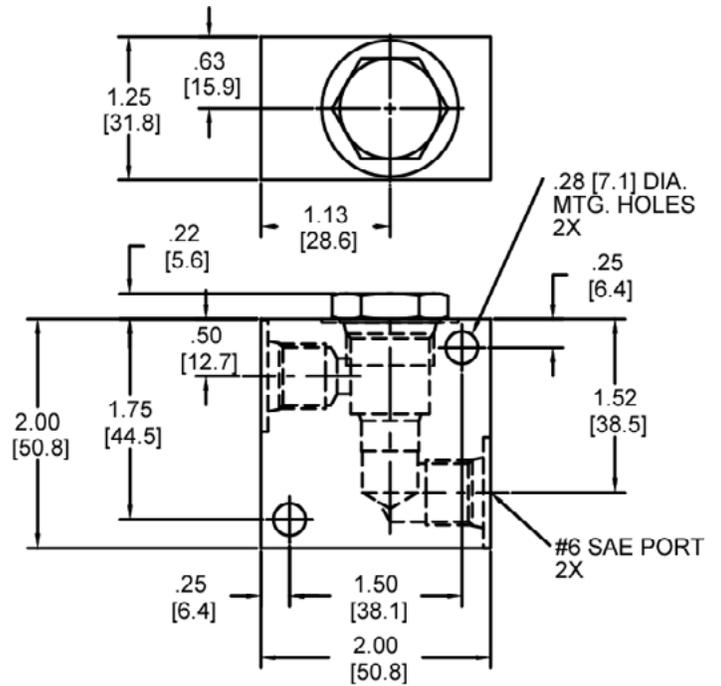
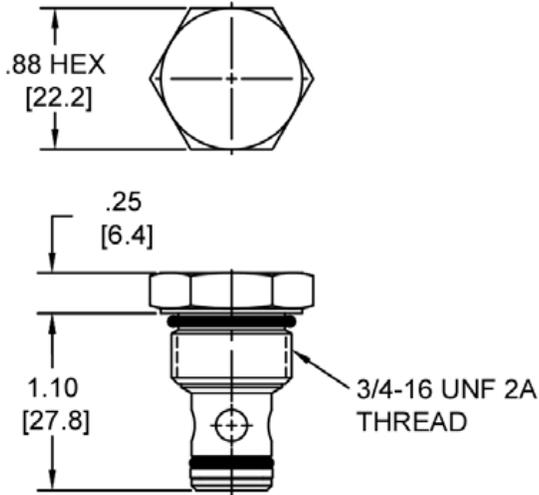


**VALVE SPECIFICATIONS**

Nominal Flow	5 GPM (19 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	Negligible
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-32° to 120°F (0° to 49°C)
Weight	.09 lbs (.04 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Cavity	POWER 2W
Cavity Form Tool (Finishing)	40500005
Seal Kit	21191100

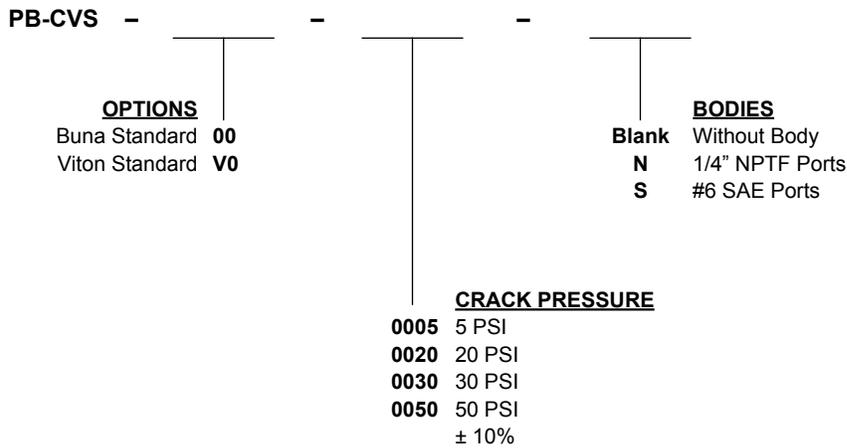
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

DIMENSIONS



Body Weight: .39 lbs (.18 kg)

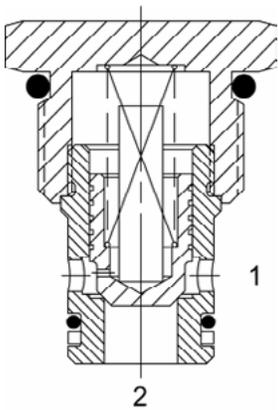
ORDERING INFORMATION



W 28 / 2022

**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DE-CVS** DIRECT ACTING CHECK VALVE, SOFT SEAT, POPPET



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, soft seat check valve.

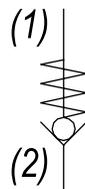
**OPERATION**

The DE-CVS allows flow to pass from (2) to (1) and blocks flow from (1) to (2). The cartridge has a fully guided check poppet, which is spring-biased closed until sufficient pressure is applied at (2) to open to (1).

**FEATURES**

- Soft seat for ultra low leakage.
- Industry common cavity.
- Optional bias springs for backpressure application flexibility.

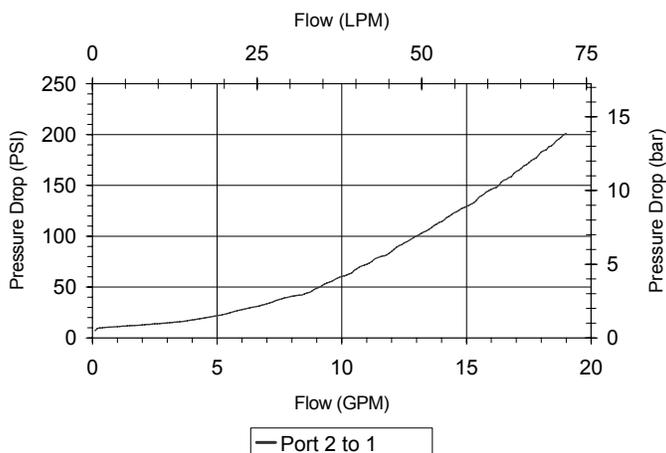
**HYDRAULIC SYMBOL**



*Drop-In pilot pistons are NOT RECOMMENDED for this valve. If you would like to create P.O. Check Valve Function, please use the CVA valve and/or see the Hydraulic Integrated Circuits section for details.*

**PERFORMANCE**

Actual Test Data (Cartridge Only)

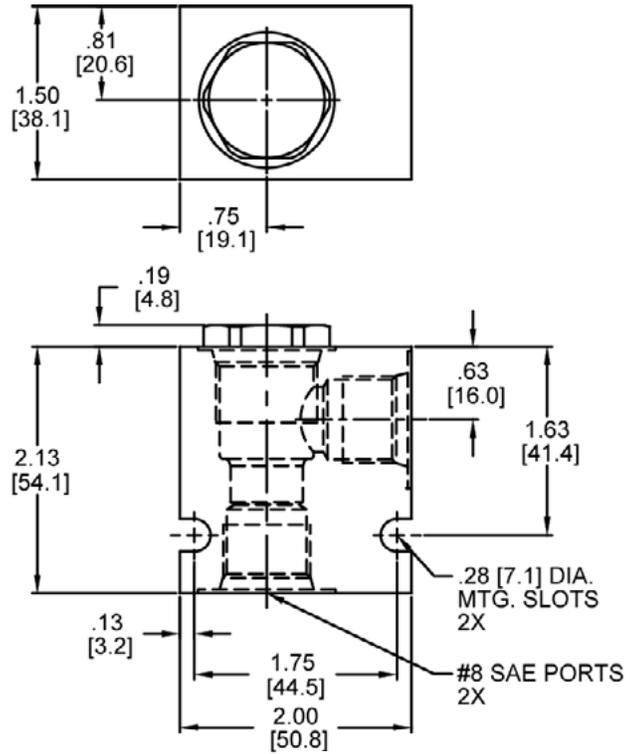
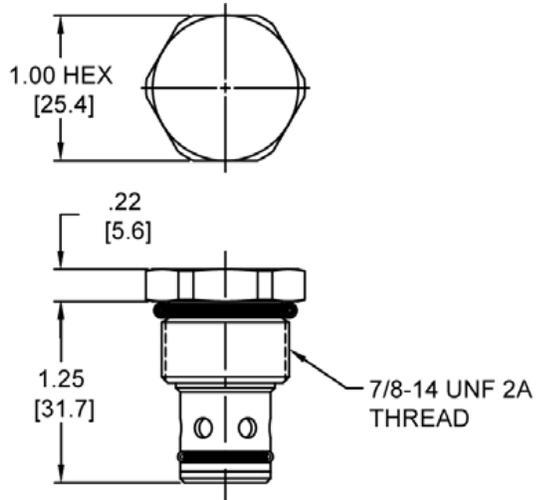


**VALVE SPECIFICATIONS**

Nominal Flow	10 GPM (38 LTR/N)
Rated Operating Pressure	1000 PSI (70 bar)
Typical Internal Leakage (150 SSU)	Negligible
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-32° to 160°F (0° to 70°C)
Weight	.14 lbs (.06 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191200

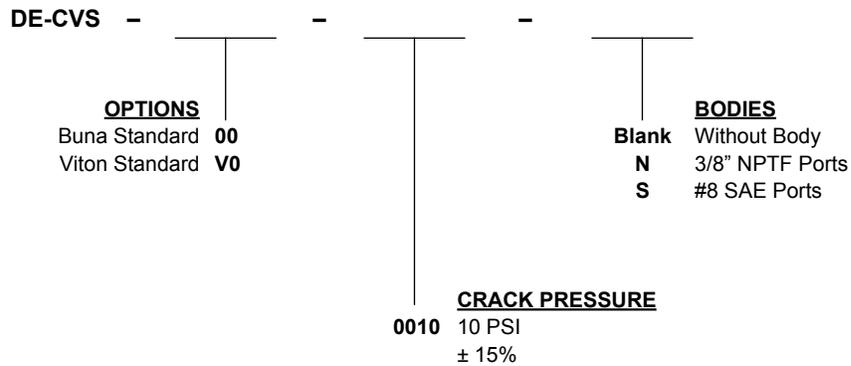
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**DIMENSIONS**

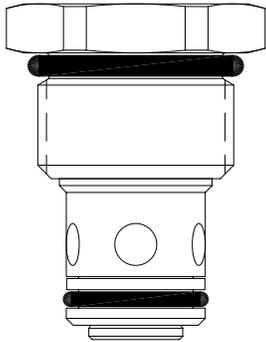


Body Weight: .47 lbs (.21 kg)

**ORDERING INFORMATION**



**DE-CVR REVERSE FLOW CHECK VALVE, POPPET**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, reverse flow check valve.

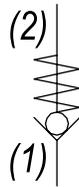
**OPERATION**

The DE-CVR allows free flow (1) to (2) and blocks flow from (2) to (1).

**FEATURES**

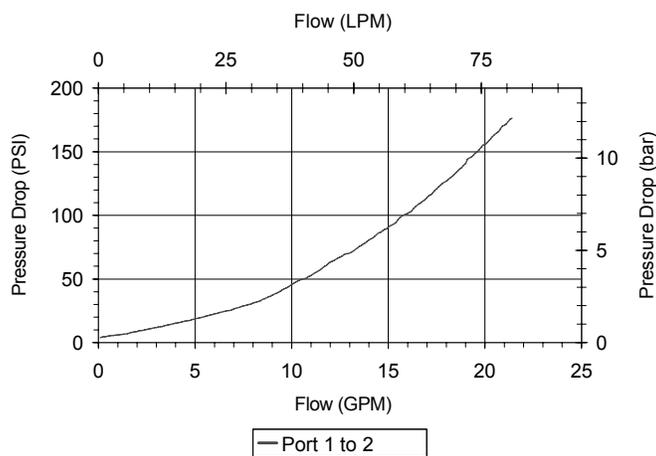
- Hardened parts for long life and low leakage.
- Industry common cavity.
- Optional bias springs for backpressure application flexibility.

**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)

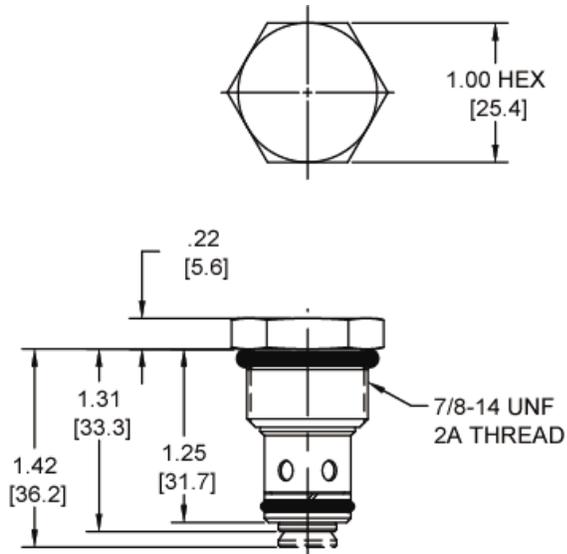


**VALVE SPECIFICATIONS**

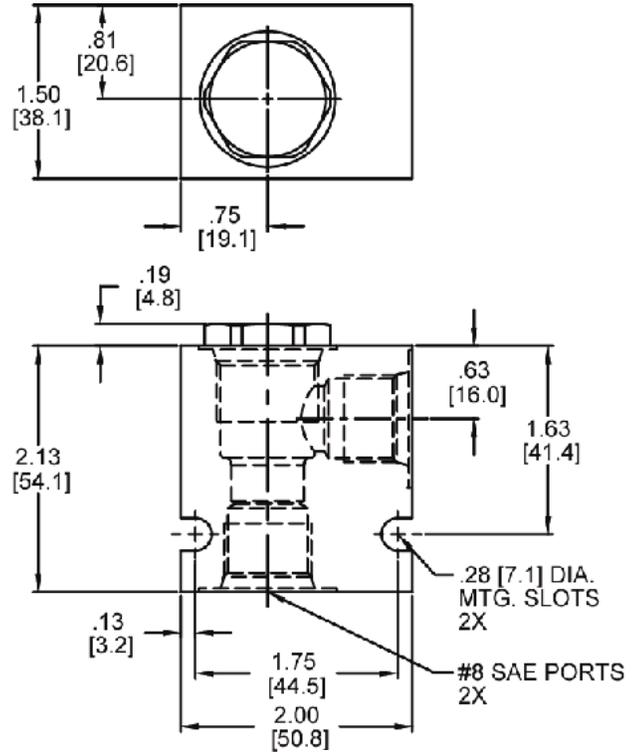
Nominal Flow	15 GPM (57 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	0-5 drops/min
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.15 lbs (.07 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191204

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**DIMENSIONS**

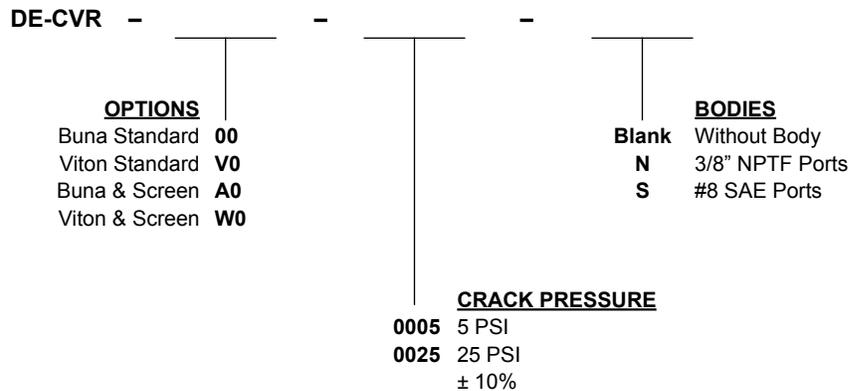


MINIMUM .563 DIAMETER PREDRILL 1.53 DEEP REQUIRED.

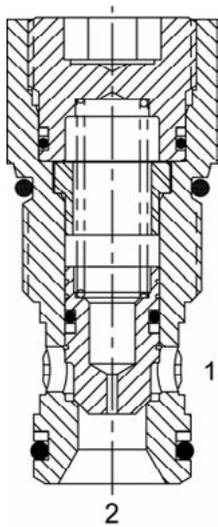


Body Weight: .47 lbs (.21 kg)

**ORDERING INFORMATION**



**HT-CVR REVERSE FLOW CHECK VALVE, POPPET**



**DESCRIPTION**

“High Pressure” 12 size, 1 1/16-12 thread, “Tecnorm” series, reverse flow check valve.

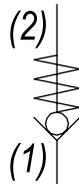
**OPERATION**

The HT-CVR allows free flow from (1) to (2) and blocks flow from (2) to (1). The cartridge has a fully guided poppet, which is spring biased closed, until sufficient pressure is applied at (1) to open to (2).

**FEATURES**

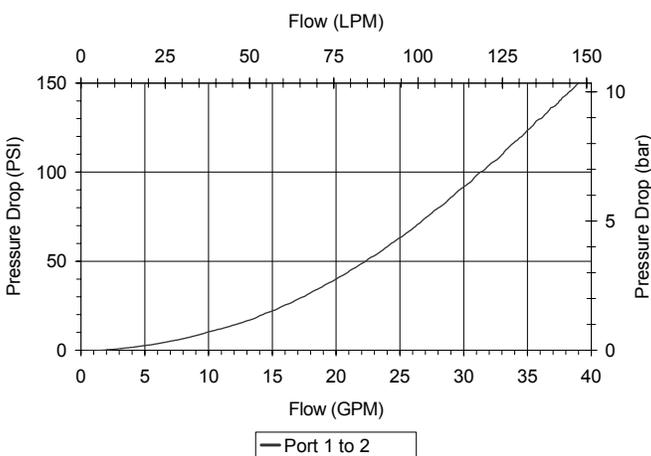
- Hardened parts for long life and low leakage.
- Industry common cavity.
- Optional bias springs for backpressure application flexibility.

**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)



**VALVE SPECIFICATIONS**

Nominal Flow	35 GPM (132 LPM)
Rated Operating Pressure	5000 PSI (345 bar)
Typical Internal Leakage (150 SSU)	0-8 drops/min
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.55 lbs (.25 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	70 ft-lbs (95 Nm)
Cavity	TECNORD 2W
Cavity Form Tool (Finishing)	40500032
Seal Kit	21191300

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**PILOT TO OPEN AND DOUBLE PO CHECK VALVES**

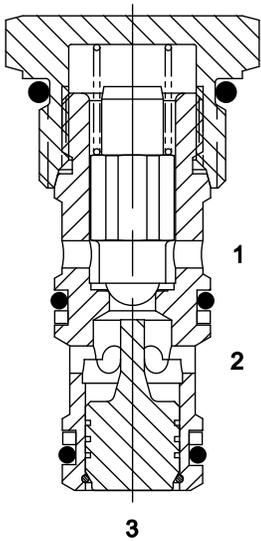
PILOT TO OPEN CHECK VALVES	GPM	PSI	LPM	BAR	CAVITY	MODEL	PAGE
	6	3500	23	241	3/4-16	PP-CPB	MD38
	8	3500	30	241	7/8-14	DF-CPB	MD40
	10	3500	38	241	7/8-14	DF-CPC	MD42

DOUBLE PO CHECK VALVES	GPM	PSI	LPM	BAR	CAVITY	MODEL	PAGE
	5	3000	19	207	3/4-16	PQ-CDP	MD44
	8	3000	30	207	7/8-14	DG-CDP	MD46

PILOT TO CLOSE CHECK VALVES	GPM	PSI	LPM	BAR	CAVITY	MODEL	PAGE
	10	3500	38	241	7/8-14	DF-CPD	MD48
	20	3500	76	241	1 5/16-12	SL-CPD	MD50

CHECK VALVES WITH THERMAL RELIEF	GPM	PSI	LPM	BAR	CAVITY	MODEL	PAGE
	15	4000	57	276	7/8-14	DE-CVT	MD52

**PP-CPB PILOT OPERATED CHECK VALVE, GUIDED BALL**



**DESCRIPTION**

8 size, 3/4-16 thread, "Power" series, pilot operated, ball check valve.

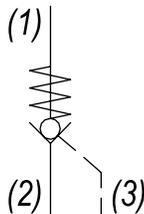
**OPERATION**

The PP-CPB allows free flow to pass from (2) to (1) and blocks flow from (1) to (2). When pilot pressure is applied to port (3) the valve allows free flow from (1) to (2).

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

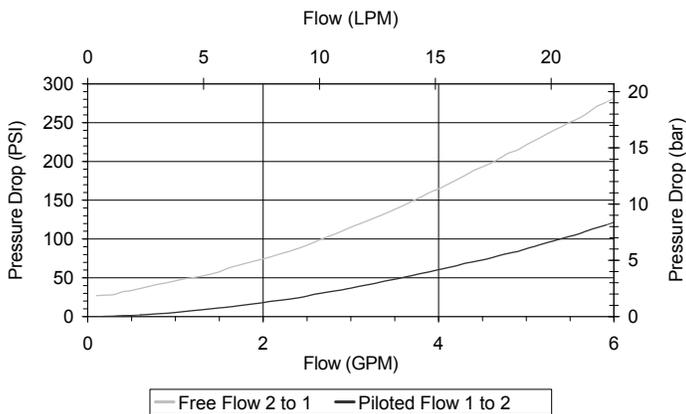
**HYDRAULIC SYMBOL**



For sealed pilot piston consult factory.

**PERFORMANCE**

Actual Test Data (Cartridge Only)

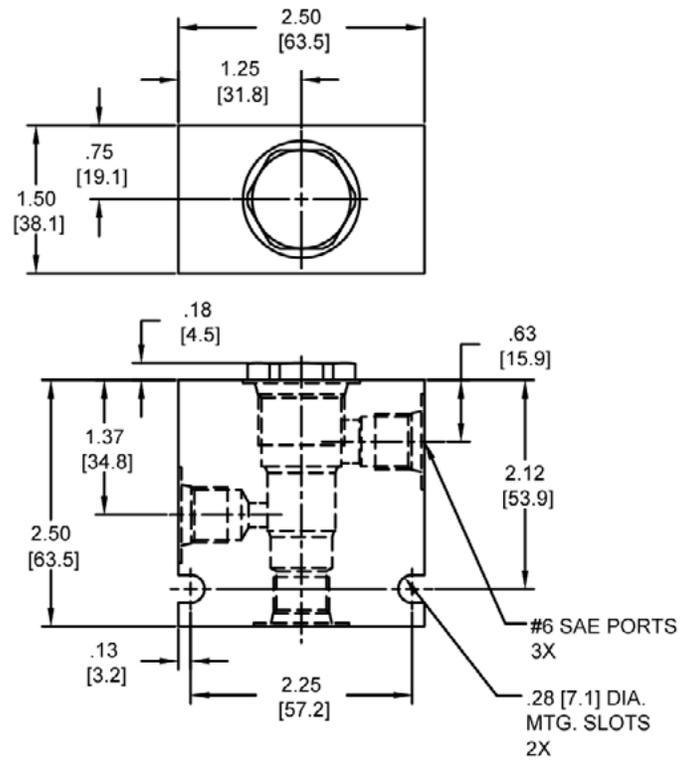
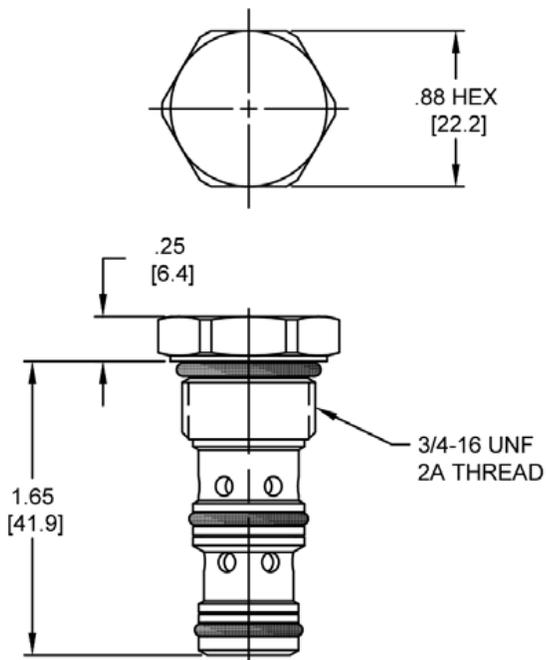


**VALVE SPECIFICATIONS**

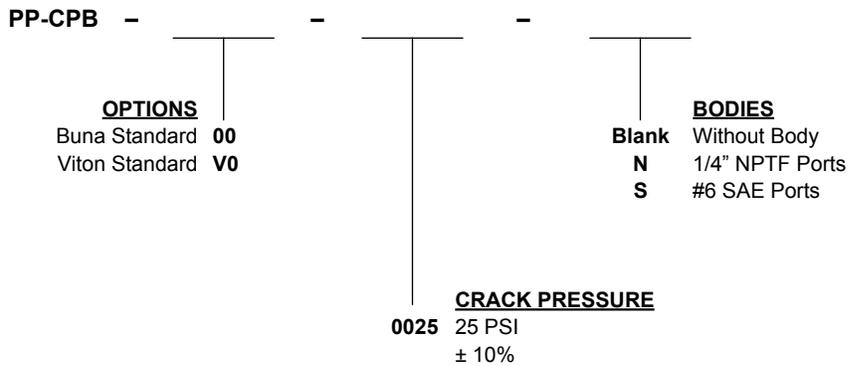
Nominal Flow	6 GPM (23 LTR/M) from (1) to (2) 4 GPM (15 LTR/M) from (2) to (1)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	0-5 drops/min
Pilot Ratio	4:1
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.14 lbs (.06 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Cavity	POWER 3W
Cavity Form Tool (Finishing)	40500024
Seal Kit	21191108

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DIMENSIONS



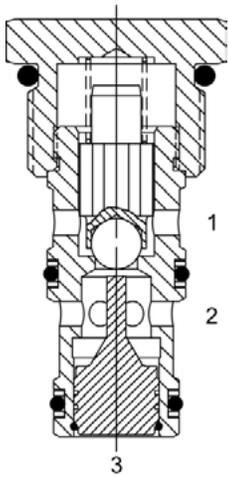
ORDERING INFORMATION



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**DF-CPB PILOT OPERATED CHECK VALVE, GUIDED BALL**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, pilot operated, ball check valve.

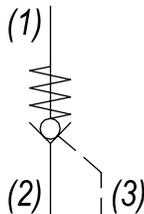
**OPERATION**

The DF-CPB allows free flow to pass from (2) to (1) and blocks flow from (1) to (2). When pilot pressure is applied to port (3) the valve allows free flow from (1) to (2).

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

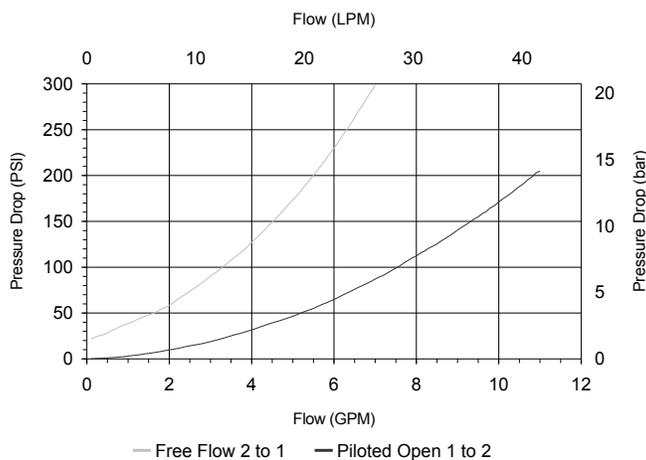
**HYDRAULIC SYMBOL**



For sealed pilot piston consult factory.  
0.030" to 0.060" diameter orifice recommended in the feed line to port #3.

**PERFORMANCE**

Actual Test Data (Cartridge Only)

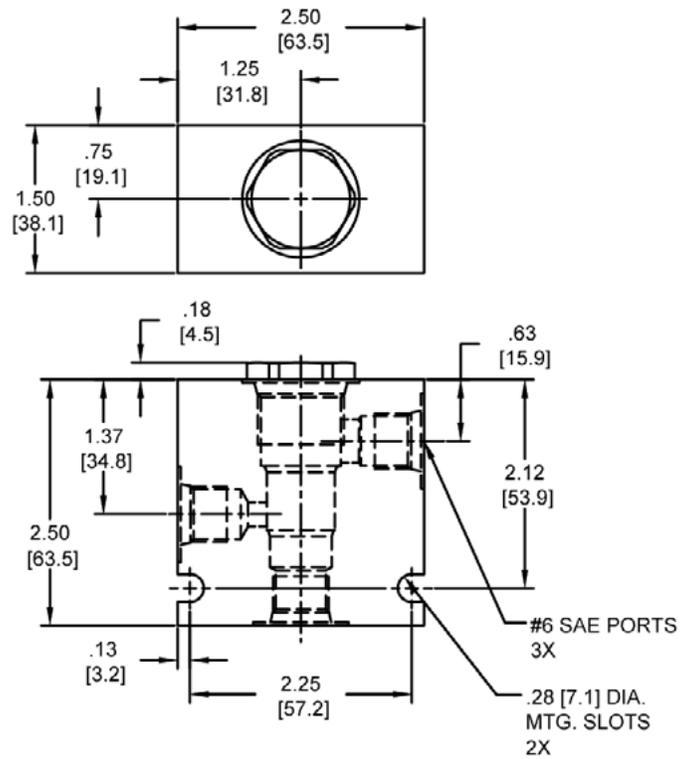
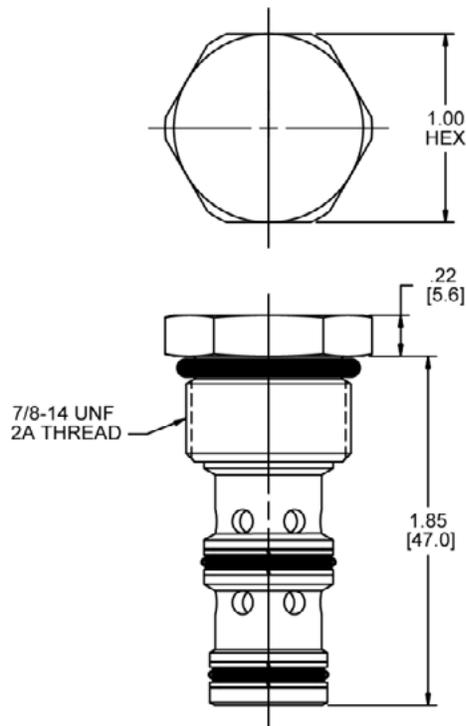


**VALVE SPECIFICATIONS**

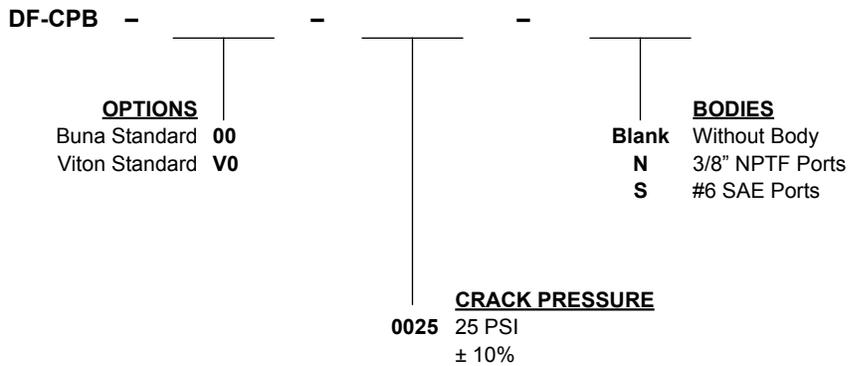
Nominal Flow	8 GPM (30 LTR/M) from (1) to (2) 5 GPM (19 LTR/M) from (2) to (1)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	0-5 drops/min
Pilot Ratio	4:1
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.19 lbs (.09 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 3W
Cavity Form Tool (Finishing)	40500001
Seal Kit	21191202

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DIMENSIONS



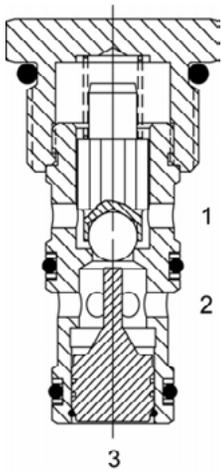
ORDERING INFORMATION



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**DF-CPC PILOT TO OPEN, CHECK VALVE, GUIDED BALL**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, pilot to open, ball check valve.

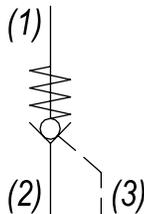
**OPERATION**

The DF-CPC allows free flow to pass from (2) to (1) and blocks flow from (1) to (2). When pilot pressure is applied to port (3) the valve allows free flow from (1) to (2). The cartridge has a 2:1 pilot ratio, meaning that at least one half of the load pressure held at (1) is required at (3) to open the valve. The check is spring biased to assure holding in static or no-load conditions.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

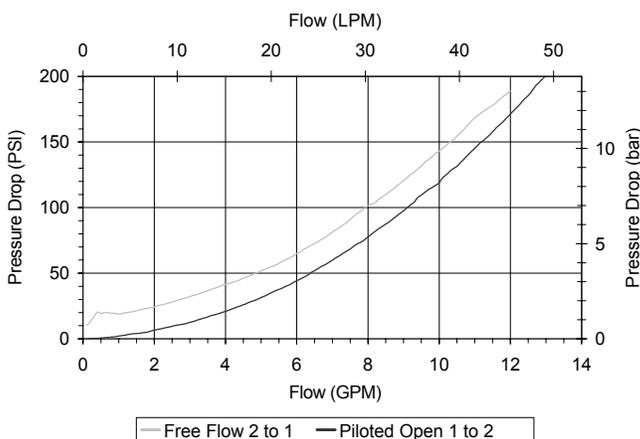
**HYDRAULIC SYMBOL**



Special higher bias spring values available. Consult factory. For sealed pilot piston consult factory.

**PERFORMANCE**

Actual Test Data (Cartridge Only)

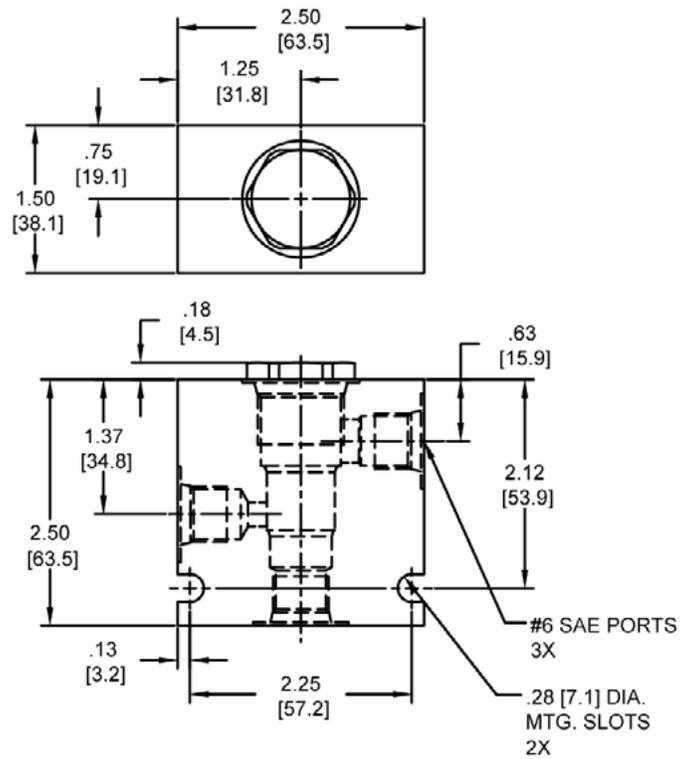
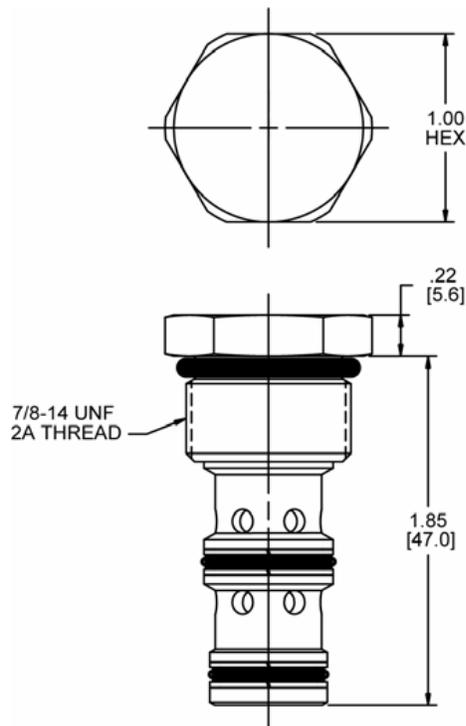


**VALVE SPECIFICATIONS**

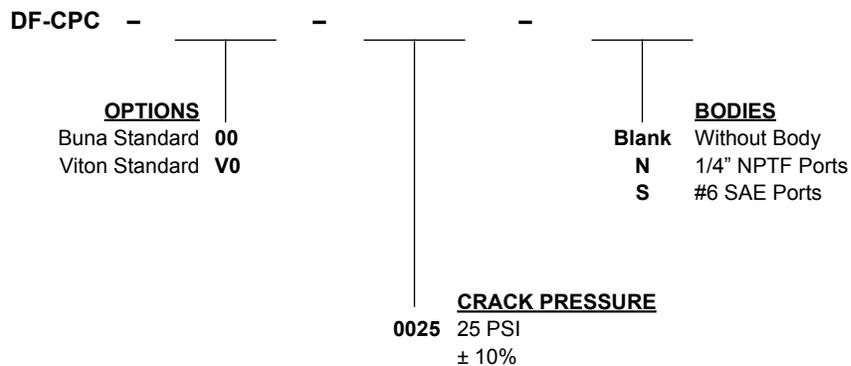
Nominal Flow	10 GPM (38 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	0-5 drops/min
Pilot Ratio	2:1
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.19 lbs (.09 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 3W
Cavity Form Tool (Finishing)	40500001
Seal Kit	21191202

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DIMENSIONS



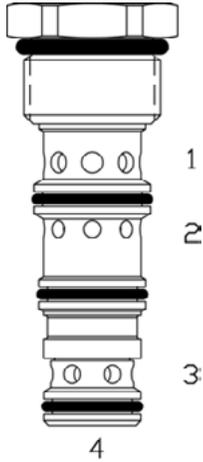
ORDERING INFORMATION



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**PQ-CDP** DOUBLE PILOT OPERATED CHECK VALVE



**DESCRIPTION**

8 size, 3/4-16 thread, "Power" series, double pilot operated check valve.

**OPERATION**

The PQ-CDP allows flow to pass from (3) to (4) and (2) to (1). The valve blocks flow from (4) to (3) and from (1) to (2). Blocked flow is released when pilot pressure is applied to the port opposite of (3) and/or (2) respectively. The valve has a 3:1 pilot ratio, so at least 1/3 of the load pressure at port (4) or (1) is required at the pilot line ports "ports (4) or (1) respectively" to open the flow passage to allow flow from port (4) or (1) respectively. The check spring biased at 20 PSI (1.4 bar) to assure holding in the static or no-load conditions.

**FEATURES**

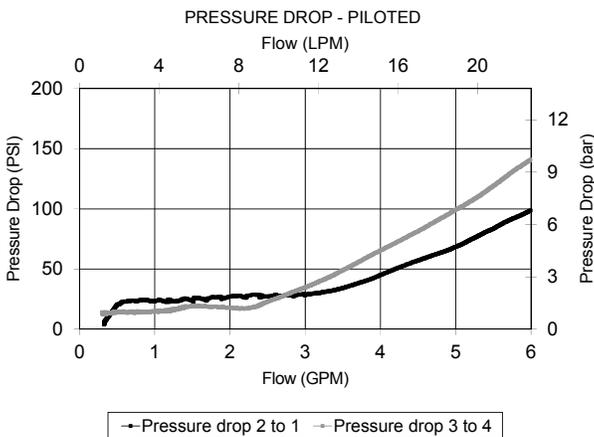
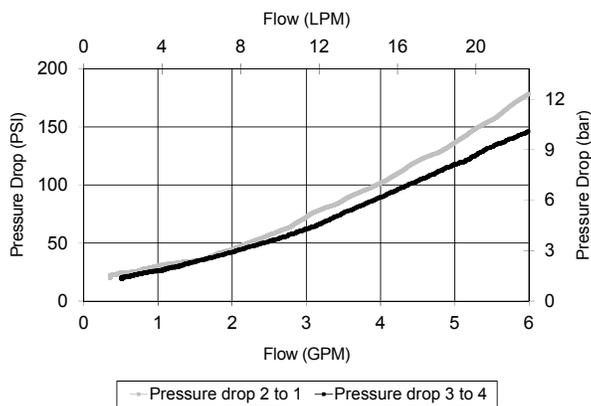
- Hardened parts for long life.
- Industry common cavity.



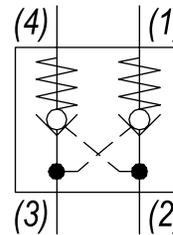
Great for "in Cylinder" use application.

**PERFORMANCE**

Actual Test Data (Cartridge Only)



**HYDRAULIC SYMBOL**

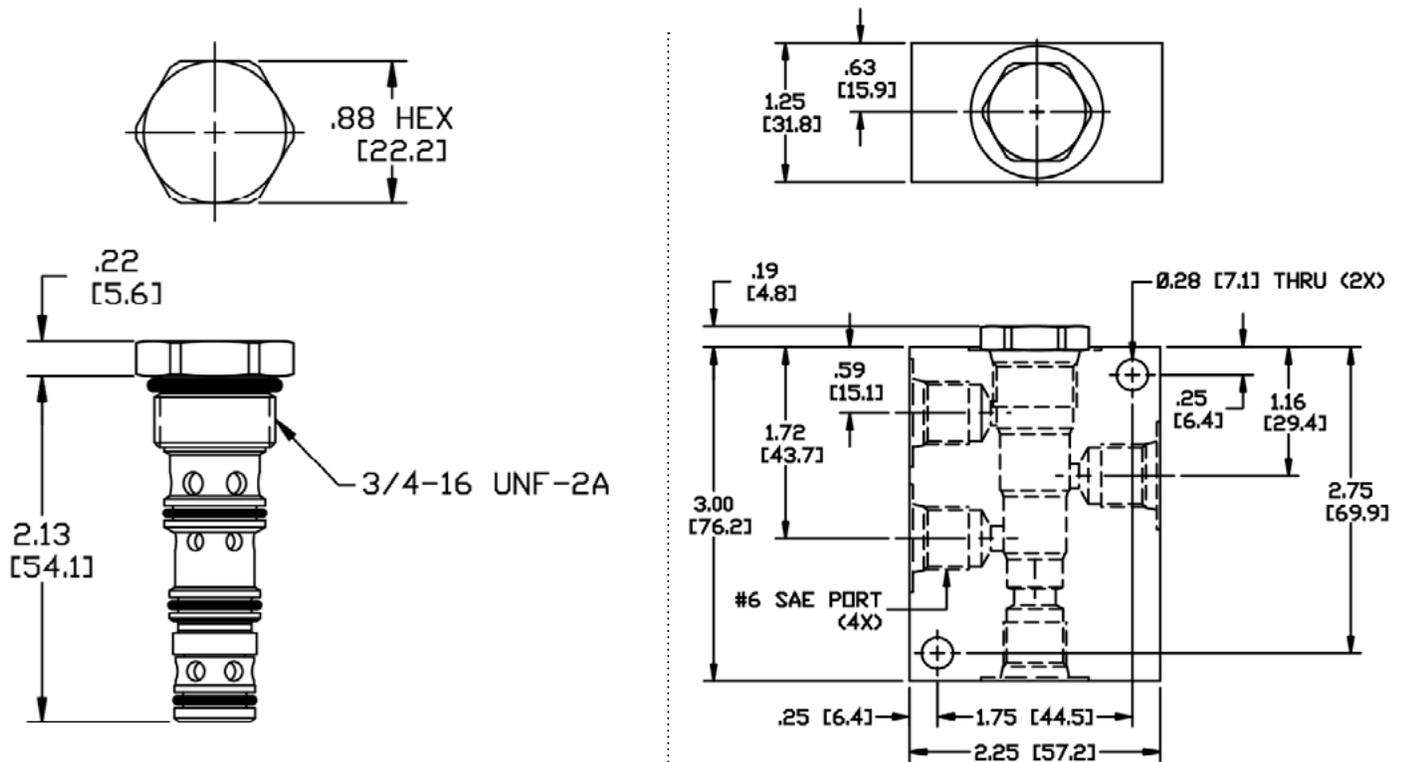


**VALVE SPECIFICATIONS**

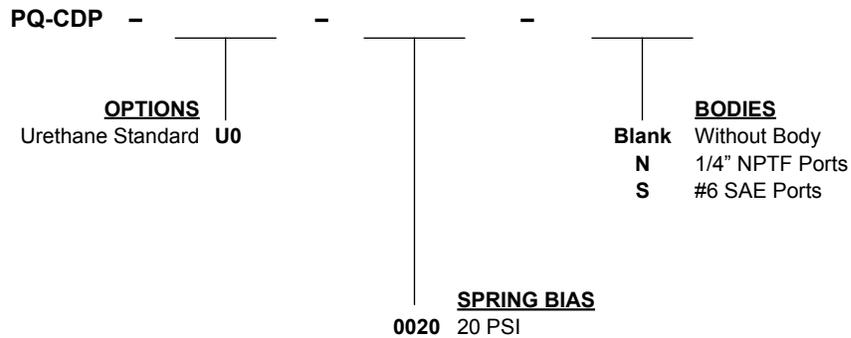
Nominal Flow	5 GPM (19 LPM)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	0-5 drops/min
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.12 lbs (.05 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Cavity	POWER 4W
Cavity Form Tool (Finishing)	40500029
Seal Kit	21191112

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DIMENSIONS



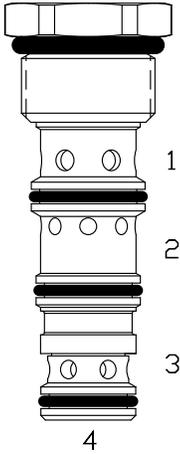
ORDERING INFORMATION



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**DG-CDP** DOUBLE PILOT OPERATED CHECK VALVE



**DESCRIPTION**

10 size, 7/8 -14 thread, "Delta" series, double pilot operated check valve.

**OPERATION**

The DG-CDP allows flow to pass from (3) to (4) and (2) to (1). The valve blocks flow from (4) to (3) and from (1) to (2). Blocked flow is released when pilot pressure is applied to the port opposite of (3) and/or (2) respectively. The valve has a 3:1 pilot ratio, so at least 1/3 of the load pressure at port (4) or (1) is required at the pilot line ports "ports (4) or (1) respectively" to open the flow passage to allow flow from port (4) or (1) respectively. The check spring biased at 20 PSI (1.4 bar) to assure holding in the static or no-load conditions.

**FEATURES**

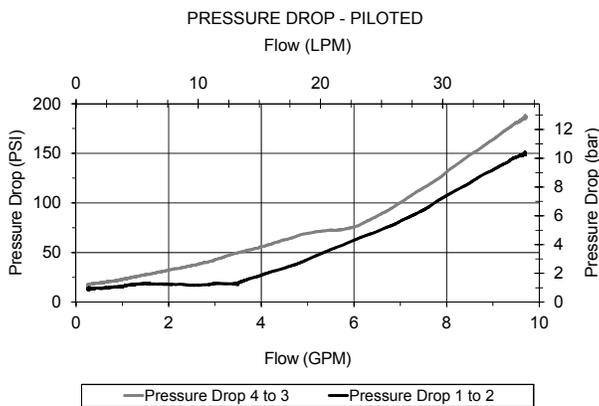
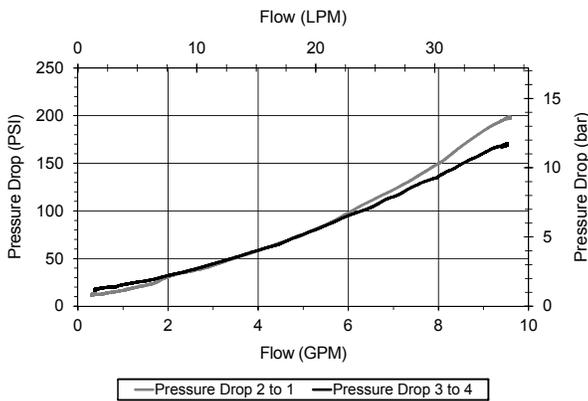
- Hardened parts for long life.
- Industry common cavity.



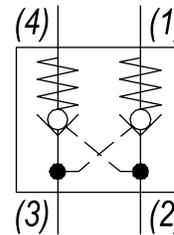
Great for "in Cylinder" use application.

**PERFORMANCE**

Actual Test Data (Cartridge Only)



**HYDRAULIC SYMBOL**

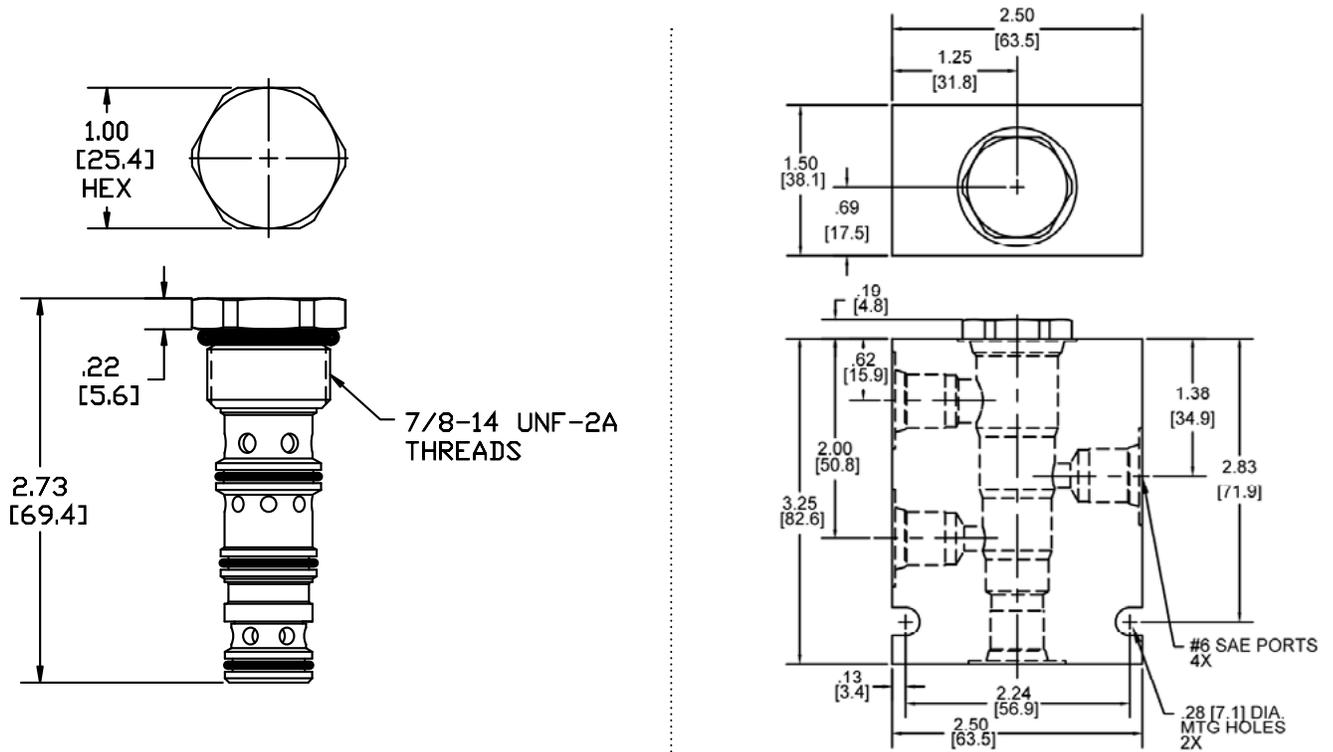


**VALVE SPECIFICATIONS**

Nominal Flow	8 GPM (30 LPM)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	0-5 drops/min
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.20 lbs (.09 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 4W
Cavity Form Tool (Finishing)	40500002
Seal Kit	21191216

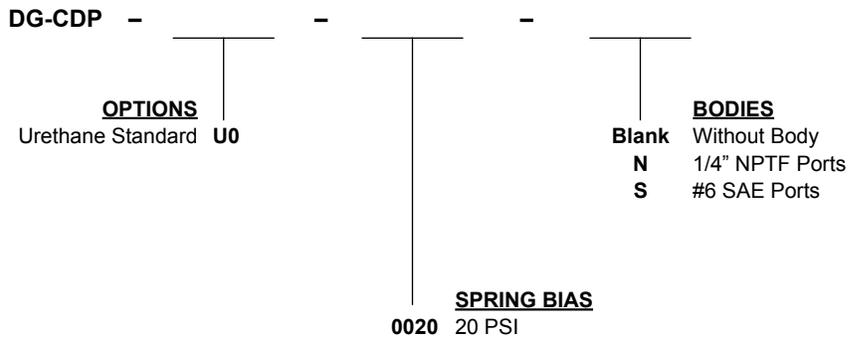
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

DIMENSIONS

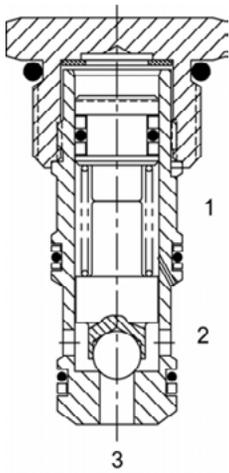


Body Weight: .99 lbs (.45 kg)

ORDERING INFORMATION



**DF-CPD PILOT TO CLOSE CHECK VALVE, GUIDED BALL**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, pilot to close, ball check valve.

**OPERATION**

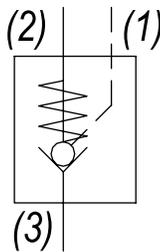
The DF-CPD allows free flow from (3) to (2), and blocks flow from (2) to (3). Flow will be blocked from (3) to (2) when sufficient pressure is applied at (1). The cartridge has various "pilot ratios" (see options).

Example: 1/4 for 4:1 of the load pressure held at (3) is required at (1) to close the valve. The check is spring biased to assure holding in static or no-load conditions.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

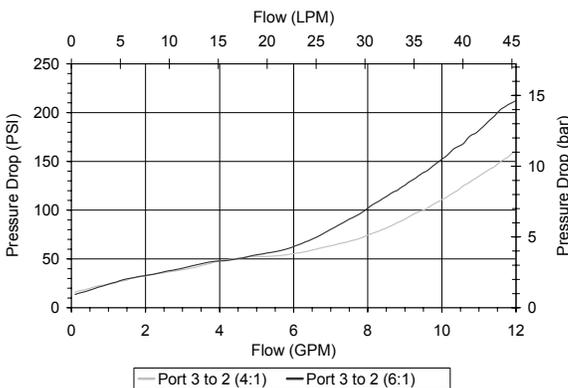
**HYDRAULIC SYMBOL**



Consult chart for flow operation of each model. Special higher bias spring values available. Consult factory.

**PERFORMANCE**

Actual Test Data (Cartridge Only)



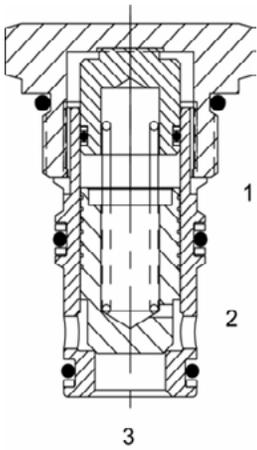
**VALVE SPECIFICATIONS**

Maximum Flow	10 GPM (38 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	50 drops/min from (2) to (3) 5 drops/min from (3) to (2) when port (1) is piloted
Pilot Ratio	(see options)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.20 lbs (.09 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 3W
Cavity Form Tool (Finishing)	40500001
Seal Kit	21191202

**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.



**SL-CPD PILOT TO CLOSE CHECK VALVE, POPPET**



**DESCRIPTION**

16 size, 1 5/16-12 thread, "Super" series, pilot to close, poppet check valve.

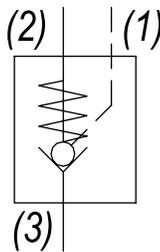
**OPERATION**

The SL-CPD allows free flow from (3) to (2), and blocks flow from (2) to (3) when sufficient pressure is applied at (1). The cartridge has a 2:1 pilot ratio, meaning that at least one half of the load pressure held at (3) is required at (1) to close the valve. The check is spring biased to assure holding in static or no-load conditions.

**FEATURES**

- Hardened seat for long life.
- Industry common cavity.

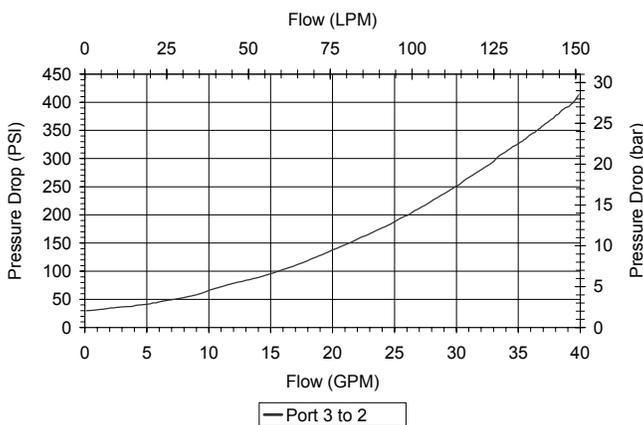
**HYDRAULIC SYMBOL**



*Special higher bias spring values available. Consult factory.*

**PERFORMANCE**

Actual Test Data (Cartridge Only)

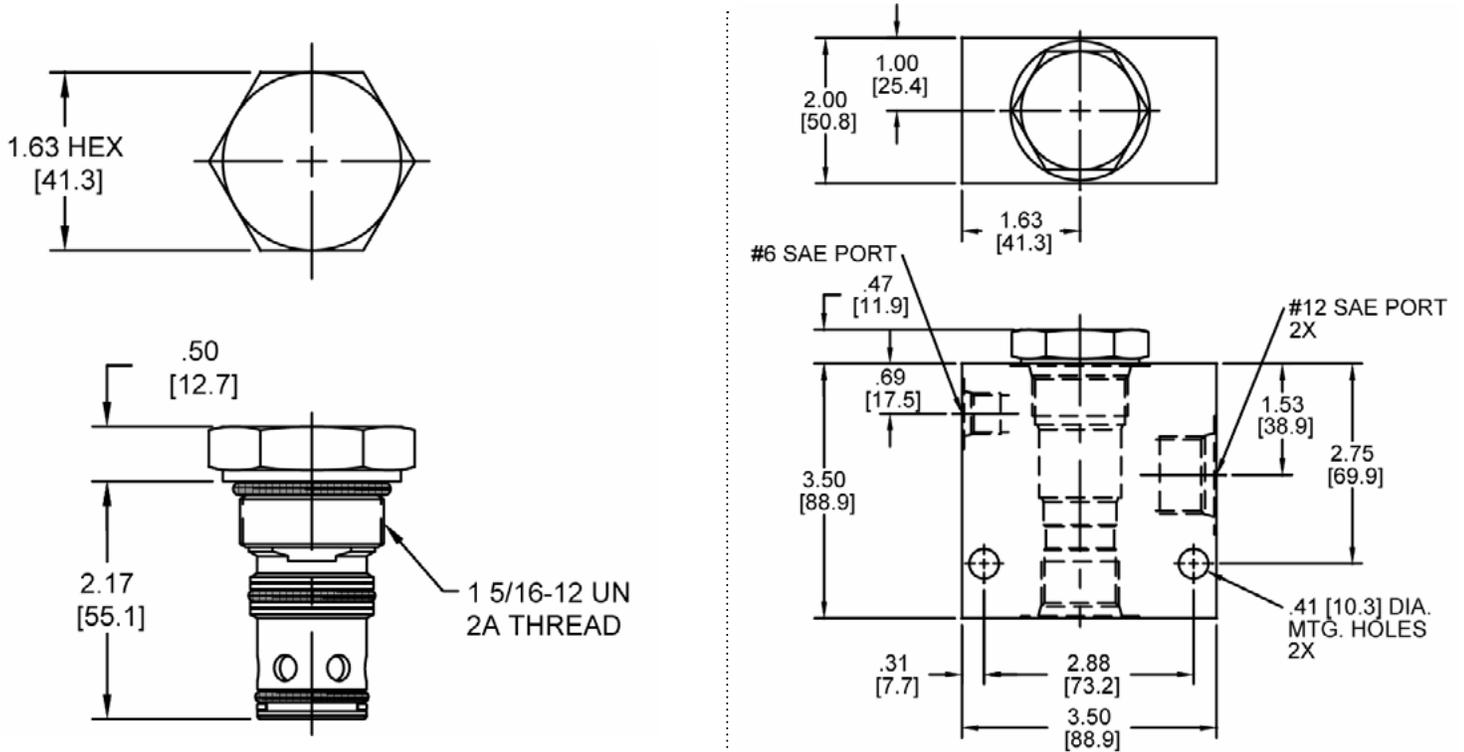


**VALVE SPECIFICATIONS**

Nominal Flow	20 GPM (76 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	5 drops/min
Pilot Ratio	2:1
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.68 lbs (.31 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	90 ft-lbs (122 Nm)
Cavity	SUPER 3WS
Cavity Form Tool (Finishing)	40500021
Seal Kit	21191404

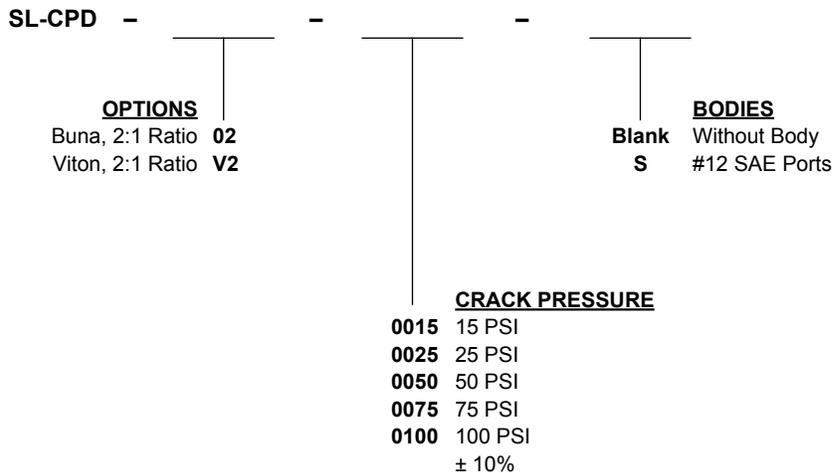
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

DIMENSIONS

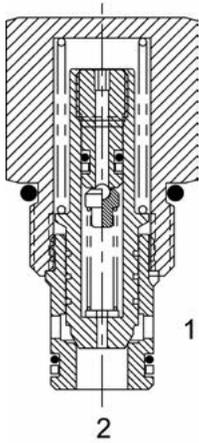


Body Weight: 1.89 lbs (.86 kg)

ORDERING INFORMATION



**DE-CVT DIRECT ACTING CHECK VALVE THERMAL RELIEF, POPPET**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, direct acting check valve with thermal relief.

**OPERATION**

The DE-CVT allows free flow passage from (2) to (1), and blocks flow from (1) to (2). If the pressure at (1) exceeds the thermal relief valve setting, a small amount of oil will be allowed to pass from (1) to (2), preventing cylinder damage from excessive pressure. The cartridge has a fully guided poppet, which is spring biased closed until sufficient pressure is applied at (2) to open to (1).

Note: the relief valve feature is not intended for use in dynamic pressure limiting applications. Consult factory.

**FEATURES**

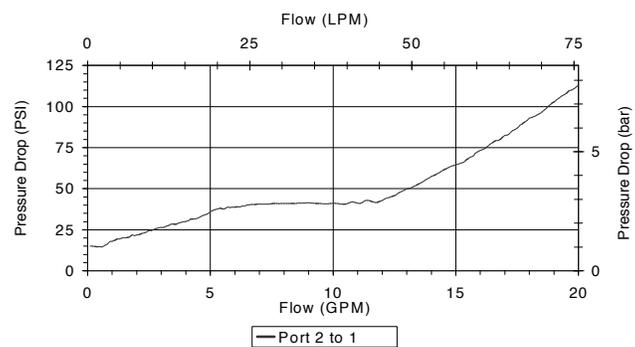
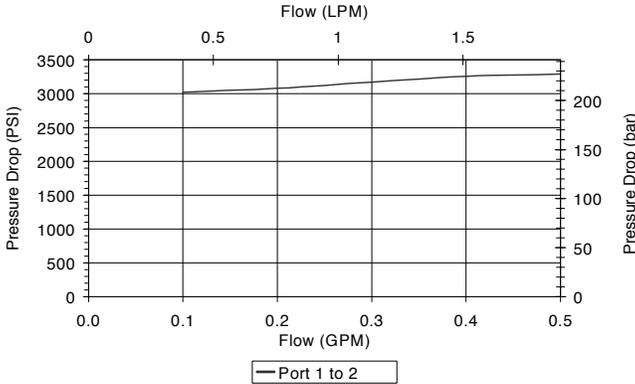
- Hardened parts for long life.
- Optional bias springs for backpressure application flexibility.
- Fully guided poppet assembly.
- Industry common cavity.



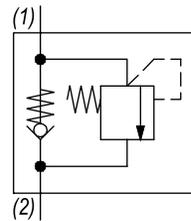
Nominal flow rating is 15 GPM for free flow port (2) to (1). Consult chart for free flow differential pressure. Thermal relief is cyclic rated to 0.1 GPM. Port (1) to (2) chart demonstrates override characteristics for a typical thermal relief application.

**PERFORMANCE**

Actual Test Data (Cartridge Only)



**HYDRAULIC SYMBOL**

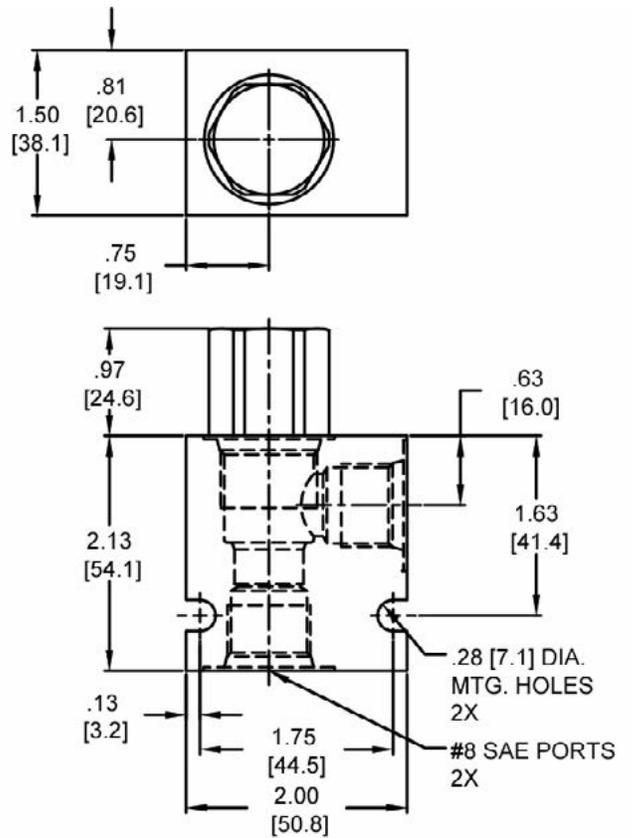
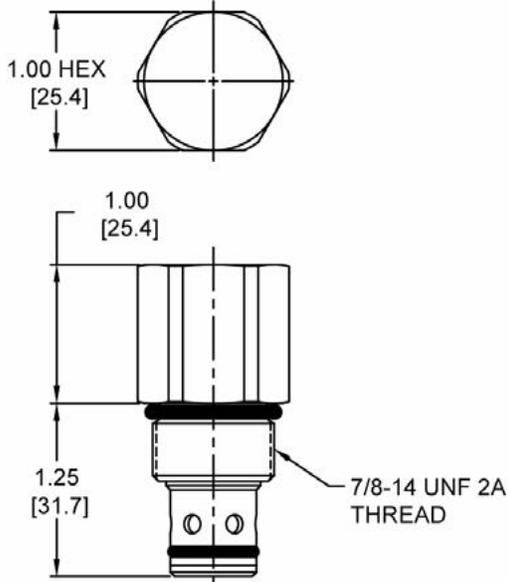


**VALVE SPECIFICATIONS**

Nominal Flow	15 GPM (57 LPM)
Rated Operating Pressure	4000 PSI (276 bar)
Typical Internal Leakage (150 SSU)	0-10 drops/min
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.31 lbs (.14 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191200

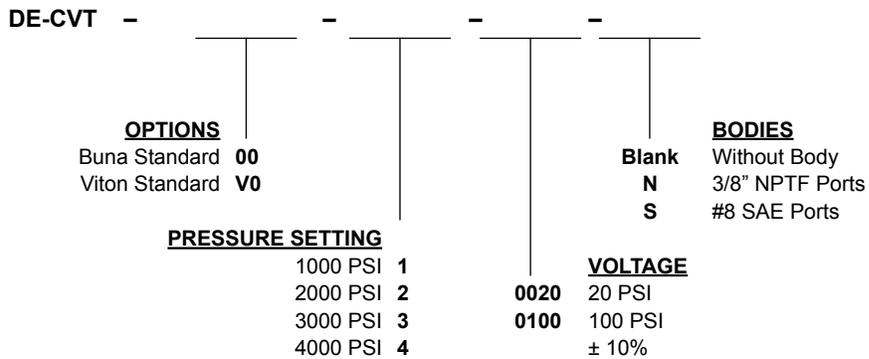
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**



Body Weight: .47 lbs (.21 kg)

**ORDERING INFORMATION**



**WARNING**  
DO NOT USE ALUMINUM BODY  
HIGH PRESSURE (4000 PSI) PRODUCT

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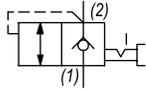
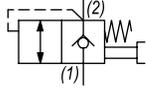
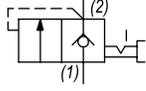
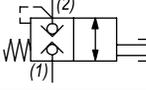
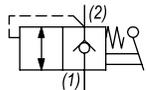
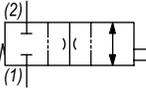
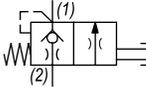
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

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Via Malavolti, 36 - 41122 Modena - ITALY - Phone +39 (059) 254895 - Fax +39 (059) 253512 - mail: [tecnord@tecnord.com](mailto:tecnord@tecnord.com) - [www.tecnord.com](http://www.tecnord.com)

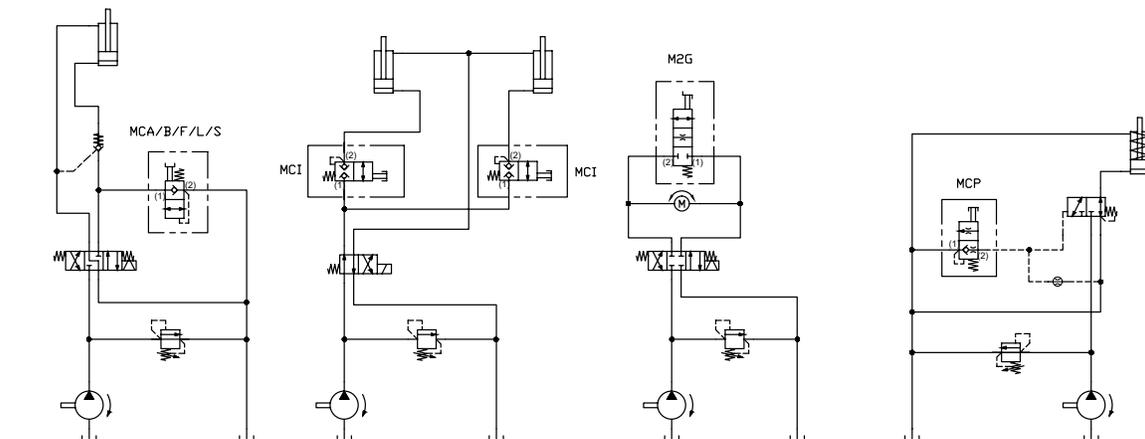
W 28/2022

2 WAY 2 POSITION MANUAL VALVES

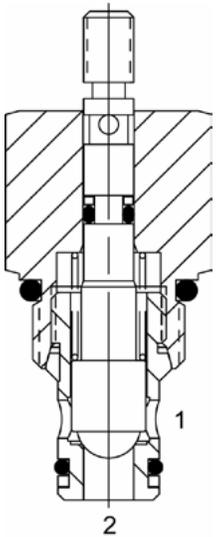
	GPM	PSI	LPM	BAR	CAVITY	MODEL	PAGE
	12	3500	45	241	3/4-16	<b>PB-MCA</b>	MD56
	15	3500	57	241	7/8-14	<b>DE-MCA</b>	MD58
	20	1500	76	103	7/8-14	<b>DE-MCF</b>	MD60
	20	3500	76	241	7/8-14	<b>DE-MCS</b>	MD62
	20	3500	76	241	7/8-14	<b>DE-MCB</b>	MD64
	8	3500	30	241	3/4-16	<b>PB-MCI</b>	MD66
	8	3500	30	241	3/4-16	<b>PB-MCL</b>	MD68
	15	3500	57	241	7/8-14	<b>DE-MCL</b>	MD70
	20	3000	76	207	7/8-14	<b>DE-M2G</b>	MD72
	1	4000	4	276	3/4-16	<b>HB-MCP</b>	MD74

TYPICAL SCHEMATIC

Typical application for MCA, MCB, MCF, MCL, and MCS is an emergency lowering device. Typical application for the MCI is a selector circuit when load holding is required in both directions. Typical application for the M2G is adjustable speed control or full bypass of fluid motor. Typical application for the MCP is a pilot dump valve.



**PB-MCA** MANUAL POPPET VALVE, 2 WAY NORMALLY CLOSED, PULL TYPE



**DESCRIPTION**

8 size, 3/4-16 thread, "Power" series, manual poppet, 2 way normally closed, pull type valve.

**OPERATION**

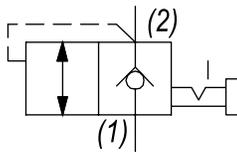
The PB-MCA blocks flow from (1) to (2) until an operator pulls the shaft outward. The bias spring (see option page for pressure) allows for backpressure at (2) before the valve will open.

Note: pressure at port (2) will act directly on the poppet and spring. Port (2) is intended to be a tank port only.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.
- Optional bias springs for backpressure application flexibility.

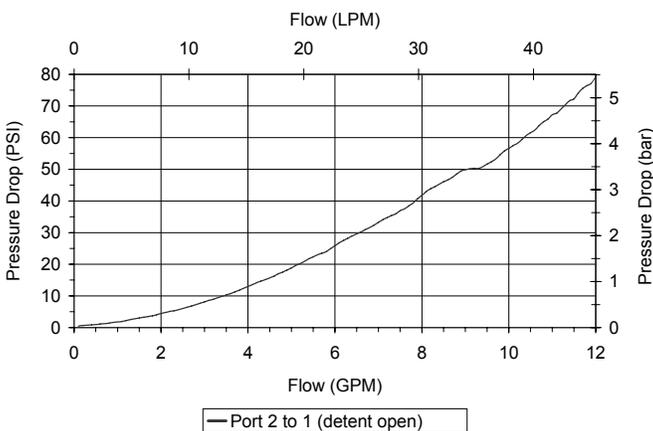
**HYDRAULIC SYMBOL**



*75 PSI bias provides comfortable effort where return line is near zero. 150 PSI option may be difficult to pull, if tank pressure is near zero. Pressure above SPRING BIAS PRESSURE at port (2) may cause valve to self open.*

**PERFORMANCE**

Actual Test Data (Cartridge Only)

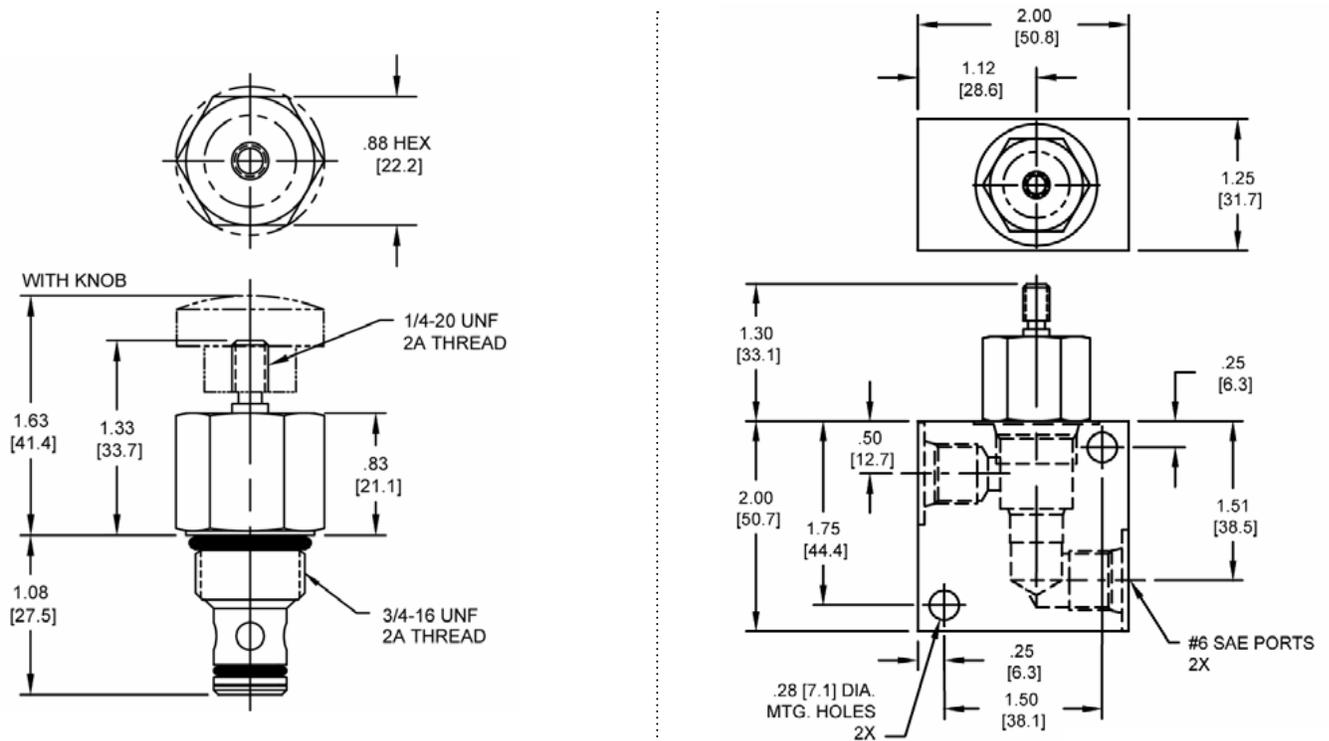


**VALVE SPECIFICATIONS**

Nominal Flow	12 GPM (45 LTR/M)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	0-5 drops/min
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.21 lbs (.10 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Cavity	POWER 2W
Cavity Form Tool (Finishing)	40500005
Seal Kit	21191100

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DIMENSIONS



Body Weight: .39 lbs (.18 kg)

ORDERING INFORMATION

PB-MCA - - -

**OPTIONS**

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Screen **A0**
- Viton, Screen **W0**
- Buna, Knob **0K**
- Viton, Knob **VK**
- Buna, Knob, Screen **AK**
- Viton, Knob, Screen **WK**
- Buna, Detent **0D**
- Viton, Detent **VD**
- Buna, Screen, Detent **AD**
- Viton, Screen, Detent **WD**
- Buna, Knob, Detent **1D**
- Viton, Knob, Detent **2D**
- Buna, Knob, Screen, Detent **3D**
- Viton, Knob, Screen, Detent **4D**

**BODIES**

- Blank** Without Body
- N** 1/4" NPT Ports
- S** #6 SAE Ports

**SPRING BIAS PRESSURE**

- 0075** 75 PSI
- 0150** 150 PSI

**Note: pressure above SPRING BIAS PRESSURE at port (2) may cause valve to self open.**

**Note: use screen only if flow direction is from (1) to (2).**

**DE-MCA MANUAL POPPET VALVE, 2 WAY NORMALLY CLOSED, PULL TYPE**

**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, manual poppet valve, 2 way normally closed, pull type.

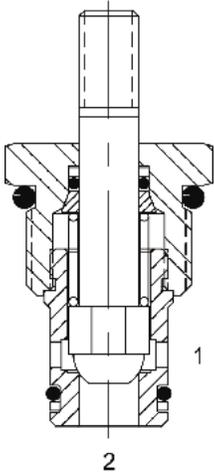
**OPERATION**

The DE-MCA blocks flow from (1) to (2) until an operator pulls the shaft outward. The bias spring allows for backpressure at (2) before the valve will open (see option page for pressure).

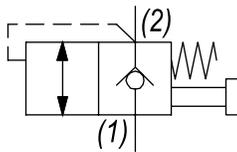
Note: pressure at port (2) will directly act on the poppet and spring. Port (2) is intended to be a tank port only.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.
- Optional bias springs for backpressure application flexibility.



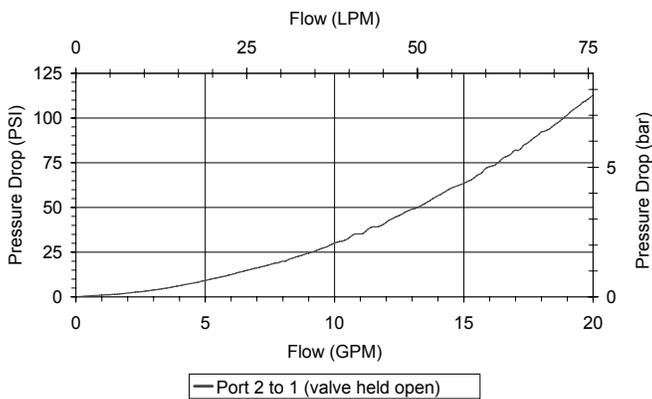
**HYDRAULIC SYMBOL**



*65 PSI bias provides comfortable effort where return line is near zero. 160 PSI option may be difficult to pull, if tank pressure is near zero.*

**PERFORMANCE**

Actual Test Data (Cartridge Only)

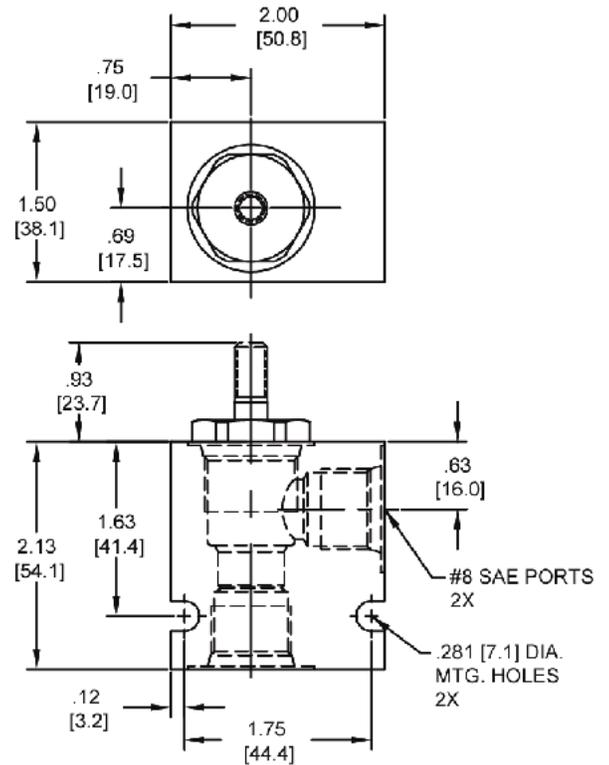
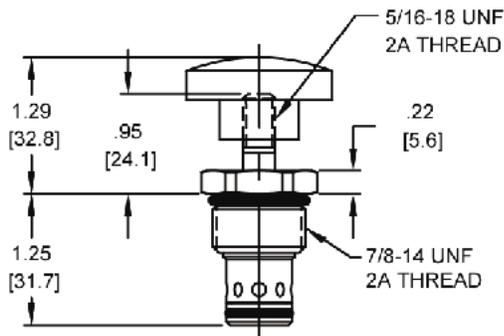
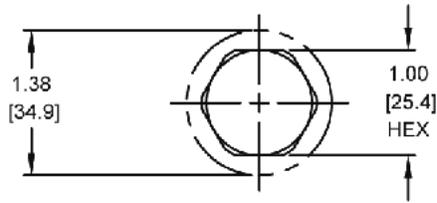


**VALVE SPECIFICATIONS**

Nominal Flow	15 GPM (57 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	5 drops/min
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.18 lbs (.08 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191200

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**DIMENSIONS**



Body Weight: .47 lbs (.21 kg)

**ORDERING INFORMATION**

DE-MCA - - -

**OPTIONS**

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Screen **A0**
- Viton, Screen **W0**
- Buna, Knob **0K**
- Viton, Knob **VK**
- Buna, Knob, Screen **AK**
- Viton, Knob, Screen **WK**

Note: use screen only if flow direction is from (1) to (2).

**BODIES**

- Blank Without Body
- N** 3/8" NPTF Ports
- S** #8 SAE Ports

**SPRING BIAS PRESSURE**

- 0065** 65 PSI
- 0160** 160 PSI

Note: pressure above SPRING BIAS PRESSURE at port (2) may cause valve to self open.

**DE-MCF** MANUAL POPPET VALVE, 2 WAY NORMALLY CLOSED, PULL TYPE, SOFT SEAT

**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, manual poppet valve, 2 way normally closed, pull type, soft seat.

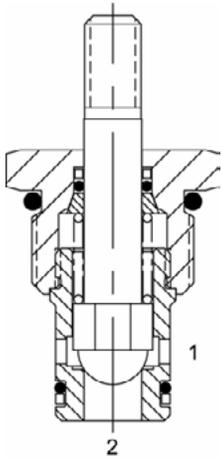
**OPERATION**

The DE-MCF blocks flow from (1) to (2) until an operator pulls the shaft outward. The bias spring allows for backpressure at (2) before the valve will open (see option page for pressure).

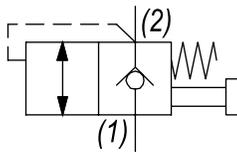
Note: pressure at port (2) will directly act on the spool and spring. Port (2) is intended to be a tank port only.

**FEATURES**

- Soft seat for ultra low leakage.
- Industry common cavity.



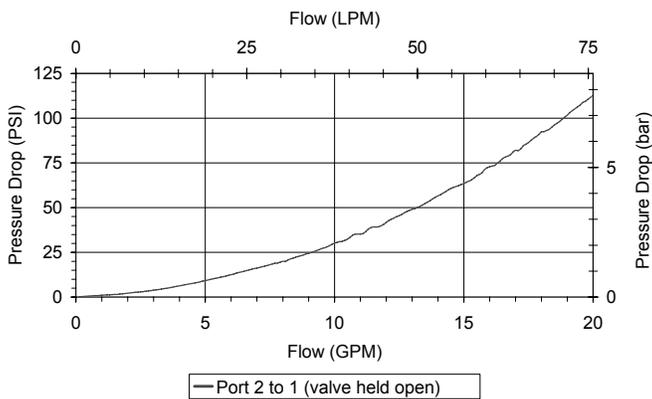
**HYDRAULIC SYMBOL**



Pressure above **SPRING BIAS PRESSURE** at port (2) may cause valve to self open.

**PERFORMANCE**

Actual Test Data (Cartridge Only)

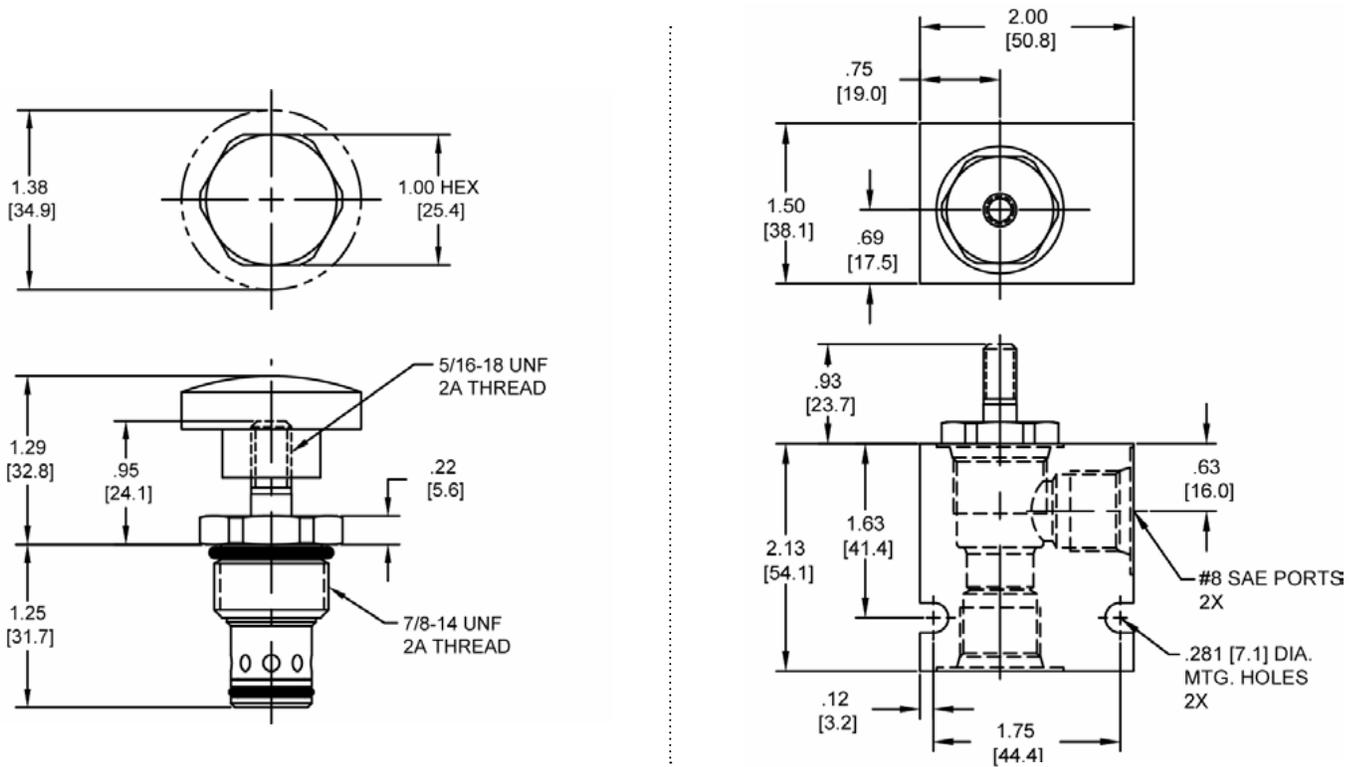


**VALVE SPECIFICATIONS**

Nominal Flow	20 GPM (76 LPM)
Rated Operating Pressure	1500 PSI (103 bar)
Typical Internal Leakage (150 SSU)	Negligible
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-32° to 160°F (0° to 70°C)
Weight	.14 lbs (.06 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191200

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**DIMENSIONS**



Body Weight: .47 lbs (.21 kg)

**ORDERING INFORMATION**

DE-MCF - - - -

**OPTIONS**

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Screen **A0**
- Viton, Screen **W0**
- Buna, Knob **0K**
- Viton, Knob **VK**
- Buna, Knob, Screen **AK**
- Viton, Knob, Screen **WK**

**BODIES**

- Blank Without Body
- N** 3/8" NPTF Ports
- S** #8 SAE Ports

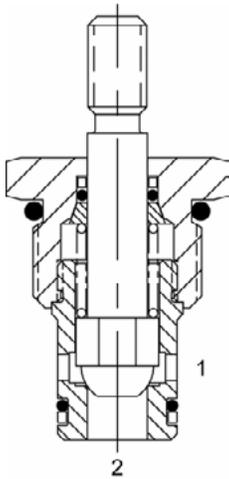
**SPRING BIAS PRESSURE**

**0065** 65 PSI

**Note:** use screen only if flow direction is from (1) to (2).

**Note:** pressure above **SPRING BIAS PRESSURE** at port (2) may cause valve to self open.

**DE-MCS MANUAL POPPET VALVE, 2 WAY NORMALLY CLOSED, PULL TYPE, CORROSION RESISTANT**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, manual poppet valve, 2 way normally closed, pull type, corrosion resistant.

**OPERATION**

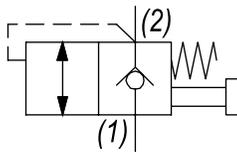
The DE-MCS blocks flow from (1) to (2) until an operator pulls the shaft outward. The bias spring allows for backpressure at (2) before the valve will open (see option page for pressure).

Note: pressure at port (2) will directly act on the spool and spring. Port (2) is intended to be a tank port only.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.
- Corrosion resistant.
- Optional bias springs for backpressure application flexibility.

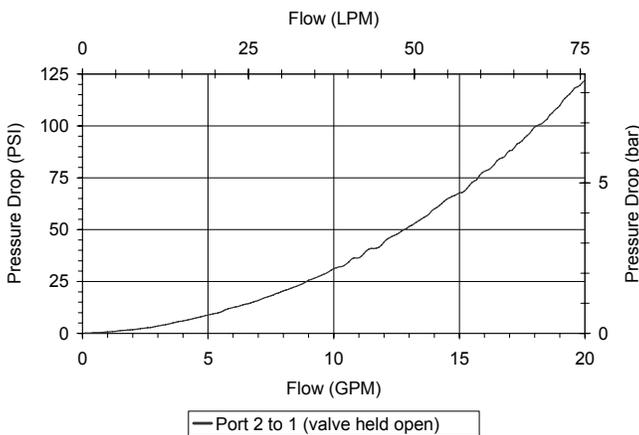
**HYDRAULIC SYMBOL**



*65 PSI bias provides comfortable effort where return line is near zero. 160 PSI option may be difficult to pull, if tank pressure is near zero. Stainless Steel Shaft. Pressure above SPRING BIAS PRESSURE at port (2) may cause valve to self open.*

**PERFORMANCE**

Actual Test Data (Cartridge Only)

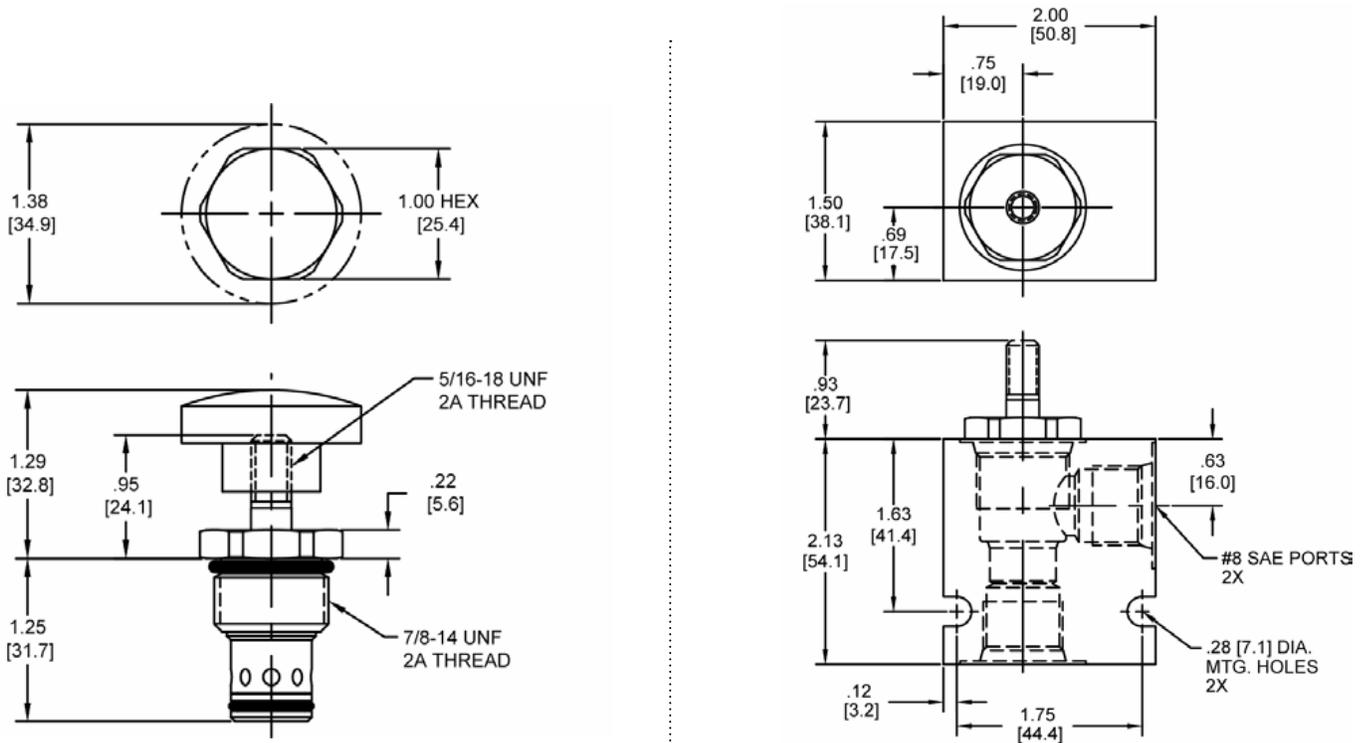


**VALVE SPECIFICATIONS**

Nominal Flow	20 GPM (76 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	0-5 drops/min
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.75 lbs (.34 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191200

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**DIMENSIONS**



Body Weight: .47 lbs (.21 kg)

**ORDERING INFORMATION**

DE-MCS - - - -

**OPTIONS**

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Screen **A0**
- Viton, Screen **W0**
- Buna, Knob **0K**
- Viton, Knob **VK**
- Buna, Knob, Screen **AK**
- Viton, Knob, Screen **WK**

**BODIES**

- Blank Without Body
- N** 3/8" NPTF Ports
- S** #8 SAE Ports

**SPRING BIAS PRESSURE**

- 0065** 65 PSI
- 0160** 160 PSI

Note: use screen only if flow direction is from (1) to (2).

Note: pressure above SPRING BIAS PRESSURE at port (2) may cause valve to self open.

**DE-MCB** MANUAL POPPET VALVE, 2 WAY NORMALLY CLOSED, PULL, DETENT

**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, manual poppet valve, 2 way normally closed, pull with detent.

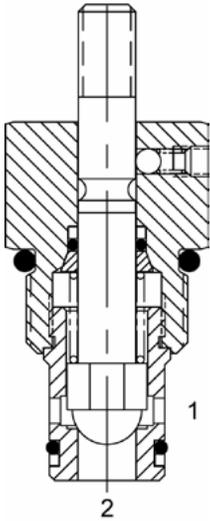
**OPERATION**

The DE-MCB blocks flow from (1) to (2) until an operator pulls the shaft outward. The bias spring allows for backpressure at (2) before the valve will open (see option page for pressure).

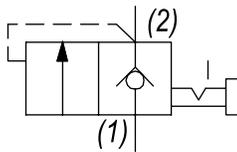
Note: pressure at port (2) will directly act on the spool and spring. Port (2) is intended to be a tank port only.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.
- Optional bias springs for backpressure application flexibility.



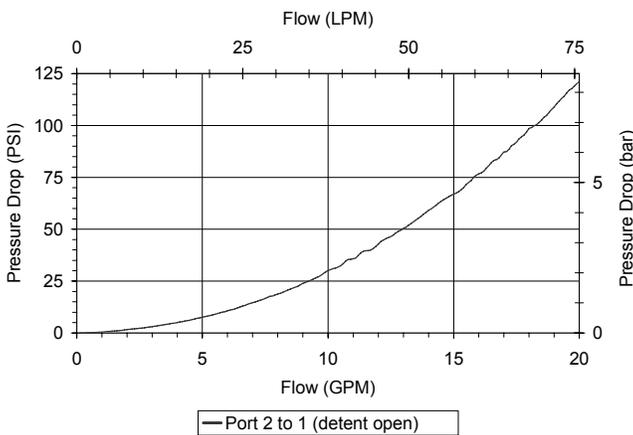
**HYDRAULIC SYMBOL**



65 PSI bias provides comfortable effort where return line is near zero. 160 PSI option may be difficult to pull, if tank pressure is near zero. Pressure above SPRING BIAS PRESSURE at port (2) may cause valve to self open.

**PERFORMANCE**

Actual Test Data (Cartridge Only)

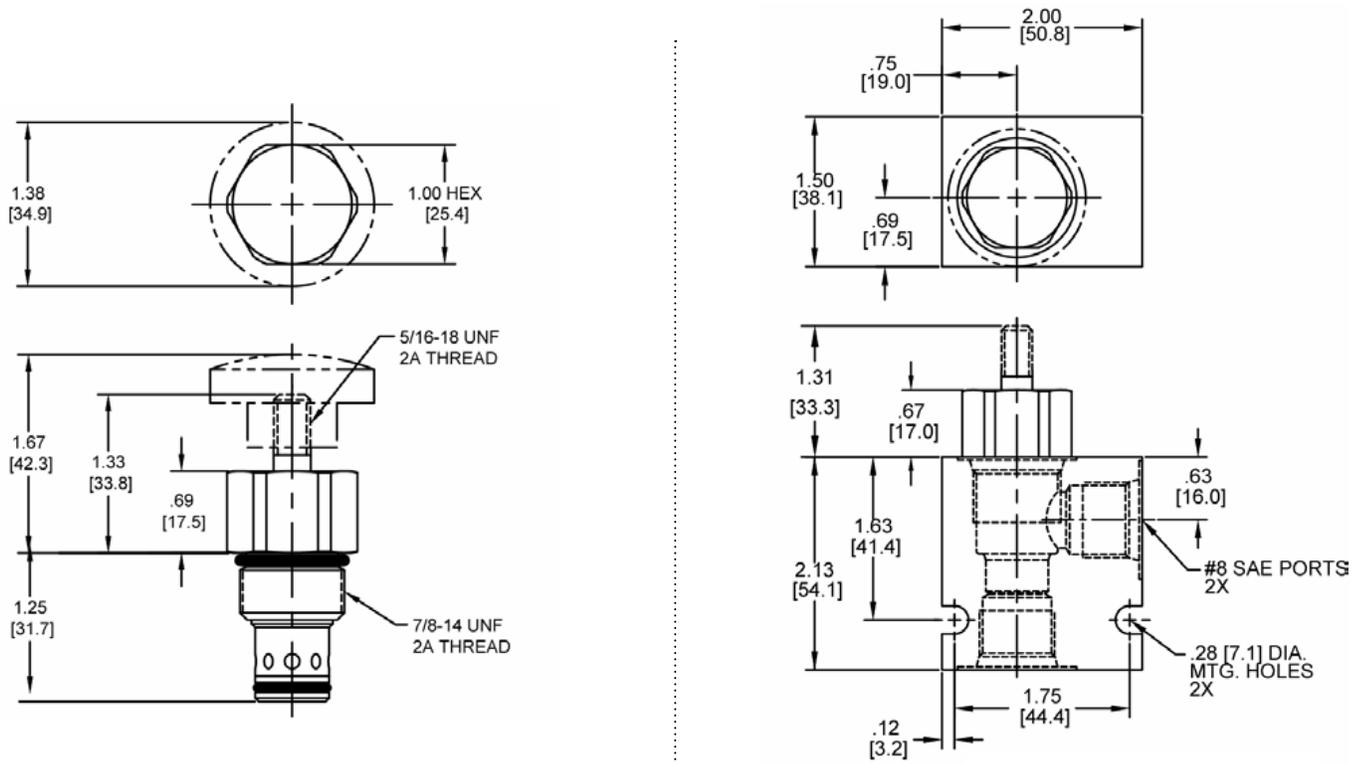


**VALVE SPECIFICATIONS**

Nominal Flow	20 GPM (76 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	5 drops/min
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.28 lbs (.13 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191200

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**DIMENSIONS**



Body Weight: .47 lbs (.21 kg)

**ORDERING INFORMATION**

DE-MCB - - -

**OPTIONS**

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Screen **A0**
- Viton, Screen **W0**
- Buna, Knob **0K**
- Viton, Knob **VK**
- Buna, Knob, Screen **AK**
- Viton, Knob, Screen **WK**

**BODIES**

- Blank Without Body
- N** 3/8" NPTF Ports
- S** #8 SAE Ports

**SPRING BIAS PRESSURE**

- 0065** 65 PSI
- 0160** 160 PSI

Note: use screen only if flow direction is from (1) to (2).

Note: pressure above SPRING BIAS PRESSURE at port (2) may cause valve to self open.

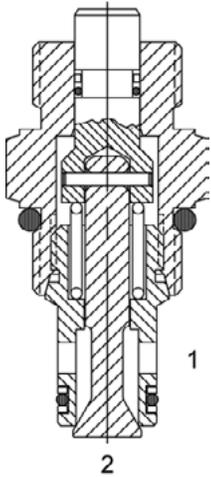
**PB-MCI** MANUAL POPPET VALVE, 2 WAY NORMALLY CLOSED, PUSH TYPE

**DESCRIPTION**

8 size, 3/4-16 thread, "Power" series, manual poppet, 2 way normally closed, push type valve.

**OPERATION**

The PB-MCI blocks flow from (2) to (1) until sufficient force is applied to button to overcome spring bias and load force.



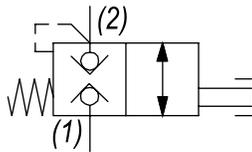
Actuation Force Required	
No Pressure	7 lbs
Side Pressure	7 + (P1 x .009)
Nose Pressure	7 + (P1 x .076)

Note: (Ø .437) cavity predrill depth must be 1.312 minimum from spotface.

**FEATURES**

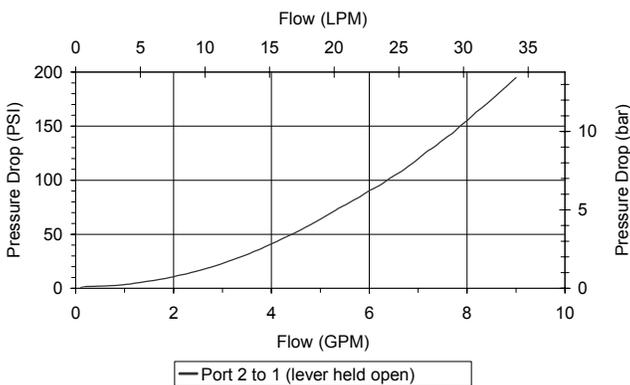
- Hardened parts for long life.
- Industry common cavity.

**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)

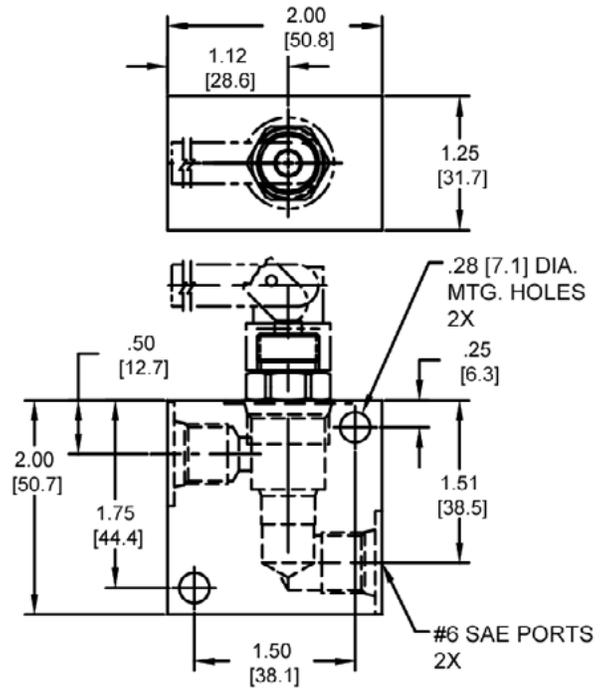
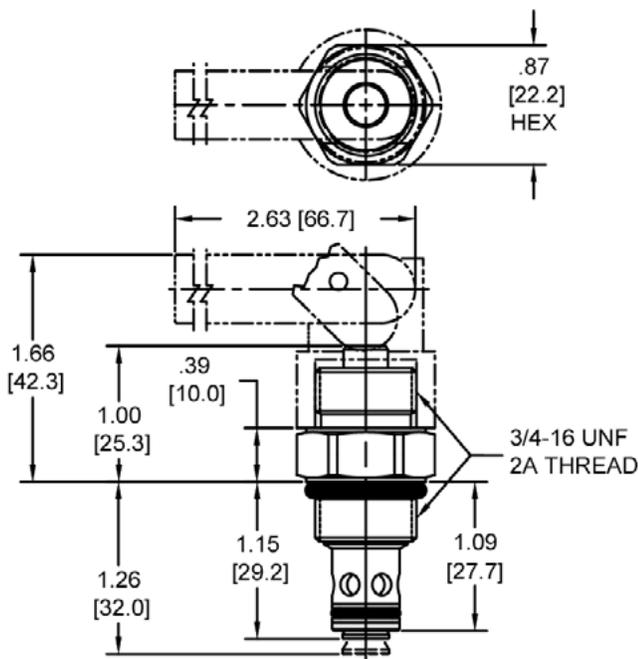


**VALVE SPECIFICATIONS**

Nominal Flow	8 GPM (30 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	Consult Factory
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.26 lbs (.12 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Cavity	POWER 2W
Cavity Form Tool (Finishing)	40500005
Seal Kit	21191102

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DIMENSIONS



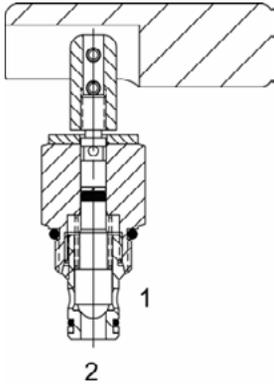
Body Weight: .39 lbs (.18 kg)

ORDERING INFORMATION

<b>PB-MCI</b> -		-	-
	<b>OPTIONS</b>		<b>BODIES</b>
	Buna Standard	<b>00</b>	<b>Blank</b> Without Body
	Viton Standard	<b>V0</b>	<b>N</b> 1/4" NPTF Ports
	Buna, Screen	<b>A0</b>	<b>S</b> #6 SAE Ports
	Viton, Screen	<b>W0</b>	
	Buna, Lever	<b>0L</b>	
	Viton, Lever	<b>VL</b>	
	Buna, Screen, Lever	<b>AL</b>	
	Viton, Screen, Lever	<b>WL</b>	

**Note: use screen only if flow direction is from (1) to (2).**

**PB-MCL** MANUAL POPPET VALVE, 2 WAY NORMALLY CLOSED, PULL TYPE, LEVER



**DESCRIPTION**

8 size, 3/4-16 thread, "Power" series, manual poppet, 2 way normally closed, pull type valve with lever.

**OPERATION**

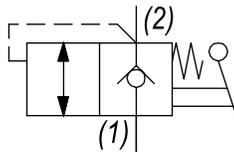
The PB-MCL blocks flow from (1) to (2) until an operator pulls the handle upward. The bias spring (see option page for pressure) allows for backpressure at (2) before the valve will open.

Note: Pressure at port (2) will directly act on the spool and spring. Port (2) is intended to be a tank port only.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

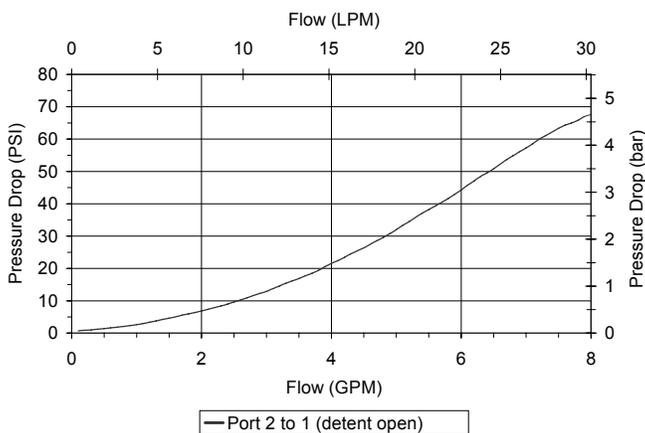
**HYDRAULIC SYMBOL**



Pressure above *SPRING BIAS PRESSURE* at port (2) may cause valve to self open.

**PERFORMANCE**

Actual Test Data (Cartridge Only)

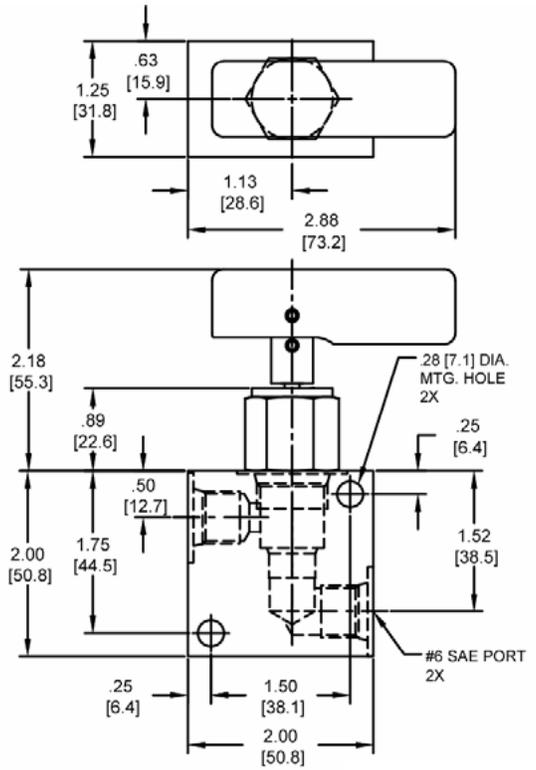
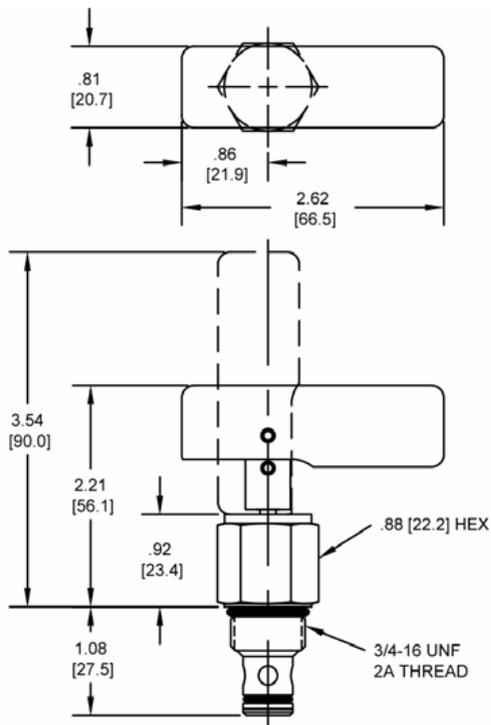


**VALVE SPECIFICATIONS**

Nominal Flow	8 GPM (30 LTR/M)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	0-5 drops/min
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.33 lbs (.15 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Cavity	POWER 2W
Cavity Form Tool (Finishing)	40500005
Seal Kit	21191101

**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**



Body Weight: .39 lbs (.18 kg)

**ORDERING INFORMATION**

PB-MCL - - -

**OPTIONS**

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Screen **A0**
- Viton, Screen **W0**

**BODIES**

- Blank Without Body
- N** 1/4" NPT Ports
- S** #6 SAE Ports

Note: use screen only if flow direction is from (1) to (2).

**SPRING BIAS PRESSURE**

- 0075** 75 PSI
- 0150** 150 PSI

Note: pressure above SPRING BIAS PRESSURE at port (2) may cause valve to self open.

**DE-MCL** NORMALLY CLOSED MANUAL, PULL VALVE

**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, normally closed, manual pull valve.

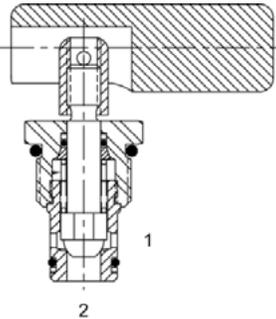
**OPERATION**

The DE-MCL blocks flow from (1) to (2) until an operator pulls the shaft outward. The bias spring allows for backpressure at (2) before the valve will open (see option page for pressure).

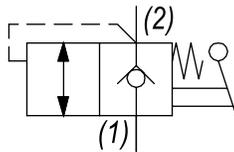
Note: pressure at port (2) will directly act on the spool and spring. Port (2) is intended to be a tank port only. The cartridge offers smooth transition in response to load changes in common hydraulic circuits.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.



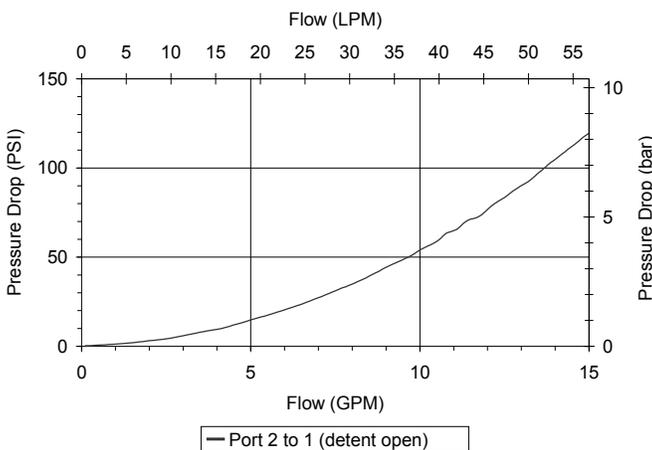
**HYDRAULIC SYMBOL**



Pressure above *SPRING BIAS PRESSURE* at port (2) may cause valve to self open.

**PERFORMANCE**

Actual Test Data (Cartridge Only)

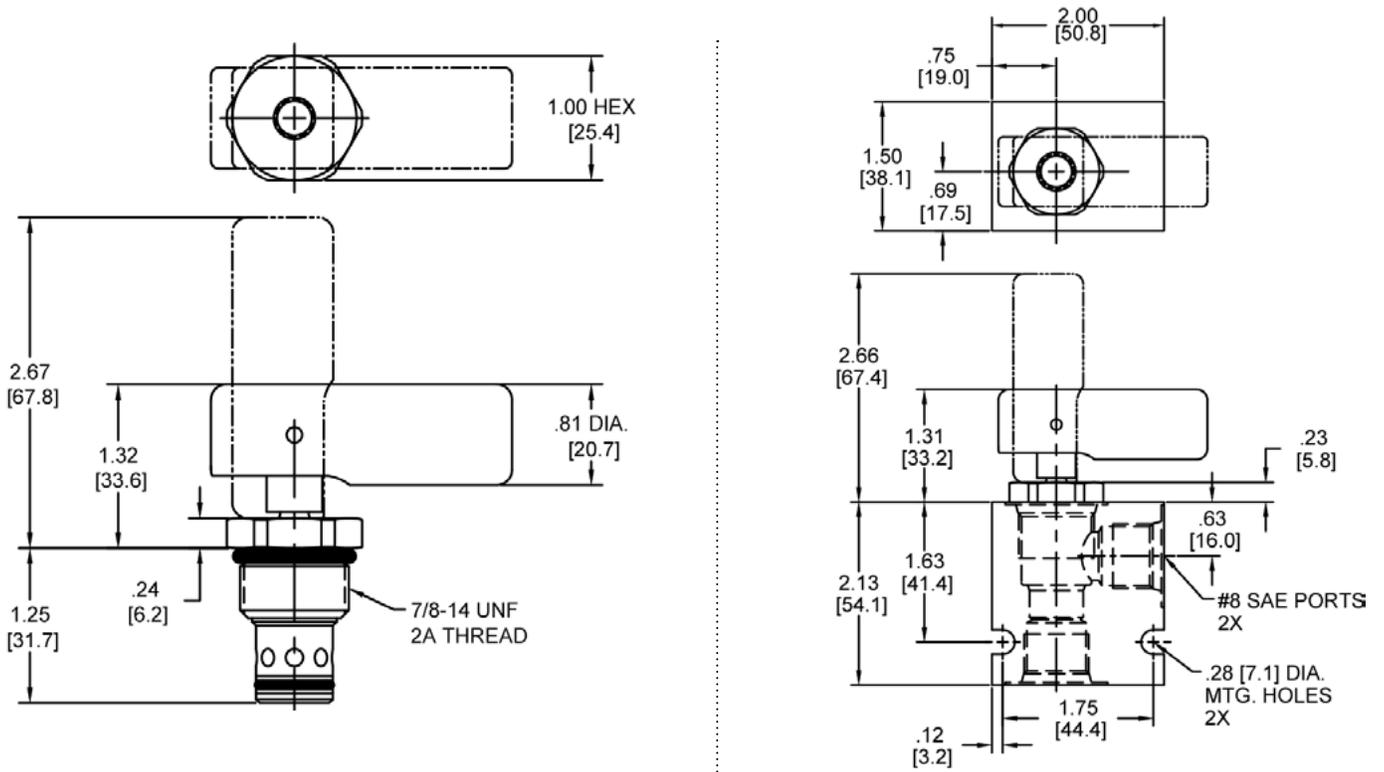


**VALVE SPECIFICATIONS**

Nominal Flow	15 GPM (57 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	5 drops/min (82 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.15 lbs (.07 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191201

**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**



Body Weight: .47 lbs (.21 kg)

**ORDERING INFORMATION**

DE-MCL - - -

**OPTIONS**

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Screen **A0**
- Viton, Screen **W0**

**Note: use screen only if flow direction is from (1) to (2).**

**BODIES**

- Blank Without Body
- N** 3/8" NPTF Ports
- S** #8 SAE Ports

**SPRING BIAS PRESSURE**

- 0065** 65 PSI
- 0160** 165 PSI

**Note: pressure above SPRING BIAS PRESSURE at port (2) may cause valve to self open.**

**DE-M2G** MANUAL ROTARY SPOOL VALVE, 2 WAY NORMALLY CLOSED

**DESCRIPTION**

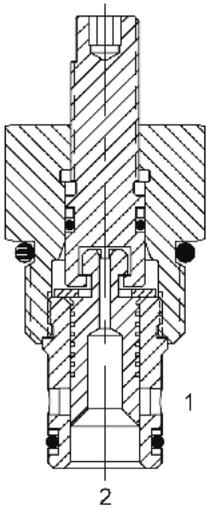
10 size, 7/8-14 thread, "Delta" series, manual rotary spool valve, 2 way normally closed.

**OPERATION**

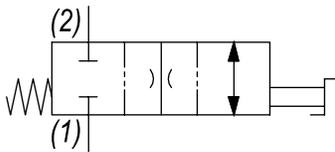
The DE-M2G when rotated clockwise (fully closed position) blocks flow from (1) to (2) and (2) to (1). When rotated counterclockwise (fully open position), the cartridge allows flow from (1) to (2) and (2) to (1).

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.



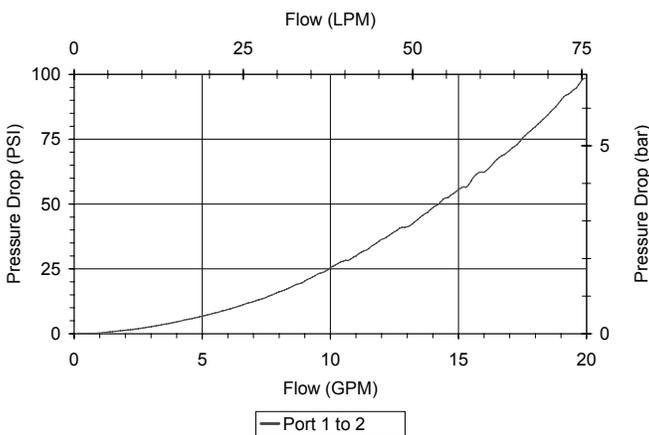
**HYDRAULIC SYMBOL**



May be used as a metering product. Valve has approximately 3.5 turns of adjustment from fully open to fully closed. See Chart for fully open pressure drop.

**PERFORMANCE**

Actual Test Data (Cartridge Only)

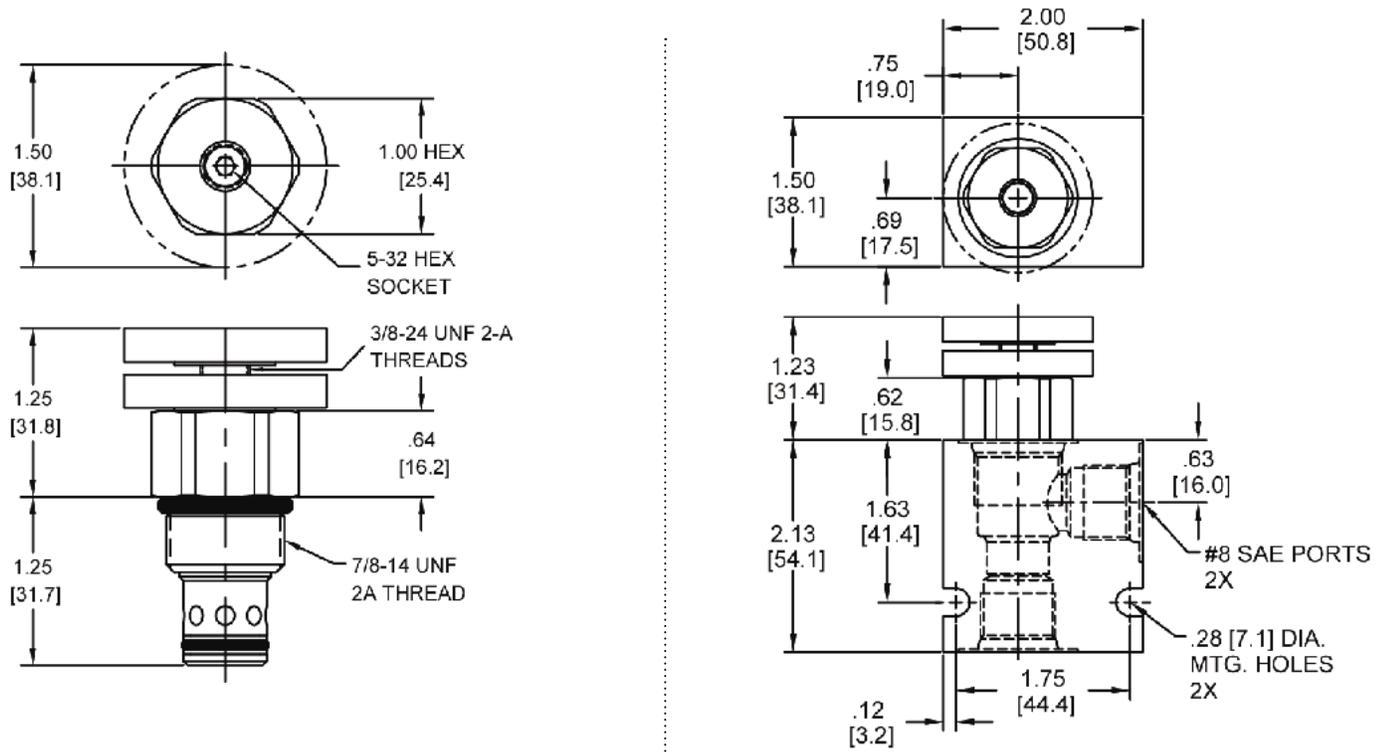


**VALVE SPECIFICATIONS**

Nominal Flow	20 GPM (76 LPM)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	5 cu/in per min (82 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.27 lbs (.12 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191202

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DIMENSIONS



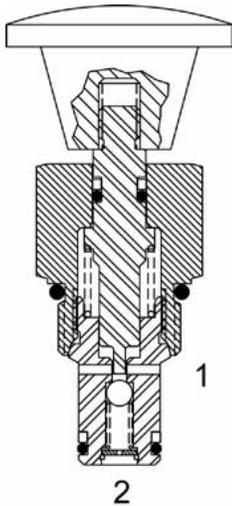
Body Weight: .47 lbs (.21 kg)

ORDERING INFORMATION

<b>DE-M2G</b> -		-	-
	<b>OPTIONS</b>		<b>BODIES</b>
	Buna Standard	<b>00</b>	<b>Blank</b> Without Body
	Viton Standard	<b>V0</b>	<b>N</b> 3/8" NPTF Ports
	Buna, Screen	<b>A0</b>	<b>S</b> #8 SAE Ports
	Viton, Screen	<b>W0</b>	
	Buna, Knob	<b>0K</b>	
	Viton, Knob	<b>VK</b>	
	Buna, Knob, Screen	<b>AK</b>	
	Viton, Knob, Screen	<b>WK</b>	

**Note: use screen only if flow direction is from (1) to (2).**

**HB-MCP 2 WAY MANUAL VALVE, NORMALLY CLOSED, PUSH TYPE**



**DESCRIPTION**

8 size, 3/4-16 thread, "Power" series, manual valve, 2 way normally closed, push type.

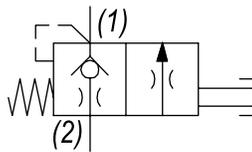
**OPERATION**

The HB-MCP blocks flow from (2) to (1) until an operator pushes the knob in allowing pressure at port #2 to drop to port #1 pressure.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

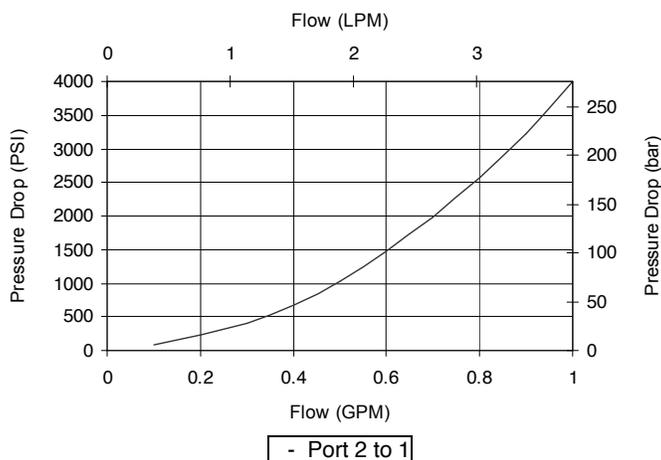
**HYDRAULIC SYMBOL**



Good as a pilot dump valve. Port #1 should be limited to <500 PSI to allow actuation (50 lbs), Port #2 actuation load at 4000 PSI (50 lbs).

**PERFORMANCE**

Actual Test Data (Cartridge Only)

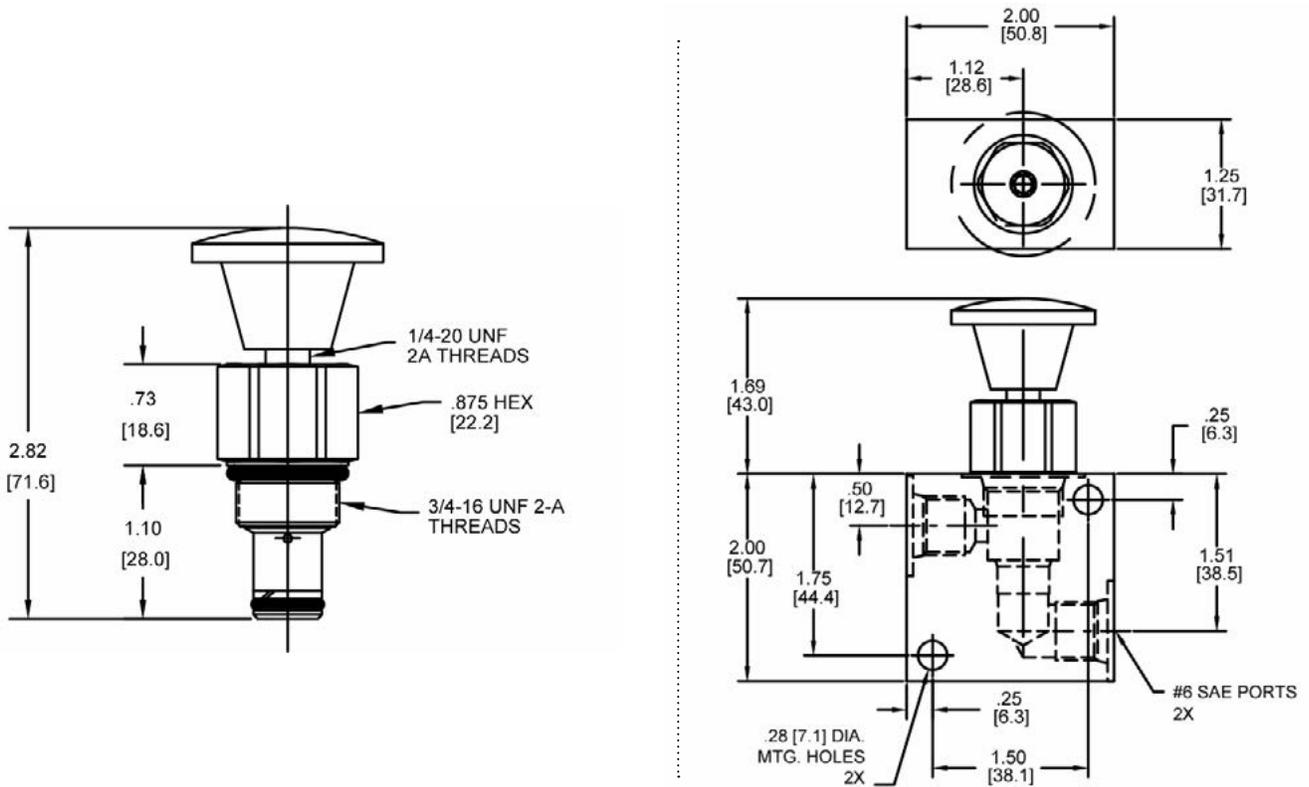


**VALVE SPECIFICATIONS**

Nominal Flow	1 GPM (4 LPM)
Max. Operating Pressure	4000 PSI (276 bar)
Typical Internal Leakage (150 SSU)	5 drops/min
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	32° to 160°F (0° to 70°C)
Weight	.14 lbs (.06 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Cavity	POWER 2W
Cavity Form Tool (Finishing)	40500005
Seal Kit	21191100

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**DIMENSIONS**



Body Weight: .39 lbs (.18 kg)

**ORDERING INFORMATION**

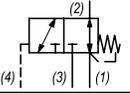
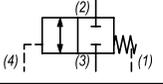
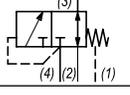
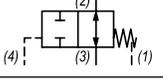
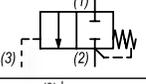
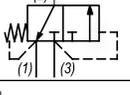
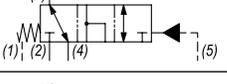
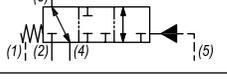
HB-MCP		-	-	-
<b>OPTIONS</b>				<b>BODIES</b>
Buna, Knob	<b>OK</b>		Blank	Without Body
Viton, Knob	<b>VK</b>		<b>N</b>	1/4" NPTF Ports
			<b>S</b>	#6 SAE Ports

**Note: aluminum NOT durability rated for 4000 PSI. Consult factory for options.**

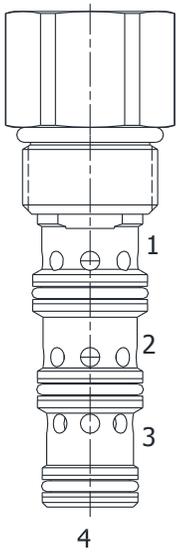
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PILOT TO SHIFT VALVES

	GPM	PSI	LPM	BAR	CAVITY	MODEL	PAGE
	10	4000	38	276	7/8-14	HG-PDA	MD78
	10	4000	38	276	7/8-14	HG-PDC	MD80
	10	3000	38	207	7/8-14	DG-PDI	MD82
	10	4000	38	276	7/8-14	HG-PDO	MD84
	10	4000	38	276	7/8-14	HF-PDE	MD86
	10	3000	38	207	7/8-14	DF-PDI	MD88
	40	3500	151	241	1 5/16	SO-PTS	MD90
	40	3500	151	241	1 5/16	SO-PTT	MD92

**HG-PDA PILOTED DIRECTIONAL VALVE, 4 WAY NORMALLY CLOSED**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, 4 way piloted directional valve.

**OPERATION**

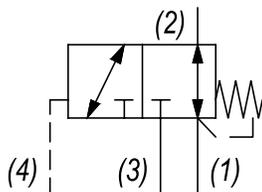
The HG-PDA in neutral (un-piloted), allows flow between (2) and (1) bi-directionally, while blocking at (3). The spring chamber is constantly vented at (1). On attainment of a predetermined pressure at (4), the cartridge redirects flow from (2) to (1), to (2) to (3).

Note: that the backpressure value at (1) must be added to the selected pressure setting to determine pilot pressure necessary to shift valve to second position.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity

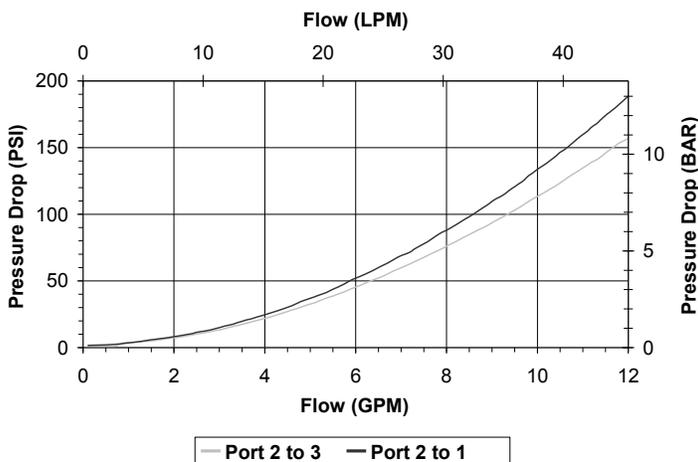
**HYDRAULIC SYMBOL**



.030 to .060 diameter orifice recommended beneath port (4).

**PERFORMANCE**

Actual Test Data (Cartridge Only)

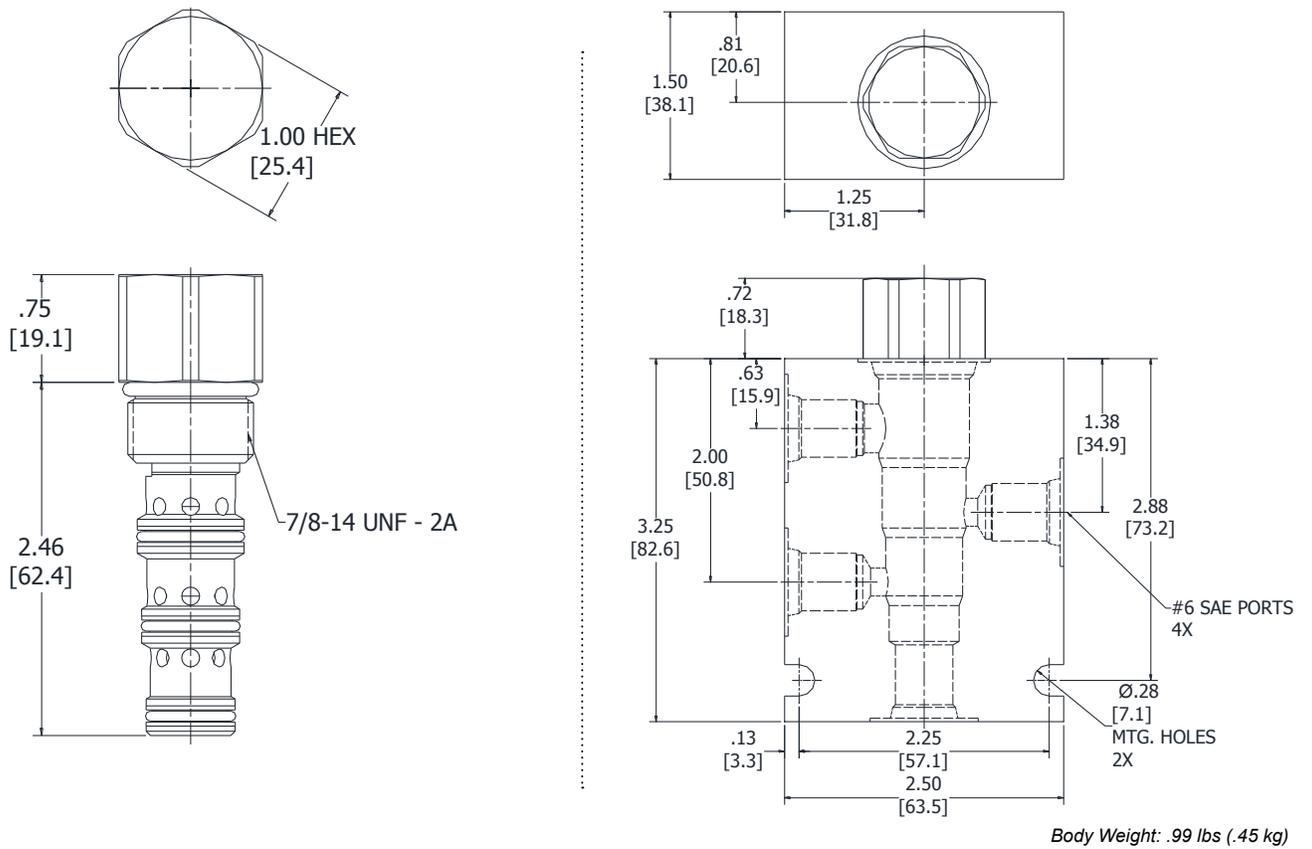


**VALVE SPECIFICATIONS**

Nominal Flow	10 GPM (38 LTR/M)
Rated Operating Pressure	4000 PSI (276 bar)
Typical Internal Leakage (150 SSU)	8 cu in/min (82 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.63 lbs (.28 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	40 ft-lbs (40.6 Nm)
Cavity	DELTA 4W
Cavity Form Tool (Finishing)	40500002
Seal Kit	21191214

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DIMENSIONS



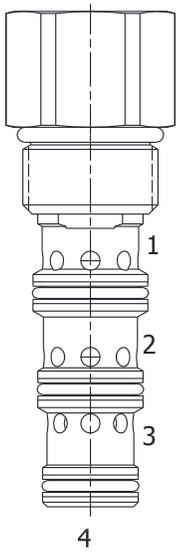
ORDERING INFORMATION

<b>HG-PDA</b> -		-	-	-
<b>OPTIONS</b>				
Buna Standard	<b>00</b>			
Viton Standard	<b>V0</b>			
<b>BODIES</b>				
Blank	Without Body			
<b>N</b>	1/4" NPTF Ports			
<b>S</b>	#6 SAE Ports			
<b>PRESSURE SETTINGS</b>				
<b>0040</b>	40 PSI			
<b>0080</b>	80 PSI			
<b>0160</b>	160 PSI			

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**HG-PDC PILOTED DIRECTIONAL VALVE, 2 WAY NORMALLY CLOSED**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, 2 way normally closed piloted directional valve.

**OPERATION**

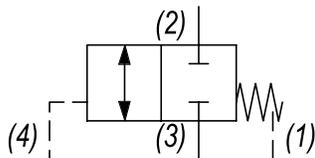
The HG-PDC in neutral (unpiloted), blocks flow between (2) and (3). The spring chamber is constantly vented at (1). On attainment of a predetermined pressure at (4), the cartridge allows flow from (2) to (3).

Note: that the backpressure value at (1) must be added to the selected pressure setting to determine pilot pressure necessary to shift valve to second position.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity

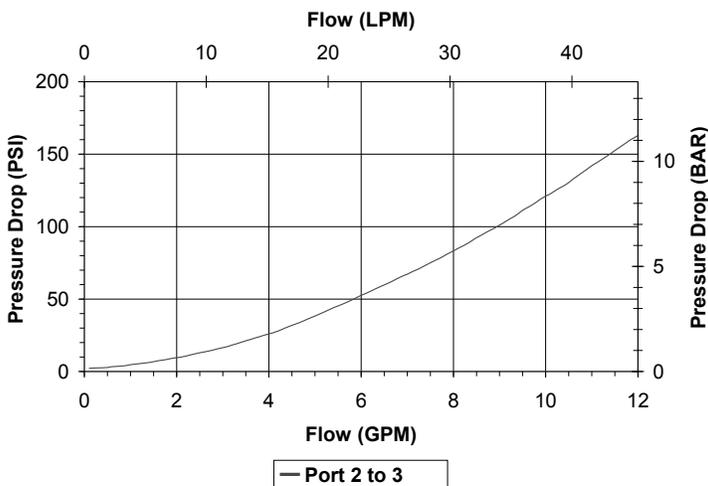
**HYDRAULIC SYMBOL**



*.030 to .060 diameter orifice recommended beneath port (4).*

**PERFORMANCE**

Actual Test Data (Cartridge Only)

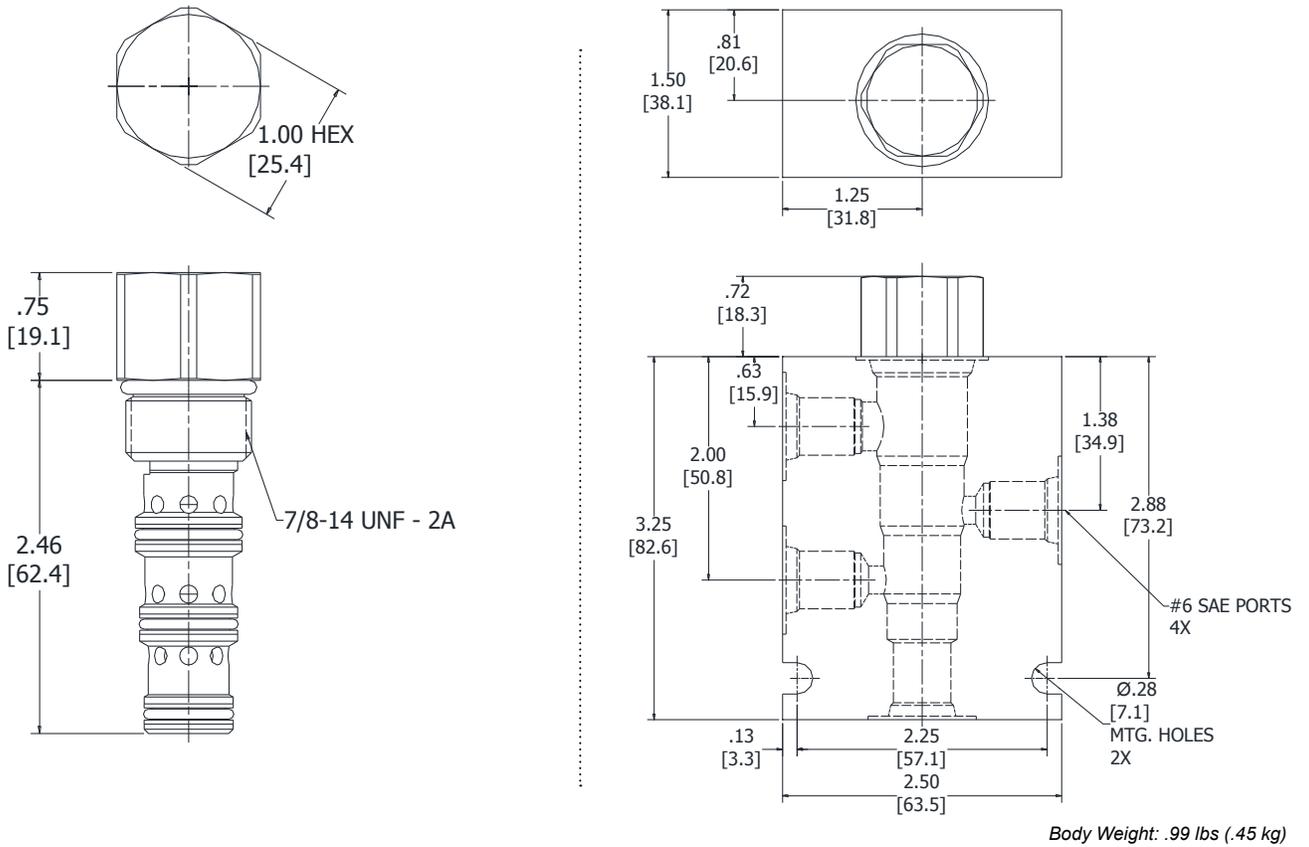


**VALVE SPECIFICATIONS**

Nominal Flow	10 GPM (38 LPM)
Rated Operating Pressure	4000 PSI (276 bar)
Typical Internal Leakage (150 SSU)	8 cu in/min (82 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.63 lbs (.28 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	40 ft-lbs (40.6 Nm)
Cavity	DELTA 4W
Cavity Form Tool (Finishing)	40500002
Seal Kit	21191214

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DIMENSIONS



ORDERING INFORMATION

HG-PDC - - -

**OPTIONS**

Buna Standard **00**  
 Viton Standard **V0**

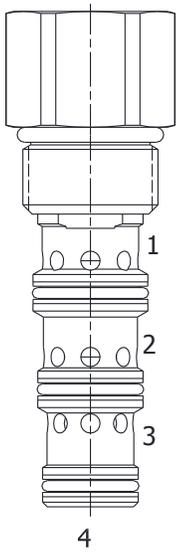
**BODIES**

Blank Without Body  
**N** 1/4" NPTF Ports  
**S** #6 SAE Ports

**PRESSURE SETTINGS**

**0040** 40 PSI  
**0080** 80 PSI  
**0160** 160 PSI

**DG-PDI PILOTED DIRECTIONAL VALVE, 3 WAY NORMALLY OPEN**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, 3 way normally open piloted directional valve.

**OPERATION**

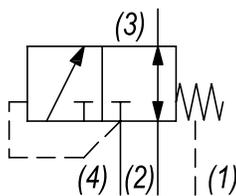
The DG-PDI in neutral (un-piloted), allows flow between (3) and (2) bidirectional, while blocking at (4). The spring chamber is constantly vented at (1). On attainment of a predetermined pressure at (4), the cartridge shifts to close (3) to (2), while opening (4) to (3).

Note: that the backpressure value at (1) must be added to the selected pressure setting to determine pilot pressure necessary to shift valve to second position.

**FEATURES**

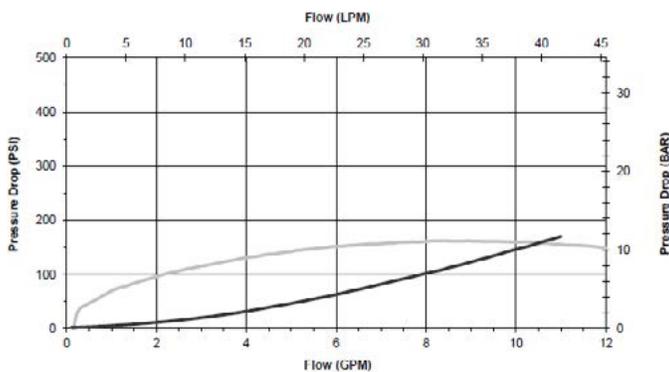
- Hardened parts for long life.
- Industry common cavity

**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)

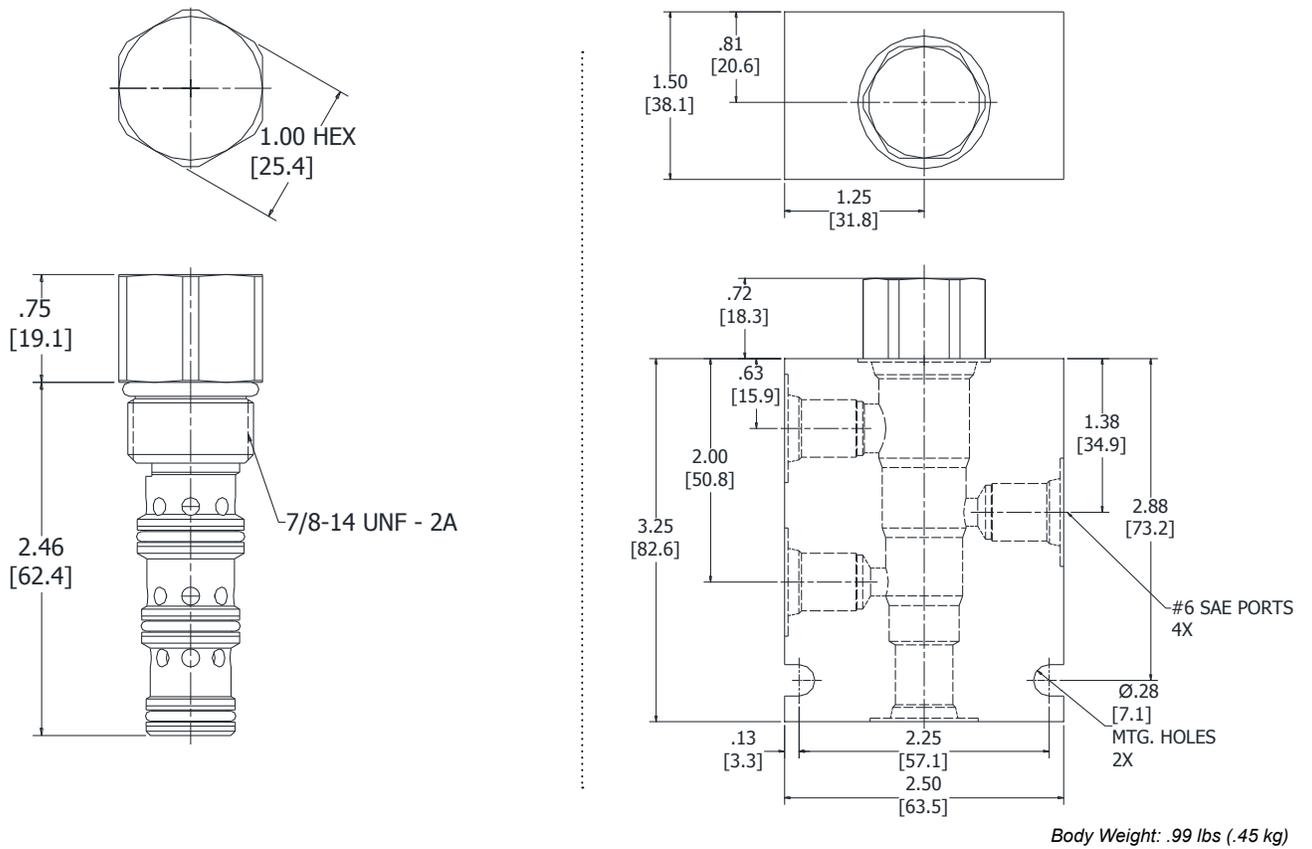


**VALVE SPECIFICATIONS**

Nominal Flow	10 GPM (38 LTR/M)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	5 cu in/min (82 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.63 lbs (.28 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 4W
Cavity Form Tool (Finishing)	40500002
Seal Kit	21191214

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**DIMENSIONS**



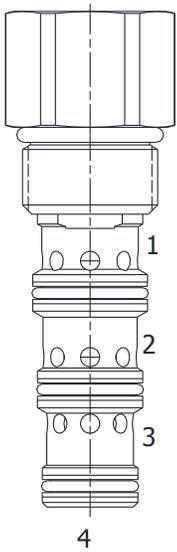
**ORDERING INFORMATION**

<b>DG-PDI</b>		-	-	-	-
<b>OPTIONS</b>					<b>BODIES</b>
Buna Standard	<b>00</b>			Blank	Without Body
Viton Standard	<b>V0</b>			<b>N</b>	1/4" NPTF Ports
				<b>S</b>	#6 SAE Ports
					<b>PRESSURE SETTINGS</b>
				<b>0055</b>	55 PSI
				<b>0080</b>	80 PSI
				<b>0160</b>	160 PSI

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**HG-PDO PILOTED DIRECTIONAL VALVE, 2 WAY NORMALLY OPEN**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, 2 way normally open piloted directional valve.

**OPERATION**

The HG-PDO in neutral (un-piloted), allows flow between (2) and (3) bi-directionally.

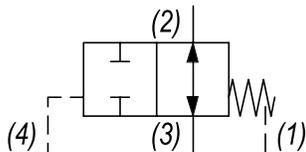
The spring chamber is constantly vented at (1). On attainment of a predetermined pressure at (4), the cartridge blocks flow from (2) to (3).

Note: that the backpressure value at (1) must be added to the selected pressure setting to determine pilot pressure necessary to shift valve to second position.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity

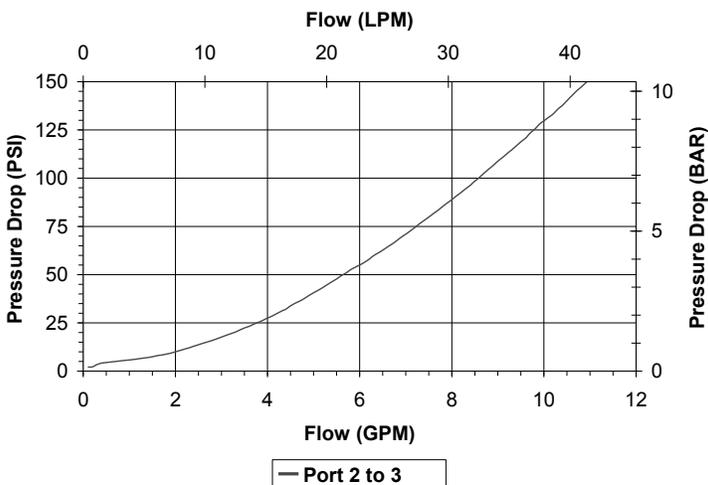
**HYDRAULIC SYMBOL**



.030 to .060 diameter orifice recommended beneath port (4).

**PERFORMANCE**

Actual Test Data (Cartridge Only)

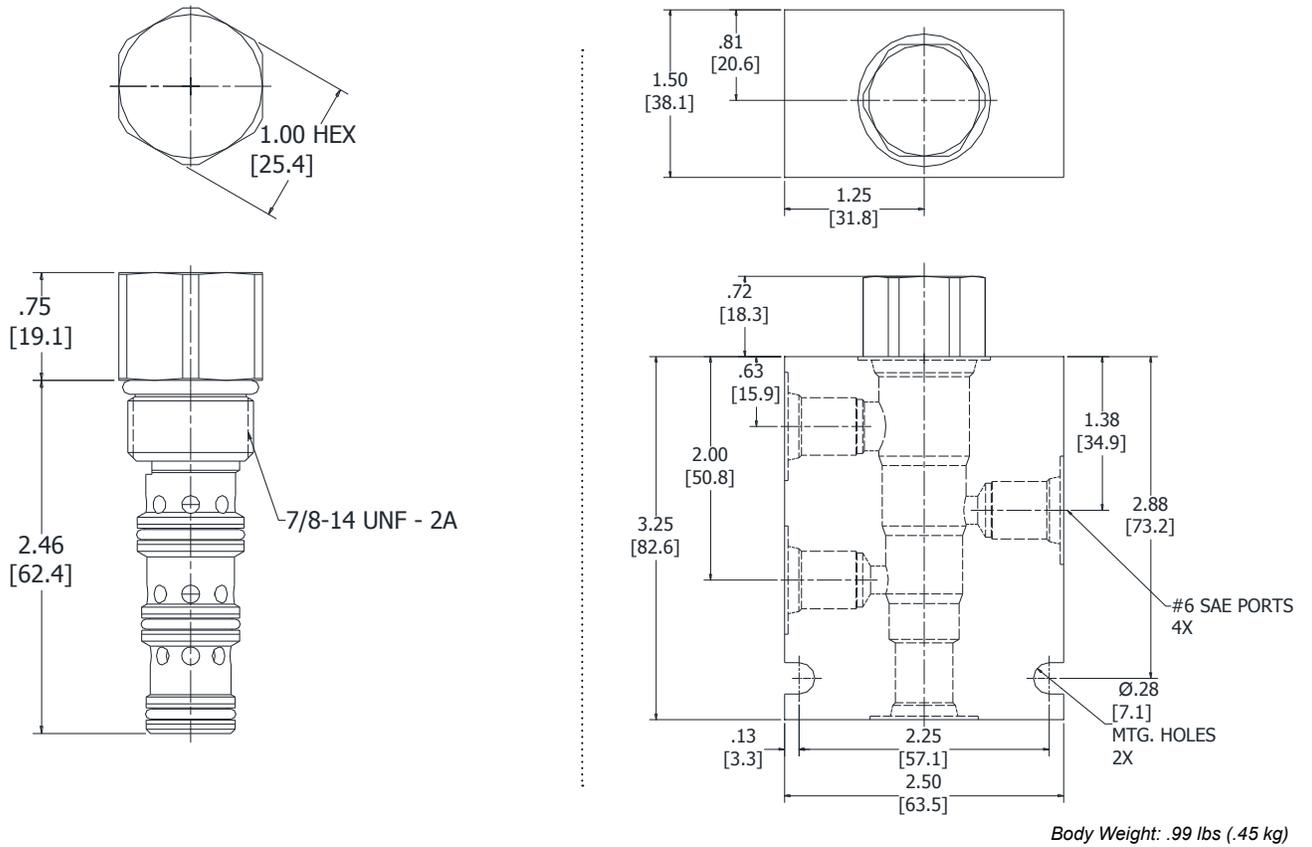


**VALVE SPECIFICATIONS**

Nominal Flow	10 GPM (38 LTR/M)
Rated Operating Pressure	4000 PSI (276 bar)
Typical Internal Leakage (150 SSU)	8 cu in/min (82 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.62 lbs (.28 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	40 ft-lbs (40.6 Nm)
Cavity	DELTA 4W
Cavity Form Tool (Finishing)	40500002
Seal Kit	21191214

**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

DIMENSIONS



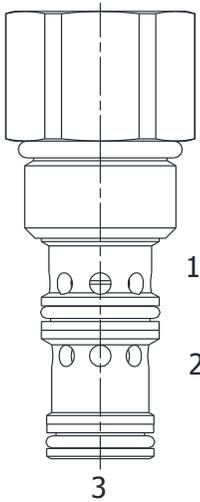
ORDERING INFORMATION

<b>HG-PDO</b> -		-	-	-
<b>OPTIONS</b>				
Buna Standard	<b>00</b>			
Viton Standard	<b>V0</b>			
<b>BODIES</b>				
Blank	Without Body			
<b>N</b>	1/4" NPTF Ports			
<b>S</b>	#6 SAE Ports			
<b>PRESSURE SETTINGS</b>				
<b>0040</b>	40 PSI			
<b>0080</b>	80 PSI			
<b>0160</b>	160 PSI			

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**HF-PDE PILOTED DIRECTIONAL VALVE, NORMALLY CLOSED, EXTERNAL PILOT**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, external pilot normally closed, piloted directional valve.

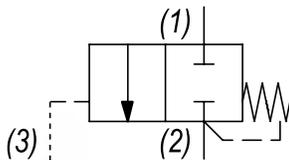
**OPERATION**

The HF-PDE blocks flow at ports (2) and (1). On attainment of a predetermined pressure at (3) the valve shifts to allow flow from (1) to (2).

**FEATURES**

- Hardened parts for long life.
- Industry common cavity

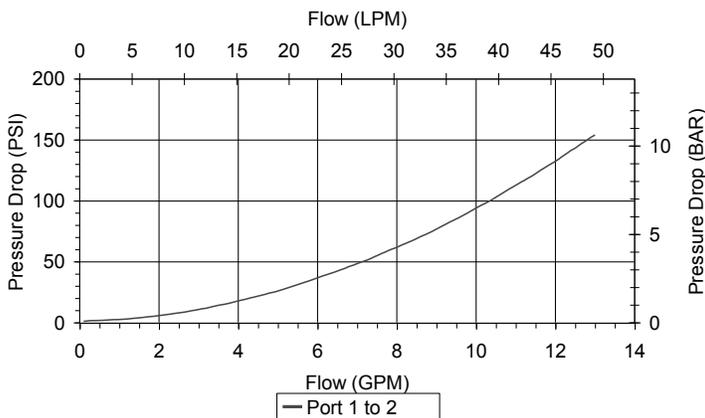
**HYDRAULIC SYMBOL**



*.030 to .060 diameter orifice recommended beneath port (3).*

**PERFORMANCE**

Actual Test Data (Cartridge Only)

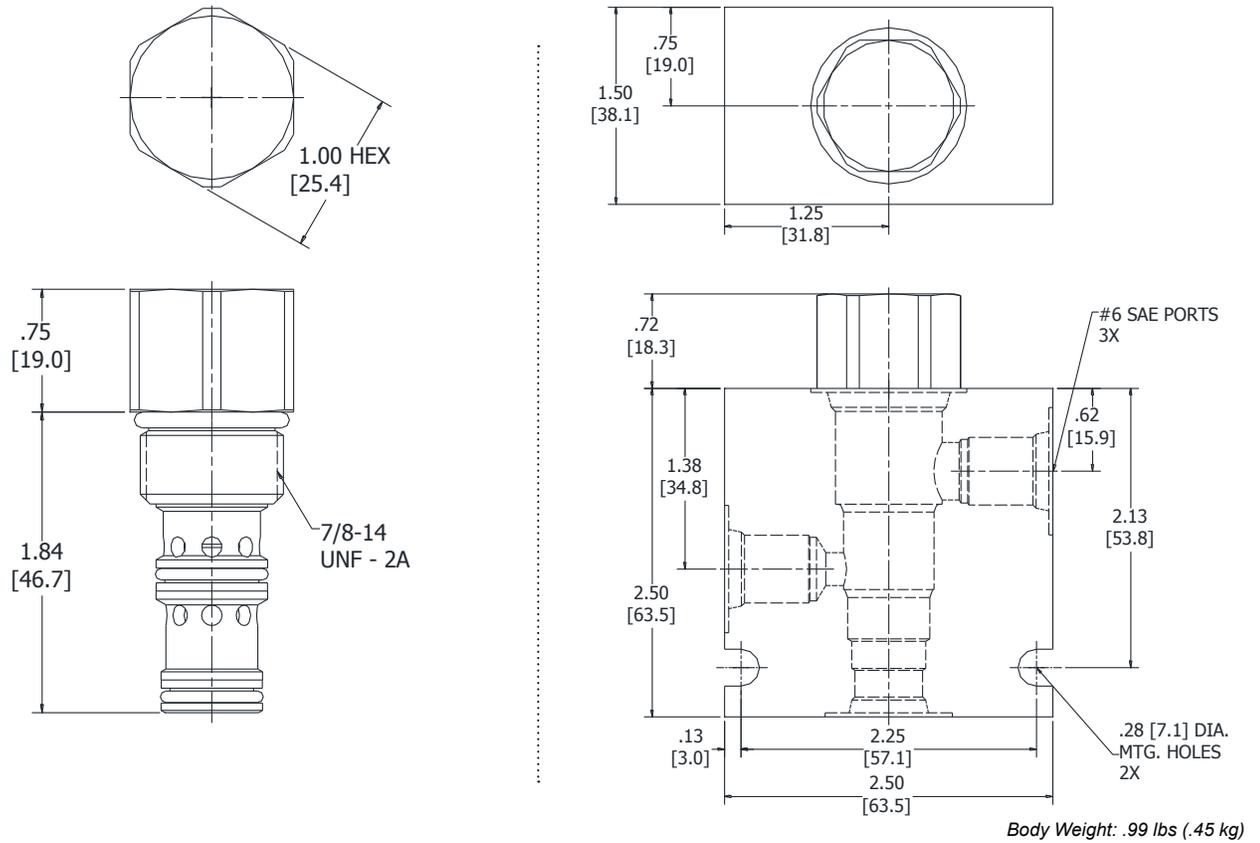


**VALVE SPECIFICATIONS**

Nominal Flow	10 GPM (38 LPM)
Rated Operating Pressure	4000 PSI (276 bar)
Typical Internal Leakage (150 SSU)	8 cu in/min (82 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.57 lbs (.26 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	40 ft-lbs (40.6 Nm)
Cavity	DELTA 3W
Cavity Form Tool (Finishing)	40500001
Seal Kit	21191206

**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**



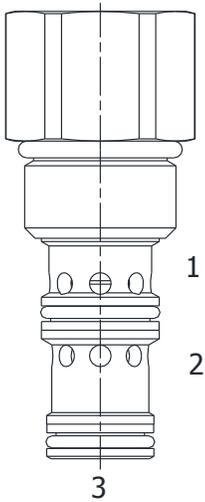
**ORDERING INFORMATION**

<b>HF-PDE</b> -		-	-	-
<b>OPTIONS</b>				
Buna Standard	<b>00</b>			
Viton Standard	<b>V0</b>			
<b>BODIES</b>				
Blank	Without Body			
<b>N</b>	1/4" NPTF Ports			
<b>S</b>	#6 SAE Ports			
<b>PRESSURE SETTINGS</b>				
<b>0050</b>	50 PSI			
<b>0095</b>	95 PSI			
<b>0165</b>	165 PSI			

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**DF-PDI PILOTED DIRECTIONAL VALVE, INTERNAL PILOT AND DRAIN**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, internal pilot and drain, piloted directional valve.

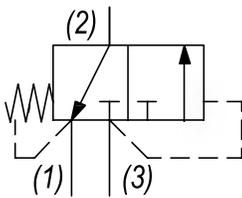
**OPERATION**

The DF-PDI blocks flow at (3) and allows flow from (2) to (1). On attainment of a predetermined pressure at (3) the valve shifts to allow flow from (3) to (2) and block flow at (1).

**FEATURES**

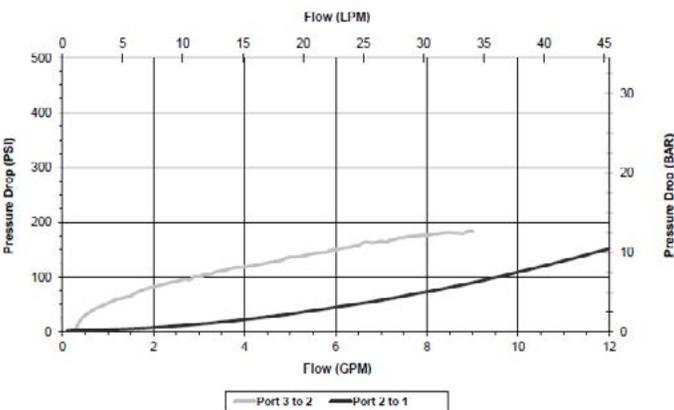
- Hardened parts for long life.
- Industry common cavity

**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)

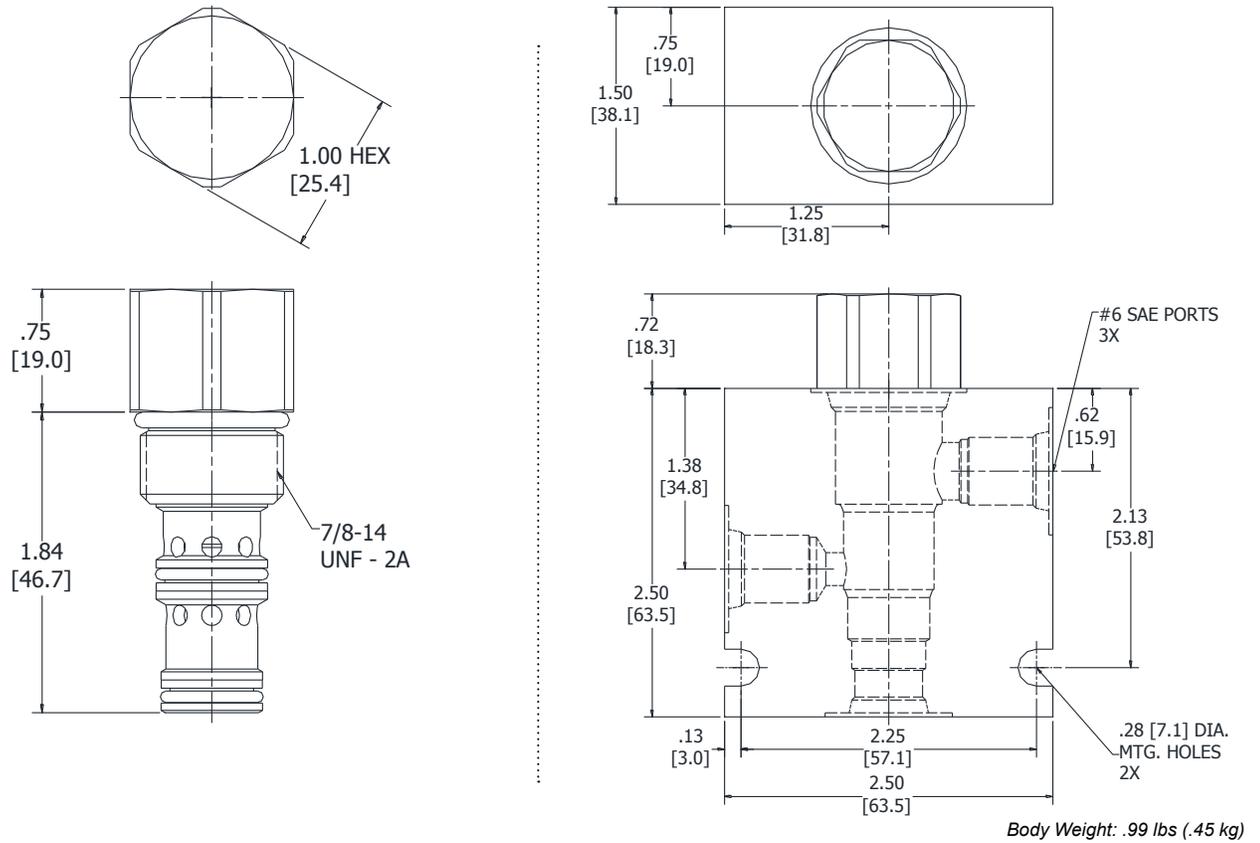


**VALVE SPECIFICATIONS**

Nominal Flow	10 GPM (38 LPM)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	5 cu in/min (82 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.57 lbs (.26 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 3W
Cavity Form Tool (Finishing)	40500001
Seal Kit	21191206

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**DIMENSIONS**



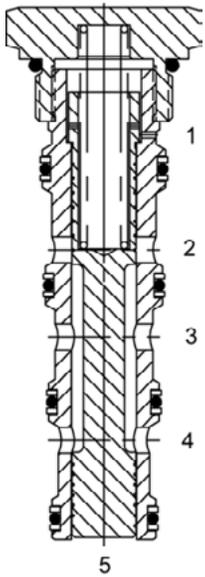
**ORDERING INFORMATION**

<p><b>DF-PDI</b> -</p> <p><b>OPTIONS</b></p> <p>Buna Standard <b>00</b></p> <p>Viton Standard <b>V0</b></p>	<p>-</p> <p>-</p> <p>-</p>	<p><b>BODIES</b></p> <p>Blank Without Body</p> <p><b>N</b> 1/4" NPTF Ports</p> <p><b>S</b> #6 SAE Ports</p>
	<p>-</p> <p>-</p>	<p><b>PRESSURE SETTINGS</b></p> <p><b>0050</b> 50 PSI</p> <p><b>0100</b> 100 PSI</p>

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**SO-PTS PILOT TO SHIFT, 3 WAY VALVE, OPEN TRANSITION**



**DESCRIPTION**

16 size, 1 5/16 -12 thread, "Super" series, pilot to shift, 3 way valve, open transition.

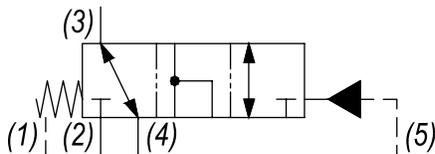
**OPERATION**

In neutral the SO-PTS allows flow between ports (3) and (4), port (2) is blocked. With application of a remote pilot signal at (5), the valve's spool shifts to allow flow between ports (2) and (3), while port (4) is blocked. During transition ports (2), (3), and (4) are open. The spring chamber is vented to the tank through port (1). The vented spring chamber allows the valve to be fully pressurized at ports (2), (3), and (4) without affecting required pilot pressure. Pressure at (1) will affect required pilot pressure.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

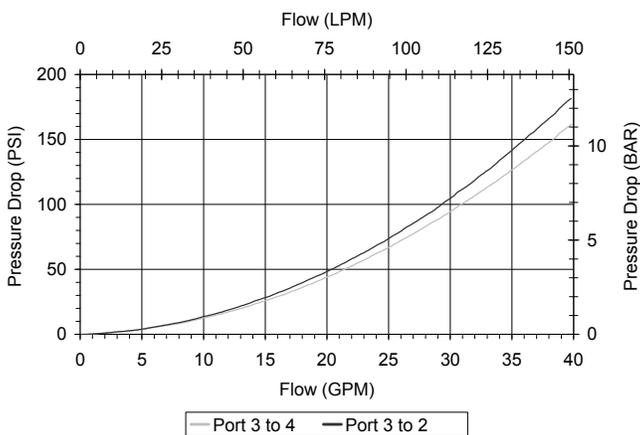
**HYDRAULIC SYMBOL**



A rate limiting orifice less than .060" diameter is recommended at port (5).

**PERFORMANCE**

Actual Test Data (Cartridge Only)

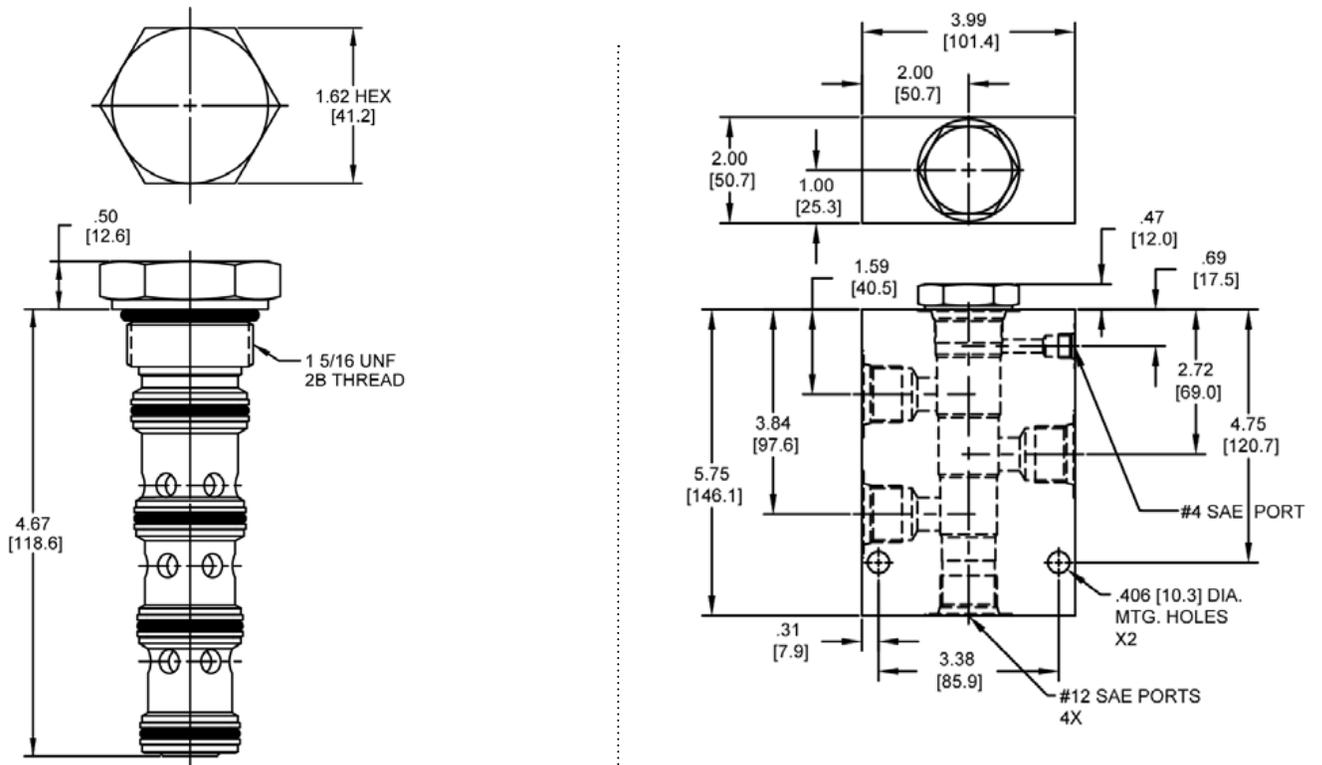


**VALVE SPECIFICATIONS**

Nominal Flow	40 GPM (151 LTR/M)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	10 cu in/min (164 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	1.11 lbs (.50 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	90 ft-lbs (122 Nm)
Cavity	SUPER 5W SHORT
Cavity Form Tool (Finishing)	40500020
Seal Kit	21191410

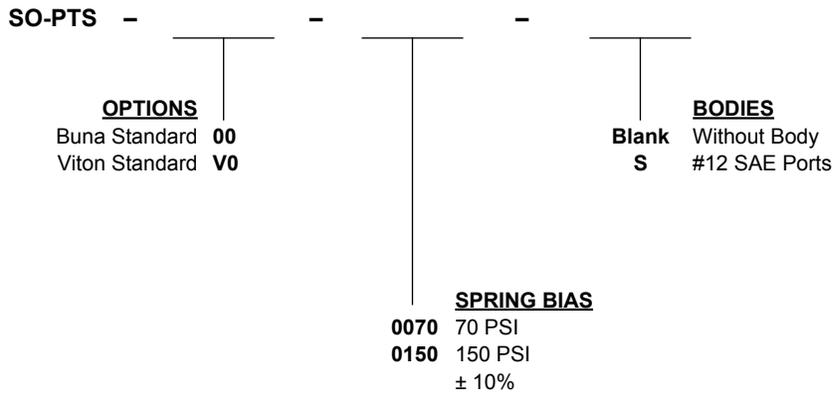
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

DIMENSIONS

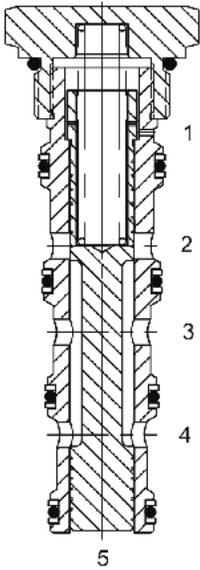


Body Weight: 3.76 lbs (1.62 kg)

ORDERING INFORMATION



**SO-PTT PILOT TO SHIFT, 3 WAY VALVE, CLOSED TRANSITION**



**DESCRIPTION**

16 size, 1 5/16 -12 thread, "Super" series, pilot to shift, 3 way valve, closed transition.

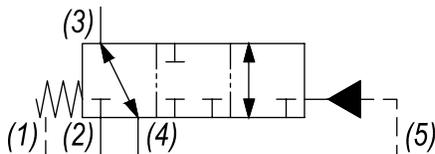
**OPERATION**

In neutral the SO-PTT allows flow between ports (3) and (4), port (2) is blocked. With application of a remote pilot signal at (5), the valve's spool shifts to allow flow between ports (2) and (3), while port (4) is blocked. During transition all ports are closed. The spring chamber is vented to the tank through port (1). The vented spring chamber allows the valve to be fully pressurized at ports (2), (3), and (4) without affecting required pilot pressure. Pressure at (1) will affect required pilot pressure.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

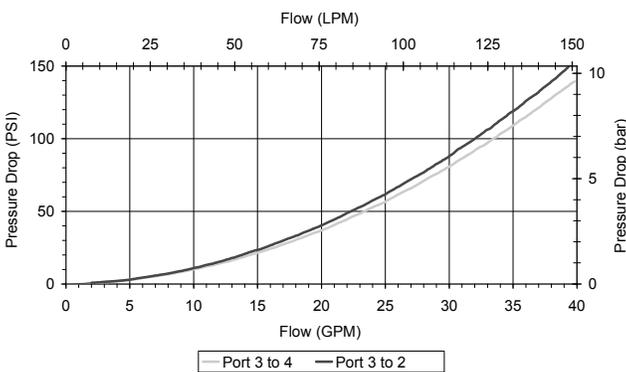
**HYDRAULIC SYMBOL**



A rate limiting orifice less than .060" diameter is recommended at port (5).

**PERFORMANCE**

Actual Test Data (Cartridge Only)

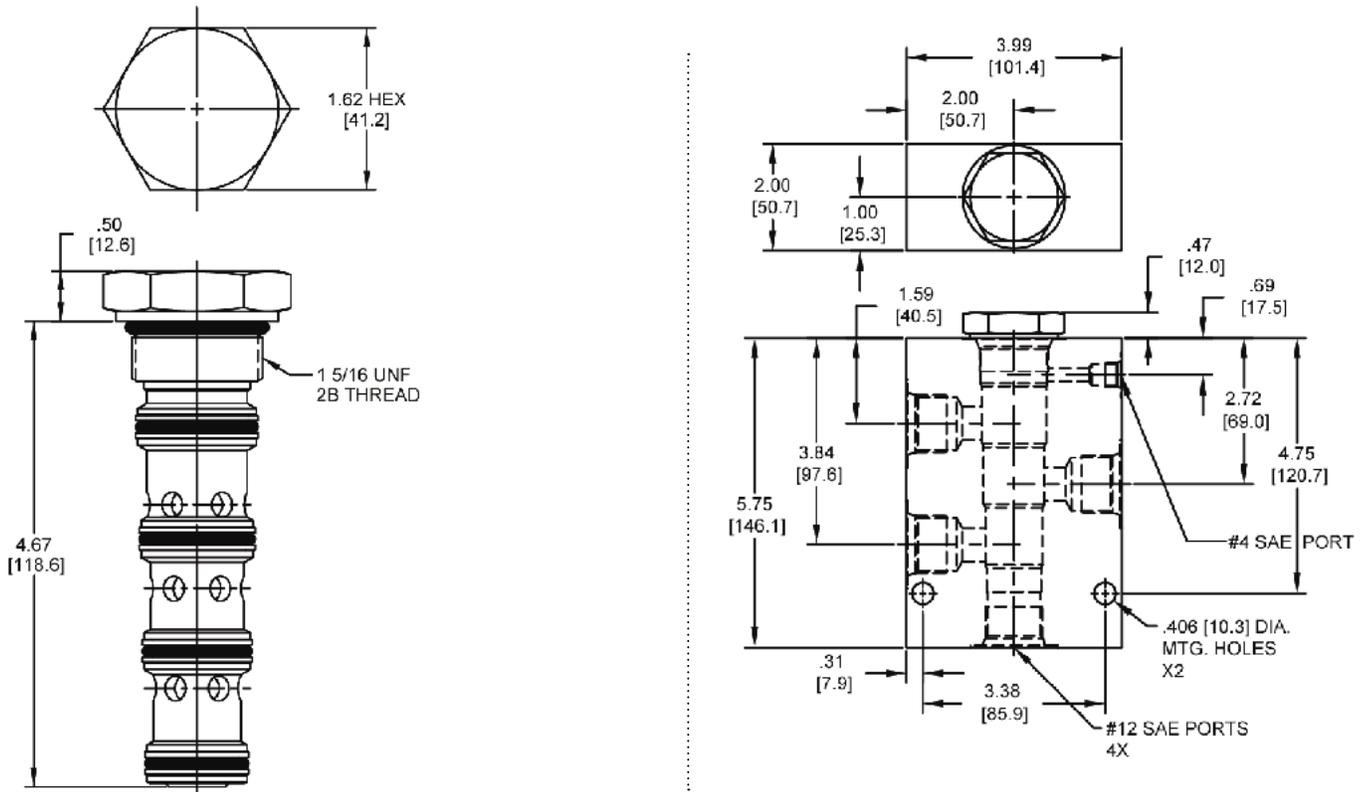


**VALVE SPECIFICATIONS**

Nominal Flow	40 GPM (151 LTR/M)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	10 cu in/min (164 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	1.08 lbs (.49 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	90 ft-lbs (122 Nm)
Cavity	SUPER 5W SHORT
Cavity Form Tool (Finishing)	40500020
Seal Kit	21191410

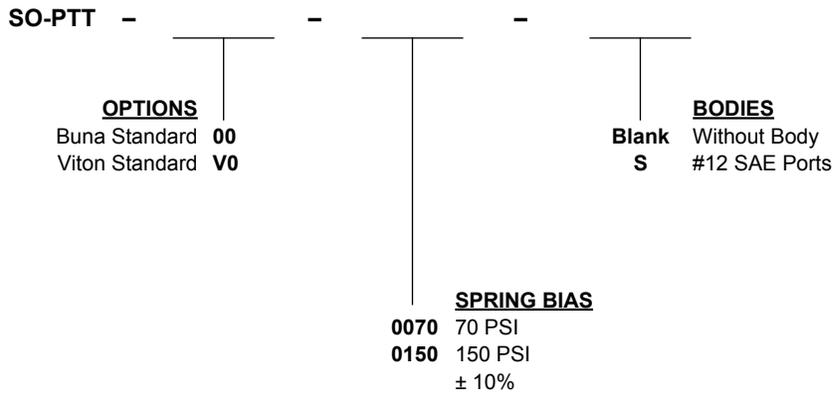
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**DIMENSIONS**



Body Weight: 3.76 lbs (1.62 kg)

**ORDERING INFORMATION**



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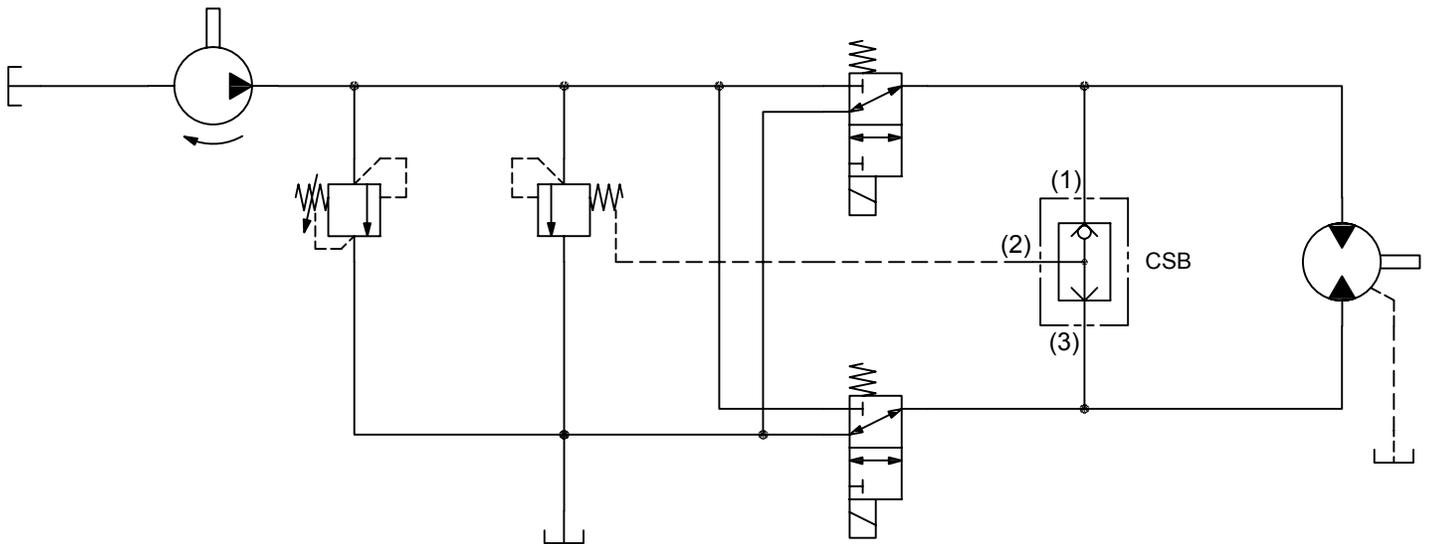
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SHUTTLE VALVES

	GPM	PSI	LPM	BAR	CAVITY	MODEL	PAGE
	10	3500	38	241	9/16-18	<b>IM-CSB</b>	MD96
	1	3500	4	241	Special	<b>QS-CSB</b>	MD98
	6	3500	23	241	3/4-16	<b>PP-CSB</b>	MD100
	8	3500	30	241	7/8-14	<b>DF-CSB</b>	MD102

TYPICAL SCHEMATIC

Typical application for the CSB is to provide load sense to a pressure compensator valve.



**IM-CSB INLINE SHUTTLE VALVE**

**DESCRIPTION**

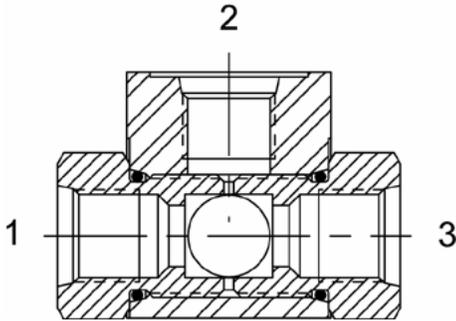
#6 SAE, inline shuttle valve.

**OPERATION**

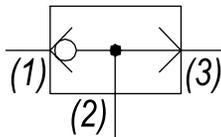
The IM-CSB allows flow from the higher pressure of (1) or (3) to (2). The valve is commonly used as a load sense to direct oil from the pressure side of a bidirectional hydraulic motor to a pressure released hydraulic brake.

**FEATURES**

- Hardened parts for long life.

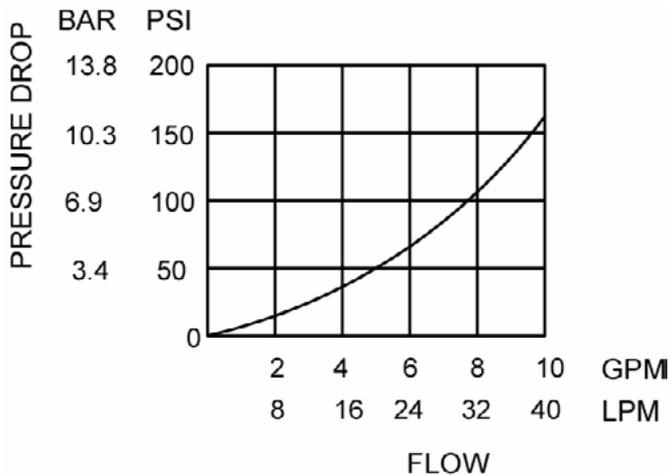


**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)



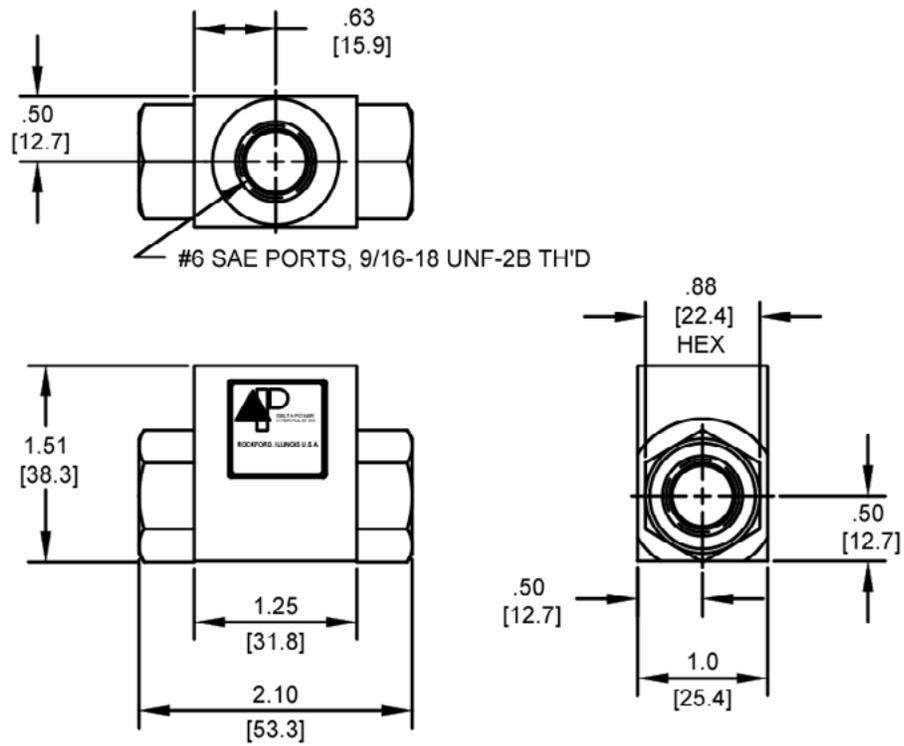
ABOVE CURVE IS WITH HYDRAULIC OIL 150 SSU AT 100°F.

**VALVE SPECIFICATIONS**

Nominal Flow Max	10 GPM (38 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	1 cu in/min (16 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.28 lbs (.13 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid

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DIMENSIONS



ORDERING INFORMATION

IM-CSB -

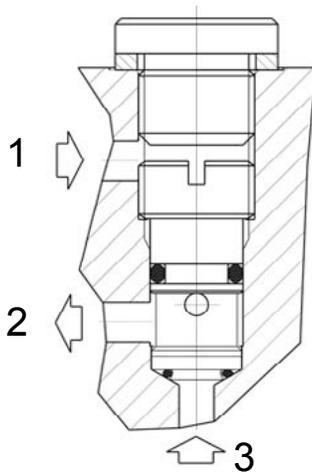
|

**OPTIONS**

Buna Standard **00**

Viton Standard **V0**

**QS-CSB SHUTTLE VALVE, INSERT TYPE**



**DESCRIPTION**

Special cavity, insert type, shuttle valve.

**OPERATION**

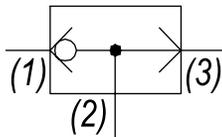
The QS-CSB allows flow from the higher pressure of (1) or (3) to (2). QS-CSB is an insert type valve, cavity must be plugged with a M10x1 plug.

The valve is commonly used as a load sense to direct oil from the pressure side of a bidirectional hydraulic motor to a pressure released hydraulic brake.

**FEATURES**

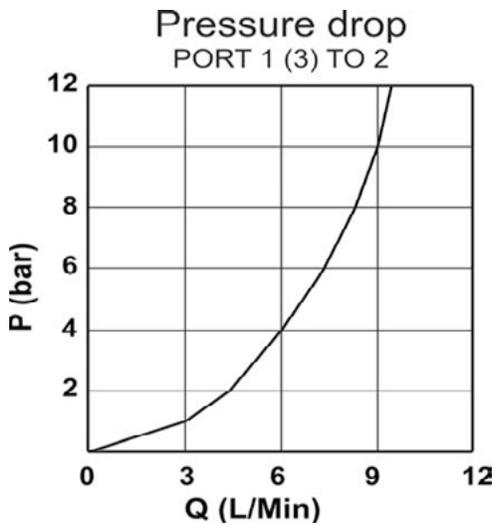
- Hardened parts for long life.

**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)



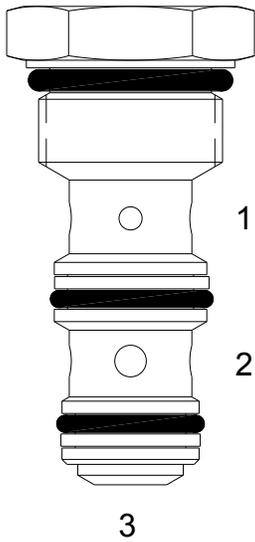
**VALVE SPECIFICATIONS**

Nominal Flow	1 GPM (4 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	1 cu in/min (16 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.16 lbs (.07 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	10 - 12 Nm
Cavity	T075
Cavity Tools Kit (form tool, reamer, tap)	K-T075

**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.



PP-CSB SHUTTLE VALVE



**DESCRIPTION**

8 size, 3/4-16 thread, "Power" series, shuttle valve.

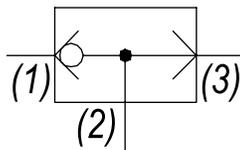
**OPERATION**

The PP-CSB allows flow from the higher pressure of (1) or (3) to (2). The valve is commonly used as a load sense to direct oil from the pressure side of a bidirectional hydraulic motor to a pressure released hydraulic brake.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

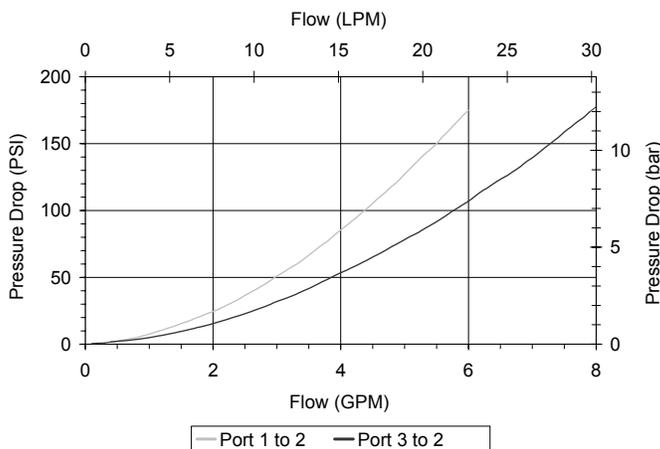
HYDRAULIC SYMBOL



*Tangency connections to cavity are not recommended.  
Inlet to port (2) is not recommended.  
Do not use orifice disk under cartridge valve.*

PERFORMANCE

Actual Test Data (Cartridge Only)



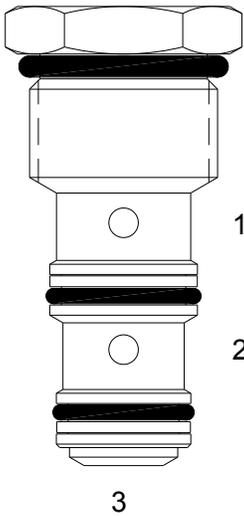
VALVE SPECIFICATIONS

Nominal Flow	6 GPM (23 LTR/M)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	1 cu in/min (16 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.16 lbs (.07 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Cavity	POWER 3W
Cavity Form Tool (Finishing)	40500024
Seal Kit	21191104

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**DF-CSB SHUTTLE VALVE**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, shuttle valve.

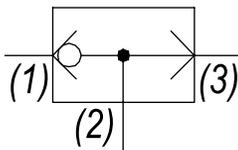
**OPERATION**

The DF-CSB allows flow from the higher pressure of (1) or (3) to (2). The valve is commonly used as a load sense to direct oil from the pressure side of a bidirectional hydraulic motor to a pressure-released hydraulic brake.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

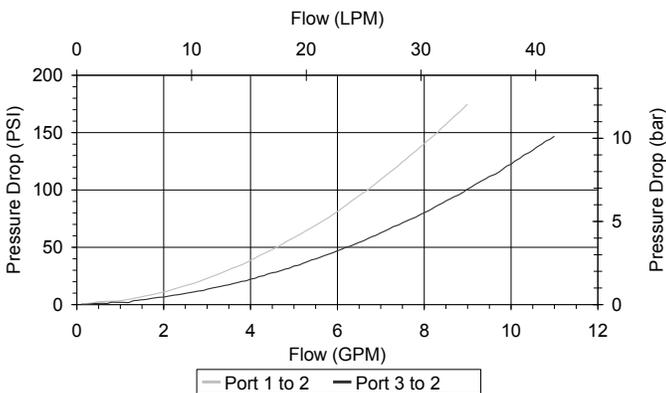
**HYDRAULIC SYMBOL**



*Tangency connections to cavity are not recommended.  
Inlet to port (2) is not recommended.  
Do not use orifice disk under cartridge valve.*

**PERFORMANCE**

Actual Test Data (Cartridge Only)

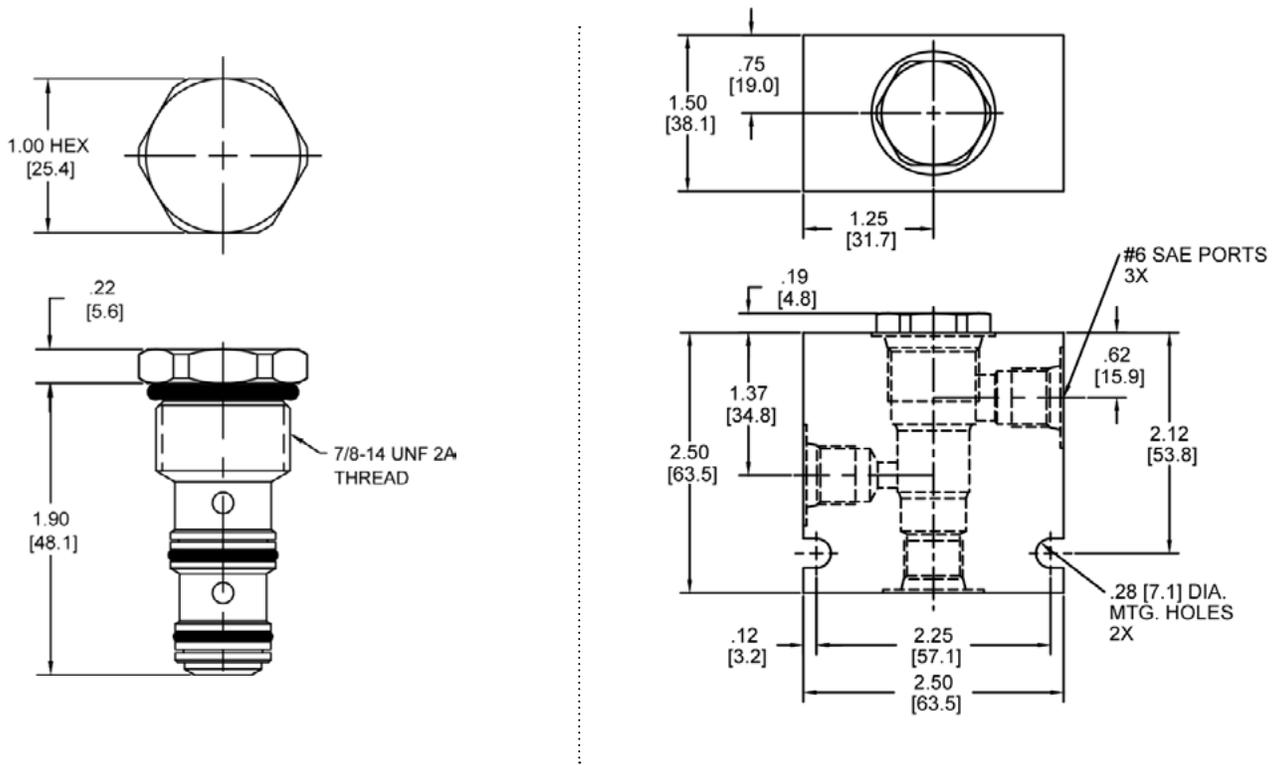


**VALVE SPECIFICATIONS**

Nominal Flow	8 GPM (30 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	1 cu in/min (16 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.22 lbs (.10 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 3W
Cavity Form Tool (Finishing)	40500001
Seal Kit	21191206

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DIMENSIONS



Body Weight: .76 lbs (.35 kg)

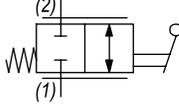
ORDERING INFORMATION

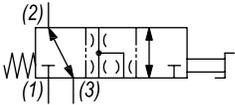
<p><b>DF-CSB</b> -</p> <p style="text-align: center;"> </p> <p style="text-align: center;"> </p> <p style="text-align: center;"> </p> <p style="text-align: center;"> </p>	<p><b>OPTIONS</b></p> <p>Buna Standard <b>00</b></p> <p>Viton Standard <b>V0</b></p>	<p style="text-align: center;">-</p> <p style="text-align: center;"> </p> <p style="text-align: center;"> </p> <p style="text-align: center;"> </p> <p style="text-align: center;"> </p>	<p><b>BODIES</b></p> <p>Blank Without Body</p> <p><b>N</b> 1/4" NPTF Ports</p> <p><b>S</b> #6 SAE Ports</p>
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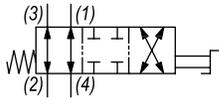
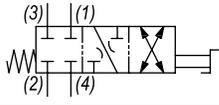
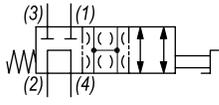
**WARNING:** *the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.*

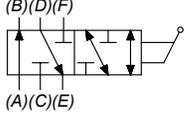
Via Malavolti, 36 - 41122 Modena - ITALY - Phone +39 (059) 254895 - Fax +39 (059) 253512 - mail: [tecnord@tecnord.com](mailto:tecnord@tecnord.com) - [www.tecnord.com](http://www.tecnord.com)

ROTARY VALVES

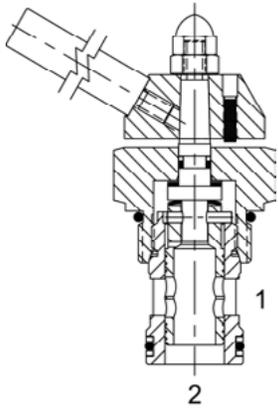
2W2P	GPM	PSI	LPM	BAR	CAVITY	MODEL	PAGE
	40	3000	151	207	1 5/16-12	SJ-MRA	MD106

3W2P	GPM	PSI	LPM	BAR	CAVITY	MODEL	PAGE
	12	3000	45	207	7/8-14	DF-M3A	MD108

4W2P	GPM	PSI	LPM	BAR	CAVITY	MODEL	PAGE
	10	3000	38	207	7/8-14	DG-M4A	MD110
	15	3000	57	207	7/8-14	DG-M4B	MD112
	12	3000	45	207	7/8-14	DG-M4C	MD114

6W2P	GPM	PSI	LPM	BAR	CAVITY	MODEL	PAGE
	25	3000	95	207	7/8-14	QS-MRS	MD116

**SJ-MRA** MANUAL ROTARY SPOOL VALVE, 2 WAY



**DESCRIPTION**

16 size, 1 5/16-12, "Super" series, manual rotary spool valve.

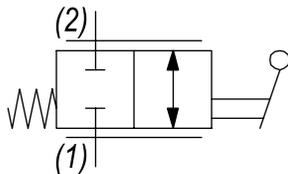
**OPERATION**

The SJ-MRA regulates flow from (1) to (2) or (2) to (1). Counter-clockwise Rotation of 90° adjusts valve from fully closed to fully open.

**FEATURES**

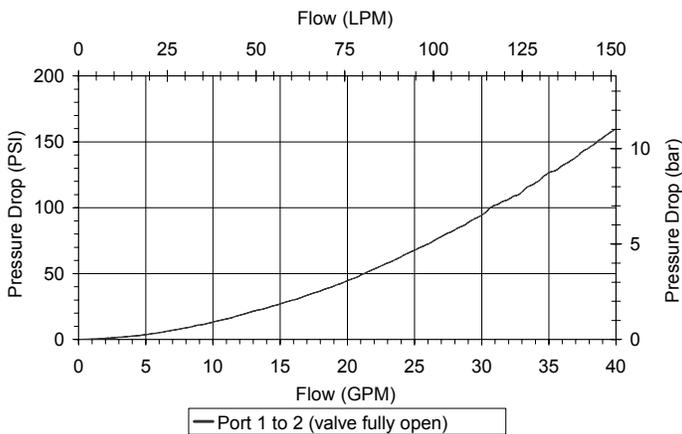
- Hardened parts for long life.
- Industry common cavity.

**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)

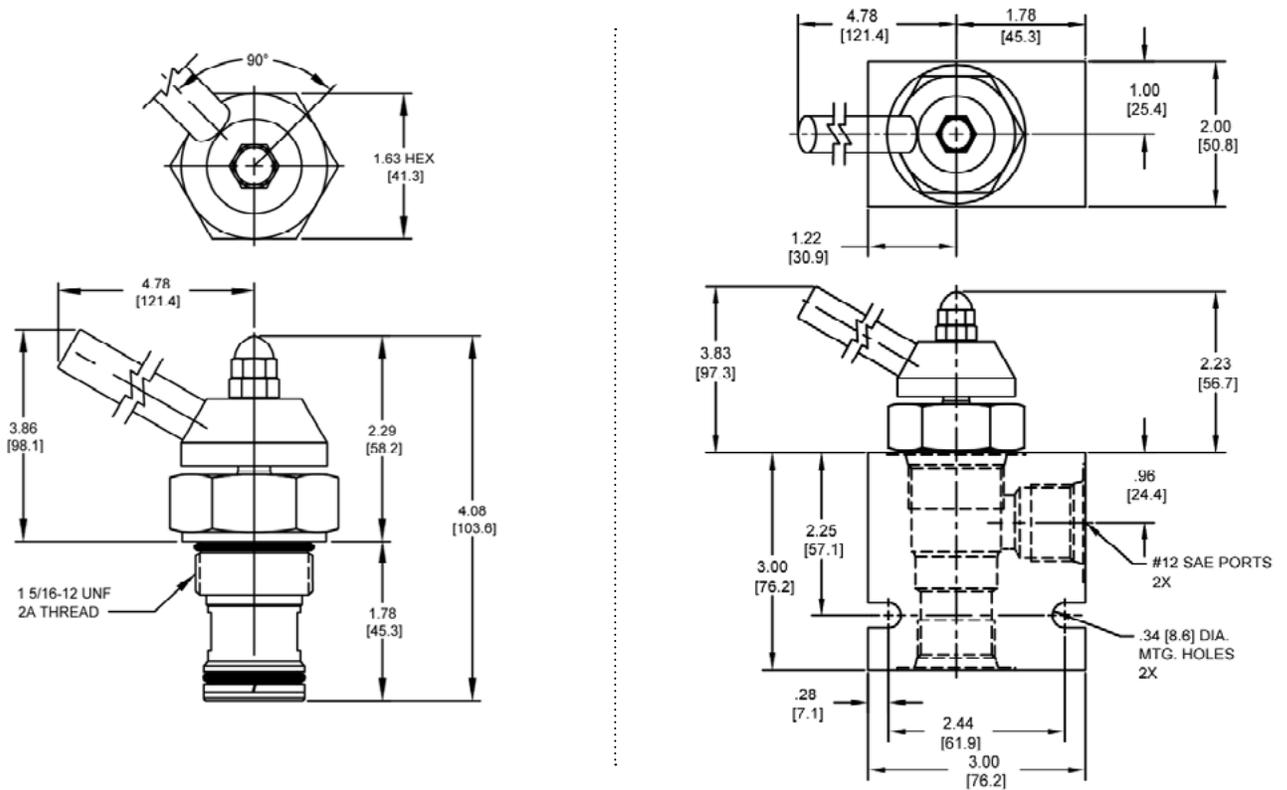


**VALVE SPECIFICATIONS**

Nominal Flow	40 GPM (151 LTR/M)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	15 cu in/min (246 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	1.13 lbs (.51 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	90 ft-lbs (122 Nm)
Cavity	SUPER 2W
Cavity Form Tool (Finishing)	40500017
Seal Kit	21191402

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DIMENSIONS

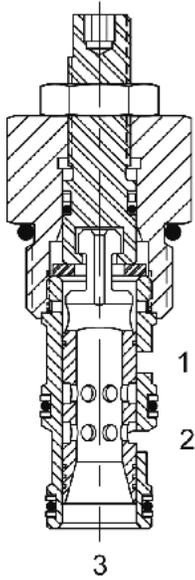


Body Weight: 1.29 lbs (.59 kg)

ORDERING INFORMATION

SJ-MRA -		-	-
		—	—
<b>OPTIONS</b>			<b>BODIES</b>
Buna, Standard	00	Blank	Without Body
Viton, Standard	V0	N	3/4" NPTF Ports
		S	#12 SAE Ports

**DF-M3A** MANUAL ROTARY SPOOL VALVE, 3 WAY 2 POSITION



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, 3 way 2 position, manual rotary spool valve.

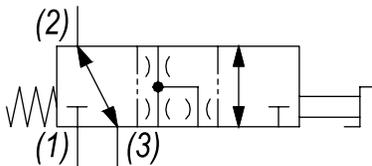
**OPERATION**

The DF-M3A when rotated fully to the clockwise position, the cartridge directs flow from (3) to (2) or (2) to (3) and blocks flow at (1). When rotated fully to the counterclockwise position, the cartridge directs flow from (1) to (3) or (3) to (1) and blocks flow at (2). All ports are closed in transition.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

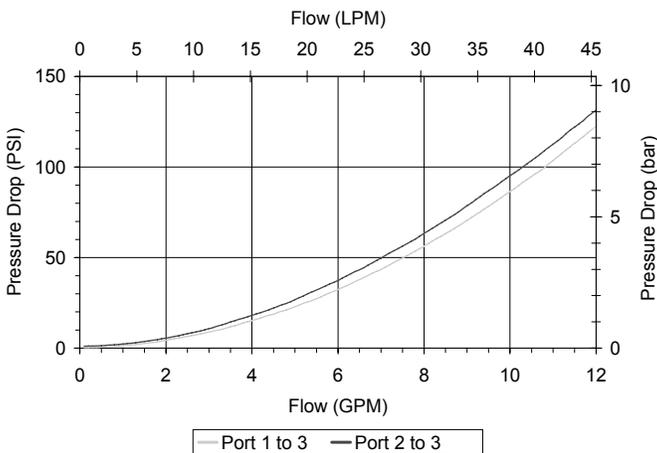
**HYDRAULIC SYMBOL**



May be used as metering product. Valve has approximately 3.5 turns adjustment from extreme clockwise fully to counterclockwise positions. See chart for pressure drop in both positions.

**PERFORMANCE**

Actual Test Data (Cartridge Only)

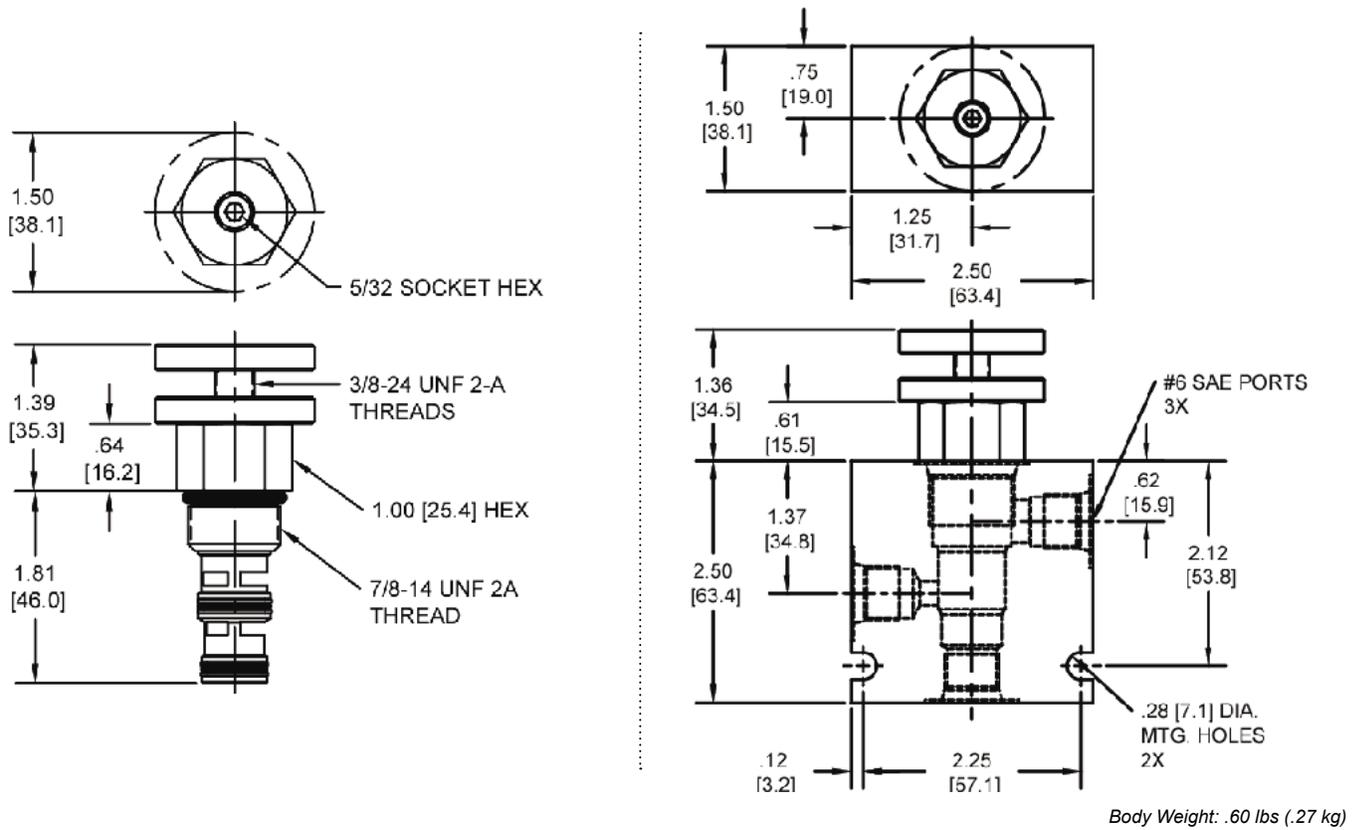


**VALVE SPECIFICATIONS**

Nominal Flow	12 GPM (45 LPM)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	5 cu in/min (82 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.49 lbs (.22 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 3W
Cavity Form Tool (Finishing)	40500001
Seal Kit	21191210

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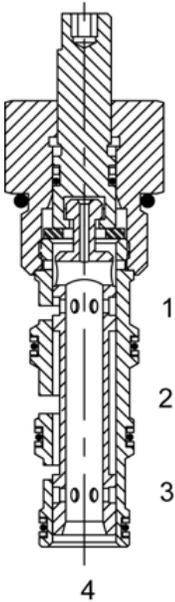
DIMENSIONS



ORDERING INFORMATION

<p><b>DF-M3A</b> -</p>	<p>-</p>	<p>-</p>
<p><b>OPTIONS</b></p> <p>Buna, Standard <b>00</b></p> <p>Viton, Standard <b>V0</b></p> <p>Buna, Knob <b>0K</b></p> <p>Viton, Knob <b>VK</b></p>	<p><b>BODIES</b></p> <p>Blank Without Body</p> <p><b>N</b> 1/4" NPTF Ports</p> <p><b>S</b> #6 SAE Ports</p>	

**DG-M4A** MANUAL SPOOL ROTARY VALVE, 4 WAY 2 POSITION, CRISS CROSS



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, manual rotary spool valve, 4 way 2 position, criss cross.

**OPERATION**

The DG-M4A, when rotated fully to clockwise position, the cartridge directs flow between (2) to (3) and (1) to (4). When rotated fully to counterclockwise position, the cartridge directs flow between (3) to (4) and (1) to (2). All ports are closed in transition.

**FEATURES**

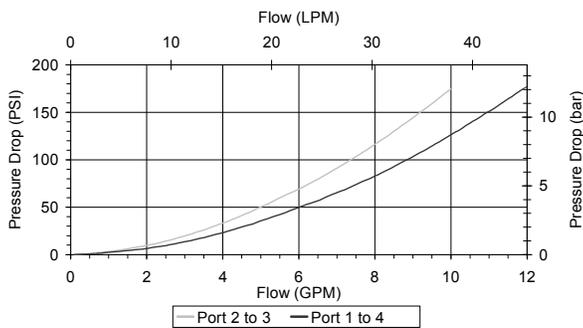
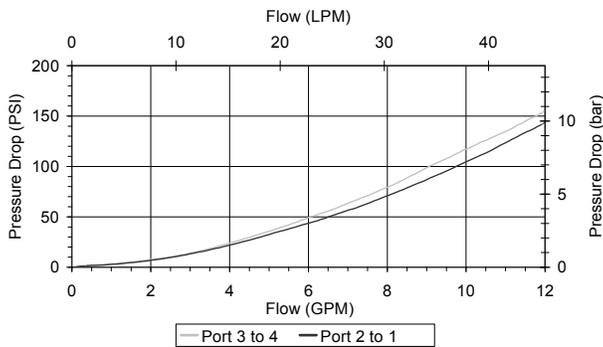
- Hardened parts for long life.
- Industry common cavity.



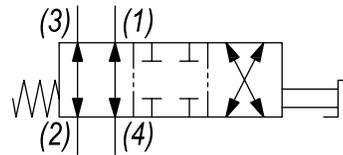
May be used as metering product. Valve has approximately 3.5 turns adjustment from extreme clockwise fully to counterclockwise positions. See chart for pressure drop in both positions.

**PERFORMANCE**

Actual Test Data (Cartridge Only)



**HYDRAULIC SYMBOL**

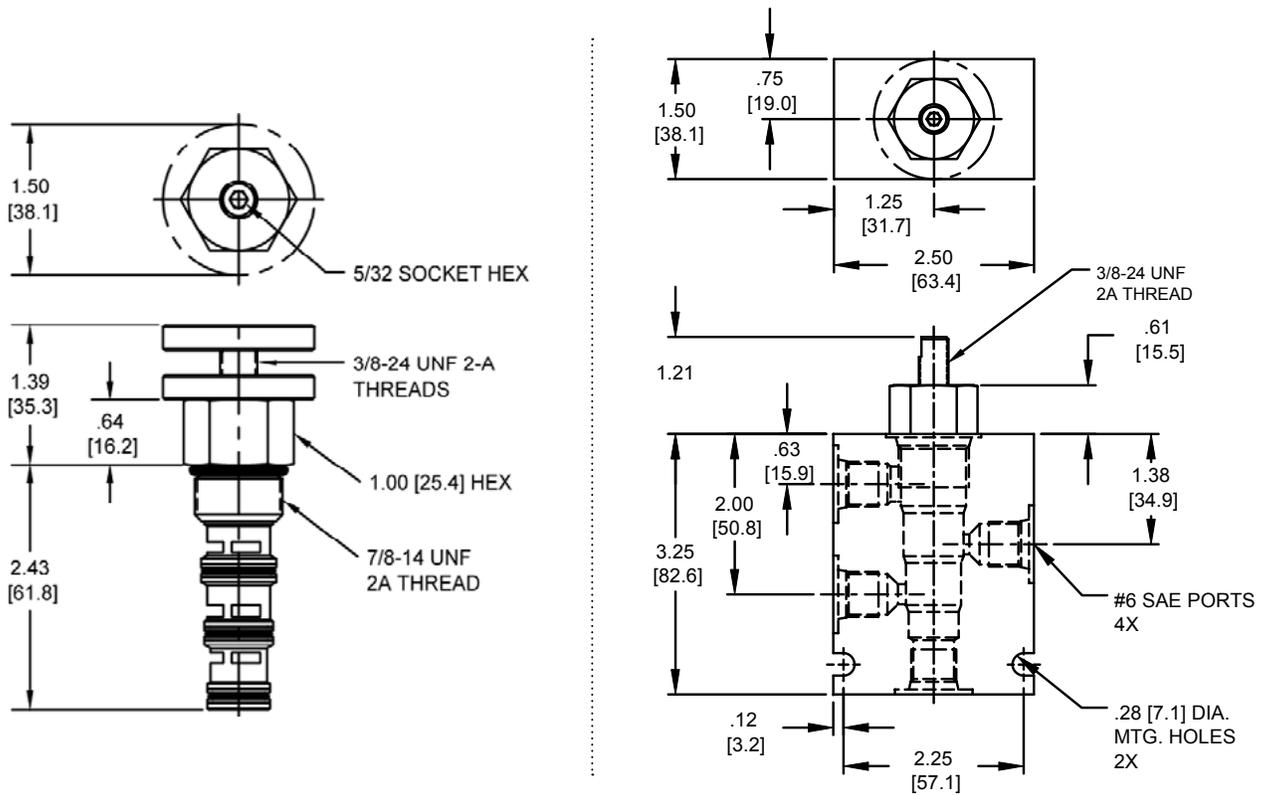


**VALVE SPECIFICATIONS**

Nominal Flow	10 GPM (38 LPM)
	8 GPM (30 LPM) from (2) to (3)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	5 cu in/min (82 ml/min) per path
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.32 lbs (.15 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 4W
Cavity Form Tool (Finishing)	40500002
Seal Kit	21191214

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DIMENSIONS

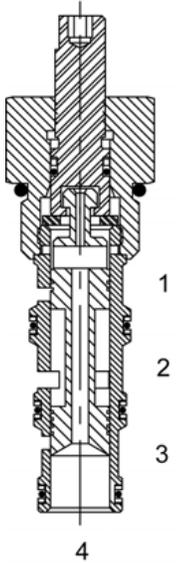


Body Weight: .99 lbs (.45 kg)

ORDERING INFORMATION

<b>DG-M4A</b>		-	-
	<b>OPTIONS</b>		<b>BODIES</b>
Buna, Standard	<b>00</b>		<b>Blank</b> Without Body
Viton, Standard	<b>V0</b>		<b>N</b> 1/4" NPTF Ports
Buna, Knob	<b>OK</b>		<b>S</b> #6 SAE Ports
Viton, Knob	<b>VK</b>		

**DG-M4B** MANUAL ROTARY SPOOL VALVE, 4 WAY 2 POSITION, CLOSED CENTER



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, 4 way 2 position, manual rotary spool valve, closed center.

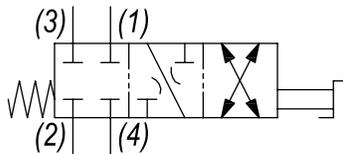
**OPERATION**

The DG-M4B when rotated fully to clockwise position, this valve blocks flow at all ports. When rotated fully to counterclockwise position, the cartridge directs flow between (2) and (1), as well as (3) and (4).

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

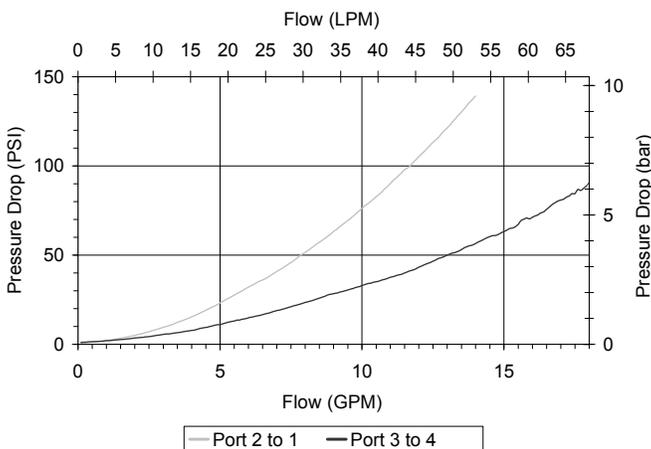
**HYDRAULIC SYMBOL**



May be used as metering product. Valve has approximately 3.5 turns adjustment from extreme clockwise fully to counterclockwise positions. See chart for pressure drop.

**PERFORMANCE**

Actual Test Data (Cartridge Only)

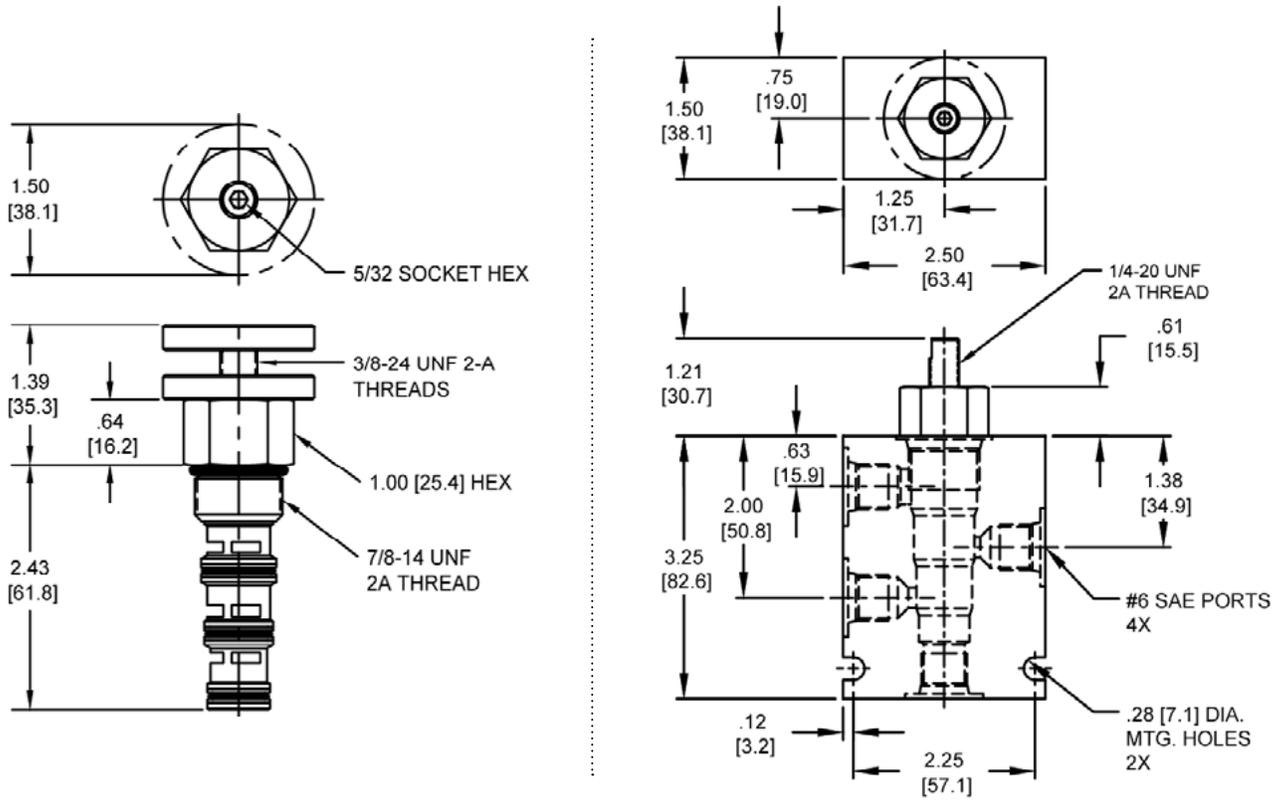


**VALVE SPECIFICATIONS**

Nominal Flow	15 GPM (57 LPM)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	5 cu in/min (82 ml/min) per path
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.33 lbs (.15 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 4W
Cavity Form Tool (Finishing)	40500002
Seal Kit	21191214

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DIMENSIONS



Body Weight: .99 lbs (.45 kg)

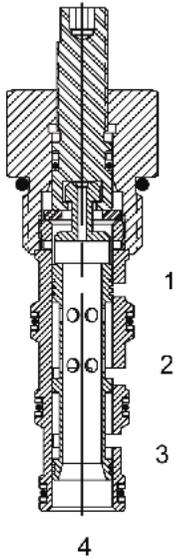
ORDERING INFORMATION

<b>DG-M4B</b>		-	-
	<b>OPTIONS</b>		<b>BODIES</b>
Buna, Standard	<b>00</b>		<b>Blank</b> Without Body
Viton, Standard	<b>V0</b>		<b>N</b> 1/4" NPTF Ports
Buna, Knob	<b>OK</b>		<b>S</b> #6 SAE Ports
Viton, Knob	<b>VK</b>		

W 28 / 2022

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**DG-M4C** MANUAL ROTARY SPOOL VALVE, 4 WAY 2 POSITION, TANDEM CENTER



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, 4 way 2 position, manual rotary spool valve tandem center.

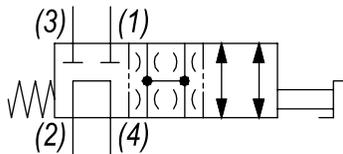
**OPERATION**

The DG-M4C when rotated fully to clockwise position, the cartridge allows flow from (2) to (4) and blocks flow at (1) and (3). When rotated fully total counterclockwise position, the cartridge allows flow between (2) and (3) and between (1) and (4). All ports are closed in transition.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

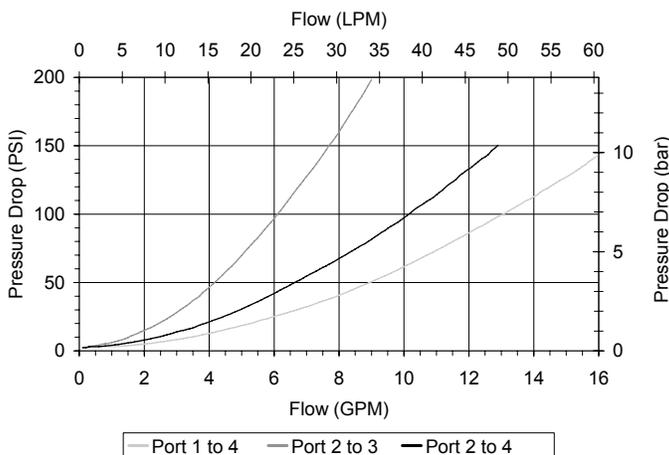
**HYDRAULIC SYMBOL**



May be used as metering product. Valve has approximately 3.5 turns adjustment from extreme clockwise fully to counterclockwise positions. See chart for fully open and fully closed pressure drop.

**PERFORMANCE**

Actual Test Data (Cartridge Only)

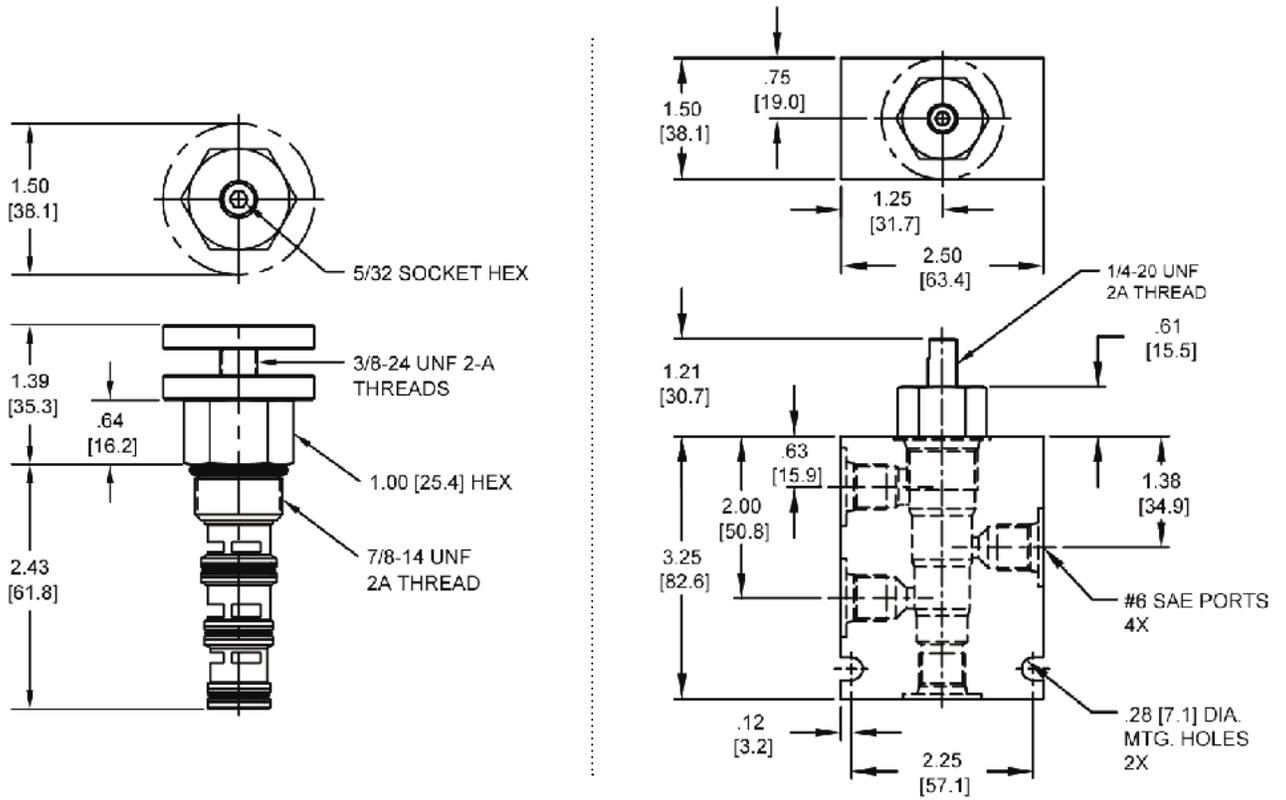


**VALVE SPECIFICATIONS**

Nominal Flow	12 GPM (45 LPM)
	8 GPM (30 LPM) from (2) to (3)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	5 cu in/min (82 ml/min) per path
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.52 lbs (.23 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 4W
Cavity Form Tool (Finishing)	40500002
Seal Kit	21191214

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**DIMENSIONS**



Body Weight: .99 lbs (.45 kg)

**ORDERING INFORMATION**

<b>DG-M4C</b>		-	-
	<b>OPTIONS</b>		<b>BODIES</b>
Buna, Standard	<b>00</b>		<b>Blank</b> Without Body
Viton, Standard	<b>V0</b>		<b>N</b> 1/4" NPTF Ports
Buna, Knob	<b>0K</b>		<b>S</b> #6 SAE Ports
Viton, Knob	<b>VK</b>		

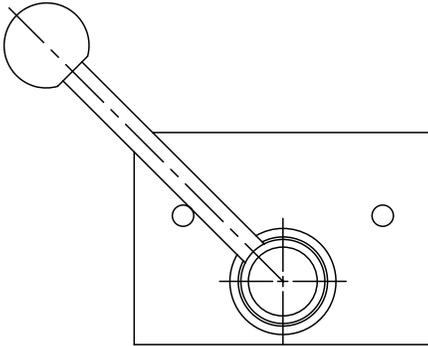
**QS-MRS ROTARY SELECTOR VALVE**

**DESCRIPTION**

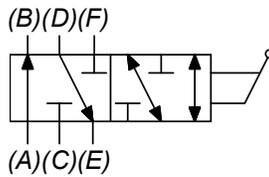
6 port rotary selector valve.

**OPERATION**

The QS-MRS when rotated counter-clockwise allows flow from (A) to (B) & (D) to (E) and blocks (C) & (F). When rotated clockwise, the valve directs flow from (C) to (B) & (F) to (E) and block flow at (A) & (D).



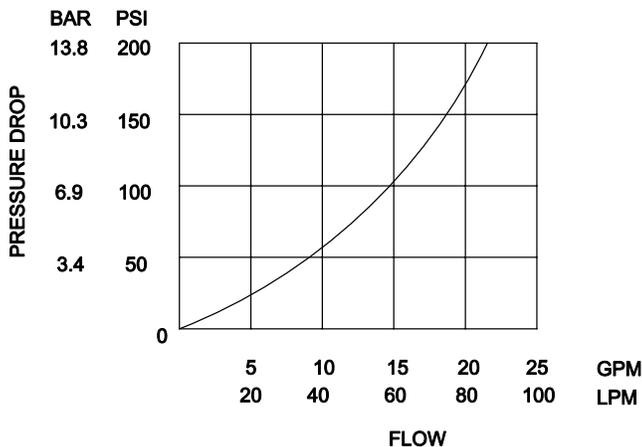
**HYDRAULIC SYMBOL**



May be used as metering product. All ports closed in transition. See chart for fully open and fully closed pressure drop.

**PERFORMANCE**

Actual Test Data (Cartridge Only)



ABOVE CURVE IS WITH HYDRAULIC OIL 150 SSU AT 100°F.

**VALVE SPECIFICATIONS**

Nominal Flow	25 GPM (95 LTR/M)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	1 cu in/min (16 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	3.42 lbs (1.55 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid

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## MECHANICAL FLOW CONTROLS

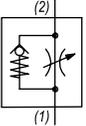
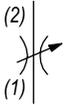


<b>FLOW RESTRICTORS, ADJUSTABLE (NEEDLE VALVES)</b> .....	MF3
<b>PRESSURE COMPENSATED FLOW REGULATOR VALVES</b> .....	MF21
<b>PRIORITY FLOW REGULATOR VALVES</b> .....	MF47
<b>VELOCITY FUSES</b> .....	MF71
<b>FLOW DIVIDER/COMBINER VALVES</b> .....	MF77
<b>LOGIC ELEMENTS</b> .....	MF89
<b>HAND PUMPS</b> .....	MF97

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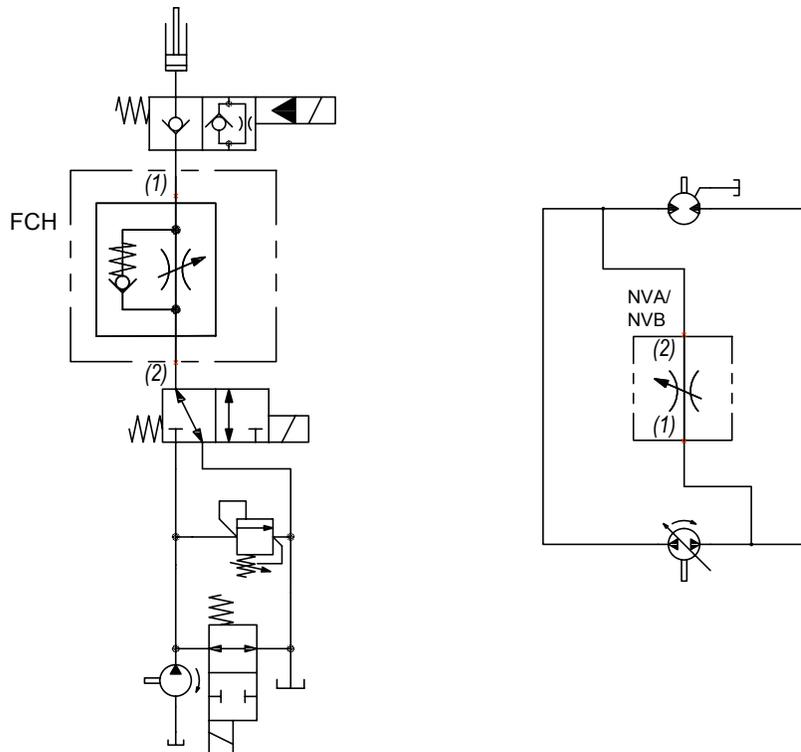
NEEDLE VALVES – FLOW RESTRICTORS

	GPM	PSI	LPM	BAR	CAVITY	MODEL	PAGE
	12	3500	45	241	7/8-14	DE-FCH	MF4
	6	3500	23	241	5/8-18	MA-NVA	MF6
	6	3500	23	241	3/4-16	PB-NVA	MF8
	10	3500	38	241	7/8-14	DE-NVA	MF10
	35	5000	132	345	1 1/16-12	HT-NVA	MF12
	40	3500	151	241	1 5/16-12	SJ-NVA	MF14
	3	3500	11	241	3/4-16	PB-NVB	MF16
	15	3500	57	241	7/8-14	DE-NVB	MF18

TYPICAL SCHEMATIC

Typical application for an NVA/NVB is to meter flow to an actuator. In the example shown, the valve is used to allow a hydraulic motor to be manually unloaded, so that the vehicle can be towed.

Typical application for the FCH is to meter flow in one direction while allowing free flow in the opposite direction.



**DE-FCH ADJUSTABLE FLOW CONTROL VALVE, SPOOL TYPE, FREE REVERSE FLOW**

**DESCRIPTION**

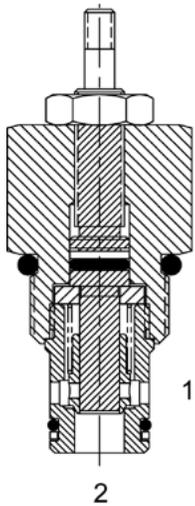
10 size, 7/8-14 thread, "Delta" adjustable needle flow control valve with free reverse flow.

**OPERATION**

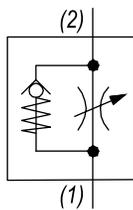
The DE-FCH increases its orifice value from fully closed to fully open by turning screw counterclockwise. When adjusted open the valves regulates flow (1) to (2). When fully closed the valve restricts flow from (1) to (2).

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

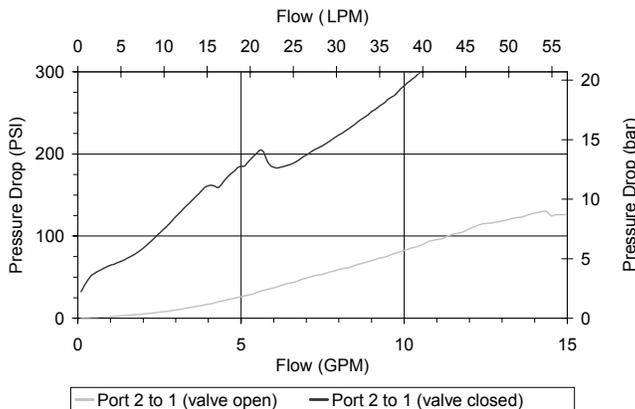


**HYDRAULIC SYMBOL**



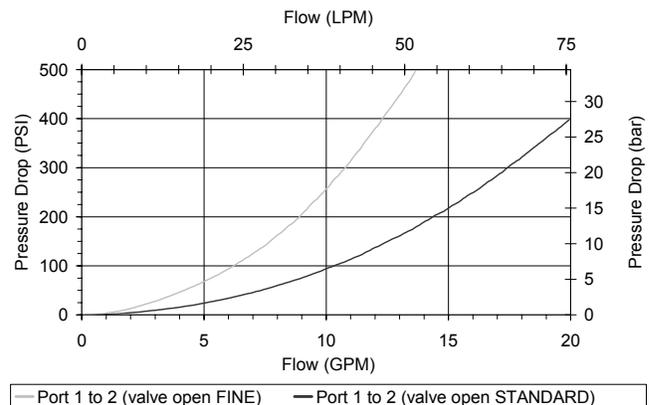
**PERFORMANCE**

Actual Test Data (Cartridge Only)



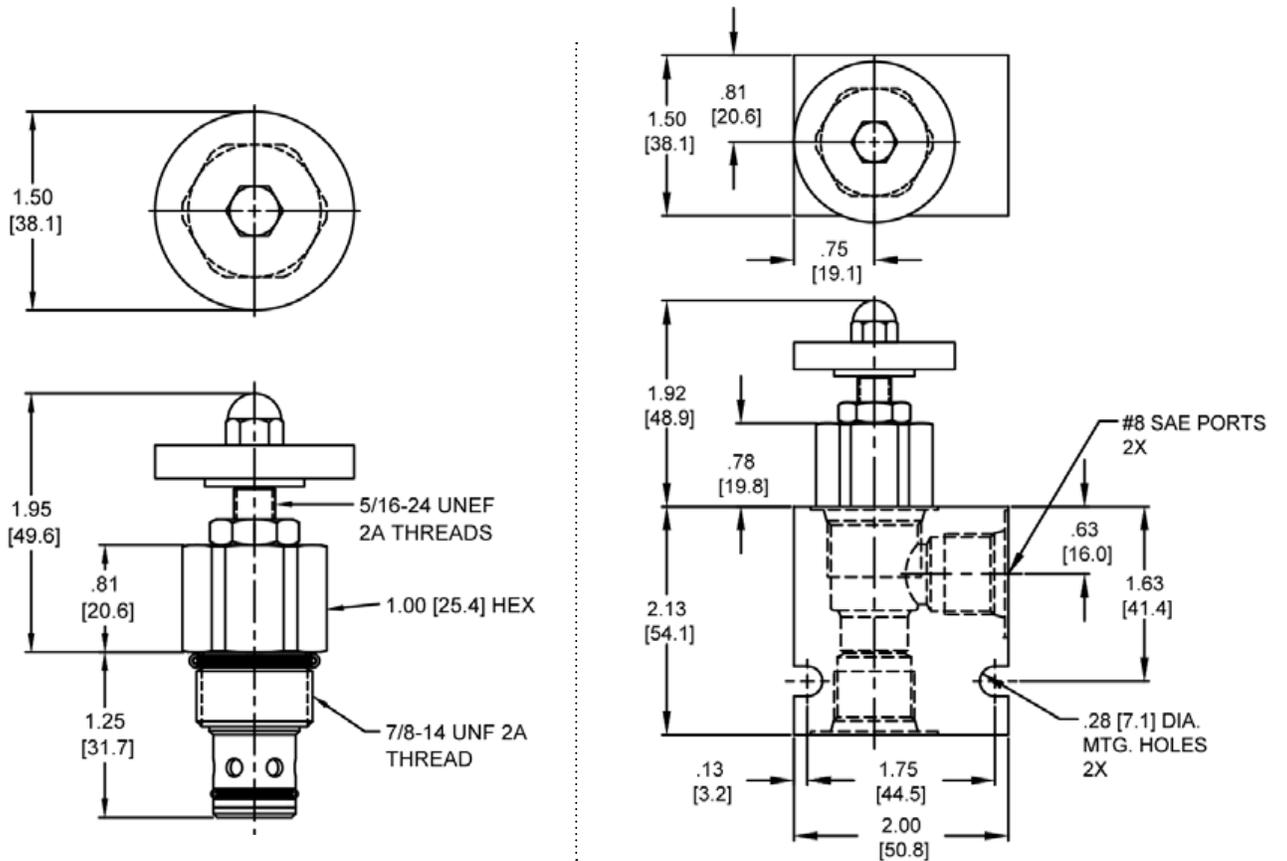
**VALVE SPECIFICATIONS**

Nominal Flow	12 GPM (45 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.32 lbs (.15 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191200



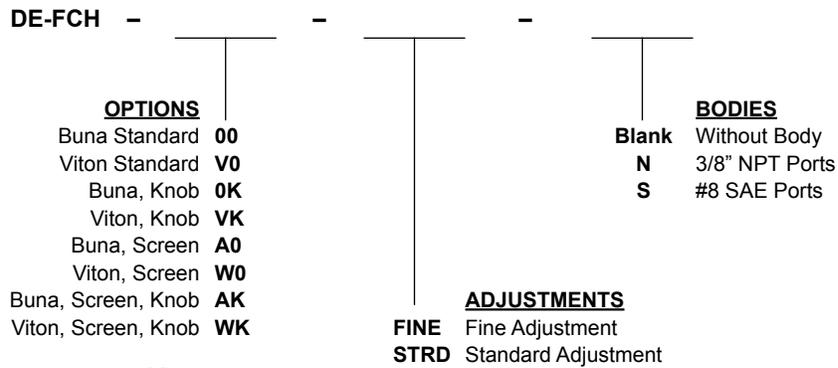
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**



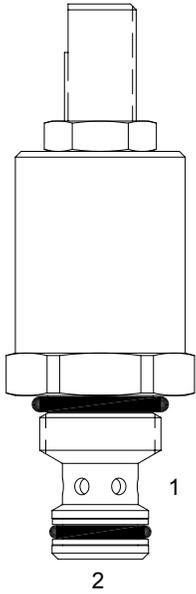
Body Weight: .47 lbs (.21 kg)

**ORDERING INFORMATION**



**Note: use screen only if flow direction is from (1) to (2).**

**MA-NVA ADJUSTABLE FLOW CONTROL VALVE, NEEDLE TYPE**



**DESCRIPTION**

7 size, 5/8-18 thread, "Mini" series, needle flow control valve.

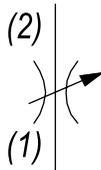
**OPERATION**

The MA-NVA adjusts from fully open to fully closed by turning adjusting screw clockwise. When adjusted open the valve allows flow (1) to (2) and (2) to (1). When fully closed the valve blocks flow from (1) to (2) and (2) to (1).

**FEATURES**

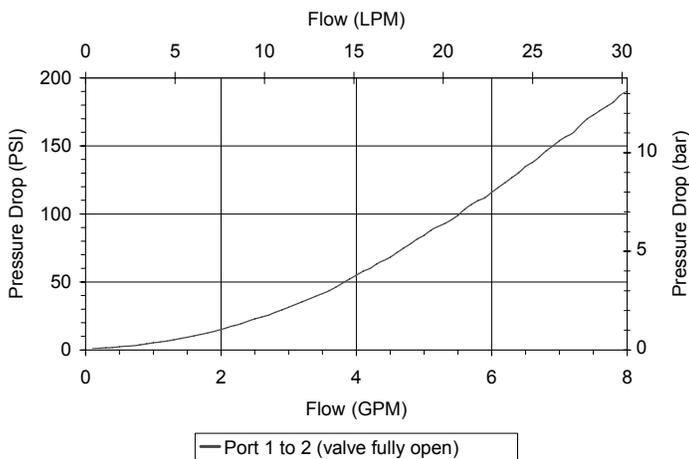
- Hardened parts for long life.
- Industry common cavity.

**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)

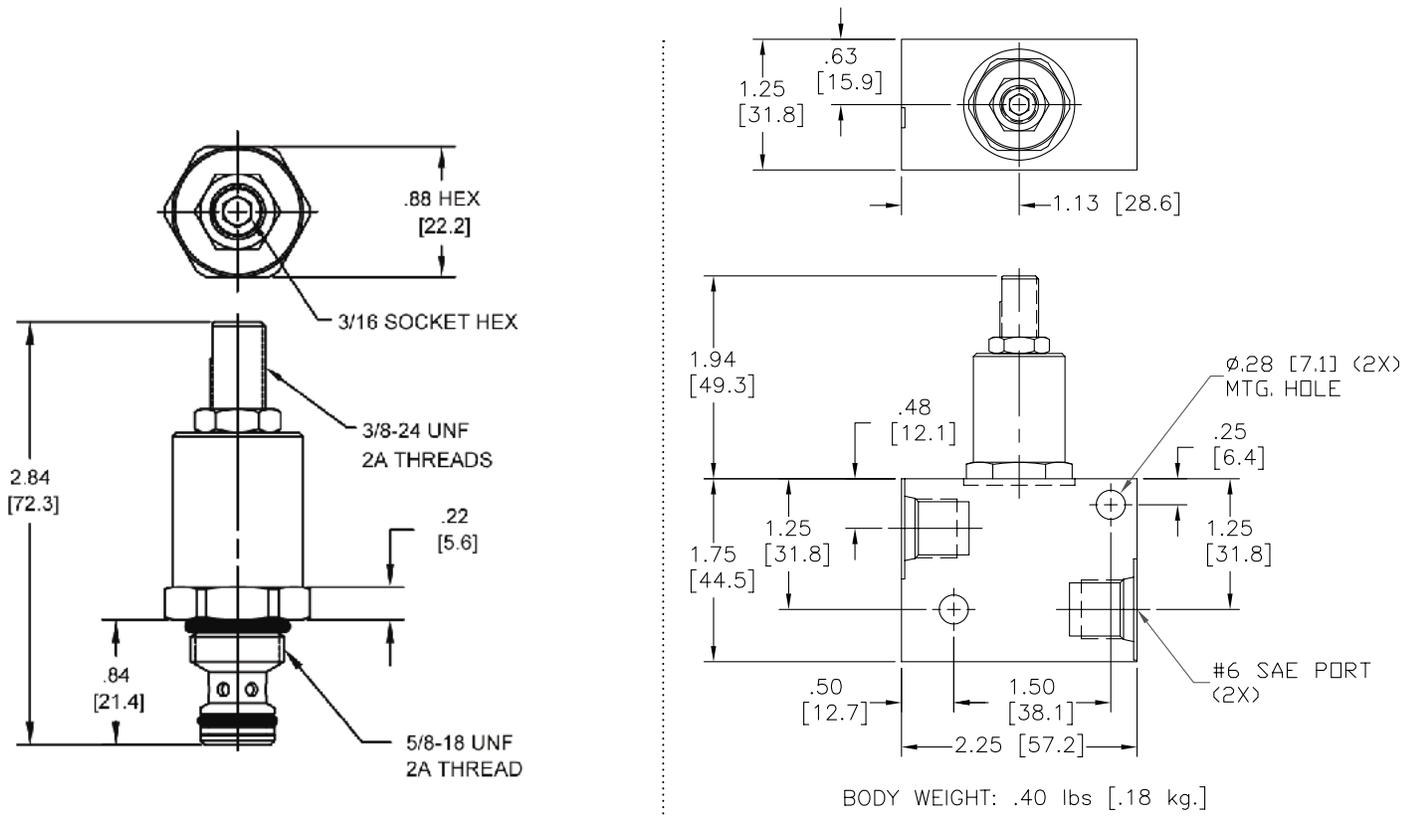


**VALVE SPECIFICATIONS**

Nominal Flow	6 GPM (23 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.24 lbs (.11 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	15 ft-lbs (20.3 Nm)
Cavity	MINI 2W
Cavity Form Tool (Finishing)	40500003
Seal Kit	21191202

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**DIMENSIONS**

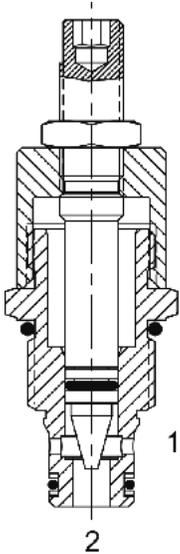


Body Weight: .29 lbs (.13 kg)

**ORDERING INFORMATION**

<b>MA-NVA</b>		-	-	-
	<b>OPTIONS</b>			<b>BODIES</b>
	Buna Standard	<b>00</b>		Blank
	Viton Standard	<b>V0</b>		Without Body
	Buna, Knob	<b>0K</b>		<b>N</b> 1/4" NPTF Ports
	Viton, Knob	<b>VK</b>		<b>S</b> #6 SAE Ports

**PB-NVA ADJUSTABLE FLOW CONTROL VALVE, NEEDLE TYPE**



**DESCRIPTION**

8 size, 3/4-16 thread, "Power" series, needle flow control.

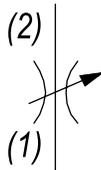
**OPERATION**

The PB-NVA adjusts from fully open to fully closed by turning adjusting screw clockwise. When adjusted open the valve allows flow from (1) to (2) and (2) to (1). When fully closed the valve blocks flow from (1) to (2) and (2) to (1).

**FEATURES**

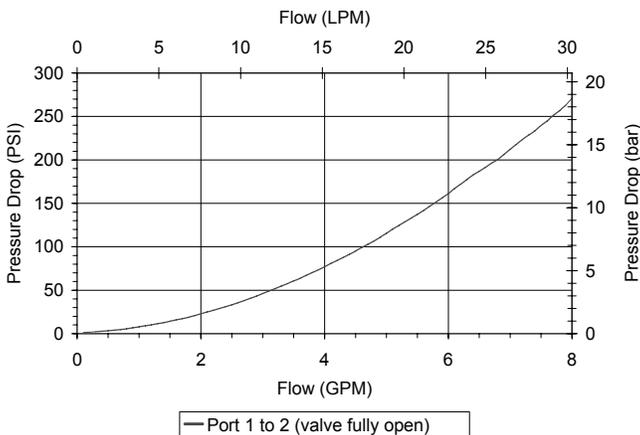
- Hardened parts for long life.
- Industry common cavity.

**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)



**VALVE SPECIFICATIONS**

Nominal Flow	6 GPM (23 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.22 lbs (.10 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Cavity	POWER 2W
Cavity Form Tool (Finishing)	40500005
Seal Kit	21191102

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**DE-NVA ADJUSTABLE FLOW CONTROL VALVE, NEEDLE TYPE, FINE ADJUST**

**DESCRIPTION**

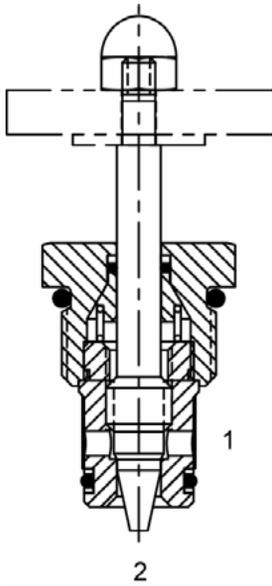
10 size, 7/8-14 thread, "Delta" series fine adjust needle flow control valve.

**OPERATION**

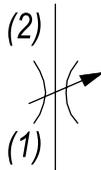
The DE-NVA adjusts from fully open to fully closed by turning adjusting screw counterclockwise. When adjusted open the valve allows flow (1) to (2) and (2) to (1). When fully closed the valve blocks flow from (1) to (2) and (2) to (1).

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

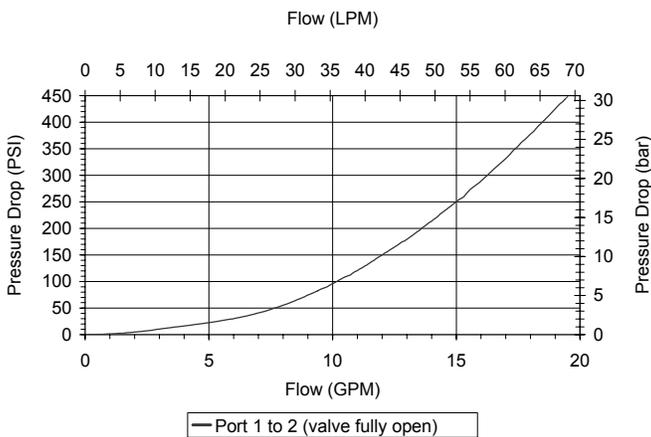


**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)



**VALVE SPECIFICATIONS**

Nominal Flow	10 GPM (38 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.19 lbs (.09 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191202

**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.



**HT-NVA ADJUSTABLE FLOW CONTROL VALVE, NEEDLE TYPE**

**DESCRIPTION**

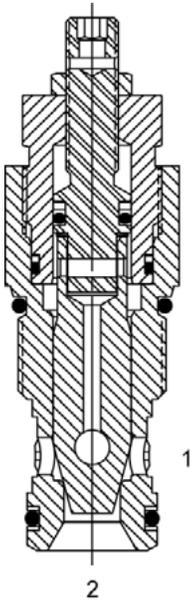
“High Pressure” 12 size, 1 1/16-12 thread, “Tecnord” series, needle flow control valve.

**OPERATION**

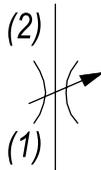
The HT-NVA adjusts from fully open to fully closed by turning adjusting screw clockwise. When adjusted open the valve allows flow (1) to (2) and (2) to (1). When fully closed the valve blocks flow from (1) to (2) and (2) to (1).

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.



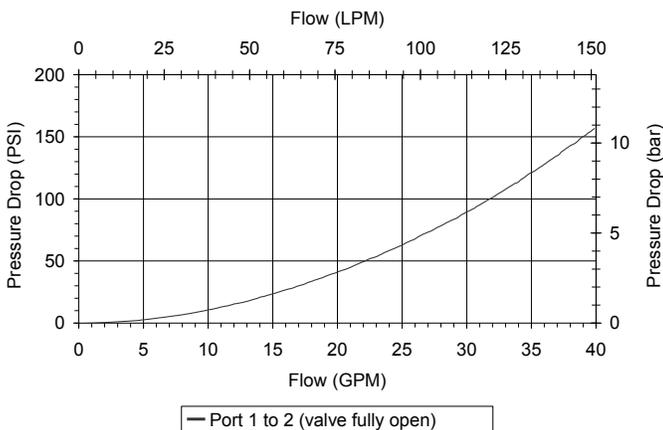
**HYDRAULIC SYMBOL**



Valves with the knob option are NOT to be adjusted under pressure.

**PERFORMANCE**

Actual Test Data (Cartridge Only)



**VALVE SPECIFICATIONS**

Nominal Flow	35 GPM (132 LPM)
Rated Operating Pressure	5000 PSI (345 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.72 lbs (.32 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	70 ft-lbs (95 Nm)
Cavity	TECNORD 2W
Cavity Form Tool (Finishing)	40500032
Seal Kit	21191302

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**SJ-NVA** ADJUSTABLE FLOW CONTROL VALVE, NEEDLE TYPE

**DESCRIPTION**

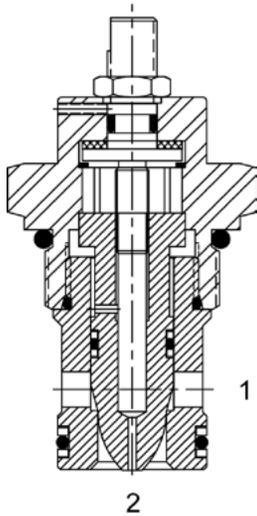
16 size, 1 5/16-12 thread, "Super" series, needle flow control valve.

**OPERATION**

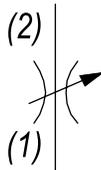
The SJ-NVA adjusts from fully open to fully closed by turning the adjustment screw clockwise. When adjusted open the valve regulates flow (1) to (2) or (2) to (1). When fully closed the valve blocks flow from (1) to (2) or (2) to (1).

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

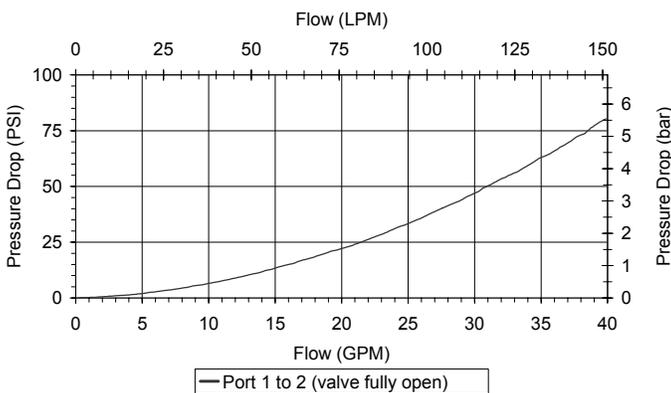


**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)

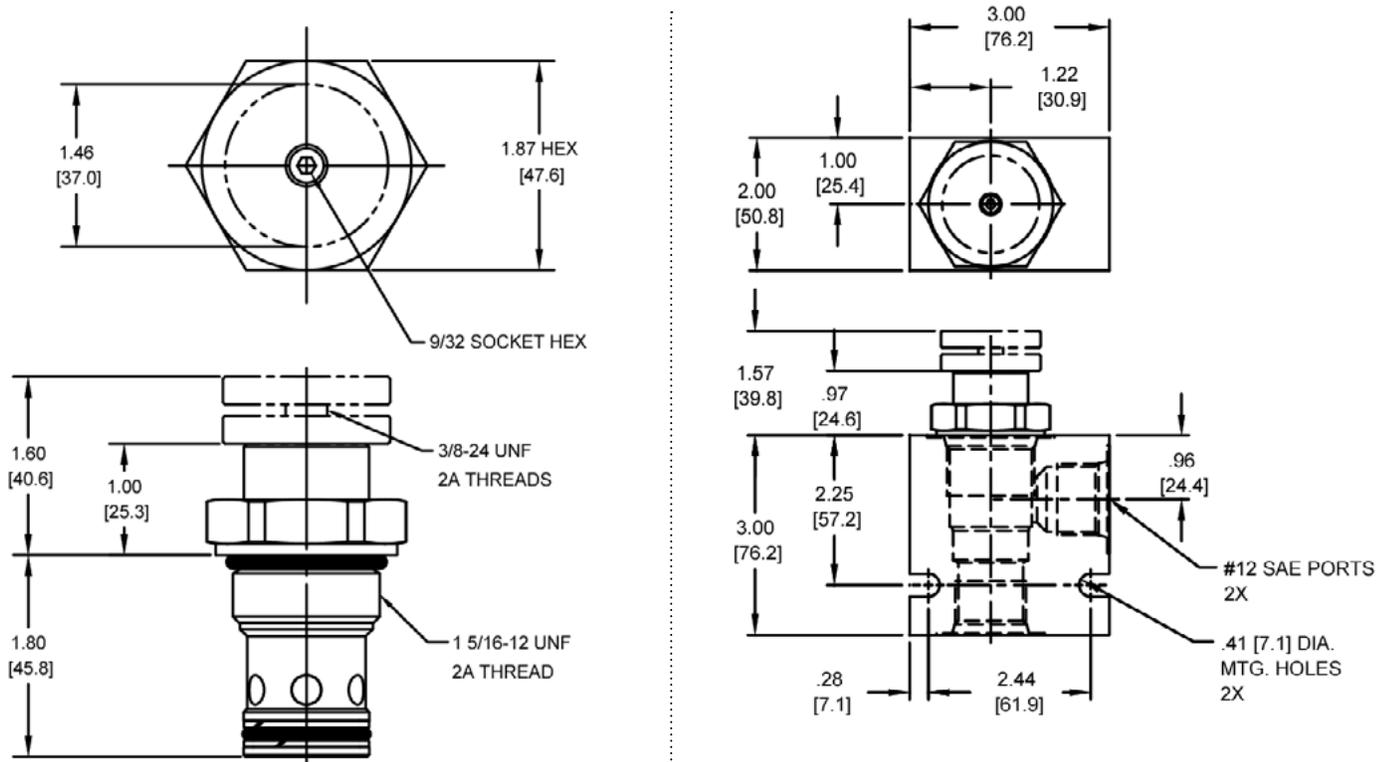


**VALVE SPECIFICATIONS**

Nominal Flow	40 GPM (151 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-35° to 200°F (-37.2° to 93.3°C)
Weight	.83 lbs (.37 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	90 ft-lbs (122 Nm)
Cavity	SUPER 2W
Cavity Form Tool (Finishing)	40500017
Seal Kit	21191402

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**DIMENSIONS**



Body Weight: 1.29 lbs (.58 kg)

**ORDERING INFORMATION**

<p><b>SJ-NVA</b> - -</p> <p style="text-align: center;"><b>OPTIONS</b></p> <p>Buna Standard <b>00</b></p> <p>Viton Standard <b>V0</b></p> <p>Buna, Knob <b>0K</b></p> <p>Viton, Knob <b>VK</b></p> <p>Buna, Internally Adj. <b>0I</b></p> <p>Viton, Internally Adj. <b>VI</b></p> <p>Buna, Tamper Proof <b>0T</b></p> <p>Viton, Tamper Proof <b>VT</b></p>	<p style="text-align: center;"><b>BODIES</b></p> <p>Blank Without Body</p> <p><b>N</b> 3/4" NPT Ports</p> <p><b>S</b> #12 SAE Ports</p>
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**PB-NVB ADJUSTABLE FLOW CONTROL VALVE, NEEDLE TYPE, FINE ADJUST**

**DESCRIPTION**

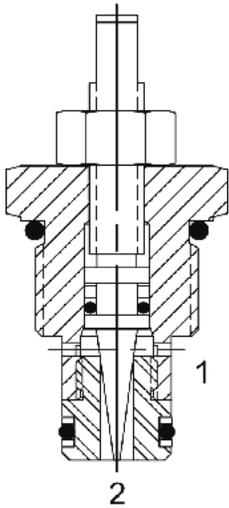
8 size, 3/4-16 thread, "Power" series, fine adjust needle flow control.

**OPERATION**

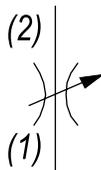
The PB-NVB adjusts from fully open to fully closed by turning adjusting screw clockwise. When adjusted open the valve allows flow (1) to (2) and (2) to (1). When fully closed the valve blocks flow from (1) to (2) and (2) to (1).

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

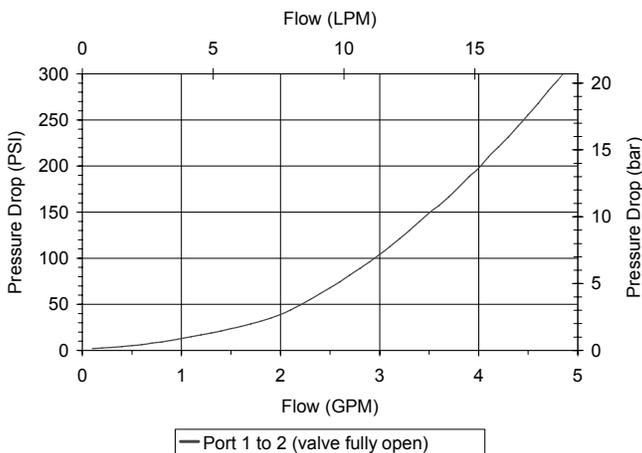


**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)

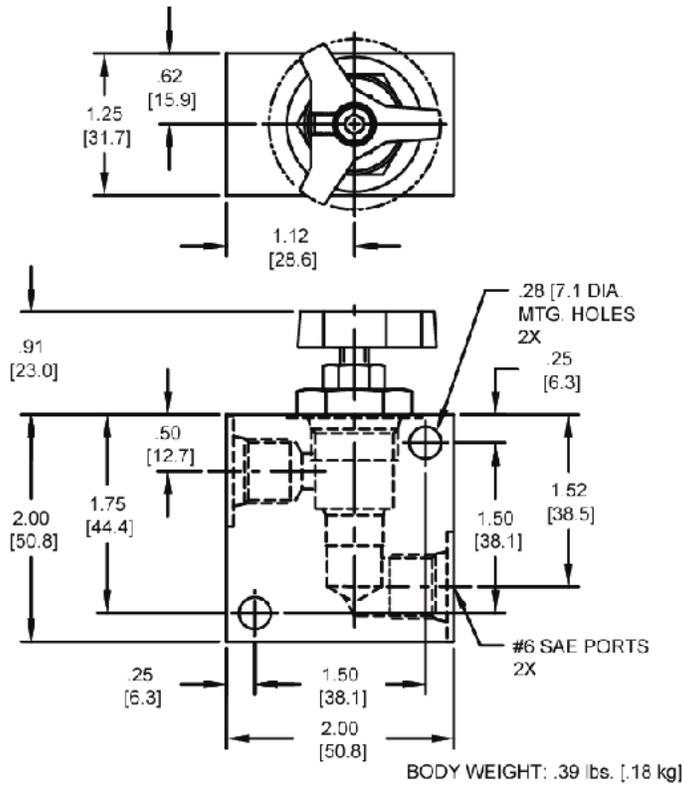
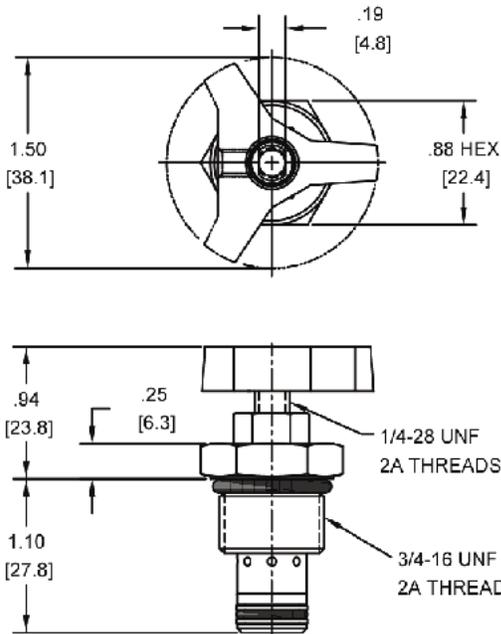


**VALVE SPECIFICATIONS**

Nominal Flow	3 GPM (11 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.13 lbs (.06 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	POWER 2W
Cavity Form Tool (Finishing)	40500005
Seal Kit	21191102

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**DIMENSIONS**



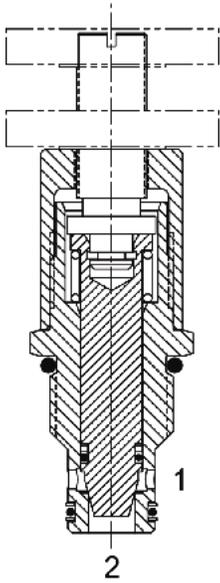
Body Weight: .39 lbs (.18 kg)

**ORDERING INFORMATION**

<b>PB-NVB</b>	-	-	-
	<b>OPTIONS</b>		<b>BODIES</b>
	Buna Standard	<b>00</b>	Blank
	Viton Standard	<b>V0</b>	Without Body
	Buna, Knob	<b>OK</b>	<b>N</b> 1/4" NPTF Ports
	Viton, Knob	<b>VK</b>	<b>S</b> #6 SAE Ports
	Buna, Screen	<b>A0</b>	
	Viton, Screen	<b>W0</b>	
	Buna, Screen, Knob	<b>AK</b>	
	Viton, Screen, Knob	<b>WK</b>	

**Note: use screen only if flow direction is from (1) to (2).**

**DE-NVB ADJUSTABLE FLOW CONTROL VALVE, COARSE ADJUST**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, course adjust needle flow control valve.

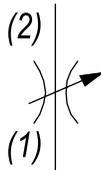
**OPERATION**

The DE-NVB adjusts from fully open to fully closed by turning adjusting screw clockwise. When adjusted open the valve allows flow (1) to (2) and (2) to (1). When fully closed the valve blocks flow from (1) to (2) and (2) to (1).

**FEATURES**

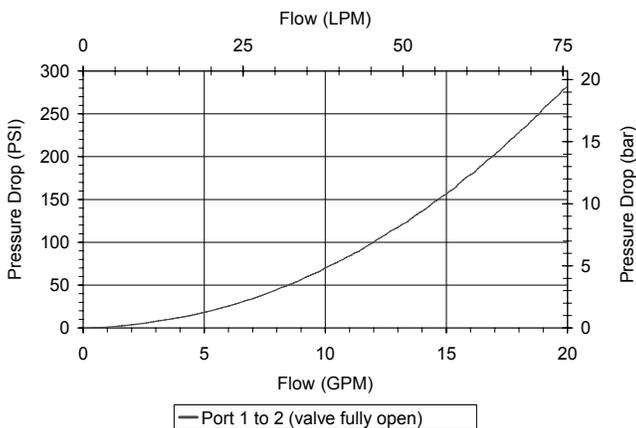
- Hardened parts for long life.
- Industry common cavity.

**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)

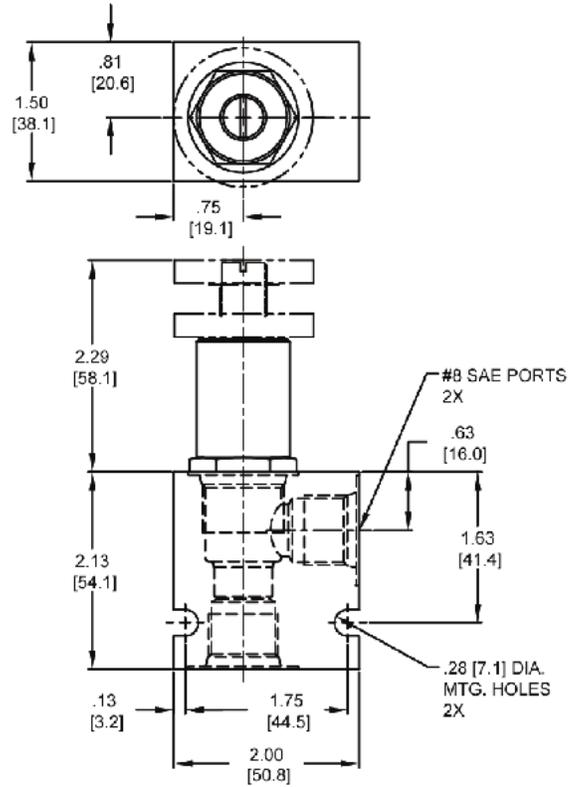
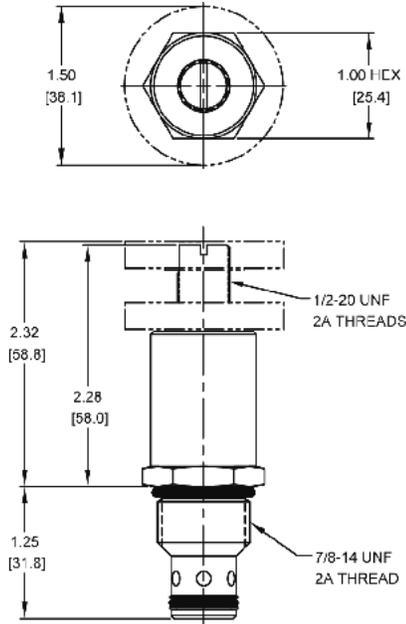


**VALVE SPECIFICATIONS**

Nominal Flow	15 GPM (57 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.47 lbs (.21 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191202

**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**



Body Weight: .47 lbs (.21 kg)

**ORDERING INFORMATION**

<p><b>DE-NVB</b> -</p> <p style="text-align: center;"> </p> <p><b>OPTIONS</b></p> <p>Buna Standard <b>00</b></p> <p>Viton Standard <b>V0</b></p> <p>    Buna, Knob <b>OK</b></p> <p>    Viton, Knob <b>VK</b></p> <p>    Buna, Screen <b>A0</b></p> <p>    Viton, Screen <b>W0</b></p> <p>    Buna, Screen, Knob <b>AK</b></p> <p>    Viton, Screen, Knob <b>WK</b></p>	<p style="text-align: center;">-</p> <p style="text-align: center;"> </p> <p><b>BODIES</b></p> <p>Blank Without Body</p> <p><b>N</b> 3/8" NPT Ports</p> <p><b>S</b> #8 SAE Ports</p>
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**Note: use screen only if flow direction is from (1) to (2).**

**WARNING:** *the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.*

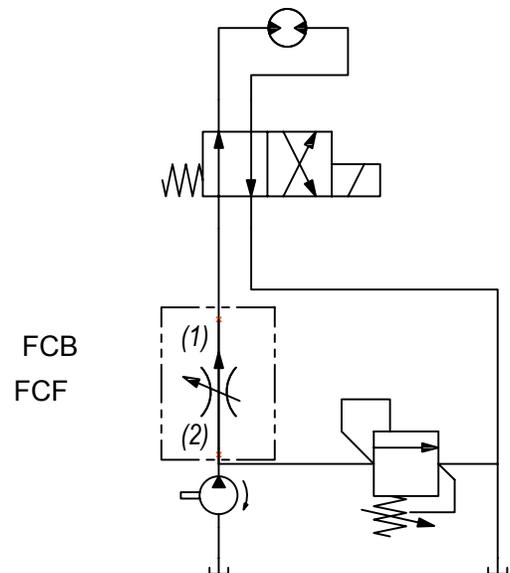
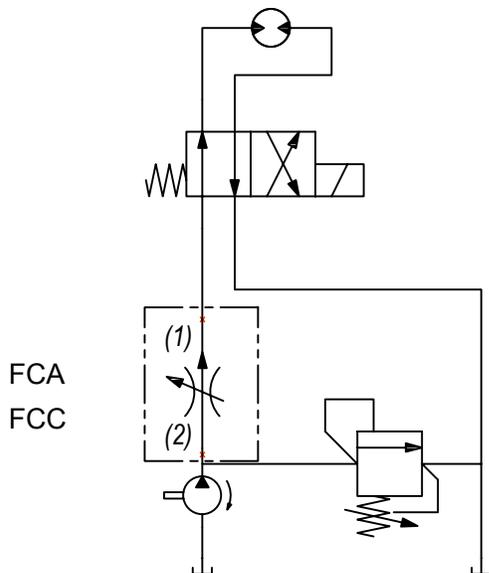
Via Malavolti, 36 - 41122 Modena - ITALY - Phone +39 (059) 254895 - Fax +39 (059) 253512 - mail: [tecnord@tecnord.com](mailto:tecnord@tecnord.com) - [www.tecnord.com](http://www.tecnord.com)

**PRESSURE COMPENSATED FLOW REGULATOR VALVES**

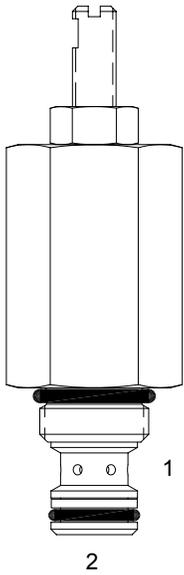
	GPM	PSI	LPM	BAR	CAVITY	MODEL	PAGE
	3	3000	11	207	5/8-18	<b>MA-FCA</b>	MF22
	4	3500	15	241	3/4-16	<b>PB-FCA</b>	MF24
	8	3500	30	241	7/8-14	<b>DE-FCA</b>	MF26
	5	3500	19	241	3/4-16	<b>PB-FCC</b>	MF28
	11	3500	41.5	241	7/8-14	<b>DE-FCC</b>	MF30
	12	3500	45	241	7/8-14	<b>DE-FAR</b>	MF32
	18	5000	68	345	1 1/16 -12	<b>HT-FCA</b>	MF34
	25	3500	95	241	1 5/16 -12	<b>SJ-FCA</b>	MF36
	8	3500	30	241	7/8-14	<b>DE-FCB</b>	MF38
	6	3500	23	241	3/4-16	<b>PB-FCF</b>	MF40
	8	3500	30	241	7/8-14	<b>DE-FCF</b>	MF42
	25	3500	95	241	1 5/16 -12	<b>SJ-FCF</b>	MF44

**TYPICAL SCHEMATIC**

Typical application for the FCA, FCB, FCC and FCF is for actuator speed control. The FCB and FCF valves have fixed, non-adjustable settings. The FCA and FCC versions are adjustable.



**MA-FCA ADJUSTABLE FLOW CONTROL VALVE, PRESSURE COMPENSATED**



**DESCRIPTION**

7 size, 5/8-18 thread, "Mini" series, pressure compensated, flow control valve.

**OPERATION**

The cartridge maintains a constant flow rate out of (1) regardless of load pressure changes in the circuit downstream of (1). The adjustable control differential spring load can be set to customer flow specification (see options for ranges). The valve begins to respond to load changes when the flow through the valve creates a pressure differential from (2) to (1) greater than 200 PSI with accurate flow maintenance from 200 to 3000 PSI (14 to 207 bar). Reverse flow (1) to (2) returns through the control orifice and is non-compensated. The regulated flow increases from low to high with clockwise rotation of the knob.

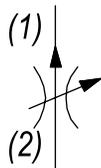
**FEATURES**

- Hardened parts for long life.
- Industry common cavity.
- Fine low-torque adjustment.



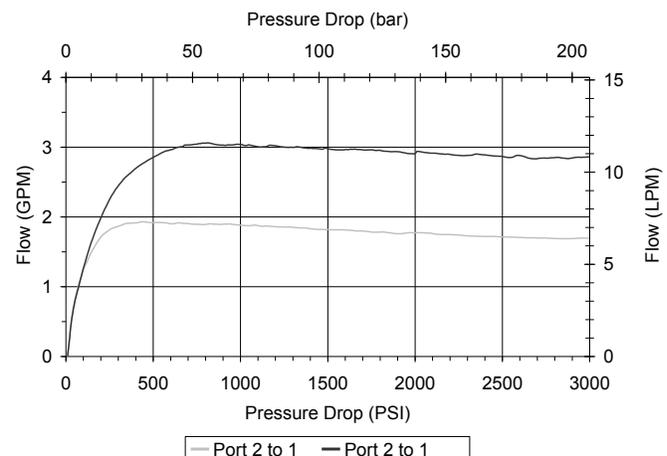
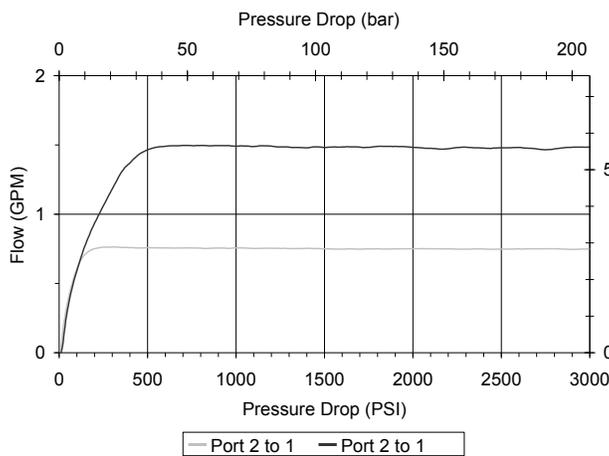
*Best stability is obtained with adjustment at highest flow.*

**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)

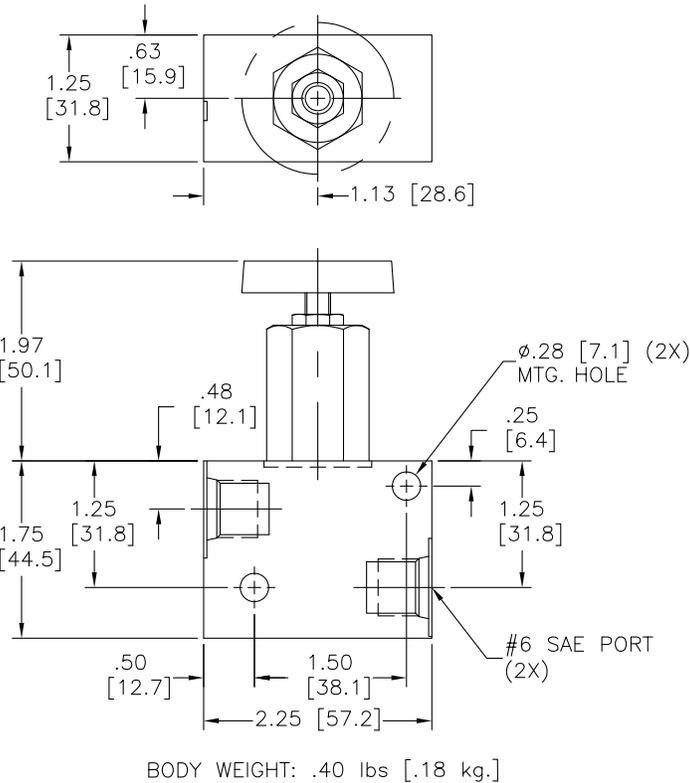
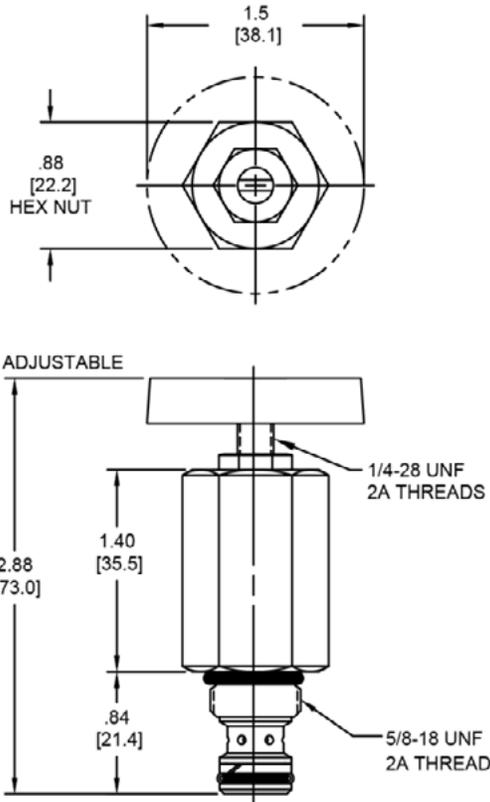


**VALVE SPECIFICATIONS**

Nominal Flow	3 GPM (11 LPM)
Rated Operating Pressure	3000 PSI (207 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.29 lbs (.13 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	15 ft-lbs (20.3 Nm)
Cavity	MINI 2W
Cavity Form Tool (Finishing)	40500003
Seal Kit	21191000

**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

DIMENSIONS



Body Weight: .29 lbs (.13 kg)

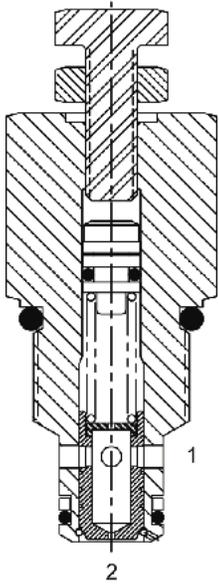
ORDERING INFORMATION

<b>MA-FCA</b> -		-	-	-
<b>OPTIONS</b>				
Buna Standard	<b>00</b>			
Viton Standard	<b>V0</b>			
Buna, Knob	<b>0K</b>			
Viton, Knob	<b>VK</b>			
				<b>BODIES</b>
				<b>Blank</b> Without Body
				<b>N</b> 1/4" NPTF Ports
				<b>S</b> #6 SAE Ports
				<b>FLOW</b>
<b>0.17</b>	.08 - .17 GPM			
<b>00.5</b>	.25 - .5 GPM			
<b>00.9</b>	.5 - .9 GPM			

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**PB-FCA ADJUSTABLE FLOW CONTROL VALVE, PRESSURE COMPENSATED**



**DESCRIPTION**

8 size, 3/4-16 thread, "Power" series, pressure compensated, flow control valve.

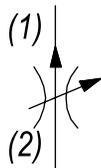
**OPERATION**

The cartridge maintains a constant flow rate out of (1) regardless of load pressure changes in the circuit downstream of (1). The adjustable control differential spring load can be set to customer flow specification (see options for ranges). The valve begins to respond to load changes when the flow through the valve creates a pressure differential from (2) to (1), greater than 200 PSI (14 bar), with accurate flow maintenance from 200 to 3500 PSI (14 to 241 bar). Reverse flow (1) to (2) returns through the control orifice and is non-compensated. The regulated flow increases from low to high with clockwise rotation of the knob.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.
- Fine low-torque adjustment.

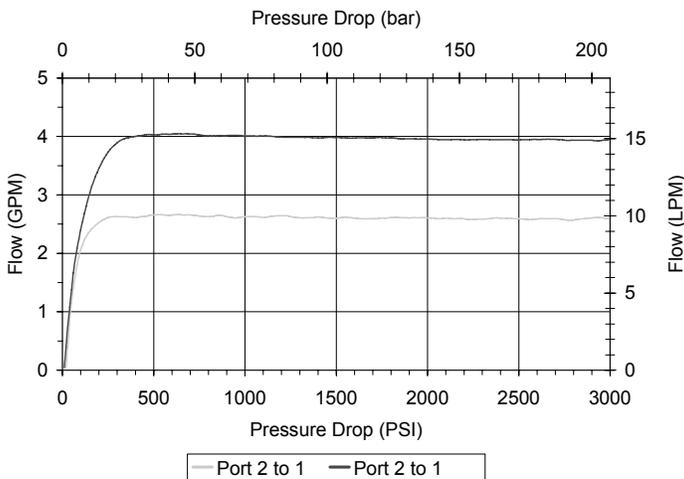
**HYDRAULIC SYMBOL**



Best stability is obtained with adjustment at highest flow.

**PERFORMANCE**

Actual Test Data (Cartridge Only)

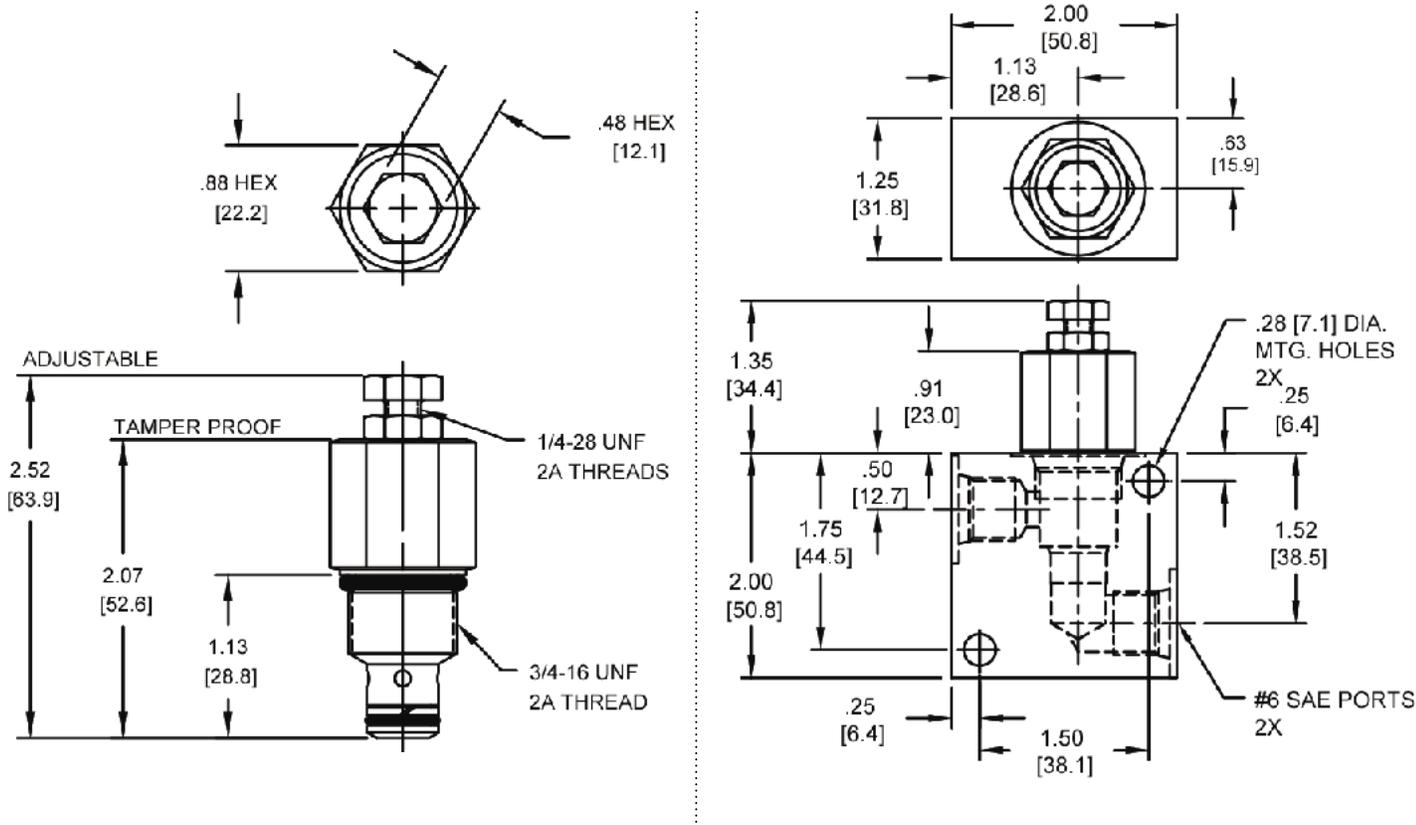


**VALVE SPECIFICATIONS**

Nominal Flow	4 GPM (15 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.26 lbs (.12 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Cavity	POWER 2W
Cavity Form Tool (Finishing)	40500005
Seal Kit	21191100

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DIMENSIONS



Body Weight: .39 lbs (.18 kg)

ORDERING INFORMATION

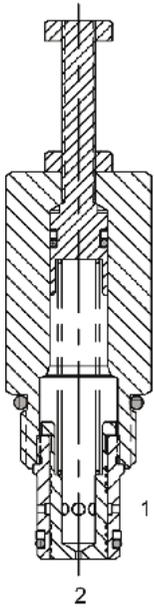
<b>PB-FCA</b> -		-	-	-	-
<b>OPTIONS</b>					<b>BODIES</b>
Buna Standard	<b>00</b>				<b>Blank</b> Without Body
Viton Standard	<b>V0</b>				<b>N</b> 1/4" NPTF Ports
Buna, Tamper Proof	<b>0T</b>				<b>S</b> #6 SAE Ports
Viton, Tamper Proof	<b>VT</b>				
<b>FLOW</b>					
<b>0.45</b>	.25 - .45 GPM				
<b>0.75</b>	.45 - .75 GPM				
<b>1.35</b>	.75 - 1.35 GPM				
<b>2.65</b>	1.35 - 2.65 GPM				
<b>4.00</b>	2.65 - 4.00 GPM				

**Tamper Proof**  
 Fill in Digit Pressure Setting  
 Example: 02.0 - 2 GPM

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**DE-FCA ADJUSTABLE FLOW CONTROL VALVE, PRESSURE COMPENSATED**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, pressure compensated, flow control valve.

**OPERATION**

The DE-FCA maintains a constant flow rate out of (1) regardless of load pressure changes in the circuit downstream of (1). The adjustable control (see options for ranges) differential spring load can be set to customer flow specification. The valve begins to respond to load changes when the flow through the valve creates a pressure differential across the control orifice greater than 100 PSI (6.9 bar), with accurate flow maintenance from 100 to 3500 PSI (6.9 to 241 bar). Reverse flow (1) to (2) returns through the control orifice and is non-compensated. The regulated flow increases from low to high with clockwise rotation of the knob.

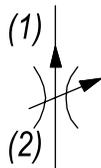
**FEATURES**

- Hardened parts for long life.
- Industry common cavity.
- Fine low-torque adjustment.



*Best stability is obtained with adjustment at highest flow.*

**HYDRAULIC SYMBOL**

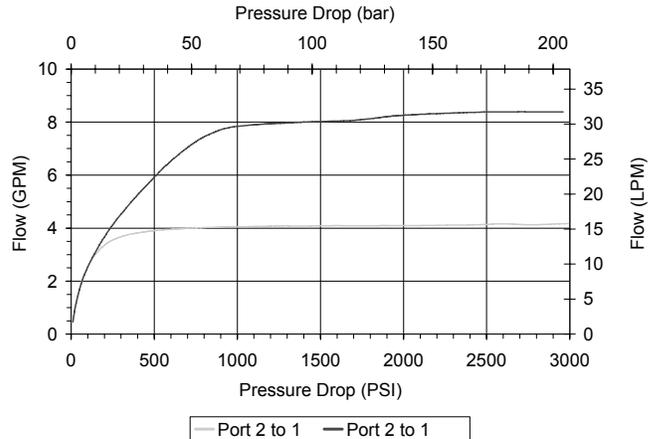
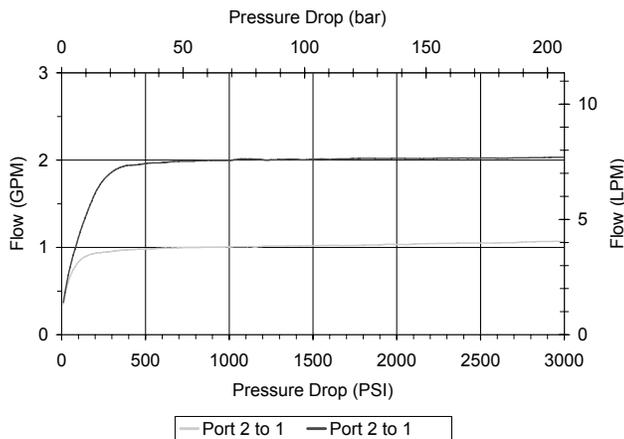


**PERFORMANCE**

Actual Test Data (Cartridge Only)

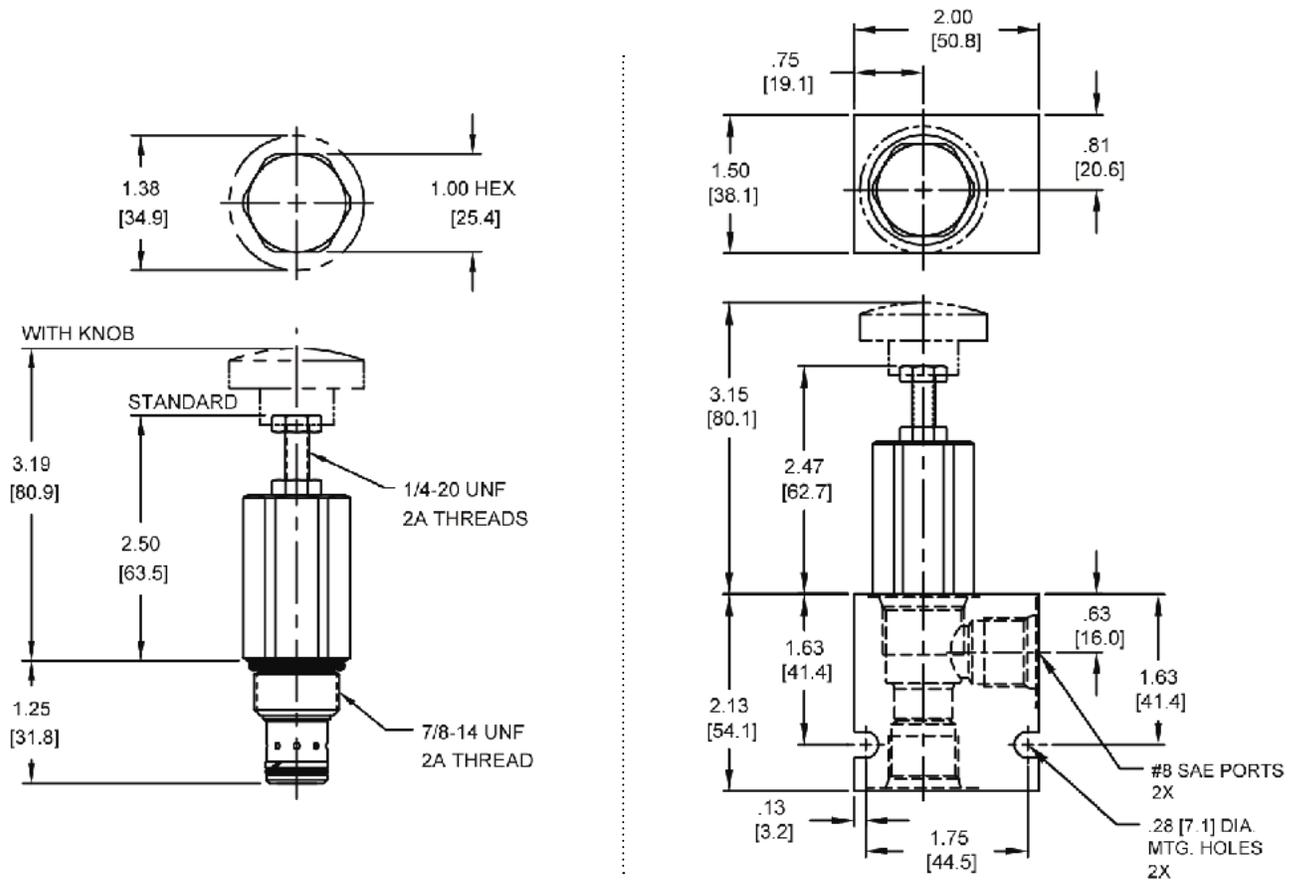
**VALVE SPECIFICATIONS**

Maximum Flow	8 GPM (30 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.49 lbs (.22 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cartridge Form Tool (Finishing)	40500000
Seal Kit	21191200



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DIMENSIONS



Body Weight: .47 lbs (.21 kg)

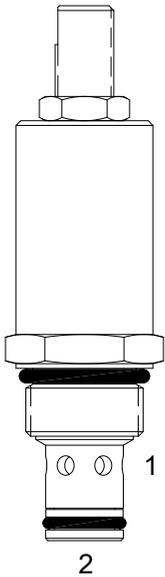
ORDERING INFORMATION

<p><b>DE-FCA</b> -</p> <p style="text-align: center;"> </p> <p><b>OPTIONS</b></p> <p>Buna Standard <b>00</b></p> <p>Viton Standard <b>V0</b></p> <p>Buna, Knob <b>0K</b></p> <p>Viton, Knob <b>VK</b></p>	<p style="text-align: center;">-</p> <p style="text-align: center;"> </p> <p><b>FLOW</b></p> <p><b>01.0</b> .5-1 GPM</p> <p><b>02.0</b> 1-2 GPM</p> <p><b>04.0</b> 2-4 GPM</p> <p><b>08.0</b> 4-8 GPM</p>	<p style="text-align: center;">-</p> <p style="text-align: center;"> </p> <p><b>BODIES</b></p> <p>Blank Without Body</p> <p><b>N</b> 3/8" NPTF Ports</p> <p><b>S</b> #8 SAE Ports</p>
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**PB-FCC ADJUSTABLE FLOW CONTROL VALVE, PRESSURE COMPENSATED**



**DESCRIPTION**

8 size, 3/4-16 thread, "Power" series, pressure compensated flow control valve.

**OPERATION**

The PB-FCC maintains a constant flow rate out of (1) regardless of load pressure changes in the circuit downstream of (1).

The adjustable control differential spring load can be set to customer flow specification (see options for ranges). The valve begins to respond to load changes when the flow through the valve creates a pressure differential from (2) to (1) across the control orifice. Consult graph to see regulation at high and low adjustment settings.

Reverse flow (1) to (2) returns through the control orifice and is non-compensated. The regulated flow increases from low to high with clockwise rotation of the knob.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

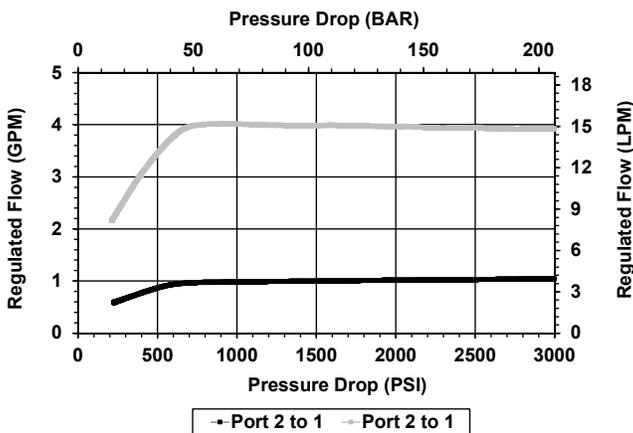
**HYDRAULIC SYMBOL**



*Best stability is obtained with adjustment at highest flow.*

**PERFORMANCE**

Actual Test Data (Cartridge Only)

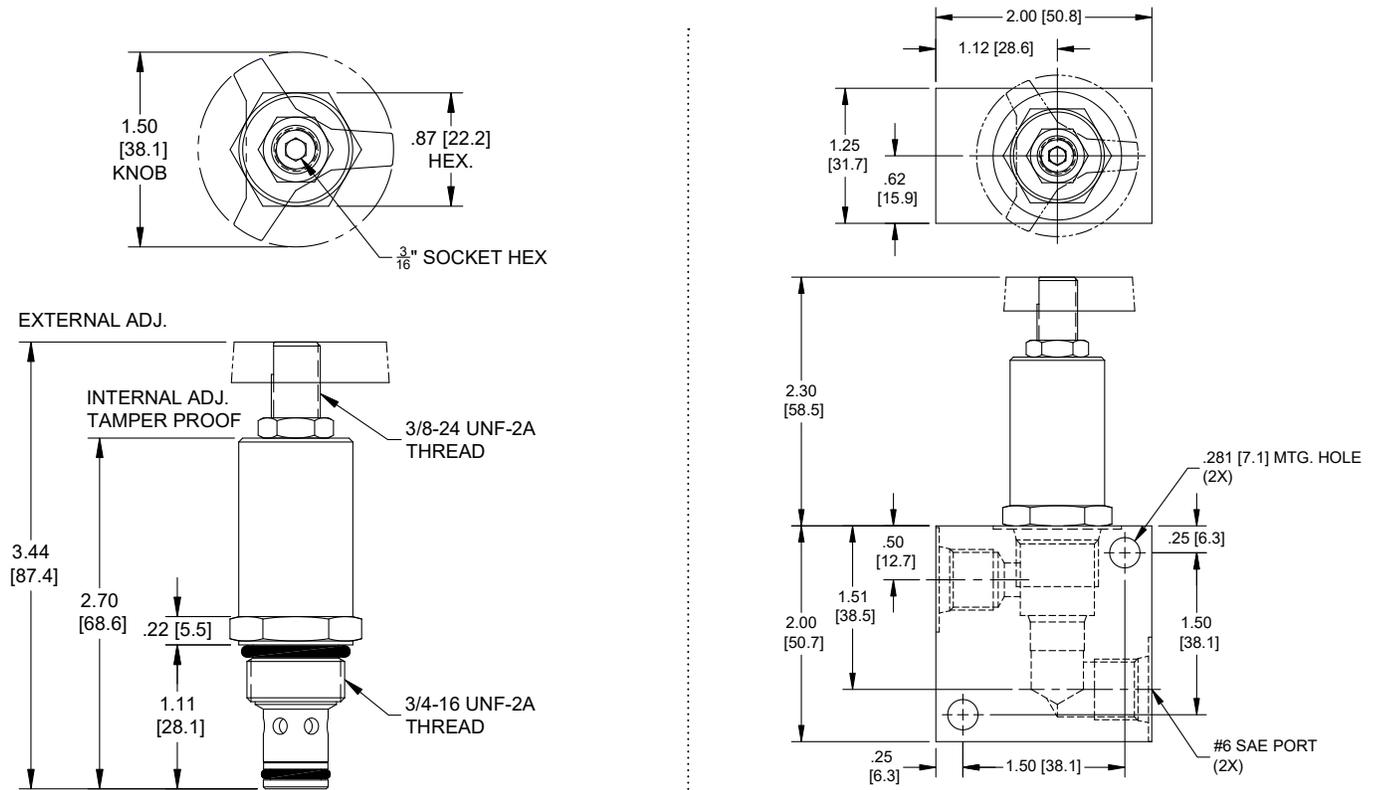


**VALVE SPECIFICATIONS**

Nominal Flow	5 GPM (19 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.26 lbs (.12 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Cavity	POWER 2W
Cavity Form Tool (Finishing)	40500005
Seal Kit	21191100

**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**



Body Weight: .39 lbs (.18 kg)

**ORDERING INFORMATION**

**PB-FCC** -

**OPTIONS**

- External Adjust w/Locknut, Buna **00**
- External Adjust w/Locknut, Viton **V0**
- Knob, Buna **0K**
- Knob, Viton **VK**
- Internal Adjust, Buna **0I**
- Internal Adjust, Viton **VI**
- Tamper Proof, Buna **0T**
- Tamper Proof, Viton **VT**

**BODIES**

- Blank** Without Body
- N** 1/4" NPTF Ports
- S** #6 SAE Ports

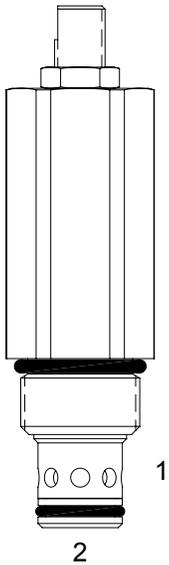
**FLOW**

- 0.45** .25 - .45 GPM
- 0.75** .45 - .75 GPM
- 1.25** .75 - 1.25 GPM
- 2.00** 1.25 - 2.00 GPM
- 5.00** 2.00 - 5.00 GPM

**Tamper Proof**

Fill in 4 Digit Flow Setting  
Example: 02.0 - 2 GPM

**DE-FCC ADJUSTABLE FLOW CONTROL VALVE, PRESSURE COMPENSATED**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, pressure compensated, flow control valve.

**OPERATION**

The DE-FCC maintains a constant flow rate out of (1) regardless of load pressure changes in the circuit downstream of (1). The adjustable control orifice can be set to customer flow specification (see options for ranges). The valve begins to respond to load changes when the flow through the valve creates a pressure differential across the control orifice. Consult chart to see regulation at high and low adjustment settings. Reverse flow (1) to (2) returns through the control orifice and is non-compensated. The regulated flow increases from low to high with clockwise rotation of the knob.

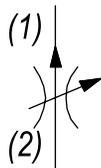
**FEATURES**

- Hardened parts for long life.
- Industry common cavity.
- Fine low-torque adjustment.



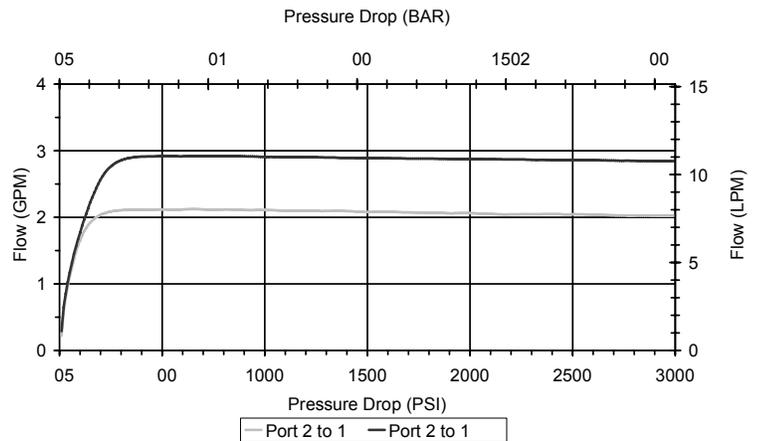
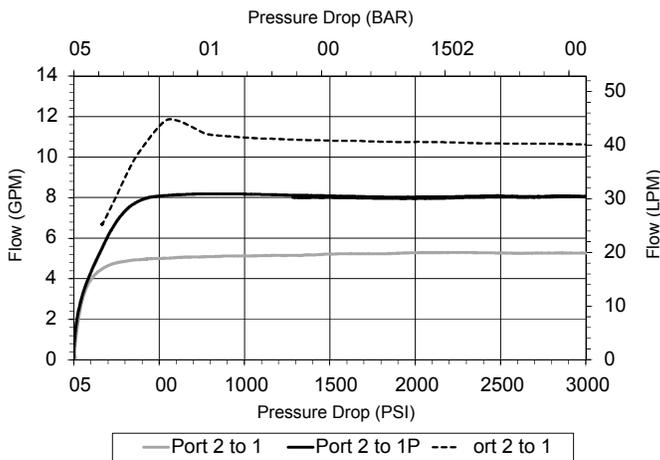
*Lowest pressure drop is obtained with adjustment at lowest setting.*

**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)

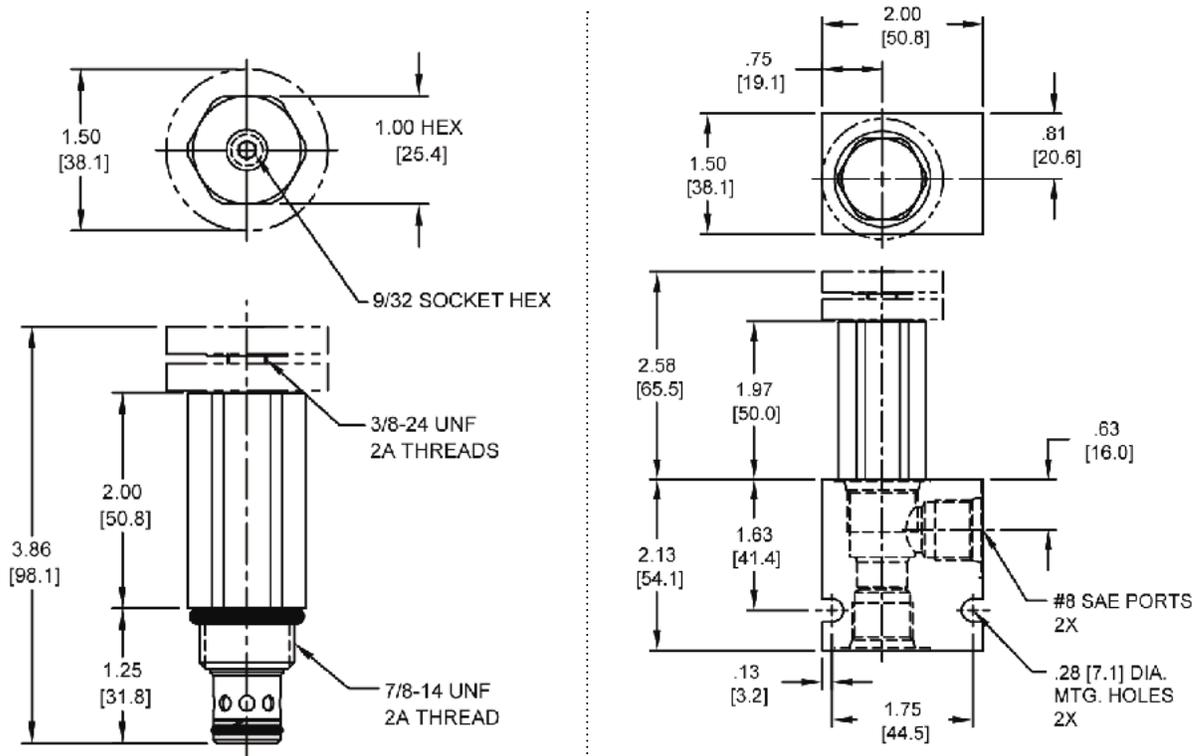


**VALVE SPECIFICATIONS**

Max Regulated Flow	11 GPM (41.5 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.51 lbs (.23 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191200

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**DIMENSIONS**



Body Weight: .47 lbs (.21 kg)

**ORDERING INFORMATION**

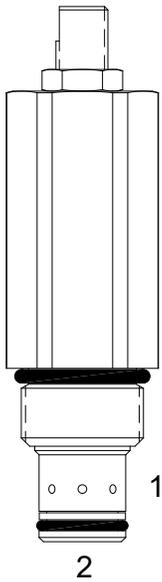
<p><b>DE-FCC</b> -</p> <p><b>OPTIONS</b></p> <p>Buna Standard <b>00</b></p> <p>Viton Standard <b>V0</b></p> <p>Buna, Knob <b>0K</b></p> <p>Viton, Knob <b>VK</b></p>	<p><b>FLOW</b></p> <p><b>1.16</b> 0.80-1.16 GPM</p> <p><b>1.62</b> 1.16-1.62 GPM</p> <p><b>2.09</b> 1.62-2.09 GPM</p> <p><b>2.90</b> 2.09-2.90 GPM</p> <p><b>3.80</b> 2.90-3.80 GPM</p> <p><b>5.00</b> 3.80-5.00 GPM</p> <p><b>8.00</b> 5.00-8.00 GPM</p> <p><b>11.0</b> 8.00-11.0 GPM</p>	<p><b>BODIES</b></p> <p><b>Blank</b> Without Body</p> <p><b>N</b> 3/8" NPTF Ports</p> <p><b>S</b> #8 SAE Ports</p>
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**FLOW**  
 Fill In 4 Digit Flow Setting  
 Example: 4.00 – 4 GPM

**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

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**DE-FAR FULLY ADJUSTABLE FLOW CONTROL VALVE, PRESSURE COMPENSATED**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, pressure compensated, fully adjustable flow control valve.

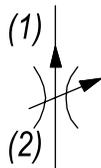
**OPERATION**

The DE-FAR maintains a constant flow rate out of (1) regardless of load pressure changes in the circuit downstream of (1). The adjustable control orifice can be set to customer flow specification. The valve begins to respond to load changes when the flow through the valve creates a pressure differential across the control orifice. Consult chart to see regulation at high and low adjustment settings. Reverse flow (1) to (2) returns through the control orifice and is non-compensated. The regulated flow increases from low to high with counterclockwise rotation of the adjustment knob.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.
- Fine low-torque adjustment.

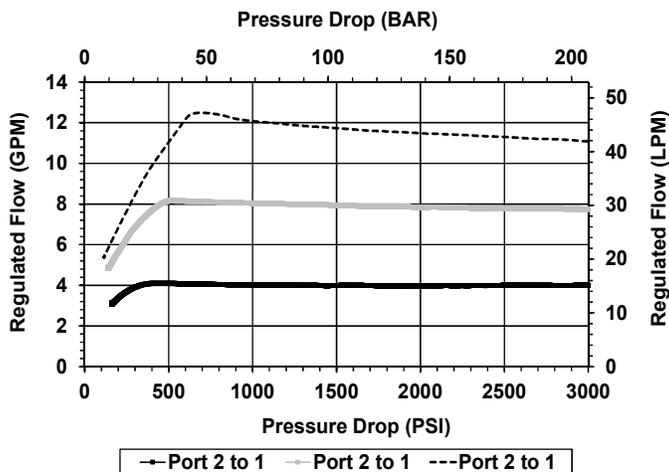
**HYDRAULIC SYMBOL**



"Fully Adjustable," Valve can be adjusted down to leakage flow.

**PERFORMANCE**

Actual Test Data (Cartridge Only)

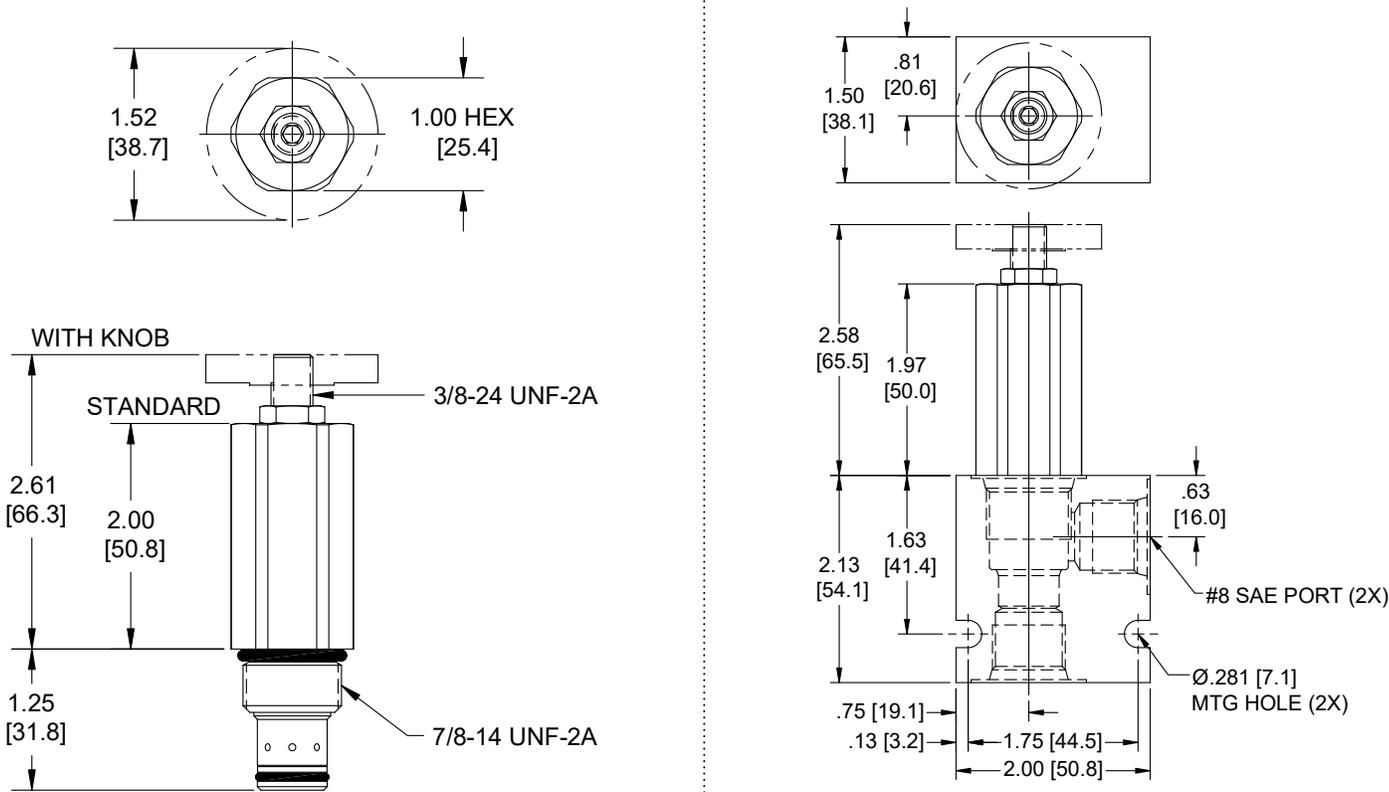


**VALVE SPECIFICATIONS**

Max Regulated Flow	12 GPM (45 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.49 lbs (.22 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Seal Kit	21191200

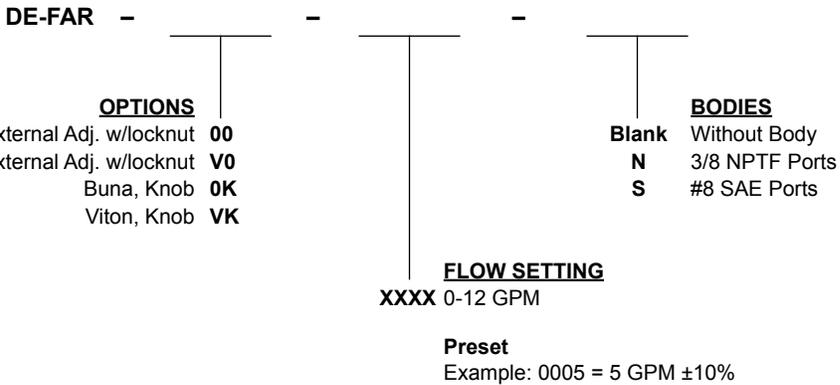
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**



Body Weight: 47 lbs (.21 kg)

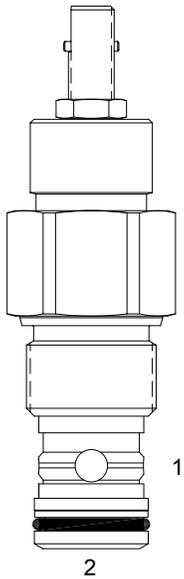
**ORDERING INFORMATION**



**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

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**HT-FCA ADJUSTABLE FLOW CONTROL VALVE, PRESSURE COMPENSATED**



**DESCRIPTION**

“High Pressure” 12 size, 1 1/16 -12 thread, “Tecnord” series, pressure compensated, flow control valve.

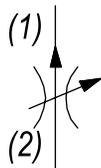
**OPERATION**

The HT-FCA maintains a constant flow rate out of (1) regardless of load pressure changes in the circuit downstream of (1). The adjustable control orifice can be set to customer flow specification (see options for ranges). The valve begins to respond to load changes when the flow through the valve creates a pressure differential across the control orifice. Consult chart to see regulation at high and low adjustment settings. Reverse flow (1) to (2) returns through the control orifice and is non-compensated. The regulated flow increases from low to high with clockwise rotation of the adjustment screw.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.
- Fine low-torque adjustment.

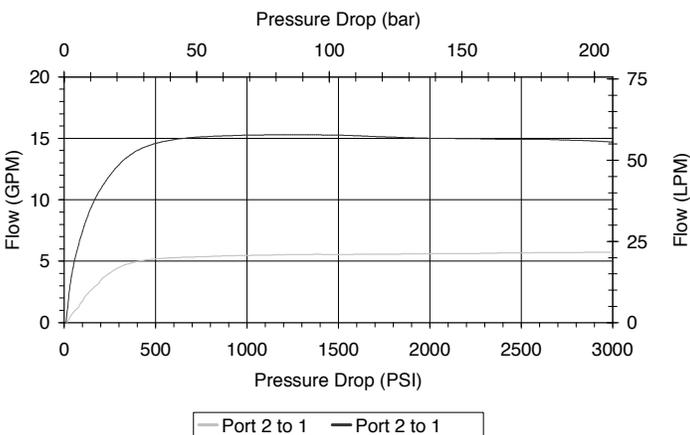
**HYDRAULIC SYMBOL**



Valve can adjust down to approximately 1 GPM. Optimum flow regulation performance achieved when pressure differential is between 500 & 2500 PSI from port (2) to (1).

**PERFORMANCE**

Actual Test Data (Cartridge Only)

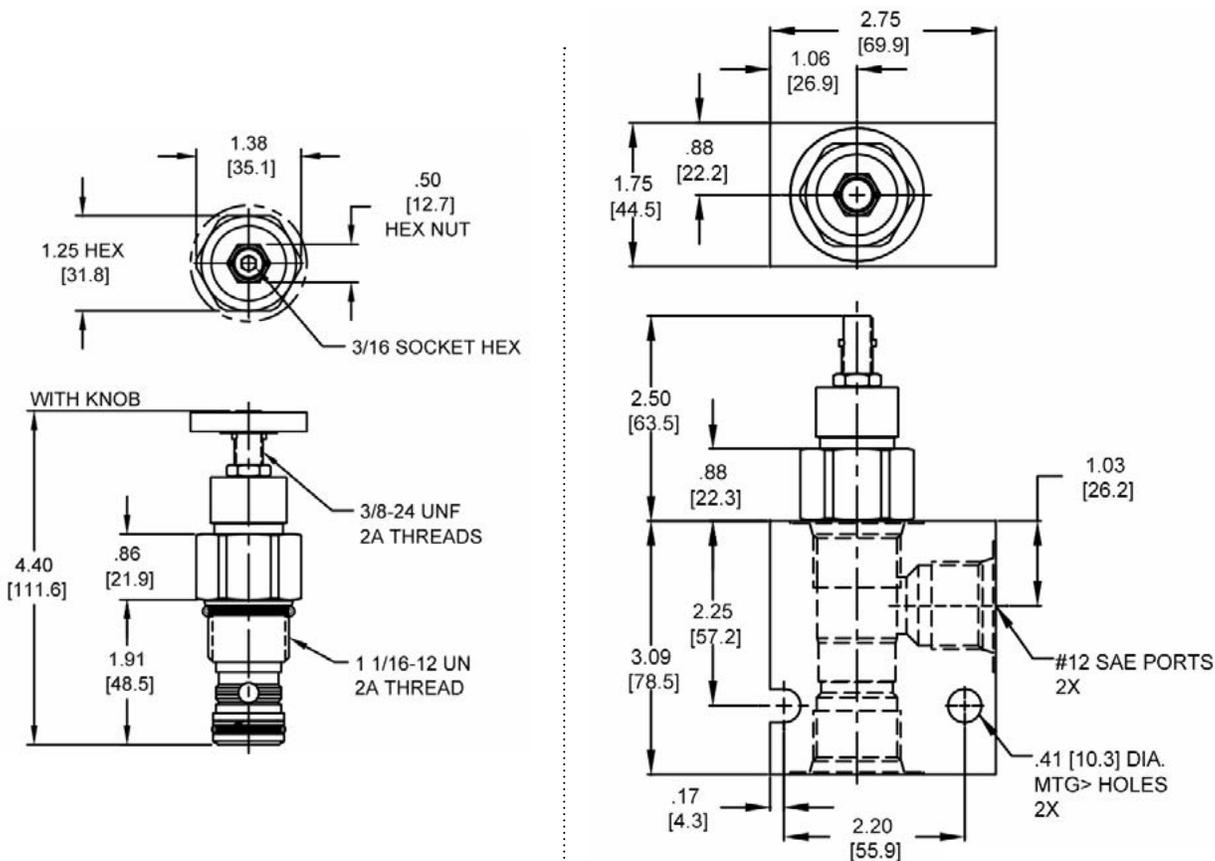


**VALVE SPECIFICATIONS**

Max Regulated Flow	18 GPM (68 LPM)
Rated Operating Pressure	5000 PSI (345 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.73 lbs (.33 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	70 ft-lbs (95 Nm)
Cavity	TECNORD 2W
Cavity Form Tool (Finishing)	40500032
Seal Kit	21191300

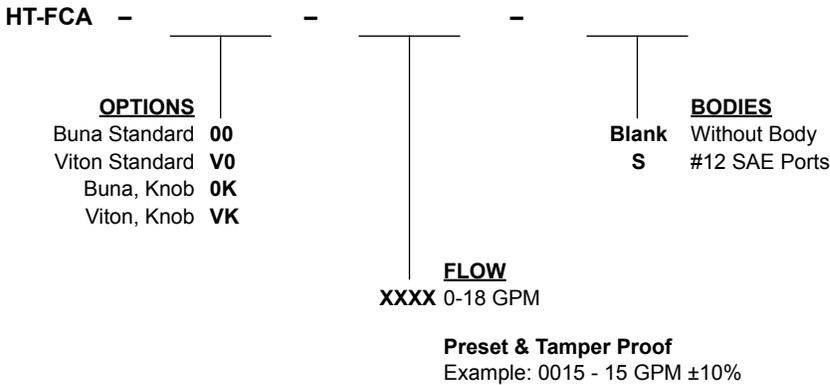
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**



Body Weight: 3.7 lbs (1.7 kg)

**ORDERING INFORMATION**



**Note: aluminum NOT durability rated for 4000 PSI. Consult factory for options.**

**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

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**SJ-FCA ADJUSTABLE FLOW CONTROL VALVE, PRESSURE COMPENSATED**

**DESCRIPTION**

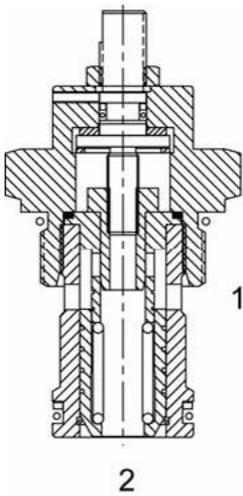
16 size, 1 5/16 -12 thread, "Super" series, pressure compensated, flow control valve.

**OPERATION**

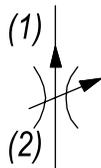
The SJ-FCA maintains a constant flow rate out of (1) regardless of load pressure changes in the circuit downstream of (1). The adjustable control orifice can be set to customer flow specification (see options for ranges). The valve begins to respond to load changes when the flow through the valve creates a pressure differential across the control orifice. Consult chart to see regulation at high and low adjustment settings. Reverse flow (1) to (2) returns through the control orifice and is non-compensated. The regulated flow increases from low to high with clockwise rotation of the adjustment knob.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.
- Fine low-torque adjustment.



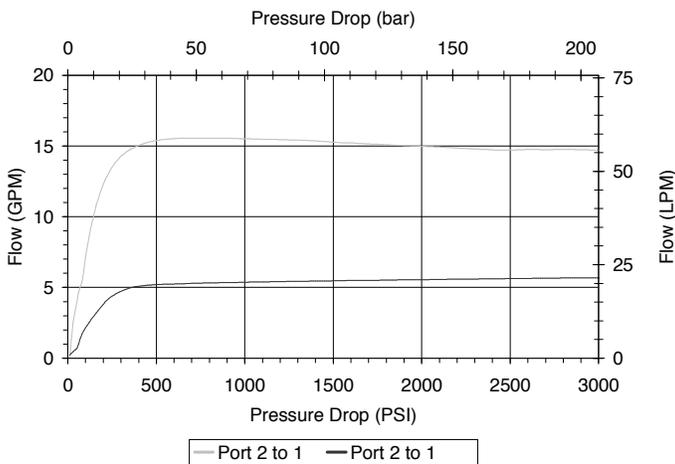
**HYDRAULIC SYMBOL**



*"Fully Adjustable," Valve can be adjusted down to leakage flow.*

**PERFORMANCE**

Actual Test Data (Cartridge Only)



**VALVE SPECIFICATIONS**

Nominal Flow	25 GPM (95 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.89 lbs (.40 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	90 ft-lbs (122 Nm)
Cavity	SUPER 2W
Cavity Form Tool (Finishing)	40500017
Seal Kit	21191400

**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.



**DE-FCB FIXED FLOW CONTROL VALVE, PRESSURE COMPENSATED**

**DESCRIPTION**

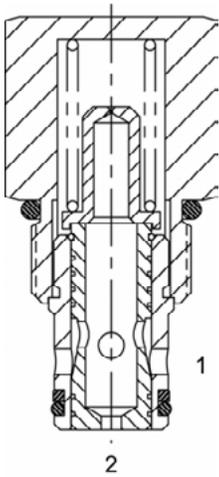
10 size, 7/8-14 thread, "Delta" series, fixed pressure compensated, flow control valve.

**OPERATION**

The DE-FCB maintains a constant flow rate out of (1) regardless of load pressure changes in the circuit downstream of (1). The valve begins to respond to load changes when the flow through the valve creates a pressure differential across the control orifice, in excess of the spring load. Consult chart for regulation performance. Reverse flow (1) to (2) returns through the control orifice and is non-compensated.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.



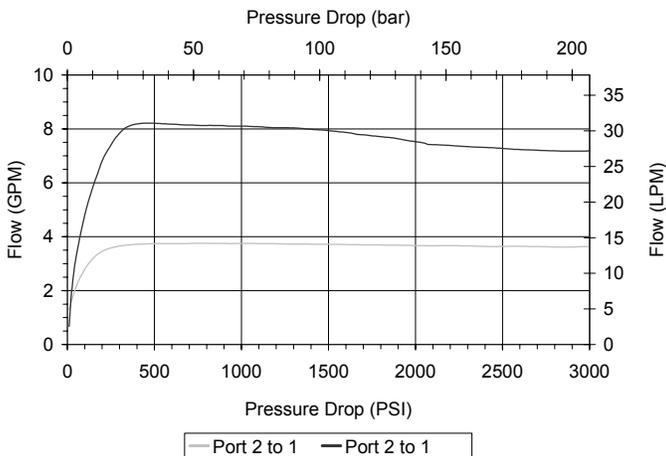
**HYDRAULIC SYMBOL**



*Low pressure drop version for low differential circuits.*

**PERFORMANCE**

Actual Test Data (Cartridge Only)

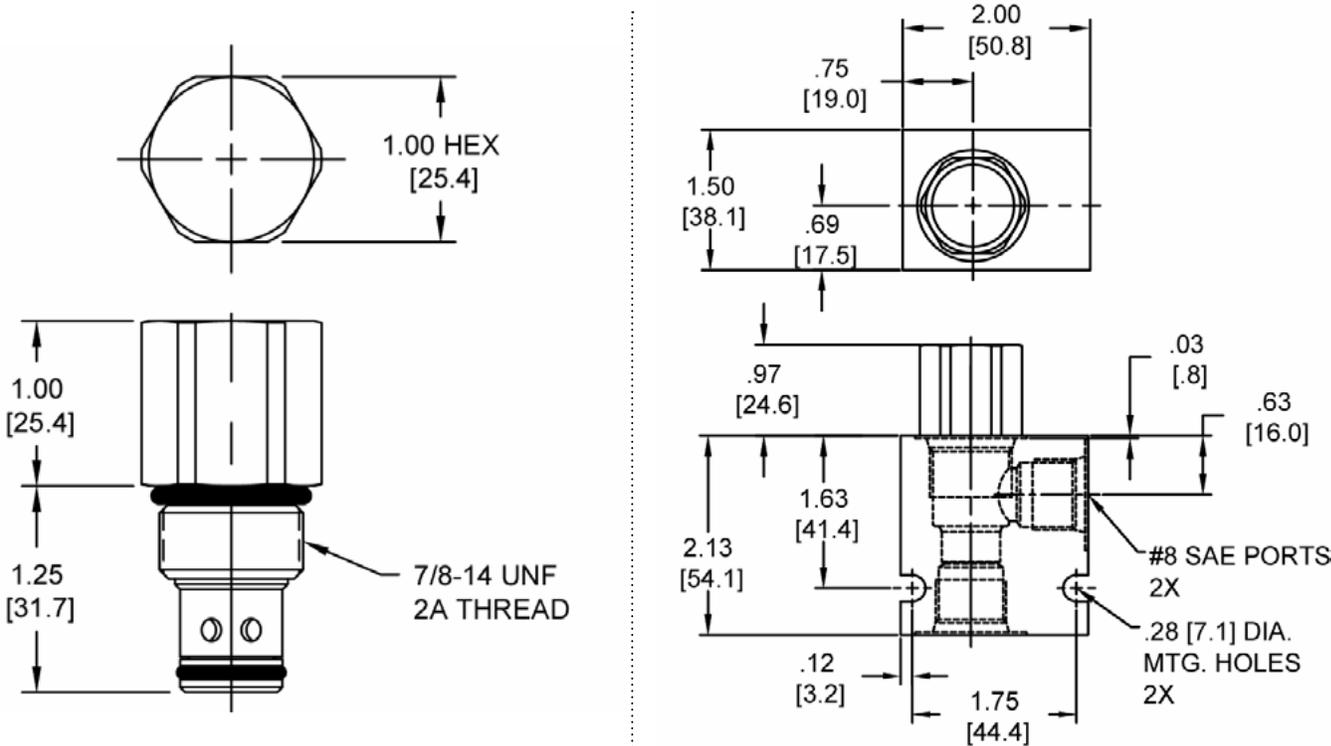


**VALVE SPECIFICATIONS**

Max Regulated Flow	8 GPM (30 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.29 lbs (.13 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191204

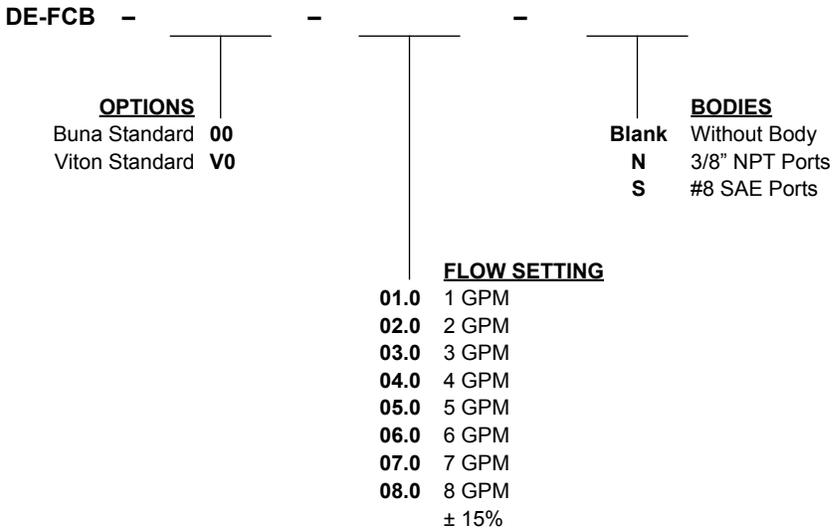
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**



Body Weight: .47 lbs (.21 kg)

**ORDERING INFORMATION**



**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**PB-FCF** FIXED FLOW CONTROL VALVE, PRESSURE COMPENSATED

**DESCRIPTION**

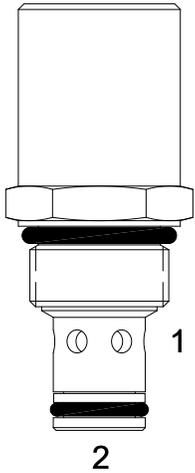
8 size, 3/4-16 thread, "Power" series, pressure compensated flow control valve.

**OPERATION**

The PB-FCF maintains a constant flow rate out of (1) regardless of load pressure changes in the circuit downstream of (1). The valve begins to respond to load changes when the flow through the valve creates a pressure differential across the control orifice, in excess of the spring load. Consult graph for regulation performance. Reverse flow (1) to (2) returns through the control orifice and is non-compensated.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.



**HYDRAULIC SYMBOL**



*Best stability version for high differential circuits.*

**PERFORMANCE**

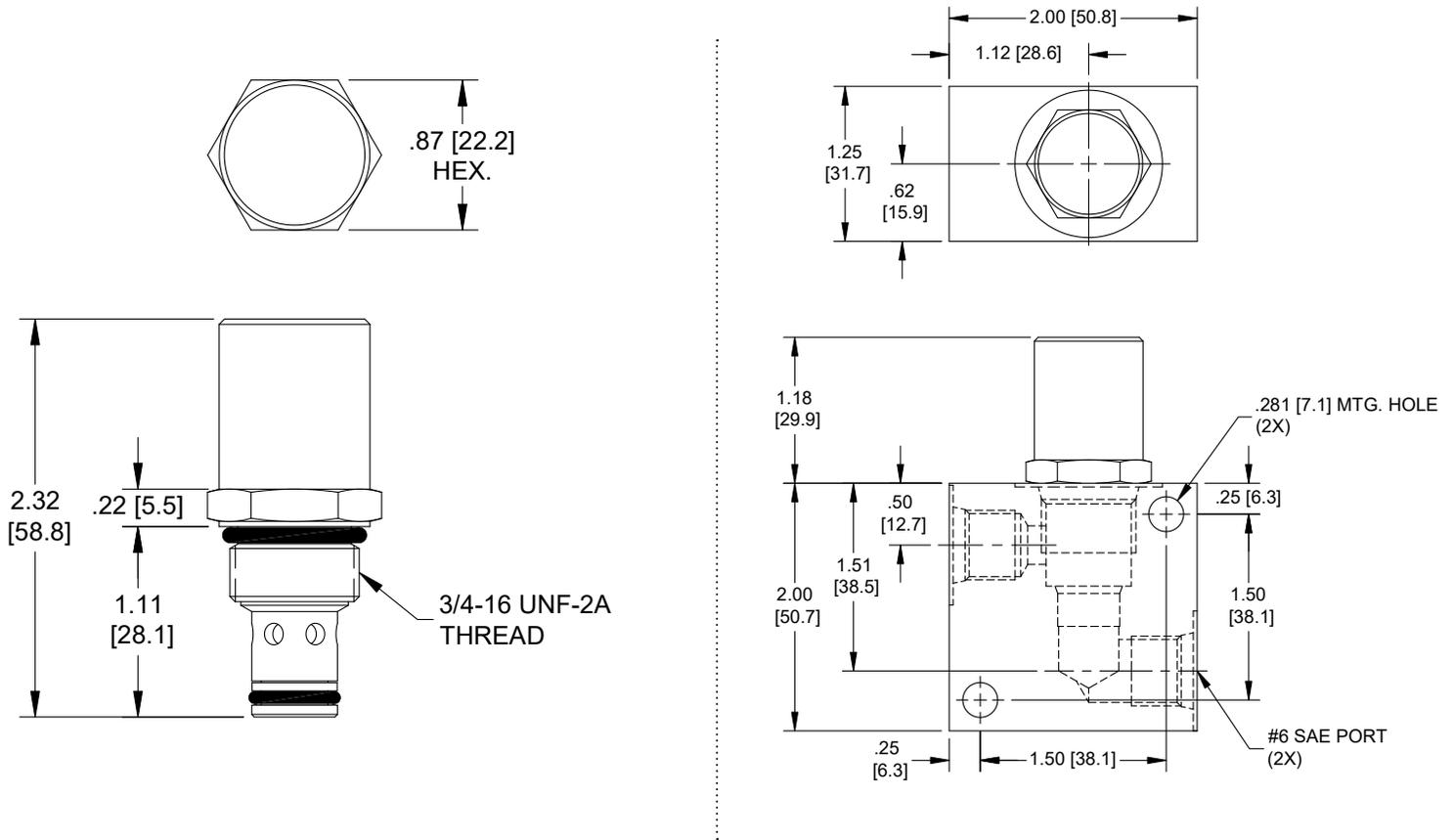
Actual Test Data (Cartridge Only)

**VALVE SPECIFICATIONS**

Maximum Flow	6 GPM (23 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.26 lbs (.12 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Cavity	POWER 2W
Cavity Form Tool (Finishing)	40500005
Seal Kit	21191100

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**DIMENSIONS**



Body Weight: .39 lbs (.18 kg)

**ORDERING INFORMATION**

<p><b>PB-FCF</b> -</p> <p style="text-align: center;"><b>OPTIONS</b></p> <p>Buna Standard <b>00</b></p> <p>Viton Standard <b>V0</b></p>	<p style="text-align: center;"><b>FLOW SETTING</b></p> <p><b>01.0</b> 1 GPM</p> <p><b>02.0</b> 2 GPM</p> <p><b>03.0</b> 3 GPM</p> <p><b>04.0</b> 4 GPM</p> <p><b>05.0</b> 5 GPM</p> <p><b>06.0</b> 6 GPM</p> <p>± 15%</p>	<p style="text-align: center;"><b>BODIES</b></p> <p>Blank Without Body</p> <p><b>N</b> 1/4 NPTF Ports</p> <p><b>S</b> #6 SAE Ports</p>
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**DE-FCF FIXED FLOW CONTROL VALVE, PRESSURE COMPENSATED**

**DESCRIPTION**

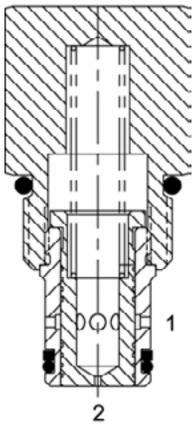
10 size, 7/8-14 thread, "Delta" series, fixed pressure compensated, flow control valve.

**OPERATION**

The DE-FCF maintains a constant flow rate out of (1) regardless of load pressure changes in the circuit downstream of (1). The valve begins to respond to load changes when the flow through the valve creates a pressure differential across the control orifice, in excess of the spring load. Consult chart for regulation performance. Reverse flow (1) to (2) returns through the control orifice and is non-compensated.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.



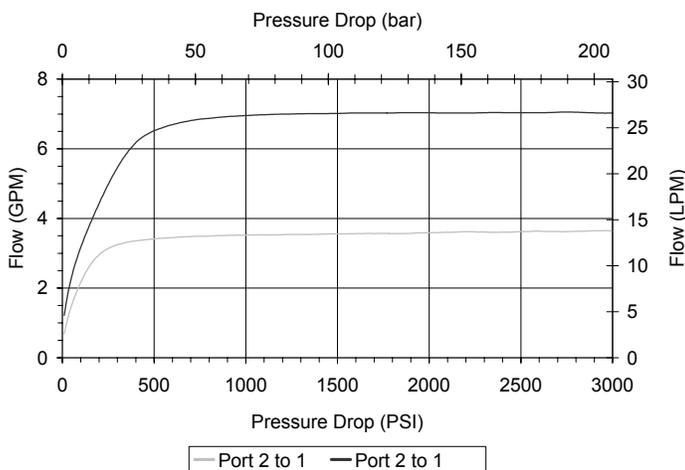
**HYDRAULIC SYMBOL**



*Best stability version for high differential circuits.*

**PERFORMANCE**

Actual Test Data (Cartridge Only)

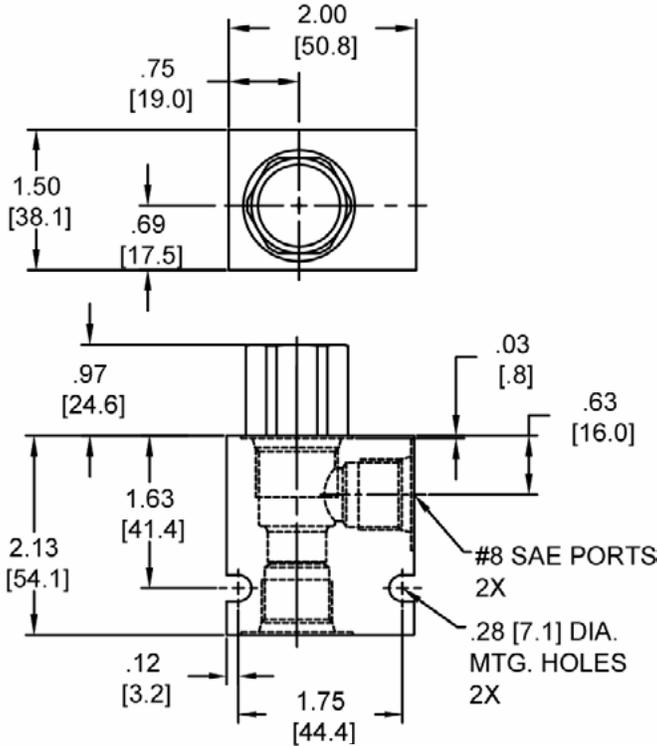
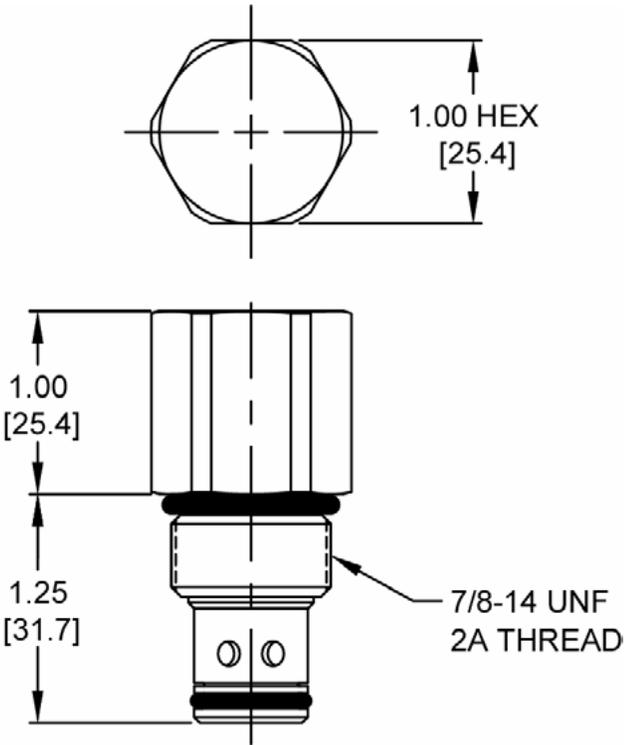


**VALVE SPECIFICATIONS**

Maximum Flow	8 GPM (30 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.32 lbs (.15 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191204

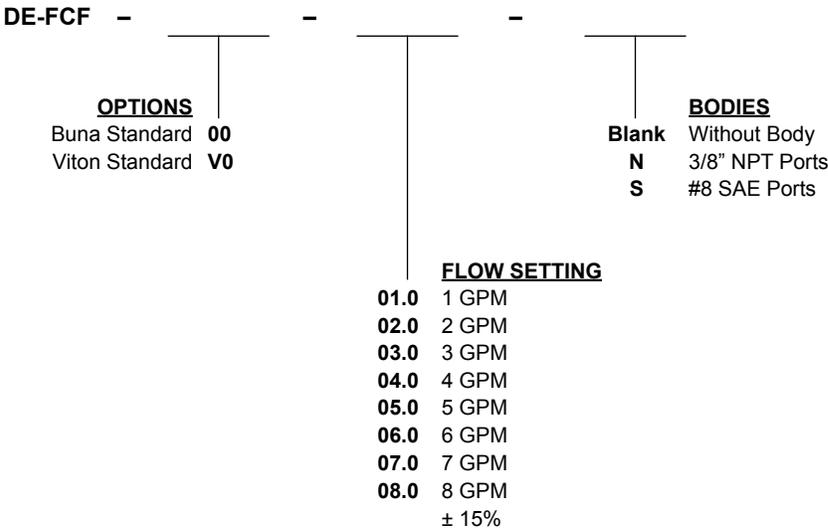
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**



Body Weight: .47 lbs (.21 kg)

**ORDERING INFORMATION**



**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**SJ-FCF FIXED FLOW CONTROL VALVE, PRESSURE COMPENSATED**

**DESCRIPTION**

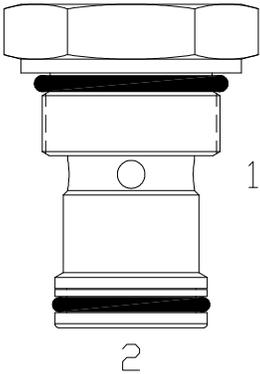
16 size, 1 5/16-12 thread, "Super" series, fixed pressure compensated, flow control valve.

**OPERATION**

The SJ-FCF maintains a constant flow rate out of (1) regardless of load pressure changes in the circuit downstream of (1). The valve begins to respond to load changes when the flow through the valve creates a pressure differential across the control orifice, in excess of the spring load. Consult chart for regulation performance. Reverse flow (1) to (2) returns through the control orifice and is non-compensated.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.



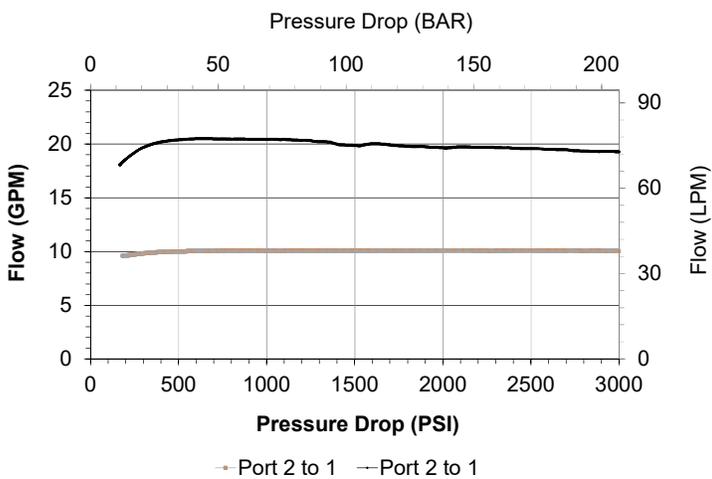
**HYDRAULIC SYMBOL**



For adjustable setting see SJ-FCA.

**PERFORMANCE**

Actual Test Data (Cartridge Only)

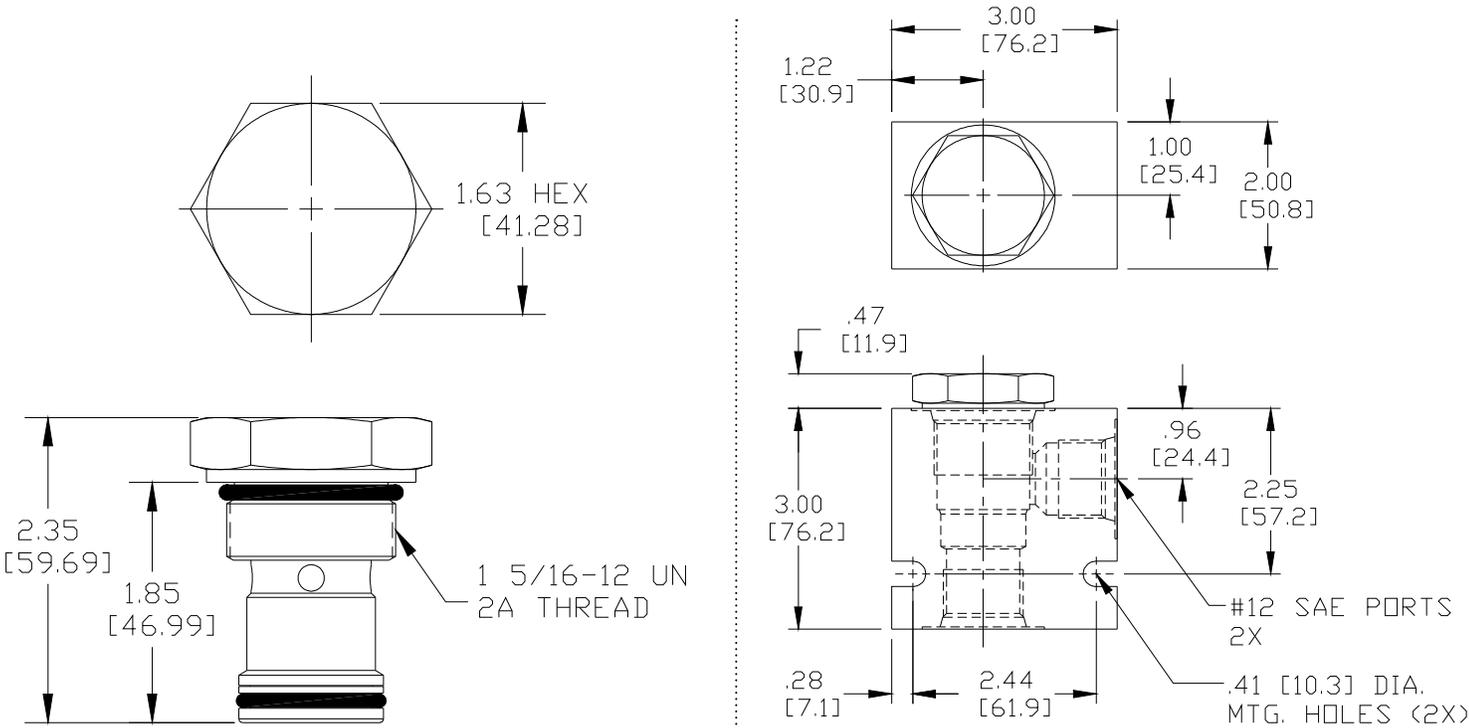


**VALVE SPECIFICATIONS**

Flow Rate	As specified from 5-25 GPM (19-95 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.65 lbs (.29 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	90 ft-lbs (122 Nm)
Cavity	SUPER 2W
Cavity Form Tool (Finishing)	40500017
Seal Kit	21191400

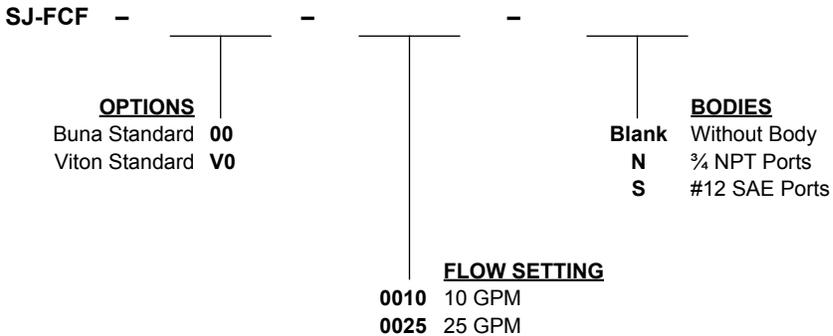
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**



Body Weight: 1.29 lbs (.59 kg)

**ORDERING INFORMATION**



Additional flow settings available upon request

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**PRIORITY FLOW REGULATOR VALVES**

	GPM	PSI	LPM	BAR	CAVITY	MODEL	PAGE
	5	3500	19	241	3/4-16	PP-FCQ	MF48
	10	3000	38	207	7/8-14	DF-FCQ	MF50
	10	3000	38	207	7/8-14	DF-FAP	MF52
	25	3000	95	207	1 5/16-12	SK-FCQ	MF54
	5	3500	19	241	3/4-16	PP-FCP	MF56
	10	3000	38	207	7/8-14	DF-FCP	MF58
	25	3000	95	207	1 5/16-12	SK-FCP	MF60

**LS STEERING PRIORITY**

	GPM	PSI	LPM	BAR	CAVITY	MODEL	PAGE
	9	3000	34	207	7/8-14	DG-PDS	MF62
	20	3000	76	207	1 5/16-12	SO-PDS	MF64
	9	3000	34	207	7/8-14	DG-PDD	MF66
	20	3000	76	207	1 5/16-12	SO-PDD	MF68

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**PP-FCQ ADJUSTABLE PRIORITY FLOW CONTROL VALVE**

**DESCRIPTION**

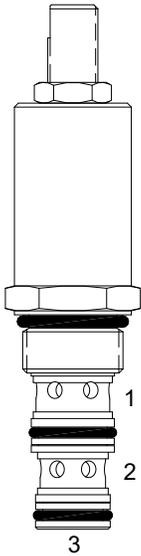
8 size, 3/4-16 thread, "Power" series, adjustable priority flow control valve.

**OPERATION**

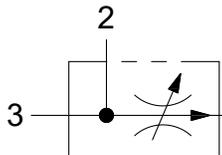
The PP-FCQ allows pressure compensated flow from (3) to (1) regulated by the pressure present at (3). Excess flow bypasses out (2).

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.



**HYDRAULIC SYMBOL**



Test data shown on this sheet, for condition of port (2) to tank. Data on next page, for condition of port (3) to tank.

**PERFORMANCE**

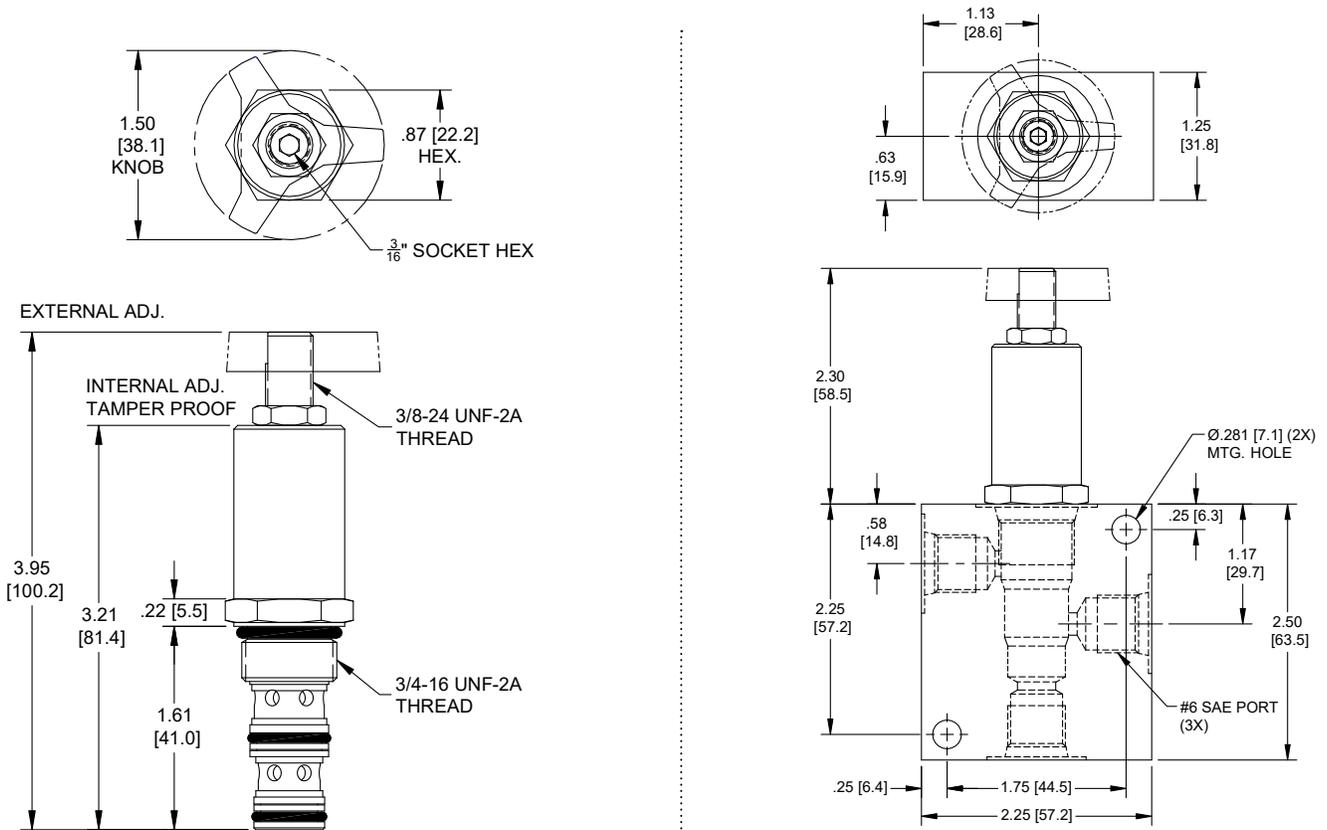
Actual Test Data (Cartridge Only)

**VALVE SPECIFICATIONS**

Nominal Flow	5 GPM (19 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.56 lbs (.25 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (33.8 Nm)
Cavity	POWER 3W
Cavity Form Tool (Finishing)	40500024
Seal Kit	21191106

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DIMENSIONS



Body Weight: .56 lbs (.25 kg)

ORDERING INFORMATION

PP-FCQ -

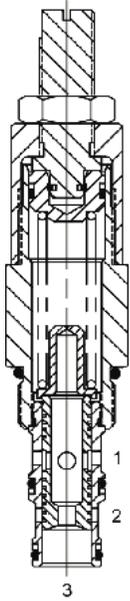
- OPTIONS**
- External Adjust w/Locknut, Buna **00**
  - External Adjust w/Locknut, Viton **V0**
  - Knob, Buna **0K**
  - Knob, Viton **VK**
  - Internal Adjust, Buna **0I**
  - Internal Adjust, Viton **VI**
  - Tamper Proof, Buna **0T**
  - Tamper Proof, Viton **VT**

- BODIES**
- Blank** Without Body
  - N** 1/4" NPTF Ports
  - S** #6 SAE Ports

- FLOW**
- 0.50** .25 - .50 GPM
  - 0.75** .50 - .75 GPM
  - 1.25** .75 - 1.25 GPM
  - 2.50** 1.25 - 2.50 GPM
  - 5.00** 2.50 - 5.00 GPM

**Tamper Proof**  
 Fill in 4 Digit Flow Setting  
 Example: 01.0 - 1.0 GPM

**DF-FCQ ADJUSTABLE PRIORITY FLOW CONTROL VALVE**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, adjustable priority flow control valve.

**OPERATION**

The DF-FCQ allows pressure compensated flow from (3) to (1) regulated by the pressure present at (3). Excess flow bypasses out (2).

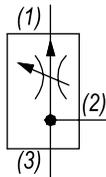
**FEATURES**

- Hardened parts for long life.
- Industry common cavity.



Test data shown on this sheet, for condition of port (2) to tank. Data on next page, for condition of port (3) to tank.

**HYDRAULIC SYMBOL**

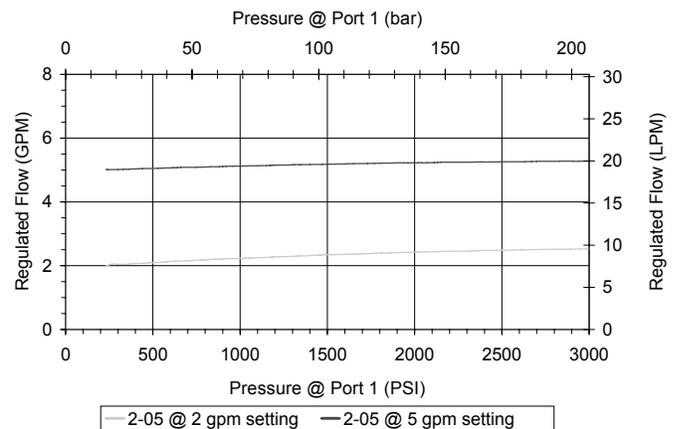
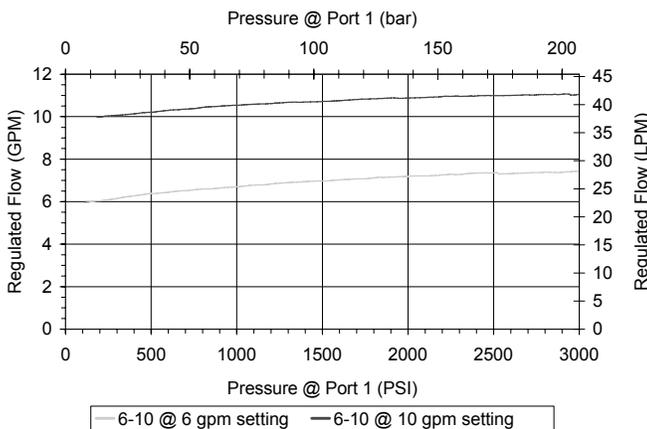


**PERFORMANCE**

Actual Test Data (Cartridge Only)

**VALVE SPECIFICATIONS**

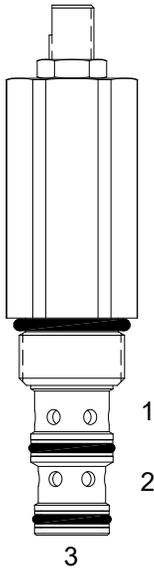
Nominal Flow	10 GPM (38 LPM)
Rated Operating Pressure	3000 PSI (207 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.56 lbs (.25 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 3W
Cartridge Form Tool (Finishing)	40500001
Seal Kit	21191206



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**DF-FAP FULLY ADJUSTABLE PRIORITY FLOW CONTROL VALVE WITH BYPASS**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, fully adjustable priority flow control valve with bypass.

**OPERATION**

The DF-FAP allows pressure compensated flow from (3) to (1), regulated by the pressure present at (3). Excess flow bypasses out (2). Can be used as a restrictive pressure compensated flow control when the bypass port (2) is blocked.

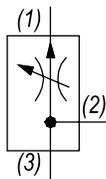
**FEATURES**

- Hardened cage and spool for long life.
- Industry common cavity.



*When used as a bypass flow control in applications where the priority flow port will be blocked by external valving, bypass pressure drop will increase unless a small amount of leakage is provided for the priority port. Consult factory.*

**HYDRAULIC SYMBOL**

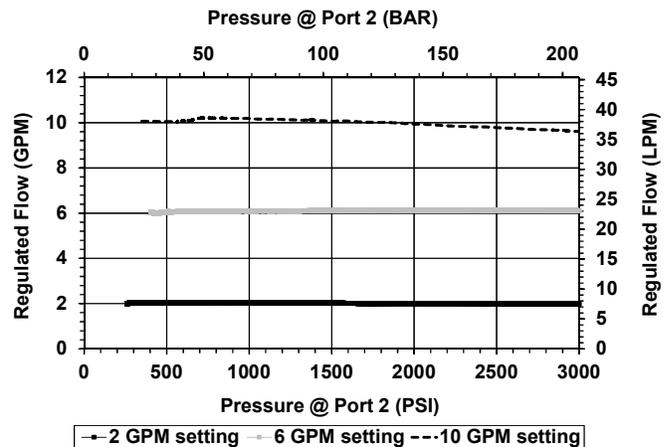
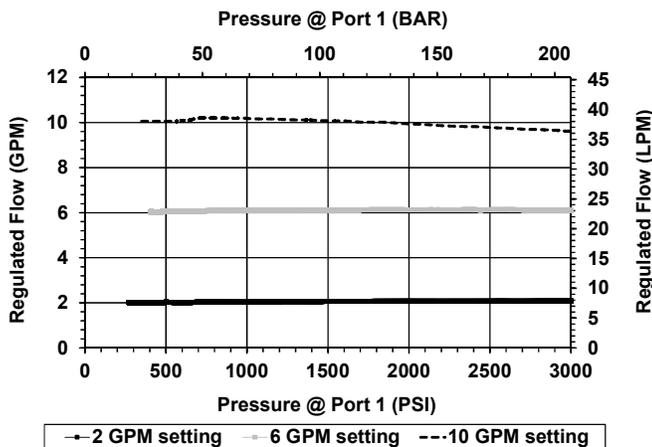


**PERFORMANCE**

Actual Test Data (Cartridge Only)

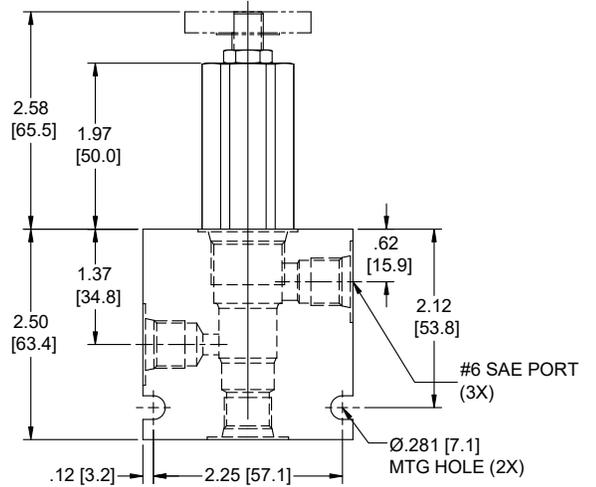
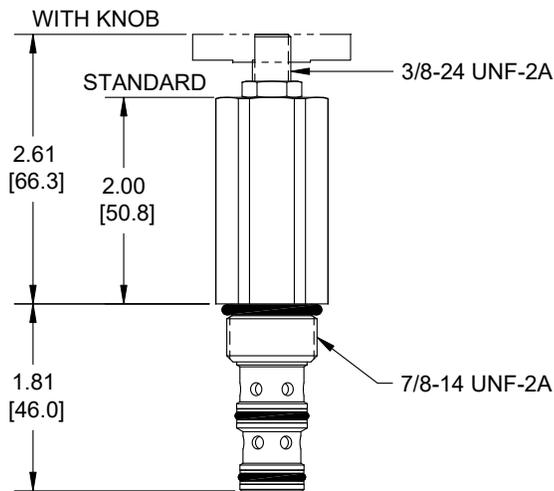
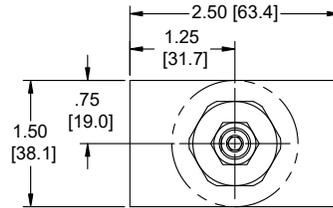
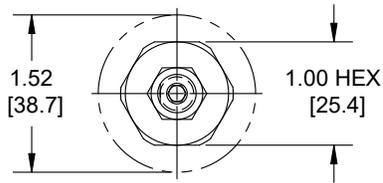
**VALVE SPECIFICATIONS**

Max Regulated Flow	10 GPM (38 LPM)
Rated Operating Pressure	3000 PSI (207 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.40 lbs (.18 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 3W
Cartridge Form Tool (Finishing)	40500001
Seal Kit	21191210



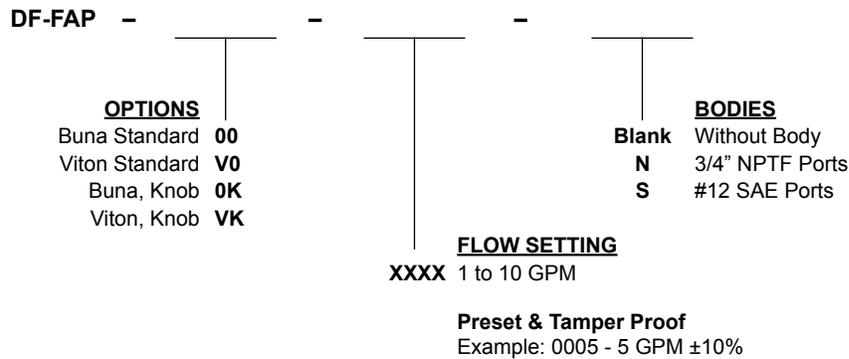
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**



Body Weight: .60 lbs (.27 kg)

**ORDERING INFORMATION**



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**SK-FCQ ADJUSTABLE PRIORITY FLOW CONTROL VALVE**

**DESCRIPTION**

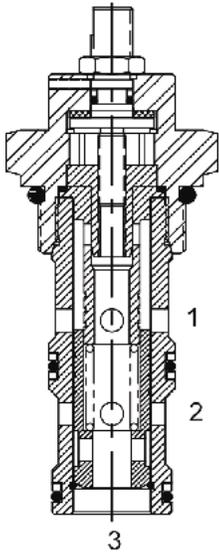
16 size, 1 5/16-12 thread, "Super" series, adjustable priority flow control valve.

**OPERATION**

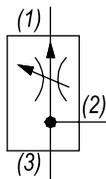
The SK-FCQ allows pressure compensated flow from (3) to (1) regulated by the pressure present at (3). Excess flow bypasses out (2). The spring chamber is constantly vented at (1).

**FEATURES**

- Hardened cage and spool for long life.
- Industry common cavity.

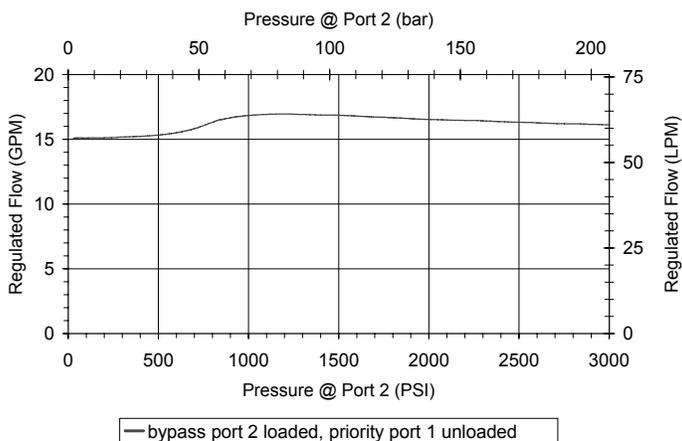


**HYDRAULIC SYMBOL**



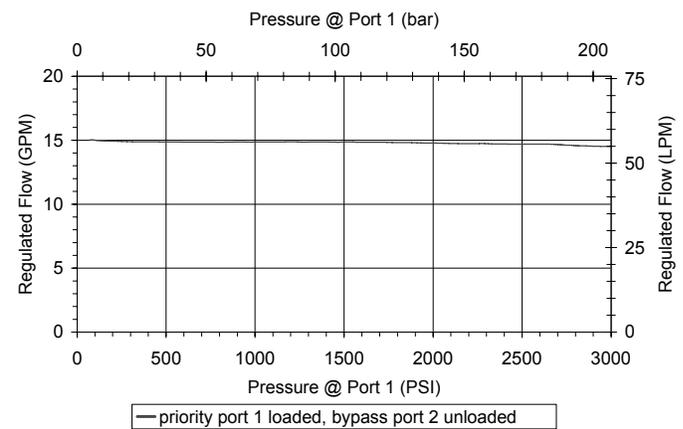
**PERFORMANCE**

Actual Test Data (Cartridge Only)



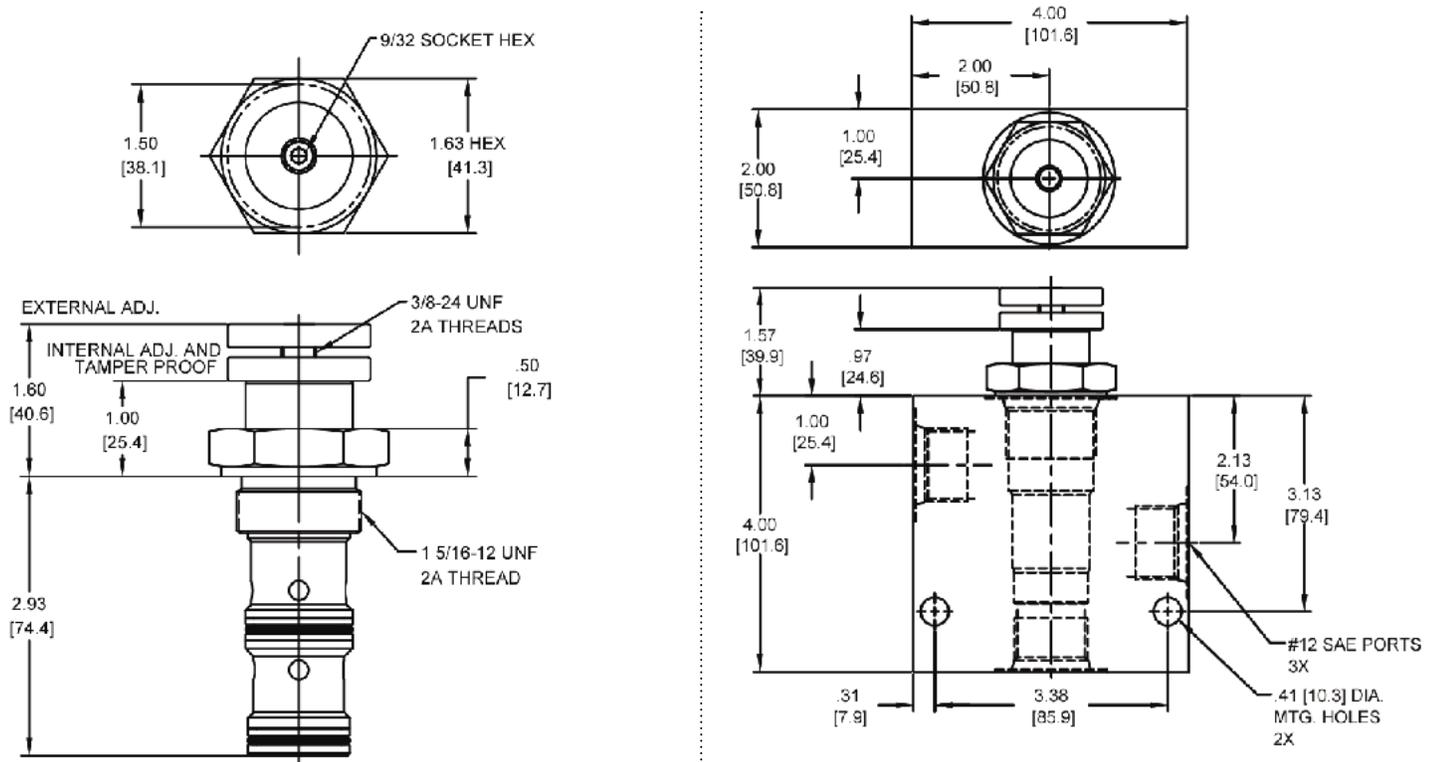
**VALVE SPECIFICATIONS**

Max Regulated Flow	25 GPM (95 LPM)
Rated Operating Pressure	500-3000 PSI (34-207 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.96 lbs (.44 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	90 ft-lbs (122 Nm)
Cavity	SUPER 3W
Cavity Form Tool (Finishing)	40500018
Seal Kit	21191404



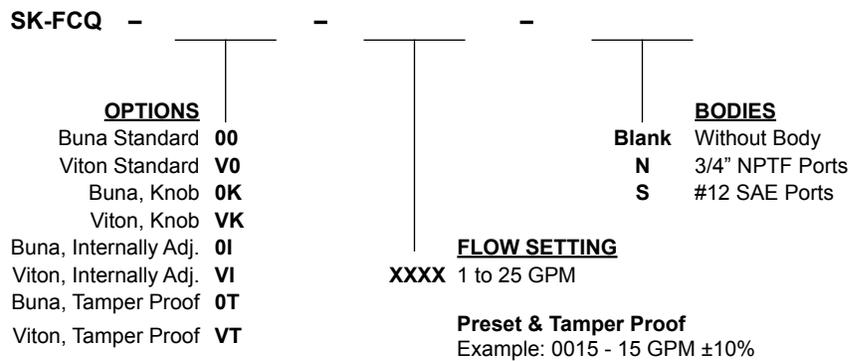
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**



Body Weight: 2.46 lbs (1.11 kg)

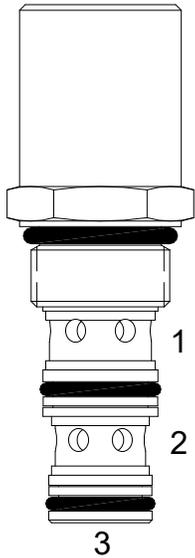
**ORDERING INFORMATION**



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**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**PP-FCP FIXED PRIORITY FLOW CONTROL VALVE**



**DESCRIPTION**

8 size, 3/4-16 thread, "Power" series, fixed priority flow control valve.

**OPERATION**

The PP-FCP allows pressure compensated flow from (3) to (1) regulated by the pressure present at (3). Excess flow bypasses out (2).

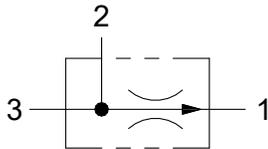
**FEATURES**

- Hardened parts for long life.
- Industry common cavity.



Test data shown on this sheet, for condition of port (2) to tank. Data on next page, for condition of port (3) to tank.

**HYDRAULIC SYMBOL**



**PERFORMANCE**

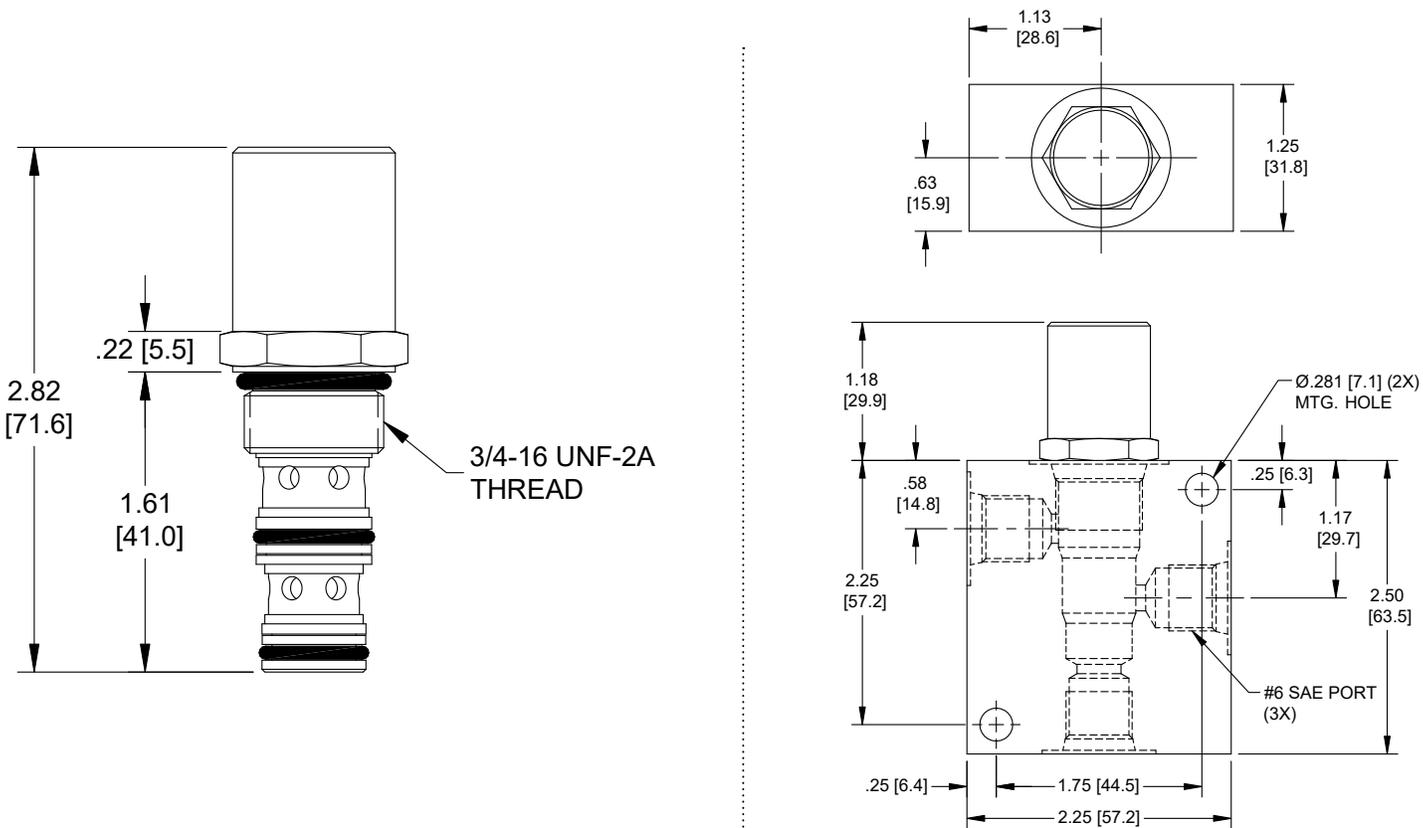
Actual Test Data (Cartridge Only)

**VALVE SPECIFICATIONS**

Maximum Flow	5 GPM (19 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.56 lbs (.25 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Cavity	POWER 3W
Cavity Form Tool (Finishing)	40500024
Seal Kit	21191106

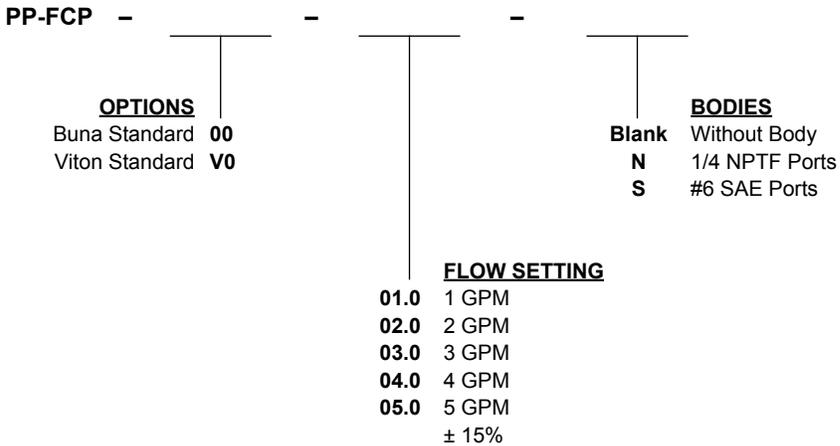
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

DIMENSIONS



Body Weight: .56 lbs (.25 kg)

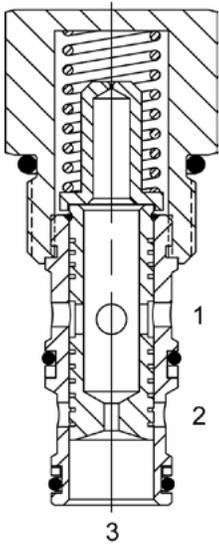
ORDERING INFORMATION



**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

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**DF-FCP FIXED PRIORITY FLOW CONTROL VALVE**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, fixed priority flow control valve.

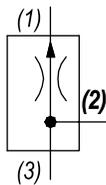
**OPERATION**

The DF-FCP allows pressure compensated flow from (3) to (1) regulated by the pressure present at (3). Excess flow bypasses out (2). The spring chamber is constantly vented at (1).

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

**HYDRAULIC SYMBOL**

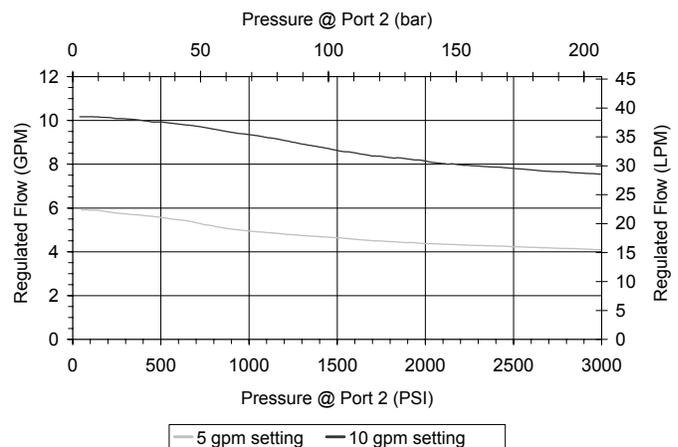
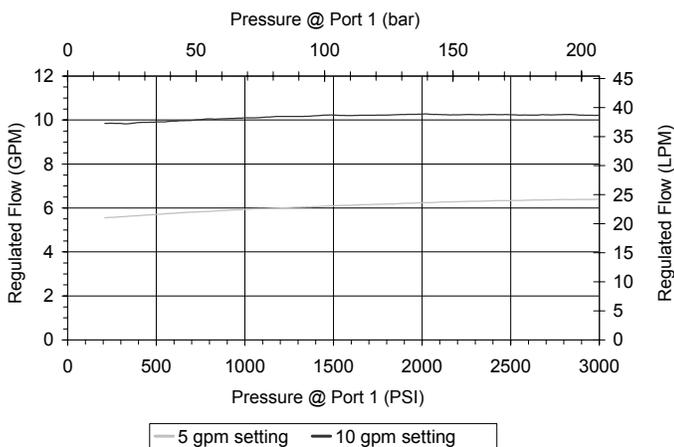


**PERFORMANCE**

Actual Test Data (Cartridge Only)

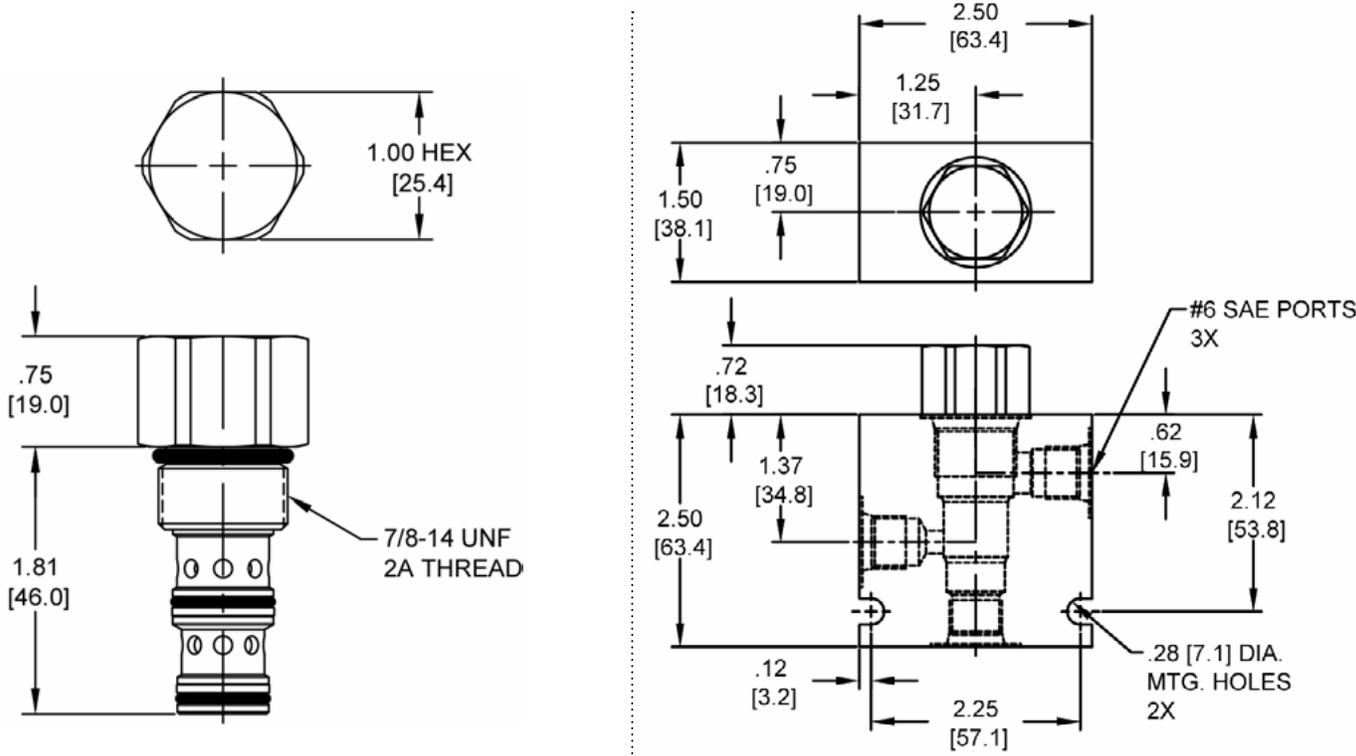
**VALVE SPECIFICATIONS**

Maximum Flow	10 GPM (38 LPM)
Rated Operating Pressure	3000 PSI (207 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.26 lbs (.12 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 3W
Cartridge Form Tool (Finishing)	40500001
Seal Kit	21191206



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DIMENSIONS



Body Weight: .76 lbs (.35 kg)

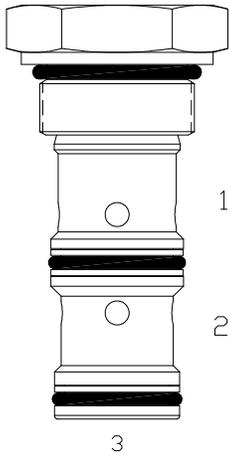
ORDERING INFORMATION

<p><b>DF-FCP</b> -</p> <p style="text-align: center;"><b>OPTIONS</b></p> <p>Buna Standard <b>00</b></p> <p>Viton Standard <b>V0</b></p>	<p style="text-align: center;"><b>FLOW SETTING</b></p> <p><b>01.0</b> 1 GPM</p> <p><b>02.0</b> 2 GPM</p> <p><b>03.0</b> 3 GPM</p> <p><b>04.0</b> 4 GPM</p> <p><b>05.0</b> 5 GPM</p> <p><b>06.0</b> 6 GPM</p> <p><b>07.0</b> 7 GPM</p> <p><b>08.0</b> 8 GPM</p> <p><b>09.0</b> 9 GPM</p> <p><b>10.0</b> 10 GPM</p> <p>± 15%</p>	<p style="text-align: center;"><b>BODIES</b></p> <p>Blank Without Body</p> <p><b>N</b> 1/4" NPTF Ports</p> <p><b>S</b> #6 SAE Ports</p>
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**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

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**SK-FCP FIXED PRIORITY FLOW CONTROL VALVE**



**DESCRIPTION**

16 size, 1 5/16-12 thread, "Super" series, fixed priority flow control valve.

**OPERATION**

The SK-FCP allows pressure compensated flow from (3) to (1) regulated by the pressure present at (3). Excess flow bypasses out (2). The spring chamber is constantly vented at (1).

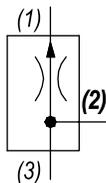
**FEATURES**

- Hardened parts for long life.
- Industry common cavity.



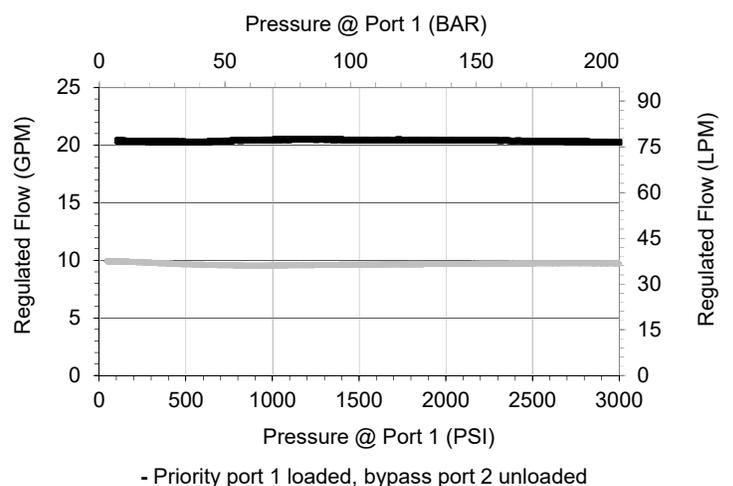
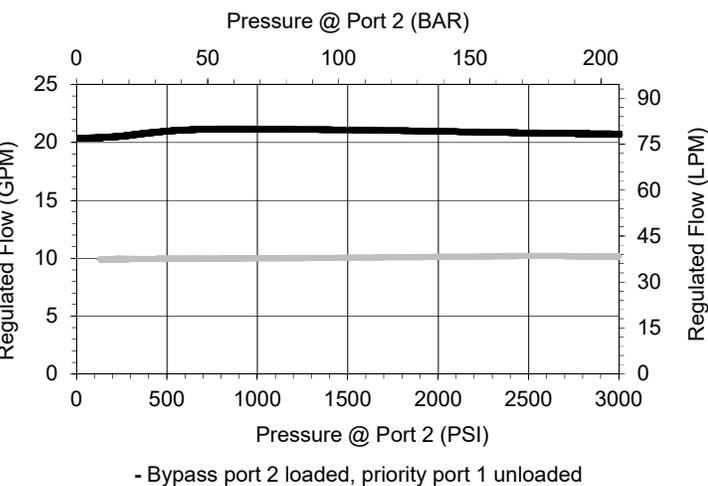
For adjustable setting see SK-FCQ.

**HYDRAULIC SYMBOL**



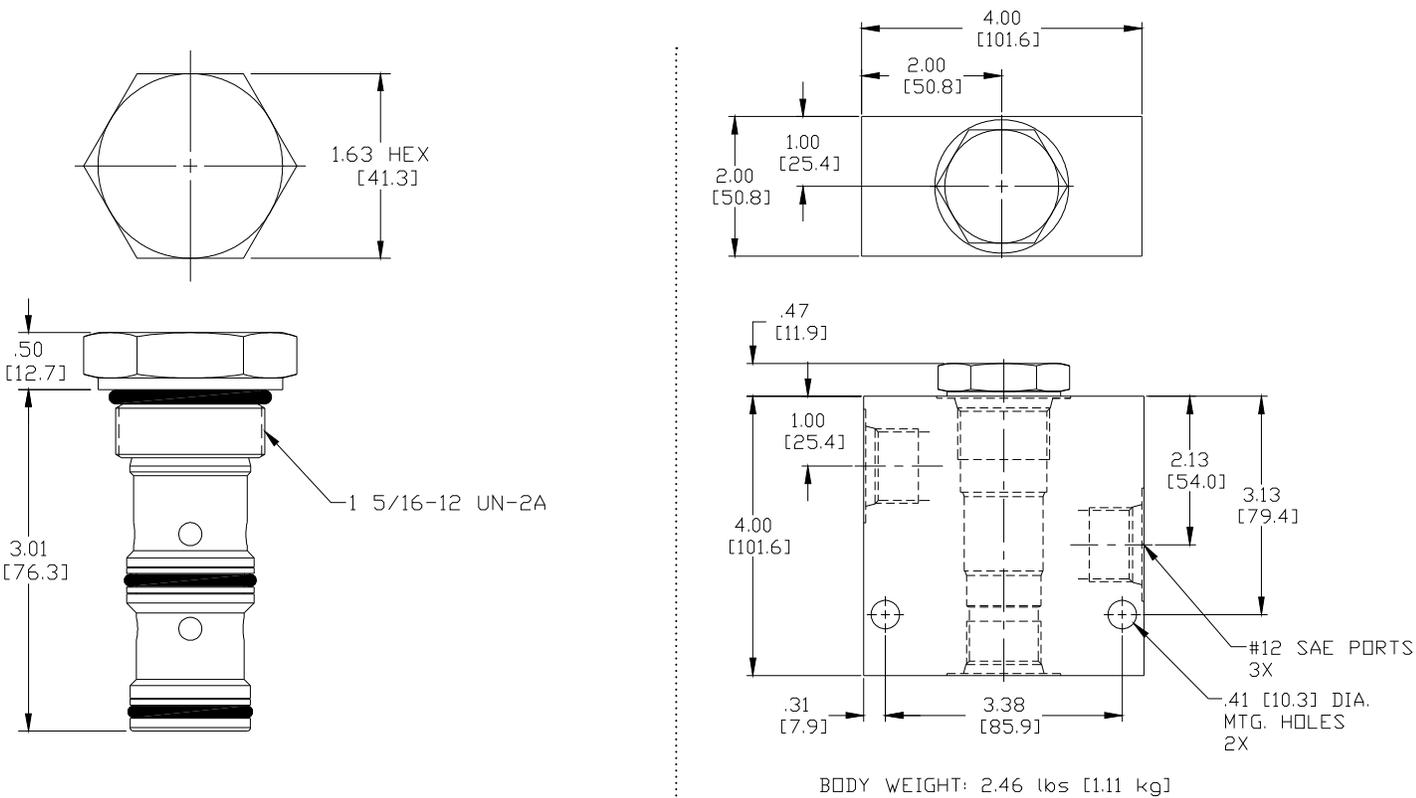
**PERFORMANCE**

Actual Test Data (Cartridge Only)



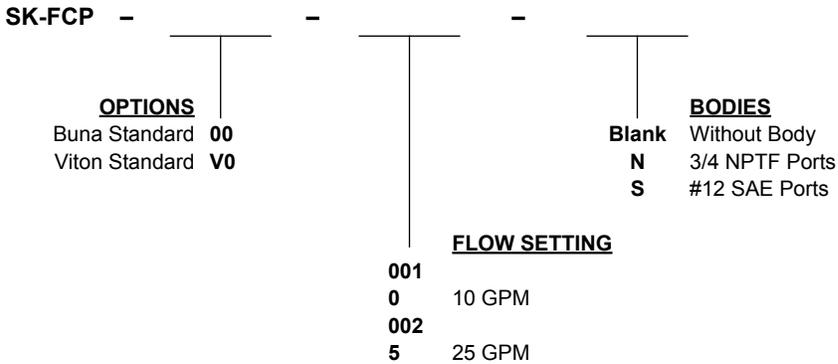
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**



Body Weight: 2.46 lbs (1.11 kg)

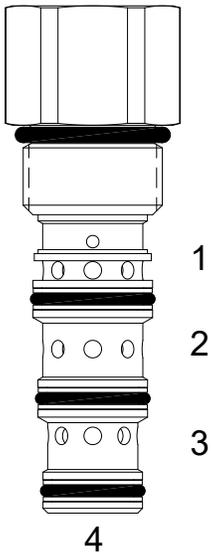
**ORDERING INFORMATION**



Additional flow settings available upon request

W 28 / 2022 **WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DG-PDS STEERING PRIORITY FLOW CONTROL VALVE WITH STATIC LOAD SENSE**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, steering priority flow control valve with static load sense.

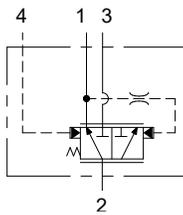
**OPERATION**

The DG-PDS allows priority flow from (2) to (1) regardless of load pressure at either port (1) or port (3). Excess flow bypasses out (3). Port (4) is the load sense port.

**FEATURES**

- Hardened cage and spool for long life.
- Industry common cavity.

**HYDRAULIC SYMBOL**



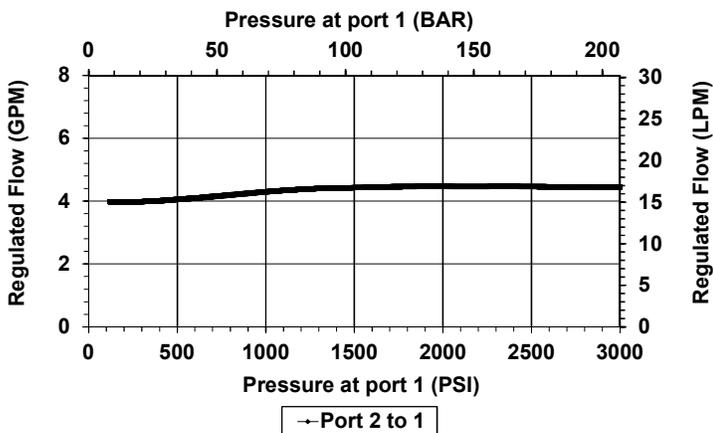
**PERFORMANCE**

Actual Test Data (Cartridge Only)

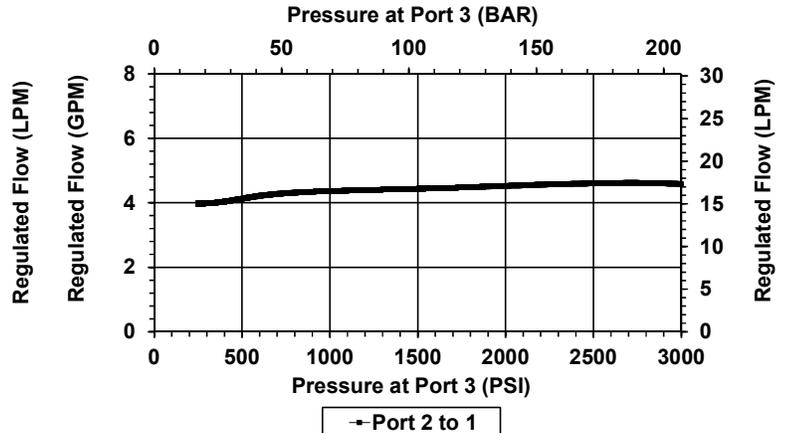
**VALVE SPECIFICATIONS**

Max Regulated Flow	9 GPM (34 LPM)
Rated Operating Pressure	3000 PSI (207 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	0.38 lbs (.17 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 4W
Cavity Form Tool (Finishing)	40500002
Seal Kit	21191214

Priority port 1 loaded, bypass port 3 unloaded  
(100 PSI spring option)

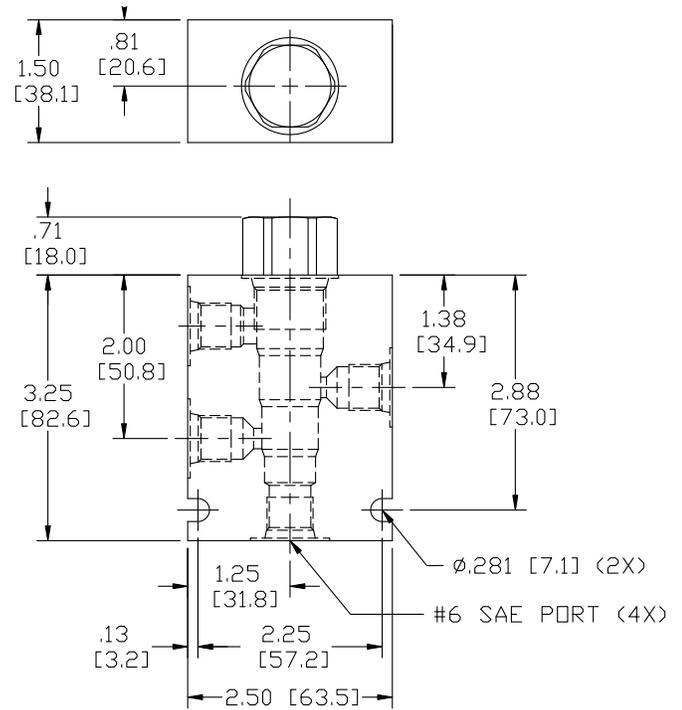
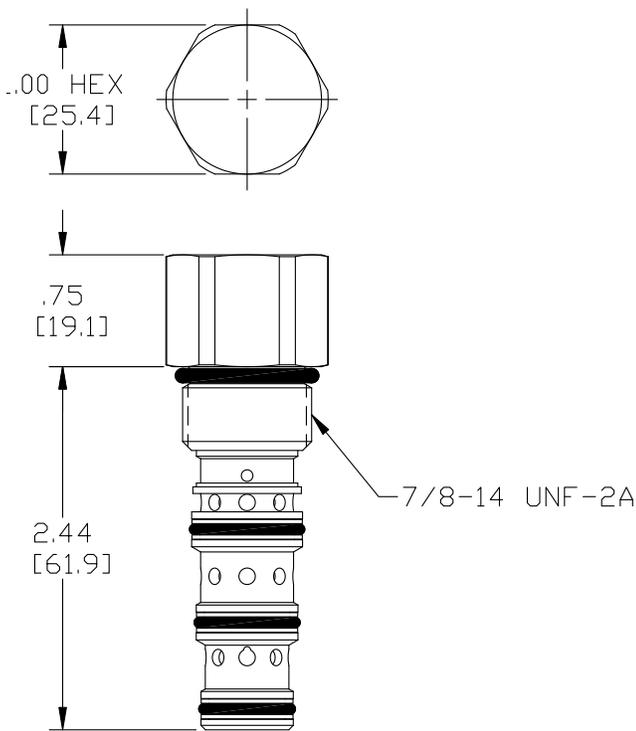


Bypass port 3 loaded, priority port 1 unloaded  
(100 PSI spring option)



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**DIMENSIONS**



Body Weight: .99 lbs (.45 kg)

**ORDERING INFORMATION**

DG-PDS -

**OPTIONS**

- Buna Standard **00**
- Viton Standard **V0**
- Buna Standard, Screen **A0**
- Viton Standard, Screen **W0**

Screen located at CF (1) port

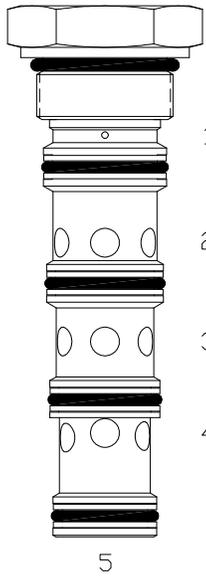
**BODIES**

- Blank Without Body
- N** 3/4 NPTF Ports
- S** #12 SAE Ports

**PRESSURE SETTING**

- 0100** 120 PSI
- 0150** 300 PSI
- 0250** 250 PSI

**SO-PDS STEERING PRIORITY FLOW CONTROL VALVE WITH STATIC LOAD SENSE**



**DESCRIPTION**

16 size, 1 5/16-12 thread, "Super" series, steering priority flow control valve with static load sense.

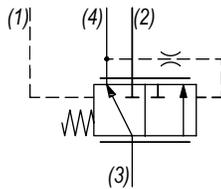
**OPERATION**

The SO-PDS allows priority flow from (3) to (4) regardless of load pressure at either port (2) or port (4). Excess flow bypasses out (2). Port (1) is the load sense port.

**FEATURES**

- Hardened cage and spool for long life.
- Industry common cavity.

**HYDRAULIC SYMBOL**



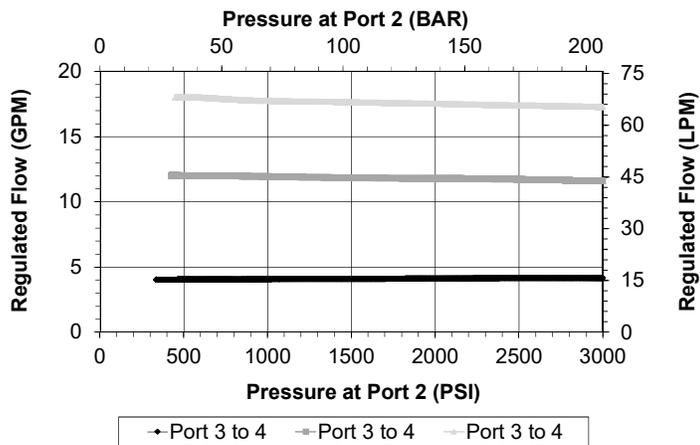
**PERFORMANCE**

Actual Test Data (Cartridge Only)

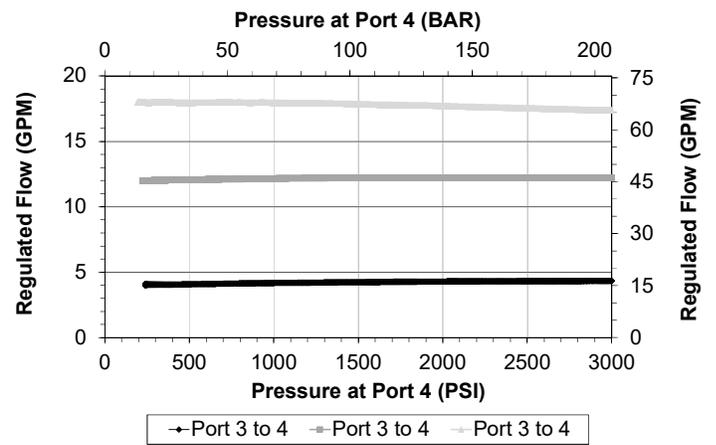
**VALVE SPECIFICATIONS**

Max Regulated Flow	20 GPM (76 LPM)
Rated Operating Pressure	3000 PSI (207 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	1.05 lbs (.48 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	90 ft-lbs (122 Nm)
Cavity	SUPER 5WS
Cavity Form Tool (Finishing)	40500020
Seal Kit	21191410

Bypass port 2 loaded, priority port 4 unloaded



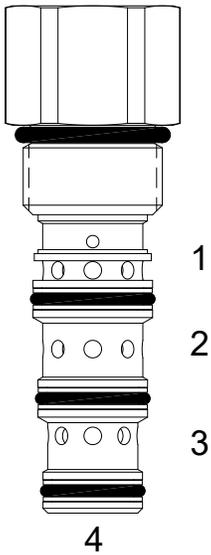
Priority port 4 loaded, bypass port 2 unloaded



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**DG-PDD STEERING PRIORITY FLOW CONTROL VALVE WITH DYNAMIC LOAD SENSE**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, steering priority flow control valve with dynamic load sense.

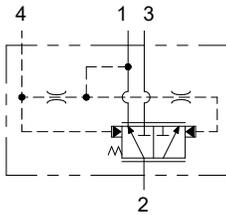
**OPERATION**

The DG-PDD allows priority flow from (2) to (1) regardless of load pressure at either port (1) or port (3). Excess flow bypasses out (3). Port (4) is the load sense port.

**FEATURES**

- Hardened cage and spool for long life.
- Industry common cavity.

**HYDRAULIC SYMBOL**



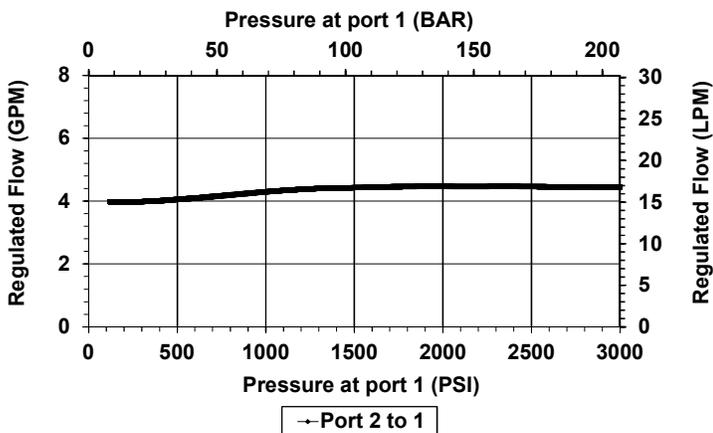
**PERFORMANCE**

Actual Test Data (Cartridge Only)

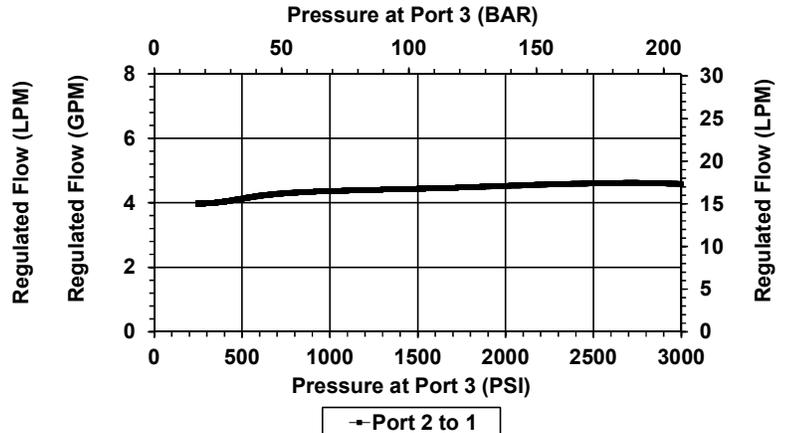
**VALVE SPECIFICATIONS**

Max Regulated Flow	9 GPM (34 LPM)
Rated Operating Pressure	3000 PSI (207 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	0.38 lbs (.17 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 4W
Cartridge Form Tool (Finishing)	40500002
Seal Kit	21191214

Priority port 1 loaded, bypass port 3 unloaded  
(100 PSI spring option)



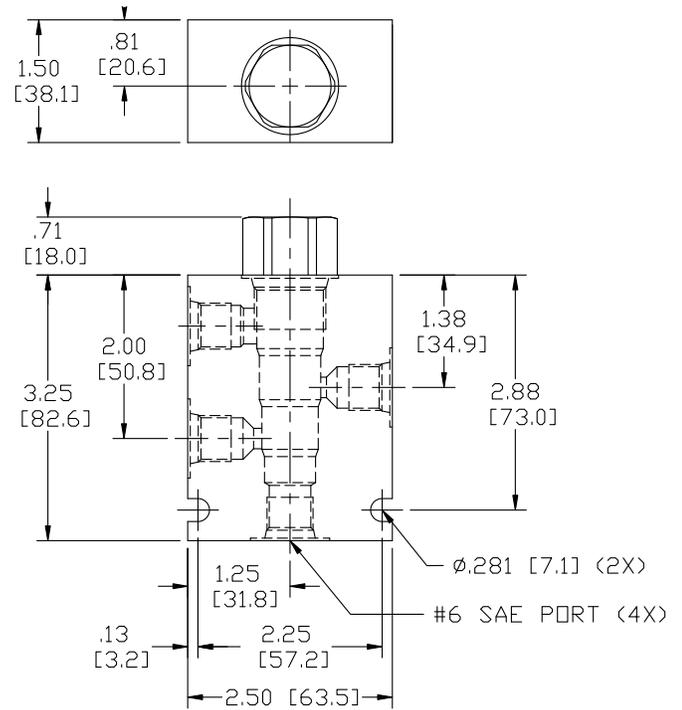
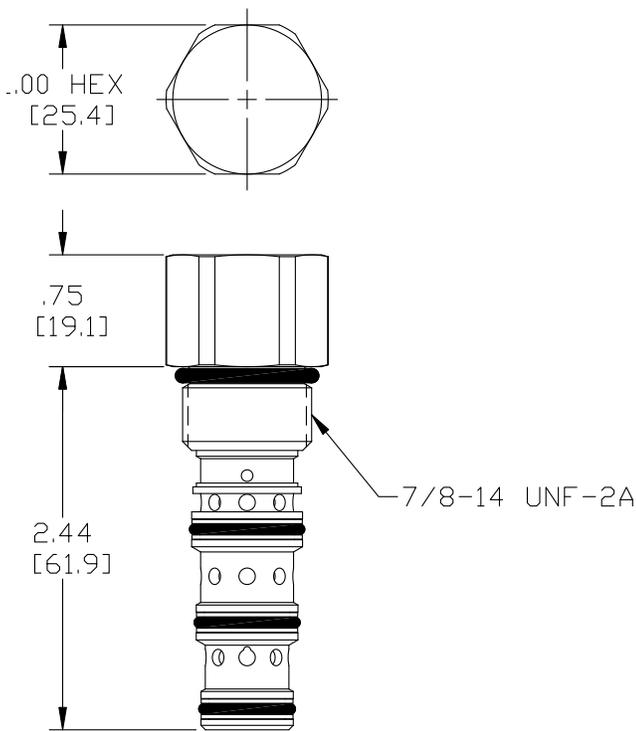
Bypass port 3 loaded, priority port 1 unloaded  
(100 PSI spring option)



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**DIMENSIONS**



Body Weight: .99 lbs (.45 kg)

**ORDERING INFORMATION**

DG-PDS -

**OPTIONS**

- Buna Standard **00**
- Viton Standard **V0**
- Buna Standard, Screen **A0**
- Viton Standard, Screen **W0**

Screen located at CF (1) port

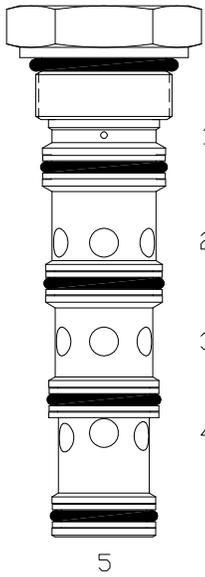
**BODIES**

- Blank Without Body
- N** 3/4 NPTF Ports
- S** #12 SAE Ports

**PRESSURE SETTING**

- 0100** 120 PSI
- 0150** 300 PSI
- 0250** 250 PSI

**SO-PDD STEERING PRIORITY FLOW CONTROL VALVE WITH DYNAMIC LOAD SENSE**



**DESCRIPTION**

16 size, 1 5/16-12 thread, "Super" series, steering priority flow control valve with dynamic load sense.

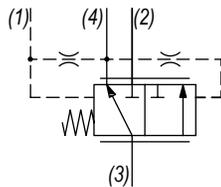
**OPERATION**

The SO-PDD allows priority flow from (3) to (4) regardless of load pressure at either port (2) or port (4). Excess flow bypasses out (2). Port (1) is the load sense port.

**FEATURES**

- Hardened cage and spool for long life.
- Industry common cavity.

**HYDRAULIC SYMBOL**



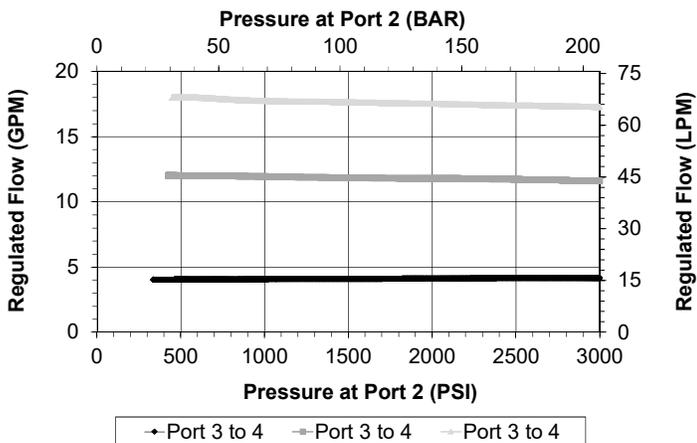
**PERFORMANCE**

Actual Test Data (Cartridge Only)

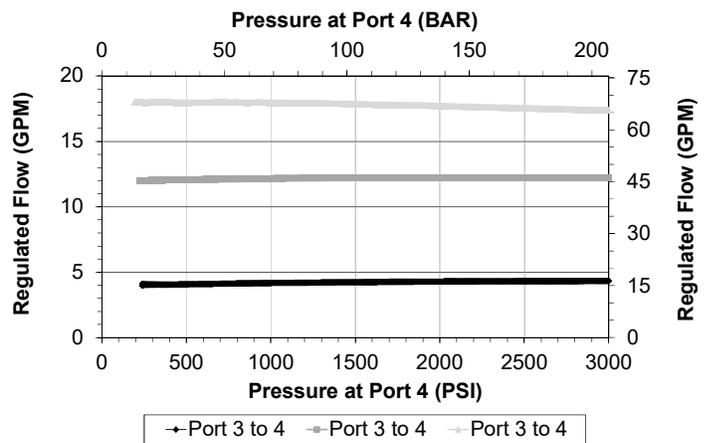
**VALVE SPECIFICATIONS**

Max Regulated Flow	20 GPM (76 LPM)
Rated Operating Pressure	3000 PSI (207 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	1.05 lbs (.48 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	90 ft-lbs (122 Nm)
Cavity	SUPER 5WS
Cavity Form Tool (Finishing)	40500020
Seal Kit	21191410

Bypass port 2 loaded, priority port 4 unloaded



Priority port 4 loaded, bypass port 2 unloaded



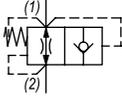
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.



**WARNING:** *the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.*

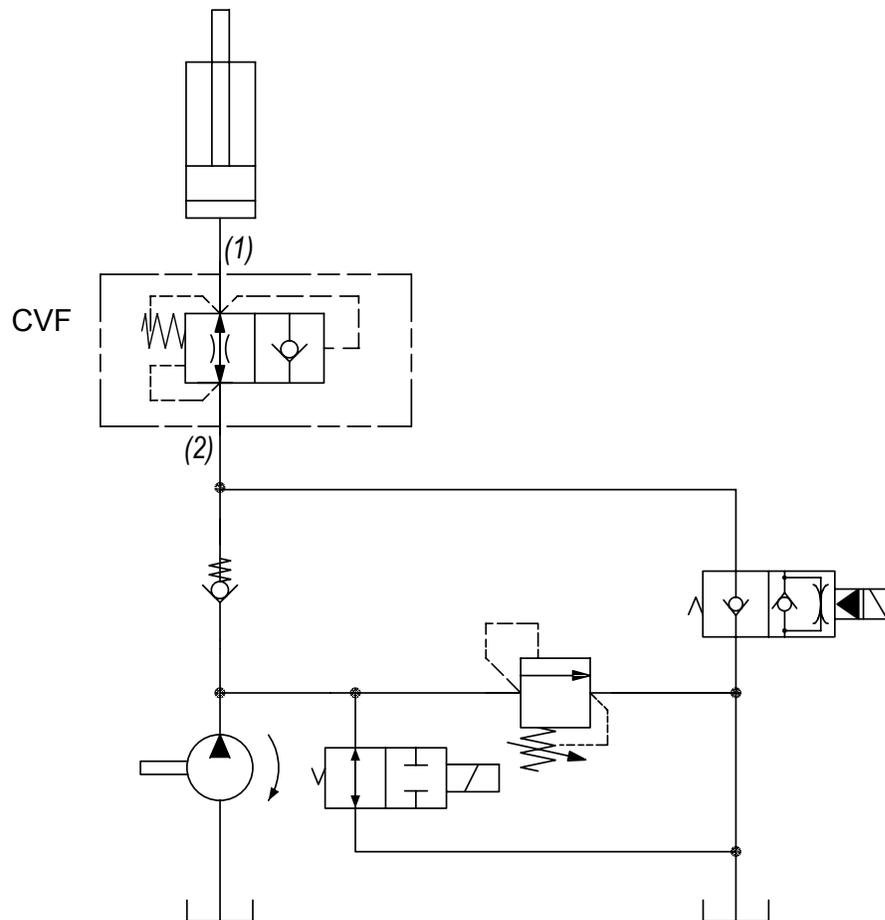
Via Malavolti, 36 - 41122 Modena - ITALY - Phone +39 (059) 254895 - Fax +39 (059) 253512 - mail: [tecnord@tecnord.com](mailto:tecnord@tecnord.com) - [www.tecnord.com](http://www.tecnord.com)

VELOCITY FUSES

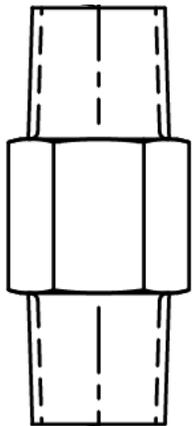
	GPM	PSI	LPM	BAR	CAVITY	MODEL	PAGE
	6	3500	23	241	7/8-14	IM-CVF	MF72
	10	3500	38	241	7/8-14	DE-CVF	MF74

TYPICAL SCHEMATIC

Typical application for the CVF is to prevent cylinder free fall in the event of a hose or plumbing failure. The valve is usually mounted directly in the bottom of the cylinder, and sized 1-2 GPM higher than the normal lowering speed. The valve will not re-open until pressure is bled off of port #1.



**IM-CVF INLINE VELOCITY FUSE**



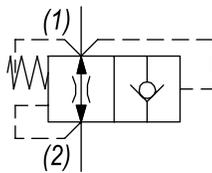
**DESCRIPTION**

3/8 NPTF thread, inline velocity fuse.

**OPERATION**

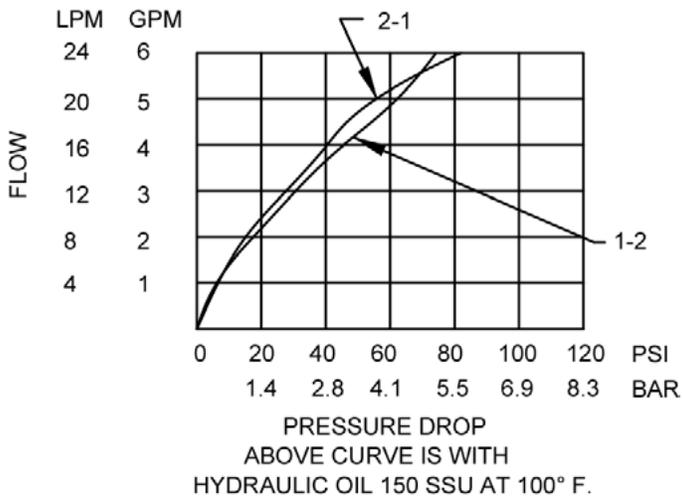
The IM-CVF allows flow to pass between (1) and (2). When oil velocity from (1) to (2) exceeds the flow setting, the valve shifts and blocks flow from (1) to (2).

**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)



**VALVE SPECIFICATIONS - IM-CVF 11**

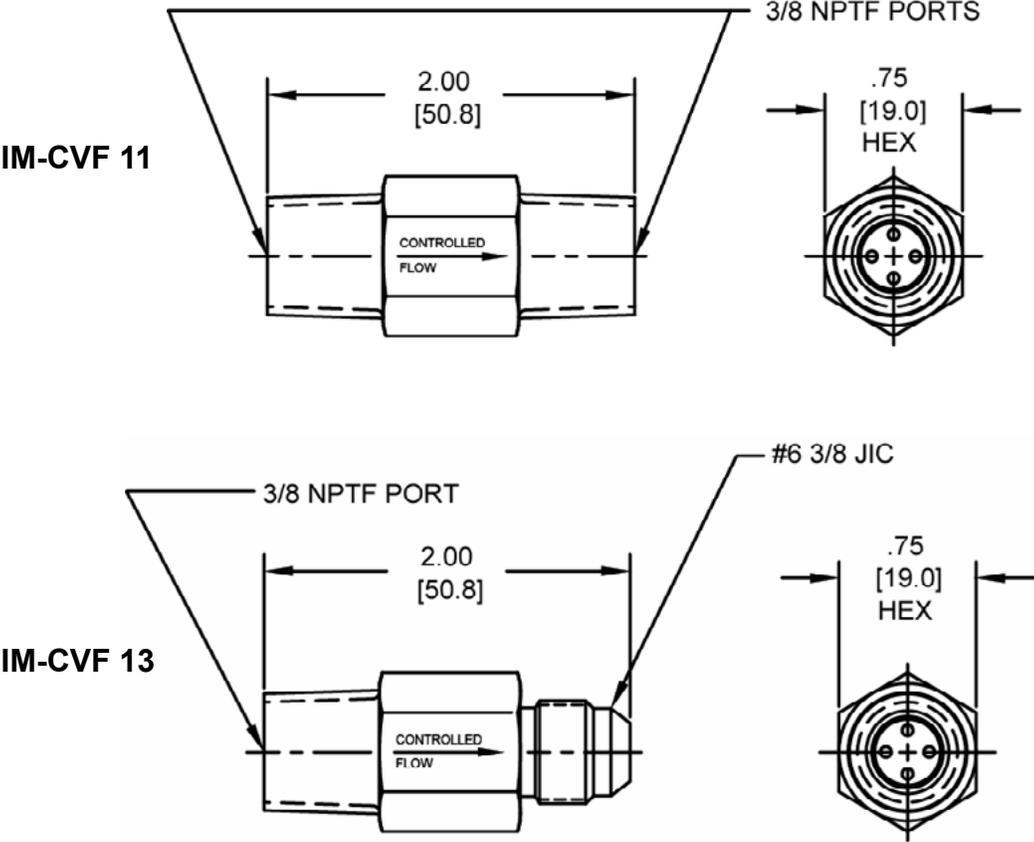
Nominal Flow Max	6 GPM (23 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	0-5 drops/min
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.18 lbs (.08 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid

**VALVE SPECIFICATIONS - IM-CVF 13**

Nominal Flow Max	6 GPM (23 LPM)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	0-5 drops/min
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.16 lbs (.07 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid

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DIMENSIONS



ORDERING INFORMATION

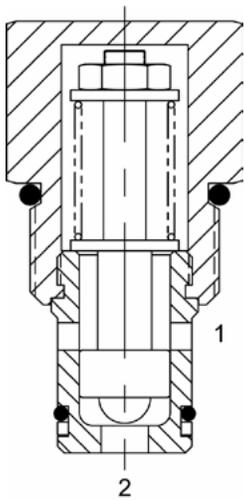
DE-CVF	-	-	-	-
		11		
		13		
			01.0	1 PSI
			02.0	2 PSI
			03.0	3 PSI
			04.0	4 PSI
			05.0	5 PSI
			06.0	6 PSI

FLOW SETTINGS

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**DE-CVF VELOCITY FUSE**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, velocity fuse valve.

**OPERATION**

The DE-CVF allows flow to pass from (1) to (2). When velocity exceeds the flow setting the valve shifts and blocks flow from (1) to (2). Valve acts like a fixed orifice when passing flow from (2) to (1).

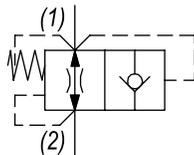
**FEATURES**

- Hardened parts for long life.
- Industry common cavity.



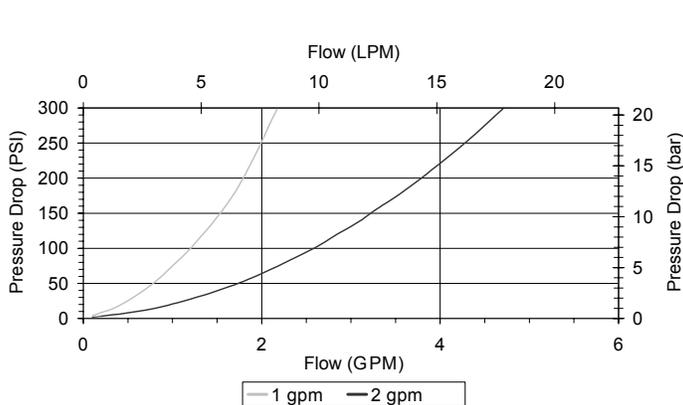
Curves identify pressure drop in port (2) to (1) direction (non-fuse). Fuse pressure drop is similar at fuse flow, until fuse takes effect (~75-100 PSID).

**HYDRAULIC SYMBOL**



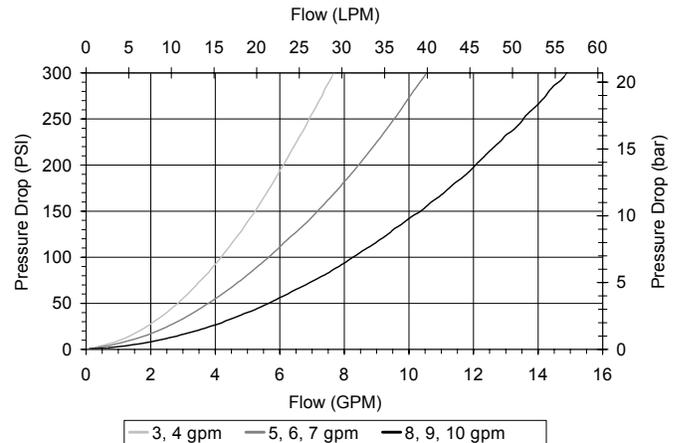
**PERFORMANCE**

Actual Test Data (Cartridge Only)



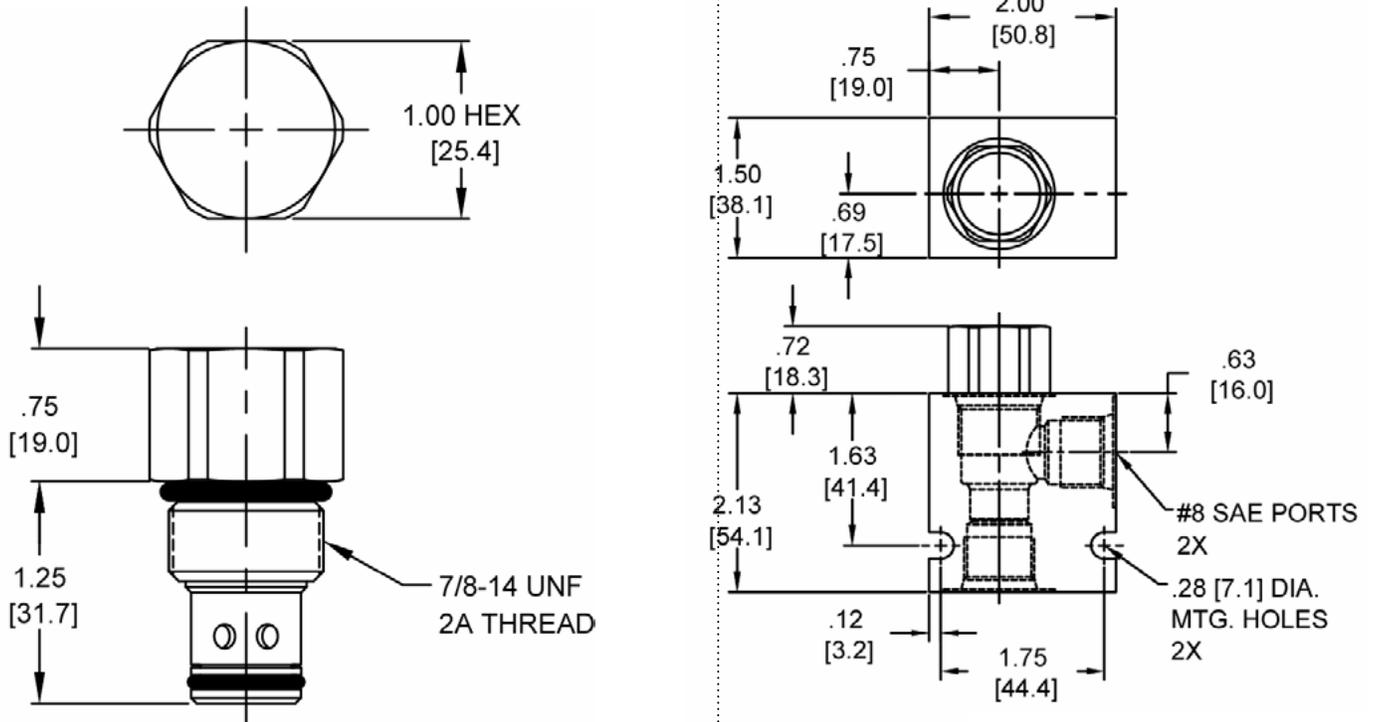
**VALVE SPECIFICATIONS**

Nominal Flow	10 GPM (38 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.25 lbs (.11 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191200



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**DIMENSIONS**



Body Weight: .47 lbs (.21 kg)

**ORDERING INFORMATION**

<b>DE-CVF</b>	-	-	-	-
	<b>OPTIONS</b>			<b>BODIES</b>
	Buna Standard	00		Blank
	Viton Standard	V0		N 3/8" NPTF Ports
				S #8 SAE Ports
			<b>FLOW SETTING</b>	
			01.0	1 GPM
			02.0	2 GPM
			03.0	3 GPM
			04.0	4 GPM
			05.0	5 GPM
			06.0	6 GPM
			07.0	7 GPM
			08.0	8 GPM
			09.0	9 GPM
			10.0	10 GPM
				± 15%

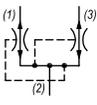
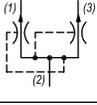
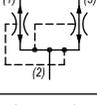
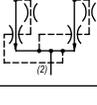
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**WARNING:** *the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.*

Via Malavolti, 36 - 41122 Modena - ITALY - Phone +39 (059) 254895 - Fax +39 (059) 253512 - mail: [tecnord@tecnord.com](mailto:tecnord@tecnord.com) - [www.tecnord.com](http://www.tecnord.com)

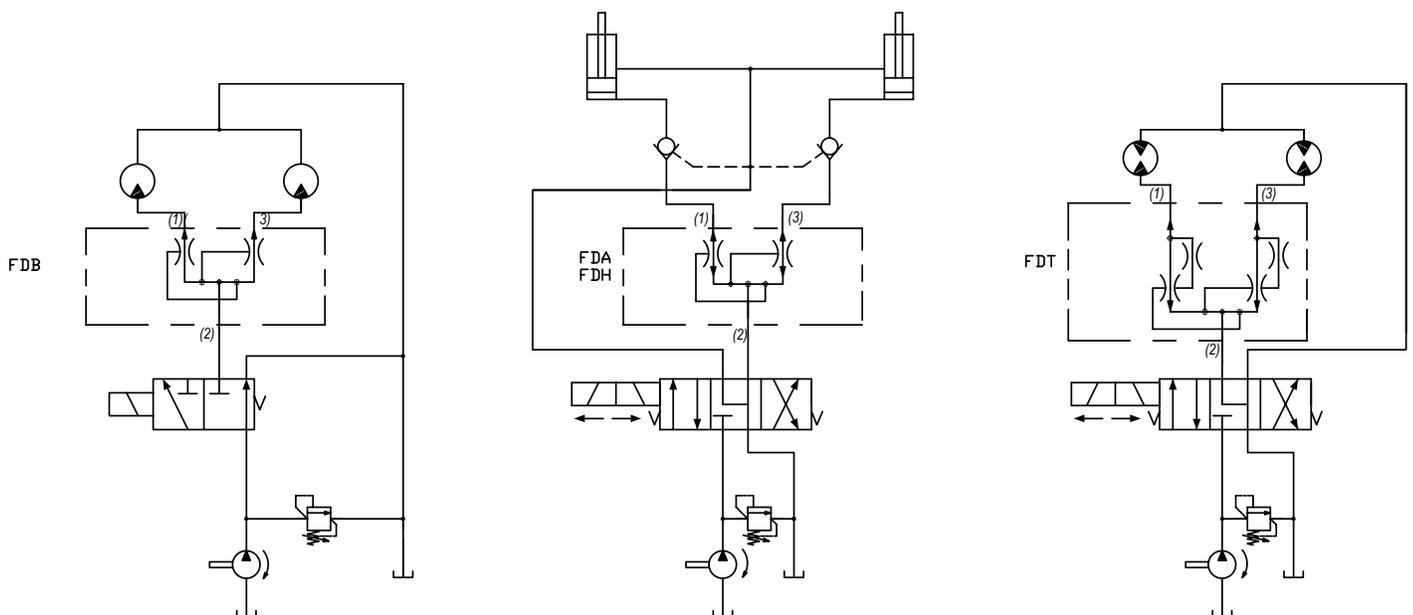
**FLOW DIVIDER/COMBINER VALVES**

	GPM	PSI	LPM	BAR	CAVITY	MODEL	PAGE
	12	3500	45	241	7/8-14	<b>DG-FDA</b>	MF78
	40	3500	151	241	1 5/16-12	<b>SN-FDA</b>	MF80
	12	3500	45	241	7/8-14	<b>DG-FDB</b>	MF82
	12	3500	45	241	7/8-14	<b>DG-FDH</b>	MF84
	12	3500	45	241	7/8-14	<b>DG-FDT</b>	MF86

**TYPICAL SCHEMATIC**

Typical application for the FDA and FDH is to synchronize two independent cylinders or hydraulic motors in both directions. The FDB is a flow divider only. It cannot be used in combine mode.

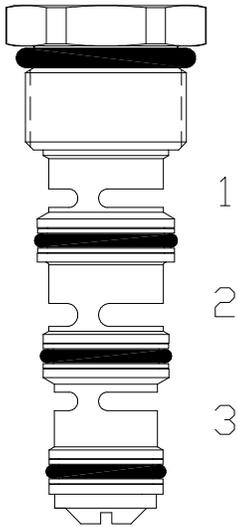
Typical application for the FDT is to provide positive traction for vehicle drive systems. If one leg loses load, the valve insures flow to the other leg.



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**DG-FDA FLOW DIVIDER / COMBINER VALVE, SPOOL TYPE**



**DESCRIPTION**

10 size, 7/8-14 thread "Delta Series", spool type, flow divider/combiner.

**OPERATION**

In the dividing mode, the DG-FDA will divert input flow from port (2) to ports (3) and (1), based on the ratio specified, regardless of operating pressure. The DG-FDA will combine input flows from ports (3) and (1), to port (2) by the same ratio. Should circuit operation result in a blockage of either (3) or (1), the opposite port may also close under certain conditions. Should this potential exist, consult the factory.

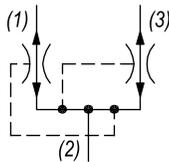
**FEATURES**

- Hardened parts for long life.
- Industry common cavity.



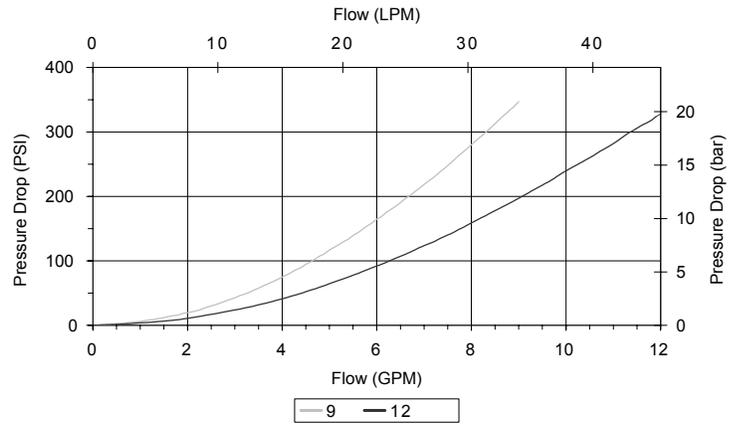
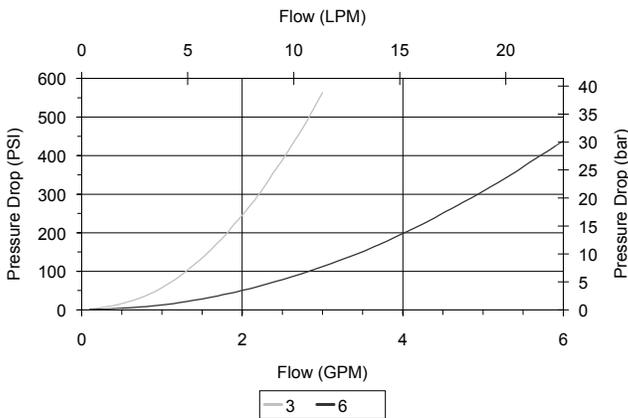
**DO NOT EXCEED MAXIMUM FLOW PER MODEL**  
For higher accuracy flow ratio, use DG-FDH.

**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)

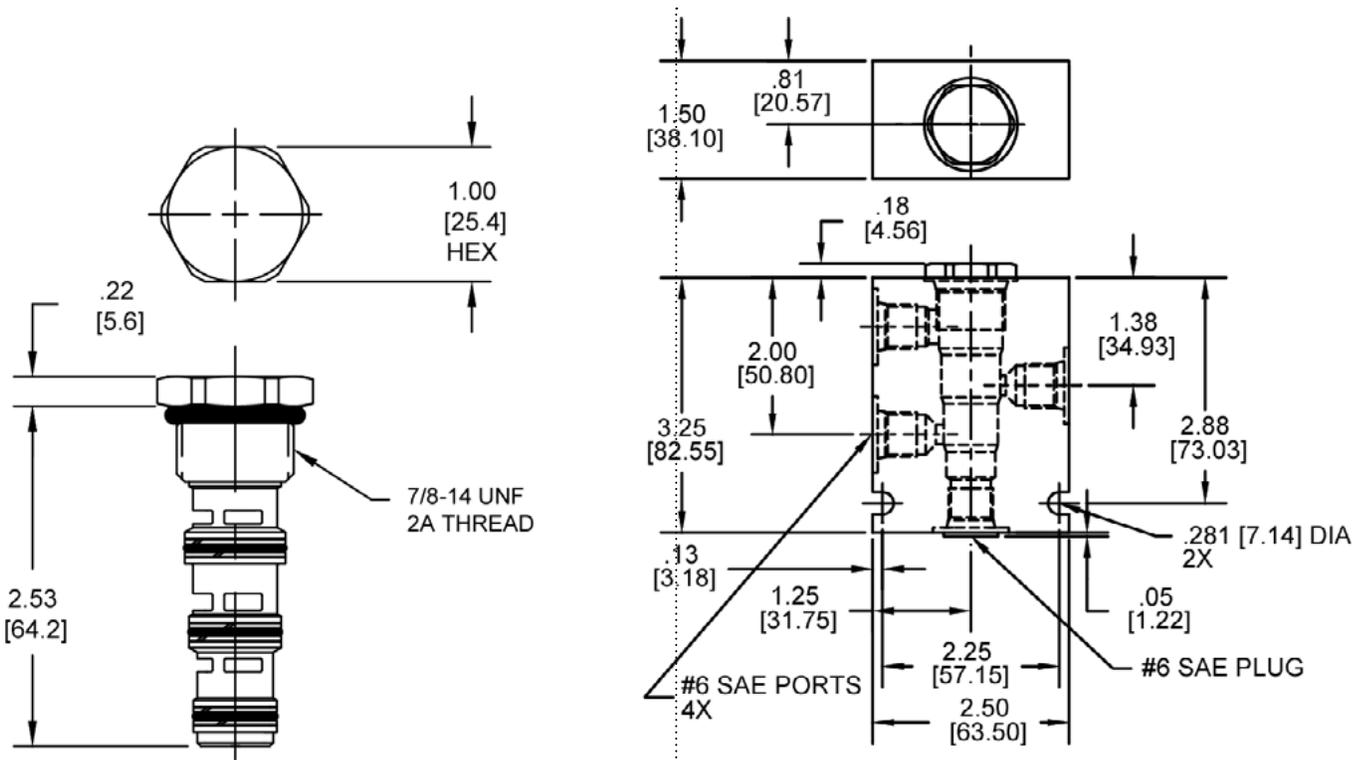


**VALVE SPECIFICATIONS**

Maximum Flow	12 GPM (45 LPM)
Accuracy on Flow Splits	±10% of Max Rated Inlet Flow
Maximum Operating Pressure	3500 PSI (241 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.21 lbs (.10 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 4W
Cavity Form Tool (Finishing)	40500002
Seal Kit	21191214

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**DIMENSIONS**



Body Weight: .99 lbs (.45 kg)

**ORDERING INFORMATION**

DG-FDA - - - - -

**OPTIONS**

- Buna Standard **00**
- Viton Standard **V0**

**BODIES**

- Blank Without Body
- N** 1/4 NPT Ports
- S** #6 SAE Ports
- Note: must use 4-way body

**SPLITS**

- |              |           |
|--------------|-----------|
| <b>#1 #3</b> |           |
| 14-86        | <b>14</b> |
| 20-80        | <b>20</b> |
| 28-72        | <b>28</b> |
| 30-70        | <b>30</b> |
| 36-64        | <b>36</b> |
| 40-60        | <b>40</b> |
| 50-50        | <b>50</b> |
| 60-40        | <b>60</b> |
| 64-36        | <b>64</b> |
| 70-30        | <b>70</b> |
| 72-28        | <b>72</b> |
| 80-20        | <b>80</b> |
| 86-14        | <b>86</b> |

**INLET FLOW**

- 03** 2-3 GPM (50 only)
- 06** 3-6 GPM (50 only)
- 09** 6-9 GPM (50 only)
- 12** 9-12 GPM (50 only)
- \*\*** All non 50-50 split valves (see chart below for flow ratings)

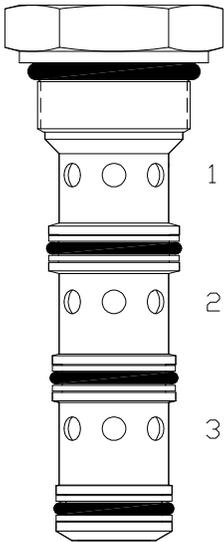
Maximum inlet flow for non 50-50 split valves	
Model code	Maximum inlet flow
<b>04</b> 30-70, 70-30	4.0 GPM
<b>06</b> 20-80, 80-20	6.0 GPM
<b>07</b> 14-86, 36-64, 64-36, 86-14	7.0 GPM
<b>09</b> 28-72, 72-28	9.0 GPM
<b>10</b> 40-60, 60-40	10.0 GPM

Consult factory for additional splits

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**SN-FDA FLOW DIVIDER / COMBINER VALVE, SPOOL TYPE**



**DESCRIPTION**

16 size, 1 5/16-12 thread "Super Series," spool-type flow divider/combiner valve.

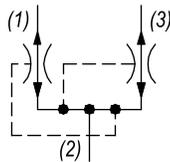
**OPERATION**

In the dividing mode, the SN-FDA will divert input flow from port (2) to ports (3) and (1), based on the ratio specified, regardless of operating pressure. The SN-FDA will combine input flows from ports (3) and (1), to port (2) by same ratio. Should circuit operation result in a blockage of either (3) or (1), the opposite port may also close under certain conditions. Should this potential exist, consult the factory.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

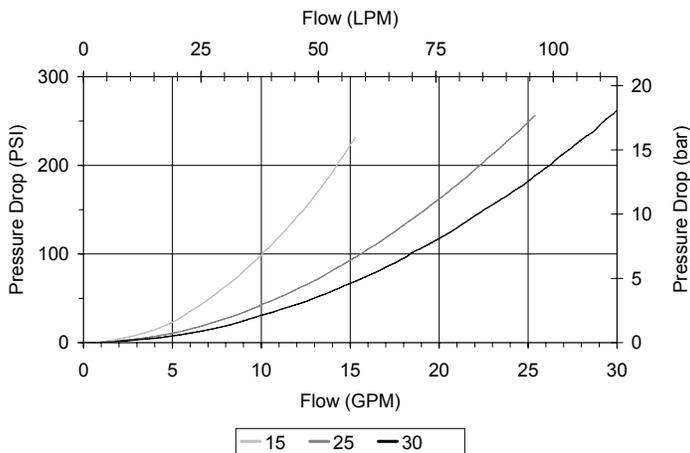
**HYDRAULIC SYMBOL**



*DO NOT EXCEED MAXIMUM FLOW PER MODEL.*

**PERFORMANCE**

Actual Test Data (Cartridge Only)

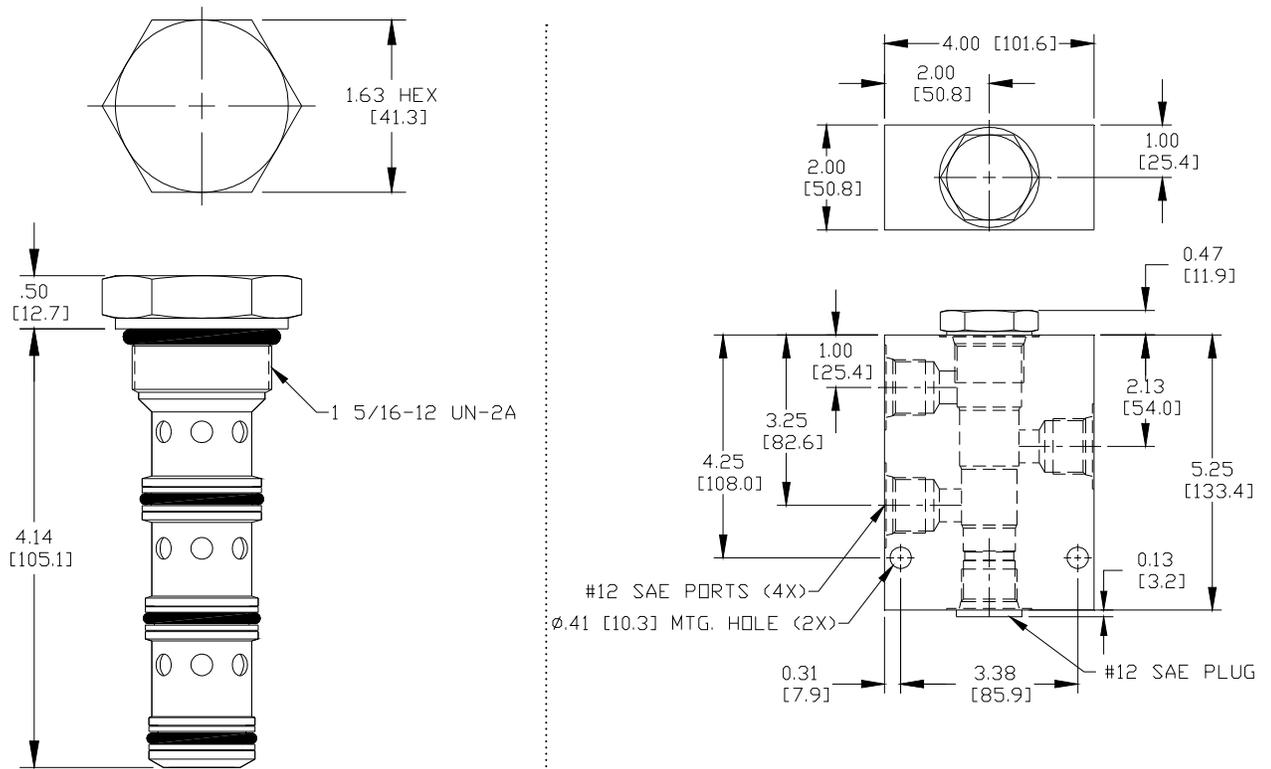


**VALVE SPECIFICATIONS**

Nominal Flow	40 GPM (151 LPM)
Accuracy on Flow Splits	±10% of Max Rated Inlet Flow
Maximum Operating Pressure	3500 PSI (241 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.95 lbs (.43 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	90 ft-lbs (122 Nm)
Cavity	SUPER 4W
Cavity Form Tool (Finishing)	40500019
Seal Kit	21191413

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**DIMENSIONS**



Body Weight: 3.21 lbs (1.46 kg)

**ORDERING INFORMATION**

SN-FDA - - - - -

**OPTIONS**

Buna Standard **00**  
Viton Standard **V0**

**BODIES**

Blank Without Body  
**S** #12 SAE Ports  
**Note: must use 4-way body**

**SPLITS**

#1	#3
25-75	<b>25</b>
35-65	<b>35</b>
40-60	<b>40</b>
50-50	<b>50</b>
60-40	<b>60</b>
65-35	<b>65</b>
75-25	<b>75</b>

Consult factory for additional splits

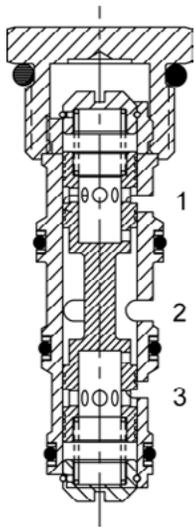
**INLET FLOW**

<b>15</b>	8-15 GPM
<b>25</b>	15-25 GPM
<b>30</b>	20-30 GPM
<b>40</b>	30-40 GPM *Available as a 50-50 split only

All non 50-50 split valves (see chart below for flow ratings)

Maximum inlet flow for non 50-50 split valves		
	Model code	Maximum inlet flow
<b>15</b>	35-65, 65-35	15.0 GPM
<b>25</b>	25-75, 40-60, 60-40, 75-25	25.0 GPM
<b>30</b>	35-65, 65-35	30.0 GPM

**DG-FDB FLOW DIVIDER VALVE, SPOOL TYPE**



**DESCRIPTION**

10 size, 7/8-14 thread "Delta Series", spool type, flow divider.

**OPERATION**

The DG-FDB will divert input flow from port (2) to ports (3) and (1), based on the ratio specified, regardless of operating pressure. Should circuit operation result in a blockage of either (3) or (1), the opposite port may also close under certain conditions. Should this potential exist, consult the factory.

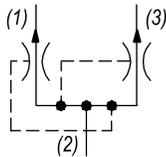
**FEATURES**

- Hardened parts for long life.
- Industry common cavity.



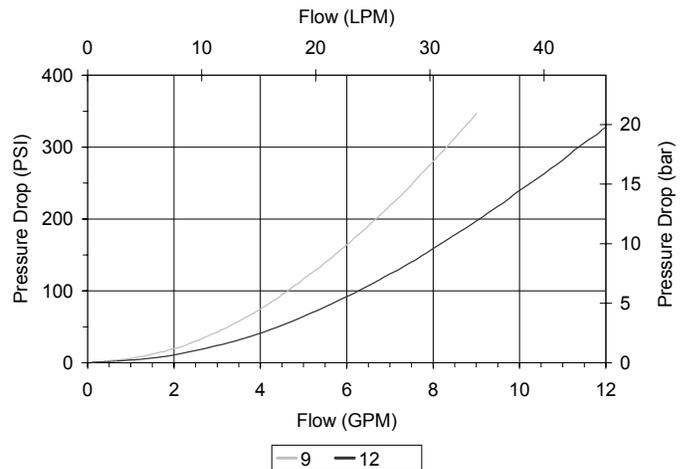
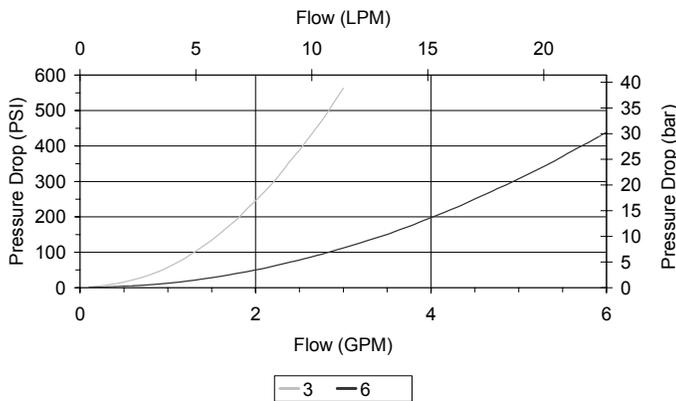
DO NOT EXCEED MAXIMUM FLOW PER MODEL.

**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)

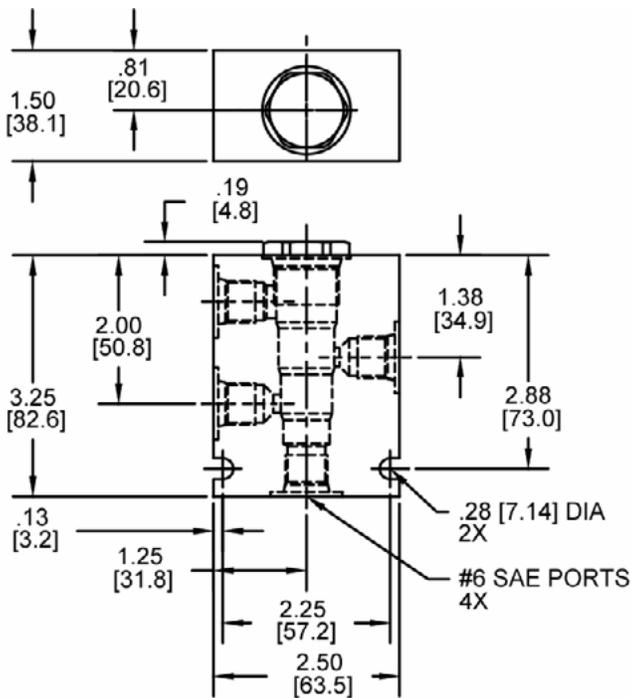
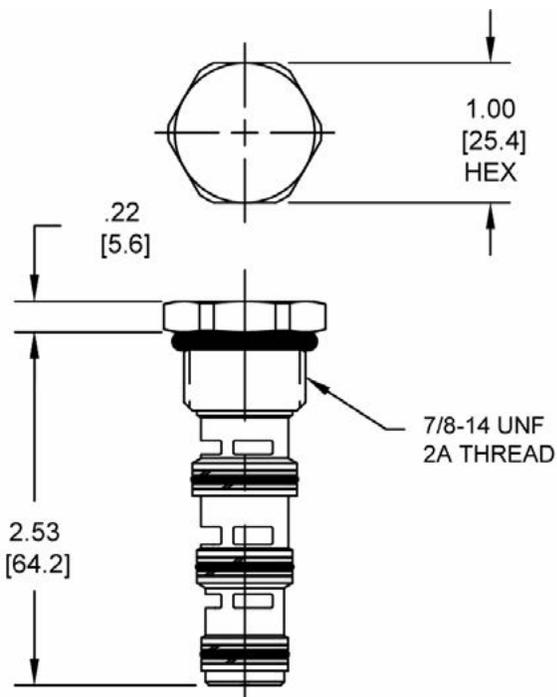


**VALVE SPECIFICATIONS**

Maximum Flow	12 GPM (45 LPM)
Accuracy on Flow Splits	±10% of Max Rated Inlet Flow
Maximum Operating Pressure	3500 PSI (241 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.21 lbs (.10 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 4W
Cavity Form Tool (Finishing)	40500002
Seal Kit	21191214

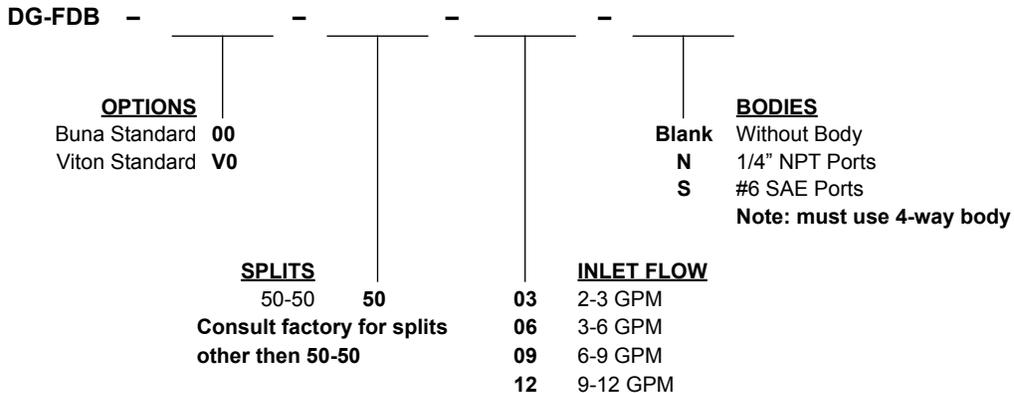
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DIMENSIONS



Body Weight: .99 lbs (.45 kg)

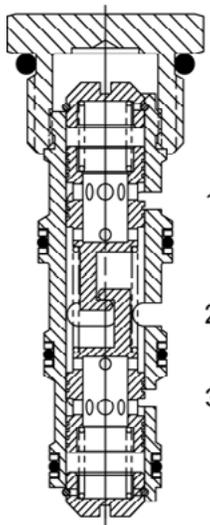
ORDERING INFORMATION



W 28 / 2022

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**DG-FDH FLOW DIVIDER / COMBINER VALVE, SPOOL TYPE**



**DESCRIPTION**

“High Accuracy” 10 size, 7/8-14 thread “Delta Series”, spool type, flow divider/combiner.

**OPERATION**

In the dividing mode, the DG-FDH will divert input flow from port (2) to ports (3) and (1), based on the ratio specified with a high degree of accuracy, regardless of operating pressure. The DG-FDH will combine input flows from ports (3) and (1), to port (2) by the same ratio. Should circuit operation result in a blockage of either (3) or (1), the opposite port may also close under certain conditions. Should this potential exist, consult the factory.

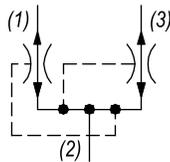
**FEATURES**

- Hardened parts for long life.
- Industry common cavity.



*DO NOT EXCEED MAXIMUM FLOW PER MODEL. The DG-FDH should be considered if the DG-FDA does not provide the required accuracy.*

**HYDRAULIC SYMBOL**

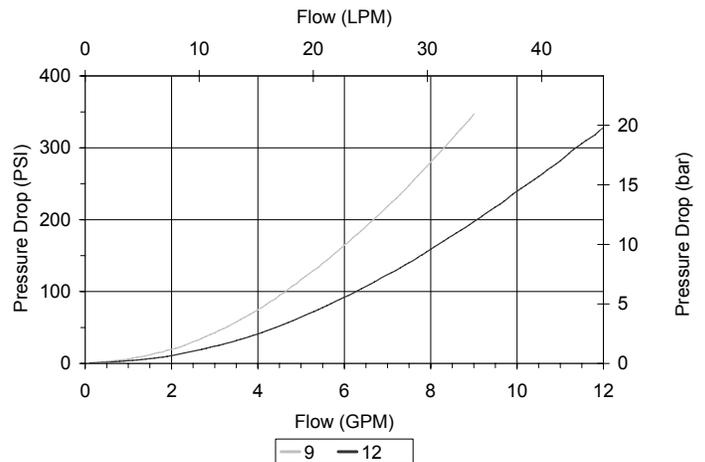
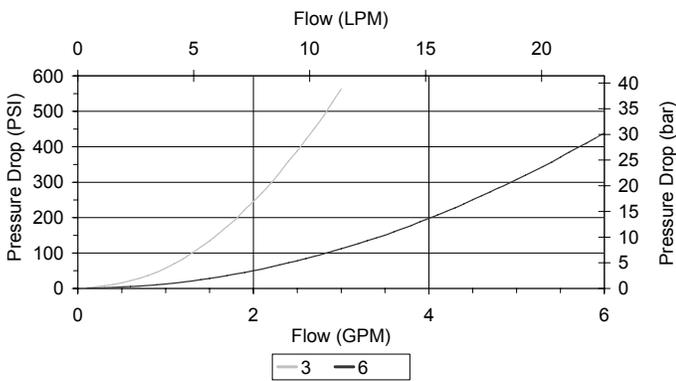


**PERFORMANCE**

Actual Test Data (Cartridge Only)

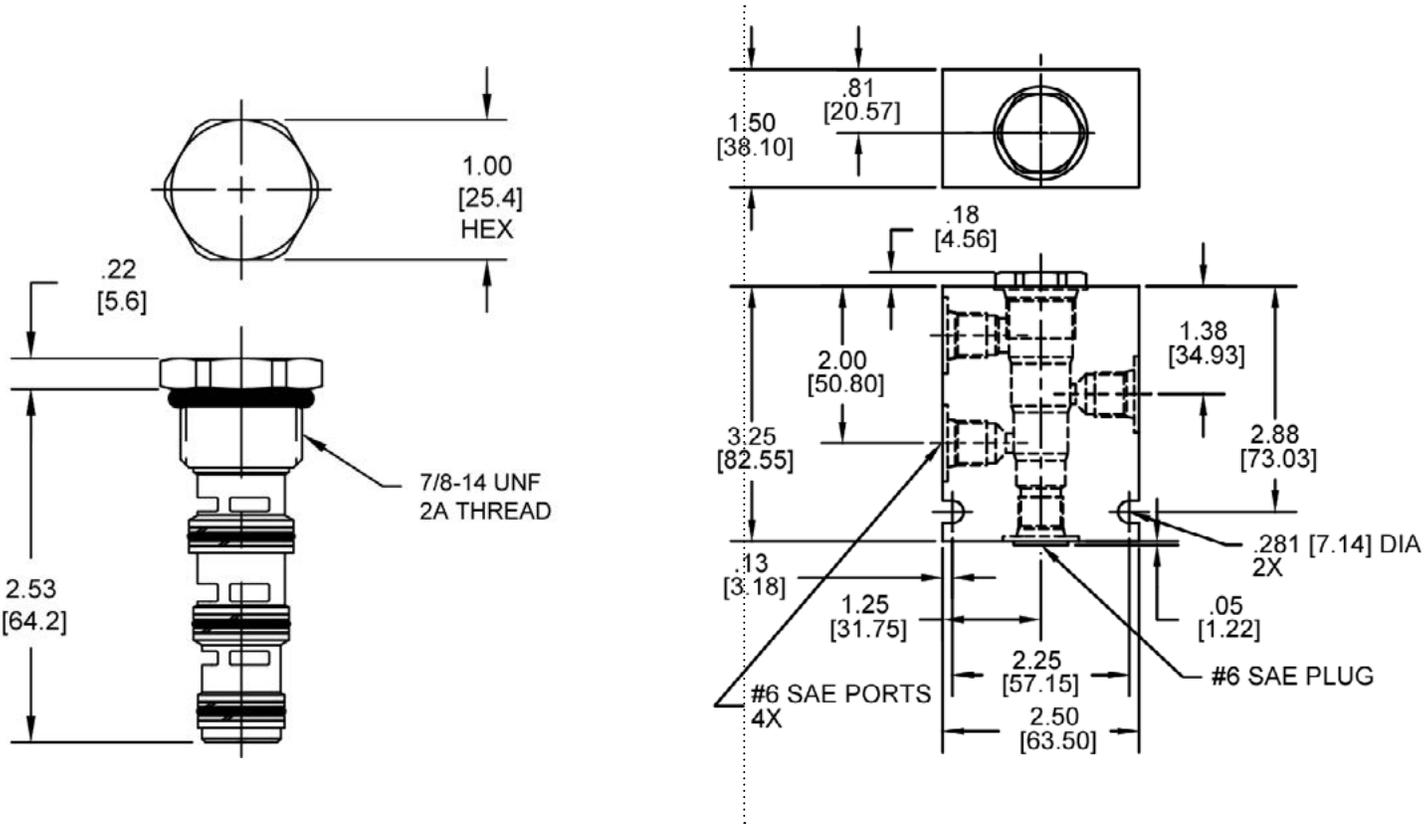
**VALVE SPECIFICATIONS**

Maximum Flow	12 GPM (45 LPM)
Accuracy on Flow Splits	±4% of Max Rated Inlet Flow
Maximum Operating Pressure	3500 PSI (241 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.21 lbs (.10 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 4W
Cavity Form Tool (Finishing)	40500002
Seal Kit	21191214



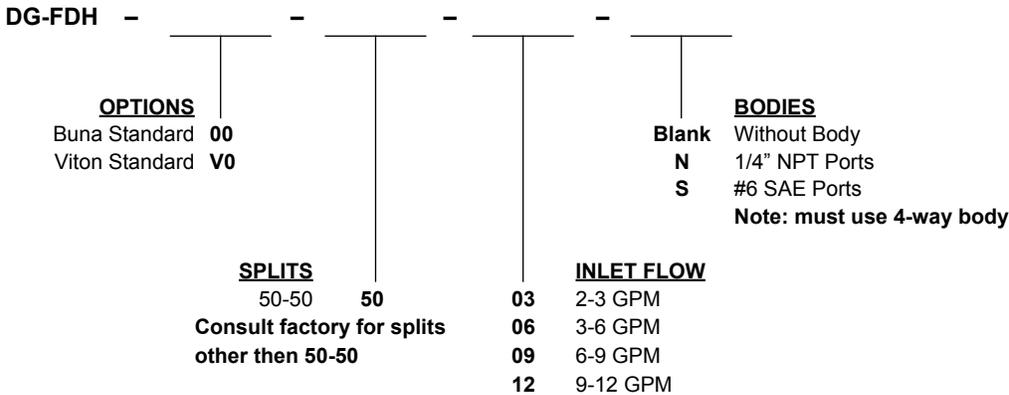
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**DIMENSIONS**



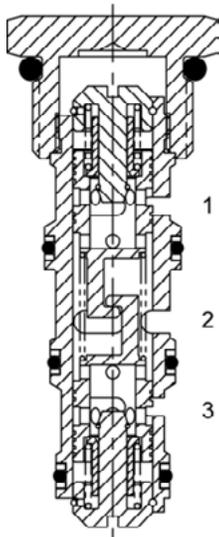
Body Weight: .99 lbs (.45 kg)

**ORDERING INFORMATION**



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**DG-FDT FLOW DIVIDER / COMBINER VALVE, SPOOL TYPE**



**DESCRIPTION**

10 size, 7/8-14 thread "Delta Series", spool type, flow divider/combiner, positive traction valve.

**OPERATION**

In the dividing mode, the DG-FDT will divert input flow from port (2) to ports (3) and (1), based on the ratio specified, regardless of operating pressure. The DG-FDT will combine input flows from ports (3) and (1). Should circuit operation result in a blockage of either (3) or (1), the opposite port may also close under certain conditions. Should this potential exist, consult the factory.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

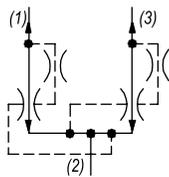


*DO NOT EXCEED MAXIMUM FLOW PER MODEL  
Use where wheel slip (or "drag") needs to be accomplished.*



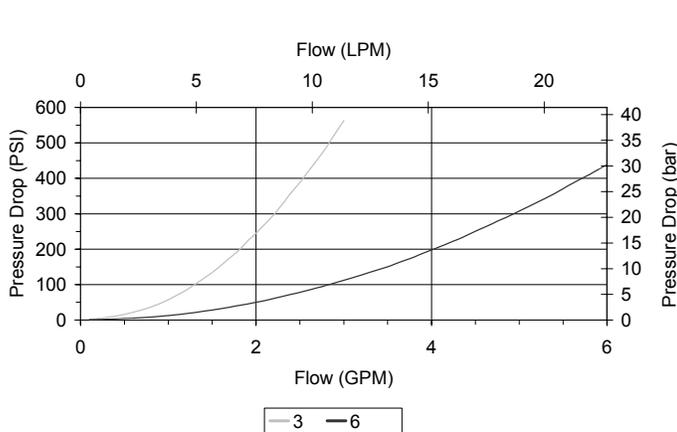
*TRACTION FLOW W/1 LEG UNLOADED  
2-3 GPM valve - 0.4 GPM  
3-6 GPM valve - 0.7 GPM  
6-9 GPM valve - 1.1 GPM  
9-12 GPM valve - 1.5 GPM*

**HYDRAULIC SYMBOL**



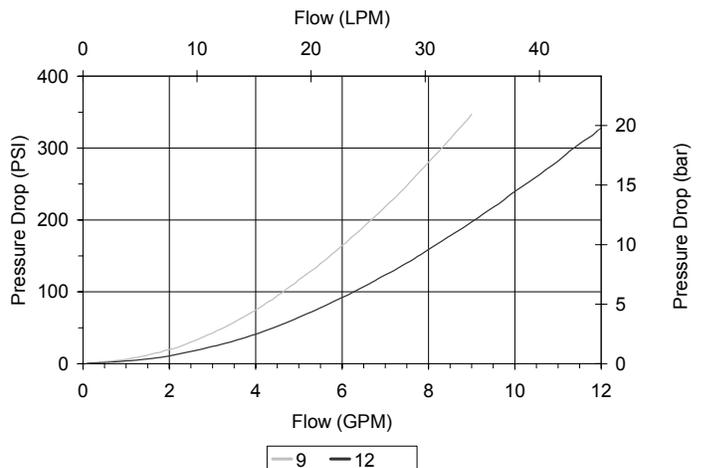
**PERFORMANCE**

Actual Test Data (Cartridge Only)



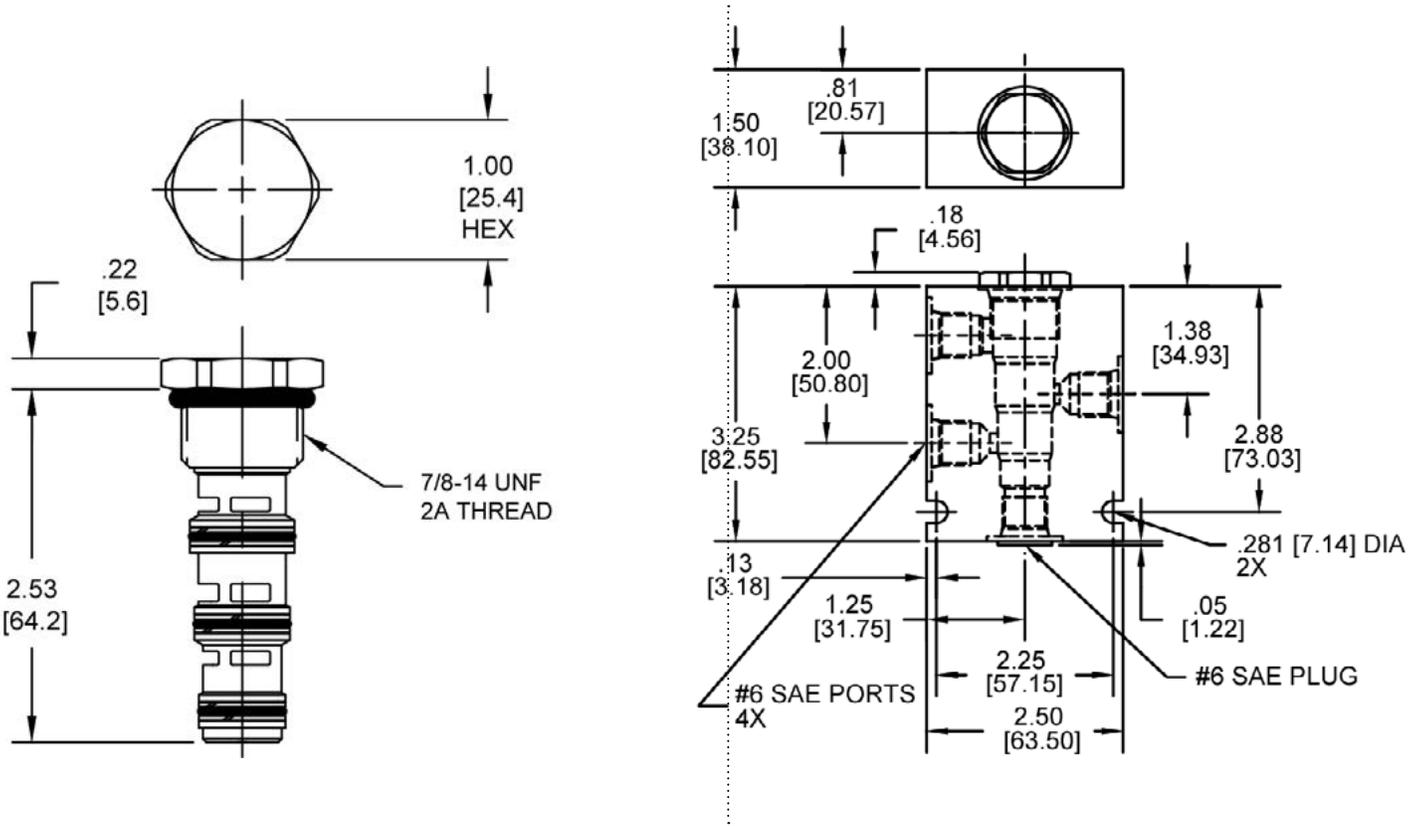
**VALVE SPECIFICATIONS**

Maximum Flow	12 GPM (45 LPM)
Accuracy on Flow Splits	±10% of Max Rated Inlet Flow
Maximum Operating Pressure	3500 PSI (241 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.22 lbs (.10 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 4W
Cavity Form Tool (Finishing)	40500002
Seal Kit	21191214



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**DIMENSIONS**



Body Weight: .99 lbs (.45 kg)

**ORDERING INFORMATION**

<b>DG-FDT</b> -		-	-	-	-	-
<b>OPTIONS</b>						
Buna Standard	00					
Viton Standard	V0					
<b>SPLITS</b>						
50-50	50					
Consult factory for splits other than 50-50						
<b>INLET FLOW</b>						
03	2-3 GPM					
06	3-6 GPM					
09	6-9 GPM					
12	9-12 GPM					
<b>BODIES</b>						
Blank	Without Body					
N	1/4" NPT Ports					
S	#6 SAE Ports					
<b>Note: must use 4-way body</b>						

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Via Malavolti, 36 - 41122 Modena - ITALY - Phone +39 (059) 254895 - Fax +39 (059) 253512 - mail: [tecnord@tecnord.com](mailto:tecnord@tecnord.com) - [www.tecnord.com](http://www.tecnord.com)

LOGIC ELEMENTS

	GPM	PSI	LPM	BAR	CAVITY	MODEL	PAGE
	40	3500	151	241	1 5/16-12	SL-PLA	MF90
	40	3500	151	241	1 5/16-12	SL-PLB	MF92
	40	3500	151	241	1 5/16-12	SL-PLC	MF94

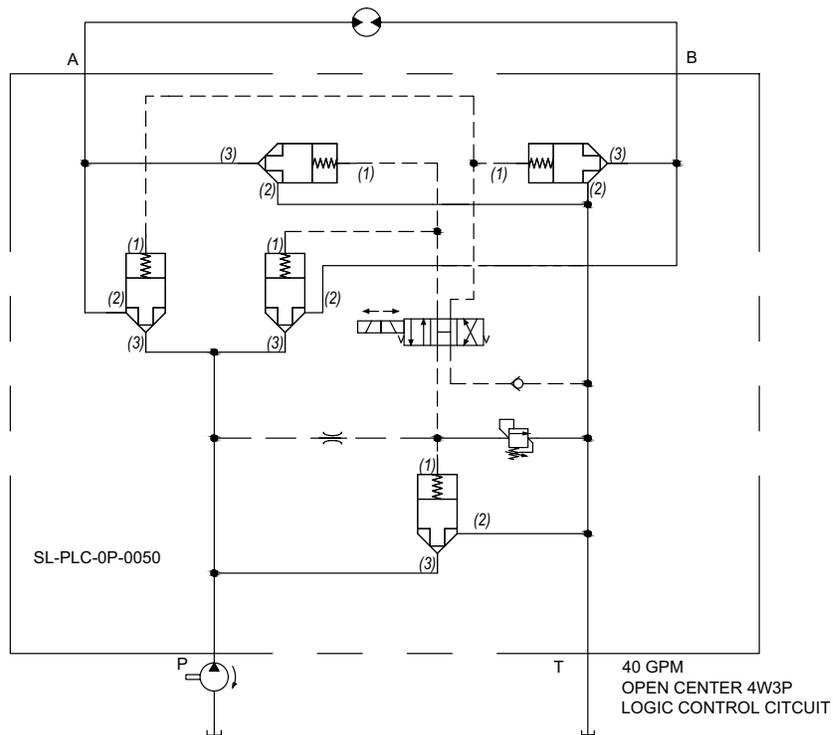
TYPICAL SCHEMATIC

Typical application for the PLA, PLB, and PLC is to provide the main stage of a high-flow capacity on/off function. A low flow solenoid valve is generally used to provide pilot control.

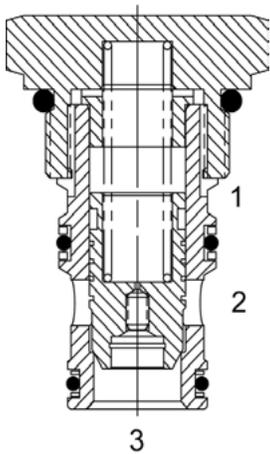
The PLA and PLB are intended for flow in one direction only, whereas the PLC can be used for bi-directional operation.

The differing pilot ratios between the three valves affect pressure drop versus flow, and **opening pressure versus pilot pressure**.

The differing pilot ratios between the three valves affect pressure drop versus flow, and **opening pressure as a function of pilot pressure**.



**SL-PLA SUPER SERIES, LOGIC VALVE**



**DESCRIPTION**

16 size, 1 5/16-12 thread, "Super" series, logic valve.

**OPERATION**

The SL-PLA with an orifice between ports (3) and (1) maintains a constant flow rate from (3) regardless of load pressure changes in the system upstream of (3), or in the bypass leg at (2) as long as pressure at (2) is less than (1). Used for basic blocking applications.

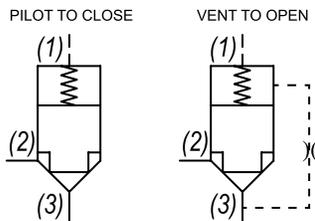
**FEATURES**

- Hardened parts for long life.
- Industry common cavity.



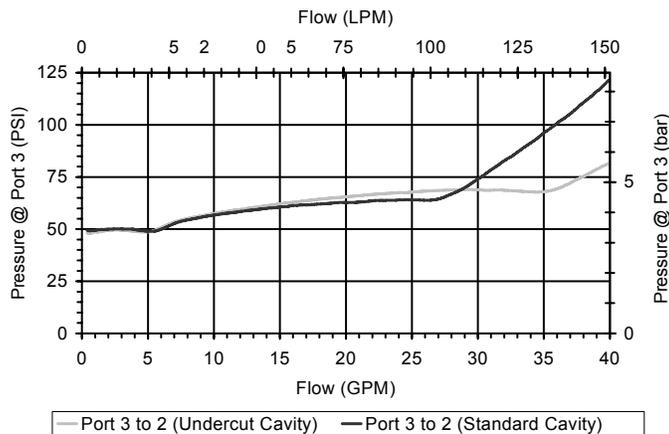
For bidirectional applications see SL-PLC.  
For metering see SLPCA or SL-PCB.

**HYDRAULIC SYMBOL**



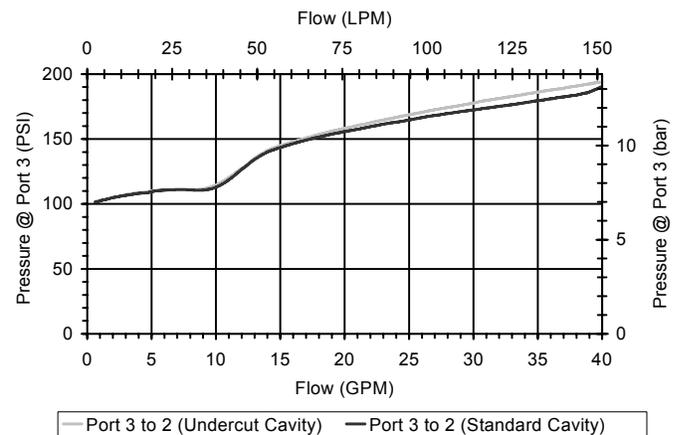
**PERFORMANCE**

Actual Test Data (Cartridge Only)



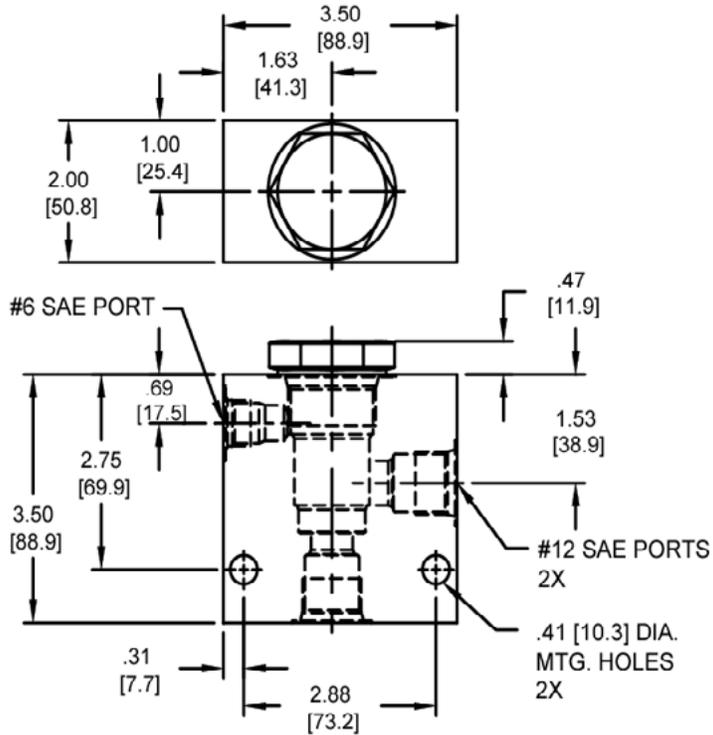
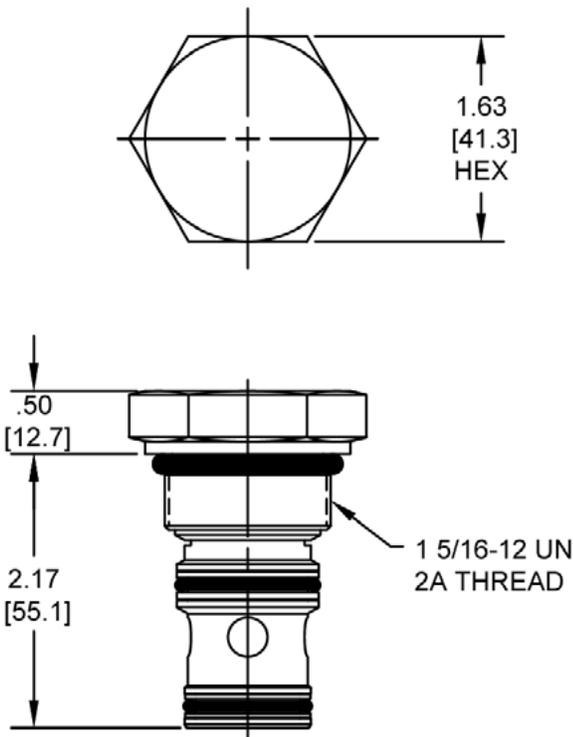
**VALVE SPECIFICATIONS**

Nominal Flow	40 GPM (151 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.69 lbs (.31 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	90 ft-lbs (122 Nm)
Cavity	SUPER 3WS
Cavity Form Tool (Finishing)	40500021
Seal Kit	21191409
Seat Ratio	Area of the pilot is 1.2 times the area of the seat at Port (3)



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**DIMENSIONS**



Body Weight: 1.89 lbs (.86 kg)

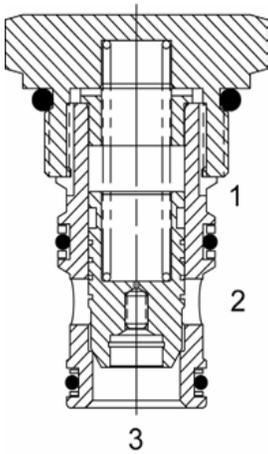
**ORDERING INFORMATION**

<p><b>SL-PLA</b> -</p> <p><b>OPTIONS</b></p> <p>Buna, Pilot to Close <b>OP</b></p> <p>Viton, Pilot to Close <b>VP</b></p> <p>Buna, Vent to Open <b>OV</b></p> <p>Viton, Vent to Open <b>VV</b></p> <p>Buna, Pilot to Close w/seals <b>OB</b></p> <p>Viton, Pilot to Close w/seals <b>VB</b></p> <p>Buna, Vent to Open w/seals <b>OC</b></p> <p>Viton, Vent to Open w/seals <b>VC</b></p>	<p>-</p> <p>-</p> <p>-</p>	<p><b>BODIES</b></p> <p>Blank Without Body</p> <p><b>S</b> #12 SAE Ports</p> <p><b>PRESSURE SETTING</b></p> <p><b>0020</b> 20 PSI</p> <p><b>0050</b> 50 PSI</p> <p><b>0100</b> 100 PSI</p> <p><b>0150</b> 150 PSI</p>
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**SL-PLB SUPER SERIES, LOGIC VALVE**



**DESCRIPTION**

16 size, 1 5/16-12 thread, "Super" series, logic valve.

**OPERATION**

The SL-PLB with an orifice between ports (3) and (1) maintains a constant flow rate from (3) regardless of load pressure changes in the system upstream of (3), or in the bypass leg at (2) as long as pressure at (2) is less than (1). Used for basic blocking applications.

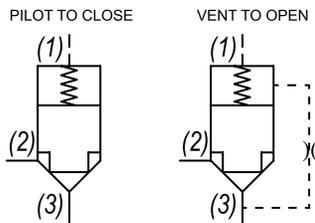
**FEATURES**

- Hardened parts for long life.
- Industry common cavity.



For bidirectional applications see SL-PLC.  
For metering see SLPCA or SL-PCB.

**HYDRAULIC SYMBOL**

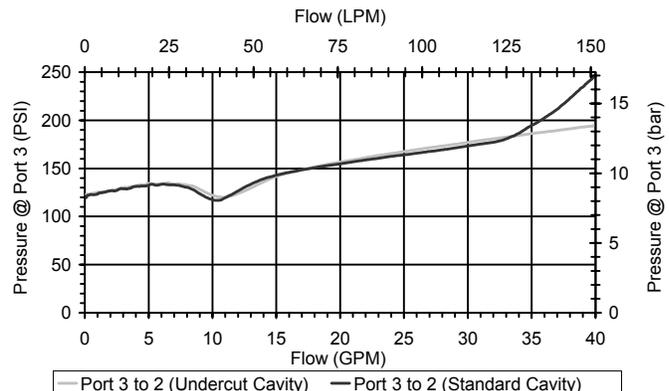
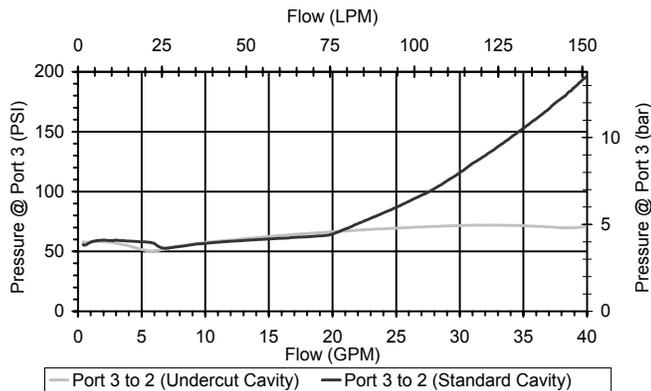


**PERFORMANCE**

Actual Test Data (Cartridge Only)

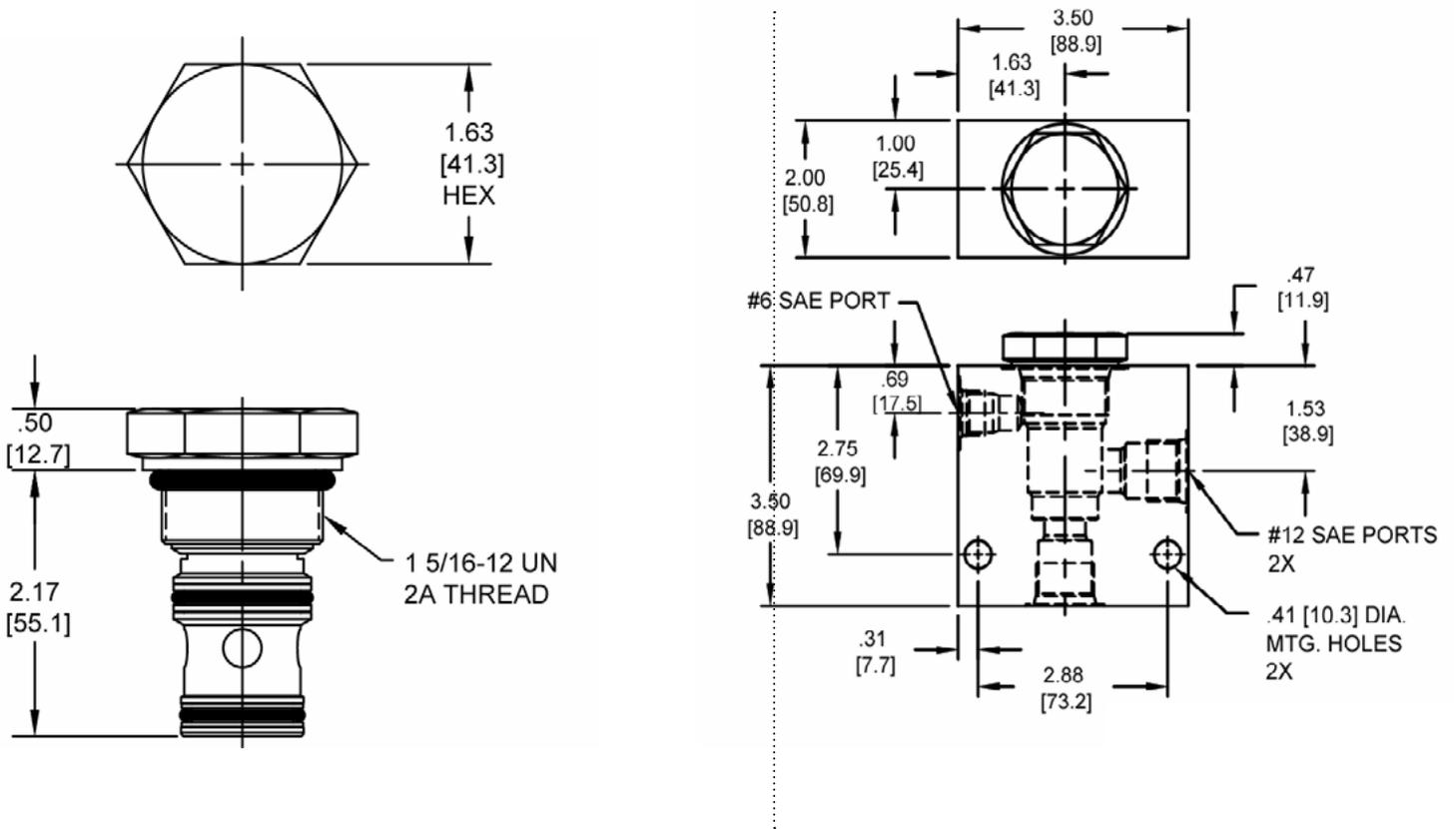
**VALVE SPECIFICATIONS**

Nominal Flow	40 GPM (151 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.69 lbs (.31 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	90 ft-lbs (122 Nm)
Cavity	SUPER 3WS
Cavity Form Tool (Finishing)	40500021
Seal Kit	21191409
Seat Ratio	Area of the pilot is 1.5 times the area of the seat at Port (3)



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**DIMENSIONS**



Body Weight: 1.89 lbs (.86 kg)

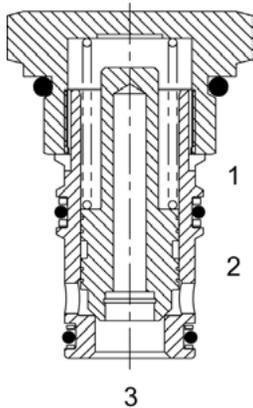
**ORDERING INFORMATION**

<p><b>SL-PLB</b> - - -</p> <p><b>OPTIONS</b></p> <p>Buna, Pilot to Close <b>0P</b></p> <p>Viton, Pilot to Close <b>VP</b></p> <p>Buna, Vent to Open <b>0V</b></p> <p>Viton, Vent to Open <b>VV</b></p> <p>Buna, Pilot to Close w/seals <b>0B</b></p> <p>Viton, Pilot to Close w/seals <b>VB</b></p> <p>Buna, Vent to Open w/seals <b>0C</b></p> <p>Viton, Vent to Open w/seals <b>VC</b></p>	<p><b>BODIES</b></p> <p>Blank Without Body</p> <p><b>S</b> #12 SAE Ports</p>	<p><b>PRESSURE SETTING</b></p> <p><b>0020</b> 20 PSI</p> <p><b>0050</b> 50 PSI</p> <p><b>0100</b> 100 PSI</p> <p><b>0150</b> 150 PSI</p>
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**SL-PLC SUPER SERIES, LOGIC VALVE**



**DESCRIPTION**

16 size, 1 5/16-12 thread, "Super" series, logic valve.

**OPERATION**

The SL-PLC with an orifice between ports (3) and (1) maintains a constant flow rate from (3) regardless of load pressure changes in the system upstream of (3), or in the bypass leg at (2) as long as pressure at (2) is less than (1). Used for basic bidirectional blocking applications.

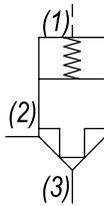
**FEATURES**

- Hardened parts for long life.
- Industry common cavity.



For metering see SL-PCA or SL-PCB.

**HYDRAULIC SYMBOL**

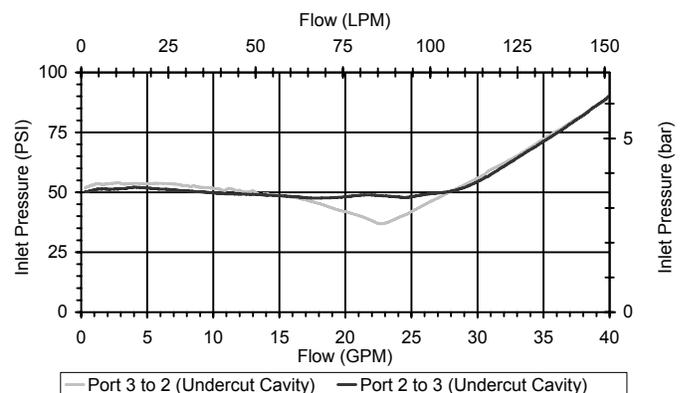
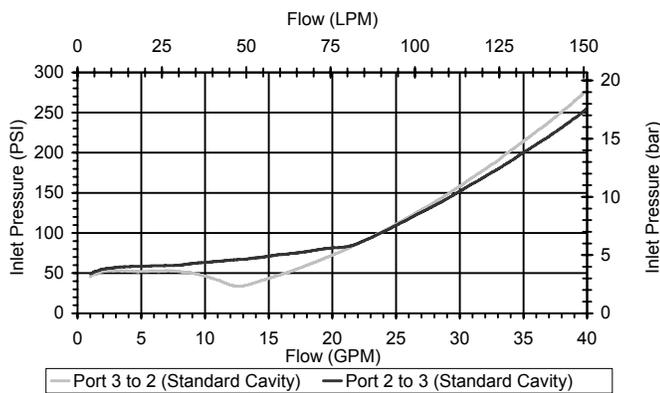


**PERFORMANCE**

Actual Test Data (Cartridge Only)

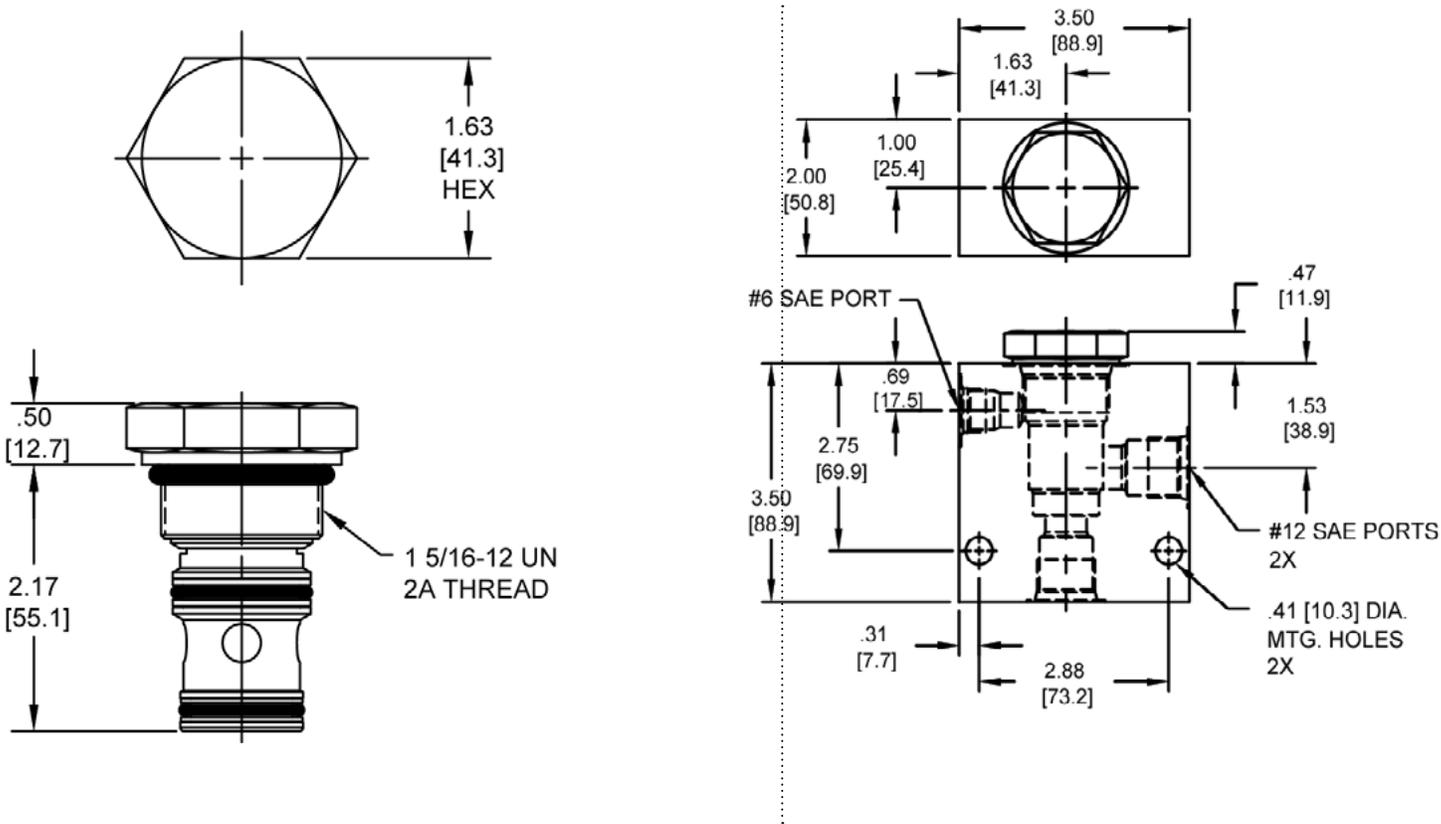
**VALVE SPECIFICATIONS**

Nominal Flow	40 GPM (151 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.65 lbs (.29 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	90 ft-lbs (122 Nm)
Cavity	SUPER 3WS
Cavity Form Tool (Finishing)	40500021
Seal Kit	21191409
Seat Ratio	Area of the pilot is 2 times the area of the seat at Port (3)



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**DIMENSIONS**



Body Weight: 1.89 lbs (.86 kg)

**ORDERING INFORMATION**

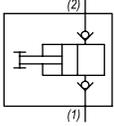
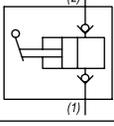
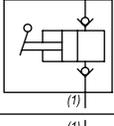
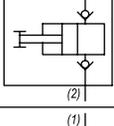
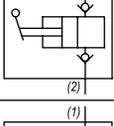
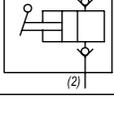
<p><b>SL-PLC</b> -</p> <p><b>OPTIONS</b></p> <p>Buna, Pilot to Close <b>0P</b></p> <p>Viton, Pilot to Close <b>VP</b></p> <p>Buna, Pilot to Close w/seals <b>0B</b></p> <p>Viton, Pilot to Close w/seals <b>VB</b></p>	<p>-</p> <p>-</p> <p>-</p>	<p><b>BODIES</b></p> <p>Blank Without Body</p> <p><b>S</b> #12 SAE Ports</p> <p><b>PRESSURE SETTING</b></p> <p><b>0020</b> 20 PSI</p> <p><b>0050</b> 50 PSI</p> <p><b>0100</b> 100 PSI</p> <p><b>0150</b> 150 PSI</p>
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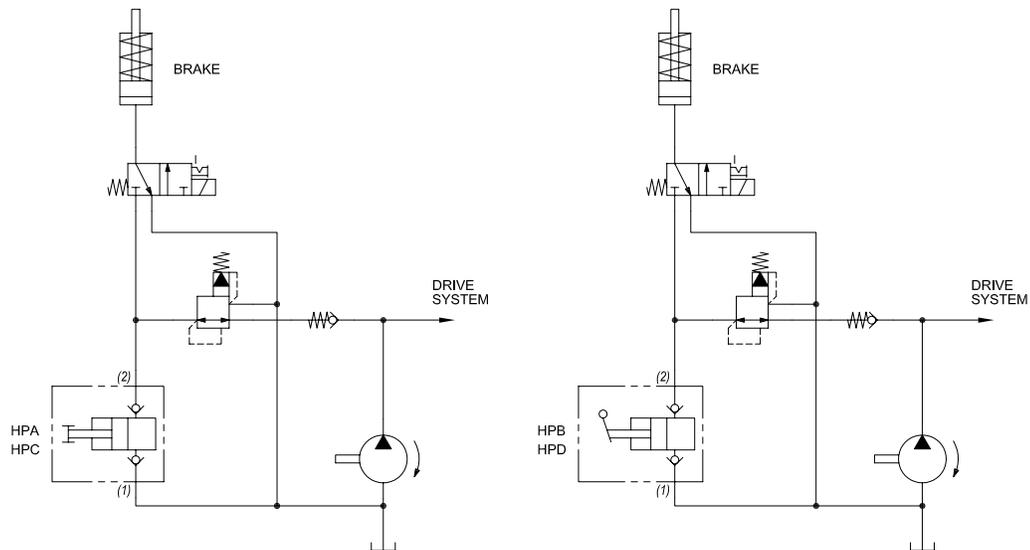
Via Malavolti, 36 - 41122 Modena - ITALY - Phone +39 (059) 254895 - Fax +39 (059) 253512 - mail: [tecnord@tecnord.com](mailto:tecnord@tecnord.com) - [www.tecnord.com](http://www.tecnord.com)

**HAND PUMPS**

	cu in/stroke	PSI	cc/stroke	BAR	CAVITY	MODEL	PAGE
	0.35	500	5.8	34	7/8-14	<b>DE-HPA</b>	MF98
	0.39	3000	6.4	207	7/8-14	<b>DE-HPB</b>	MF100
	0.39	3000	6.4	207	7/8-14	<b>DE-HPE</b>	MF102
	0.35	500	5.8	34	7/8-14	<b>DE-HPC</b>	MF104
	0.39	3000	6.4	207	7/8-14	<b>DE-HPD</b>	MF106
	0.39	3000	6.4	207	7/8-14	<b>DE-HPF</b>	MF108

**TYPICAL SCHEMATIC**

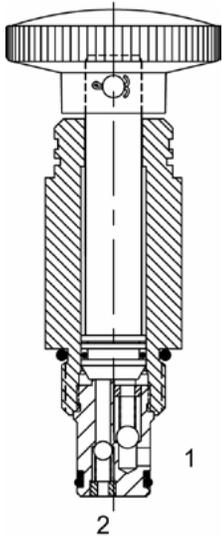
Typical application for the HPA, HPB, HPC, and HPD is to supply pressure to release parking brake for towing.



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**DE-HPA HAND PUMP**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, cartridge type, plunger hand pump.

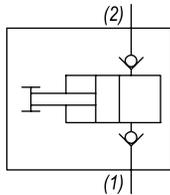
**OPERATION**

The DE-HPA hand pump when pulled primes thru Port (1) and when pushed pressurizes outlet port (2).

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

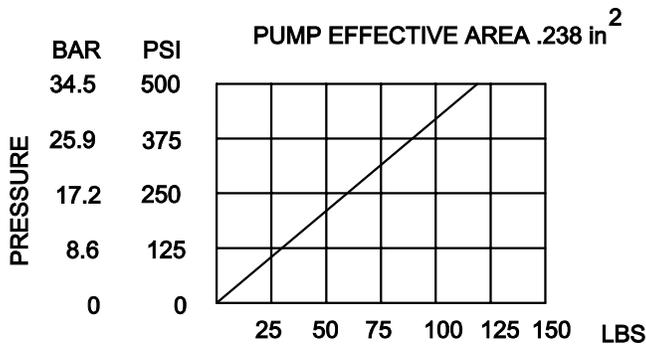
**HYDRAULIC SYMBOL**



*This product is not intended as a load holding device.*

**PERFORMANCE**

Actual Test Data (Cartridge Only)



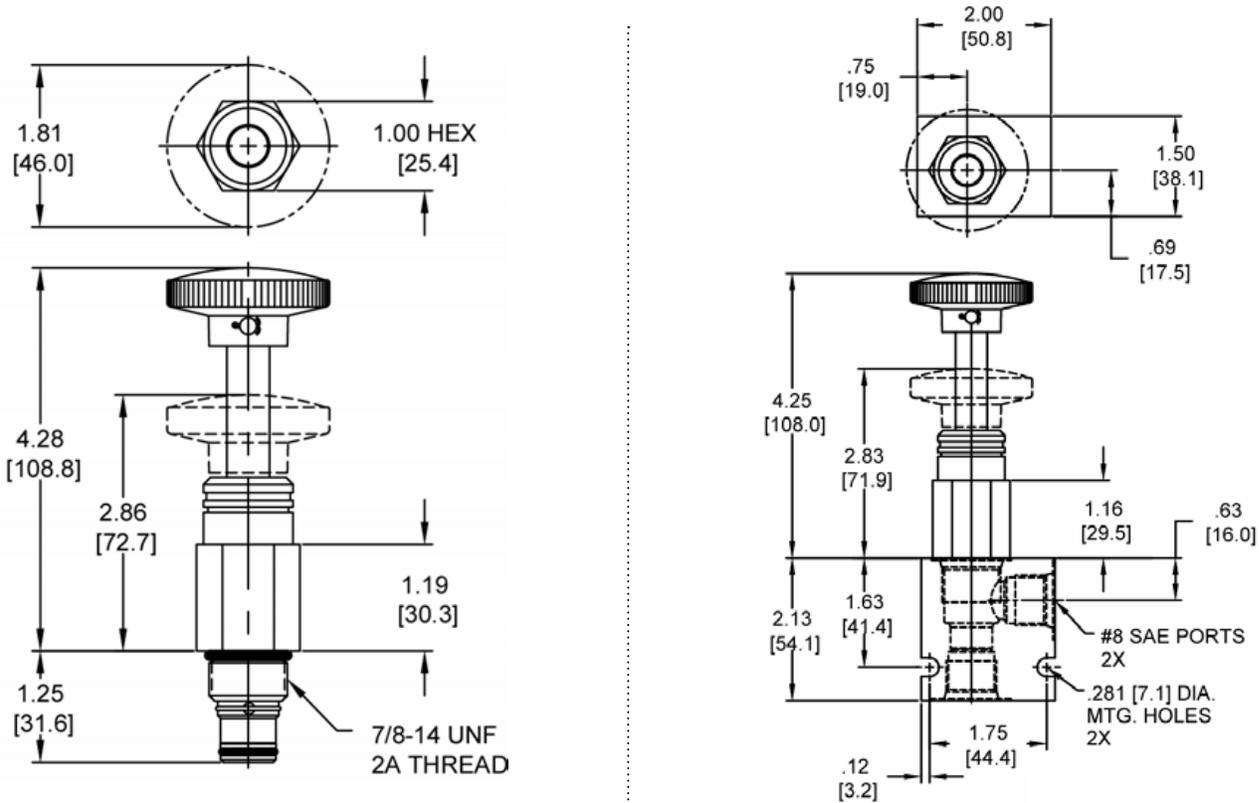
**FORCE**  
**ABOVE CURVE IS WITH**  
**HYDRAULIC OIL 150 SSU AT 100°F.**

**VALVE SPECIFICATIONS**

Nominal Flow	.35 cu in/stroke
Rated Operating Pressure	500 PSI (34 bar)
Typical Internal Leakage (150 SSU)	0-10 drops/min
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.57 lbs (.26 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191200

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**DIMENSIONS**



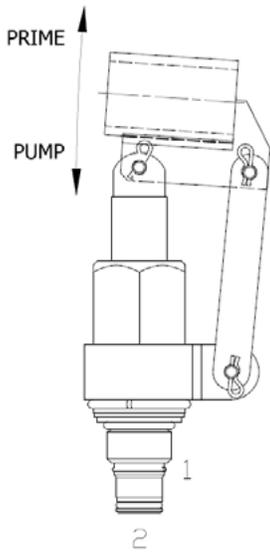
Body Weight: .47 lbs (21 kg)

**ORDERING INFORMATION**

<p><b>DE-HPA</b> -</p> <p style="text-align: center;"> </p> <p style="text-align: center;"> </p> <p style="text-align: center;"> </p> <p style="text-align: center;"> </p>	<p><b>OPTIONS</b></p> <p>Buna, Knob <b>OK</b></p> <p>Viton, Knob <b>VK</b></p>	<p>-</p> <p style="text-align: center;"> </p> <p style="text-align: center;"> </p> <p style="text-align: center;"> </p> <p style="text-align: center;"> </p>	<p><b>BODIES</b></p> <p>Without Body</p> <p>3/8" NPTF Ports</p> <p>#8 SAE Ports</p>
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**DE-HPB HAND PUMP, PUSH TO PUMP TYPE**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, screw in, cartridge type, hand pump.

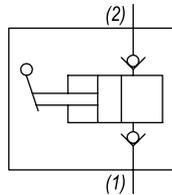
**OPERATION**

The DE-HPB hand pump when pipe handle is lifted, primes thru port (1) and when pushed provides flow pressure to outlet port (2).

**FEATURES**

- Large displacement per stroke.
- Industry common cavity.

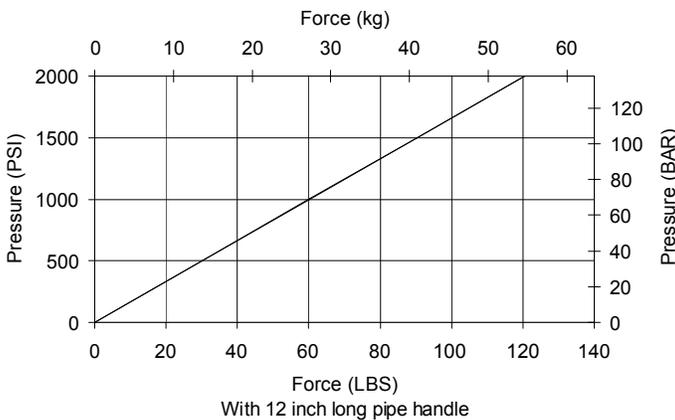
**HYDRAULIC SYMBOL**



*This product is not intended as a load holding device. Linkage is not to be removed. 36" Maximum handle length.*

**PERFORMANCE**

Actual Test Data (Cartridge Only)

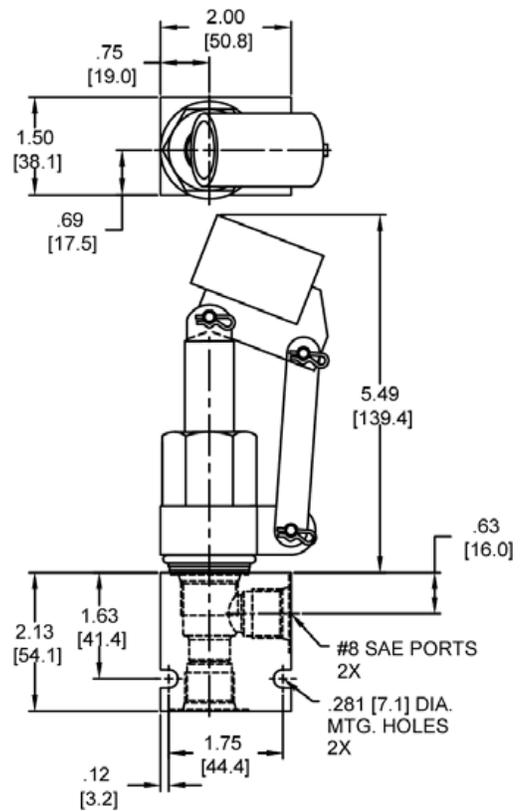
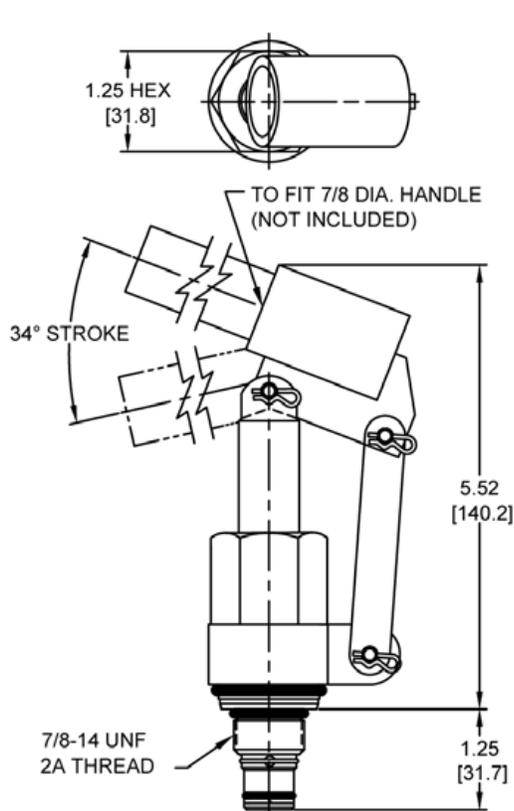


**VALVE SPECIFICATIONS**

Nominal Flow	.39 cu in/stroke
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	0-10 drops/min
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	1.5 lbs (.69 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191200

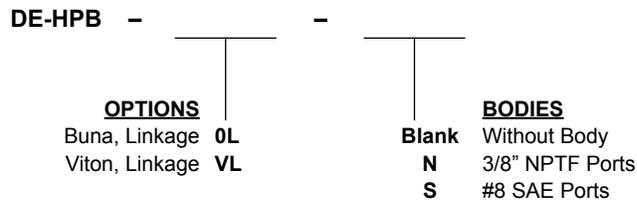
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**



Body Weight: .47 lbs (21 kg)

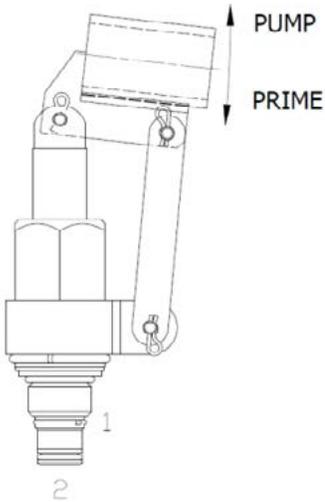
**ORDERING INFORMATION**



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**DE-HPE HAND PUMP, PULL TO PUMP TYPE**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, screw in, cartridge type, hand pump.

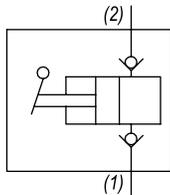
**OPERATION**

The DE-HPE hand pump when pipe handle is pushed, primes thru port (1) and when lifted provides flow pressure to outlet port (2).

**FEATURES**

- Large displacement per stroke.
- Industry common cavity.

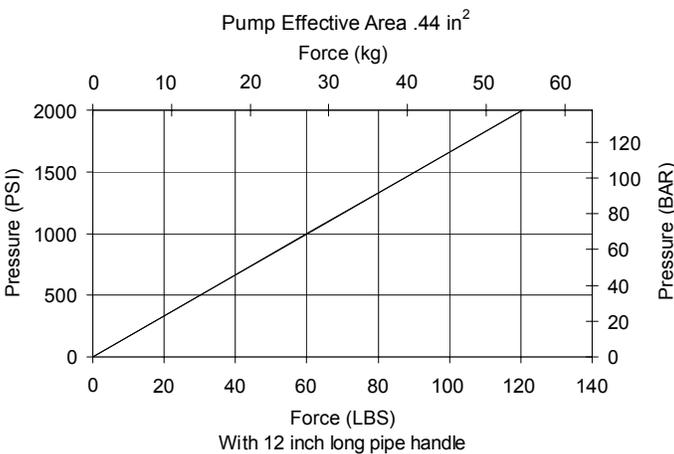
**HYDRAULIC SYMBOL**



*This product is not intended as a load holding device. Linkage is not to be removed. 36" Maximum handle length.*

**PERFORMANCE**

Actual Test Data (Cartridge Only)

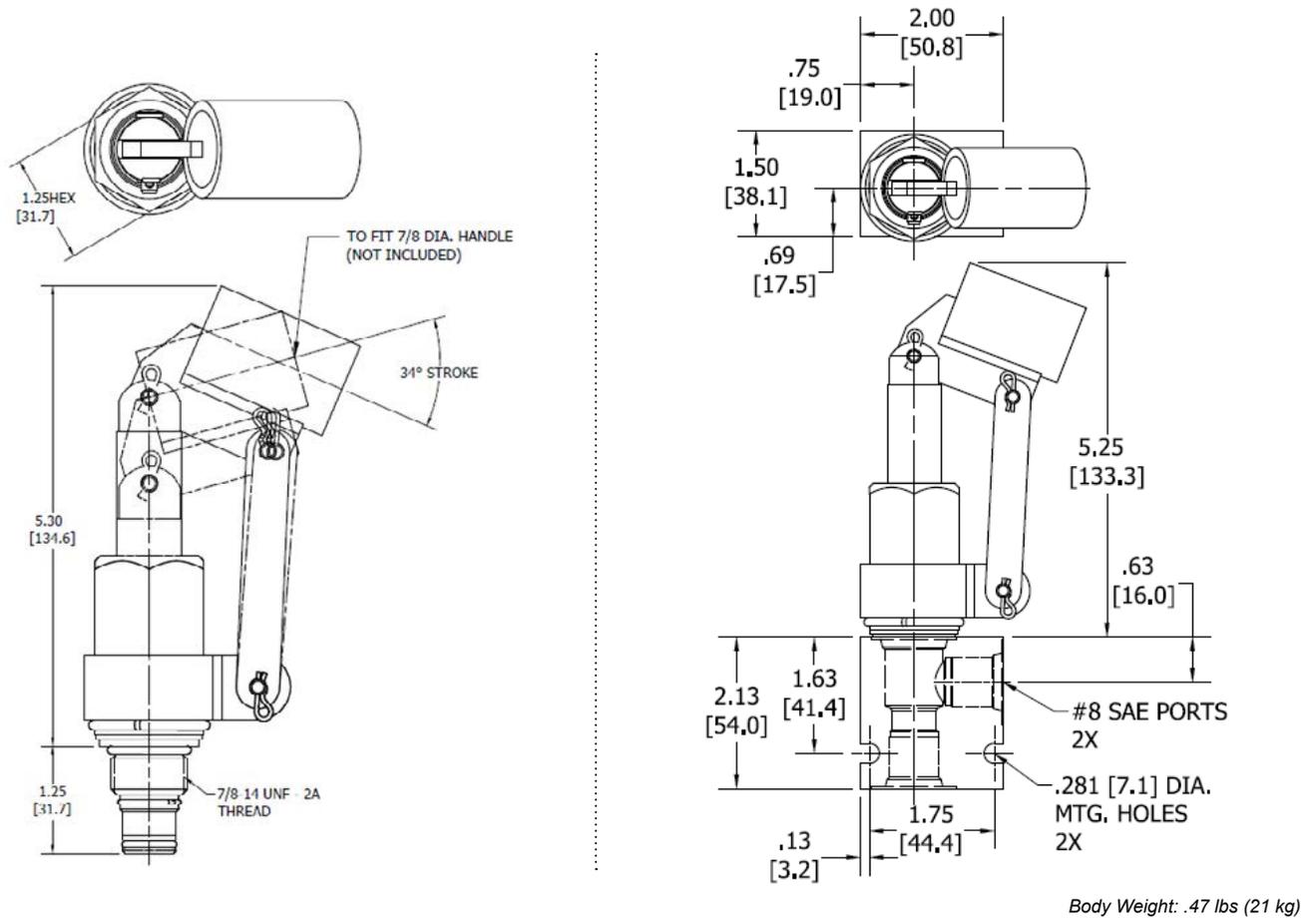


**VALVE SPECIFICATIONS**

Nominal Flow	.39 cu in/stroke
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	0-10 drops/min
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	1.5 lbs (.69 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191200

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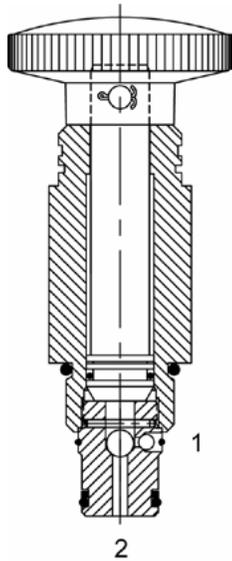
**DIMENSIONS**



**ORDERING INFORMATION**

<p><b>DE-HPE</b> -</p> <p style="text-align: center;"> </p> <p style="text-align: center;"> </p> <p style="text-align: center;"> </p> <p style="text-align: center;"> </p>	<p><b>OPTIONS</b></p> <p>Buna, Linkage <b>0L</b></p> <p>Viton, Linkage <b>VL</b></p>	<p>-</p> <p style="text-align: center;"> </p> <p style="text-align: center;"> </p> <p style="text-align: center;"> </p> <p style="text-align: center;"> </p>	<p><b>BODIES</b></p> <p>Without Body</p> <p>3/8" NPTF Ports</p> <p>#8 SAE Ports</p>
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DE-HPC HAND PUMP



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, cartridge type, plunger hand pump.

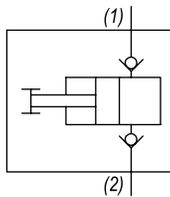
**OPERATION**

The DE-HPC hand pump when pulled primes thru port (2) and when pushed provide flow pressure to outlet port (1).

**FEATURES**

- Small profile.
- Industry common cavity.
- Large displacement per stroke.

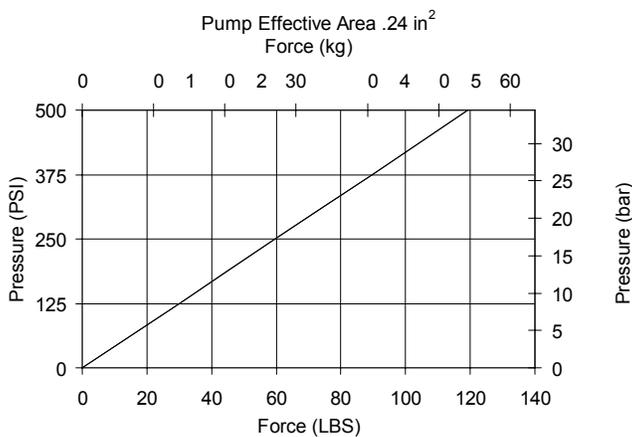
HYDRAULIC SYMBOL



*This product is not intended as a load holding device.*

PERFORMANCE

Actual Test Data (Cartridge Only)

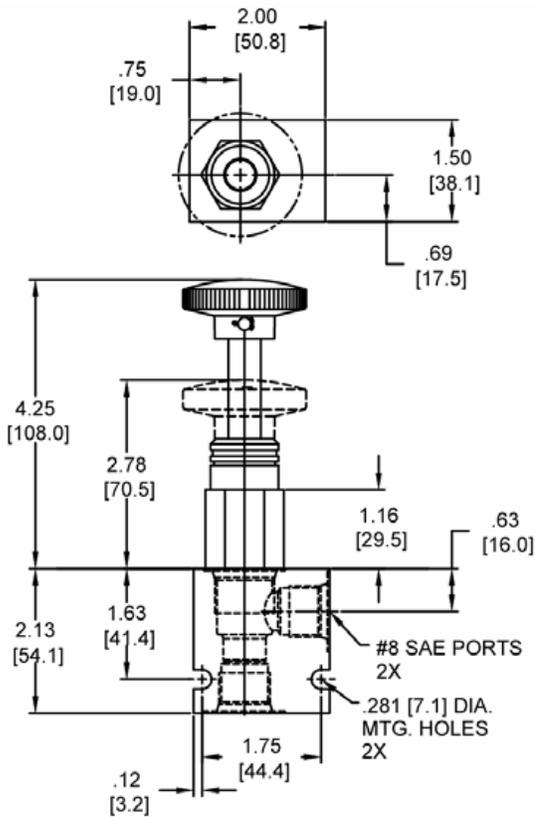
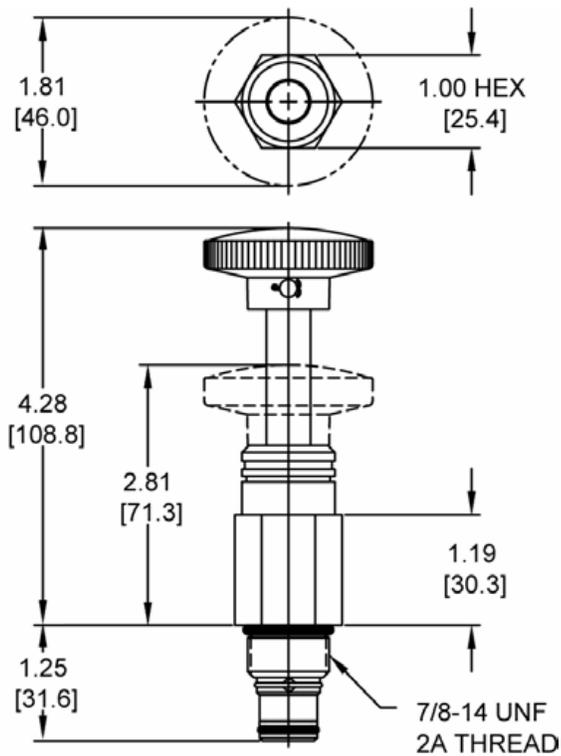


VALVE SPECIFICATIONS

Nominal Flow	.35 cu in/stroke
Rated Operating Pressure	500 PSI (34 bar)
Typical Internal Leakage (150 SSU)	0-10 drops/min
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.57 lbs (.26 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191200

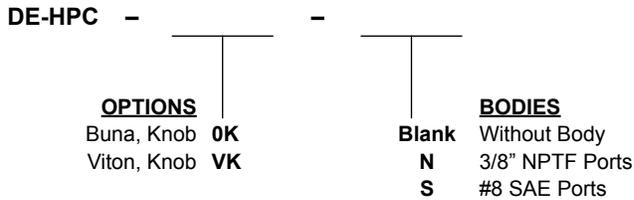
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**



Body Weight: .47 lbs (21 kg)

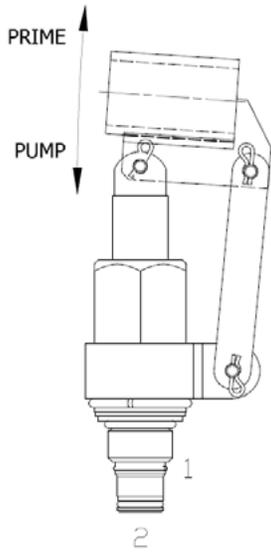
**ORDERING INFORMATION**



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**DE-HPD HAND PUMP, PUSH TO PUMP TYPE**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, cartridge type, hand pump.

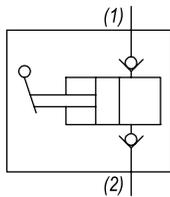
**OPERATION**

The DE-HPD hand pump when pipe handle is lifted, primes thru port (2) and when pushed provides flow pressure to outlet port (1).

**FEATURES**

- Large displacement per stroke.
- Industry common cavity.

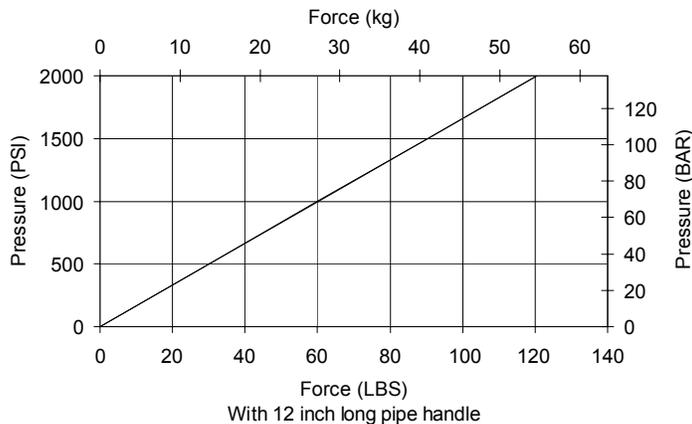
**HYDRAULIC SYMBOL**



*This product is not intended as a load holding device. Linkage is not to be removed. 36" Maximum handle length.*

**PERFORMANCE**

Actual Test Data (Cartridge Only)

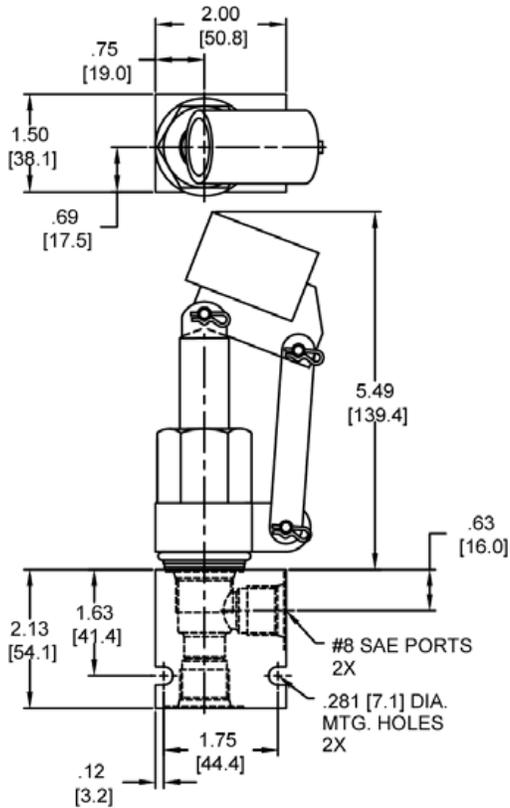
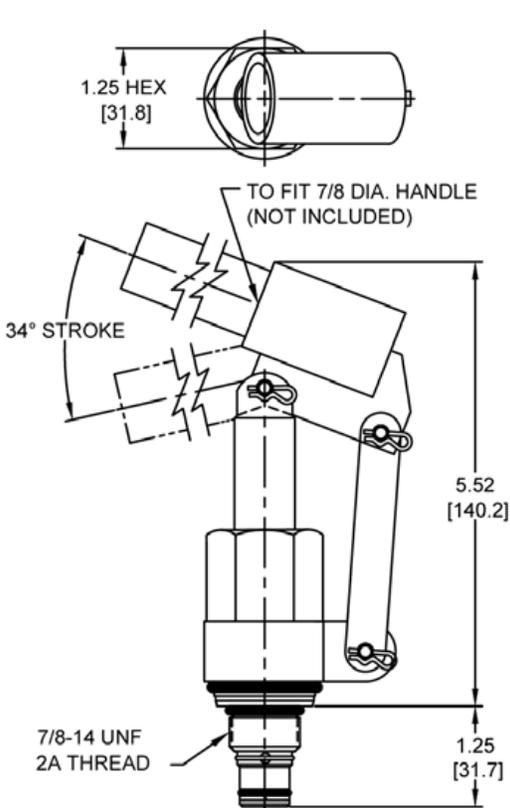


**VALVE SPECIFICATIONS**

Nominal Flow	.39 cu in/stroke
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	0-10 drops/min
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	1.5 lbs (.69 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191200

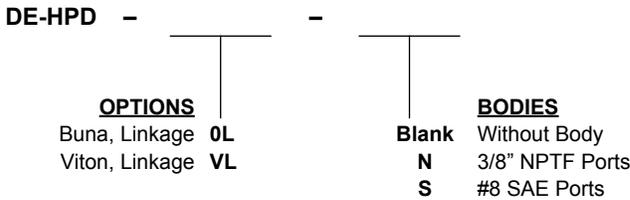
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**



Body Weight: .47 lbs (21 kg)

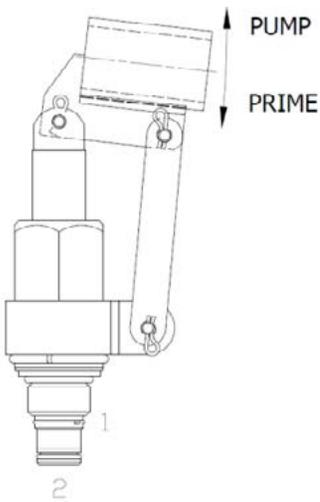
**ORDERING INFORMATION**



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**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DE-HPF HAND PUMP, PULL TO PUMP TYPE**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, cartridge type, hand pump.

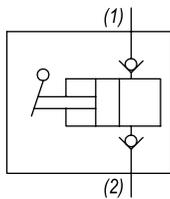
**OPERATION**

The DE-HPF hand pump when pipe handle is pushed, primes thru port (2) and when lifted provides flow pressure to outlet port (1).

**FEATURES**

- Large displacement per stroke.
- Industry common cavity.

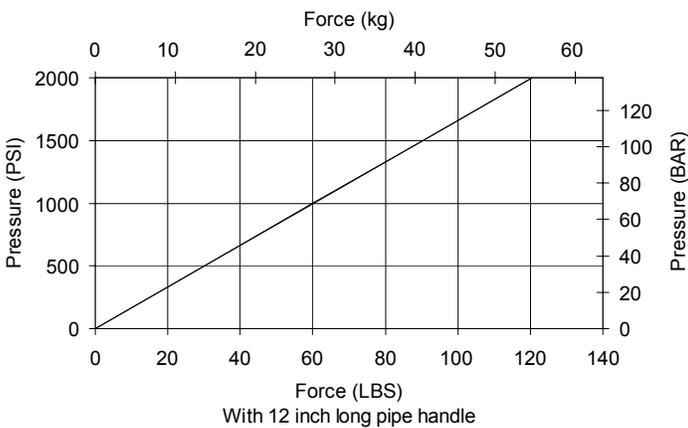
**HYDRAULIC SYMBOL**



*This product is not intended as a load holding device. Linkage is not to be removed. 36" Maximum handle length.*

**PERFORMANCE**

Actual Test Data (Cartridge Only)

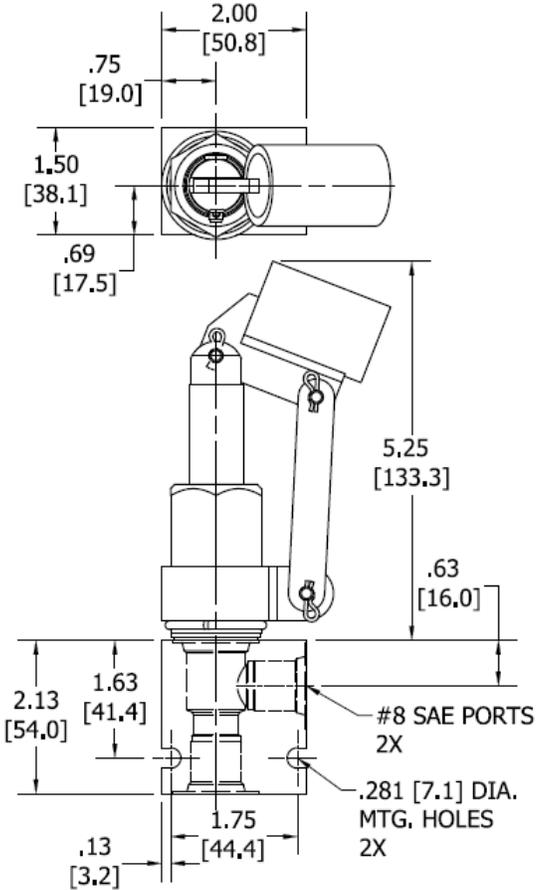
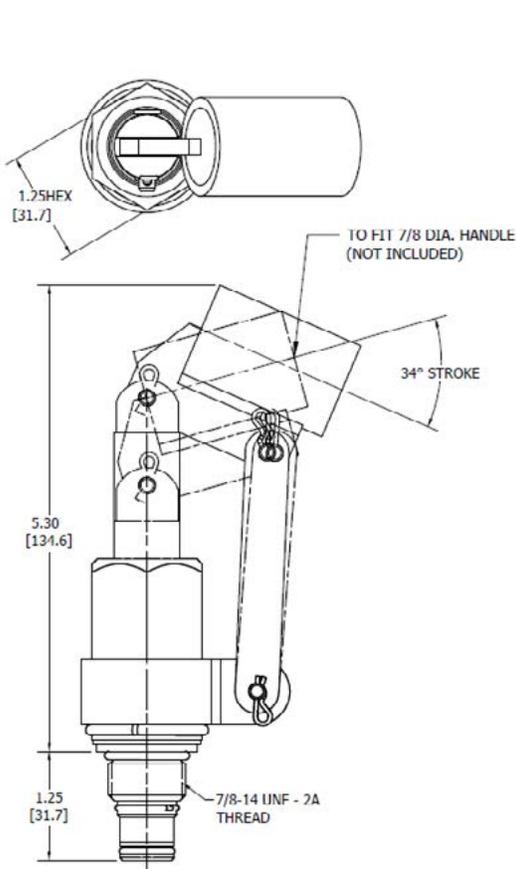


**VALVE SPECIFICATIONS**

Nominal Flow	.39 cu in/stroke
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	0-10 drops/min
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	1.5 lbs (.69 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191200

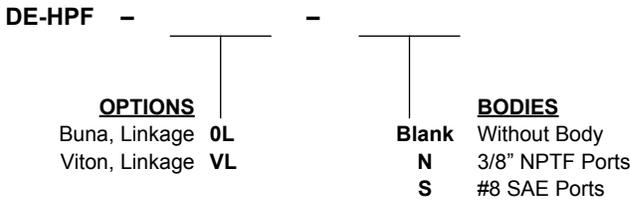
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**DIMENSIONS**



Body Weight: .47 lbs (21 kg)

**ORDERING INFORMATION**



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## MECHANICAL PRESSURE CONTROLS



<b>DIRECT ACTING AND DIFFERENTIAL AREA RELIEF VALVES</b> .....	MP3
<b>PILOT OPERATED RELIEF VALVES</b> .....	MP31
<b>CROSSOVER RELIEF VALVES</b> .....	MP47
<b>PRESSURE COMPENSATED REGULATOR VALVES</b> .....	MP53
<b>PRESSURE REDUCING/RELIEVING VALVES</b> .....	MP87
<b>SEQUENCE VALVES</b> .....	MP95
<b>SHUT DOWN VALVES</b> .....	MP119

**WARNING:** *the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.*

Via Malavolti, 36 - 41122 Modena - ITALY - Phone +39 (059) 254895 - Fax +39 (059) 253512 - mail: [tecnord@tecnord.com](mailto:tecnord@tecnord.com) - [www.tecnord.com](http://www.tecnord.com)

**DIRECT ACTING AND DIFFERENTIAL AREA RELIEF VALVES**

DIRECT ACTING RELIEF VALVES	GPM	PSI	LPM	BAR	CAVITY	MODEL	PAGE
	12	3500	45	241	7/8-14	DE-RCA	MP4
	5	3000	19	207	5/8-18	MA-RVA	MP6
	6	3500	23	241	3/4-16	PB-RVA	MP8
	8	4000	30	276	7/8-14	DE-RVA	MP10
	6	3500	23	241	3/4-16	PB-RVA	MP12
	8	4000	30	276	7/8-14	DE-RVA	MP14
	20	4000	76	276	7/8-14	DE-RWF	MP16

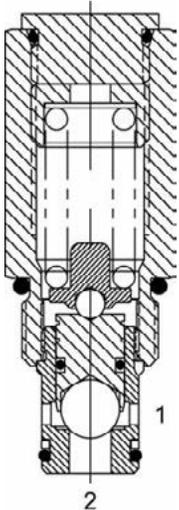
DIFFERENTIAL AREA RELIEF VALVES	GPM	PSI	LPM	BAR	CAVITY	MODEL	PAGE
	15	3500	57	241	7/8-14	DE-RCD	MP18
	8	3500	30	241	3/4-16	PB-RVD	MP20
	15	4000	57	276	7/8-14	DE-RVD	MP22
	40	5000	151	345	7/8-14	HE-RVD	MP24
	8	3500	30	241	3/4-16	PB-RVD	MP26
	15	4000	57	276	7/8-14	DE-RVD	MP28

**TYPICAL SCHEMATIC**

Typical application for the RVA, RVD, RWA, RWD is to protect pump and system.

Typical application for the RCA and RCD is cross over relief to protect motor in both directions, where lowest possible price is desired.

**DE-RCA GUIDED BALL, DIRECT ACTING RELIEF VALVE**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, direct acting relief valve.

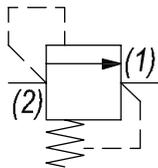
**OPERATION**

The DE-RCA blocks flow from (2) to (1) until sufficient pressure is present at (2) to force the poppet to open and allow metered flow from (2) to (1). The cartridge offers smooth transition in response to load changes in common hydraulic circuits.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

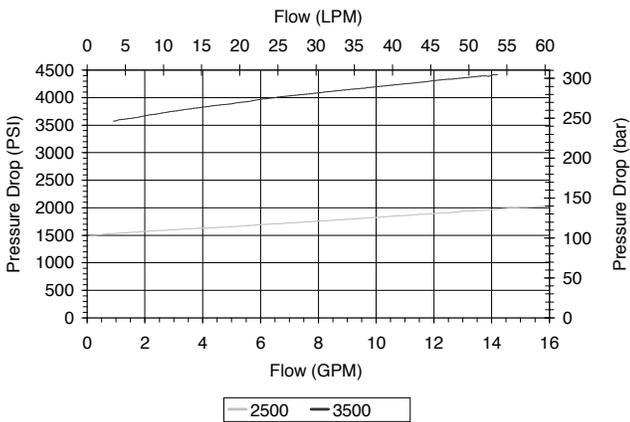
**HYDRAULIC SYMBOL**



*Installation Space Saving Product. Cannot be field adjusted. Not recommended for crossover relief valve applications, use DE-RWA.*

**PERFORMANCE**

Actual Test Data (Cartridge Only)

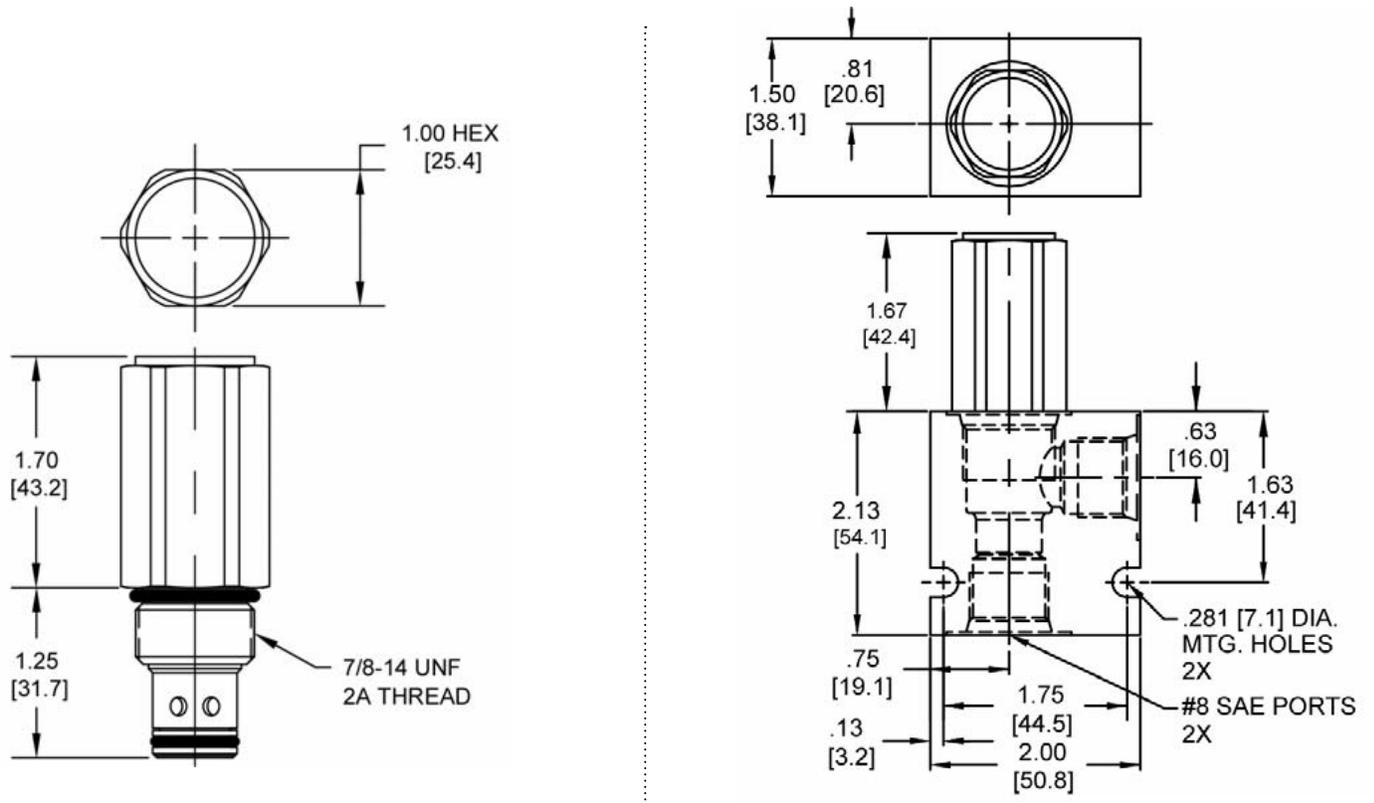


**VALVE SPECIFICATIONS**

Nominal Flow	12 GPM (45 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.38 lbs (.17 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191200

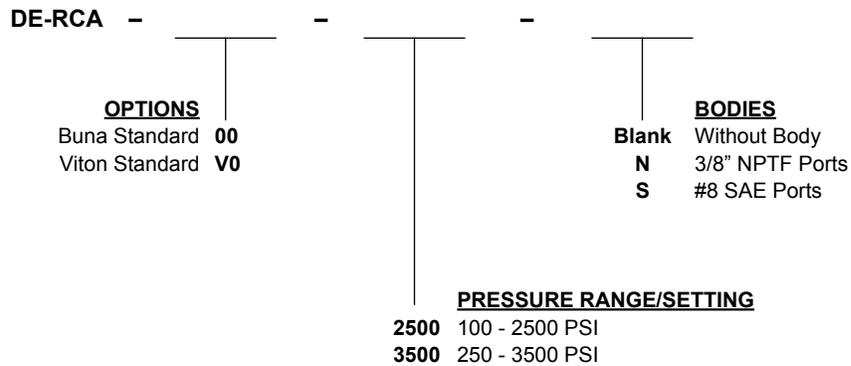
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

DIMENSIONS

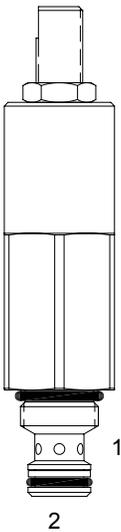


Body Weight: .47 lbs (.21 kg)

ORDERING INFORMATION



**MA-RVA DIRECT ACTING RELIEF VALVE**



**DESCRIPTION**

7 size, 5/8-18 thread, "Mini" series, direct acting relief valve.

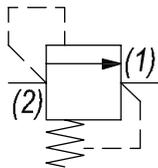
**OPERATION**

The MA-RVA blocks flow from (2) to (1) until sufficient pressure is present at (2) to force the poppet to open and allow metered flow from (2) to (1). The cartridge offers smooth transition in response to load changes in common hydraulic circuits.

**FEATURES**

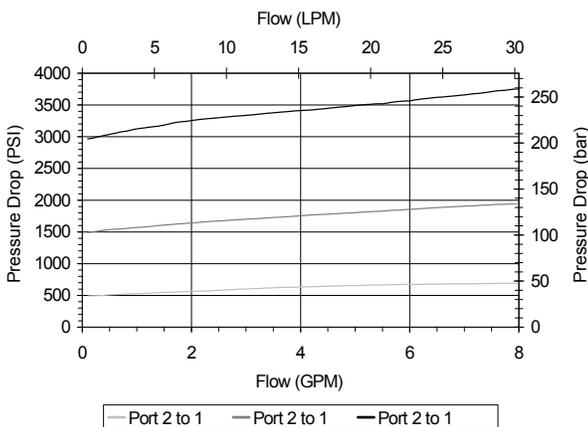
- Hardened parts for long life.
- Industry common cavity.

**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)

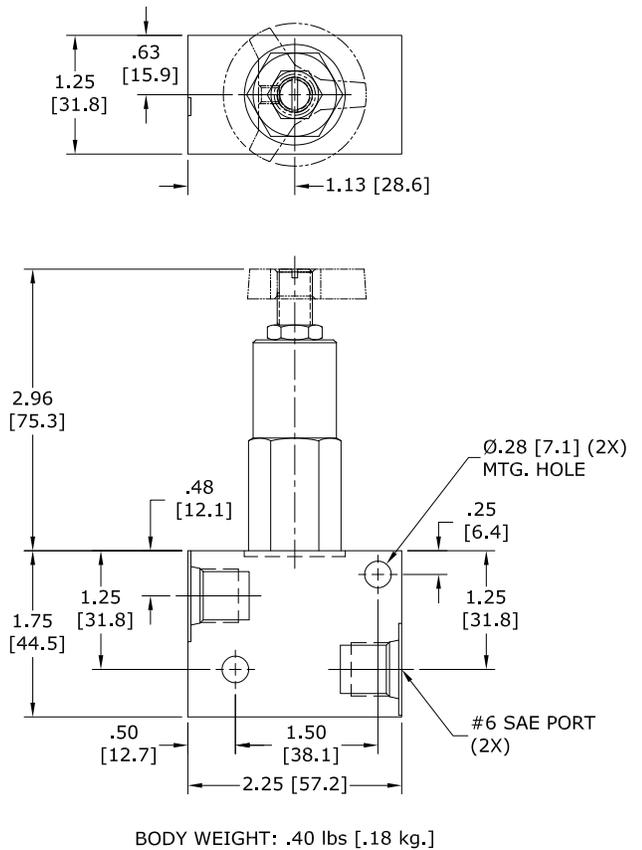
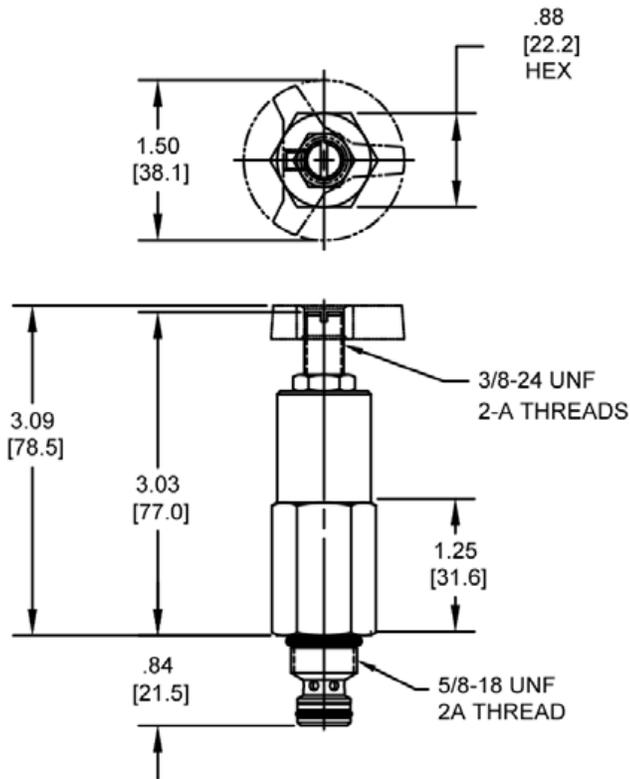


**VALVE SPECIFICATIONS**

Nominal Flow	5 GPM (19 LPM)
Rated Operating Pressure	3000 PSI (207 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.39 lbs (.17 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	15 ft-lbs (20.3 Nm)
Cavity	MINI 2W
Cavity Form Tool (Finishing)	40500003
Seal Kit	21191000

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DIMENSIONS

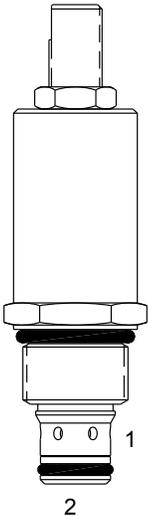


Body Weight: .29 lbs (.13 kg)

ORDERING INFORMATION

MA-RVA -		-	-	-	-
<b>OPTIONS</b>					<b>BODIES</b>
Buna Standard	00				Blank Without Body
Viton Standard	V0				N 1/4" NPTF Ports
Buna, Knob	0K				S #6 SAE Ports
Viton, Knob	VK				
				<b>PRESSURE RANGE</b>	
				0500	100 - 500 PSI
				1500	500 - 1500 PSI
				3000	1500 - 3000 PSI

**PB-RVA DIRECT ACTING RELIEF VALVE**



**DESCRIPTION**

8 size, 3/4-16 thread, "Power" series, direct acting relief valve.

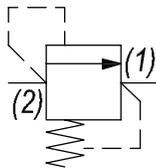
**OPERATION**

The PB-RVA blocks flow from (2) to (1) until sufficient pressure is present at (2) to force the poppet to open and allow metered flow from (2) to (1). The cartridge offers smooth transition in response to load changes in common hydraulic circuits.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

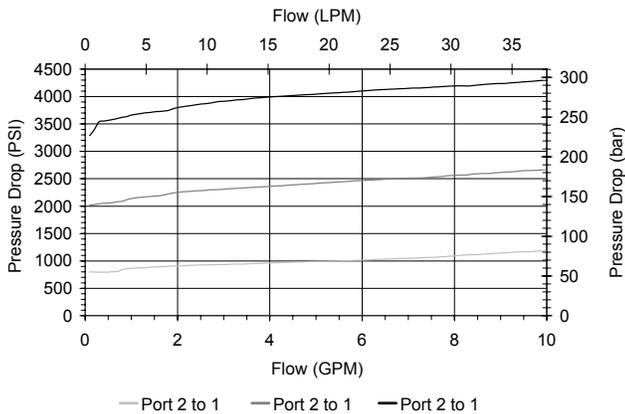
**HYDRAULIC SYMBOL**



Pressure at port (1) must not exceed 2500 PSI.

**PERFORMANCE**

Actual Test Data (Cartridge Only)

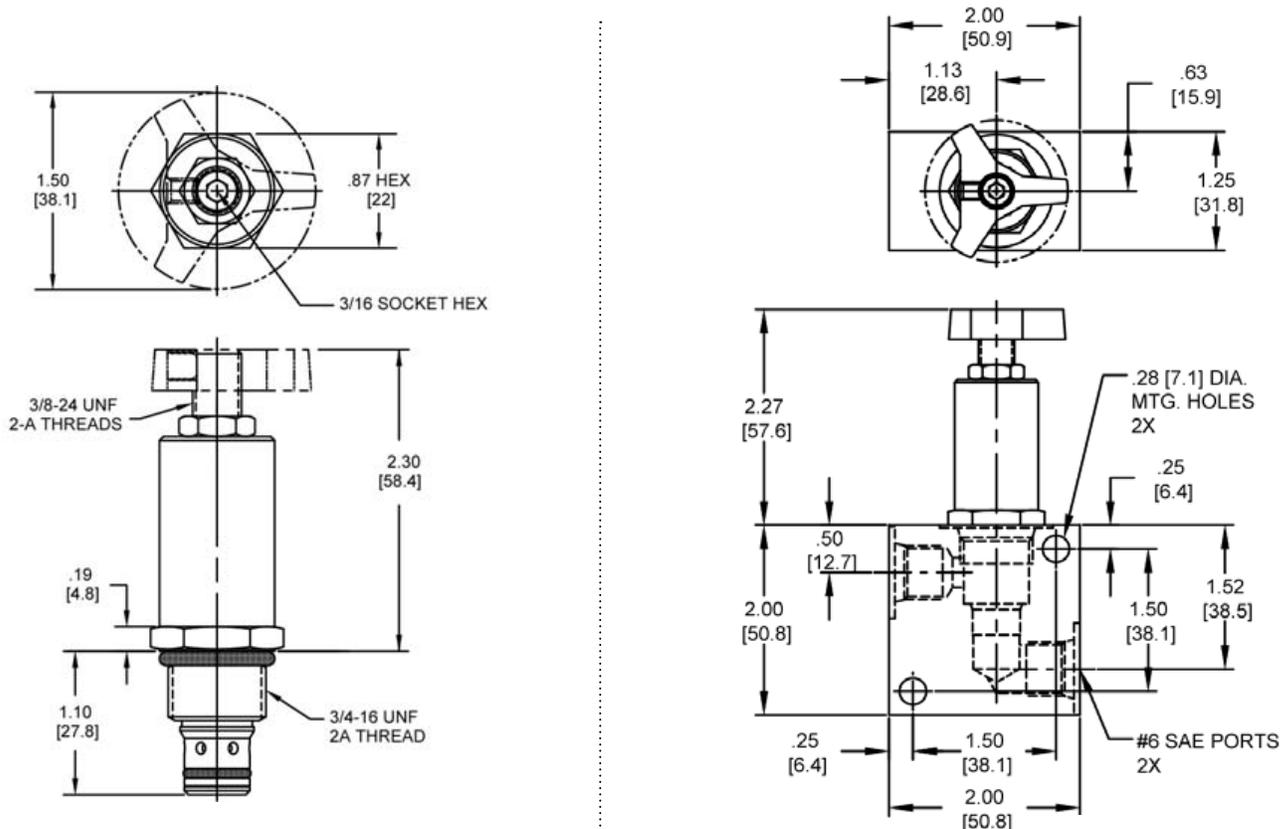


**VALVE SPECIFICATIONS**

Nominal Flow	6 GPM (23 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.30 lbs (.14 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Cavity	POWER 2W
Cavity Form Tool (Finishing)	40500005
Seal Kit	21191100

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DIMENSIONS

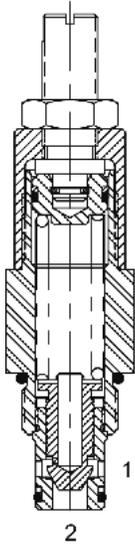


Body Weight: .39 lbs (.18 kg)

ORDERING INFORMATION

<p><b>PB-RVA</b> -</p> <p><b>OPTIONS</b></p> <p>Buna Standard <b>00</b></p> <p>Viton Standard <b>V0</b></p> <p>Buna, Knob <b>0K</b></p> <p>Viton, Knob <b>VK</b></p>	<p>-</p> <p>-</p> <p>-</p> <p>-</p>	<p><b>BODIES</b></p> <p>Blank Without Body</p> <p><b>N</b> 1/4" NPTF Ports</p> <p><b>S</b> #6 SAE Ports</p>
<p><b>PRESSURE RANGE/SETTING</b></p> <p><b>0800</b> 100 - 800 PSI</p> <p><b>2000</b> 800 - 2000 PSI</p> <p><b>3500</b> 2000 - 3500 PSI</p>		

**DE-RVA DIRECT ACTING RELIEF VALVE**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, direct acting relief valve.

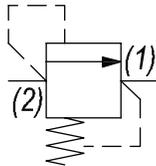
**OPERATION**

The DE-RVA blocks flow from (2) to (1) until sufficient pressure is present at (2) to force the poppet to open and allow metered flow from (2) to (1). The cartridge offers smooth transition in response to load changes in common hydraulic circuits.

**FEATURES**

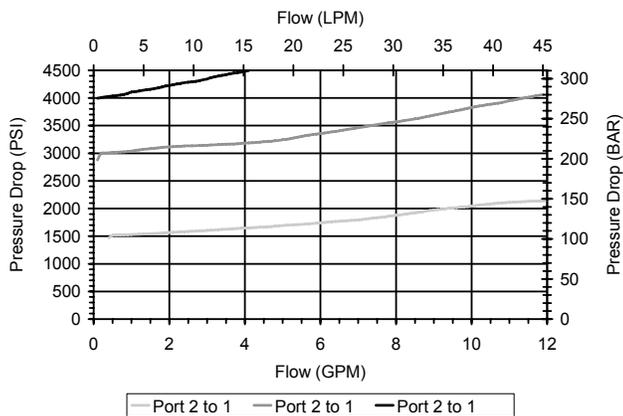
- Hardened parts for long life.
- Industry common cavity.

**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)



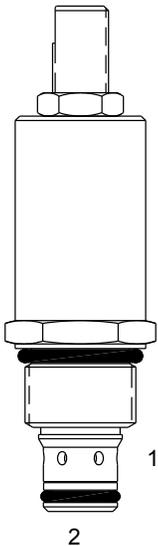
**VALVE SPECIFICATIONS**

Nominal Flow	4 GPM (15.6 LPM) 4000 PSI
	8 GPM (30 LPM) 3000 PSI
Rated Operating Pressure	4000 PSI (276 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.56 lbs (.25 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191200

**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.



**PB-RWA DIRECT ACTING RELIEF VALVE**



**DESCRIPTION**

8 size, 3/4-16 thread, "Power" series, direct acting relief valve.

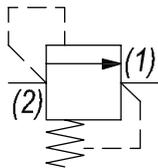
**OPERATION**

The PB-RWA blocks flow from (2) to (1) until sufficient pressure is present at (2) to force the poppet to open and allow metered flow from (2) to (1). The cartridge offers smooth transition in response to load changes in common hydraulic circuits.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

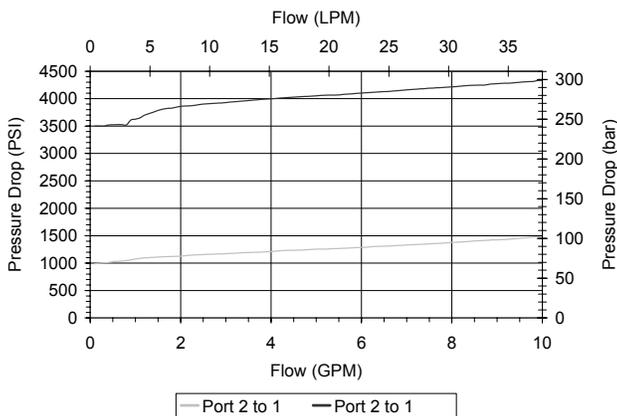
**HYDRAULIC SYMBOL**



Pressure at port (1) must not exceed 2500 PSI.

**PERFORMANCE**

Actual Test Data (Cartridge Only)

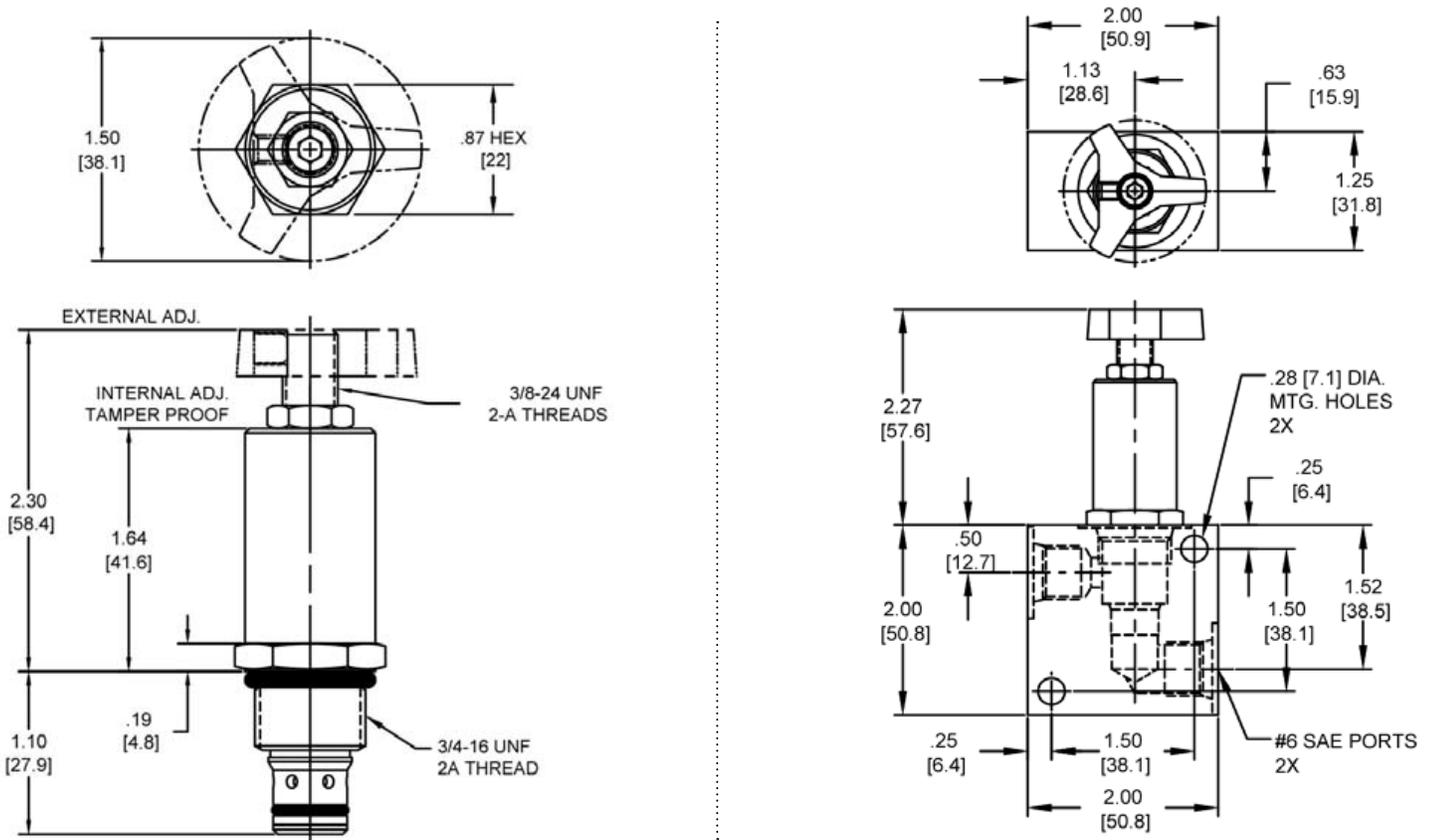


**VALVE SPECIFICATIONS**

Nominal Flow	6 GPM (23 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.31 lbs (.14 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Cavity	POWER 2W
Cavity Form Tool (Finishing)	40500005
Seal Kit	21191100

**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**



Body Weight: .39 lbs (.18 kg)

**ORDERING INFORMATION**

PB-RWA - - - -

**OPTIONS**

- External Adj. W/Locknut Buna **00**
- External Adj. W/Locknut Viton **V0**
- Buna, Knob **0K**
- Viton, Knob **VK**
- Internal Adjust Buna **0I**
- Internal Adjust Viton **VI**
- Tamper Proof Buna **0T**
- Tamper Proof Viton **VT**

**BODIES**

- Blank** Without Body
- N** 1/4" NPTF Ports
- S** #6 SAE Ports

**PRESSURE RANGE/SETTING**

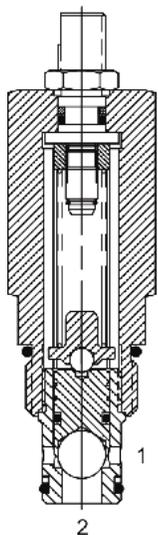
**Ext./Int. Adjustment**

- 1000** 100 - 1000 PSI
- 3500** 500 - 3500 PSI

**Tamper Proof**

Fill in 4 Digit Pressure Setting  
Example: 0500 - 500 PSI

**DE-RWA DIRECT ACTING RELIEF VALVE**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, direct acting relief valve.

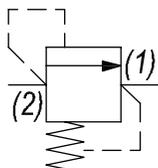
**OPERATION**

The DE-RWA blocks flow from (2) to (1) until sufficient pressure is present at (2) to force the poppet to open and allow metered flow from (2) to (1). The cartridge offers smooth transition in response to load changes in common hydraulic circuits.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

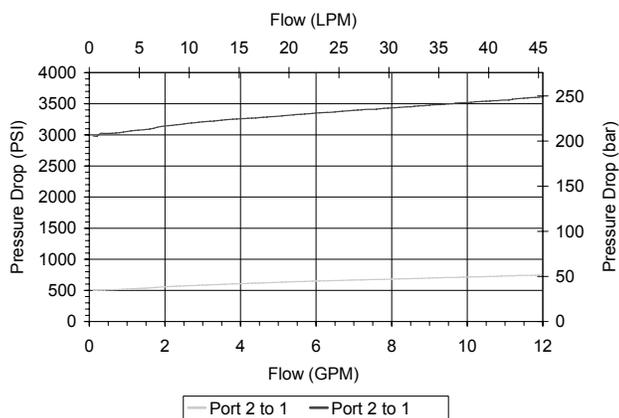
**HYDRAULIC SYMBOL**



For critical leakage applications consult factory.

**PERFORMANCE**

Actual Test Data (Cartridge Only)

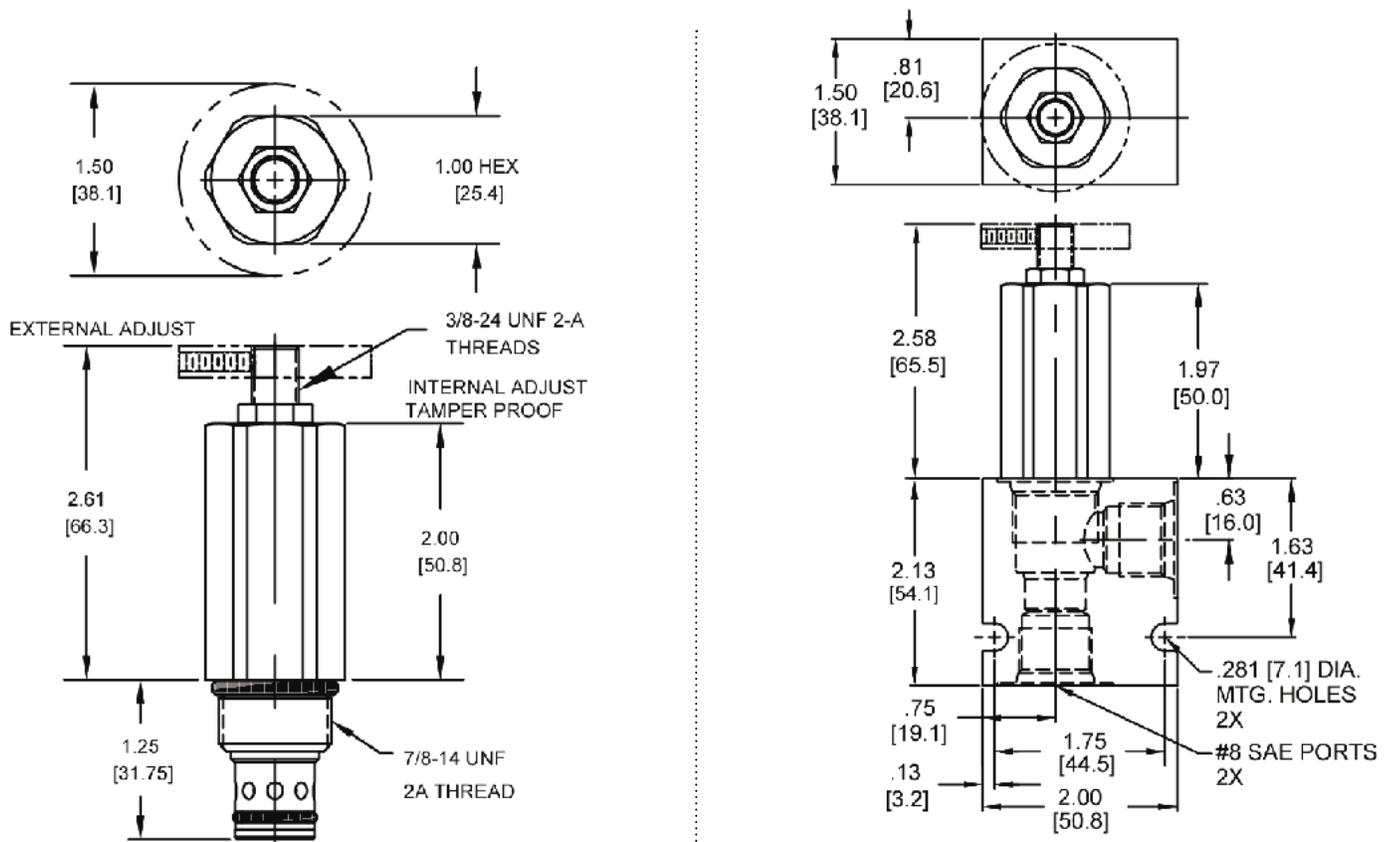


**VALVE SPECIFICATIONS**

Nominal Flow	8 GPM (30 LPM)
Rated Operating Pressure	4000 PSI (276 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.51 lbs (.23 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191200

**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**



Body Weight: .47 lbs (.21 kg)

**ORDERING INFORMATION**

DE-RWA - - - -

**OPTIONS**

- Buna, External Adj. W/Locknut **00**
- Viton, External Adj. W/Locknut **V0**
- Buna, Knob **0K**
- Viton, Knob **VK**
- Buna, Internal Adjust **0I**
- Viton, Internal Adjust **VI**
- Buna, Tamper Proof **0T**
- Viton, Tamper Proof **VT**

**BODIES**

- Blank Without Body
- N** 3/8" NPTF Ports
- S** #8 SAE Ports

**PRESSURE RANGE/SETTING**

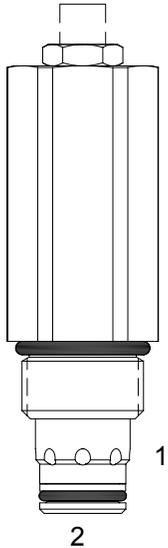
**Ext./Int. Adjustment**

- 0500** 100 - 500 PSI
- 3000** 100 - 3000 PSI
- 4000** 3000 - 4000 PSI

**Tamper Proof**

Fill in 4 Digit Pressure Setting  
Example: 0500 - 500 PSI

**DE-RWF DIRECT ACTING RELIEF VALVE – FAST RESPONSE**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, direct acting relief valve.

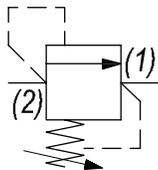
**OPERATION**

The DE-RWF blocks flow from (2) to (1) until sufficient pressure is present at (2) to force the poppet to open and allow metered flow from (2) to (1). The cartridge offers smooth transition in response to load changes in common hydraulic circuits.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

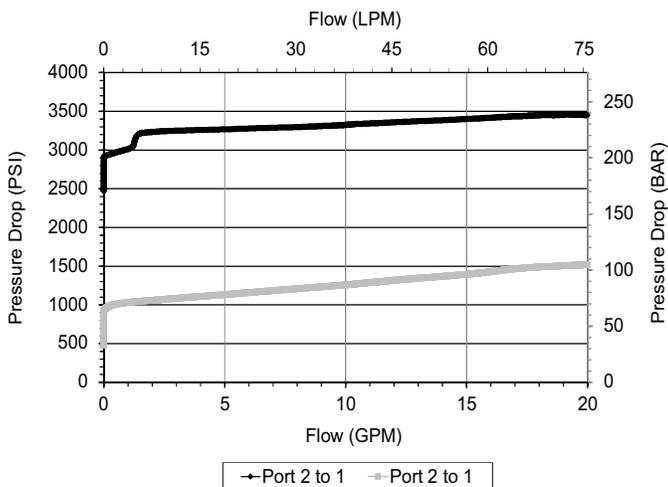
**HYDRAULIC SYMBOL**



*Fast response direct acting poppet style relief valve. For critical leakage applications consult factory.*

**PERFORMANCE**

Actual Test Data (Cartridge Only)

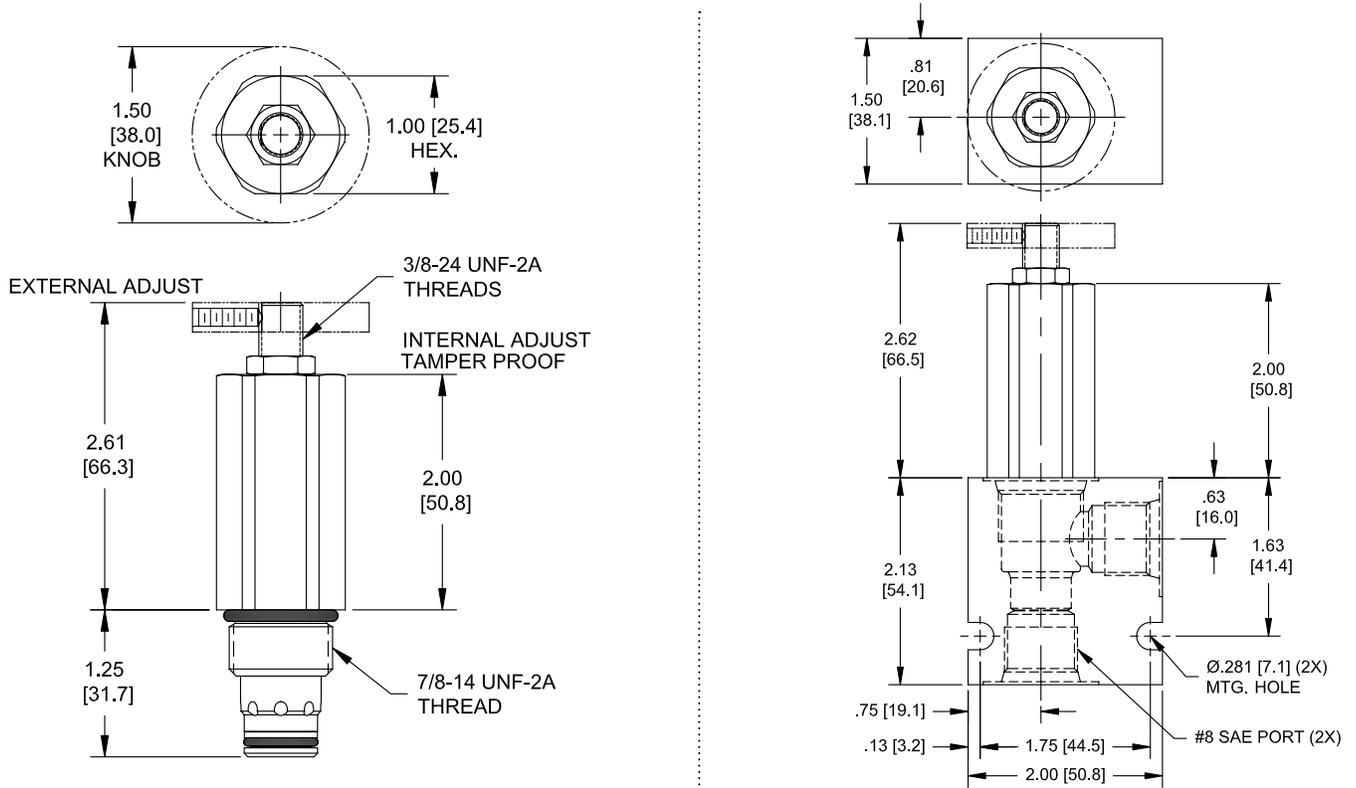


**VALVE SPECIFICATIONS**

Nominal Flow	20 GPM (76 LPM)
Rated Operating Pressure	4000 PSI (276 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.51 lbs (.23 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191200

**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**



Body Weight: .47 lbs (.21 kg)

**ORDERING INFORMATION**

DE-RWF - - -

**OPTIONS**

- Buna, External Adj. W/Locknut **00**
- Viton, External Adj. W/Locknut **V0**
- Buna, Knob **0K**
- Viton, Knob **VK**
- Buna, Internal Adjust **0I**
- Viton, Internal Adjust **VI**
- Buna, Tamper Proof **0T**
- Viton, Tamper Proof **VT**

**BODIES**

- Blank** Without Body
- N** 3/8" NPTF Ports
- S** #8 SAE Ports

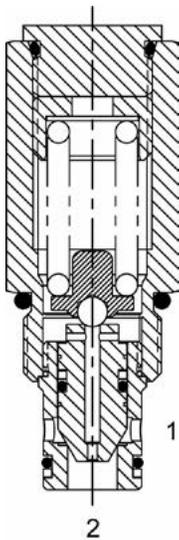
**PRESSURE RANGE**

- 3000** 500 - 3000 PSI
- 4000** 2000 - 4000 PSI

**Tamper Proof**

Fill in 4 Digit Pressure Setting  
Example: 2500 = 2500 PSI

**DE-RCD DIFFERENTIAL AREA RELIEF VALVE**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, differential area relief valve.

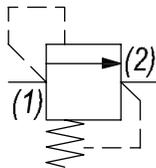
**OPERATION**

The DE-RCD blocks flow from (1) to (2) until sufficient pressure is present at (1) to force the poppet to open and allow metered flow from (1) to (2). The cartridge offers smooth transition in response to load changes in common hydraulic circuits.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

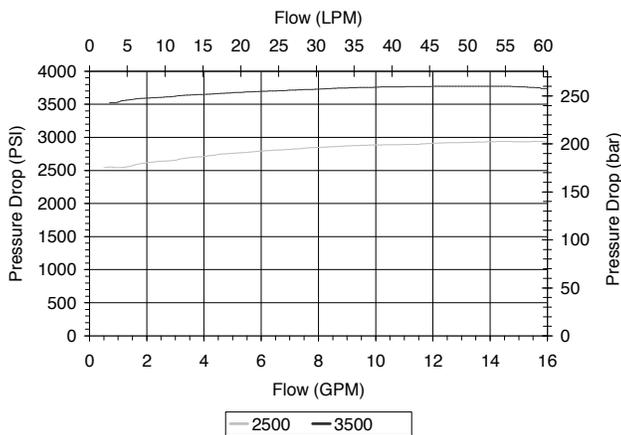
**HYDRAULIC SYMBOL**



*Installation Space Saving Product. Cannot be field adjusted. Not recommended for crossover relief valve applications, use DE-RWD.*

**PERFORMANCE**

Actual Test Data (Cartridge Only)

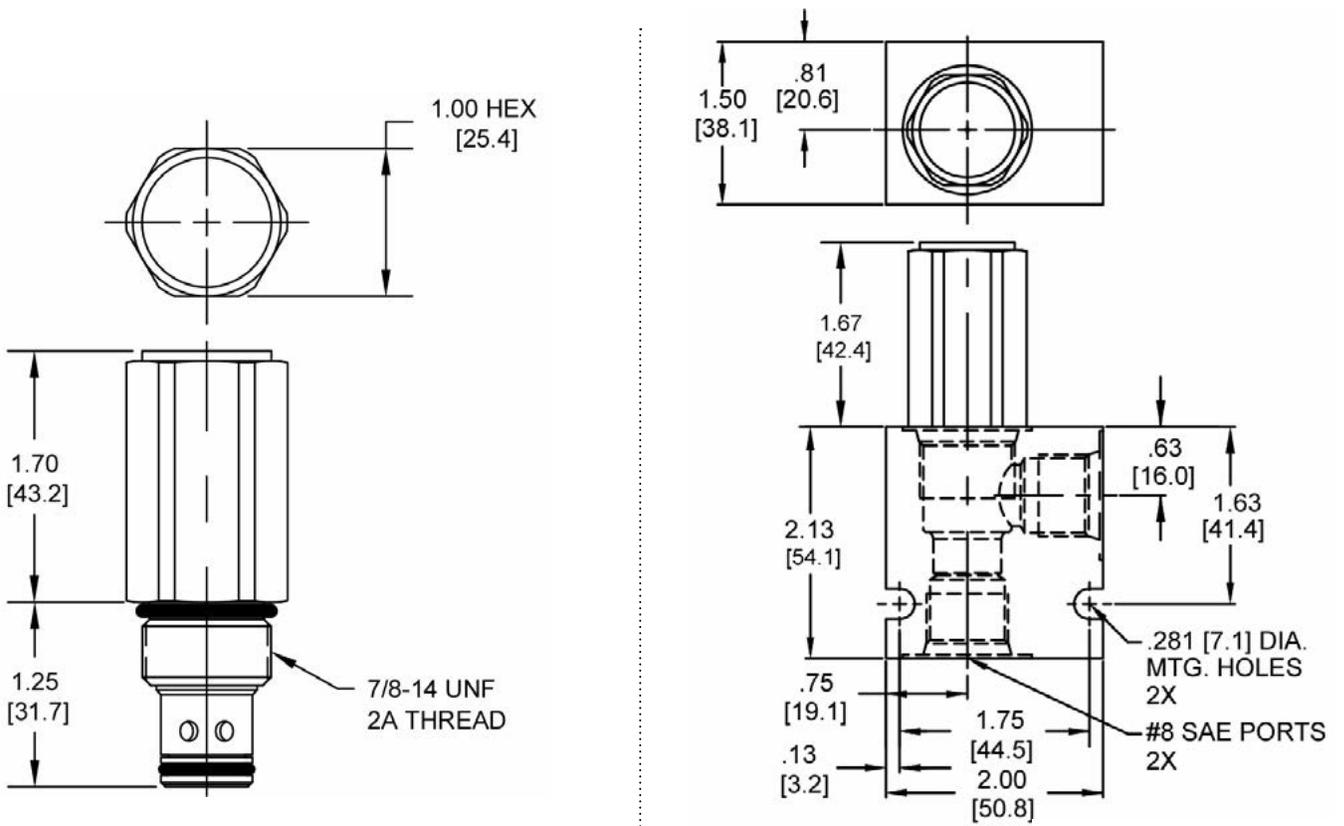


**VALVE SPECIFICATIONS**

Nominal Flow	15 GPM (57 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.37 lbs (.17 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191200

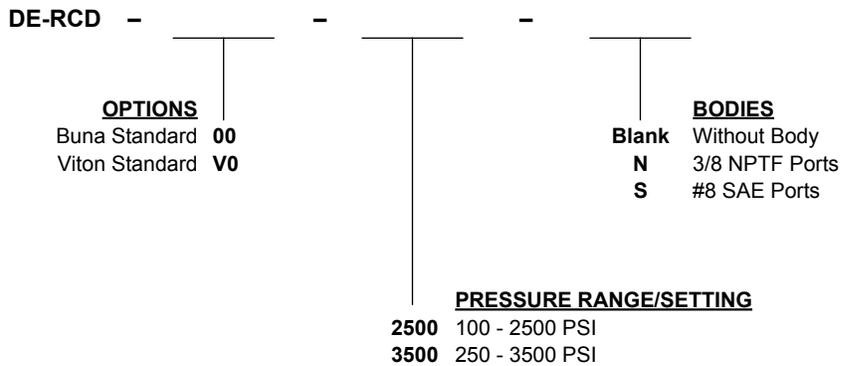
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**



Body Weight: .47 lbs (.21 kg)

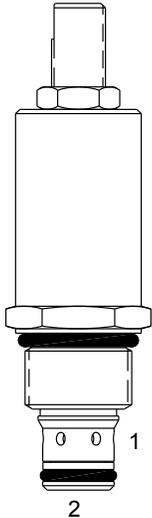
**ORDERING INFORMATION**



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**PB-RVD DIFFERENTIAL AREA RELIEF VALVE**



**DESCRIPTION**

8 size, 3/4-16 thread, "Power" series, differential area relief valve.

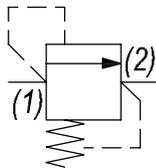
**OPERATION**

The PB-RVD blocks flow from (1) to (2) until sufficient pressure is present at (1) to force the poppet to open and allow metered flow from (1) to (2). The cartridge offers smooth transition in response to load changes in common hydraulic circuits.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

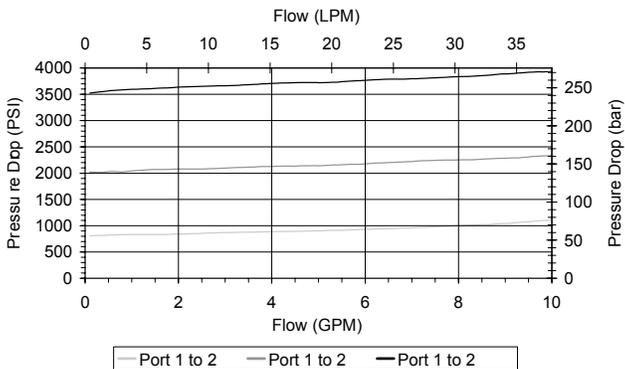
**HYDRAULIC SYMBOL**



Pressure at port (2) must not exceed 2500 PSI.

**PERFORMANCE**

Actual Test Data (Cartridge Only)

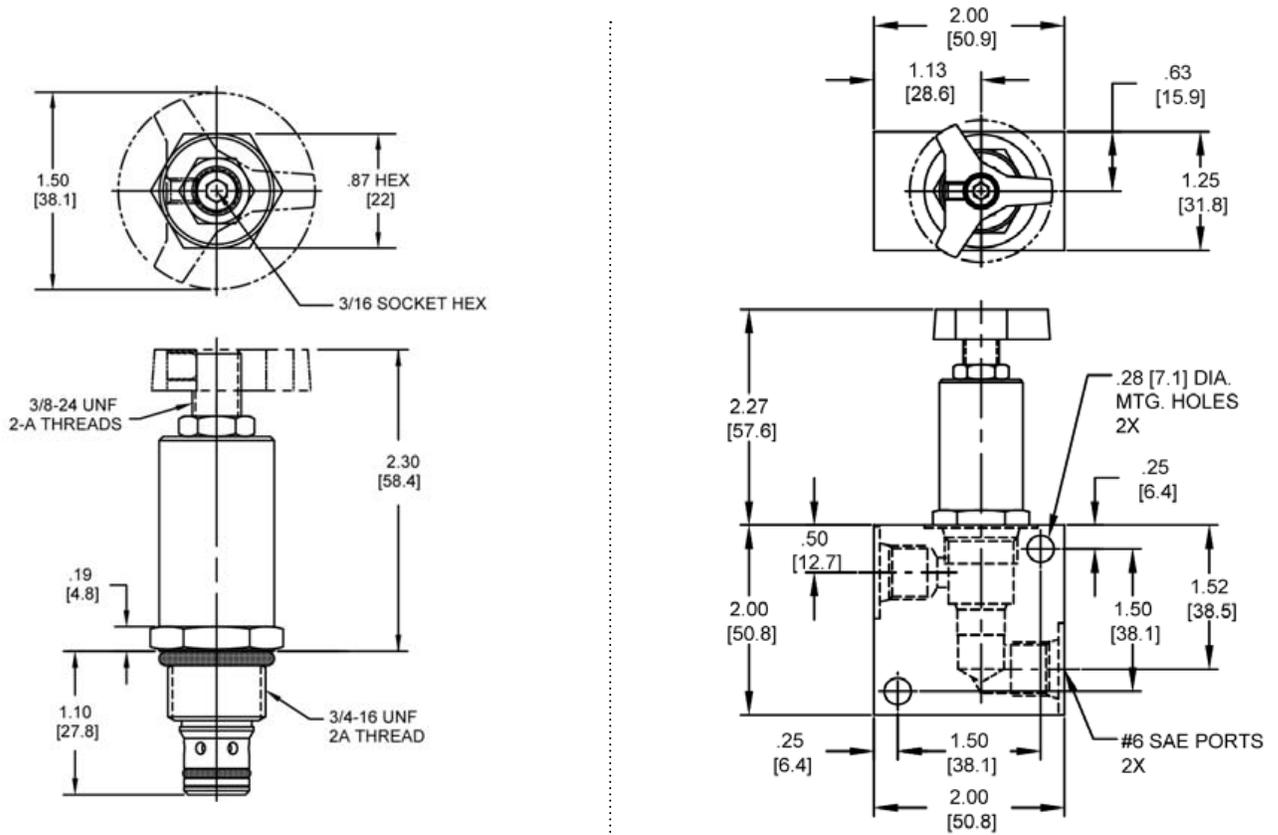


**VALVE SPECIFICATIONS**

Nominal Flow	8 GPM (30 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.31 lbs (.14 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Cavity	POWER 2W
Cavity Form Tool (Finishing)	40500005
Seal Kit	21191100

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**DIMENSIONS**



Body Weight: .39 lbs (.18 kg)

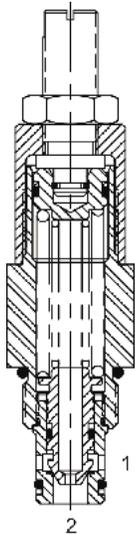
**ORDERING INFORMATION**

<p><b>PB-RVD</b> -</p> <p><b>OPTIONS</b></p> <p>Buna Standard <b>00</b></p> <p>Viton Standard <b>V0</b></p> <p>Buna, Knob <b>0K</b></p> <p>Viton, Knob <b>VK</b></p>	<p>-</p> <p>-</p> <p>-</p> <p>-</p>	<p><b>BODIES</b></p> <p>Blank Without Body</p> <p><b>N</b> 1/4" NPTF Ports</p> <p><b>S</b> #6 SAE Ports</p>
<p><b>PRESSURE RANGE/SETTING</b></p> <p><b>0800</b> 100 - 800 PSI</p> <p><b>2000</b> 800 - 2000 PSI</p> <p><b>3500</b> 2000 - 3500 PSI</p>		

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**DE-RVD DIFFERENTIAL AREA RELIEF VALVE**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, differential area relief valve.

**OPERATION**

The DE-RVD blocks flow from (1) to (2) until sufficient pressure is present at (1) to force the poppet to open and allow metered flow from (1) to (2). The cartridge offers smooth transition in response to load changes in common hydraulic circuits.

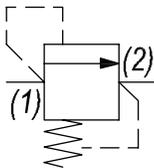
**FEATURES**

- Hardened parts for long life.
- Industry common cavity.



*Low PSI/turn adjustment.  
Good pressure vs. flow characteristic.*

**HYDRAULIC SYMBOL**

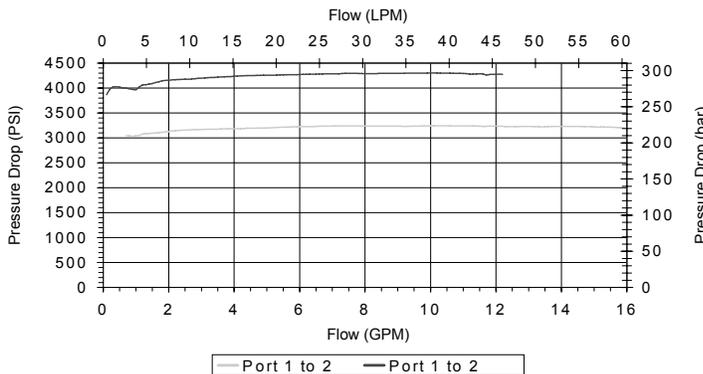
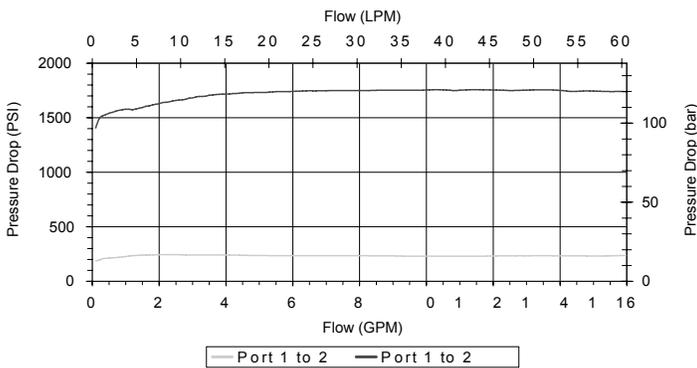


**PERFORMANCE**

Actual Test Data (Cartridge Only)

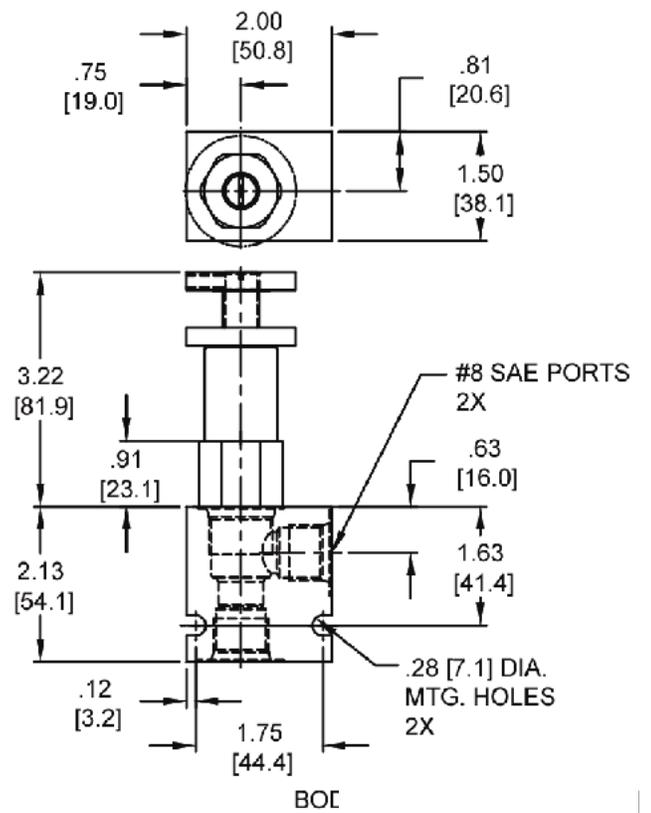
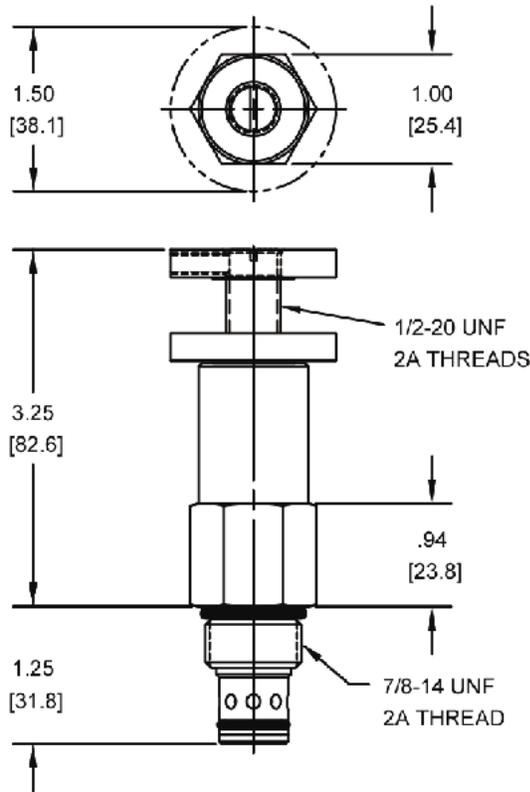
**VALVE SPECIFICATIONS**

Nominal Flow	15 GPM (57 LPM)
Rated Operating Pressure	4000 PSI (276 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.57 lbs (.26 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191200



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DIMENSIONS



Body Weight: .47 lbs (.21 kg)

ORDERING INFORMATION

DE-RVD - - -

**OPTIONS**

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Screen **A0**
- Viton, Screen **W0**
- Buna, Knob **0K**
- Viton, Knob **VK**
- Buna, Knob, Screen **AK**
- Viton, Knob, Screen **WK**

**Note: use screen only if flow direction is from (1) to (2).**

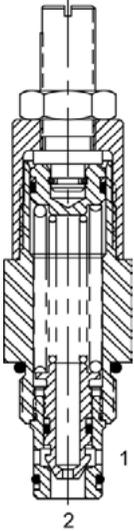
**BODIES**

- Blank** Without Body
- N** 3/8" NPTF Ports
- S** #8 SAE Ports

**PRESSURE RANGE/SETTING**

- 0200** 50 - 200 PSI
- 1500** 200 - 1500 PSI
- 3000** 1500 - 3000 PSI
- 4000** 2500 - 4000 PSI

**HE-RVD DIFFERENTIAL AREA RELIEF VALVE**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, differential area relief valve.

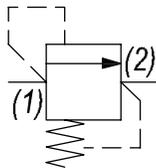
**OPERATION**

The HE-RVD blocks flow from (1) to (2) until sufficient pressure is present at (1) to force the poppet to open and allow metered flow from (1) to (2). The cartridge offers smooth transition in response to load changes in common hydraulic circuits.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

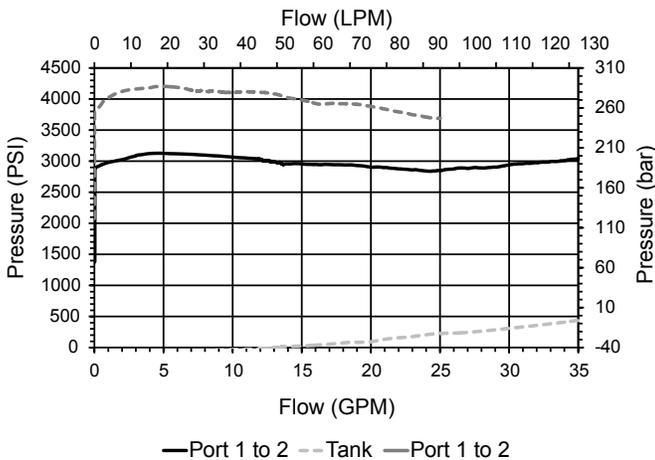
**HYDRAULIC SYMBOL**



*Good pressure vs. flow characteristic. Recommended Return Line Pressure as shown on Performance Data Graph. Undercut Cavity Recommended for Max flows (Consult Factory for Details).*

**PERFORMANCE**

Actual Test Data (Cartridge Only)



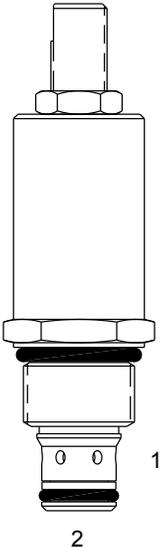
**VALVE SPECIFICATIONS**

Nominal Flow	40 GPM (151 LPM)
Rated Operating Pressure	5000 PSI (345 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.57 lbs (.26 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191200

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**PB-RWD DIFFERENTIAL AREA RELIEF VALVE**



**DESCRIPTION**

8 size, 3/4-16 thread, "Power" series, differential area relief valve.

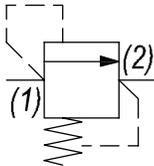
**OPERATION**

The PB-RWD blocks flow from (1) to (2) until sufficient pressure is present at (1) to force the poppet to open and allow metered flow from (1) to (2). The cartridge offers smooth transition in response to load changes in common hydraulic circuits.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

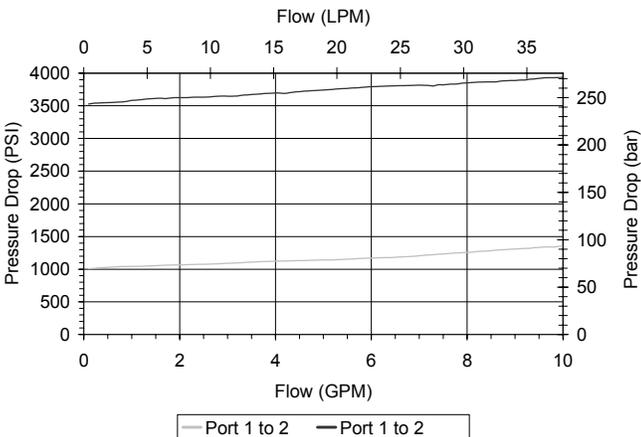
**HYDRAULIC SYMBOL**



Pressure at port (2) must not exceed 2500 PSI.

**PERFORMANCE**

Actual Test Data (Cartridge Only)

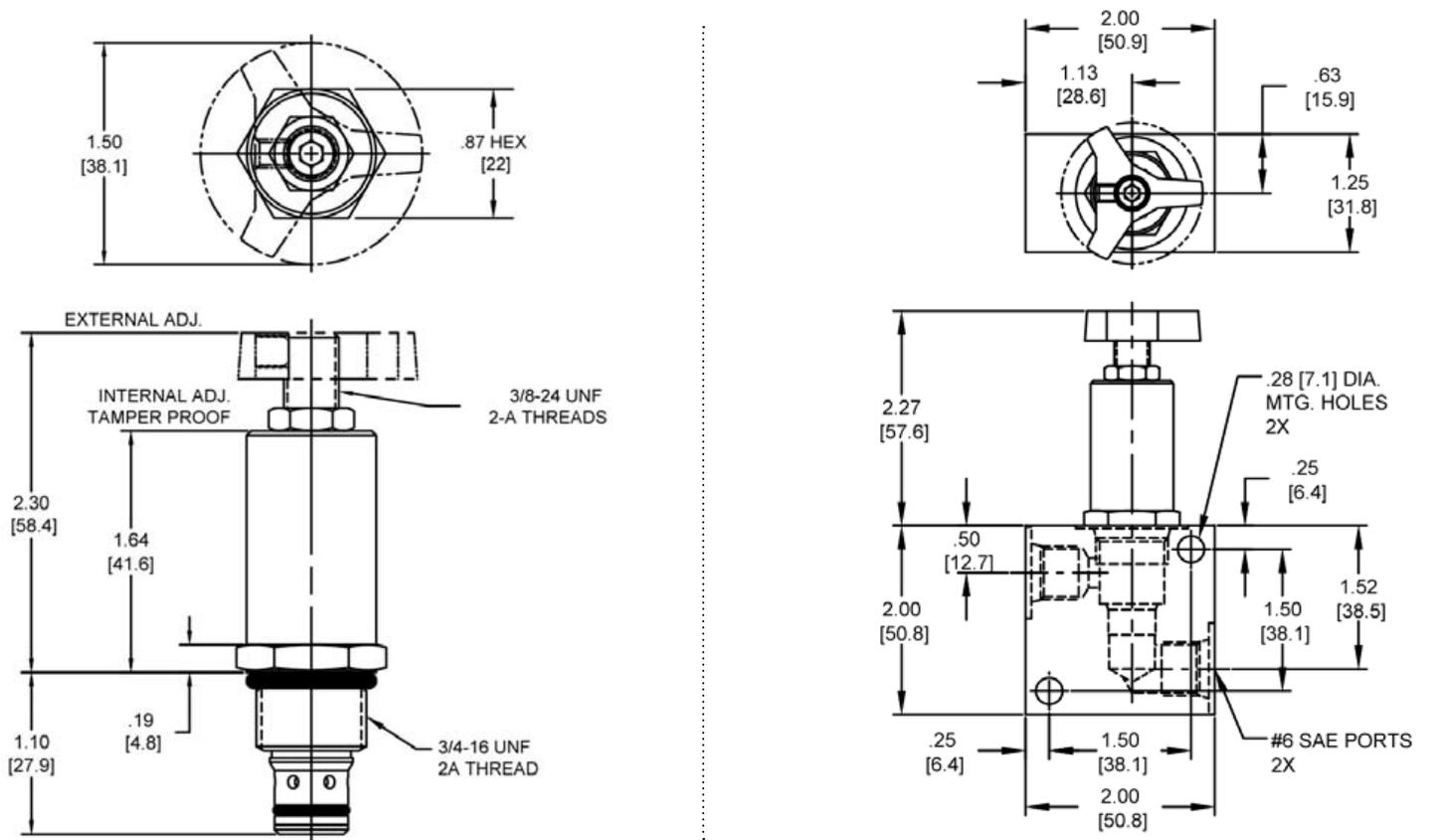


**VALVE SPECIFICATIONS**

Nominal Flow	8 GPM (30 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.32 lbs (.15 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Cavity	POWER 2W
Cavity Form Tool (Finishing)	40500005
Seal Kit	21191100

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**DIMENSIONS**



Body Weight: .39 lbs (.18 kg)

**ORDERING INFORMATION**

PB-RWD - - -

**OPTIONS**

- External Adj. W/Locknut Buna **00**
- External Adj. W/Locknut Viton **V0**
- Buna, Knob **0K**
- Viton, Knob **VK**
- Internal Adjust Buna **0I**
- Internal Adjust Viton **VI**
- Tamper Proof Buna **0T**
- Tamper Proof Viton **VT**

**BODIES**

- Blank** Without Body
- N** 1/4" NPTF Ports
- S** #6 SAE Ports

**PRESSURE RANGE/SETTING**

Ext./Int. Adjustable

- 1000** 100 - 1000 PSI
- 3500** 500 - 3500 PSI

**Tamper Proof**

Fill in 4 Digit Pressure Setting  
Example: 0500 - 500 PSI

**DE-RWD DIFFERENTIAL AREA RELIEF VALVE**

**DESCRIPTION**

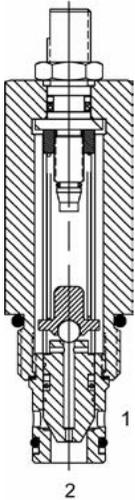
10 size, 7/8-14 thread, "Delta" series, differential area relief valve.

**OPERATION**

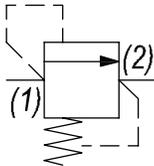
The DE-RWD blocks flow from (1) to (2) until sufficient pressure is present at (1) to force the poppet to open and allow metered flow from (1) to (2).

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

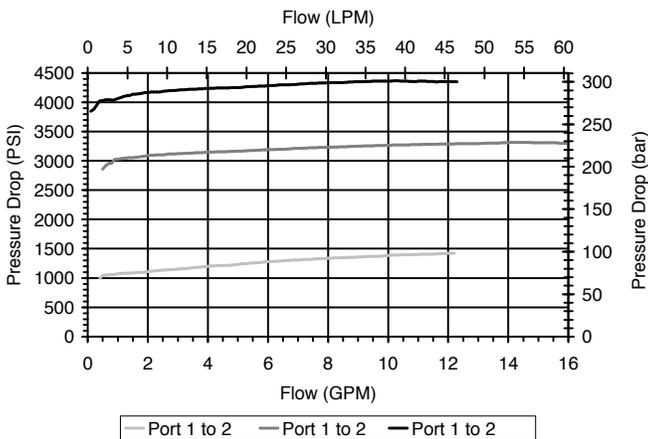


**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)

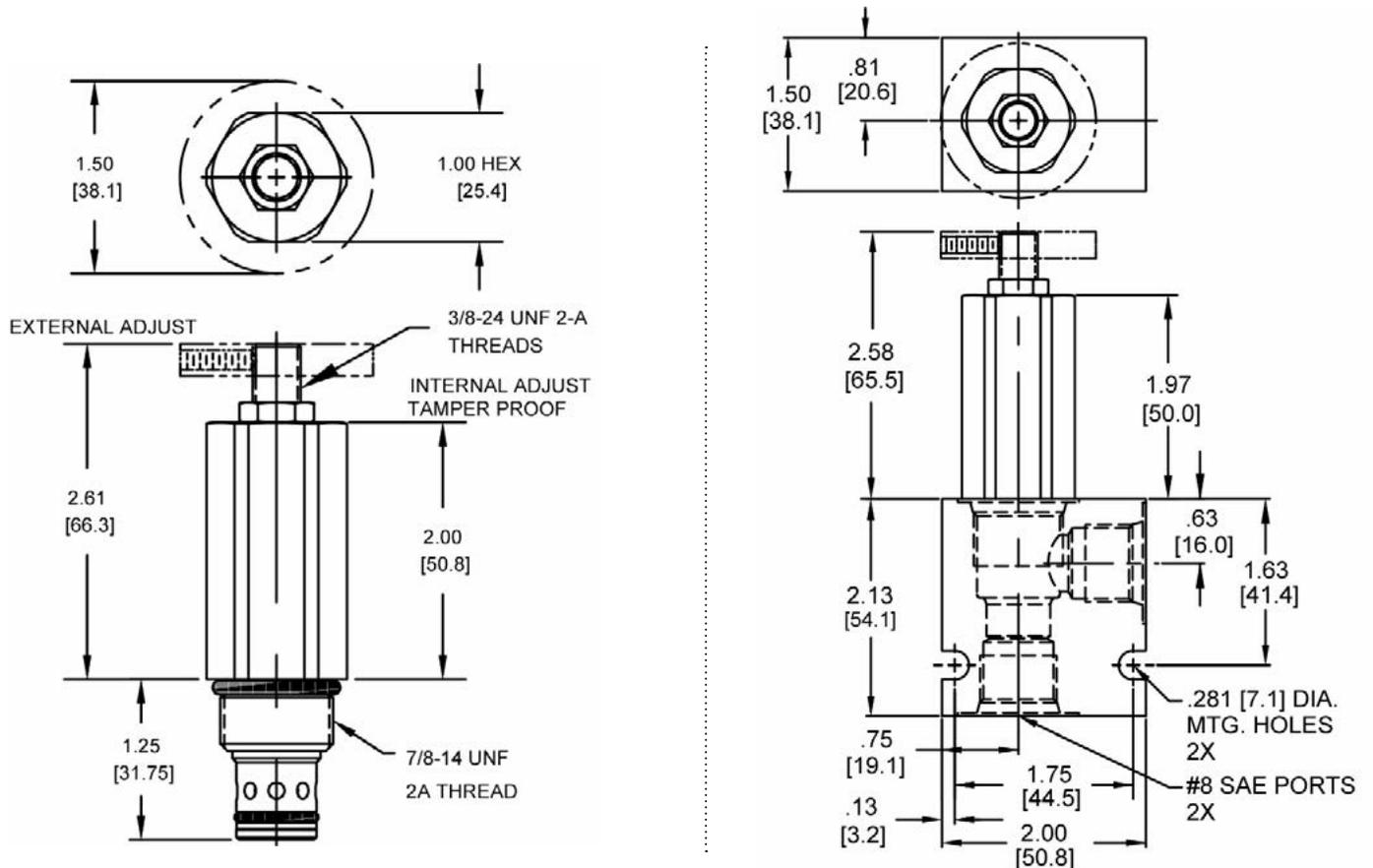


**VALVE SPECIFICATIONS**

Nominal Flow	15 GPM (57 LPM)
Rated Operating Pressure	4000 PSI (276 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.55 lbs (.25 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191200

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**DIMENSIONS**



Body Weight: .47 lbs (.21 kg)

**ORDERING INFORMATION**

DE-RWD - - -

**OPTIONS**

- Buna, External Adj. W/Locknut **00**
- Viton, External Adj. W/Locknut **V0**
- Buna, Knob **0K**
- Viton, Knob **VK**
- Buna, Internal Adjust **0I**
- Viton, Internal Adjust **VI**
- Buna, Tamper Proof **0T**
- Viton, Tamper Proof **VT**

**BODIES**

- Blank** Without Body
- N** 3/8" NPTF Ports
- S** #8 SAE Ports

**PRESSURE RANGE/SETTING**

Ext./Int. Adjustable

- 1000** 100 - 1000 PSI
- 3000** 100 - 3000 PSI
- 4000** 3000 - 4000 PSI

**Tamper Proof**

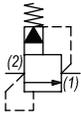
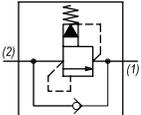
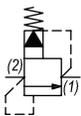
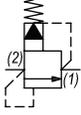
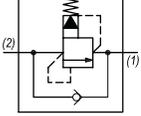
Fill in 4 Digit Pressure Setting  
Example: 0500 - 500 PSI

**Note: aluminum NOT durability rated for 4000 PSI. Consult factory for options.**

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Via Malavolti, 36 - 41122 Modena - ITALY - Phone +39 (059) 254895 - Fax +39 (059) 253512 - mail: [tecnord@tecnord.com](mailto:tecnord@tecnord.com) - [www.tecnord.com](http://www.tecnord.com)

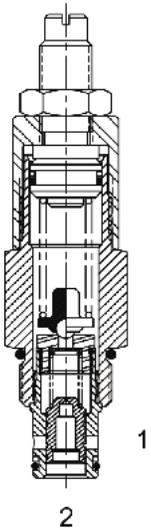
**PILOT OPERATED RELIEF VALVES**

	GPM	PSI	LPM	BAR	CAVITY	MODEL	PAGE
	20	4000	76	276	7/8-14	<b>DE-RVP</b>	MP32
	20	5000	76	345	1 1/16-12	<b>HT-RVP</b>	MP34
	15	4000	57	276	7/8-14	<b>DE-RVR</b>	MP36
	40	3500	151	241	1 5/16-12	<b>SJ-RVR</b>	MP38
	15	4000	57	276	7/8-14	<b>DE-RWP</b>	MP40
	40	5000	151	345	7/8-14	<b>HE-RWP</b>	MP42
	15	4000	57	276	7/8-14	<b>DE-RWR</b>	MP44

**TYPICAL SCHEMATIC**

Typical application for the RVP and RWP is to protect pump or system. Typical application for the RWR and RVR, is to be used as counterbalance in a system where positive hydraulic locking is not required. In this schematic positive locking is done by using a P. O. check valve.

**DE-RVP PILOT OPERATED RELIEF VALVE**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, pilot operated relief valve.

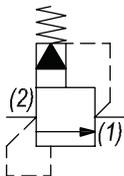
**OPERATION**

The DE-RVP blocks flow from (2) to (1) until sufficient pressure is present at (2) to force the pilot stage open, allowing the main stage to shift, opening (2) to (1). The cartridge offers smooth transition in response to load changes in common hydraulic circuits.

**FEATURES**

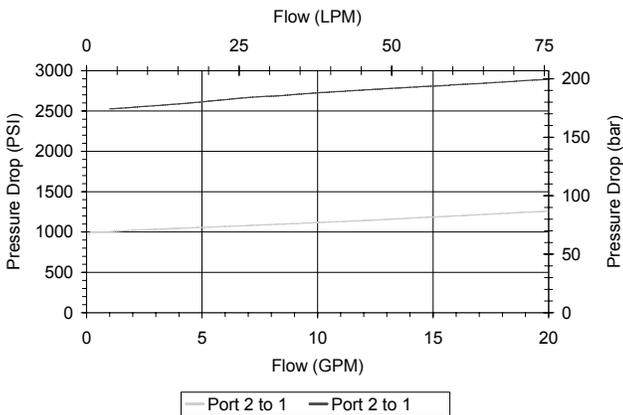
- Hardened parts for long life.
- Industry common cavity.

**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)

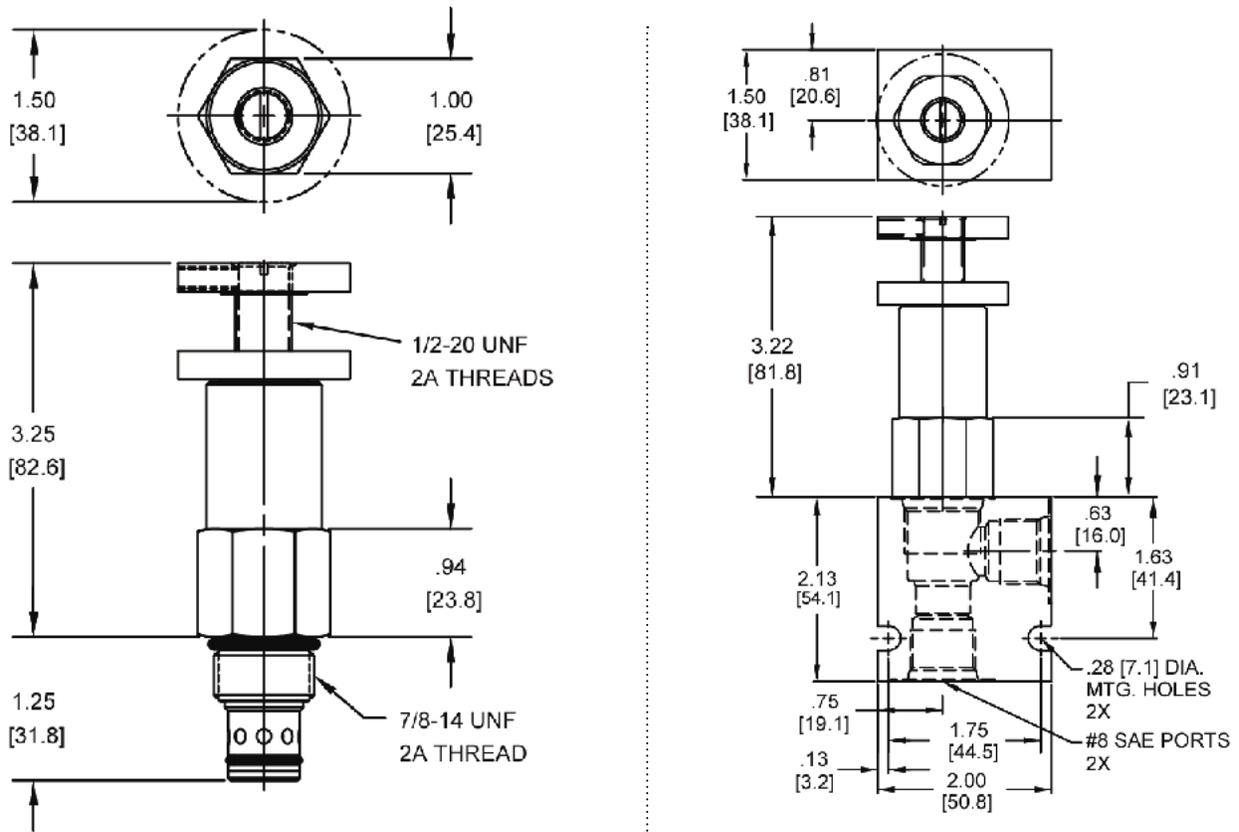


**VALVE SPECIFICATIONS**

Nominal Flow	20 GPM (76 LPM)
Rated Operating Pressure	4000 PSI (276 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.56 lbs (.25 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191200

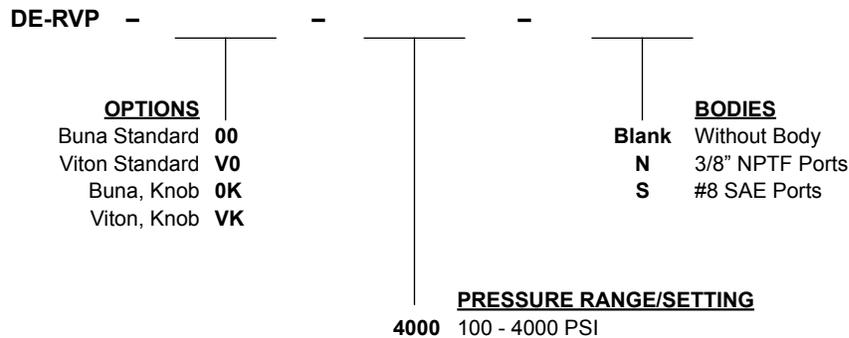
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**

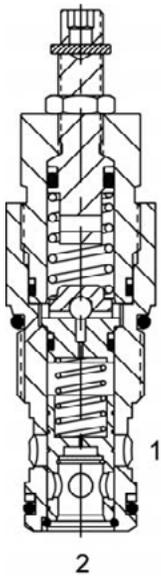


Body Weight: .47 lbs (.21 kg)

**ORDERING INFORMATION**



**HT-RVP PILOT OPERATED RELIEF VALVE**



**DESCRIPTION**

12 size, 1 1/16-12 thread, "Tecnord" series, pilot operated relief valve.

**OPERATION**

The HT-RVP blocks flow from (2) to (1) until sufficient pressure is present at (2) to force the pilot stage off its seat, allowing the main stage spool to shift, opening (2) to (1). The cartridge offers smooth transition in response to load changes in common hydraulic circuits.

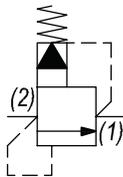
**FEATURES**

- Hardened parts for long life.
- Industry common cavity.



*Undercut cavity recommended for circuits above 2500 PSI where flows go to 30 GPM.*

**HYDRAULIC SYMBOL**

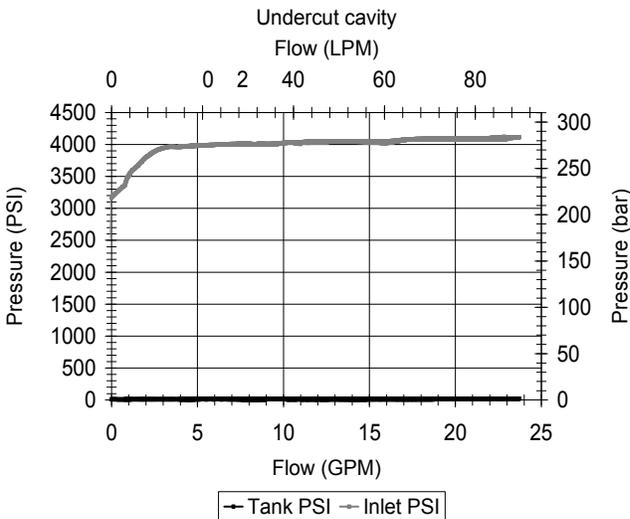
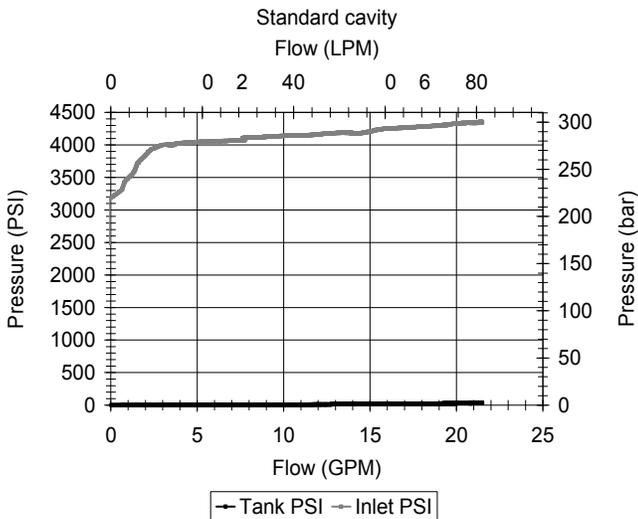


**PERFORMANCE**

Actual Test Data (Cartridge Only)

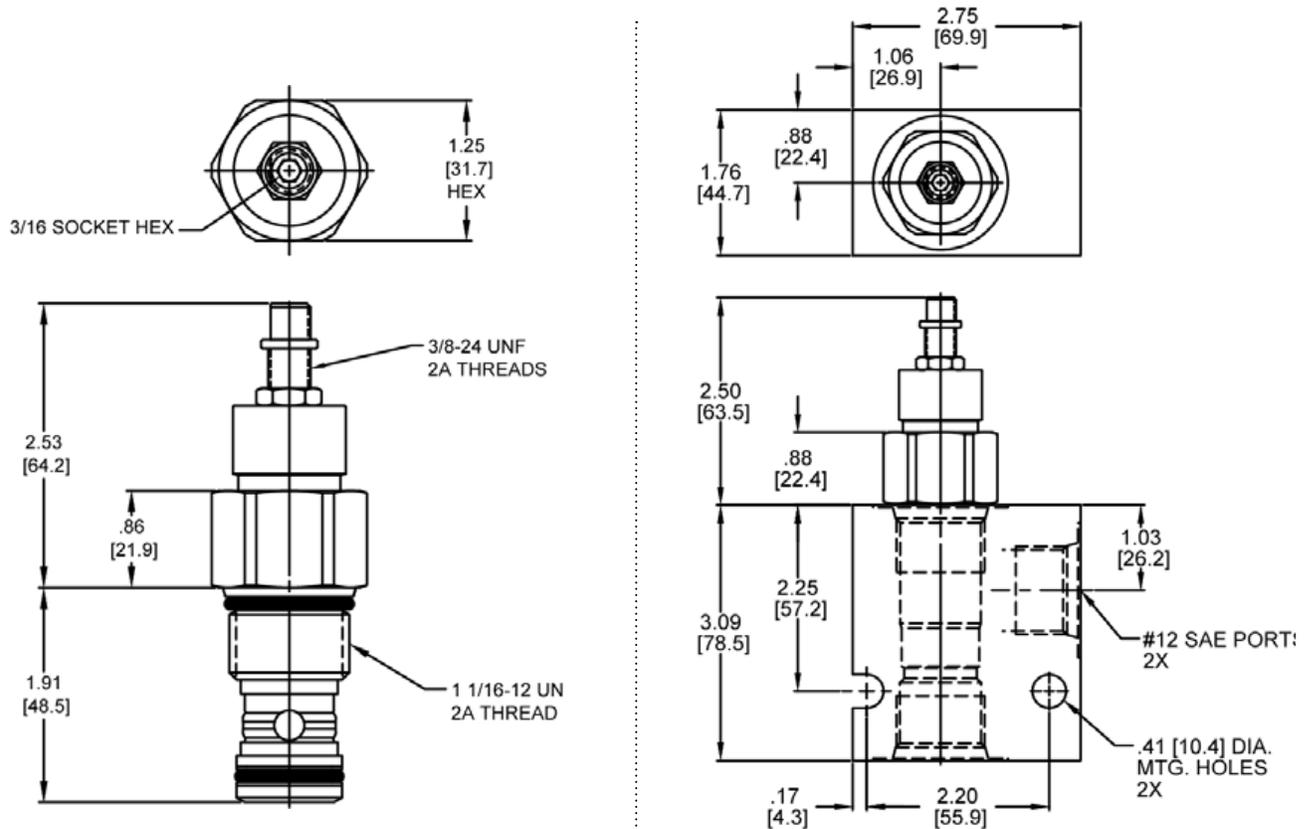
**VALVE SPECIFICATIONS**

Nominal Flow	20 GPM (76 LPM)
Rated Operating Pressure	5000 PSI (345 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	1.13 lbs (.51 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	70 ft-lbs (95 Nm)
Cavity	TECNORD 2W
Cavity Form Tool (Finishing)	40500032
Seal Kit	21191300



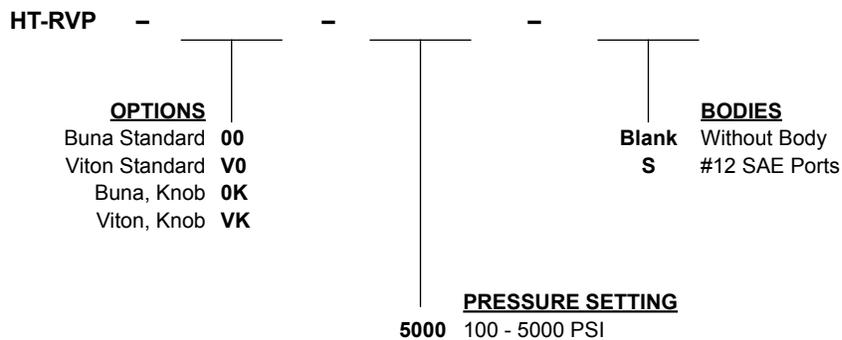
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**



Body Weight: 3.71 lbs (1.68 kg)

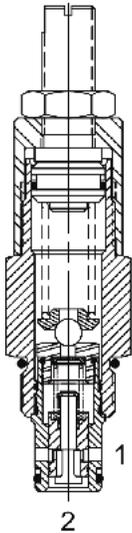
**ORDERING INFORMATION**



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**DE-RVR PILOT OPERATED RELIEF VALVE, WITH REVERSE FLOW**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, pilot operated relief valve with reverse flow.

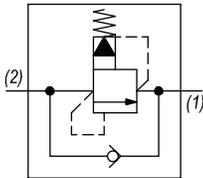
**OPERATION**

The DE-RVR blocks flow from (2) to (1) until sufficient pressure is present at (2) to force the pilot stage open, allowing the main stage to shift, opening (2) to (1). The relief flow path is from (2) to (1). Free reverse flow, from (1) to (2), occurs when the pressure at (1) is at least 10 PSI (.7 bar) higher than at port (2).

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

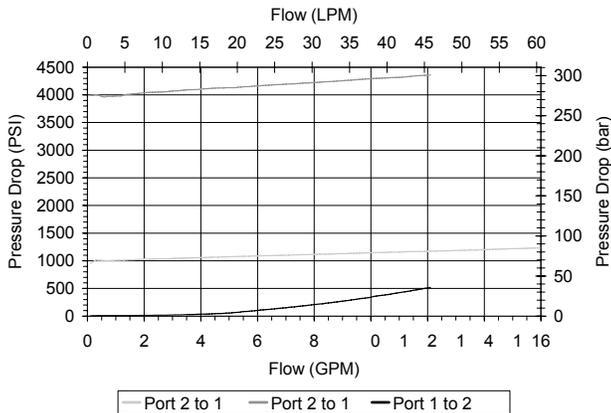
**HYDRAULIC SYMBOL**



Consult Chart for flow capacity port (1) to (2).

**PERFORMANCE**

Actual Test Data (Cartridge Only)

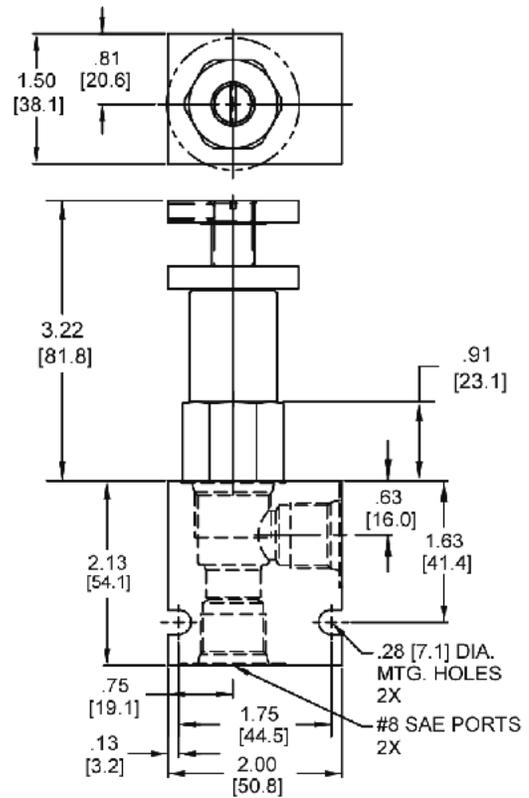
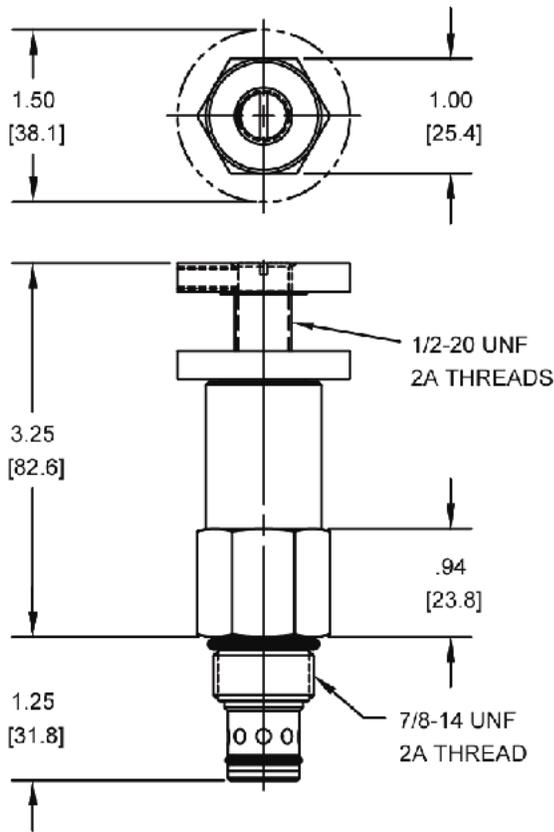


**VALVE SPECIFICATIONS**

Nominal Flow	15 GPM (57 LPM)
Rated Operating Pressure	4000 PSI (276 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.56 lbs (.25 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191200

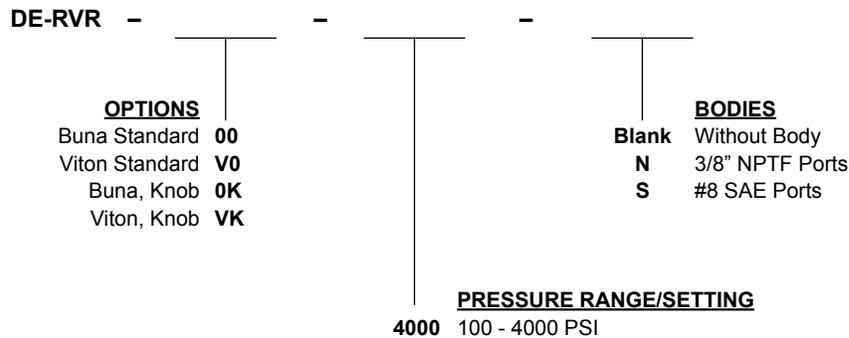
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**

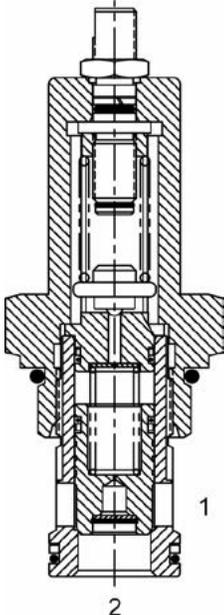


Body Weight: .47 lbs (.21 kg)

**ORDERING INFORMATION**



**SJ-RVR PILOT OPERATED RELIEF VALVE, WITH REVERSE FLOW**



**DESCRIPTION**

16 size, 1 5/16-12 thread, "Super" series, pilot operated relief valve with reverse flow.

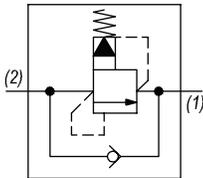
**OPERATION**

The SJ-RVR blocks flow from (2) to (1) until sufficient pressure is present at (2) to force the pilot stage off its seat, allowing the main stage spool to shift, opening (2) to (1). The relief flow path is from (2) to (1). Reverse flow, from (1) to (2), occurs when the pressure at (1) is at least 30 PSI (2.1 bar) higher than at port (2). The Cartridge offers smooth transition in response to load changes in common hydraulic circuits.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

**HYDRAULIC SYMBOL**

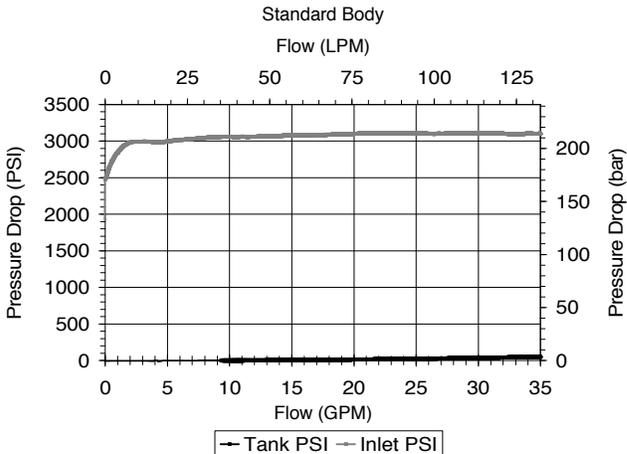
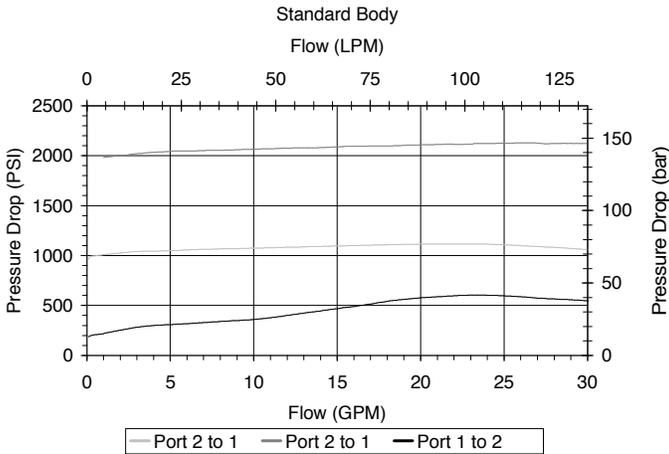


**PERFORMANCE**

Actual Test Data (Cartridge Only)

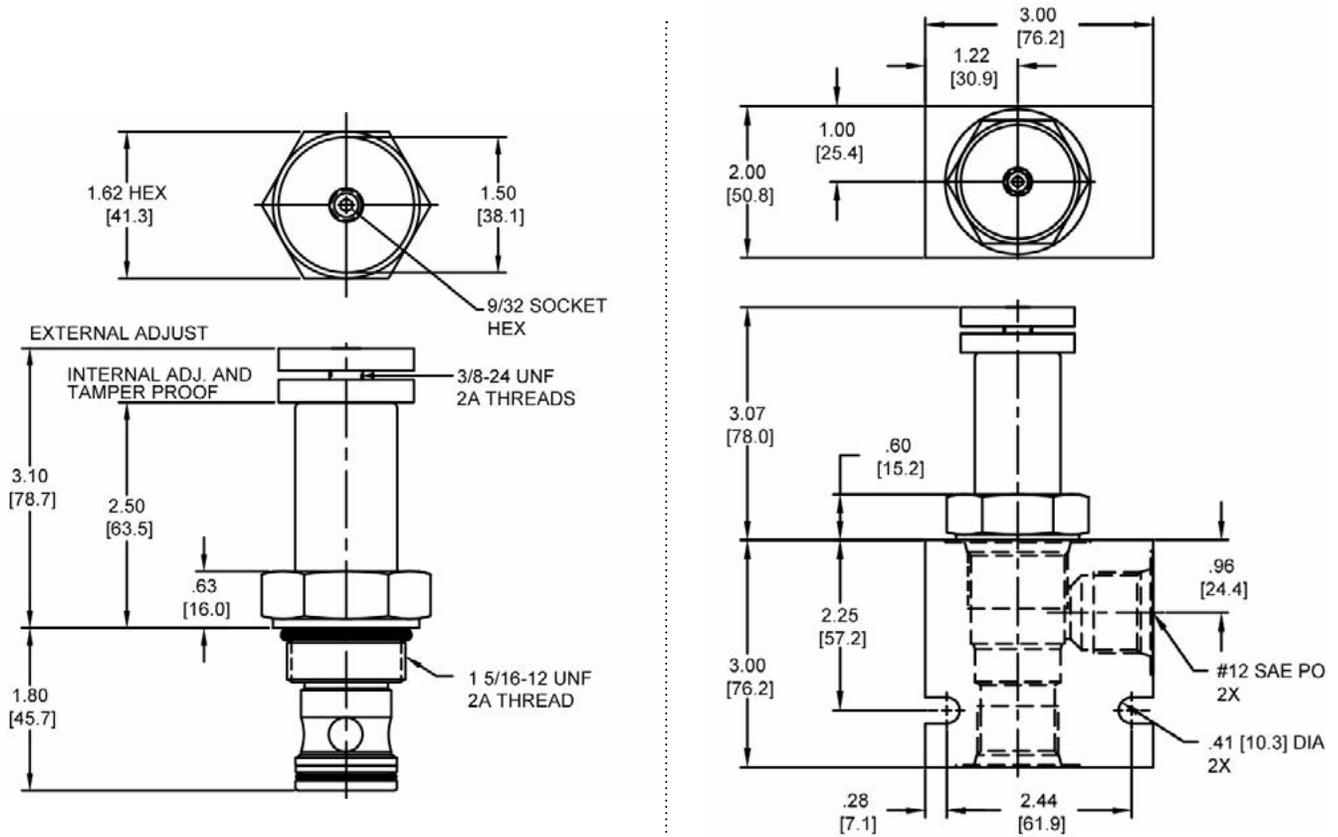
**VALVE SPECIFICATIONS**

Nominal Flow	40 GPM (151 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	1.13 lbs (.51 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	90 ft-lbs (122 Nm)
Cavity	SUPER 2W
Cavity Form Tool (Finishing)	40500017
Seal Kit	21191400



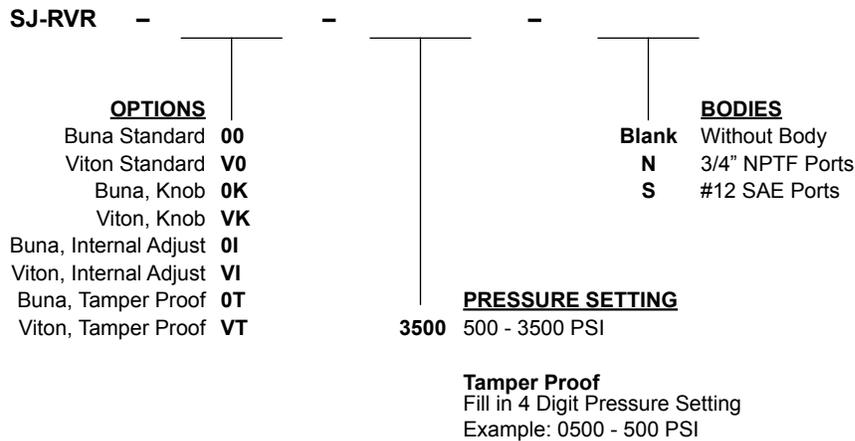
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

DIMENSIONS



Body Weight: 1.29 lbs (.59 kg)

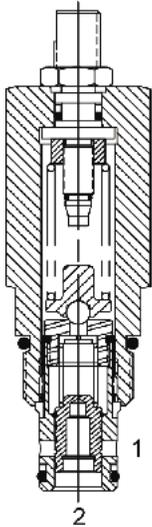
ORDERING INFORMATION



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**DE-RWP PILOT OPERATED RELIEF VALVE**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, pilot operated relief valve.

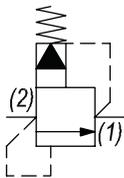
**OPERATION**

The DE-RWP blocks flow from (2) to (1) until sufficient pressure is present at (2) to force the pilot stage open, allowing the main stage to shift, opening (2) to (1).

**FEATURES**

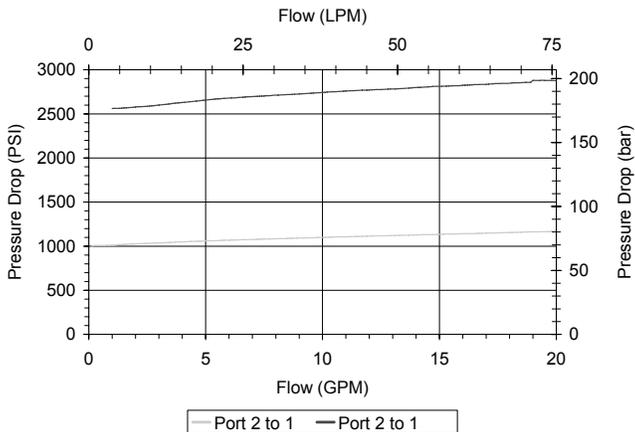
- Hardened parts for long life.
- Industry common cavity.

**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)

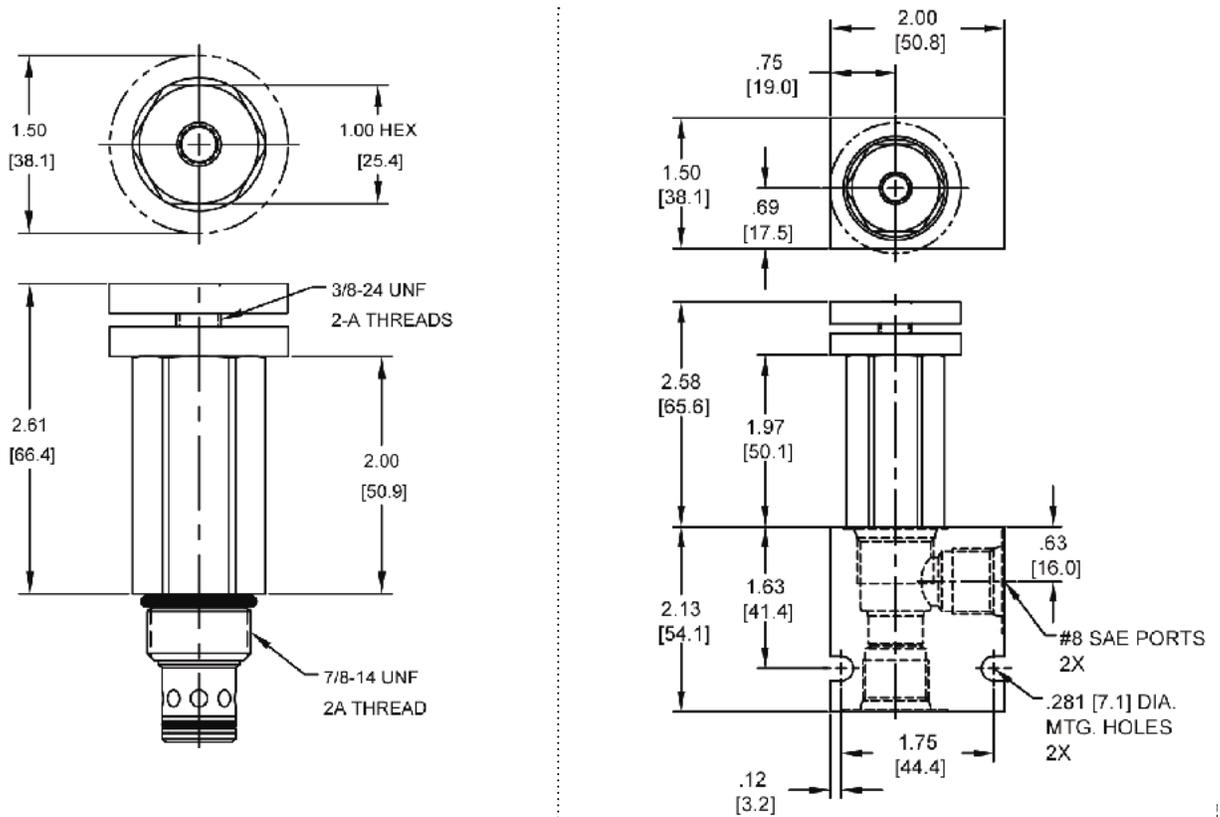


**VALVE SPECIFICATIONS**

Nominal Flow	15 GPM (57 LPM)
Rated Operating Pressure	4000 PSI (276 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.53 lbs (.24 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191200

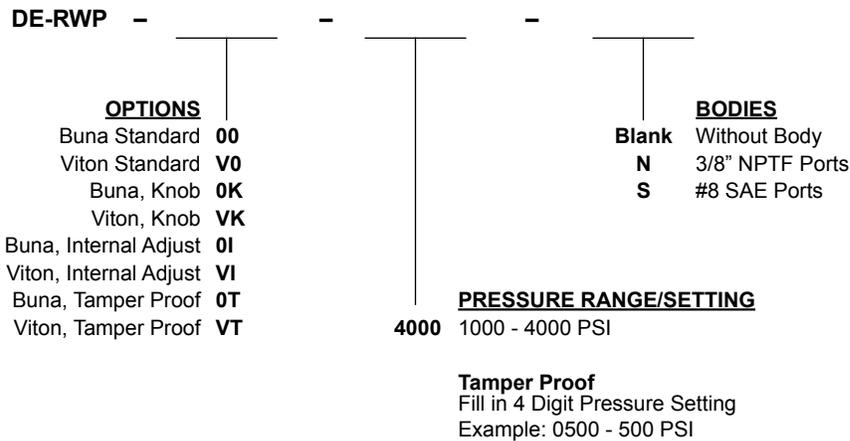
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**DIMENSIONS**



Body Weight: .47 lbs (.21 kg)

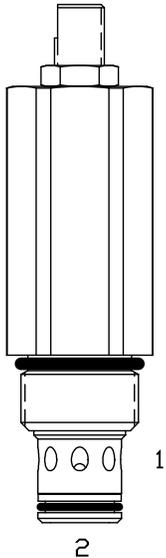
**ORDERING INFORMATION**



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**HE-RWP RAPID RESPONSE, PILOT OPERATED RELIEF VALVE**



**DESCRIPTION**

High Pressure, High Flow, Rapid Response, 10 size, 7/8-14 thread, "Delta" series, pilot operated relief valve.

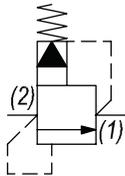
**OPERATION**

The HE-RWP blocks flow from (2) to (1) until sufficient pressure is present at (2) to force the pilot stage open, allowing the main stage to shift, opening (2) to (1).

**FEATURES**

- High pressure valve.
- Hardened parts for long life.
- Industry common cavity.
- Rapid response to sudden pressure application.
- Excellent regulation of pressure with flow (low override).

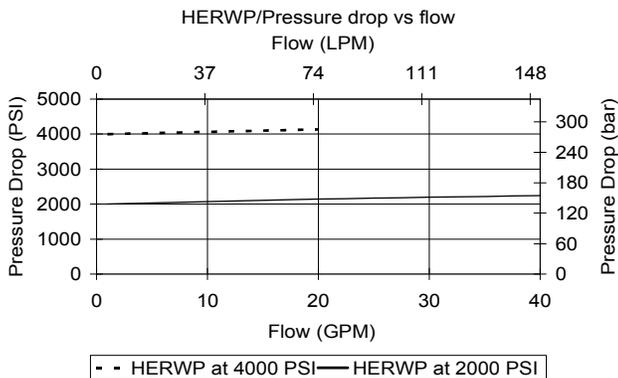
**HYDRAULIC SYMBOL**



*This is a rapid response, high pressure relief valve with excellent high flow regulation. Consult factory for higher flow capacity cavity option.*

**PERFORMANCE**

Actual Test Data (Cartridge Only)

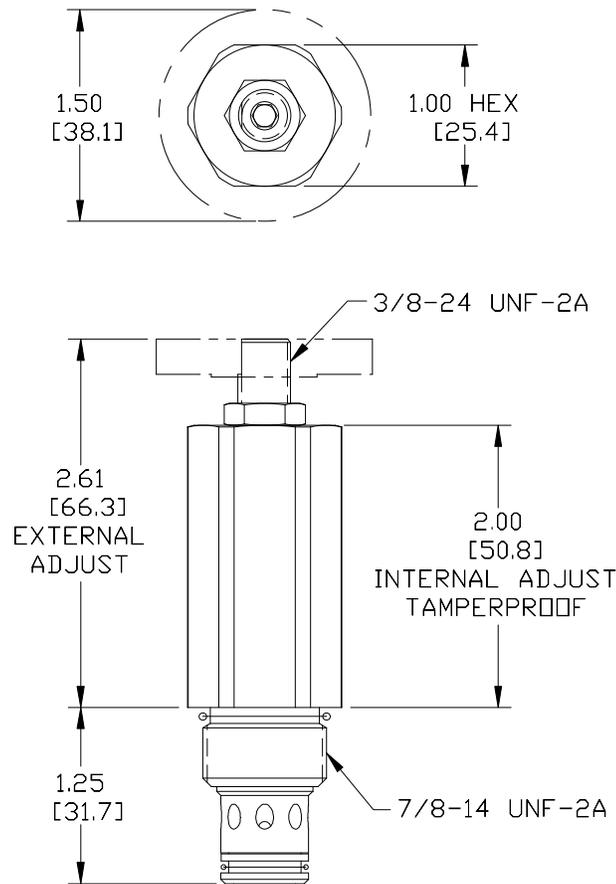


**VALVE SPECIFICATIONS**

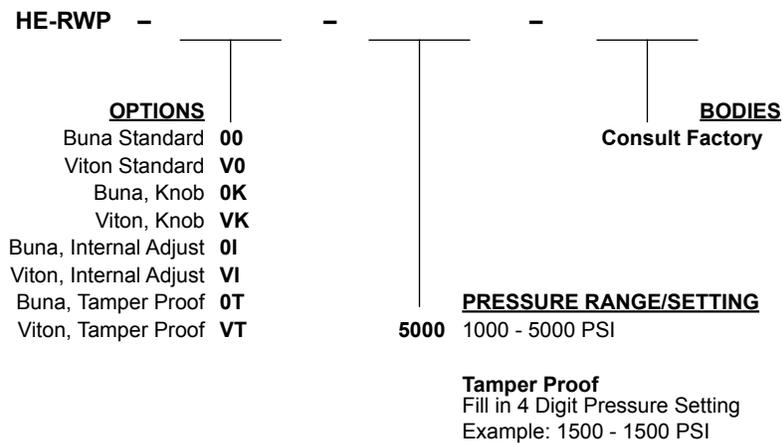
Nominal Flow	40 GPM (151 LPM)
Rated Operating Pressure	5000 PSI (345 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.53 lbs (.24 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191200

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**DIMENSIONS**



**ORDERING INFORMATION**

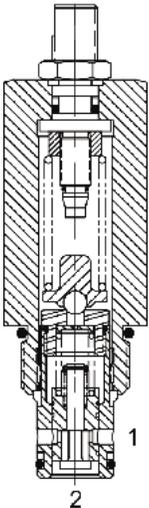


**WARNING**  
DO NOT USE ALUMINUM BODY  
HIGH PRESSURE (5000 PSI) PRODUCT

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**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DE-RWR PILOT OPERATED RELIEF VALVE, WITH REVERSE FLOW**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, pilot operated relief valve with reverse flow.

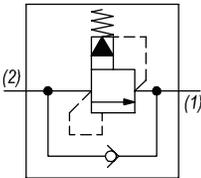
**OPERATION**

The DE-RWR blocks flow from (2) to (1) until sufficient pressure is present at (2) to force the pilot stage open, and allow metered flow from (2) to (1). The relief flow path is from (2) to (1). Free reverse flow, from (1) to (2), occurs when the pressure at (1) is at least 10 PSI (.7 bar) higher than at port (2).

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

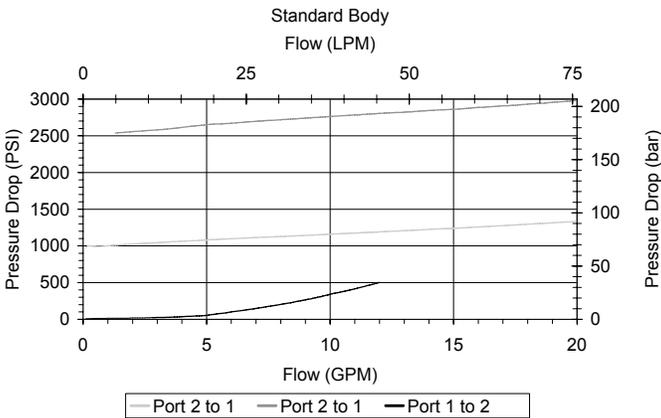
**HYDRAULIC SYMBOL**



Consult chart for flow capacity (1) to (2).

**PERFORMANCE**

Actual Test Data (Cartridge Only)



**VALVE SPECIFICATIONS**

Nominal Flow	15 GPM (57 LPM)
Rated Operating Pressure	4000 PSI (276 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.53 lbs (.24 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191200

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**CROSSOVER RELIEF VALVES**

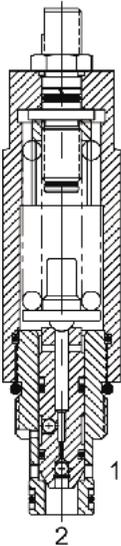
	GPM	PSI	LPM	BAR	CAVITY	MODEL	PAGE
	15	4000	57	276	7/8-14	<b>DE-RVB</b>	MP48
	15	4000	57	276	7/8-14	<b>DE-RVC</b>	MP50

**TYPICAL SCHEMATIC**

Typical application for the RVC is in a series circuit where a load on motor #2 causes back pressure on motor #1 and relief valve #1. Vent in port (2) of RV 1 allows spring to maintain proper load on motor #1 even though back pressure is present. Port (2) pressure into spring chamber to offset back pressure. Vent at port (2) causes .2 GPM flow from port (2) to port (1).

Typical application for the RVB is in a parallel circuit where the load on motor #2 does not cause back pressure on motor #1. Relief valve maintains differential pressure across motor because one side of motor always goes to tank.

**DE-RVB CROSSOVER RELIEF VALVE, FOR PARALLEL CIRCUITS**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, crossover relief valve for parallel circuit applications.

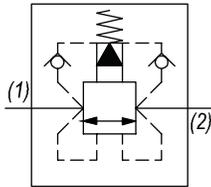
**OPERATION**

The DE-RVB is a direct-acting, cross over relief valve. When pressure at either port exceeds the nominal setting value, flow will be diverted to the opposite port. Back pressure at either port will affect the nominal setting of the opposite port on a 1:1 basis. For correlation purposes, pre-set value will be measured at port (2). Pressure at port (1) will not vary more than ±300 PSI from the port (2) value. The cartridge offers smooth transition in response to load changes in common hydraulic circuits.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

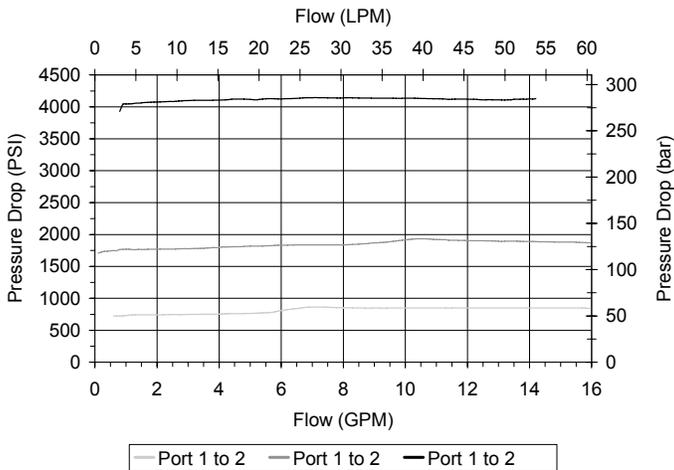
**HYDRAULIC SYMBOL**



The DE-RVB is designed for parallel circuit applications. For series circuits, use DE-RVC.

**PERFORMANCE**

Actual Test Data (Cartridge Only)

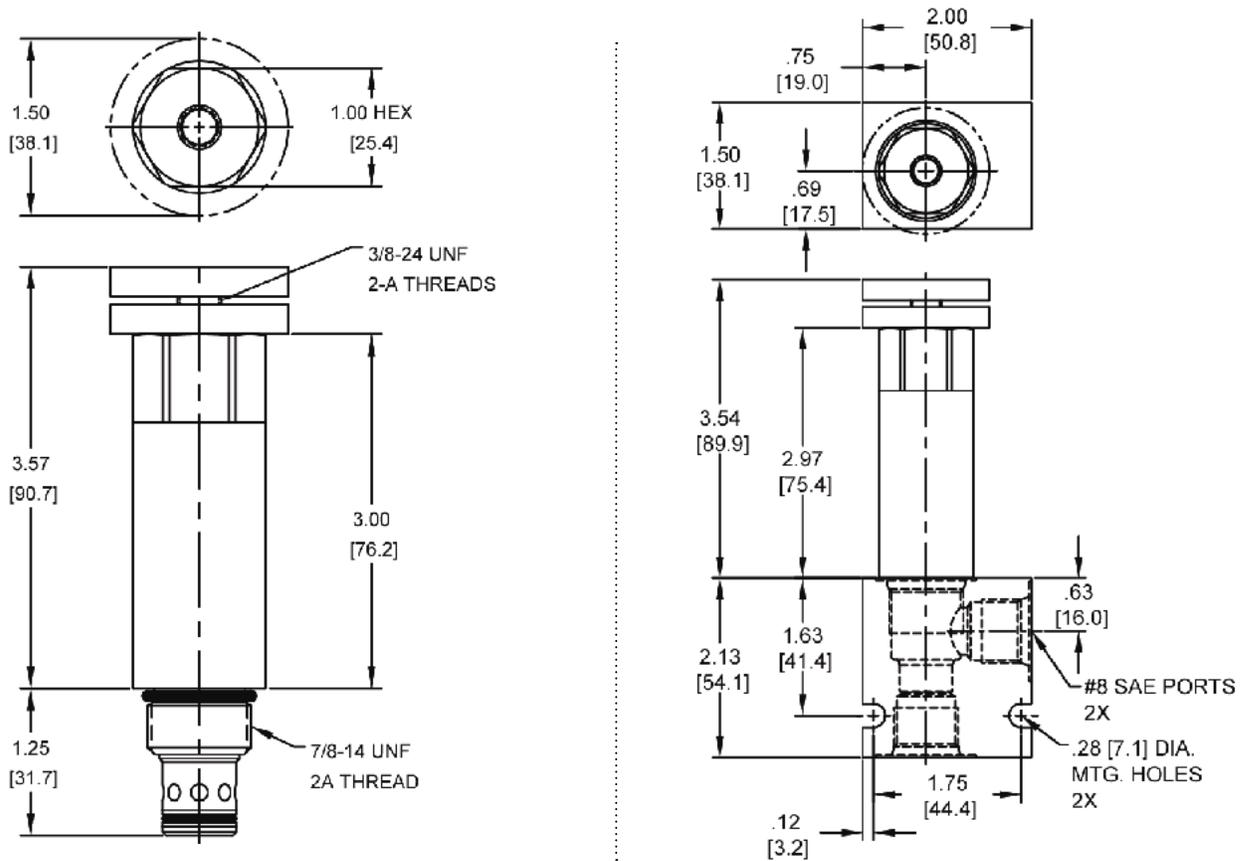


**VALVE SPECIFICATIONS**

Nominal Flow	15 GPM (57 LPM) from (2) to (1) 20 GPM (76 LPM) from (1) to (2)
Rated Operating Pressure	4000 PSI (276 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.80 lbs (.36 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191202

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**DIMENSIONS**



Body Weight: .47 lbs (.21 kg)

**ORDERING INFORMATION**

DE-RVB - - - -

**OPTIONS**

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Knob **0K**
- Viton, Knob **VK**
- Buna, Internal Adjust **0I**
- Viton, Internal Adjust **VI**
- Buna, Tamper Proof **0T**
- Viton, Tamper Proof **VT**

**BODIES**

- Blank Without Body
- N** 3/8" NPTF Ports
- S** #8 SAE Ports

**PRESSURE RANGE/SETTING**

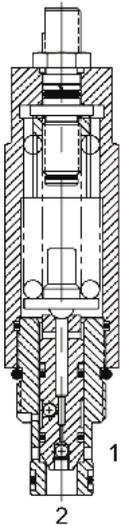
Ext./Int. Adjustable

- 0700** 100 - 700 PSI
- 1800** 500 - 1800 PSI
- 4000** 1000 - 4000 PSI

**Tamper Proof**

Fill in 4 Digit Pressure Setting  
Example: 0500 - 500 PSI

**DE-RVC CROSSOVER RELIEF VALVE, FOR SERIES CIRCUITS**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, crossover relief valve for series circuit application.

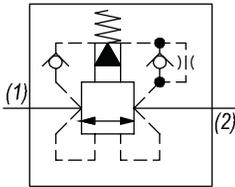
**OPERATION**

The DE-RVC is a direct-acting, cross over relief valve. When pressure at either port exceeds the nominal setting value, flow will be diverted to the opposite port. Back pressure at either port will affect the nominal setting of the opposite port on a 1:1 basis. For correlation purposes, pre-set value will be measured at port (2). Pressure at port (1) will not vary more than  $\pm 300$  PSI from the port (2) value. The cartridge offers smooth transition in response to load changes in common hydraulic circuits.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

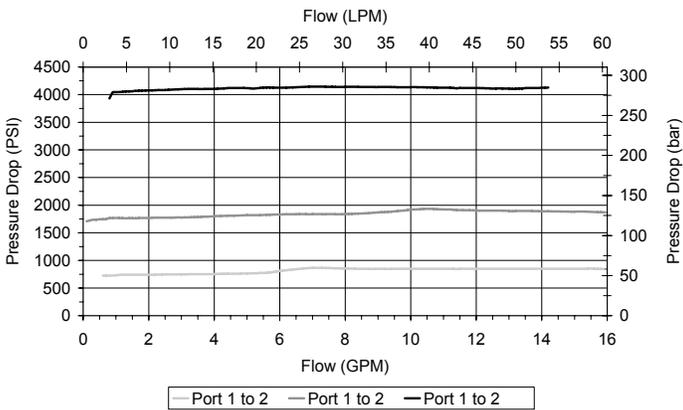
**HYDRAULIC SYMBOL**



The DE-RVC is designed for series circuit applications with controlled leakage between ports (2) and (1). For parallel circuits, use DE-RVB.

**PERFORMANCE**

Actual Test Data (Cartridge Only)

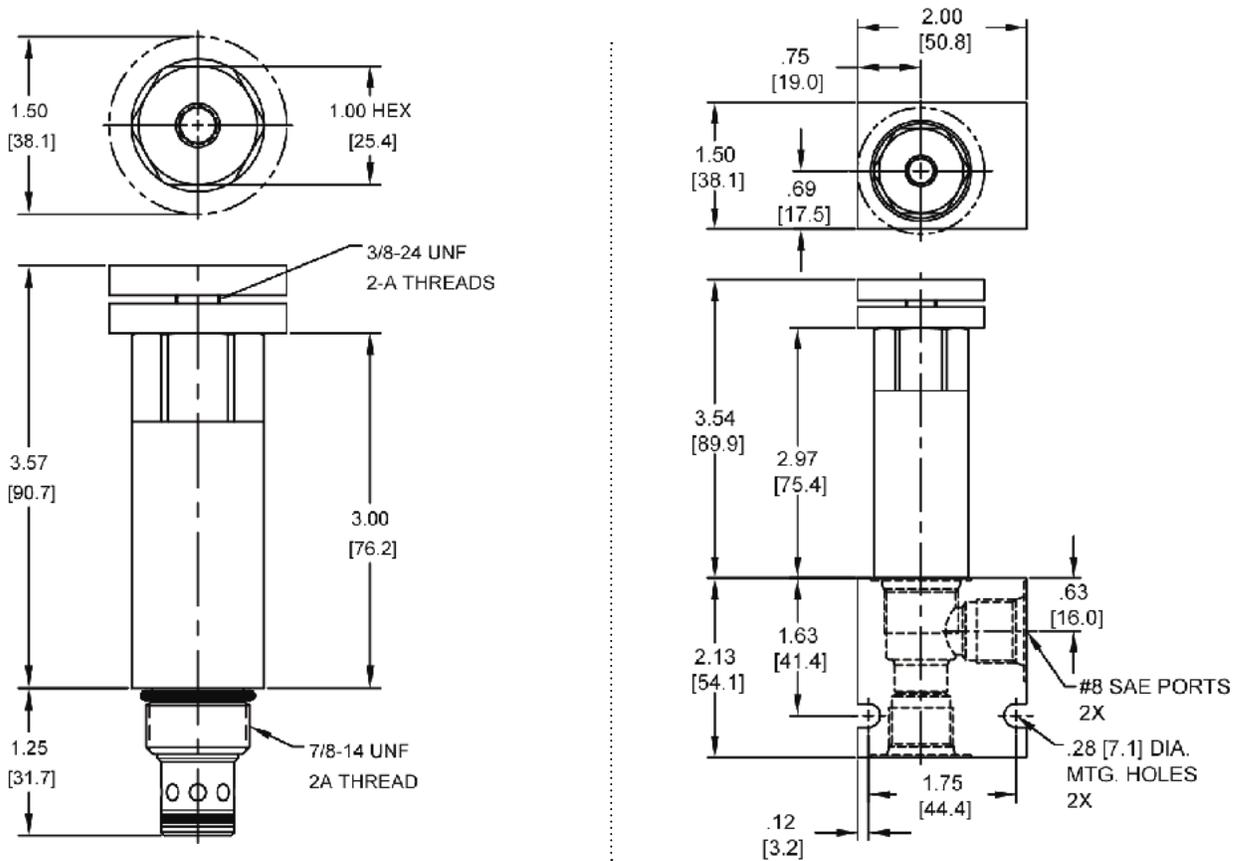


**VALVE SPECIFICATIONS**

Nominal Flow	15 GPM (57 LPM) from (2) to (1) 20 GPM (76 LPM) from (1) to (2)
Rated Operating Pressure	4000 PSI (276 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.80 lbs (.36 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191202

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**DIMENSIONS**



Body Weight: .47 lbs (.21 kg)

**ORDERING INFORMATION**

<p><b>DE-RVC</b> -</p> <p><b>OPTIONS</b></p> <p>Buna Standard <b>00</b></p> <p>Viton Standard <b>V0</b></p> <p>Buna, Knob <b>0K</b></p> <p>Viton, Knob <b>VK</b></p> <p>Buna, Internal Adjust <b>0I</b></p> <p>Viton, Internal Adjust <b>VI</b></p> <p>Buna, Tamper Proof <b>0T</b></p> <p>Viton, Tamper Proof <b>VT</b></p>	<p><b>BODIES</b></p> <p>Blank Without Body</p> <p><b>N</b> 3/8" NPTF Ports</p> <p><b>S</b> #8 SAE Ports</p>
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**PRESSURE RANGE/SETTING**

**Ext./Int. Adjustable**

- 0700** 100 - 700 PSI
- 1800** 500 - 1800 PSI
- 4000** 1000 - 4000 PSI

**Tamper Proof**

Fill in 4 Digit Pressure Setting  
Example: 0500 - 500 PSI

**WARNING:** *the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.*

Via Malavolti, 36 - 41122 Modena - ITALY - Phone +39 (059) 254895 - Fax +39 (059) 253512 - mail: [tecnord@tecnord.com](mailto:tecnord@tecnord.com) - [www.tecnord.com](http://www.tecnord.com)

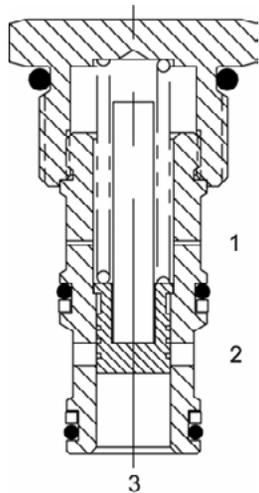
**PRESSURE COMPENSATED REGULATOR VALVES**

	GPM	PSI	LPM	BAR	CAVITY	MODEL	PAGE
	10	3500	38	241	7/8-14	DF-PCR	MP54
	33	3500	120	241	Special	QC-CP3	MP56
	8	3500	30	241	3/4-16	PP-PCA	MP58
	40	3500	151	241	1 1/16-12	TR-PCA	MP60
	40	3500	151	241	1 5/16-12	SL-PCA	MP62
	10	3500	38	241	7/8-14	DG-PCB	MP64
	10	3500	38	241	7/8-14	DG-TCB	MP66
	8	3000	30	207	3/4-16	PP-PCC	MP68
	8	3500	30	241	7/8-14	DF-CP2	MP70
	19	3500	70	241	Special	QC-CP2	MP72
	20	3500	76	241	1 1/16-12	TR-PCC	MP74
	10	3500	38	241	7/8-14	DF-PCE	MP76
	40	3500	151	241	1 5/16-12	SL-PCE	MP78
	10	3500	38	241	7/8-14	DF-PCS	MP80
	10	3500	38	241	7/8-14	DF-TCS	MP82
	10	3500	38	241	7/8-14	DF-PCT	MP84

**TYPICAL SCHEMATIC**

These very flexible pressure compensator valves can regulate flow through many types of orifices: Electro-Proportional Orifices, Plate or Set Screw Orifices, Needle Valves &/or even across the pressure drop of other control valve (s). When using multiple compensating devices in the same circuit it is good practice to keep at least 50 PSID between their settings to reduce the likelihood of cross talking during dynamic events.

**DF-PCR PRESSURE COMPENSATING REGULATOR VALVE**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, pressure compensating regulator valve.

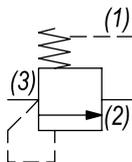
**OPERATION**

The DF-PCR-0P with an orifice between ports (3) and (1) maintains a constant flow rate from (3) regardless of load pressure changes in the system upstream of (3), or in the bypass leg at (2) as long as pressure at (2) is less than (1). The valve's spool maintains a constant differential pressure across an external orifice, thereby regulating the hydraulic flow rate from (3) to (2) (see options table for pressure ranges). When used with an orifice as described above, as a priority type regulator, delivering pump flow first to (3), then bypassing excess to (2). All ports may be fully pressurized. The DF-PCR-0V with a dump valve and a pilot relief valve at (1) acts as main stage of a ventable relief valve.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

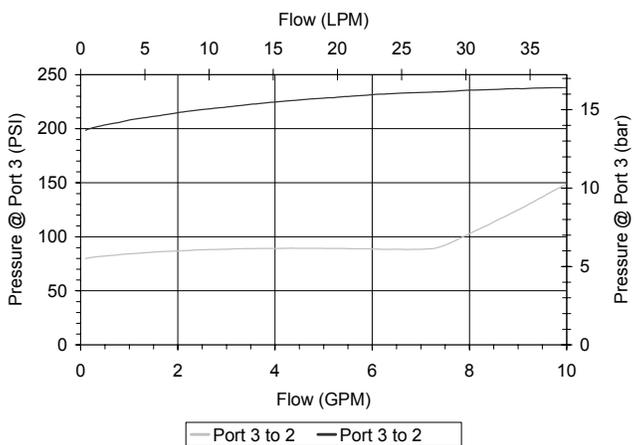
**HYDRAULIC SYMBOL**



Can be used as a logic element. DF-PCR-0P is commonly used as a bypass flow regulator (80 PSI recommended). DF-PCR-0V is commonly used as the main stage of a ventable relief valve (40 and 80 PSI recommended).

**PERFORMANCE**

Actual Test Data (Cartridge Only)

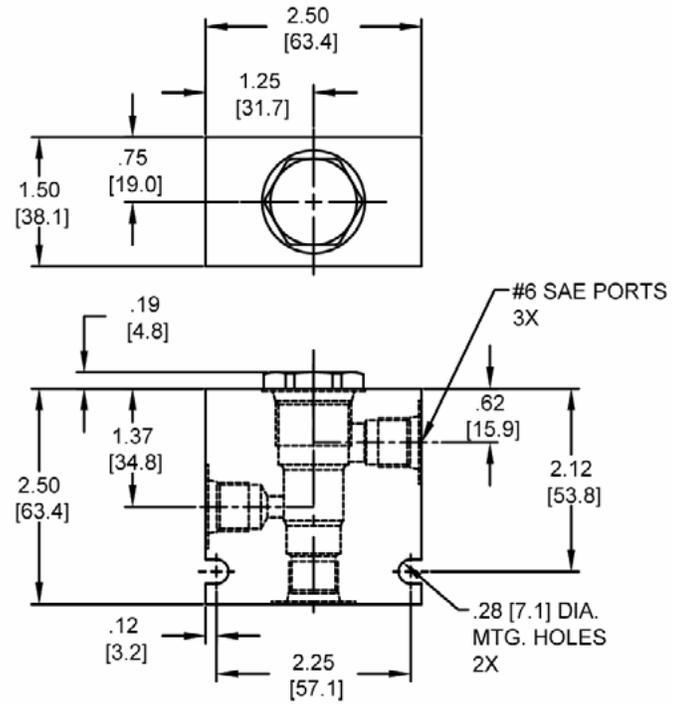
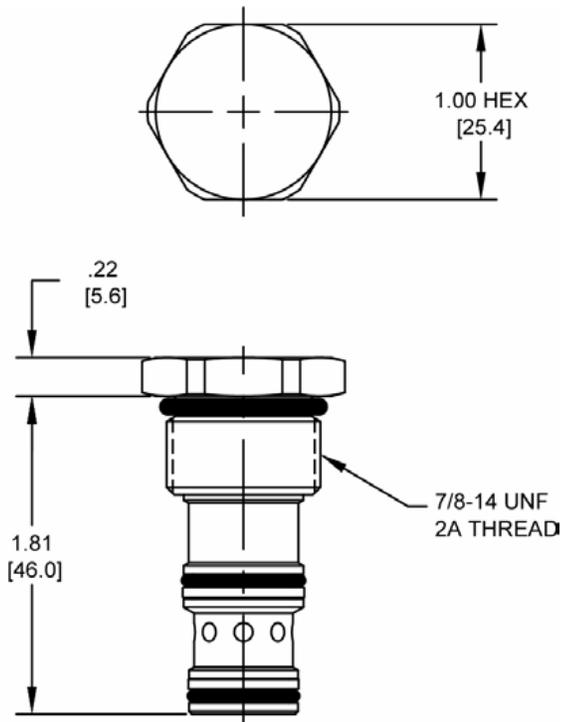


**VALVE SPECIFICATIONS**

Nominal Flow	10 GPM (38 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Seat Ratio	Area of Pilot is equal to the area at Port (3)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.19 lbs (.09 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 3W
Cavity Form Tool (Finishing)	40500001
Seal Kit	21191206

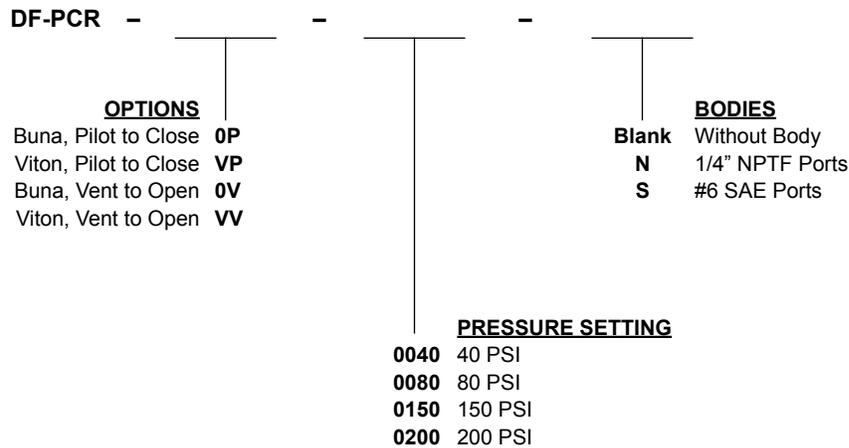
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**



Body Weight: .76 lbs (.35 kg)

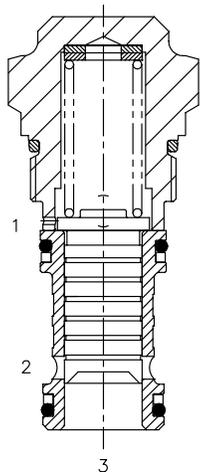
**ORDERING INFORMATION**



W 28 / 2022

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**QC-CP3 PRESSURE COMPENSATING VALVE, BYPASS TYPE FOR 3 WAY FLOW CONTROL**



**DESCRIPTION**

Special cavity, pressure compensating valve, bypass type, for 3 way flow control, normally closed.

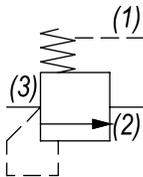
**OPERATION**

The QC-CP3 with an orifice between ports (3) and (1) maintains a constant flow rate from (3) regardless of load pressure changes in the system upstream of (3), or in the bypass leg at (2) as long as pressure at (2) is less than (1). The valve's spool maintains a constant differential pressure across an external orifice, thereby regulating the hydraulic flow rate from (3) to (2), (see options table for pressure ranges). When used with an orifice as described above, as a priority type regulator, delivering pump flow first to (3), then bypassing excess to (2). All ports may be fully pressurized.

**FEATURES**

- Hardened parts for long life.
- Spring range from 8 to 24 bar.

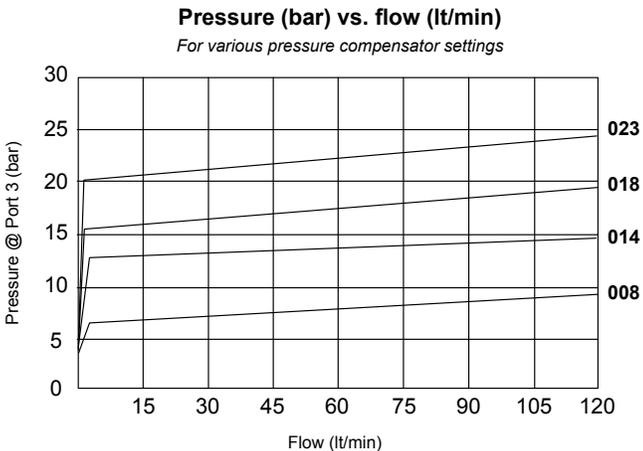
**HYDRAULIC SYMBOL**



*Pressure compensator for 3 way flow control, typically used with an external orifice between ports (3) and (1). Port (1) should sense upstream pressure of orifice.*

**PERFORMANCE**

Actual Test Data (Cartridge Only)

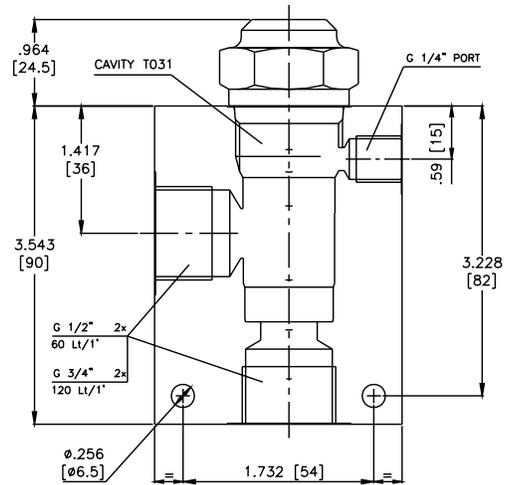
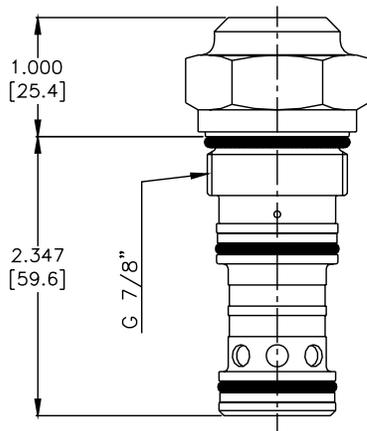
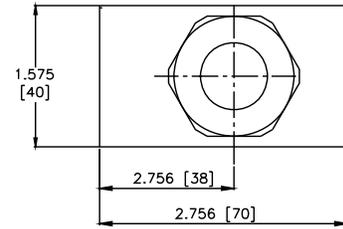
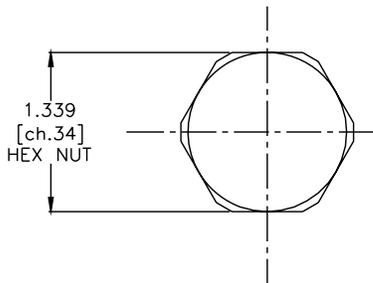


**VALVE SPECIFICATIONS**

Nominal Flow	33 GPM (120 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	35 ml/min @ 250 bar
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.35 lbs (.16 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	52 ft-lbs (70 Nm)
Cavity	T031 (Special)
Cavity Tools Kit (form tool, reamer, tap)	K-T031
Seal Kit	210902321

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**DIMENSIONS**



(for bodies style and sizes see section "Accessories")

**ORDERING INFORMATION**

QC-CP3 - - -

**OPTIONS**

Buna Standard **00**  
Viton Standard **V0**

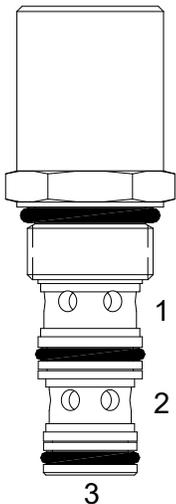
**BODIES**

Blank Without Body  
**N** 1/2" BSP Ports  
**S** #8 SAE Ports

**PRESSURE SETTINGS**

**008** 8 bar (115 PSI) @ 60 l/min  
**014** 14 bar (200 PSI) @ 60 l/min  
**018** 18 bar (260 PSI) @ 60 l/min  
**023** 23 bar (330 PSI) @ 60 l/min

**PP-PCA FIXED PRESSURE COMPENSATING REGULATOR VALVE**



**DESCRIPTION**

8 size, 3/4-16 thread, "Power" series, pressure compensating regulator valve.

**OPERATION**

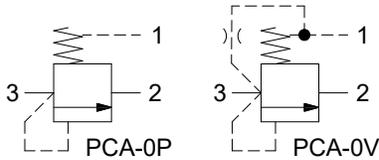
The PP-PCA-0P with an orifice between ports (3) and (1) maintains a constant flow rate from (3) regardless of load pressure changes in the system upstream of (3), or in the bypass leg at (2) as long as pressure at (2) is less than (1).

The valves spool maintains a constant differential pressure across an external orifice, thereby regulating the hydraulic flow rate across this external orifice. (see options table for pressure ranges). When used with an orifice as described above, it functions as a priority type regulator, delivering pump flow first to the external orifice, then bypassing excess to (2). All ports may be fully pressurized. The PP-PCA-0V with a dump valve and a pilot relief valve at (1) acts as main stage of a ventable relief valve.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

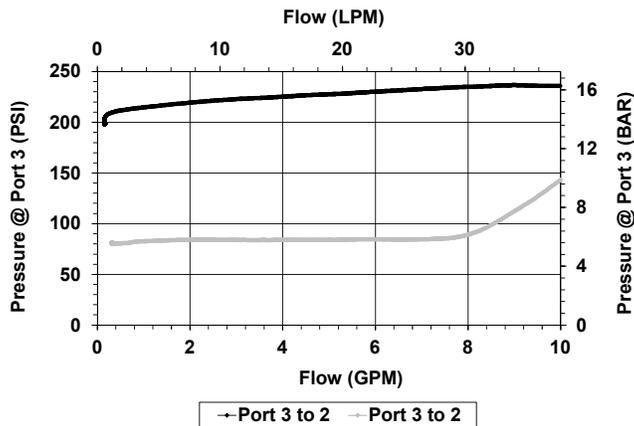
**HYDRAULIC SYMBOL**



Can be used as a logic element.  
 PP-PCA-0P is commonly used as a bypass flow regulator (80 PSI recommended).  
 PP-PCA-0V is commonly used as the main stage of a ventable relief valve (40 and 80 PSI recommended).

**PERFORMANCE**

Actual Test Data (Cartridge Only)

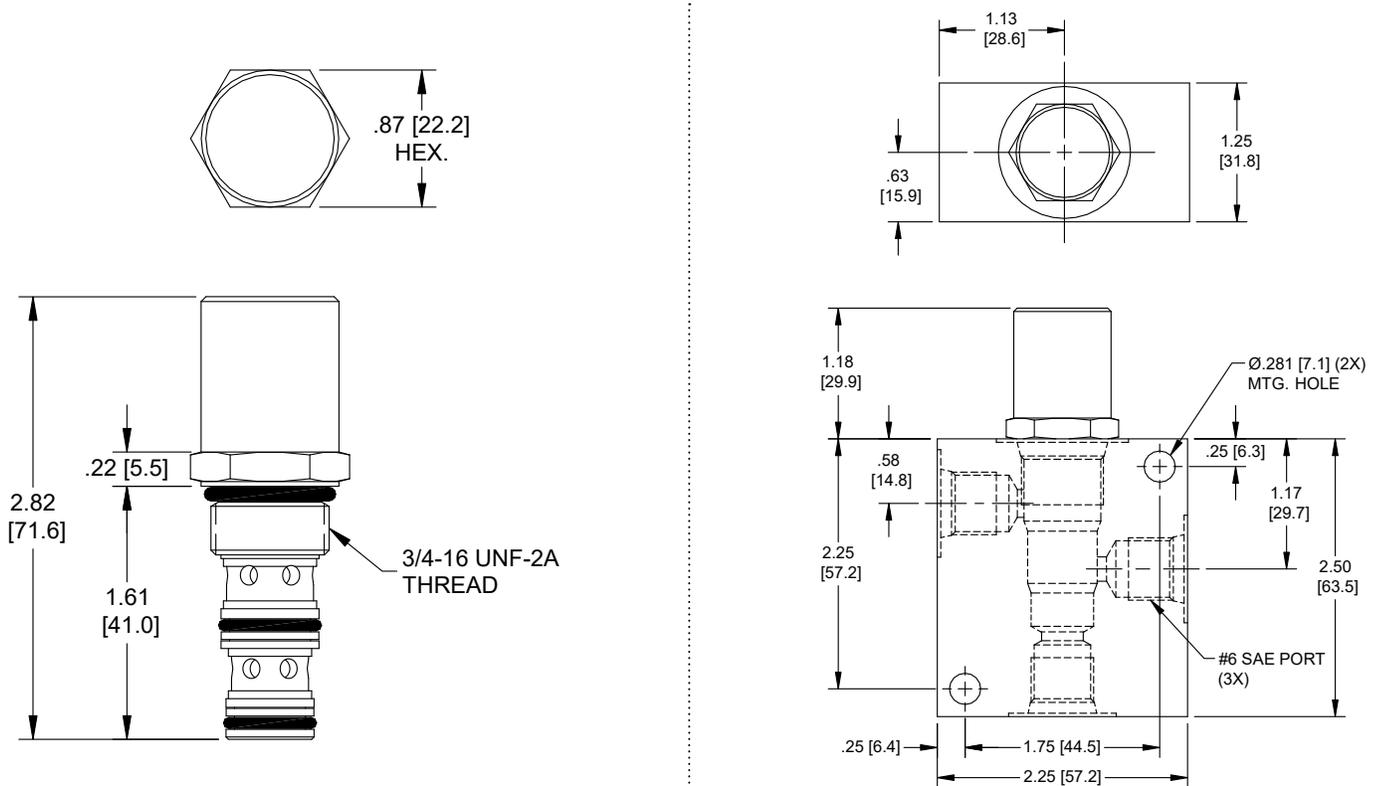


**VALVE SPECIFICATIONS**

Nominal Flow	8 GPM (30 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Seat Ratio	Area of Pilot is equal to the area at Port (3)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.19 lbs (.09 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Cavity	POWER 3W
Cavity Form Tool (Finishing)	40500024
Seal Kit	21191106

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DIMENSIONS

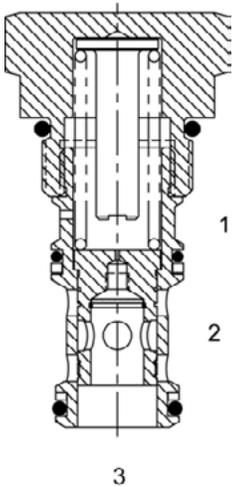


Body Weight: .56 lbs (.55 kg)

ORDERING INFORMATION

<p><b>PP-PCA</b> -</p> <p><b>OPTIONS</b></p> <p>Buna, Vent to Open <b>0V</b></p> <p>Buna, Pilot to Close <b>0P</b></p> <p>Viton, Vent to Open <b>VV</b></p> <p>Viton, Pilot to Close <b>VP</b></p>	<p>-</p> <p>-</p> <p>-</p>	<p><b>BODIES</b></p> <p>Blank Without Body</p> <p><b>N</b> 1/4" NPTF Ports</p> <p><b>S</b> #6 SAE Ports</p>
<p><b>PRESSURE SETTING</b></p> <p><b>0040</b> 40 PSI</p> <p><b>0080</b> 80 PSI</p> <p><b>0150</b> 150 PSI</p> <p><b>0200</b> 200 PSI</p>		

**TR-PCA PRESSURE COMPENSATING REGULATOR VALVE**



**DESCRIPTION**

12 size, 1 1/16-12 thread, "Tecnomd" series, pressure compensating regulator valve.

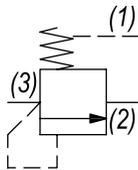
**OPERATION**

The TR-PCA-0P with an orifice between ports (3) and (1) maintains a constant flow rate from (3) regardless of load pressure changes in the system upstream of (3), or in the bypass leg at (2) as long as pressure at (2) is less than (1). The valve's spool maintains a constant differential pressure across an external orifice, thereby regulating the hydraulic flow rate across this external orifice (see options table for pressure ranges). When used with an orifice as described above, it functions as a priority type regulator, delivering pump flow first to the external orifice, then bypassing excess to (2). All ports may be fully pressurized. The TR-PCA-0V with a dump valve and a pilot relief valve at (1) acts as main stage of a ventable relief valve.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

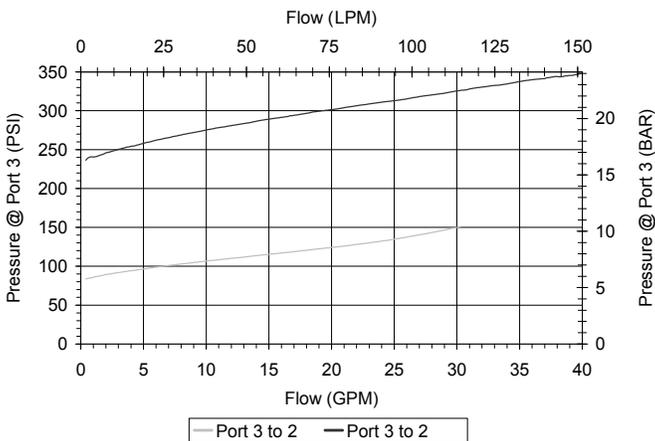
**HYDRAULIC SYMBOL**



Can be used as a logic element. TR-PCA-0P is commonly used as a bypass flow regulator (90 and 150 PSI recommended). TR-PCA-0V is commonly used as the main stage of a ventable relief valve (50 and 90 PSI recommended).

**PERFORMANCE**

Actual Test Data (Cartridge Only)

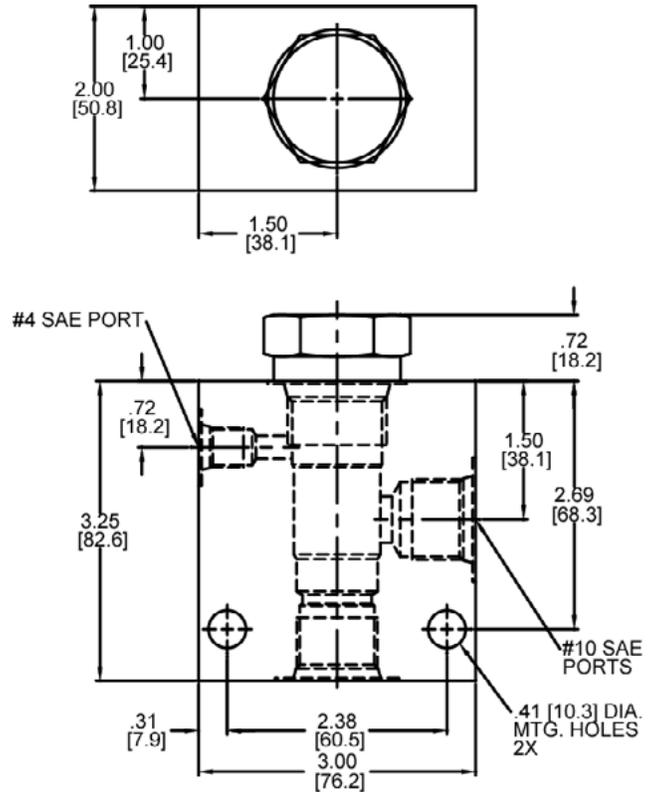
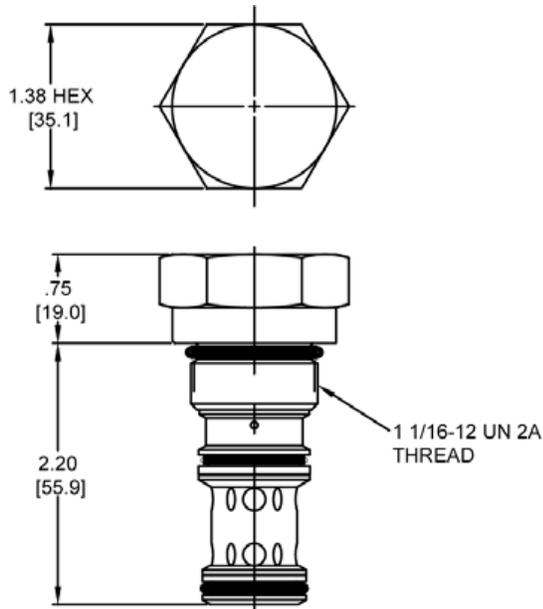


**VALVE SPECIFICATIONS**

Nominal Flow	40 GPM (151 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Seat Ratio	Area of Pilot is equal to the area at Port (3)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.54 lbs (.24 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	70 ft-lbs (95 Nm)
Cavity	TECNORD 3WS
Cavity Form Tool (Finishing)	40500033
Seal Kit	21191306

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**DIMENSIONS**



Body Weight: 1.56 lbs (.70 kg)

**ORDERING INFORMATION**

<p><b>TR-PCA</b> - - -</p> <p><b>OPTIONS</b></p> <p>Buna, Pilot to Close <b>0P</b></p> <p>Viton, Pilot to Close <b>VP</b></p> <p>Buna, Vent to Open <b>0V</b></p> <p>Viton, Vent to Open <b>VV</b></p>	<p><b>BODIES</b></p> <p>Blank Without Body</p> <p><b>S</b> #10 SAE Ports</p>
<p><b>Δ P SETTING</b></p> <p><b>@ 1 GPM with Pilot Vented</b></p> <p><b>0020</b> 20 PSI</p> <p><b>0050</b> 50 PSI</p> <p><b>0090</b> 90 PSI</p> <p><b>0150</b> 150 PSI</p> <p><b>0230</b> 230 PSI</p> <p>±10%</p>	

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**SL-PCA PRESSURE COMPENSATING REGULATOR VALVE**

**DESCRIPTION**

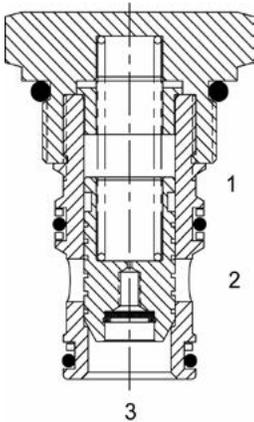
16 size, 1 5/16-12 thread, "Super" series, pressure compensating regulator valve.

**OPERATION**

The SL-PCA-0P with an external orifice between ports (3) and (1) maintains a constant flow rate across the external orifice, regardless of load pressure changes in the system upstream of (3), or in the bypass leg at (2) as long as pressure at (2) is less than (1). The valve's spool maintains a constant differential pressure across the external orifice, thereby regulating the hydraulic flow rate across the external orifice (see options table for pressure ranges). When used with an orifice as described above, it functions as a priority type regulator, delivering pump flow first to the external orifice, then bypassing excess to (2). All ports may be fully pressurized. The SL-PCA-0V with a dump valve and a pilot relief valve at (1) acts as main stage of a ventable relief valve.

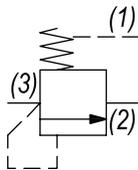
**FEATURES**

- Hardened parts for long life.
- Industry common cavity.



Can be used as a logic element. SL-PCA-0P is commonly used as a bypass flow regulator (100 PSI recommended). SL-PCA-0V is commonly used as the main stage of a ventable relief valve (50 and 100 PSI recommended).

**HYDRAULIC SYMBOL**

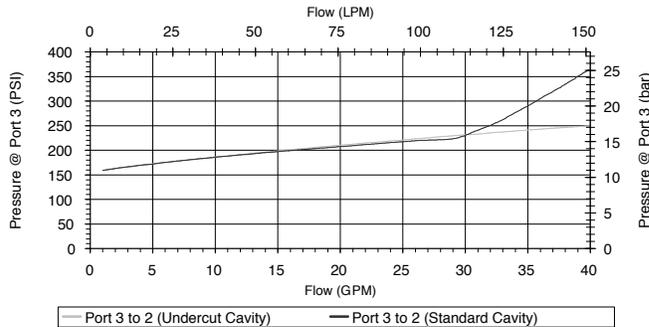
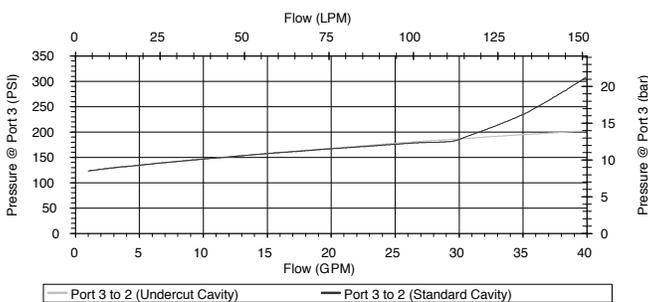


**VALVE SPECIFICATIONS**

Nominal Flow	40 GPM (151 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Seat Ratio	Initially area of Pilot is 1.2 times the area at Port (3), then 1:1
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.70 lbs (.32 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	90 ft-lbs (122 Nm)
Cavity	SUPER 3WS
Cavity Form Tool (Finishing)	40500021
Seal Kit	21191406

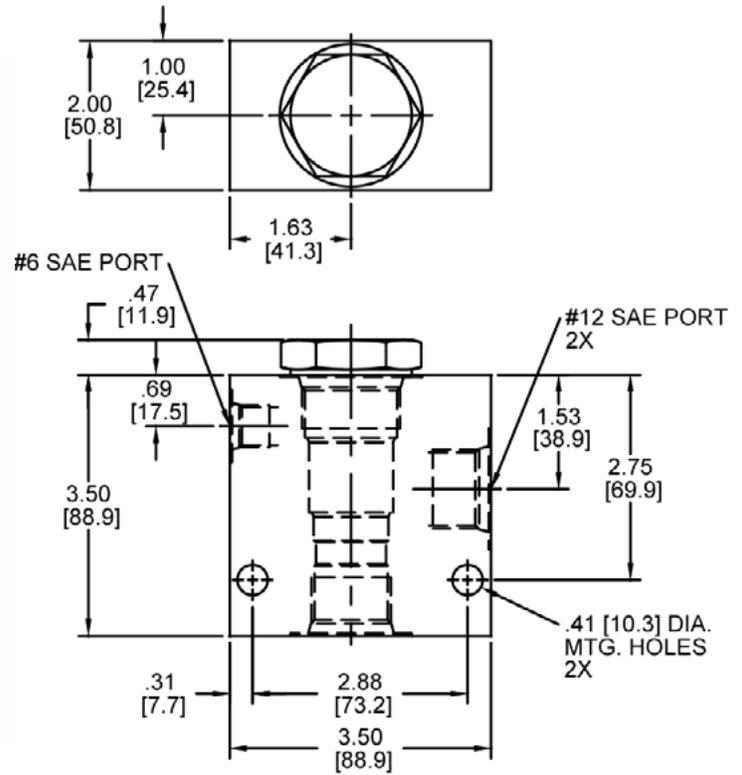
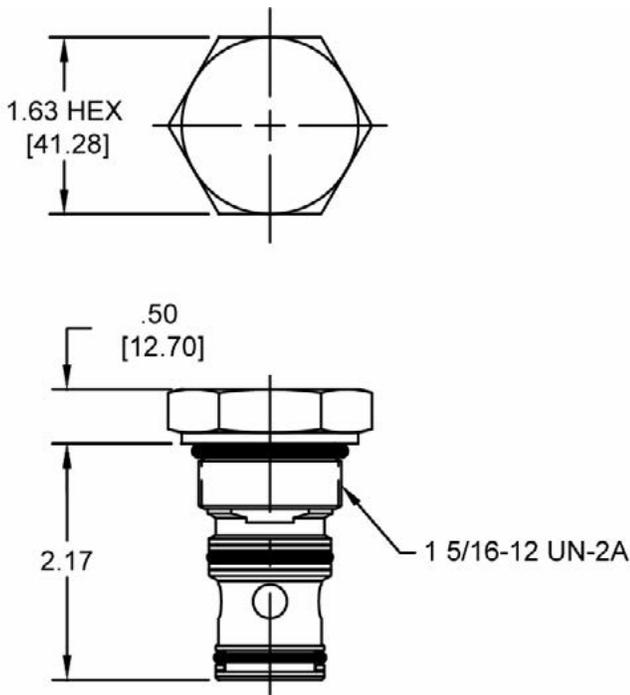
**PERFORMANCE**

Actual Test Data (Cartridge Only)



**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**



Body Weight: 1.89 lbs (.86 kg)

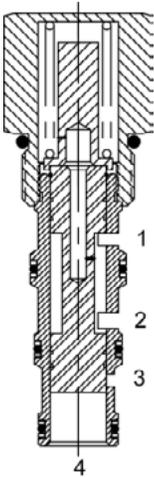
**ORDERING INFORMATION**

<p><b>SL-PCA</b> - - -</p> <p><b>OPTIONS</b></p> <p>Buna, Pilot to Close <b>0P</b></p> <p>Viton, Pilot to Close <b>VP</b></p> <p>Buna, Vent to Open <b>0V</b></p> <p>Viton, Vent to Open <b>VV</b></p> <p>Buna, Pilot to Close with Seals <b>0B</b></p> <p>Viton, Pilot to Close with Seals <b>VB</b></p> <p>Buna, Vent to Open with Seals <b>0C</b></p> <p>Viton, Vent to Open with Seals <b>VC</b></p>	<p><b>BODIES</b></p> <p>Blank Without Body</p> <p><b>S</b> #12 SAE Ports</p>
<p><b>Δ P SETTING</b></p> <p><b>@ 1 GPM with Pilot Vented</b></p> <p><b>0020</b> 20 PSI</p> <p><b>0050</b> 50 PSI</p> <p><b>0100</b> 100 PSI</p> <p><b>0150</b> 150 PSI</p>	

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**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DG-PCB PRESSURE COMPENSATING VALVE, RESTRICTIVE TYPE WITH BY-PASS**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, pressure compensating valve, restrictive type with bypass.

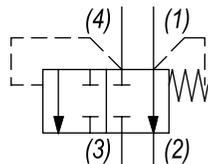
**OPERATION**

The DG-PCB allows pressure compensated or proportional flow from (1) to (2) regulated by the pressure differential across (1) and (4) with a bypass of (4) to (3). The spring chamber is constantly connected at (1).

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

**HYDRAULIC SYMBOL**

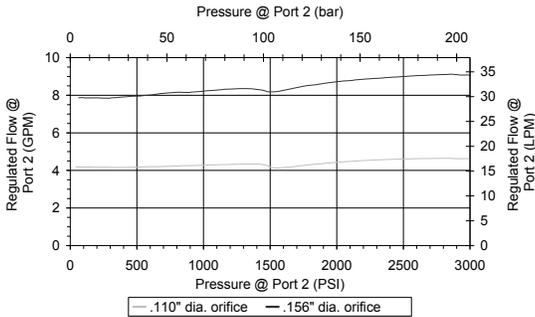


*DG-PCB is not intended for differential pressure more than 1500 PSI from (4) to (3). Consult Factory for abrupt pressure change applications that exceed 1500 PSI, for alternative products.*

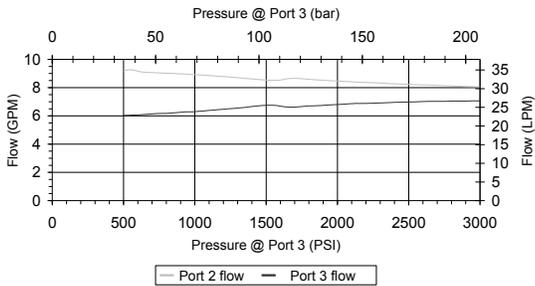
**PERFORMANCE**

**Actual Test Data (Cartridge Only with 150 PSI Spring)**

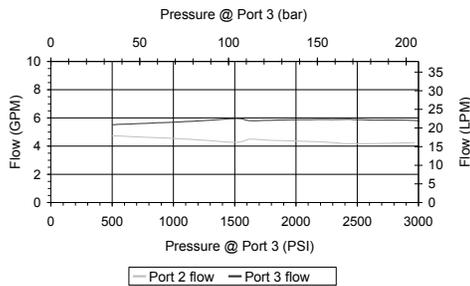
10 GPM Supply flow, .110" Orifice, 150 PSI spring  
 15 GPM Supply flow, .156" Orifice, 150 PSI spring - 1500 PSI load on port (3)



Priority port (2) load: 1500-1700 psi, .156" dia orifice, 15 gpm supply  
 not intended for differential pressure > 1500 psi port (4) to port (3)



Priority port (2) load: 1500-1700 PSI, .110" dia orifice, 10 GPM supply  
 not intended for differential pressure > 1500 PSI port (4) to port (3)

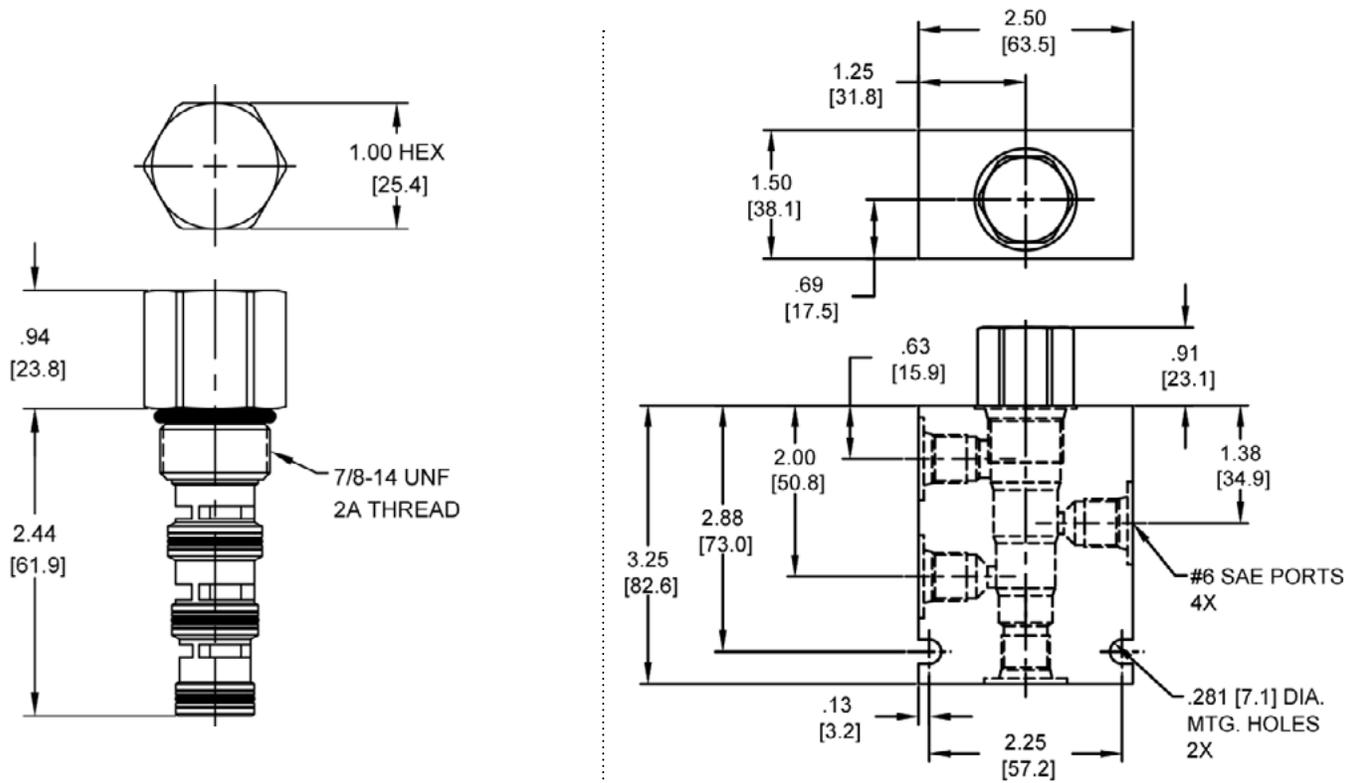


**VALVE SPECIFICATIONS**

Nominal Flow	10 GPM (38 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	5 cu in/min (82 ml/min) per path
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.38 lbs (.17 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 4W
Cavity Form Tool (Finishing)	40500002
Seal Kit	21191214

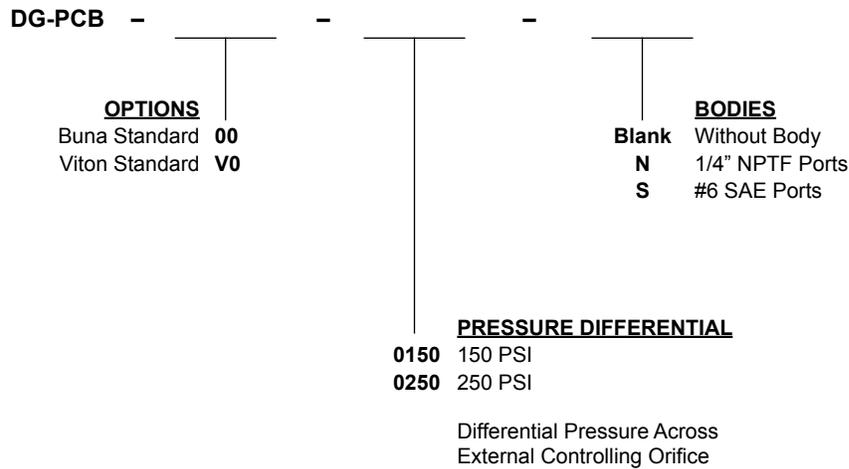
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

DIMENSIONS

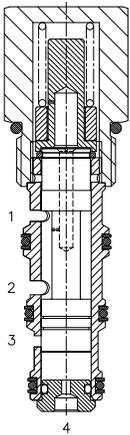


Body Weight: .99 lbs (.45 kg)

ORDERING INFORMATION



**DG-TCB PRESSURE COMPENSATING VALVE, RESTRICTIVE TYPE WITH BYPASS**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, pressure compensating valve, restrictive type with bypass.

**OPERATION**

The DG-TCB allows pressure compensated or proportional flow from (1) to (2) regulated by the pressure differential across (1) and (4) with a bypass of (4) to (3). The spring chamber is constantly connected at (1).

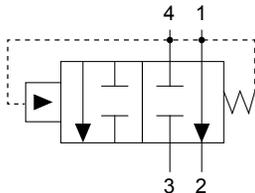
**FEATURES**

- Hardened parts for longer life.
- Industry common cavity.



Bypass line (3) can be pressurized.

**HYDRAULIC SYMBOL**



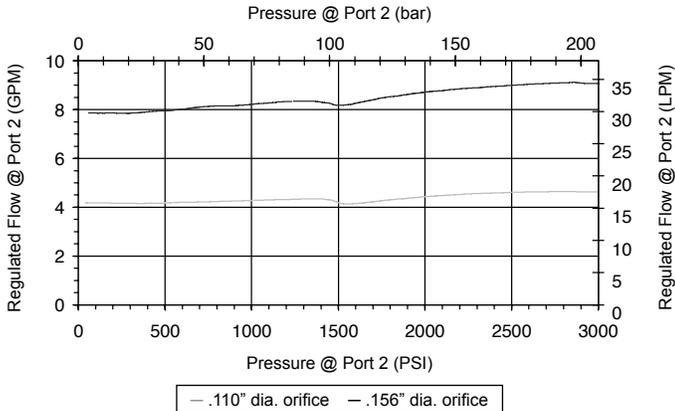
**PERFORMANCE**

Actual Test Data (Cartridge Only)

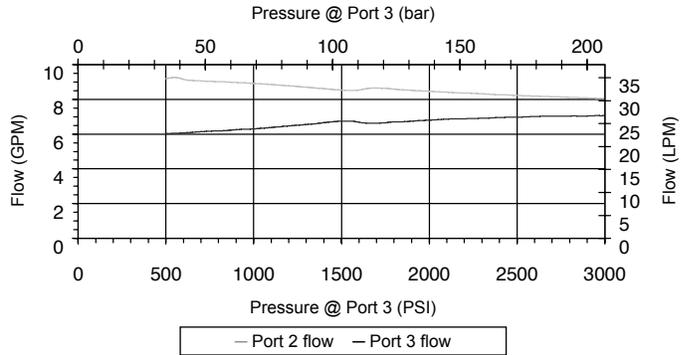
**VALVE SPECIFICATIONS**

Nominal Flow	10 GPM (38 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	5 cu in/min (82 ml/min) per path
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.38 lbs (.17 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 4W
Cavity Tools Kit (form tool, reamer, tap)	40500002
Seal Kit	21191214

10 GPM supply flow, .110" orifice, 150 PSI spring - 15 GPM supply flow, .156" orifice, 150 PSI spring - 1500 PSI load on port 3



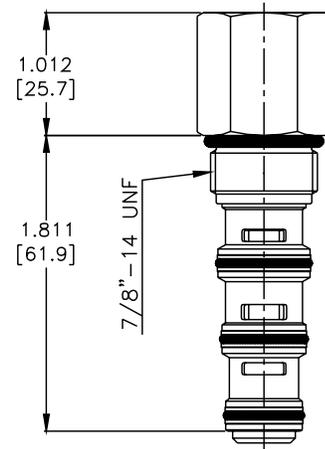
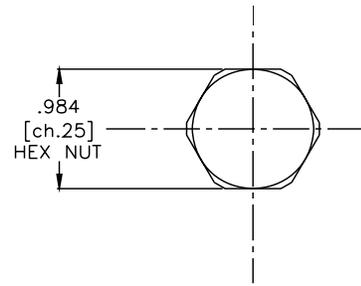
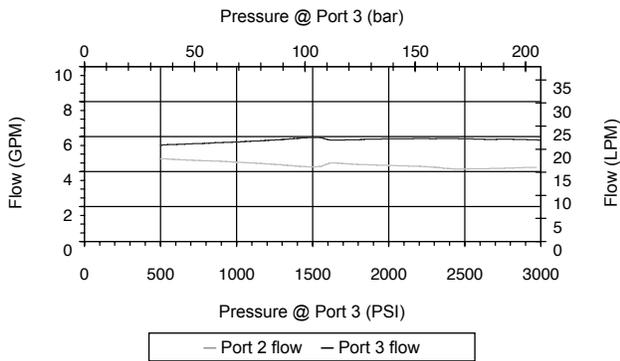
Priority port 2 load: 1500 - 1700 PSI, .156" dia orifice, 15 GPM supply not intended for differential pressure > 1500 PSI port 4 to port 3



**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**

Priority port 2 load: 1500 - 1700 PSI, .110" dia orifice, 10 GPM supply  
not intended for differential pressure > 1500 PSI port 4 to port 3



(for bodies style and sizes see section "Accessories")

**ORDERING INFORMATION**

DG-TCB - - - -

**OPTIONS**

- Buna Standard **00**
- Viton Standard **V0**

**BODIES**

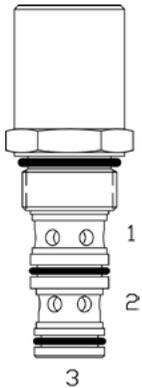
- Blank** Without Body
- N** 3/8" BSP Ports
- S** #6 SAE Ports

**PRESSURE SETTINGS**

- 014** 14 bar (200 PSI)
- 020** 20 bar (285 PSI)
- 032** 32 bar (460 PSI)

Differential Pressure Across  
External Controlling Orifice

**PP-PCC FIXED PRESSURE COMPENSATING REGULATOR VALVE - RESTRICTIVE TYPE**



**DESCRIPTION**

8 size, 3/4-16 thread, "Power" series, pressure compensating regulator valve (restrictive type).

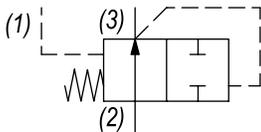
**OPERATION**

The PP-PCC-00 with an external orifice beyond port (3) and sensed by port (1) maintains a constant flow rate from (3) regardless of load pressure changes in the system downstream of (3), or in the inlet at (2) as long as pressure at (3) is above (1) by more than spring setting chosen and pump supply is in excess of demand. The valve's spool maintains a constant differential pressure across an external orifice, thereby regulating the hydraulic flow rate across this external orifice (see options table for pressure ranges). When used with an orifice as described above, it functions as a restrictive type regulator, delivering pump flow through the external orifice. All ports may be fully pressurized.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

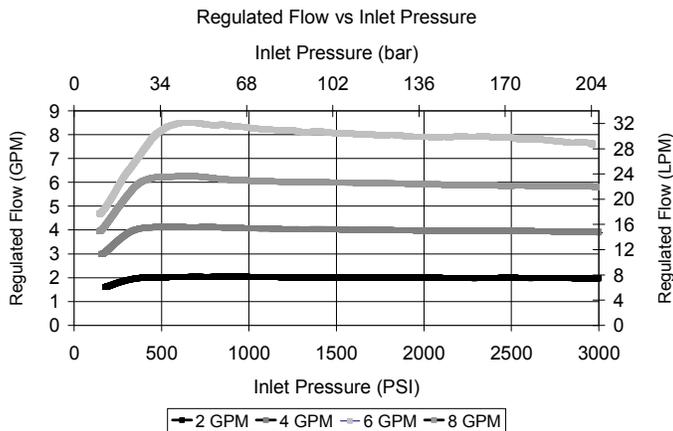
**HYDRAULIC SYMBOL**



Can be used as a logic element. Fixed setting pressure reducing valve. For adjustable setting see PP-PCD. PP-PCC-00-0100 is recommended for regulated flows up to 4.0 GPM only. PP-PCC-00-0220 is recommended for regulated flows up to 8.0 GPM. For fixed pressure reducing/relieving valve see PP-PCP.

**PERFORMANCE**

Actual Test Data (Cartridge Only)

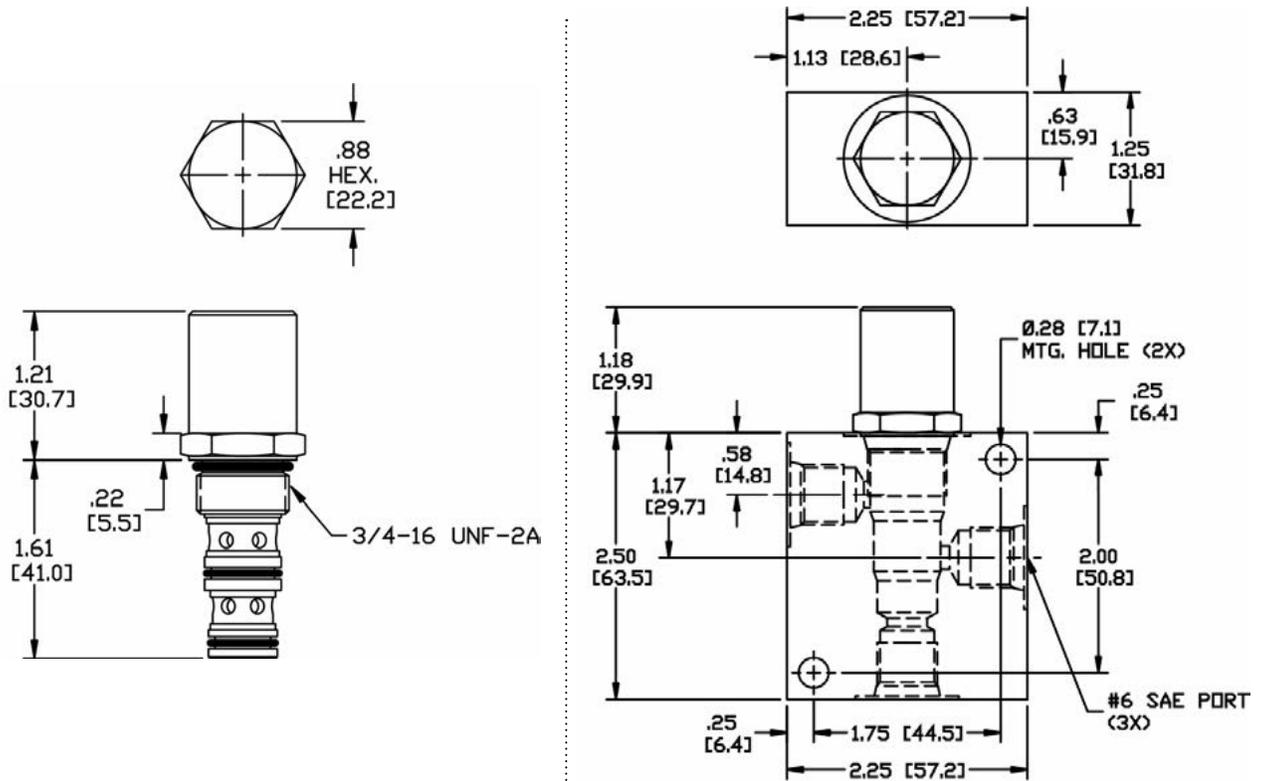


**VALVE SPECIFICATIONS**

Nominal Flow	8 GPM (30 LPM)
Rated Operating Pressure	3000 PSI (207 bar)
Ratio	Area of Pilot is equal to the area at Port (3)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.25 lbs (.11 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Cavity	POWER 3W
Cavity Form Tool (Finishing)	40500024
Seal Kit	21191111

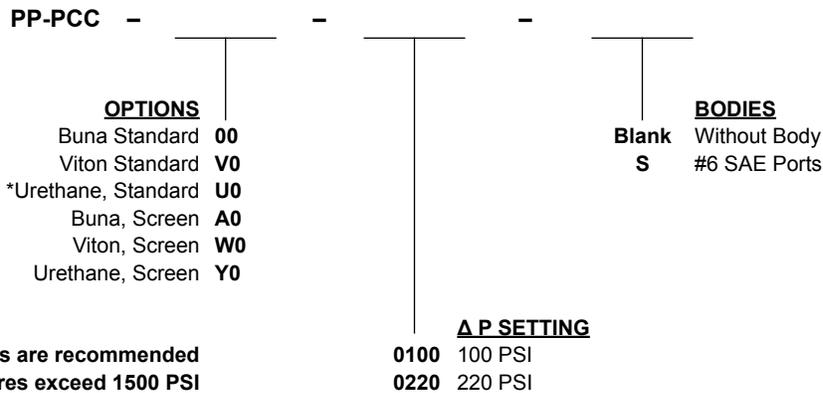
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

DIMENSIONS



Body Weight: .56 lbs (.25 kg)

ORDERING INFORMATION

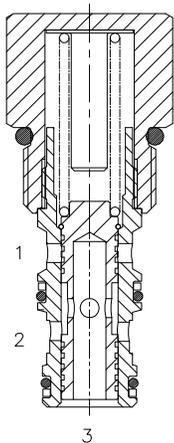


\*Urethane seals are recommended when inlet pressures exceed 1500 PSI

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**DF-CP2 PRESSURE COMPENSATING/REDUCING VALVE**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, 2 ways pressure compensating/reducing valve.

**OPERATION**

The DF-CP2 allows pressure compensated flow from (2) to (3) regulated by the pressure present at (1). Pressure differential between (3) and (1) is fixed at 8/14/18 bar (according to the pressure settings). These are minimum values, increasing with the flow because of the pressure drop through the valve (see graph). When used with (1) connected to a drain line, it works as pressure reducing valve.

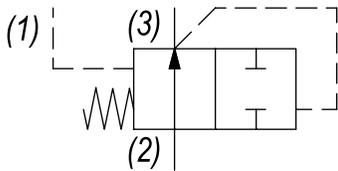
**FEATURES**

- Hardened parts for long life.
- Industry common cavity.
- Spring range 8 to 18 bar.



Pressure compensator for 2 way flow control, typically used with an external orifice inline with port (3). Port (1) should sense upstream pressure of orifice.

**HYDRAULIC SYMBOL**



**PERFORMANCE**

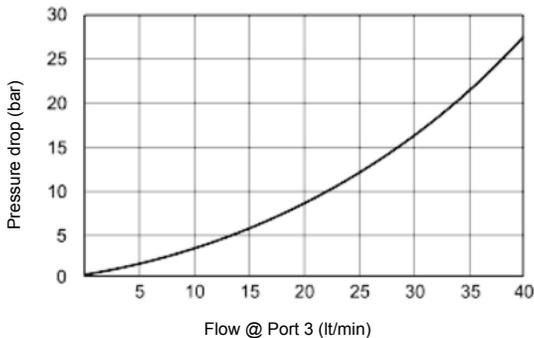
Actual Test Data (Cartridge Only)

**VALVE SPECIFICATIONS**

Nominal Flow	8 GPM (30 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	35 ml/min @ 250 bar
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-25° to +95°C
Weight	.35 lbs (.16 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	33 ft-lbs (45 Nm)
Cavity	DELTA 3W
Cavity Tools Kit (form tool, reamer, tap)	40500001
Seal Kit	210902025

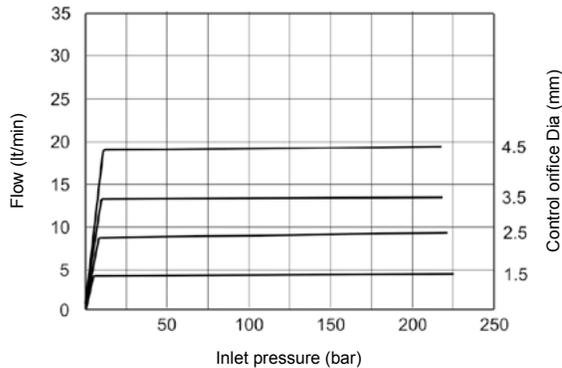
**Pressure Drop (bar) vs. Flow (lt/min)**

For various pressure compensator settings (bar)



**DF-CP2 008 - Flow (lt/min) vs. inlet pressure (bar)**

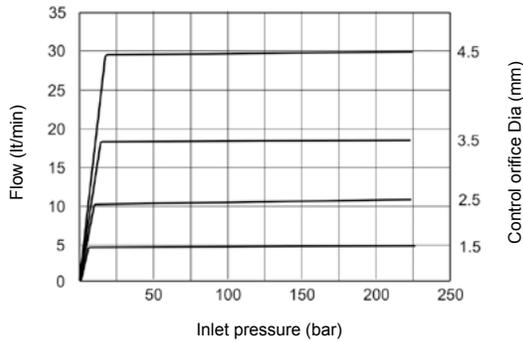
For various orifice diameters (mm)



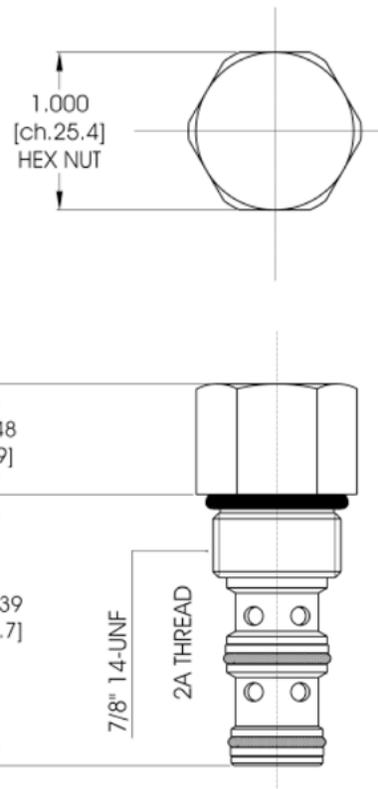
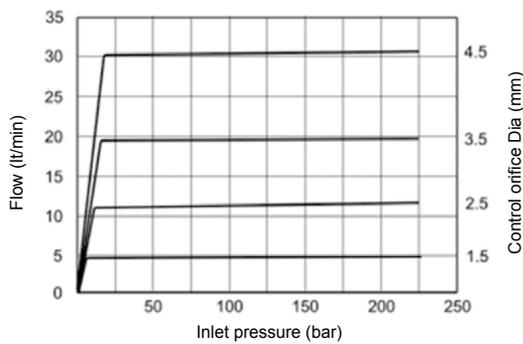
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**

**DF-CP2 014 - Flow (lt/min) vs. inlet pressure (bar)**  
For various orifice diameters (mm)



**DF-CP2 018 - Flow (lt/min) vs. inlet pressure (bar)**  
For various orifice diameters (mm)

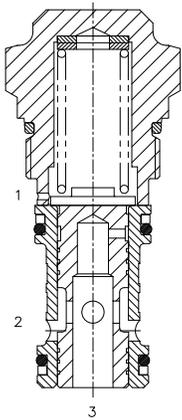


(for bodies style and sizes see section "Accessories")

**ORDERING INFORMATION**

<p><b>DF-CP2</b> -</p> <p><b>OPTIONS</b></p> <p>Buna Standard <b>00</b></p> <p>Viton Standard <b>V0</b></p>	<p>-</p> <p>-</p> <p>-</p>	<p><b>BODIES</b></p> <p><b>Blank</b> Without Body</p> <p><b>N</b> 3/8" BSP Ports</p> <p><b>S</b> #6 SAE Ports</p> <p><b>PRESSURE SETTINGS</b></p> <p><b>008</b> 8 bar (115 PSI)</p> <p><b>014</b> 14 bar (200 PSI)</p> <p><b>018</b> 18 bar (260 PSI)</p> <p>Differential Pressure Across External Controlling Orifice</p>
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**QC-CP2 PRESSURE COMPENSATING/REDUCING VALVE**



**DESCRIPTION**

Special cavity, 2 ways pressure compensating/reducing valve.

**OPERATION**

The QC-CP2 allows pressure compensated flow from (2) to (3) regulated by the pressure present at (1). Pressure differential between (3) and (1) is fixed at 8/14/18/24 bar (according to the pressure settings). These are minimum values, increasing with the flow because of the pressure drop through the valve (see graph). When used with (1) connected to a drain line, it works as a fix setting pressure reducing valve.

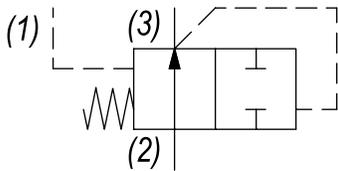
**FEATURES**

- Hardened parts for long life.
- Spring range 8 to 24 bar.



Pressure compensator for 2 way flow control, typically used with an external orifice inline with port (3). Port (1) should sense upstream pressure of orifice.

**HYDRAULIC SYMBOL**



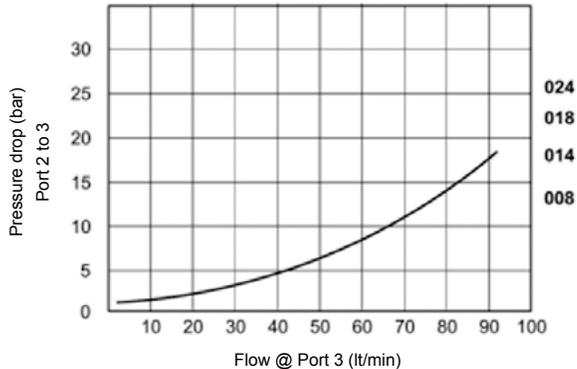
**PERFORMANCE**

Actual Test Data (Cartridge Only)

**VALVE SPECIFICATIONS**

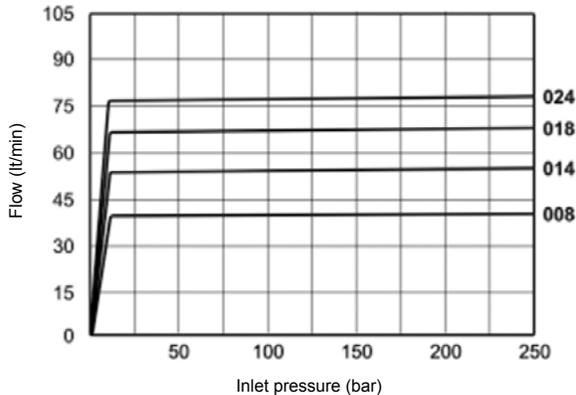
Nominal Flow	19 GPM (70 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	35 ml/min @ 250 bar
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.35 lbs (.16 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	52 ft-lbs (70 Nm)
Cavity	T031 (Special)
Cavity Tools Kit (form tool, reamer, tap)	K-T031
Seal Kit	210902012

**Pressure drop (bar) vs. flow (lt/min)**



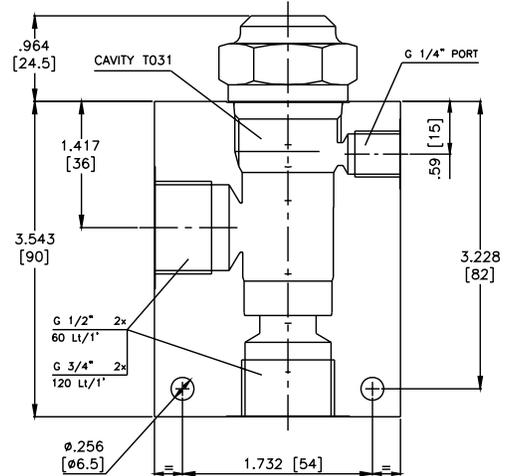
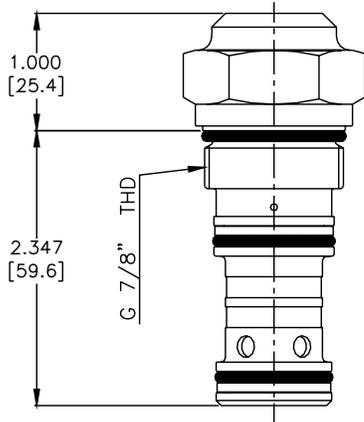
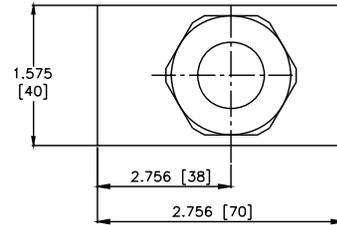
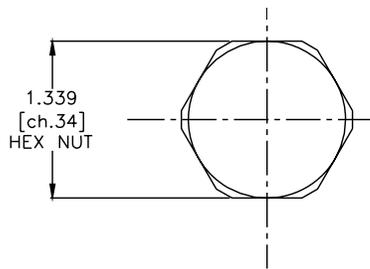
**Flow (lt/min) vs. inlet pressure (bar)**

For various press. compensator valve settings - Re: control orifice diameter: 5.5 mm



**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**



(for bodies style and sizes see section "Accessories")

**ORDERING INFORMATION**

QC-CP2 -

**OPTIONS**

Buna Standard **00**  
Viton Standard **V0**

**BODIES**

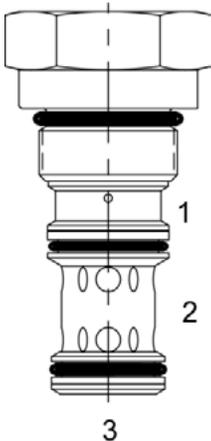
Blank Without Body  
**N** 1/2" BSP Ports  
**S** #8 SAE Ports

**PRESSURE SETTINGS**

**008** 8 bar (115 PSI)  
**014** 14 bar (200 PSI)  
**018** 18 bar (260 PSI)  
**024** 24 bar (340 PSI)

Differential Pressure Across  
External Controlling Orifice

**TR-PCC PRESSURE COMPENSATING REGULATOR VALVE – RESTRICTIVE TYPE**



**DESCRIPTION**

12 size, 1 1/16-12 thread, "Tecnomd" series, pressure compensating regulator valve (restrictive type).

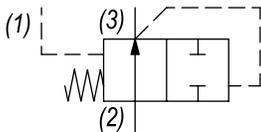
**OPERATION**

The TR-PCC with an external orifice beyond port (3) and sensed by port (1) maintains a constant flow rate from (3) regardless of load pressure changes in the system downstream of (3), or in the inlet at (2) as long as pressure at (3) is greater than (1) by more than spring setting chosen and pump supply is in excess of demand. The valve's spool maintains a constant differential pressure across an external orifice, thereby regulating the hydraulic flow rate across this external orifice (see table for pressure ranges). When used with an orifice as described above, it functions as a restrictive type regulator, delivering pump flow through the external orifice. All ports may be fully pressurized.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

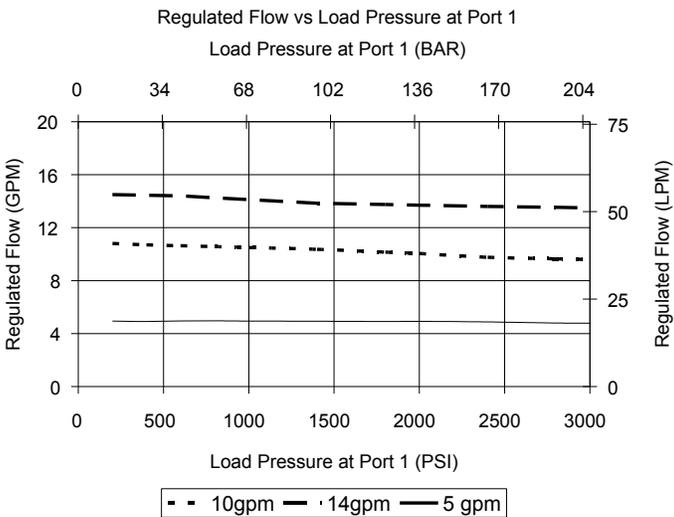
**HYDRAULIC SYMBOL**



Can be used as a logic element. Fixed setting pressure reducing valve. For adjustable setting see TR-PCD.

**PERFORMANCE**

Actual Test Data (Cartridge Only)

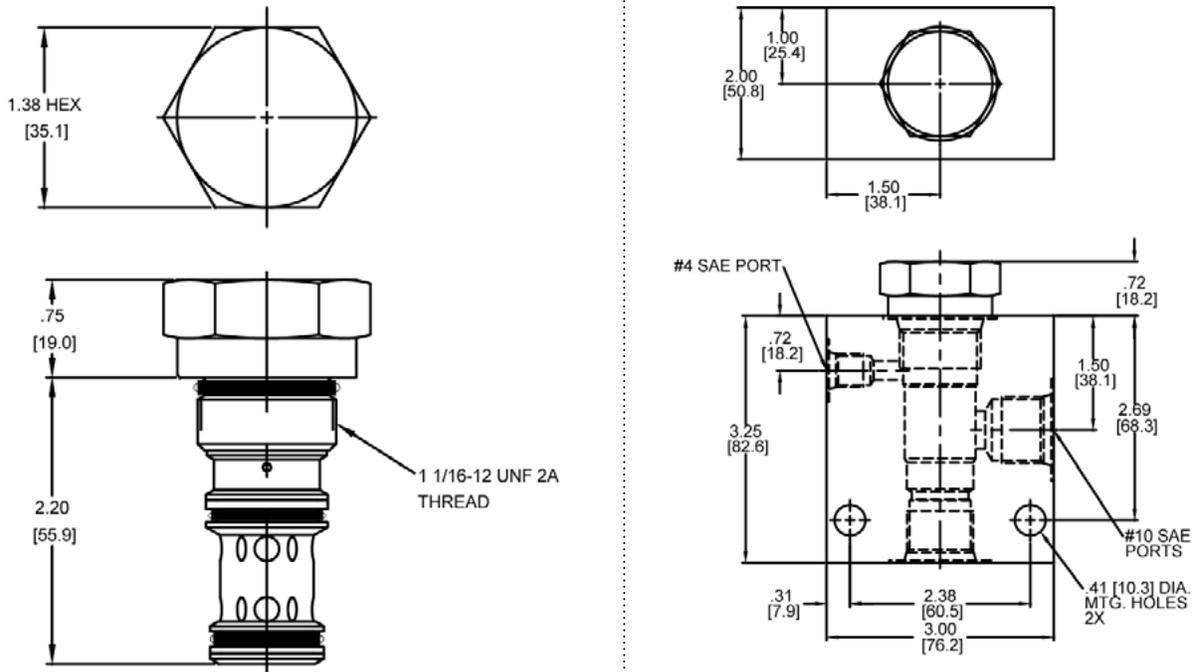


**VALVE SPECIFICATIONS**

Nominal Flow	20 GPM (76 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Seat Ratio	Area of Pilot is equal to the area at Port (3)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.54 lbs (.24 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	70 ft-lbs (95 Nm)
Cavity	TECNORD 3WS
Cavity Form Tool (Finishing)	40500033
Seal Kit	21191306

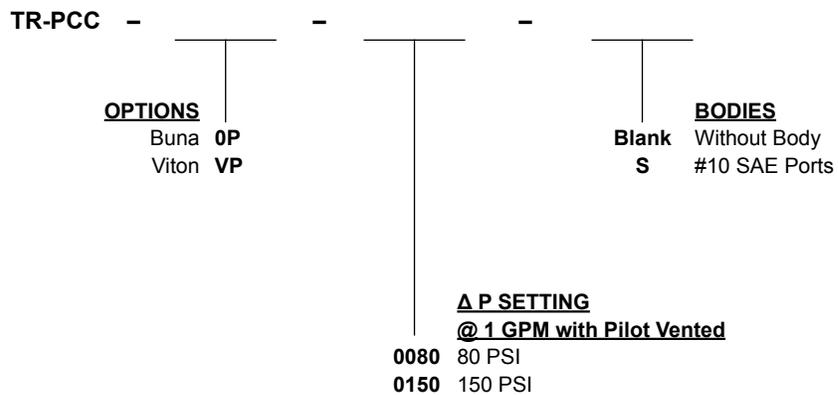
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**



Body Weight: 1.56 lbs (.70 kg)

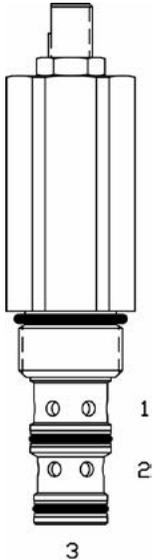
**ORDERING INFORMATION**



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**DF-PCE ADJUSTABLE PRESSURE COMPENSATING VALVE, BYPASS TYPE**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, spring adjustable pressure compensating valve, bypass type.

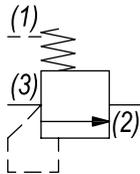
**OPERATION**

The DF-PCE with an external orifice in parallel with ports (3) and (1) maintains a constant flow rate across the external orifice, regardless of load pressure changes in the system upstream of (3), or in the bypass leg at (2) as long as pressure at (2) is greater than (1). The valve's spool maintains a constant differential pressure across an external orifice, thereby regulating the hydraulic flow rate across this external orifice (see table for pressure ranges). When used with an orifice as described above, it functions as a bypass type regulator, delivering pump flow through the external orifice.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

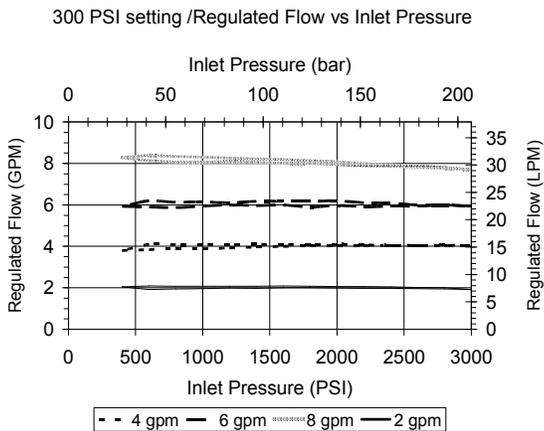
**HYDRAULIC SYMBOL**



*Can be used as an adjustable logic element. Great as an adjustable pressure setting regulation device in brake, transmission & cooling systems, because the spring chamber is separately drained, the outlet can be used for lower pressure functions. For fixed version see DF-PCR-oP. For higher spring differential pressure ranges consult factory.*

**PERFORMANCE**

Actual Test Data (Cartridge Only)

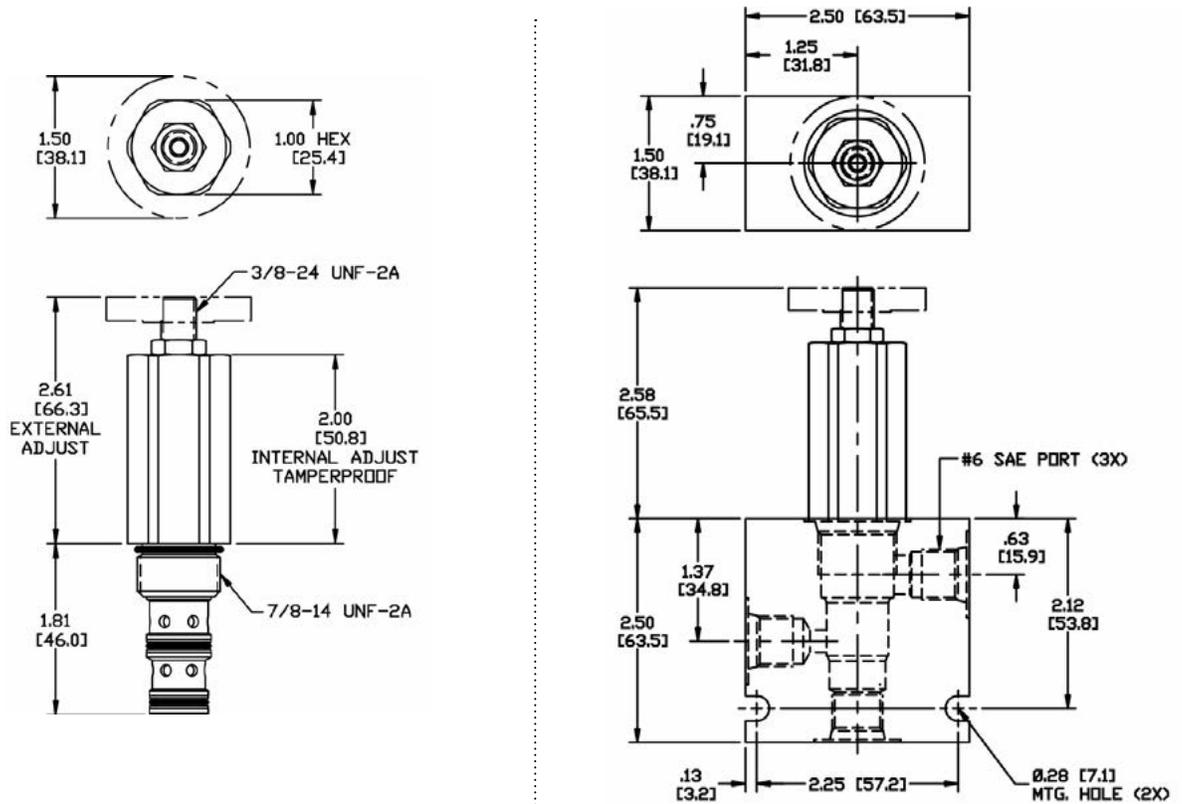


**VALVE SPECIFICATIONS**

Nominal Flow	10 GPM (38 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Seat Ratio	Area of Pilot is equal to the area at Port (3)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.52 lbs (.23 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 3W
Cavity Form Tool (Finishing)	40500001
Seal Kit	21191210

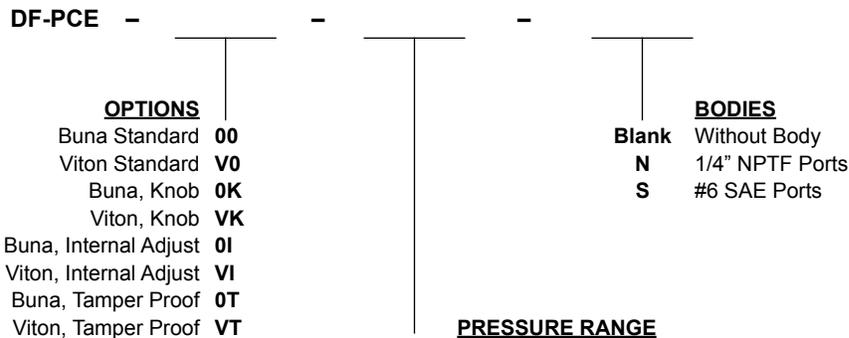
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

DIMENSIONS



Body Weight: .76 lbs (.35 kg)

ORDERING INFORMATION

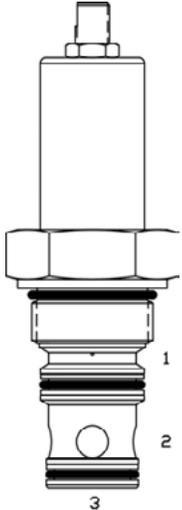


**PRESSURE RANGE**  
**0300** 100 - 300 PSI

Differential Pressure Across  
 External Controlling Orifice

**Tamper Proof**  
 Fill in 4 Digit Pressure Setting  
 Example: 0200 - 200 PSI

**SL-PCE ADJUSTABLE PRESSURE COMPENSATING REGULATOR VALVE**



**DESCRIPTION**

16 size, 1 5/16-12 thread, "Super" series, pressure compensating regulator valve.

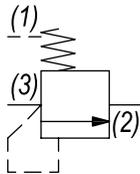
**OPERATION**

The SL-PCE with an external orifice in parallel with ports (3) and (1) maintains a constant flow rate across the external orifice, regardless of load pressure changes in the system upstream of (3), or in the bypass leg at (2) as long as pressure at (2) is less than (1). The valve's spool maintains a constant differential pressure across the external orifice, thereby regulating the hydraulic flow rate across the external orifice (see options table for pressure ranges). When used with an orifice as described above, it functions as a priority type regulator, delivering pump flow first to the external orifice, then bypassing excess to (2). All ports may be fully pressurized.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

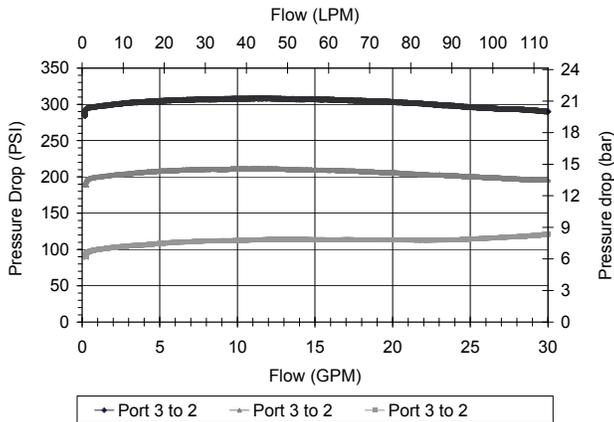
**HYDRAULIC SYMBOL**



*Can be used as an adjustable logic element. Great as an adjustable pressure setting regulation device in brake, transmission & cooling systems. Because the spring chamber is separately drained, the outlet flow can be used for lower pressure functions. For fixed version see SL-PCA-oP. For higher spring differential pressure ranges consult factory.*

**PERFORMANCE**

Actual Test Data (Cartridge Only)

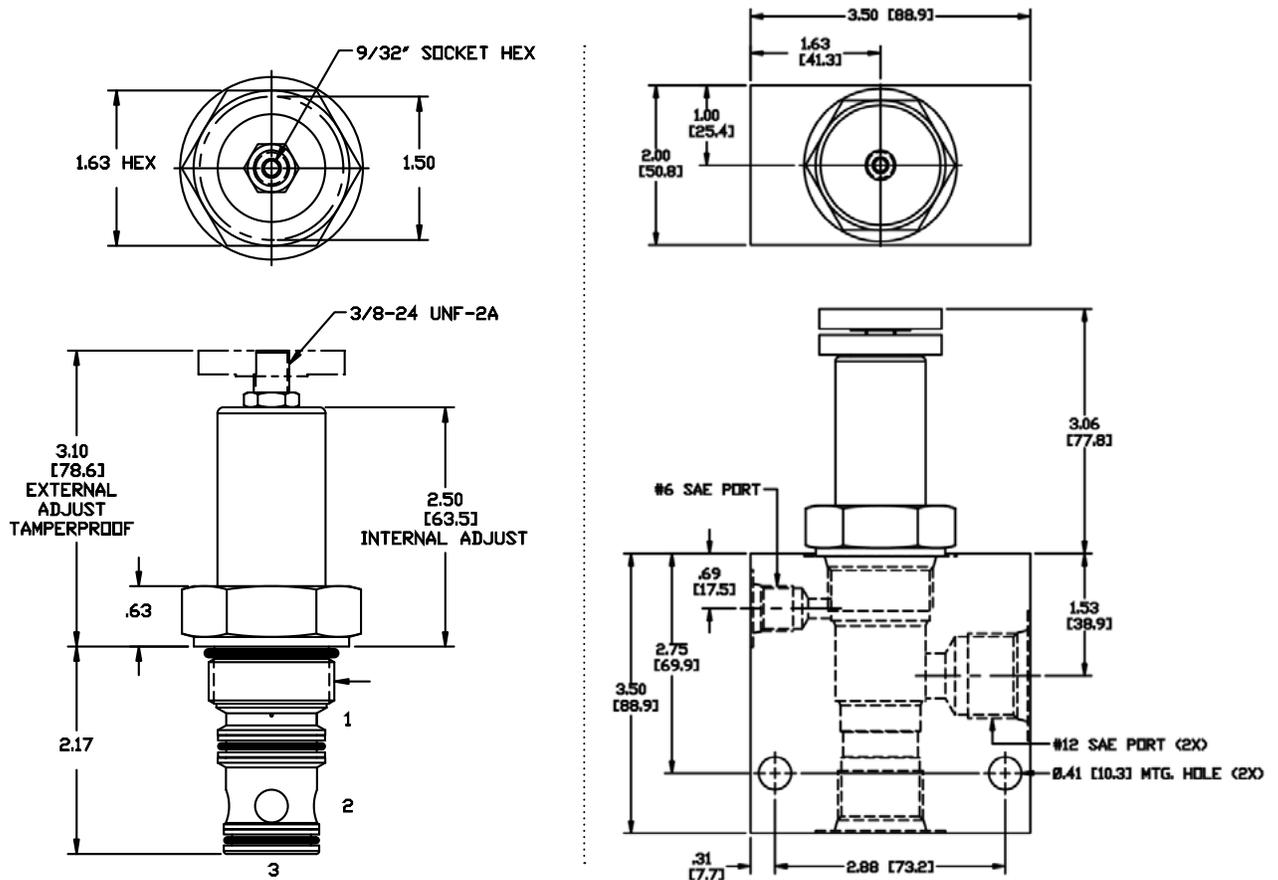


**VALVE SPECIFICATIONS**

Nominal Flow	40 GPM (151 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Seat Ratio	Area of Pilot is equal to the area at Port (3)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	1.15 lbs (.52 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	90 ft-lbs (122 Nm)
Cavity	SUPER 3WS
Cavity Form Tool (Finishing)	40500021
Seal Kit	21191406

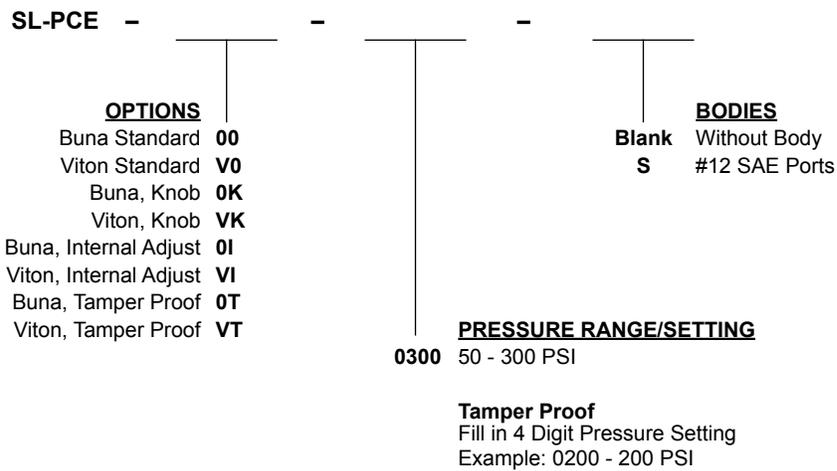
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

DIMENSIONS

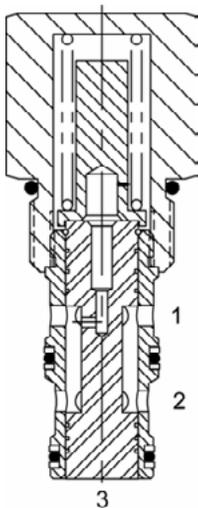


Body Weight: 1.89 lbs (.86 kg)

ORDERING INFORMATION



**DF-PCS PRESSURE COMPENSATING VALVE, RESTRICTIVE TYPE**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, pressure compensating valve, restrictive type.

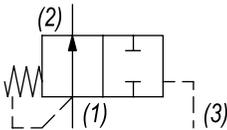
**OPERATION**

The DF-PCS allows pressure compensated flow from (1) to (2) regulated by the pressure present at (3). The spring chamber is constantly vented at (1).

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

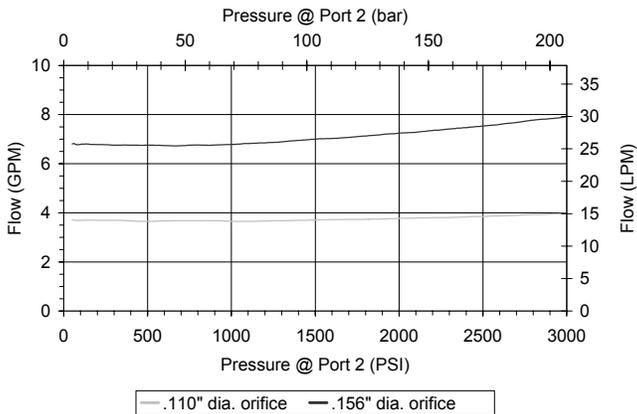
**HYDRAULIC SYMBOL**



Pressure compensator for flow control, typically used with an external orifice inline with port (1). Port (3) should sense upstream pressure of orifice.

**PERFORMANCE**

Actual Test Data (Cartridge Only)

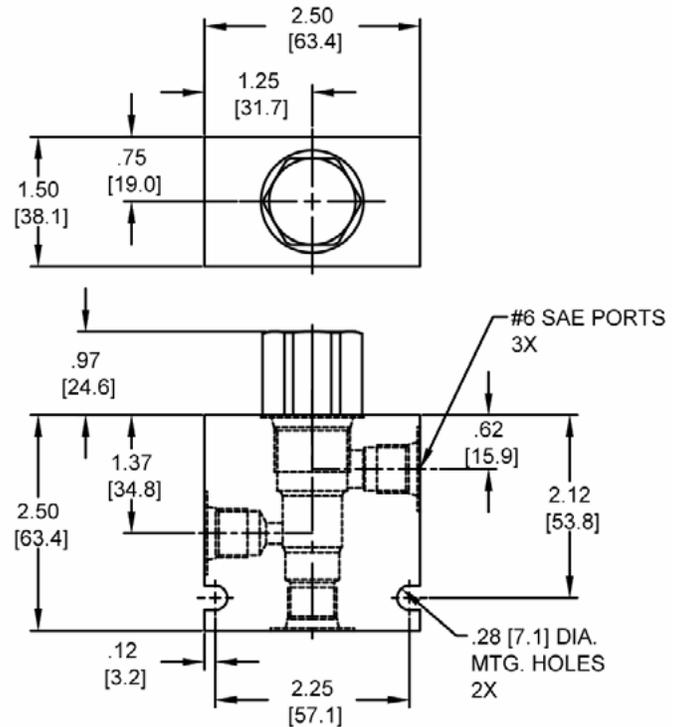
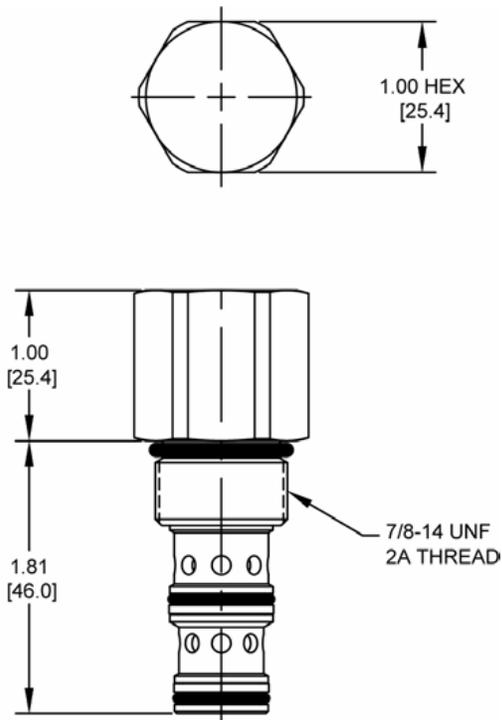


**VALVE SPECIFICATIONS**

Nominal Flow	10 GPM (38 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	5 cu in/min (82 ml/min) per path
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.35 lbs (.16 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 3W
Cavity Form Tool (Finishing)	40500001
Seal Kit	21191210

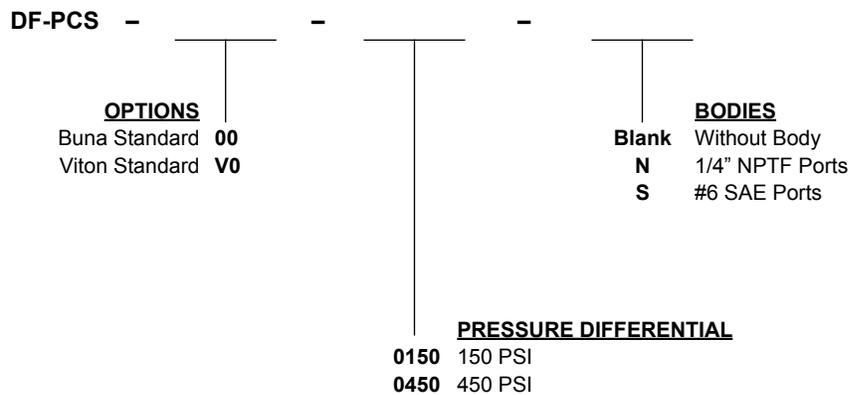
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

DIMENSIONS



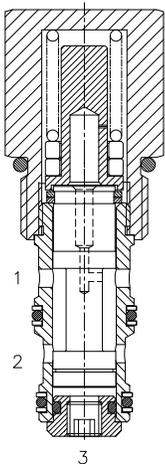
Body Weight: .76 lbs (.35 kg)

ORDERING INFORMATION



Differential Pressure Across External Controlling Orifice

**DF-TCS PRESSURE COMPENSATING VALVE, RESTRICTIVE TYPE**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, pressure compensating valve, restrictive type.

**OPERATION**

The DF-TCS allows pressure compensated flow from (1) to (2) regulated the pressure present at (3). Pressure differential between (1) and (3) is fixed at 8/24 bar (according to the pressure settings). These are minimum values increasing with the flow because of the pressure drop through the valve (see graph).

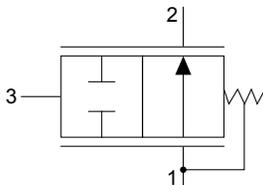
**FEATURES**

- Hardened parts for long life.
- Industry common cavity.



*Pressure compensator for 2 way flow control, typically used with an external orifice inline with port (3). Port (1) should sense upstream pressure of orifice.*

**HYDRAULIC SYMBOL**



**VALVE SPECIFICATIONS**

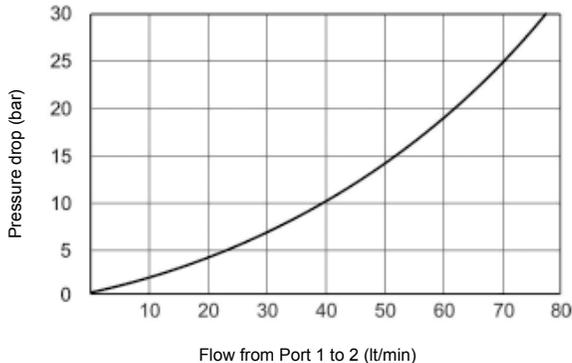
Nominal Flow	10 GPM (38 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	35 ml/min @ 250 bar
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.35 lbs (.16 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	33 ft-lbs (45 Nm)
Cavity	DELTA 3W
Cavity Tools Kit (form tool, reamer, tap)	40500001
Seal Kit	210902026

**PERFORMANCE**

Actual Test Data (Cartridge Only)

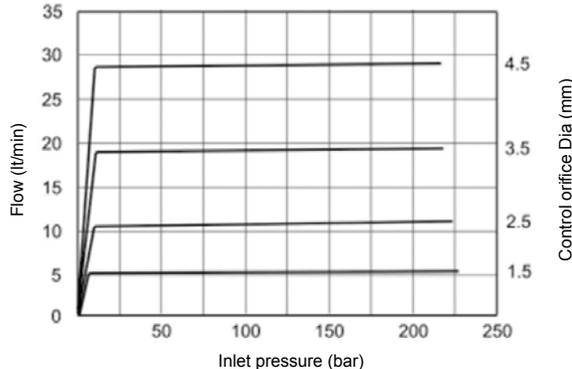
**Pressure Drop (bar) vs. Flow (lt/min)**

*For various pressure compensator settings (bar)*



**DF-TCS 008 - Flow (lt/min) vs. inlet pressure (bar)**

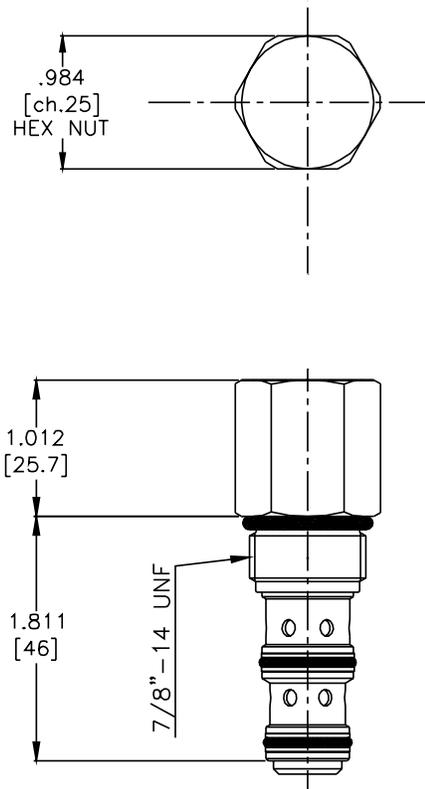
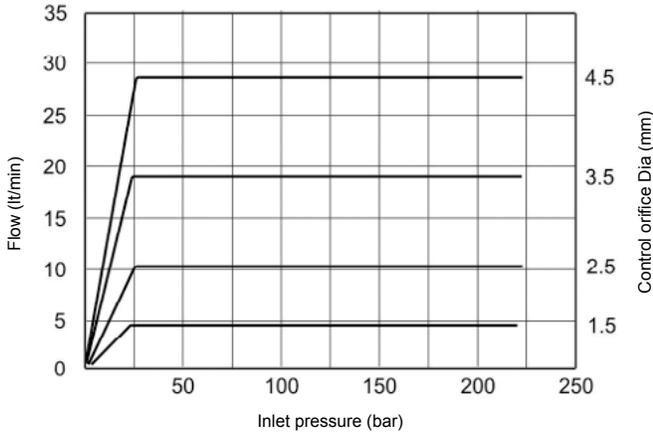
*For various orifice diameters (mm)*



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**DIMENSIONS**

**DF-TCS 024 - Flow (lt/min) vs. inlet pressure (bar)**  
For various orifice diameters (mm)



(for bodies style and sizes see section "Accessories")

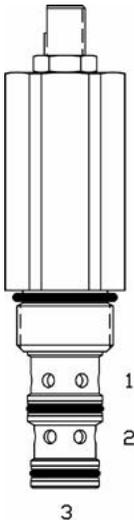
**ORDERING INFORMATION**

<p><b>DF-TCS</b> -</p> <p style="text-align: center;"><b>OPTIONS</b></p> <p>Buna Standard <b>00</b></p> <p>Viton Standard <b>V0</b></p>	<p>-</p> <p style="text-align: center;"><b>BODIES</b></p> <p>Blank Without Body</p> <p><b>N</b> 3/8" BSP Ports</p> <p><b>S</b> #6 SAE Ports</p>	<p style="text-align: center;"><b>PRESSURE SETTINGS</b></p> <p><b>008</b> 8 bar (115 PSI)</p> <p><b>024</b> 24 bar (340 PSI)</p> <p>Differential Pressure Across External Controlling Orifice</p>
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**DF-PCT ADJUSTABLE PRESSURE COMPENSATING VALVE, RESTRICTIVE TYPE**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, pressure compensating valve, restrictive type.

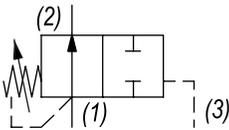
**OPERATION**

The DF-PCT with an external orifice in front of port (1) allows pressure compensated flow from (1) to (2), regulated by the pressure present at (3). The spring chamber is constantly vented at (1).

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

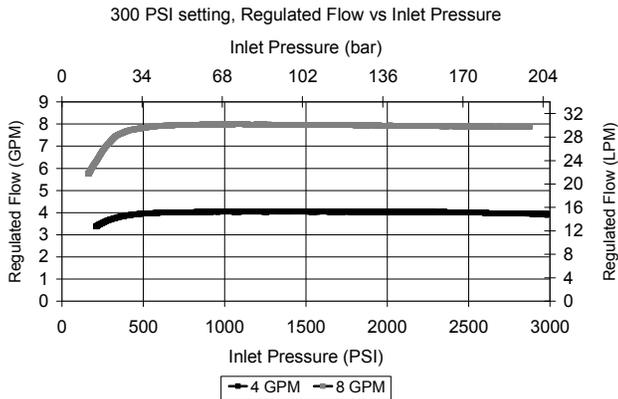
**HYDRAULIC SYMBOL**



Can be used as an adjustable logic element. For fixed version see DF-PCS. For higher spring differential pressure ranges consult factory.

**PERFORMANCE**

Actual Test Data (Cartridge Only)



**VALVE SPECIFICATIONS**

Nominal Flow	10 GPM (38 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Typical Internal Leakage (150 SSU)	5 cu in/min (82 ml/min) per path
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.60 lbs (.27 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 3W
Cavity Form Tool (Finishing)	40500001
Seal Kit	21191210

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Via Malavolti, 36 - 41122 Modena - ITALY - Phone +39 (059) 254895 - Fax +39 (059) 253512 - mail: [tecnord@tecnord.com](mailto:tecnord@tecnord.com) - [www.tecnord.com](http://www.tecnord.com)

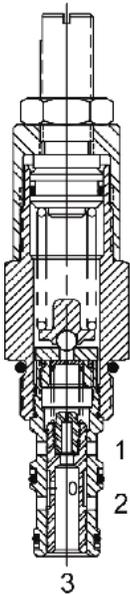
**PRESSURE REDUCING/RELIEVING VALVES**

	GPM	PSI	LPM	BAR	CAVITY	MODEL	PAGE
	10	3000	38	207	7/8-14	<b>DF-PRP</b>	MP88
	20	3000	76	207	1 5/16-12	<b>SK-PRP</b>	MP90
	10	4000	38	276	7/8-14	<b>DF-PWP</b>	MP92

**TYPICAL SCHEMATIC**

Typical application for the PRP and PWP is multi-system pressure setting. System relief pressure must be greater than reduce pressure setting.

**DF-PRP PILOT OPERATED, PRESSURE REDUCING, RELIEVING VALVE**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, pilot operated, pressure reducing, relieving valve.

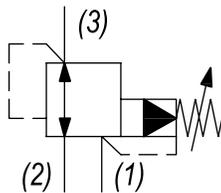
**OPERATION**

The DF-PRP in its steady state, allows flow to pass from (2) to (3), with the spring chamber constantly drained at (1). When a pre-determined pressure is reached at (3), the spool shifts to restrict input flow at (2), thereby reducing (restricting) flow. If valve and pressure at port (3) exceeds setting, spool shift to open passage at port (1), thereby regulating pressure at port (3) by relieving excess flow. The cartridge offers smooth transition in response to load changes in common hydraulic circuits.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

**HYDRAULIC SYMBOL**

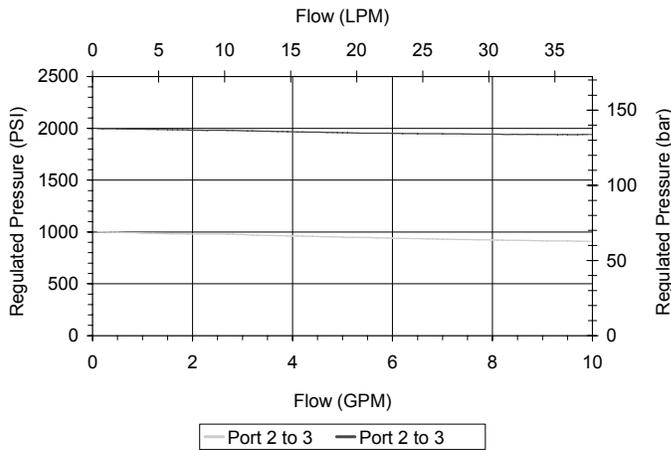
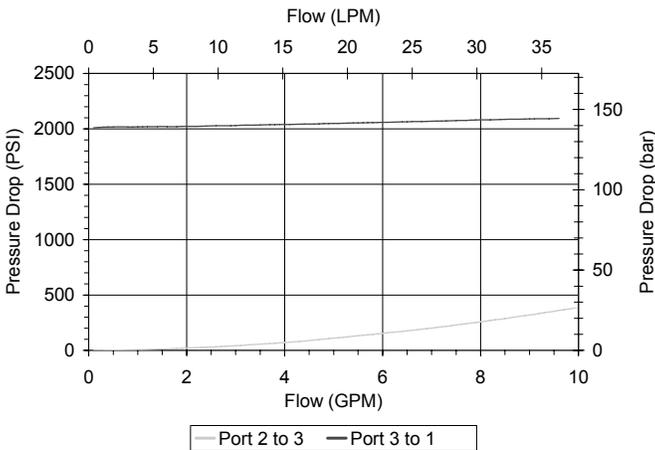


**PERFORMANCE**

Actual Test Data (Cartridge Only)

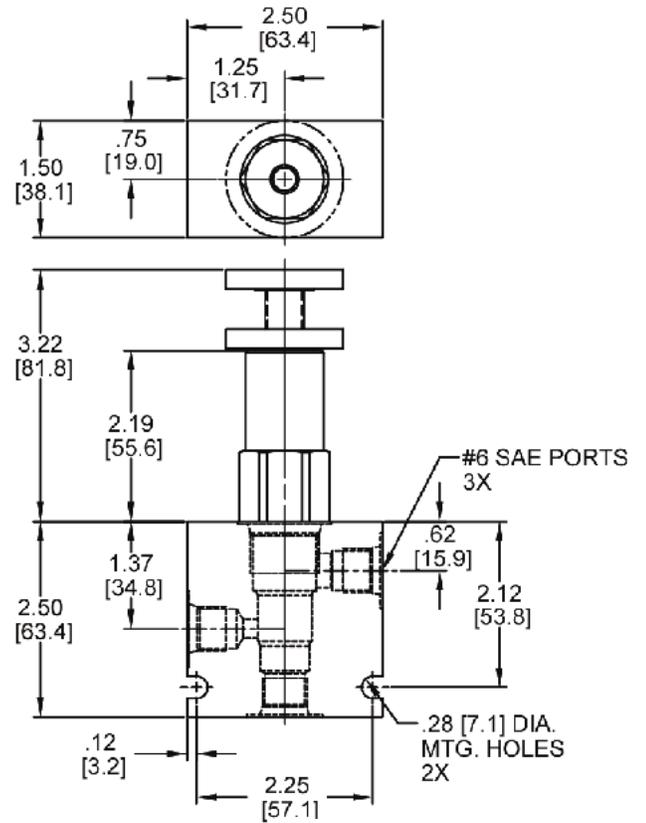
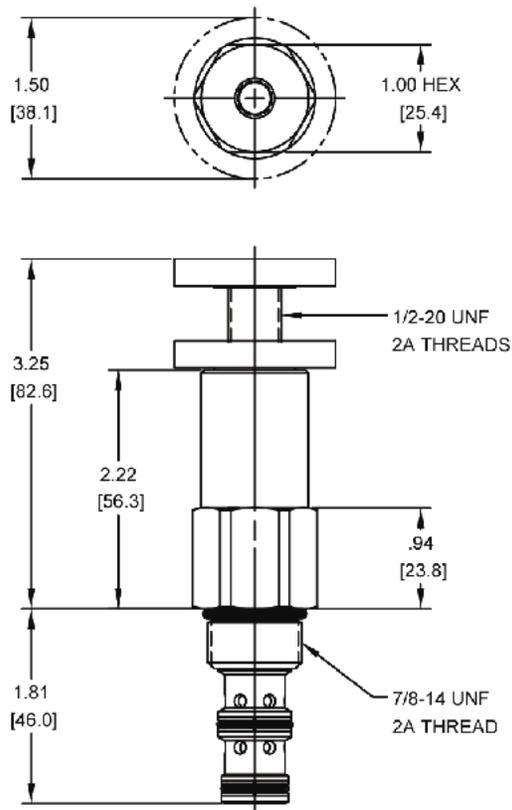
**VALVE SPECIFICATIONS**

Nominal Flow	10 GPM (38 LPM)
Rated Operating Pressure	3000 PSI (207 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.59 lbs (.27 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 3W
Cavity Form Tool (Finishing)	40500001
Seal Kit	21191206



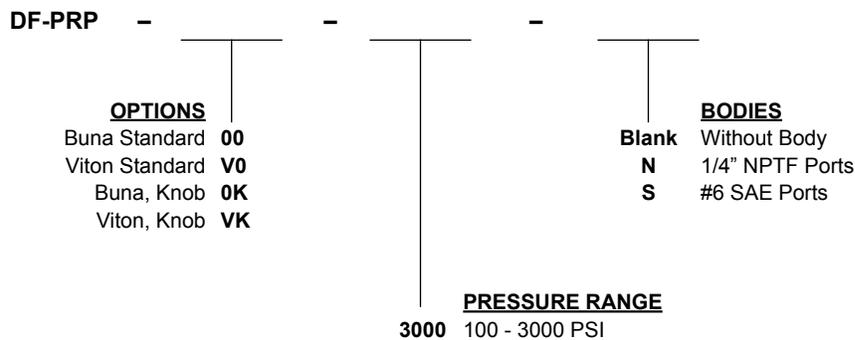
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DIMENSIONS

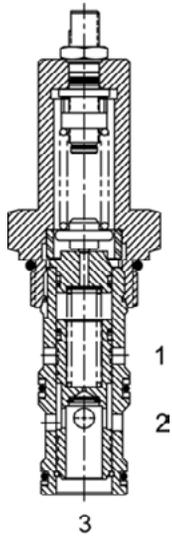


Body Weight: .76 lbs (.35 kg)

ORDERING INFORMATION



**SK-PRP PILOT OPERATED PRESSURE REDUCING, RELIEVING VALVE**



**DESCRIPTION**

16 size, 1 5/16-12 thread, "Super" series, pilot operated pressure reducing, relieving valve.

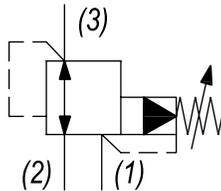
**OPERATION**

The SK-PRP in its steady state, allows flow to pass from (2) to (3), with the spring chamber constantly drained at (1). When a pre-determined pressure is reached at (3), the spool shifts to restrict input flow at (2), thereby reducing (restricting) flow. If the valve and pressure at port (3) exceeds setting, spool shifts to open passage at port (1), thereby regulating pressure at (3) by relieving excess flow. The cartridge offers smooth transition in response to load changes in common hydraulic circuits.

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

**HYDRAULIC SYMBOL**

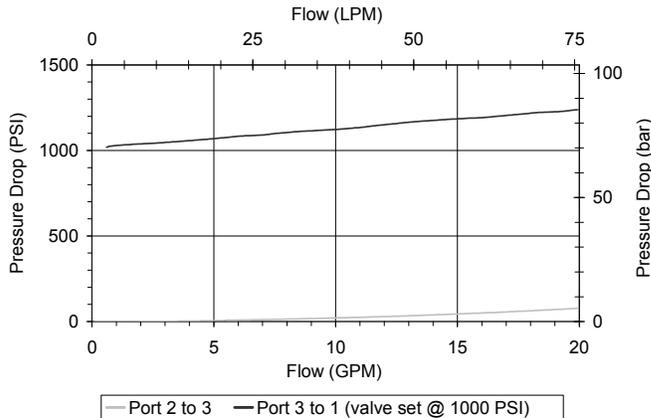
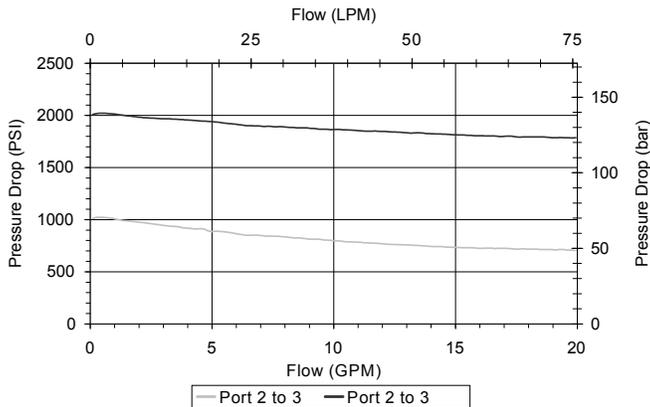


**VALVE SPECIFICATIONS**

Nominal Flow	20 GPM (76 LPM)
Rated Operating Pressure	500-3000 PSI (34-207 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	1.28 lbs (.58 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	90 ft-lbs (122 Nm)
Cavity	SUPER 3W
Cavity Form Tool (Finishing)	40500018
Seal Kit	21191406

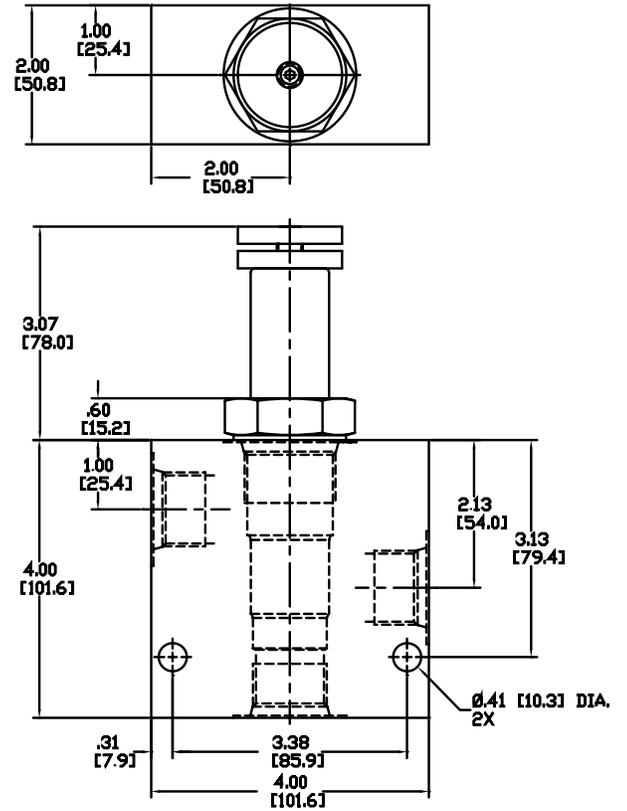
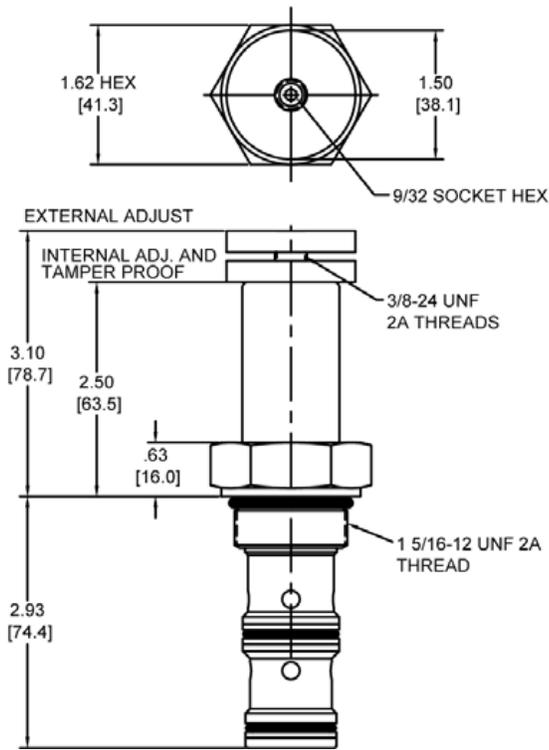
**PERFORMANCE**

Actual Test Data (Cartridge Only)



**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**



Body Weight: 2.46 lbs (1.11 kg)

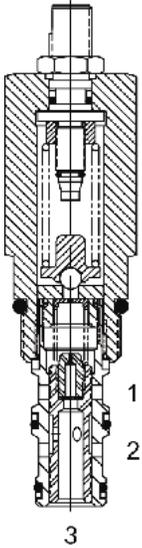
**ORDERING INFORMATION**

<p><b>SK-PRP</b> - - -</p> <p><b>OPTIONS</b></p> <p>Buna Standard <b>00</b></p> <p>Viton Standard <b>V0</b></p> <p>Buna, Knob <b>0K</b></p> <p>Viton, Knob <b>VK</b></p> <p>Buna, Internal Adjust <b>0I</b></p> <p>Viton, Internal Adjust <b>VI</b></p> <p>Buna, Tamper Proof <b>0T</b></p> <p>Viton, Tamper Proof <b>VT</b></p>	<p><b>3000</b></p>	<p><b>BODIES</b></p> <p>Blank Without Body</p> <p><b>S</b> #12 SAE Ports</p> <p><b>PRESSURE RANGE/SETTING</b></p> <p><b>Ext./Int. Adjustable</b></p> <p>500 - 3000 PSI</p> <p><b>Tamper Proof</b></p> <p>Fill in 4 Digit Pressure Setting</p> <p>Example: 0500 - 500 PSI</p>
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**DF-PWP PILOT OPERATED PRESSURE REDUCING, RELIEVING VALVE**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, pilot operated pressure reducing, relieving valve.

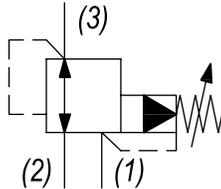
**OPERATION**

The DF-PWP in its steady state, allows flow to pass from (2) to (3), with the spring chamber constantly drained at (1). When a pre-determined pressure is reached at (3), the spool shifts to restrict input flow at (2), thereby reducing (restricting) flow. If valve and pressure at port (3) exceeds setting, spool shifts to open passage at port (1), thereby regulating pressure at port (3) by relieving excess flow. The cartridge offers smooth transition in response to load changes in common hydraulic circuits.

**FEATURES**

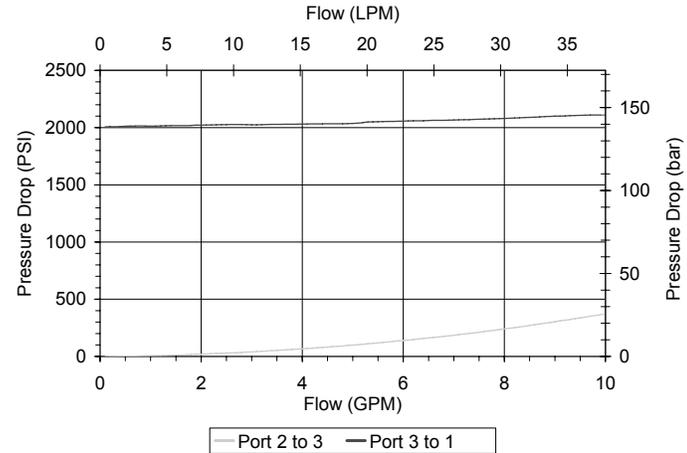
- Hardened parts for long life.
- Industry common cavity.

**HYDRAULIC SYMBOL**



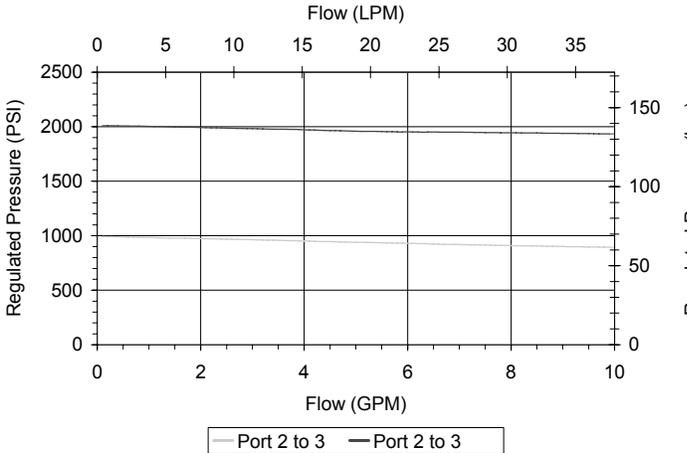
**PERFORMANCE**

Actual Test Data (Cartridge Only)



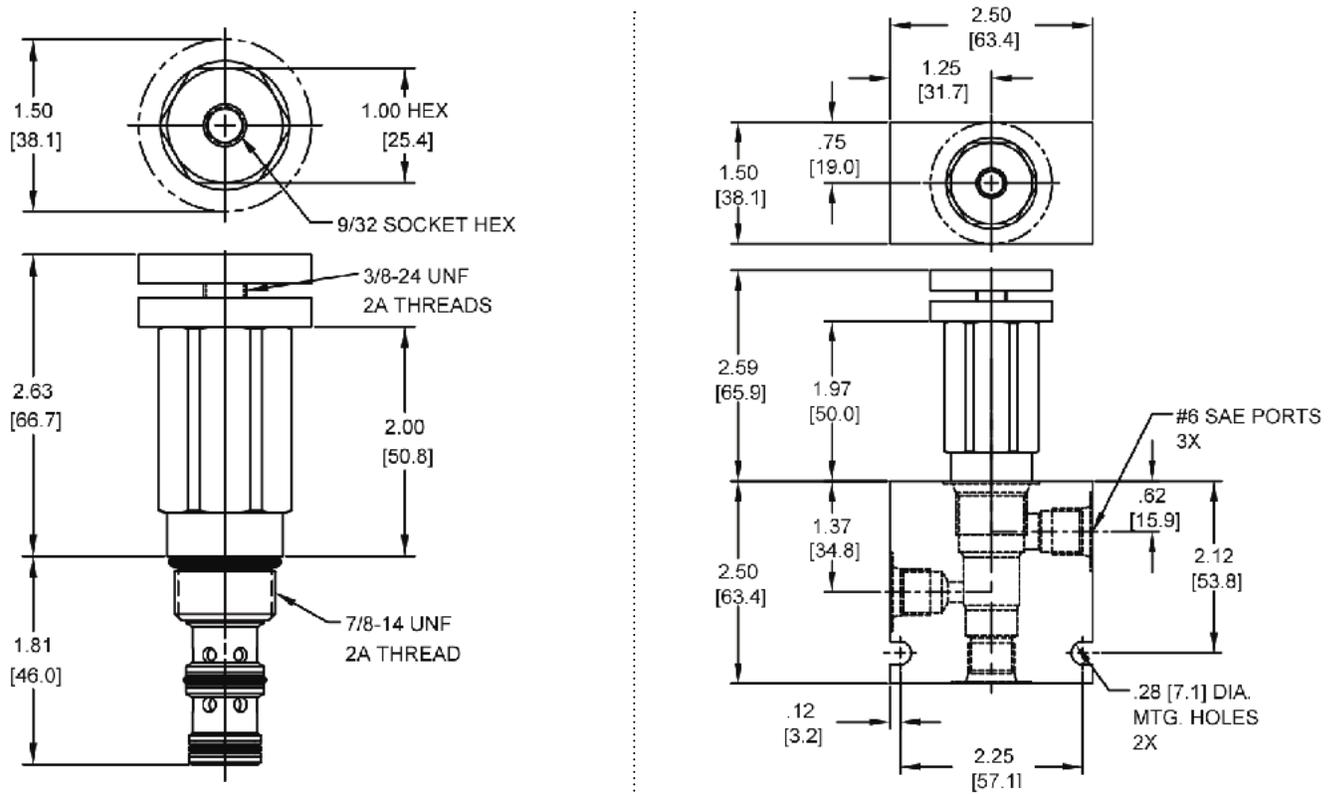
**VALVE SPECIFICATIONS**

Nominal Flow	10 GPM (38 LPM)
Rated Operating Pressure	4000 PSI (276 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.57 lbs (.26 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 3W
Cavity Form Tool (Finishing)	40500001
Seal Kit	21191206



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**DIMENSIONS**



Body Weight: .76 lbs (.35 kg)

**ORDERING INFORMATION**

<p><b>DF-PWP</b></p> <p><b>OPTIONS</b></p> <p>Buna Standard <b>00</b></p> <p>Viton Standard <b>V0</b></p> <p>Buna, Knob <b>0K</b></p> <p>Viton, Knob <b>VK</b></p> <p>Buna, Internal Adjust <b>0I</b></p> <p>Viton, Internal Adjust <b>VI</b></p> <p>Buna, Tamper Proof <b>0T</b></p> <p>Viton, Tamper Proof <b>VT</b></p>	<p><b>4000</b></p>	<p><b>BODIES</b></p> <p>Blank Without Body</p> <p><b>N</b> 1/4" NPTF Ports</p> <p><b>S</b> #6 SAE Ports</p> <p><b>PRESSURE RANGE/SETTING</b></p> <p><b>Ext./Int. Adjustable</b></p> <p>100 - 4000 PSI</p> <p><b>Tamper Proof</b></p> <p>Fill in 4 Digit Pressure Setting</p> <p>Example: 0500 - 500 PSI</p>
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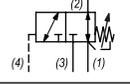
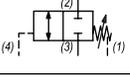
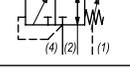
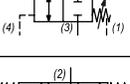
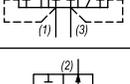
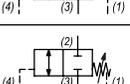
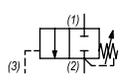
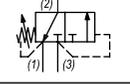
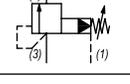
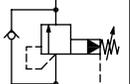
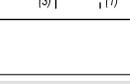
W 28 / 2022

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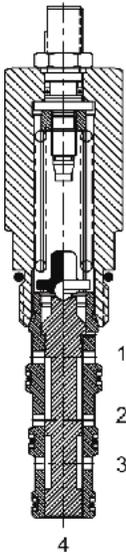
SEQUENCE VALVES

	GPM	PSI	LPM	BAR	CAVITY	MODEL	PAGE
	10	3000	38	207	7/8-14	DG-PSA	MP96
	10	3000	38	207	7/8-14	DG-PSC	MP98
	10	3000	38	207	7/8-14	DG-PSI	MP100
	10	3000	38	207	7/8-14	DG-PSO	MP102
	12	3000	45	207	7/8-14	DG-PSS	MP104
	10	3000	38	207	7/8-14	DG-PTC	MP106
	10	3000	38	207	7/8-14	DG-PTO	MP108
	10	3000	38	207	7/8-14	DF-PWE	MP110
	8	3000	30	207	7/8-14	DF-PWI	MP112
	40	3500	151	241	1 5/16-12	SL-PWA	MP114
	40	3500	151	241	1 5/16-12	SL-PWB	MP116

TYPICAL SCHEMATIC

Typical application for the PSO or PSC sequence valve is for a high/low application like a log splitter where the spring chamber can be vented externally (spring chamber pressure directly adds to the pilot pressure required to shift the valve). Typical application for the PWI sequence valve is for controlling the lip on a dock leveler. Typical application for the PWE sequence valve is for a high/low pump in a positive traction circuit where the valve automatically shifts to low speed high torque mode. Typical application for the PSI sequence valve is when starting against load where the spring chamber can be vented externally (spring chamber pressure directly adds to the pilot pressure required to shift the valve). Typical application for the PSA sequence valve is a hydraulic brake release of a spring loaded single acting cylinder. Typical application for the PSS hot oil shuttle is to divert fluid from the low pressure side of a closed loop hydrostatic transmission for cooling or filtering.

**DG-PSA SEQUENCE VALVE, 4 WAY NORMALLY CLOSED, EXTERNAL PILOT**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, 4 way external pilot sequence valve.

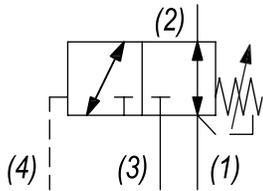
**OPERATION**

The DG-PSA in neutral (un-piloted), allows flow between (1) and (2) bidirectionally, while blocking at (3). The spring chamber is constantly vented at (1). On attainment of a predetermined pressure at (4), the cartridge shifts to close (1) to (2), while opening (2) to (3). Note that the backpressure value at (1) must be added to the selected pressure setting to determine pilot pressure necessary to open valve.

**FEATURES**

- Optional spring ranges to 1500 PSI (103 bar).
- Hardened parts for long life.
- Industry common cavity.

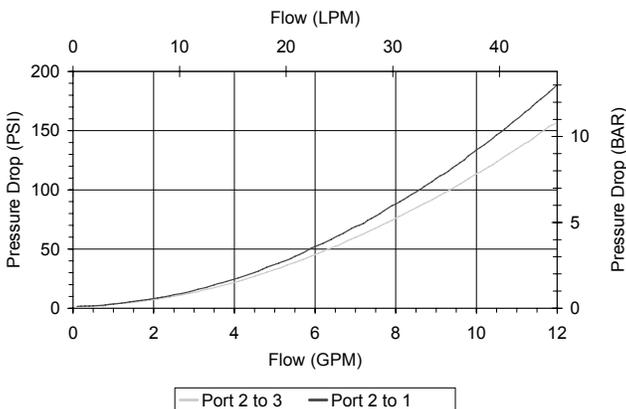
**HYDRAULIC SYMBOL**



Orifice .030 to .060 diameter recommended beneath port (4).

**PERFORMANCE**

Actual Test Data (Cartridge Only)

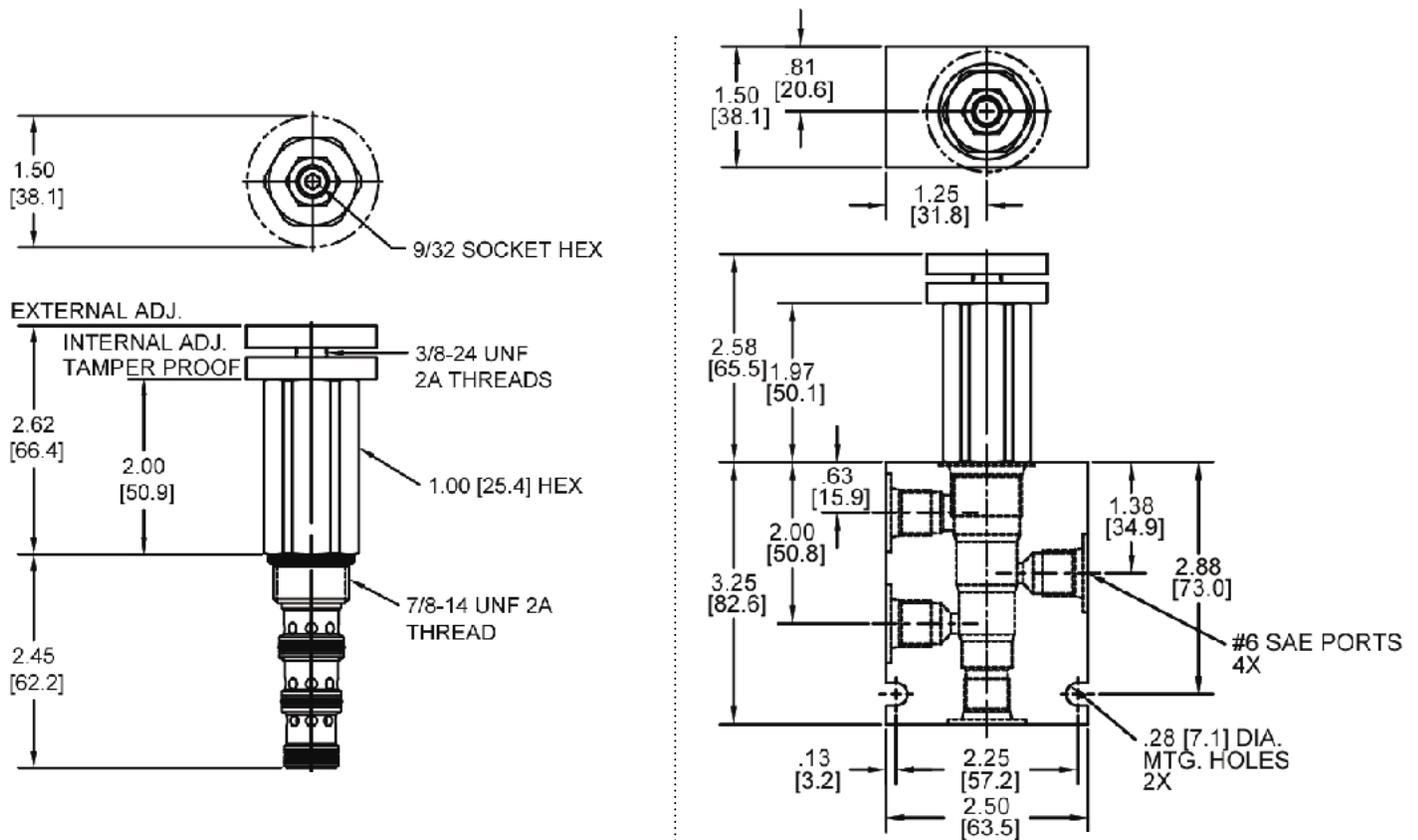


**VALVE SPECIFICATIONS**

Nominal Flow	10 GPM (38 LPM)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	5 cu in/min (82 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.63 lbs (.28 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 4W
Cavity Form Tool (Finishing)	40500002
Seal Kit	21191214

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DIMENSIONS



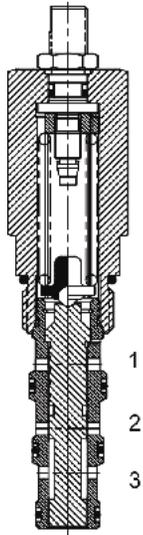
Body Weight: .99 lbs (.45 kg)

ORDERING INFORMATION

<p><b>DG-PSA</b> - - -</p> <p><b>OPTIONS</b></p> <p>Buna Standard <b>00</b></p> <p>Viton Standard <b>V0</b></p> <p>Buna, Knob <b>0K</b></p> <p>Viton, Knob <b>VK</b></p> <p>Buna, Internal Adjust <b>0I</b></p> <p>Viton, Internal Adjust <b>VI</b></p> <p>Buna, Tamper Proof <b>0T</b></p> <p>Viton, Tamper Proof <b>VT</b></p>	<p><b>BODIES</b></p> <p>Blank Without Body</p> <p><b>N</b> 1/4" NPTF Ports</p> <p><b>S</b> #6 SAE Ports</p>
<p><b>PRESSURE RANGE</b></p> <p><b>0425</b> 50 - 425 PSI</p> <p><b>1500</b> 425 - 1500 PSI</p>	

**Tamper Proof**  
 Fill in 4 Digit Pressure Setting  
 Example: 0500 - 500 PSI

**DG-PSC SEQUENCE VALVE, 2 WAY NORMALLY CLOSED, EXTERNAL PILOT**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, 2 way normally closed sequence valve, external pilot.

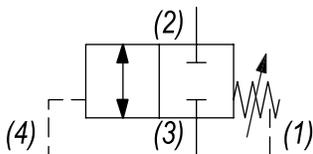
**OPERATION**

The DG-PSC in neutral (unpiloted), blocks flow between (3) and (2). The spring chamber is constantly vented at (1). On attainment of a predetermined pressure at (4), the cartridge shifts to allow flow from (3) to (2). Note that the backpressure value at (1) must be added to the selected pressure setting to determine pilot pressure.

**FEATURES**

- Optional spring ranges to 1500 PSI (103 bar).
- Hardened parts for long life.
- Industry common cavity.

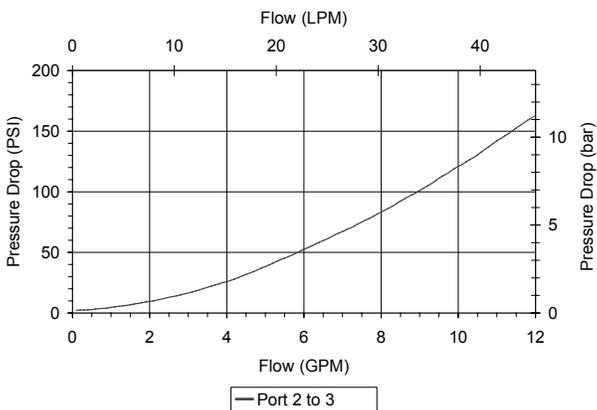
**HYDRAULIC SYMBOL**



Orifice .030 to .060 diameter recommended beneath port (4).

**PERFORMANCE**

Actual Test Data (Cartridge Only)

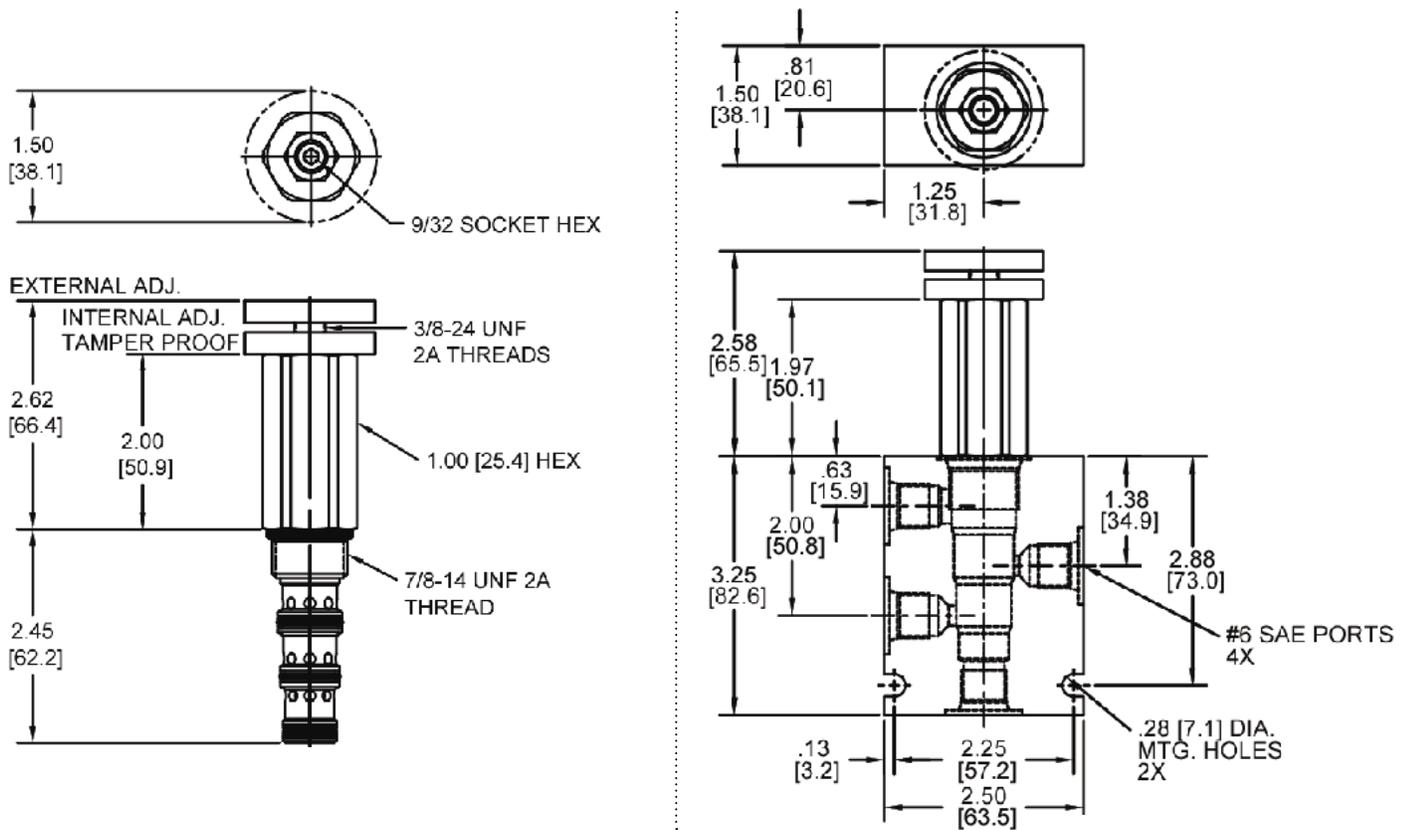


**VALVE SPECIFICATIONS**

Nominal Flow	10 GPM (38 LPM)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	5 cu in/min (82 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.63 lbs (.28 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 4W
Cavity Form Tool (Finishing)	40500002
Seal Kit	21191214

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**DIMENSIONS**



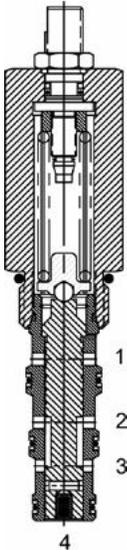
Body Weight: .99 lbs (.45 kg)

**ORDERING INFORMATION**

<p><b>DG-PSC</b> - - - -</p> <p><b>OPTIONS</b></p> <p>Buna Standard <b>00</b></p> <p>Viton Standard <b>V0</b></p> <p>Buna, Knob <b>0K</b></p> <p>Viton, Knob <b>VK</b></p> <p>Buna, Internal Adjust <b>0I</b></p> <p>Viton, Internal Adjust <b>VI</b></p> <p>Buna, Tamper Proof <b>0T</b></p> <p>Viton, Tamper Proof <b>VT</b></p>	<p><b>BODIES</b></p> <p>Blank Without Body</p> <p><b>N</b> 1/4" NPTF Ports</p> <p><b>S</b> #6 SAE Ports</p>
<p><b>PRESSURE RANGE</b></p> <p><b>0425</b> 50 - 425 PSI</p> <p><b>1500</b> 425 - 1500 PSI</p>	

**Tamper Proof**  
 Fill in 4 Digit Pressure Setting  
 Example: 0500 - 500 PSI

**DG-PSI** SEQUENCE VALVE, 3 WAY NORMALLY OPEN, INTERNAL PILOT



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, 3 way normally open internal pilot sequence valve.

**OPERATION**

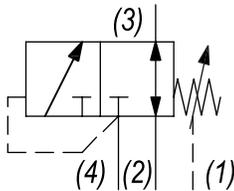
The DG-PSI in neutral (un-piloted), allows flow between (3) and (2) bidirectional, while blocking at (4). The spring chamber is constantly vented at (1). On attainment of a predetermined pressure at (4), the cartridge shifts to close (3) to (2), while opening (4) to (3).

Note: that the backpressure value at (1) must be added to the selected pressure setting to determine pilot pressure necessary to open valve.

**FEATURES**

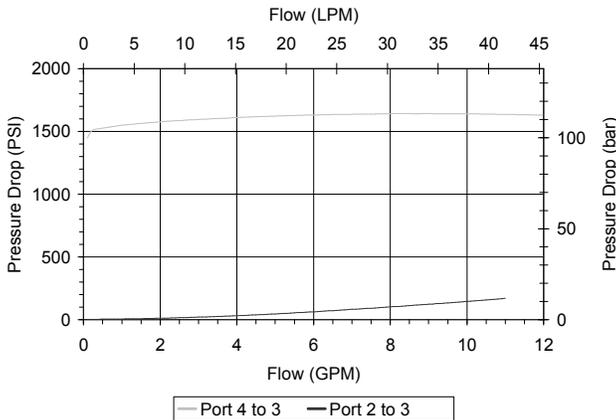
- Optional spring ranges to 1500 PSI (103 bar).
- Hardened parts for long life.
- Industry common cavity.

**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)

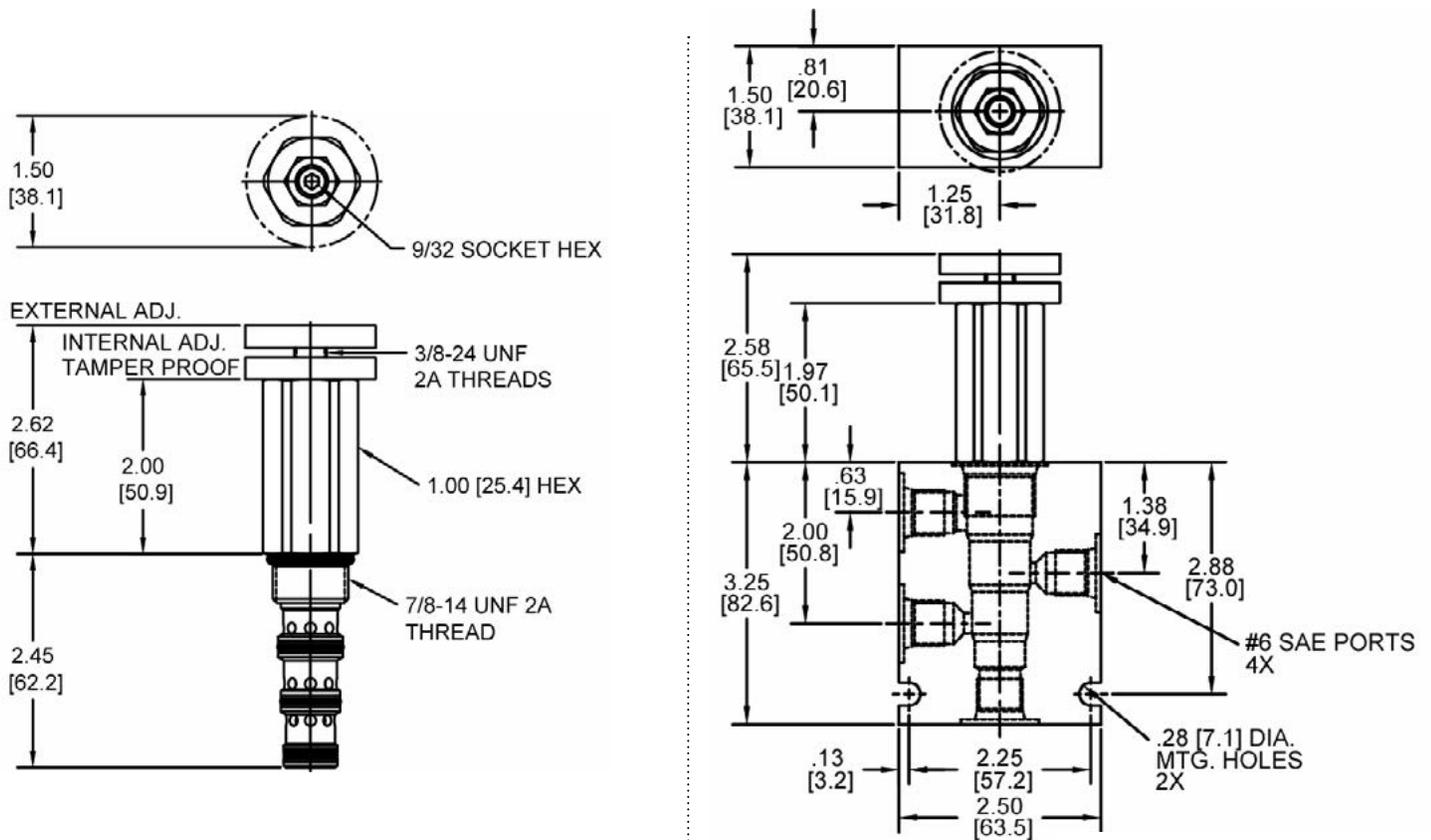


**VALVE SPECIFICATIONS**

Nominal Flow	10 GPM (38 LTR/M)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	5 cu in/min (82 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.63 lbs (.28 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 4W
Cavity Form Tool (Finishing)	40500002
Seal Kit	21191214

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**DIMENSIONS**



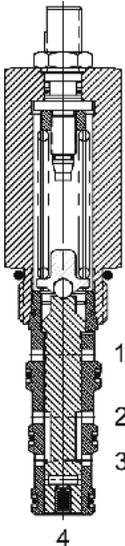
Body Weight: .99 lbs (.45 kg)

**ORDERING INFORMATION**

<p><b>DG-PSI</b> - - -</p> <p><b>OPTIONS</b></p> <p>Buna Standard <b>00</b></p> <p>Viton Standard <b>V0</b></p> <p>Buna, Knob <b>0K</b></p> <p>Viton, Knob <b>VK</b></p> <p>Buna, Internal Adjust <b>0I</b></p> <p>Viton, Internal Adjust <b>VI</b></p> <p>Buna, Tamper Proof <b>0T</b></p> <p>Viton, Tamper Proof <b>VT</b></p>	<p><b>BODIES</b></p> <p>Blank Without Body</p> <p><b>N</b> 1/4" NPTF Ports</p> <p><b>S</b> #6 SAE Ports</p>
<p><b>PRESSURE RANGE</b></p> <p><b>0425</b> 50 - 425 PSI</p> <p><b>1500</b> 425 - 1500 PSI</p>	

**Tamper Proof**  
 Fill in 4 Digit Pressure Setting  
 Example: 0500 - 500 PSI

**DG-PSO SEQUENCE VALVE, 2 WAY NORMALLY OPEN, EXTERNAL PILOT**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, 2 way normally open sequence valve, external pilot.

**OPERATION**

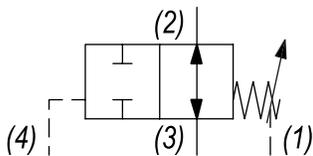
The DG-PSO in neutral (un-piloted), allows flow between (3) and (2) bi-directionally. The spring chamber is constantly vented at (1). On attainment of a predetermined pressure at (4), the cartridge shifts to block flow from (3) to (2).

Note: that the backpressure value at (1) must be added to the selected pressure setting to determine pilot pressure necessary to close valve.

**FEATURES**

- Optional spring ranges to 1500 PSI (103 bar).
- Hardened parts for long life.
- Industry common cavity.

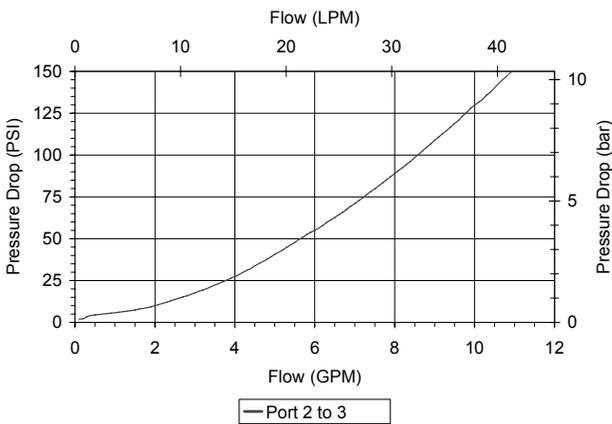
**HYDRAULIC SYMBOL**



Orifice .030 to .060 diameter recommended beneath port (4).

**PERFORMANCE**

Actual Test Data (Cartridge Only)

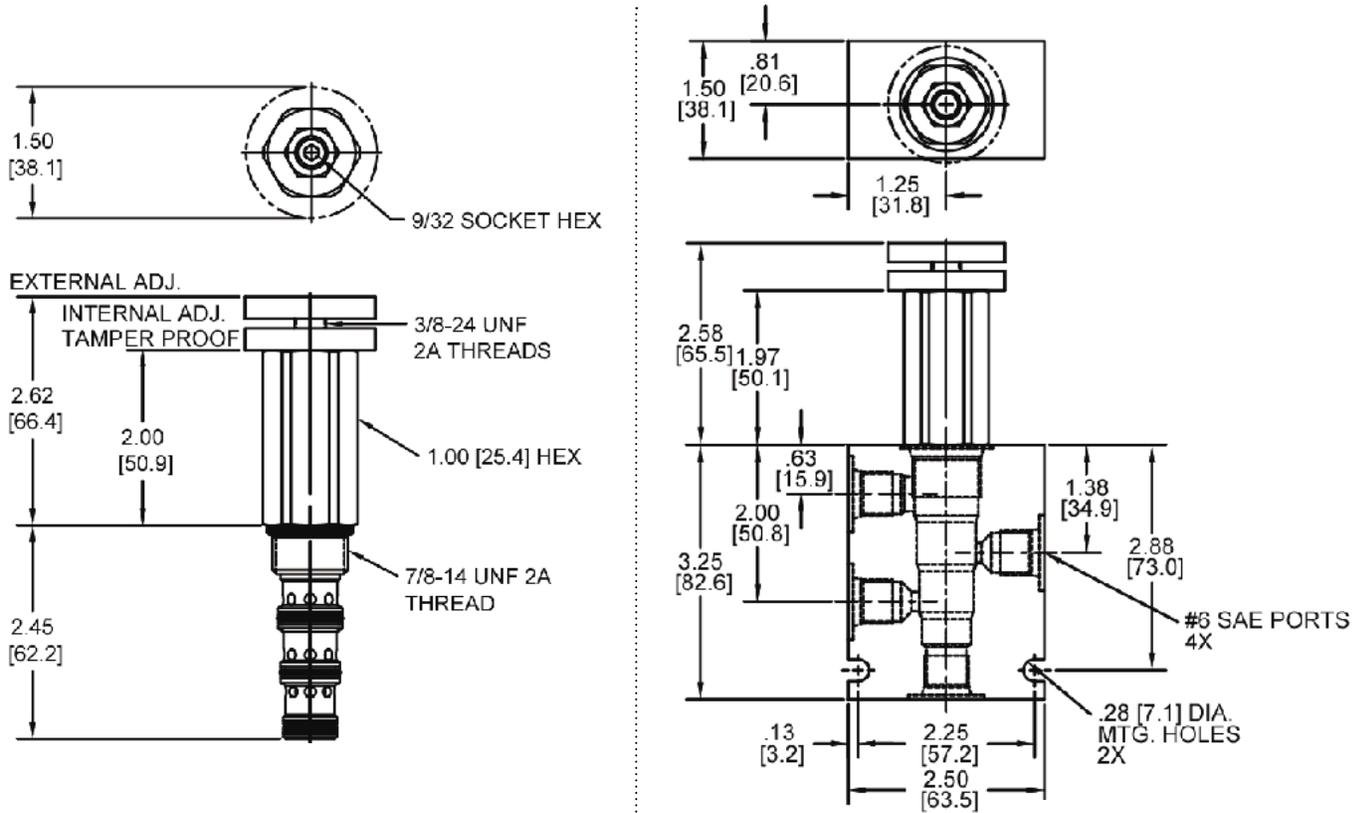


**VALVE SPECIFICATIONS**

Nominal Flow	10 GPM (38 LTR/M)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	5 cu in/min (82 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.62 lbs (.28 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 4W
Cavity Form Tool (Finishing)	40500002
Seal Kit	21191214

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**DIMENSIONS**



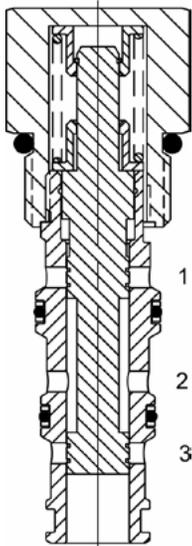
Body Weight: .99 lbs (.45 kg)

**ORDERING INFORMATION**

<p><b>DG-PSO</b> - - - -</p> <p><b>OPTIONS</b></p> <p>Buna Standard <b>00</b></p> <p>Viton Standard <b>V0</b></p> <p>Buna, Knob <b>0K</b></p> <p>Viton, Knob <b>VK</b></p> <p>Buna, Internal Adjust <b>0I</b></p> <p>Viton, Internal Adjust <b>VI</b></p> <p>Buna, Tamper Proof <b>0T</b></p> <p>Viton, Tamper Proof <b>VT</b></p>	<p><b>BODIES</b></p> <p>Blank Without Body</p> <p><b>N</b> 1/4" NPTF Ports</p> <p><b>S</b> #6 SAE Ports</p>
<p><b>PRESSURE RANGE</b></p> <p><b>0425</b> 50 - 425 PSI</p> <p><b>1500</b> 425 - 1500 PSI</p>	

**Tamper Proof**  
 Fill in 4 Digit Pressure Setting  
 Example: 0500 - 500 PSI

**DG-PSS HOT OIL SHUTTLE VALVE**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, hot oil shuttle valve.

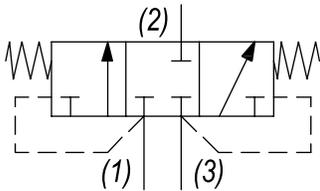
**OPERATION**

The DG-PSS, with internal piloting at port (1) or (3), oil will flow from the port opposite of the port piloted to port (2), thus removing oil from the low-pressure side for cooling or filtration purposes. The Valve is spring bias neutral, relying solely on the internal pilot pressure signal to shift to either side. The DG-PSS is closed in transition.

**FEATURES**

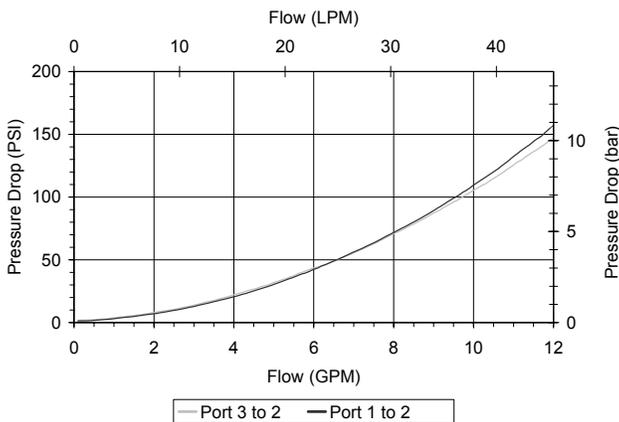
- Hardened parts for long life.
- Industry common cavity.

**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)

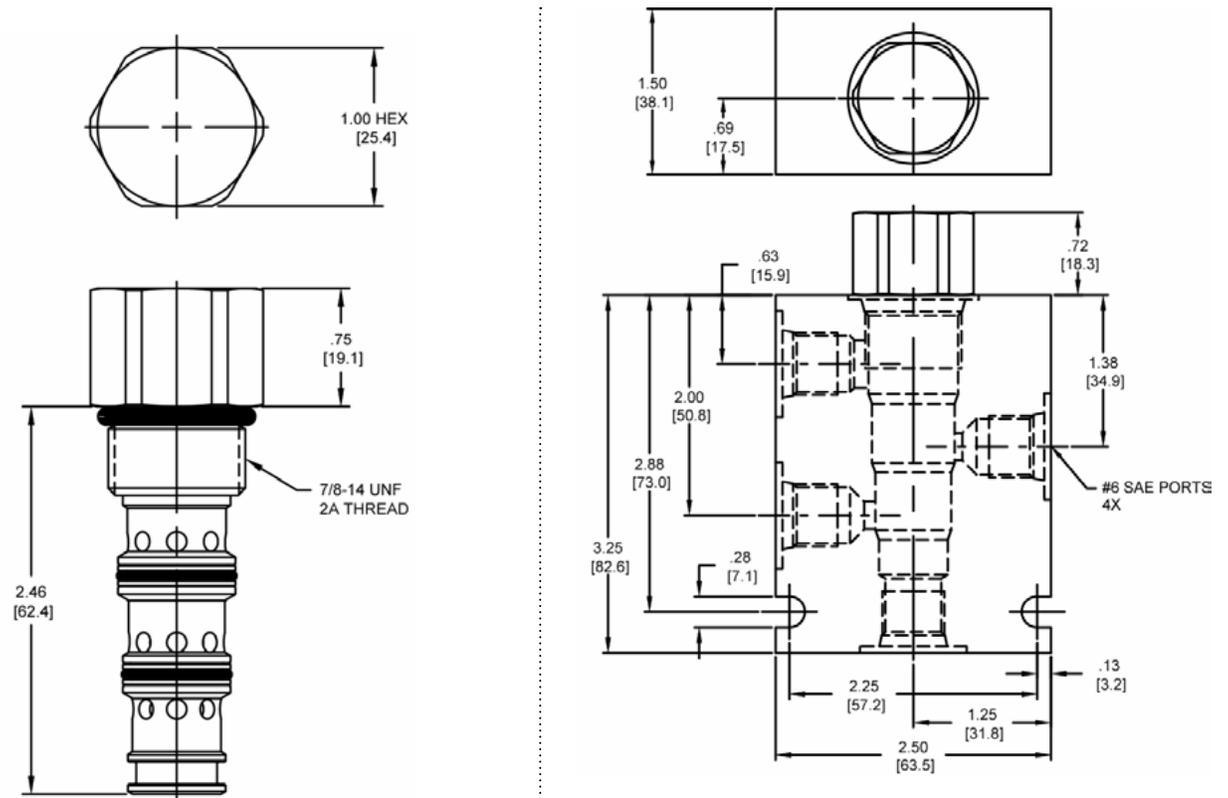


**VALVE SPECIFICATIONS**

Nominal Flow	12 GPM (45 LTR/M)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	5 cu/in per/min (82 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.34 lbs (.15 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 4W
Cavity Form Tool (Finishing)	40500002
Seal Kit	21191212

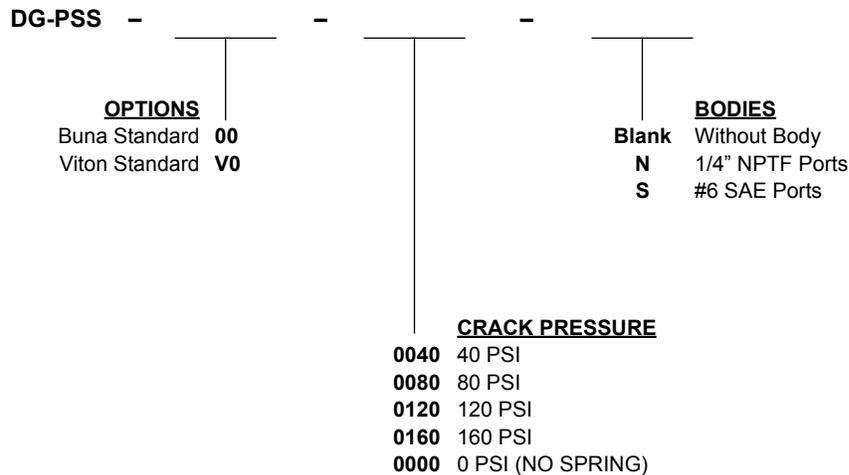
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DIMENSIONS



Body Weight: .99 lbs (.45 kg)

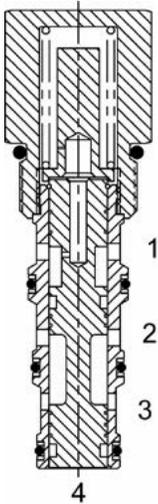
ORDERING INFORMATION



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**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DG-PTC SEQUENCE VALVE, NORMALLY OPEN, EXTERNAL PILOT**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, external pilot, normally open.

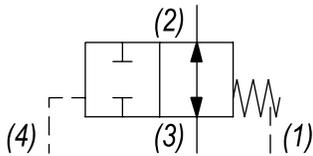
**OPERATION**

The DG-PTC allows flow at ports (3) and (2). On attainment of a predetermined pressure at port (4), the valve shifts to block flow from port (3) to (2). Spring Chamber is constantly vented to port (1).

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

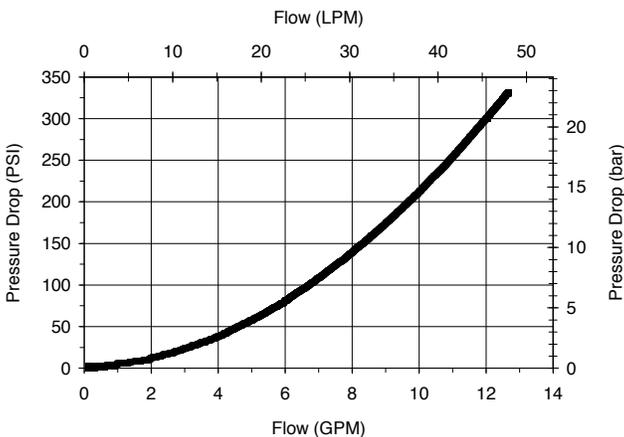
**HYDRAULIC SYMBOL**



*Orifice .030 to .060 diameter recommended beneath port (4).*

**PERFORMANCE**

Actual Test Data (Cartridge Only)

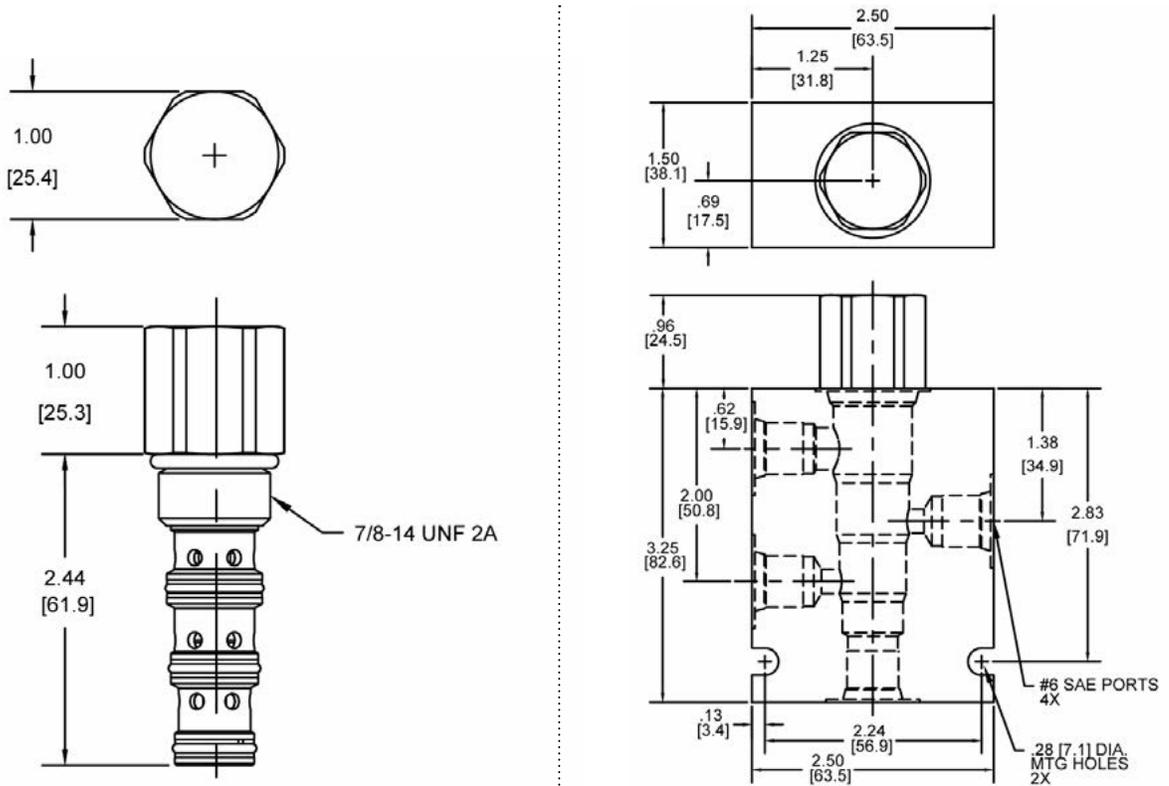


**VALVE SPECIFICATIONS**

Nominal Flow	10 GPM (38 LTR/M)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	5 cu in/min (82 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.39 lbs (.17 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 4W
Cavity Form Tool (Finishing)	40500002
Seal Kit	21191108

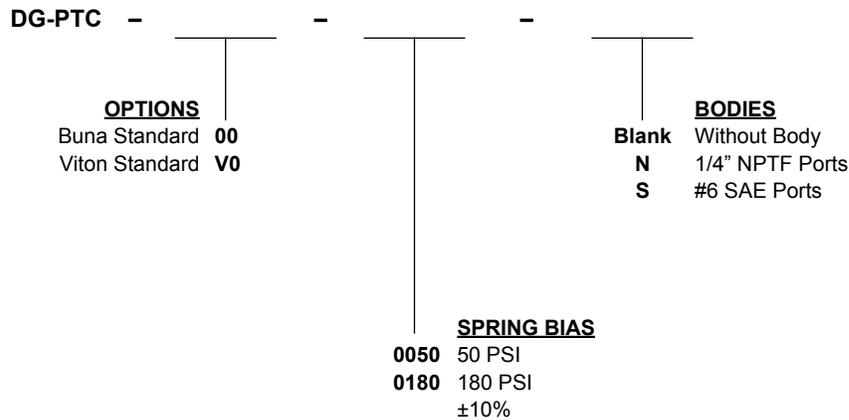
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

DIMENSIONS



Body Weight: .99 lbs (.45 kg)

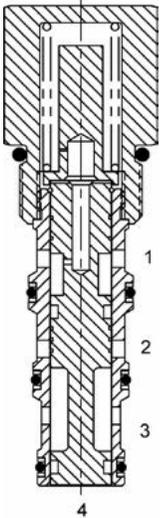
ORDERING INFORMATION



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**DG-PTO SEQUENCE VALVE, NORMALLY CLOSED, EXTERNAL PILOT**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, external pilot, normally closed.

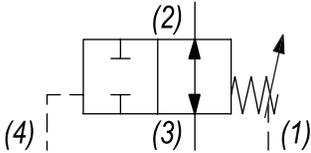
**OPERATION**

The DG-PTO blocks flow at ports (3) and (2). On attainment of a predetermined pressure at port (4), the valve shifts to allow flow from port (3) to (2). Spring Chamber is constantly vented to port (1).

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

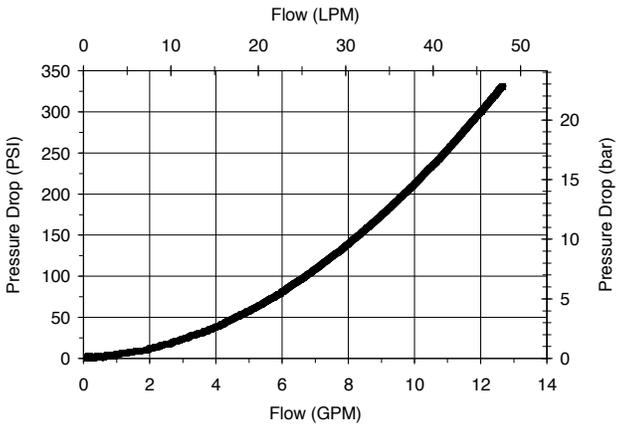
**HYDRAULIC SYMBOL**



*Orifice .030 to .060 diameter recommended beneath port (4).*

**PERFORMANCE**

Actual Test Data (Cartridge Only)

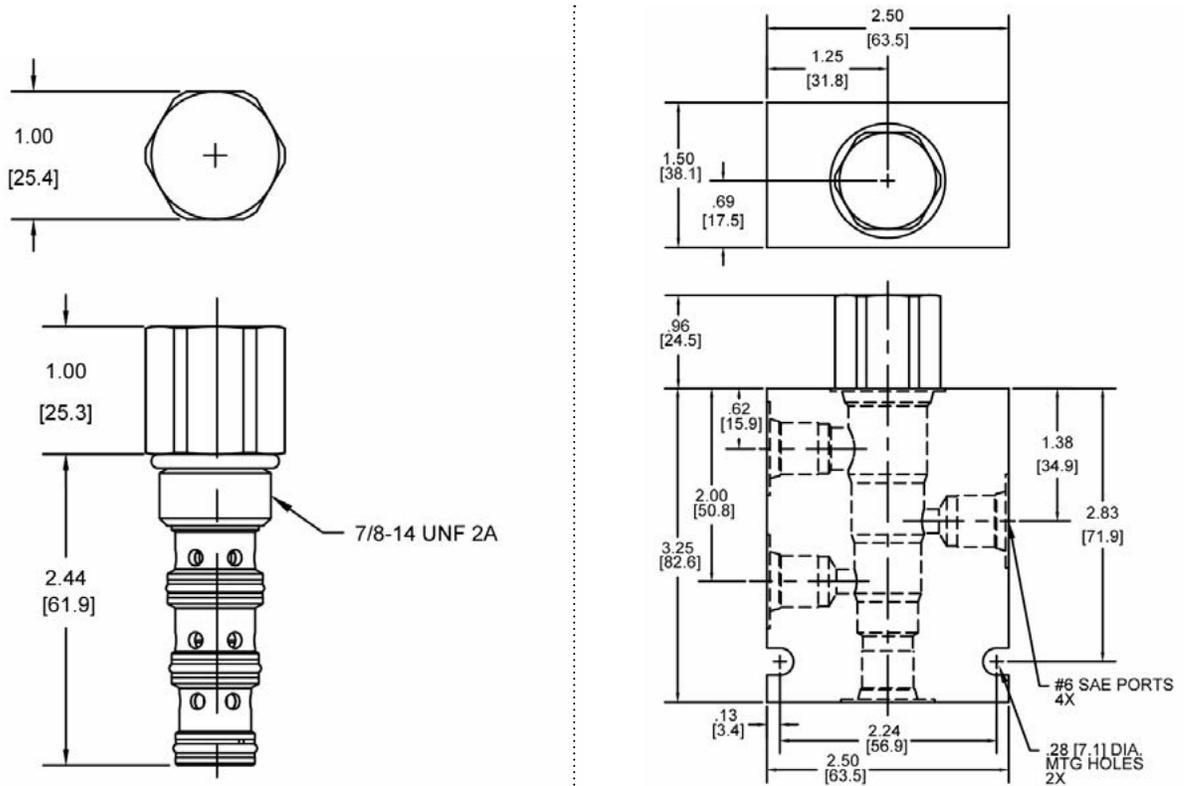


**VALVE SPECIFICATIONS**

Nominal Flow	10 GPM (38 LTR/M)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	5 cu in/min (82 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.39 lbs (.17 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 4W
Cavity Form Tool (Finishing)	40500002
Seal Kit	21191108

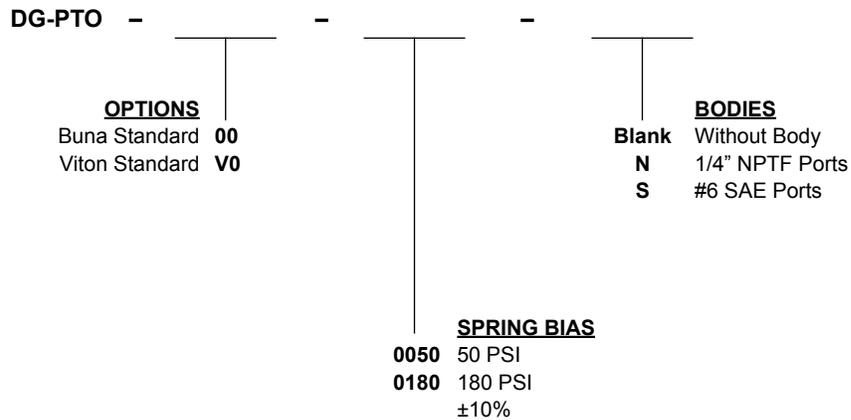
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**



Body Weight: .99 lbs (.45 kg)

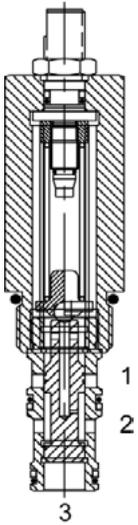
**ORDERING INFORMATION**



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**DF-PWE SEQUENCE VALVE, NORMALLY CLOSED, EXTERNAL PILOT**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, external pilot normally closed, sequence valve.

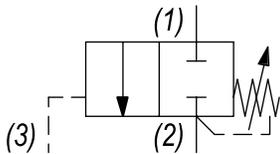
**OPERATION**

The DF-PWE blocks flow at ports (2) and (1). On attainment of a predetermined pressure at (3) the valve shifts to allow flow from (1) to (2).

**FEATURES**

- Hardened parts for long life.
- Optional spring ranges to 1500 PSI (103 bar).
- Industry common Cavity.

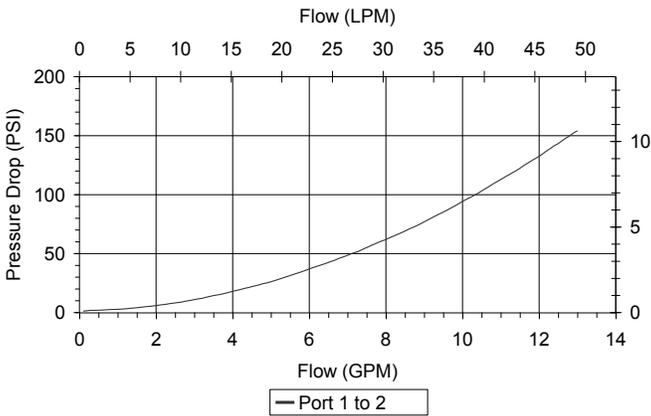
**HYDRAULIC SYMBOL**



Orifice .030 to .060 diameter recommended beneath port (3).

**PERFORMANCE**

Actual Test Data (Cartridge Only)

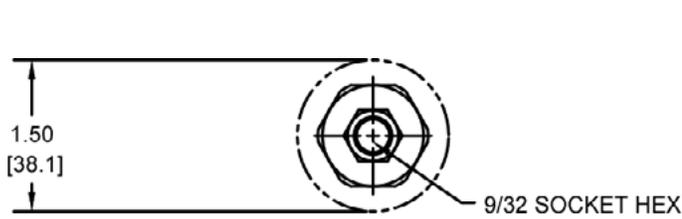


**VALVE SPECIFICATIONS**

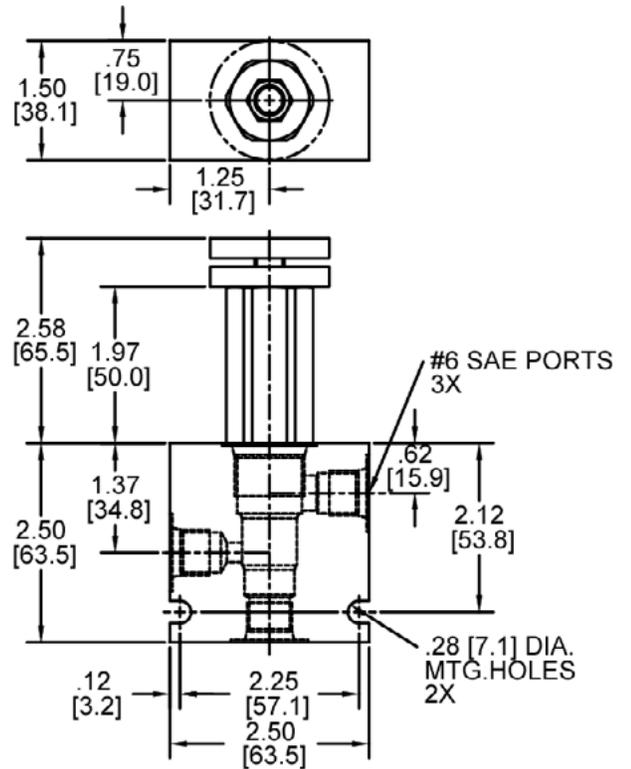
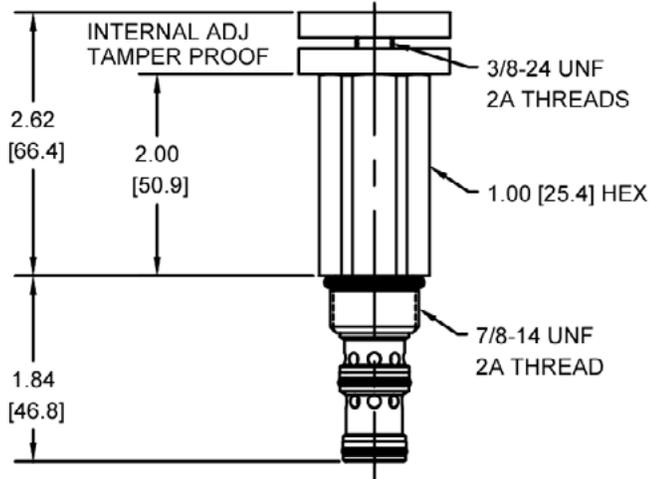
Nominal Flow	10 GPM (38 LTR/M)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	5 cu in/min (82 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.57 lbs (.26 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 3W
Cavity Form Tool (Finishing)	40500001
Seal Kit	21191206

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**DIMENSIONS**



**EXTERNAL ADJ.**



Body Weight: .76 lbs (.35 kg)

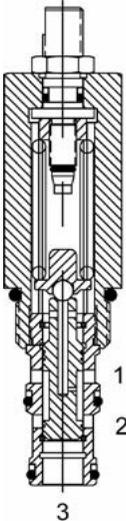
**ORDERING INFORMATION**

<p><b>DF-PWE</b> -</p> <p><b>OPTIONS</b></p> <p>Buna Standard <b>00</b></p> <p>Viton Standard <b>V0</b></p> <p>Buna, Knob <b>0K</b></p> <p>Viton, Knob <b>VK</b></p> <p>Buna, Internal Adjust <b>0I</b></p> <p>Viton, Internal Adjust <b>VI</b></p> <p>Buna, Tamper Proof <b>0T</b></p> <p>Viton, Tamper Proof <b>VT</b></p>	<p><b>BODIES</b></p> <p><b>Blank</b> Without Body</p> <p><b>N</b> 1/4" NPTF Ports</p> <p><b>S</b> #6 SAE Ports</p>
<p><b>0425</b> 50-425 PSI</p> <p><b>1500</b> 425-1500 PSI</p>	<p><b>SPRING BIAS</b></p> <p><b>Tamper Proof</b> Fill in 4 Digit Pressure Setting Example: 0500 - 500 PSI</p>

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**DF-PWI SEQUENCE VALVE, INTERNAL PILOT AND DRAIN**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, internal pilot and drain, sequence valve.

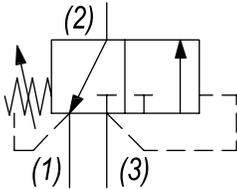
**OPERATION**

The DF-PWI blocks flow at (3) and allows flow from (2) to (1). On attainment of a predetermined pressure at (3) the valve shifts to allow flow from (3) to (2) and block flow at (1).

**FEATURES**

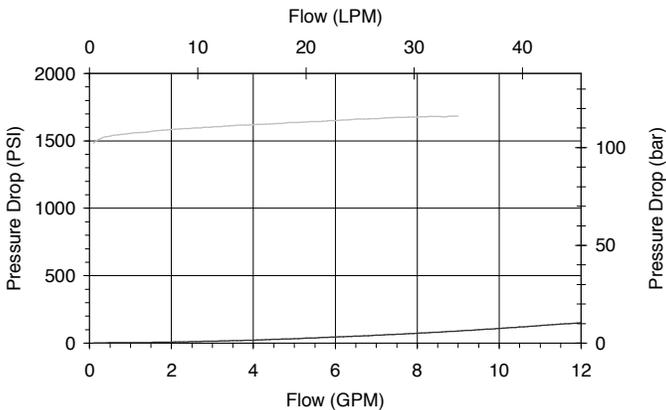
- Hardened parts for long life.
- Optional spring ranges to 1500 PSI (103 bar).
- Industry common Cavity.

**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)

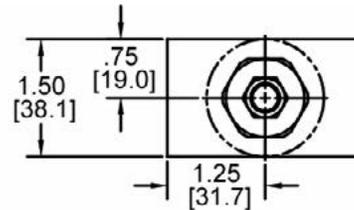
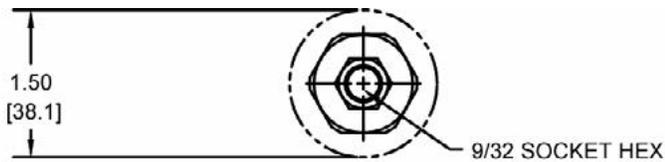


**VALVE SPECIFICATIONS**

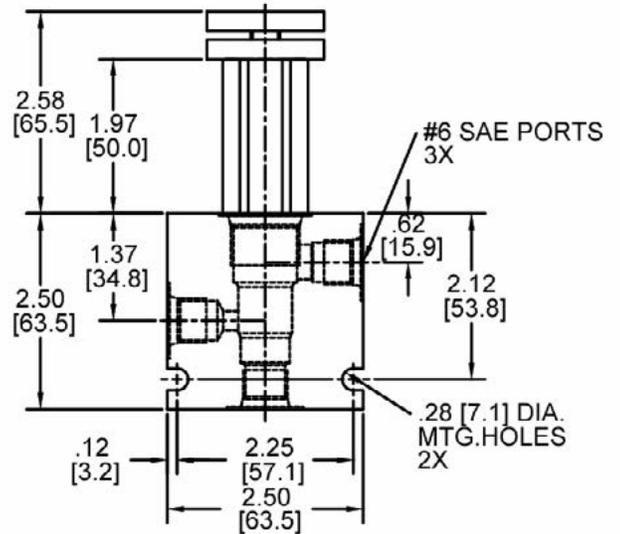
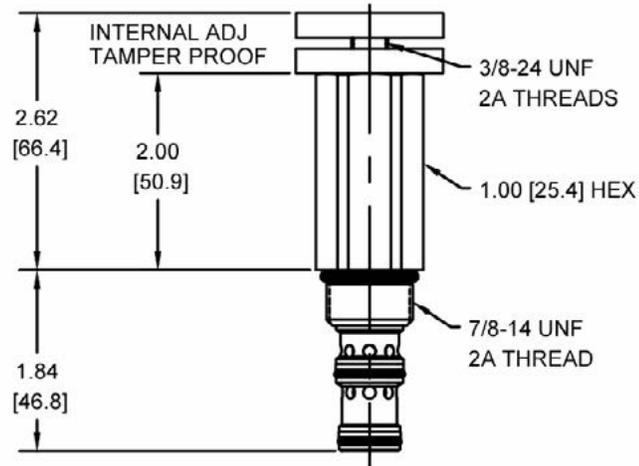
Nominal Flow	8 GPM (30 LPM)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	5 cu in/min (82 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.57 lbs (.26 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 3W
Cavity Form Tool (Finishing)	40500001
Seal Kit	21191206

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**DIMENSIONS**

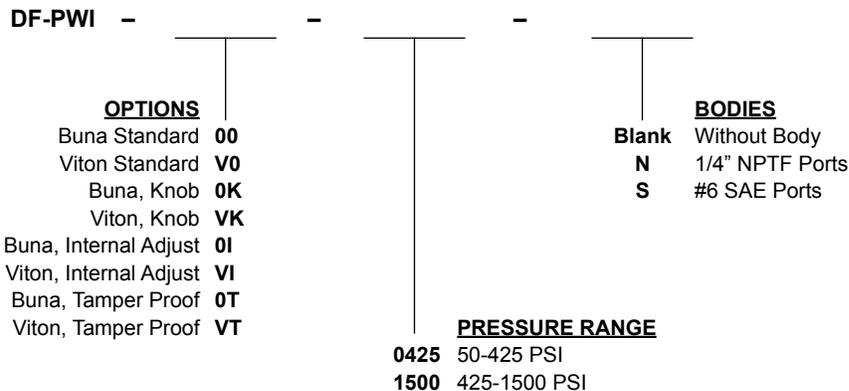


EXTERNAL ADJ.



Body Weight: .76 lbs (.35 kg)

**ORDERING INFORMATION**

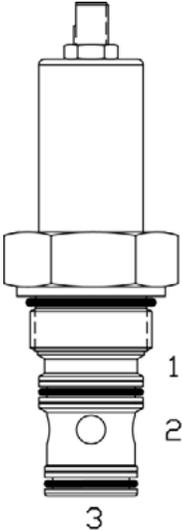


**Tamper Proof**  
 Fill in 4 Digit Pressure Setting  
 Example: 0500 - 500 PSI

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**SL-PWA SEQUENCE VALVE, NORMALLY CLOSED, INTERNAL PILOT**



**DESCRIPTION**

16 size, 1 5/16-12 thread, "Super" series, internal pilot normally closed, sequence valve.

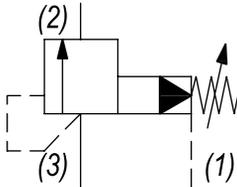
**OPERATION**

The SL-PWA blocks flow from ports (3) to (2). On attainment of a predetermined pressure at (3) the valve shifts to allow flow from (3) to (2). Port (1) should be a tank line.

**FEATURES**

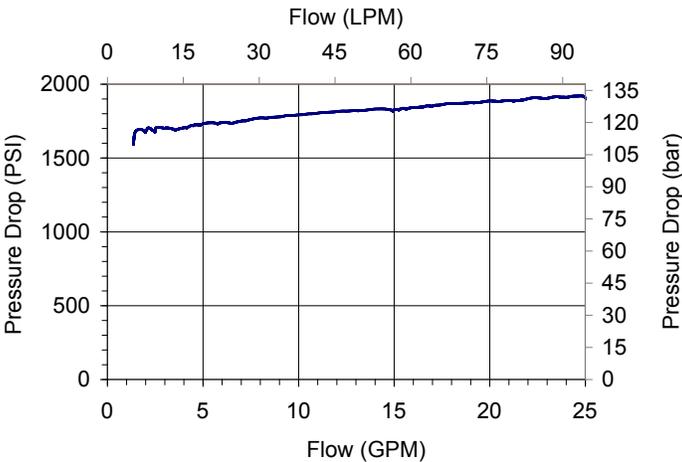
- Hardened parts for long life.
- Industry common cavity.

**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)

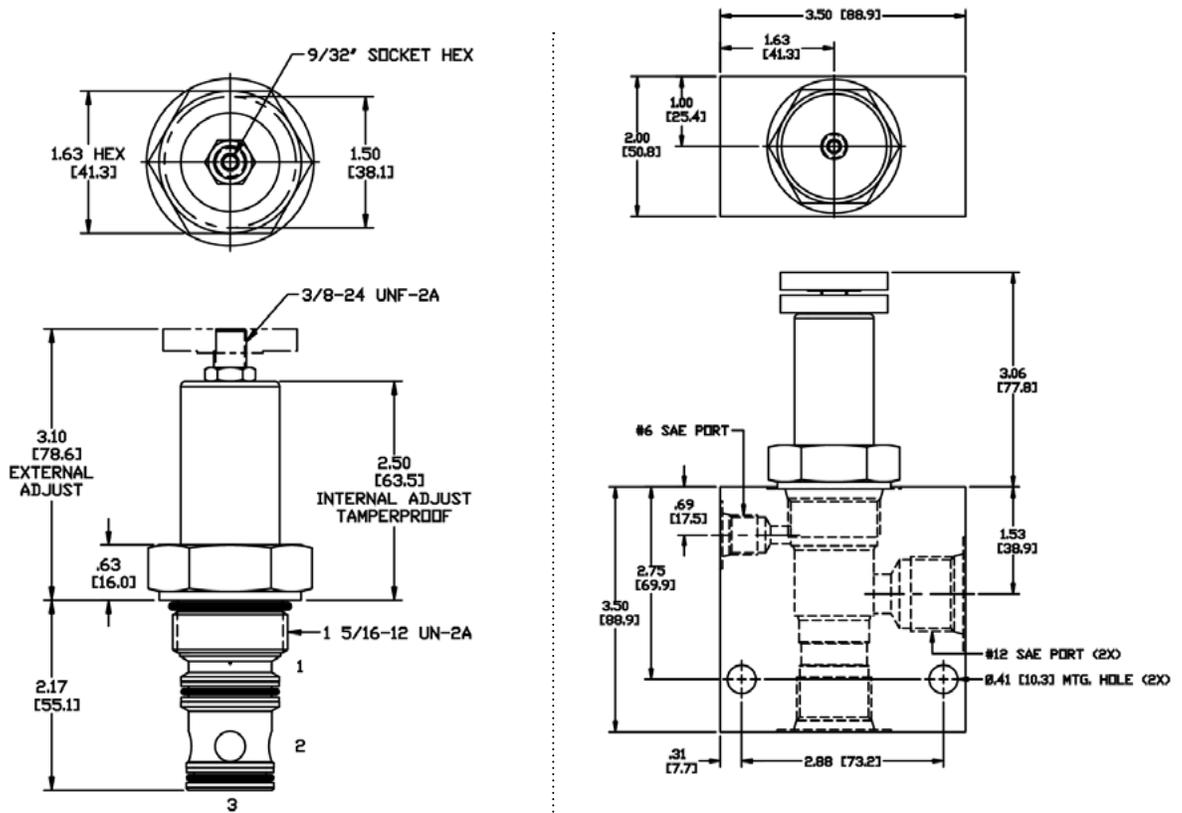


**VALVE SPECIFICATIONS**

Nominal Flow	40 GPM (151 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	1.15 lbs (.52 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	90 ft-lbs (122 Nm)
Cavity	SUPER 3WS
Cavity Form Tool (Finishing)	40500021
Seal Kit	21191404

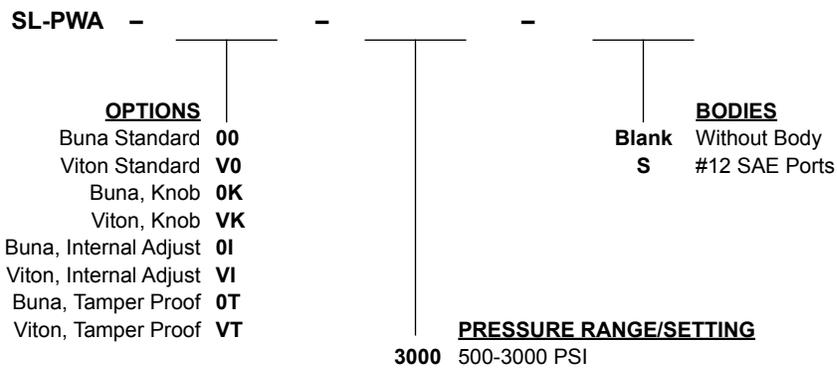
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

DIMENSIONS



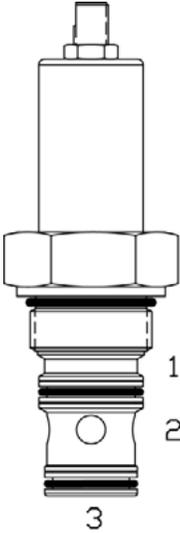
Body Weight: 1.89 lbs (.86 kg)

ORDERING INFORMATION



**Tamper Proof**  
 Fill in 4 Digit Pressure Setting  
 Example: 2000 = 2000 PSI

**SL-PWB SEQUENCE VALVE, NORMALLY CLOSED, INTERNAL PILOT WITH REVERSE FREE FLOW**



**DESCRIPTION**

16 size, 1 5/16-12 thread, "Super" series, internal pilot normally closed, sequence valve w/ reverse free flow.

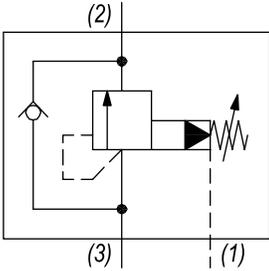
**OPERATION**

The SL-PWB blocks flow from ports (3) to (2). On attainment of a predetermined pressure at (3) the valve shifts to allow flow from (3) to (2). Port (1) should be a tank line. Reverse flow from (2) to (3) occurs when the pressure at port (2) is at least 45 PSI (3.1 bar) higher than at port (3).

**FEATURES**

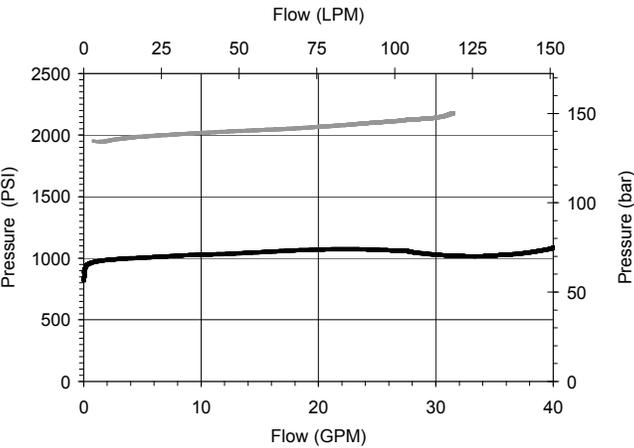
- Hardened parts for long life.
- Industry common cavity.

**HYDRAULIC SYMBOL**



**PERFORMANCE**

Actual Test Data (Cartridge Only)

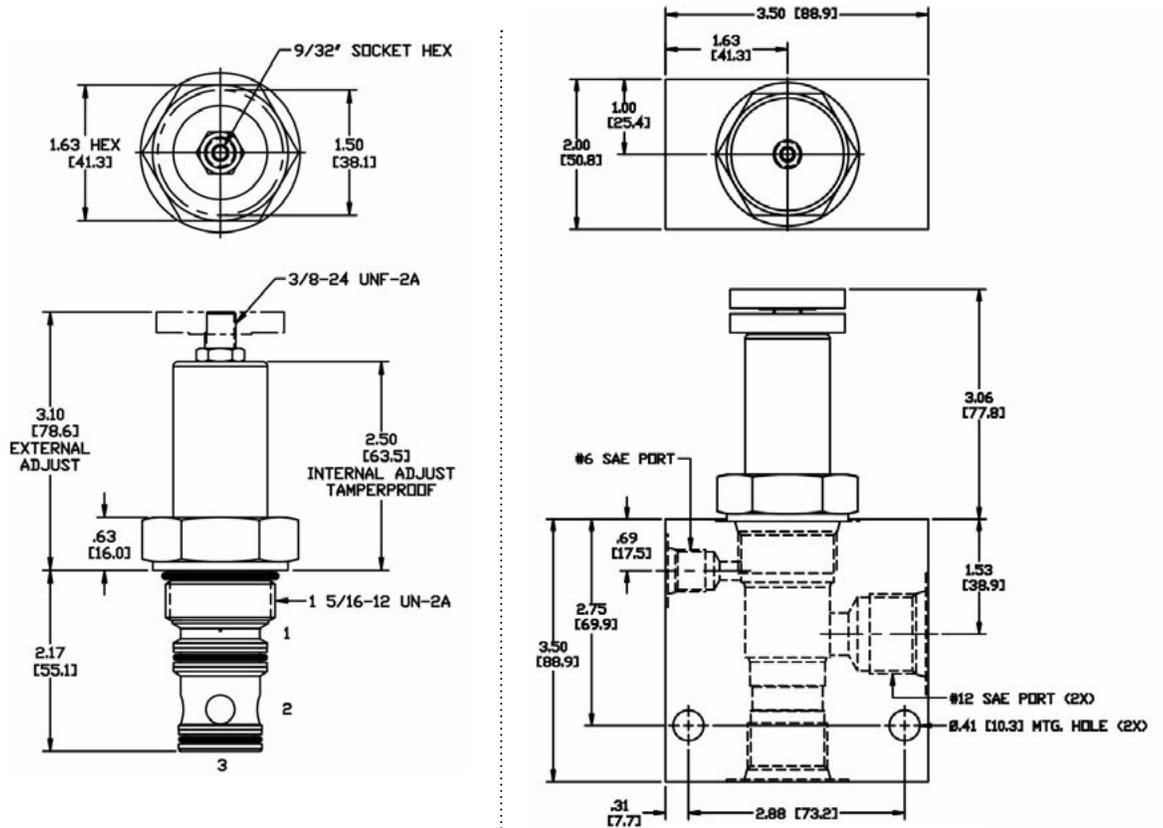


**VALVE SPECIFICATIONS**

Nominal Flow	40 GPM (151 LPM)
Rated Operating Pressure	3500 PSI (241 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	1.15 lbs (.52 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	90 ft-lbs (122 Nm)
Cavity	SUPER 3WS
Cavity Form Tool (Finishing)	40500021
Seal Kit	21191404

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DIMENSIONS



Body Weight: 1.89 lbs (.86 kg)

ORDERING INFORMATION

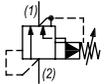
<p><b>SL-PWB</b> -</p> <p><b>OPTIONS</b></p> <p>Buna Standard <b>00</b></p> <p>Viton Standard <b>V0</b></p> <p>Buna, Knob <b>0K</b></p> <p>Viton, Knob <b>VK</b></p> <p>Buna, Internal Adjust <b>0I</b></p> <p>Viton, Internal Adjust <b>VI</b></p> <p>Buna, Tamper Proof <b>0T</b></p> <p>Viton, Tamper Proof <b>VT</b></p>	<p><b>BODIES</b></p> <p>Blank Without Body</p> <p><b>S</b> #12 SAE Ports</p>	<p><b>PRESSURE RANGE/SETTING</b></p> <p><b>3000</b> 500-3000 PSI</p>
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**Tamper Proof**  
 Fill in 4 Digit Pressure Setting  
 Example: 2000 = 2000 PSI

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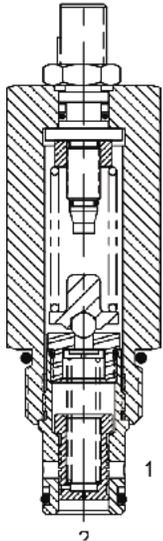
**SHUT DOWN VALVES**

	GPM	PSI	LPM	BAR	CAVITY	MODEL	PAGE
	15	4500	57	310	7/8-14	DE-PSD	MP122

**TYPICAL SCHEMATIC**

Typical application for the PSD is a system protector, like a relief valve, but once this valve opens it will not reseal until the pressure at port (2) is drained off. This valve is not to be used as a load holding device.

**DE-PSD PRESSURE SHUT DOWN VALVE**



**DESCRIPTION**

10 size, 7/8-14 thread, "Delta" series, pressure shut down valve.

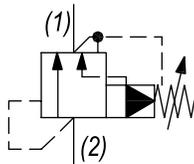
**OPERATION**

The DE-PSD blocks flow from (2) to (1) until sufficient pressure is present at (2) to open the pilot, thereby forcing the spool to open and allowing flow from (2) to (1). The valve stays open until the differential pressure from (2) to (1) decreases to less than 50 PSI (3.4 bar).

**FEATURES**

- Hardened parts for long life.
- Industry common cavity.

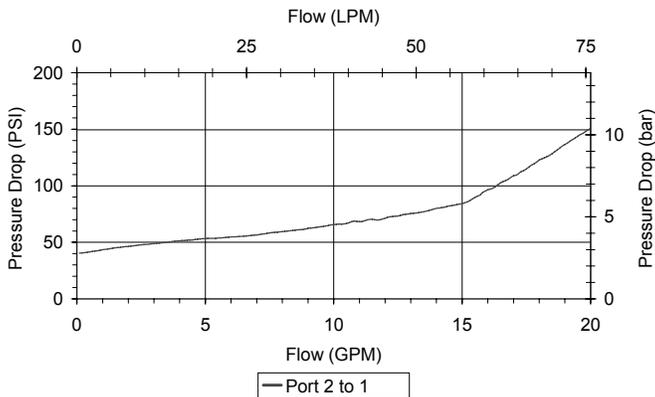
**HYDRAULIC SYMBOL**



Usually the valve requires flow to be reduced to near zero before the valve will reset.

**PERFORMANCE**

Actual Test Data (Cartridge Only)

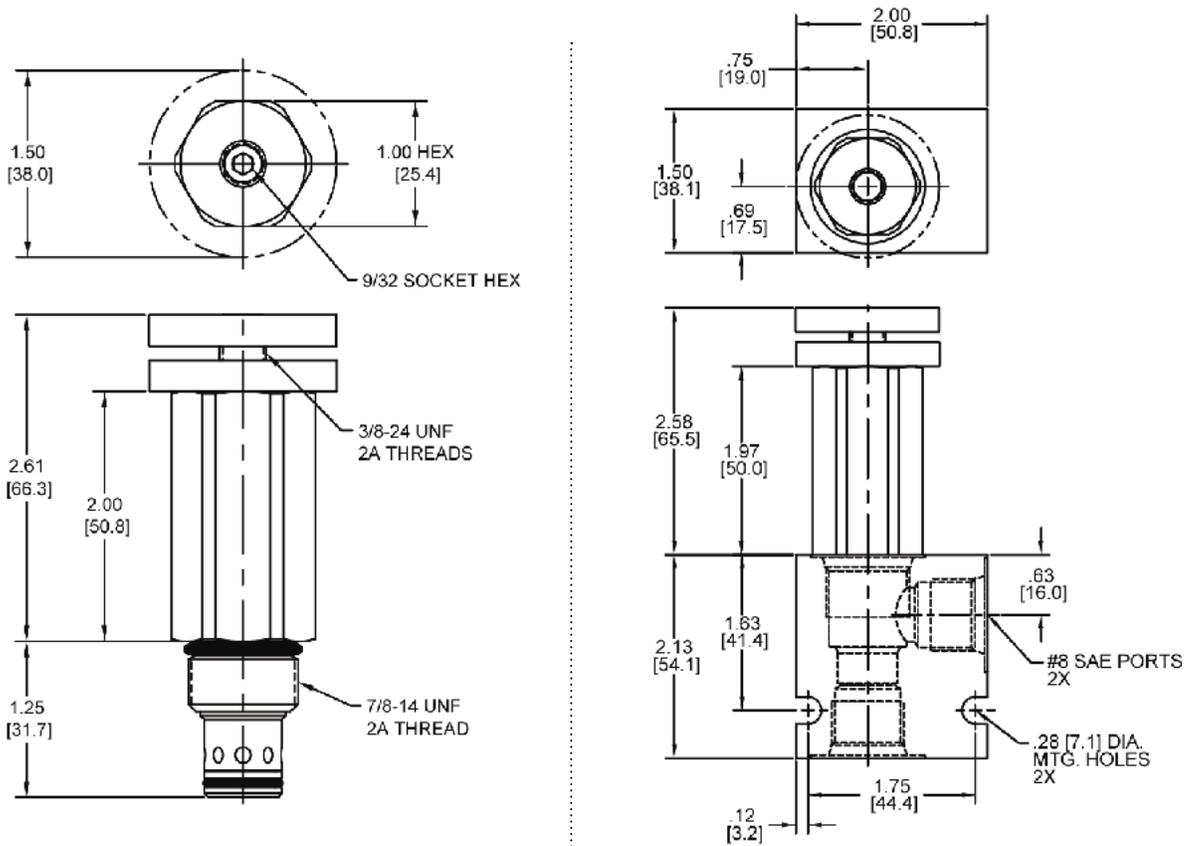


**VALVE SPECIFICATIONS**

Nominal Flow	15 GPM (57 LPM)
Rated Operating Pressure	4500 PSI (310 bar)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temp. Range	-40° to 250°F (-40° to 120°C)
Weight	.53 lbs (.24 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191200

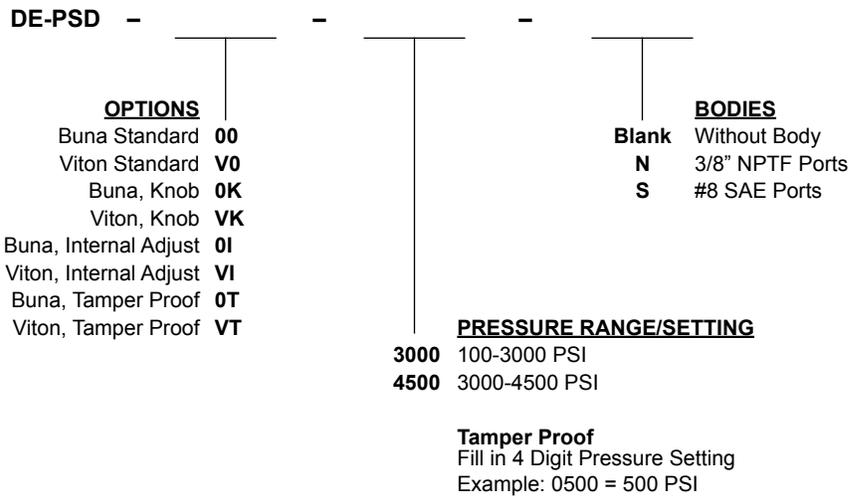
**WARNING:** the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

**DIMENSIONS**



Body Weight: .47 lbs (.21 kg)

**ORDERING INFORMATION**



**Note: aluminum NOT durability rated for 4000 PSI. Consult factory for options.**

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