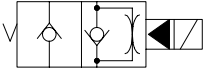
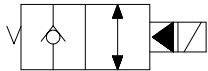
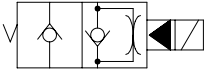




SECTION/Description	Pages
2W2P Normally Closed Poppet Valves	9
2W2P Normally Closed Bi-Directional Valves	35
2W2P Normally Closed Spool Valves	51
2W2P Normally Open Poppet Valves	63
2W2P Normally Open Spool Valves	83
3W2P Spool Valves	97
4W2P Spool Valves	127
4W3P Spool Valves	173

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.

2 Way 2 Position Normally Closed Poppet Valves

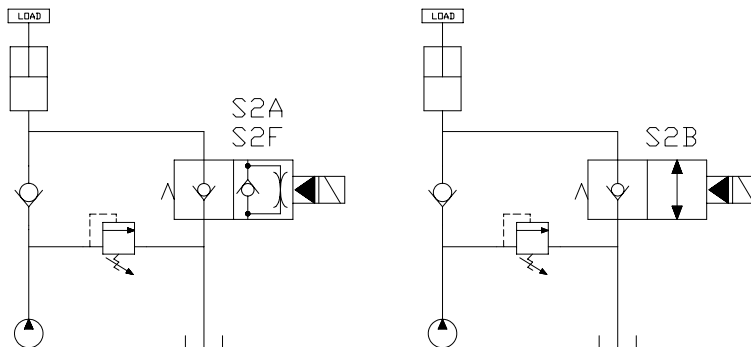
	GPM	PSI	LPM	BAR	MODEL	PAGE
	5	3000	19	207	MA-S2A	10
	5	4000	19	276	HA-S2A	12
	8	3500	30	241	PB-S2A	14
	11	5000	42	345	HB-S2A	588
	15	3500	57	241	DE-S2A	16
	15	4000	57	276	HE-S2A	18
	25	3000	95	207	TT-S2A	20
	30	3500	114	241	SJ-S2A	22
	8	3500	30	241	PB-S2B	24
	15	3500	57	241	DE-S2B	26
	25	3000	95	207	TT-S2B	28
	25	5000	95	345	HT-S2B	30
	30	3500	114	241	SJ-S2B	32
<p>SOFT SEAT</p> 	2.5	1500	9	103	MA-S2F	44
	6	2500	23	172	PB-S2F	46
	10	1000	38	69	DE-S2F	48

Typical Schematic

Typical application for the S2A is load holding and lowering in a Lift, Check and Dump circuit.

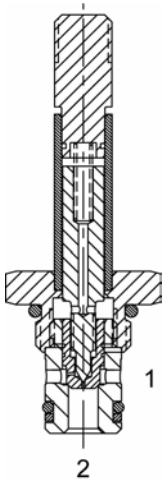
Typical application for the S2B is load holding and lowering when free flow in both directions is required to float the cylinder.

Typical application for the S2F is load holding and lowering of a cylinder in low pressure application where the soft seat gives better leakage control.



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.

MA-S2A Pilot Operated Poppet, 2 Way, Normally Closed



DESCRIPTION

7 size, 5/8-18 thread, "Mini" series, solenoid operated, 2 way normally closed, pilot operated poppet valve with reverse flow de-energized.

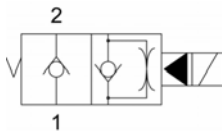
OPERATION

When de-energized the MA-S2A blocks flow from (1) to (2) and allows reverse flow from (2) to (1). When energized the valve allows flow from (1) to (2) and restricts flow from (2) to (1).

FEATURES

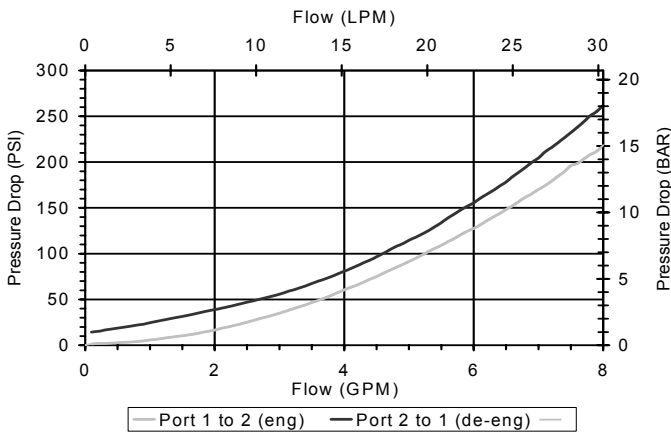
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

HYDRAULIC SYMBOL



PERFORMANCE

Actual Test Data (Cartridge Only)



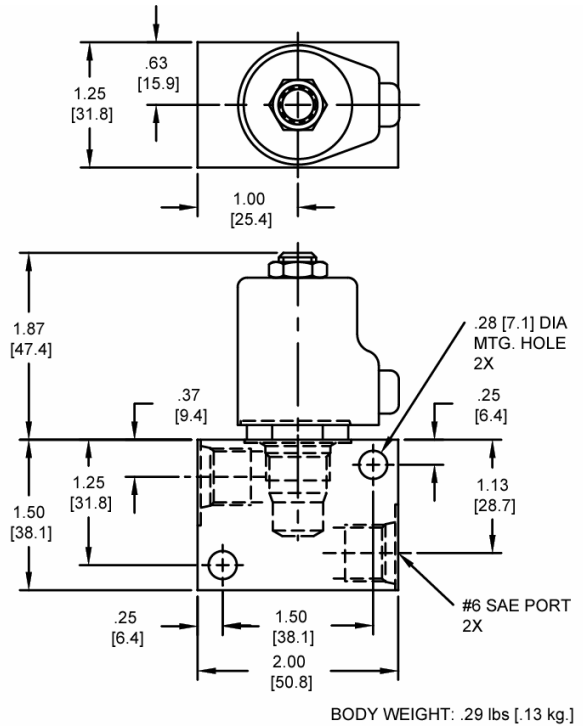
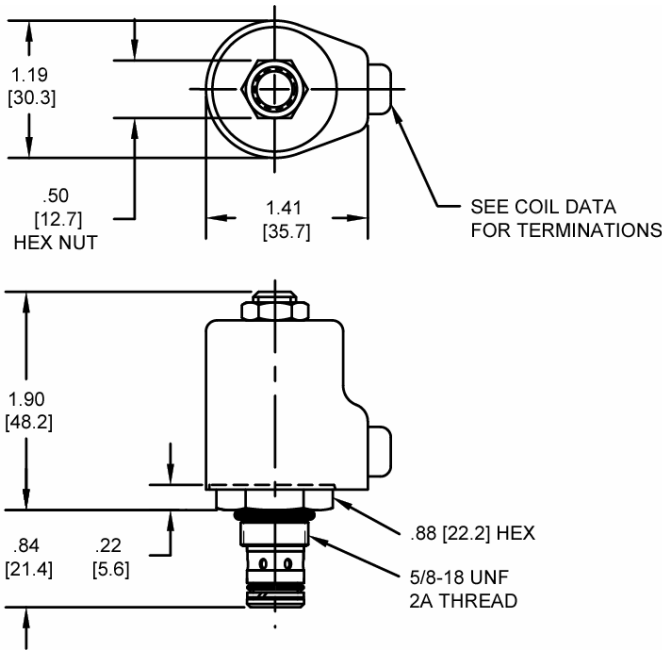
VALVE SPECIFICATIONS

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 Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.13 lbs. (.06 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	15 ft-lbs (20.3 Nm)
Coil Nut Torque Requirements	3-5 ft-lbs (4.1-6.8 Nm)
Cavity	MINI 2W
Cavity Form Tool (Finishing)	40500003
Seal Kit (Buna)	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



ORDERING INFORMATION

MA-S2A - - -

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).

"M" COIL TERMINATION

(All DC Except as Noted)

- Double Lead **DL**
- Deutsch on Leads DT04-2P **DT**
- Metri-Pack on Leads **ML**
- Packard on Leads **PL**
- Weatherpack on Leads **WL**
- Single Spade **SS**
- Double Spade **DS**
- DIN 43650 (Hirschman) - (AC&DC) **HC**
- Conduit Lead - (AC Only) **CL**

Blank

N

S

BODIES

- Without Body
- 1/4 NPTF Ports
- #6 SAE Ports

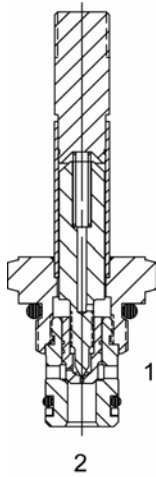
VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 25** 24 VAC
- 11** 120 VAC
- 22** 220 VAC
- 44** 440 VAC

Approximate Coil Weight: .30 lbs. (.14 kg.)

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.

HA-S2A Pilot Operated Poppet, 2 Way, Normally Closed



DESCRIPTION

“High Pressure” 7 size, 5/8-18 thread, “Mini” series, solenoid operated, 2 way normally closed, pilot operated poppet valve with free reverse flow de-energized.

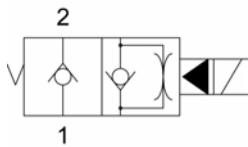
OPERATION

When de-energized the HA-S2A blocks flow from (1) to (2) and allows flow from (2) to (1). When energized the valve allows flow from (1) to (2) and restricts flow from (2) to (1).

FEATURES

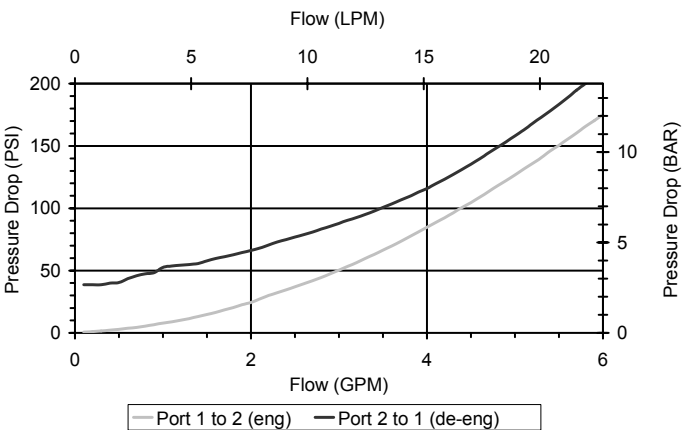
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design (for most common termination, see coil page).
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

HYDRAULIC SYMBOL



PERFORMANCE

Actual Test Data (Cartridge Only)



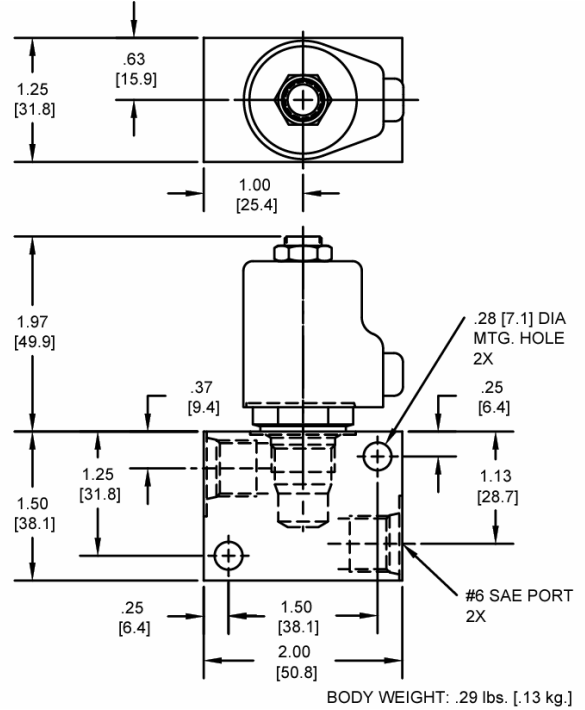
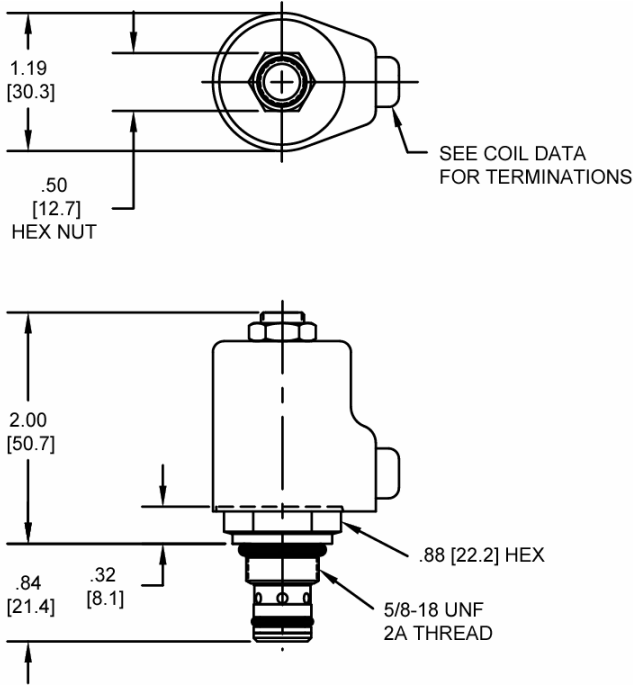
VALVE SPECIFICATIONS

Nominal Flow	5 GPM (19 LPM)
Rated Operating Pressure	4000 PSI (276 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 Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.14 lbs. (.06 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	15 ft-lbs (20.3 Nm)
Coil Nut Torque Requirements	3-5 ft-lbs (4.1-6.8 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



ORDERING INFORMATION

HA-S2A - - -

OPTIONS

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

"M" COIL TERMINATION

Double Lead **DL**
Deutsch on Leads DT04-2P **DT**
Metri-Pack on Leads **ML**
Packard on Leads **PL**
Weatherpack on Leads **WL**
Single Spade **SS**
Double Spade **DS**
DIN 43650 (Hirschman) - (AC&DC) **HC**
Conduit Lead - (AC Only) **CL**

Blank **N**
S

BODIES

Without Body
1/4 NPTF Ports
#6 SAE Ports

Note: Aluminum, NOT durability rated for 4000 PSI. Consult factory for body options.

VOLTAGE

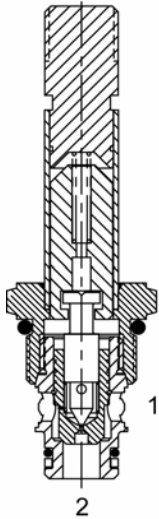
06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC
44 440 VAC

Approximate Coil Weight: .30 lbs/.14 kg.

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-S2A Pilot Operated Poppet, 2 Way, Normally Closed



DESCRIPTION

8 size, 3/4-16 thread, "Power" series, solenoid operated, 2 way normally closed, pilot operated poppet valve with reverse flow de-energized.

OPERATION

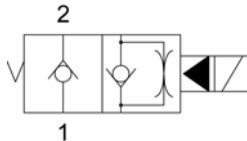
When de-energized the PB-S2A blocks flow from (1) to (2) and allows reverse flow from (2) to (1). When energized the valve allows flow from (1) to (2) and restricts flow from (2) to (1).

OPERATION OF MANUAL OVERRIDE OPTION: To override, pull knob out. On the detented version, after pulling knob out twist 180 degrees and release. The valve will remain in that position.

FEATURES

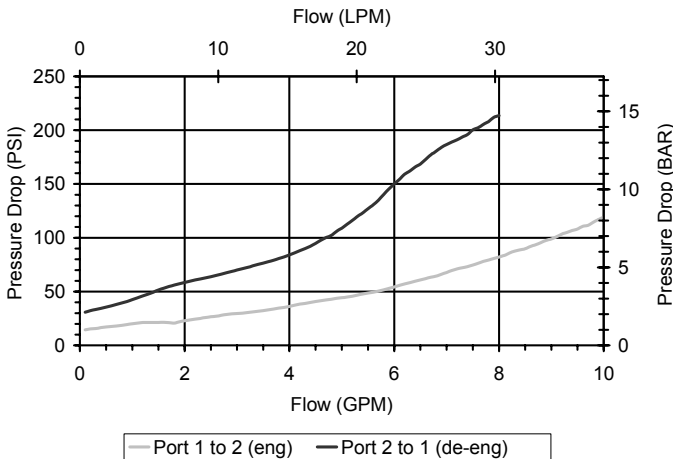
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

HYDRAULIC SYMBOL



PERFORMANCE

Actual Test Data (Cartridge Only)

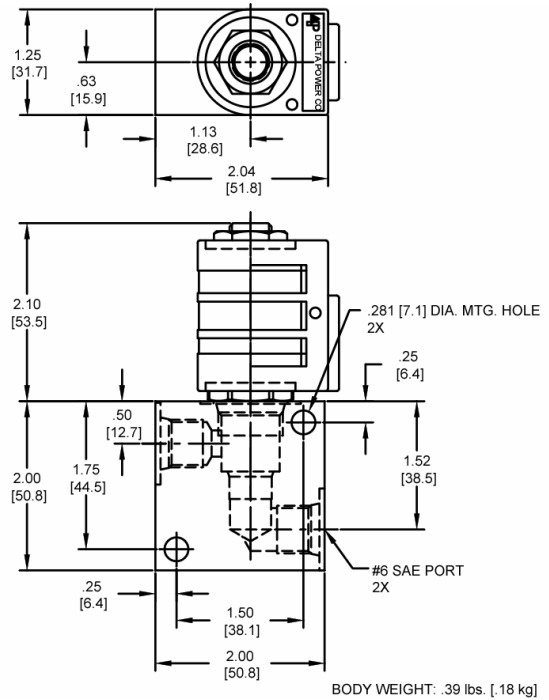
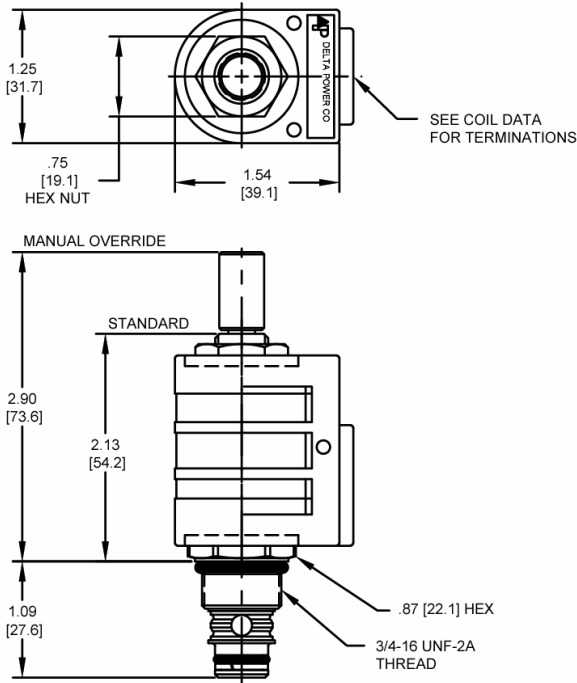


VALVE SPECIFICATIONS

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 Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.20 lbs. (.09 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 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



ORDERING INFORMATION

PB-S2A

- OPTIONS**
- Buna Standard **00**
 - Viton Standard **V0**
 - Buna, Override, Detent **0M**
 - Viton, Override, Detent **VM**
 - Buna, Screen **A0**
 - Viton, Screen **W0**
 - Buna, Override, Nondetent **B1**
 - Viton, Override, Nondetent **V1**
 - Buna, Screen, Override, Nondetent **B3**
 - Viton, Screen, Override, Nondetent **V3**
 - Buna, Screen, Override, Detent **B4**
 - Viton, Screen, Override, Detent **V4**

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

"P" COIL TERMINATION
(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04-2P
- ML** Metri-Pack on Leads
- PL** Packard on Leads
- WL** Weatherpack on Leads

- SS** Single Spade
- DS** Double Spade
- HC** DIN 43650 (Hirschman) – (AC & DC)
- CL** Conduit Lead – (AC Only)
- DI** Deutsch – Integral DT04-2P

- BODIES**
- Blank
 - N** 1/4 NPTF Ports
 - S** #6 SAE Ports

- VOLTAGE**
- 06** 6 VDC
 - 12** 12 VDC
 - 24** 24 VDC
 - 36** 36 VDC
 - 48** 48 VDC
 - 25** 24 VAC
 - 11** 120 VAC
 - 22** 220 VAC
 - 44** 440 VAC

- IMMERSION PROOF "P" TYPE**
- IA** "I" Coil AMP Superseal - Integral
 - ID** "I" Coil Deutsch – Integral DT04-2P
 - IJ** "I" Coil AMP Jr. Timer - Integral
 - IM** "I" Coil Metri-Pack – Integral

Approximate Coil Weight: .42 lbs (.19 kg.)

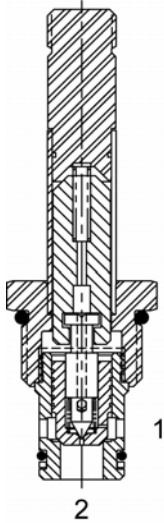
WARNING: The specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

DE-S2A Pilot Operated Poppet, 2 Way Normally Closed



DESCRIPTION

10 size, 7/8-14 thread, "Delta" series, solenoid operated, 2 way normally closed, pilot operated poppet valve with reverse flow de-energized.

OPERATION

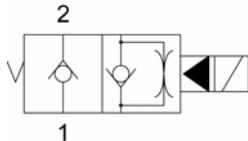
When de-energized the DE-S2A blocks flow from (1) to (2) and allows reverse flow from (2) to (1). When energized the valve allows flow from (1) to (2) and restricts flow from (2) to (1).

OPERATION OF MANUAL OVERRIDE OPTION: To override, pull knob out. On the detented version, after pulling knob out twist 180 degrees and release. The valve will remain in that position.

FEATURES

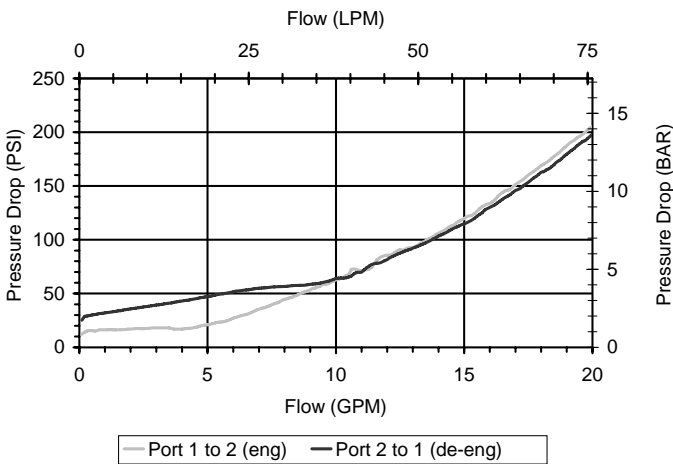
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

HYDRAULIC SYMBOL



PERFORMANCE

Actual Test Data (Cartridge Only)

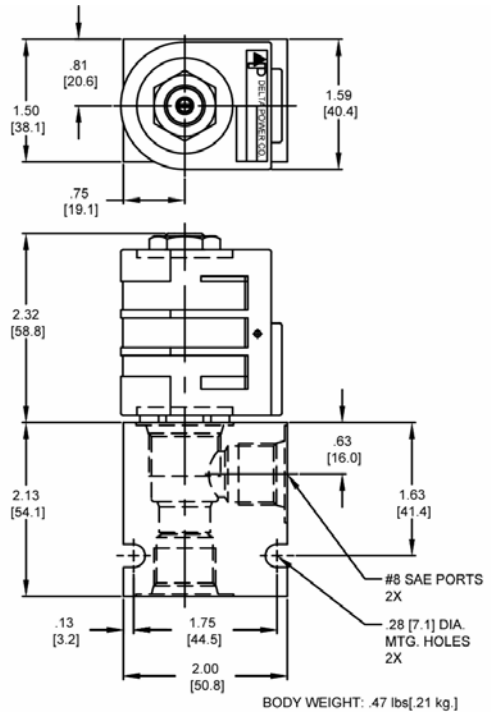
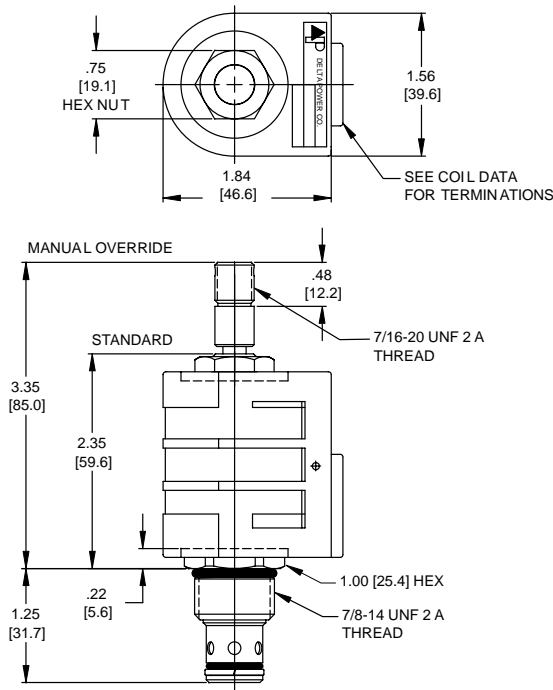


VALVE SPECIFICATIONS

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 Temperature 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)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 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



ORDERING INFORMATION

DE-S2A - - - -

OPTIONS

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Override **0M**
- Viton, Override **VM**
- Buna & Screen **A0**
- Viton & Screen **W0**
- Buna, Override, Non-detent **B1**
- Viton, Override, Non-detent **V1**
- Buna, Screen, Override, Non-detent **B3**
- Buna, Screen, Override, Detent **B4**
- Viton, Screen, Override, Non-detent **V3**
- Viton, Screen, Override, Detent **V4**

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

"D" COIL TERMINATION
(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04-2P
- ML** Metri-Pack on Leads
- PL** Packard on Leads
- WL** Weatherpack on Leads

- SS** Single Spade
- DS** Double Spade
- HC** DIN 43650 (Hirschman) - (AC & DC)
- CL** Conduit Lead - (AC Only)
- DI** Deutsch - Integral DT04-2P

BODIES

- Blank
- N** 3/8 NPTF Ports
- S** #8 SAE Ports

VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 25** 24 VAC
- 11** 120 VAC
- 22** 220 VAC
- 44** 440 VAC

IMMERSION PROOF "D" TYPE

- IA** "I" Coil AMP Superseal - Integral
- ID** "I" Coil Deutsch - Integral DT04-2P
- IJ** "I" Coil AMP Jr. Timer - Integral
- IM** "I" Coil Metri-Pack - Integral

Approximate Coil Weight: .74 lbs (.33 kg.)

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.

Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

HE-S2A Pilot Operated Poppet, 2 Way Normally Closed

DESCRIPTION

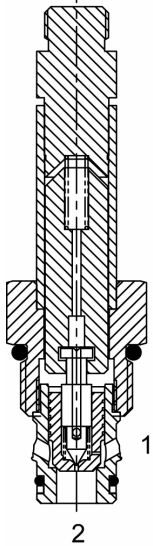
"High Pressure" 10 size, 7/8-14 thread, "Delta" series, solenoid operated, 2 way normally closed, pilot operated poppet valve with reverse flow de-energized.

OPERATION

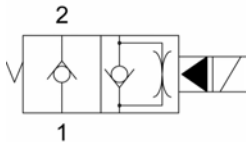
When de-energized the HE-S2A blocks flow from (1) to (2) and allows reverse flow from (2) to (1). When energized the valve allows flow from (1) to (2) and restricts flow from (2) to (1).

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.



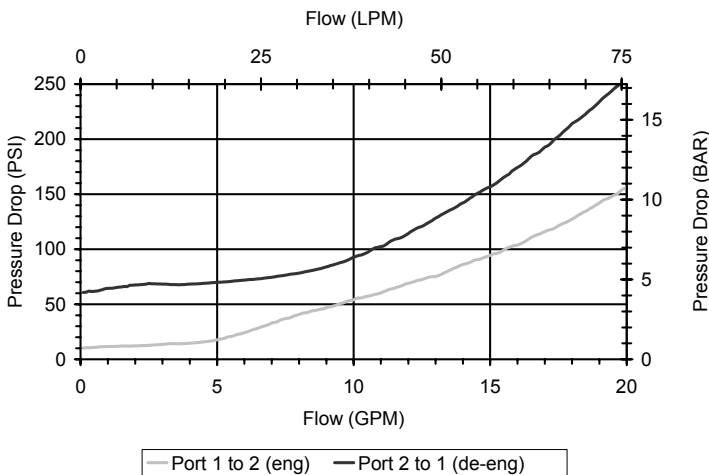
HYDRAULIC SYMBOL



Uses "L" Coil.

PERFORMANCE

Actual Test Data (Cartridge Only)



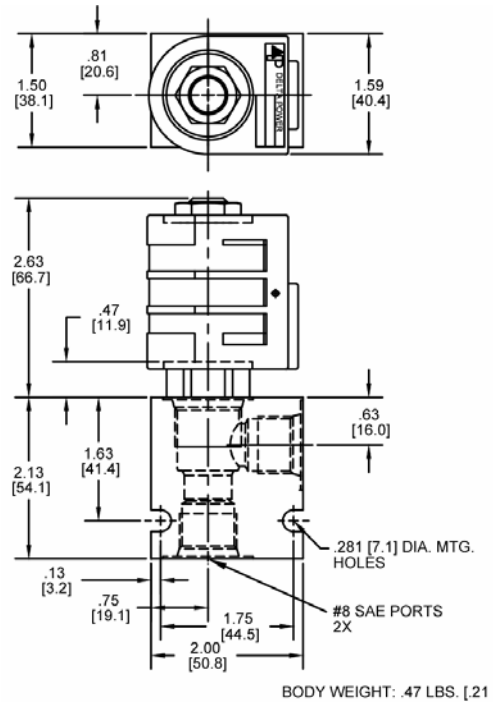
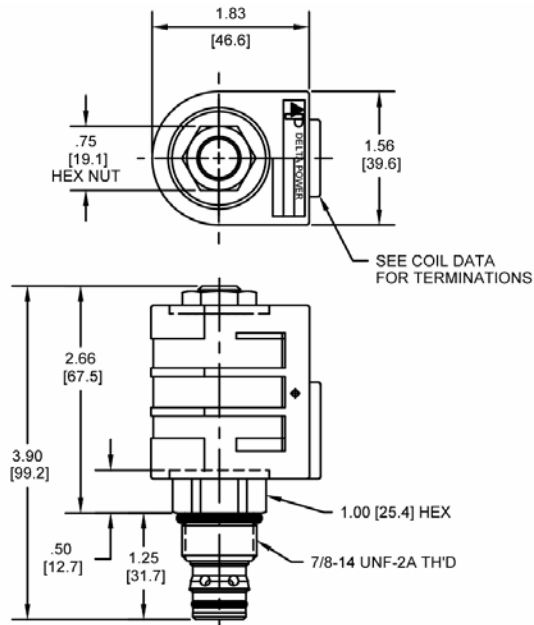
VALVE SPECIFICATIONS

Nominal Flow	15 GPM (57 LPM)
Rated Operating Pressure	4000 PSI (276 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 Temperature 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)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 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



ORDERING INFORMATION

HE-S2A - - - -

OPTIONS

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

Blank
N
S

BODIES

Without Body
3/8 NPTF Ports
#8 SAE Ports

Note: Aluminum, NOT durability rated for 4000 PSI. Consult factory options.

VOLTAGE

06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VAC
25 25 VAC
11 120 VAC
22 220 VAC
44 440 VAC

"L" COIL TERMINATION

(All DC Except as Noted)

DL Double Lead
DT Deutsch on Leads DT04-2P
ML Metri-Pack on Leads
PL Packard on Leads
WL Weatherpack on Leads

SS Single Spade
DS Double Spade
HC DIN 43650 (Hirschman) – (AC & DC)
CL Conduit Lead – (AC Only)
DI Deutsch – Integral DT04-2P

IMMERSION PROOF "D" TYPE

IA "I" Coil AMP Superseal - Integral
ID "I" Coil Deutsch – Integral DT04-2P
IJ "I" Coil AMP Jr. Timer - Integral
IM "I" Coil Metri-Pack – Integral

Approximate Coil Weight: .68 lbs. (.31 kg.)

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.

Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

TT-S2A Pilot Operated Poppet, 2 Way Normally Closed

DESCRIPTION

12 size, 1 1/16-12 thread, "Tecnorm" series, solenoid operated, 2 way normally closed, pilot operated poppet valve with reverse flow de-energized.

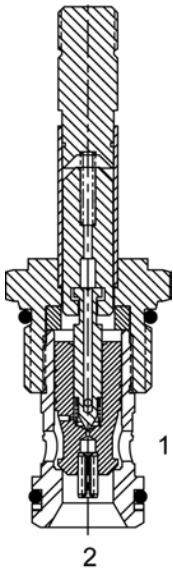
OPERATION

When de-energized the TT-S2A blocks flow from (1) to (2) and allows reverse flow from (2) to (1). When energized the valve allows flow from (1) to (2) and restricts flow from (2) to (1).

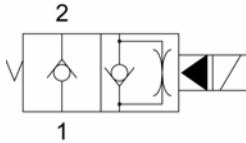
OPERATION OF MANUAL OVERRIDE OPTION: To override, pull knob out. On the detented version, after pulling knob out twist 180 degrees and release. The valve will remain in that position.

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

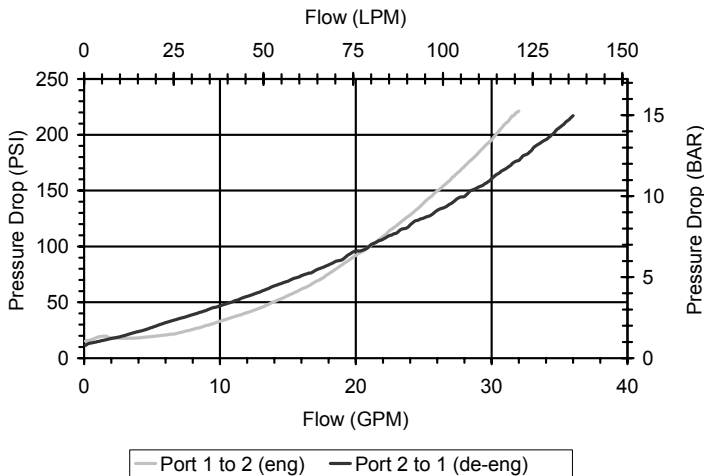


HYDRAULIC SYMBOL



PERFORMANCE

Actual Test Data (Cartridge Only)

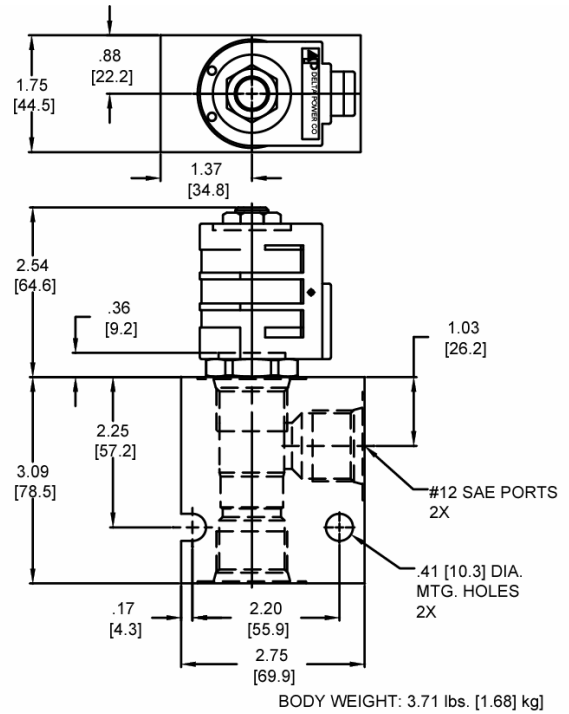
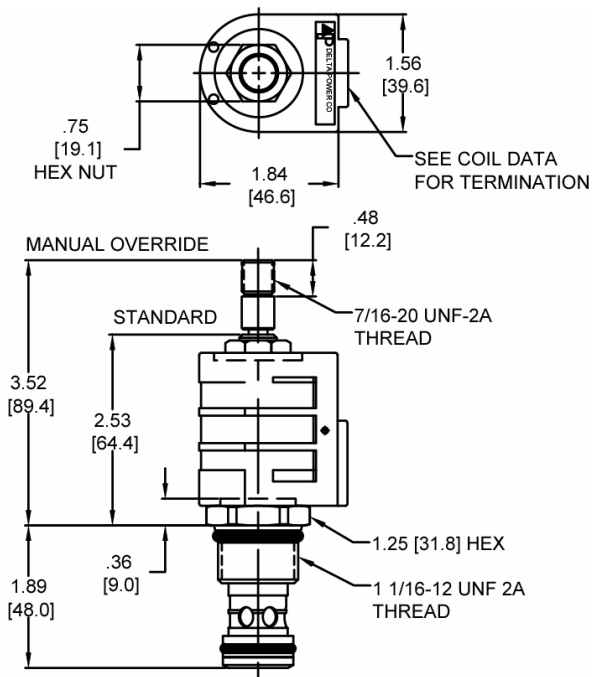


VALVE SPECIFICATIONS

Nominal Flow	25 GPM (95 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 Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	49 lbs. (.22 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	70 ft-lbs (94.9 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 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



ORDERING INFORMATION

TT-S2A

OPTIONS				BODIES
Buna, Standard	00		Blank	Without Body
Viton, Standard	V0		S	#12 SAE Ports
Buna, Override	OM			
Viton, Override	VM			
Buna, Screen	A0			
Viton, Screen	W0			
Buna, Override, Non-detent	BI		06	VOLTAGE
Viton, Override, Non-detent	VI		12	6 VDC
Buna, Screen, Override, Non-detent	B3		24	12 VDC
Buna, Screen, Override, Detent	B4		36	24 VDC
Viton, Screen, Override, Non-detent	V3		48	36 VDC
Viton, Screen, Override, Detent	V4		25	48 VDC
			11	24 VAC
			11	120 VAC
			22	220 VAC
			44	440 VAC

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

"D" COIL TERMINATION
(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04-2P
- ML** Metri-Pack on Leads
- PL** Packard on Leads
- WL** Weatherpack on Leads

- SS** Single Spade
- DS** Double Spade
- HC** DIN 43650 (Hirschman) – (AC & DC)
- CL** Conduit Lead – (AC Only)
- DI** Deutsch – Integral DT04-2P

IMMERSION PROOF "D" TYPE

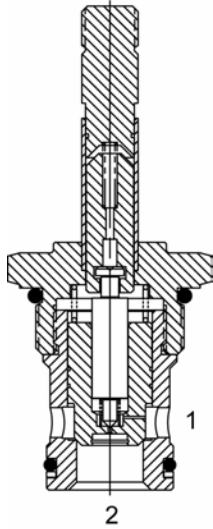
- IA** "I" Coil AMP Superseal - Integral
- ID** "I" Coil Deutsch – Integral DT04-2P
- IJ** "I" Coil AMP Jr. Timer - Integral
- IM** "I" Coil Metri-Pack – Integral

Approximate Coil Weight: .74 lbs. (.33 kg.)

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-S2A Pilot Operated Poppet, 2 Way Normally Closed



DESCRIPTION

16 size, 1 5/16-12 thread, "Super" series, solenoid operated, 2 way normally closed, pilot operated poppet valve with reverse flow de-energized.

OPERATION

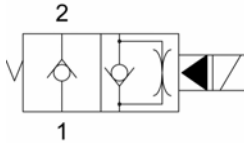
When de-energized the SJ-S2A blocks flow from (1) to (2) and allows reverse flow from (2) to (1). When energized the valve allows flow from (1) to (2) and restricted flow from (2) to (1).

OPERATION OF MANUAL OVERRIDE OPTION: To override, pull knob out. On the detented version, after pulling knob out twist 180 degrees and release. The valve will remain in that position.

FEATURES

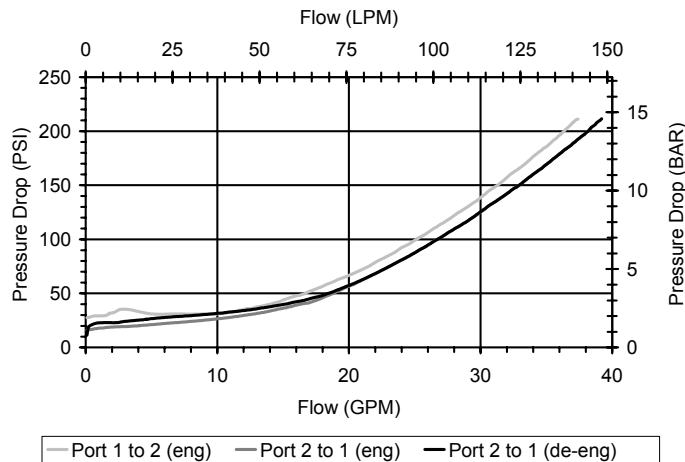
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

HYDRAULIC SYMBOL



PERFORMANCE

Actual Test Data (Cartridge Only)

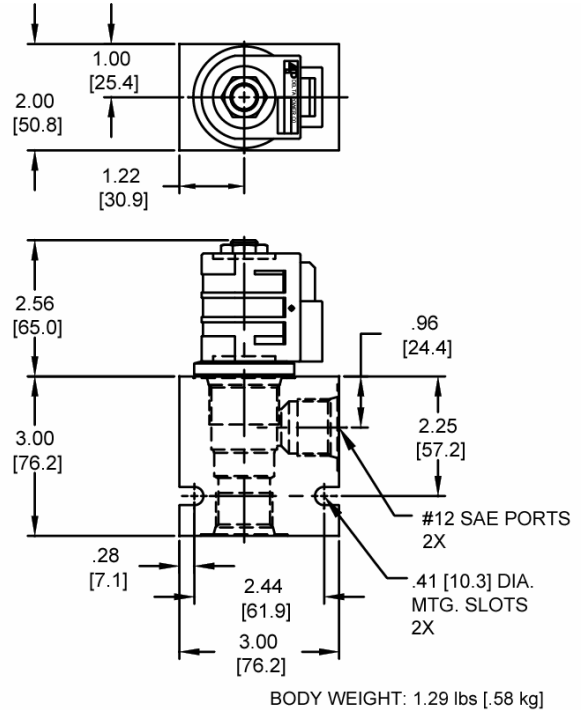
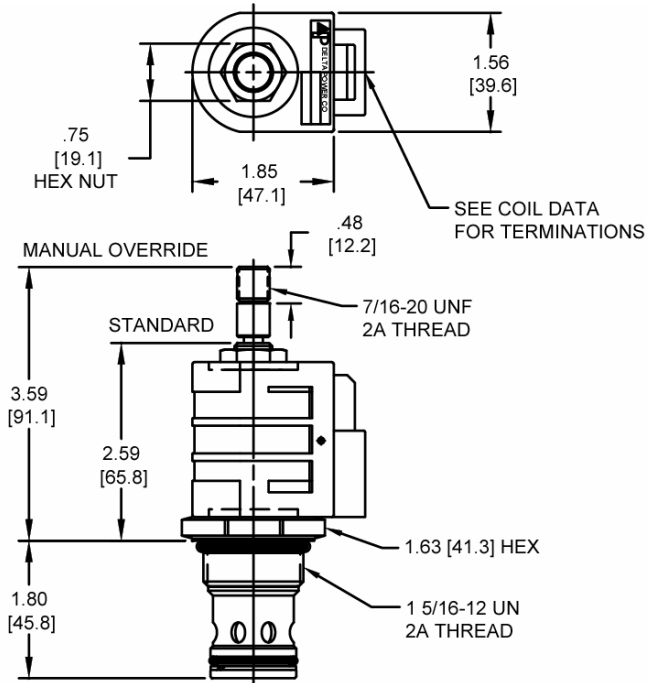


VALVE SPECIFICATIONS

Nominal Flow	30 GPM (114 LPM)
Rated Operating Pressure	3500 PSI (241 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 Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.72 lbs. (.32 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	90 ft-lbs (122 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 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



ORDERING INFORMATION

SJ-S2A - - - -

- OPTIONS**
- Buna Standard **00**
 - Viton Standard **V0**
 - Buna, Override, Detent **0M**
 - Viton, Override, Detent **VM**
 - Buna, Override, Nondetent **B1**
 - Viton, Override, Nondetent **V1**

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

- VOLTAGE**
- 06** 6 VDC
 - 12** 12 VDC
 - 24** 24 VDC
 - 36** 36 VDC
 - 48** 48 VDC
 - 25** 24 VAC
 - 11** 120 VAC
 - 22** 220 VAC
 - 44** 440 VAC

"D" COIL TERMINATION
(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04-2P
- ML** Metri-Pack on Leads
- PL** Packard on Leads
- WL** Weatherpack on Leads

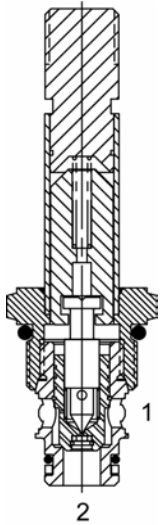
- SS** Single Spade
- DS** Double Spade
- HC** DIN 43650 (Hirschman) - (AC & DC)
- CL** Conduit Lead - (AC Only)
- DI** Deutsch - Integral DT04-2P

- IMMERSION PROOF "D" TYPE**
- IA** "I" Coil AMP Superseal - Integral
 - ID** "I" Coil Deutsch - Integral DT04-2P
 - IJ** "I" Coil AMP Jr. Timer - Integral
 - IM** "I" Coil Metri-Pack - Integral

Approximate Coil Weight: .74 lbs (.33 kg.)

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-S2B Pilot Operated Poppet, 2 Way Normally Closed



DESCRIPTION

8 size, 3/4-16 thread, "Power" series, solenoid operated, 2 way normally closed, pilot operated poppet valve with reverse flow energized and de-energized.

OPERATION

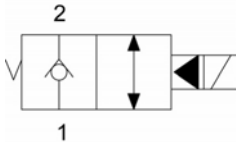
When de-energized the PB-S2B blocks flow from (1) to (2) and allows reverse flow from (2) to (1). When energized the valve allows flow from (1) to (2) and (2) to (1).

OPERATION OF MANUAL OVERRIDE OPTION: To override, pull knob out. On the detented version, after pulling knob out twist 180 degrees and release. The valve will remain in that position.

FEATURES

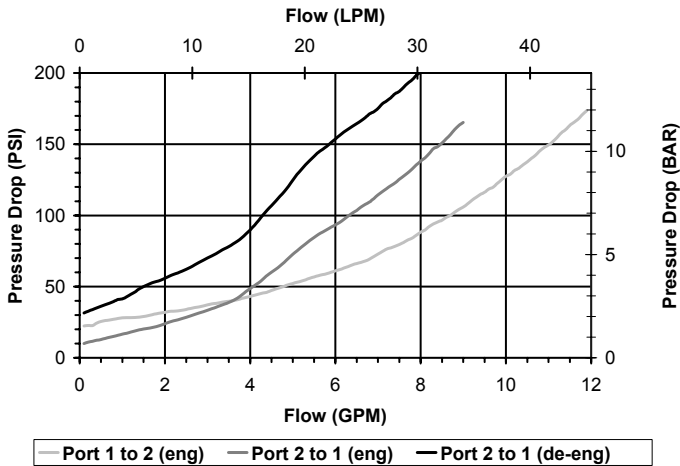
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

HYDRAULIC SYMBOL



PERFORMANCE

Actual Test Data (Cartridge Only)

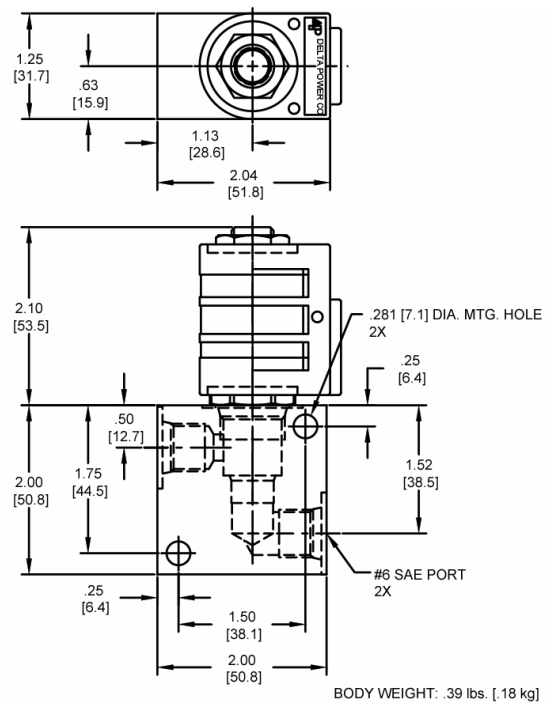
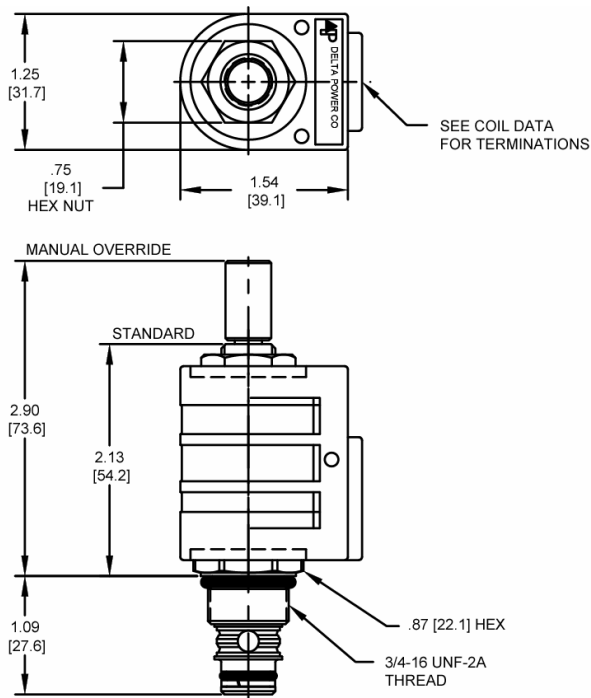


VALVE SPECIFICATIONS

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 Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.20 lbs. (.09 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 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



ORDERING INFORMATION

PB-S2B - - - -

OPTIONS

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Override, Detent **0M**
- Viton, Override, Detent **VM**
- Buna, Screen **A0**
- Viton, Screen **W0**
- Buna, Override, Nondetent **B1**
- Viton, Override, Nondetent **V1**
- Buna, Screen, Override, Nondetent **B3**
- Viton, Screen, Override, Nondetent **V3**
- Buna, Screen, Override, Detent **B4**
- Viton, Screen, Override, Detent **V4**

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

"P" COIL TERMINATION

(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04-2P
- ML** Metri-Pack on Leads
- PL** Parkard on Leads
- WL** Weatherpack on Leads

- SS** Single Spade
- DS** Double Spade
- HC** DIN 43650 (Hirschman) - (AC & DC)
- CL** Conduit Lead - (AC Only)
- DI** Deutsch - Integral DT04-2P

BODIES

- Blank
- N** 1/4 NPTF Ports
- S** #6 SAE Ports

VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 25** 24 VAC
- 11** 120 VAC
- 22** 220 VAC
- 44** 440 VAC

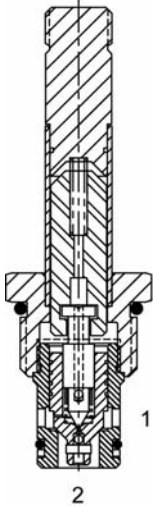
IMMERSION PROOF "P" TYPE

- IA** "I" Coil AMP Superseal - Integral
- ID** "I" Coil Deutsch - Integral DT04-2P
- IJ** "I" Coil AMP Jr. Timer - Integral
- IM** "I" Coil Metri-Pack - Integral

Approximate Coil Weight: .42 lbs/.19 kg.

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-S2B Pilot Operated Poppet, 2 Way Normally Closed



DESCRIPTION

10 size, 7/8-14 thread, "Delta" series, solenoid operated, 2 way normally closed, pilot operated poppet valve with reverse flow energized and de-energized.

OPERATION

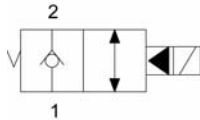
When de-energized the DE-S2B acts as a check valve, allowing flow to pass from (2) to (1), while blocking flow from (1) to (2). When energized the valve opens allowing flow to pass from (1) to (2).

OPERATION OF MANUAL OVERRIDE OPTION: To override, pull knob out. On the detented version, after pulling knob out twist 180 degrees and release. The valve will remain in that position.

FEATURES

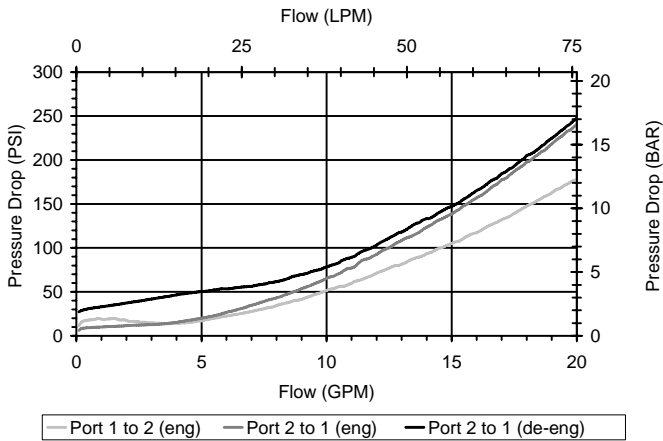
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

HYDRAULIC SYMBOL



PERFORMANCE

Actual Test Data (Cartridge Only)

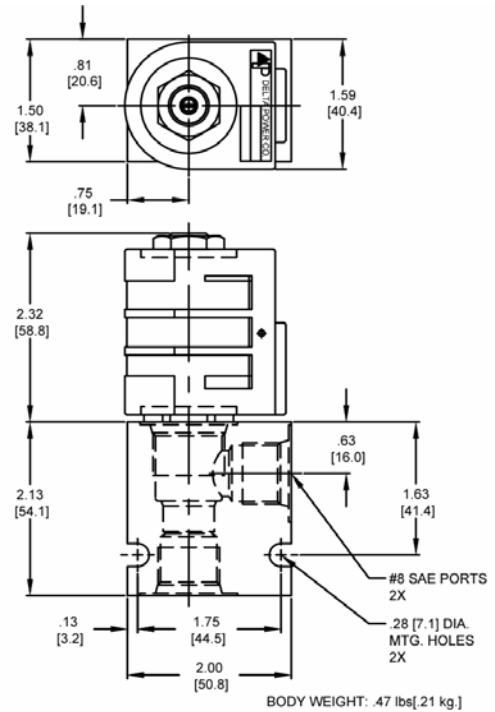
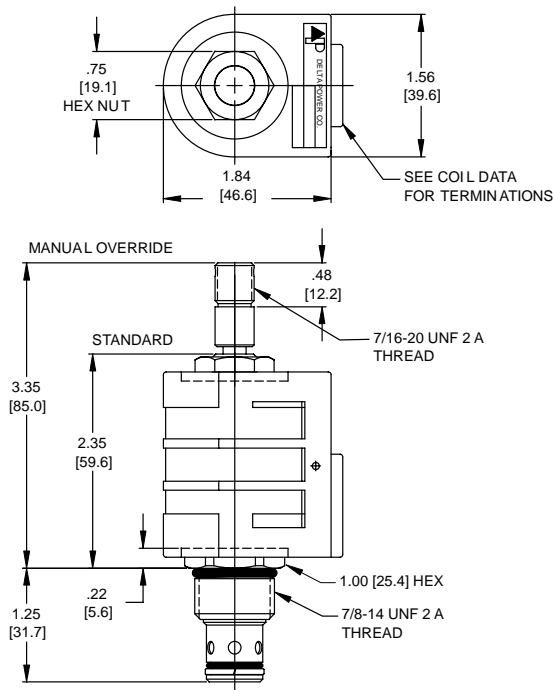


VALVE SPECIFICATIONS

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 Temperature 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)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 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



ORDERING INFORMATION

DE-S2B - - - -

OPTIONS

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Override **0M**
- Viton, Override **VM**
- Buna & Screen **A0**
- Viton & Screen **W0**
- Buna, Override, Non-detent **B1**
- Viton, Override, Non-detent **V1**
- Buna, Screen, Override, Non-detent **B3**
- Buna, Screen, Override, Detent **B4**
- Viton, Screen, Override, Non-detent **V3**
- Viton, Screen, Override, Detent **V4**

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

"D" COIL TERMINATION
(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04-2P
- ML** Metri-Pack on Leads
- PL** Packard on Leads
- WL** Weatherpack on Leads

- SS** Single Spade
- DS** Double Spade
- HC** DIN 43650 (Hirschman) - (AC & DC)
- CL** Conduit Lead - (AC Only)
- DI** Deutsch - Integral DT04-2P

BODIES

- Blank
- N** 3/8 NPTF Ports
- S** #8 SAE Ports

VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 25** 24 VAC
- 11** 120 VAC
- 22** 220 VAC
- 44** 440 VAC

IMMERSION PROOF "D" TYPE

- IA** "I" Coil AMP Superseal - Integral
- ID** "I" Coil Deutsch - Integral DT04-2P
- IJ** "I" Coil AMP Jr. Timer - Integral
- IM** "I" Coil Metri-Pack - Integral

Approximate Coil Weight: .74 lbs (.33 kg.)

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.

TT-S2B Pilot Operated Poppet, 2 Way Normally Closed

DESCRIPTION

12 size, 1 1/16-12 thread, "Tecnorm" series, solenoid operated, 2 way normally closed, pilot operated poppet valve with reverse flow energized and de-energized.

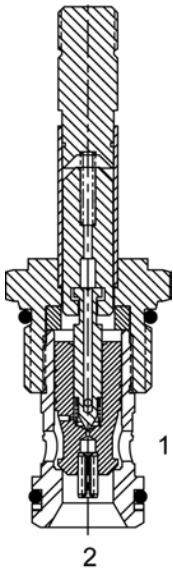
OPERATION

When de-energized the TT-S2B blocks flow from (1) to (2) and allows reverse flow from (2) to (1). When energized the valve allows flow from (1) to (2) and from (2) to (1).

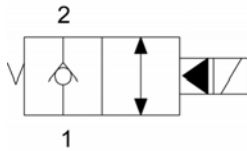
OPERATION OF MANUAL OVERRIDE OPTION: To override, pull knob out. On the detented version, after pulling knob out twist 180 degrees and release. The valve will remain in that position.

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

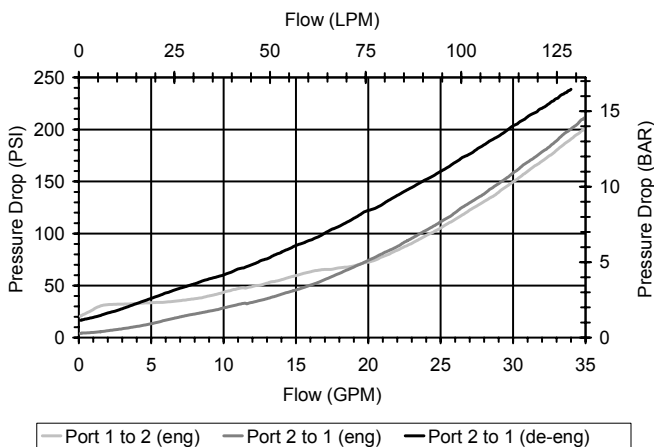


HYDRAULIC SYMBOL



PERFORMANCE

Actual Test Data (Cartridge Only)

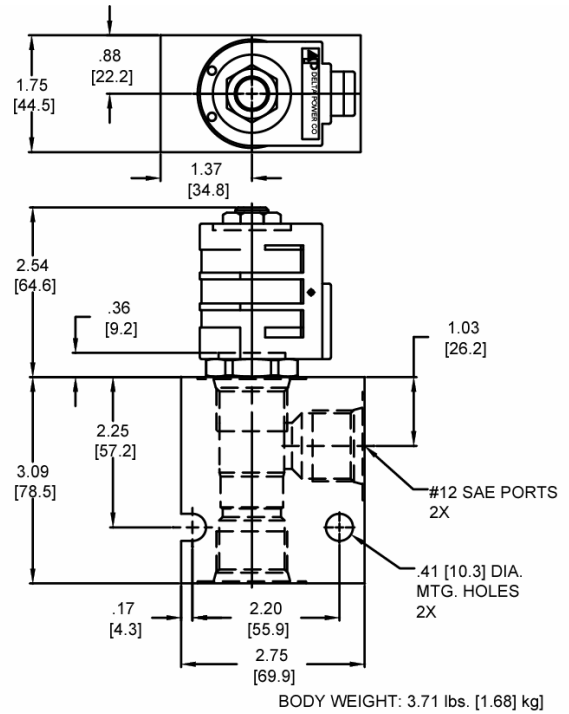
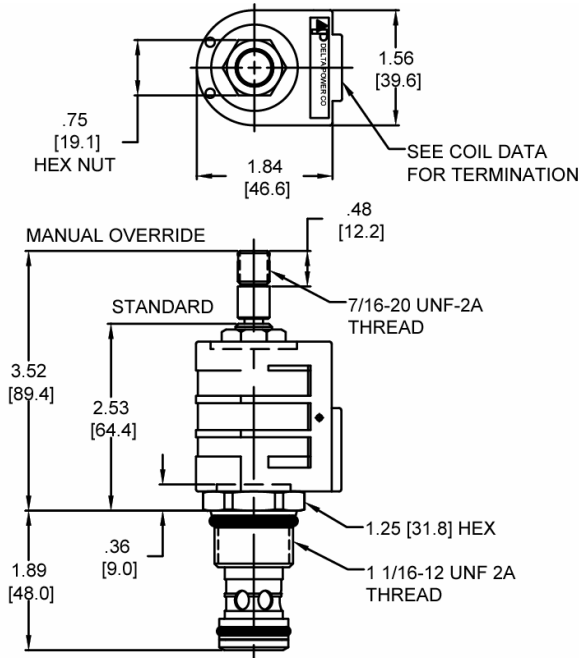


VALVE SPECIFICATIONS

Nominal Flow	25 GPM (95 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 Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	49 lbs. (22 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	70 ft-lbs (94.9 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 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



ORDERING INFORMATION

TT-S2B - - -

OPTIONS

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Override **0M**
- Viton, Override **VM**
- Buna & Screen **A0**
- Viton & Screen **W0**
- Buna, Override, Non-detent **B1**
- Viton, Override, Non-detent **V1**
- Buna, Screen, Override, Non-detent **B3**
- Buna, Screen, Override, Detent **B4**
- Viton, Screen, Override, Non-detent **V3**
- Viton, Screen, Override, Detent **V4**

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

"D" COIL TERMINATION
(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04-2P
- ML** Metri-Pack on Leads
- PL** Packard on Leads
- WL** Weatherpack on Leads

- SS** Single Spade
- DS** Double Spade
- HC** DIN 43650 (Hirschman) - (AC & DC)
- CL** Conduit Lead - (AC Only)
- DI** Deutsch - Integral DT04-2P

- Blank
- S**

BODIES

- Without Body
- #12 SAE Ports**

VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 25** 24 VAC
- 11** 120 VAC
- 22** 220 VAC
- 44** 440 VAC

IMMERSION PROOF "D" TYPE

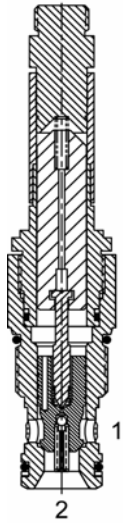
- IA** "I" Coil AMP Superseal - Integral
- ID** "I" Coil Deutsch - Integral DT04-2P
- IJ** "I" Coil AMP Jr. Timer - Integral
- IM** "I" Coil Metri-Pack - Integral

Approximate Coil Weight: .74 lbs. (.33 kg.)

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-S2B Pilot Operated Poppet, 2 Way Normally Closed



DESCRIPTION

“High pressure” 12 size, 1 1/16-12 thread, “Tecnorm” series, solenoid operated, 2 way normally closed, pilot operated poppet valve with reverse flow energized and de-energized.

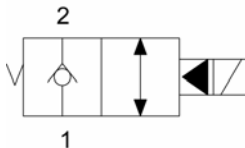
OPERATION

When de-energized the HT-S2B blocks flow from (1) to (2) and allows reverse flow from (2) to (1). When energized the valve allows flow from (1) to (2) and from (2) to (1).

FEATURES

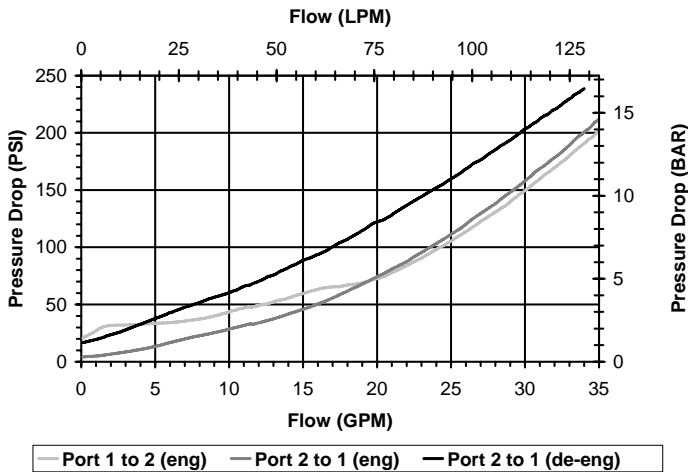
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

HYDRAULIC SYMBOL



PERFORMANCE

Actual Test Data (Cartridge Only)

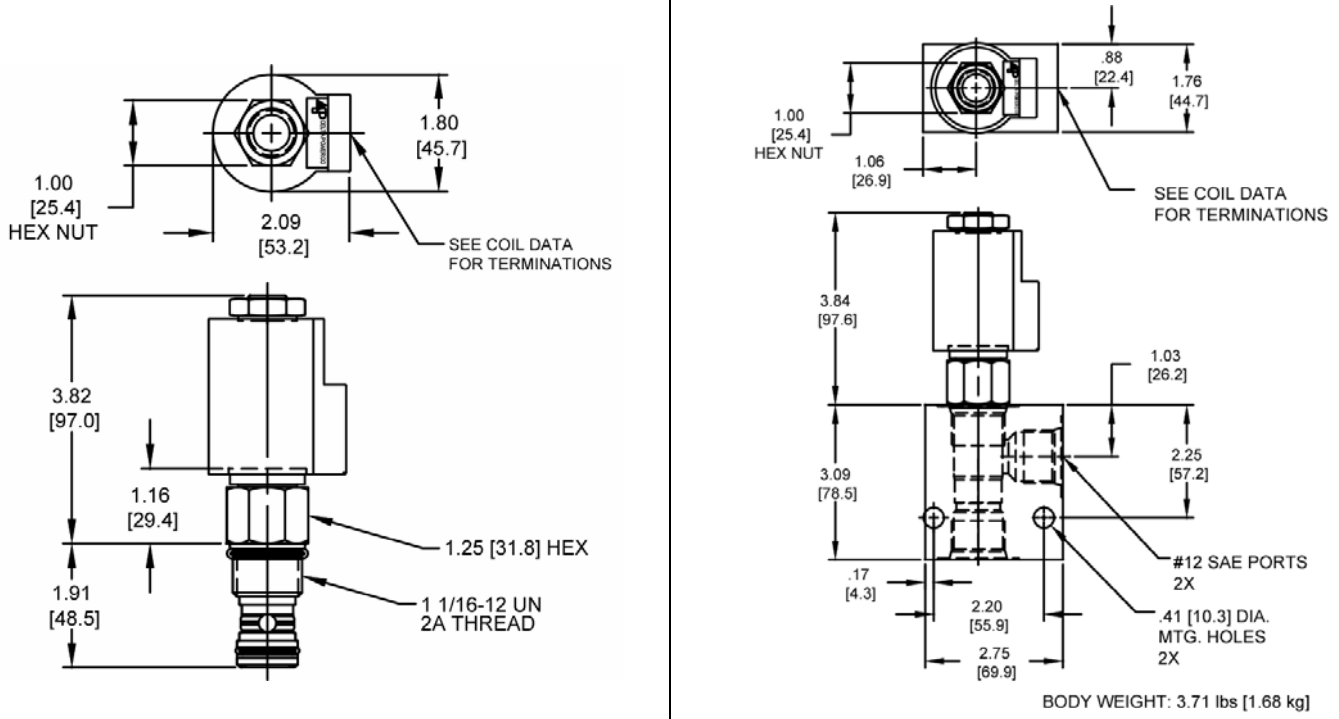


VALVE SPECIFICATIONS

Nominal Flow	25 GPM (95 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 Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.94 lbs. (.43 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	70 ft-lbs (94.9 Nm)
Coil Nut Torque Requirements	5-7 ft-lbs (6.8-9.5 Nm)
Cavity	TECNORD 2W
Cavity Form Tool (Finishing)	40500032
Seal Kit	21191301

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

HT-S2B - - - -

OPTIONS

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

- Blank
- S**

BODIES

- Without Body
- #12 SAE Ports**

VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 25** 24 VAC
- 11** 120 VAC
- 22** 220 VAC

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

"T" COIL TERMINATION

- (All DC Except as Noted)
- Double Lead **DL**
- Deutsch on Leads **DT**
- Metri-Pack on Leads **ML**
- Packard on Leads **PL**
- Weatherpak on Leads **WL**
- Double Spade **DS**
- DIN 43650 (Hirschman) - (AC/DC) **HC**

Approximate Coil Weight: .89 lbs/.41 kg.

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-S2B Pilot Operated Poppet, 2 Way Normally Closed

DESCRIPTION

16 size, 1 5/16-12 thread, "Super" series, solenoid operated, 2 way normally closed, pilot operated poppet valve with reverse flow energized and de-energized.

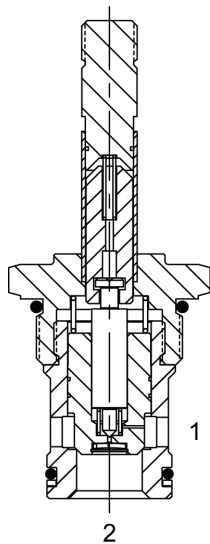
OPERATION

When de-energized the SJ-S2B blocks flow from (1) to (2) and allows reverse flow from (2) to (1). When energized the valve allows flow from (1) to (2) and from (2) to (1).

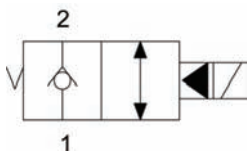
OPERATION OF MANUAL OVERRIDE OPTION: To override, pull knob out. On the detented version, after pulling knob out twist 180 degrees and release. The valve will remain in that position.

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

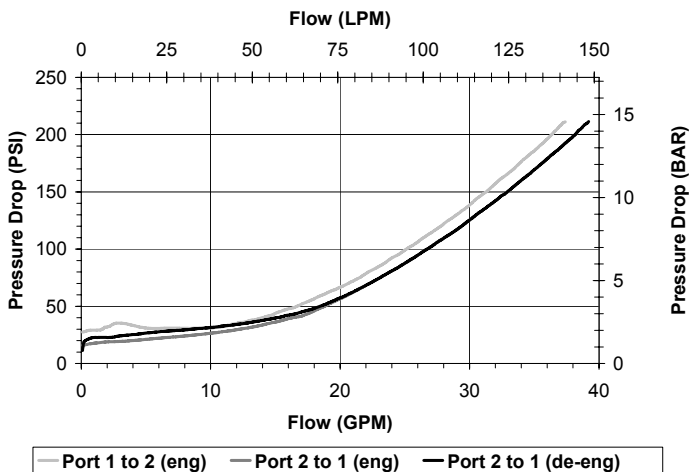


HYDRAULIC SYMBOL



PERFORMANCE

Actual Test Data (Cartridge Only)

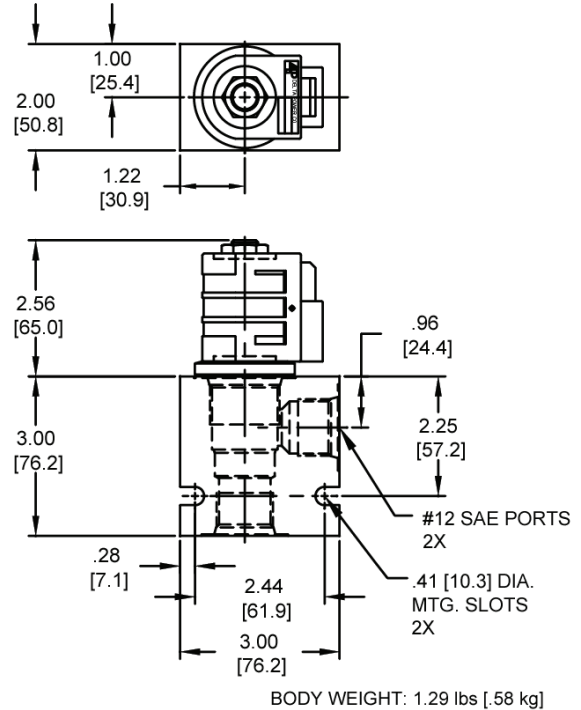
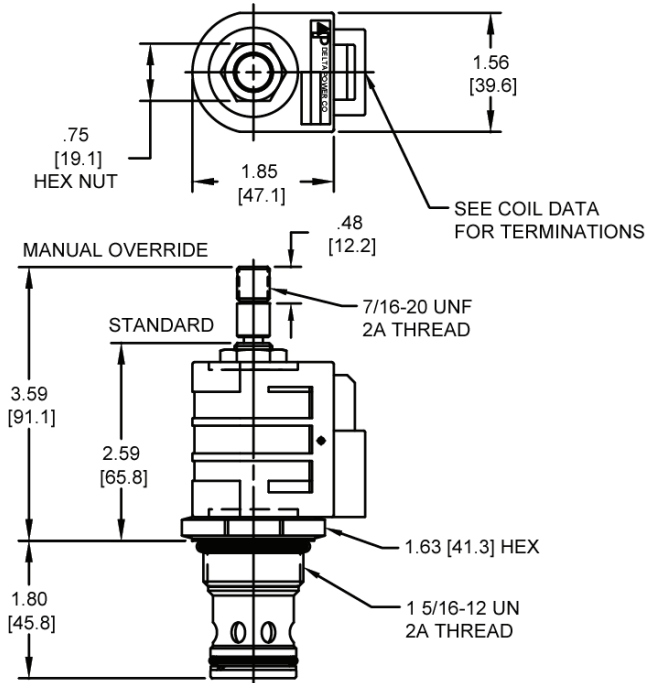


VALVE SPECIFICATIONS

Nominal Flow	30 GPM (114 LPM)
Rated Operating Pressure	3500 PSI (241 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 Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.72 lbs. (.32 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	90 ft-lbs (122 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 Nm)
Cavity	SUPER 2W
Cavity Form Tool (Finishing)	40500017
Seal Kit	21191401

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

SJ-S2B - - - -

OPTIONS

- Buna Standard **00**
- Viton Standard **VO**
- Buna, Screen **A0**
- Viton, Screen **W0**
- Buna, Override, Detent **0M**
- Viton, Override, Detent **VM**
- Buna, Override, Non-detent **B1**
- Viton, Override, Non-detent **V1**
- Buna, Screen, Override, Non-detent **B3**
- Viton, Screen, Override, Non-detent **V3**
- Buna, Screen, Override, Detent **B4**
- Viton, Screen, Override, Detent **V4**

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

BODIES

- Blank
- N** 3/4 NPT Ports
- S** #12 SAE Ports

VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 25** 24 VAC
- 11** 120 VAC
- 22** 220 VAC
- 44** 440 VAC

"D" COIL TERMINATION

(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04-2P
- ML** Metri-Pack on Leads
- PL** Packard on Leads
- WL** Weatherpack on Leads

- SS** Single Spade
- DS** Double Spade
- HC** DIN 43650 (Hirschman) - (AC & DC)
- CL** Conduit Lead - (AC Only)
- DI** Deutsch - Integral DT04-2P


IMMERSION PROOF "D" TYPE

- IA** "I" Coil AMP Superseal - Integral
- ID** "I" Coil Deutsch - Integral DT04-2P
- IJ** "I" Coil AMP Jr. Timer - Integral
- IM** "I" Coil Metri-Pack - Integral

Approximate Coil Weight: .74 lbs (.33 kg.)

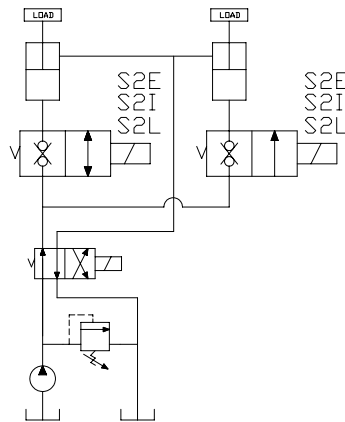
WARNING: The specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

2 Way 2 Position Normally Closed Bi-Directional Valves

	GPM	PSI	LPM	BAR	MODEL	PAGE
	0.20	3000	0.76	207	MA-S2E	36
	3	3000	11	207	PB-S2I	38
	3	3000	15	207	DE-S2I	40
	11	5000	42	345	HB-S2L	592
	12	3000	45	207	DE-S2L	42

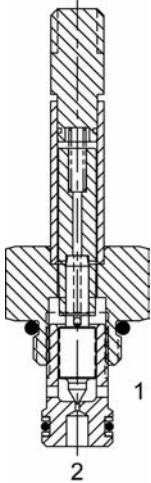
Typical Schematic

Typical application for the S2E, S2I, and S2L is where load holding in both directions is required.



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.

MA-S2E Poppet, 2 Way, Normally Closed, Bi-directional



DESCRIPTION

7 size, 5/8-18 thread, "Mini" series, solenoid operated, 2 way normally closed, bi-directional poppet valve.

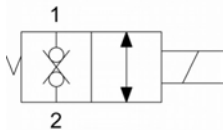
OPERATION

When de-energized the MA-S2E blocks flow from (1) to (2) and (2) to (1). When energized the valve allows flow from (1) to (2) and (2) to (1).

FEATURES

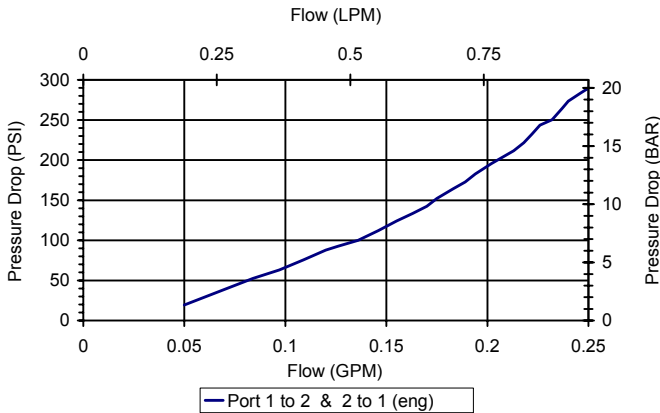
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

HYDRAULIC SYMBOL



PERFORMANCE

Actual Test Data (Cartridge Only)

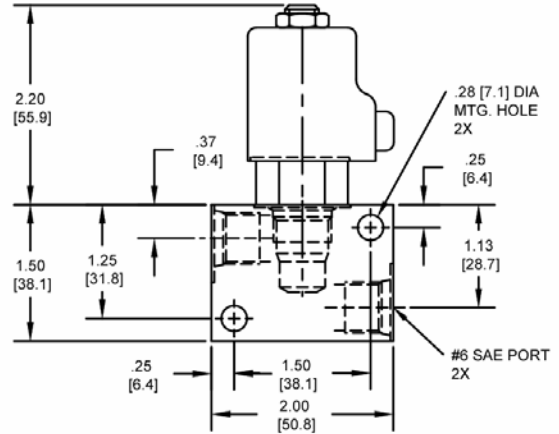
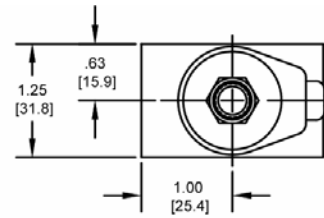
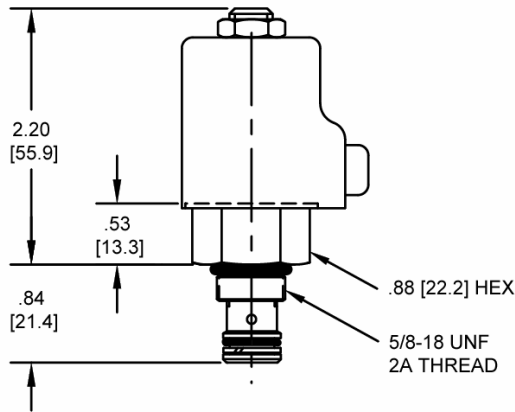
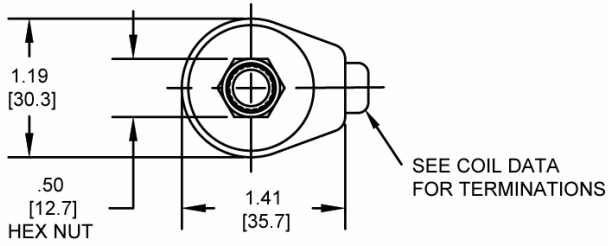


VALVE SPECIFICATIONS

Nominal Flow	20 GPM (.76 LPM)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	0-10 drops/min
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.18 lbs. (.08 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	15 ft-lbs (20.3 Nm)
Coil Nut Torque Requirements	3-5 ft-lbs (4.1-6.8 Nm)
Cavity	MINI 2W
Cavity Form Tool (Finishing)	40500003
Seal Kit	21191003

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



MA-S2E - - - -

OPTIONS

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

- Blank
- N** 1/4 NPTF Ports
- S** #6 SAE Ports

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

"M" COIL TERMINATION

(All DC Except as Noted)

- Double Lead **DL**
- Deutsch on Leads DT04-2P **DT**
- Metri-Pack on Leads **ML**
- Parkard on Leads **PL**
- Weather on Leads **WL**
- Single Spade **SS**
- Double Spade **DS**
- DIN 43650 (Hirschmann) - (AC&DC) **HC**
- Conduit Lead - (AC only) **CL**

BODIES

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

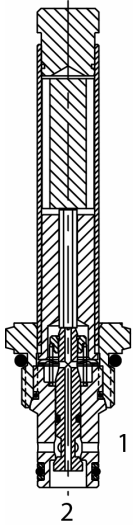
VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 25** 24 VAC
- 11** 120 VAC
- 22** 220 VAC
- 44** 440 VAC

Approximate Coil Weight: .30 lbs/.14 kg.

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-S2I Poppet, 2 Way, Normally Closed, Bi-Directional



DESCRIPTION

8 size, 3/4-16 thread, "Power" series, solenoid operated, 2 way normally closed, bi-directional poppet valve.

OPERATION

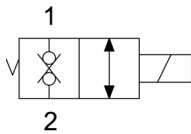
When de-energized the PB-S2I blocks flow from (1) to (2) and (2) to (1). When energized the valve allows flow from (1) to (2) and (2) to (1).

OPERATION OF MANUAL OVERRIDE OPTION: To override, turn the manual override screw clockwise. To release turn the manual override screw counter-clockwise.

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

HYDRAULIC SYMBOL



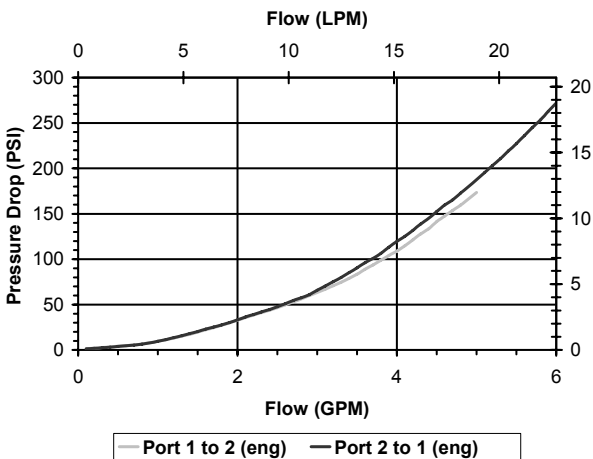
Uses "D" Delta coil.

Higher pressure or higher flow capable, consult factory for options.

For Higher flow see HB-S2L.

PERFORMANCE

Actual Test Data (Cartridge Only)



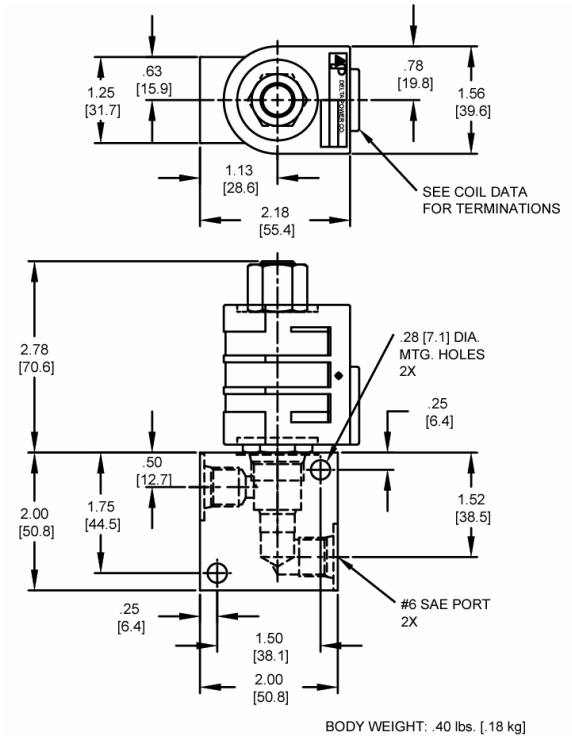
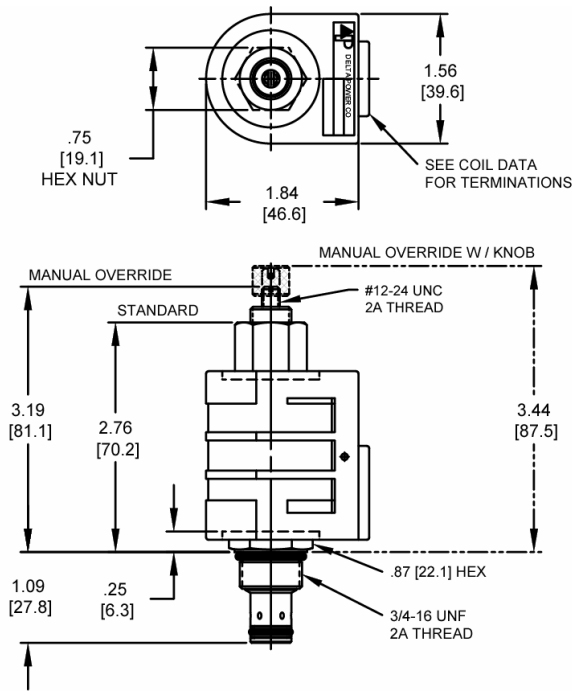
VALVE SPECIFICATIONS

Nominal Flow	3 GPM (11 LPM)
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 Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.15 lbs. (.07 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 Nm)
Cavity	POWER 2W
Cavity Form Tool (Finishing)	40500005
Seal Kit	21191102

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

PB-S2I - - - -

OPTIONS

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Override **0M**
- Viton, Override **VM**
- Buna, Override, Knob **OK**
- Viton, Override, Knob **VK**
- Buna, Screen **A0**
- Viton, Screen **W0**
- Buna, Screen, Override **B2**
- Viton, Screen, Override **V2**
- Buna, Screen, Override, Knob **B5**
- Viton, Screen, Override, Knob **V5**

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

BODIES

- Blank
- N** 1/4 NPTF Ports
- S** #6 SAE Ports

VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 25** 24 VAC
- 11** 120 VAC
- 22** 220 VAC
- 44** 440 VAC

"D" COIL TERMINATION

(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04-2P
- ML** Metri-Pack on Leads
- PL** Packard on Leads
- WL** Weatherpack on Leads

- SS** Single Spade
- DS** Double Spade
- HC** DIN 43650 (Hirschman) - (AC & DC)
- CL** Conduit Lead - (AC Only)
- DI** Deutsch - Integral DT04-2P

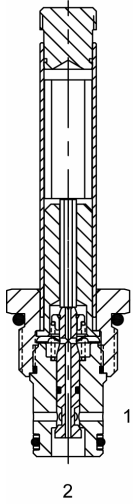
IMMERSION PROOF "D" TYPE

- IA** "I" Coil AMP Superseal - Integral
- ID** "I" Coil Deutsch - Integral DT04-2P
- IJ** "I" Coil AMP Jr. Timer - Integral
- IM** "I" Coil Metri-Pack - Integral

Approximate Coil Weight: .74 lbs (.33 kg.)

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-S2I Poppet, 2 Way, Normally Closed, Bi-Directional



DESCRIPTION

10 size, 7/8-14 thread, "Delta" series, solenoid operated, 2 way normally closed, bi-directional poppet valve.

OPERATION

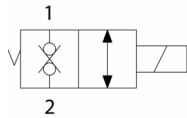
When de-energized the DE-S2I blocks flow from (1) to (2) and (2) to (1). When energized the valve allows flow from (1) to (2) and (2) to (1).

OPERATION OF MANUAL OVERRIDE OPTION: To override, turn the manual override screw clockwise. To release turn the manual override screw counter-clockwise.

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

HYDRAULIC SYMBOL

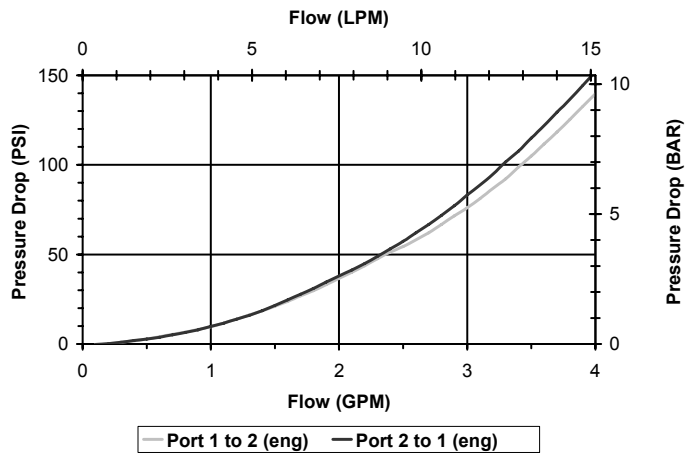


Higher pressure or higher flow capable, consult factory for options.

For Higher flow see DE-S2L.

PERFORMANCE

Actual Test Data (Cartridge Only)



VALVE SPECIFICATIONS

Nominal Flow	3 GPM (11 LPM)
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 Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.21 lbs. (.09 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 Nm)
Cavity	DELTA 2W
Cavity Form Tool (Finishing)	40500000
Seal Kit	21191202

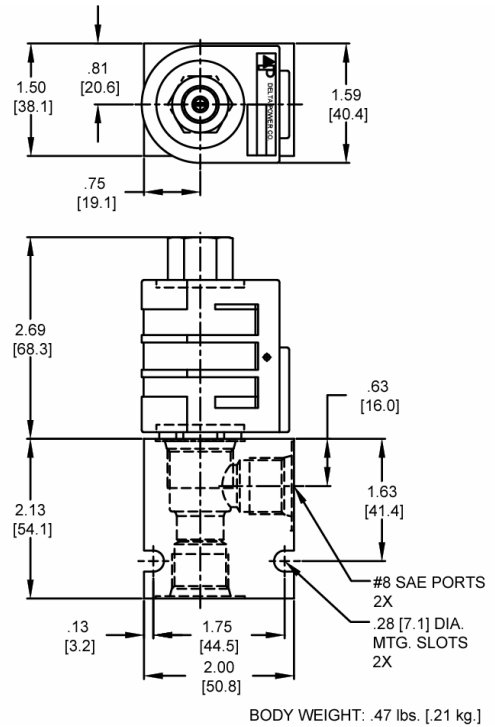
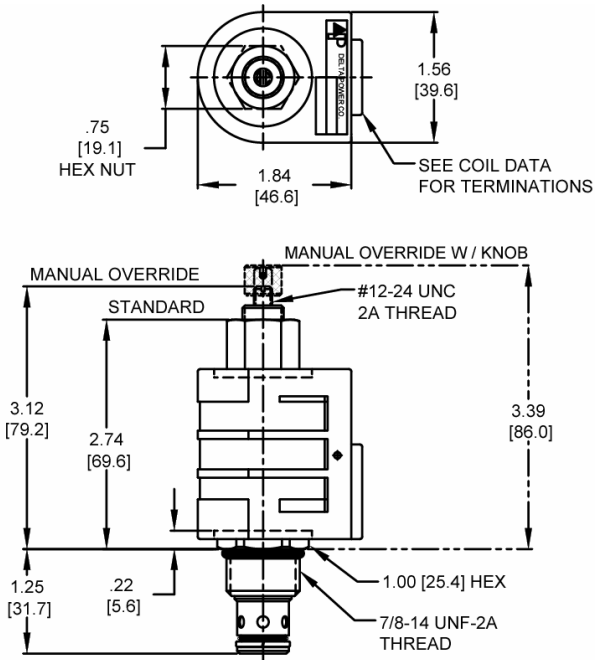
WARNING: The specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

DIMENSIONS



ORDERING INFORMATION

DE-S2I - - - -

OPTIONS

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Override **OM**
- Viton, Override **VM**
- Buna, Override, Knob **OK**
- Viton, Override, Knob **VK**
- Buna, Screen **A0**
- Viton, Screen **W0**
- Buna, Screen, Override **B2**
- Viton, Screen, Override **V2**
- Buna, Screen, Override, Knob **B5**
- Viton, Screen, Override, Knob **V5**

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

“D” COIL TERMINATION
(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04-2P
- ML** Metri-Pack on Leads
- PL** Packard on Leads
- WL** Weatherpack on Leads

- SS** Single Spade
- DS** Double Spade
- HC** DIN 43650 (Hirschman) – (AC & DC)
- CL** Conduit Lead – (AC Only)
- DI** Deutsch – Integral DT04-2P

BODIES

- Blank
- N** 3/8 NPTF Ports
- S** #8 SAE Ports

VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 25** 24 VAC
- 11** 120 VAC
- 22** 220 VAC
- 44** 440 VAC

IMMERSION PROOF “D” TYPE

- IA** “I” Coil AMP Superseal - Integral
- ID** “I” Coil Deutsch – Integral DT04-2P
- IJ** “I” Coil AMP Jr. Timer - Integral
- IM** “I” Coil Metri-Pack – Integral

Approximate Coil Weight: .72 lbs. (.32 kg.)

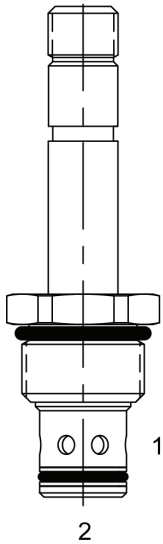
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Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

DE-S2L Piloted Operated Poppet, 2 Way, Normally Closed, Bi-directional



DESCRIPTION

10 size, 7/8-14 thread, "Delta" series, solenoid operated, 2 way normally closed, bi-directional poppet valve.

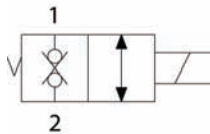
OPERATION

When de-energized the DE-S2L blocks flow from (1) to (2) and (2) to (1). When energized the valve allows flow from (1) to (2) and (2) to (1).

FEATURES

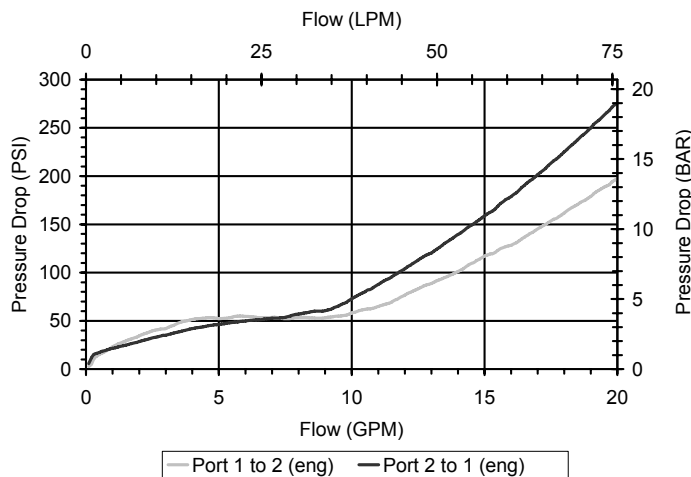
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

HYDRAULIC SYMBOL



PERFORMANCE

Actual Test Data (Cartridge Only)

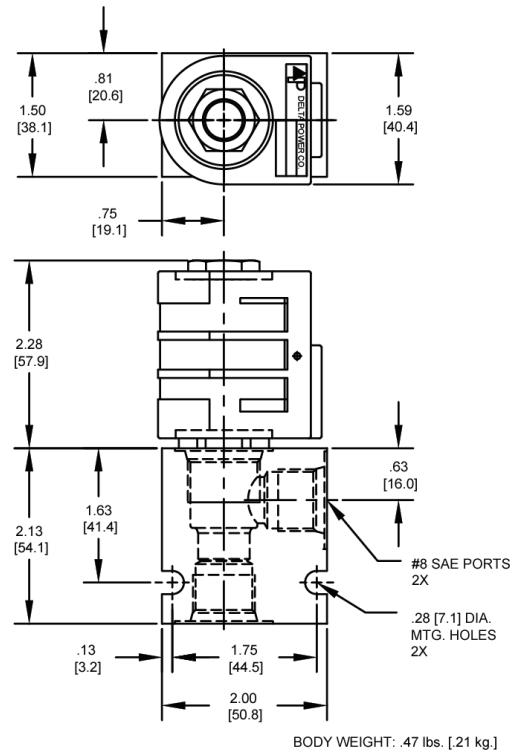
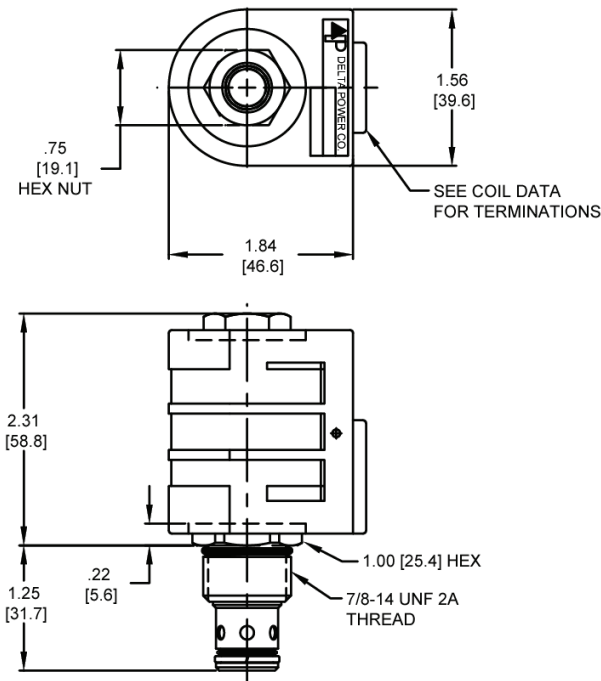


VALVE SPECIFICATIONS

Nominal Flow	12 GPM (45 LPM)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	0-10 drops/min
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature 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)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 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



ORDERING INFORMATION

DE-S2L - - - -

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

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

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

- VOLTAGE**
06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC
44 440 VAC

"D" COIL TERMINATION
(All DC Except as Noted)

- DL** Double Lead
DT Deutsch on Leads DT04-2P
ML Metri-Pack on Leads
PL Packard on Leads
WL Weatherpack on Leads

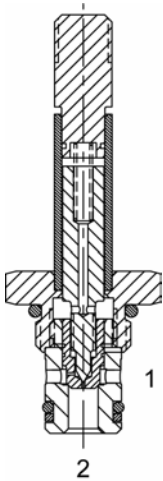
- SS** Single Spade
DS Double Spade
HC DIN 43650 (Hirschman) - (AC & DC)
CL Conduit Lead - (AC Only)
DI Deutsch - Integral DT04-2P

- IMMERSION PROOF "D" TYPE**
IA "I" Coil AMP Superseal - Integral
ID "I" Coil Deutsch - Integral DT04-2P
IJ "I" Coil AMP Jr. Timer - Integral
IM "I" Coil Metri-Pack - Integral

Approximate Coil Weight: .72 lbs. (.32 kg.)

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.

MA-S2F Pilot Operated Poppet, 2 Way, Normally Closed – Soft Seat



DESCRIPTION

7 size, 5/8-18 thread, "Mini" series, solenoid operated, 2 way normally closed, pilot operated soft seat poppet valve with reverse flow de-energized.

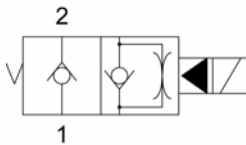
OPERATION

When de-energized the MA-S2F blocks flow from (1) to (2) and allows free reverse flow from (2) to (1). When energized the valve allows flow from (1) to (2) and restricts flow from (2) to (1).

FEATURES

- Soft seat for ultra low leakage.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

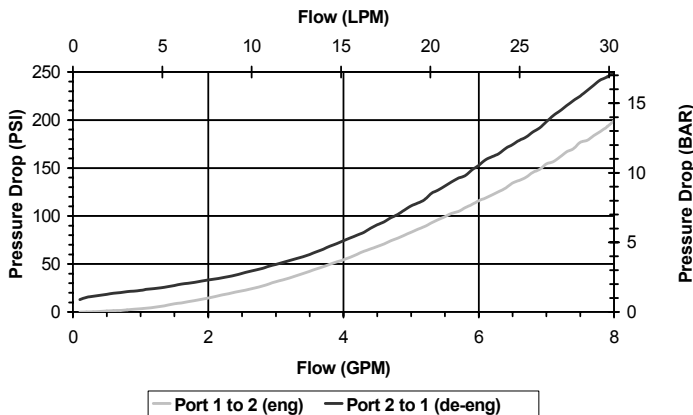
HYDRAULIC SYMBOL



Operational shift limit 2.5 GPM (9.5 LPM). For shifted flow performance consult chart.

PERFORMANCE

Actual Test Data (Cartridge Only)



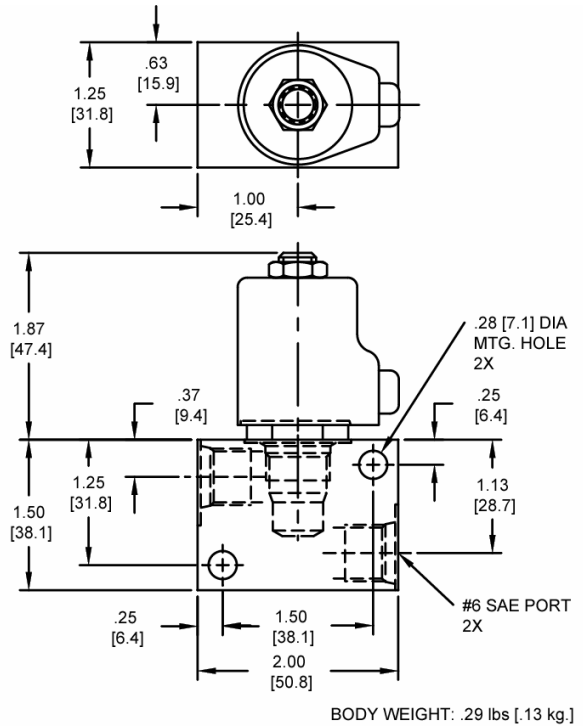
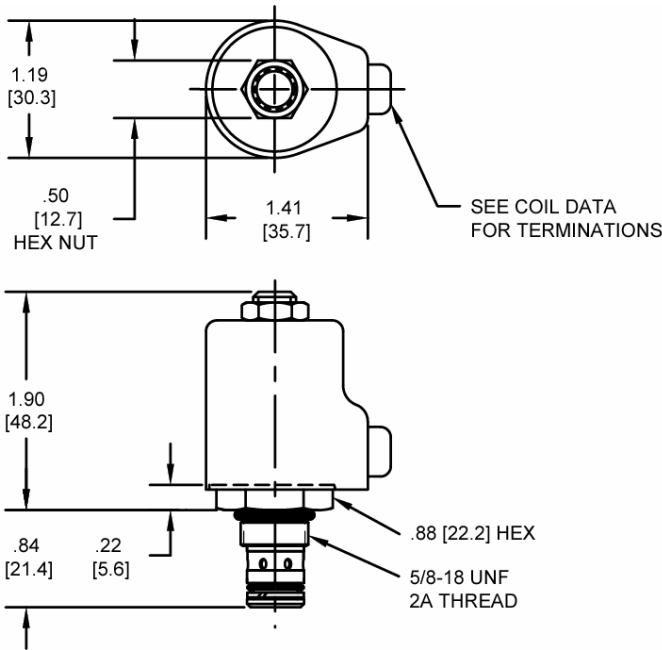
VALVE SPECIFICATIONS

Maximum 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 Temperature Range	32° to 160° F (0° to 70° C)
Weight	.12 lbs. (.05 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	15 ft-lbs (20.3 Nm)
Coil Nut Torque Requirements	3-5 ft-lbs (4.1-6.8 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



ORDERING INFORMATION

MA-S2F - - -

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).

"M" COIL TERMINATION

(All DC Except as Noted)

- Double Lead **DL**
- Deutsch on Leads DT04-2P **DT**
- Metri-Pack on Leads **ML**
- Packard on Leads **PL**
- Weatherpack on Leads **WL**
- Single Spade **SS**
- Double Spade **DS**
- DIN 43650 (Hirschman) - (AC&DC) **HC**
- Conduit Lead - (AC Only) **CL**

BODIES

- Blank
- N** 1/4 NPTF Ports
- S** #6 SAE Ports

VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 25** 24 VAC
- 11** 120 VAC
- 22** 220 VAC
- 44** 440 VAC

Approximate Coil Weight: .30 lbs. (.14 kg.)

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-S2F Pilot Operated Poppet, 2 Way Normally Closed – Soft Seat

DESCRIPTION

8 size, 3/4-16 thread, "Power" series, solenoid operated, 2 way normally closed, pilot operated soft seat poppet valve with reverse flow de-energized.

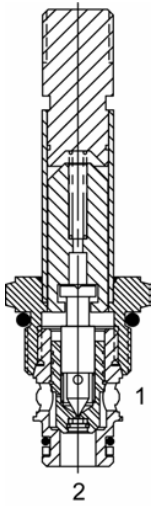
OPERATION

When de-energized the PB-S2F blocks flow from (1) to (2) and allows reverse flow from (2) to (1). When energized the valve allows flow from (1) to (2) and restrict flow from (2) to (1).

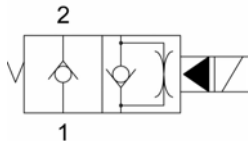
OPERATION OF MANUAL OVERRIDE OPTION: To override, pull knob out. On the detented version, after pulling knob out twist 180 degrees and release. The valve will remain in that position.

FEATURES

- Soft seat for ultra low leakage.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.



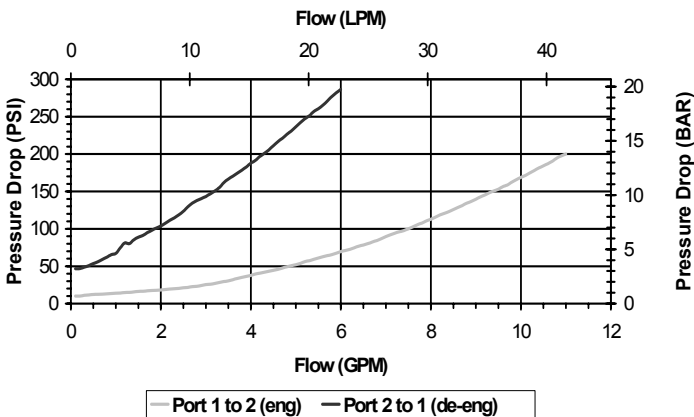
HYDRAULIC SYMBOL



Operational shift limit is 6 GPM.
For shifted performance consult chart.

PERFORMANCE

Actual Test Data (Cartridge Only)

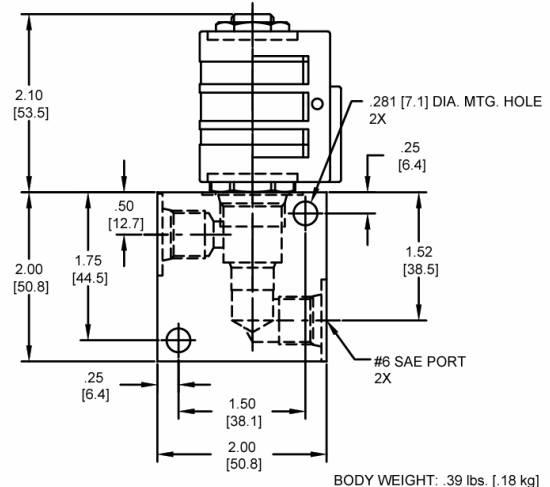
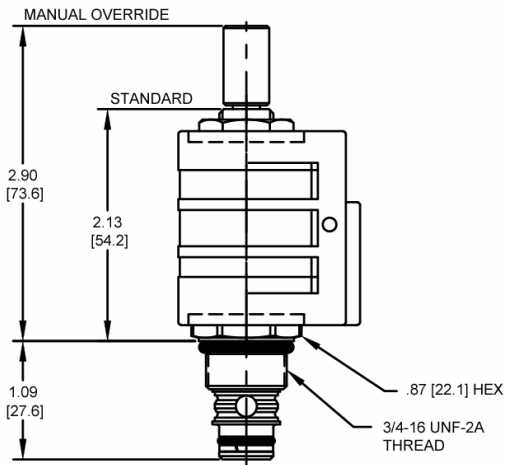
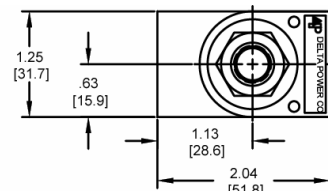
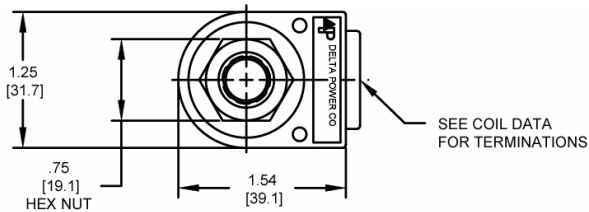


VALVE SPECIFICATIONS

Maximum Flow	6 GPM (23 LPM)
Rated Operating Pressure	2500 PSI (172 bar)
Typical Internal Leakage (150 SSU)	Negligible
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-35° to 200° F (-37° to 93° C)
Weight	.19 lbs. (.08 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 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



ORDERING INFORMATION

PB-S2F - - -

OPTIONS

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Override, Detent **0M**
- Viton, Override, Detent **VM**
- Buna, Screen **A0**
- Viton, Screen **W0**
- Buna, Override, Nondetent **B1**
- Viton, Override, Nondetent **V1**
- Buna, Screen, Override, Nondetent **B3**
- Viton, Screen, Override, Nondetent **V3**
- Buna, Screen, Override, Detent **B4**
- Viton, Screen, Override, Detent **V4**

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

"P" COIL TERMINATION

(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04-2P
- ML** Metri-Pack on Leads
- PL** Packard on Leads
- WL** Weatherpack on Leads

- SS** Single Spade
- DS** Double Spade
- HC** DIN 43650 (Hirschmann) - (AC & DC)
- CL** Conduit Lead - (AC Only)
- DI** Deutsch - Integral DT04-2P

BODIES

- Blank
- N** 1/4 NPTF Ports
- S** #6 SAE Ports

VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 25** 24 VAC
- 11** 120 VAC
- 22** 220 VAC
- 44** 440 VAC

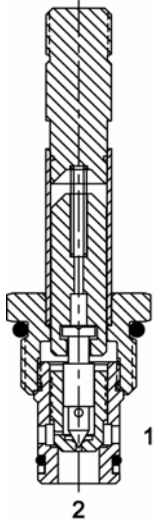
IMMERSION PROOF "P" TYPE

- IA** "I" Coil AMP Superseal - Integral
- ID** "I" Coil Deutsch - Integral DT04-2P
- IJ** "I" Coil AMP Jr. Timer - Integral
- IM** "I" Coil Metri-Pack - Integral

Approximate Coil Weight: .42 lbs/.19 kg.

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-S2F Pilot Operated Poppet, 2 Way Normally Closed – Soft Seat



DESCRIPTION

10 size, 7/8-14 thread, "Delta" series, solenoid operated, 2 way normally closed, pilot operated soft seat poppet valve with reverse flow de-energized.

OPERATION

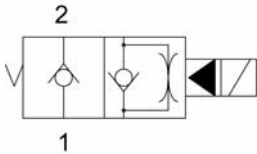
When de-energized the DE-S2F blocks flow from (1) to (2) and allows reverse flow from (2) to (1). When energized the valve allows flow from (1) to (2) but restricts reverse flow from (2) to (1).

OPERATION OF MANUAL OVERRIDE OPTION: To override, pull knob out. On the detented version, after pulling knob out twist 180 degrees and release. The valve will remain in that position.

FEATURES

- Soft seat for ultra low leakage.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

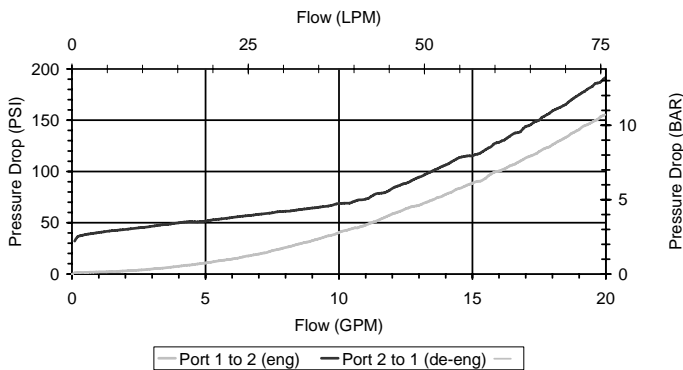
HYDRAULIC SYMBOL



Operational shift limit 10 GPM (38 LPM). For shifted flow performance consult chart.

PERFORMANCE

Actual Test Data (Cartridge Only)

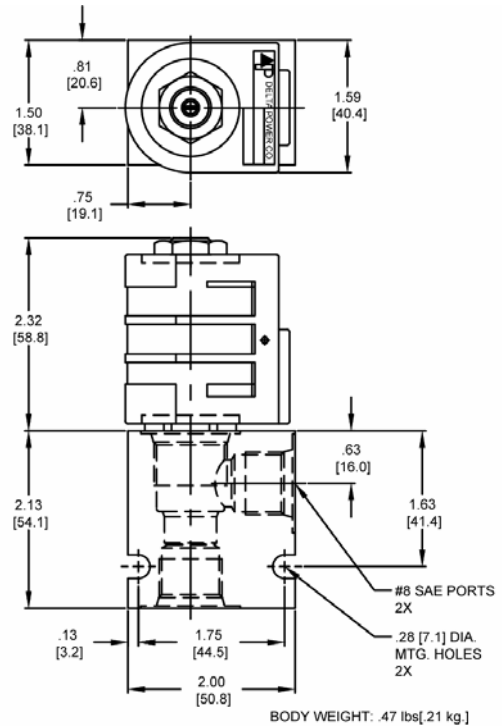
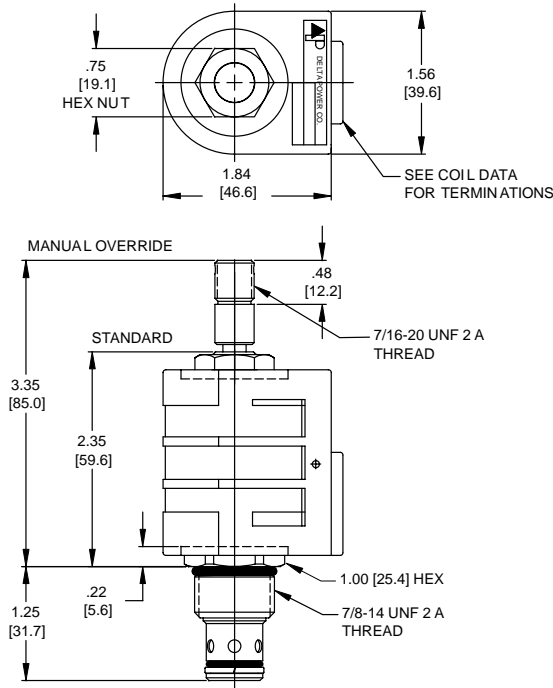


VALVE SPECIFICATIONS

Nominal Flow	10 GPM (38 LPM)
Rated Operating Pressure	1000 PSI (69 bar)
Typical Internal Leakage (150 SSU)	Negligible
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	32° to 160° F (0° to 70° C)
Weight	.25 lbs. (.11 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 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



ORDERING INFORMATION

DE-S2F - - - -

OPTIONS

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Override **0M**
- Viton, Override **VM**
- Buna & Screen **A0**
- Viton & Screen **W0**
- Buna, Override, Non-detent **B1**
- Viton, Override, Non-detent **V1**
- Buna, Screen, Override, Non-detent **B3**
- Buna, Screen, Override, Detent **B4**
- Viton, Screen, Override, Non-detent **V3**
- Viton, Screen, Override, Detent **V4**

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

"D" COIL TERMINATION
(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04-2P
- ML** Metri-Pack on Leads
- PL** Packard on Leads
- WL** Weatherpack on Leads

- SS** Single Spade
- DS** Double Spade
- HC** DIN 43650 (Hirschman) - (AC & DC)
- CL** Conduit Lead - (AC Only)
- DI** Deutsch - Integral DT04-2P

BODIES

- Blank
- N** 3/8 NPTF Ports
- S** #8 SAE Ports

VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 25** 24 VAC
- 11** 120 VAC
- 22** 220 VAC
- 44** 440 VAC


IMMERSION PROOF "D" TYPE

- IA** "I" Coil AMP Superseal - Integral
- ID** "I" Coil Deutsch - Integral DT04-2P
- IJ** "I" Coil AMP Jr. Timer - Integral
- IM** "I" Coil Metri-Pack - Integral

Approximate Coil Weight: .74 lbs (.33 kg.)

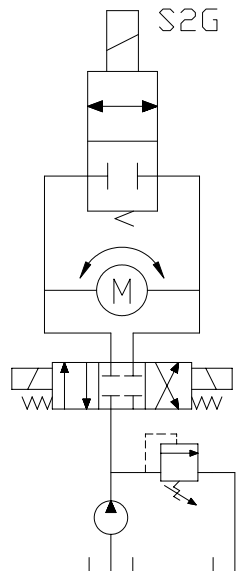
WARNING: The specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

2 Way 2 Position Normally Closed Spool Valves

	GPM	PSI	LPM	BAR	MODEL	PAGE
	1.5	3000	6	207	MA-S2G	52
	4	4000	15	276	HA-S2G	54
	8	3000	30	207	PB-S2G	56
	8	3000	30	207	DE-S2G	58
	15	4000	57	276	HE-S2G	60

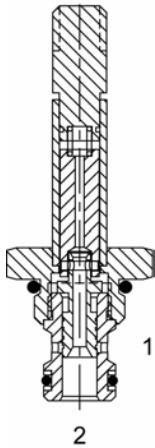
Typical Schematic

Typical application for the S2G is locking or braking of a fluid motor.



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.

MA-S2G Direct Acting Spool, 2 Way, Normally Closed



DESCRIPTION

7 size, 5/8-18 thread, "Mini" series, solenoid operated, 2 way normally closed, spool valve.

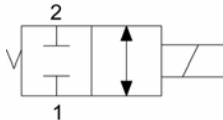
OPERATION

When de-energized the MA-S2G blocks flow from (1) to (2) and (2) to (1). When energized the valve allows flow from (1) to (2) and (2) to (1).

FEATURES

- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

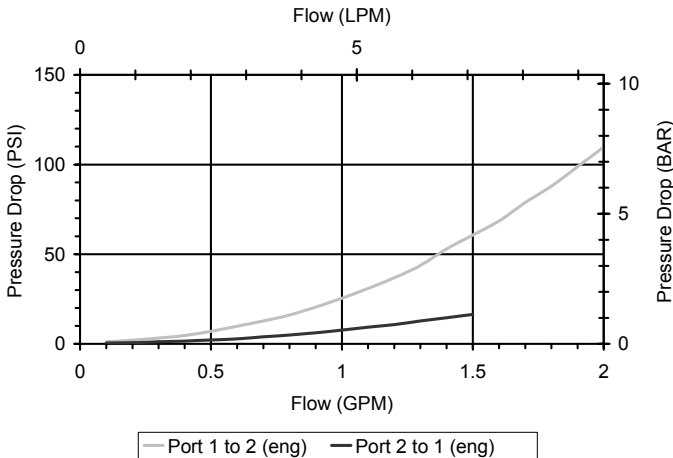
HYDRAULIC SYMBOL



For higher flow or pressure see HA-S2G.

PERFORMANCE

Actual Test Data (Cartridge Only)



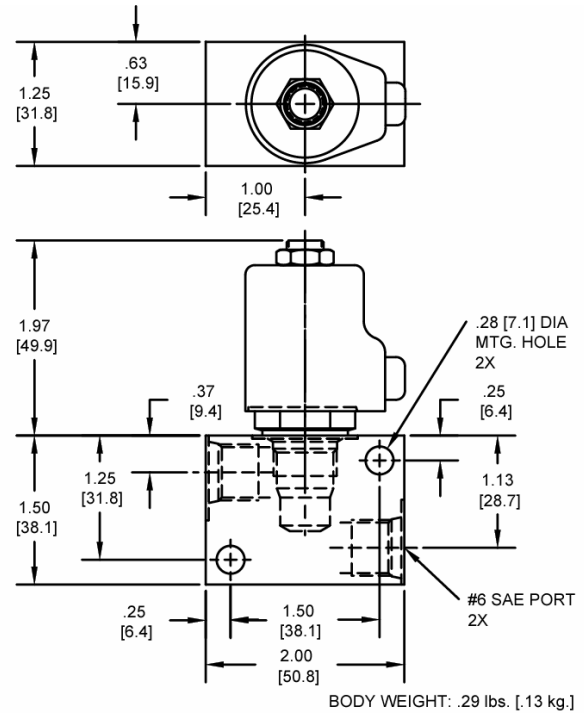
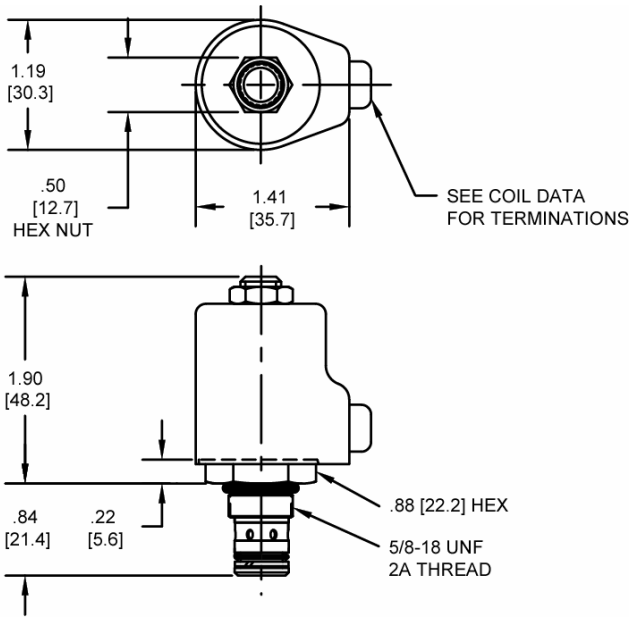
VALVE SPECIFICATIONS

Nominal Flow	1.5 GPM (5.7 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 Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.12 lbs. (.05 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	15 ft-lbs (20.3 Nm)
Coil Nut Torque Requirements	3-5 ft-lbs (6.8 Nm)
Cavity	MINI 2W
Cavity Form Tool (Finishing)	40500003
Seal Kit	21191002

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

MA-S2G - - - - -

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).

- Blank
- N** 1/4 NPTF Ports
- S** #6 SAE Ports

BODIES

VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 24** 24 VAC
- 11** 120 VAC
- 22** 220 VAC
- 44** 440 VAC

"M" COIL TERMINATION

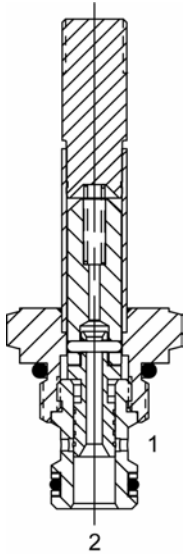
(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04-2P
- ML** Metri-Pack on Leads
- PL** Parkard on Leads
- WL** Weatherpack on Leads
- SS** Single Spade
- DS** Double Spade
- HC** DIN 43650 (Hirschmann) - (AC&DC)
- CL** Conduit Lead - (AC Only)

Approximate Coil Weight: .30 lbs/.14 kg.

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.

HA-S2G Direct Acting Spool, 2 Way, Normally Closed



DESCRIPTION

“High Pressure” 7 size, 5/8-18 thread, “Mini” series, solenoid operated, 2 way normally closed, spool valve with free reverse.

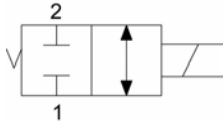
OPERATION

When de-energized the HA-S2G blocks flow from (1) to (2) and (2) to (1). When energized the valve allows flow from (1) to (2) and (2) to (1).

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design (for most common terminations, see coil page).
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

HYDRAULIC SYMBOL

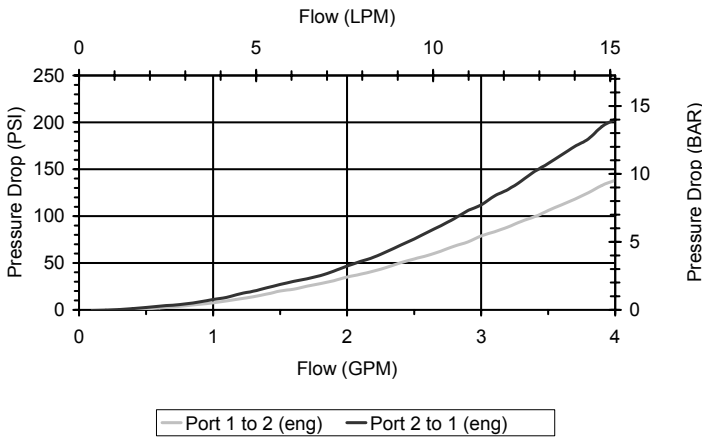


Operation shift limit 2 GPM (8 LPM).

For shifted performance consult chart.

PERFORMANCE

Actual Test Data (Cartridge Only)



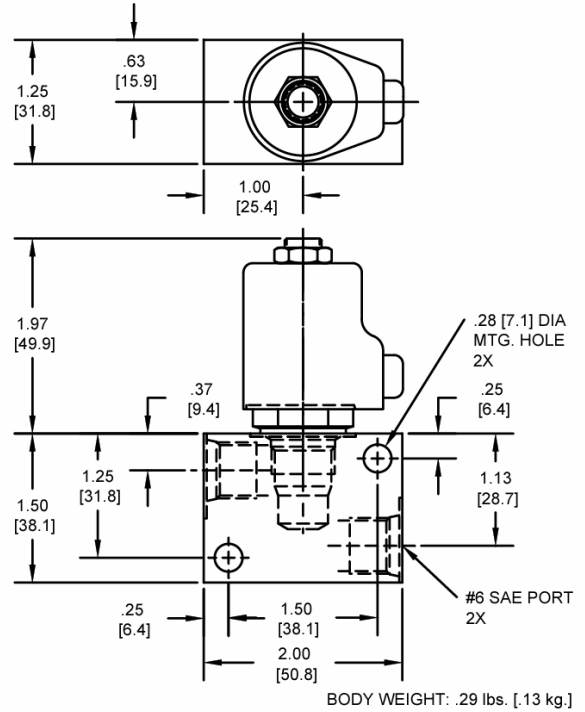
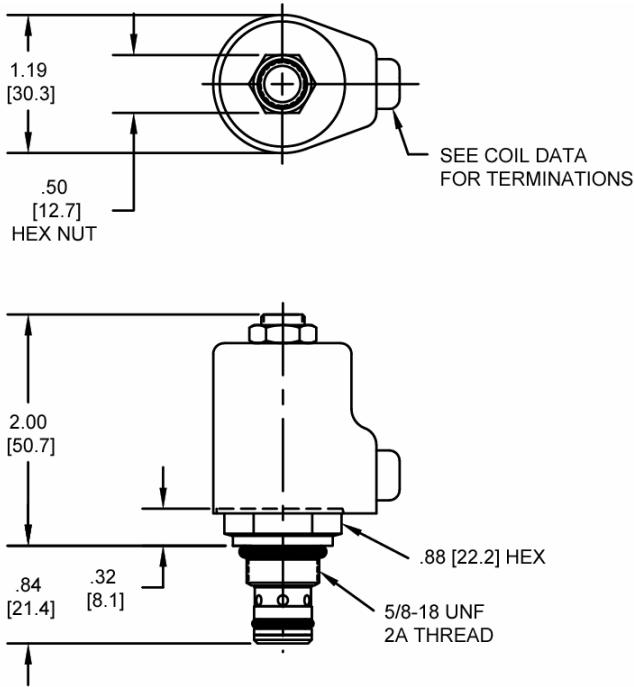
VALVE SPECIFICATIONS

Maximum Flow	4 GPM (15 LPM)
Rated Operating Pressure	4000 PSI (276 bar)
Typical Internal Leakage (150 SSU)	8 cu in/min (131 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature 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)
Coil Nut Torque Requirements	3-5 ft-lbs (4.1-6.8 Nm)
Cavity	MINI 2W
Cavity Form Tool (Finishing)	40500003
Seal Kit	21191002

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

HA-S2G - - -

OPTIONS

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

Blank **N**
S

BODIES

Without Body
1/4 NPTF Ports
#6 SAE Ports

Note: Aluminum, NOT durability rated for 4000 PSI. Consult factory for body options.

VOLTAGE

06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC
44 440 VAC

"M" COIL TERMINATION

(All DC Except as Noted)

Double Lead **DL**
Deutsch on Leads DT04-2P **DT**
Metri-Pack on Leads **ML**
Packard on Leads **PL**
Weatherpack on Leads **WL**
Single Spade **SS**
Double Spade **DS**
DIN 43650 (Hirschman) - (AC&DC) **HC**
Conduit Lead - (AC Only) **CL**

Approximate Coil Weight: .30 lbs/.14 kg.

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-S2G Direct Acting Spool, 2 Way, Normally Closed

DESCRIPTION

8 size, 3/4-16 thread, "Power" series, solenoid operated, 2 way normally closed, spool valve.

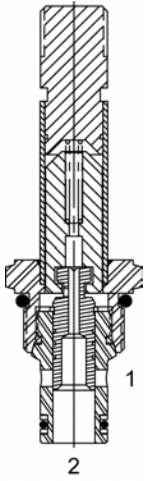
OPERATION

When de-energized the PB-S2G blocks flow from (1) to (2) and (2) to (1). When energized the valve allows flow from (1) to (2) and (2) to (1).

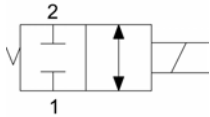
OPERATION OF MANUAL OVERRIDE OPTION: To override, pull knob out. On the detented version, after pulling knob out twist 180 degrees and release. The valve will remain in that position.

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.



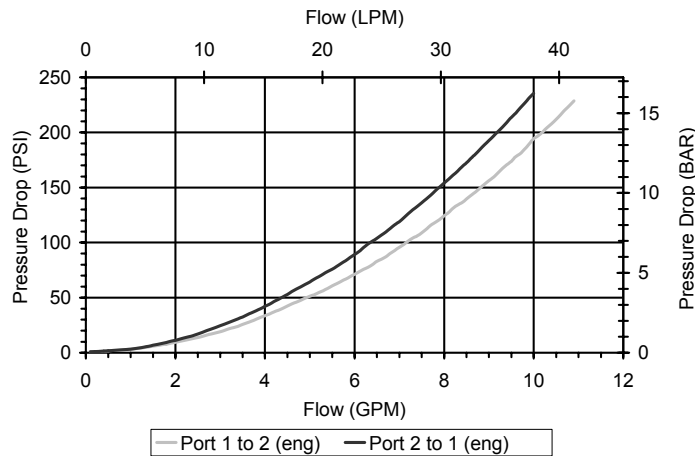
HYDRAULIC SYMBOL



Operational shift limit in 2 to 1 direction is 4 GPM. For shifted flow performance consult chart.

PERFORMANCE

Actual Test Data (Cartridge Only)

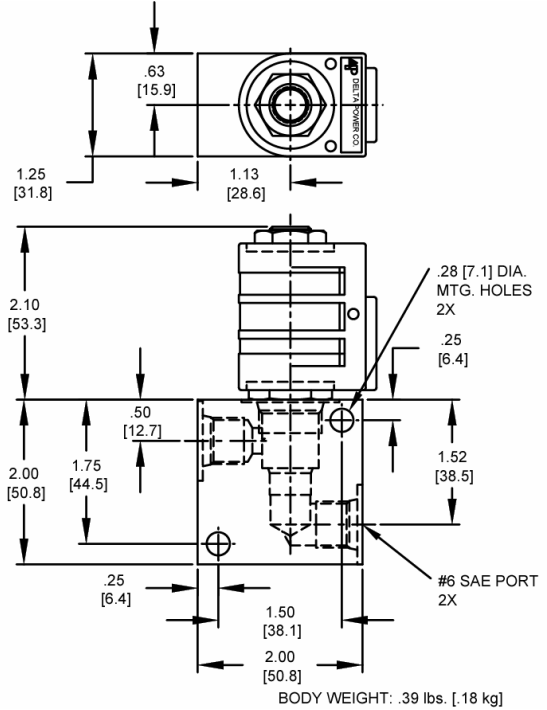
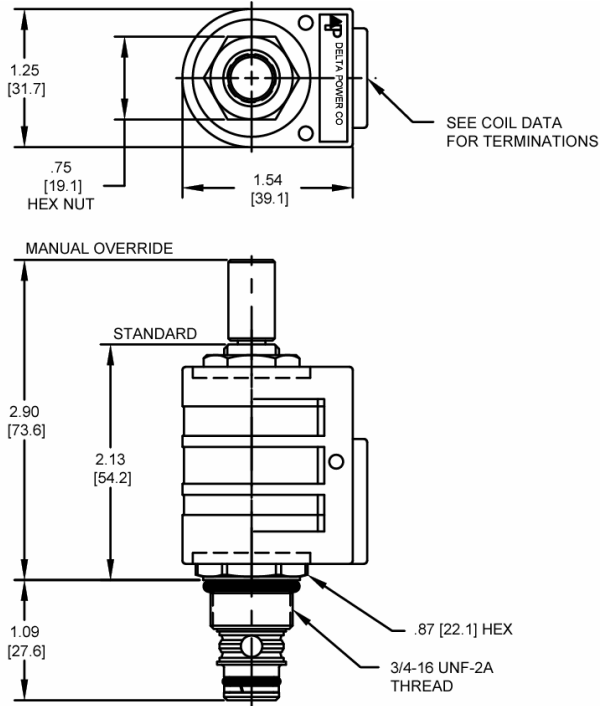


VALVE SPECIFICATIONS

Nominal Flow	8 GPM (30 LPM) from (1) to (2) 4 GPM (15 LPM) from (2) to (1)
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 Temperature 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)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 Nm)
Cavity	POWER 2W
Cavity Form Tool (Finishing)	40500005
Seal Kit	21191102

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

PB-S2G - - -

OPTIONS

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Override, Detent **0M**
- Viton, Override, Detent **VM**
- Buna, Screen **A0**
- Viton, Screen **W0**
- Buna, Override, Nondetent **B1**
- Viton, Override, Nondetent **V1**
- Buna, Screen, Override, Nondetent **B3**
- Viton, Screen, Override, Nondetent **V3**
- Buna, Screen, Override, Detent **B4**
- Viton, Screen, Override, Detent **V4**

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

"P" COIL TERMINATION

(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04-2P
- ML** Metri-Pack on Leads
- PL** Packard on Leads
- WL** Weatherpack on Leads

- SS** Single Spade
- DS** Double Spade
- HC** DIN 43650 (Hirschman) - (AC & DC)
- CL** Conduit Lead - (AC Only)
- DI** Deutsch - Integral DT04-2P

BODIES

- Blank
- N** 1/4 NPTF Ports
- S** #6 SAE Ports

VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 25** 24 VAC
- 11** 120 VAC
- 22** 220 VAC
- 44** 440 VAC

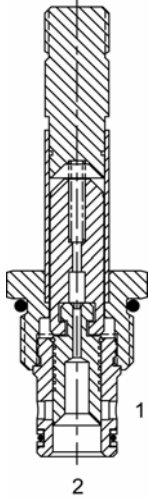
IMMERSION PROOF "P" TYPE

- IA** "I" Coil AMP Superseal - Integral
- ID** "I" Coil Deutsch - Integral DT04-2P
- IJ** "I" Coil AMP Jr. Timer - Integral
- IM** "I" Coil Metri-Pack - Integral

Approximate Coil Weight: .42 lbs (.19 kg.)

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-S2G Direct Acting Spool, 2 Way Normally Closed



DESCRIPTION

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

OPERATION

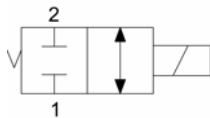
When de-energized the DE-S2G blocks flow from (1) to (2) and (2) to (1). When energized the valve allows flow from (1) to (2) and (2) to (1).

OPERATION OF MANUAL OVERRIDE OPTION: To override, pull knob out. On the detented version, after pulling knob out twist 180 degrees and release. The valve will remain in that position.

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

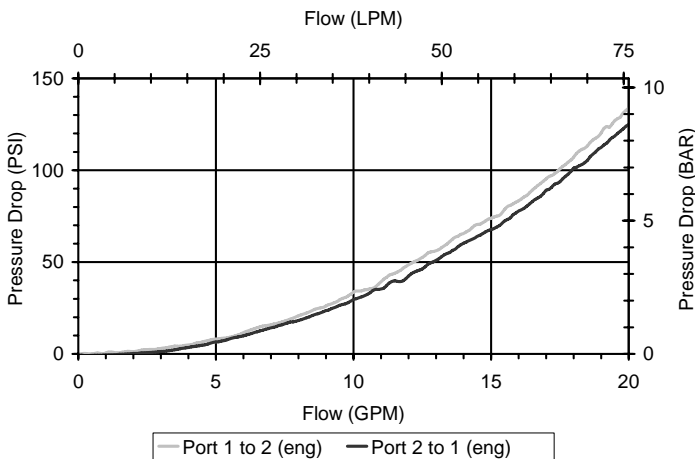
HYDRAULIC SYMBOL



Operational shift limit 8 GPM (30 LPM) and 5 GPM (19 LPM).
For shifted flow performance consult chart.
For higher flow or pressure see HE-S2G.

PERFORMANCE

Actual Test Data (Cartridge Only)

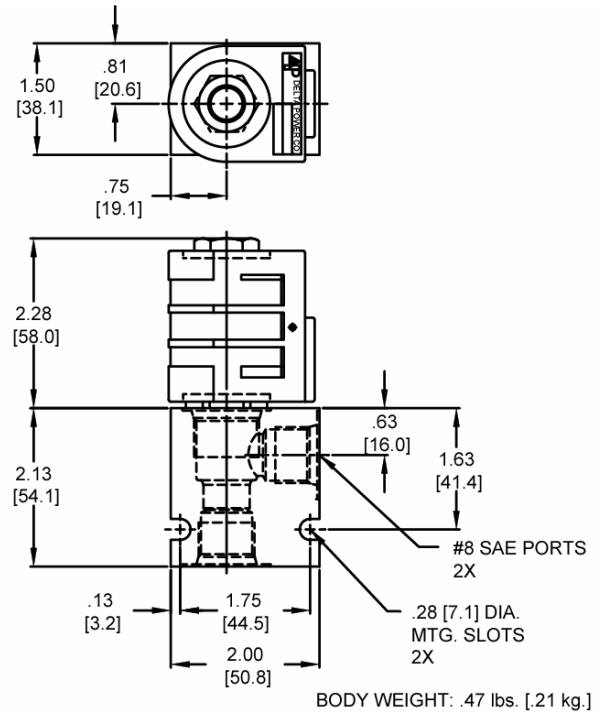
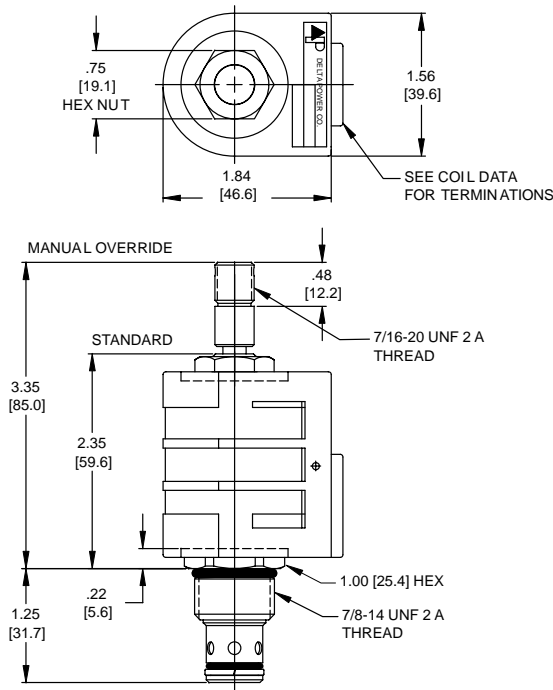


VALVE SPECIFICATIONS

Nominal Flow	8 GPM (30 LPM) from (1) to (2) 5 GPM (19 LPM) from (2) to (1)
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 Temperature 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)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 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



ORDERING INFORMATION

DE-S2G - - - -

OPTIONS

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Override **0M**
- Viton, Override **VM**
- Buna, Screen **A0**
- Viton, Screen **W0**
- Buna, Override, Non-detent **B1**
- Viton, Override, Non-detent **V1**
- Buna, Screen, Override, Non-detent **B3**
- Buna, Screen, Override, Detent **B4**
- Viton, Screen, Override, Non-detent **V3**
- Viton, Screen, Override, Detent **V4**

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

"D" COIL TERMINATION
(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04-2P
- ML** Metri-Pack on Leads
- PL** Packard on Leads
- WL** Weatherpack on Leads

- SS** Single Spade
- DS** Double Spade
- HC** DIN 43650 (Hirschman) - (AC & DC)
- CL** Conduit Lead - (AC Only)
- DI** Deutsch - Integral DT04-2P

BODIES

- Blank
- N** 3/8 NPTF Ports
- S** #8 SAE Ports

VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 25** 24 VAC
- 11** 120 VAC
- 22** 220 VAC
- 44** 440 VAC

IMMERSION PROOF "D" TYPE

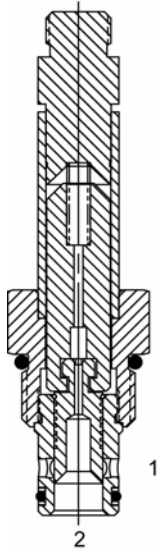
- IA** "I" Coil AMP Superseal - Integral
- ID** "I" Coil Deutsch - Integral DT04-2P
- IJ** "I" Coil AMP Jr. Timer - Integral
- IM** "I" Coil Metri-Pack - Integral

Approximate Coil Weight: .74 lbs (.33 kg.)

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.



HE-S2G Direct Acting Spool, 2-Way, Normally Closed



DESCRIPTION

"High Pressure" 10 size, 7/8-14 thread, "Delta" series, solenoid operated, 2-way normally closed, spool valve.

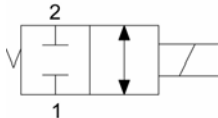
OPERATION

When de-energized the HE-S2G blocks flow from (1) to (2) and (2) to (1). When energized the valve allows flow from (1) to (2) and (2) to (1).

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

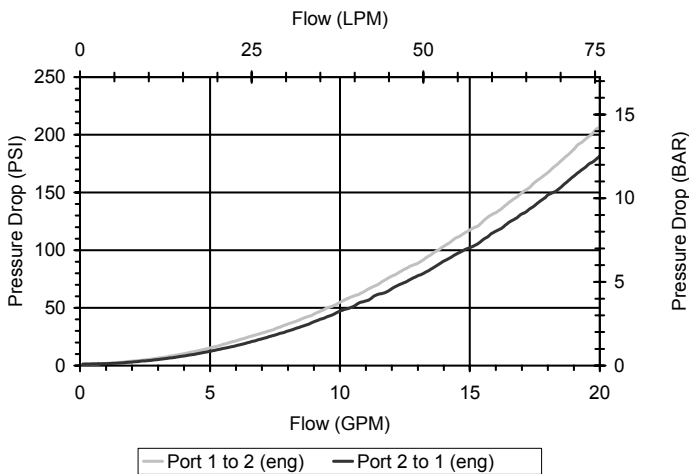
HYDRAULIC SYMBOL



Uses "L" Coil.

PERFORMANCE

Actual Test Data (Cartridge Only)

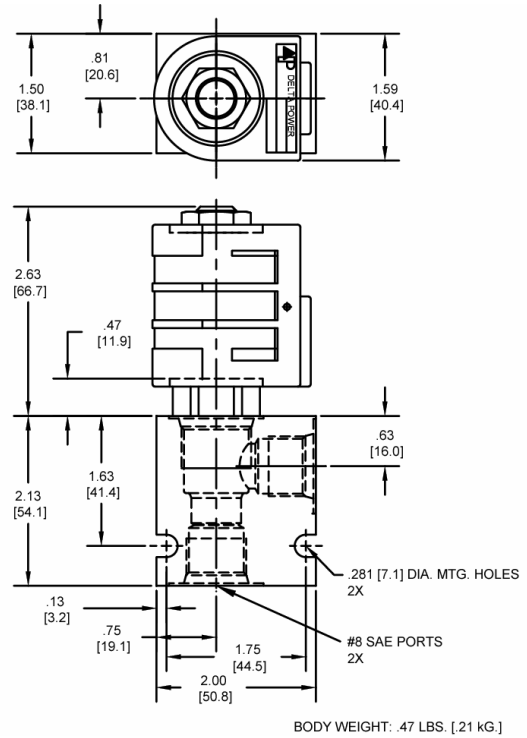
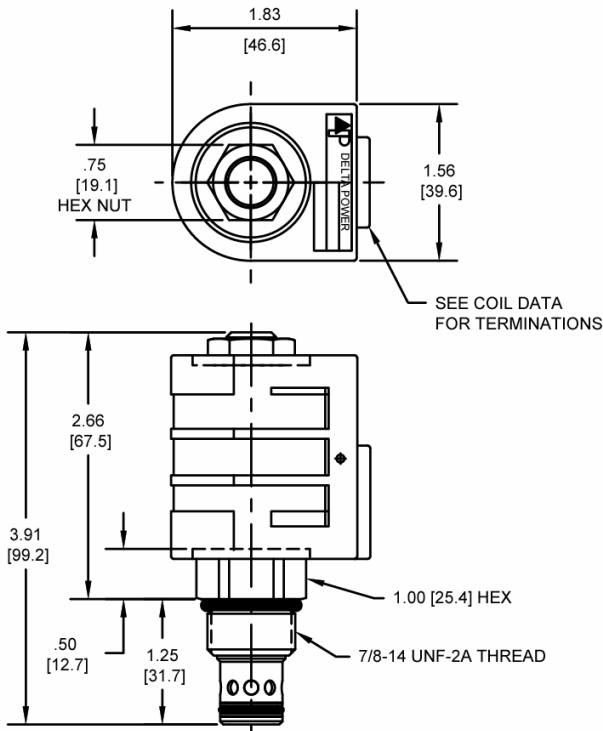


VALVE SPECIFICATIONS

Nominal Flow	15 GPM (57 LPM) from (1) to (2) 6 GPM (23 LPM) from (2) to (1)
Max Operating Pressure	4000 PSI (276 bar)
Typical Internal Leakage (150 SSU)	8 cu in/min (131 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature 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)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 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



ORDERING INFORMATION

HE-S2G

OPTIONS

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

Blank **N**
S

BODIES

Without Body
3/8 NPTF Ports
#8 SAE Ports

Note: Aluminum, NOT durability rated for 4000 PSI. Consult factory options.

VOLTAGE

06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VAC
25 25 VAC
11 120 VAC
22 220 VAC
44 440 VAC

"L" COIL TERMINATION

(All DC Except as Noted)

DL Double Lead
DT Deutsch on Leads DT04-2P
ML Metri-Pack on Leads
PL Packard on Leads
WL Weatherpack on Leads

SS Single Spade
DS Double Spade
HC DIN 43650 (Hirschman) – (AC & DC)
CL Conduit Lead – (AC Only)
DI Deutsch – Integral DT04-2P

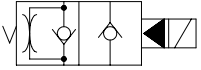
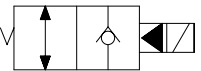
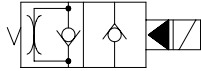
IMMERSION PROOF "L" TYPE

IA "I" Coil AMP Superseal - Integral
ID "I" Coil Deutsch – Integral DT04-2P
IJ "I" Coil AMP Jr. Timer - Integral
IM "I" Coil Metri-Pack – Integral

Approximate Coil Weight: .68 lbs. (.31 kg.)

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.

2 Way 2 Position Normally Open Poppet Valves

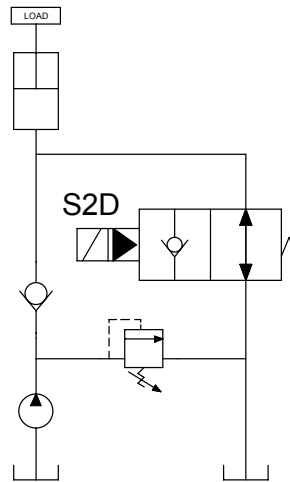
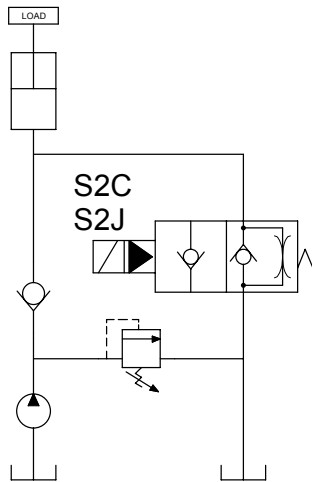
	GPM	PSI	LPM	BAR	MODEL	PAGE
	5	3000	19	207	MA-S2C	64
	10	3500	38	241	PB-S2C	66
	8	5000	30	345	HB-S2C	590
	15	3500	57	241	DE-S2C	68
	30	3000	114	207	TT-S2C	70
	40	3000	151	207	SJ-S2C	72
	10	3500	38	241	PB-S2D	74
	15	3500	57	241	DE-S2D	76
	30	3000	114	207	TT-S2D	78
	40	3000	151	207	SJ-S2D	80
<p>SOFT SEAT</p> 	8	2000	30	138	PB-S2J	94

Typical Schematic

Typical application for the S2C is a pump unloading circuit when high flow and low pressure drop is required.

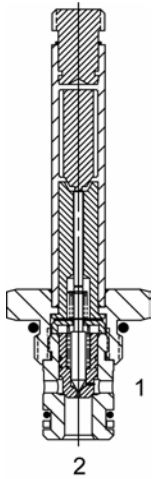
Typical application for the S2D is for when free flow is required in both directions to float the cylinder.

Typical application for the S2J is for low pressure applications where the soft seat gives better leakage control.



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.

MA-S2C Pilot Operated Poppet, 2 Way, Normally Open



DESCRIPTION

7 size, 5/8-18 thread, "Mini" series, solenoid operated, 2 way normally open, pilot operated poppet valve with free reverse flow energized.

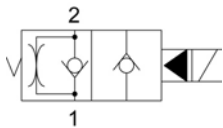
OPERATION

When de-energized the MA-S2C allows flow from (1) to (2) and restricts flow from (2) to (1). When energized the valve blocks flow from (1) to (2) and allows flow from (2) to (1).

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

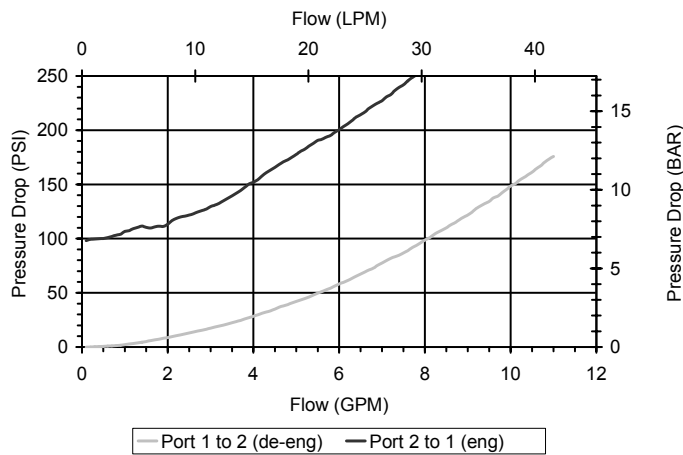
HYDRAULIC SYMBOL



Operational shift limit 5 GPM (19 LPM) from (1) to (2) energized. For shifted flow performance consult chart.

PERFORMANCE

Actual Test Data (Cartridge Only)

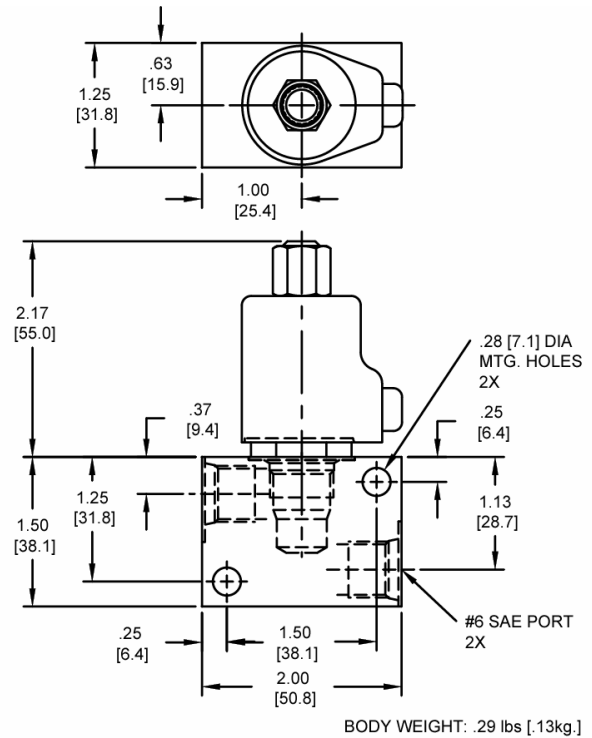
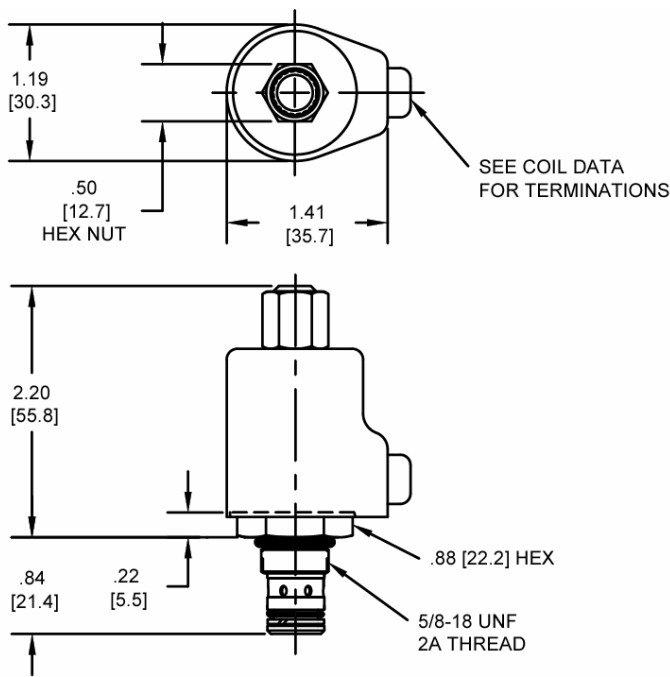


VALVE SPECIFICATIONS

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 Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.14 lbs. (.06 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	15 ft-lbs (20.3 Nm)
Coil Nut Torque Requirements	3-5 ft-lbs (4.1-6.8 Nm)
Cavity	MINI 2W
Cavity Form Tool (Finishing)	40500003
Seal Kit (Buna)	21191001

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

MA-S2C - - -

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
- N** 1/4 NPTF Ports
- S** #6 SAE Ports

VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 25** 24 VAC
- 11** 120 VAC
- 22** 220 VAC
- 44** 440 VAC

"M" COIL TERMINATION

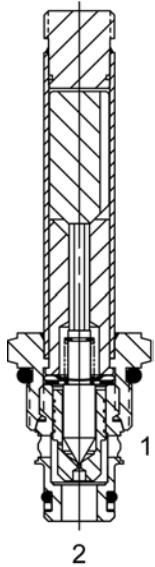
(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04-2P
- ML** Metri-Pack on Leads
- PL** Packard on Leads
- WL** Weatherpack on Leads
- SS** Single Spade
- DS** Double Spade
- HC** DIN 43650 (Hirschman) - (AC & DC)
- CL** Conduit Lead - (AC Only)

Approximate Coil Weight: .30 lbs/.14 kg.

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-S2C Pilot Operated Poppet, 2 Way, Normally Open



DESCRIPTION

8 size, 3/4-16 thread, "Power" series, solenoid operated, 2 way normally open, pilot operated poppet valve with free reverse flow energized.

OPERATION

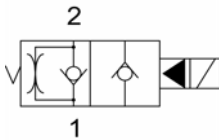
When de-energized the PB-S2C allows flow from (1) to (2) and restricted flow from (2) to (1). When energized the valve blocks flow from (1) to (2) and allows flow from (2) to (1).

OPERATION OF MANUAL OVERRIDE OPTION: To override, turn the manual override screw clockwise. To release turn the manual override screw counter-clockwise.

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

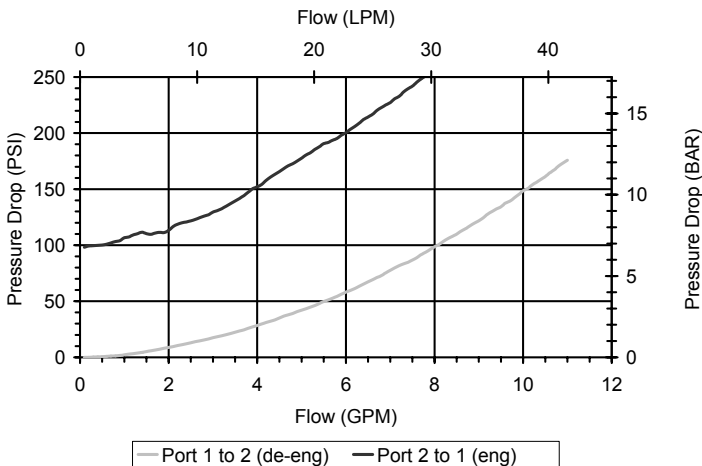
HYDRAULIC SYMBOL



Unshifted limit 10 GPM (38 LPM) from (1) to (2) when deenergized. For shifted flow performance consult chart.

PERFORMANCE

Actual Test Data (Cartridge Only)

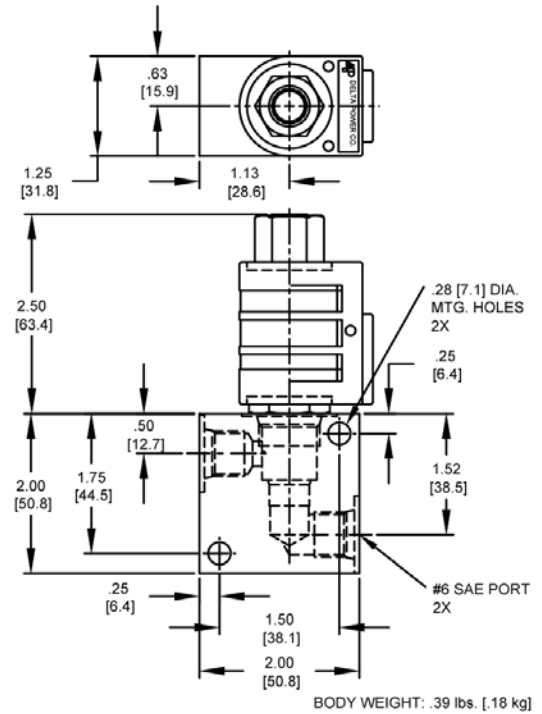
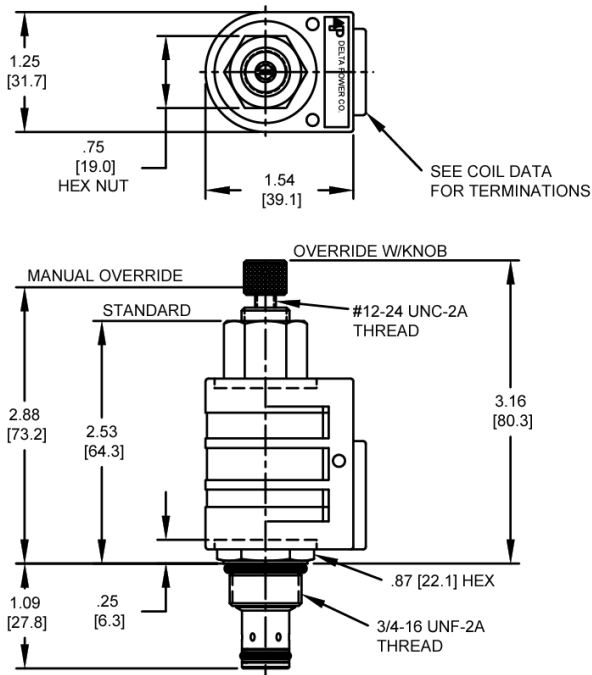


VALVE SPECIFICATIONS

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 Temperature 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)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 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



ORDERING INFORMATION

PB-S2C

<p>OPTIONS</p> <p>Buna Standard 00</p> <p>Viton Standard V0</p> <p>Buna, Override, Detent 0M</p> <p>Viton, Override, Detent VM</p> <p>Buna, Override, Knob OK</p> <p>Viton, Override, Knob VK</p> <p>Buna, Screen A0</p> <p>Viton, Screen W0</p> <p>Buna, Screen, Override B2</p> <p>Viton, Screen, Override V2</p> <p>Buna, Screen, Override, Knob B5</p> <p>Viton, Screen, Override, Knob V5</p>	<p>Blank</p> <p>N</p> <p>S</p>	<p>BODIES</p> <p>Without Body</p> <p>1/4 NPTF Ports</p> <p>#6 SAE Ports</p>	<p>VOLTAGE</p> <p>06 6 VDC</p> <p>12 12 VDC</p> <p>24 24 VDC</p> <p>36 36 VDC</p> <p>48 48 VDC</p> <p>25 24 VAC</p> <p>11 120 VAC</p> <p>22 220 VAC</p> <p>44 440 VAC</p>
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Note: Use screen only if flow direction is from (1) to (2).

"P" COIL TERMINATION
(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04-2P
- ML** Metri-Pack on Leads
- PL** Packard on Leads
- WL** Weatherpack on Leads

- SS** Single Spade
- DS** Double Spade
- HC** DIN 43650 (Hirschman) – (AC & DC)
- CL** Conduit Lead – (AC Only)
- DI** Deutsch – Integral DT04-2P

- IMMERSION PROOF "P" TYPE**
- IA** "I" Coil AMP Superseal - Integral
 - ID** "I" Coil Deutsch – Integral DT04-2P
 - IJ** "I" Coil AMP Jr. Timer - Integral
 - IM** "I" Coil Metri-Pack – Integral

Approximate Coil Weight: .42 lbs. (.19 kg.)

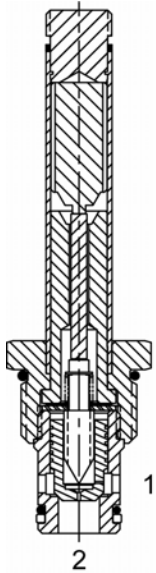
WARNING: The specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

DE-S2C Pilot Operated Poppet, 2 Way, Normally Open



DESCRIPTION

10 size, 7/8-14 thread, "Delta" series, solenoid operated, 2 way normally open, pilot operated poppet valve with free reverse flow energized.

OPERATION

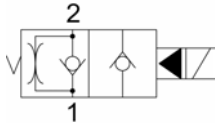
When de-energized the DE-S2C allows flow to pass from (1) to (2), but restricts flow from (2) to (1). When energized the valve blocks flow from (1) to (2) but allows free reverse flow from (2) to (1).

OPERATION OF MANUAL OVERRIDE OPTION: To override, turn the manual override screw clockwise. To release turn the manual override screw counter-clockwise.

FEATURES

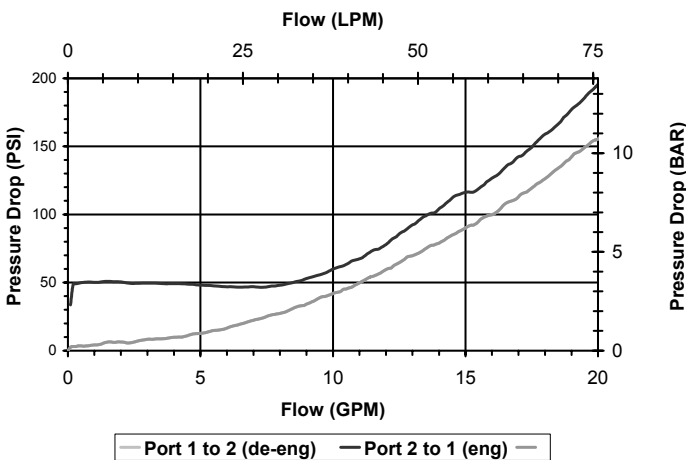
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

HYDRAULIC SYMBOL



PERFORMANCE

Actual Test Data (Cartridges Only)

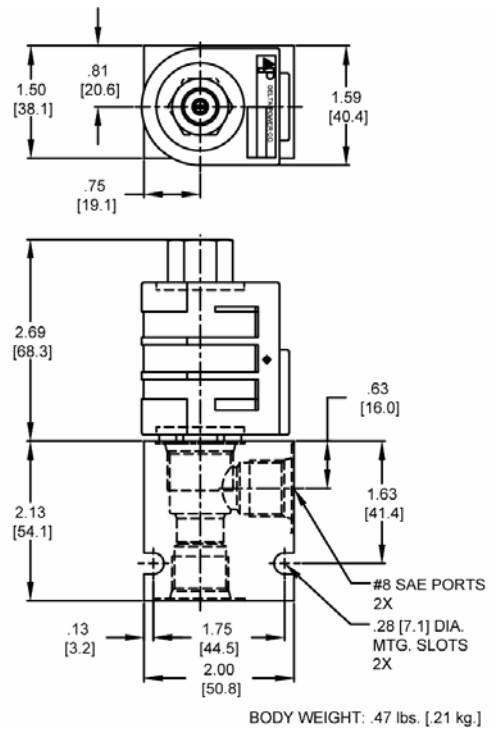
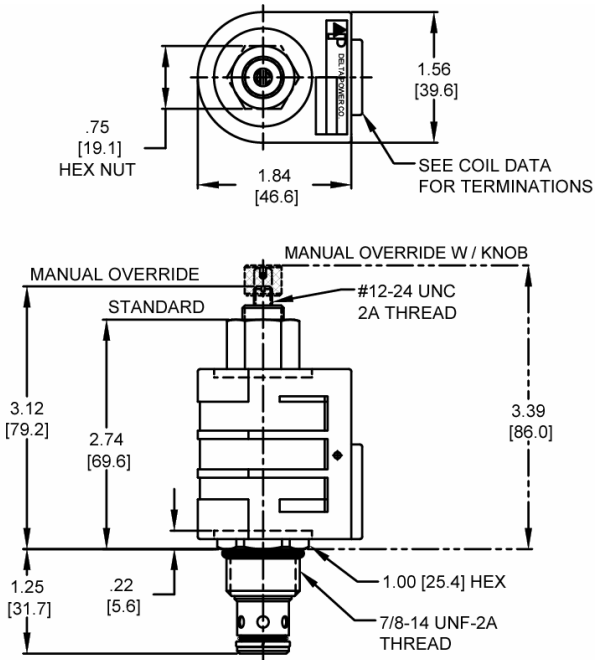


VALVE SPECIFICATIONS

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 Temperature 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)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 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



ORDERING INFORMATION

DE-S2C - - -

OPTIONS

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Override **0M**
- Viton, Override **VM**
- Buna, Override, Knob **OK**
- Viton, Override, Knob **VK**
- Buna, Screen **A0**
- Viton, Screen **W0**
- Buna, Screen, Override **B2**
- Viton, Screen, Override **V2**
- Buna, Screen, Override, Knob **B5**
- Viton, Screen, Override, Knob **V5**

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

“D” COIL TERMINATION

(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04-2P
- MI** Metri-Pack on Leads
- PI** Packard on Leads
- WL** Weatherpack on Leads

- SS** Single Spade
- DS** Double Spade
- HC** DIN 43650 (Hirschmann) – (AC & DC)
- CL** Conduit Lead – (AC Only)
- DI** Deutsch – Integral DT04-2P

BODIES

- Blank
- N** 3/8 NPTF Ports
- S** #8 SAE Ports

VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 25** 24 VAC
- 11** 120 VAC
- 22** 220 VAC
- 44** 440 VAC

IMMERSION PROOF “D” TYPE

- IA** “I” Coil AMP Superseal - Integral
- ID** “I” Coil Deutsch – Integral DT04-2P
- IJ** “I” Coil AMP Jr. Timer - Integral
- IM** “I” Coil Metri-Pack - Integral

Approximate Coil Weight: .74 lbs/.33 kg.

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.

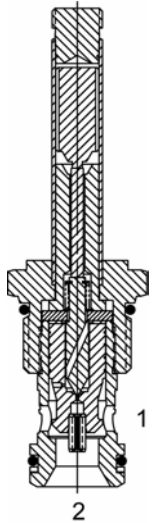
Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com



TT-S2C Pilot Operated Poppet, 2 Way, Normally Open



DESCRIPTION

12 size, 1 1/16-12 thread, "Tecnorm" series, solenoid operated, 2 way normally open, pilot operated poppet valve with free reverse flow energized.

OPERATION

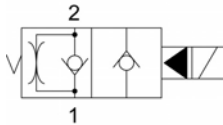
When de-energized the TT-S2C allows flow to pass from (1) to (2), but restricts flow from (2) to (1). When energized the valve blocks flow from (1) to (2) but allows free reverse flow from (2) to (1).

OPERATION OF MANUAL OVERRIDE OPTION: To override, turn the manual override screw clockwise. To release turn the manual override screw counter-clockwise.

FEATURES

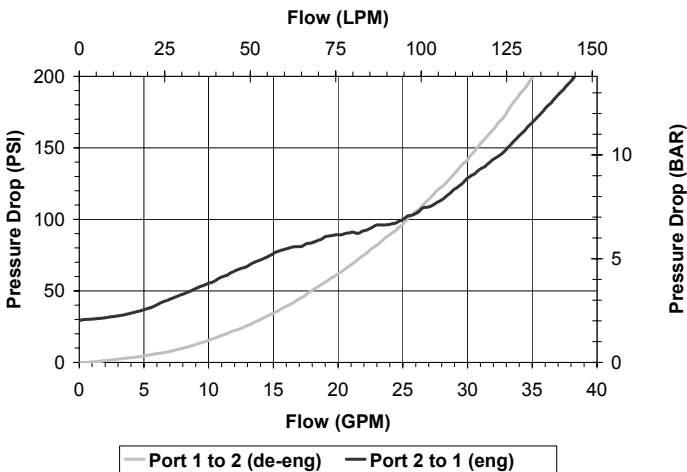
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

HYDRAULIC SYMBOL



PERFORMANCE

Actual Test Data (Cartridges Only)

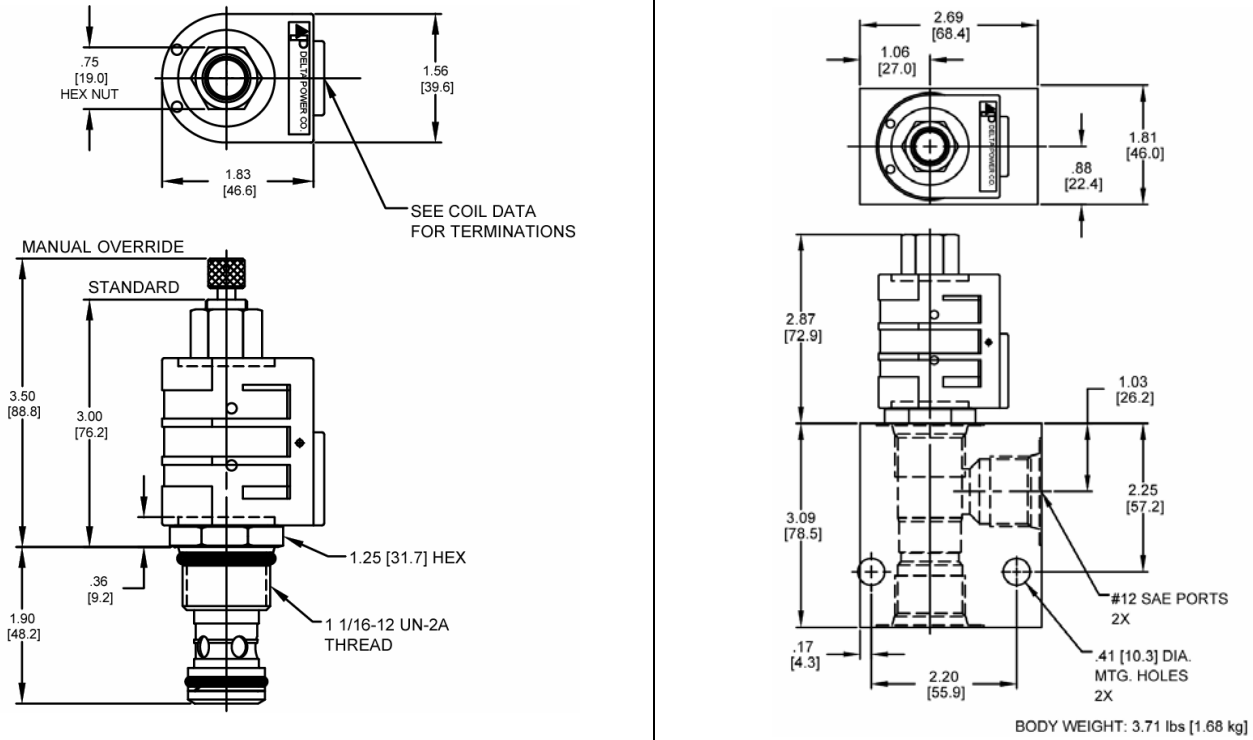


VALVE SPECIFICATIONS

Nominal Flow	30 GPM (114 LPM)
Rated Operating Pressure	3000 PSI (241 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 Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.51 lbs. (.23 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	70 ft-lbs (94.9 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 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



ORDERING INFORMATION

TT-S2C - - - -

OPTIONS

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Override, Knob **0K**
- Viton, Override, Knob **VK**
- Buna, Screen **A0**
- Viton, Screen **W0**
- Buna, Screen, Override, Knob **B5**
- Viton, Screen, Override, Knob **V5**

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

Blank
S

BODIES

- Without Body
- #12 SAE Ports

VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 25** 24 VAC
- 11** 120 VAC
- 22** 220 VAC
- 44** 440 VAC

"D" COIL TERMINATION

(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04-2P
- MI** Metri-Pack on Leads
- PI** Packard on Leads
- WL** Weatherpack on Leads

- SS** Single Spade
- DS** Double Spade
- HC** DIN 43650 (Hirschmann) - (AC & DC)
- CL** Conduit Lead - (AC Only)
- DI** Deutsch - Integral DT04-2P

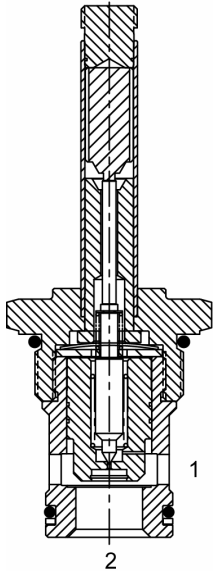
IMMERSION PROOF "D" TYPE

- IA** "I" Coil AMP Superseal - Integral
- ID** "I" Coil Deutsch - Integral DT04-2P
- IJ** "I" Coil AMP Jr. Timer - Integral
- IM** "I" Coil Metri-Pack - Integral

Approximate Coil Weight: .74 lbs/.33 kg.

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-S2C Pilot Operated Poppet, 2 Way, Normally Open



DESCRIPTION

16 size, 1 5/16-12 thread, "Super" series, solenoid operated, 2 way normally open, pilot operated poppet valve with free reverse flow energized.

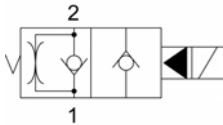
OPERATION

When de-energized the SJ-S2C allows flow to pass from (1) to (2), but restricts flow from (2) to (1). When energized the valve blocks flow from (1) to (2) but allows free reverse flow from (2) to (1).

FEATURES

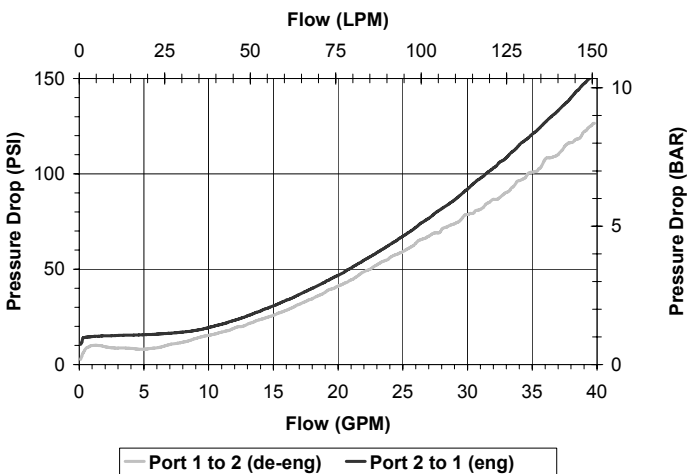
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

HYDRAULIC SYMBOL



PERFORMANCE

Actual Test Data (Cartridges Only)

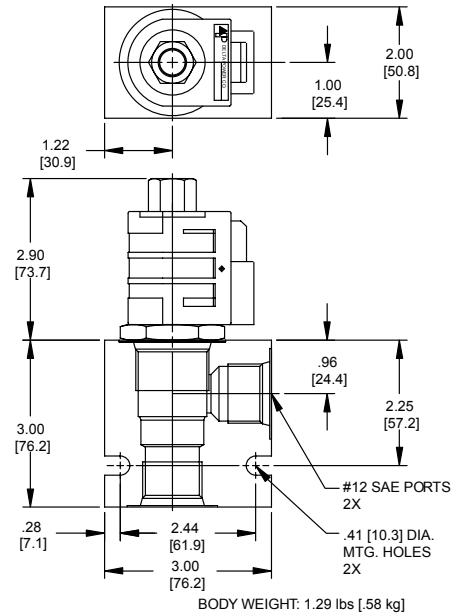
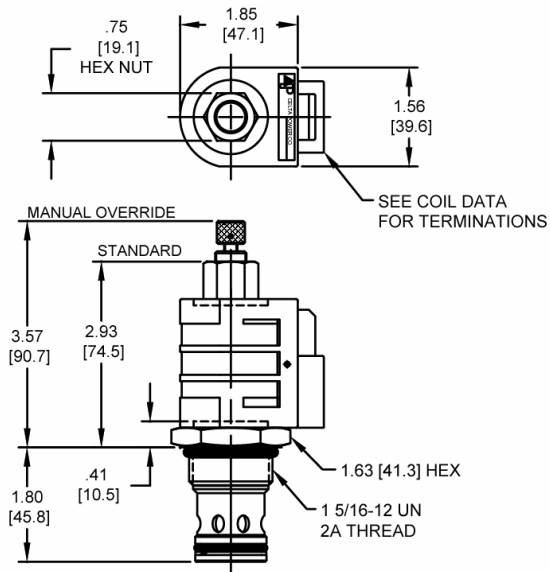


VALVE SPECIFICATIONS

Nominal Flow	40 GPM (151 LPM)
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 Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.74 lbs. (.33 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	90 ft-lbs (121 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 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



ORDERING INFORMATION

SJ-S2C - - - -

OPTIONS

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Screen **A0**
- Viton, Screen **W0**
- Buna, Override **0K**
- Viton, Override **VK**
- Buna, Screen, Override **B2**
- Viton, Screen, Override **V2**

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

"D" COIL TERMINATION

(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04—2P
- MI** Metri-Pack on Leads
- PI** Packard on Leads
- WL** Weatherpack on Leads

- SS** Single Spade
- DS** Double Spade
- HC** Din 43650 (Hirschmann) — (AC & DC)
- CL** Conduit Lead — (AC Only)
- DI** Deutsch — Integral DT04—2P

BODIES

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

VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 25** 24 VAC
- 11** 120 VAC
- 22** 220 VAC
- 44** 440 VAC

IMMERSION PROOF "D" TYPE

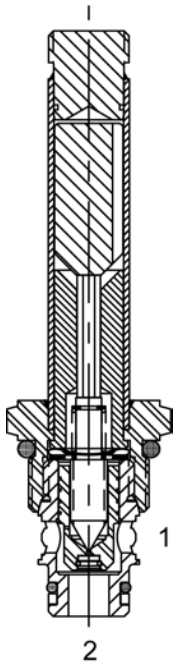
- IA** "I" Coil AMP Superseal — Integral
- ID** "I" Coil Deutsch — Integral DT04-2P
- IJ** "I" Coil AMP Jr. Timer — Integral
- IM** "I" Coil Metri-Pack — Integral

Approximate Coil Weight: .74 lbs/.33 kg.

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-S2D Pilot Operated Poppet, 2 Way, Normally Open



DESCRIPTION

8 size, 3/4-16 thread, "Power" series, solenoid operated, 2 way normally open, pilot operated poppet valve with free reverse flow energized and de-energized.

OPERATION

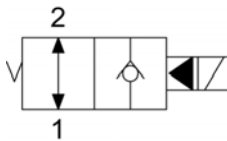
When de-energized the PB-S2D allows flow from (1) to (2) or (2) to (1). When energized the valve blocks flow from (1) to (2) and allows flow from (2) to (1).

OPERATION OF MANUAL OVERRIDE OPTION: To override, turn the manual override screw clockwise. To release turn the manual override screw counter-clockwise.

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

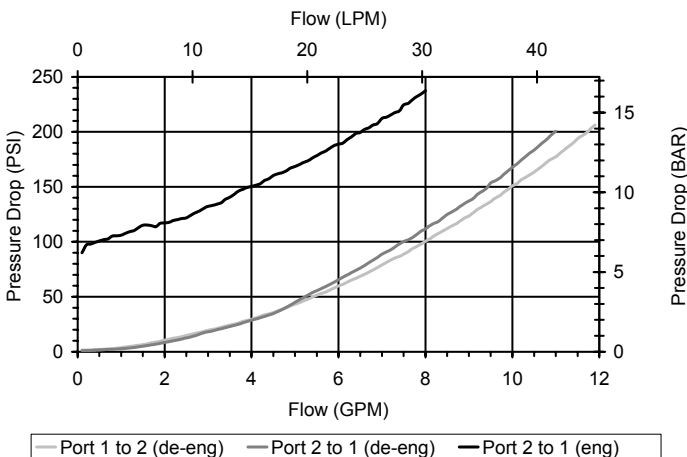
HYDRAULIC SYMBOL



Unshifted limit of 10 GPM (38 LPM) from (1) to (2) energized and from (2) to (1) de-energized. For shifted flow performance consult chart.

PERFORMANCE

Actual Test Data (Cartridge Only)

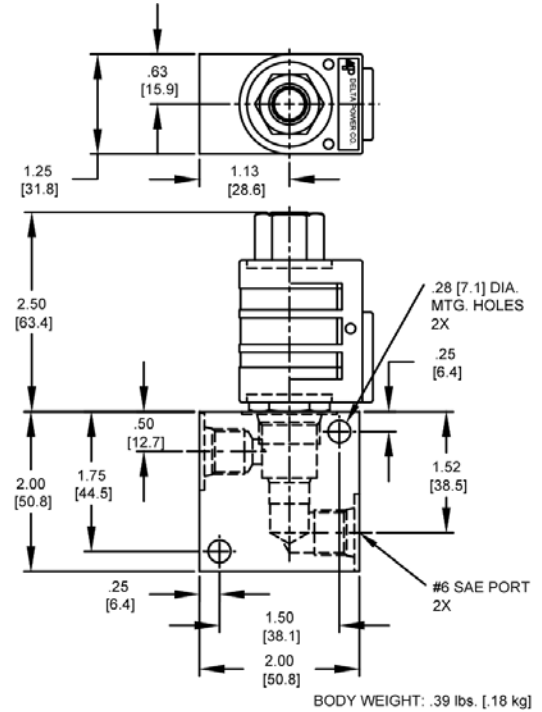
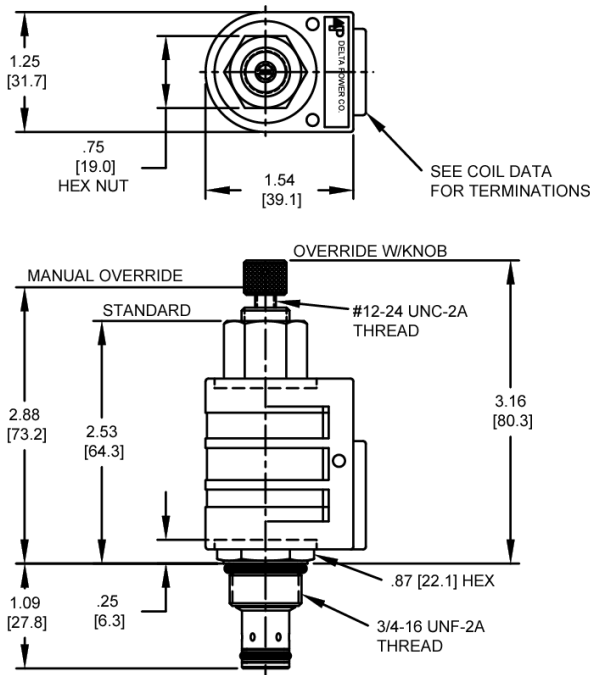


VALVE SPECIFICATIONS

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 Temperature 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)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 Nm)
Cavity	POWER 2W
Cavity Form Tool (Finishing)	40500005
Seal Kit	2191100

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

PB-S2D

OPTIONS				BODIES
Buna Standard	00		Blank	Without Body
Viton Standard	V0		N	1/4 NPTF Ports
Buna, Override, Detent	0M		S	#6 SAE Ports
Viton, Override, Detent	VM			
Buna, Override, Knob	OK			
Viton, Override, Knob	VK			
Buna, Screen	A0		06	6 VDC
Viton, Screen	W0		12	12 VDC
Buna, Screen, Override	B2		24	24 VDC
Viton, Screen, Override	V2		36	36 VDC
Buna, Screen, Override, Knob	B5		48	48 VDC
Viton, Screen, Override, Knob	V5		25	24 VAC
			11	120 VAC
			22	220 VAC
			44	440 VAC

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

"P" COIL TERMINATION
(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04-2P
- ML** Metri-Pack on Leads
- PL** Packard on Leads
- WL** Weatherpack on Leads

- SS** Single Spade
- DS** Double Spade
- HC** DIN 43650 (Hirschman) – (AC & DC)
- CL** Conduit Lead – (AC Only)
- DI** Deutsch – Integral DT04-2P

- IMMERSION PROOF "P" TYPE**
- IA** "I" Coil AMP Superseal - Integral
 - ID** "I" Coil Deutsch – Integral DT04-2P
 - IJ** "I" Coil AMP Jr. Timer - Integral
 - IM** "I" Coil Metri-Pack – Integral

Approximate Coil Weight: .42 lbs. (.19 kg.)

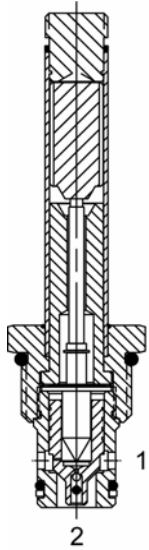
WARNING: The specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

DE-S2D Pilot Operated Poppet, 2 Way, Normally Open



DESCRIPTION

10 size, 7/8-14 thread, "Delta" series, solenoid operated, 2 way normally open, pilot operated poppet valve with free reverse flow energized and de-energized.

OPERATION

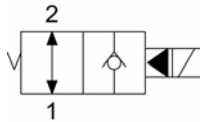
When de-energized the DE-S2D allows flow to pass from (1) to (2) and (2) to (1), When energized the valve blocks flow from (1) to (2) but allows free reverse flow from (2) to (1).

OPERATION OF MANUAL OVERRIDE OPTION: To override, turn the manual override screw clockwise. To release turn the turn the manual override screw counter-clockwise.

FEATURES

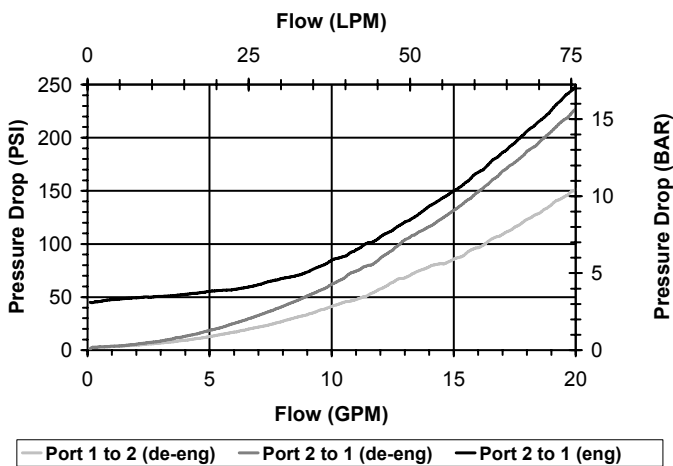
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

HYDRAULIC SYMBOL



PERFORMANCE

Actual Test Data (Cartridge Only)

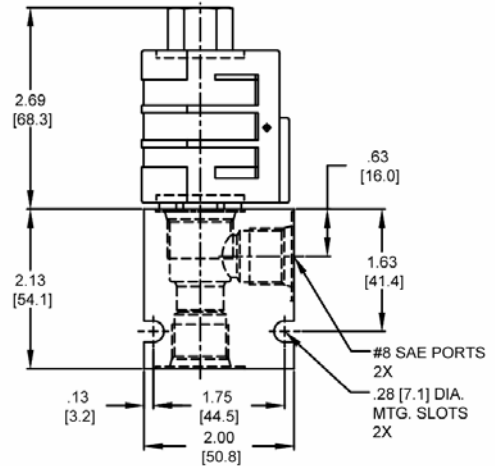
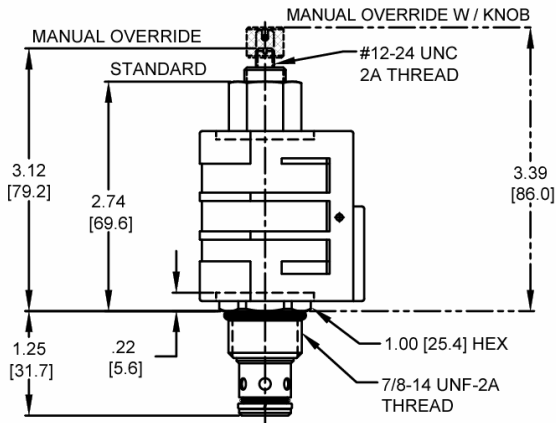
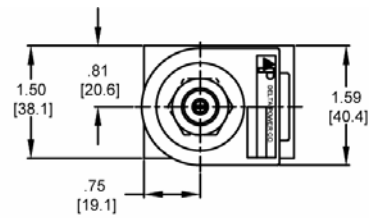
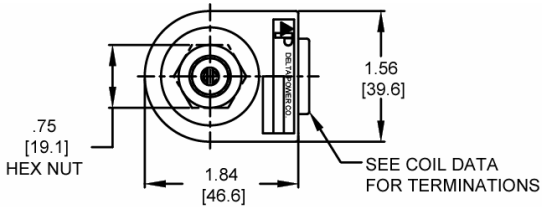


VALVE SPECIFICATIONS

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 Temperature 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)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 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



ORDERING INFORMATION

DE-S2D - - - -

OPTIONS

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Override **0M**
- Viton, Override **VM**
- Buna, Override, Knob **OK**
- Viton, Override, Knob **VK**
- Buna, Screen **A0**
- Viton, Screen **W0**
- Buna, Screen, Override **B2**
- Viton, Screen, Override **V2**
- Buna, Screen, Override, Knob **B5**
- Viton, Screen, Override, Knob **V5**

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

"D" COIL TERMINATION

(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04-2P
- MI** Metri-Pack on Leads
- PI** Packard on Leads
- WL** Weatherpack on Leads

- SS** Single Spade
- DS** Double Spade
- HC** DIN 43650 (Hirschmann) - (AC & DC)
- CL** Conduit Lead - (AC Only)
- DI** Deutsch - Integral DT04-2P

BODIES

- Blank
- N** 3/8 NPTF Ports
- S** #8 SAE Ports

VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 25** 24 VAC
- 11** 120 VAC
- 22** 220 VAC
- 44** 440 VAC

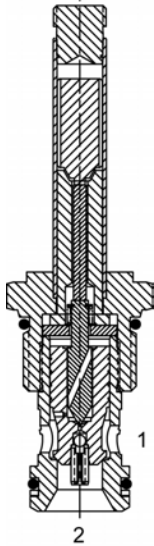
IMMERSION PROOF "D" TYPE

- IA** "I" Coil AMP Superseal - Integral
- ID** "I" Coil Deutsch - Integral DT04-2P
- IJ** "I" Coil AMP Jr. Timer - Integral
- IM** "I" Coil Metri-Pack - Integral

Approximate Coil Weight: .74 lbs./33 kg.

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.

TT-S2D Pilot Operated Poppet, 2 Way, Normally Open



DESCRIPTION

12 size, 1 1/16-12 thread, "Tecnorm" series, solenoid operated, 2 way normally open, pilot operated poppet valve with free reverse flow energized and de-energized.

OPERATION

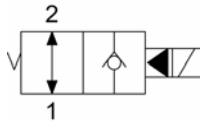
When de-energized the TT-S2D allows flow to pass from (1) to (2) and (2) to (1), When energized the valve blocks flow from (1) to (2) but allows free reverse flow from (2) to (1).

OPERATION OF MANUAL OVERRIDE OPTION: To override, turn the manual override screw clockwise. To release turn the manual override screw counter-clockwise.

FEATURES

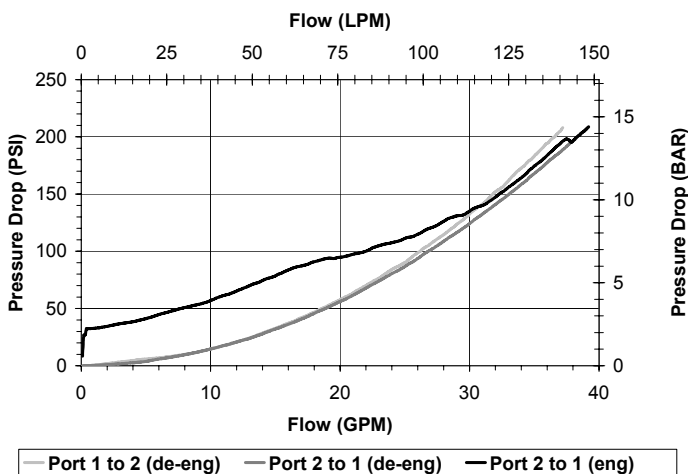
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

HYDRAULIC SYMBOL



PERFORMANCE

Actual Test Data (Cartridge Only)

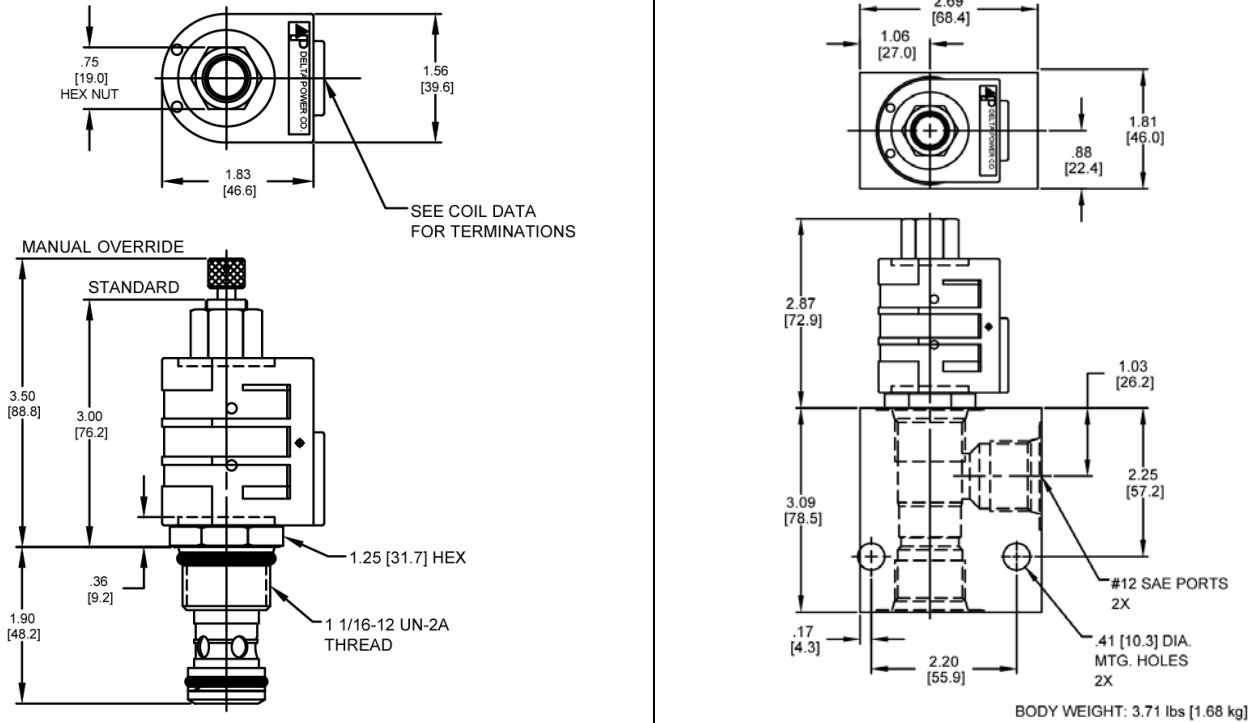


VALVE SPECIFICATIONS

Nominal Flow	30 GPM (114 LPM)
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 Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.51 lbs. (.23 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	70 ft-lbs (94.9 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (4.5-8.1 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



ORDERING INFORMATION

TT-S2D - - - -

OPTIONS

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Override, Knob **OK**
- Viton, Override, Knob **VK**
- Buna, Screen **A0**
- Viton, Screen **W0**
- Buna, Screen, Override, Knob **B5**
- Viton, Screen, Override, Knob **V5**

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

- Blank
- S**

BODIES

- Without Body
- #12 SAE Ports**

VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 25** 24 VAC
- 11** 120 VAC
- 22** 220 VAC
- 44** 440 VAC

“D” COIL TERMINATION

(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04-2P
- MI** Metri-Pack on Leads
- PI** Packard on Leads
- WL** Weatherpack on Leads

- SS** Single Spade
- DS** Double Spade
- HC** DIN 43650 (Hirschmann) – (AC & DC)
- CL** Conduit Lead – (AC Only)
- DI** Deutsch – Integral DT04-2P

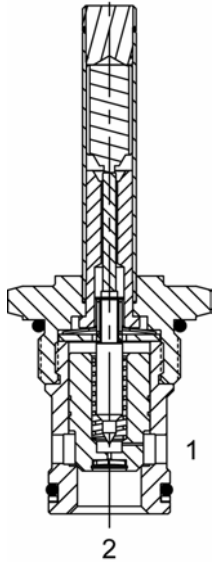
IMMERSION PROOF “D” TYPE

- IA** “I” Coil AMP Superseal - Integral
- ID** “I” Coil Deutsch – Integral DT04-2P
- IJ** “I” Coil AMP Jr. Timer - Integral
- IM** “I” Coil Metri-Pack- Integral

Approximate Coil Weight: .74 lbs/.33 kg.

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-S2D Pilot Operated Poppet, 2 Way, Normally Open



DESCRIPTION

16 size, 1 5/16-12 thread, "Super" series, solenoid operated, 2 way normally open, pilot operated poppet valve with free reverse flow energized and de-energized.

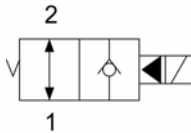
OPERATION

When de-energized the SJ-S2D allows flow to pass from (1) to (2) and (2) to (1), When energized the valve blocks flow from (1) to (2) but allows free reverse flow from (2) to (1).

FEATURES

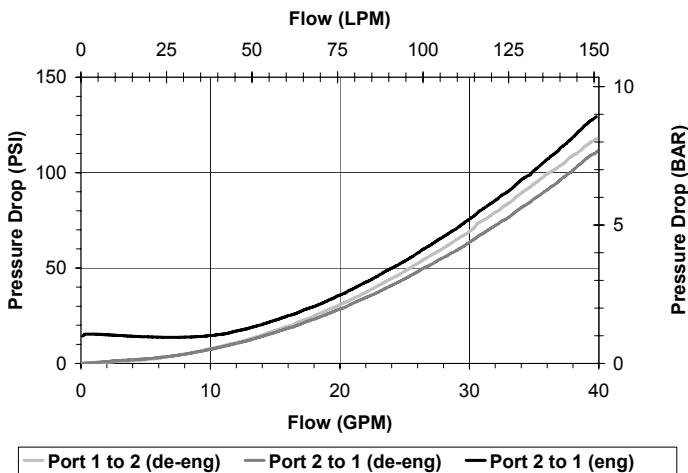
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

HYDRAULIC SYMBOL



PERFORMANCE

Actual Test Data (Cartridge Only)

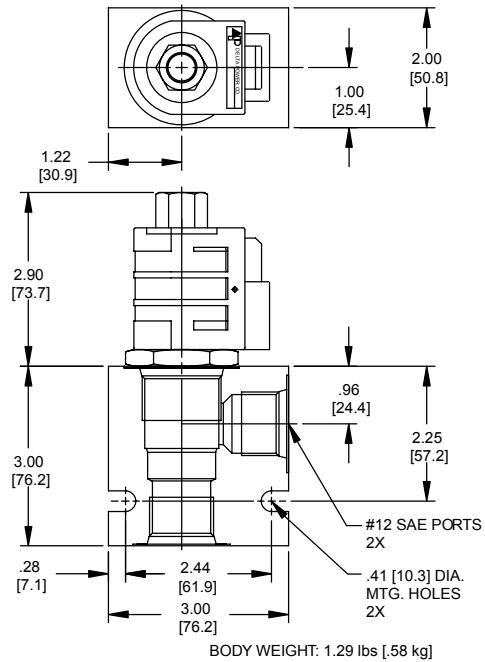
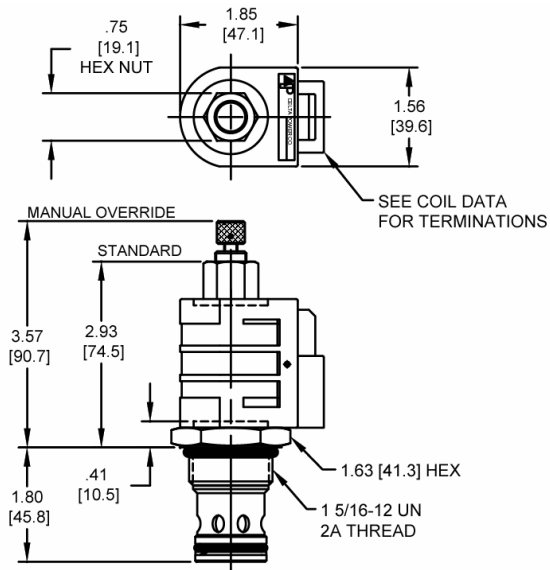


VALVE SPECIFICATIONS

Nominal Flow	40 GPM (151 LPM)
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 Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.74 lbs. (.33 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	90 ft-lbs (122 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 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



ORDERING INFORMATION

SJ-S2D - - - -

OPTIONS

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Screen **A0**
- Viton, Screen **W0**
- Buna, Override **0K**
- Viton, Override **VK**
- Buna, Screen, Override **B2**
- Viton, Screen, Override **V2**

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

BODIES

- Blank
- N** 3/4 NPTF Ports
- S** #12 SAE Ports

VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 25** 24 VAC
- 11** 120 VAC
- 22** 220 VAC
- 44** 440 VAC

"D" COIL TERMINATION

(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04—2P
- MI** Metri-Pack on Leads
- PI** Packard on Leads
- WL** Weatherpack on Leads

- SS** Single Spade
- DS** Double Spade
- HC** Din 43650 (Hirschmann) — (AC & DC)
- CL** Conduit Lead — (AC Only)
- DI** Deutsch — Integral DT04—2P

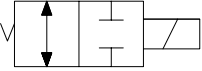
IMMERSION PROOF "D" TYPE

- IA** "I" Coil AMP Superseal — Integral
- ID** "I" Coil Deutsch — Integral DT04—2P
- IJ** "I" Coil AMP Jr. Timer — Integral
- IM** "I" Coil Metri-Pack — Integral

Approximate Coil Weight: .74 lbs/.33 kg.

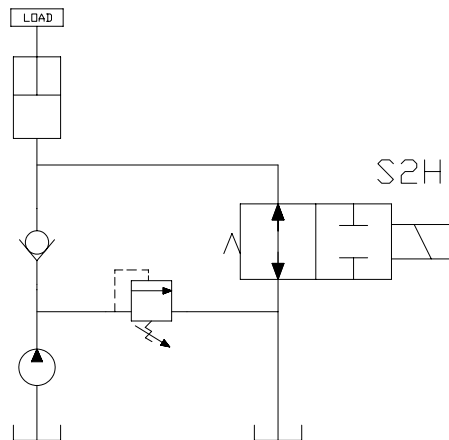
WARNING: The specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

2 Way 2 Position Normally Open Spool Valves

	GPM	PSI	LPM	BAR	MODEL	PAGE
	3	3000	11	207	MA-S2H	84
	3	4000	11	276	HA-S2H	86
	5	3000	19	207	PB-S2H	88
	8	3000	30	207	DE-S2H	90
	8	4000	30	276	HE-S2H	92
	6	1000	23	69	IE-S2H	596

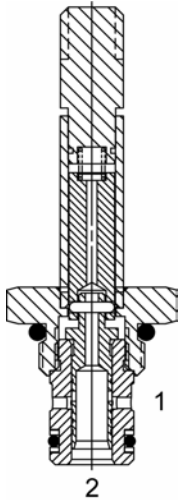
Typical Schematic

Typical application for the S2H is a pump unloading valve.



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.

MA-S2H Direct Acting Spool, 2 Way, Normally Open



DESCRIPTION

7 size, 5/8-18 thread, "Mini" series, solenoid operated, 2 way normally open, spool valve.

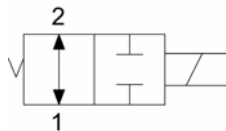
OPERATION

When de-energized the MA-S2H allows flow from (1) to (2) and (2) to (1). When energized the valve blocks flow from (1) to (2) and (2) to (1).

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

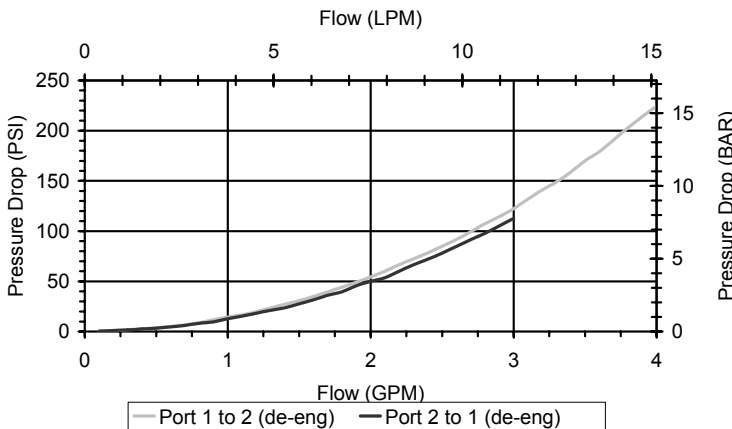
HYDRAULIC SYMBOL



Valve is rated for shift and return from 1 to 2 only: 3 GPM, 3000 PSI. Max steady state flow 2 to 1 1:3 GPM. HA-S2H should be specified where higher pressures or 2 to 1 shift operation is required.

PERFORMANCE

Actual Test Data (Cartridge Only)

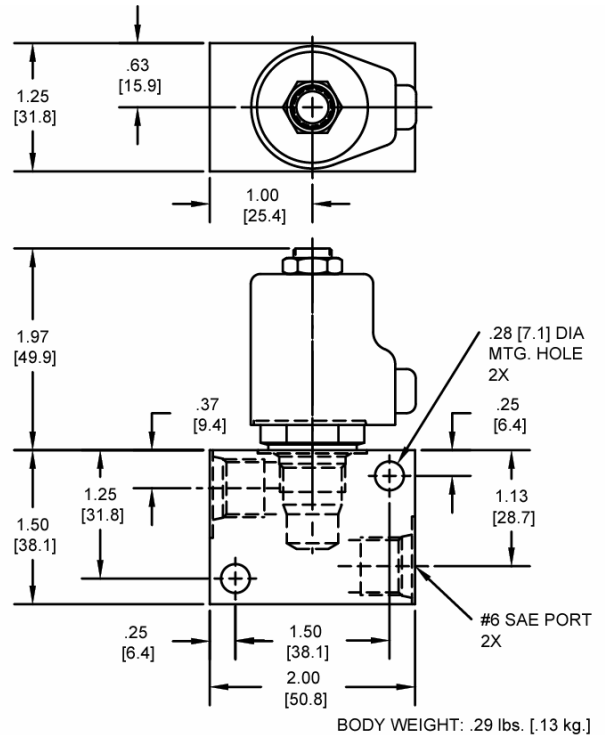
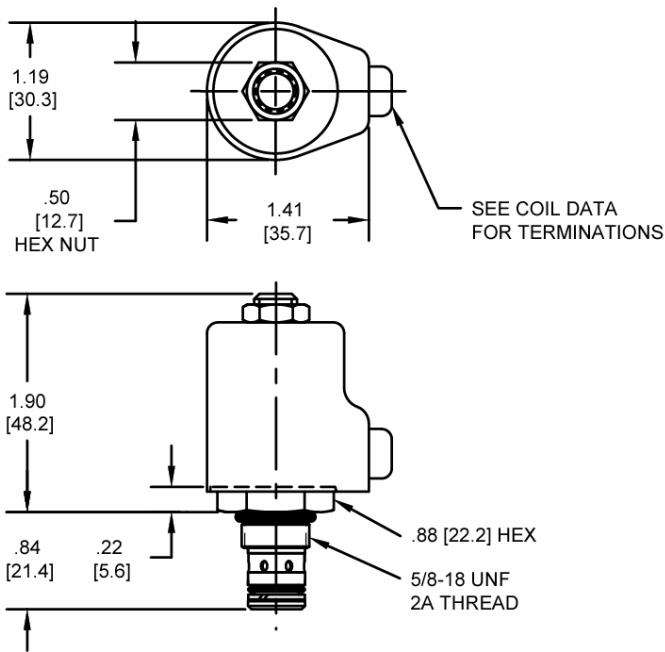


VALVE SPECIFICATIONS

Maximum Flow	3 GPM (11 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 Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.12 lbs. (.05 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	15 ft-lbs (40 Nm)
Coil Nut Torque Requirements	3-5 ft-lbs (4.1-6.8 Nm)
Cavity	MINI 2W
Cavity Form Tool (Finishing)	40500003
Seal Kit	21191002

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

MA-S2H - - - - -

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).

"M" COIL TERMINATION

(All DC Except as Noted)

- Double Lead **DL**
- Deutsch on Leads DT04-2P **DT**
- Metri-Pack on Leads **ML**
- Packard on Leads **PL**
- Weatherpack on Leads **WL**
- Single Spade **SS**
- Double Spade **DS**
- DIN 43650 (Hirschman) - (AC&DC) **HC**
- Conduit Lead - (AC Only) **CL**

BODIES

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

VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 25** 24 VAC
- 11** 120 VAC
- 22** 220 VAC
- 44** 440 VAC

Approximate Coil Weight: .30 lbs (.14 kg.)

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.

Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

HA-S2H Direct Acting Spool, 2 Way, Normally Open

DESCRIPTION

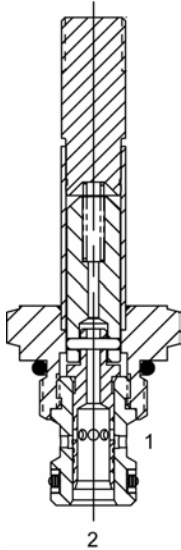
"High Pressure" 7 size, 5/8-18 thread, "Mini" series, solenoid operated, 2-way normally open, spool valve.

OPERATION

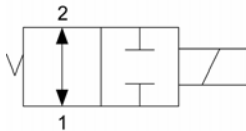
When de-energized the HA-S2H allows flow from (1) to (2) and (2) to (1). When energized the valve blocks flow from (1) to (2) and (2) to (1).

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design (for most common terminations, see coil page).
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.



HYDRAULIC SYMBOL

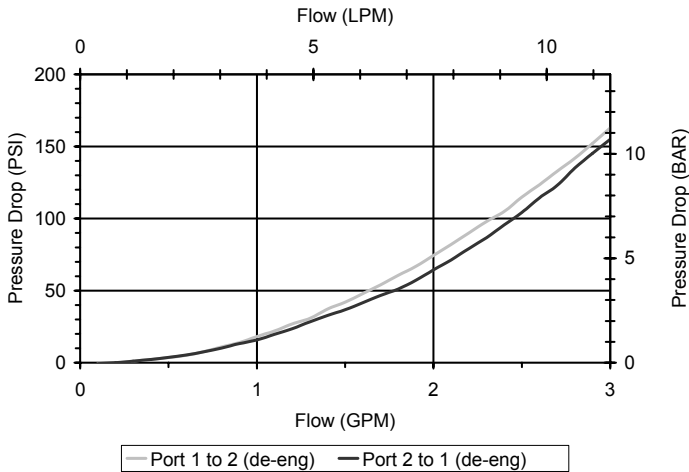


Operational shift limit 2 GPM (8 LPM).

For shifted performance consult chart.

PERFORMANCE

Actual Test Data (Cartridge Only)



VALVE SPECIFICATIONS

Maximum Flow	3 GPM (11 LPM)
Rated Operating Pressure	4000 PSI (276 bar)
Typical Internal Leakage (150 SSU)	8 cu in/min (131 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.14 lbs. (.06 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	15 ft-lbs (20 Nm)
Coil Nut Torque Requirements	3-5 ft-lbs (4.1-6.8 Nm)
Cavity	MINI 2W
Cavity Form Tool (Finishing)	40500003
Seal Kit	21191002

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.

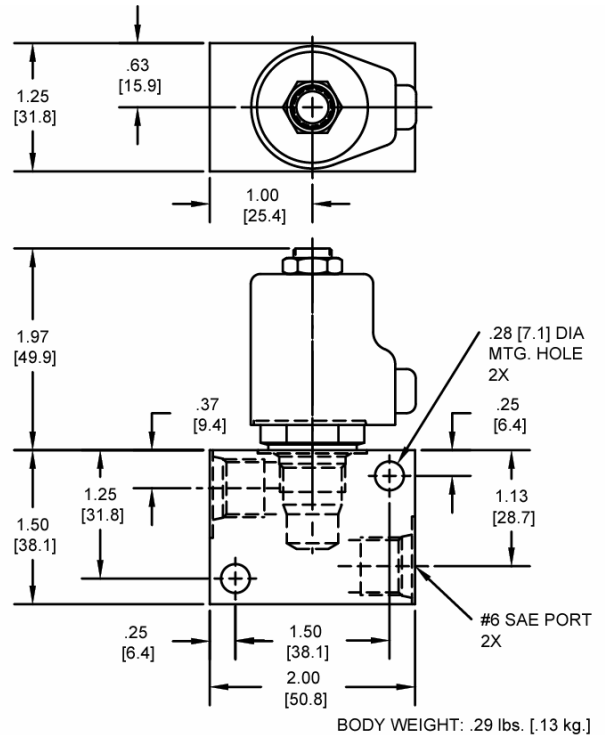
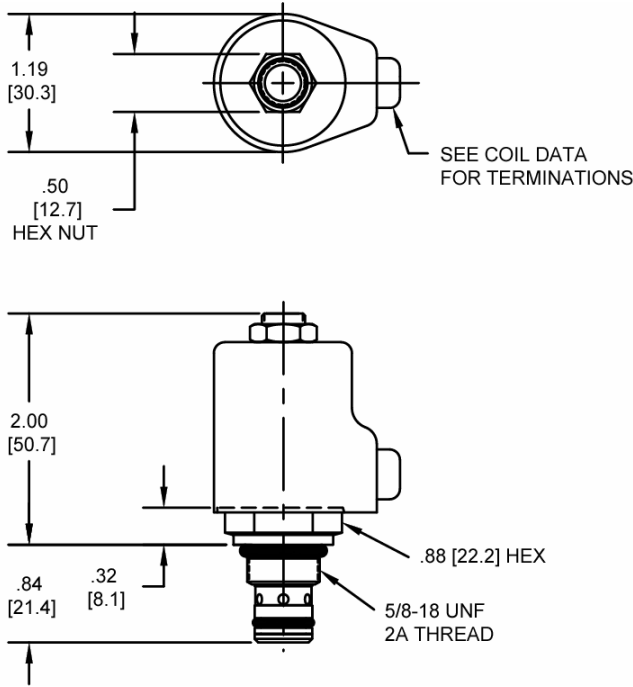
Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com



DIMENSIONS



ORDERING INFORMATION

HA-S2H - - - -

OPTIONS

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

Blank **N**
S

BODIES

Without Body
1/4 NPTF Ports
#6 SAE Ports

Note: Aluminum, NOT durability rated for 4000 PSI. Consult factory for body options.

VOLTAGE

06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC
44 440 VAC

"M" COIL TERMINATION

(All DC Except as Noted)

Double Lead **DL**
Deutsch on Leads DT04-2P **DT**
Metri-Pack on Leads **ML**
Packard on Leads **PL**
Weatherpack on Leads **WL**
Single Spade **SS**
Double Spade **DS**
DIN 43650 (Hirschman) - (AC&DC) **HC**
Conduit Lead - (AC Only) **CL**

Approximate Coil Weight: .30 lbs (.14 kg.)

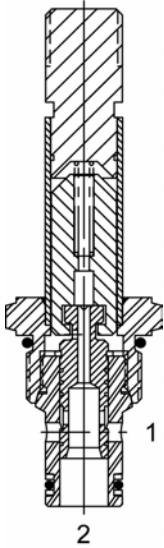
WARNING: The specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

PB-S2H Direct Acting Spool, 2 Way, Normally Open



DESCRIPTION

8 size, 3/4-16 thread, "Power" series, solenoid operated, 2 way normally open, spool valve.

OPERATION

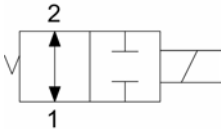
When de-energized the PB-S2H allows flow from (1) to (2) and (2) to (1). When energized the valve allows flow from (1) to (2) and (2) to (1).

OPERATION OF MANUAL OVERRIDE OPTION: To override, pull knob out. On the detented version, after pulling knob out twist 180 degrees and release. The valve will remain in that position.

FEATURES

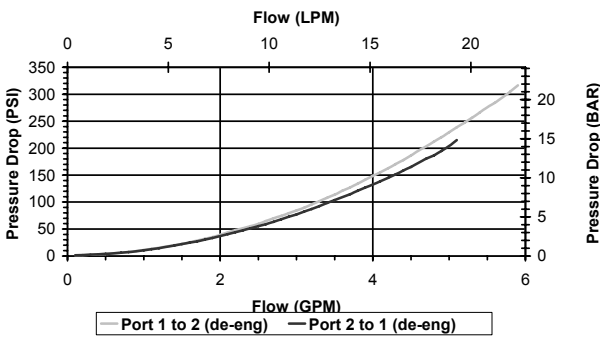
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

HYDRAULIC SYMBOL



PERFORMANCE

Actual Test Data (Cartridge Only)

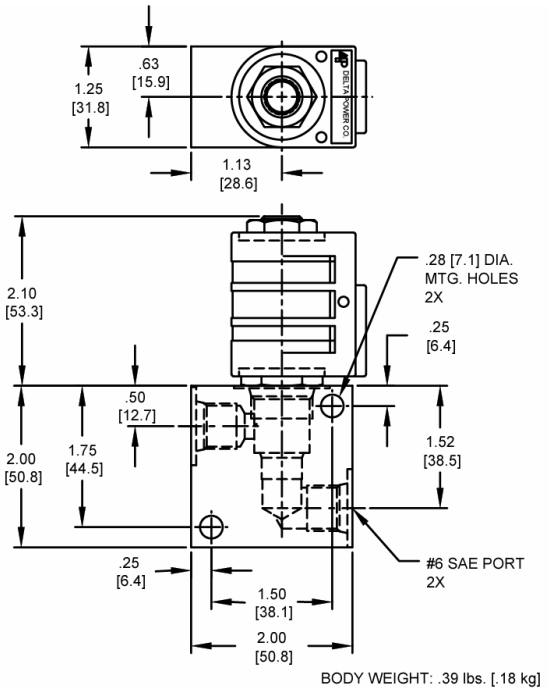
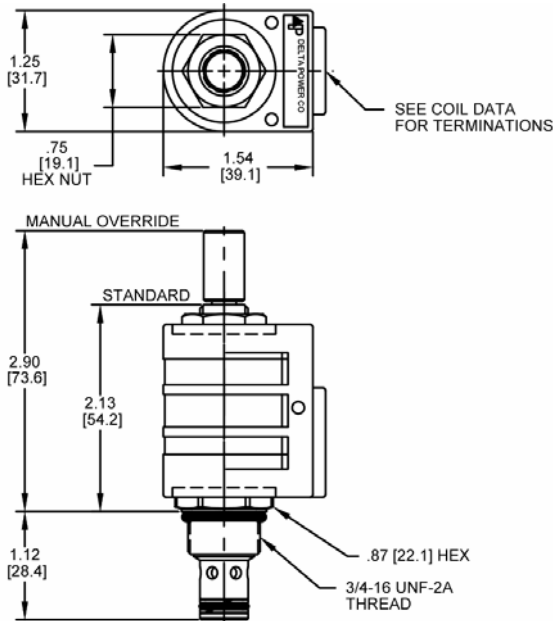


VALVE SPECIFICATIONS

Nominal Flow	5 GPM (19 LPM) from (1) to (2) 3 GPM (11 LPM) from (2) to (1)
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 Temperature 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)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 Nm)
Cavity	POWER 2W
Cavity Form Tool (Finishing)	40500005
Seal Kit	21191102

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

PB-S2H - - - -

OPTIONS

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Override, Detent **0M**
- Viton, Override, Detent **VM**
- Buna, Screen **A0**
- Viton, Screen **W0**
- Buna, Override, Nondetent **B1**
- Viton, Override, Nondetent **V1**
- Buna, Screen, Override, Nondetent **B3**
- Viton, Screen, Override, Nondetent **V3**
- Buna, Screen, Override, Detent **B4**
- Viton, Screen, Override, Detent **V4**

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

"P" COIL TERMINATION

(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04-2P
- ML** Metri-Pack on Leads
- PL** Packard on Leads
- WL** Weatherpack on Leads

- SS** Single Spade
- DS** Double Spade
- HC** Din 43650 (Hirschmann) - (AC & DC)
- CL** Conduit Lead - (AC Only)
- DI** Deutsch - Integral DT04-2P

BODIES

- Blank
- N** 1/4 NPTF Ports
- S** #6 SAE Ports

VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 25** 24 VAC
- 11** 120 VAC
- 22** 220 VAC
- 44** 440 VAC

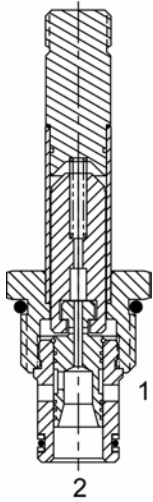
IMMERSION PROOF "P" TYPE

- IA** "I" COIL AMP Superseal - Integral
- ID** "I" COIL Deutsch - Integral DT04-2P
- IJ** "I" COIL AMP Jr. Timer - Integral
- IM** "I" COIL Metri-Pack - Integral

Approximate Coil Weight: .42 lbs/. 19 kg.

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-S2H Direct Acting Spool, 2 Way, Normally Open



DESCRIPTION

10 size, 7/8-14 thread, "Delta" series, solenoid operated, 2 way normally open, spool valve

OPERATION

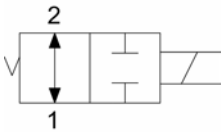
When de-energized the DE-S2H allows flow from (1) to (2) and (2) to (1). When energized the valve blocks flow from (1) to (2) and (2) to (1).

OPERATION OF MANUAL OVERRIDE OPTION: To override, pull knob out. On the detented version, after pulling knob out twist 180 degrees and release. The valve will remain in that position.

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

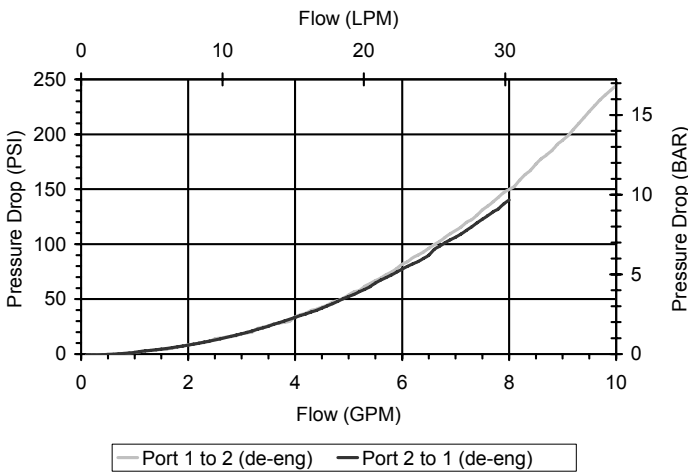
HYDRAULIC SYMBOL



For higher pressure systems see HE-S2H

PERFORMANCE

Actual Test Data (Cartridge Only)

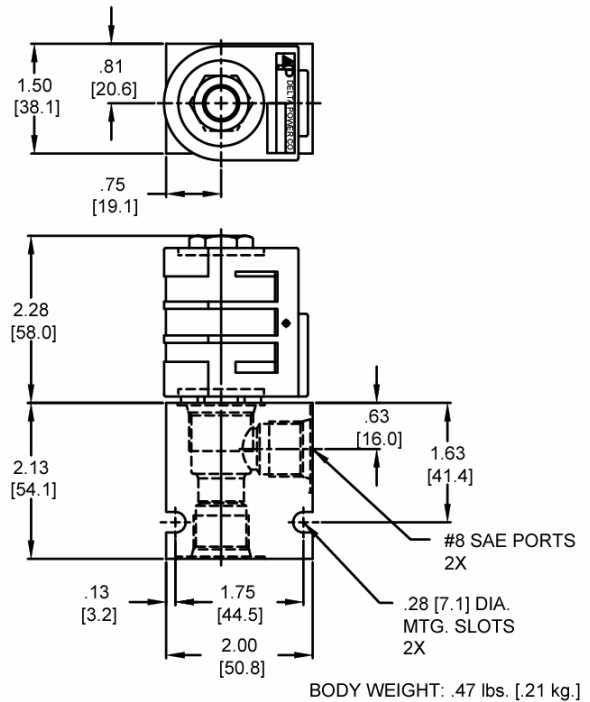
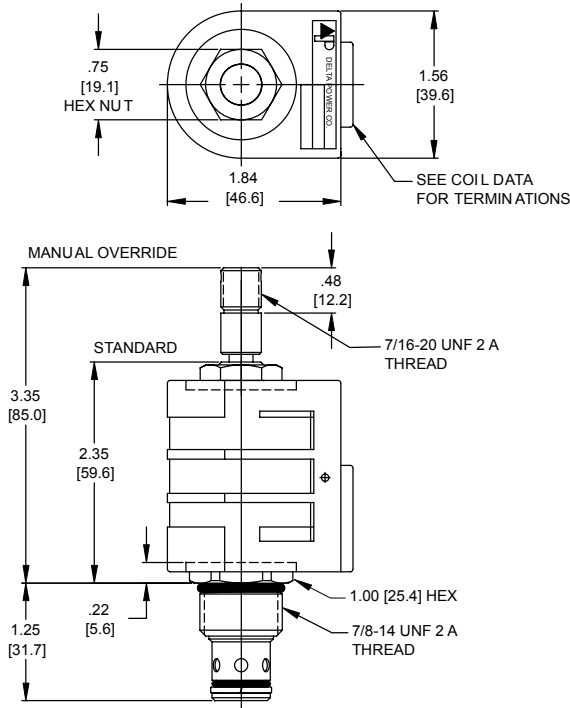


VALVE SPECIFICATIONS

Nominal Flow	8 GPM (30 LPM) from (1) to (2) 4 GPM (15 LPM) from (2) to (1)
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 Temperature 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)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 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



ORDERING INFORMATION

DE-S2H - - - -

OPTIONS

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Override **0M**
- Viton, Override **VM**
- Buna, Screen **A0**
- Viton, Screen **W0**
- Buna, Override, Non-detent **B1**
- Viton, Override, Non-detent **V1**
- Buna, Screen, Override, Non-detent **B3**
- Buna, Screen, Override, Detent **B4**
- Viton, Screen, Override, Non-detent **V3**
- Viton, Screen, Override, Detent **V4**

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

"D" COIL TERMINATION

(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04-2P
- ML** Metri-Pack on Leads
- PL** Packard on Leads
- WL** Weatherpack on Leads

- SS** Single Spade
- DS** Double Spade
- HC** DIN 43650 (Hirschman) - (AC & DC)
- CL** Conduit Lead - (AC Only)
- DI** Deutsch - Integral DT04-2P

BODIES

- Blank
- N** 3/8 NPTF Ports
- S** #8 SAE Ports

VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 25** 24 VAC
- 11** 120 VAC
- 22** 220 VAC
- 44** 440 VAC

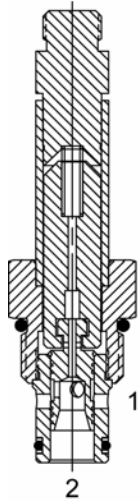
IMMERSION PROOF "D" TYPE

- IA** "I" Coil AMP Superseal - Integral
- ID** "I" Coil Deutsch - Integral DT04-2P
- IJ** "I" Coil AMP Jr. Timer - Integral
- IM** "I" Coil Metri-Pack - Integral

Approximate Coil Weight: .74 lbs/.33 kg.

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.

HE-S2H Direct Acting Spool, 2-Way, Normally Open



DESCRIPTION

"High Pressure" 10 size, 7/8-14 thread, "Delta" series, solenoid operated, 2 way normally open, spool valve

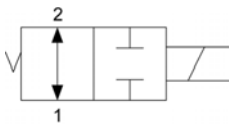
OPERATION

When de-energized the HE-S2H allows flow from (1) to (2) and (2) to (1). When energized the valve blocks flow from (1) to (2) and (2) to (1).

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

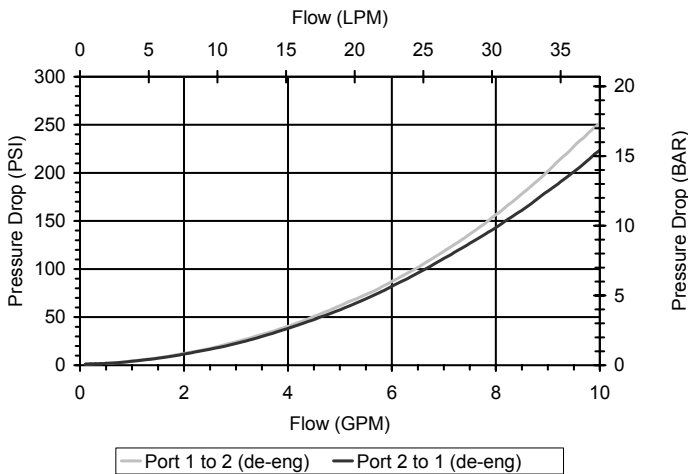
HYDRAULIC SYMBOL



Uses "L" Coil.

PERFORMANCE

Actual Test Data (Cartridge Only)

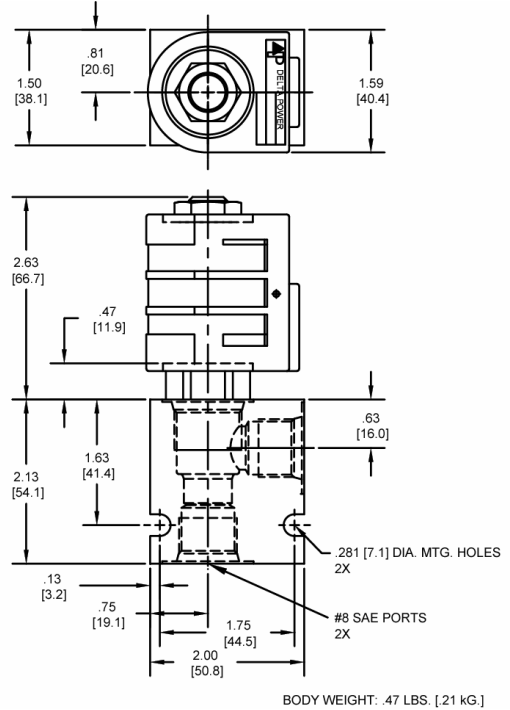
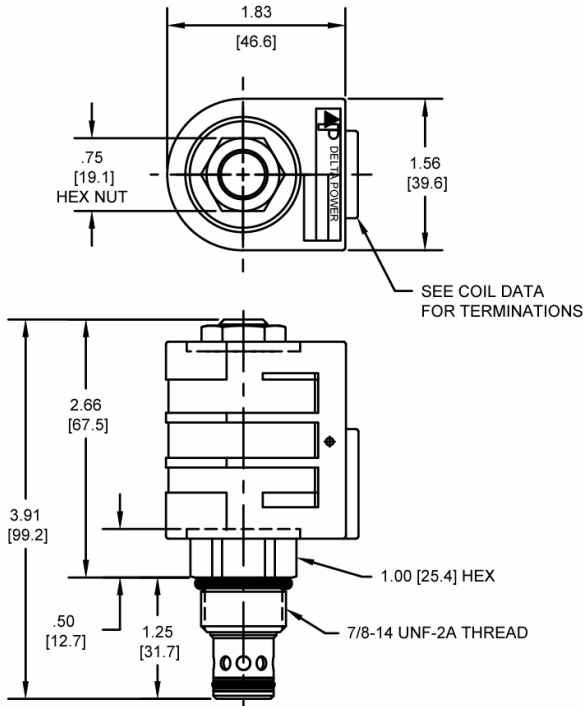


VALVE SPECIFICATIONS

Maximum Flow	8 GPM (30 LPM) from 1 to 2 4 GPM (15 LPM) from 2 to 1
Max Operating Pressure	4000 PSI (276 bar)
Typical Internal Leakage (150 SSU)	8 cu in/min (131 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature 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)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 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



ORDERING INFORMATION

HE-S2H -

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

Blank
N
S

BODIES
Without Body
3/8 NPTF Ports
#8 SAE Ports

Note: Aluminum, NOT durability rated for 4000 PSI. Consult factory options.

VOLTAGE
06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VAC
25 25 VAC
11 120 VAC
22 220 VAC
44 440 VAC

“L” - COIL TERMINATION
(All DC Except as Noted)

DL Double Lead
DT Deutsch on Leads DT04-2P
ML Metri-Pack on Leads
PL Packard on Leads
WL Weatherpack on Leads

SS Single Spade
DS Double Spade
HC DIN 43650 (Hirschman) – (AC & DC)
CL Conduit Lead – (AC Only)
DI Deutsch – Integral DT04-2P

IMMERSION PROOF “L” TYPE
IA “I” Coil AMP Superseal - Integral
ID “I” Coil Deutsch – Integral DT04-2P
IJ “I” Coil AMP Jr. Timer - Integral
IM “I” Coil Metri-Pack – Integral

Approximate Coil Weight: .68 lbs. (.31 kg.)

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-S2J Pilot Operated Poppet, 2 Way, Normally Open, Soft Seat

DESCRIPTION

8 size, 3/4-16 thread, "Power" series, solenoid operated, 2 way normally open, pilot operated soft seat poppet valve with free reverse flow energized.

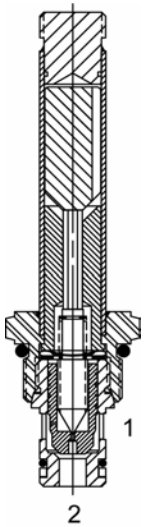
OPERATION

When de-energized the PB-S2J allows flow from (1) to (2) and restricts flow from (2) to (1). When energized the valve blocks flow from (1) to (2) and allows free flow from (2) to (1).

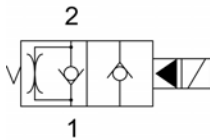
OPERATION OF MANUAL OVERRIDE OPTION: To override, turn the manual override screw clockwise. To release turn the manual override screw counter-clockwise.

FEATURES

- Soft seat for ultra low leakage.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.



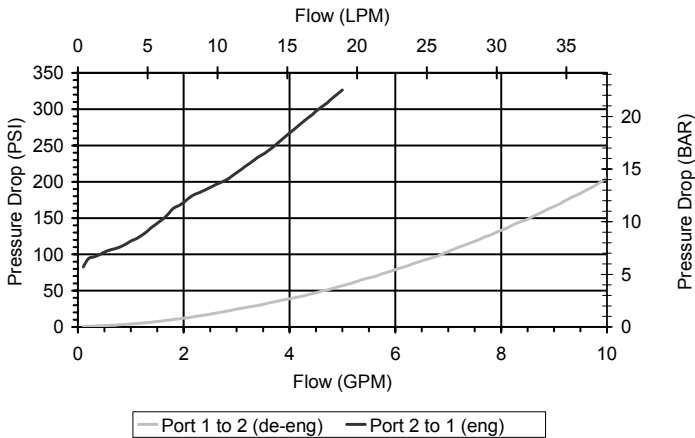
HYDRAULIC SYMBOL



Unshifted limit 6 GPM (23 LPM) from (1) to (2) energized. For shifted flow performance consult chart.

PERFORMANCE

Actual Test Data (Cartridge Only)

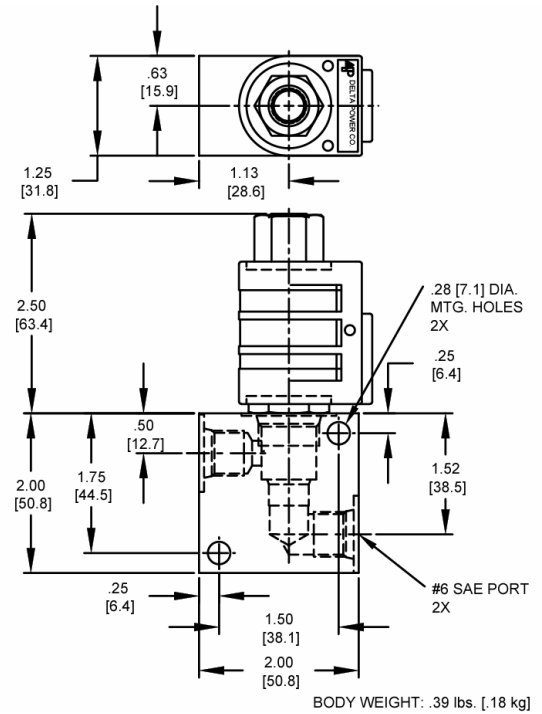
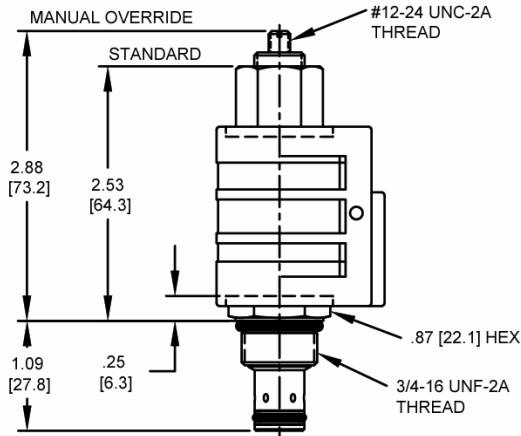
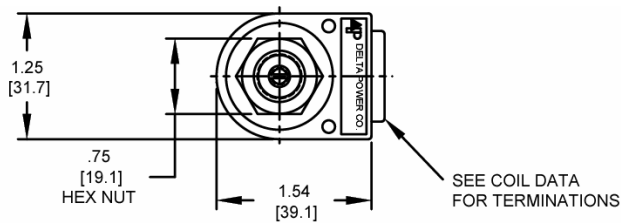


VALVE SPECIFICATIONS

Nominal Flow	8 GPM (30 LPM)
Rated Operating Pressure	2000 PSI (138 bar)
Typical Internal Leakage (150 SSU)	Negligible
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-35° to 200° F (-37° to 93° C)
Weight	21 lbs. (.10 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 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



ORDERING INFORMATION

PB-S2J - - -

OPTIONS

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Override, Detent **0M**
- Viton, Override, Detent **VM**
- Buna, Screen **A0**
- Viton, Screen **W0**
- Buna, Screen Override **B2**
- Viton, Screen, Override **V2**

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

- Blank
- N** 1/4 NPTF Ports
- S** #6 SAE Ports

BODIES

VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 25** 24 VAC
- 11** 120 VAC
- 22** 220 VAC
- 44** 440 VAC

"P" COIL TERMINATION

(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04-2P
- ML** Metri-Pack on Leads
- PL** Packard on Leads
- WL** Weatherpack on Leads

- SS** Single Spade
- DS** Double Spade
- HC** DIN 43650 (Hirschman) – (AC & DC)
- CL** Conduit Lead – (AC Only)
- DI** Deutsch – Integral DT04-2P

IMMERSION PROOF "P" TYPE

- IA** "I" Coil AMP Superseal - Integral
- ID** "I" Coil Deutsch – Integral DT04-2P
- IJ** "I" Coil AMP Jr. Timer - Integral
- IM** "I" Coil Metri-Pack – Integral

Approximate Coil Weight: .42 lbs. (.19 kg.)


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.

Phone: (815) 397-6628

Fax: (815) 397-2526

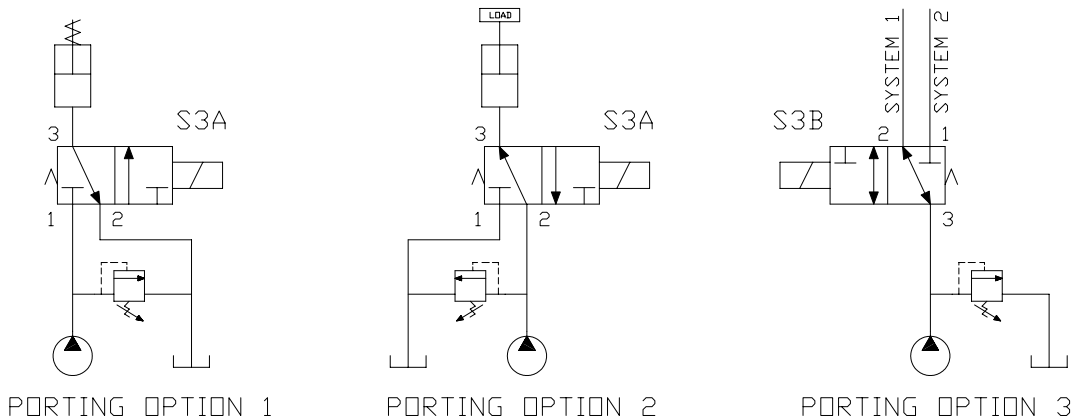
E-mail: delta@delta-power.com

3 Way 2 Position Spool Valves

	GPM	PSI	LPM	BAR	MODEL	PAGE
	1	3000	4	207	MC-S3A	98
	2	4000	8	276	HC-S3A	100
	3	3000	11	207	PP-S3A	102
	10	3000	38	207	DF-S3A	104
	10	4000	38	276	HF-S3A	106
	6	1000	23	69	IF-S3A	598
	6	1000	23	69	QF-S3A	580
	8	3000	30	207	DF-S3B	108
	8	4000	30	276	HF-S3B	110
	3	3000	11	207	PP-S3D	112
	6	1000	23	69	IF-S3D	600
	6	1000	23	69	QF-S3D	582
	15	5000	57	345	HU-S3E	114
	15	5000	57	345	HU-S3F	116
	3	4000	11	276	HC-S3P	118
	4	1500	15	103	MC-S3T	120
	8	1500	30	103	DF-S3T	122
3	3000	11	207	PP-S3X	124	

Typical Schematic

Typical application for porting option 1 is to operate a spring loaded hydraulic clutch.
 Typical application for porting option 2 is single acting cylinder control in a gravity lower circuit.
 Typical application for porting option 3 is a selector valve for two different systems or functions.



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.

MC-S3A Direct Acting Spool, 3 Way 2 Position

DESCRIPTION

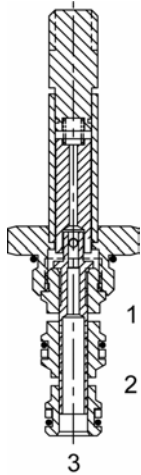
7 size, 5/8-18 thread, "Mini" series, solenoid operated, 3 way 2 position, spool valve.

OPERATION

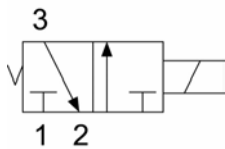
When de-energized the MC-S3A blocks flow at (1) and allows flow from (3) to (2). When energized the valve allows flow from (1) to (3) and blocks flow at (2).

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.



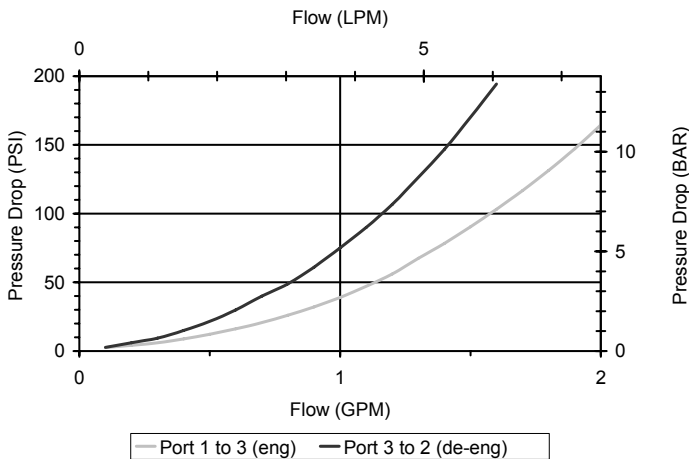
HYDRAULIC SYMBOL



Operational shift limit 1 GPM (3.8 LPM) from (1) to (3) at 3000 PSI and 2 GPM (7.6 LPM) from (3) to (2) with no load. For shifted flow performance consult chart. For higher pressures or flows SEE HC-S3A

PERFORMANCE

Actual Test Data (Cartridge Only)

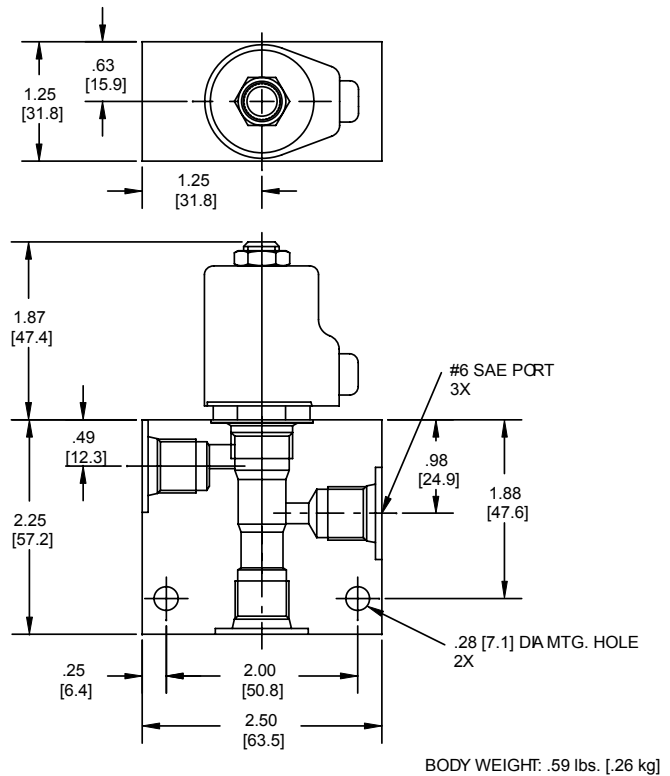
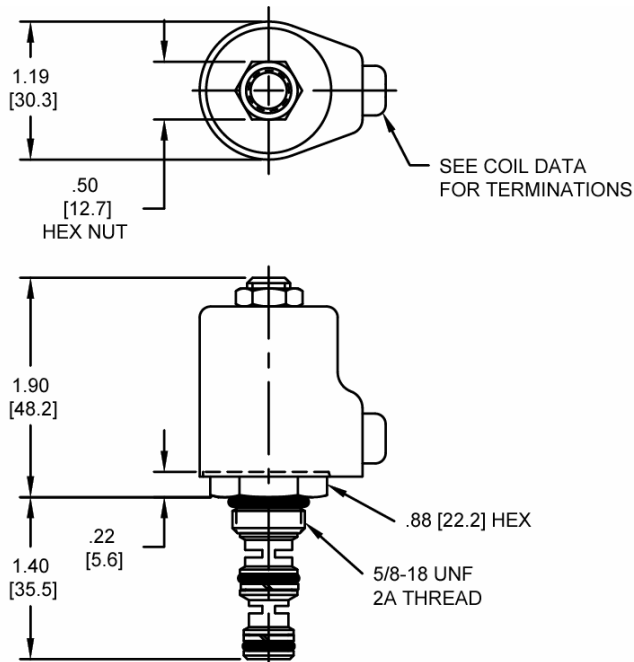


VALVE SPECIFICATIONS

Nominal Flow	1 GPM (3.8 LPM) from (1) to (3) 2 GPM (7.6 LPM) from (3) to (2)
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 Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.14 lbs. (.06 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	15 ft-lbs (20.3 Nm)
Coil Nut Torque Requirements	3-5 ft-lbs (4.1-6.8 Nm)
Cavity	MINI 3W
Cavity Form Tool (Finishing)	40500004
Seal Kit	21191004

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

MC-S3A - - - -

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

Blank **N**
S

BODIES
Without Body
1/4 NPTF Ports
#6 SAE Ports

VOLTAGE
06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC
44 440 VAC

"M" COIL TERMINATION

(All DC Except as Noted)

Double Lead **DL**
Deutsch on Leads DT04-2P **DT**
Metri-Pack on Leads **ML**
Packard on Leads **PL**
Weatherpack on Leads **WL**
Single Spade **SS**
Double Spade **DS**
DIN 43650 (Hirschman) - (AC&DC) **HC**
Conduit Lead - (AC Only) **CL**

Approximate Coil Weight: .30 lbs/.14 kg.

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.

Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

HC-S3A Direct Acting Spool, 3 Way 2 Position

DESCRIPTION

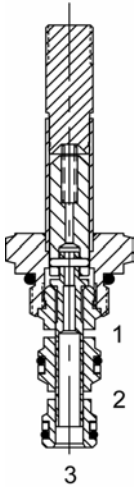
"High Pressure" 7 size, 5/8-18 thread, "Mini" series, solenoid operated, 3 way 2 Position, spool valve.

OPERATION

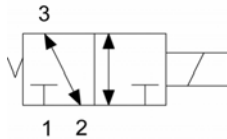
When de-energized the HC-S3A blocks flow at (1) and allows flow from (3) to (2). When energized the valve allows flow from (1) to (3) and blocks flow at (2).

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design (for most common terminations, see coil page).
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.



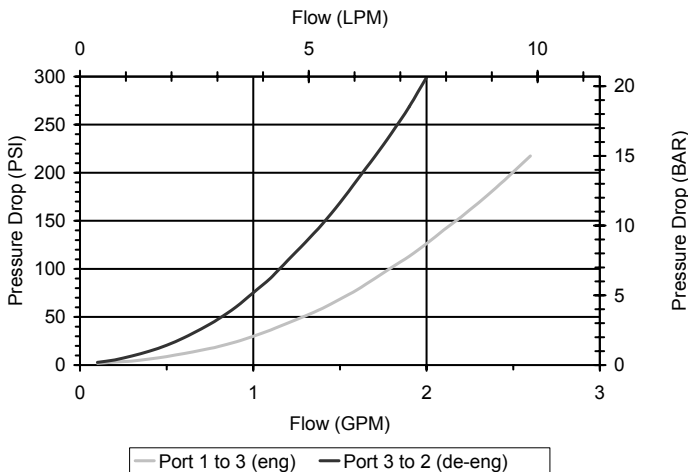
HYDRAULIC SYMBOL



Flow limited at 1.5 GPM for flow at port (3)

PERFORMANCE

Actual Test Data (Cartridge Only)



VALVE SPECIFICATIONS

Nominal Flow	2 GPM (8 LPM)
Rated Operating Pressure	4000 PSI (276 bar)
Typical Internal Leakage (150 SSU)	8 cu in/min (131 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.15 lbs. (.07 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	15 ft-lbs (20.3 Nm)
Coil Nut Torque Requirements	3-5 ft-lbs (4.1-6.8 Nm)
Cavity	MINI 3W
Cavity Form Tool (Finishing)	40500004
Seal Kit	21191004

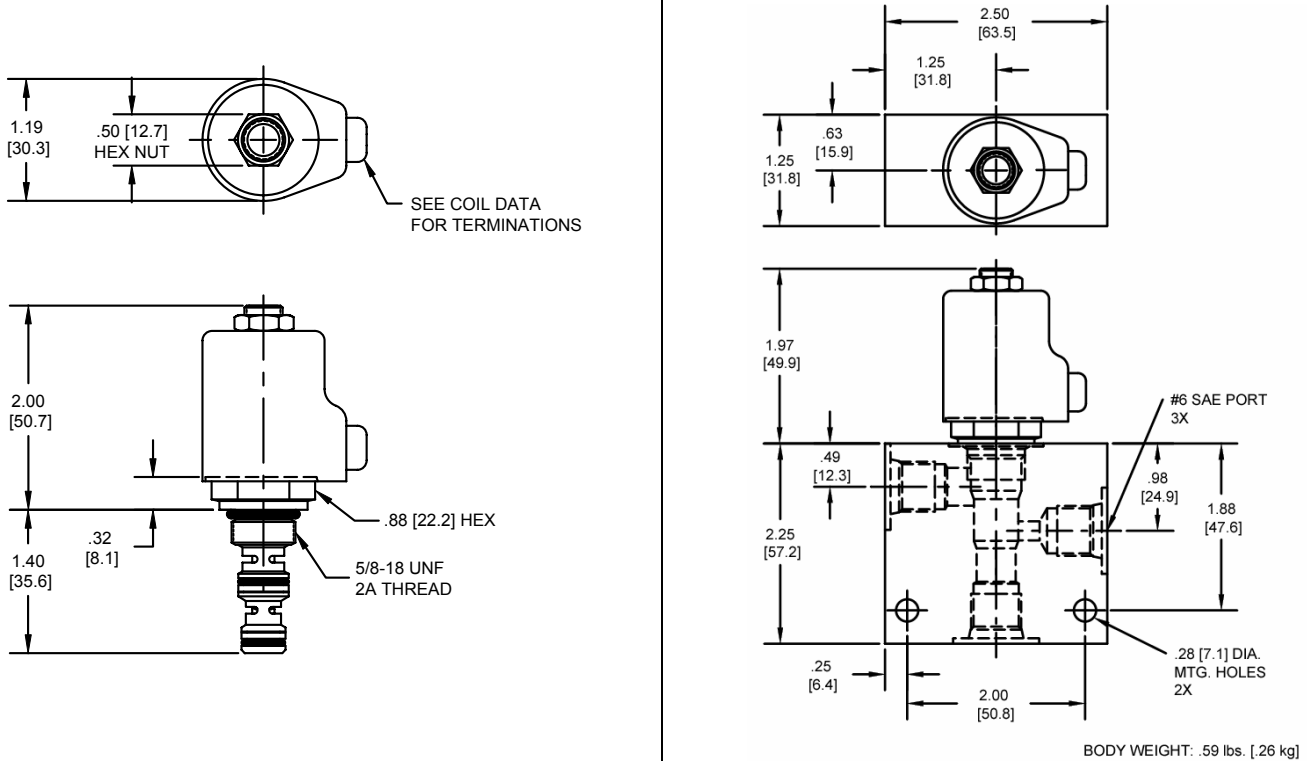
WARNING: The specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

DIMENSIONS



ORDERING INFORMATION

HC-S3A - - -

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

Blank **N**
S

BODIES
Without Body
1/4 NPTF Ports
#6 SAE Ports

Note: Aluminum, NOT durability rated for 4000 PSI. Consult factory for body options.

VOLTAGE

06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC
44 440 VAC

"M" COIL TERMINATION

(All DC Except as Noted)

Double Lead **DL**
Deutsch on Leads DT04-2P **DT**
Metri-Pack on Leads **ML**
Packard on Leads **PL**
Weatherpack on Leads **WL**
Single Spade **SS**
Double Spade **DS**
DIN 43650 (Hirschman) - (AC&DC) **HC**
Conduit Lead - (AC Only) **CL**

Approximate Coil Weight: .30 lbs/.14 kg.

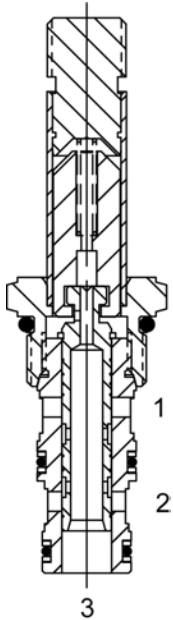
WARNING: The specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

PP-S3A Direct Acting Spool, 3 Way 2 Position



DESCRIPTION

8 size, 3/4-16 thread, "Power" series, solenoid operated, 3 way 2 position, spool valve.

OPERATION

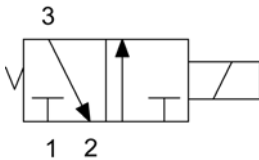
When de-energized the PP-S3A allows flow from (3) to (2) and blocks flow at port (1). When energized the valve allows flow from (1) to (3) and blocks flow at port (2).

OPERATION OF MANUAL OVERRIDE OPTION: To override, pull knob out. On the detented version, after pulling knob out twist 180 degrees and release. The valve will remain in that position.

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

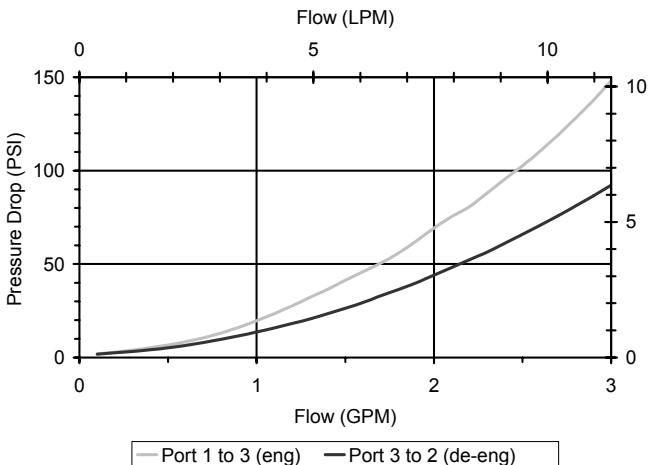
HYDRAULIC SYMBOL



Operational shift limit 3 GPM (11 LPM) from (1) to (3) at 3000 PSI (207 bar) and (3) to (2) with no load. For shifted flow performance consult chart.

PERFORMANCE

Actual Test Data (Cartridge Only)

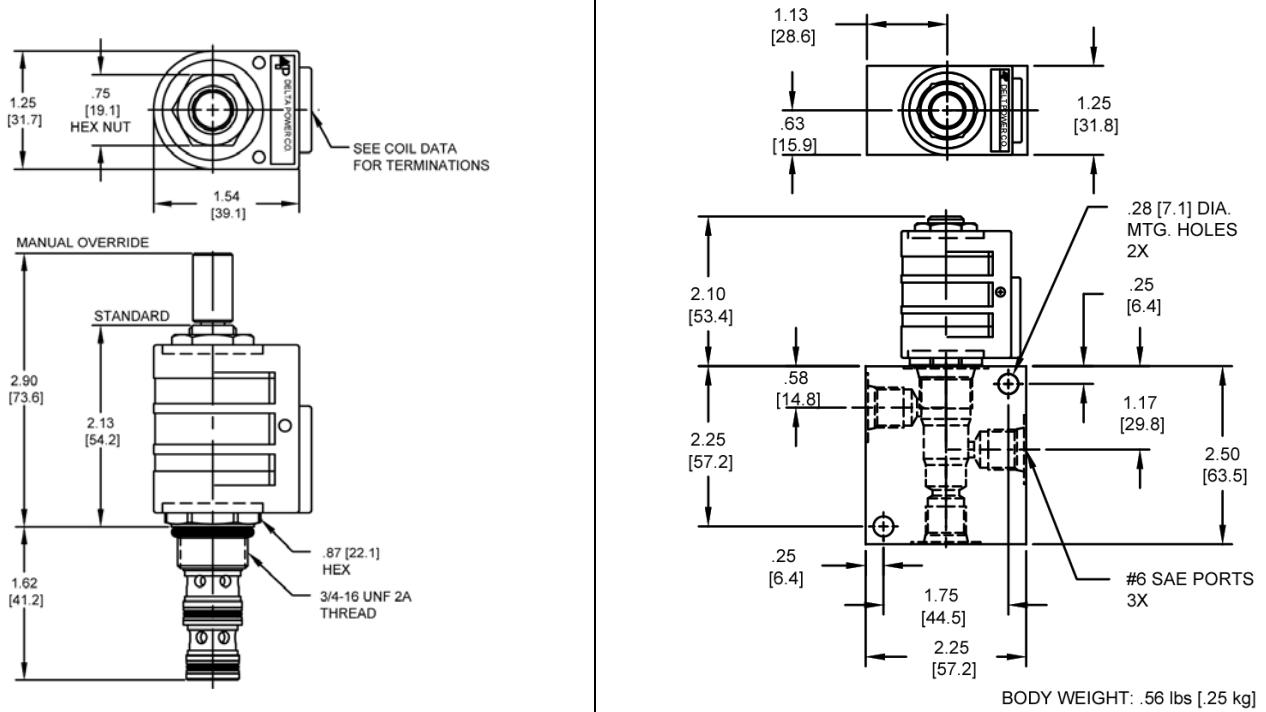


VALVE SPECIFICATIONS

Nominal Flow	3 GPM (11 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 Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.23 lbs. (.10 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 Nm)
Cavity	POWER 3W
Cavity Form Tool (Finishing)	40500024
Seal Kit	21191105

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

PP-S3A

OPTIONS

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Override **0M**
- Viton, Override **VM**
- Buna, Screen **A0**
- Viton, Screen **W0**
- Buna, Override, Non-detent **B1**
- Viton, Override, Non-detent **V1**
- Buna, Screen, Override, Non-detent **B3**
- Buna, Screen, Override, Detent **B4**
- Viton, Screen, Override, Non-detent **V3**
- Viton, Screen, Override, Detent **V4**

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

"P" COIL TERMINATION

(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04-2P
- ML** Metri-Pack on Leads
- PL** Packard on Leads
- WL** Weatherpack on Leads

- SS** Single Spade
- DS** Double Spade
- HC** DIN 43650 (Hirschman) – (AC & DC)
- CL** Conduit Lead – (AC Only)
- DI** Deutsch – Integral DT04-2P

BODIES

- Blank
- N** 1/4 NPTF Ports
- S** #6 SAE Ports

VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 25** 24 VAC
- 11** 120 VAC
- 22** 220 VAC
- 44** 440 VAC

IMMERSION PROOF "P" TYPE

- IA** "I" Coil AMP Superseal - Integral
- ID** "I" Coil Deutsch – Integral DT04-2P
- IJ** "I" Coil AMP Jr. Timer - Integral
- IM** "I" Coil Metri-Pack – Integral

Approximate Coil Weight: .42 lbs. (.19 kg.)

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.

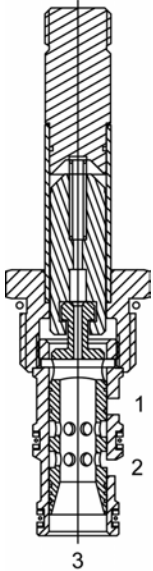
Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com



DF-S3A Direct Acting Spool, 3 Way 2 Position



DESCRIPTION

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

OPERATION

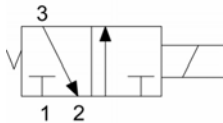
When de-energized the DF-S3A allows flow from (3) to (2) and blocks flow at port (1). When energized the valve allows flow from (1) to (3) and blocks flow at port (2).

OPERATION OF MANUAL OVERRIDE OPTION: To override, pull knob out. On the detented version, after pulling knob out twist 180 degrees and release. The valve will remain in that position.

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

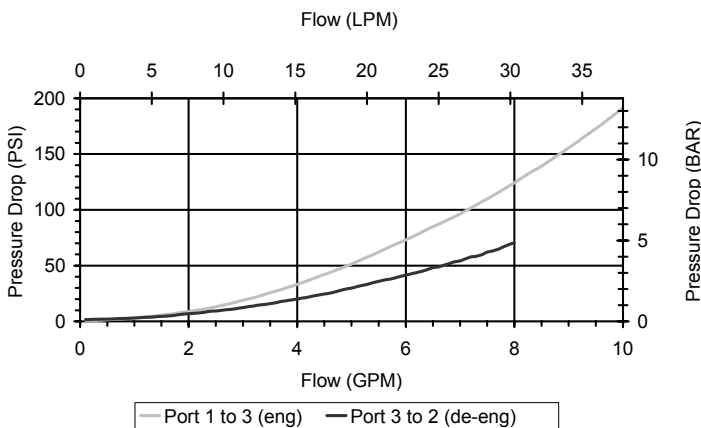
HYDRAULIC SYMBOL



Common lift/lower valve where load holding is not required. For higher pressures see HF-S3A.

PERFORMANCE

Actual Test Data (Cartridge Only)

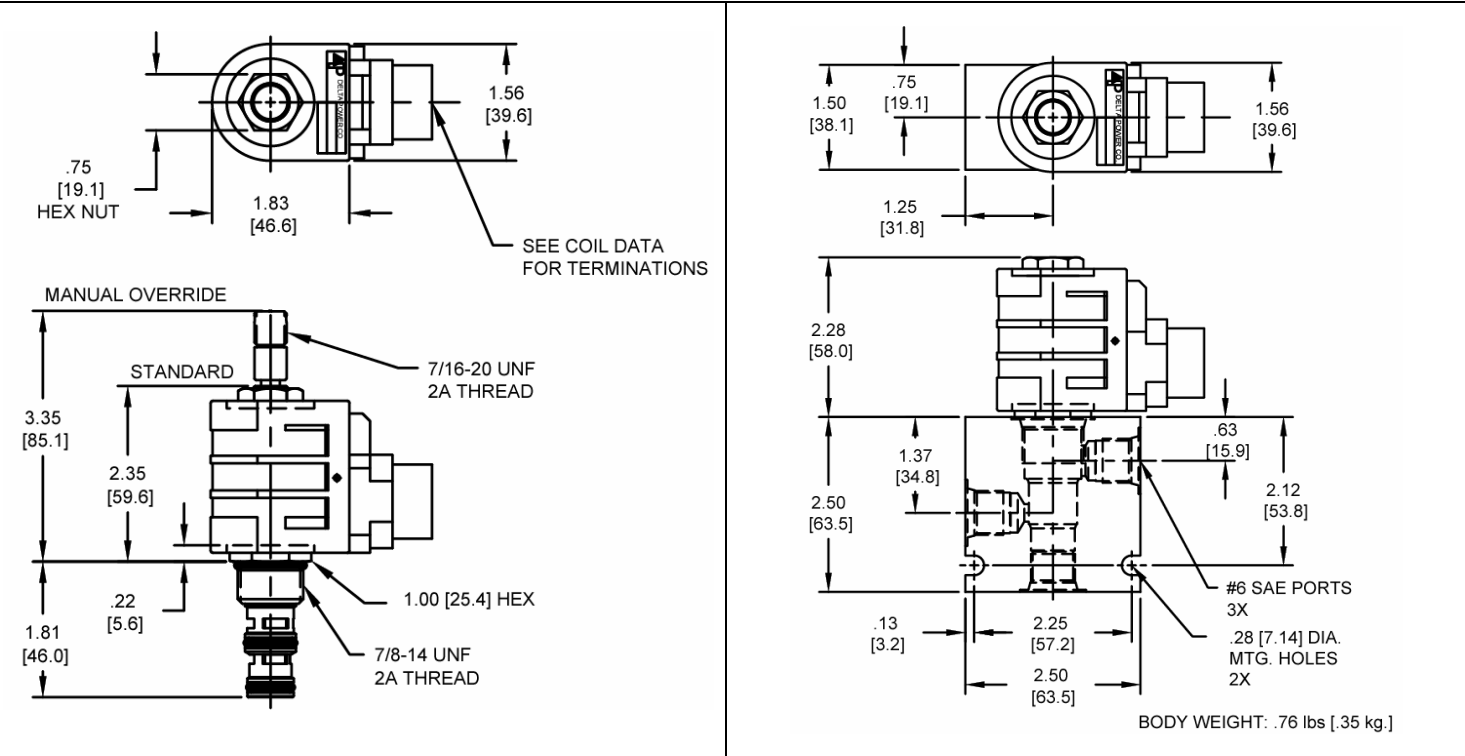


VALVE SPECIFICATIONS

Nominal Flow	10 GPM (38 LPM)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	5 cu/in per min (82 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.28 lbs. (.12 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 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



ORDERING INFORMATION

DF-S3A - - - -

OPTIONS

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Override **0M**
- Viton, Override **VM**
- Buna, Override, Non-detent **B1**
- Viton, Override, Non-detent **V1**
- Buna, Screen **V0**
- Viton, Screen **W0**
- Buna, Screen, Override, Non-detent **B3**
- Buna, Screen, Override, Detent **B4**
- Viton, Screen, Override, Non-detent **V3**
- Viton, Screen, Override, Detent **V4**

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

“D” COIL TERMINATION

(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04-2P
- ML** Metri-Pack on Leads
- PL** Packard on Leads
- WL** Weatherpack on Leads

- SS** Single Spade
- DS** Double Spade
- HC** Din 43650 (Hirschman) - (AC & DC)
- CL** Conduit Lead - (AC Only)
- DI** Deutsch - Integral DT04-2P

BODIES

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

VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 25** 24 VAC
- 11** 120 VAC
- 22** 220 VAC
- 44** 440 VAC

IMMERSION PROOF “D” TYPE

- IA** “I” Coil AMP Superseal - Integral
- ID** “I” Coil - Deutsch - Integral DT04-2P
- IJ** “I” Coil AMP Jr. Timer - Integral
- IM** “I” Coil - Metri-Pack - Integral

Approximate Coil Weight: .74 lbs/.33 kg.

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.

HF-S3A Direct Acting Spool, 3 Way 2 Position

DESCRIPTION

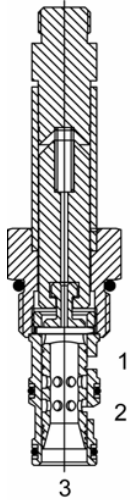
"High Pressure" 10 size, 7/8-14 thread, "Delta" series, solenoid operated, 3 way 2 position, spool valve.

OPERATION

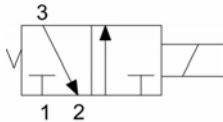
When de-energized the HF-S3A blocks flow at port (1) and allows flow from (3) to (2). When energized the valve allows flow from (1) to (3) and blocks flow at port (2).

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.



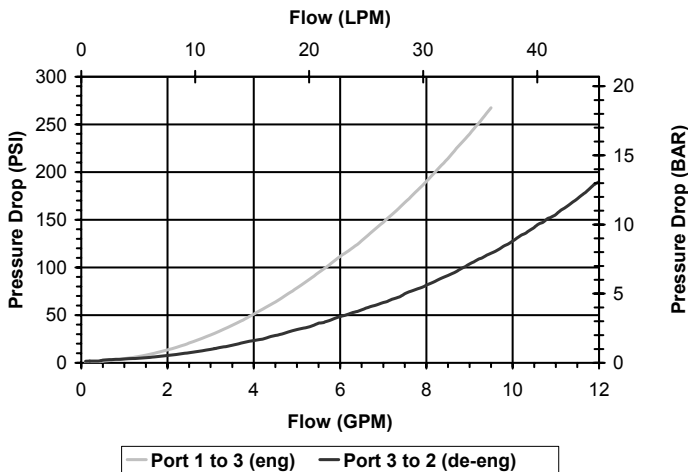
HYDRAULIC SYMBOL



Uses "L" Coil.

PERFORMANCE

Actual Test Data (Cartridge Only)



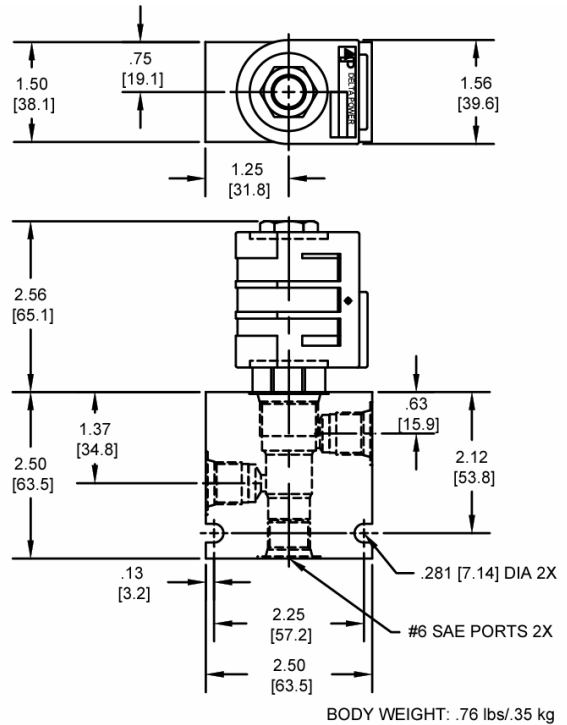
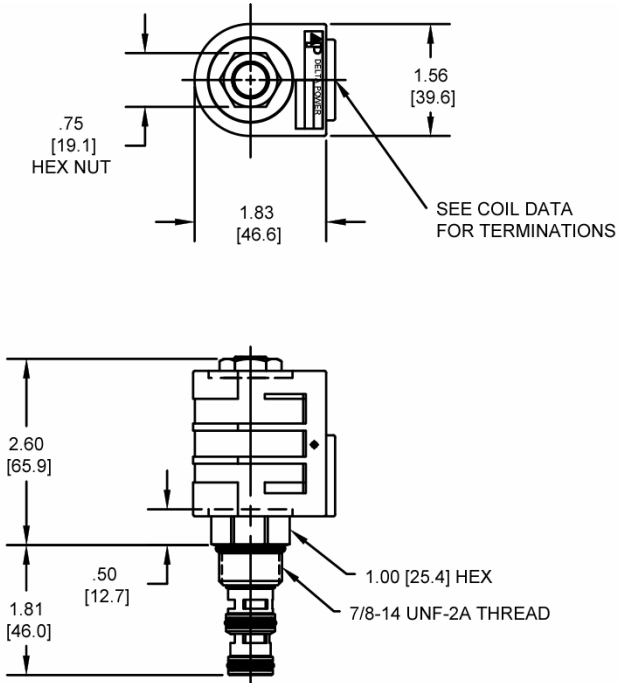
VALVE SPECIFICATIONS

Nominal Flow	10 GPM (38 LPM)
Rated Operating Pressure	4000 PSI (276 bar)
Typical Internal Leakage (150 SSU)	8 cu/in per min (131 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature 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)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 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



ORDERING INFORMATION

HF-S3A - - -

OPTIONS
Buna Standard 00
Viton Standard V0

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

Note: Aluminum, NOT durability rated for 4000 PSI. Consult factory for body options.

VOLTAGE
06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC
44 440 VAC

"L" COIL TERMINATION
(All DC Except as Noted)

DL Double Lead
DT Deutsch on Leads DT04-2P
ML Metri-Pack on Leads
PL Packard on Leads
WL Weatherpack on Leads

SS Single Spade
DS Double Spade
HC DIN 43650 (Hirschman) - (AC & DC)
CL Conduit Lead - (AC Only)
DI Deutsch - Integral DT04-2P

IMMERSION PROOF "L" TYPE
IA "I" Coil AMP Superseal - Integral
ID "I" Coil Deutsch - Integral DT04-2P
IJ "I" Coil AMP Jr. Timer - Integral
IM "I" Coil Metri-Pack - Integral

Approximate Coil Weight: .68 lbs/.31 kg.

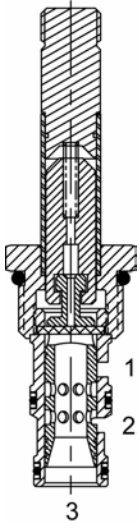
WARNING: The specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

DF-S3B Direct Acting Spool, 3 Way 2 Position, Selector



DESCRIPTION

10 size, 7/8-14 thread, "Delta" series, solenoid operated, 3 way 2 position, selector spool valve.

OPERATION

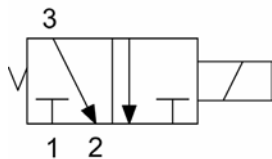
When de-energized the DF-S3B allows flow from (3) to (2) and blocks flow at port (1). When energized the valve allows flow from (3) to (1) and blocks flow at port (2).

OPERATION OF MANUAL OVERRIDE OPTION: To override, pull knob out. On the detented version, after pulling knob out twist 180 degrees and release. The valve will remain in that position.

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

HYDRAULIC SYMBOL

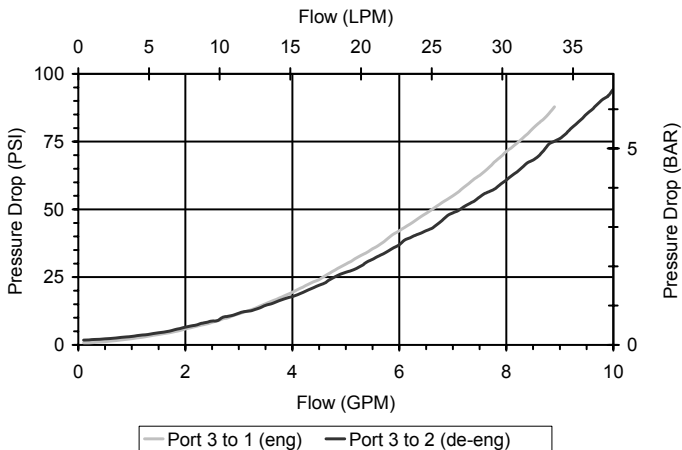


Trapped differentials above 1500 PSI from ports 2 to 1 can create shift issues near flow rating. (Differentials to 3000 psi from 1 to 2 are not an issue.)

For higher pressures consult HF-S3B.

PERFORMANCE

Actual Test Data (Cartridge Only)

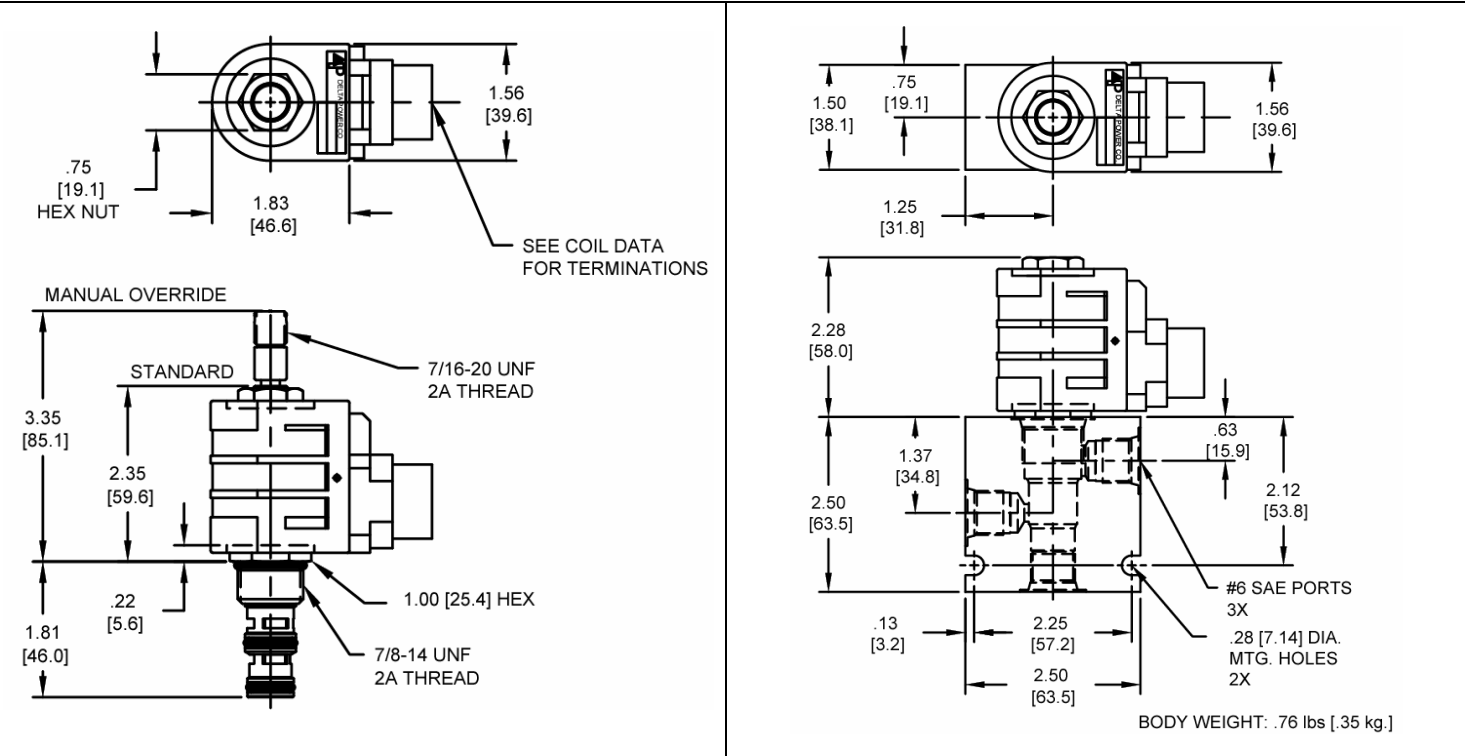


VALVE SPECIFICATIONS

Nominal Flow	8 GPM (30 LPM)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	5 cu/in per min (82 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.28 lbs. (.12 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 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



ORDERING INFORMATION

DF-S3B - - - -

OPTIONS

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Override **0M**
- Viton, Override **VM**
- Buna, screen **A0**
- Viton, screen **W0**
- Buna, Override, Non-detent **B1**
- Viton, Override, Non-detent **V1**
- Buna, Screen, Override, Non-detent **B3**
- Buna, Screen, Override, Detent **B4**
- Viton, Screen, Override, Non-detent **V3**
- Viton, Screen, Override, Detent **V4**

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

- BODIES**
- Blank
 - N** 1/4 NPTF Ports
 - S** #6 SAE Ports

VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 25** 24 VAC
- 11** 120 VAC
- 22** 220 VAC
- 44** 440 VAC

“D” COIL TERMINATION

(All DC Except as Noted)

- DL** Double Leads
- DT** Deutsch on Leads DT04-2P
- ML** Metri-Pack on Leads
- PL** Packard on Leads
- WL** Weatherpack on Leads

- SS** Single Spade
- DS** Double Spade
- HS** Din 43650 (Hirshman) - (AC & DC)
- CL** Conduit Lead - (AC Only)
- DI** Deutsch - Integral DT04-2P

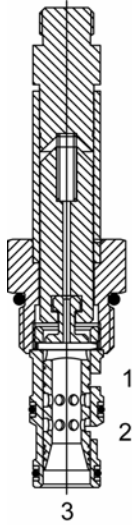
IMMERSION PROOF “D” TYPE

- IA** “I” Coil AMP Superseal - Integral
- ID** “I” Coil - Deutsch - Integral DT04-2P
- IJ** “I” Coil AMP Jr. Timer - Integral
- IM** “I” Coil - Metri-Pack - Integral

Approximate Coil Weight: .74 lbs/.33 kg.

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.

HF-S3B Direct Acting Spool, 3 Way 2 Position, Selector



DESCRIPTION

“High Pressure” 10 size, 7/8-14 thread, “Delta” series, solenoid operated, 3 way 2 position, selector spool valve.

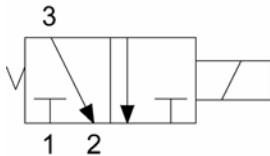
OPERATION

When de-energized the HF-S3B allows flow from (3) to (2) and blocks flow at port (1). When energized the valve allows flow from (3) to (1) and blocks flow at port (2).

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional “I” Coil: Weatherproof, Thermal Shock, Immersion Safe

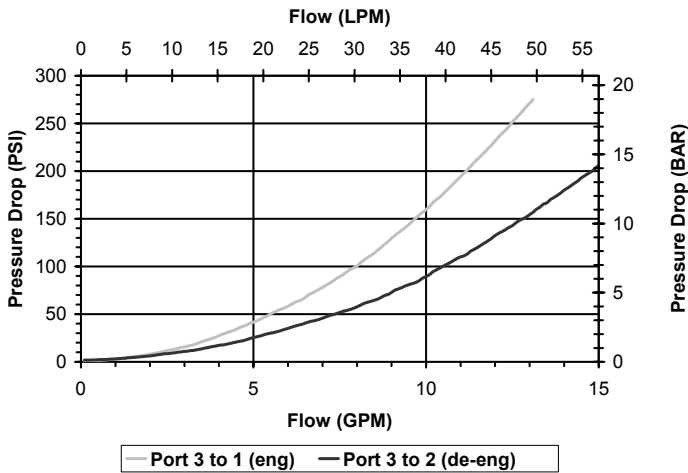
HYDRAULIC SYMBOL



Uses “L” Coil.

PERFORMANCE

Actual Test Data (Cartridge Only)

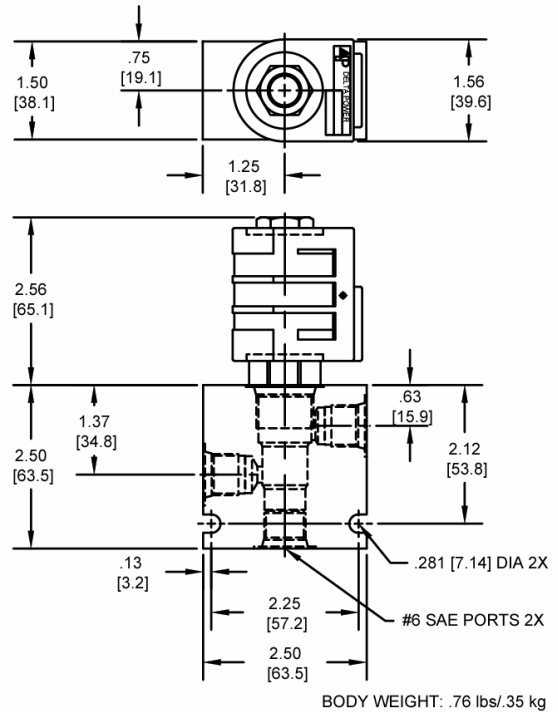
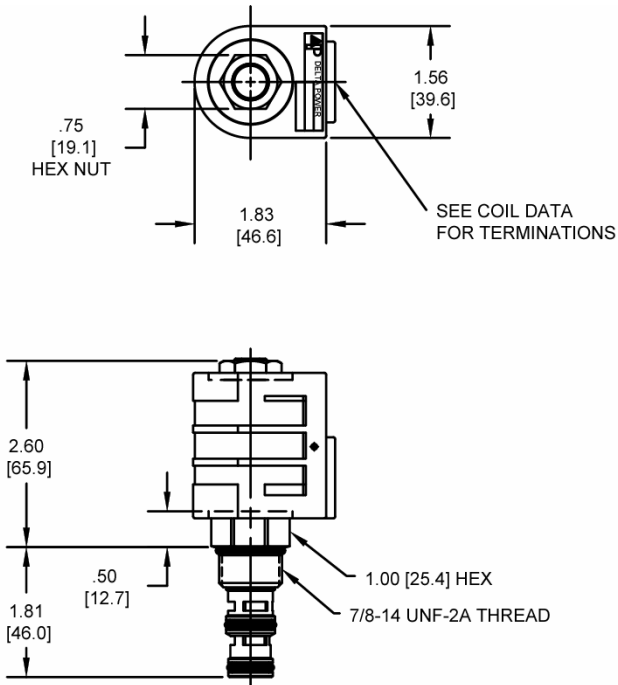


VALVE SPECIFICATIONS

Nominal Flow	8 GPM (30 LPM)
Rated Operating Pressure	4000 PSI (276 bar)
Typical Internal Leakage (150 SSU)	8 cu/in per min (131 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature 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)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 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



ORDERING INFORMATION

HF-S3B - - -

OPTIONS

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

Blank
N
S

BODIES

Without Body
1/4 NPTF Ports
#6 SAE Ports

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

VOLTAGE

06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC
44 440 VAC

"L" COIL TERMINATION

(All DC Except as Noted)

DL Double Lead
DT Deutsch on Leads DT04-2P
ML Metri-Pack on Leads
PL Packard on Leads
WL Weatherpack on Leads

SS Single Spade
DS Double Spade
HC DIN 43650 (Hirschman) – (AC & DC)
CL Conduit Lead – (AC Only)
DI Deutsch – Integral DT04-2P

IMMERSION PROOF "L" TYPE

IA "I" Coil AMP Superseal - Integral
ID "I" Coil Deutsch – Integral DT04-2P
IJ "I" Coil AMP Jr. Timer - Integral
IM "I" Coil Metri-Pack

Approximate Coil Weight: .68 lbs/.31 kg.

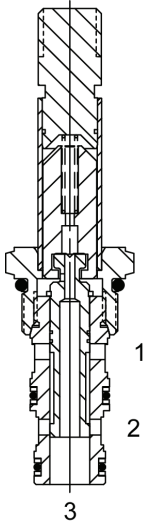
WARNING: The specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

PP-S3D Direct Acting Spool, 3 Way 2 Position



DESCRIPTION

8 size, 3/4-16 thread, "Power" series, solenoid operated, 3 way 2 position spool valve.

OPERATION

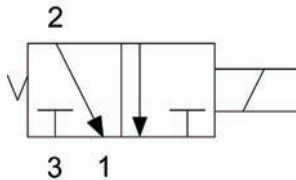
When de-energized the PP-S3D allows flow from (2) to (1) and blocks flow at port (3). When energized the valve allows flow from (2) to (3) and blocks flow at port (1).

OPERATION OF MANUAL OVERRIDE OPTION: To override, pull knob out. On the detented version, after pulling knob out twist 180 degrees and release. The valve will remain in that position.

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

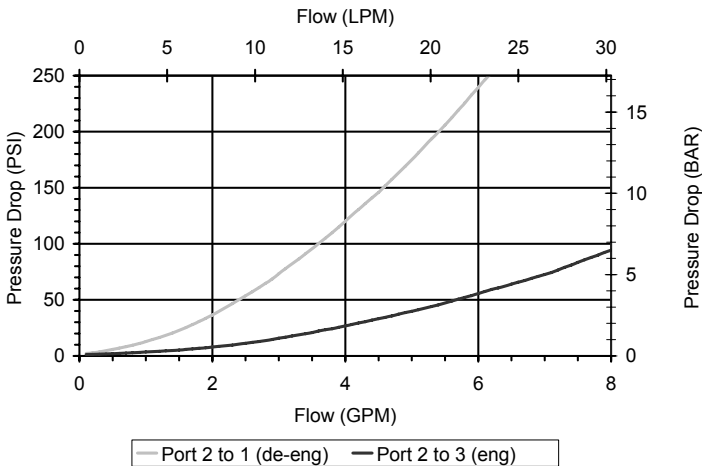
HYDRAULIC SYMBOL



Operational shift limit 3 GPM (11 LPM) from (2) or (3). Consult factory for flow in (1) that exceed 3 GPM. For shifted flow performance consult chart.

PERFORMANCE

Actual Test Data (Cartridge Only)



VALVE SPECIFICATIONS

Nominal Flow	3 GPM (11 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 Temperature 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)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 Nm)
Cavity	POWER 3W
Cavity Form Tool (Finishing)	40500024
Seal Kit	21191105

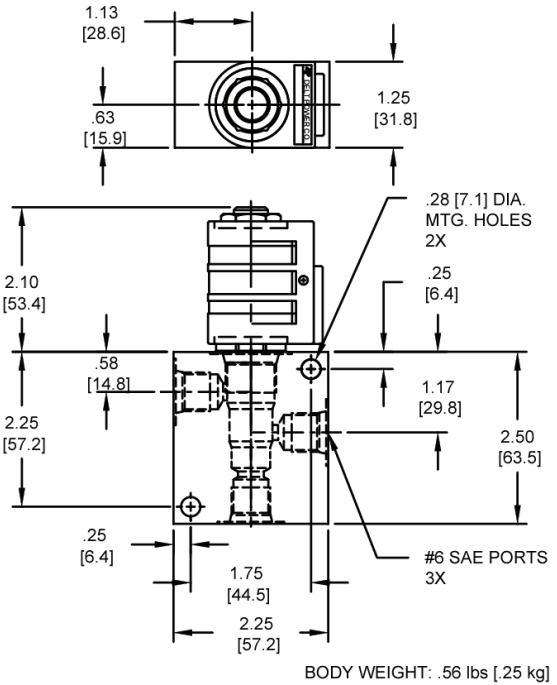
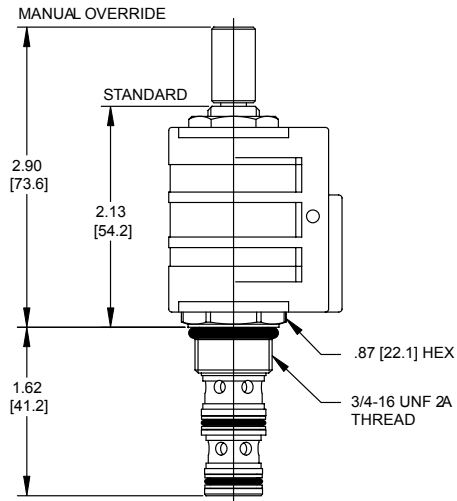
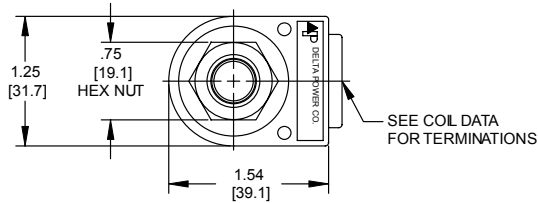
WARNING: The specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

DIMENSIONS



ORDERING INFORMATION

PP-S3D - - - -

OPTIONS

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Override **0M**
- Viton, Override **VM**
- Buna, Screen **A0**
- Viton, Screen **W0**
- Buna, Override, Non-detent **B1**
- Viton, Override, Non-detent **V1**
- Buna, Screen, Override, Non-detent **B3**
- Buna, Screen, Override, Detent **B4**
- Viton, Screen, Override, Non-detent **V3**
- Viton, Screen, Override, Detent **V4**

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

“P” COIL TERMINATION

(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04-2P
- ML** Metri-Pack on Leads
- PL** Packard on Leads
- WL** Weatherpack on Leads

- SS** Single Spade
- DS** Double Spade
- HC** DIN 43650 (Hirschman) – (AC & DC)
- CL** Conduit Lead – (AC Only)
- DI** Deutsch – Integral DT04-2P

BODIES

- Blank
- N** 1/4 NPTF Ports
- S** #6 SAE Ports

VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 25** 24 VAC
- 11** 120 VAC
- 22** 220 VAC
- 44** 440 VAC

IMMERSION PROOF “P” TYPE

- IA** “I” Coil AMP Superseal - Integral
- ID** “I” Coil Deutsch – Integral DT04-2P
- IJ** “I” Coil AMP Jr. Timer - Integral
- IM** “I” Coil Metri-Pack – Integral

Approximate Coil Weight: .42 lbs. (.19 kg.)

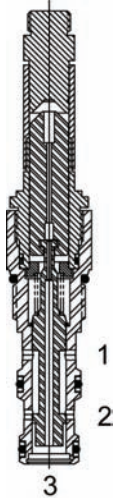
WARNING: The specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

HU-S3E Direct Acting Spool, 3 Way 2 Position, High Pressure



DESCRIPTION

12 size, 1 1/16-12 thread, "Tecnorm" series, solenoid operated, 3 way 2 position, spool valve.

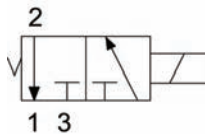
OPERATION

When de-energized the HU-S3E allows flow from (2) to (1) and blocks flow at port (3). When energized the valve allows flow from (3) to (2) and blocks flow at port (1).

FEATURES

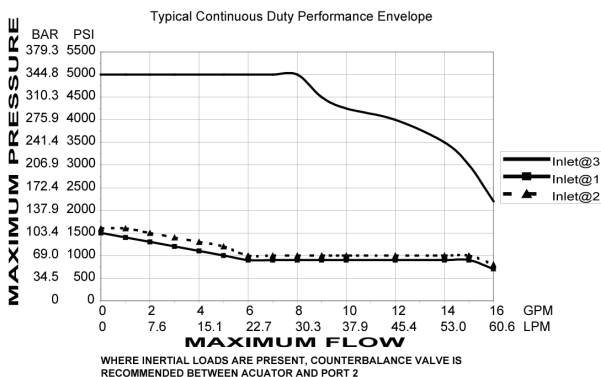
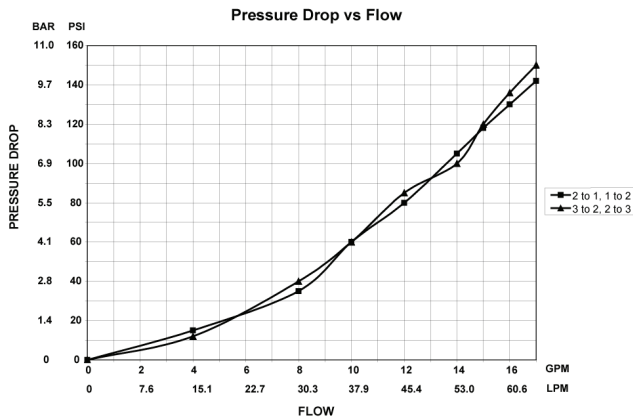
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

HYDRAULIC SYMBOL



Common usage is inlet at port 3.
See HU-S3F for port 2 or port 1 inlet.

PERFORMANCE

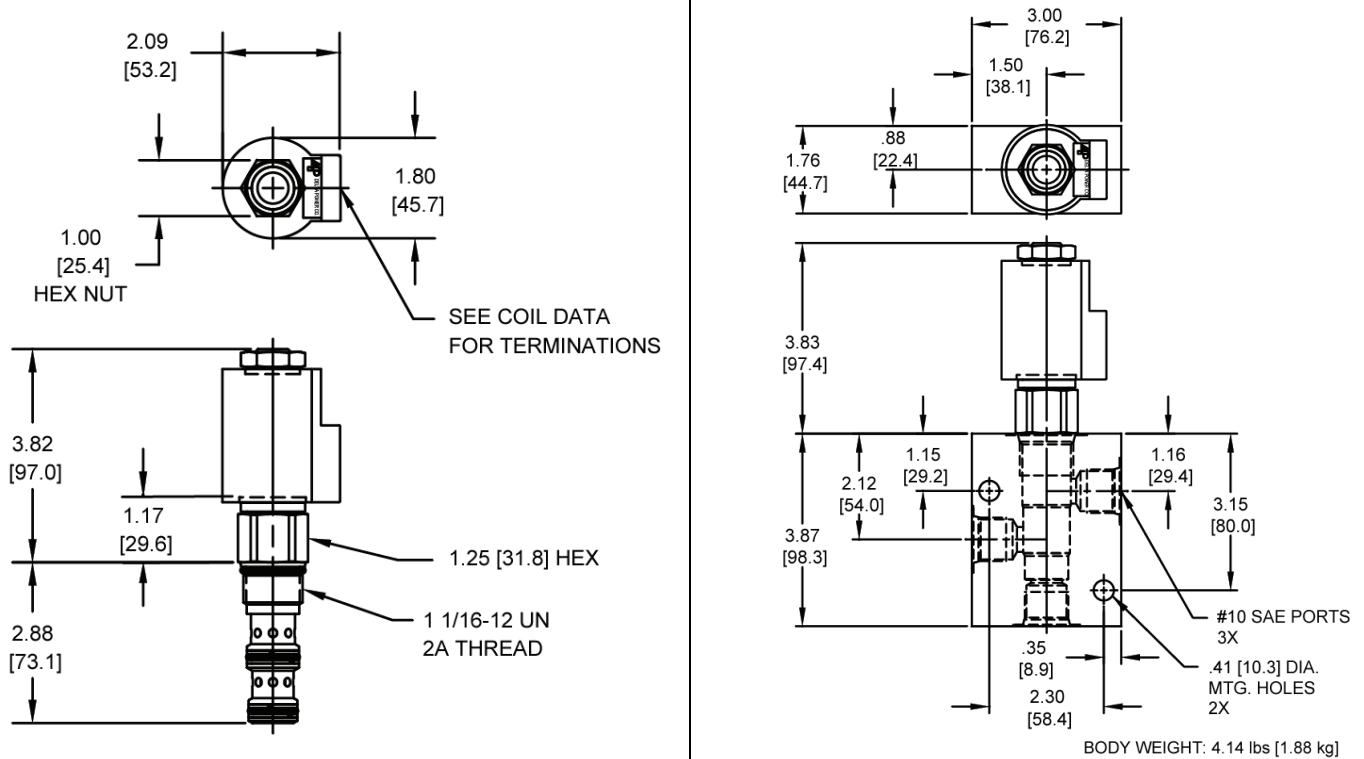


VALVE SPECIFICATIONS

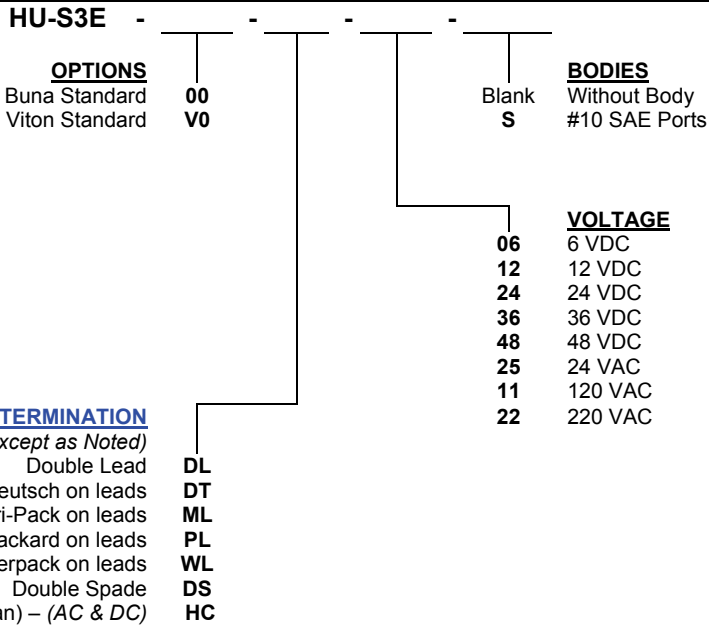
Nominal Flow	15 GPM (57 LPM)
Rated Operating Pressure	5000 PSI (345 bar)
Typical Internal Leakage (150 SSU)	8 cu in/min @ 3000 PSI
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	1.01 lbs. (.46 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	70 ft-lbs (94.9 Nm)
Coil Nut Torque Requirements	5-7 ft-lbs (6.8-9.5 Nm)
Cavity	TECNORD 3W
Cavity Form Tool (Finishing)	40500034
Seal Kit	21191305

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



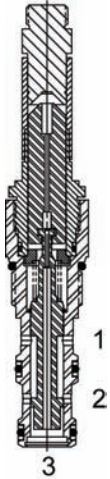
ORDERING INFORMATION



Approximate Coil Weight: .89 lbs/.41 kg.

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.

HU-S3F Direct Acting Spool, 3 Way 2 position, High Pressure



DESCRIPTION

12 size, 1 1/16-12 thread, "Tecnorm" series, solenoid operated, 3 way 2 position, spool valve.

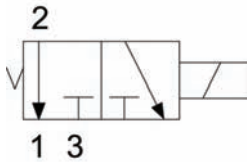
OPERATION

When de-energized the HU-S3F allows flow from (2) to (1) and blocks flow at port 3. When energized the valve allows flow from (2) to (3) and blocks flow at port (1).

FEATURES

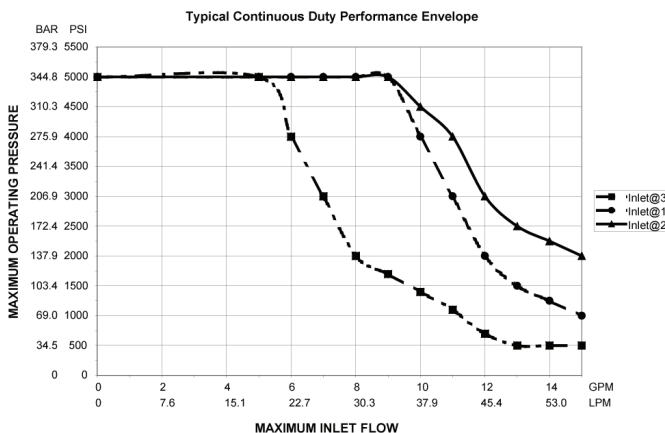
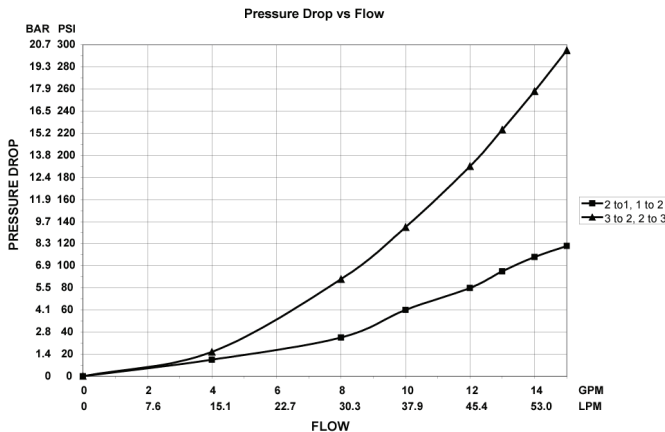
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

HYDRAULIC SYMBOL



Recommended usage is inlet at port 1 or 2. See HU-S3E for port 3 inlet.

PERFORMANCE

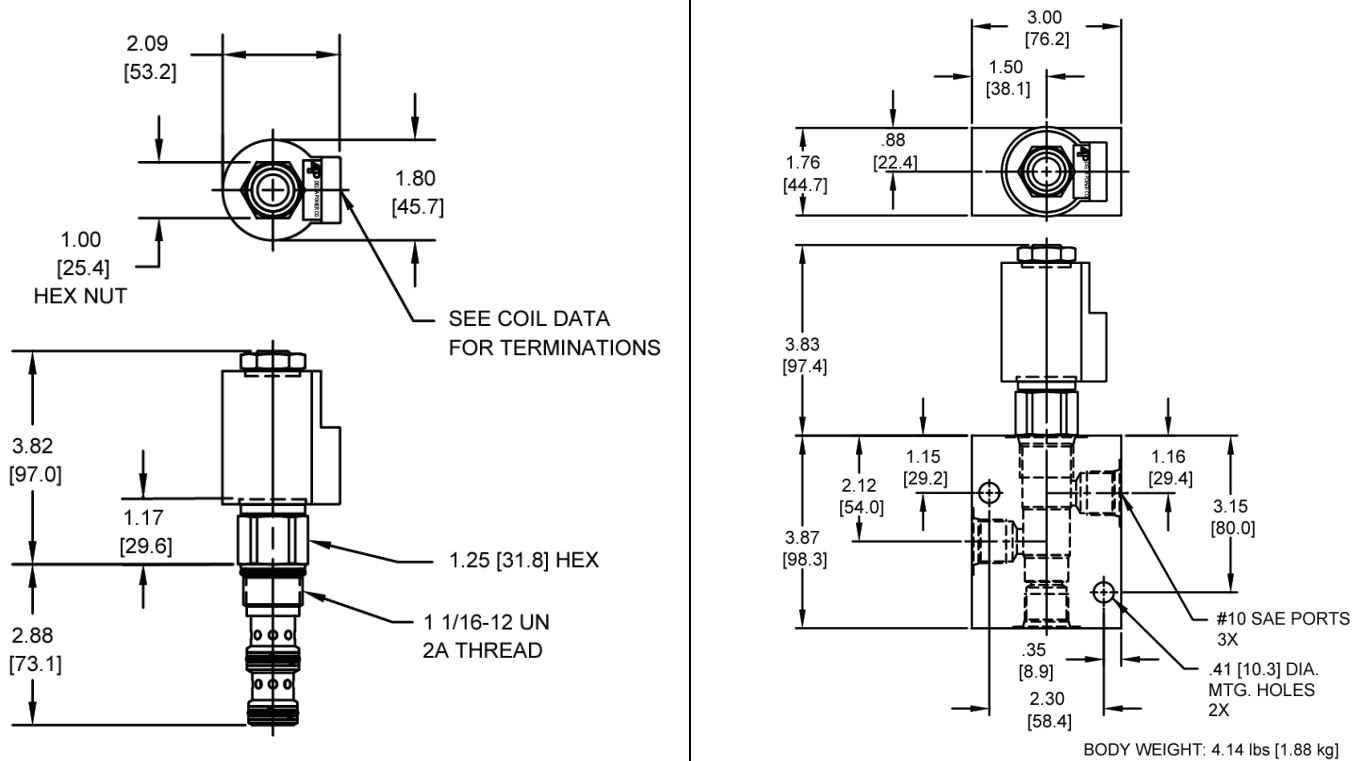


VALVE SPECIFICATIONS

Nominal Flow	15 GPM (57 LPM)
Rated Operating Pressure	5000 PSI (345 bar)
Typical Internal Leakage (150 SSU)	8 cu in/min @ 3000 PSI
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	1.01 lbs. (.46 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	70 ft-lbs (94.9 Nm)
Coil Nut Torque Requirements	5-7 ft-lbs (6.8-9.5 Nm) Maximum
Cavity	TECNORD 3W
Cavity Form Tool (Finishing)	40500034
Seal Kit	21191305

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

HU-S3F - - - -

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

Blank **S**
BODIES
Without Body
#10 SAE Ports

VOLTAGE
06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC

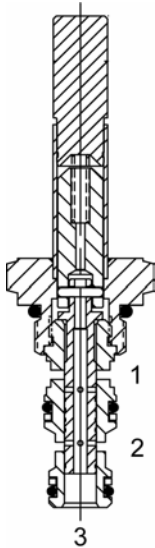
"T" TYPE COIL TERMINATION
(All DC Except as Noted)

Double Lead **DL**
Deutsch on leads **DT**
Metri-Pack on leads **ML**
Packard on leads **PL**
Weatherpack on leads **WL**
Double Spade **DS**
DIN 43650 (Hirschman) - (AC & DC) **HC**

Approximate Coil Weight: .89 lbs/.41 kg.

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.

HC-S3P Direct Acting Spool, 3 Way 2 Position, Pilot Control, Low Leakage



DESCRIPTION

“High Pressure” 7 size, 5/8-18 thread, “Mini” series, solenoid operated, 3 way 2 Position, pilot control spool valve.

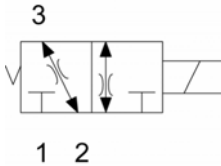
OPERATION

When de-energized the HC-S3P blocks flow at (1) and allows flow from (3) to (2). When energized the valve allows flow from (1) to (3) and blocks flow at (2).

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design (for most common terminations, see coil page).
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

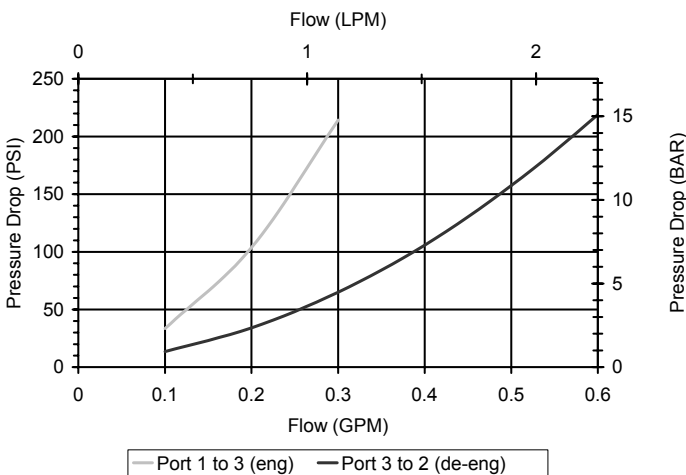
HYDRAULIC SYMBOL



Great for pilot control, low leakage.

PERFORMANCE

Actual Test Data (Cartridge Only)

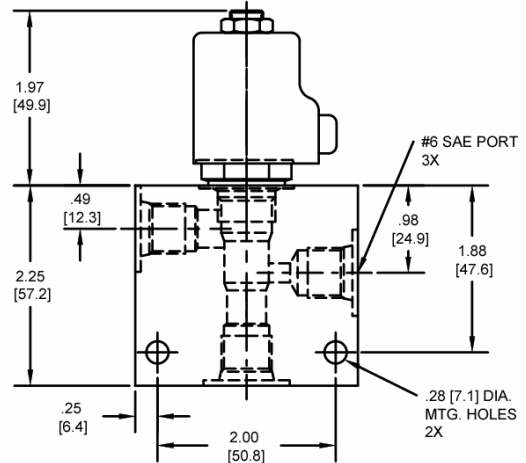
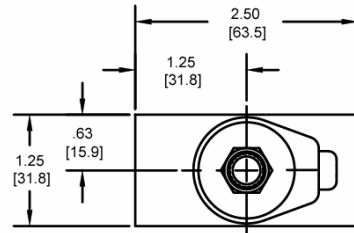
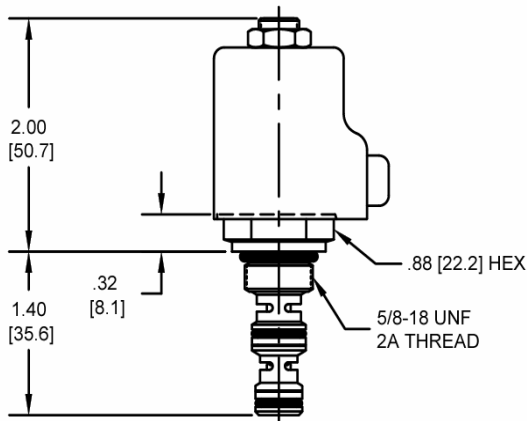
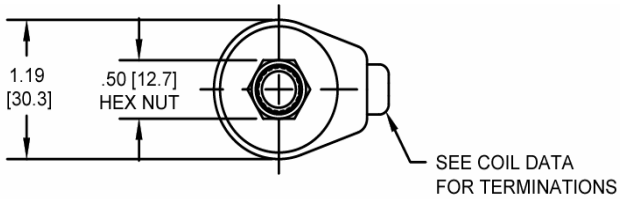


VALVE SPECIFICATIONS

Nominal Flow	.3 GPM (1.13 LPM)
Rated Operating Pressure	4000 PSI (276 bar)
Typical Internal Leakage (150 SSU)	3 cu in/min (49 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.15 lbs. (.07 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	15 ft-lbs (20.3 Nm)
Coil Nut Torque Requirements	3-5 ft-lbs (4.1-6.8 Nm)
Cavity	MINI 3W
Cavity Form Tool (Finishing)	40500004
Seal Kit	21191004

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: .59 lbs. [26 kg]

ORDERING INFORMATION

HC-S3P

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

- Blank
N
S

Note: Aluminum, NOT durability rated for 4000 PSI. Consult factory for body options.

VOLTAGE

- 06** 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC
44 440 VAC

"M" COIL TERMINATION

(All DC Except as Noted)

- Double Lead **DL**
Deutsch on Leads DT04-2P **DT**
Metri-Pack on Leads **ML**
Packard on Leads **PL**
Weatherpack on Leads **WL**
Single Spade **SS**
Double Spade **DS**
DIN 43650 (Hirschman) – (AC&DC) **HC**
Conduit Lead – (AC Only) **CL**

Approximate Coil Weight: .30 lbs/.14 kg.

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.

Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

MC-S3T Direct Acting Spool, 3 Way 2 Position, Transmission & Brake

DESCRIPTION

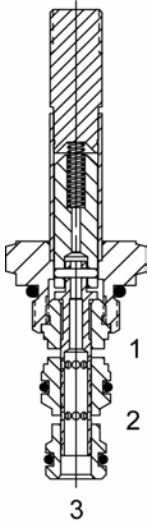
7 size, 5/8-18 thread, "Mini" series, solenoid operated, 3 way 2 position, transmission & brake spool valve.

OPERATION

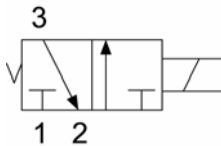
When de-energized the MC-S3T blocks flow at (1) and allows flow from (3) to (2). When energized the valve allows flow from (1) to (3) and blocks flow at (2).

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.



HYDRAULIC SYMBOL

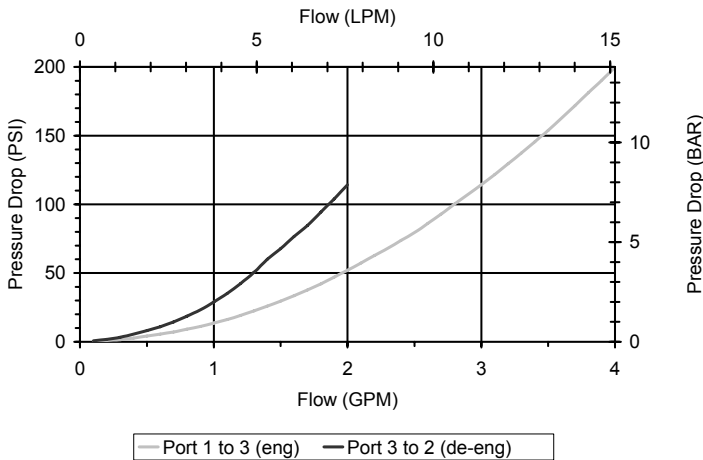


Contamination Tolerant Product

This valve is designed for transmission and brake applications. Consult factory for alternate low wattage coil options.

PERFORMANCE

Actual Test Data (Cartridge Only)



VALVE SPECIFICATIONS

Nominal Flow	4 GPM (15 LPM) from (1) to (3) 2 GPM (7.6 LPM) from (3) to (2)
Rated Operating Pressure	1500 PSI (103 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 20/18/15
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.14 lbs. (.06 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	15 ft-lbs (20.3 Nm)
Coil Nut Torque Requirements	3-5 ft-lbs (4.1-6.8 Nm)
Cavity	MINI 3W
Cavity Form Tool (Finishing)	40500004
Seal Kit	21191006

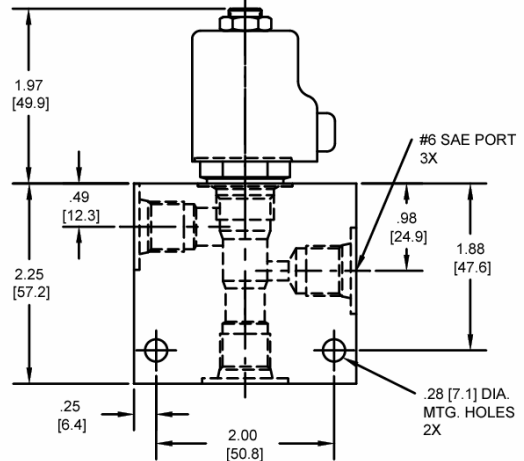
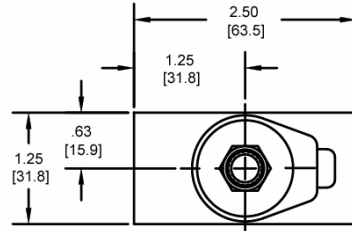
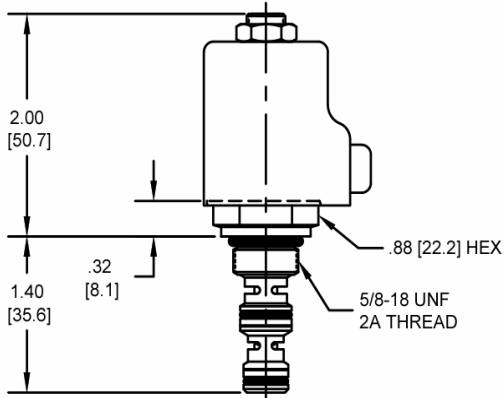
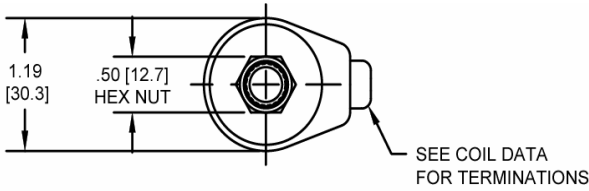
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Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

DIMENSIONS



BODY WEIGHT: .59 lbs. [.26 kg]

ORDERING INFORMATION

MC-S3T - - - -

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

Blank
N
S

BODIES
Without Body
1/4 NPTF Ports
#6 SAE Ports

VOLTAGE

06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC
44 440 VAC

"M" TYPE COIL TERMINATION

(All DC Except as Noted)

Double Lead **DL**
Deutsch on Leads DT04-2P **DT**
Metri-Pack on Leads **ML**
Packard on Leads **PL**
Weatherpack on Leads **WL**
Single Spade **SS**
Double Spade **DS**
DIN 43650 (Hirschman) - (AC & DC) **HC**
Conduit Lead - (AC Only) **CL**

Approximate Coil Weight: .30 lbs/.14 kg.

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.

Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

DF-S3T Direct Acting Spool, 3 Way 2 Position, Transmission & Brake

DESCRIPTION

10 size, 7/8-14 thread, "Delta" series, solenoid operated, 3 way 2 position, transmission & brake spool valve.

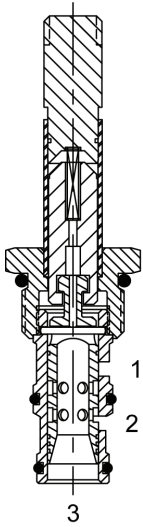
OPERATION

When de-energized the DF-S3T allows flow from (3) to (2) and blocks flow at port (1). When energized the valve allows flow from (1) to (3) and blocks flow at port (2).

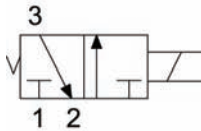
OPERATION OF MANUAL OVERRIDE OPTION: To override, pull knob out. On the detented version, after pulling knob out twist 180 degrees and release. The valve will remain in that position.

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.



HYDRAULIC SYMBOL

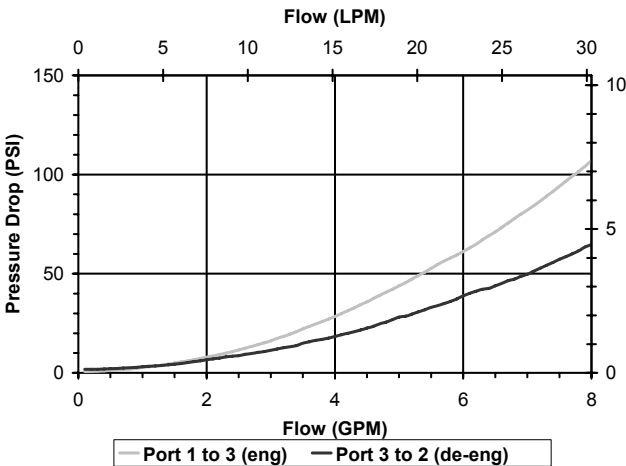


Contamination Tolerant Product

This valve is designed for transmission and brake applications. Consult factory for alternate low wattage coil options.

PERFORMANCE

Actual Test Data (Cartridge Only)

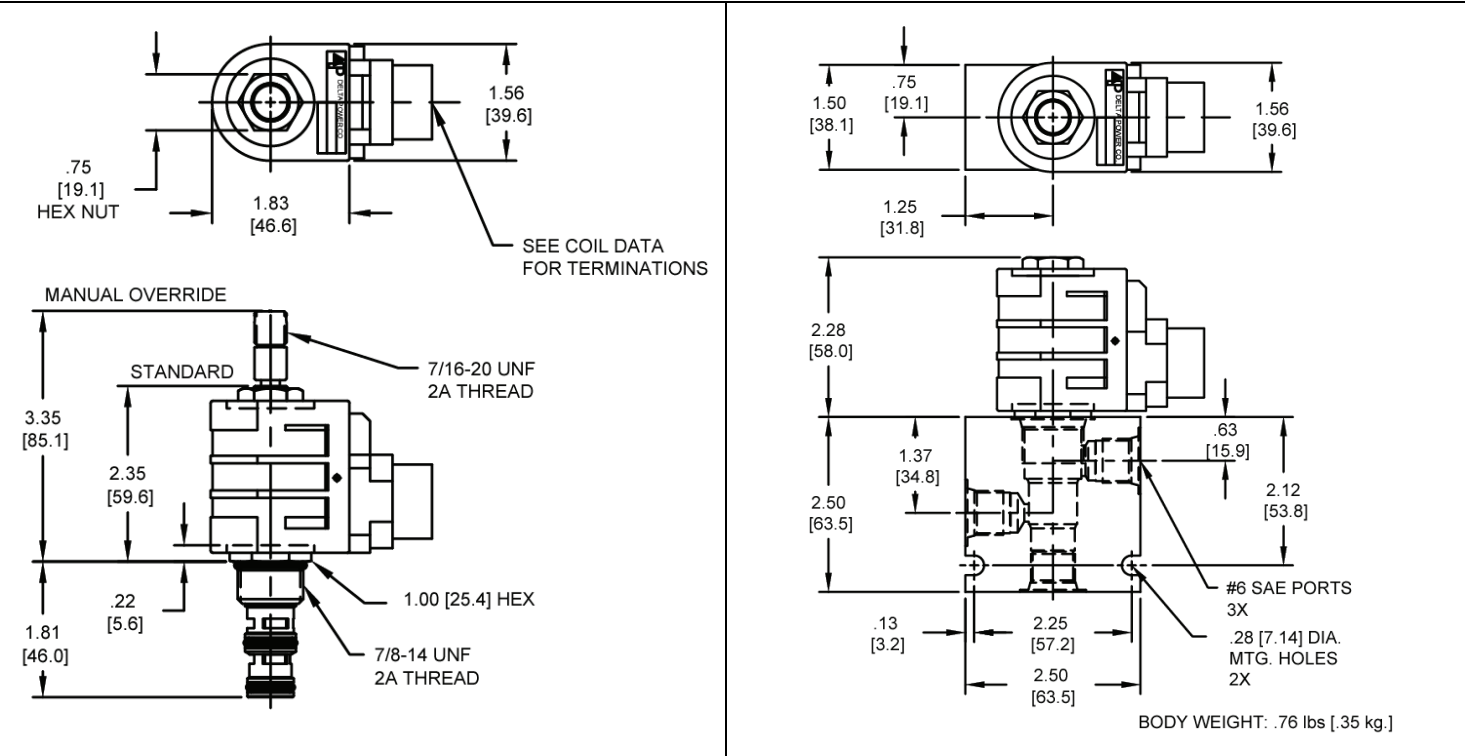


VALVE SPECIFICATIONS

Nominal Flow	8 GPM (30 LPM)
Rated Operating Pressure	1500 PSI (103 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 Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.28 lbs. (.12 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 Nm)
Cavity	DELTA 3W
Cavity Form Tool (Finishing)	40500001
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



ORDERING INFORMATION

DF-S3T - - - -

OPTIONS

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Override **0M**
- Viton, Override **VM**
- Buna, Override, Non-detent **B1**
- Viton, Override, Non-detent **V1**
- Buna, Screen **AO**
- Viton, Screen **WO**
- Buna, Screen, Override, Non-detent **B3**
- Buna, Screen, Override, Detent **B4**
- Viton, Screen, Override, Non-detent **V3**
- Viton, Screen, Override, Detent **V4**

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

"D" COIL TERMINATION

(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04-2P
- ML** Metri-Pack on Leads
- PL** Packard on Leads
- WL** Weatherpack on Leads

- SS** Single Spade
- DS** Double Spade
- HS** Din 43650 (Hirshman) - (AC & DC)
- CL** Conduit Leads - (AC Only)
- DI** Deutsch - Integral DT04-2P

BODIES

- Blank
- N** 1/4 NPTF Ports
- S** #6 SAE Ports

VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 25** 24 VAC
- 11** 120 VAC
- 22** 220 VAC
- 44** 440 VAC

IMMERSION PROOF "D" TYPE

- IA** "I" Coil AMP Superseal - Integral
- IM** "I" Coil - Deutsch - Integral DT04-2P
- IJ** "I" Coil AMP Jr. Timer - Integral
- II** "I" Coil - Metri-Pack - Integral

Approximate Coil Weight: .74 lbs/.33 kg.

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-S3X Direct Acting Spool, 3 Way 2 Position, Selector

DESCRIPTION

8 size, 3/4-16 thread, "Power" series, solenoid operated, 3 way 2 position, selector spool valve.

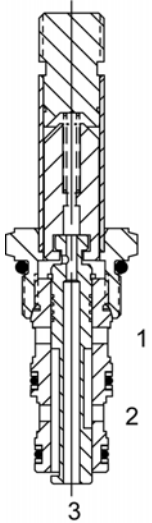
OPERATION

When de-energized the PP-S3X allows flow from (2) to (3) and blocks flow at port (1). When energized the valve allows flow from (2) to (1) and blocks flow at port (3).

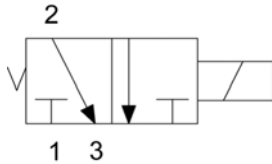
OPERATION OF MANUAL OVERRIDE OPTION: To override, pull knob out. On the detented version, after pulling knob out twist 180 degrees and release. The valve will remain in that position.

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.



HYDRAULIC SYMBOL

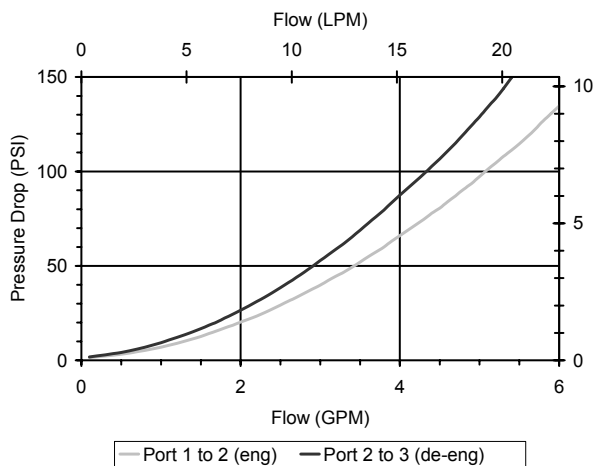


Operational shift limit 3 GPM (11 LPM) from port 2.
Not recommended for port 3 inlet cavity.
For shifted flow performance consult chart.

PERFORMANCE

Actual Test Data (Cartridge Only)

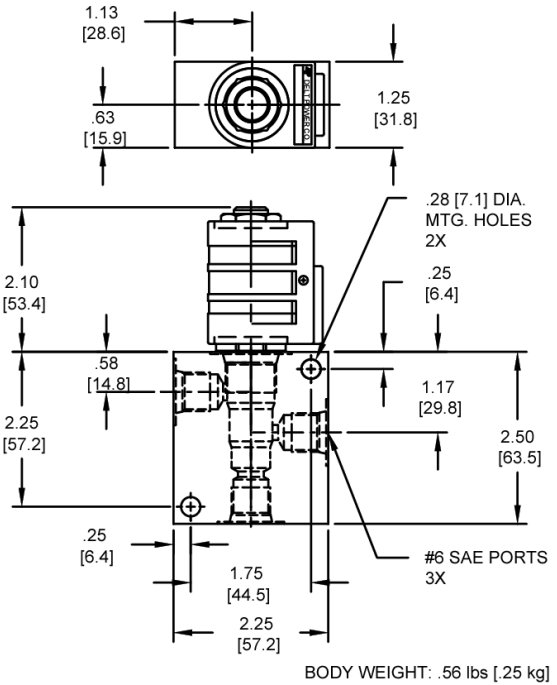
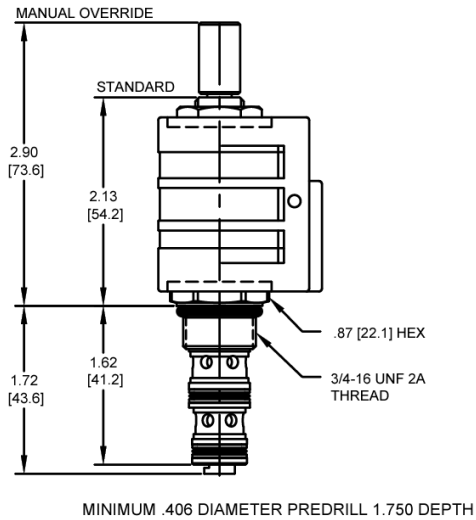
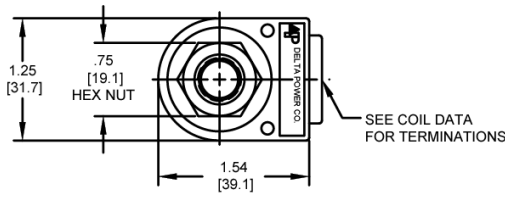
VALVE SPECIFICATIONS



Nominal Flow	3 GPM (11 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 Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.23 lbs. (.10 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 Nm)
Cavity	POWER 3W
Cavity Form Tool (Finishing)	40500024
Seal Kit	21191105

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

PP-S3X

OPTIONS

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Override **0M**
- Viton, Override **VM**
- Buna, Screen **A0**
- Viton, Screen **W0**
- Buna, Override, Non-detent **B1**
- Viton, Override, Non-detent **V1**
- Buna, Screen, Override, Non-detent **B3**
- Buna, Screen, Override, Detent **B4**
- Viton, Screen, Override, Non-detent **V3**
- Viton, Screen, Override, Detent **V4**

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

- Blank
- N** 1/4 NPTF Ports
- S** #6 SAE Ports

BODIES

VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 25** 24 VAC
- 11** 120 VAC
- 22** 220 VAC
- 44** 440 VAC

"P" COIL TERMINATION

(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04-2P
- ML** Metri-Pack on Leads
- PL** Packard on Leads
- WL** Weatherpack on Leads

- SS** Single Spade
- DS** Double Spade
- HC** DIN 43650 (Hirschman) - (AC & DC)
- CL** Conduit Lead - (AC Only)
- DI** Deutsch - Integral DT04-2P

IMMERSION PROOF "P" TYPE

- IA** "I" Coil AMP Superseal - Integral
- ID** "I" Coil Deutsch - Integral DT04-2P
- IJ** "I" Coil AMP Jr. Timer - Integral
- IM** "I" Coil Metri-Pack - Integral

Approximate Coil Weight: .42 lbs. (.19 kg.)

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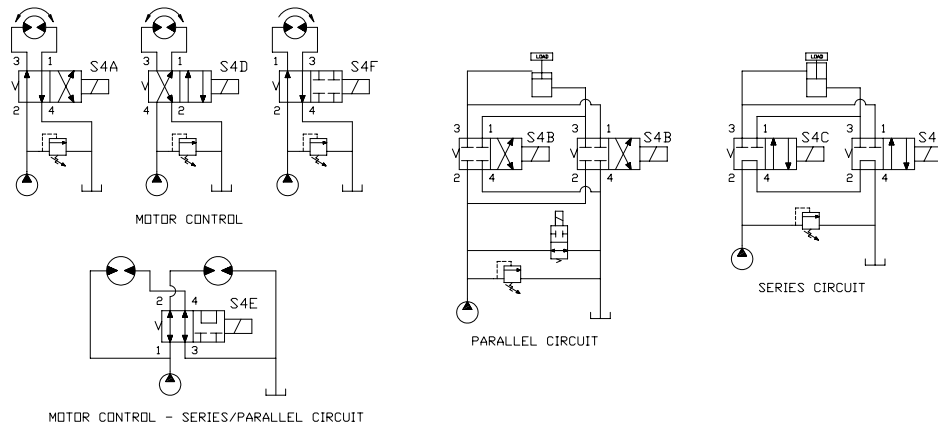


4 Way 2 Position Spool Valves

	GPM	PSI	LPM	BAR	MODEL	PAGE
	1	3000	4	207	MD-S4A	128
	1.5	4000	6	276	HD-S4A	130
	4	3000	15	207	PQ-S4A	132
	10	3000	38	207	DG-S4A	134
	10	4000	38	276	HG-S4A	136
	5	1000	19	69	QG-S4A	584
	5.28	1000	20	69	IG-S4A	602
	15	5000	57	345	HV-S4A	138
	1.5	3000	6	207	MD-S4B	140
	3	4000	11	276	HD-S4B	142
	4	3000	15	207	PQ-S4B	144
	10	3000	38	207	DG-S4B	146
	10	4000	38	276	HG-S4B	148
	4	3000	15	207	PQ-S4C	150
	8	3000	30	207	DG-S4C	152
	8	4000	30	276	HG-S4C	154
	2.5	3000	9	207	PQ-S4D	156
	6	3000	23	207	DG-S4D	158
	8	4000	30	276	HG-S4D	160
	6	3000	23	207	DG-S4E	162
	8	4000	30	276	HG-S4E	164
	15	5000	57	345	HV-S4E	166
	6	3000	23	207	DG-S4F	168
	6	4000	23	276	HG-S4F	170

Typical Schematic

Typical application for the S4A, S4D, and S4F is directional motor or cylinder control.
 Typical application for the S4B is directional motor or cylinder control in a parallel circuit.
 Typical application for the S4C is directional motor or cylinder control in a series circuit.
 Typical application for the S4E is motor control in a series/parallel circuit.



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.

MD-S4A Direct Acting Spool, 4 Way 2 Position

DESCRIPTION

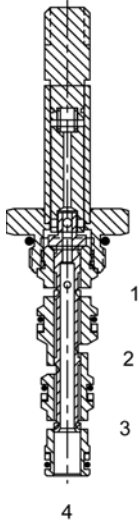
7 size, 5/8-18 thread, "Mini" series, solenoid operated, 4 way 2 position, spool valve.

OPERATION

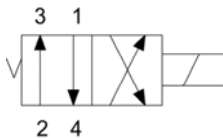
When de-energized the MD-S4A allows flow from (1) to (4) and (2) to (3). When energized the valve allows flow from (2) to (1) and (3) to (4).

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.



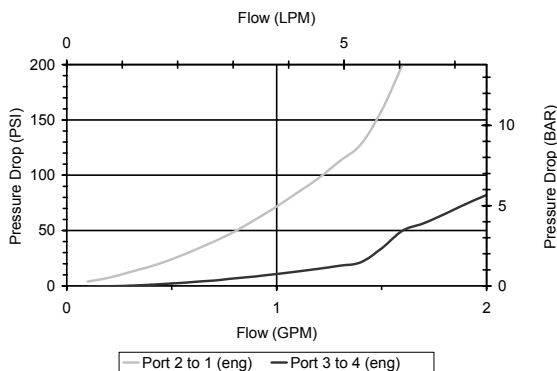
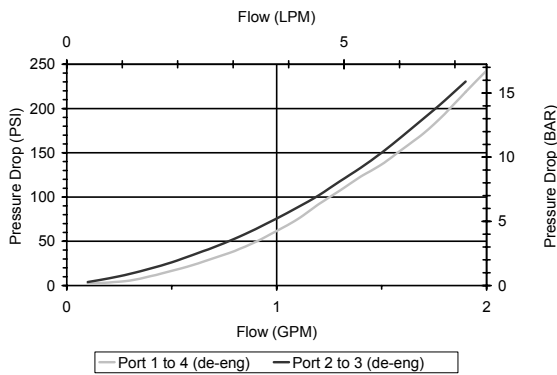
HYDRAULIC SYMBOL



Operational shift limit 1 GPM (3.8 LPM).
For shifted flow performance consult chart.
For higher pressures or flows see HD-S4A.

PERFORMANCE

Actual Test Data (Cartridge Only)



VALVE SPECIFICATIONS

Maximum Flow	1 GPM (4 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 Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.15 lbs. (.07 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	15 ft-lbs (20.3 Nm)
Coil Nut Torque Requirements	3-5 ft-lbs (4.1-6.8 Nm)
Cavity	MINI 4W
Cavity Form Tool (Finishing)	40500006
Seal Kit	21191008

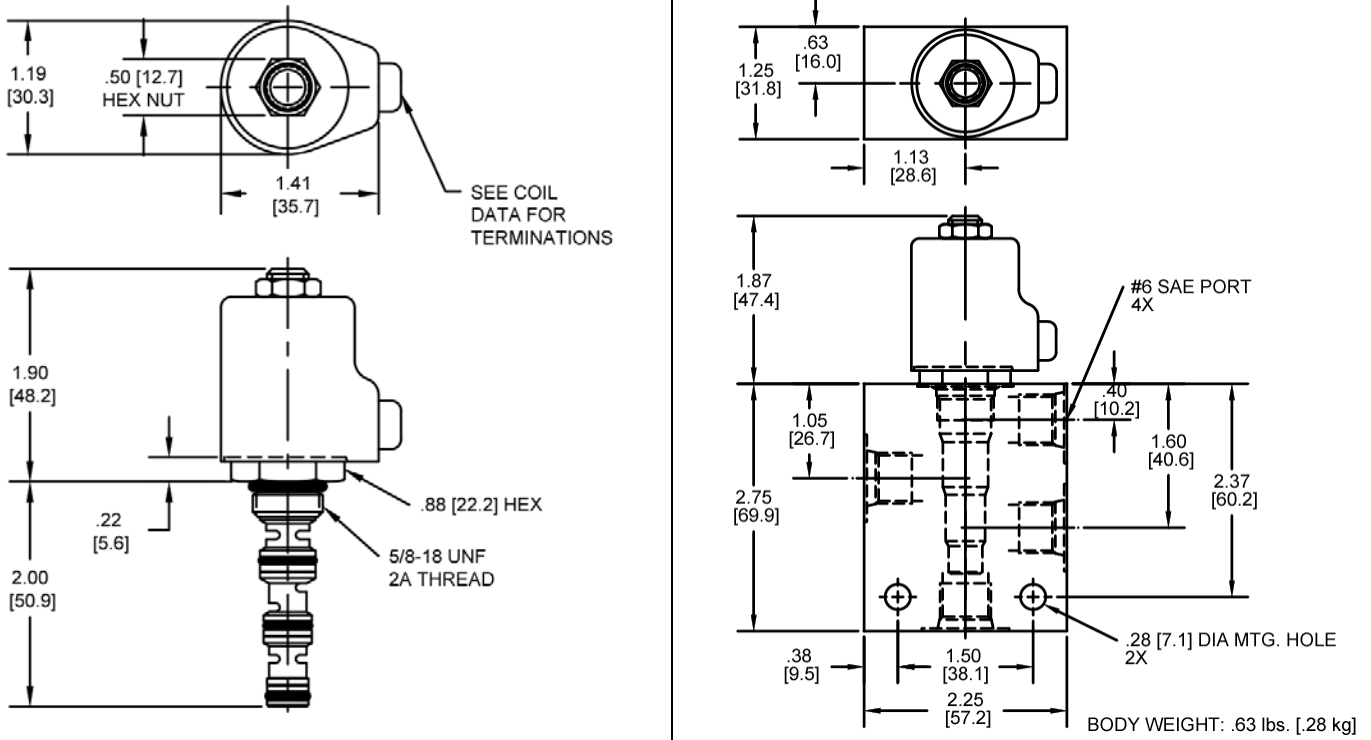
WARNING: The specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

DIMENSIONS



ORDERING INFORMATION

MD-S4A - - - -

OPTIONS
Buna Standard
Viton Standard

00
V0

Blank
N
S

BODIES
Without Body
1/4 NPTF Ports
#6 SAE Ports

VOLTAGE
06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC
44 440 VAC

“M” COIL TERMINATION

(All DC Except as Noted)
Double Lead
Deutsch on Leads DT04-2P
Metri-Pack on Leads
Packard on Leads
Weatherpack on Leads
Single Spade
Double Spade
DIN 43650 (Hirschman) – (AC & DC)
Conduit Lead – (AC Only)

DL
DT
ML
PL
WL
SS
DS
HC
CL

Approximate Coil Weight: .30 lbs/.14 kg.

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.

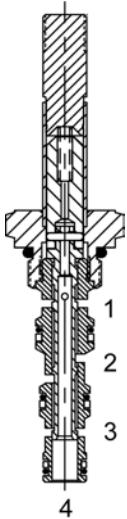
Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com



HD-S4A Direct Acting Spool, 4 Way 2 Position



DESCRIPTION

“High Pressure” 7 size, 5/8-18 thread, “Mini” series, solenoid operated, 4 way 2 position spool valve.

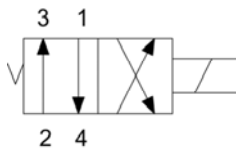
OPERATION

When de-energized the HD-S4A allows flow from (1) to (4) and (2) to (3). When energized the valve allows flow from (2) to (1) and (3) to (4).

FEATURES

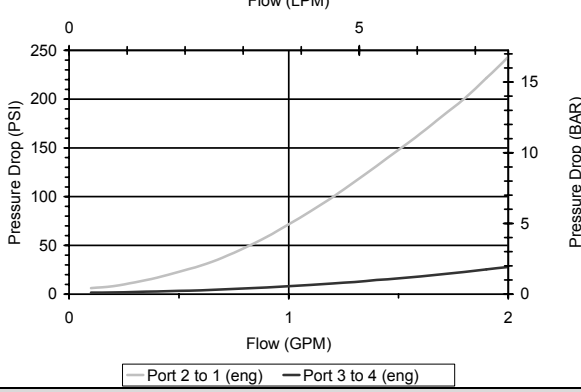
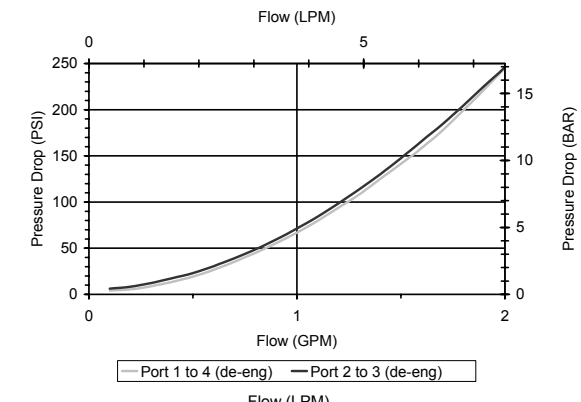
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design (for most common terminations, see coil page).
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

HYDRAULIC SYMBOL



PERFORMANCE

Actual Test Data (Cartridge Only)



VALVE SPECIFICATIONS

Nominal Flow	1.5 GPM (6 LPM)
Rated Operating Pressure	4000 PSI (276 bar)
Typical Internal Leakage (150 SSU)	8 cu in/min (131 ml/min) per path
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.16 lbs. (.07 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	15 ft-lbs (20 Nm)
Coil Nut Torque Requirements	3-5 ft-lbs (4.1-6.8 Nm)
Cavity	MINI 4W
Cavity Form Tool (Finishing)	40500006
Seal Kit	21191008

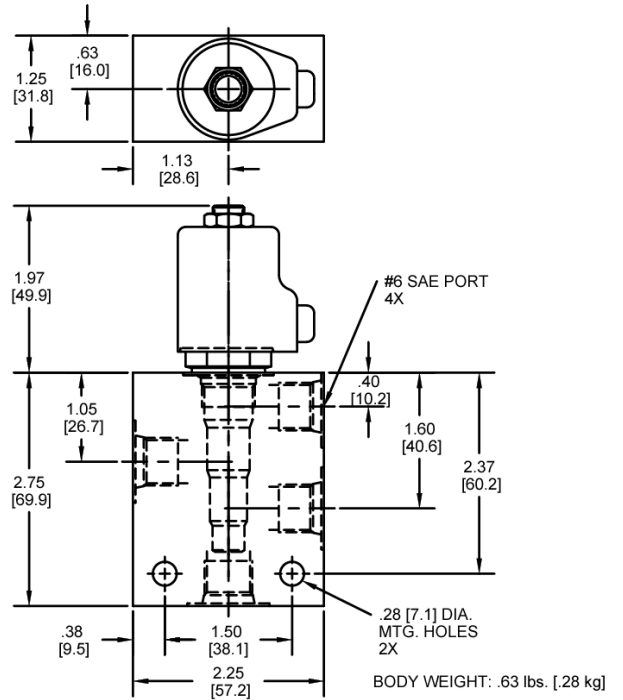
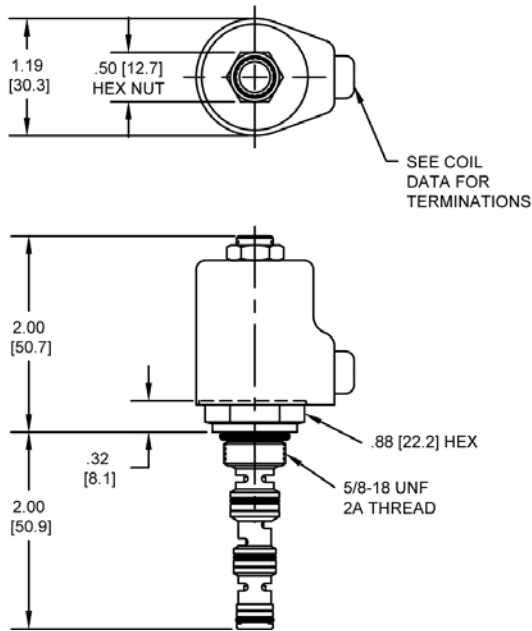
WARNING: The specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

DIMENSIONS



ORDERING INFORMATION

HD-S4A

OPTIONS
Buna Standard
Viton Standard

00
V0

Blank
N
S

BODIES
Without Body
1/4 NPTF Ports
#6 SAE Ports

Note: Aluminum, NOT durability rated for 4000 PSI. Consult factory for body options.

"M" COIL TERMINATION

(All DC Except as Noted)
Double Lead
Deutsch on Leads DT04-2P
Metri-Pack on Leads
Packard on Leads
Weatherpack on Leads
Single Spade
Double Spade
DIN 43650 (Hirschman) – (AC & DC)
Conduit Lead – (AC Only)

DL
DT
ML
PL
WL
SS
DS
HC
CL

VOLTAGE
06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC
44 440 VAC

Approximate Coil Weight: .30 lbs./14 kg

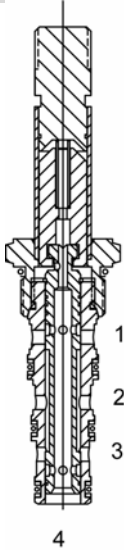
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Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

PQ-S4A Direct Acting Spool, 4 Way 2 Position



DESCRIPTION

8 size, 3/4-16 thread, "Power" series, solenoid operated, 4 way 2 position, spool valve.

OPERATION

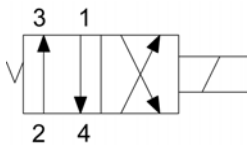
When de-energized the PQ-S4A allows flow from (1) to (4) and from (2) to (3). When energized the valve allows flow from (2) to (1) and from (3) to (4).

OPERATION OF MANUAL OVERRIDE OPTION: To override, pull knob out. On the detented version, after pulling knob out twist 180 degrees and release. The valve will remain in that position.

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

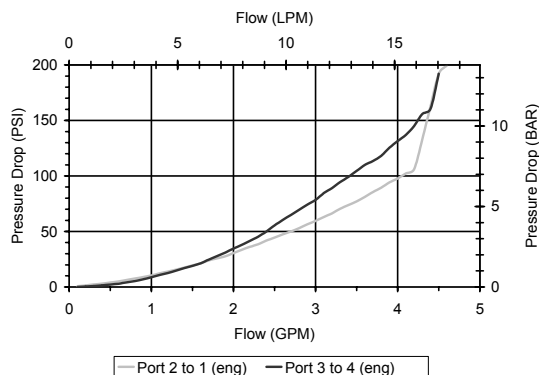
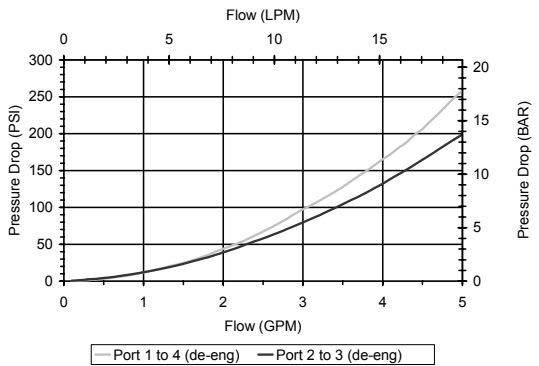
HYDRAULIC SYMBOL



Modes of shift operation to 6 GPM, Consult Factory.

PERFORMANCE

Actual Test Data (Cartridge Only)



VALVE SPECIFICATIONS

Nominal Flow	4 GPM (15 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 Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.24 lbs. (.11 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 Nm)
Cavity	POWER 4W
Cavity Form Tool (Finishing)	40500029
Seal Kit	21191108

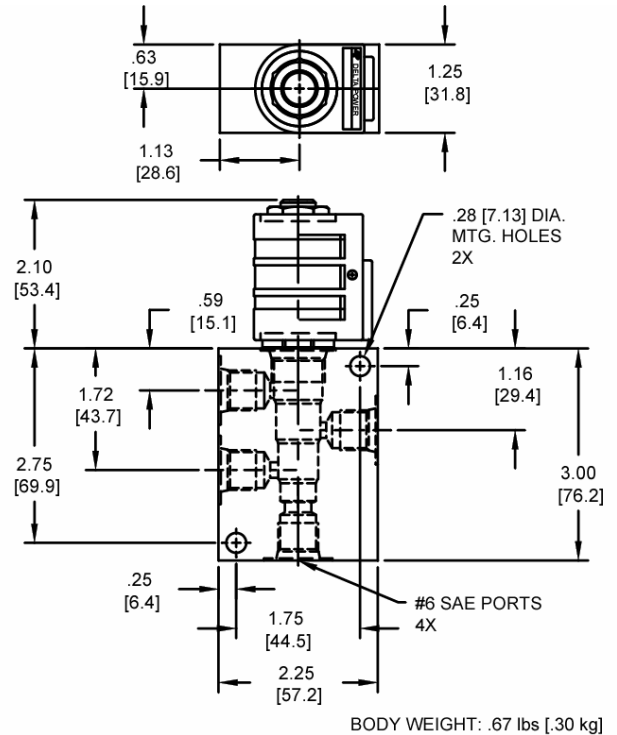
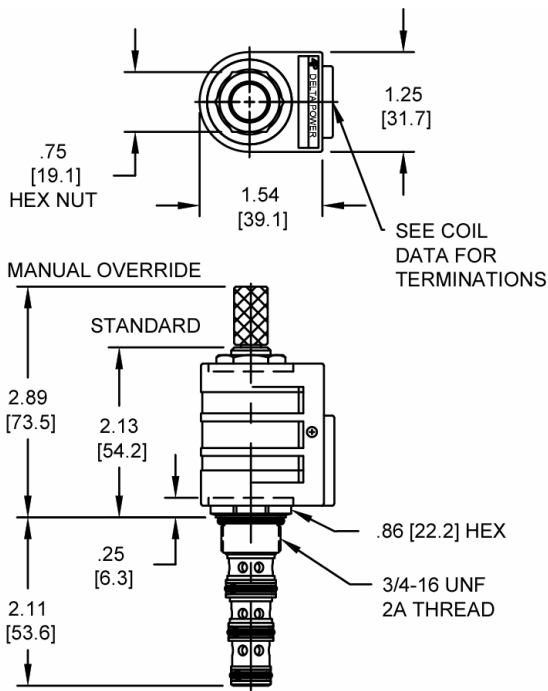
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Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

DIMENSIONS



ORDERING INFORMATION

PQ-S4A - - -

- OPTIONS**
 Buna Standard **00**
 Viton Standard **V0**
 Buna, Override, Detent **0M**
 Viton, Override, Detent **VM**
 Buna, Override, Non-detent **B1**
 Viton, Override, Non-detent **V1**

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

- VOLTAGE**
06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC
44 440 VAC

"P" COIL TERMINATION
(All DC Except as Noted)

- DL** Double Lead
DT Deutsch on Leads DT04-2P
ML Metri-Pack on Leads
PL Packard on Leads
WL Weatherpack on Leads

- SS** Single Spade
DS Double Spade
HC DIN 43650 (Hirschman) - (AC & DC)
CL Conduit Lead - (AC Only)
DI Deutsch - Integral DT04-2P

- IMMERSION PROOF "P" TYPE**
IA "I" Coil AMP Superseal - Integral
ID "I" Coil Deutsch - Integral DT04-2P
IJ "I" Coil AMP Jr. Timer - Integral
IM "I" Coil Metri-Pack - Integral

Approximate Coil Weight: .42 lbs (.19 kg.)

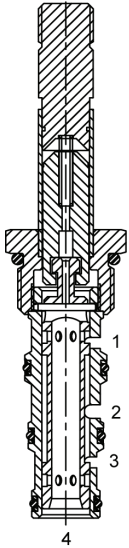
WARNING: The specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

DG-S4A Direct Acting Spool, 4 Way 2 Position



DESCRIPTION

10 size, 7/8-14 thread, "Delta" series, solenoid operated, 4 way 2 position, side flow spool valve.

OPERATION

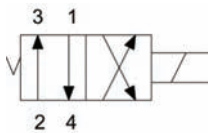
When de-energized the DG-S4A allows flow between (1) to (4) and (2) to (3). When energized the valve allows flow between (2) to (1) and (3) to (4).

OPERATION OF MANUAL OVERRIDE OPTION: To override, pull knob out. On the detented version, after pulling knob out twist 180 degrees and release. The valve will remain in that position.

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

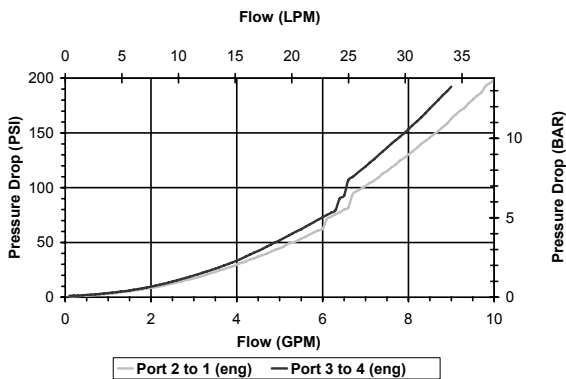
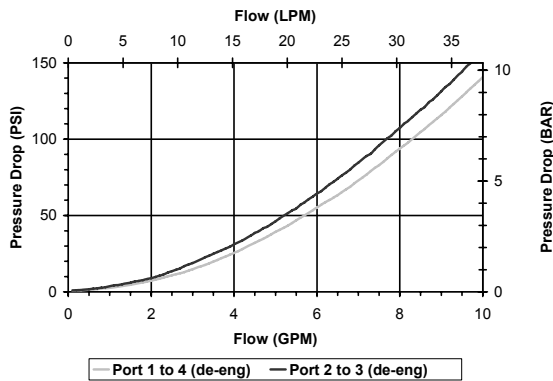
HYDRAULIC SYMBOL



For higher pressures see HG-S4A.

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) per path
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature 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)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 Nm) Maximum
Cavity	DELTA 4W
Cavity Form Tool (Finishing)	40500002
Seal Kit	21191214

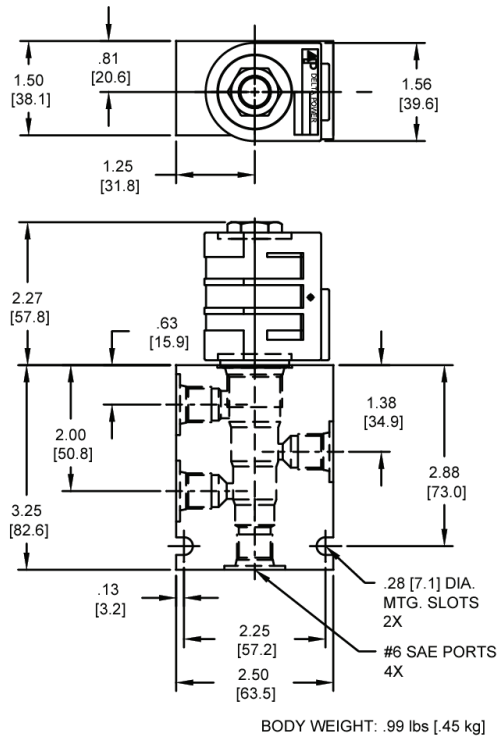
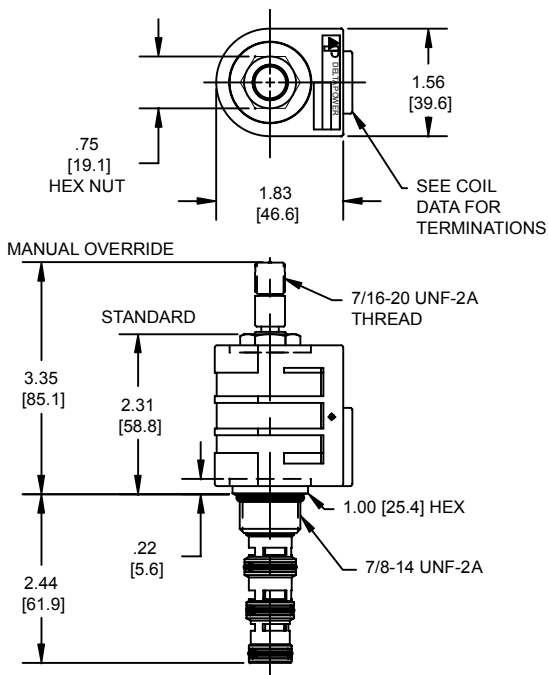
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Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

DIMENSIONS



ORDERING INFORMATION

DG-S4A - - - -

OPTIONS

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Override **0M**
- Viton, Override **VM**
- Buna, Override, Non-detent **B1**
- Viton, Override, Non-detent **V1**

- Blank
- N** 1/4 NPTF Ports
- S** #6 SAE Ports

BODIES

VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 25** 24 VAC
- 11** 120 VAC
- 22** 220 VAC
- 44** 440 VAC

"D" COIL TERMINATION
(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04-2P
- ML** Metri-Pack on Leads
- PL** Packard on Leads
- WL** Weatherpack on Leads

- SS** Single Spade
- DS** Double Spade
- HC** DIN 43650 (Hirschman) - (AC & DC)
- CL** Conduit Lead - (AC Only)
- DI** Deutsch - Integral DT04-2P

IMMERSION PROOF "D" TYPE

- IA** "I" Coil AMP Superseal - Integral
- ID** "I" Coil Deutsch - Integral DT04-2P
- IJ** "I" Coil AMP Jr. Timer - Integral
- IM** "I" Coil Metri-Pack - Integral

Approximate Coil Weight: .74 lbs (.33 kg.)

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.

Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

HG-S4A, Direct Acting Spool, 4 Way 2 Position, Criss Cross

DESCRIPTION

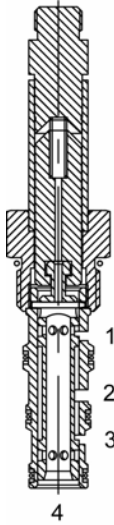
"High Pressure" 10 size, 7/8-14 thread, "Delta" series, 4 way 2 position, side flow spool valve.

OPERATION

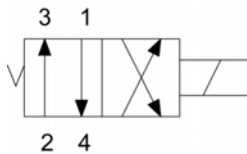
When de-energized the HG-S4A allows flow from (1) to (4) and from (2) to (3). When energized the valve allows flow from (2) to (1) and from (3) to (4).

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.



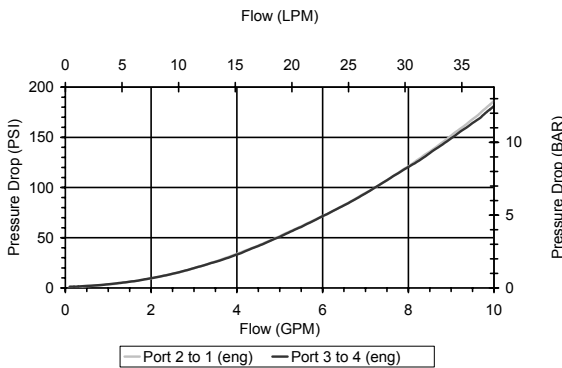
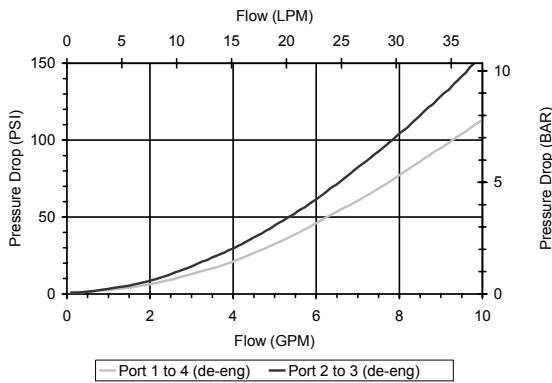
HYDRAULIC SYMBOL



Uses "L" Coil.

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)	10 cu in/min (164 ml/min) per path
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.44 lbs. (.20 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 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.

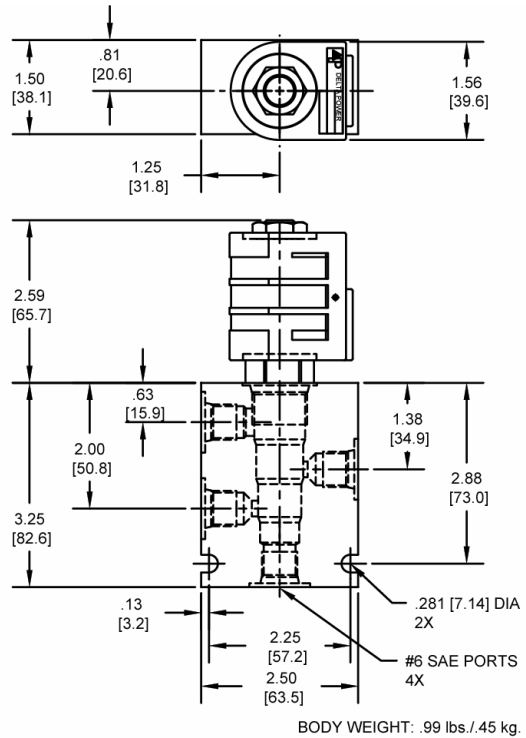
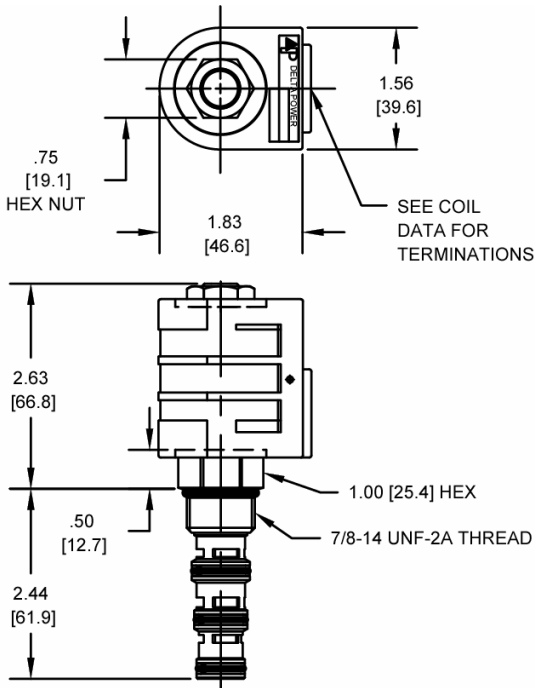
Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com



DIMENSIONS



ORDERING INFORMATION

HG-S4A - - - -

OPTIONS
Buna Standard 00
Viton Standard V0

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

Note: Aluminum, NOT durability rated for 4000 PSI. Consult factory for body options.

VOLTAGE
06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC
44 440 VAC

"L" COIL TERMINATION
(All DC Except as Noted)

DL Double Lead
DT Deutsch on Leads DT04-2P
ML Metri-Pack on Leads
PL Packard on Leads
WL Weatherpack on Leads

SS Single Spade
DS Double Spade
HC DIN 43650 (Hirschman) – (AC & DC)
CL Conduit Lead – (AC Only)
DI Deutsch – Integral DT04-2P

IMMERSION PROOF "L" TYPE
IA "I" Coil AMP Superseal - Integral
ID "I" Coil Deutsch – Integral DT04-2P
IJ "I" Coil AMP Jr. Timer - Integral
IM "I" Coil Metri-Pack – Integral

Approximate Coil Weight: .68 lbs. (.31 kg.)

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.

Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

HV-S4A Direct Acting Spool, 4 Way 2 Position



DESCRIPTION

"High pressure" 12 size, 1 1/16-12 thread, "Tecnorm" series, solenoid operated, 4 way 2 position, criss cross side flow spool valve.

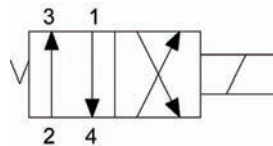
OPERATION

When de-energized the HV-S4A allows flow from (1) to (4) and from (2) to (3). When energized the valve allows flow from (2) to (1) and from (3) to (4).

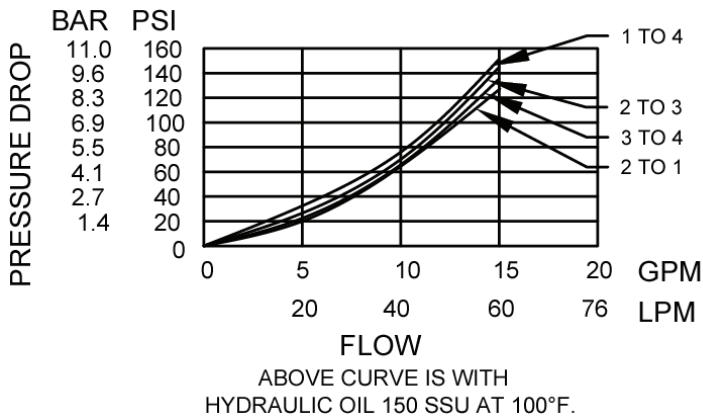
FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

HYDRAULIC SYMBOL



PERFORMANCE



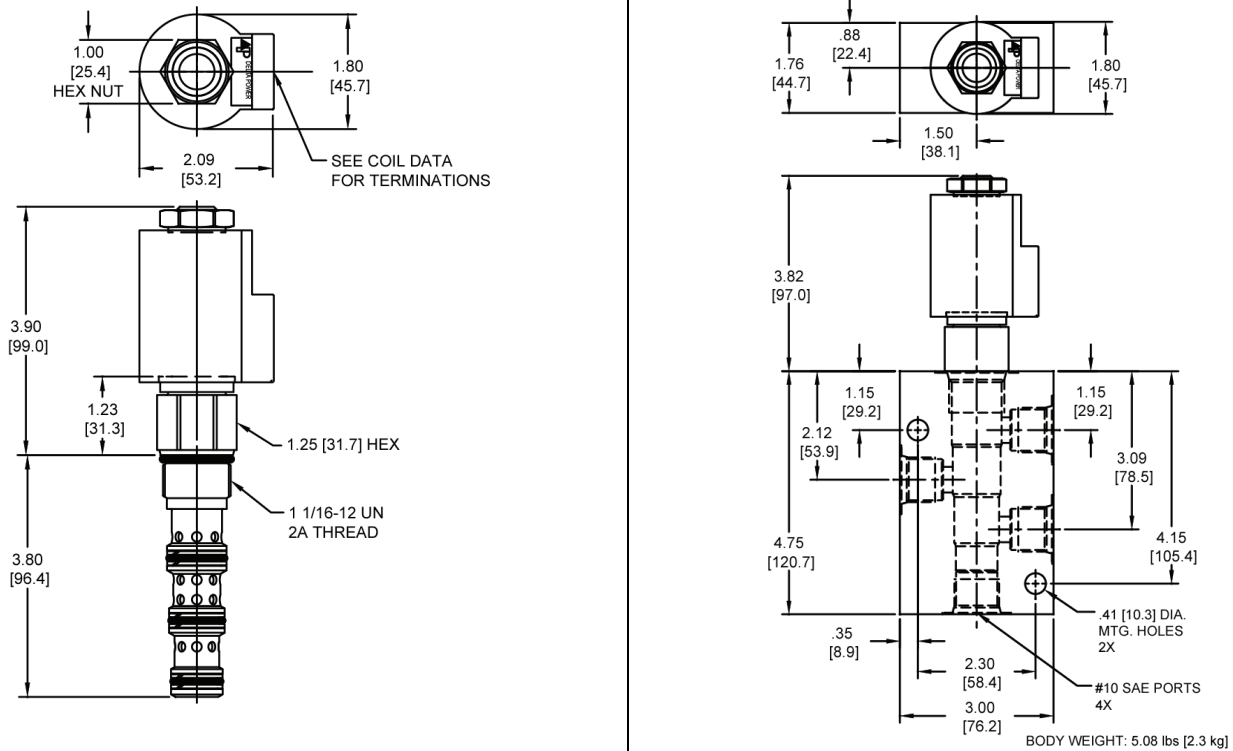
PORTING OPTIONS	FLOW (GPM)	FLOW (GPM)
2	15	56.7
4	8	30

VALVE SPECIFICATIONS

Nominal Flow	15 GPM (57 LPM)
Rated Operating Pressure	5000 PSI (345 bar)
Typical Internal Leakage (150 SSU)	8 cu in/min (131 ml/min) per path
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	1.07 lbs. (.48 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	70 ft-lbs (94.9 Nm)
Coil Nut Torque Requirements	5-7 ft-lbs (6.8-9.5Nm)
Cavity	TECNORD 4W
Cavity Form Tool (Finishing)	40500035
Seal Kit	21191309

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

HV-S4A - - - -

OPTIONS

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

Blank **S**

BODIES

Without Body
#10 SAE Ports

"T" COIL TERMINATION

(All DC Except as Noted)

Double Lead **DL**
Deutsch on Leads **DT**
Metri-Pack on Leads **ML**
Packard on Leads **PL**
Weatherpack on Leads **WL**
Double Spade **DS**
DIN 43650 (Hirschman) - (AC & DC) **HC**

VOLTAGE

06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC

Approximate Coil Weight: .89 lbs/.41 kg.

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.

MD-S4B Direct Acting Spool, 4 Way 2 Position, Closed Center

DESCRIPTION

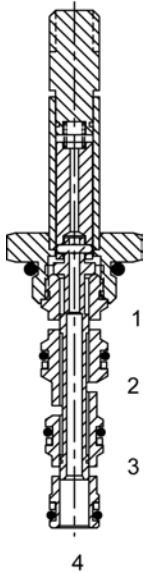
7 size, 5/8-18 thread, "Mini" series, solenoid operated, 4 way 2 position, closed center spool valve.

OPERATION

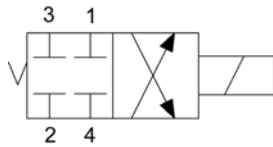
When de-energized the MD-S4B blocks flow at all ports. When energized the valve allows flow from (2) to (1) and (3) to (4).

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.



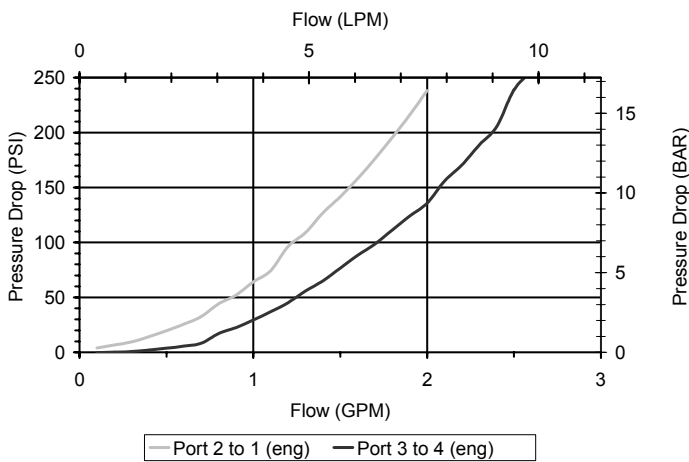
HYDRAULIC SYMBOL



Modes of shift operation to 3 GPM, Consult Factory.
For higher pressures or flows see HD-S4B.

PERFORMANCE

Actual Test Data (Cartridge Only)



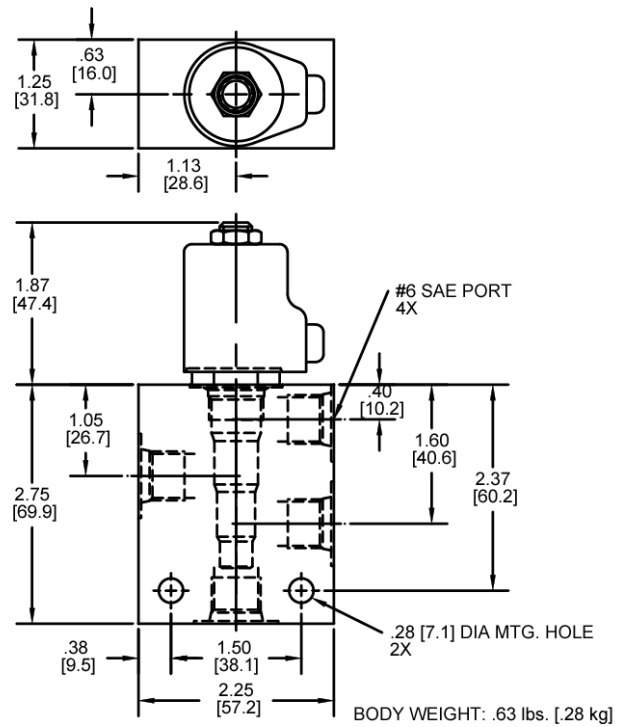
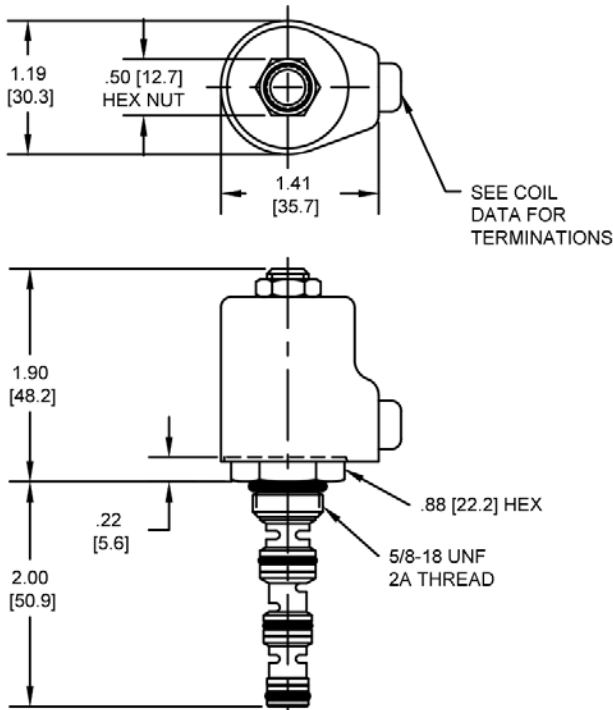
VALVE SPECIFICATIONS

Nominal Flow	1.5 GPM (6 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 Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.15 lbs. (.07 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	15 ft-lbs (20.3 Nm)
Coil Nut Torque Requirements	3-5 ft-lbs (4.1-6.8 Nm)
Cavity	MINI 4W
Cavity Form Tool (Finishing)	40500006
Seal Kit	21191008

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

MD-S4B - - - -

OPTIONS

Buna Standard 00
Viton Standard V0

"M" COIL TERMINATION

(All DC Except as Noted)

Double Lead DL
Deutsch on Leads DT04-2P DT
Metri-Pack on Leads ML
Packard on Leads PL
Weatherpack on Leads WL
Single Spade SS
Double Spade DS
DIN 43650 (Hirschman) - (AC&DC) HC
Conduit Lead - (AC Only) CL

BODIES

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

VOLTAGE

06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC
44 440 VAC

Approximate Coil Weight: .30 lbs/.14 kg.

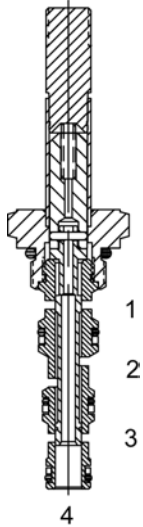
WARNING: The specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

HD-S4B Direct Acting Spool, 4 Way 2 Position, Closed Center



DESCRIPTION

"High Pressure" 7 size, 5/8-18 thread, "Mini" series, solenoid operated, 4 way 2 Position, closed center spool valve.

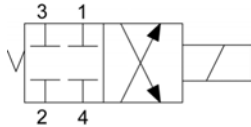
OPERATION

When de-energized the HD-S4B blocks flow at all ports. When energized the valve allows flow from (2) to (1) and (3) to (4).

FEATURES

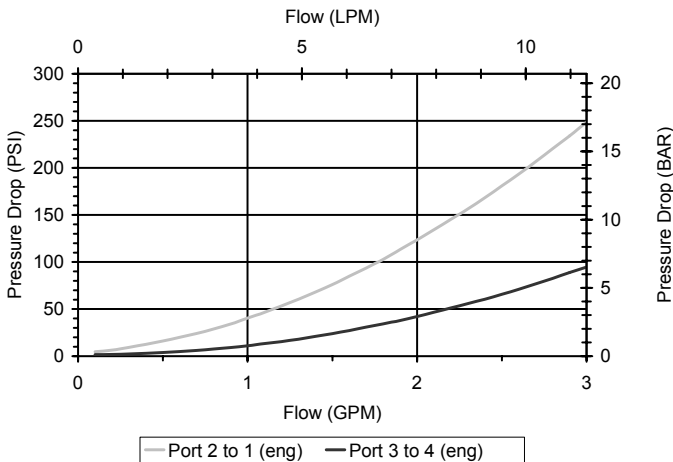
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design (for most common terminations, see coil page).
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

HYDRAULIC SYMBOL



PERFORMANCE

Actual Test Data (Cartridge Only)



VALVE SPECIFICATIONS

Maximum Flow	3 GPM (11 LPM)
Rated Operating Pressure	4000 PSI (276 bar)
Typical Internal Leakage (150 SSU)	8 cu in/min (131 ml/min) per path
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.16 lbs. (.07 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	15 ft-lbs (20 Nm)
Coil Nut Torque Requirements	3-5 ft-lbs (4.1-6.8 Nm)
Cavity	MINI 4W
Cavity Form Tool (Finishing)	40500006
Seal Kit	21191008

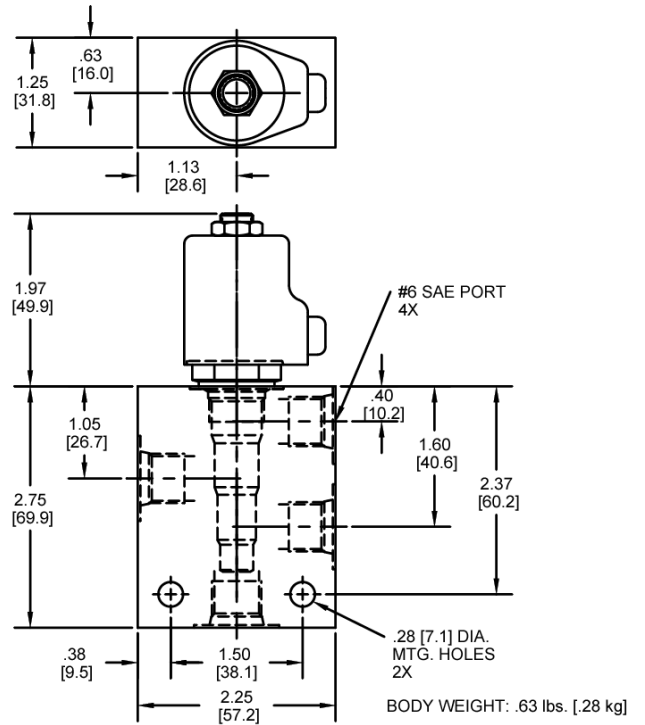
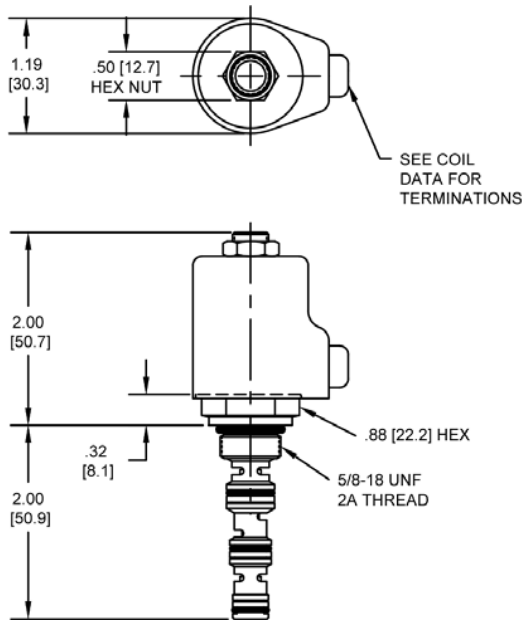
WARNING: The specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

DIMENSIONS



ORDERING INFORMATION

HD-S4B

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

"M" COIL TERMINATION

(All DC Except as Noted)

Double Lead **DL**
Deutsch on Leads DT04-2P **DT**
Metri-Pack on Leads **ML**
Packard on Leads **PL**
Weatherpack on Leads **WL**
Single Spade **SS**
Double Spade **DS**
DIN 43650 (Hirschman) - (AC & DC) **HC**
Conduit Lead - (AC Only) **CL**

Blank **N**
S

BODIES
Without Body
1/4 NPTF Ports
#6 SAE Ports

Note: Aluminum, NOT durability rated for 4000 PSI. Consult factory for body options.

VOLTAGE
06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC
44 440 VAC

Approximate Coil Weight: .30 lbs/.14 kg.

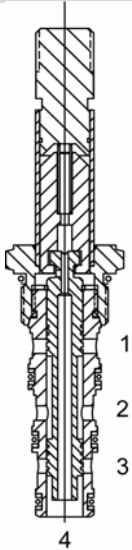
WARNING: The specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

PQ-S4B Direct Acting Spool, 4 Way 2 Position, Closed Center



DESCRIPTION

8 size, 3/4 -16 thread, "Power" series, solenoid operated, 4 way 2 position, closed center spool valve.

OPERATION

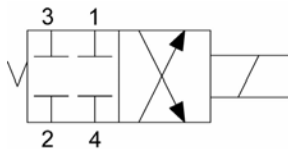
When de-energized the PQ-S4B blocks flow at all ports. When energized the valve allows flow from (2) to (1) and from (3) to (4).

OPERATION OF MANUAL OVERRIDE OPTION: To override, pull knob out. On the detented version, after pulling knob out twist 180 degrees and release. The valve will remain in that position.

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

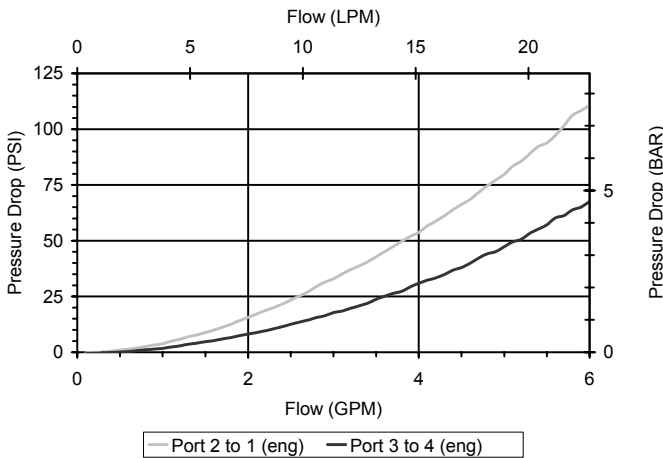
HYDRAULIC SYMBOL



Modes of shift operation to 6 GPM, Consult Factory.

PERFORMANCE

Actual Test Data (Cartridge Only)

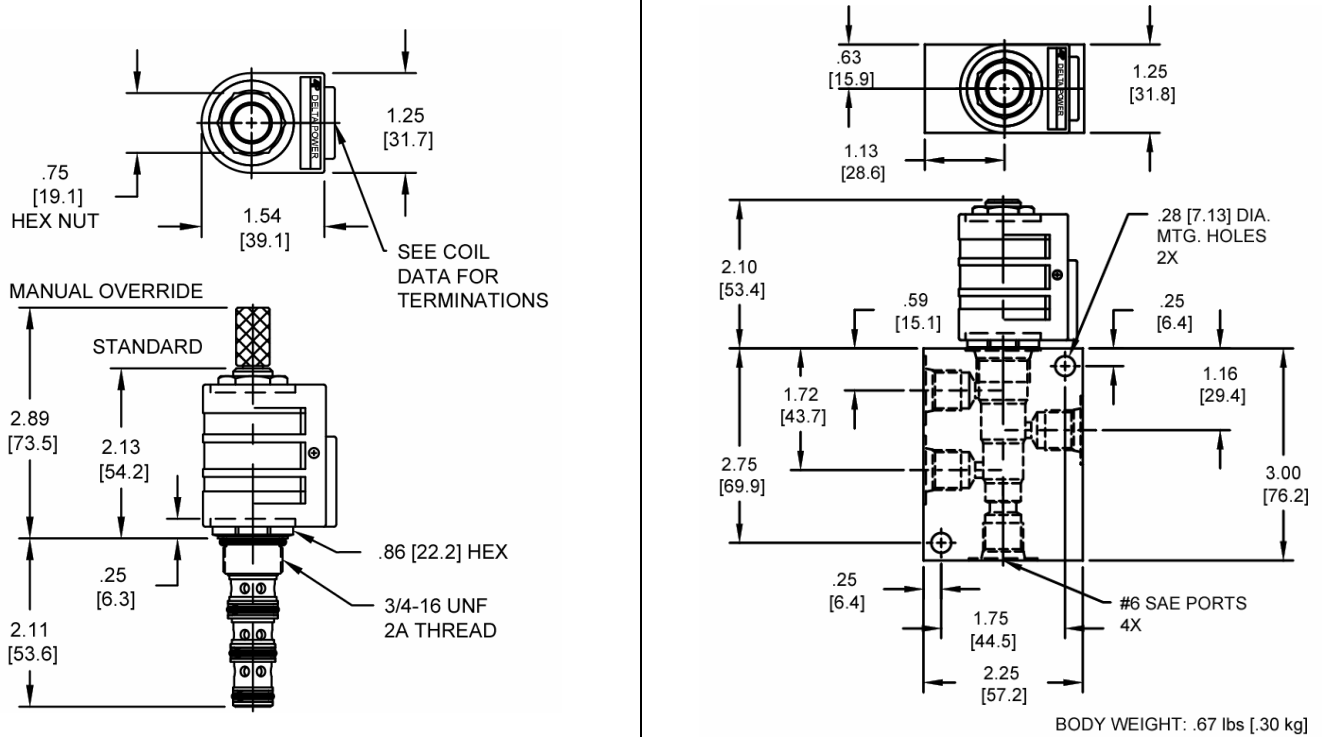


VALVE SPECIFICATIONS

Nominal Flow	4 GPM (15 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 Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.24 lbs. (.11 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 Nm)
Cavity	POWER 4W
Cavity Form Tool (Finishing)	40500029
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



ORDERING INFORMATION

PQ-S4B - - - -

- OPTIONS**
 Buna Standard **00**
 Viton Standard **V0**
 Buna, Override, Detent **OM**
 Viton, Override, Detent **VM**
 Buna, Override, Non-detent **B1**
 Viton, Override, Non-detent **V1**

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

- VOLTAGE**
06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC
44 440 VAC

"P" COIL TERMINATION
(All DC Except as Noted)

- DL** Double Lead
DT Deutsch on Leads DT04-2P
ML Metri-Pack on Leads
PL Packard on Leads
WL Weatherpack on Leads

- SS** Single Spade
DS Double Spade
HC DIN 43650 (Hirschman) - (AC & DC)
CL Conduit Lead - (AC Only)
DI Deutsch - Integral DT04-2P

- IMMERSION PROOF "P" TYPE**
IA "I" Coil AMP Superseal - Integral
ID "I" Coil Deutsch - Integral DT04-2P
IJ "I" Coil AMP Jr. Timer - Integral
IM "I" Coil Metri-Pack - Integral

Approximate Coil Weight: .42 lbs (.19 kg.)

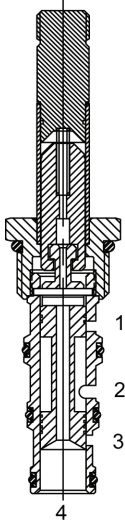
WARNING: The specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

DG-S4B Direct Acting Spool, 4 Way 2 Position, Closed Center



DESCRIPTION

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

OPERATION

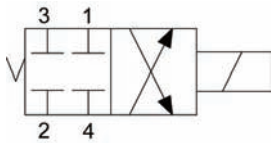
When de-energized the DG-S4B blocks flow at all ports. When energized the valve allows flow from (2) to (1) and (3) to (4).

OPERATION OF MANUAL OVERRIDE OPTION: To override, pull knob out. On the detented version, after pulling knob out twist 180 degrees and release. The valve will remain in that position.

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

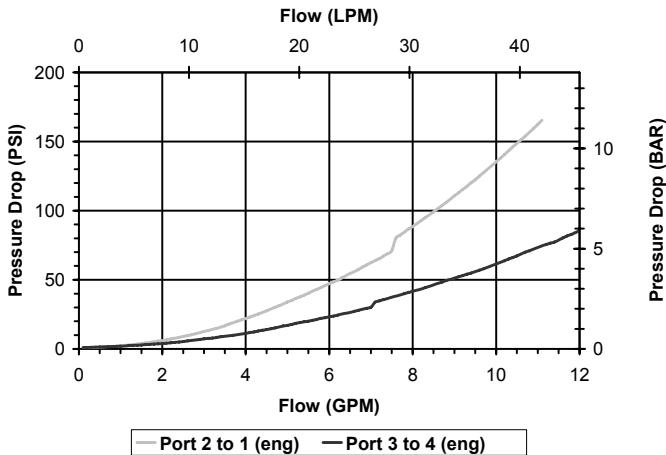
HYDRAULIC SYMBOL



For higher pressures see HG-S4B.
Operational shift limit, 10 GPM.
For shift performance consult chart.

PERFORMANCE

Actual Test Data (Cartridge Only)

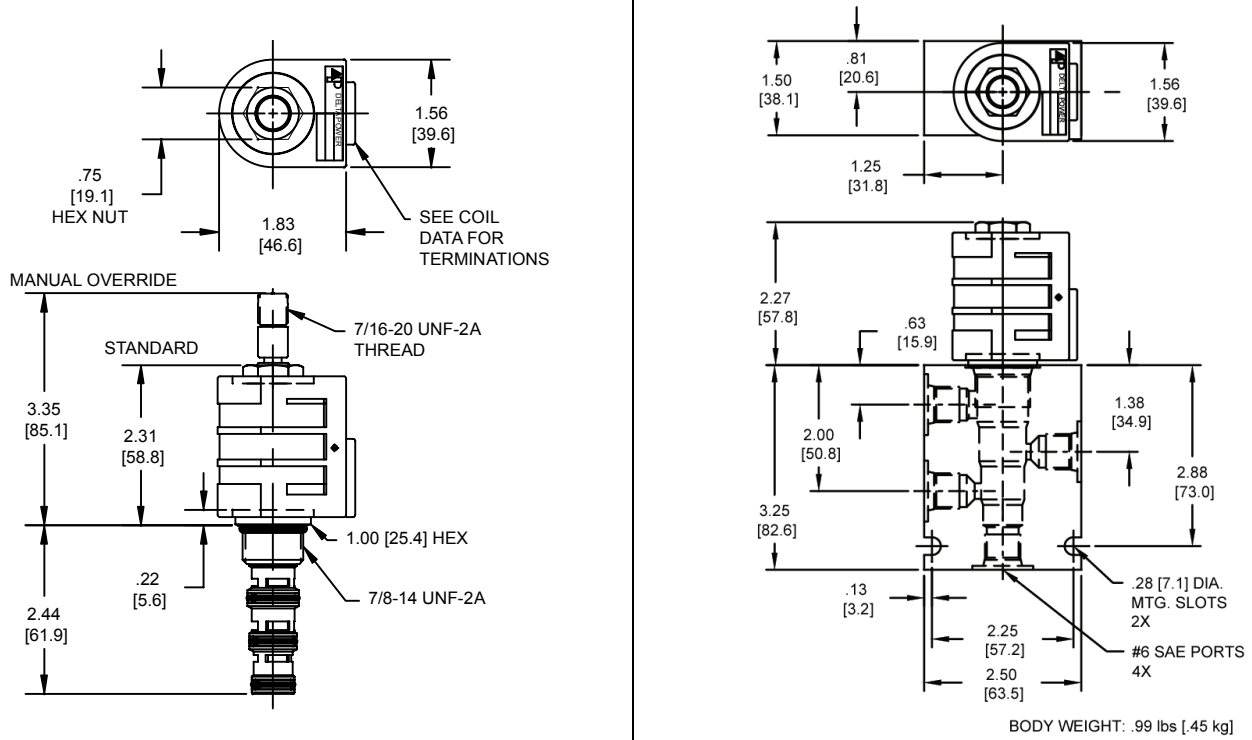


VALVE SPECIFICATIONS

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) per path
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature 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)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 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

DG-S4B - - - -

OPTIONS

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Override **0M**
- Viton, Override **VM**
- Buna, Override, Non-detent **B1**
- Viton, Override, Non-detent **V1**

BODIES

- Blank
- N** 1/4 NPTF Ports
- S** #6 SAE Ports

VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 25** 24 VAC
- 11** 120 VAC
- 22** 220 VAC
- 44** 440 VAC

"D" COIL TERMINATION

(All DC Except as Noted)

- | | | |
|------------------------------------|---|---|
| DL Double Lead | SS Single Spade | IA "I" Coil AMP Superseal - Integral |
| DT Deutsch on Leads DT04-2P | DS Double Spade | ID "I" Coil Deutsch - Integral DT04-2P |
| ML Metri-Pack on Leads | HC DIN 43650 (Hirschman) - (AC & DC) | IJ "I" Coil AMP Jr. Timer - Integral |
| PL Packard on Leads | CL Conduit Lead - (AC Only) | IM "I" Coil Metri-Pack - Integral |
| WL Weatherpack on Leads | DI Deutsch - Integral DT04-2P | |

Approximate Coil Weight: .74 lbs/.33 kg.

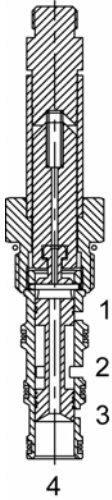
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Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

HG-S4B, Direct Acting Spool, 4 Way 2 Position



DESCRIPTION

“High Pressure” 10 size, 7/8-14 thread, “Delta” series, solenoid operated, 4 way 2 position closed center spool valve.

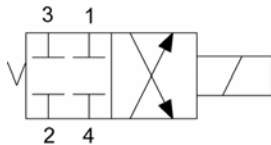
OPERATION

When de-energized the HG-S4B blocks flow at all ports. When energized the valve allows flow from (2) to (1) and from (3) to (4).

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional “I” Coil: Weatherproof, Thermal Shock, Immersion Safe.

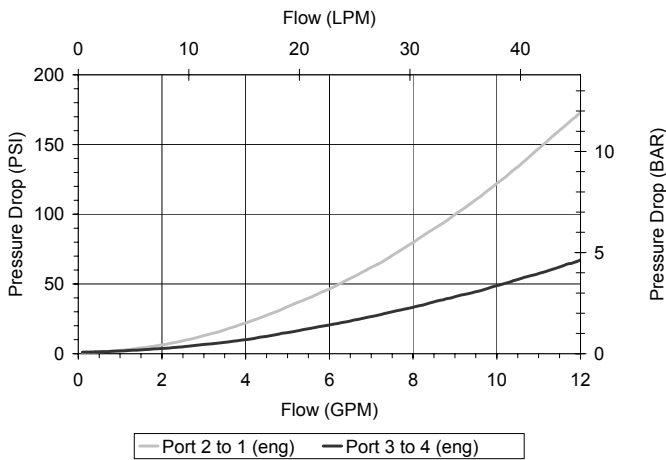
HYDRAULIC SYMBOL



Uses “L” Coil

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)	10 cu in/min (164 ml/min) per path
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.44 lbs. (.20 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 Nm)
Cavity	DELTA 4W
Cavity Form Tool (Finishing)	40500002
Seal Kit	21191214

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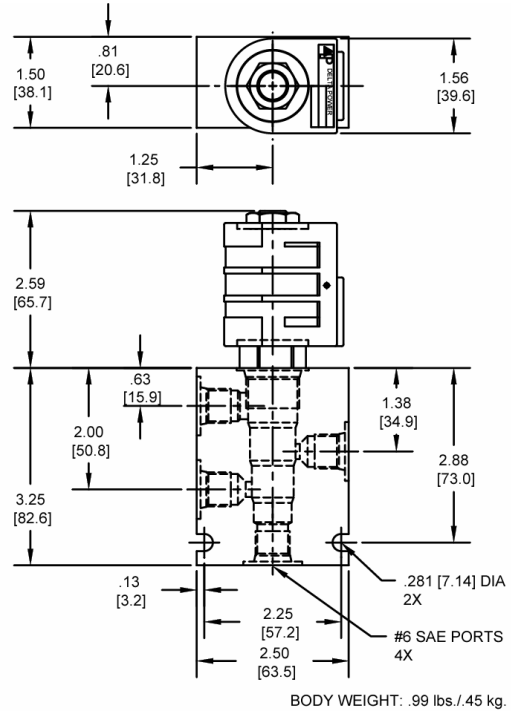
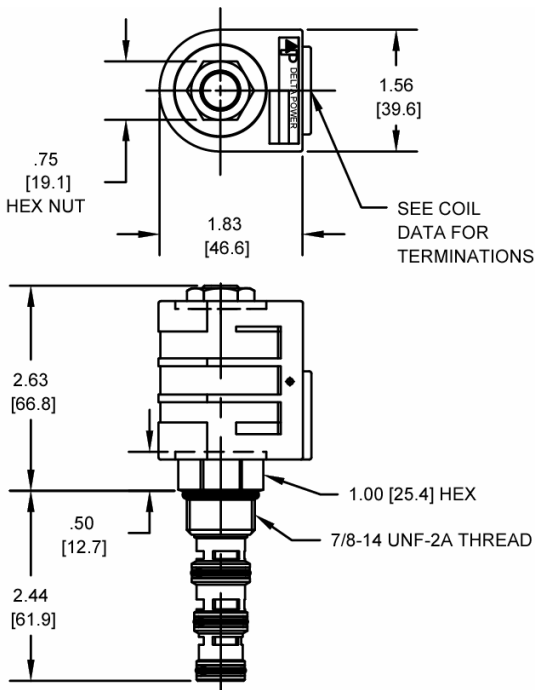
Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com



DIMENSIONS



ORDERING INFORMATION

HG-S4B

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

Blank
N
S

BODIES
Without Body
1/4 NPTF Ports
#6 SAE Ports

Note: Aluminum, Not durability rated for 4000 PSI. Consult factory for body options.

VOLTAGE
06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC
44 440 VAC

"L" COIL TERMINATION
(All DC Except as Noted)

DL Double Lead
DT Deutsch on Leads DT04-2P
ML Metri-Pack on Leads
PL Packard on Leads
WL Weatherpack on Leads

SS Single Spade
DS Double Spade
HC DIN 43650 (Hirschman) – (AC & DC)
CL Conduit Lead – (AC Only)
DI Deutsch – Integral DT04-2P

IMMERSION PROOF "L" TYPE
IA "I" Coil AMP Superseal - Integral
ID "I" Coil Deutsch – Integral DT04-2P
IJ "I" Coil AMP Jr. Timer - Integral
IM "I" Coil Metri-Pack – Integral

Approximate Coil Weight: .68 lbs. (.31 kg.)

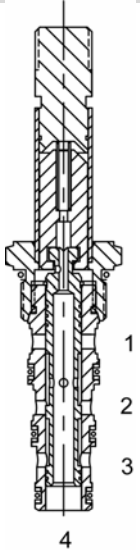
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Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

PQ-S4C Direct Acting Spool, 4 Way 2 Position, Tandem Center



DESCRIPTION

8 size, 3/4-16 thread, "Power" series, solenoid operated, 4 way 2 position, tandem center spool valve.

OPERATION

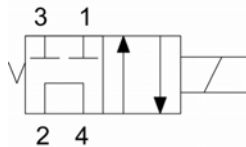
When de-energized the PQ-S4C allows flow between (2) and (4), blocks flow at (1) and (3). When energized the valve allows flow from (2) to (3) and from (1) to (4).

OPERATION OF MANUAL OVERRIDE OPTION: To override, pull knob out. On the detented version, after pulling knob out twist 180 degrees and release. The valve will remain in that position.

FEATURES

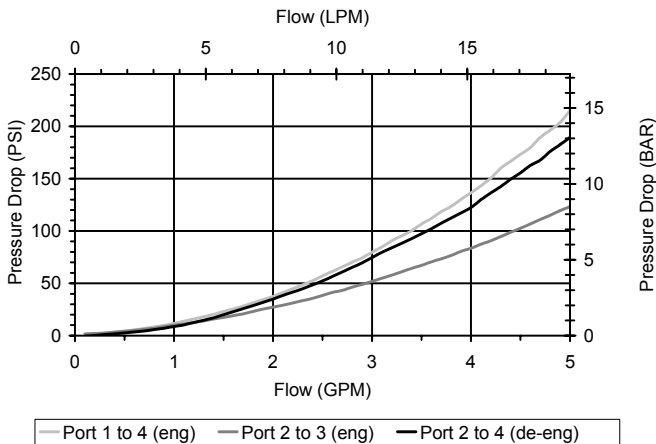
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

HYDRAULIC SYMBOL



PERFORMANCE

Actual Test Data (Cartridge Only)

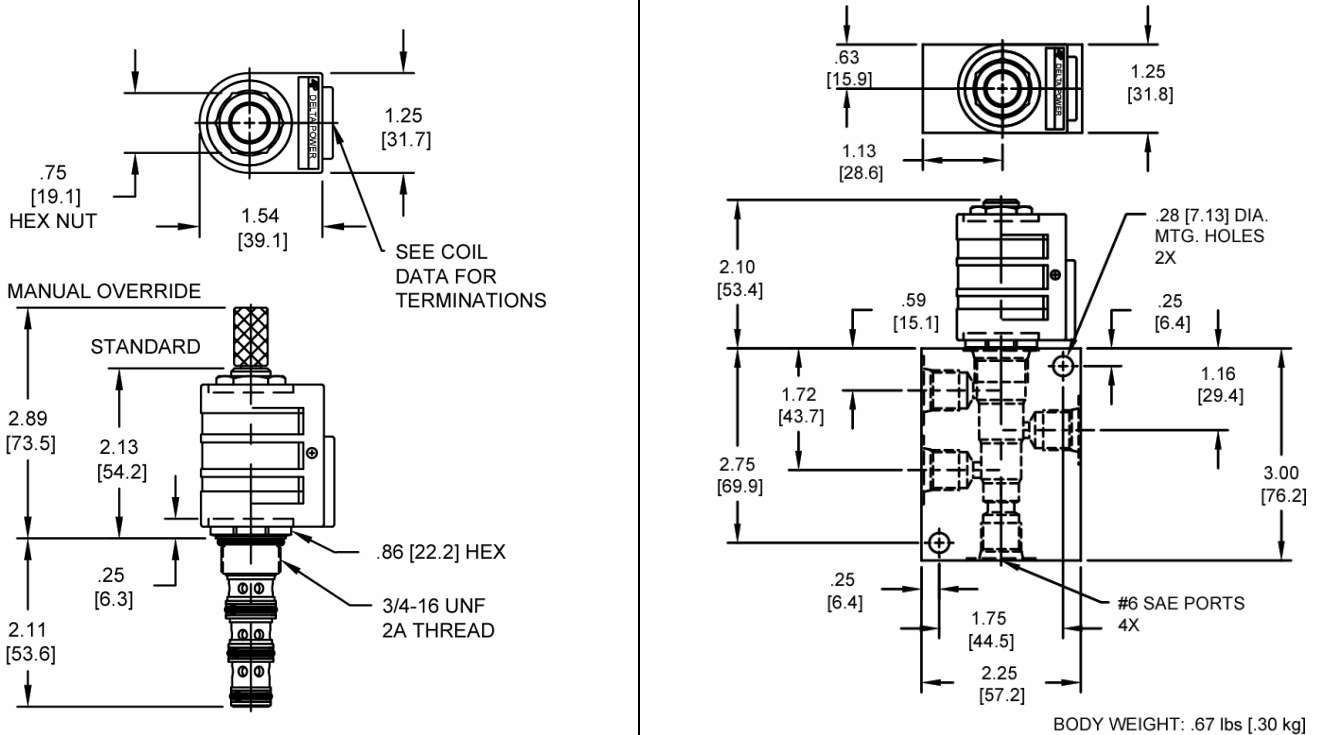


VALVE SPECIFICATIONS

Nominal Flow	4 GPM (15 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 Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.24 lbs. (.11 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 Nm)
Cavity	POWER 4W
Cavity Form Tool (Finishing)	40500029
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



ORDERING INFORMATION

PQ-S4C

- OPTIONS**
 Buna Standard **00**
 Viton Standard **V0**
 Buna, Override, Detent **OM**
 Viton, Override, Detent **VM**
 Buna, Override, Non-detent **B1**
 Viton, Override, Non-detent **V1**

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

- VOLTAGE**
06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC
44 440 VAC

"P" COIL TERMINATION
(All DC Except as Noted)

- DL** Double Lead
DT Deutsch on Leads DT04-2P
ML Metri-Pack on Leads
PL Packard on Leads
WL Weatherpack on Leads

- SS** Single Spade
DS Double Spade
HC DIN 43650 (Hirschman) – (AC & DC)
CL Conduit Lead – (AC Only)
DI Deutsch – Integral DT04-2P

- IMMERSION PROOF "P" TYPE**
IA "I" Coil AMP Superseal - Integral
ID "I" Coil Deutsch – Integral DT04-2P
IJ "I" Coil AMP Jr. Timer - Integral
IM "I" Coil Metri-Pack – Integral

Approximate Coil Weight: .42 lbs (.19 kg.)

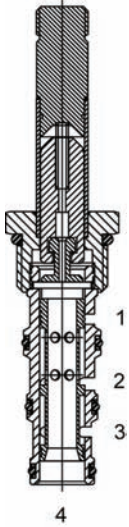
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Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

DG-S4C Direct Acting Spool, 4 Way 2 Position, Tandem Center



DESCRIPTION

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

OPERATION

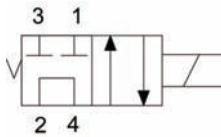
When de-energized the DG-S4C allows flow between (2) and (4), and blocks flow at ports (1) and (3). When energized the valve allows flow from (2) to (3) and (1) to (4).

OPERATION OF MANUAL OVERRIDE OPTION: To override, pull knob out. On the detented version, after pulling knob out twist 180 degrees and release. The valve will remain in that position.

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

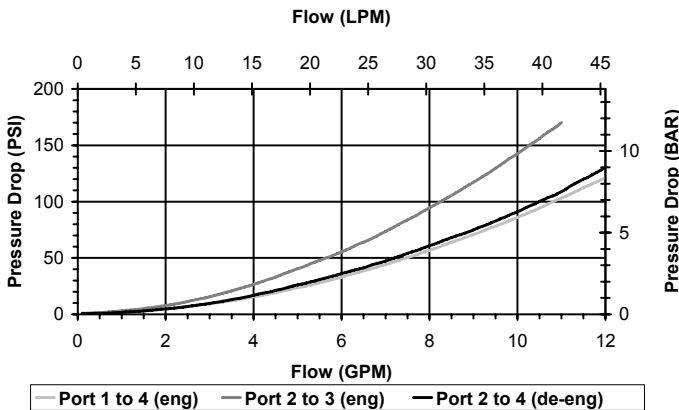
HYDRAULIC SYMBOL



For higher pressures see HG-S4C.
Operational shift limit, 8 GPM.
For shift performance consult chart.

PERFORMANCE

Actual Test Data (Cartridge Only)

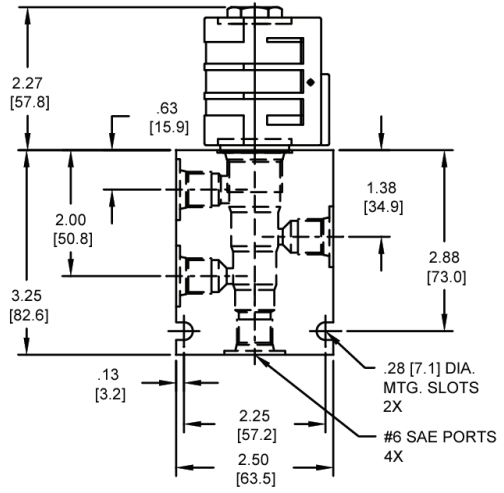
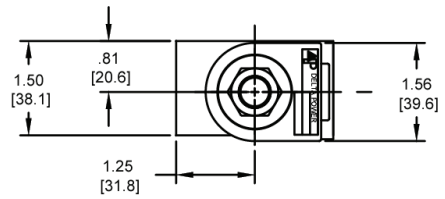
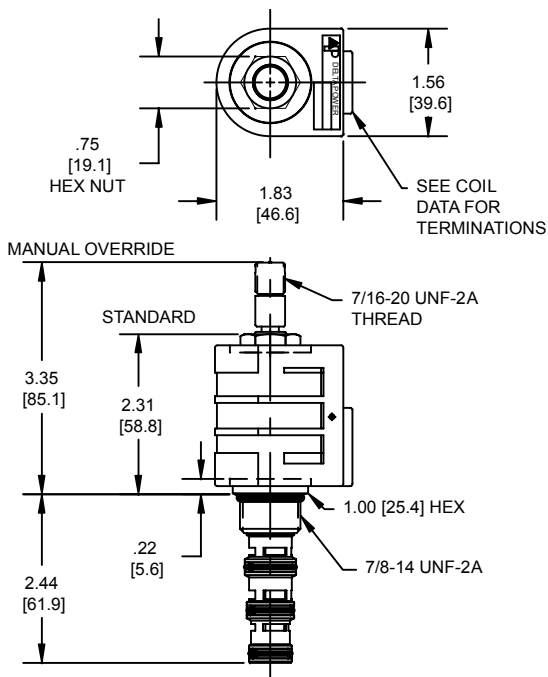


VALVE SPECIFICATIONS

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) per path
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature 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)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1Nm)
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

DG-S4C

- OPTIONS**
 Buna Standard **00**
 Viton Standard **V0**
 Buna, Override **0M**
 Viton, Override **VM**
 Buna, Override, Non-detent **B1**
 Viton, Override, Non-detent **V1**

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

- VOLTAGE**
06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC
44 440 VAC

"D" COIL TERMINATION
(All DC Except as Noted)

- DL** Double Lead
DT Deutsch on Leads DT04-2P
ML Metri-Pack on Leads
PL Packard on Leads
WL Weatherpack on Leads

- SS** Single Spade
DS Double Spade
HC DIN 43650 (Hirschman) – (AC & DC)
CL Conduit Lead – (AC Only)
DI Deutsch – Integral DT04-2P

IMMERSION PROOF "D" TYPE

- IA** "I" Coil AMP Superseal - Integral
ID "I" Coil Deutsch – Integral DT04-2P
IJ "I" Coil AMP Jr. Timer - Integral
IM "I" Coil Metri-Pack – Integral

Approximate Coil Weight: .74 lbs/.33 kg.

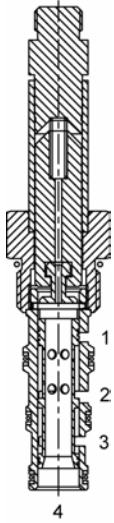
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Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

HG-S4C, Direct Acting Spool, 4 Way 2 Position, Tandem



DESCRIPTION

“High Pressure” 10 size, 7/8-14 thread, “Delta” series, solenoid operated, 4 way 2 position tandem center spool valve.

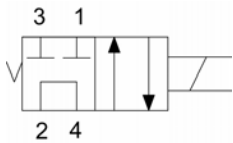
OPERATION

When de-energized the HG-S4C allows flow between (2) and (4) and blocks the flow at (1) and (3). When energized the valve allows flow from (2) to (3) and from (1) to (4).

FEATURES

- Hardened Parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional “I” Coil: Weatherproof, Thermal Shock, Immersion Safe.

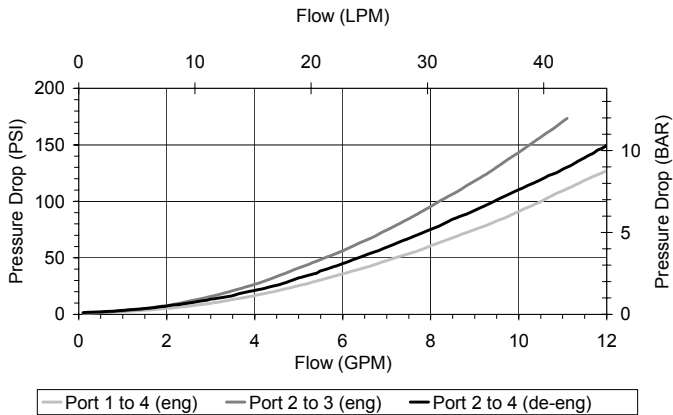
HYDRAULIC SYMBOL



Uses “L” Coil

PERFORMANCE

Actual Test Data (Cartridge Only)



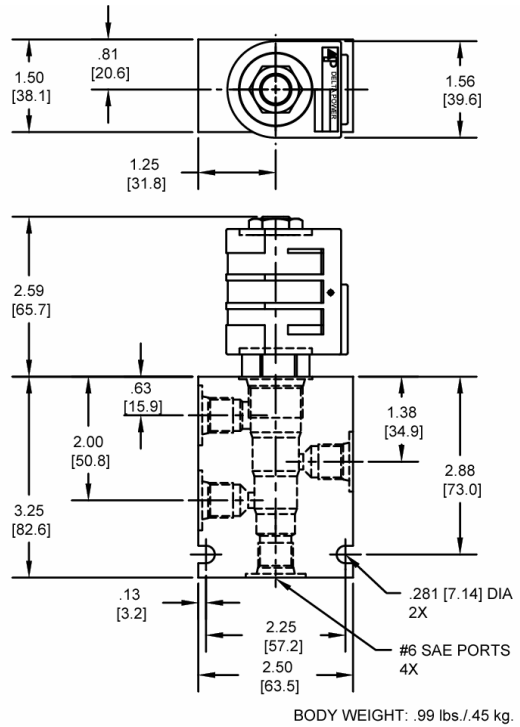
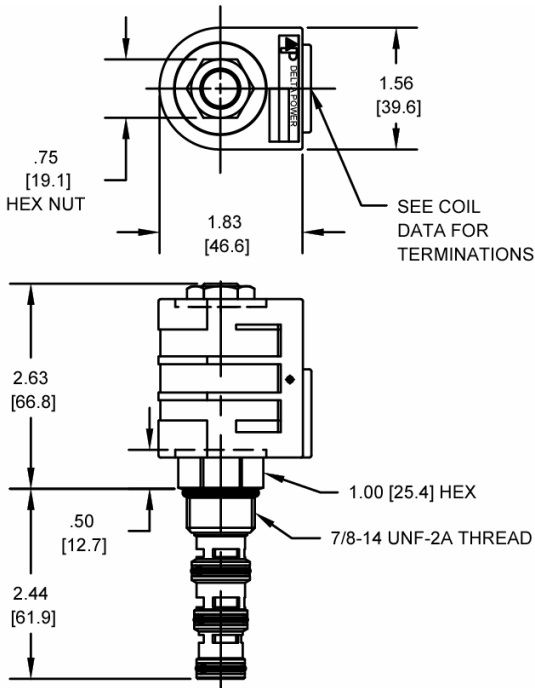
VALVE SPECIFICATIONS

Nominal Flow	8 GPM (30 LPM)
Rated Operating Pressure	4000 PSI (276 bar)
Typical Internal Leakage (150 SSU)	10 cu in/min (164 ml/min) per path
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.43 lbs. (.20 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 Nm)
Cavity	DELTA 4W
Cavity Form Tool (Finishing)	40500002
Seal Kit	21191214

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DIMENSIONS



ORDERING INFORMATION

HG-S4C

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

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

Note: Aluminum, NOT durability rated for 4000 PSI. Consult factory for body options.

VOLTAGE
06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC
44 440 VAC

"L" COIL TERMINATION
(All DC Except as Noted)

DL Double Lead
DT Deutsch on Leads DT04-2P
ML Metri-Pack on Leads
PL Packard on Leads
WL Weatherpack on Leads

SS Single Spade
DS Double Spade
HC DIN 43650 (Hirschman) – (AC & DC)
CL Conduit Lead – (AC Only)
DI Deutsch – Integral DT04-2P

IMMERSION PROOF "L" TYPE
IA "I" Coil AMP Superseal - Integral
ID "I" Coil Deutsch – Integral DT04-2P
IJ "I" Coil AMP Jr. Timer - Integral
IM "I" Coil Metri-Pack – Integral

Approximate Coil Weight: .68 lbs. (.31 kg.)

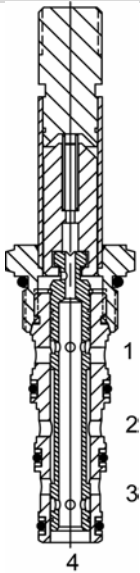
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Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

PQ-S4D Direct Acting Spool, 4 Way 2 Position, Criss Cross



DESCRIPTION

8 size, 3/4-16 thread, "Power" series, solenoid operated, 4 way 2 position, criss cross, bottom flow spool valve.

OPERATION

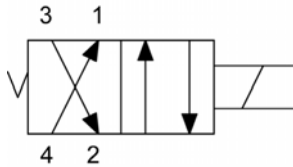
When de-energized the PQ-S4D allows flow from (3) to (2), and from (4) to (1). When energized the valve allows flow from (1) to (2) and from (4) to (3).

OPERATION OF MANUAL OVERRIDE OPTION: To override, pull knob out. On the detented version, after pulling knob out twist 180 degrees and release. The valve will remain in that position.

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

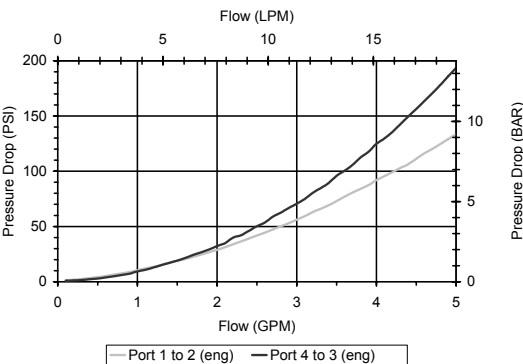
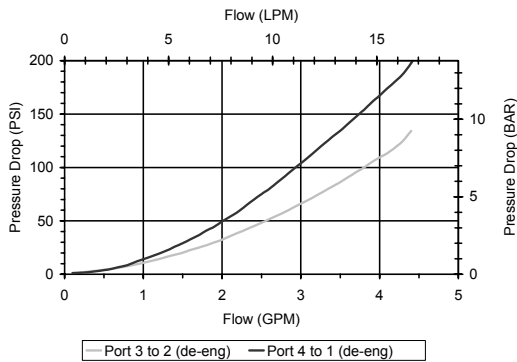
HYDRAULIC SYMBOL



Modes of shift operation to 3 GPM, Consult Factory.

PERFORMANCE

Actual Test Data (Cartridge Only)



VALVE SPECIFICATIONS

Maximum Flow	2.5 GPM (9 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 Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.24 lbs. (.11 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (33.8 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 Nm)
Cavity	POWER 4W
Cavity Form Tool (Finishing)	40500029
Seal Kit	21191108

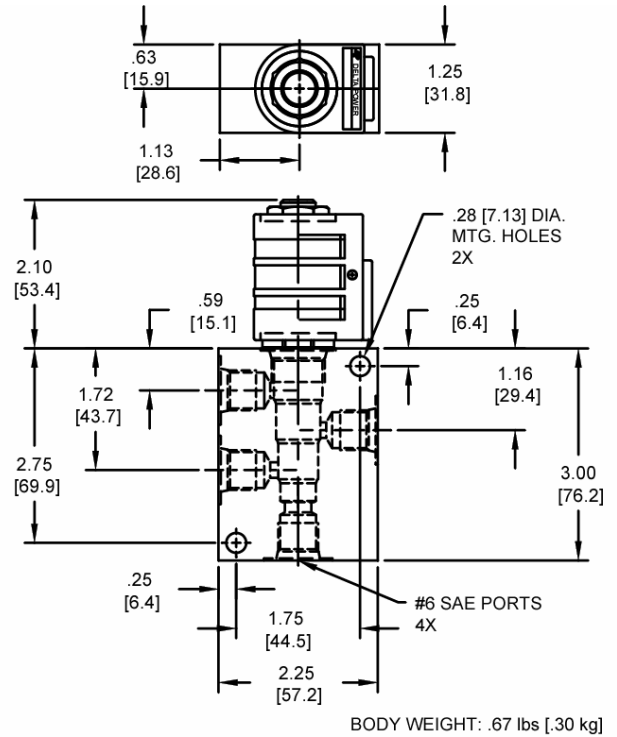
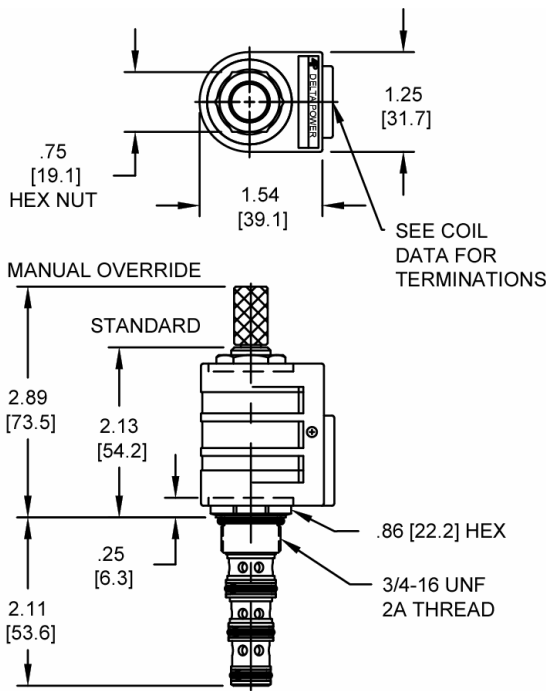
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Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

DIMENSIONS



ORDERING INFORMATION

PQ-S4D

- OPTIONS**
 Buna Standard **00**
 Viton Standard **V0**
 Buna, Override, Detent **0M**
 Viton, Override, Detent **VM**
 Buna, Override, Non-detent **B1**
 Viton, Override, Non-detent **V1**

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

- VOLTAGE**
06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC
44 440 VAC

"P" COIL TERMINATION
(All DC Except as Noted)

- DL** Double Lead
DT Deutsch on Leads DT04-2P
ML Metri-Pack on Leads
PL Packard on Leads
WL Weatherpack on Leads

- SS** Single Spade
DS Double Spade
HC DIN 43650 (Hirschman) – (AC & DC)
CL Conduit Lead – (AC Only)
DI Deutsch – Integral DT04-2P

- IMMERSION PROOF "D" TYPE**
IA "I" Coil AMP Superseal - Integral
ID "I" Coil Deutsch – Integral DT04-2P
IJ "I" Coil AMP Jr. Timer - Integral
IM "I" Coil Metri-Pack – Integral

Approximate Coil Weight: .42 lbs (.19 kg.)

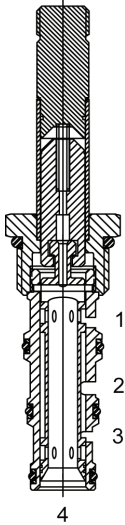
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Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

DG-S4D Direct Acting Spool, 4 Way 2 Position, Criss Cross



DESCRIPTION

10 size, 7/8 -14 thread, "Delta" series, solenoid operated, 4 way 2 position, criss cross, bottom flow spool valve.

OPERATION

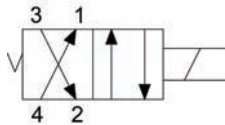
When de-energized the DG-S4D allows flow from (4) to (1), and (3) to (2). When energized the valve allows flow from (4) to (3) and (1) to (2).

OPERATION OF MANUAL OVERRIDE OPTION: To override, pull knob out. On the detented version, after pulling knob out twist 180 degrees and release. The valve will remain in that position.

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

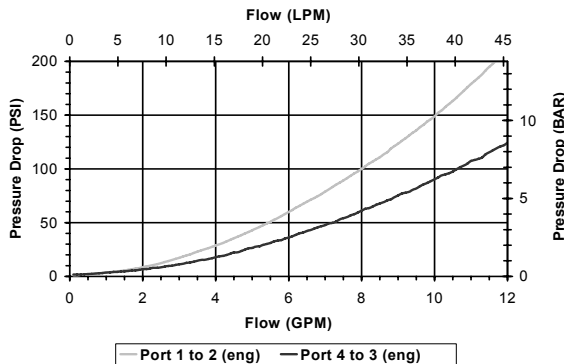
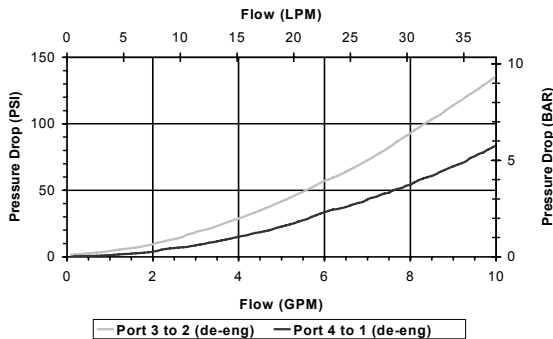
HYDRAULIC SYMBOL



For higher pressures see HG-S4D.
Operational shift limit, 6 GPM.
For shift performance consult chart.

PERFORMANCE

Actual Test Data (Cartridge Only)



VALVE SPECIFICATIONS

Nominal Flow	6 GPM (23 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 Temperature 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)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 Nm)
Cavity	DELTA 4W
Cavity Form Tool (Finishing)	40500002
Seal Kit	21191214

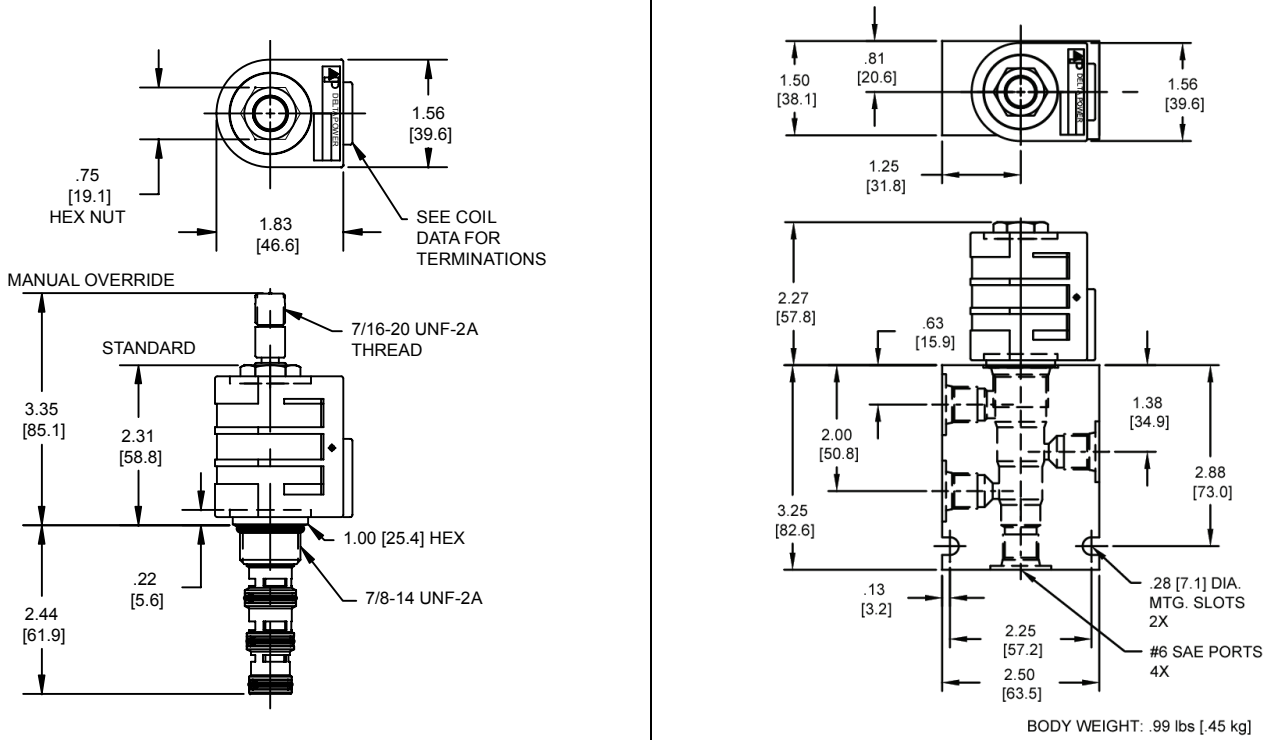
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Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

DIMENSIONS



ORDERING INFORMATION

DG-S4D

- OPTIONS**
 Buna Standard **00**
 Viton Standard **V0**
 Buna, Override **0M**
 Viton, Override **VM**
 Buna, Override, Non-detent **B1**
 Viton, Override, Non-detent **V1**

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

- VOLTAGE**
06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC
44 440 VAC

"D" COIL TERMINATION
(All DC Except as Noted)

- DL** Double Lead
DT Deutsch on Leads DT04-2P
ML Metri-Pack on Leads
PL Packard on Leads
WL Weatherpack on Leads

- SS** Single Spade
DS Double Spade
HC DIN 43650 (Hirschman) – (AC & DC)
CL Conduit Lead – (AC Only)
DI Deutsch – Integral DT04-2P

- IMMERSION PROOF "D" TYPE**
IA "I" Coil AMP Superseal - Integral
ID "I" Coil Deutsch – Integral DT04-2P
IJ "I" Coil AMP Jr. Timer - Integral
IM "I" Coil Metri-Pack – Integral

Approximate Coil Weight: .74 lbs/.33 kg.

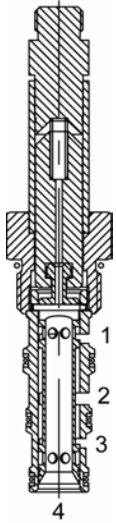
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Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

HG-S4D, Direct Acting Spool, 4 Way 2 Position, Bottom Flow



DESCRIPTION

“High Pressure” 10 size, 7/8-14 thread, “Delta” series, solenoid operated, 4 way 2 position bottom flow spool valve.

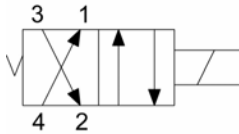
OPERATION

When de-energized the HG-S4D allows flow from (4) to (1) and from (3) to (2). When energized the valve allows flow from (4) to (3) and from (1) to (2).

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional “I” Coil: Weatherproof, Thermal Shock, Immersion Safe.

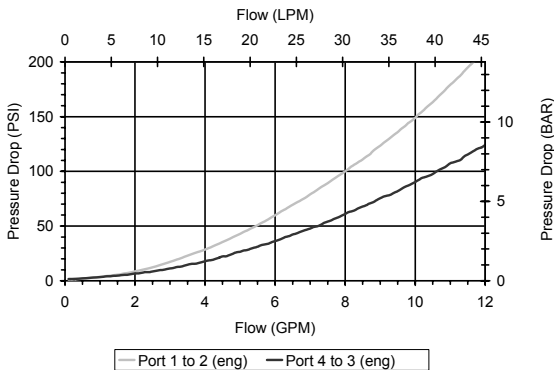
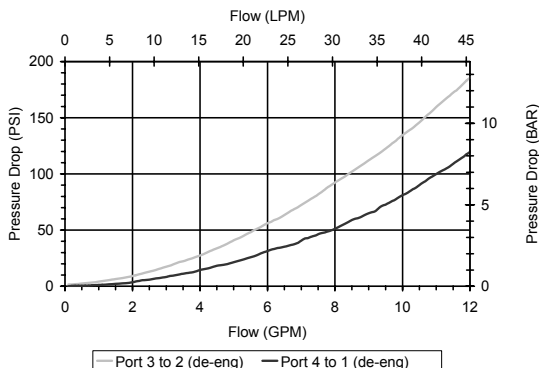
HYDRAULIC SYMBOL



Uses “L” Coil

PERFORMANCE

Actual Test Data (Cartridge Only)



VALVE SPECIFICATIONS

Nominal Flow	8 GPM (30 LPM)
Rated Operating Pressure	4000 PSI (276 bar)
Typical Internal Leakage (150 SSU)	10 cu in/min (164 ml/min) per path
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	43 lbs. (.20 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 Nm)
Cavity	DELTA 4W
Cavity Form Tool (Finishing)	40500002
Seal Kit	21191214

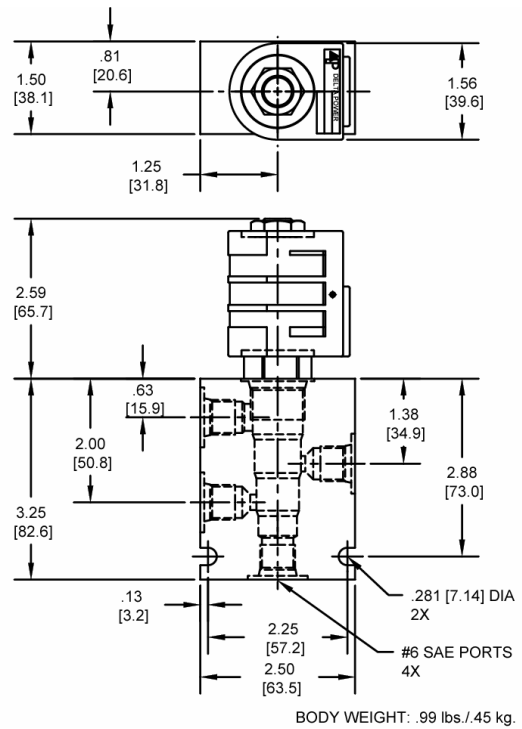
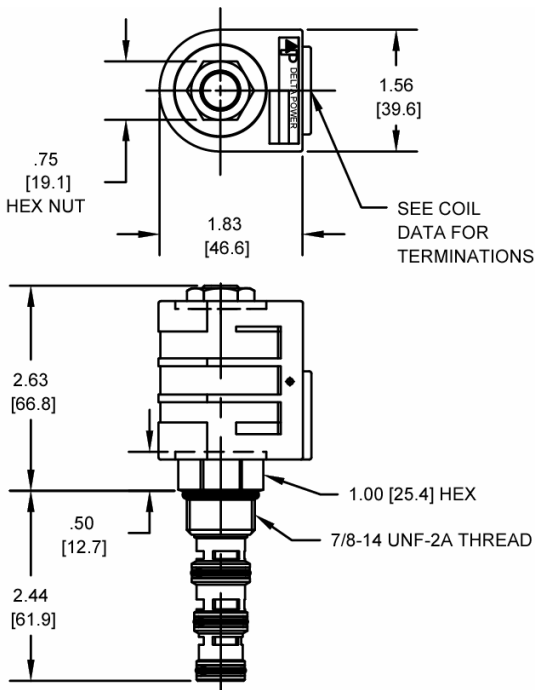
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Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

DIMENSIONS



ORDERING INFORMATION

HG-S4D

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

Blank **N**
S

BODIES
Without Body
1/4 NPTF Ports
#6 SAE Ports

Note: Aluminum, NOT durability rated for 4000 PSI. Consult factory for options.

VOLTAGE
06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC
44 440 VAC

"L" COIL TERMINATION
(All DC Except as Noted)

DL Double Lead
DT Deutsch on Leads DT04-2P
ML Metri-Pack on Leads
PL Packard on Leads
WL Weatherpack on Leads

SS Single Spade
DS Double Spade
HC DIN 43650 (Hirschman) – (AC & DC)
CL Conduit Lead – (AC Only)
DI Deutsch – Integral DT04-2P

IMMERSION PROOF "L" TYPE
IA "I" Coil AMP Superseal - Integral
ID "I" Coil Deutsch – Integral DT04-2P
IJ "I" Coil AMP Jr. Timer - Integral
IM "I" Coil Metri-Pack – Integral

Approximate Coil Weight: .68 lbs. (.31 kg.)

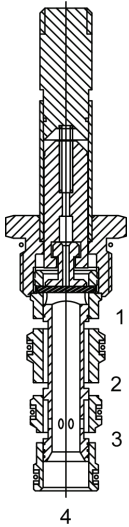
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Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

DG-S4E Direct Acting Spool, 4 Way 2 Position, Series/Parallel



DESCRIPTION

10 size, 7/8-14 thread, "Delta" series, solenoid operated, 4 way 2 position, series/parallel spool valve.

OPERATION

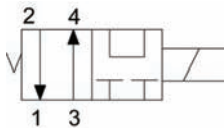
When de-energized the DG-S4E allows flow from (2) and (1), and (3) to (4). When energized the valve allows flow (2) to (4) and blocks the flow at (1) and (3).

OPERATION OF MANUAL OVERRIDE OPTION: To override, pull knob out. On the detented version, after pulling knob out twist 180 degrees and release. The valve will remain in that position.

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

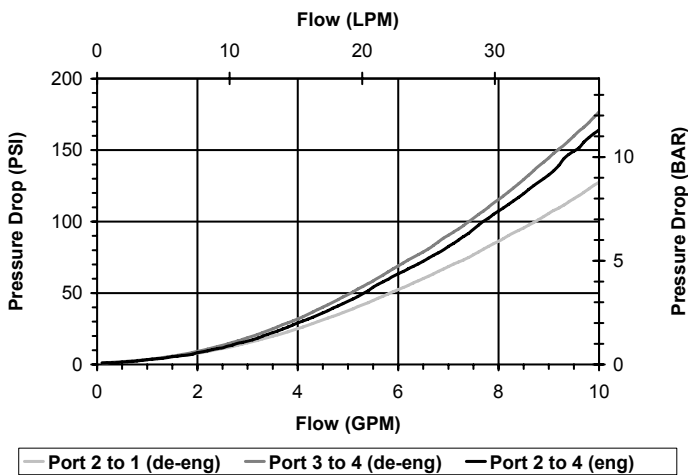
HYDRAULIC SYMBOL



For higher pressures see HG-S4E.
Operational shift limit, 6 GPM.
For shift performance consult chart.

PERFORMANCE

Actual Test Data (Cartridge Only)

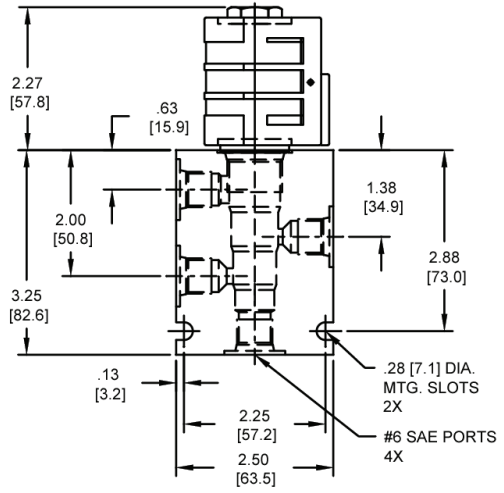
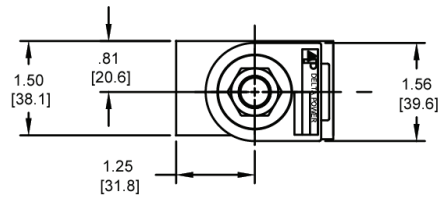
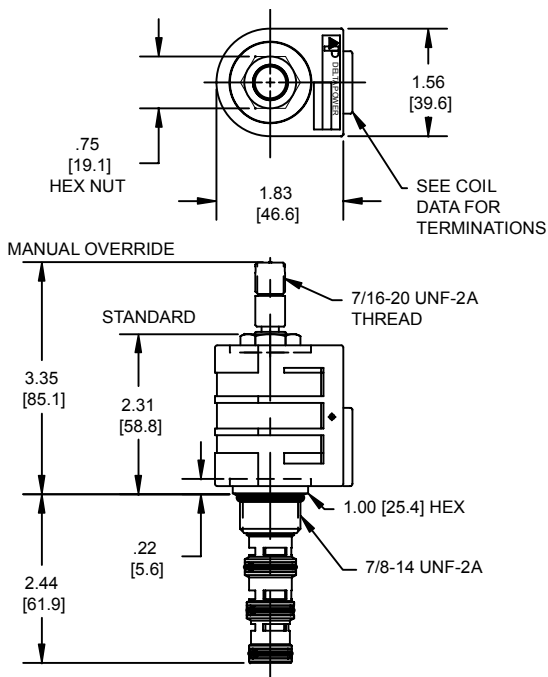


VALVE SPECIFICATIONS

Nominal Flow	6 GPM (23 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 Temperature 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)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 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

DG-S4E - - - -

OPTIONS

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Override **0M**
- Viton, Override **VM**
- Buna, Override, Non-detent **B1**
- Viton, Override, Non-detent **V1**

- Blank
- N** 1/4 NPTF Ports
- S** #6 SAE Ports

VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 25** 24 VAC
- 11** 120 VAC
- 22** 220 VAC
- 44** 440 VAC

"D" COIL TERMINATION

(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04-2P
- ML** Metri-Pack on Leads
- PL** Packard on Leads
- WL** Weatherpack on Leads

- SS** Single Spade
- DS** Double Spade
- HC** DIN 43650 (Hirschman) – (AC & DC)
- CL** Conduit Lead – (AC Only)
- DI** Deutsch – Integral DT04-2P

IMMERSION PROOF "D" TYPE

- IA** "I" Coil AMP Superseal - Integral
- ID** "I" Coil Deutsch – Integral DT04-2P
- IJ** "I" Coil AMP Jr. Timer - Integral
- IM** "I" Coil Metri-Pack – Integral

Approximate Coil Weight: .74 lbs/.33 kg.

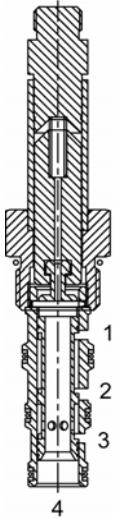
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Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

HG-S4E, Direct Acting Spool, 4 Way 2 Position, Series/Parallel



DESCRIPTION

“High Pressure” 10 size, 7/8-14 thread, “Delta” series, solenoid operated, 4 way 2 position series / parallel spool valve.

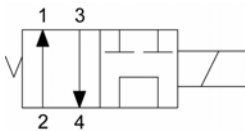
OPERATION

When de-energized the HG-S4E allows flow from (1) to (2) and from (3) to (4). When energized the valve allows flow from (2) to (4) and blocks flow at (1) and (3).

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional “I” Coil: Weatherproof, Thermal Shock, Immersion Safe.

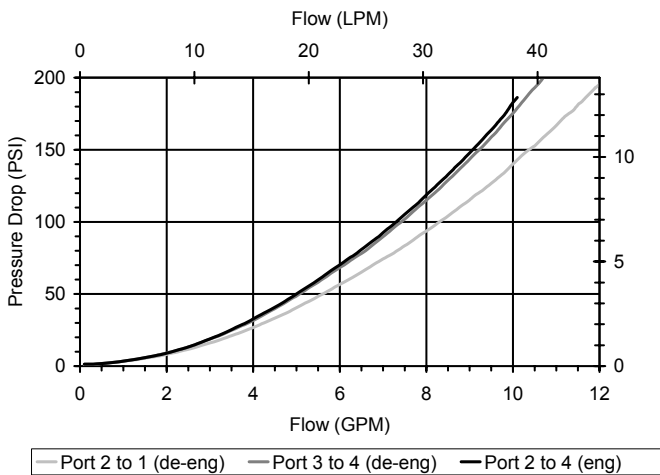
HYDRAULIC SYMBOL



Uses “L” Coil

PERFORMANCE

Actual Test Data (Cartridge Only)

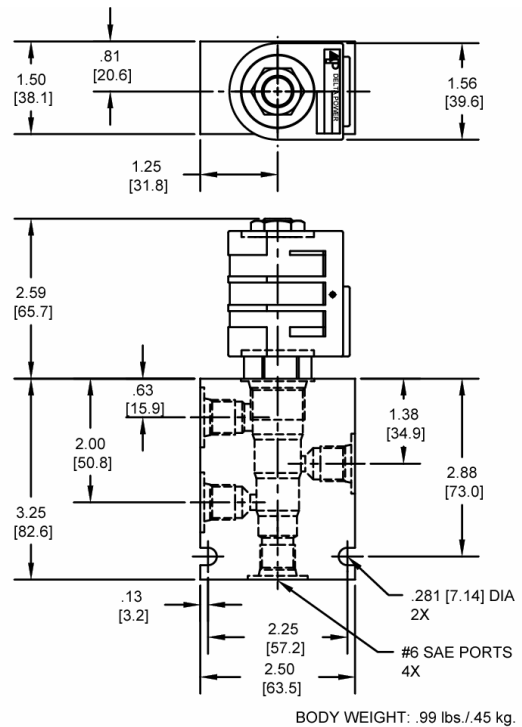
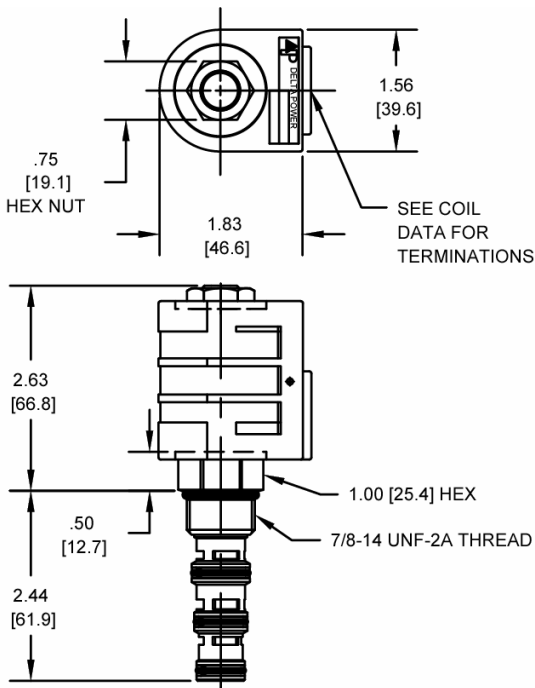


VALVE SPECIFICATIONS

Nominal Flow	8 GPM (30 LPM)
Rated Operating Pressure	4000 PSI (276 bar)
Typical Internal Leakage (150 SSU)	10 cu in/min (164 ml/min) per path
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.43 lbs. (.20 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 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

HG-S4E

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

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

Note: Aluminum, NOT durability rated for 4000 PSI. Consult factory for body options.

VOLTAGE
06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC
44 440 VAC

"L" COIL TERMINATION
(All DC Except as Noted)

DL Double Lead
DT Deutsch on Leads DT04-2P
ML Metri-Pack on Leads
PL Packard on Leads
WL Weatherpack on Leads

SS Single Spade
DS Double Spade
HC DIN 43650 (Hirschman) – (AC & DC)
CL Conduit Lead – (AC Only)
DI Deutsch – Integral DT04-2P

IMMERSION PROOF "L" TYPE
IA "I" Coil AMP Superseal - Integral
ID "I" Coil Deutsch – Integral DT04-2P
IJ "I" Coil AMP Jr. Timer - Integral
IM "I" Coil Metri-Pack – Integral

Approximate Coil Weight: .68 lbs. (.31 kg.)

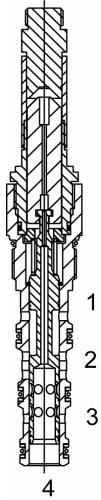
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Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

HV-S4E Direct Acting Spool, 4 Way 2 Position, Series / Parallel



DESCRIPTION

"High pressure" 12 size, 1 1/16-12 thread, "Tecnorm" series, solenoid operated, 4 way 2 position, series / parallel flow spool valve.

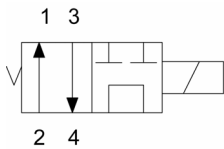
OPERATION

When de-energized the HV-S4E allows flow from (2) to (1) and from (3) to (4). When energized the valve allows flow from (2) to (4) and blocks flow at (1) to (3).

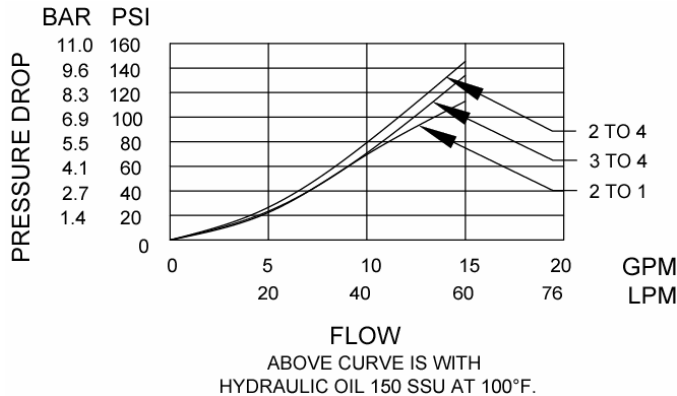
FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.

HYDRAULIC SYMBOL



PERFORMANCE

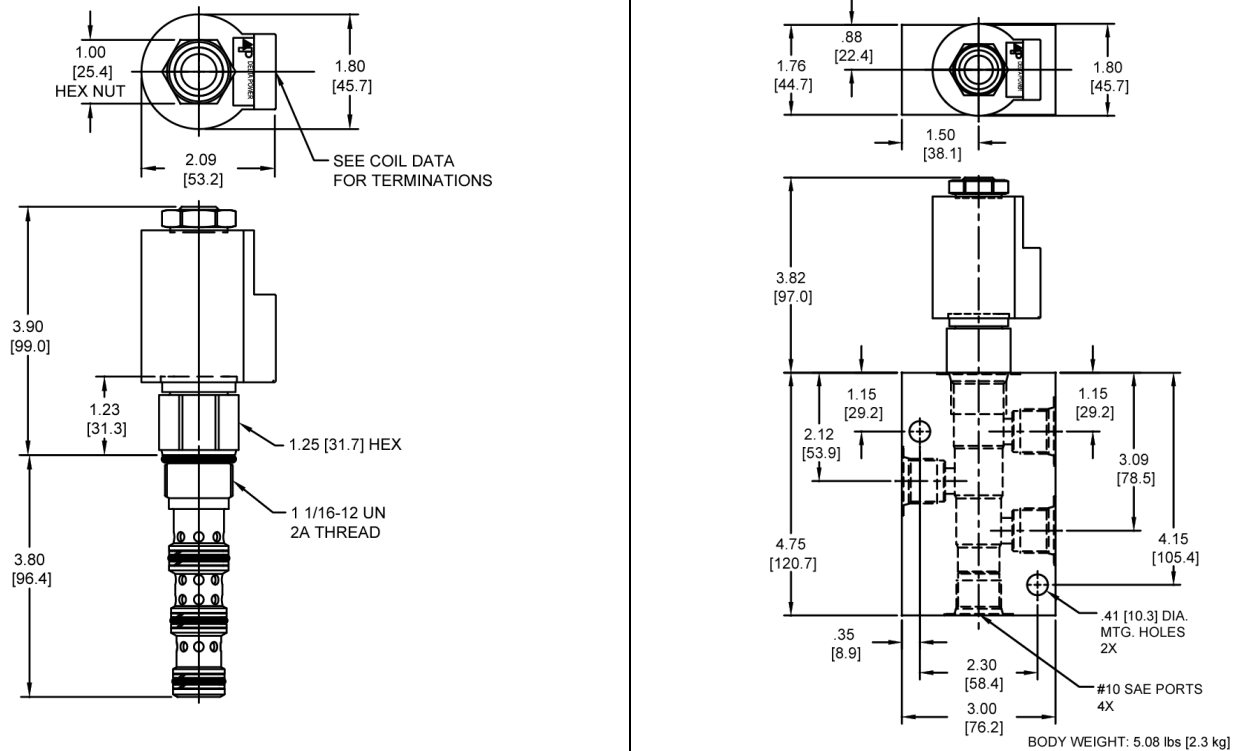


VALVE SPECIFICATIONS

Nominal Flow	15 GPM (57 LPM) From (2) to (4) 8 GPM (30 LPM) from (4) to (2)
Rated Operating Pressure	5000 PSI (345 bar)
Typical Internal Leakage (150 SSU)	8 cu in/min (131 ml/min) per path
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	1.09 lbs. (.49 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	70 ft-lbs (94.9 Nm)
Coil Nut Torque Requirements	5-7 ft-lbs (6.8-9.5 Nm) Maximum
Cavity	TECNORD 4W
Cavity Form Tool (Finishing)	40500035
Seal Kit	21191309

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

HV-S4E - - - -

OPTIONS

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

Blank **S**

BODIES

Without Body
#10 SAE Ports

"T" COIL TERMINATION

(All DC Except as Noted)

Double Lead **DL**
Deutsch on Leads **DT**
Metri-Pack on Leads **ML**
Packard on Leads **PL**
Weatherpack on Leads **WL**
Double Spade **DS**
DIN 43650 (Hirschman) – (AC & DC) **HC**

VOLTAGE

06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC

Approximate Coil Weight: .89 lbs/.41 kg.

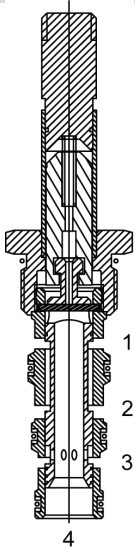
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Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

DG-S4F Direct Acting Spool, 4 Way 2 Position, Energized to Block



DESCRIPTION

10 size, 7/8-14 thread, "Delta" series, solenoid operated, 4 way 2 position, energized to block spool valve.

OPERATION

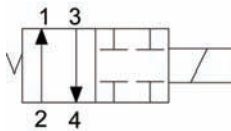
When de-energized the DG-S4F allows flow from (2) and (1), and from (3) to (4). When energized the valve blocks flow at all ports.

OPERATION OF MANUAL OVERRIDE OPTION: To override, pull knob out. On the detented version, after pulling knob out twist 180 degrees and release. The valve will remain in that position.

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

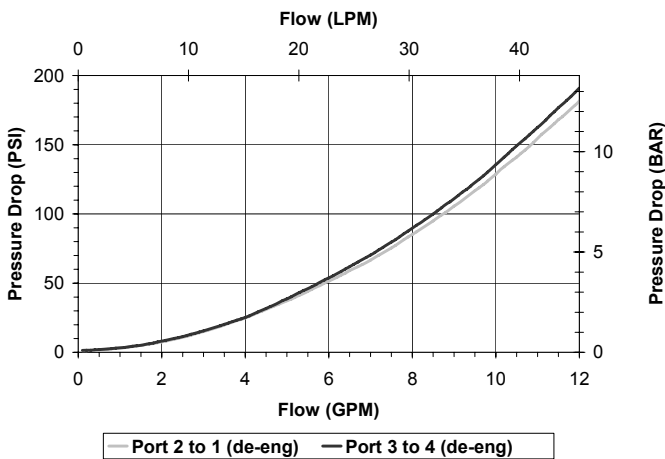
HYDRAULIC SYMBOL



For higher pressures see HG-S4F.
Operational shift limit, 6 GPM.
For shift performance consult chart.

PERFORMANCE

Actual Test Data (Cartridge Only)

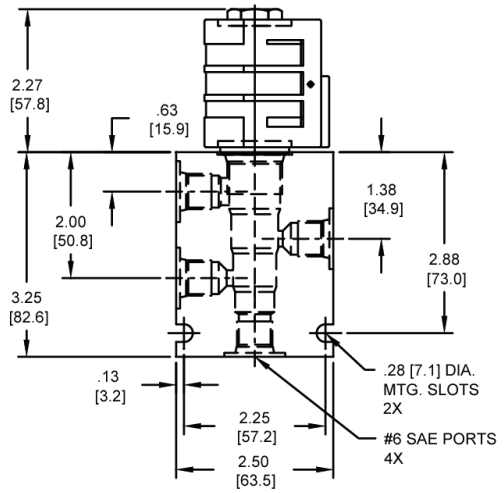
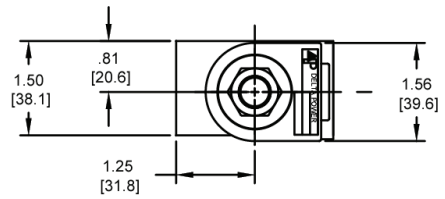
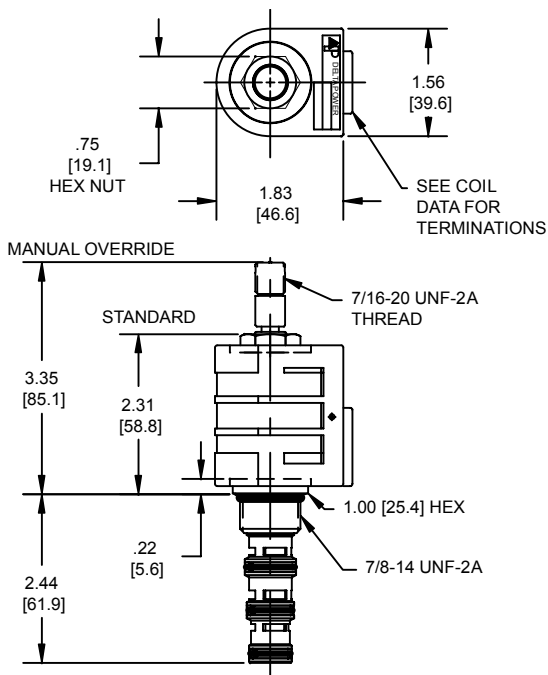


VALVE SPECIFICATIONS

Nominal Flow	6 GPM (23 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 Temperature 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)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 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-S4F - - -

OPTIONS

- Buna Standard **00**
- Viton Standard **V0**
- Buna, Override **0M**
- Viton, Override **VM**
- Buna, Override, Non-detent **B1**
- Viton, Override, Non-detent **V1**

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

VOLTAGE

- 06** 6 VDC
- 12** 12 VDC
- 24** 24 VDC
- 36** 36 VDC
- 48** 48 VDC
- 25** 24 VAC
- 11** 120 VAC
- 22** 220 VAC
- 44** 440 VAC

"D" COIL TERMINATION

(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04-2P
- ML** Metri-Pack on Leads
- PL** Packard on Leads
- WL** Weatherpack on Leads

- SS** Single Spade
- DS** Double Spade
- HC** DIN 43650 (Hirschman) – (AC & DC)
- CL** Conduit Lead – (AC Only)
- DI** Deutsch – Integral DT04-2P

IMMERSION PROOF "D" TYPE

- IA** "I" Coil AMP Superseal - Integral
- ID** "I" Coil Deutsch – Integral DT04-2P
- IJ** "I" Coil AMP Jr. Timer - Integral
- IM** "I" Coil Metri-Pack – Integral

Approximate Coil Weight: .74 lbs/.33 kg.

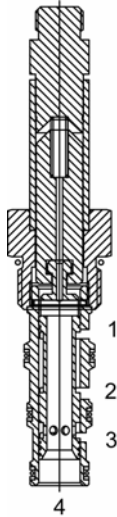
WARNING: The specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

HG-S4F, Direct Acting Spool, 4 Way 2 Position, Energized to Block



DESCRIPTION

“High Pressure” 10 size, 7/8-14 thread, “Delta” series, solenoid operated, 4 way 2 position energized to block spool valve.

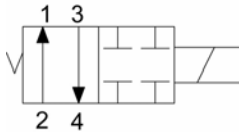
OPERATION

When de-energized the HG-S4F allows flow from (2) to (1) and from (3) to (4). When energized the valve blocks flow at all ports.

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional “I” Coil: Weatherproof, Thermal Shock, Immersion Safe.

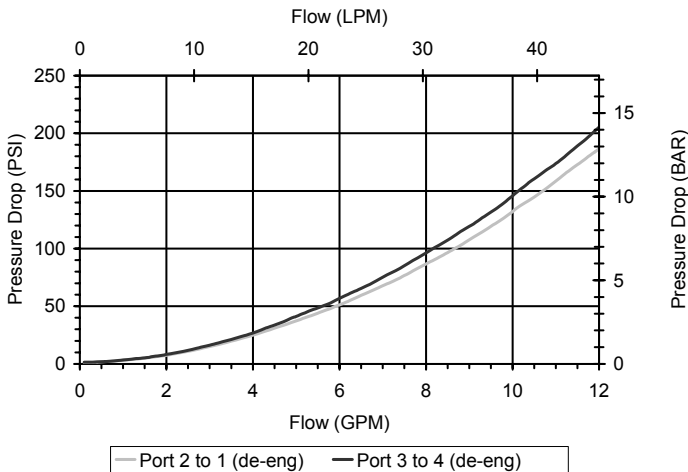
HYDRAULIC SYMBOL



Uses “L” Coil

PERFORMANCE

Actual Test Data (Cartridge Only)



VALVE SPECIFICATIONS

Nominal Flow	6 GPM (23 LPM)
Rated Operating Pressure	4000 PSI (276 bar)
Typical Internal Leakage (150 SSU)	10 cu in/min (164 ml/min) per path
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.44 lbs. (.20 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 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.

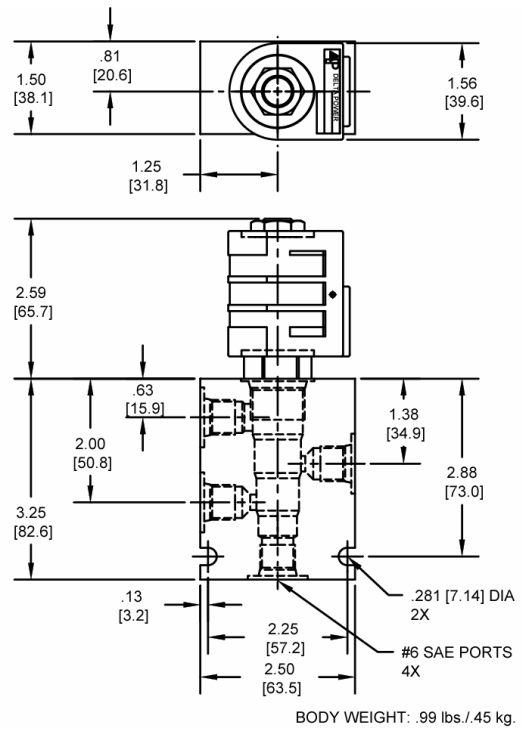
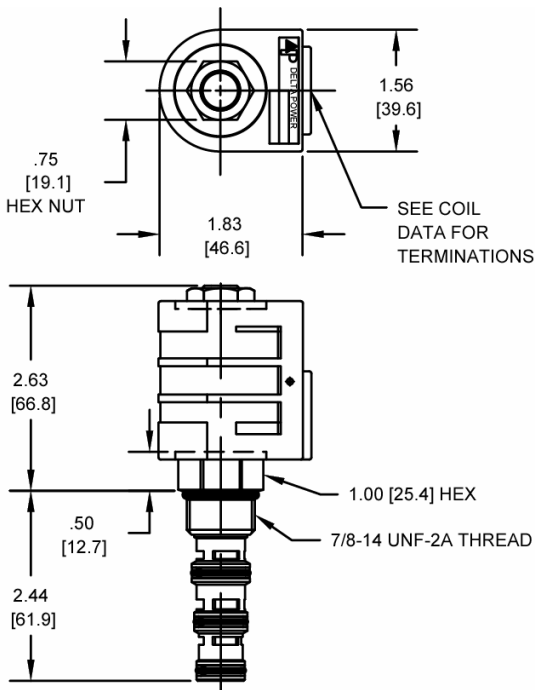
Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com



DIMENSIONS



ORDERING INFORMATION

HG-S4F

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

Blank **N**
S

BODIES
Without Body
1/4 NPTF Ports
#6 SAE Ports

Note: Aluminum, NOT durability rated for 4000 PSI. Consult factory for body options.

VOLTAGE
06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC
44 440 VAC

"L" COIL TERMINATION
(All DC Except as Noted)

DL Double Lead
DT Deutsch on Leads DT04-2P
ML Metri-Pack on Leads
PL Packard on Leads
WL Weatherpack on Leads

SS Single Spade
DS Double Spade
HC DIN 43650 (Hirschman) – (AC & DC)
CL Conduit Lead – (AC Only)
DI Deutsch – Integral DT04-2P

IMMERSION PROOF "L" TYPE
IA "I" Coil AMP Superseal - Integral
ID "I" Coil Deutsch – Integral DT04-2P
IJ "I" Coil AMP Jr. Timer - Integral
IM "I" Coil Metri-Pack – Integral

Approximate Coil Weight: .68 lbs. (.31 kg.)

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.

Phone: (815) 397-6628

Fax: (815) 397-2526

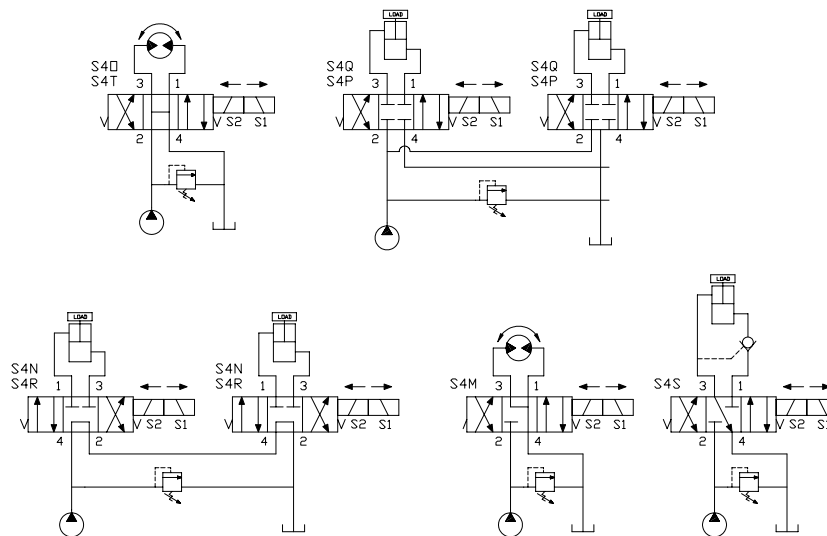
E-mail: delta@delta-power.com

4 Way 3 Position Spool Valves

	GPM	PSI	LPM	BAR	MODEL	PAGE
	6	3000	23	207	PQ-S4M	174
	6	3000	23	207	DG-S4M	176
	5	3000	19	207	PQ-S4N	178
	6	3000	23	207	DG-S4N	180
	3	3000	11	207	PQ-S4R	182
	3	3000	11	207	PQ-S4O	184
	8	3000	30	207	DG-S4O	186
	5	3000	19	207	PQ-S4T	188
	8	3000	30	207	PQ-S4P	190
	8	3000	30	207	DG-S4P	192
	6	3000	23	207	PQ-S4Q	194
	6	3000	23	207	DG-S4S	196

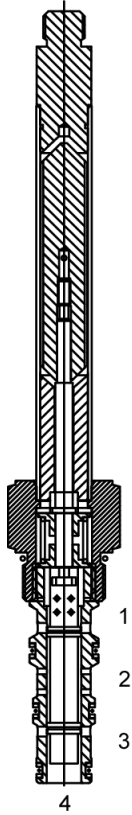
Typical Schematic

Typical application for the S4O and S4T “Open Center” valve is a bi-directional fluid motor control with coasting.
 Typical application for the S4Q and S4P “Closed Center” valve is a parallel circuit for cylinder control.
 Typical application for the S4N and S4R “Tandem Center” valve is a series circuit with power beyond.
 Typical application for the S4M “Figure Four” valve is coasting in a fluid motor control circuit.
 Typical application for the S4S “Scotch Center” valve is to vent the pilot side of load holding application.



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.

PQ-S4M Direct Acting Spool, 4 Way 3 Position, Motor Center



DESCRIPTION

8 size, 3/4-16 thread, "Power" series, solenoid operated, 4 way 3 position, motor center spool valve.

OPERATION

When de-energized the PQ-S4M allows flow between (1), (3) and (4), blocks flow at (2). When outer coil (S1) is energized the valve allows flow from (2) to (1) and from (3) to (4). When inner coil (S2) is energized the valve allows flow from (2) to (3) and from (1) to (4).

OPERATION OF MANUAL OVERRIDE OPTION:

Push Only Override - Spring biased in neutral center position, when pushed the valve shifts in the S2 direction.

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Optional manual "push only" override.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

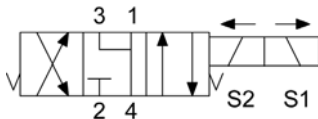


Uses "D" Delta coil.
Flow rating based on maximum differential load of 1000 PSI.
"OP" override is a push only non-detented button that actuates S2 direction.

VALVE SPECIFICATIONS

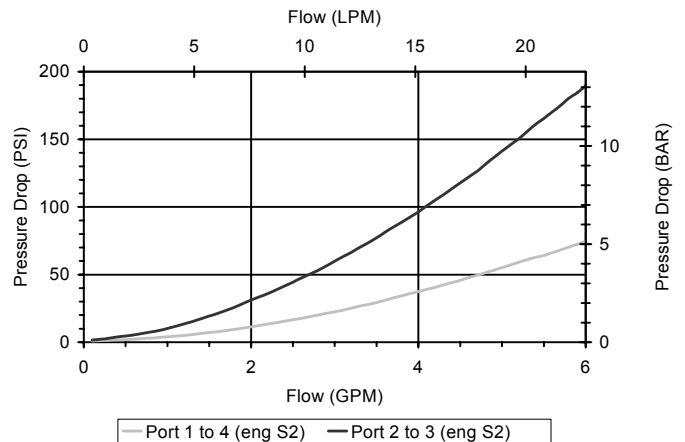
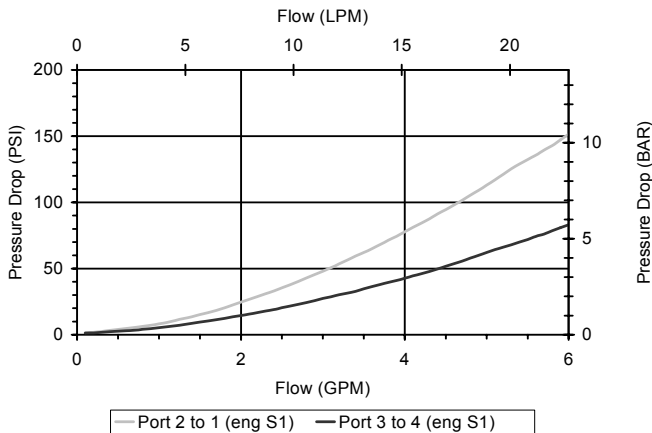
Nominal Flow	6 GPM (23 LPM)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	5 cu in/min (82 ml/min) per path
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.42 lbs. (.19 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 Nm)
Cavity	POWER 4W
Cavity Form Tool (Finishing)	40500029
Seal Kit	21191108

HYDRAULIC SYMBOL



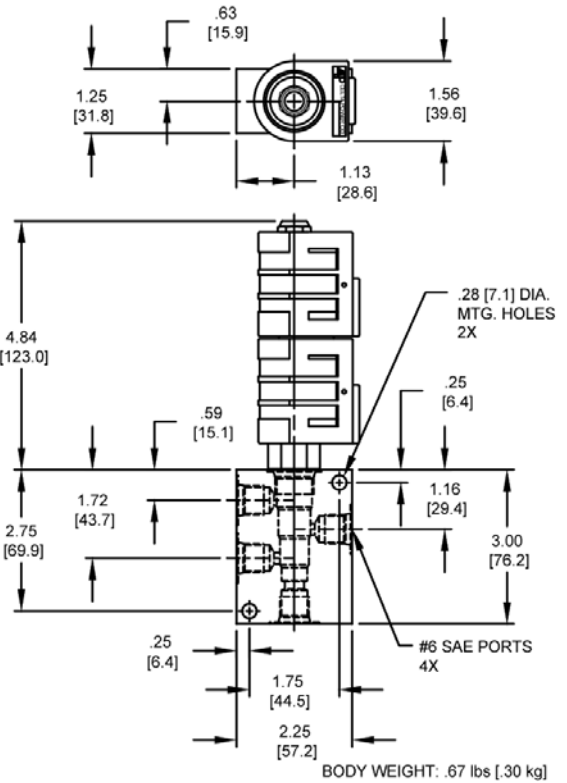
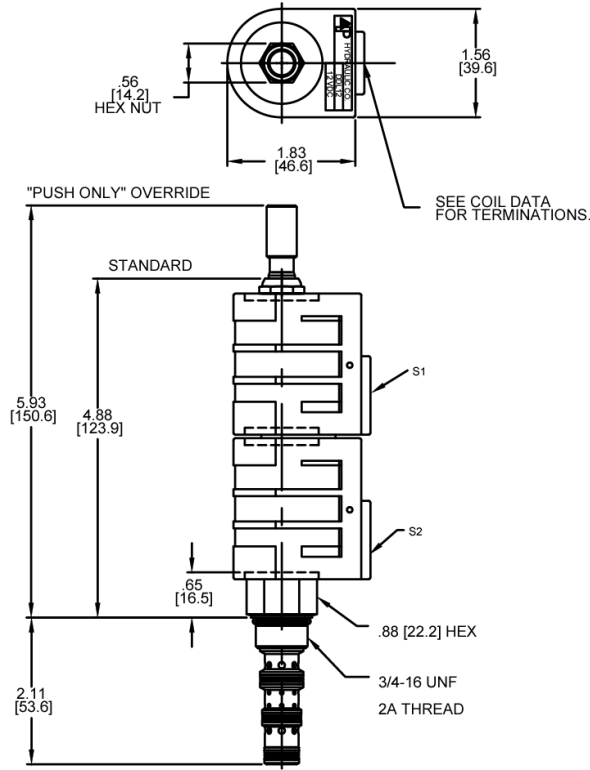
PERFORMANCE

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



ORDERING INFORMATION

PQ-S4M

- OPTIONS**
 Buna Standard **00**
 Viton Standard **V0**
 Buna, Push only override **0P**
 Viton, Push only override **VP**

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

- VOLTAGE**
06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC
44 440 VAC

"D" COIL TERMINATION
 (All DC Except as Noted)

- DL** Double Lead
DT Deutsch on Leads DT04-2P
ML Metri-Pack on Leads
PL Packard on Leads
WL Weatherpack on Leads

- SS** Single Spade
DS Double Spade
HC DIN 43650 (Hirschman) – (AC & DC)
CL Conduit Lead – (AC Only)
DI Deutsch – Integral DT04-2P

- IMMERSION PROOF "D" TYPE**
IA "I" Coil AMP Superseal - Integral
ID "I" Coil Deutsch – Integral DT04-2P
IJ "I" Coil AMP Jr. Timer - Integral
IM "I" Coil Metri-Pack – Integral

Approximate Coil Weight: .74 lbs. (.33 kg.)

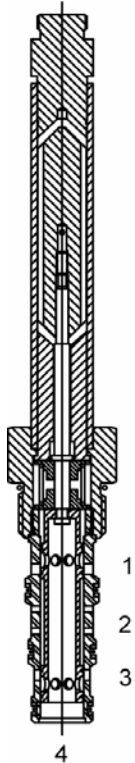
WARNING: The specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

DG-S4M Direct Acting Spool, 4 Way 3 Position, Motor Center



DESCRIPTION

10 size, 7/8-14 thread, "Delta" series, solenoid operated, 4 way 3 position motor center spool valve.

OPERATION

When de-energized the DG-S4M block the flow at (2) and allows flow between (1), (3) and (4). When outer coil (S1) is energized the valve allows flow from (2) to (1) and from (3) to (4). When inner coil (S2) is energized the valve allows flow from (2) to (3) and from (1) to (4).

OPERATION OF MANUAL OVERRIDE OPTION:

Bi-Directional Override - Spring biased in neutral center position, when pushed the valve shifts in the S2 direction, when pulled the valve shifts in the S1 direction.
Push Only Override - Spring biased in neutral center position, when pushed the valve shifts in the S2 direction.

FEATURES

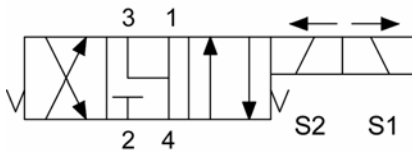
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

Uses "L" Coil.
Flow rating is at 1000 PSID maximum differential loading.

VALVE SPECIFICATIONS

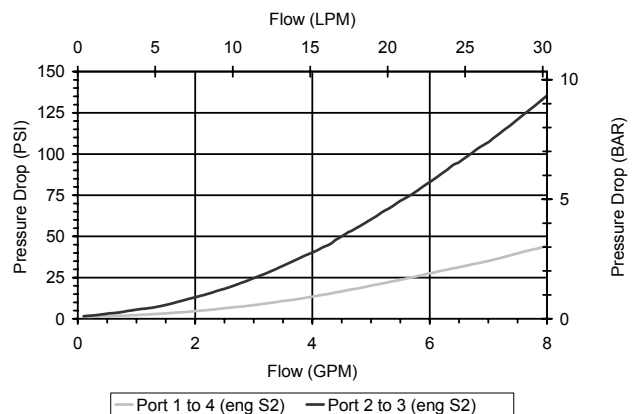
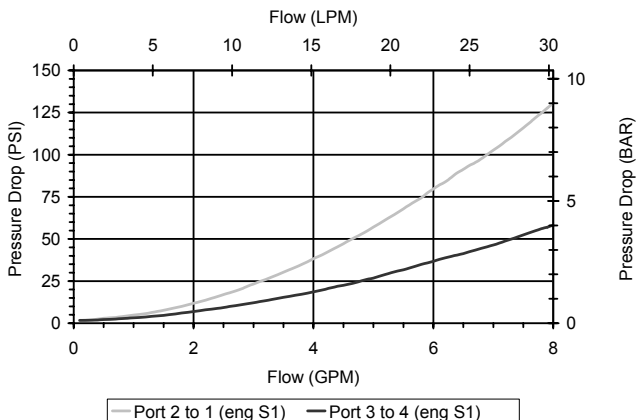
Nominal Flow	6 GPM (23 LPM)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	5 cu in/min (82 ml/min) per path
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.51 lbs. (.23 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 Nm)
Cavity	DELTA 4W
Cavity Form Tool (Finishing)	40500002
Seal Kit	21191214

HYDRAULIC SYMBOL



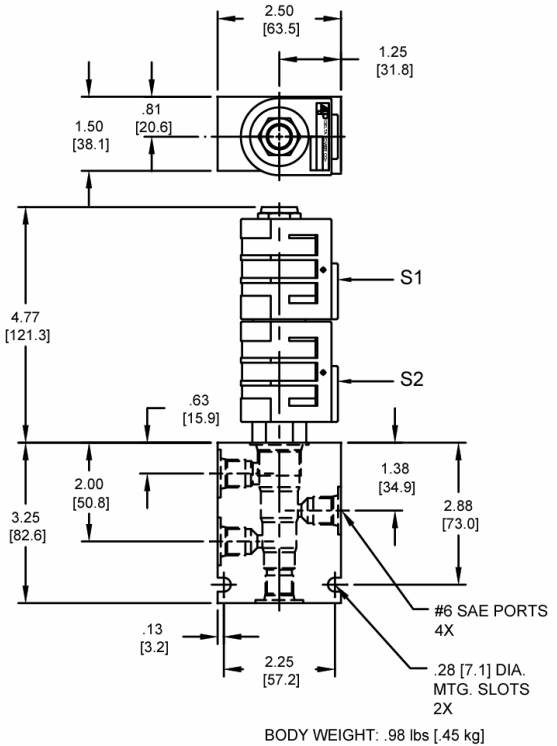
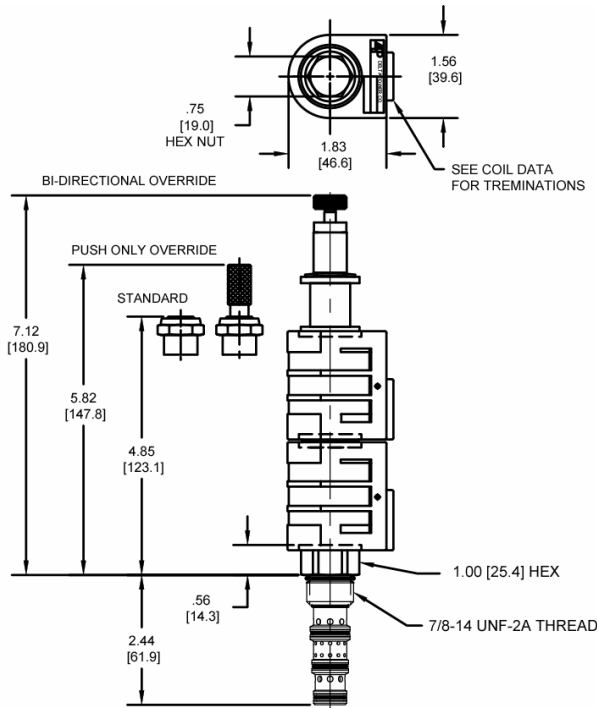
PERFORMANCE

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



ORDERING INFORMATION

DG-S4M

- OPTIONS**
 Buna Standard **00**
 Viton Standard **V0**
 Buna, Override **0M**
 Viton, Override **VM**
 Buna, Push only override **0P**
 Viton, Push only override **VP**

- BODIES**
 Blank
N 1/4 NPTF Ports
S #6 SAE Ports

- VOLTAGE**
06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC
44 440 VAC

"L" COIL TERMINATION
(All DC Except as Noted)

- DL** Double Lead
DT Deutsch on Leads DT04-2P
ML Metri-Pack on Leads
PL Packard on Leads
WL Weatherpack on Leads

- SS** Single Spade
DS Double Spade
HC DIN 43650 (Hirschman) - (AC & DC)
CL Conduit Lead - (AC Only)
DI Deutsch - Integral DT04-2P

- IMMERSION PROOF "L" TYPE**
IA "I" Coil AMP Superseal - Integral
ID "I" Coil Deutsch - Integral DT04-2P
IJ "I" Coil AMP Jr. Timer - Integral
IM "I" Coil Metri-Pack - Integral

Approximate Coil Weight: .68 lbs. (.31 kg.)

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.

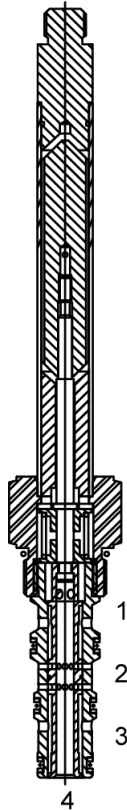
Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com



PQ-S4N Direct Acting Spool, 4 Way 3 Position, Tandem Center



DESCRIPTION

8 size, 3/4-16 thread, "Power" series, solenoid operated, 4 way 3 position, tandem center spool valve.

OPERATION

When de-energized the PQ-S4N allows flow between (2) and (4), blocks flow at (1) and (3). When outer coil (S1) is energized the valve allows flow from (2) to (3) and from (1) to (4). When inner coil (S2) is energized the valve allows flow from (2) to (1) and from (3) to (4).

OPERATION OF MANUAL OVERRIDE OPTION:

Push Only Override - Spring biased in neutral center position, when pushed the valve shifts in the S2 direction.

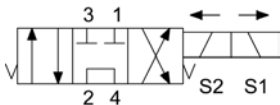
FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Optional manual "push only" override.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "1" Coil: Weatherproof, Thermal Shock, Immersion Safe.



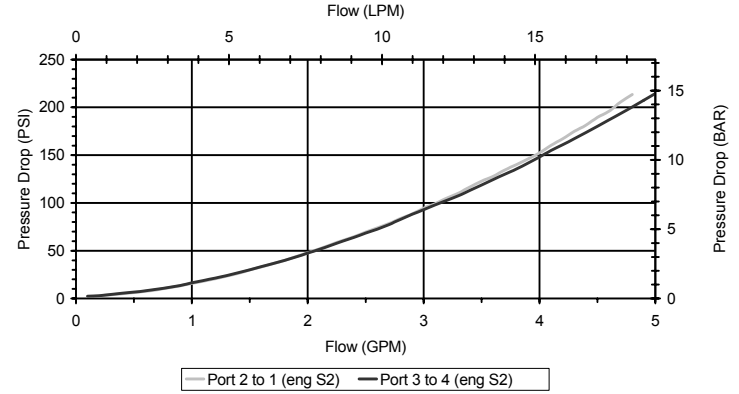
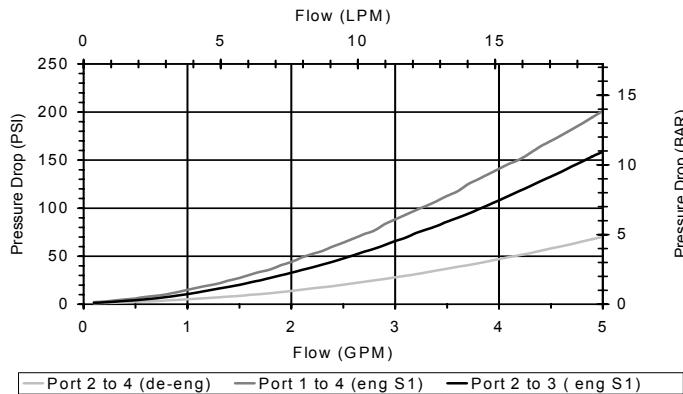
Uses "D" Delta coil.
"OP" override is a push only non-detented button that actuates S2 direction.

HYDRAULIC SYMBOL



PERFORMANCE

Actual Test Data (Cartridge Only)

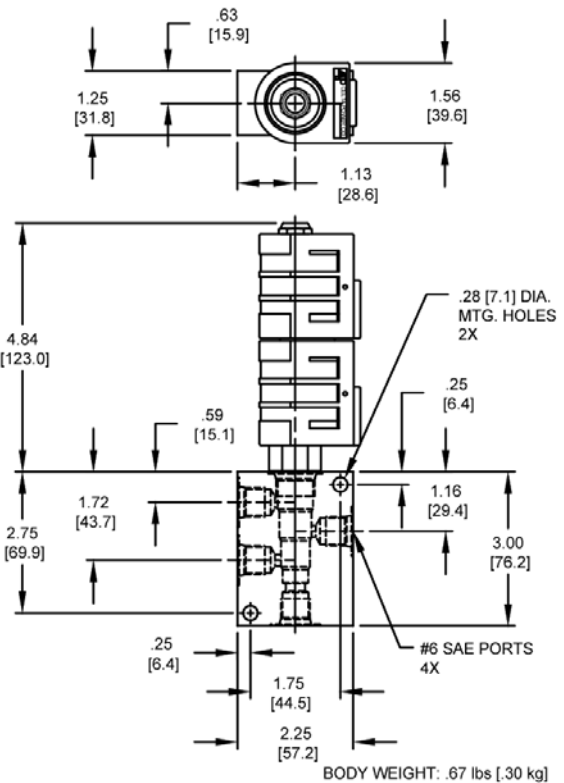
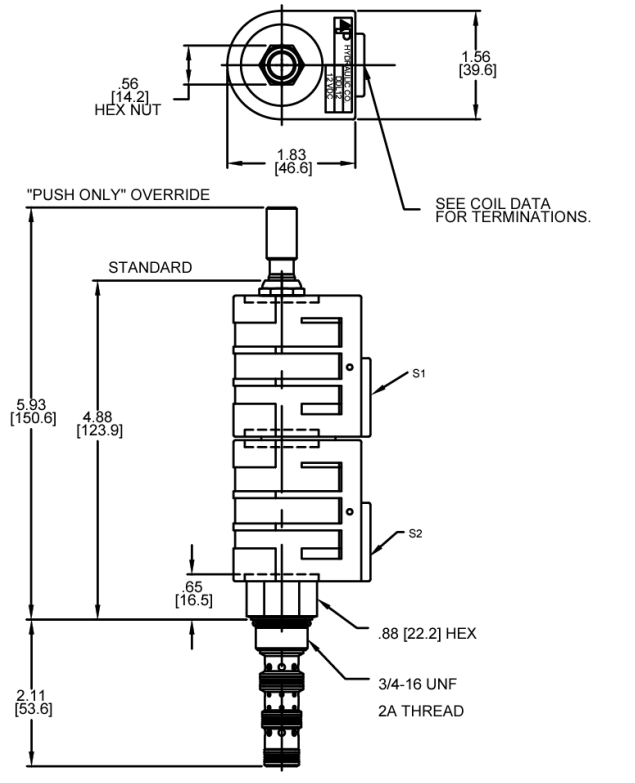


VALVE SPECIFICATIONS

Nominal Flow	5 GPM (19 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 Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.42 lbs. (.19 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 Nm)
Cavity	POWER 4W
Cavity Form Tool (Finishing)	40500029
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



ORDERING INFORMATION

PQ-S4N

- OPTIONS**
 Buna Standard **00**
 Viton Standard **V0**
 Buna, Push only override **0P**
 Viton, Push only override **VP**

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

- VOLTAGE**
06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC
44 440 VAC

"D" COIL TERMINATION
(All DC Except as Noted)

- DL** Double Lead
DT Deutsch on Leads DT04-2P
ML Metri-Pack on Leads
PL Packard on Leads
WL Weatherpack on Leads

- SS** Single Spade
DS Double Spade
HC DIN 43650 (Hirschman) – (AC & DC)
CL Conduit Lead – (AC Only)
DI Deutsch – Integral DT04-2P

- IMMERSION PROOF "D" TYPE**
IA "I" Coil AMP Superseal - Integral
ID "I" Coil Deutsch – Integral DT04-2P
IJ "I" Coil AMP Jr. Timer - Integral
IM "I" Coil Metri-Pack – Integral

Approximate Coil Weight: .74 lbs. (.33 kg.)

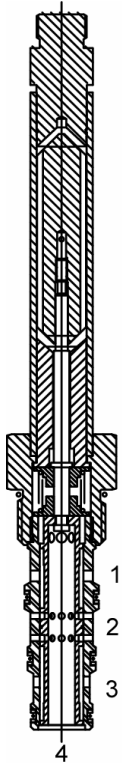
WARNING: The specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

DG-S4N Direct Acting Spool, 4 Way 3 Position, Tandem Center



DESCRIPTION

10 size, 7/8-14 thread, "Delta" series, solenoid operated, 4 way 3 position, tandem center spool valve.

OPERATION

When de-energized the DG-S4N allows flow between (2) and (4), and blocks flow at (1) and (3). When outer coil (S1) is energized the valve allows flow from (2) to (3) and from (1) to (4). When inner coil (S2) is energized the valve allows flow from (2) to (1) and from (3) to (4).

OPERATION OF MANUAL OVERRIDE OPTION:

Bi-Directional Override - Spring biased in neutral center position, when pushed the valve shifts in the S2 direction, when pulled the valve shifts in the S1 direction.

Push Only Override - Spring biased in neutral center position, when pushed the valve shifts in the S2 direction.

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override option.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

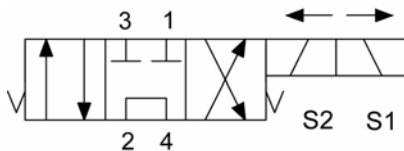


Uses "L" coil.

VALVE SPECIFICATIONS

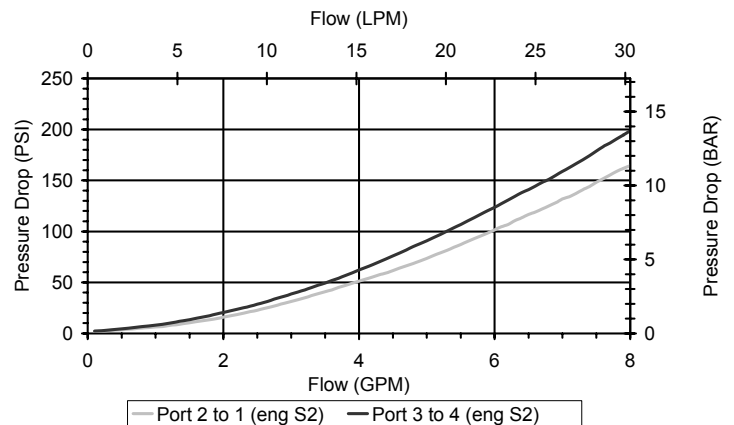
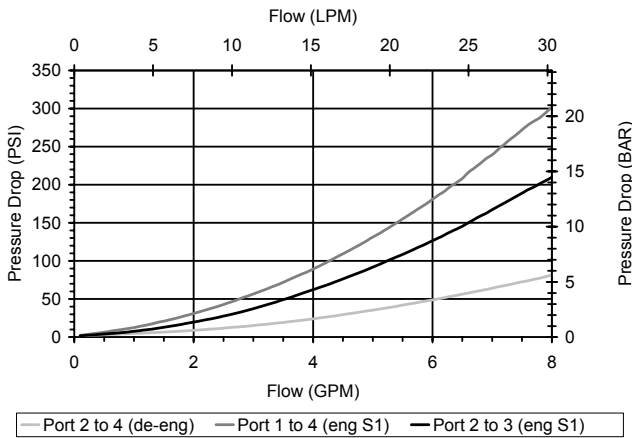
Nominal Flow	6 GPM (23 LPM)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	5 cu in/min (82 ml/min) per path
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.52 lbs. (.23 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 Nm)
Cavity	DELTA 4W
Cavity Form Tool (Finishing)	40500002
Seal Kit	21191214

HYDRAULIC SYMBOL



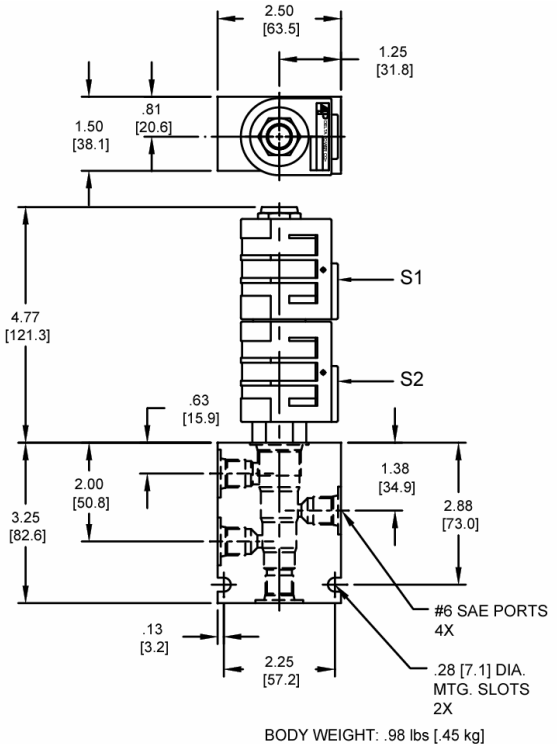
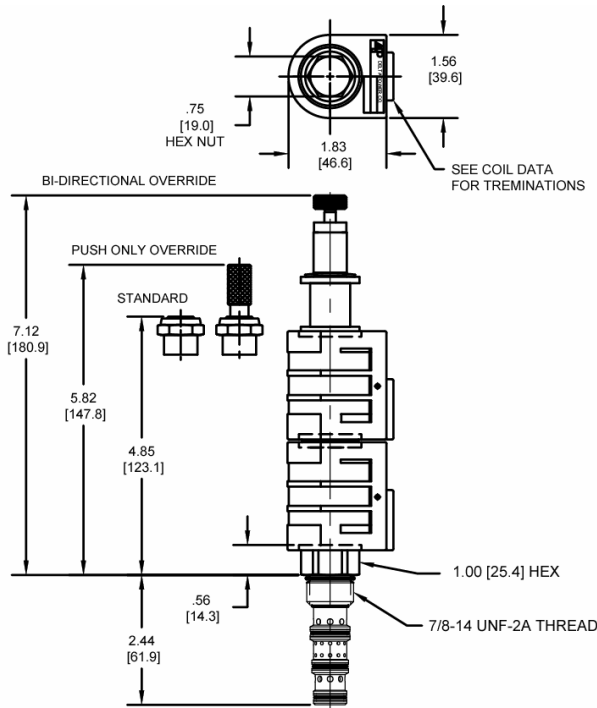
PERFORMANCE

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



ORDERING INFORMATION

DG-S4N

- OPTIONS**
 Buna Standard **00**
 Viton Standard **V0**
 Buna, Override **0M**
 Viton, Override **VM**
 Buna, Push only override **0P**
 Viton, Push only override **VP**

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

- VOLTAGE**
06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC
44 440 VAC

“L” COIL TERMINATION
(All DC Except as Noted)

- DL** Double Lead
DT Deutsch on Leads DT04-2P
ML Metri-Pack on Leads
PL Packard on Leads
WL Weatherpack on Leads

- SS** Single Spade
DS Double Spade
HC DIN 43650 (Hirschman) – (AC & DC)
CL Conduit Lead – (AC Only)
DI Deutsch – Integral DT04-2P

- IMMERSION PROOF “L” TYPE**
IA “I” Coil AMP Superseal - Integral
ID “I” Coil Deutsch – Integral DT04-2P
IJ “I” Coil AMP Jr. Timer - Integral
IM “I” Coil Metri-Pack – Integral

Approximate Coil Weight: .68 lbs. (.31 kg.)

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.

Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

PQ-S4R Direct Acting Spool, 4 Way 3 Position, Tandem Center

DESCRIPTION

8 size, 3/4-16 thread, "Power" series, solenoid operated, 4 way 3 position, tandem center spool valve.

OPERATION

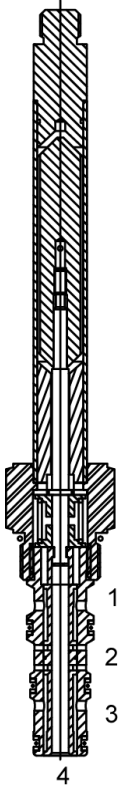
When de-energized the PQ-S4R allows flow between (2) and (4), ports (1) and (3) are blocked. When outer coil (S1) is energized the valve allows flow from (2) to (3) and from (1) to (4). When inner coil (S2) is energized the valve allows flow from (2) to (1) and from (3) to (4).

OPERATION OF MANUAL OVERRIDE OPTION:

Push Only Override - Spring biased in neutral center position, when pushed the valve shifts in the S2 direction.

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Optional manual "push only" override.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "1" Coil: Weatherproof, Thermal Shock, Immersion Safe.

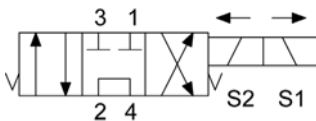


Uses "P" Power coil.
For higher flow see PQ-S4N.
"OP" override is a push only non-detented button that actuates S2 direction.

VALVE SPECIFICATIONS

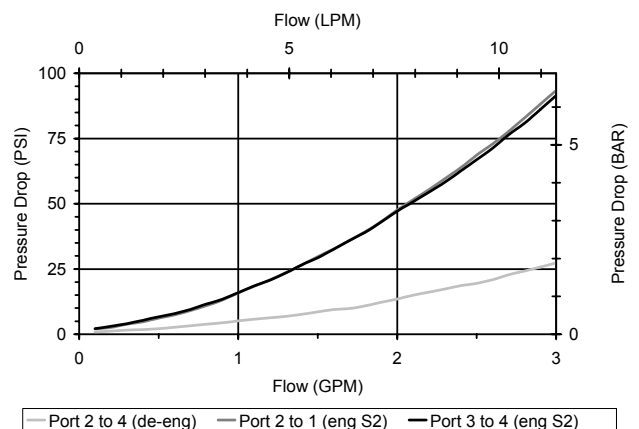
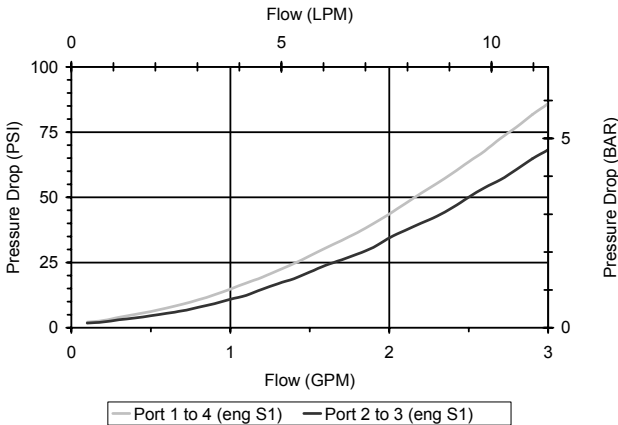
Nominal Flow	3 GPM (11 LPM)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	5 cu in/min (82 ml/min) per path
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.42 lbs. (.19 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 Nm)
Cavity	POWER 4W
Cavity Form Tool (Finishing)	40500029
Seal Kit	21191108

HYDRAULIC SYMBOL



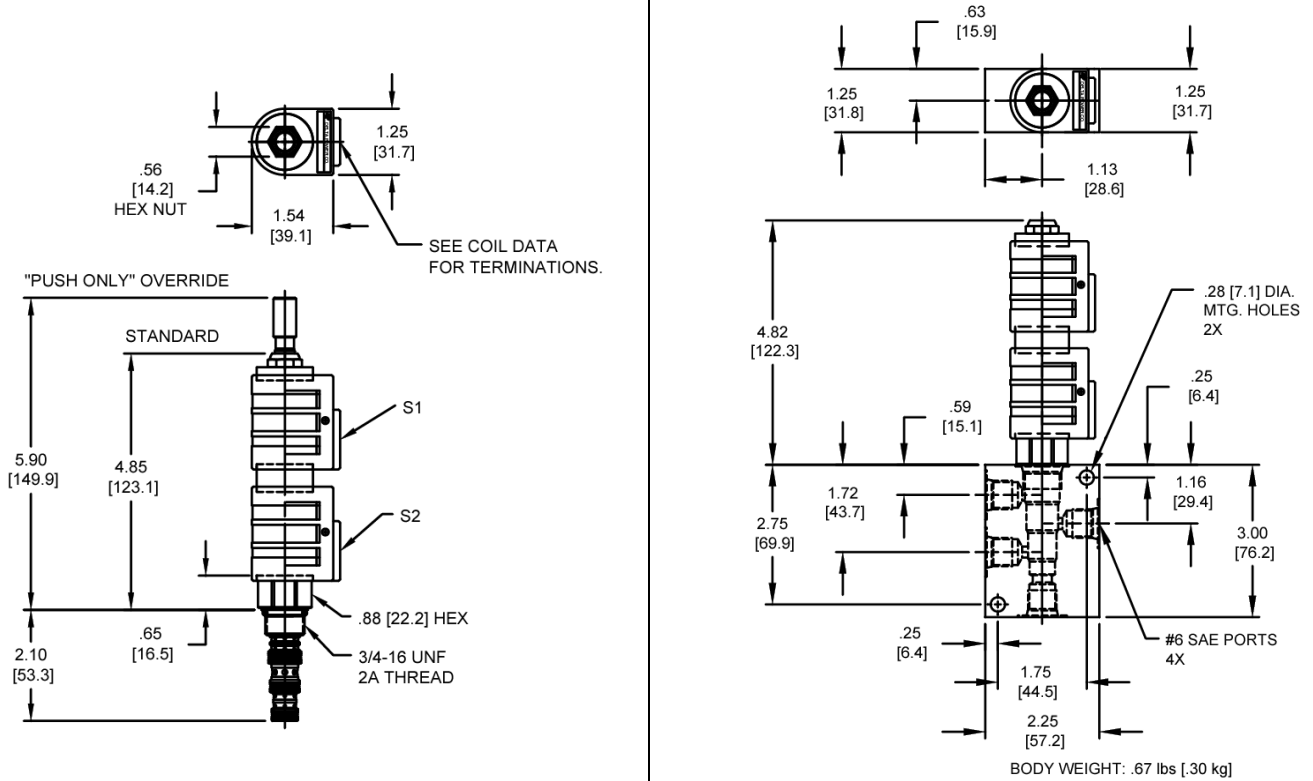
PERFORMANCE

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



ORDERING INFORMATION

PQ-S4R

- OPTIONS**
 Buna Standard **00**
 Viton Standard **V0**
 Buna, Push only override **0P**
 Viton, Push only override **VP**

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

- VOLTAGE**
06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC
44 440 VAC

"P" COIL TERMINATION
(All DC Except as Noted)

- DL** Double Lead
DT Deutsch on Leads DT04-2P
ML Metri-Pack on Leads
PL Packard on Leads
WL Weatherpack on Leads

- SS** Single Spade
DS Double Spade
HC DIN 43650 (Hirschman) – (AC & DC)
CL Conduit Lead – (AC Only)
DI Deutsch – Integral DT04-2P

- IMMERSION PROOF "D" TYPE**
IA "I" Coil AMP Superseal - Integral
ID "I" Coil Deutsch – Integral DT04-2P
IJ "I" Coil AMP Jr. Timer - Integral
IM "I" Coil Metri-Pack – Integral

Approximate Coil Weight: .42 lbs. (.19 kg.)

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.

Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

PQ-S4O Direct Acting Spool, 4 Way 3 Position, Open Center

DESCRIPTION

8 size, 3/4-16 thread, "Power" series, solenoid operated, 4 way 3 position, open center spool valve.

OPERATION

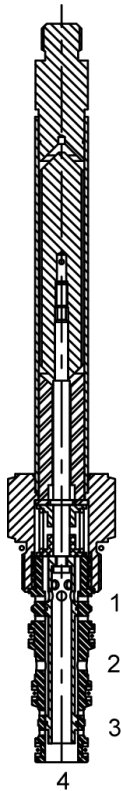
When de-energized the PQ-S4O allows flow to all ports, and pressures are relieved. When outer coil (S1) is energized the valve allows flow from (2) to (1) and from (3) to (4). When inner coil (S2) is energized the valve allows flow from (2) to (3) and from (1) to (4).

OPERATION OF MANUAL OVERRIDE OPTION:

Push Only Override - Spring biased in neutral center position, when pushed the valve shifts in the S2 direction.

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Optional manual "push only" override.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

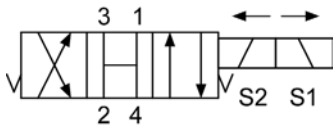


Uses "P" Power coil. For higher flow see PQ-S4T. "OP" override is a push only non-detented button that actuates S2 direction.

VALVE SPECIFICATIONS

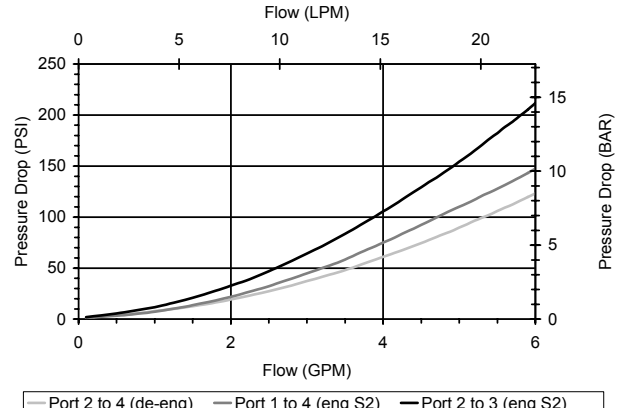
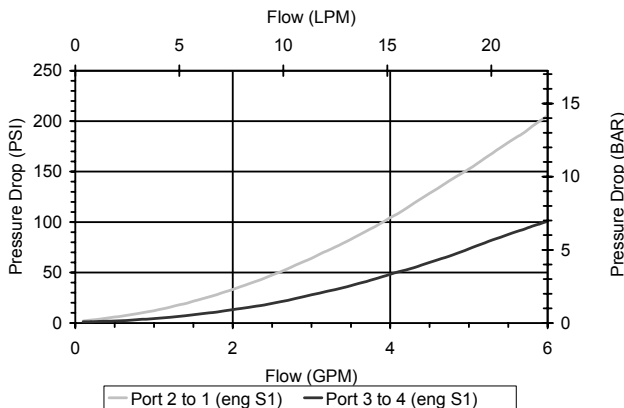
Nominal Flow	3 GPM (11 LPM)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	5 cu in/min (82 ml/min) per path
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.42 lbs. (.19 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (33.9 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 Nm)
Cavity	POWER 4W
Cavity Form Tool (Finishing)	40500029
Seal Kit	21191108

HYDRAULIC SYMBOL



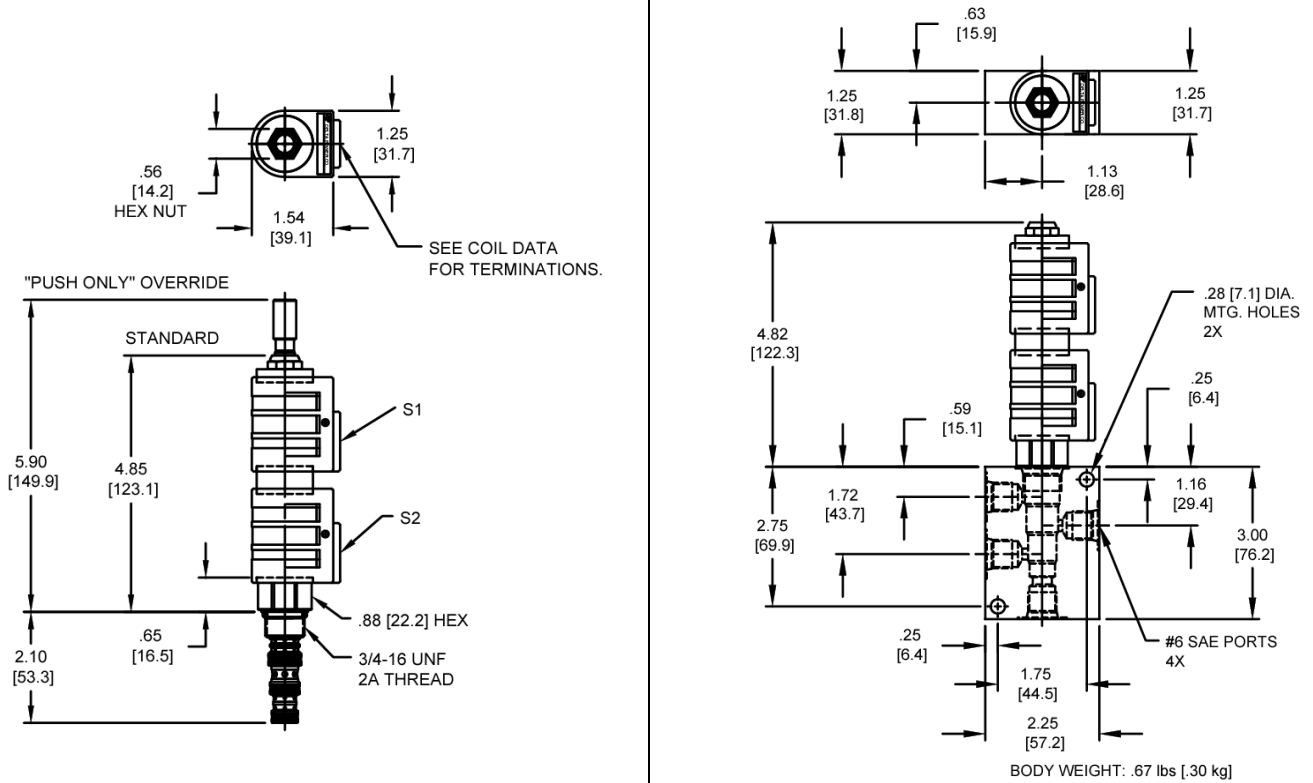
PERFORMANCE

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



ORDERING INFORMATION

PQ-S40

- OPTIONS**
 Buna Standard **00**
 Viton Standard **V0**
 Buna, Push only override **0P**
 Viton, Push only override **VP**

- BODIES**
 Blank
N 1/4 NPTF Ports
S #6 SAE Ports

- VOLTAGE**
06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC
44 440 VAC

"P" COIL TERMINATION
(All DC Except as Noted)

- DL** Double Lead
DT Deutsch on Leads DT04-2P
ML Metri-Pack on Leads
PL Packard on Leads
WL Weatherpack on Leads

- SS** Single Spade
DS Double Spade
HC DIN 43650 (Hirschman) – (AC & DC)
CL Conduit Lead – (AC Only)
DI Deutsch – Integral DT04-2P

- IMMERSION PROOF "P" TYPE**
IA "I" Coil AMP Superseal - Integral
ID "I" Coil Deutsch – Integral DT04-2P
IJ "I" Coil AMP Jr. Timer - Integral
IM "I" Coil Metri-Pack – Integral

Approximate Coil Weight: .42 lbs. (.19 kg.)

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.

Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

DG-S40 Direct Acting Spool, 4 Way 3 Position, Open Center

DESCRIPTION

10 size, 7/8-14 thread, "Delta" series, solenoid operated, 4 way 3 position, open center spool valve.

OPERATION

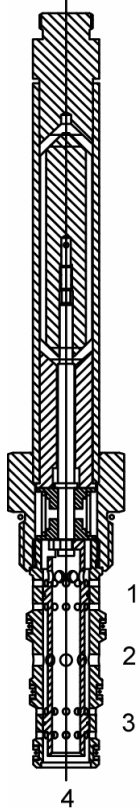
When de-energized the DG-S40 is open to all ports, all pressures are relieved. When outer coil (S1) is energized the valve allows flow from (2) to (1) and from (3) to (4). When inner coil (S2) is energized the valve allows flow from (2) to (3) and from (1) to (4).

OPERATION OF MANUAL OVERRIDE OPTION:

Bi-Directional Override - Spring biased in neutral center position, when pushed the valve shifts in the S2 direction, when pulled the valve shifts in the S1 direction.
Push Only Override - Spring biased in neutral center position, when pushed the valve shifts in the S2 direction.

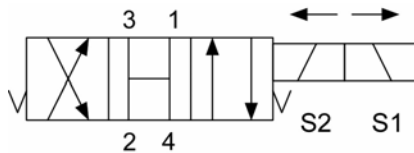
FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override options.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.



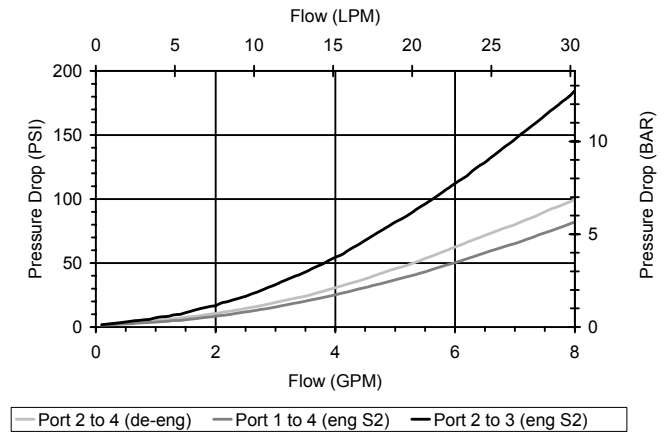
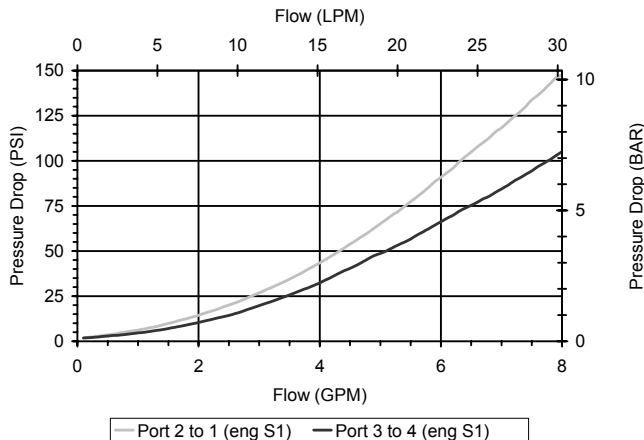
Uses "L" coil.

HYDRAULIC SYMBOL



PERFORMANCE

Actual Test Data (Cartridge Only)

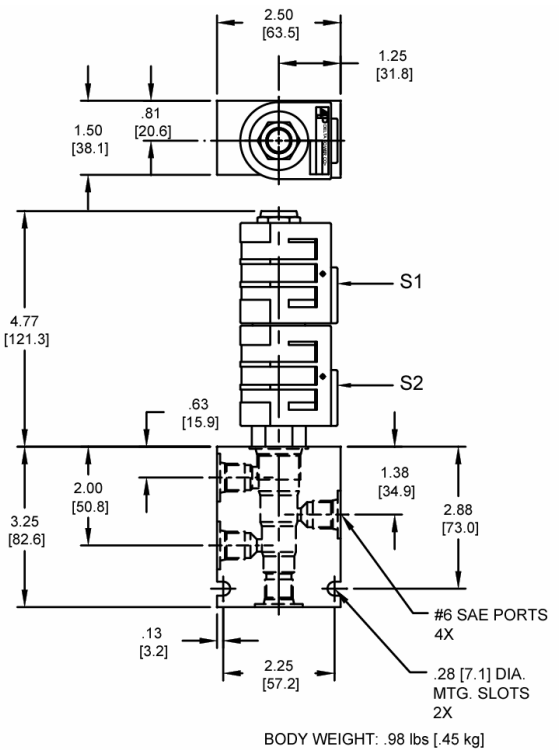
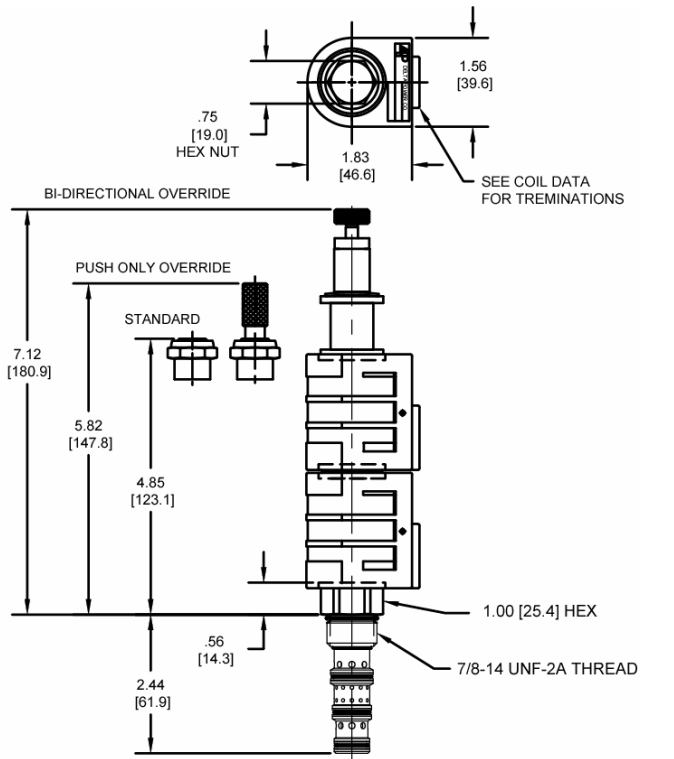


VALVE SPECIFICATIONS

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) per path
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.50 lbs. (.23 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4 to 8.1 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

DG-S40

- OPTIONS**
- Buna Standard **00**
 - Viton Standard **V0**
 - Buna, Override **0M**
 - Viton, Override **VM**
 - Buna, Push only override **0P**
 - Viton, Push only override **VP**

- BODIES**
- Blank
 - N** 1/4 NPTF Ports
 - S** #6 SAE Ports

- VOLTAGE**
- 06** 6 VDC
 - 12** 12 VDC
 - 24** 24 VDC
 - 36** 36 VDC
 - 48** 48 VDC
 - 25** 24 VAC
 - 11** 120 VAC
 - 22** 220 VAC
 - 44** 440 VAC

"L" COIL TERMINATION
(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04-2P
- ML** Metri-Pack on Leads
- PL** Packard on Leads
- WL** Weatherpack on Leads

- SS** Single Spade
- DS** Double Spade
- HC** DIN 43650 (Hirschman) – (AC & DC)
- CL** Conduit Lead – (AC Only)
- DI** Deutsch – Integral DT04-2P

IMMERSION PROOF "L" TYPE

- IA** "I" Coil AMP Superseal - Integral
- ID** "I" Coil Deutsch – Integral DT04-2P
- IJ** "I" Coil AMP Jr. Timer - Integral
- IM** "I" Coil Metri-Pack – Integral

Approximate Coil Weight: .68 lbs. (.31 kg.)

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.

Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com



PQ-S4T Direct Acting Spool, 4 Way 3 Position, Open Center

DESCRIPTION

8 size, 3/4-16 thread, "Power" series, solenoid operated, 4 way 3 position, open center spool valve.

OPERATION

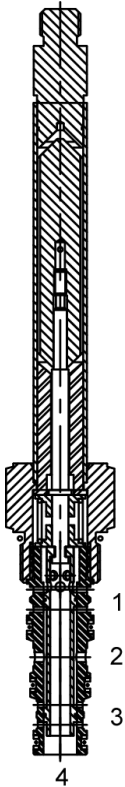
When de-energized the PQ-S4T is open to all ports, all pressures are relieved. When outer coil (S1) is energized the valve allows flow from (2) to (1) and from (3) to (4). When inner coil (S2) is energized the valve allows flow from (2) to (3) and from (1) to (4).

OPERATION OF MANUAL OVERRIDE OPTION:

Push Only Override - Spring biased in neutral center position, when pushed the valve shifts in the S2 direction.

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Optional manual "push only" override.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

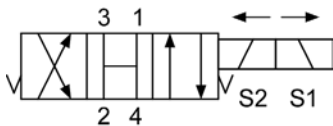


Uses "D" Delta coil. "OP" override is a push only non-detented button that actuates S2 direction.

VALVE SPECIFICATIONS

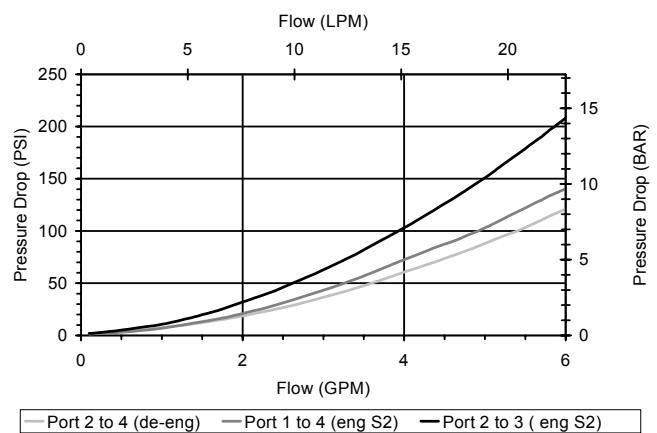
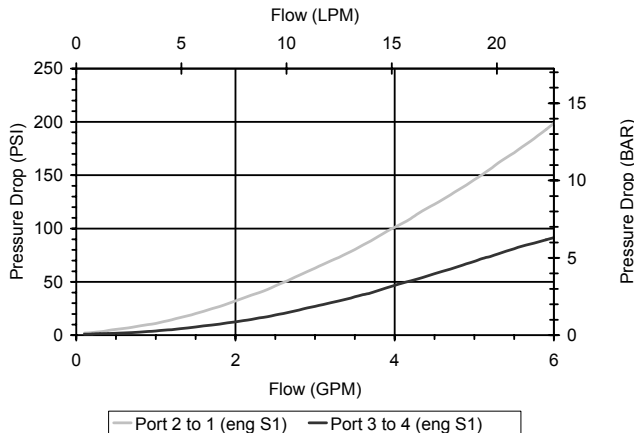
Nominal Flow	5 GPM (19 LPM)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	5 cu in/min (82 ml/min) per path
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.42 lbs. (.19 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1Nm)
Cavity	POWER 4W
Cavity Form Tool (Finishing)	40500029
Seal Kit	21191108

HYDRAULIC SYMBOL



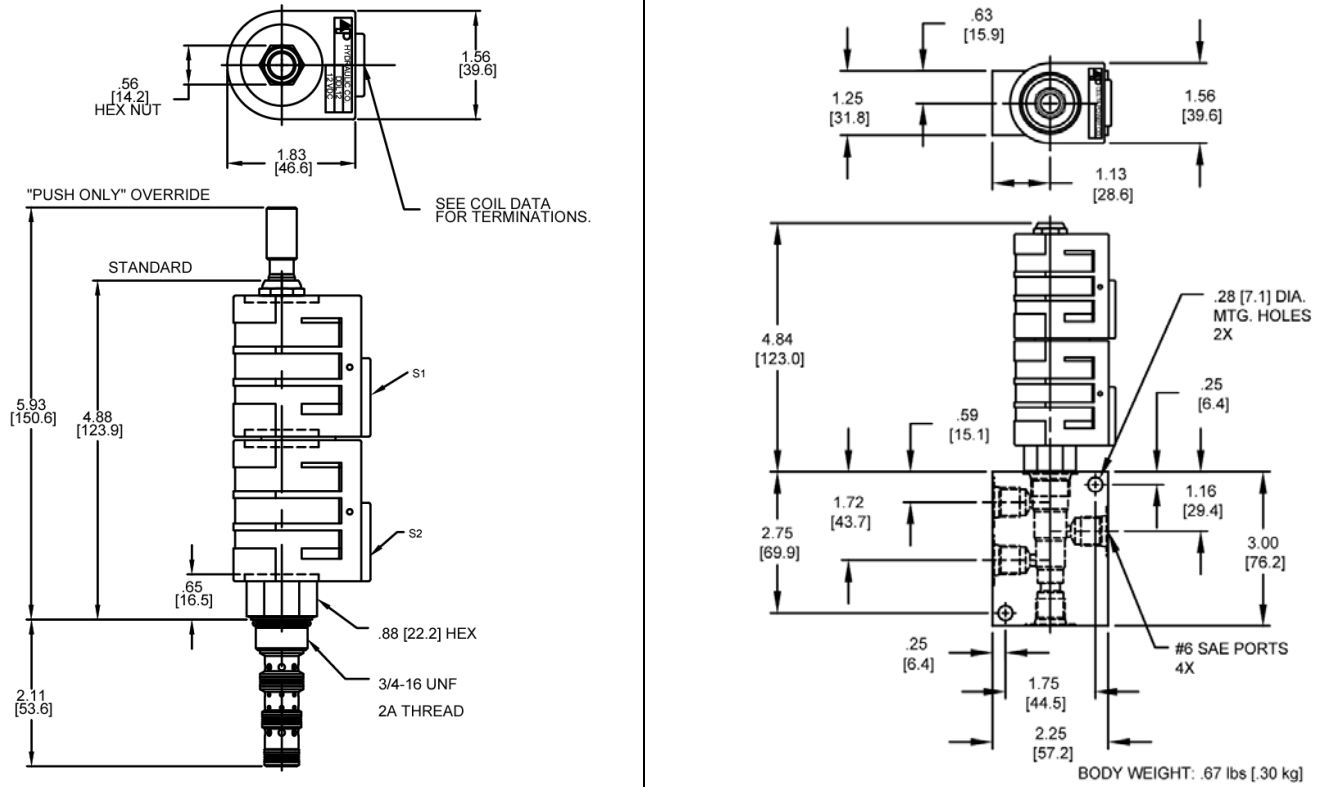
PERFORMANCE

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



ORDERING INFORMATION

PQ-S4T

- OPTIONS**
Buna Standard **00**
Viton Standard **V0**
Buna, Push only override **0P**
Viton, Push only override **VP**

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

- VOLTAGE**
06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC
44 440 VAC

"D" COIL TERMINATION
(All DC Except as Noted)

- DL** Double Lead
DT Deutsch on Leads DT04-2P
ML Metri-Pack on Leads
PL Packard on Leads
WL Weatherpack on Leads

- SS** Single Spade
DS Double Spade
HC DIN 43650 (Hirschman) – (AC & DC)
CL Conduit Lead – (AC Only)
DI Deutsch – Integral DT04-2P

- IMMERSION PROOF "D" TYPE**
IA "I" Coil AMP Superseal - Integral
ID "I" Coil Deutsch – Integral DT04-2P
IJ "I" Coil AMP Jr. Timer - Integral
IM "I" Coil Metri-Pack – Integral

Approximate Coil Weight: .74 lbs. (.33 kg.)

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.

Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

PQ-S4P Direct Acting Spool, 4 Way 3 Position, Closed Center

DESCRIPTION

8 size, 3/4-16 thread, "Power" series, solenoid operated, 4 way 3 position, closed center spool valve.

OPERATION

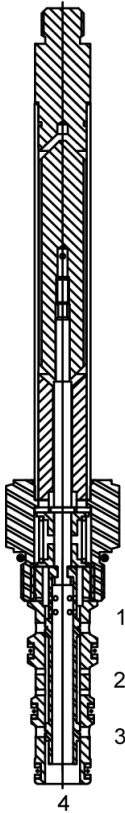
When de-energized the PQ-S4P blocks flow at all ports. When outer coil (S1) is energized the valve allows flow from (2) to (1) and from (3) to (4). When inner coil (S2) is energized the valve allows flow from (2) to (3) and from (1) to (4).

OPERATION OF MANUAL OVERRIDE OPTION:

Push Only Override - Spring biased in neutral center position, when pushed the valve shifts in the S2 direction.

FEATURES

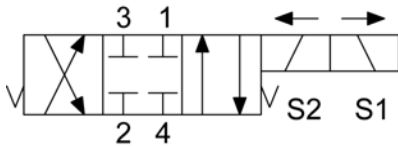
- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Unitized, molded coil design.
- Optional manual "push only" override.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.



Uses "D" Delta coil.
Flow rating based upon on maximum differential load of 1000 PSI.
"OP" override is a push only non-detented button that actuates S2 direction.



HYDRAULIC SYMBOL

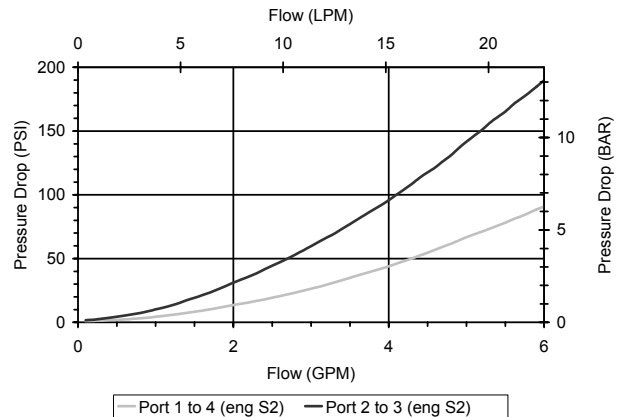
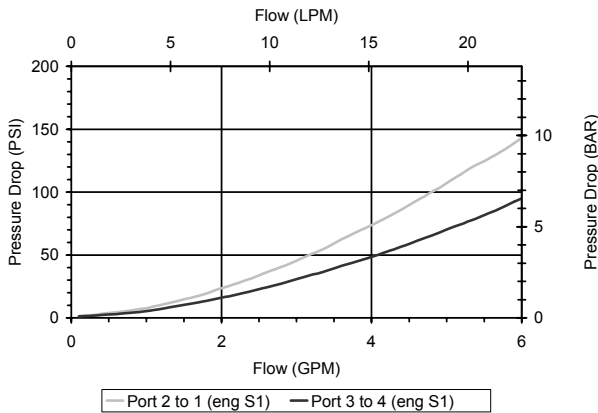


PERFORMANCE

Actual Test Data (Cartridge Only)

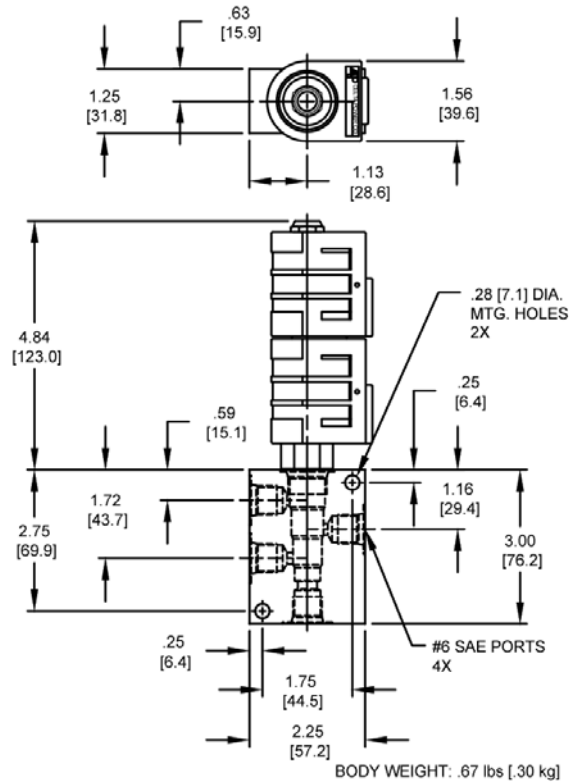
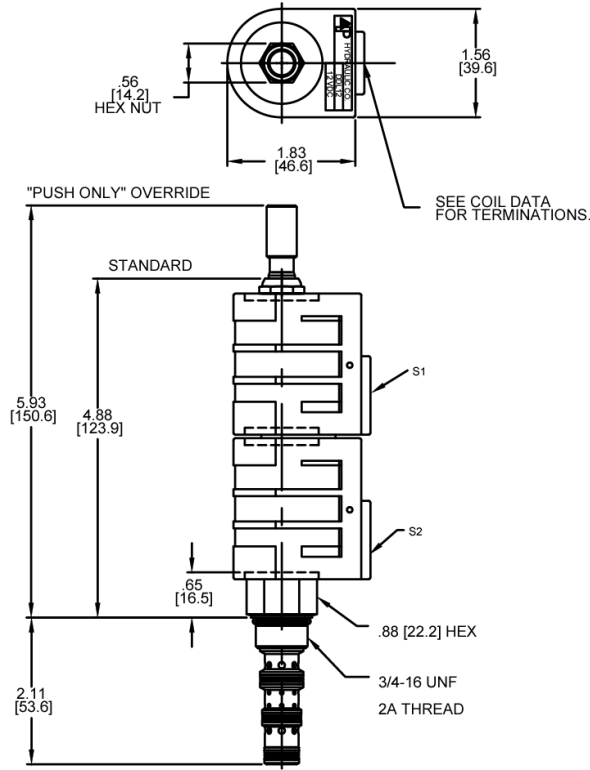
VALVE SPECIFICATIONS

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) per path
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.42 lbs. (.19 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	25 ft-lbs (34 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 Nm)
Cavity	POWER 4W
Cavity Form Tool (Finishing)	40500029
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



ORDERING INFORMATION

PQ-S4P

- OPTIONS**
 Buna Standard **00**
 Viton Standard **V0**
 Buna, Push only override **0P**
 Viton, Push only override **VP**

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

- VOLTAGE**
06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC
44 440 VAC

"D" COIL TERMINATION
(All DC Except as Noted)

- DL** Double Lead
DT Deutsch on Leads DT04-2P
ML Metri-Pack on Leads
PL Packard on Leads
WL Weatherpack on Leads

- SS** Single Spade
DS Double Spade
HC DIN 43650 (Hirschman) – (AC & DC)
CL Conduit Lead – (AC Only)
DI Deutsch – Integral DT04-2P

- IMMERSION PROOF "D" TYPE**
IA "I" Coil AMP Superseal - Integral
ID "I" Coil Deutsch – Integral DT04-2P
IJ "I" Coil AMP Jr. Timer - Integral
IM "I" Coil Metri-Pack – Integral

Approximate Coil Weight: .74 lbs. (.33 kg.)

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Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

DG-S4P Direct Acting Spool, Closed Center, 4 Way 3 Position, Closed Center

DESCRIPTION

10 size, 7/8-14 thread, "Delta" series, solenoid operated, 4 way 3 position, closed center spool valve.

OPERATION

When de-energized the DG-S4P blocks flow at all ports. When outer coil (S1) is energized the valve allows flow from (2) to (1) and from (3) to (4). When inner coil (S2) is energized the valve allows flow from (2) to (3) and from (1) to (4).

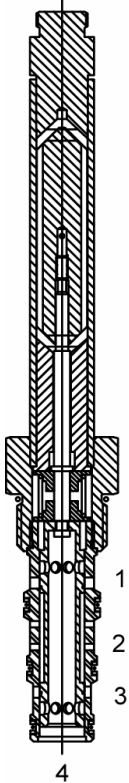
OPERATION OF MANUAL OVERRIDE OPTION:

Bi-Directional Override - Spring biased in neutral center position, when pushed the valve shifts in the S2 direction, when pulled the valve shifts in the S1 direction.

Push Only Override - Spring biased in neutral center position, when pushed the valve shifts in the S2 direction.

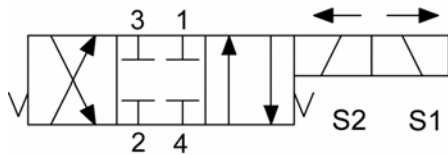
FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override options.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.



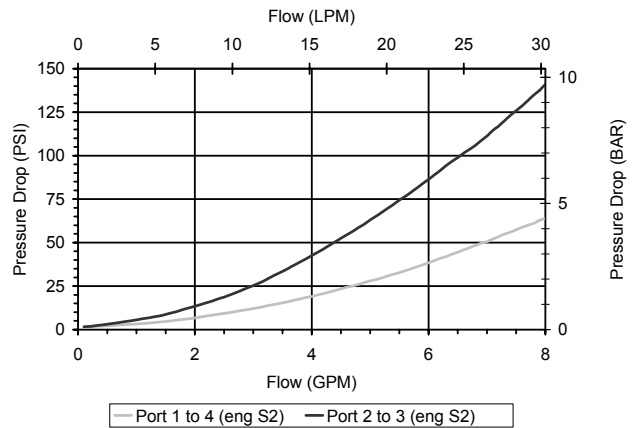
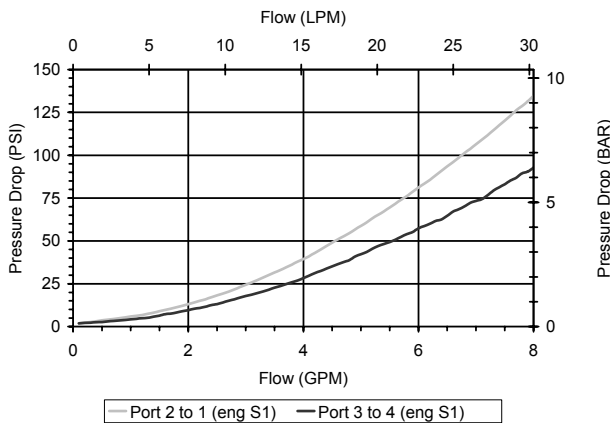
Uses "L" Coil.
Flow rating is at 1000 PSID maximum differential loading.

HYDRAULIC SYMBOL



PERFORMANCE

Actual Test Data (Cartridge Only)

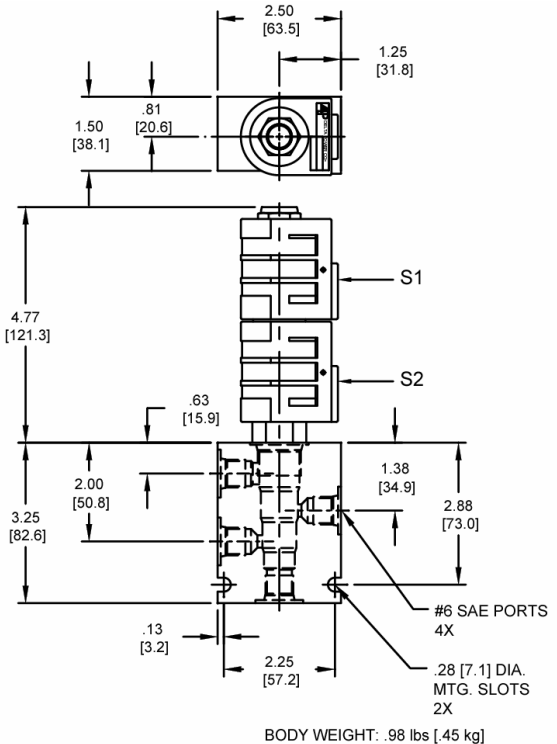
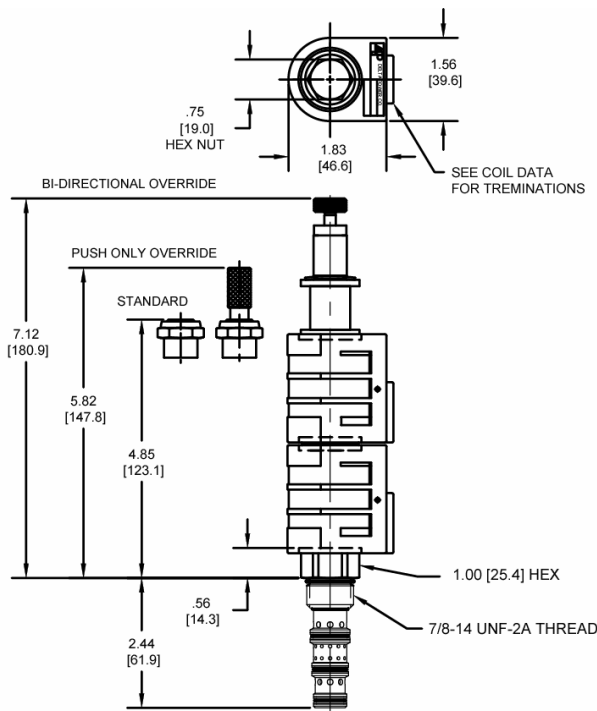


VALVE SPECIFICATIONS

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) per path
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature 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)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4 to 8.1 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

DG-S4P

- OPTIONS**
- Buna Standard **00**
 - Viton Standard **V0**
 - Buna, Override **0M**
 - Viton, Override **VM**
 - Buna, Push only override **0P**
 - Viton, Push only override **VP**

- BODIES**
- Blank
 - N** 1/4 NPTF Ports
 - S** #6 SAE Ports

- VOLTAGE**
- 06** 6 VDC
 - 12** 12 VDC
 - 24** 24 VDC
 - 36** 36 VDC
 - 48** 48 VDC
 - 25** 24 VAC
 - 11** 120 VAC
 - 22** 220 VAC
 - 44** 440 VAC

"L" COIL TERMINATION
(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04-2P
- ML** Metri-Pack on Leads
- PL** Packard on Leads
- WL** Weatherpack on Leads

- SS** Single Spade
- DS** Double Spade
- HC** DIN 43650 (Hirschman) – (AC & DC)
- CL** Conduit Lead – (AC Only)
- DI** Deutsch – Integral DT04-2P

- IMMERSION PROOF "L" TYPE**
- IA** "I" Coil AMP Superseal - Integral
 - ID** "I" Coil Deutsch – Integral DT04-2P
 - IJ** "I" Coil AMP Jr. Timer - Integral
 - IM** "I" Coil Metri-Pack – Integral

Approximate Coil Weight: .68 lbs. (.31 kg.)

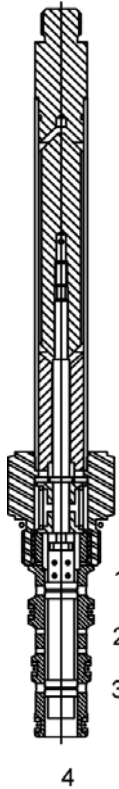
WARNING: The specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

PQ-S4Q Direct Acting Spool, 4 Way 3 Position, Closed Center



DESCRIPTION

8 size, 3/4-16 thread, "Power" series, solenoid operated, 4 way 3 position, closed center spool valve.

OPERATION

When de-energized the PQ-S4Q blocks flow to all ports. When outer coil (S1) is energized the valve allows flow from (2) to (1) and from (3) to (4). When inner coil (S2) is energized the valve allows flow from (2) to (3) and from (1) to (4).

OPERATION OF MANUAL OVERRIDE OPTION:

Push Only Override - Spring biased in neutral center position, when pushed the valve shifts in the S2 direction.

FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Industry common cavity.
- Optional manual "push only" override.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.

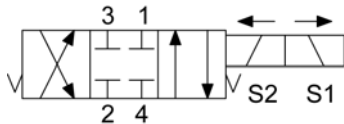


Uses "P" Power coil. For higher flow see PQ-S4P. Flow rating based on maximum differential load of 1000 PSI. "OP" override is a push only non-detented button that actuates S2 direction.

VALVE SPECIFICATIONS

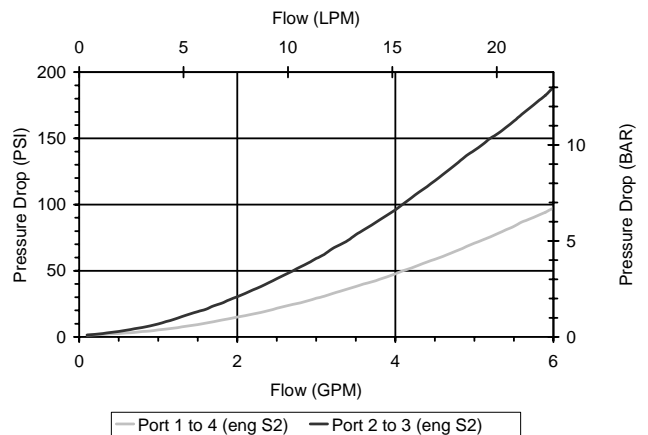
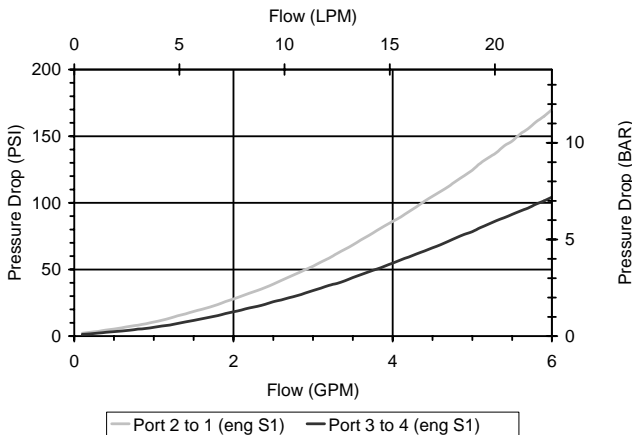
Nominal Flow	6 GPM (23 LPM)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	5 cu in/min (82 ml/min) per path
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.42 lbs. (.19 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 Nm)
Cavity	POWER 4W
Cavity Form Tool (Finishing)	40500029
Seal Kit	21191108

HYDRAULIC SYMBOL



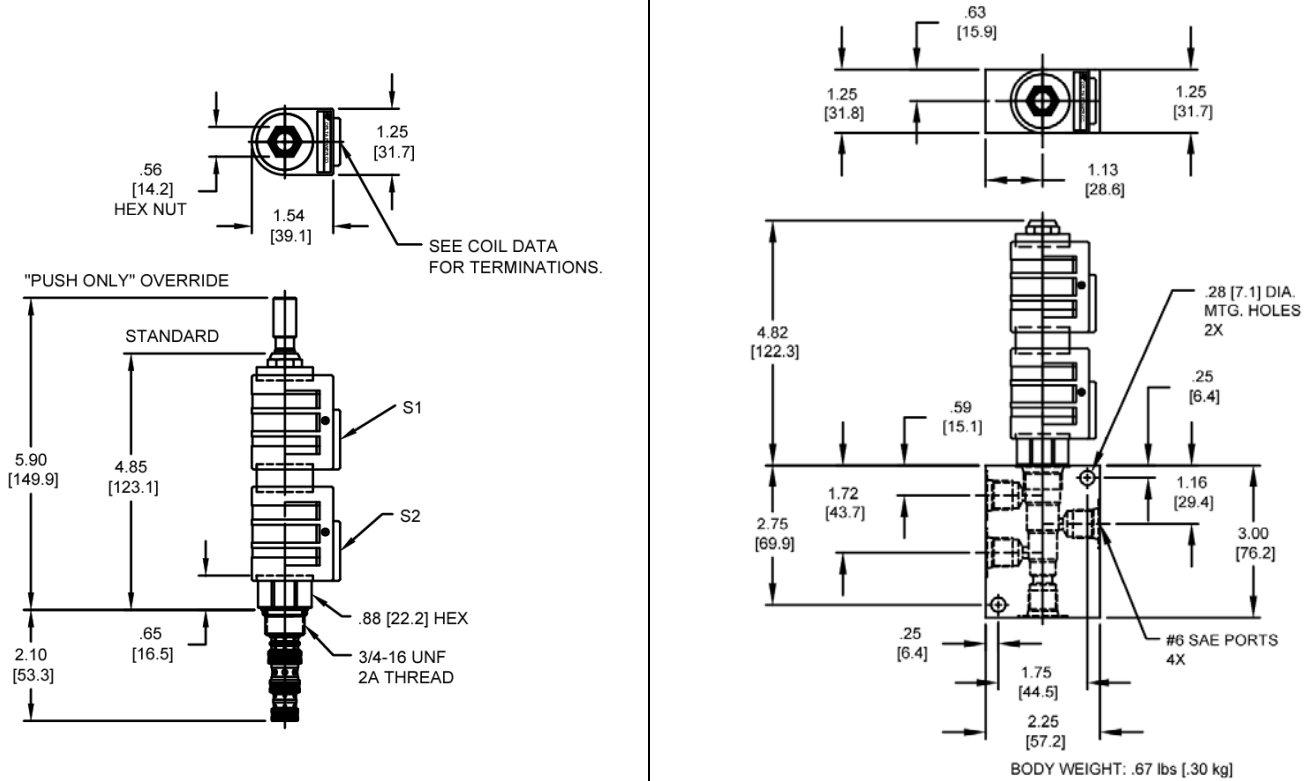
PERFORMANCE

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



ORDERING INFORMATION

PQ-S4Q

- OPTIONS**
 Buna Standard **00**
 Viton Standard **V0**
 Buna, Push only override **0P**
 Viton, Push only override **VP**

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

- VOLTAGE**
06 6 VDC
12 12 VDC
24 24 VDC
36 36 VDC
48 48 VDC
25 24 VAC
11 120 VAC
22 220 VAC
44 440 VAC

"P" COIL TERMINATION
(All DC Except as Noted)

- DL** Double Lead
DT Deutsch on Leads DT04-2P
ML Metri-Pack on Leads
PL Packard on Leads
WL Weatherpack on Leads

- SS** Single Spade
DS Double Spade
HC DIN 43650 (Hirschman) – (AC & DC)
CL Conduit Lead – (AC Only)
DI Deutsch – Integral DT04-2P

IMMERSION PROOF "D" TYPE

- IA** "I" Coil AMP Superseal - Integral
ID "I" Coil Deutsch – Integral DT04-2P
IJ "I" Coil AMP Jr. Timer - Integral
IM "I" Coil Metri-Pack – Integral

Approximate Coil Weight: .42 lbs. (.19 kg.)

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Phone: (815) 397-6628

Fax: (815) 397-2526

E-mail: delta@delta-power.com

DG-S4S Spool Operated, 4 Way 3 Position, Scotch Center

DESCRIPTION

10 size, 7/8-14 thread, "Delta" series, solenoid operated, 4 way 3 position, scotch center spool valve.

OPERATION

When de-energized the DG-S4S blocks flow at (1) and (2) and allows flow from (3) to (4). When outer coil (S1) is energized the valve allows flow from (2) to (1) and from (3) to (4). When inner coil (S2) is energized the valve allows flow from (2) to (3) and from (1) to (4).

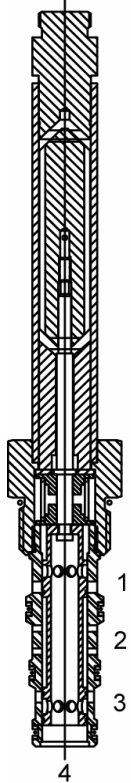
OPERATION OF MANUAL OVERRIDE OPTION:

Bi-Directional Override - Spring biased in neutral center position, when pushed the valve shifts in the S2 direction, when pulled the valve shifts in the S1 direction.

Push Only Override - Spring biased in neutral center position, when pushed the valve shifts in the S2 direction.

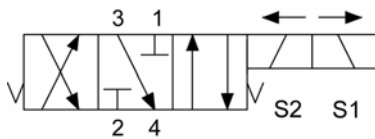
FEATURES

- Hardened parts for long life.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Manual override options.
- Industry common cavity.
- Unitized, molded coil design.
- Continuous duty rated solenoid.
- Optional coil voltages and terminations.
- Optional "I" Coil: Weatherproof, Thermal Shock, Immersion Safe.



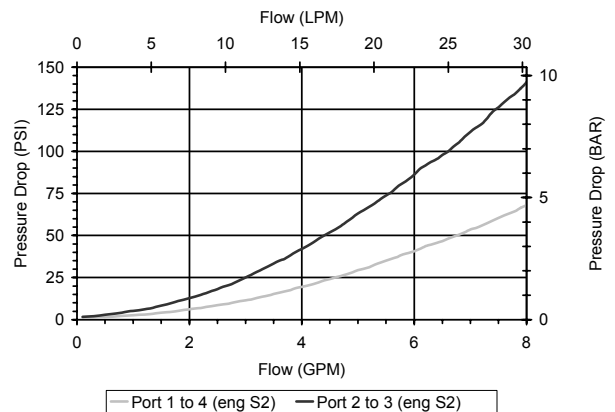
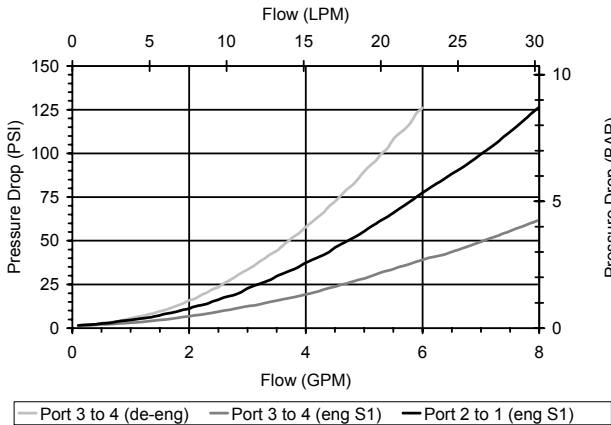
Uses "L" Coil.
Flow rating is at 1000 PSID maximum differential loading

HYDRAULIC SYMBOL



PERFORMANCE

Actual Test Data (Cartridge Only)

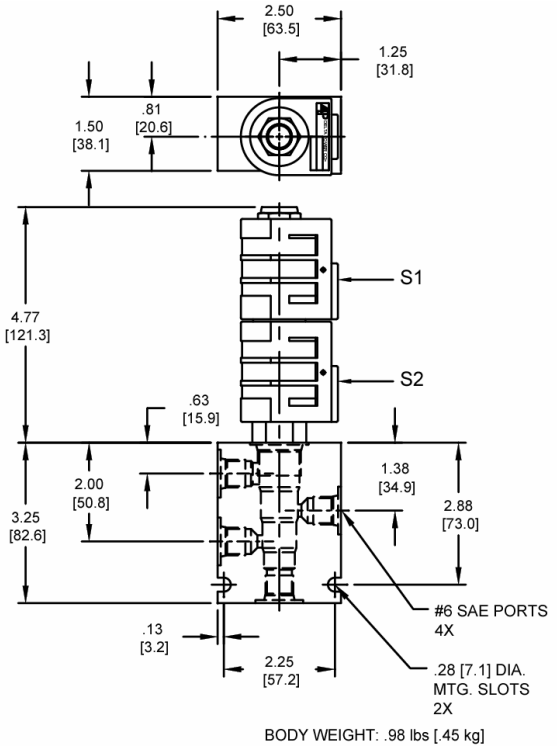
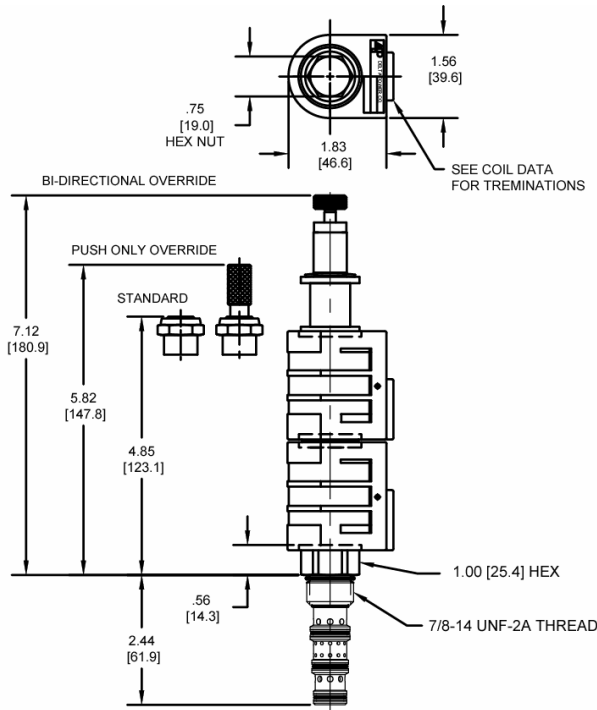


VALVE SPECIFICATIONS

Nominal Flow	6 GPM (23 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 Temperature 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)
Coil Nut Torque Requirements	4-6 ft-lbs (5.4-8.1 Nm)
Cavity	DELTA 4W
Cavity Form Tool (Finishing)	40500002
Seal Kit	21191214

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DIMENSIONS



ORDERING INFORMATION

DG-S4S

- OPTIONS**
- Buna Standard **00**
 - Viton Standard **V0**
 - Buna, Override **0M**
 - Viton, Override **VM**
 - Buna, Push only override **0P**
 - Viton, Push only override **VP**

- BODIES**
- Blank
 - N** 1/4 NPTF Ports
 - S** #6 SAE Ports

- VOLTAGE**
- 06** 6 VDC
 - 12** 12 VDC
 - 24** 24 VDC
 - 36** 36 VDC
 - 48** 48 VDC
 - 25** 24 VAC
 - 11** 120 VAC
 - 22** 220 VAC
 - 44** 440 VAC

"L" COIL TERMINATION
(All DC Except as Noted)

- DL** Double Lead
- DT** Deutsch on Leads DT04-2P
- ML** Metri-Pack on Leads
- PL** Packard on Leads
- WL** Weatherpack on Leads

- SS** Single Spade
- DS** Double Spade
- HC** DIN 43650 (Hirschman) – (AC & DC)
- CL** Conduit Lead – (AC Only)
- DI** Deutsch – Integral DT04-2P

- IMMERSION PROOF "L" TYPE**
- IA** "I" Coil AMP Superseal - Integral
 - ID** "I" Coil Deutsch – Integral DT04-2P
 - IJ** "I" Coil AMP Jr. Timer - Integral
 - IM** "I" Coil Metri-Pack – Integral

Approximate Coil Weight: .68 lbs. (.31 kg.)

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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