INDEX TO SCREW-IN
DIRECTIONAL CONTROL CARTRIDGE VALVES
(DS 80050-DS 80350)

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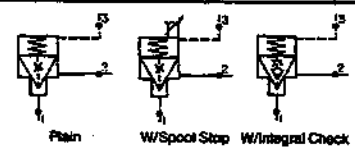
Oilgear

VALVE, SCREW-IN CARTRIDGE

30 USGPM △ 100 PSI
(113,7 LPM △ 6,9 Bar)

HSP803

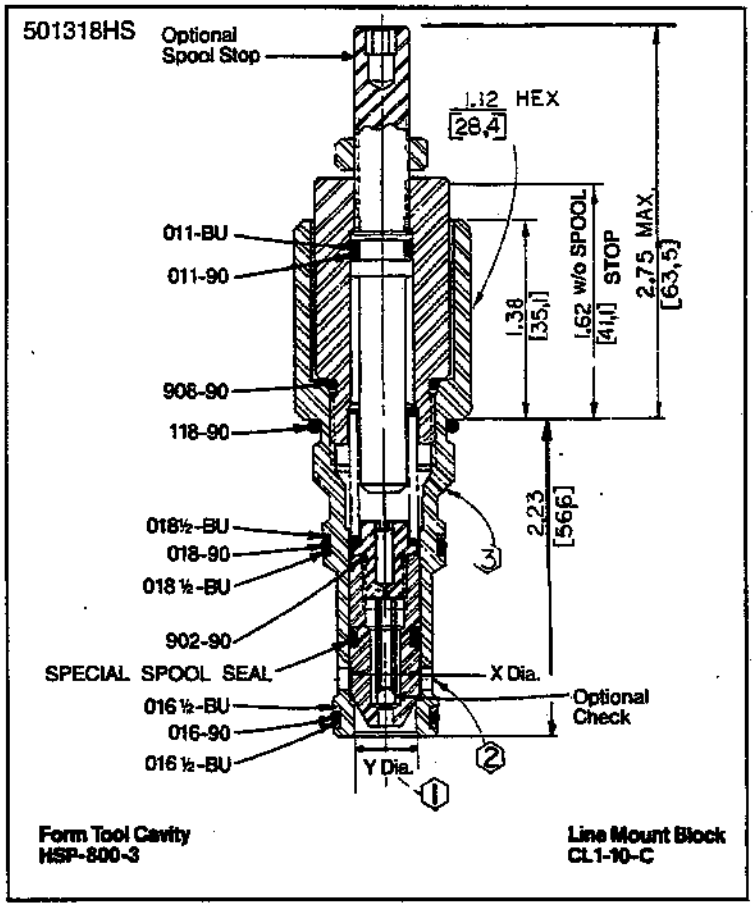
ENGINEERING | 1



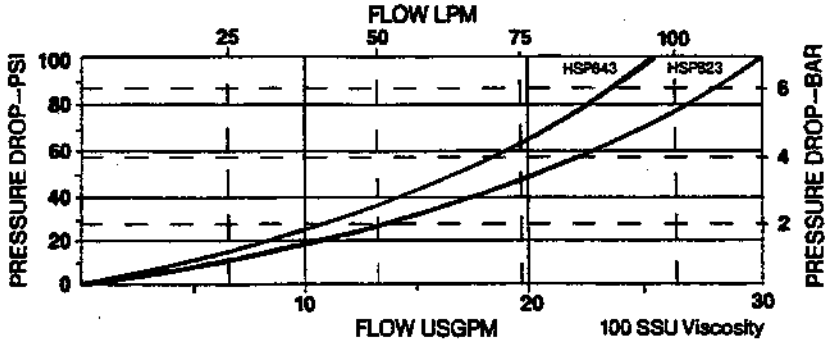
Data Sheet — **Normally Closed Poppet Valve**

Application

The HSP cartridge valve can be used as a pilot operated check valve, directional control valve (one or more cartridges can be used to provide 2-, 3-, and 4-way functions), flow control valve (when used with stroke limiter operation) and as a pressure control valve (when used with appropriate pilot valve).



Performance Curve



Operation

Opening and closing of the valve is a function of force balances on three areas; diameter "X" (port 3), diameter "X-Y" (port 2) and diameter "Y" (port 1). Pressure in ports 1 and 2 acting on respective area "Y" and effective area "X-Y" tend to open the main spool (poppet). Spring force and pressure (when operative) acting on top of main spool close the plunger. NOTE: Orifice in spool allows port 1 pressure to operate on the much larger top area of the spool--thus holding spool in closed position unless vented thru port 3. Also NOTE: orifice is available with integral check valve to prevent flow from port 3, thru the orifice to port 1.

If port 3 is vented and pressure is applied to port 1 (spool is imbalanced) and spool rises to allow flow to port 2. If pressure is applied to port 2 and port 3 is vented, pressure on annular area raises the spool and allows flow to port 1. Closing port 3 vent and or applying pressure at port 3 tends to close poppet valve.

Features

Availability of two (different) ratio poppets (spools) and several springs provides many "cracking" pressure ratios. A spool stop option permits use as flow control valve. The valve is constructed of steel parts, operating parts are hardened and ground as required. Cartridge is designed for easy service or field repair.

Specifications

Ratio (Y to X) HSP823=1:1.25
HSP843=1:1.67

Rated flow
HSP823--0 to 30 USgpm △ 100 psi
(0-113,7 lpm △ 6,9 bar)
HSP843--0 to 25 USgpm △ 100 psi
(0-94,8 lpm △ 6,9 bar)

Maximum operating pressure--
5000 psi (345 bar)

Cracking pressure--See "How To Order"

Pilot displacement--0.04 in.³/m (0.66 cm³/m)

Spool stop turns, full to full 1:1.25=4
1:1.67=2.5

Viscosity range--27-30 SSU at 100°F
35-2000 SSU at 100°F

Seals--Viton

Operating temperature---40°F to 350°F
(-39,6°C to 175°C)

Filtration--Maintain SAE Class 6, ISO 18/15

Seal kit, standard--HSSK-800-F
w/spool seal option - HSSK-800-H

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Reissued: Nov., 1995

DS 80050-C8.1

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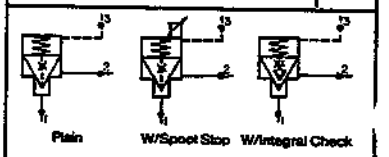
VALVE, SCREW-IN CARTRIDGE

30 USGPM △ 100 PSI
(113,7 LPM △ 6,9 Bar)

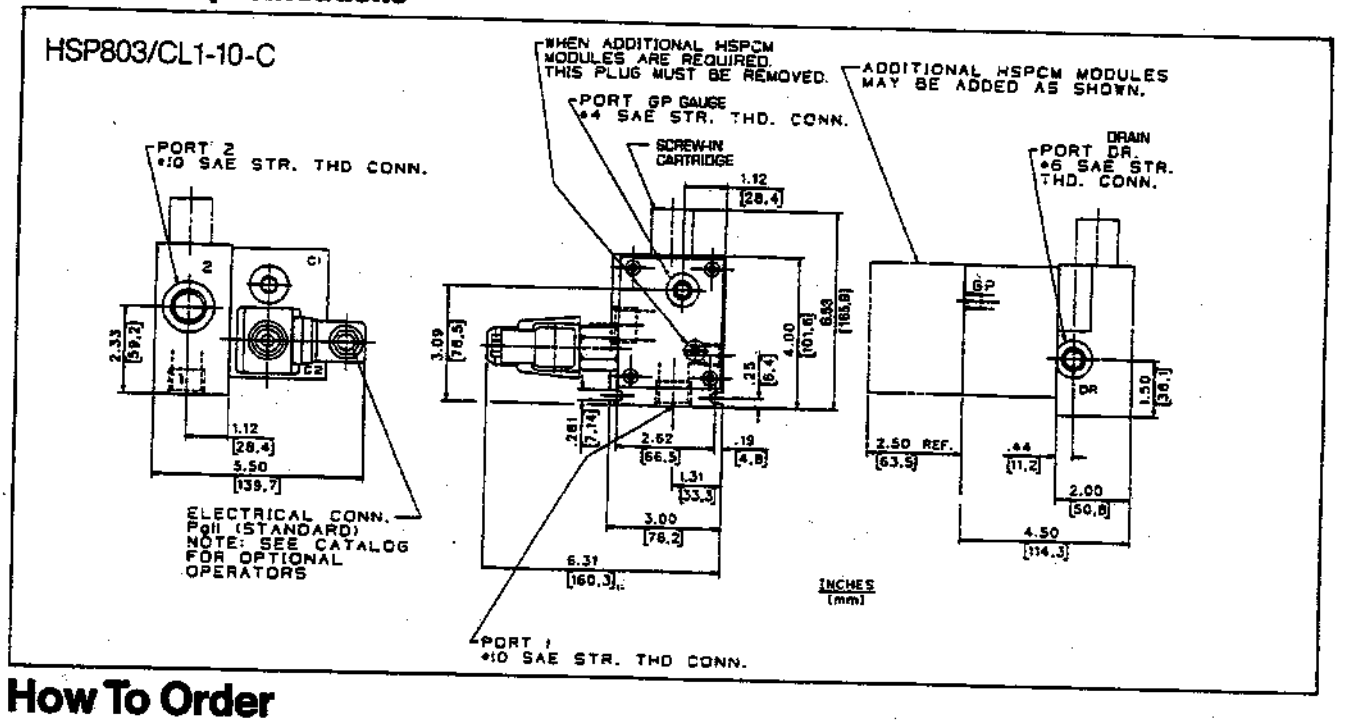
HSP803

ENGINEERING | **2**



Data Sheet — **Normally Closed Poppet Valve**

Line Mount Specifications



How To Order

Screw-In Cartridge Only

HSP8-__-__-__-__

	Orifice Diameter		
	w/o integral check	w/integral check	
0	0.000		
3	0.032	0.032	C3
4	0.040	0.040	C4
5	0.050	0.050	C5
6	0.062	0.062	C6

	Spool Stop & Seals
S	Spool stop
P*	Spool seals
SP*	Spool stop and seal
	Omit if not required

*For springs 1 and 2 only.

	Ratios	Spool diameter (X) & port (Y) area relationship
23	1:1.25	Area of diam. "Y" is 20% less than "X"
43	1:1.67	Area of diam. "Y" is 40% less than "X"

		Cracking Pressure			
		Flow Port 1 to 2		Flow Port 2 to 1	
Spring	Model	psi	bar	psi	bar
1	HSP823	92	6,34	292	20,14
	HSP843	148	10,21	185	12,76
2	HSP823	44	3,03	139	9,59
	HSP843	70	4,83	88	6,07
3	HSP823	15	1,03	48	3,31
	HSP843	25	1,72	31	2,14

Cartridge With Line Mount Block

HSP8-__-__-__-__/CL1-10-C

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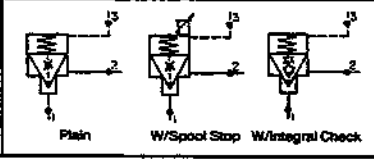
VALVE, SCREW-IN CARTRIDGE

30 USGPM △ 100 PSI
(113,7 LPM △ 6,9 Bar)

HSP803

ENGINEERING | 3



Data Sheet — **Normally Closed Poppet Valve**

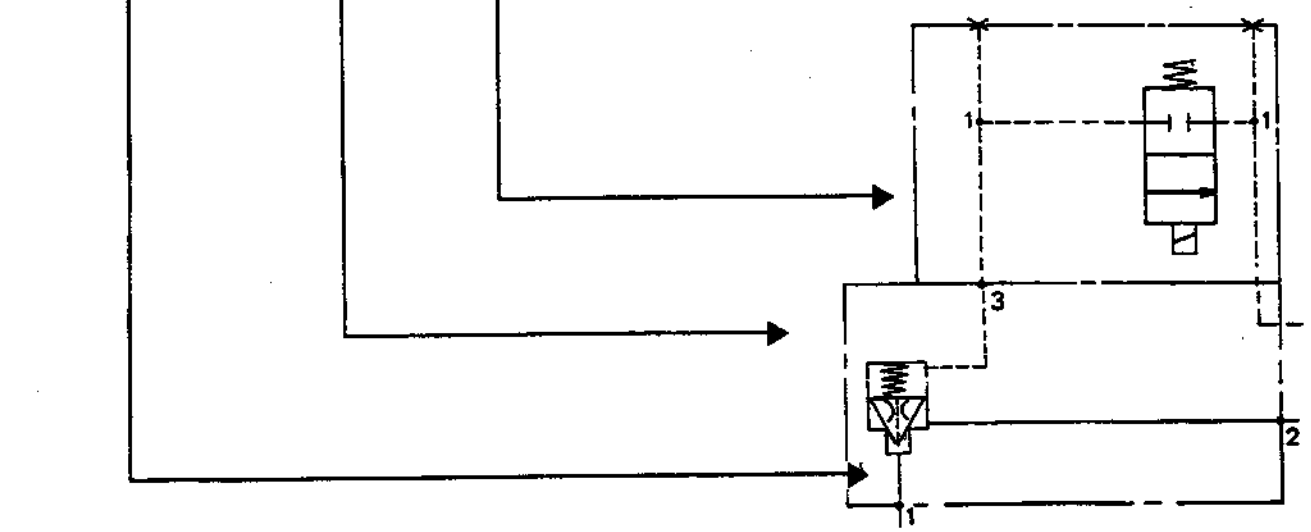
Cartridge Must Have Pilot Control Module

This cartridge valve requires pilot logic to offer added flexibility in providing maximum pressure consistently and smoothly. At least one pilot control module must be added to the valve.

Typical HSP803 How To Order Example

HSP823-C3-1-SP / CL1-10-C / 2-0-S-C

- Cartridge
- Line Mount Block
- Pilot Control Module (PCM) (For detailed information on Pilot Control Modules See DS 85100)



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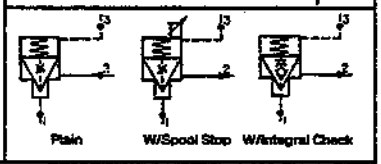
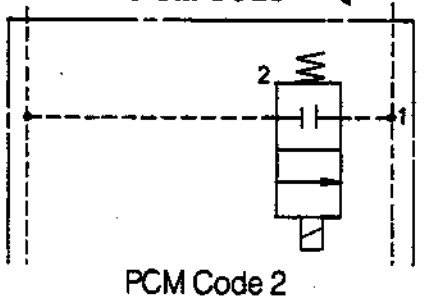


Data Sheet — Normally Closed Poppet Valve

How To Order

Typical PCM How To Order Example: / 2 - 0 S - C

PCM Code



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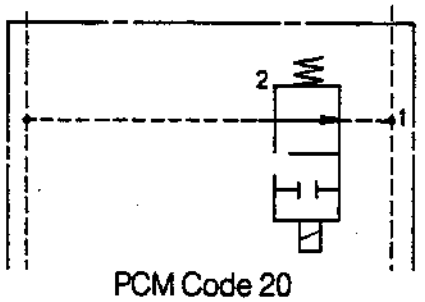

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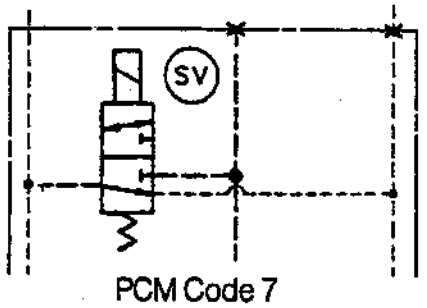
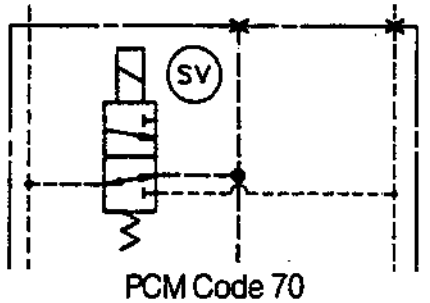


PCM Code 7



PCM Code 70

Solenoid Voltage (if required)
0 = 115 V.A.C./60 HZ. or 110 V.A.C./50 HZ. Solenoid
1 = 230 V.A.C./60 HZ. or 220 V.A.C./50 HZ. Solenoid
2 = 12 V.D.C. Solenoid
3 = 24 V.D.C. Solenoid
Other voltages are available, consult factory

Electrical Connector (if required)
S = Cable connector w/o indicator light (standard)
L = Cable connector with indicator light (115 V.A.C. only)
R = .500 NPTF connector w/o indicator light
W = .500 NPTF connector w/indicator light
C = Three pin Brad Harrison/DIN 43650 connector w/mating plug

Block Material
C = Nodular Iron (standard)

See DS 85100 for additional information on pilot controls.

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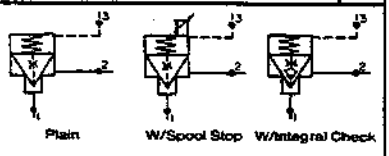
VALVE, SCREW-IN CARTRIDGE

50 USGPM △ 100 PSI
(189,5 LPM △ 6,9 Bar)

HSP1201

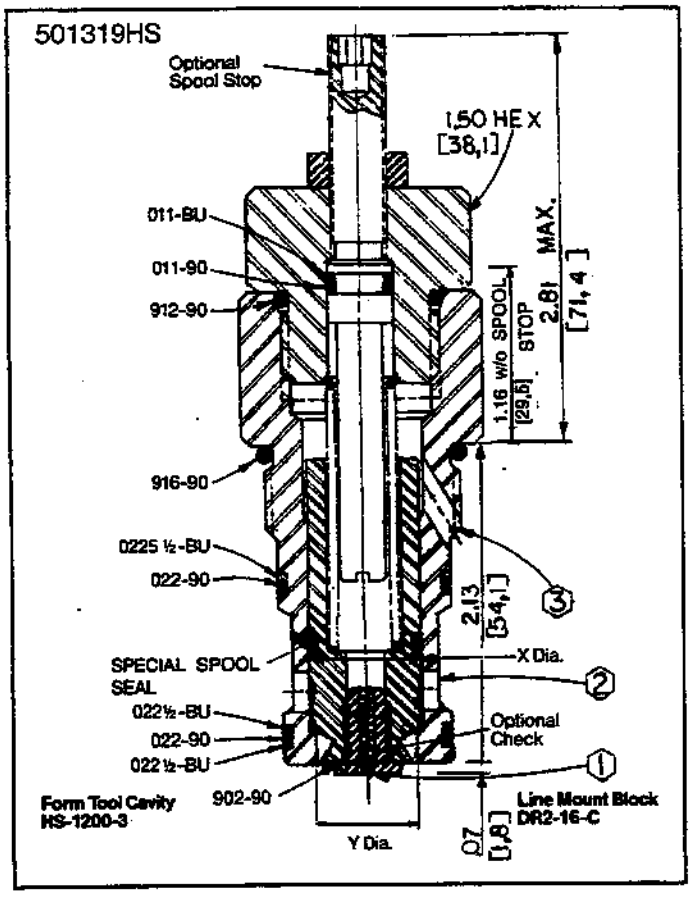
ENGINEERING | 1



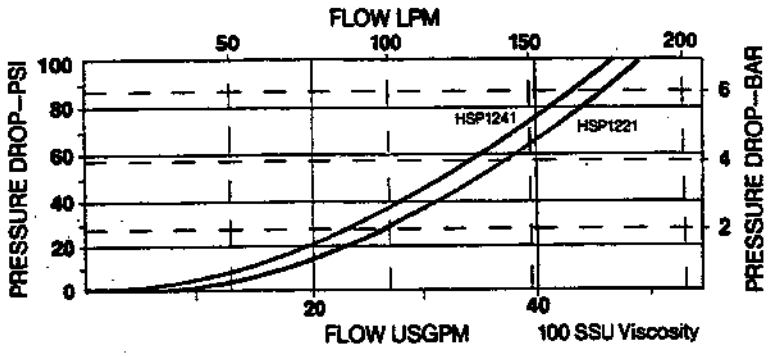
Data Sheet — **Normally Closed Poppet Valve**

Application

The HSP cartridge valve can be used as a pilot operated check valve, directional control valve (one or more cartridges can be used to provide 2-, 3-, and 4-way functions), flow control valve (when used with stroke limiter operation) and as a pressure control valve (when used with appropriate pilot valve).



Performance Curve



Operation

Opening and closing of the valve is a function of force balances on three areas: diameter "X" (port 3), diameter "X-Y" (port 2) and diameter "Y" (port 1). Pressure in ports 1 and 2 acting on respective area "Y" and effective area "X-Y" tend to open the main spool (poppet). Spring force and pressure (when operative) acting on top of main spool close the plunger. NOTE: Orifice in spool allows port 1 pressure to operate on the much larger top area of the spool—thus holding spool in closed position unless vented thru port 3. Also NOTE: orifice is available with integral check valve to prevent flow from port 3, thru the orifice to port 1.

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Features

Availability of two (different) ratio poppets (spools) and several springs provides many "cracking" pressure ratios. A spool stop option permits use as flow control valve. The valve is constructed of steel parts, operating parts are hardened and ground as required. Cartridge is designed for easy service or field repair.

Specifications

Ratio (Y to X) HSP1221=1:1.25
HSP1241=1:1.67

Rated flow
HSP1221—0 to 50 USgpm △ 100 psi
(0-189,5 lpm △ 6,9 bar)
HSP1241—0 to 45 USgpm △ 100 psi
(0-170,6 lpm △ 6,9 bar)

Maximum operating pressure—
5000 psi (345 bar)

Cracking pressure—See "How To Order"

Pilot displacement—0.22 in.³/m (3.61 cm³/m)

Spool stop turns, full to full 1:1.25=11
1:1.67=2,5

Viscosity range—27-30 SSU at 100°F
35-2000 SSU at 100°F

Seals—Viton

Operating temperature—-40°F to 350°F
(-39,6°C to 175°C)

Filtration—Maintain SAE Class 6, ISO 18/15

Seal kit, standard—HSSK-1200-E
w/spool seal option—HSSK-1200-H

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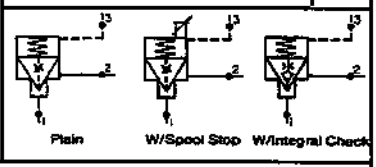
VALVE, SCREW-IN CARTRIDGE

50 USGPM Δ 100 PSI
(189,5 LPM Δ 6,9 Bar)

HSP1201

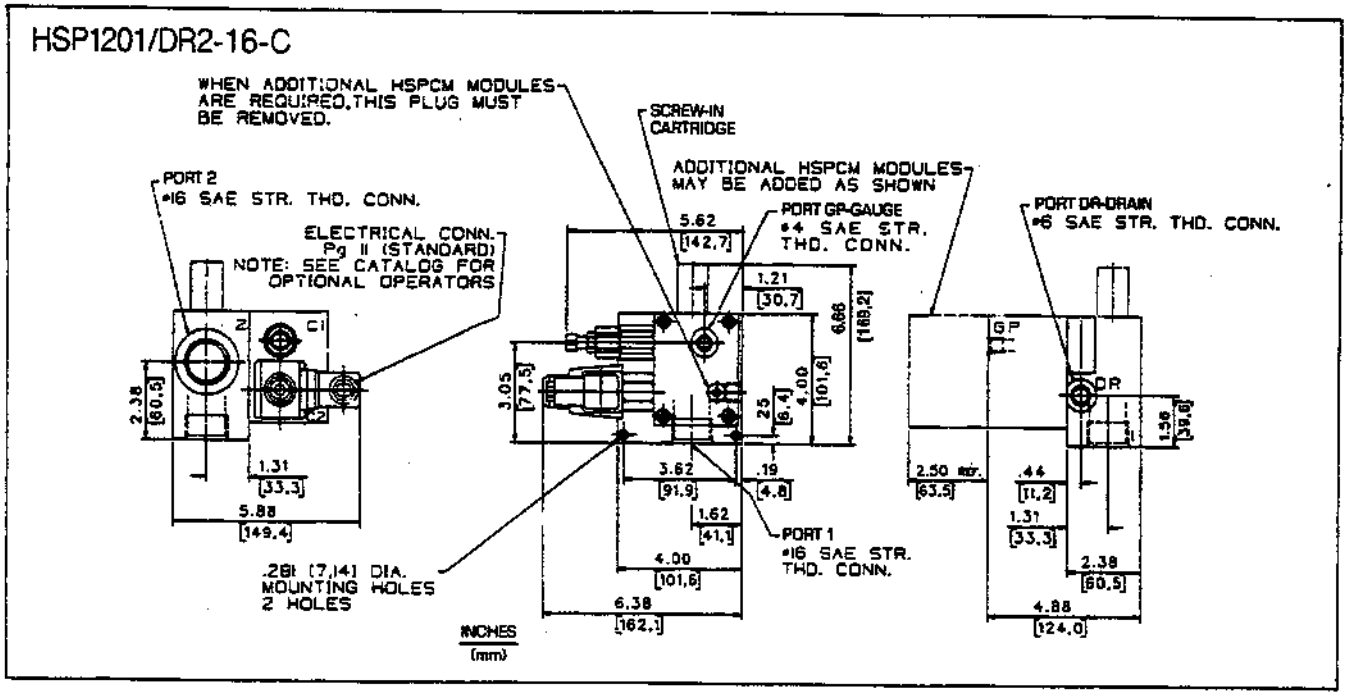
ENGINEERING | 2



Data Sheet — **Normally Closed Poppet Valve**

Line Mount Specifications

HSP1201/DR2-16-C



How To Order

Screw-In Cartridge Only

HSP12__-__-__-__

	Orifice Diameter		
	w/o integral check	w/integral check	
0	0.000		
3	0.032	0.032	C3
4	0.040	0.040	C4
5	0.050	0.050	C5
6	0.062	0.062	C6

	Spool Stop & Seals
S	Spool stop
P*	Spool seals
SP*	Spool stop and seal

*For spring 2 only.

	Ratios	Spool diameter (X) & port (Y) area relationship
21	1:1.25	Area of diam. "Y" is 20% less than "X"
41	1:1.67	Area of diam. "Y" is 40% less than "X"

		Cracking Pressure			
		Flow Port 1 to 2		Flow Port 2 to 1	
Spring	Model	psi	bar	psi	bar
1	HSP1221	14	0,96	55	3,79
	HSP1241	18	1,24	27	1,86
2	HSP1221	36	2,48	142	9,79
	HSP1241	48	3,31	71	4,90

Cartridge With Line Mount Block

HSP12__-__-__-__/DR2-16-C

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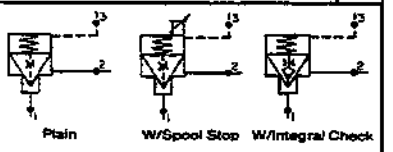
VALVE, SCREW-IN CARTRIDGE

50 USGPM △ 100 PSI
(189,5 LPM △ 6,9 Bar)

HSP1201

ENGINEERING | 3



Data Sheet — **Normally Closed Poppet Valve**

Cartridge Must Have Pilot Control Module

This cartridge valve requires pilot logic to offer added flexibility in providing maximum pressure consistently and smoothly. At least one pilot control module must be added to the valve.

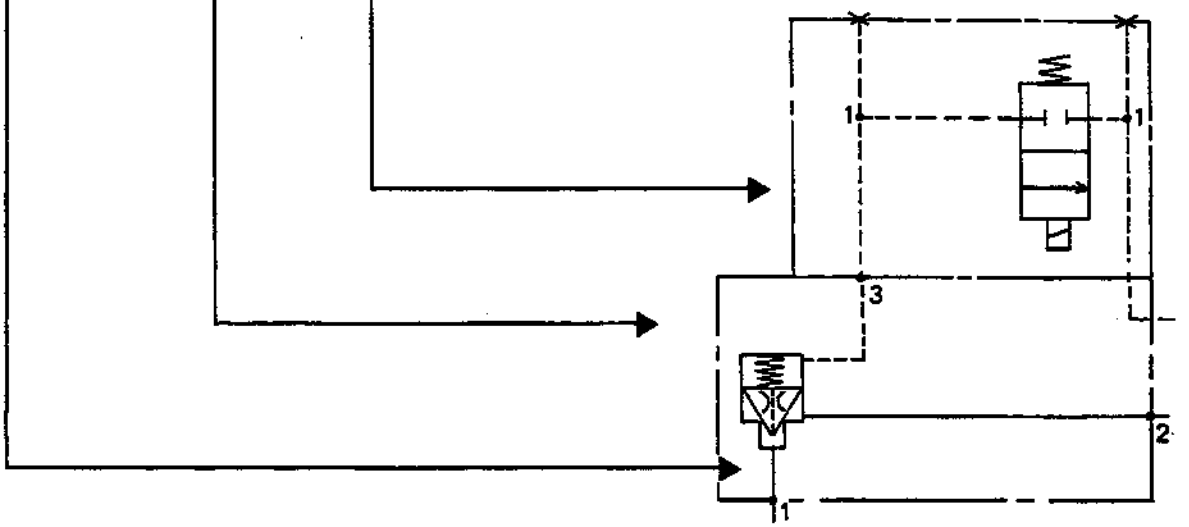
Typical HSP1201 How To Order Example

HSP1221-C3-1-SP / DR2-16-C / 2-0-S-C

Cartridge

Line Mount Block

Pilot Control Module (PCM)
(For detailed information on Pilot Control Modules See DS 85100)



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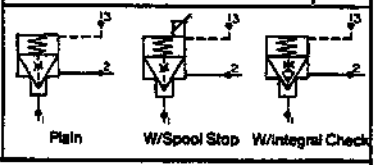
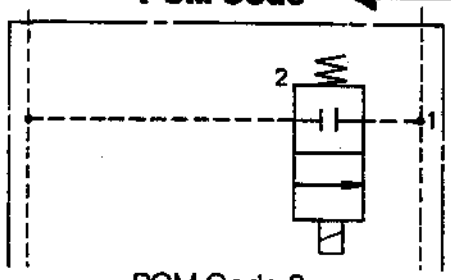


Data Sheet — Normally Closed Poppet Valve

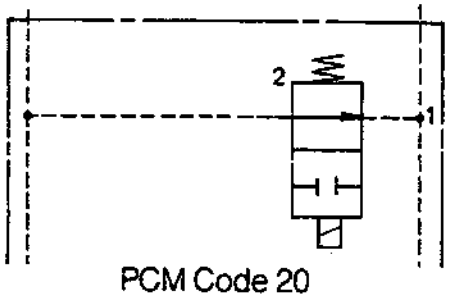
How To Order

Typical PCM How To Order Example: / 2 - 0 S - C

PCM Code



PCM Code 2



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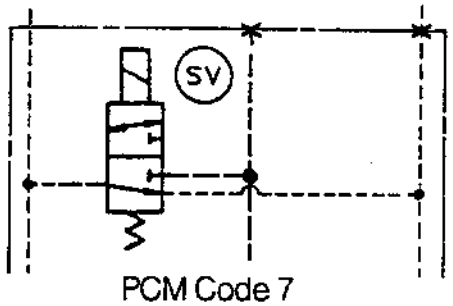

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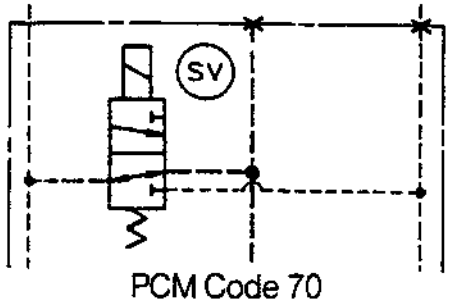

PCM Code 70

Solenoid Voltage (if required)
0 = 115 V.A.C./60 HZ. or 110 V.A.C./50 HZ. Solenoid
1 = 230 V.A.C./60 HZ. or 220 V.A.C./50 HZ. Solenoid
2 = 12 V.D.C. Solenoid
3 = 24 V.D.C. Solenoid
Other voltages are available, consult factory

Electrical Connector (if required)
S = Cable connector w/o indicator light (standard)
L = Cable connector with indicator light (115 V.A.C. only)
R = .500 NPTF connector w/o indicator light
W = .500 NPTF connector w/indicator light
C = Three pin Brad Harrison/DIN 43650 connector w/mating plug

Block Material
C = Nodular Iron (standard)

See DS 85100 for additional information on pilot controls.

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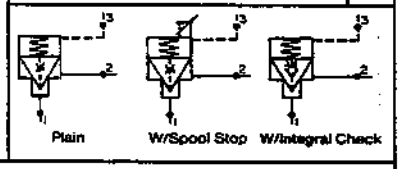
VALVE, SCREW-IN CARTRIDGE

100 USGPM △ 100 PSI
(379,0 LPM △ 6,9 Bar)

HSP1601

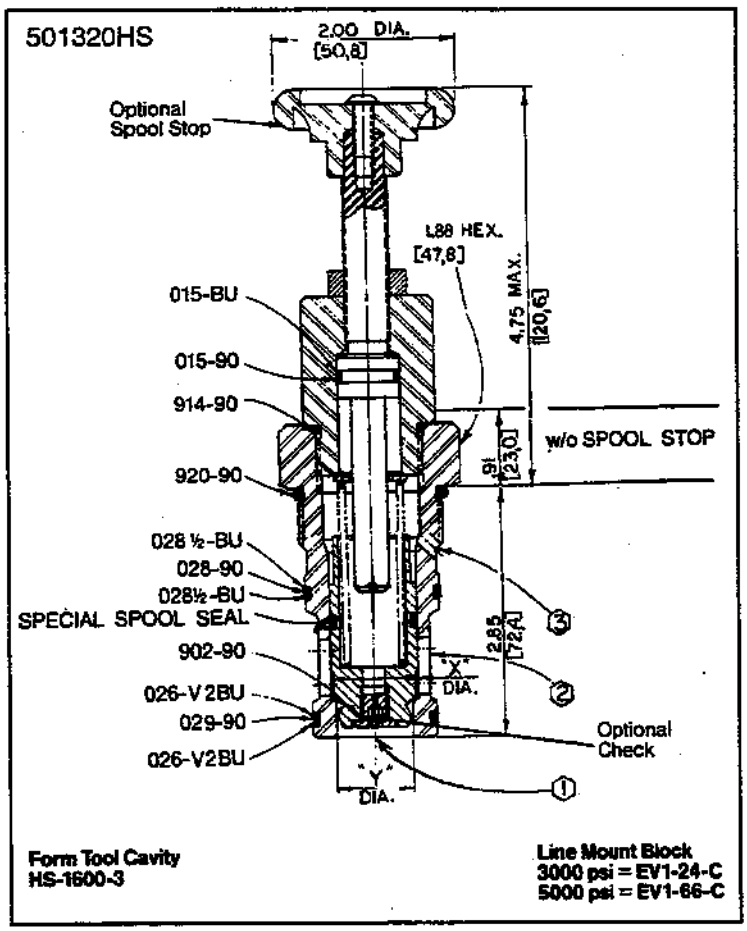
ENGINEERING 1



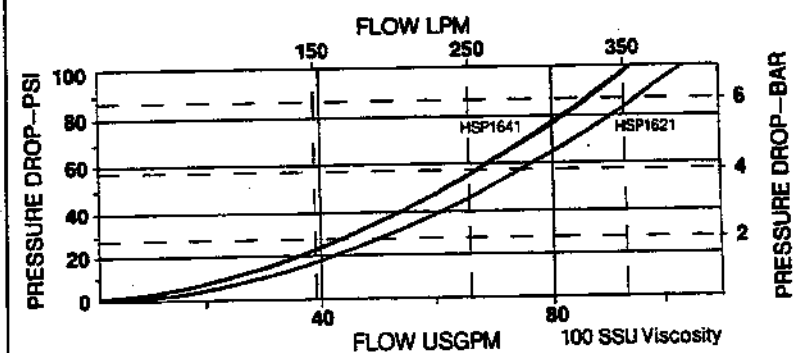
Data Sheet — **Normally Closed Poppet Valve**

Application

The HSP cartridge valve can be used as a pilot operated check valve, directional control valve (one or more cartridges can be used to provide 2-, 3-, and 4-way functions), flow control valve (when used with stroke limiter operation) and as a pressure control valve (when used with appropriate pilot valve).



Performance Curve



Operation

Opening and closing of the valve is a functior of force balances on three areas; diameter "X" (port 3), diameter "X-Y" (port 2) and diameter "Y" (port 1). Pressure in ports 1 and 2 acting on respective area "Y" and effective area "X-Y" tend to open the main spool (poppet). Spring force and pressure (when operative) acting on top of main spool close the plunger. NOTE: Orifice in spool allows port 1 pressure to operate on the much larger top area of the spool—thus holding spool in closed position unless vented thru port 3. Also NOTE: orifice is available with integral check valve to prevent flow from port 3, thru the orifice to port 1.

If port 3 is vented and pressure is applied to port 1 (spool is imbalanced) and spool rises to allow flow to port 2. If pressure is applied to port 2 and port 3 is vented, pressure on annular area raises the spool and allows flow to port 1. Closing port 3 vent and or applying pressure at port 3 tends to close poppet valve.

Features

Availability of two (different) ratio poppets (spools) and several springs provides many "cracking" pressure ratios. A spool stop option permits use as flow control valve. The valve is constructed of steel parts, operating parts are hardened and ground as required. Cartridge is designed for easy service or field repair.

Specifications

Ratio (Y to X) HSP1621=1:1.25
HSP1641=1:1.67
Rated flow
HSP1621—0 to 100 USgpm △ 100 psi
(0-379,0 lpm △ 6,9 bar)
HSP1641—0 to 90 USgpm △ 100 psi
(0-341,1 lpm △ 6,9 bar)
Maximum operating pressure—
5000 psi (345 bar)
Cracking pressure—See "How To Order"
Pilot displacement—0.52 in³/m (8,52 cm³/m)
Spool stop turns, full to full 1:1.25=14
1:1.67=14
Viscosity range—27-30 SSU at 100°F
35-2000 SSU at 100°F
Seals—Viton
Operating temperature—-40°F to 350°F
(-39,6°C to 175°C)
Filtration—Maintain SAE Class 6, ISO 18/15
Seal kit—Standard—HSSK-1600-E
w/spool seal option—HSSK-1200-H

Telephone: (414) 327-1700
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OILGEAR
2300 So. 51st. Street
Milwaukee, WI USA 53219

Reissued: Nov., 1995

DS 80050-C8.3

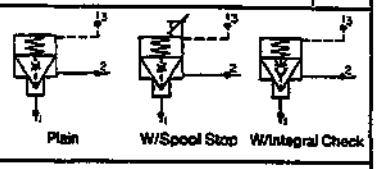
Oilgear

VALVE, SCREW-IN CARTRIDGE

100 USGPM △ 100 PSI
(379,0 LPM △ 6,9 Bar)

HSP1601

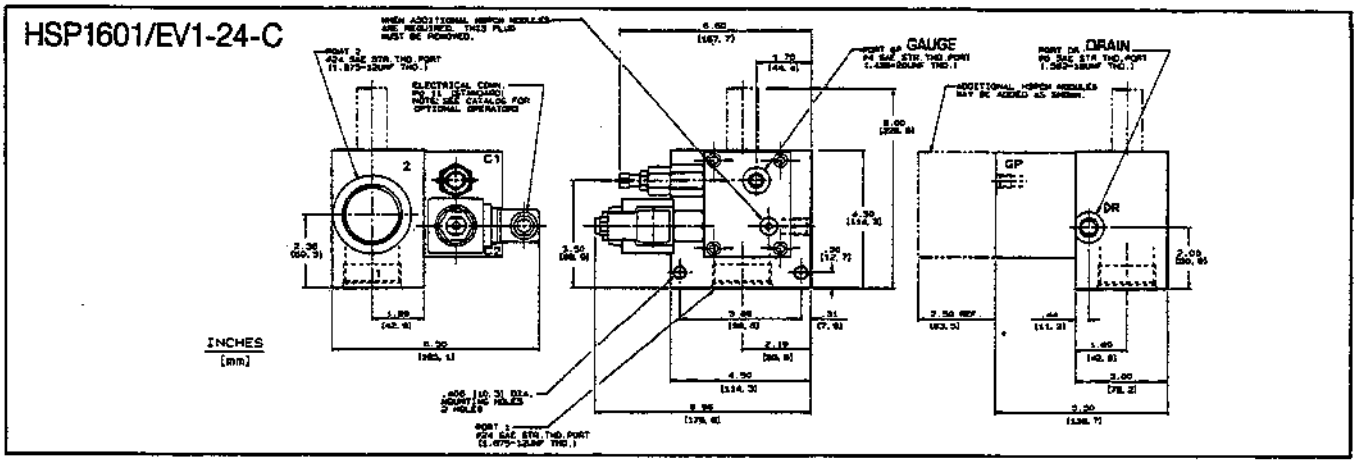
ENGINEERING | **2**



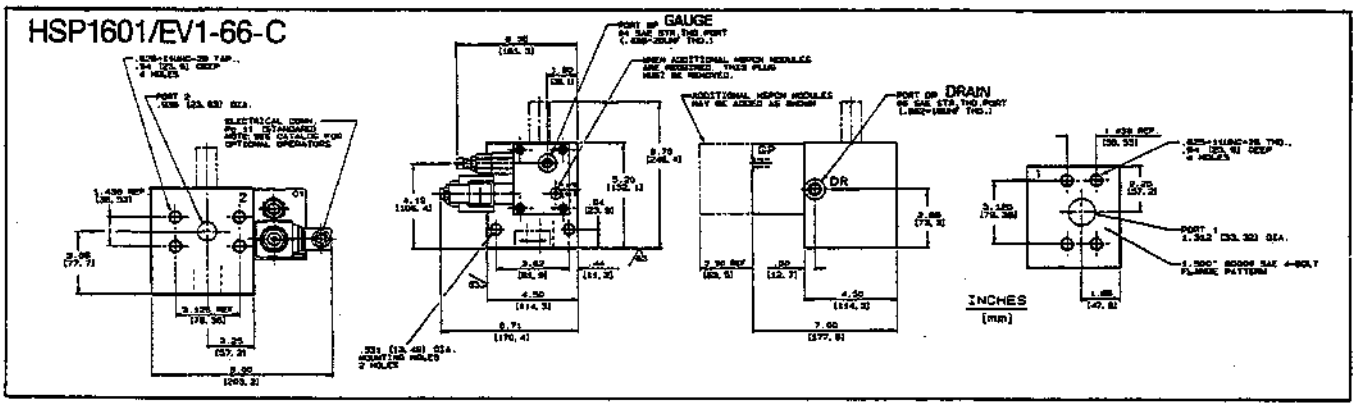
Data Sheet — **Normally Closed Poppet Valve**

Line Mount Specifications

HSP1601/EV1-24-C



HSP1601/EV1-66-C



How To Order

Screw-In Cartridge Only

HSP16__ - __ - __ - __

	Orifice Diameter		
	w/o integral check	w/integral check	
0	0.000		
3	0.032	0.032	C3
4	0.040	0.040	C4
5	0.050	0.050	C5
6	0.062	0.062	C6

	Spool Stop & Seals
S	Spool stop
P*	Spool seals
SP*	Spool stop and seal

*For springs #2 and 3 only.

	Ratios	Spool diameter (X) & port (Y) area relationship
21	1:1.25	Area of diam. "Y" is 20% less than "X"
41	1:1.67	Area of diam. "Y" is 40% less than "X"

		Cracking Pressure			
		Flow Port 1 to 2		Flow Port 2 to 1	
Spring	Model	psi	bar	psi	bar
1	HSP1621	12	0,83	49	3,38
	HSP1641	16	1,10	24	1,66
2 (Std)	HSP1621	28	1,93	115	7,93
	HSP1641	38	2,62	56	3,86
3	HSP1621	49	3,38	204	14,07
	HSP1641	66	4,55	99	6,83

*Use #3 spring for all pressure control functions.

Cartridge With Line Mount Block

3000 psi (207 bar) service pressure
HSP16__-__-__-__/EV1-24-C

5000 psi (345 bar) service pressure
HSP16__-__-__-__/EV1-66-C

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DS 80050-C8.3

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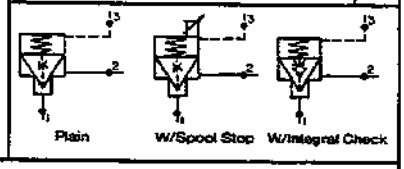
Oilgear

VALVE, SCREW-IN CARTRIDGE

100 USGPM △ 100 PSI
(379,0 LPM △ 6,9 Bar)

HSP1601

ENGINEERING | 3



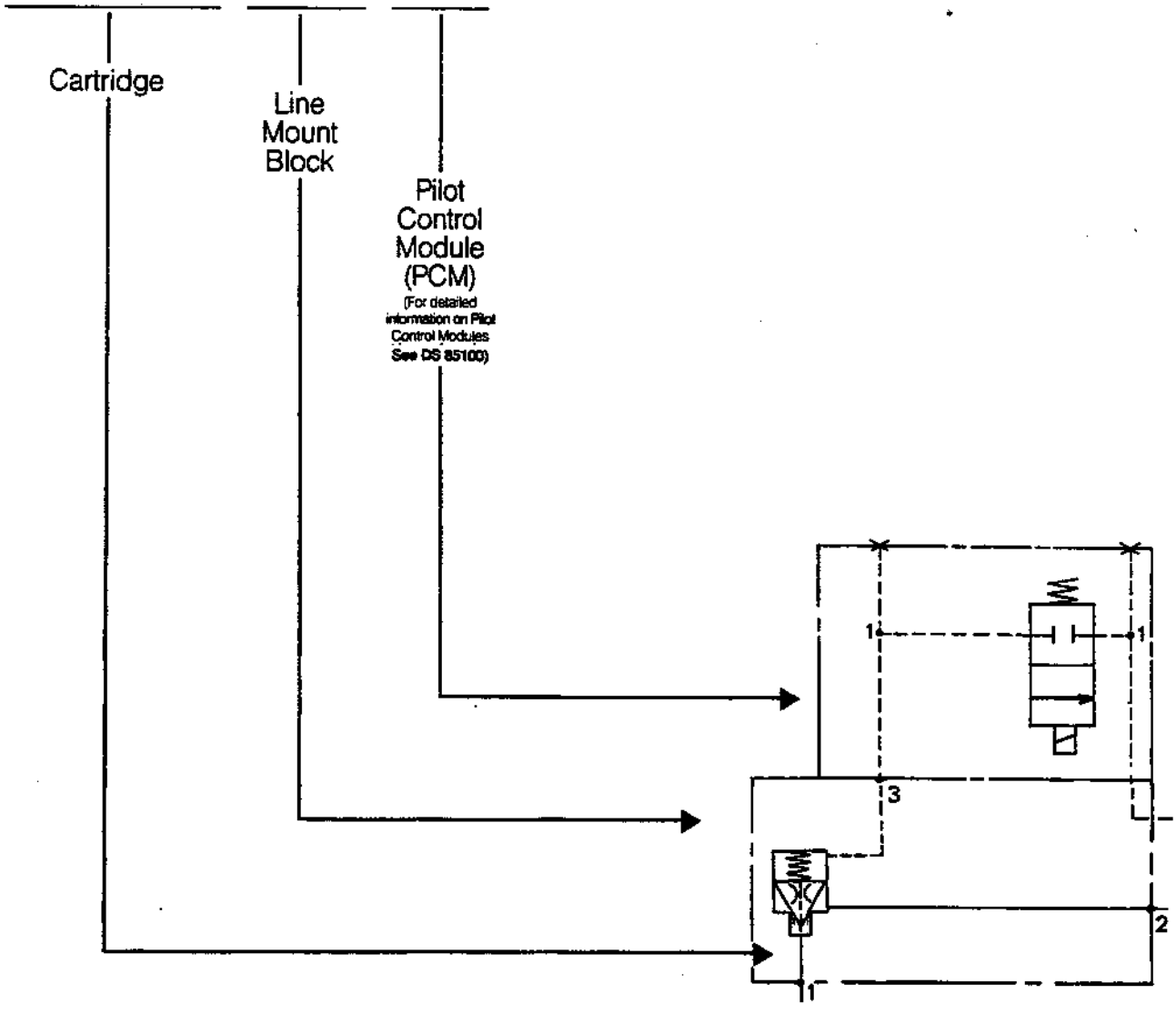
Data Sheet — **Normally Closed Poppet Valve**

Cartridge Must Have Pilot Control Module

This cartridge valve requires pilot logic to offer added flexibility in providing maximum pressure consistently and smoothly. At least one pilot control module must be added to the valve.

Typical HSP1601 How To Order Example

HSP1621-C3-1-S / EV1-24-C / 2-0-S-C



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Reissued: Nov., 1995

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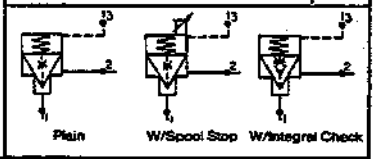
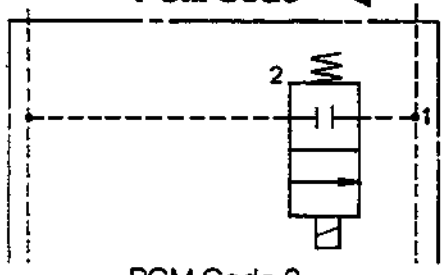


Data Sheet — Normally Closed Poppet Valve

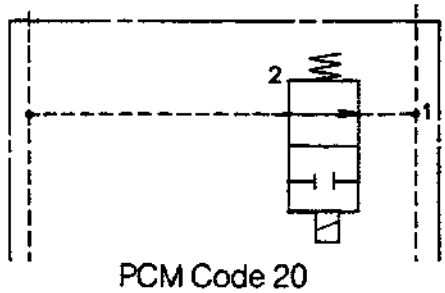
How To Order

Typical PCM How To Order Example: / 2 - 0 S - C

PCM Code



PCM Code 2



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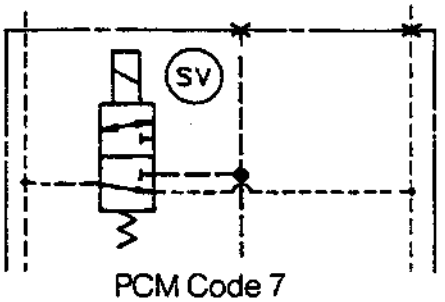

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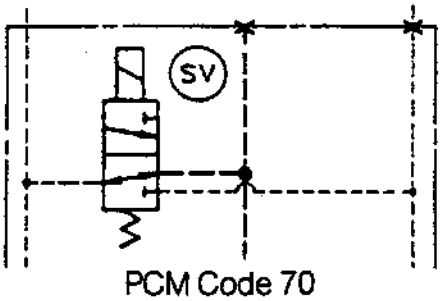

PCM Code 70

Solenoid Voltage (if required)
0 = 115 V.A.C./60 HZ. or 110 V.A.C./50 HZ. Solenoid
1 = 230 V.A.C./60 HZ. or 220 V.A.C./50 HZ. Solenoid
2 = 12 V.D.C. Solenoid
3 = 24 V.D.C. Solenoid
Other voltages are available, consult factory

Electrical Connector (if required)
S = Cable connector w/o indicator light (standard)
L = Cable connector with indicator light (115 V.A.C. only)
R = .500 NPTF connector w/o indicator light
W = .500 NPTF connector w/indicator light
C = Three pin Brad Harrison/DIN 43650 connector w/mating plug

Block Material
C = Nodular Iron (standard)

See DS 85100 for additional information on pilot controls.

OILGEAR
2300 So. 51st. Street
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Telephone: (414) 327-1700
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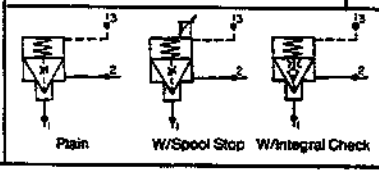
VALVE, SCREW-IN CARTRIDGE

230 USGPM △ 100 PSI
(871,7 LPM △ 6,9 Bar)

HSP2001

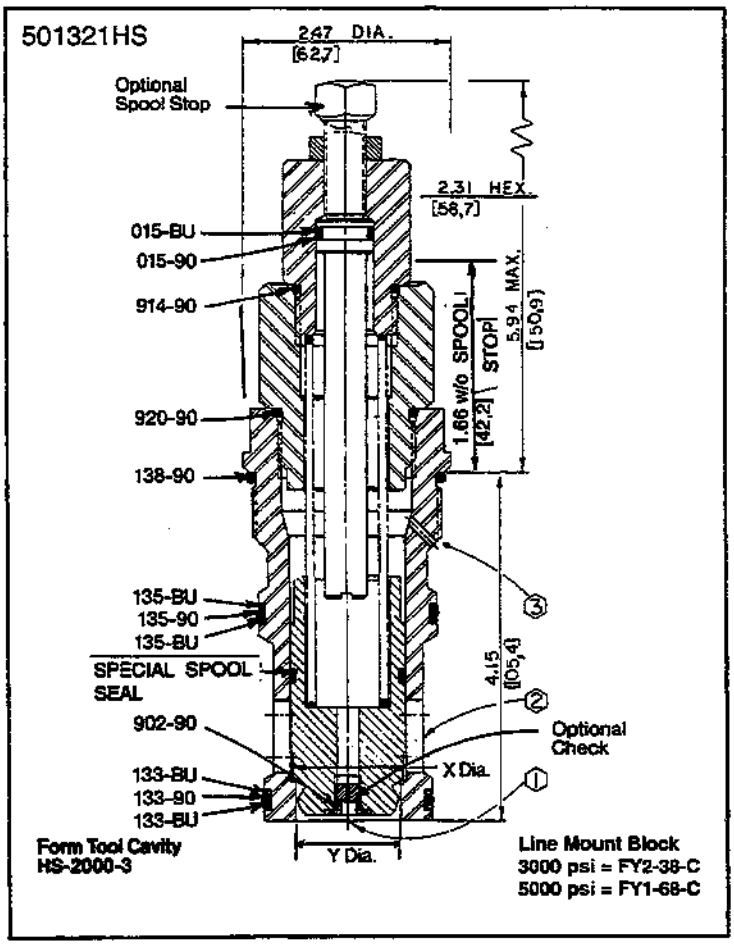
ENGINEERING 1



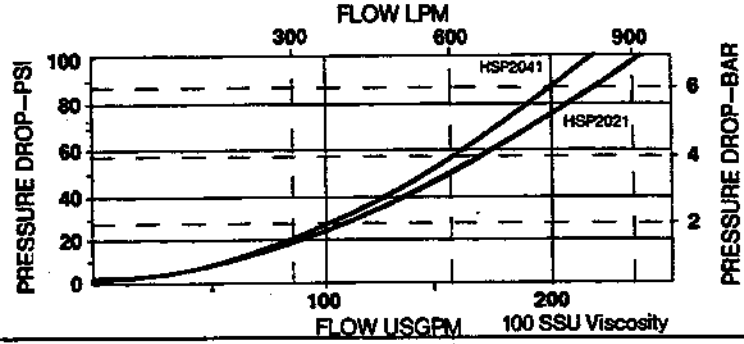
Data Sheet — **Normally Closed Poppet Valve**

Application

The HSP cartridge valve can be used as a pilot operated check valve, directional control valve (one or more cartridges can be used to provide 2-, 3-, and 4-way functions), flow control valve (when used with stroke limiter operation) and as a pressure control valve (when used with appropriate pilot valve).



Performance Curve



Operation

Opening and closing of the valve is a function of force balances on three areas; diameter "X" (port 3), diameter "X-Y" (port 2) and diameter "Y" (port 1). Pressure in ports 1 and 2 acting on respective area "Y" and effective area "X-Y" tend to open the main spool (poppet). Spring force and pressure (when operative) acting on top of main spool close the plunger. NOTE: Orifice in spool allows port 1 pressure to operate on the much larger top area of the spool—thus holding spool in closed position unless vented thru port 3. Also NOTE: orifice is available with integral check valve to prevent flow from port 3, thru the orifice to port 1.

If port 3 is vented and pressure is applied to port 1 (spool is imbalanced) and spool rises to allow flow to port 2. If pressure is applied to port 2 and port 3 is vented, pressure on annular area raises the spool and allows flow to port 1. Closing port 3 vent and or applying pressure at port 3 tends to close poppet valve.

Features

Availability of two (different) ratio poppets (spools) and several springs provides many "cracking" pressure ratios. A spool stop option permits use as flow control valve. The valve is constructed of steel parts, operating parts are hardened and ground as required. Cartridge is designed for easy service or field repair.

Specifications

Ratio (Y to X) HSP2021=1:1.25
HSP2041=1:1.67

Rated flow
HSP2021—0 to 230 USgpm △ 100 psi (0-871,7 lpm △ 6,9 bar)
HSP2041—0 to 210 USgpm △ 100 psi (0-795,9 lpm △ 6,9 bar)

Maximum operating pressure—5000 psi (345 bar)

Cracking pressure—See "How To Order"

Pilot displacement—1.51 in³/m (24,7 cm³/m)

Spool stop turns, full to full 1:1.25=24
1:1.67=27

Viscosity range—27-30 SSU at 100°F
35-2000 SSU at 100°F

Seals—Viton

Operating temperature—-40°F to 350°F (-39,6°C to 175°C)

Filtration—Maintain SAE Class 6, ISO 18/15

Seal kit, standard—HSSK-2000-F
w/spool seal option—HSSK-2000-G

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Reissued: Nov., 1995

DS 80050-C8.5

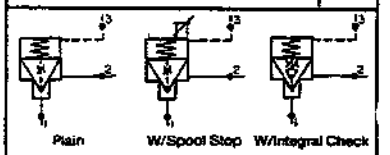
Oilgear

VALVE, SCREW-IN CARTRIDGE

230 USGPM △ 100 PSI
(871,7 LPM △ 6,9 Bar)

HSP2001

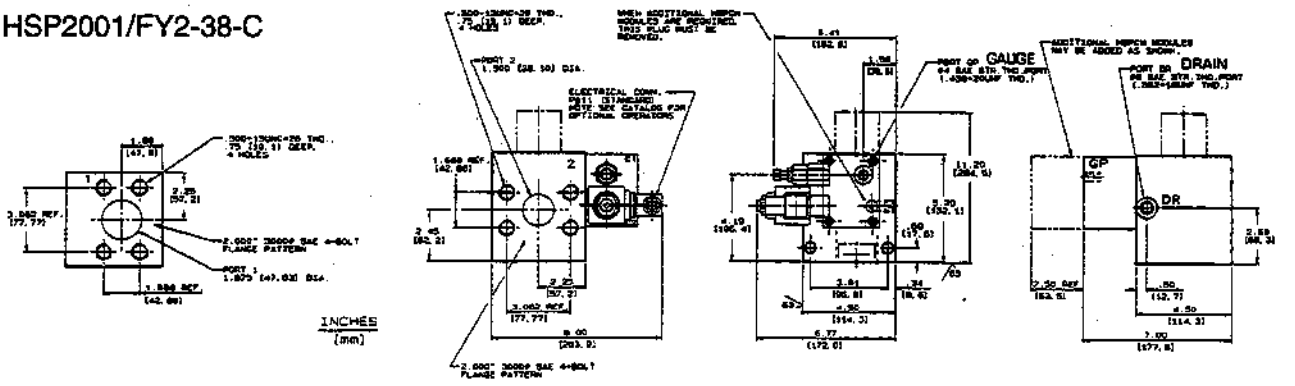
ENGINEERING | **2**



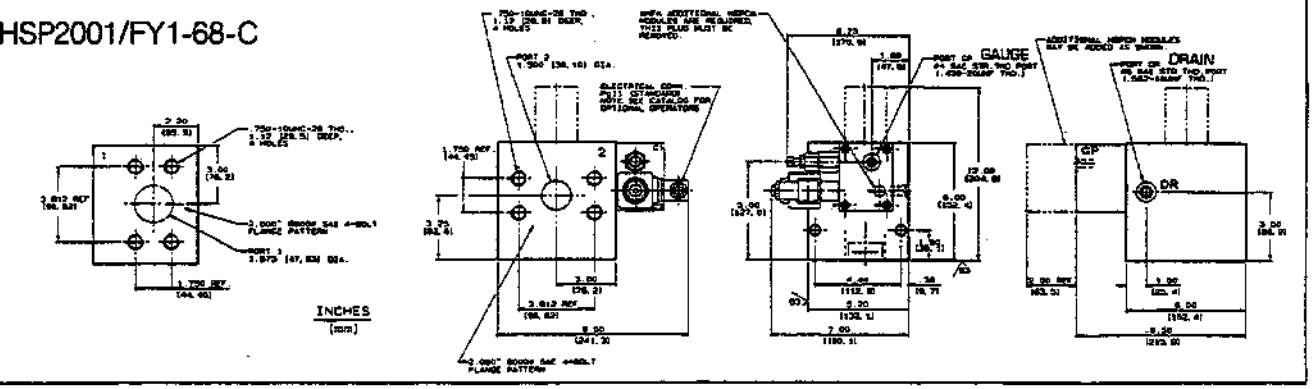
Data Sheet — **Normally Closed Poppet Valve**

Line Mount Specifications

HSP2001/FY2-38-C



HSP2001/FY1-68-C



How To Order

Screw-In Cartridge Only

HSP20__-__-__-__

Orifice Diameter			
	w/o integral check	w/integral check	
0	0.000		
3	0.032	0.032	C3
4	0.040	0.040	C4
5	0.050	0.050	C5
6	0.062	0.062	C6

Spool Stop & Seals	
S	Spool stop
SP	Spool stop and seal

	Ratios	Spool diameter (X) & port (Y) area relationship
21	1:1.25	Area of diam. "Y" is 20% less than "X"
41	1:1.67	Area of diam. "Y" is 40% less than "X"

		Cracking Pressure			
		Flow Port 1 to 2		Flow Port 2 to 1	
Spring	Model	psi	bar	psi	bar
1	HSP2021	7	0,48	30	2,07
	HSP2041	8	0,55	12	0,38
4	HSP2021	47	3,24	214	14,76
	HSP2041	54	3,72	79	5,45
5	HSP2021	72	4,96	327	22,55
	HSP2041	82	5,66	120	8,28
6	HSP2021	163	11,24	742	51,17
	HSP2041	187	12,90	274	18,90

Cartridge With Line Mount Block

3000 psi (207 bar) service pressure
HSP20__-__-__-__/FY2-38-C
5000 psi (345 bar) service pressure
HSP20__-__-__-__/FY1-68-C

Reissued: Nov., 1995
DS 80050-C8.5

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Milwaukee, WI USA 53219

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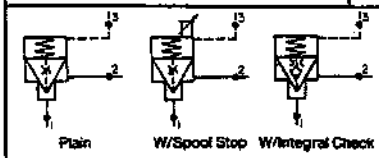
Oilgear

VALVE, SCREW-IN CARTRIDGE

230 USGPM Δ 100 PSI
(871,7 LPM Δ 6,9 Bar)

HSP2001

ENGINEERING | 3



Data Sheet — **Normally Closed Poppet Valve**

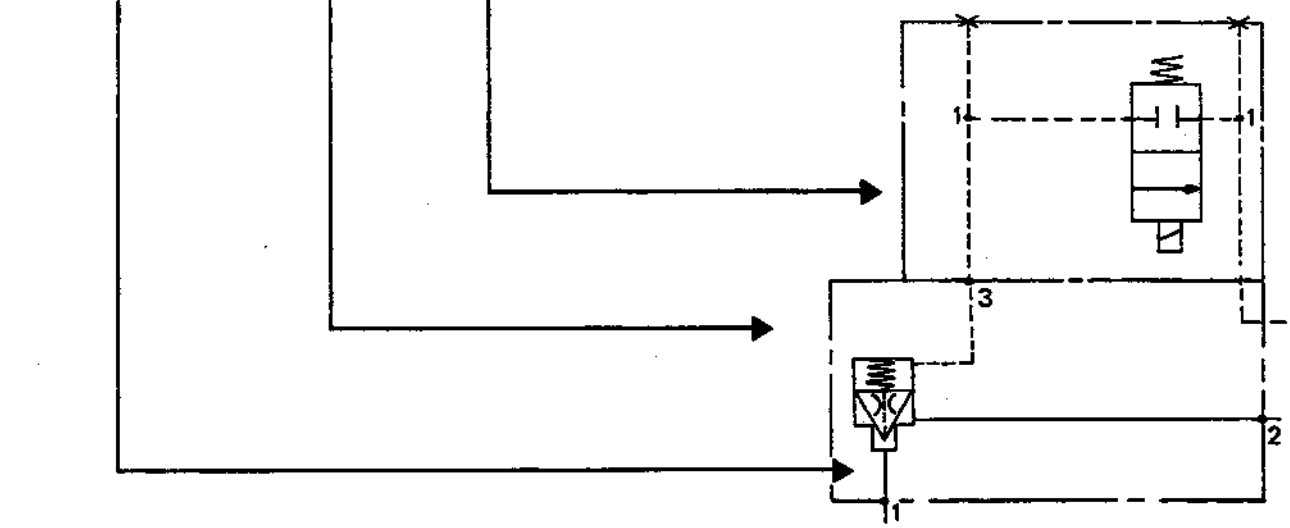
Cartridge Must Have Pilot Control Module

This cartridge valve requires pilot logic to offer added flexibility in providing maximum pressure consistently and smoothly. At least one pilot control module must be added to the valve.

Typical HSP2001 How To Order Example

HSP2021-C3-1-S / FY2-38-C / 2-0-S-C

- Cartridge
- Line Mount Block
- Pilot Control Module (PCM) (For detailed information on Pilot Control Modules See DS 86100)



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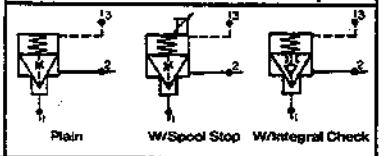
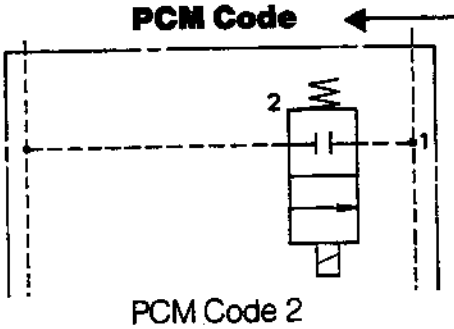


Data Sheet — Normally Closed Poppet Valve

How To Order

Typical PCM How To Order Example: / 2 - 0 - S - C

PCM Code



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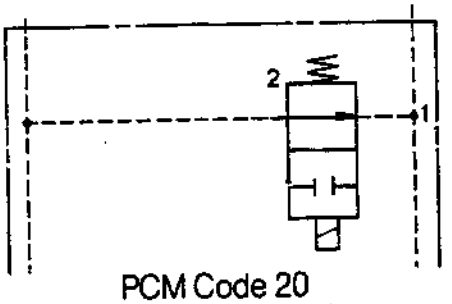

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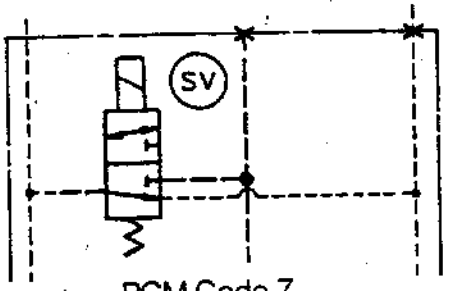

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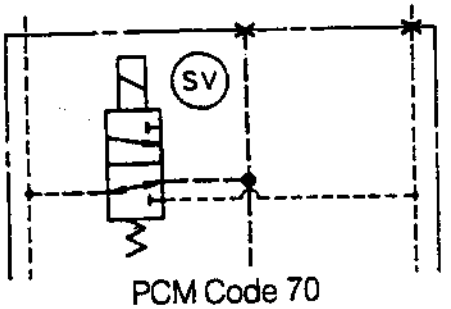

PCM Code 70

Solenoid Voltage (if required)
0 = 115 V.A.C./60 HZ. or 110 V.A.C./50 HZ. Solenoid
1 = 230 V.A.C./60 HZ. or 220 V.A.C./50 HZ. Solenoid
2 = 12 V.D.C. Solenoid
3 = 24 V.D.C. Solenoid
Other voltages are available, consult factory

Electrical Connector (if required)
S = Cable connector w/o indicator light (standard)
L = Cable connector with indicator light (115 V.A.C. only)
R = .500 NPTF connector w/o indicator light
W = .500 NPTF connector w/indicator light
C = Three pin Brad Harrison/DIN 43650 connector w/mating plug

Block Material
C = Nodular Iron (standard)

See DS 85100 for additional information on pilot controls.

OILGEAR
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Milwaukee, WI USA 53219

Telephone: (414) 327-1700
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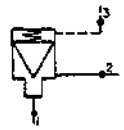
VALVE, SCREW-IN CARTRIDGE

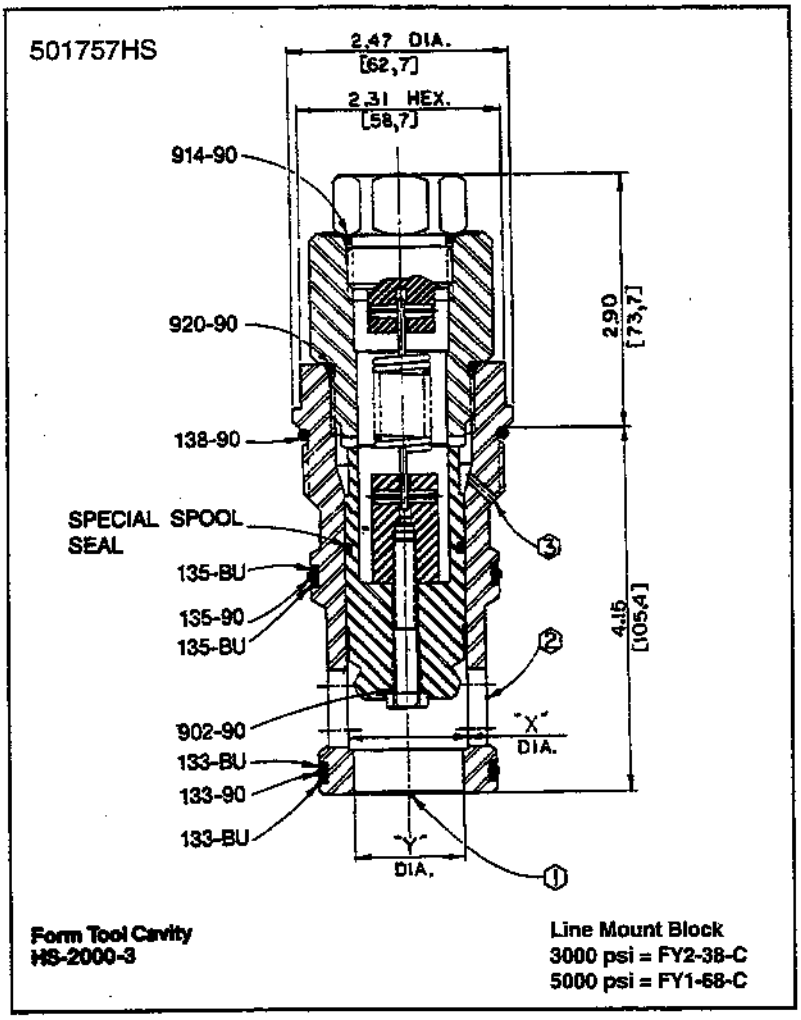
230 USGPM Δ 100 PSI
(871,7 LPM Δ 6,9 Bar)

HSPO2001

ENGINEERING | 1



Data Sheet — Normally Open Poppet Valve



Application

The HSPO normally open cartridge type poppet valve can be used as a pilot operated check valve, a directional control valve (one or more cartridges can be used to provide 2-, 3-, and 4-way functions), or a prefill valve.

Operation

The main spool (poppet) is held open by tensions hook type spring suspended between the bonnet and the spool. Opening and closing of the valve is a function of force balance in three areas: diameter "X" (port 3), diameter "X-Y" (port 2) and diameter "Y" (port 1). Pilot pressure acting on top of main spool tends to close the poppet. NOTE: Port 1 and 2 areas are smaller than 3 but if higher pressure is present at those ports it may cause the poppet to open.

Features

Availability of two (different) ratio poppets (spools) and springs provides a variety of closing/cracking (opening) ratios. The valve is constructed of steel parts, operating parts are hardened and ground as required. Cartridge is designed for easy service or field repair.

Specifications

Ratio (Y to X) HSPO2021=1:1.25
HSPO2041=1:1.67

Rated flow,
HSPO2021—0 to 230 USgpm Δ 100 psi (0 to 871,7 lpm Δ 6,9 bar)
HSPO2041—0 to 210 USgpm Δ 100 psi (0-795,9 lpm Δ 6,9 bar)

Maximum operating pressure—5000 psi (345 bar)

Closing pilot pressure—See "How To Order"

Pilot displacement—1.51 in.³/m (24,7 cm³/m)

Viscosity range—27-30 SSU at 100°F
35-2000 SSU at 100°F

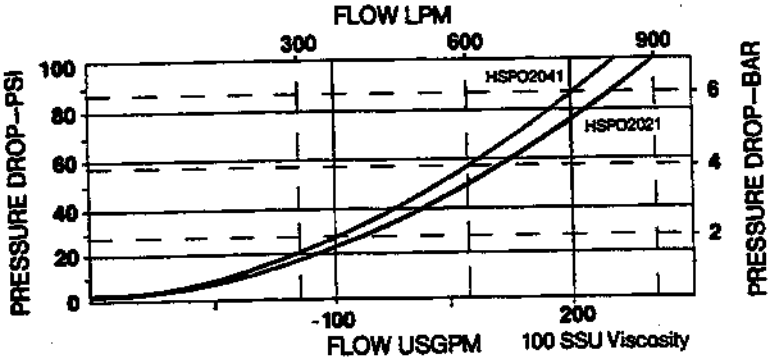
Seals—Viton

Operating temperature—-40°F to 350°F (-39,6°C to 175°C)

Filtration—Maintain SAE Class 6, ISO 18/15

Seal kit, standard—HSSK-2000-F
w/spool seal option—HSSK-2000-G

Performance Curve



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OILGEAR
2300 So. 51st. Street
Milwaukee, WI USA 53219

Reissued: Nov., 1995

DS 80051-C8.6

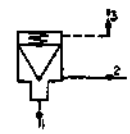
Oilgear

VALVE, SCREW-IN CARTRIDGE

230 USGPM △ 100 PSI
(871,7 LPM △ 6,9 Bar)

HSPO2001

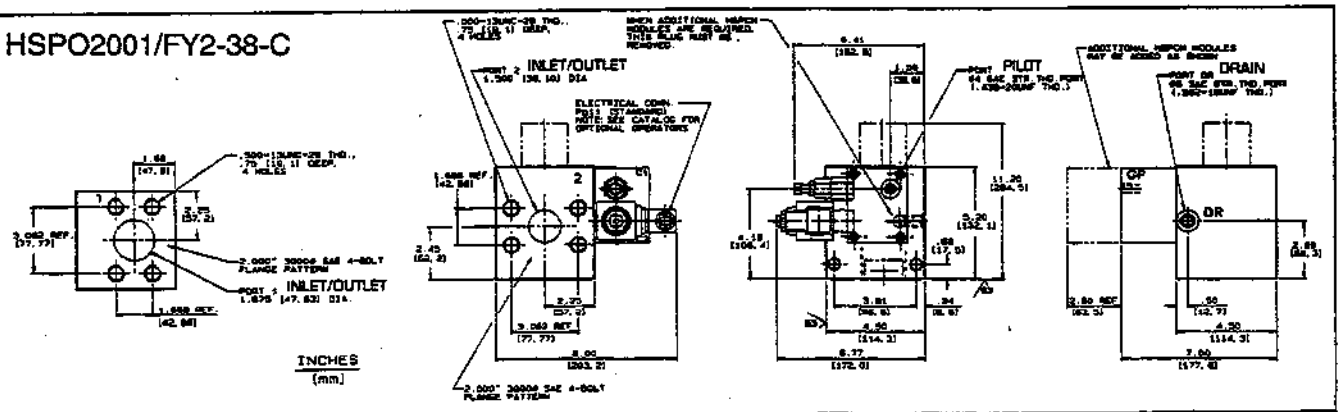
ENGINEERING | 2



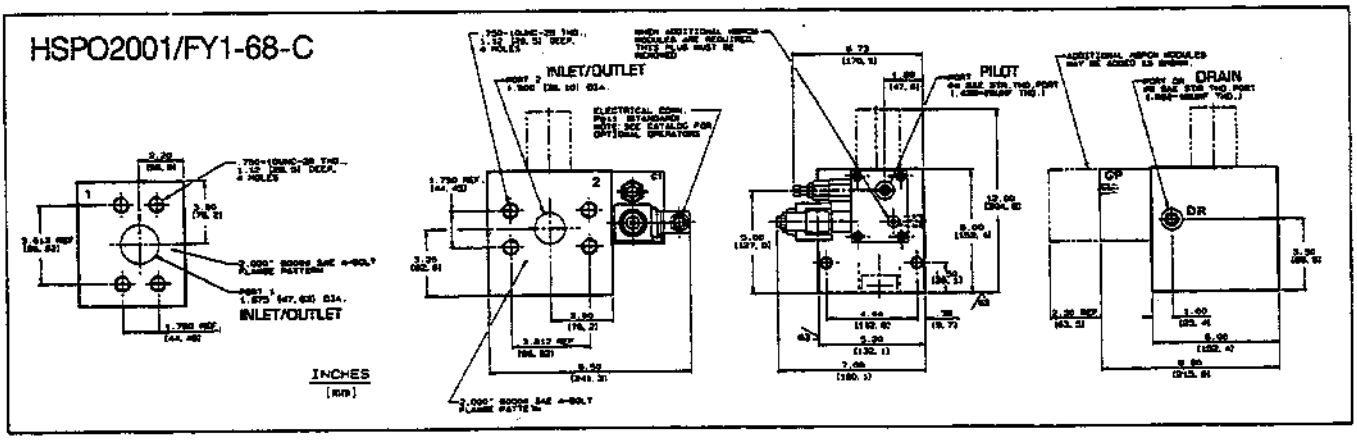
Data Sheet — Normally Open Poppet Valve

Line Mount Specifications

HSPO2001/FY2-38-C



HSPO2001/FY1-68-C



How To Order

Screw-In Cartridge Only

HSPO20__ - __ - __

	Spool Seals
Blank	Not required
P*	Spool seals

	Ratios	Spool diameter (X) & port (Y) area relationship
21	1:1.25	Area of diam. "Y" is 20% less than "X"
41	1:1.67	Area of diam. "Y" is 40% less than "X"

	Spring & Sealing Pressure (Minimum pilot pressure at port 3 to close)	
	psi	bar
1	14	0,97
2*	32	2,2

*Optional spool seals available with 32 psi (2,2 bar) spring only.

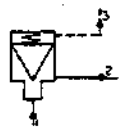
Cartridge With Line Mount Block

3000 psi (207 bar) service pressure
HSPO__-__/FY2-38-C
5000 psi (345 bar) service pressure
HSPO__-__-__/FY1-68-C

Reissued: Nov., 1995
DS 80051-C8.6

OILGEAR
2300 So. 51st. Street
Milwaukee, WI USA 53219

Telephone: (414) 327-1700
Fax: (414) 327-0532



Data Sheet — Normally Open Poppet Valve

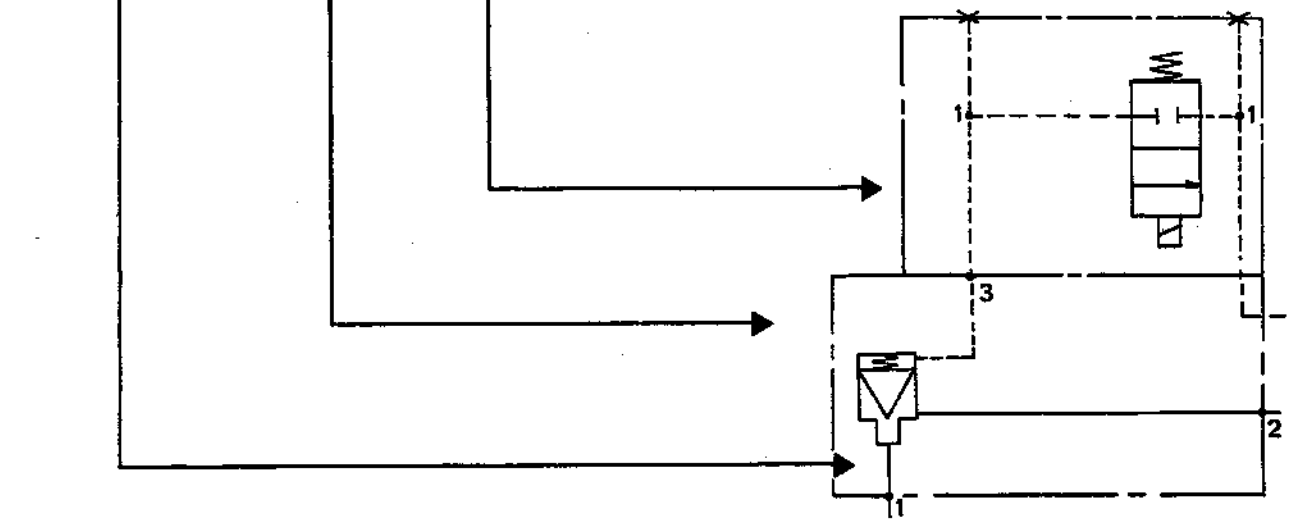
Cartridge Must Have Pilot Control Module

This cartridge valve requires pilot logic to offer added flexibility in providing maximum pressure consistently and smoothly. At least one pilot control module must be added to the valve.

Typical HSPO2001 How To Order Example

HSPO2021-2-P / FY2-38-C/ 2-0-S-C

- HSPO2021-2-P — Cartridge
- FY2-38-C — Line Mount Block
- 2-0-S-C — Pilot Control Module (PCM) (For detailed information on Pilot Control Modules See DS 85100)



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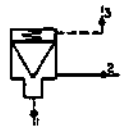
Reissued: Nov., 1995

DS 80051-C8.6

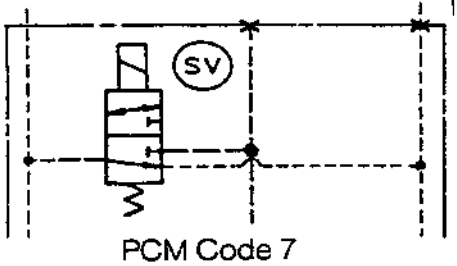


Data Sheet — Normally Open Poppet Valve

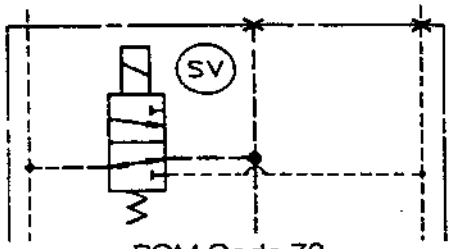
How To Order

Typical PCM How To Order Example: /20- 0 - S - C

PCM Code
PCM Code 20



PCM Code 7



PCM Code 70

Solenoid Voltage (if required)
0 = 115 V.A.C./60 HZ. or 110 V.A.C./50 HZ. Solenoid
1 = 230 V.A.C./60 HZ. or 220 V.A.C./50 HZ. Solenoid
2 = 12 V.D.C. Solenoid
3 = 24 V.D.C. Solenoid
Other voltages are available, consult factory

Electrical Connector (if required)
S = Cable connector w/o indicator light (standard)
L = Cable connector with indicator light (115 V.A.C. only)
R = .500 NPTF connector w/o indicator light
W = .500 NPTF connector w/indicator light
C = Three pin Brad Harrison/DIN 43650 connector w/mating plug

Block Material
C = Nodular iron (standard)

See DS 85100 for additional information on pilot controls.

OILGEAR
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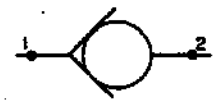
VALVE, SCREW-IN CARTRIDGE

15 USGPM △ 100 PSI
(56,9 LPM △ 6,9 Bar)

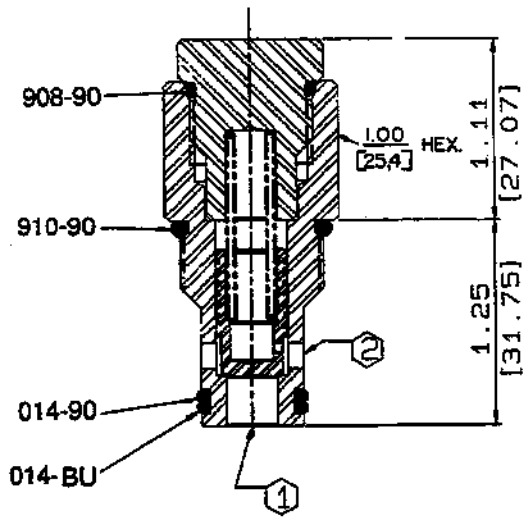
HSC601-P

ENGINEERING | 1



Data Sheet — **Check Valve**

400920HS



Form Tool Cavity
HS-600-2

Line Mount Block
BB1-08-C

Application

The HSC cartridge type check valve allows flow in one direction but prevents flow in the other. Several "cracking pressures" springs are available to regulate the pressure at which flow starts. The valve can be used to separate portions of a circuit, or with a sequence valve to provide a counterbalance function.

Operation

Pressure at port 1 forces the poppet off the seat and compresses the spring to allow flow to port 2. Reverse flow (from port 2) or a higher differential pressure, works on top of the poppet and forces it against the seat to stop flow.

Features

Several springs are offered for regulating the cracking pressure. The valve is constructed of steel parts, operating parts are hardened and ground as required. Cartridge is designed for easy service or field repair.

Specifications

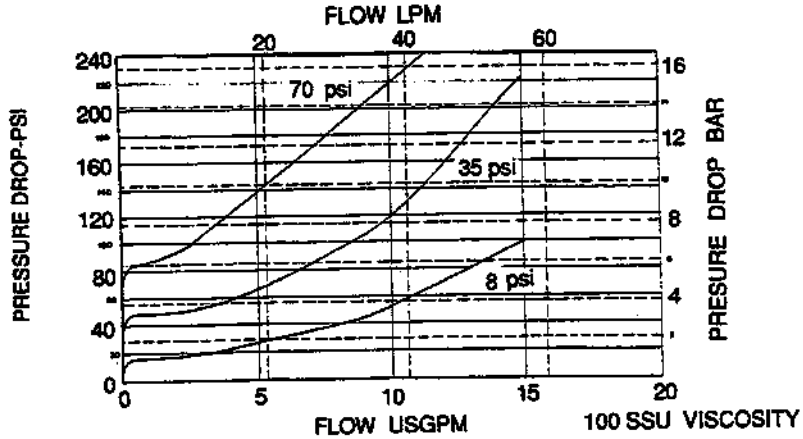
Nominal flow

8 psi cracking pressure	(15 gpm at 100 psi) (56,9 lpm at 6,9 bar)
35 psi cracking pressure	(15 gpm at 225 psi) (56,9 lpm at 15,5 bar)
70 psi cracking pressure	(15 gpm at 300 psi) (56,9 lpm at 207 bar)

Maximum operating pressure - 5000 psi (345 bar)
Maximum leakage at rated pressure -- 1 drop per minute
Viscosity Range - 27 -30 SSU at 100° F
35-2000 SSU at 100° F
Seals - Viton
Operating temperature - (-40° F to 350°F)
(-39,6° C to 175°C)

Filtration - Maintain SAE class 6, ISO 18/15
Seal Kit - HSSK-600-AC

Performance Curve



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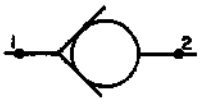
Reissued: Nov., 1995

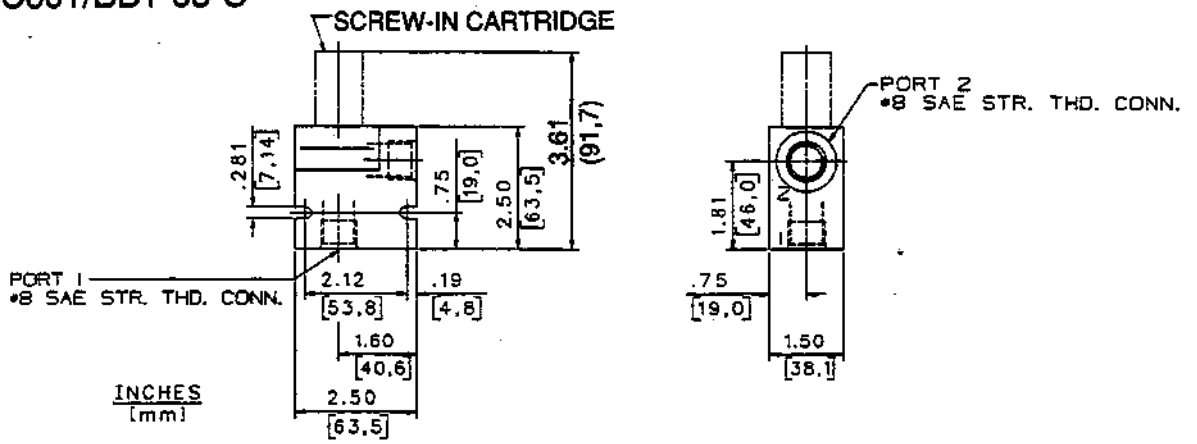
DS 80060-C9.1



Data Sheet — Check Valve

Line Mounted Specifications

HSC601/BB1-08-C



How To Order

Screw-in Cartridge Only

HSC601-P-

	Cracking Pressure	
	psi	bar
Blank	8	0,6
35	35	2,4
70	70	4,8

Cartridge With Line Mount Block

HSC601-P- /BB1-08-C

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Milwaukee, WI USA 53219

Telephone: (414) 327-1700
Fax: (414) 327-0532

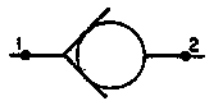
Oilgear

VALVE, SCREW-IN CARTRIDGE

35 USGPM △ 100 PSI
(132,5 LPM △ 6,9 Bar)

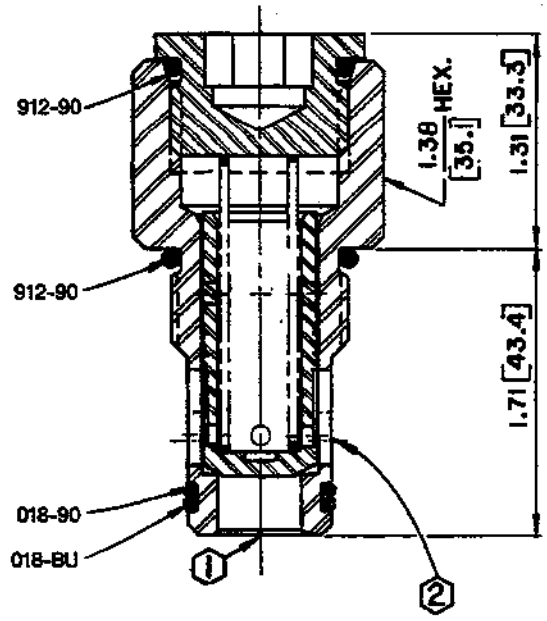
HSC803

ENGINEERING | 1



Data Sheet — **Check Valve**

400537HS



Form Tool Cavity
HS-800-2

Line Mount Block
CE1-10-C

Application

The HSC cartridge type check valve allows free flow in one direction but prevents flow in the other. It can be used to separate portions of a circuit, or with a sequence valve to provide a counterbalance valve function.

Operation

Pressure at port 1 forces the poppet off the seat and compresses the spring to allow flow to port 2. Reverse flow (from port 2) works on top of poppet and forces it against the seat to stop flow.

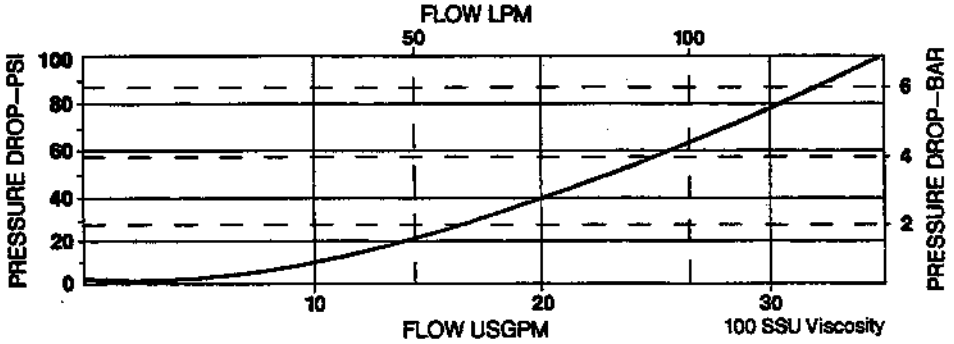
Features

The valve is constructed of steel parts, operating parts are hardened and ground as required. Cartridge is designed for easy service or field repair.

Specifications

Rated flow—35 USgpm △ 100 psi
(132,5 lpm △ 6,9 bar)
Maximum operating pressure—
5000 psi (345 bar)
Cracking pressure—See "How To Order"
Maximum leakage at rated pressure—
3 drops per minute
Viscosity range—27-30 SSU at 100°F
35-2000 SSU at 100°F
Seals—Viton
Operating temperature—-40°F to 350°F
(-39,6°C to 175°C)
Filtration—Maintain SAE Class 6, ISO 18/15
Seal kit—HSSK-800-A

Performance Curve



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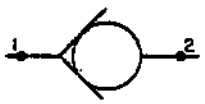
Reissued: Nov., 1995

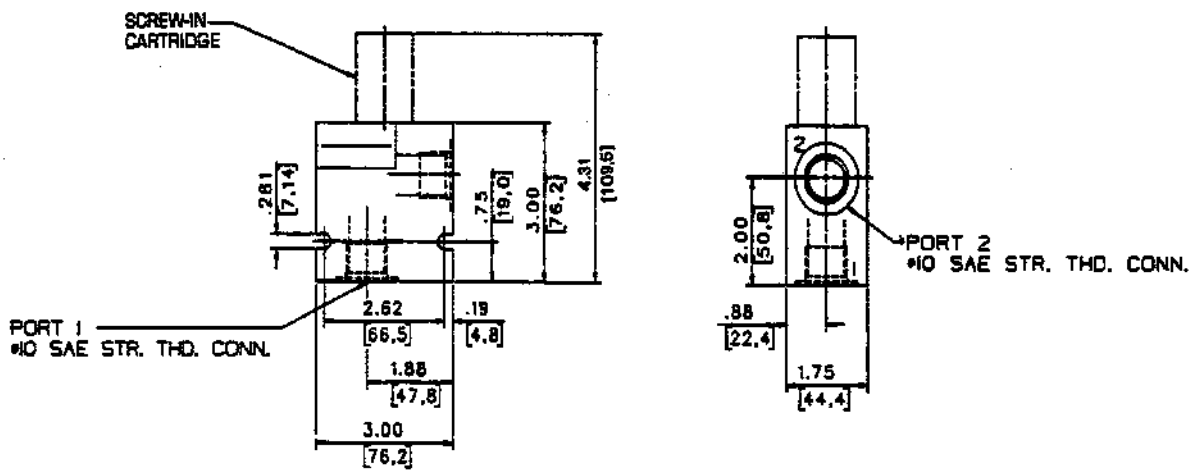
DS 80060-C9.2



Data Sheet — Check Valve

Line Mount Specifications

HSC803/CE1-10-C



How To Order

Screw-In Cartridge Only

HSC803-__

	Cracking Pressure	
	psi	bar
Blank	5	0,3
35	35	2,4
60	60	4,1

Cartridge With Line Mount Block

HSC803-__/CE1-10-C

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Milwaukee, WI USA 53219

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Fax: (414) 327-0532

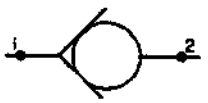
Oilgear

VALVE, SCREW-IN CARTRIDGE

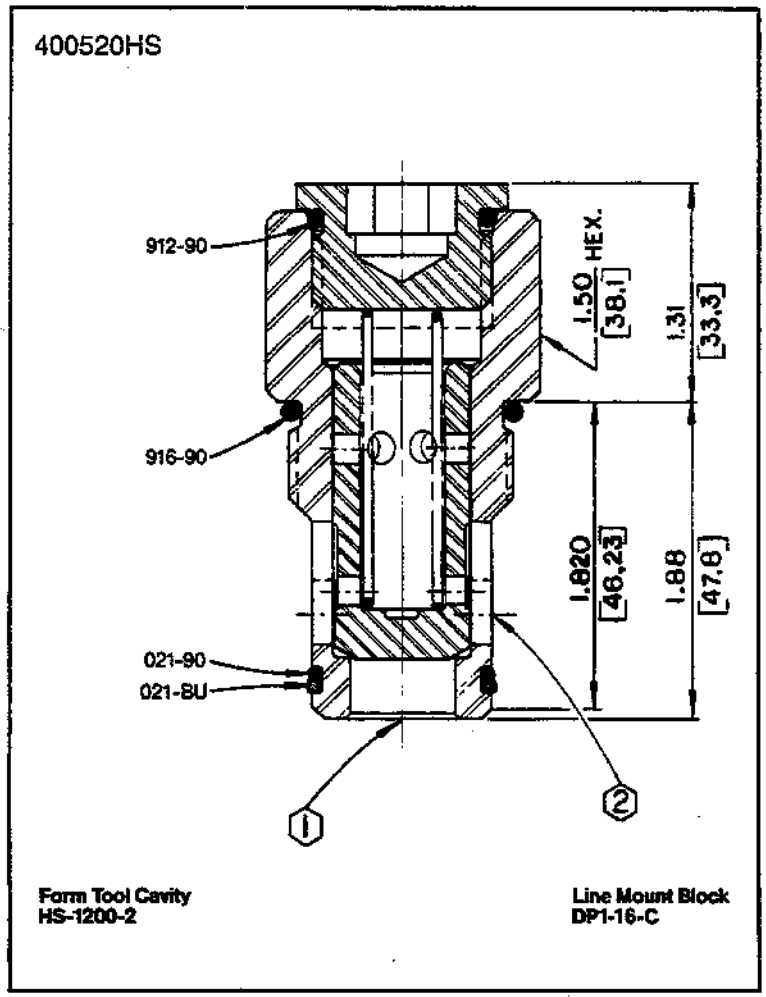
50 USGPM △ 100 PSI
(189,5 LPM △ 6,9 Bar)

HSC1202

ENGINEERING | 1



Data Sheet — **Check Valve**



Application

The HSC cartridge type check valve allows free flow in one direction but prevents flow in the other. It can be used to separate portions of a circuit, or with a sequence valve to provide a counterbalance valve function.

Operation

Pressure at port 1 forces the poppet off the seat and compresses the spring to allow flow to port 2. Reverse flow (from port 2) works on top of poppet and forces it against the seat to stop flow.

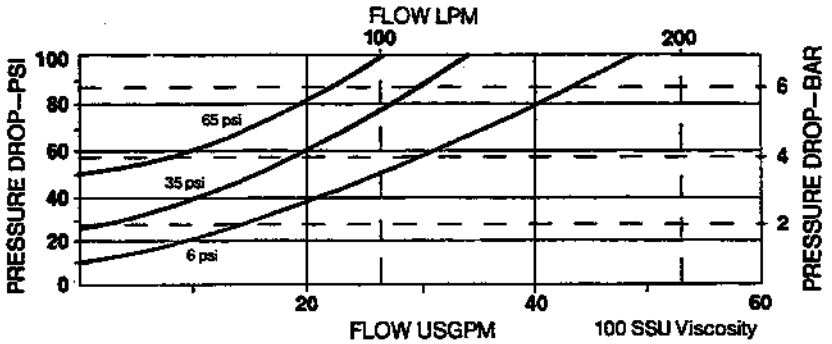
Features

The valve is constructed of steel parts, operating parts are hardened and ground as required. Cartridge is designed for easy service or field repair.

Specifications

Rated flow—50 USgpm △ 100 psi
(189,5 lpm △ 6,9 bar)
Maximum operating pressure—
5000 psi (345 bar)
Cracking pressure—See "How To Order"
Maximum leakage at rated pressure—
3 drops per minute
Viscosity range—27-30 SSU at 100°F
35-2000 SSU at 100°F
Seals—Viton
Operating temperature—-40°F to 350°F
(-39,6°C to 175°C)
Filtration—Maintain SAE Class 6, ISO 18/15
Seal kit—HSSK-1200-A

Performance Curve



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Milwaukee, WI USA 53219

Reissued: Nov., 1995

DS 80060-C9.3

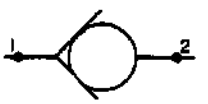
Oilgear

VALVE, SCREW-IN CARTRIDGE

50 USGPM Δ 100 PSI
(189,5 LPM Δ 6,9 Bar)

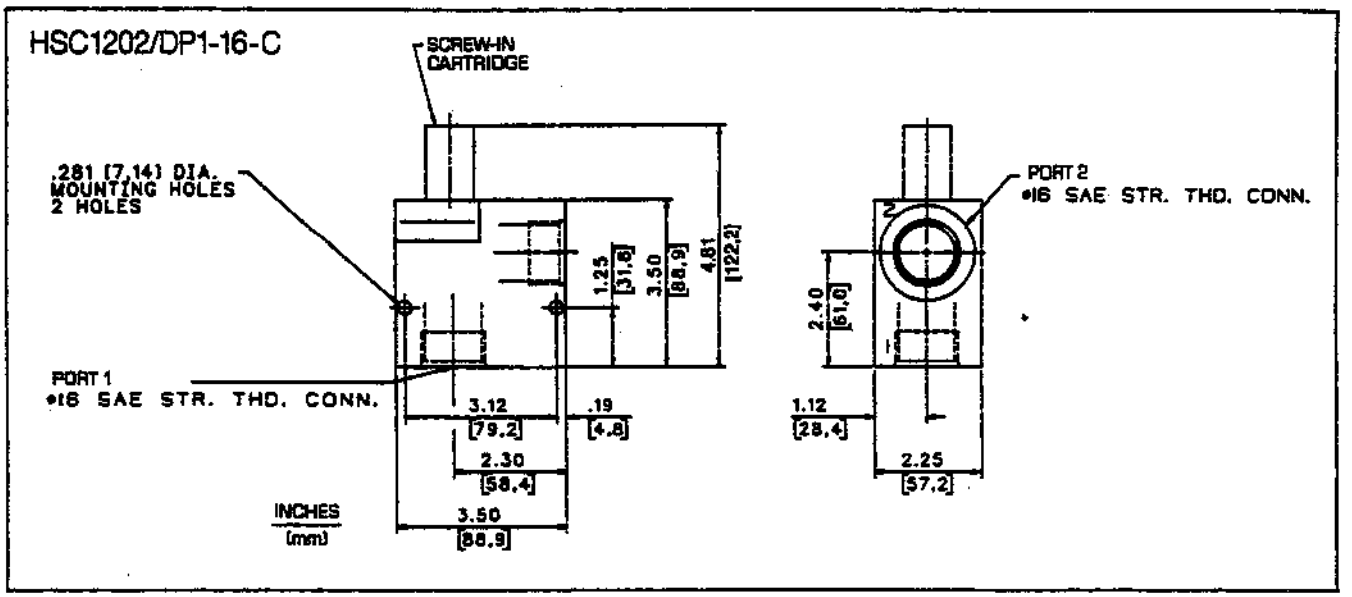
HSC1202

ENGINEERING | 2



Data Sheet — Check Valve

Line Mount Specifications



How To Order

Screw-In Cartridge Only

HSC1202-__

	Cracking Pressure	
	psi	bar
Blank	6	0,4
35	35	2,4
65	65	4,5

Cartridge With Line Mount Block

HSC1202-__/DP1-16-C

Reissued: Nov., 1995
DS 80060-C9.3

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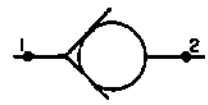
VALVE, SCREW-IN CARTRIDGE

90 USGPM △ 100 PSI
(341,1 LPM △ 6,9 Bar)

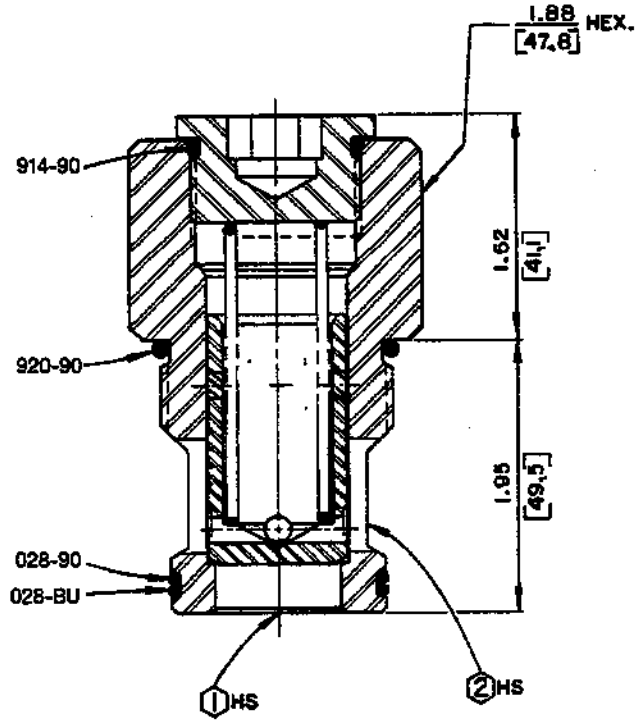
HSC1604

ENGINEERING | 1



Data Sheet — **Check Valve**

400541HS



Form Tool Cavity
HS-1600-2

Line Mount Block
3000 psi = EU1-24-C
5000 psi = EU1-66-C

Application

The HSC cartridge type check valve allows free flow in one direction but prevents flow in the other. It can be used to separate portions of a circuit, or with a sequence valve to provide a counterbalance valve function.

Operation

Pressure at port 1 forces the poppet off the seat and compresses the spring to allow flow to port 2. Reverse flow (from port 2) works on top of poppet and forces it against the seat to stop flow.

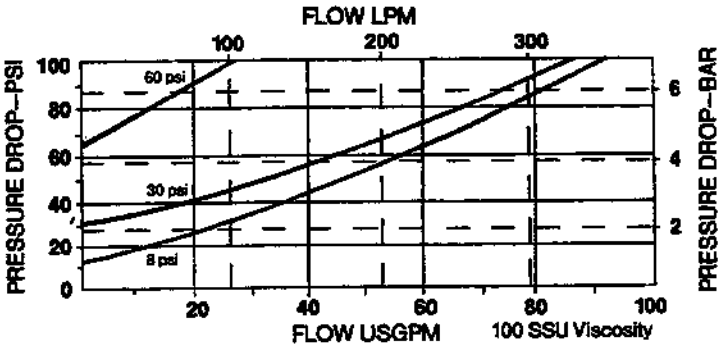
Features

The valve is constructed of steel parts, operating parts are hardened and ground as required. Cartridge is designed for easy service or field repair.

Specifications

Rated flow—90 USgpm △ 100 psi
(341,1 lpm △ 6,9 bar)
Maximum operating pressure—
5000 psi (345 bar)
Cracking pressure—See "How To Order"
Maximum leakage at rated pressure—
3 drops per minute
Viscosity range—27-30 SSU at 100°F
35-2000 SSU at 100°F
Seals—Viton
Operating temperature—-40°F to 350°F
(-39,6°C to 175°C)
Filtration—Maintain SAE Class 6, ISO 18/15
Seal kit—HSSK-1600-A

Performance Curve



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Milwaukee, WI USA 53219

Reissued: Nov., 1995

DS 80060-C9.4

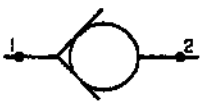
Oilgear

VALVE, SCREW-IN CARTRIDGE

90 USGPM Δ 100 PSI
(341,1 LPM Δ 6,9 Bar)

HSC1604

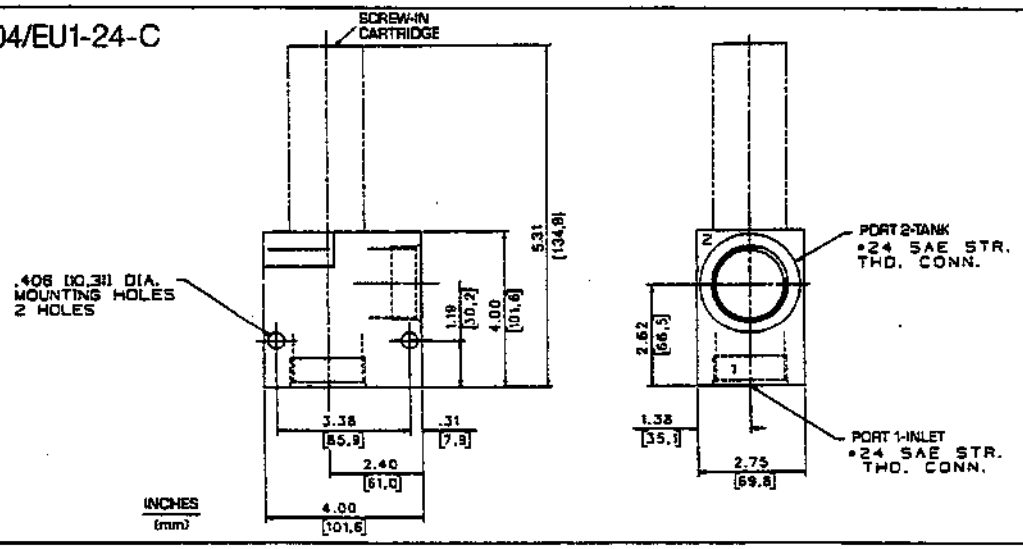
ENGINEERING | 2



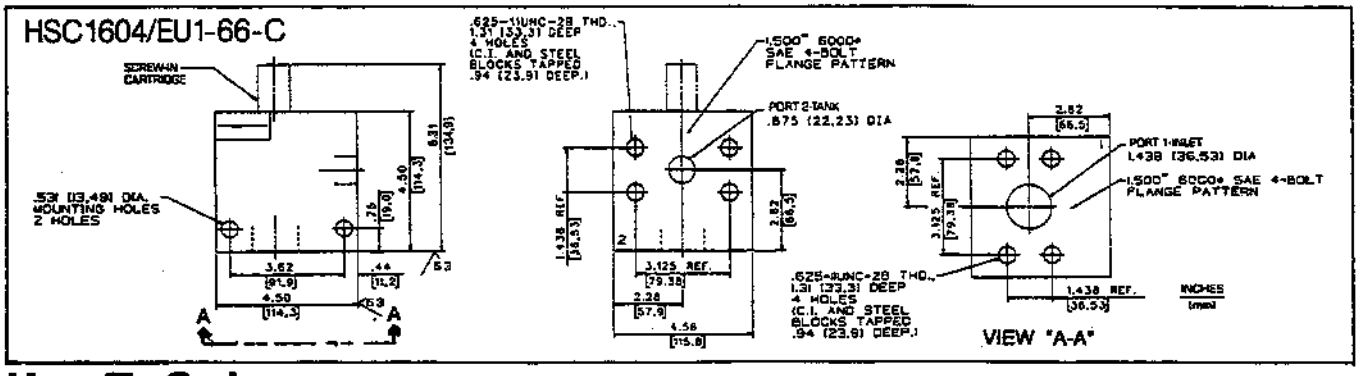
Data Sheet — **Check Valve**

Line Mount Specifications

HSC1604/EU1-24-C



HSC1604/EU1-66-C



How To Order

Screw-In Cartridge Only

HSC1604-__

	Cracking Pressure	
	psi	bar
Blank	8	0,6
30	30	2,1
60	60	4,1

Cartridge With Line Mount Block

3000 psi (207 bar) service pressure
HSC1604-__/EU1-24-C

5000 psi (345 bar) service pressure
HSC1604-__/EU1-66-C

Reissued: Nov., 1995
DS 80060-C9.4

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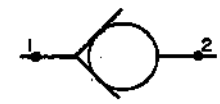
Oilgear

VALVE, SCREW-IN CARTRIDGE

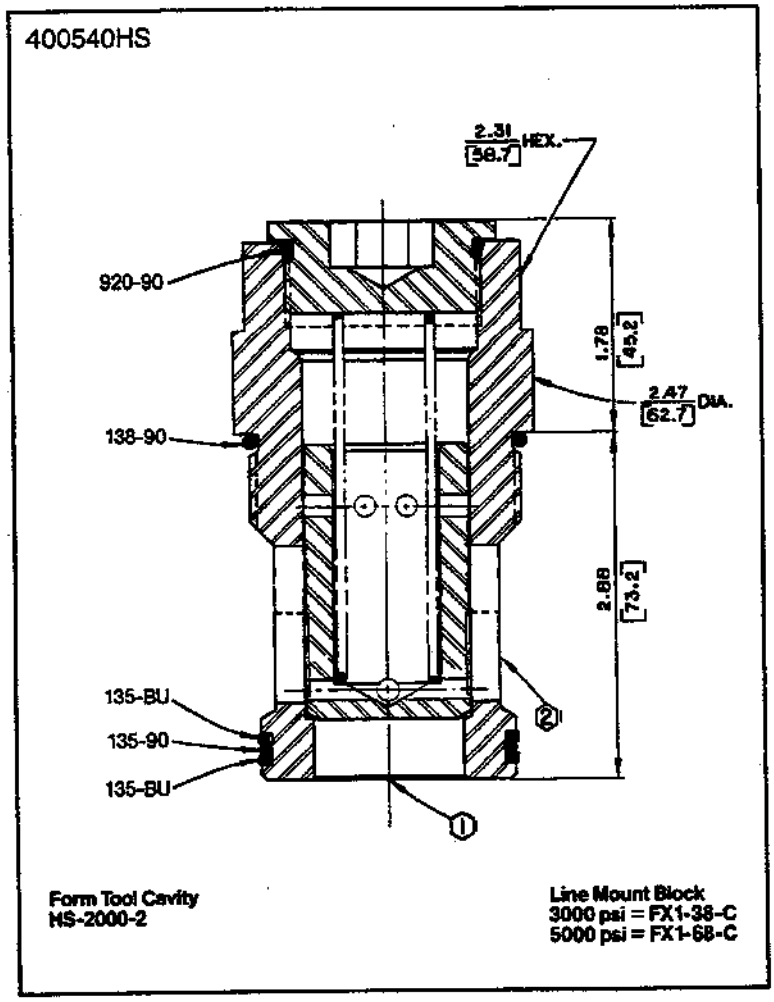
235 USGPM △ 100 PSI
(890,7 LPM △ 6,9 Bar)

HSC2003

ENGINEERING | 1



Data Sheet — **Check Valve**



Application

The HSC cartridge type check valve allows free flow in one direction but prevents flow in the other. It can be used to separate portions of a circuit, or with a sequence valve to provide a counterbalance valve function.

Operation

Pressure at port 1 forces the poppet off the seat and compresses the spring to allow flow to port 2. Reverse flow (from port 2) works on top of poppet and forces it against the seat to stop flow.

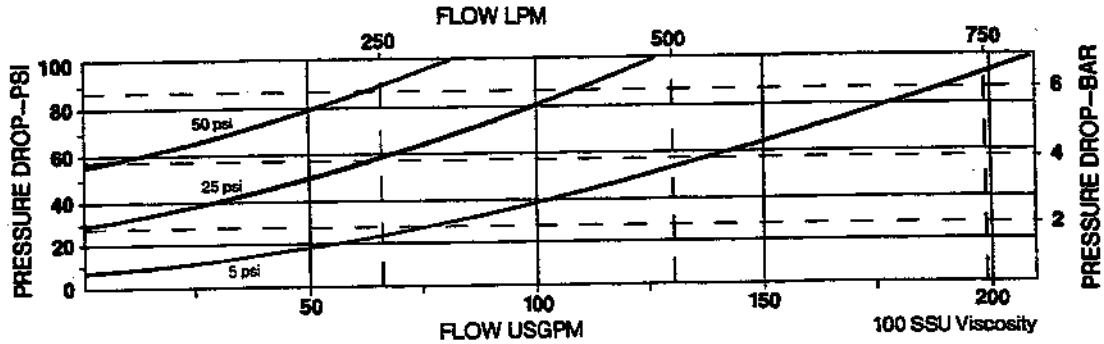
Features

The valve is constructed of steel parts, operating parts are hardened and ground as required. Cartridge is designed for easy service or field repair.

Specifications

Rated flow—235 USgpm △ 100 psi
(890,7 lpm △ 6,9 bar)
Maximum operating pressure—
5000 psi (345 bar)
Cracking pressure—See "How To Order"
Maximum leakage at rated pressure—
3 drops per minute
Viscosity range—27-30 SSU at 100°F
35-2000 SSU at 100°F
Seals—Viton
Operating temperature—-40°F to 350°F
(-39,6°C to 175°C)
Filtration—Maintain SAE Class 6, ISO 18/15
Seal kit—HSSK-2000-A

Performance Curve



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OILGEAR
2300 So. 51st. Street
Milwaukee, WI USA 53219

Reissued: Nov., 1995

DS 80060-C9.5

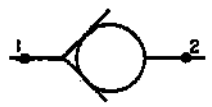
Oilgear

VALVE, SCREW-IN CARTRIDGE

235 USGPM Δ 100 PSI
(890,7 LPM Δ 6,9 Bar)

HSC2003

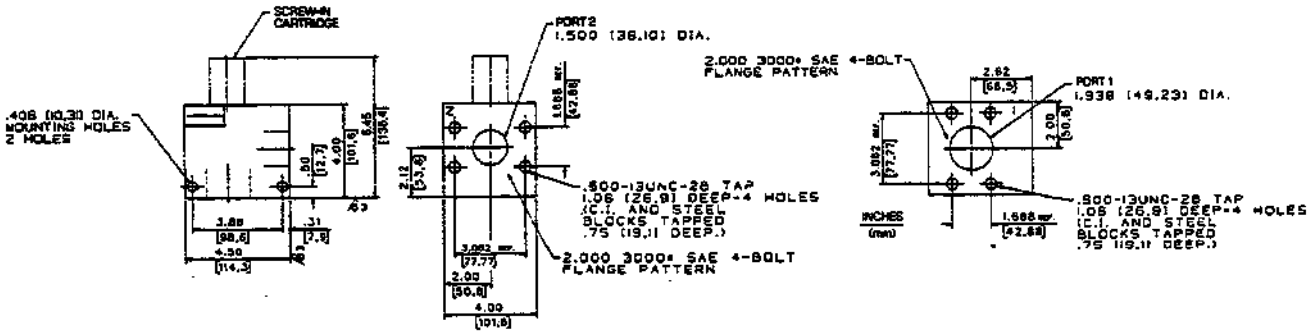
ENGINEERING | 2



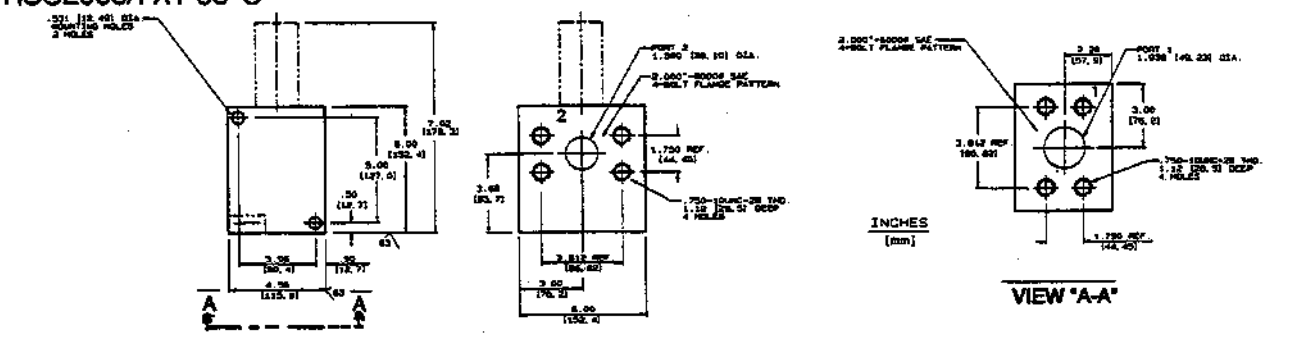
Data Sheet — **Check Valve**

Line Mount Specifications

HSC2003/FX1-38-C



HSC2003/FX1-68-C



How To Order

Screw-In Cartridge Only

HSC2003-__

	Cracking Pressure	
	psi	bar
Blank	5	0,3
25	25	1,7
50	50	3,5

Cartridge With Line Mount Block

3000 psi (207 bar) service pressure
HSC2003-__/FX1-38-C

5000 psi (345 bar) service pressure
HSC2003-__/FX1-68-C

Reissued: Nov., 1995
DS 80060-C9.5

OILGEAR
2300 So. 51st. Street
Milwaukee, WI USA 53219

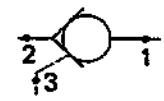
Telephone: (414) 327-1700
Fax: (414) 327-0532

VALVE, SCREW-IN CARTRIDGE

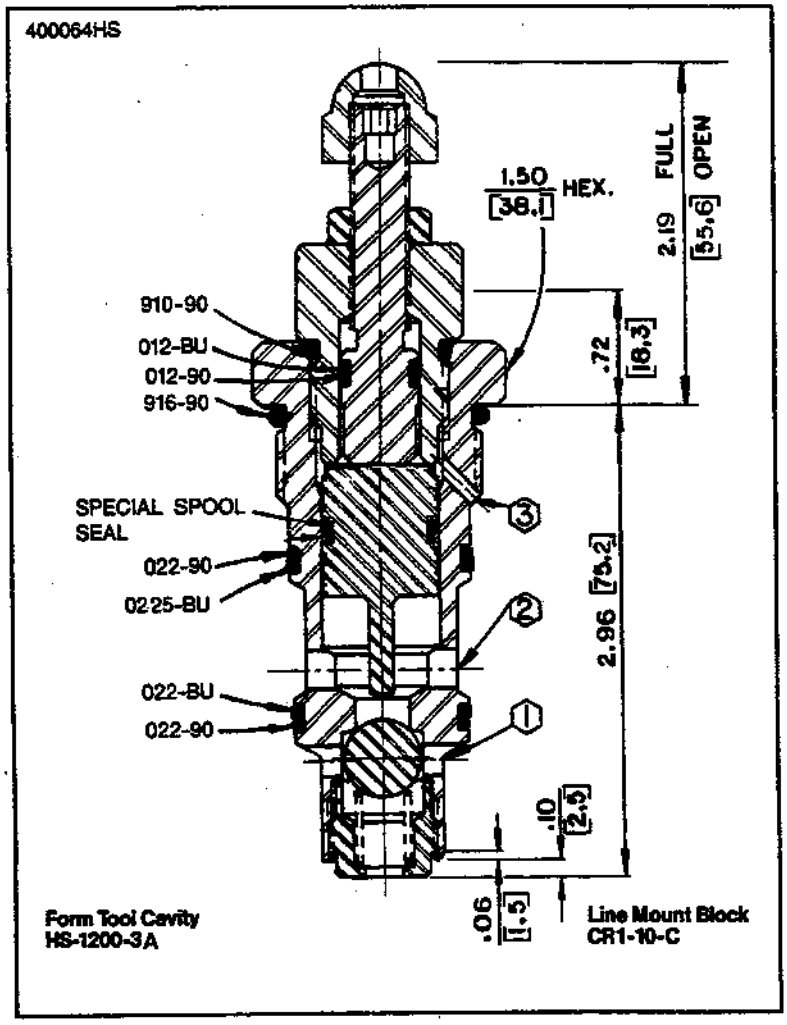
22 USGPM △ 100 PSI
(83,4 LPM △ 6,9 Bar)

HSPC800

ENGINEERING | 1



Data Sheet — **Pilot Operated Check Valve**



Application

The HSPC cartridge type check valve allows free flow in one direction but prevents flow in the other until sufficient pressure is applied at pilot port.

Operation

Pressure at port 2 forces the check ball off the seat, and compresses the spring to allow flow to port 1. Reverse flow (from port 1) pressure forces the ball against the seat to stop flow. However, when sufficient pressure is piloted to port 3, it will shift the larger area spool and in turn move the ball off its seat and allow reverse flow from port 1 to port 2. Note: Pilot pressure must be sufficient to overcome force generated by pressure at port 1 and spring.

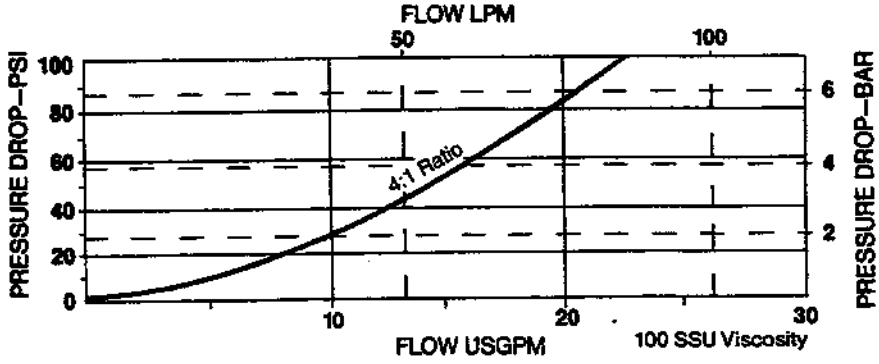
Features

The valve is constructed of steel parts, all operating parts are hardened and cartridge is designed for easy service or field repair.

Specifications

Ratio flow (4:1 ratio)—22 USgpm △ 100 psi
(83,4 lpm △ 6,9 bar)
(10:1 ratio)—7 USgpm △ 100 psi
(26,5 lpm △ 6,9 bar)
Maximum operating pressure—
5000 psi (345 bar)
Cracking pressure—See "How To Order"
Pilot ratio—See "How To Order"
Maximum leakage at rated pressure—
0.5 in³/m (8,2 cm³/m)
Viscosity range—27-30 SSU at 100°F
35-2000 SSU at 100°F
Seals—Viton
Operating temperature—-40°F to 350°F
(-39,6°C to 175°C)
Filtration—Maintain SAE Class 6, ISO 18/15
Seal kit—"Standard" or "MO" models,
HSSK-800-G
—for "MOP" or "P" models,
HSSK-800-S

Performance Curve



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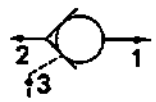
OILGEAR
2300 So. 51st. Street
Milwaukee, WI USA 53219

Reissued: Nov., 1995

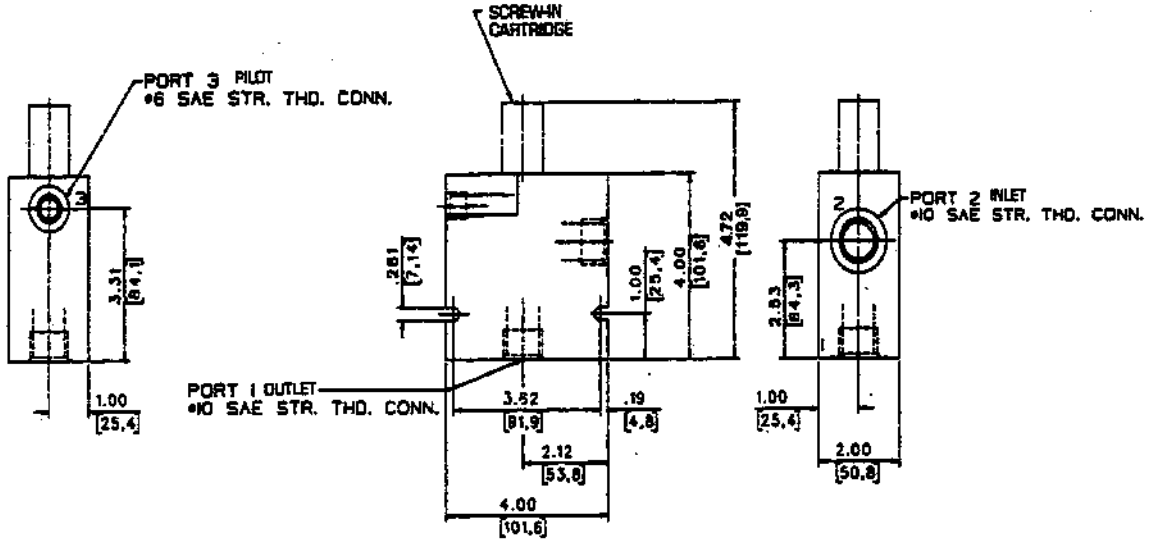
DS 80061 C10.2



Data Sheet — Pilot Operated Check Valve

Line Mount Specifications

HSPC800/CR1-10-C



How To Order

Screw-In Cartridge Only

HSPC800-__-__

	Pilot Pressure Ratio	Cracking Pressure	
		psi	bar
00	4:1	10	0,7
10	10:1	25	1,7

Options	
Blank	None (Standard)
MO	Manual overide
P	Spool seals
MOP	Manual overide & spool seals

Cartridge With Line Mount Block

HSPC800-__-__/CR1-10-C

OILGEAR
2300 So. 51st. Street
Milwaukee, WI USA 53219

Telephone: (414) 327-1700
Fax: (414) 327-0532

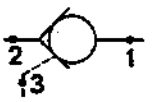
Oilgear

VALVE, SCREW-IN CARTRIDGE

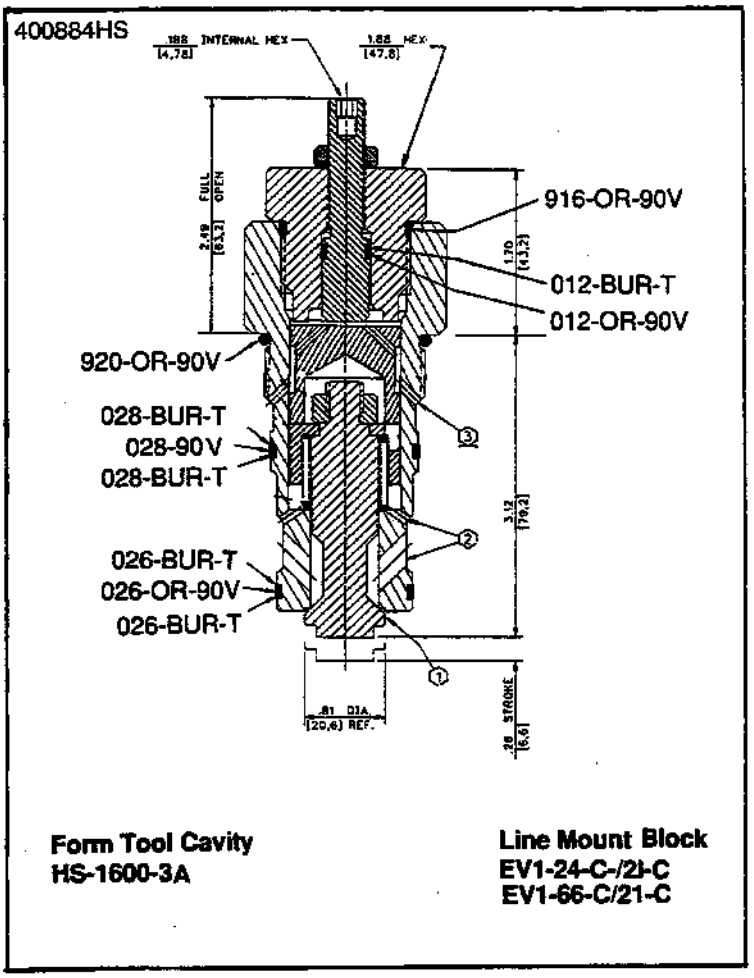
65 USGPM △100 PSI
(246,4 LPM △6,9 Bar)

HSPC1201

ENGINEERING | 1



Data Sheet — **Pilot Operated Check Valve**



Form Tool Cavity
HS-1600-3A

Line Mount Block
EV1-24-C-/2I-C
EV1-66-C/21-C

Application

The HSPC cartridge type check valve allows free flow in one direcion but prevents flow in the other until sufficient pressure is applied at pilot port.

Opearation

Pressure at port 2 is directecd to the top of the plunger moving it downward and compressing the spring to allow flow from port 2 to port 1. Reverse flow (at port 1) pressure forces the plunger upward against the seat to stop flow. However, when sufficient pressure is piloted through port 3, it will shift the large area spool and in turn move the plunger and allow reverse flow from port 1 to 2. Note: Pilot pressure must be sufficient to overcome force generated by pressure at port 1 and spring.

Features

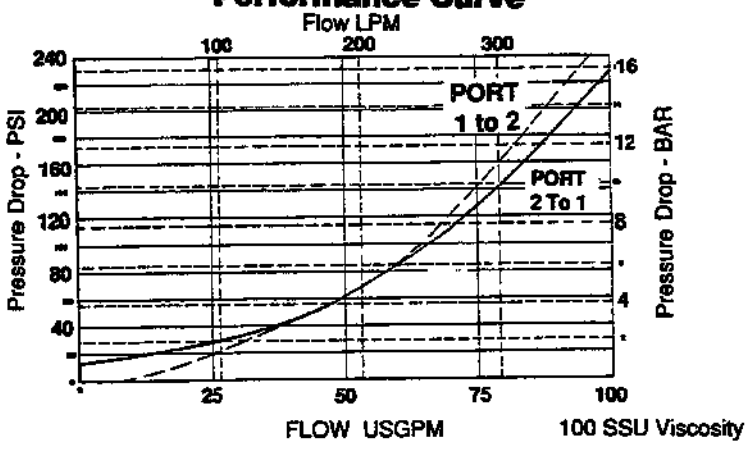
The valve is available with a manual override (screw) that can be used when hydraulic pilot pressure is not available to open port 1 to port 2. The valve is constructed of steel parts, and operating parts are hardened. Cartridge is designed for easy service and field repair.

Specifications

Ratio Flow (3:1 ratio) - 65 USgpm△100 psi
(246,4 lpm △6,9 bar)
Maximum operating pressure - 5000 psi (345 bar)
Cracking pressure - 10 psi, (0,7 bar)
Pilot ratio - 3:1
Maximum leakage at rated pressure - 0.5 in.³/m
(8,2 cm³/m)

Viscosity range -27-2000 SSU at 100°F
Seals -Viton
Operating temperature - 40°F to 350°F
(-39,6°C to 175°C)
Filtation - Maintain SAE Class 6, ISO 18/15
Seal kit - HSSK-1200-T

Performance Curve



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Fax: (414) 327-0532

OILGEAR
2300 So. 51st. Street
Milwaukee, WI USA 53219

Reissued: Nov., 1995
DS 80061-C10.3

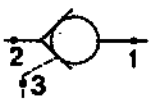
Oilgear

VALVE, SCREW-IN CARTRIDGE

65 USGPM △ 100 PSI
(246,4 LPM △6,9 Bar)

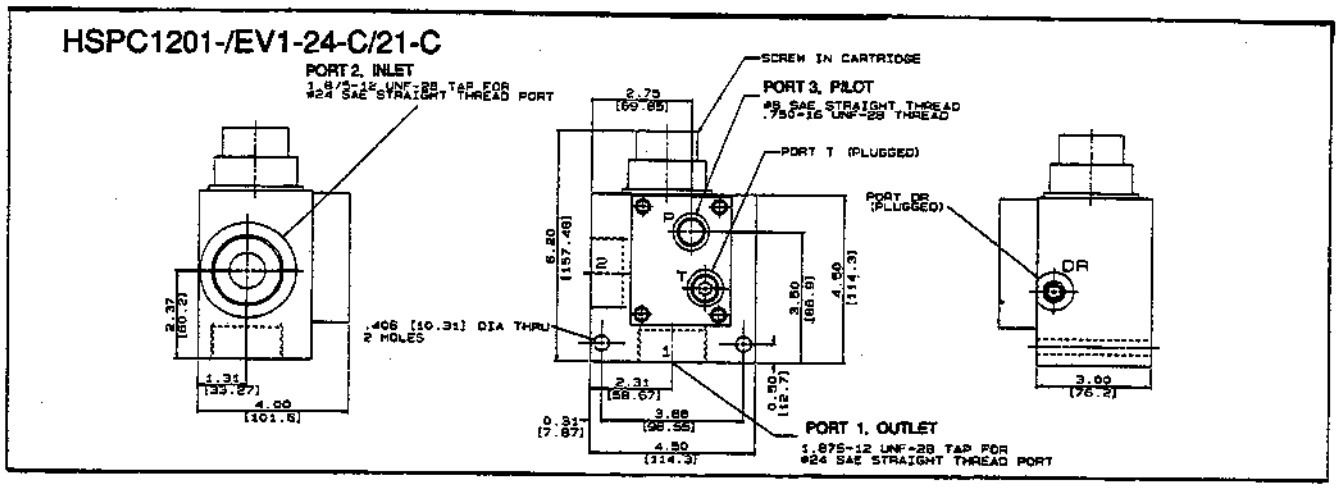
HSPC1201

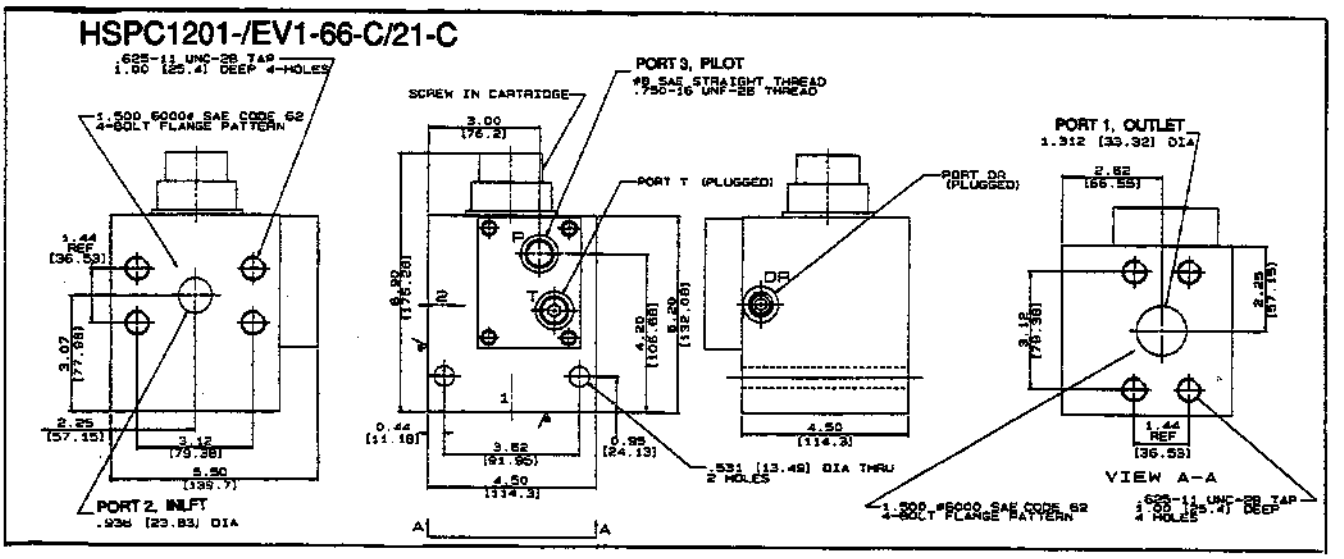
ENGINEERING | 2



Data Sheet — **Pilot Operated Check Valve**

Line Mount Specifications





How To Order

Screw-In Cartridge Only

HSPC1201 -___

Options	
MO	Manual Over-ride

Cartridge With Line Mount Block

3000 psi (207 bar) service pressure
HSPC1201-__/EV1-24-C/21-C

5000 psi (345 bar) service pressure
HSPC1201-__/EV1-66-C/21-C

Reissued: Nov., 1995
DS 80061-C10.3

OILGEAR
2300 So. 51st Street
Milwaukee, WI USA 53219

Telephone: (414) 327-1700
Fax: (414) 327-0532

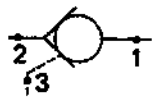
Oilgear

VALVE, SCREW-IN CARTRIDGE

120 USGPM △ 100 PSI
(454,8 LPM △ 6,9 Bar)

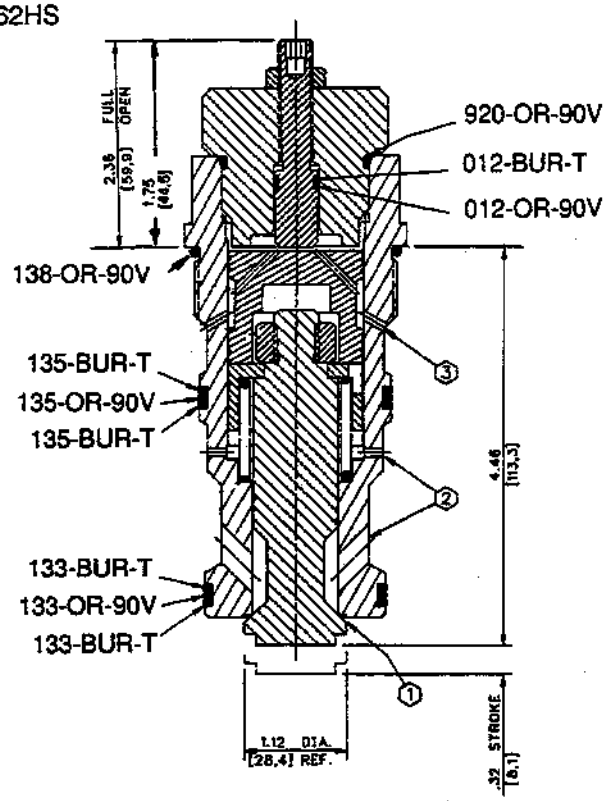
HSPC1600

ENGINEERING | 1



Data Sheet — **Pilot Operated Check Valve**

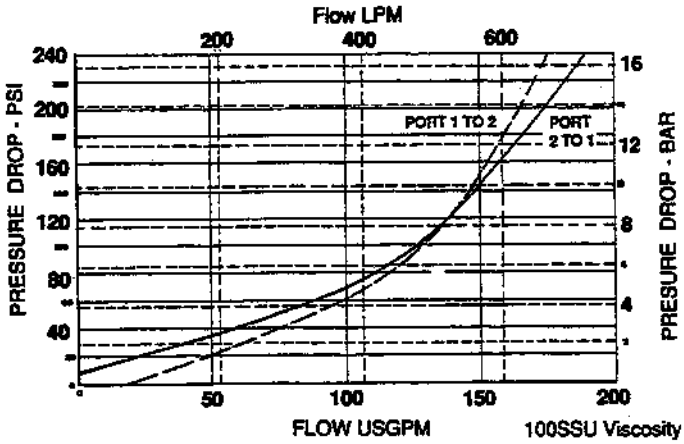
400862HS



Form Tool
HS-2000-3A

Line Mount Block
FY2-38-C/21-C
FY1-68-C/21-C

Performance Curve



Application

The HSPC cartridge type check valve allows free flow in one direcion but prevents flow in the other until sufficient pressure is applied at pilot port.

Operation

Pressure at port 2 is directed to the top of the plunger moving it downward and compressing the spring to allow flow from port 2 to port 1. Reverse flow (at port 1) pressure forces the plunger upward against the seat to stop flow. However, when sufficient pressure is piloted through port 3, it will shift the large area spool and in turn move the plunger and allow reverse flow from port 1 to 2. NOTE: Pilot pressure must be sufficient to overcome the force generated by pressure at port 1 and the spring.

Features

The valve is available with a manual over-ride (screw) that can be used when hydraulic pilot pressure is not available to open port 1, to port 2. The valve is constructed of steel parts, and operating parts are hardened and ground as required. Cartridge is designed for easy service and field repair.

Specificatons

Ratio flow (3:1 ratio) - 120 USgpm △ 100 psi (454,8 lpm △ 6,9 bar)
Maximum operating pressure - 5000 psi (345 bar)
Cracking pressure - 8 psi (0,5 bar)
Pilot ratio - 3:1
Maximum leakage at rated pressure - 0.5 in.³/m (8,2 cm³/m)
Viscosity - 27-2000 SSU at 100°F
Seals - Viton
Operating temperature - -40°F to 350°F (-39,6°C to 175°C)
Filtration - Maintain SAE Class 6, ISO 18/15
Seal kit - HSSK2000-T

Telephone: (414) 327-1700
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OILGEAR
2300 So. 51st. Street
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Reissued: Nov., 1995

DS 80061-C10.4

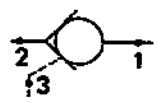
Oilgear

VALVE, SCREW-IN CARTRIDGE

120 USGPM △ 100 PSI
(454,8 LPM △ 6,9 Bar)

HSPC1600

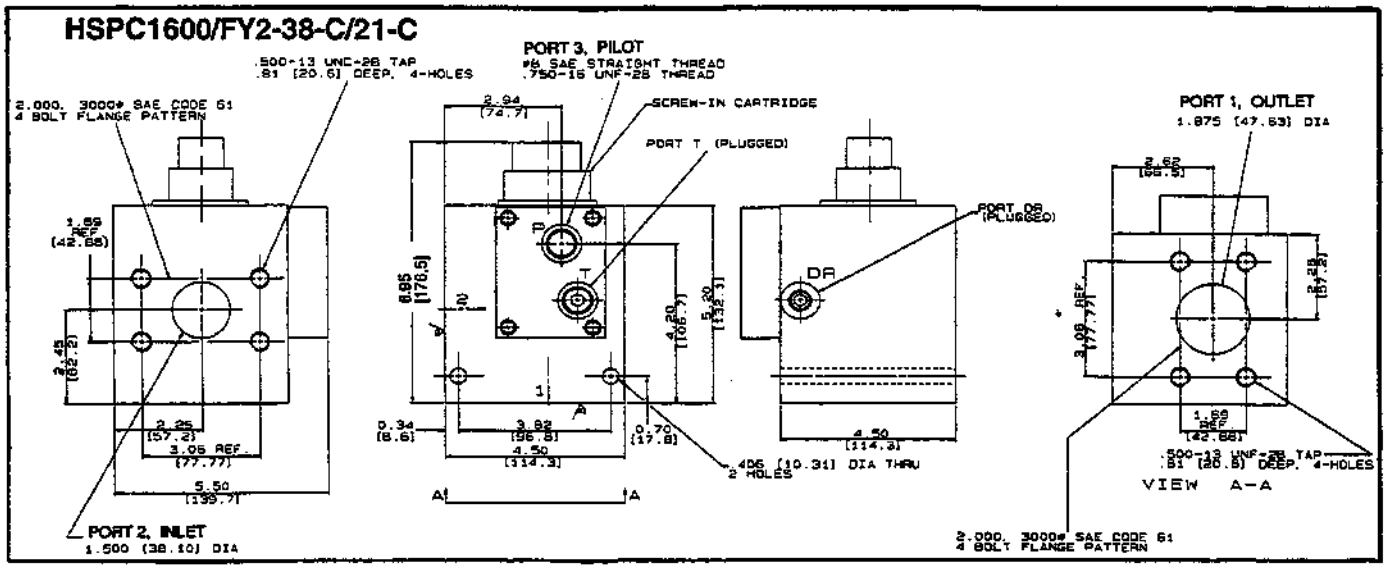
ENGINEERING | **2**



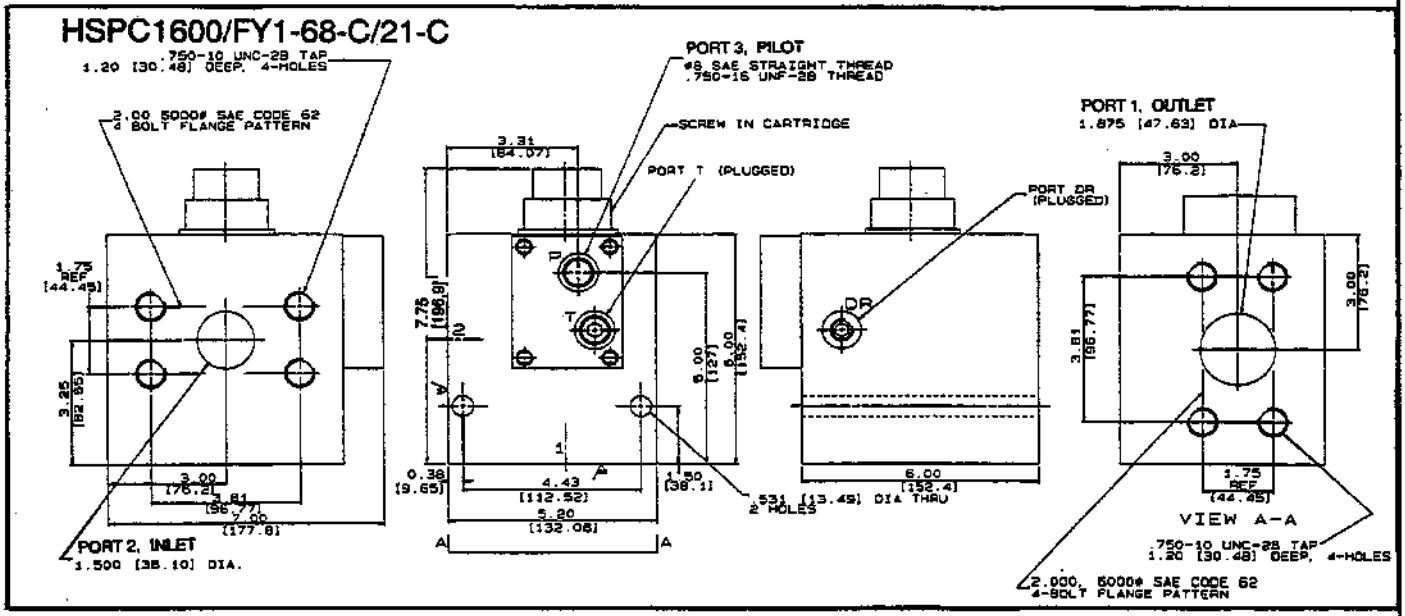
Data Sheet — **Pilot Operated Check Valve**

Line Mount Specification

HSPC1600/FY2-38-C/21-C



HSPC1600/FY1-68-C/21-C



How To Order

Screw-In Cartridge Only

HSPC1600 - ____

Options	
MO	Manual Over-ride

Cartridge With Line Mount Block

3000 psi (207 bar) service pressure
HSPC1600-__/FY2-38-C/21-C

5000 psi (345 bar) service pressure
HSPC1600-__/FY1-68-C/21-C

Reissued: Nov., 1995
DS 80061-C10.4

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Milwaukee, WI USA 53219

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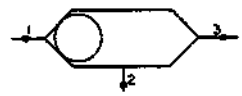
Oilgear

VALVE, SCREW-IN CARTRIDGE

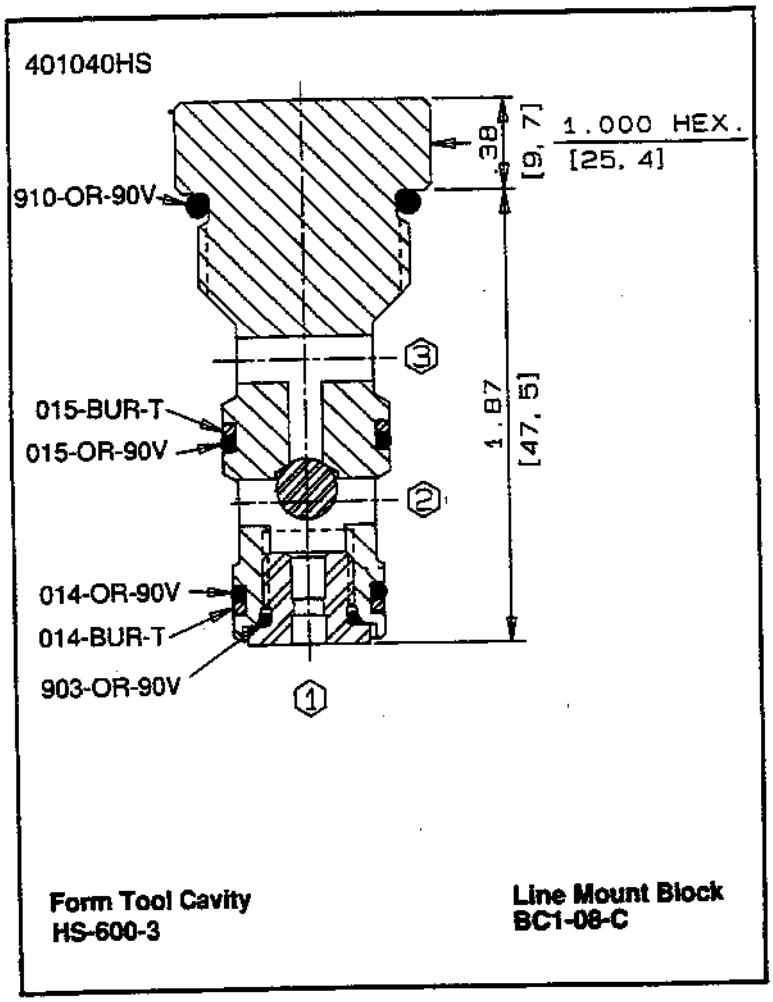
3 USGPM △100 PSI
(11,4 LPM △ 6,9 Bar)

HSSCV601

ENGINEERING | **1**



Data Sheet — **Shuttle Check Valve**



Form Tool Cavity
HS-600-3

Line Mount Block
BC1-08-C

Application

The HSSCV cartridge type shuttle check valve allows free flow to outlet port (2) from highest (or only) pressure inlet port (1 or 3) while shutting off (any) flow from the remaining port.

Operation

When one of the inlet ports (1 or 3) is pressurized, the ball is forced against the seat of the opposite port, sealing that inlet and allowing flow to outlet port (2). If unequal pressures are present at both inlet ports, the ball will be forced against the seat of the port with lesser pressure, connecting the higher pressure to port 2.

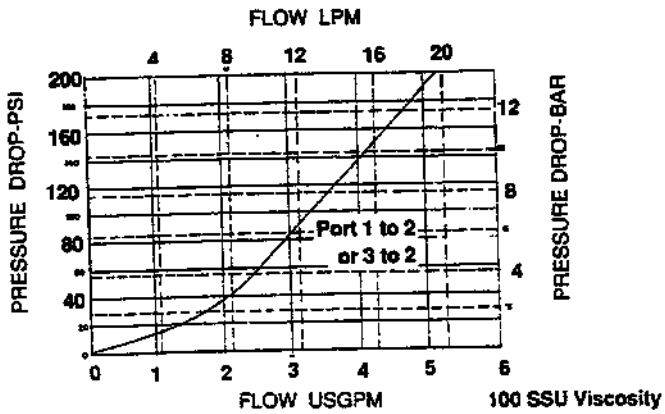
Features

This low leakage valve is constructed of high strength steel parts, to assure superior seat life when used for high cyclical applications. Cartridge is designed for easy service or field repair.

Specifications

Rated flow, port 1 to 2 -- 3 USgpm △ 100 psi (11.4 lpm △ 6.9 bar)
port 3 to 2 -- 3 USgpm △ 100 psi (11.4 lpm △ 6.9 bar)
Maximum operating pressure - 5000 psi (345 bar)
Viscosity range - 27-2000 SSU at 100°F
Seals - Viton
Operating temperature - -40°F to 350°F (-39,6°C to 175°C)
Filtration - Maintain SAE Class 6, ISO 18/15
Seal kit - HSSK-600-AN

Performance Curve



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2300 So. 51st. Street
Milwaukee, WI USA 53219

Reissued: Nov., 1995

DS 80062-C11.1

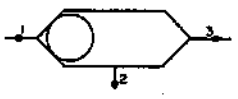
Oilgear

VALVE, SCREW-IN CARTRIDGE

3 USGPM △100 PSI
(11,4 LPM △ 6,9 Bar)

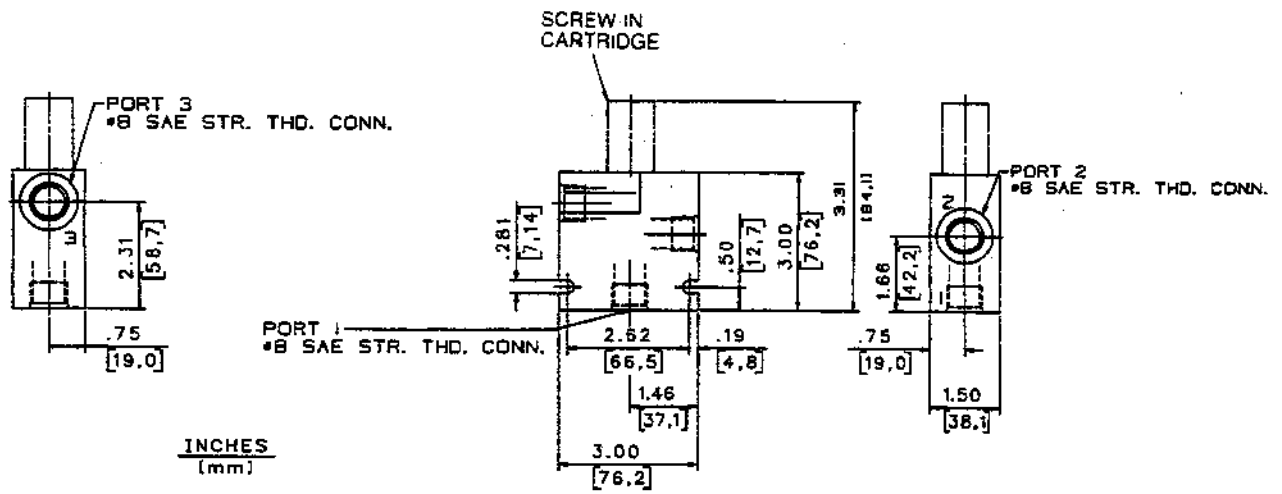
HSSCV601

ENGINEERING | 2



Data Sheet — **Shuttle Check Valve**

HSSCV601/BC1-08-C



How To Order

Screw-In Cartridge Only

HSSCV601

Cartridge With Line Mount Block

HSSCV601/BC1-08-C

Reissued: Nov., 1995
DS 80062-C11.1

OILGEAR
2300 So. 51st. Street
Milwaukee, WI USA 53219

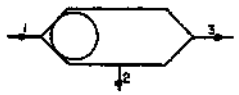
Telephone: (414) 327-1700
Fax: (414) 327-0532

VALVE, SCREW-IN CARTRIDGE

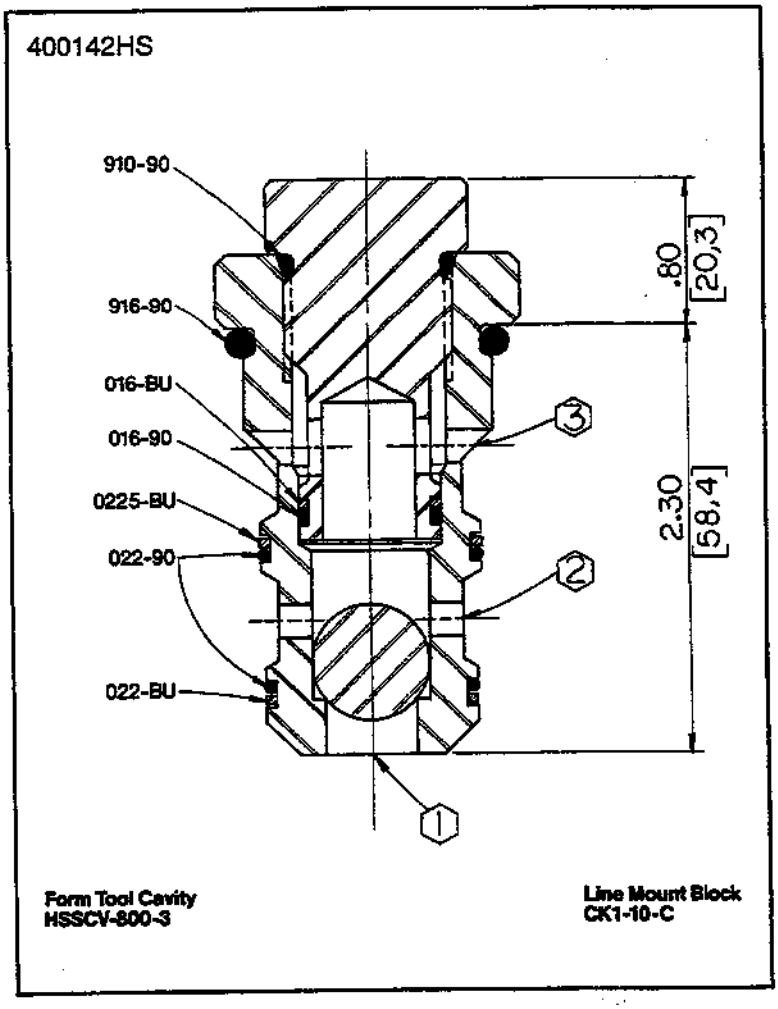
20 USGPM Δ 100 PSI
(75,8 LPM Δ 6,9 Bar)

HSSCV800

ENGINEERING | 1



Data Sheet — **Shuttle Check Valve**



Application

The HSSCV cartridge type shuttle check valve allows free flow to outlet port (2) from highest (or only) pressured inlet port (1 or 3) while shutting off (any) flow from remaining port.

Operation

When one of the inlet ports (1 or 3) is pressurized, the ball is forced against the seat of the opposite port, sealing that inlet and allowing flow to outlet port (2). If unequal pressures are present at both inlet ports, the ball will be forced against the seat of the port with lesser pressure, connecting the higher pressure to port 2.

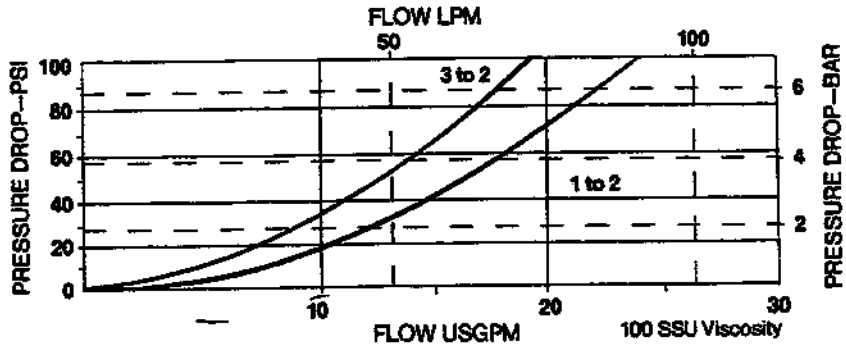
Features

This low leakage valve is constructed of steel parts, operating parts are hardened and ground as required. Cartridge is designed for easy service or field repair.

Specifications

Rated flow, port 1 to 2—26 USgpm Δ 100 psi
(98,5 lpm Δ 6,9 bar)
port 3 to 2—20 USgpm Δ 100 psi
(98,5 lpm Δ 6,9 bar)
Maximum operating pressure—
5000 psi (345 bar)
Viscosity range—27-30 SSU at 100°F
35-2000 SSU at 100°F
Seals—Viton
Operating temperature—-40°F to 350°F
(-39,6°C to 175°C)
Filtration—Maintain SAE Class 6, ISO 18/15
Seal kit—HSSK-800-P

Performance Curve



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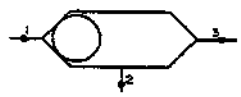
Milwaukee, WI USA 53219

Reissued: Nov., 1995

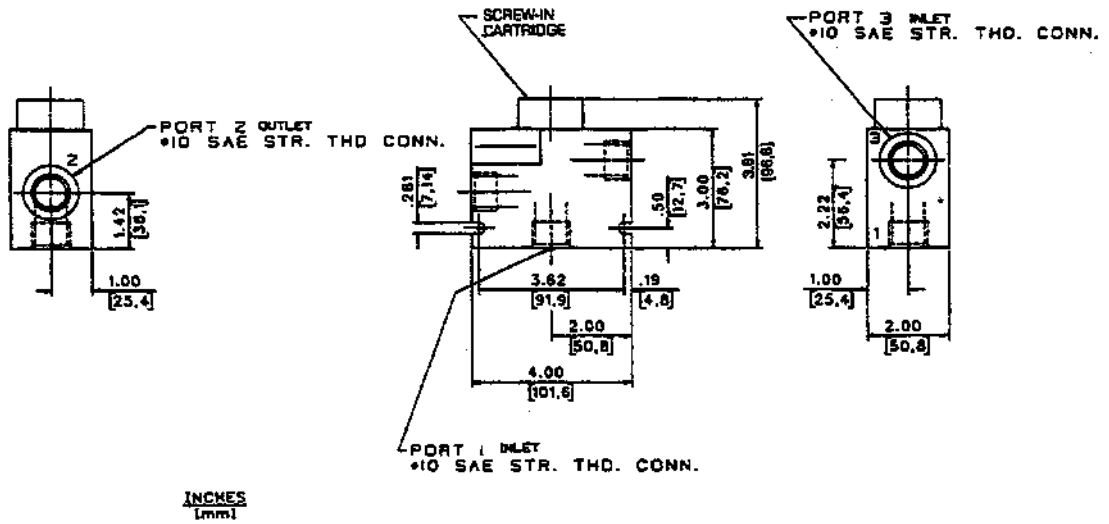
DS 80062-C11.2



Data Sheet — Shuttle Check Valve

Line Mount Specifications

HSSCV800/CK1-10-C



How To Order

Screw-In Cartridge Only

HSSCV800

Cartridge With Line Mount Block

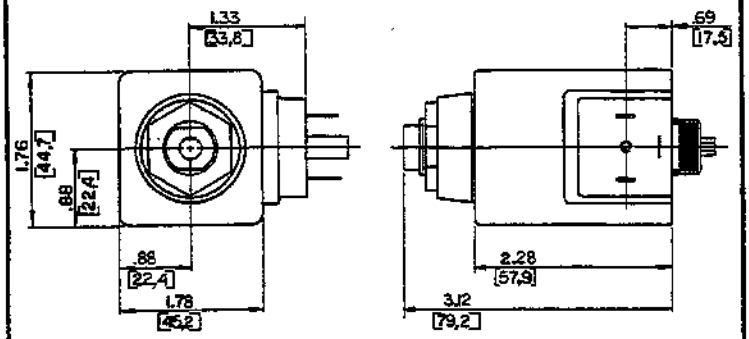
HSSCV800/CK1-10-C

OILGEAR
2300 So. 51st. Street
Milwaukee, WI USA 53219

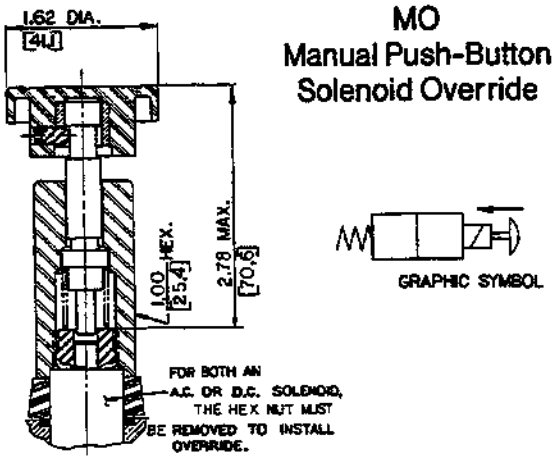
Telephone: (414) 327-1700
Fax: (414) 327-0532

500121HS

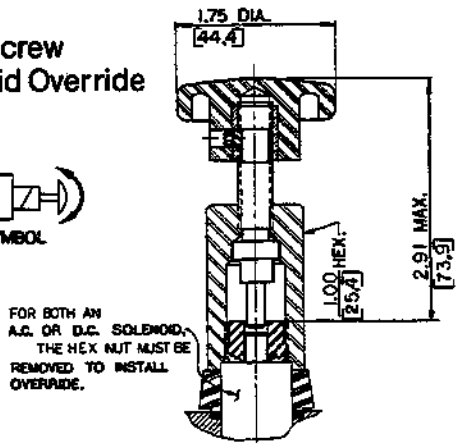
2 & 3
Solenoid Operator Options
(2 = 12 volts, 3 = 24 volts)



MO
Manual Push-Button
Solenoid Override



MS
Manual Screw
Lock-In Solenoid Override



Application

Size 600 directional control valves can be directly activated by solenoid, air or manual operators and are available in two-way, three-way or four-way configurations.

Size 600 valves can be used as pilot (remote) actuators or vents for piloting larger hydraulically operated spool or poppet valves when large capacity two-, three-, or four-way functions are required.

Note: All electrical connectors mount to the solenoid coil, per DIN 43650, three poles and ground. Pg 11 (Type S&L) are for 16-20 gage wire in 0.438 maximum outside diameter (OD) cord. Connections are supplied with strain relieving parts.

Type "B" connectors use Brad-Harrison 3-pin male receptacles with indicator light. Type "C" connectors use Brad-Harrison 3-pin male receptacles without indicator lite. All Brad-Harrison connectors are furnished with mating connector and 3 feet of cord.

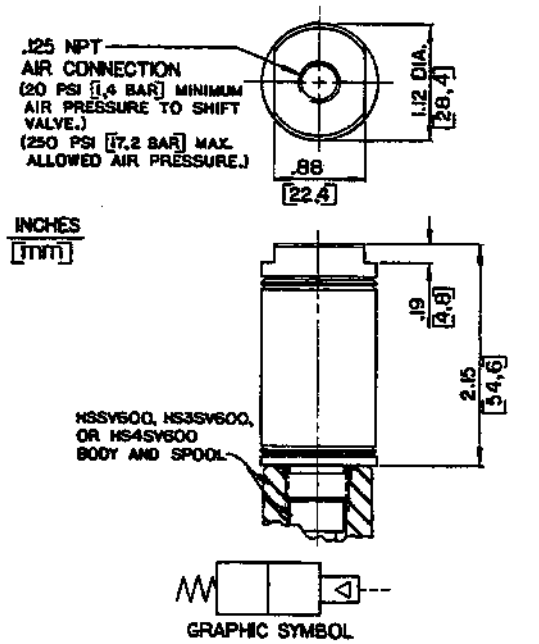
Current Ratings

Volts	Amperes			
	60 HZ		50 HZ	
	Inrush	Holding	Inrush	Holding
115 AC	1.70	0.45	1.80	0.53
230 AC	0.85	0.22	0.90	0.27
12 DC		2.50		
24 DC		1.25		
125 DC		0.26		
220 DC		0.14		

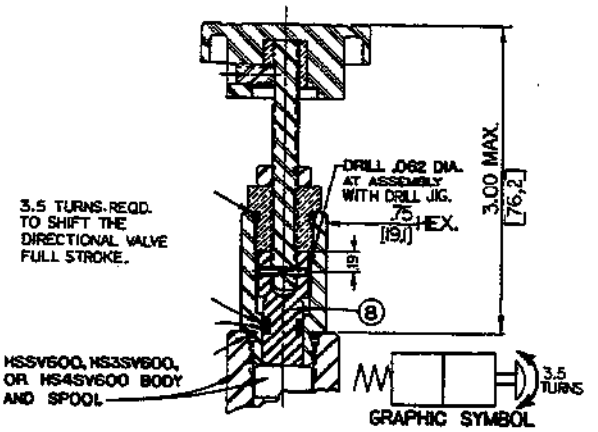
Data Sheet

Directional Valve Operator Options

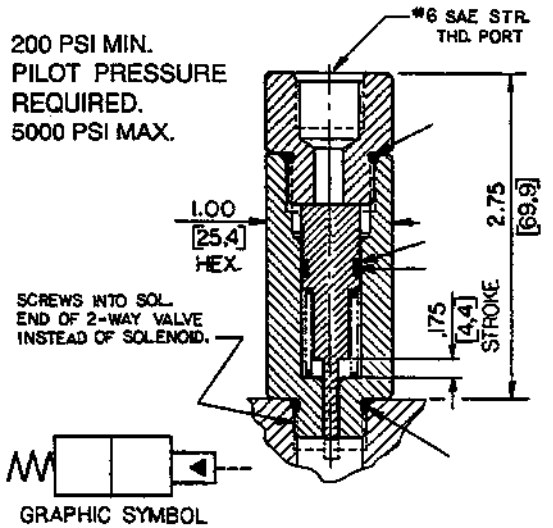
AP
Air Pilot Operator



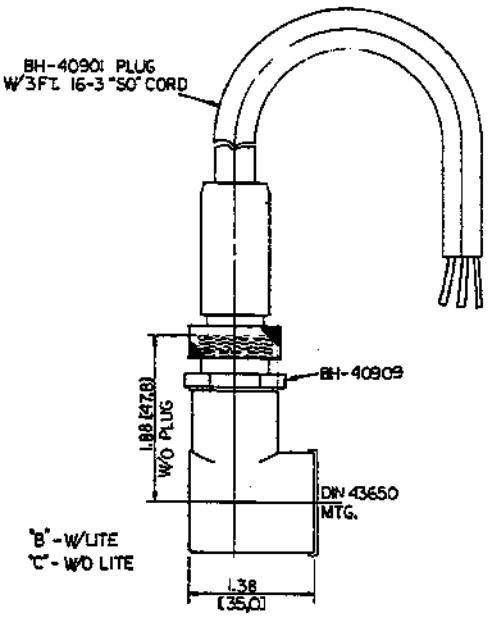
MAN
Manual Directional Valve Operator



HP
Hydraulic Pilot Operator



B&C
Brad-Harrison 3-pin Connector
(B = w/light, C = w/o light)



OILGEAR
2300 So. 51st. Street
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Telephone: (414) 327-1700
Fax: (414) 327-0532

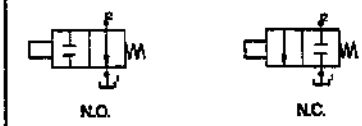
Oilgear

VALVE, SCREW-IN CARTRIDGE

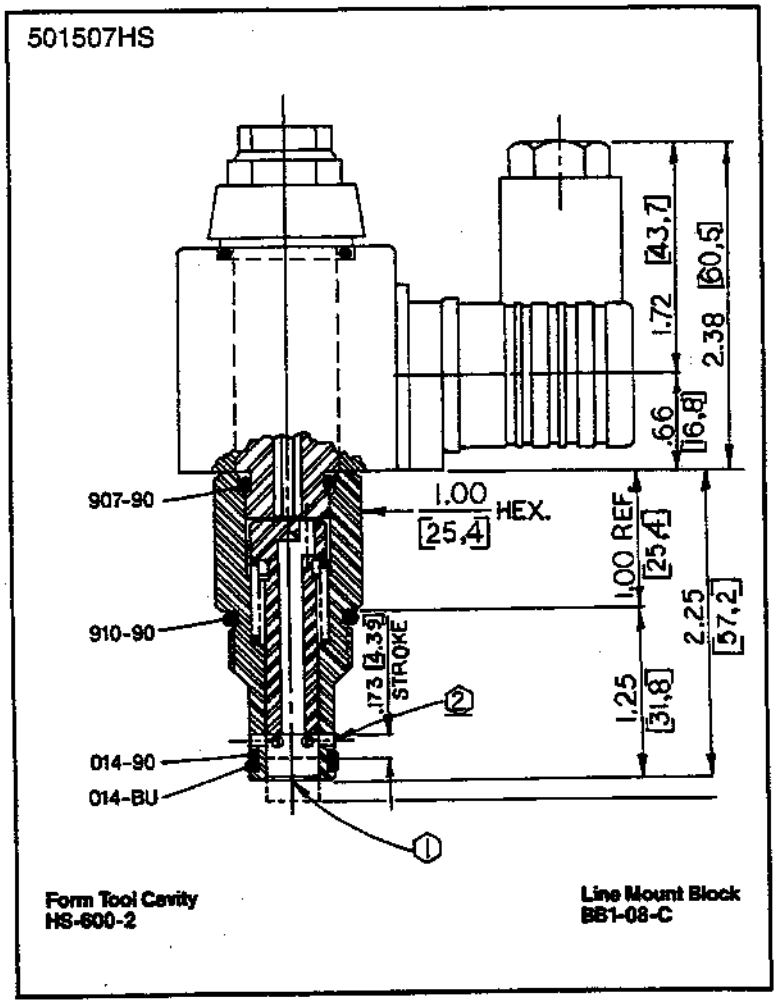
4 USGPM Δ 35 PSI
(15,2 LPM Δ 2,4 Bar)

HS2SV-604

ENGINEERING | 1



Data Sheet — **Two-Way Directional Control Pilot Valve**



Application

The HS2SV cartridge valve is used to allow or block flow, thru actuation of an operator, from a circuit to reservoir.

Operation

The HS2SV valve can be actuated by one of several (electric) solenoids, an air (pneumatic) cylinder or knob (manual) operator. The main spool is available in a normally open or normally closed configuration. The spool is held in its' normal position by a spring. Actuating the operator shifts the spool to open or close flow from port 2 to port 1. NOTE: port 1 must be connected directly to tank. Deactuating the operator allows the integral spring to shift spool to original position.

Features

Normally open or normally closed valves are available with electric, pneumatic, or manual operators. Valve is constructed of steel parts, operating parts are hardened as required and cartridge is designed for easy service or field repair.

Specifications

Maximum flow—4 USgpm Δ 35 psi
(15,2 lpm Δ 2,4 bar)
Maximum operating pressure—
5000 psi (345 bar)
Maximum leakage (port to port)— 5 in³/m
(82 cm³/m)
Viscosity range—27-30 SSU at 100°F
35-2000 SSU at 100°F
Seals—Viton
Operating temperature
Solenoid operators only—-40°F to 140°F
(-39,6°C to 59,4°C)
All other operators—-40°F to 350°F
(-39,6°C to 175°C)
Filtration—Maintain SAE Class 5, ISO 17/14
Seal kit—HSSK-600-I

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Reissued: Nov., 1995

DS 80152-C1.1

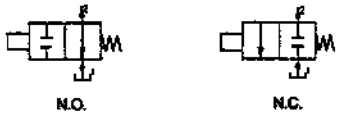
Oilgear

VALVE, SCREW-IN CARTRIDGE

4 USGPM △ 35 PSI
(15,2 LPM △ 2,4 Bar)

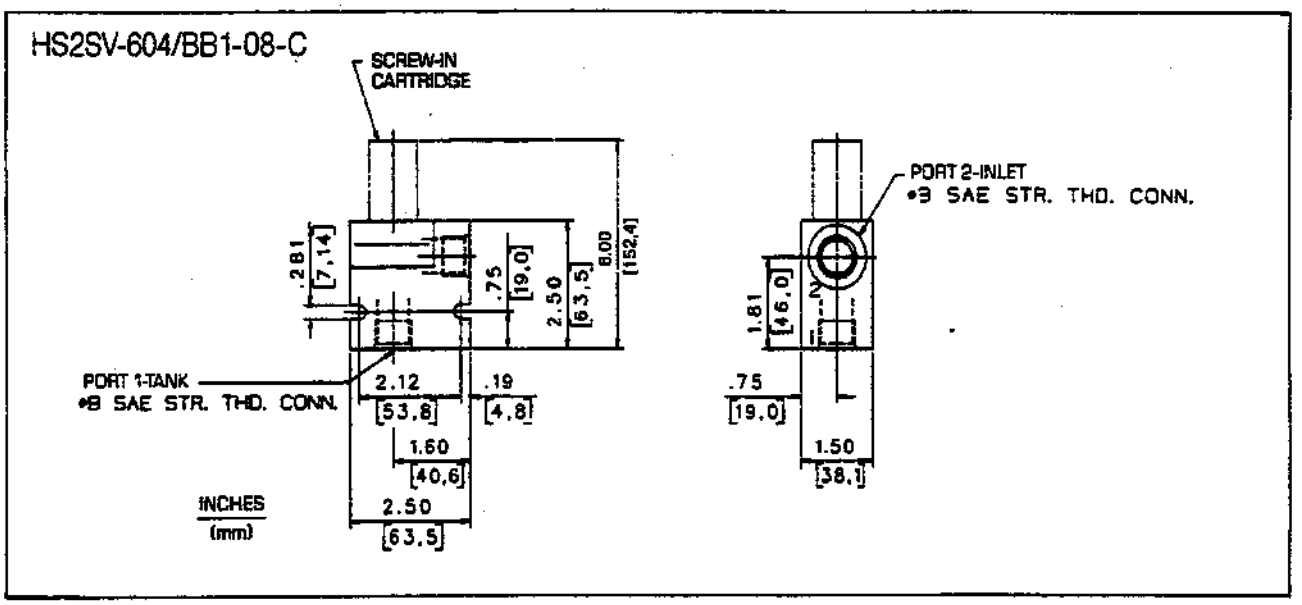
HS2SV-604

ENGINEERING | 2



Data Sheet — **Two-Way Directional Control Pilot Valve**

Line Mount Specifications



How To Order

Screw-In Cartridge Only

HS2SV__-604-____-__

Spools **	
O	Normally open
C	Normally closed

** ALL SPOOLS ARE NORMALLY OPEN CROSS OVER

Operators	
0	(Standard) 115 VAC/60 Hz or 110 VAC/50 Hz Solenoid
1	230 VAC/60 Hz or 220 VAC/ 50 Hz Solenoid
2*	12 VDC Solenoid
3*	24 VDC Solenoid
AP*	Air (16 psi to 100 psi)
MAN*	Manual
HP*	Hydraulic Pilot Operator

*See DS 80150-1C for details.

Accessories	
Blank	None required
MO*	Manual Push Button Solenoid Overide
MS*	Manual Screw Lock-In Solenoid Overide

Electrical Connectors	
N	None required
S	(Standard) Cable Connector w/o Indicator Light
L	Cable Connector with Indicator Light
R	0.500 NPTF Connector w/o Indicator Light
W	0.500 NPTF Connector with Indicator Light
B*	3-pin Brad-Harrison Connector with Light
C*	3-pin Brad-Harrison Connector w/o Indicator Light

Cartridge With Line Mount Block

HS2SV__-604-____-__/BB1-08-C

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DS 80152-C1.1

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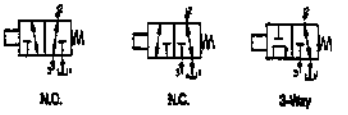
Oilgear

VALVE, SCREW-IN CARTRIDGE

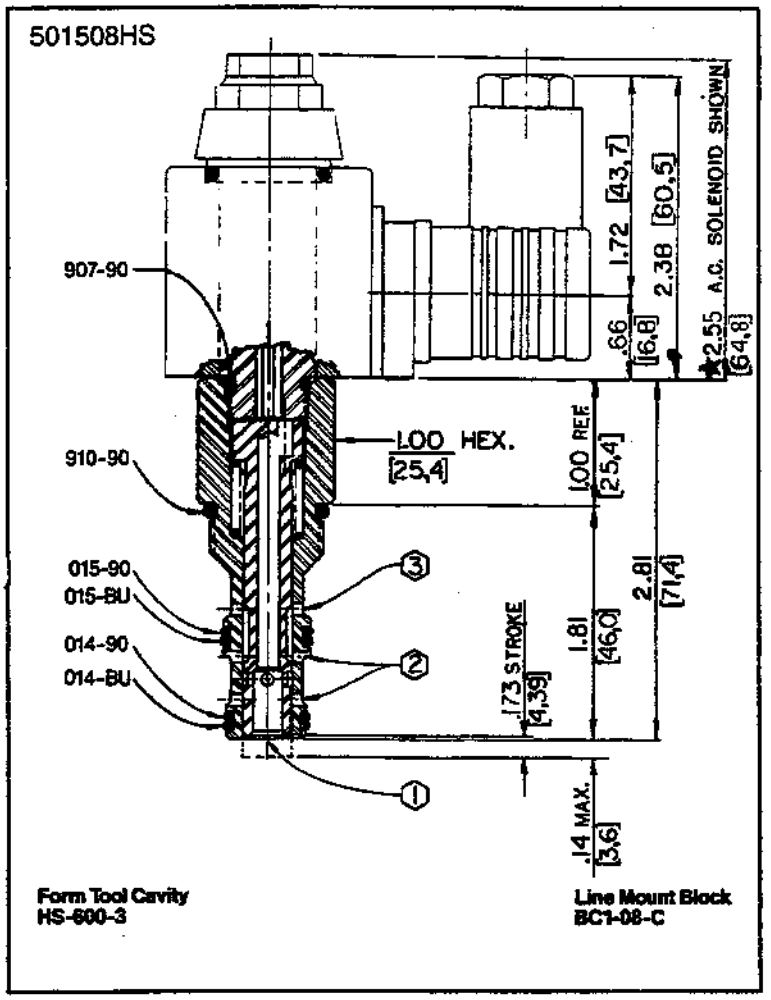
2.5 USGPM Δ 35 PSI
(9,5 LPM Δ 2,4 Bar)

HS3SV-602

ENGINEERING | 1



Data Sheet — **Three Way Directional Control Pilot Valve**



Application

The HS3SV cartridge valve is used to allow, block or bypass flow in a system (depending on spool chosen) thru actuation of an operator.

Operation

The HS3SV valve can be actuated by one of several (electric) solenoids, an air (pneumatic) cylinder, or a knob (manual) operator. The main spool is available in several configurations. The spool is held in its normal position by a spring. Actuating the operator shifts the spool to open or close flow between various ports. NOTE: port 1 must be connected directly to tank. Deactuating the operator allows the spring to return the spool to original position.

Features

Valves are available with several spool configurations (for a variety of functions) and can be actuated by electric, pneumatic or manual operators. Valves are constructed of steel parts, operating parts are hardened, and ground as required. Cartridge is designed for easy service or field repair.

Specifications

Maximum flow—2.5 USgpm Δ 35 psi
(9,5 lpm Δ 2,4 bar)
Maximum operating pressure—
5000 psi (345 bar)
Maximum leakage (port to port)— 20 in³/m
(328 cm³/m)
Viscosity range—27-30 SSU at 100°F
35-2000 SSU at 100°F
Seals—Viton
Operating temperature
Solenoid operators only—-40°F to 140°F
(-39,6°C to 175°C)
All other operators—-40°F to 350°F
(-39,6°C to 175°C)
Filtration—Maintain SAE Class 5, ISO 17/14
Seal kit—HSSK-600-K

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Reissued: Nov., 1995

DS 80153-C2.1

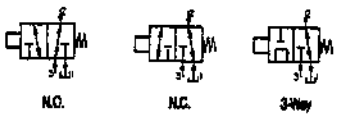
Oilgear

VALVE, SCREW-IN CARTRIDGE

2.5 USGPM Δ 35 PSI
(9,5 LPM Δ 2,4 Bar)

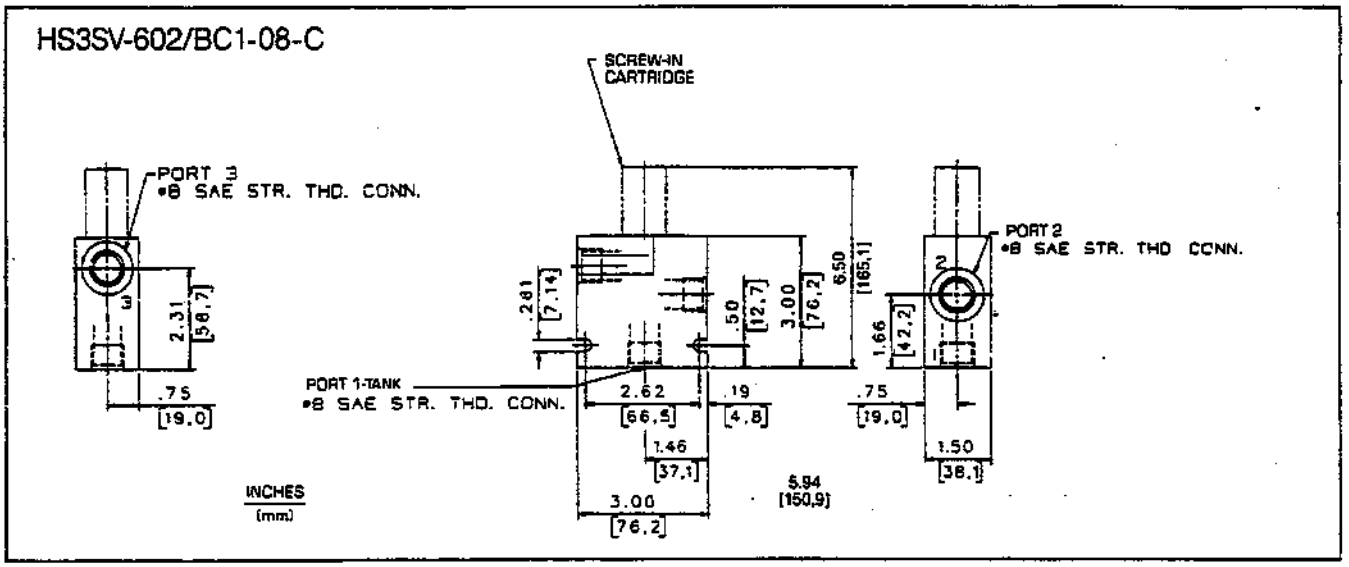
HS3SV-602

ENGINEERING | 2



Data Sheet — **Three Way Directional Control Pilot Valve**

Line Mount Specifications



How To Order

Screw-In Cartridge Only

HS3SV__-602-____-__

Spools **	
O	Normally open 3 way
C	Normally closed 3 way
3	3 way diverter

**ALL SPOOLS ARE NORMALLY OPEN CROSS OVER

Operators	
0	(Standard) 115 VAC/60 Hz or 110 VAC/50 Hz Solenoid
1	230 VAC/60 Hz or 220 VAC/ 50 Hz Solenoid
2*	12 VDC Solenoid
3*	24 VDC Solenoid
AP*	Air (16 psi to 100 psi)
MAN*	Manual
HP*	Hydraulic Pilot Operator

*See DS 80150-1C for details.

Accessories	
Blank	None required
MO*	Manual Push Button Solenoid Overide
MS*	Manual Screw Lock-In Solenoid Overide

Electrical Connectors	
N	None required
S	(Standard) Cable Connector w/o Indicator Light
L	Cable Connector with Indicator Light
R	0.500 NPTF Connector w/o Indicator Light
W	0.500 NPTF Connector with Indicator Light
B*	3-pin Brad-Harrison Connector with Light
C*	3-pin Brad-Harrison Connector w/o Indicator Light

Cartridge With Line Mount Block

HS3SV__-602-____-__/BC1-08-C

Reissued: Nov., 1995
DS 80153-C2.1

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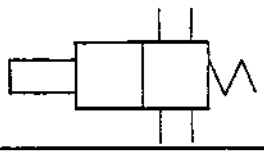
Oilgear

VALVE, SCREW-IN CARTRIDGE

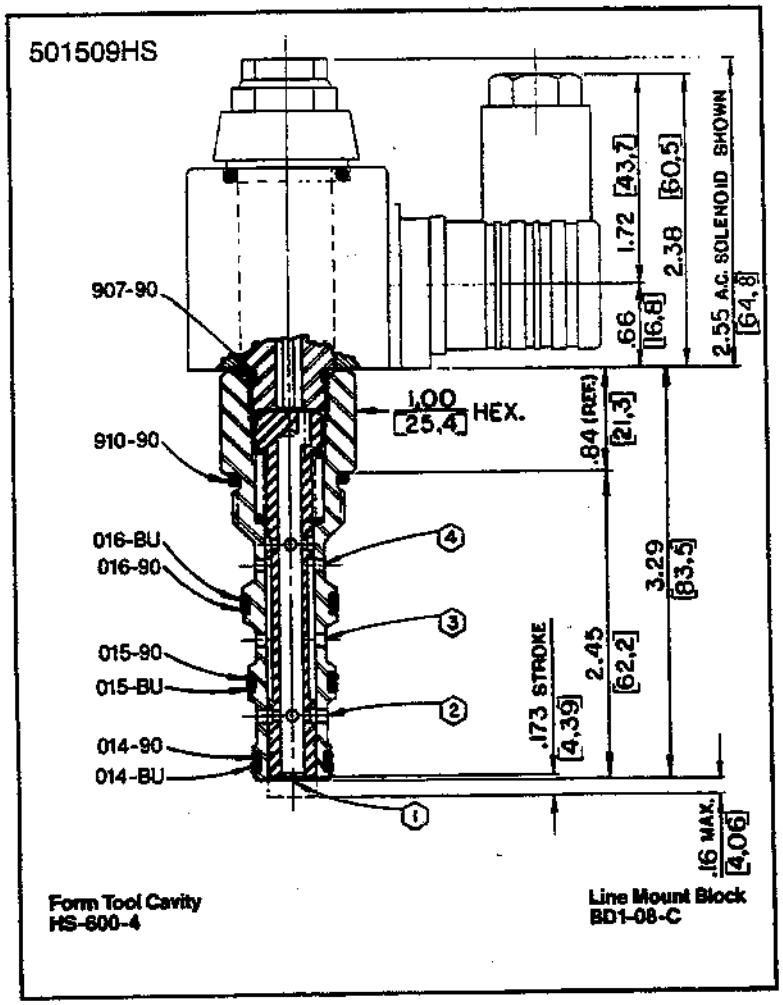
3 USGPM Δ 35 PSI
(11,4 LPM Δ 2,4 Bar)

HS4SV-602

ENGINEERING | 1



Data Sheet — **Four-Way Directional Control Pilot Valve**



Application

The HS4SV cartridge valve is used to provide a variety of functions (depending on spool chosen) thru actuation of a variety of operators available.

Operation

The HS4SV valve can be actuated by one of several (electric) solenoids, an air (pneumatic) cylinder, or a knob (manual) operator. The main spool is available in several configurations. The spool is held in its' normal position by a spring. Actuating the operator shifts the spool to open or close flow between various ports. NOTE: port 1 must be connected directly to tank. Deactuating the operator allows the spring to return spool to original position.

Features

Valves are available with several spool configurations (for a variety of functions) and can be actuated by electric, pneumatic, or manual operators. Valves are constructed of steel parts, operating parts are hardened as required and cartridge is designed for easy service or field repair.

Specifications

Maximum flow—3 USgpm Δ 35 psi
(11,4 lpm Δ 2,4 bar)
Maximum operating pressure—
5000 psi (345 bar)
Maximum leakage (port to port)— 40 in^3/m
(656 cm^3/m)
Viscosity range—27-30 SSU at 100°F
35-3000 SSU at 100°F
Seals—Viton
Operating temperature
Solenoid operators only—-40°F to 140°F
(-39,6°C to 59,4°C)
All other operators—-40°F to 350°F
(-39,6°C to 175°C)
Filtration—Maintain SAE Class 5, ISO 17/14
Seal kit—HSSK-600-L

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Reissued: Nov, 1995

DS 80154-C3.1

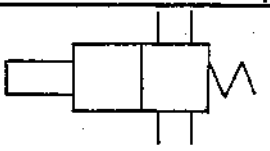
Oilgear

VALVE, SCREW-IN CARTRIDGE

3 USGPM Δ 35 PSI
(11,4 LPM Δ 2,4 Bar)

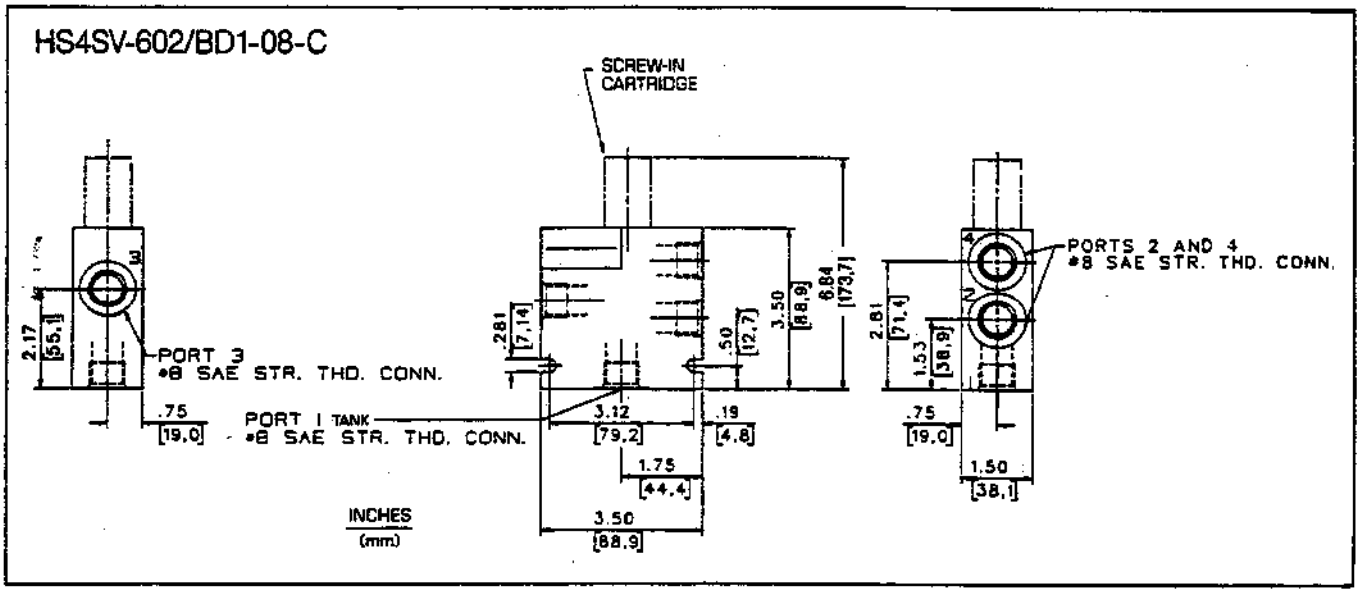
HS4SV-602

ENGINEERING | 2



Data Sheet — Four-Way Directional Control Pilot Valve

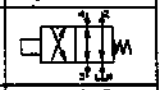
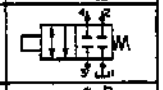
Line Mount Specifications



How To Order

Screw-In Cartridge Only

HS4SV__-602-____-__

Spools **	
Blank	
2	
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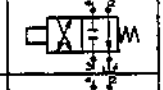
4	
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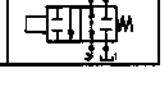
6	

Operators	
0	(Standard) 115 VAC/60 Hz or 110 VAC/50 Hz Solenoid
1	230 VAC/60 Hz or 220 VAC/ 50 Hz Solenoid
2*	12 VDC Solenoid
3*	24 VDC Solenoid
AP*	Air (16 psi to 100 psi)
MAN*	Manual
HP*	Hydraulic Pilot Operator

*See DS 80150-1C for details.
** ALL SPOOLS ARE NORMALLY OPEN CROSS OVER

Accessories	
Blank	None required
MO*	Manual Push Button Solenoid Overide
MS*	Manual Screw Lock-In Solenoid Overide

Electrical Connectors	
N	None required
S	(Standard) Cable Connector w/o Indicator Light
L	Cable Connector with Indicator Light
R	0.500 NPTF Connector w/o Indicator Light
W	0.500 NPTF Connector with Indicator Light
B*	3-pin Brad-Harrison Connector with Light
C*	3-pin Brad-Harrison Connector w/o Indicator Light

Cartridge With Line Mount Block

HS4SV__-602-____-__/BD1-08-C

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DS 80154-C3.1

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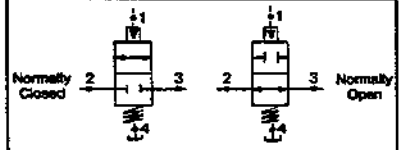
VALVE, SCREW-IN CARTRIDGE

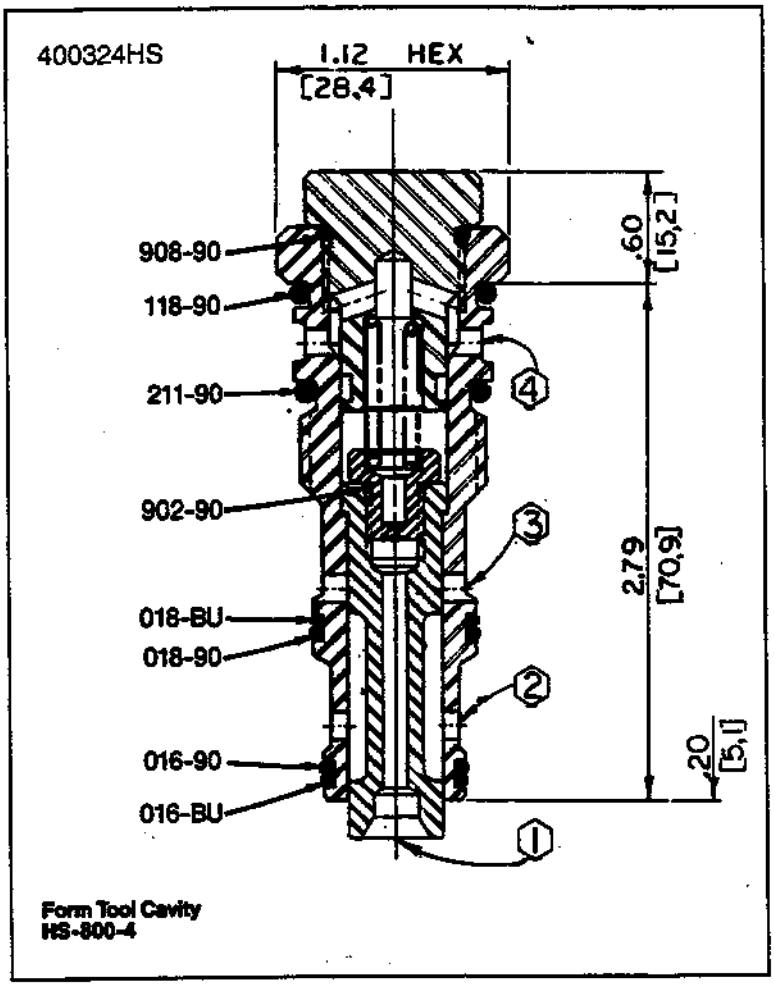
17 USGPM △ 100 PSI
(64,4 LPM △ 6,9 Bar)

HS2W800-SP

ENGINEERING | 1



Data Sheet Two-Way Single Pilot Operated Directional Control Valve



Application

The HS2W cartridge valve is used to allow (open) or block (close) flow, in a single line of a circuit, when actuated by a pilot valve.

Operation

The HS2W valve can be pilot operated by connecting port 1 to an electric, pneumatic or manual operated pilot valve. Port 4 must be connected to drain (unless a four-way pilot control valve is used). The main spool is available in a normally open or normally closed configuration. The spool is held in its normal position by a spring. Pressure piloted to port 1 shifts the spool against the spring to open or close flow between ports 2 and 3. Draining port 1 allows spring to shift spool to original position.

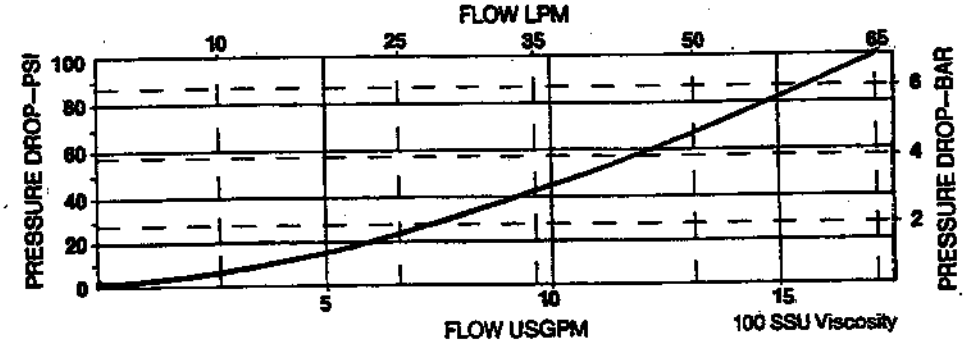
Features

Normally open or normally closed pilot operated valves are constructed of steel parts, operating parts are hardened, and ground as required. Cartridge is designed for easy service or field repair.

Specifications

Maximum flow—17 USgpm (64,4 lpm)
Maximum operating pressure—
5000 psi (345 bar)
Maximum pilot pressure (to shift valve)—
50 psi (3,4 bar)
Viscosity range—27 to 30 SSU at 100°F
35 to 2000 SSU at 100°F
Seals—Viton
Operating temperature—-40°F to 350°F
(-39,6°C to 175°C)
Filtration—Maintain SAE Class 5, ISO 17/14
Seal kit—HSSK-800-R

Performance Curve



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OILGEAR
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Milwaukee, WI USA 53219

Reissued: Nov., 1995

DS 80251-C4.1

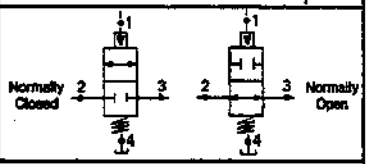
Oilgear

VALVE, SCREW-IN CARTRIDGE

17 USGPM Δ 100 PSI
(64,4 LPM Δ 6,9 Bar)

HS2W800-SP

ENGINEERING | 2



Data Sheet Two-Way Single Pilot Operated Directional Control Valve

How To Order

Screw-In Cartridge Only

HS2W__800-SP

	Spool Function
O	Normally Open
C	Normally Closed

Reissued: Nov., 1995
DS 80251-C4.1

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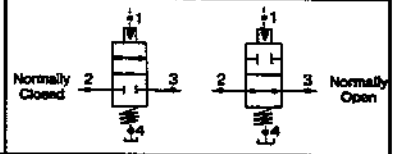
Oilgear

VALVE, SCREW-IN CARTRIDGE

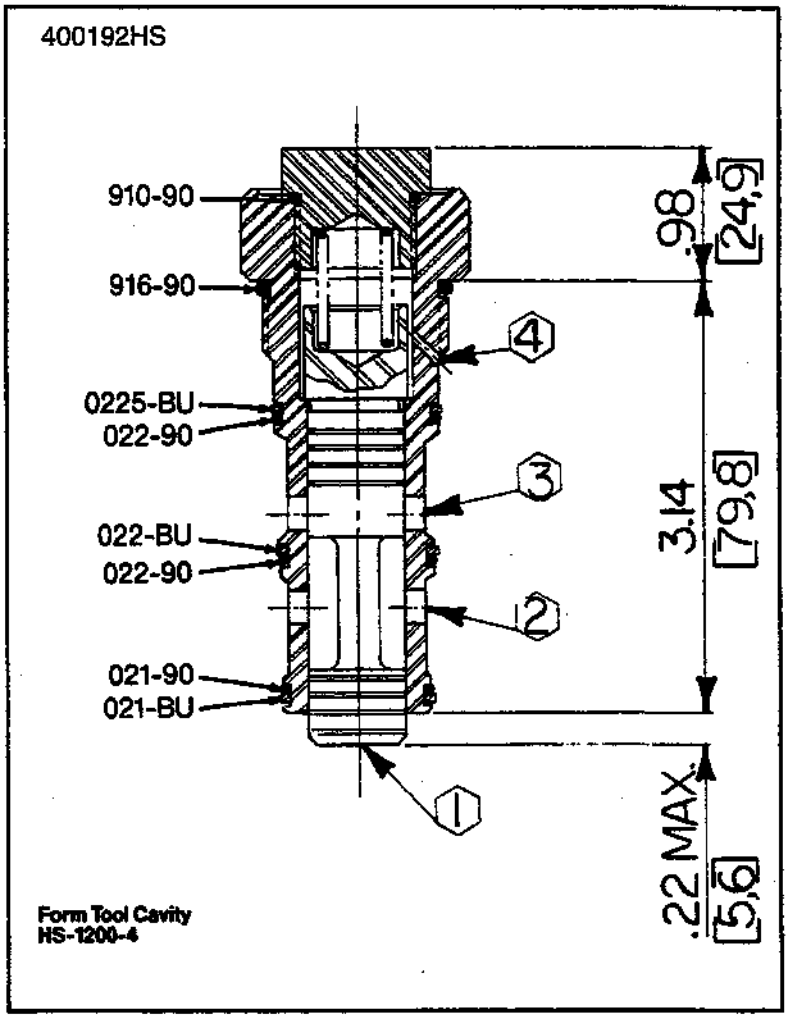
35 USGPM Δ 100 PSI
(132,5 LPM Δ 6,9 Bar)

HS2W1200-SP

ENGINEERING | 1



Data Sheet Two-Way Single Pilot Operated Directional Control Valve



Application

The HS2W cartridge valve is used to allow (open) or block (close) flow, in a single line of a circuit, when actuated by a pilot valve.

Operation

The HS2W valve can be pilot operated by connecting port 1 to an electric, pneumatic or manual operated pilot valve. Port 4 must be connected to drain (unless a four-way pilot control valve is used). The main spool is available in a normally open or normally closed configuration. The spool is held in its normal position by a spring. Pressure piloted to port 1 shifts the spool against the spring to open or close flow between ports 2 and 3. Draining port 1 allows spring to shift spool to original position.

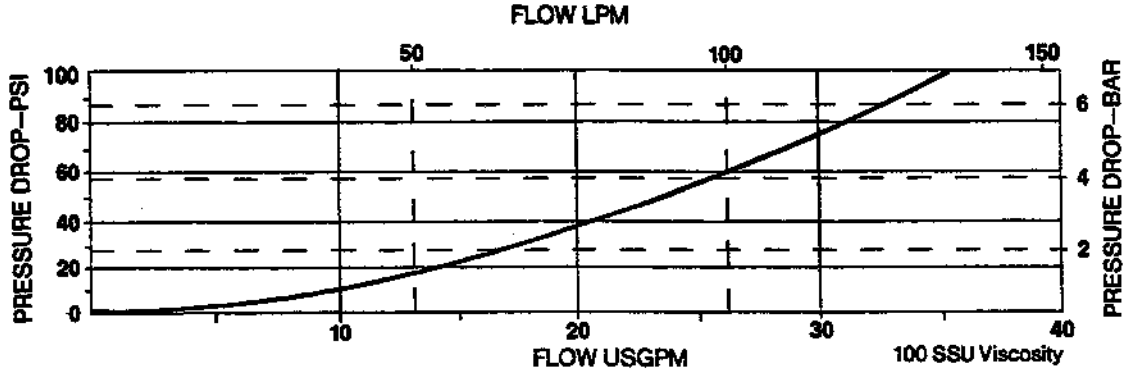
Features

Normally open or normally closed pilot operated valves are constructed of steel parts, operating parts are hardened, and ground as required. Cartridge is designed for easy service or field repair.

Specifications

Maximum flow—35 USgpm (132,5 lpm)
Maximum operating pressure—
5000 psi (345 bar)
Maximum pilot pressure (to shift valve)—
55 psi (3,8 bar)
Viscosity range—27 to 30 SSU at 100°F
35 to 2000 SSU at 100°F
Seals—Viton
Operating temperature—-40°F to 350°F
(-39,6°C to 175°C)
Filtration—Maintain SAE Class 5, ISO 17/14
Seal kit—HSSK-1200-D

Performance Curve



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OILGEAR
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DS 80251-C4.2

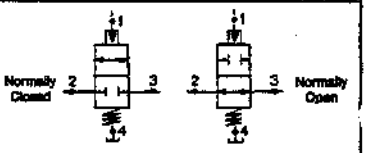
Oilgear

VALVE, SCREW-IN CARTRIDGE

35 USGPM Δ 100 PSI
(132,5 LPM Δ 6,9 Bar)

HS2W1200-SP

ENGINEERING | 2



Data Sheet Two-Way Single Pilot Operated Directional Control Valve

How To Order

Screw-In Cartridge Only

HS2W__1200-SP

	Spool Function
O	Normally Open
C	Normally Closed

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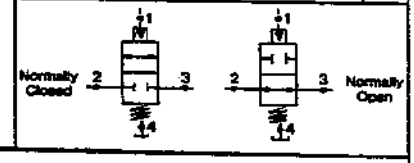
Oilgear

VALVE, SCREW-IN CARTRIDGE

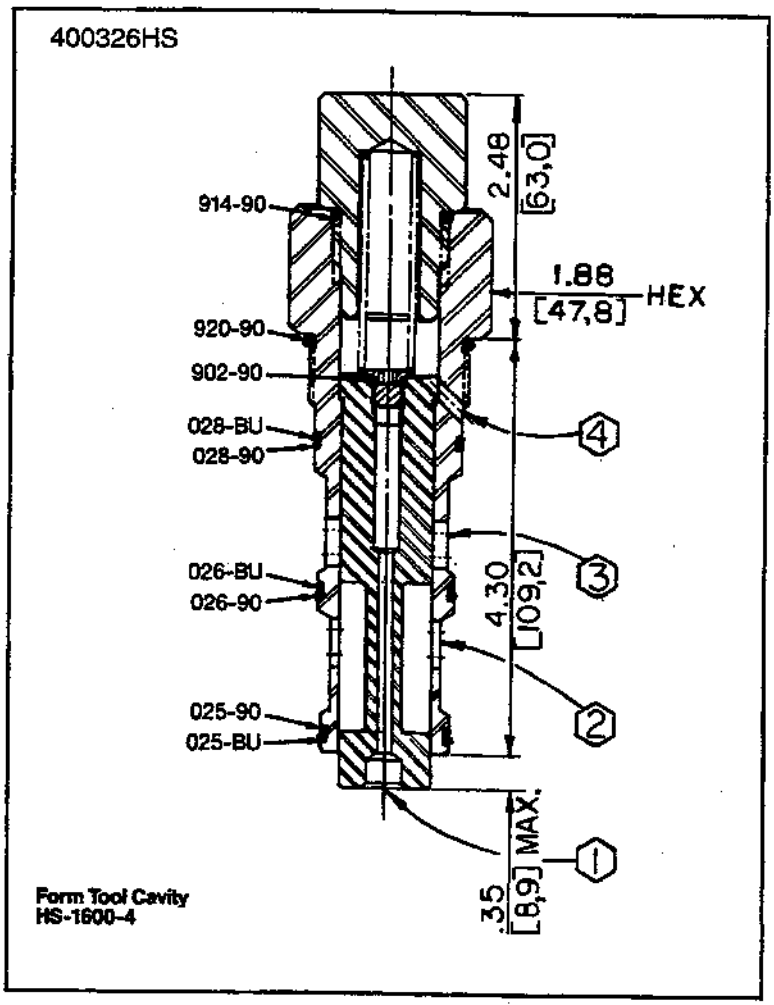
80 USGPM Δ 100 PSI
(303,2 LM Δ 6,9 Bar)

HS2W1600-SP

ENGINEERING | 1



Data Sheet Two-Way Single Pilot Operated Directional Control Valve



Application

The HS2W cartridge valve is used to allow (open) or block (close) flow, in a single line of a circuit, when actuated by a pilot valve.

Operation

The HS2W valve can be pilot operated by connecting port 1 to an electric, pneumatic or manual operated pilot valve. Port 4 must be connected to drain (unless a four-way pilot control valve is used). The main spool is available in a normally open or normally closed configuration. The spool is held in its normal position by a spring. Pressure piloted to port 1 shifts the spool against the spring to open or close flow between ports 2 and 3. Draining port 1 allows spring to shift spool to original position.

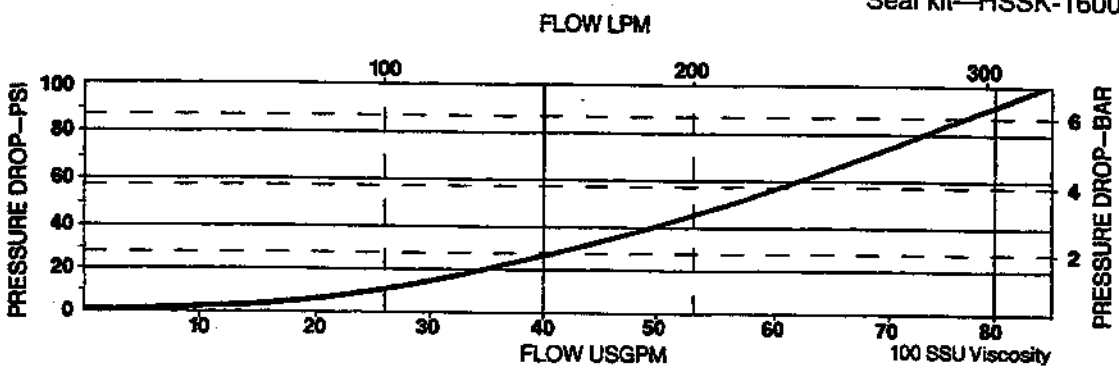
Features

Normally open or normally closed pilot operated valves are constructed of steel parts, operating parts are hardened, and ground as required. Cartridge is designed for easy service or field repair.

Specifications

Maximum flow—80 USgpm (303,2 lpm)
Maximum operating pressure—
5000 psi (345 bar)
Maximum pilot pressure (to shift valve)—
36 psi (2,5 bar)
Viscosity range—27 to 30 SSU at 100°F
35 to 2000 SSU at 100°F
Seals—Viton
Operating temperature—-40°F to 350°F
(-39,6°C to 175°C)
Filtration—Maintain SAE Class 5, ISO 17/14
Seal kit—HSSK-1600-D

Performance Curve



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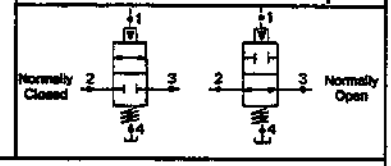
Oilgear

VALVE, SCREW-IN CARTRIDGE

80 USGPM △ 100 PSI
(303,2 LPM △ 6,9 Bar)

HS2W1600-SP

ENGINEERING | 2



Data Sheet — Two-Way Single Pilot Operated Directional Control Valve

How To Order

Screw-In Cartridge Only

HS2W__1600-SP

	Spool Function
O	Normally Open
C	Normally Closed

Reissued: Nov., 1995
DS 80251-C4.3

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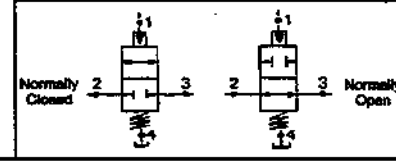
Oilgear

VALVE, SCREW-IN CARTRIDGE

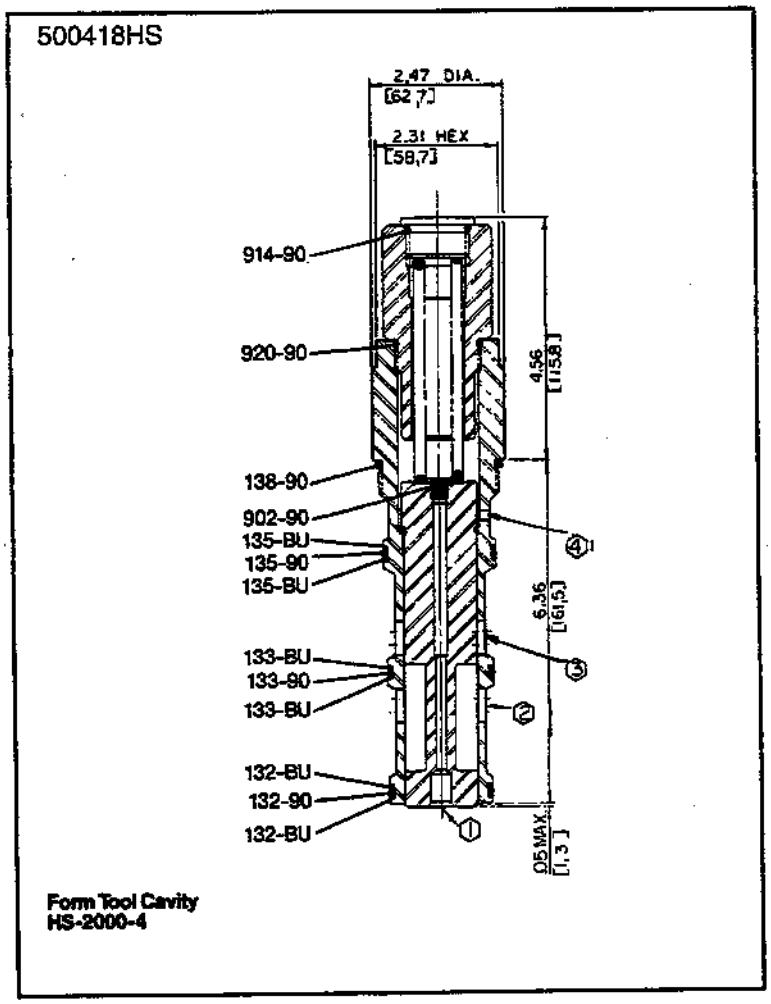
175 USGPM Δ 100 PSI
(663,3 LPM Δ 6,9 Bar)

HS2W2000-SP

ENGINEERING | 1



Data Sheet — **Two-Way Single Pilot Operated Directional Control Valve**



Application

The HS2W cartridge valve is used to allow (open) or block (close) flow, in a single line of a circuit, when actuated by a pilot valve.

Operation

The HS2W valve can be pilot operated by connecting port 1 to an electric, pneumatic or manual operated pilot valve. Port 4 must be connected to drain (unless a four-way pilot control valve is used). The main spool is available in a normally open or normally closed configuration. The spool is held in its normal position by a spring. Pressure piloted to port 1 shifts the spool against the spring to open or close flow between ports 2 and 3. Draining port 1 allows spring to shift spool to original position.

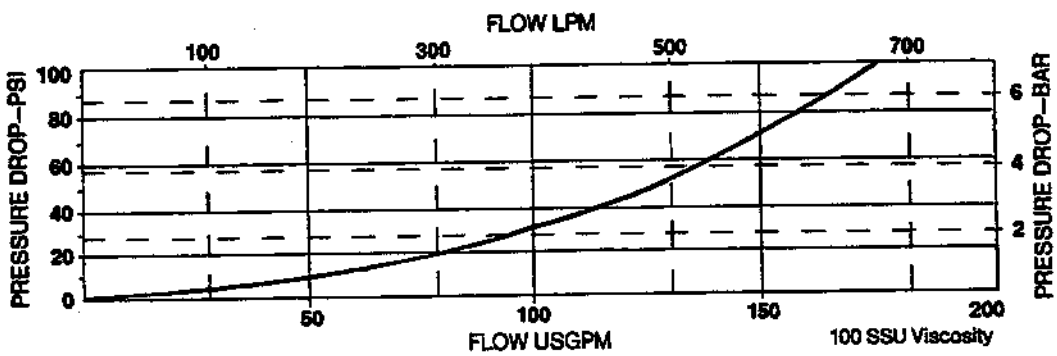
Features

Normally open or normally closed pilot operated valves are constructed of steel parts, operating parts are hardened, and ground as required. Cartridge is designed for easy service or field repair.

Specifications

Maximum flow—175 USgpm (663,3 lpm)
Maximum operating pressure—
5000 psi (345 bar)
Maximum pilot pressure (to shift valve)—
75 psi (5,2 bar)
Viscosity range—27 to 30 SSU at 100°F
35 to 2000 SSU at 100°F
Seals—Viton
Operating temperature—-40°F to 350°F
(-39,6°C to 175°C)
Filtration—Maintain SAE Class 5, ISO 17/14
Seal kit—HSSK-2000-D

Performance Curve



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DS 80251-C4.4

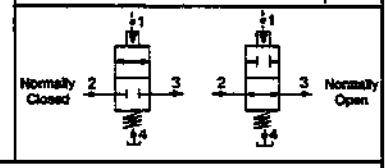
Oilgear

VALVE, SCREW-IN CARTRIDGE

175 USGPM △ 100 PSI
(663,3 LPM △ 6,9 Bar)

HS2W2000-SP

ENGINEERING | 2



Data Sheet — Two-Way Single Pilot Operated Directional Control Valve

How To Order

Screw-In Cartridge Only

HS2W__2000-SP

	Spool Function
O	Normally Open
C	Normally Closed

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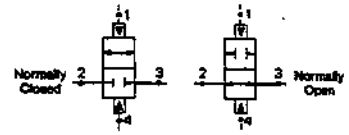
Oilgear

VALVE, SCREW-IN CARTRIDGE

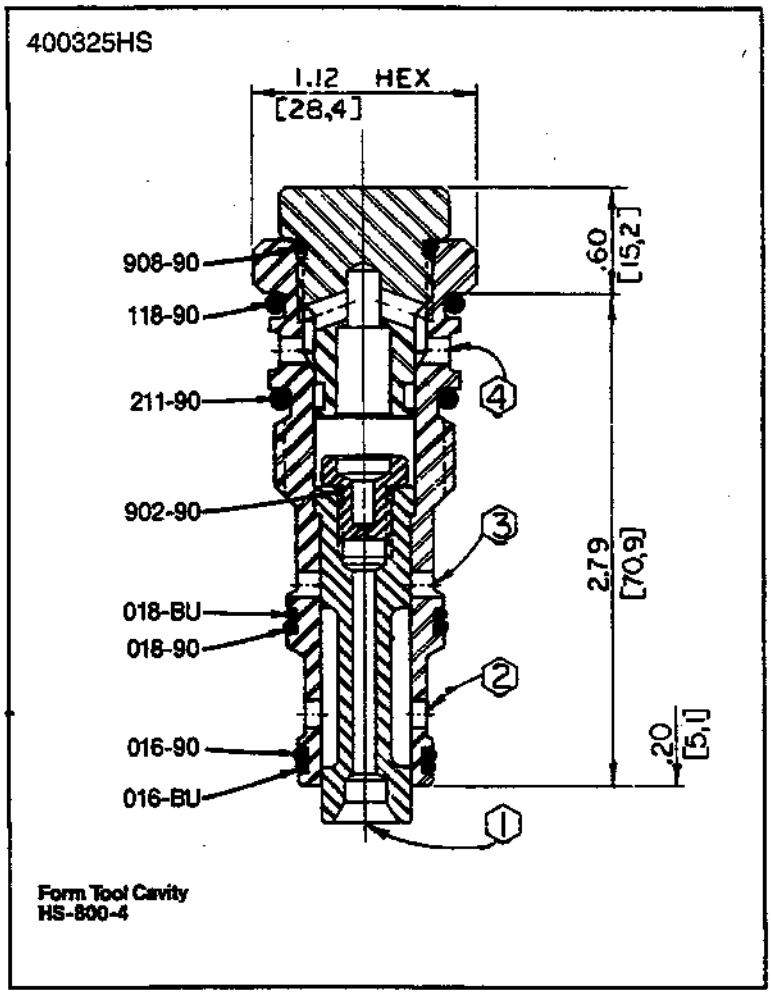
17 USGPM △ 100 PSI
(64,4 LPM △ 6,9 Bar)

HS2W800-DP

ENGINEERING | 1



Data Sheet — **Two-Way Dual Pilot Operated Directional Control Valve**



Application

The HS2W cartridge valve is used to allow (open) or block (close) flow, in a single line of a circuit when operated by a pilot valve.

Operation

The HS2W valve can be pilot operated by connecting ports 1 and 4 to an electric, pneumatic, or manual operated pilot valve. The main spool is available in a normally open or a normally closed configuration. With port 1 drained and pressure at port 4, the spool is held in its normal position. Connecting port 1 to pressure and port 4 to drain shifts the spool to open or close flow between ports 2 and 3. If equal pressures are applied to both ports 1 and 4 at the same time, the larger area on the port 4 end of the spool will tend to move the spool to its normal position.

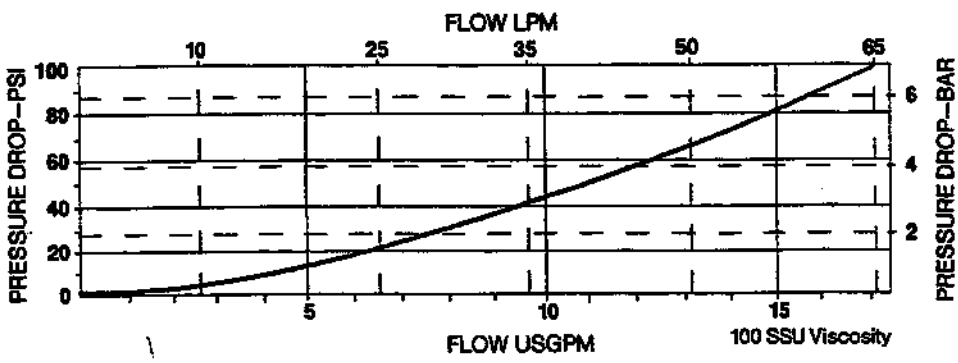
Features

Normally open or normally closed pilot operated valves are constructed of steel parts, operating parts are hardened and cartridge is designed for easy service or field repair.

Specifications

Maximum flow—17 USgpm (64,4 lpm)
Maximum operating pressure—
5000 psi (345 bar)
Viscosity range—27 to 30 SSU at 100°F
35 to 2000 SSU at 100°F
Seals—Viton
Operating temperature—-40°F to 350°F
(-39,6°C to 175°C)
Filtration—Maintain SAE Class 5, ISO 17/14
Seal kit—HSSK-800-R

Performance Curve



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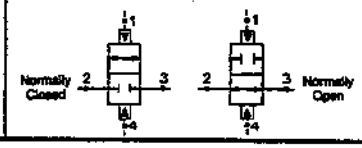
Oilgear

VALVE, SCREW-IN CARTRIDGE

17 USGPM △ 100 PSI
(64,4 LPM △ 6,9 Bar)

HS2W800-DP

ENGINEERING | 2



Data Sheet — Two-Way Dual Pilot Operated Directional Control Valve

How To Order

Screw-In Cartridge Only

HS2W__800-DP

Spool Function	
O	Normally Open
C	Normally Closed

Reissued: Nov., 1995
DS 80252-C5.1

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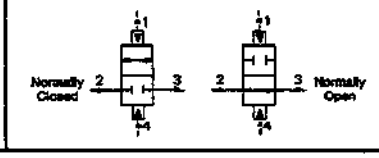
Oilgear

VALVE, SCREW-IN CARTRIDGE

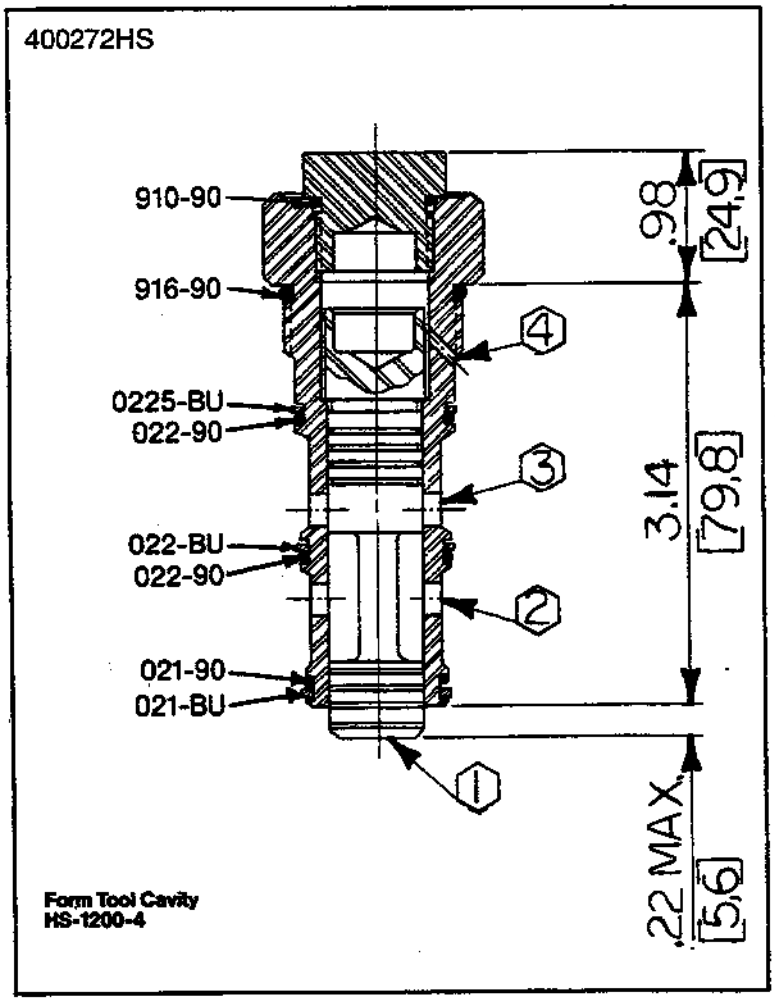
35 USGPM Δ 100 PSI
(132,5 LPM Δ 6,9 Bar)

HS2W1200-DP

ENGINEERING 1



Data Sheet Two-Way Dual Pilot Operated Directional Control Valve



Application

The HS2W cartridge valve is used to allow (open) or block (close) flow, in a single line of a circuit when operated by a pilot valve.

Operation

The HS2W valve can be pilot operated by connecting ports 1 and 4 to an electric, pneumatic, or manual operated pilot valve. The main spool is available in a normally open or a normally closed configuration. With port 1 drained and pressure at port 4, the spool is held in its normal position. Connecting port 1 to pressure and port 4 to drain shifts the spool to open or close flow between ports 2 and 3. If equal pressures are applied to both ports 1 and 4 at the same time, the larger area on the port 4 end of the spool will tend to move the spool to its normal position.

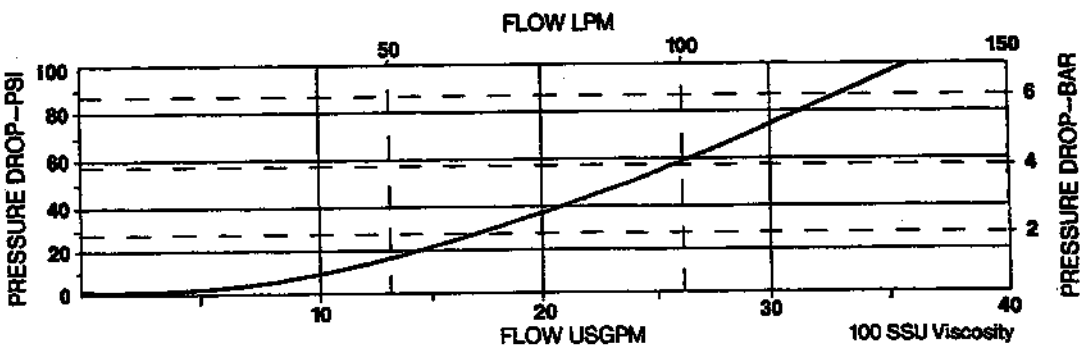
Features

Normally open or normally closed pilot operated valves are constructed of steel parts, operating parts are hardened and cartridge is designed for easy service or field repair.

Specifications

Maximum flow—35 USgpm (132,5 lpm)
Maximum operating pressure—
5000 psi (345 bar)
Viscosity range—27 to 30 SSU at 100°F
35 to 2000 SSU at 100°F
Seals—Viton
Operating temperature—-40°F to 350°F
(-39,6°C to 175°C)
Filtration—Maintain SAE Class 5, ISO 17/14
Seal kit—HSSK-1200-D

Performance Curve



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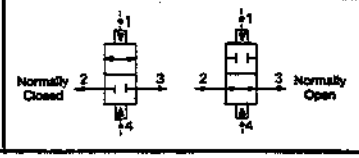
Oilgear

VALVE, SCREW-IN CARTRIDGE

35 USGPM △ 100 PSI
(132,5 LPM △ 6,9 Bar)

HS2W1200-DP

ENGINEERING | 2



Data Sheet — Two-Way Dual Pilot Operated Directional Control Valve

How To Order

Screw-In Cartridge Only

HS2W__1200-DP

	Spool Function
O	Normally Open
C	Normally Closed

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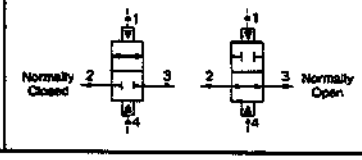
VALVE, SCREW-IN CARTRIDGE

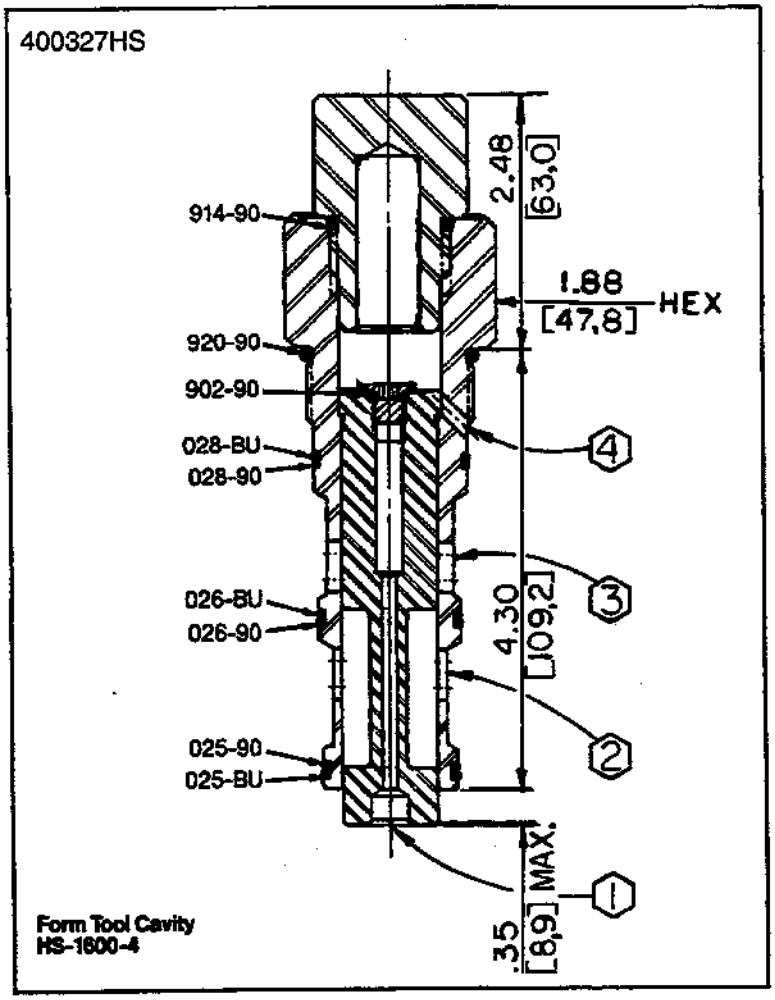
80 USGPM △ 100 PSI
(303,2 LPM △ 6,9 Bar)

HS2W1600-DP

ENGINEERING | 1



Data Sheet — **Two-Way Dual Pilot Operated Directional Control Valve**



Application

The HS2W cartridge valve is used to allow (open) or block (close) flow, in a single line of a circuit when operated by a pilot valve.

Operation

The HS2W valve can be pilot operated by connecting ports 1 and 4 to an electric, pneumatic, or manual operated pilot valve. The main spool is available in a normally open or a normally closed configuration. With port 1 drained and pressure at port 4, the spool is held in its normal position. Connecting port 1 to pressure and port 4 to drain shifts the spool to open or close flow between ports 2 and 3. If equal pressures are applied to both ports 1 and 4 at the same time, the larger area on the port 4 end of the spool will tend to move the spool to its normal position.

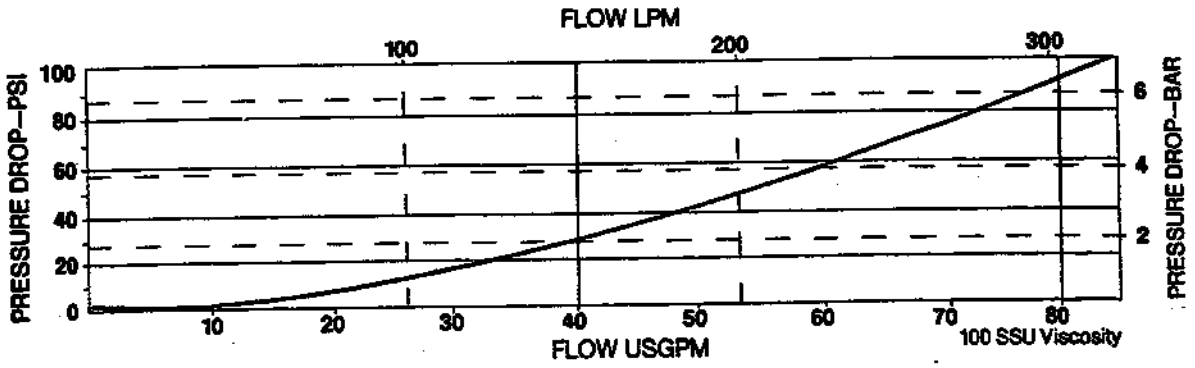
Features

Normally open or normally closed pilot operated valves are constructed of steel parts, operating parts are hardened and cartridge is designed for easy service or field repair.

Specifications

Maximum flow—80 USgpm (303,2 lpm)
Maximum operating pressure—
5000 psi (345 bar)
Viscosity range—27 to 30 SSU at 100°F
35 to 2000 SSU at 100°F
Seals—Viton
Operating temperature—-40°F to 350°F
(-39,6°C to 175°C)
Filtration—Maintain SAE Class 5, ISO 17/14
Seal kit—HSSK-1600-D

Performance Curve



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Reissued: Nov., 1995

DS 80252-C5.3

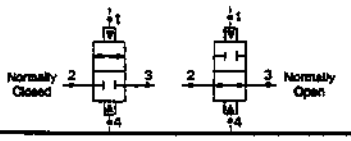
Oilgear

VALVE, SCREW-IN CARTRIDGE

80 USGPM △ 100 PSI
(303,2 LPM △ 6,9 Bar)

HS2W1600-DP

ENGINEERING | 2



Data Sheet — Two-Way Dual Pilot Operated Directional Control Valve

How To Order

Screw-In Cartridge Only

HS2W__1600-DP

Spool Function	
O	Normally Open
C	Normally Closed

Reissued: Nov., 1995
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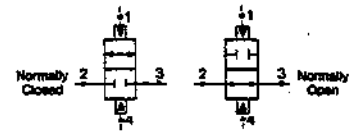
Oilgear

VALVE, SCREW-IN CARTRIDGE

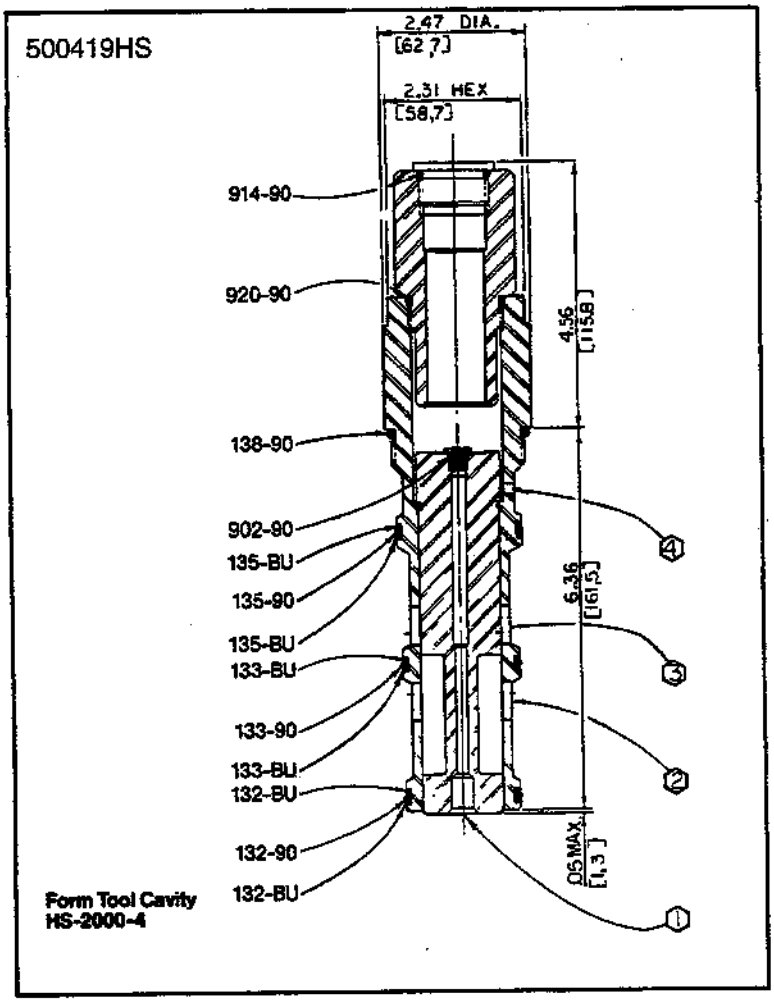
175 USGPM △ 100 PSI
(663,3 LPM △ 6,9 Bar)

HS2W2000-DP

ENGINEERING 1



Data Sheet Two-Way Dual Pilot Operated Directional Control Valve



Application

The HS2W cartridge valve is used to allow (open) or block (close) flow, in a single line of a circuit when operated by a pilot valve.

Operation

The HS2W valve can be pilot operated by connecting ports 1 and 4 to an electric, pneumatic, or manual operated pilot valve. The main spool is available in a normally open or a normally closed configuration. With port 1 drained and pressure at port 4, the spool is held in its normal position. Connecting port 1 to pressure and port 4 to drain shifts the spool to open or close flow between ports 2 and 3. If equal pressures are applied to both ports 1 and 4 at the same time, the larger area on the port 4 end of the spool will tend to move the spool to its normal position.

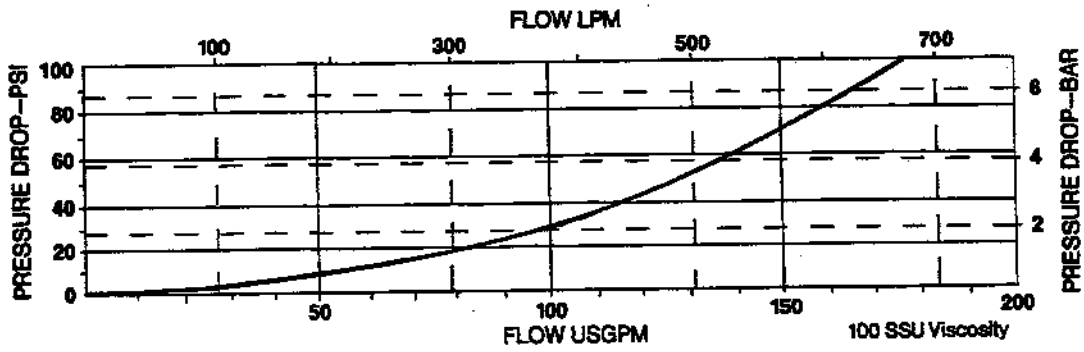
Features

Normally open or normally closed pilot operated valves are constructed of steel parts, operating parts are hardened and cartridge is designed for easy service or field repair.

Specifications

Maximum flow—175 USgpm (663,3 lpm)
Maximum operating pressure—
5000 psi (345 bar)
Viscosity range—27 to 30 SSU at 100°F
35 to 2000 SSU at 100°F
Seals—Viton
Operating temperature—-40°F to 350°F
(-39,6°C to 175°C)
Filtration—Maintain SAE Class 5, ISO 17/14
Seal kit—HSSK-2000-D

Performance Curve



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Reissued: Nov., 1995
DS 80252-C5.4

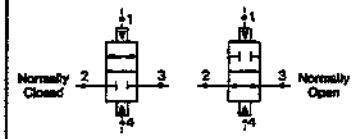
Oilgear

VALVE, SCREW-IN CARTRIDGE

175 USGPM △ 100 PSI
(663,3 LPM △ 6,9 Bar)

HS2W2000-DP

ENGINEERING | 2



Data Sheet — **Two-Way Dual Pilot Operated Directional Control Valve**

How To Order

Screw-In Cartridge Only

HS2W__2000-DP

Spool Function	
O	Normally Open
C	Normally Closed

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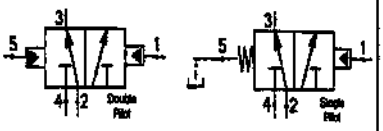
Oilgear

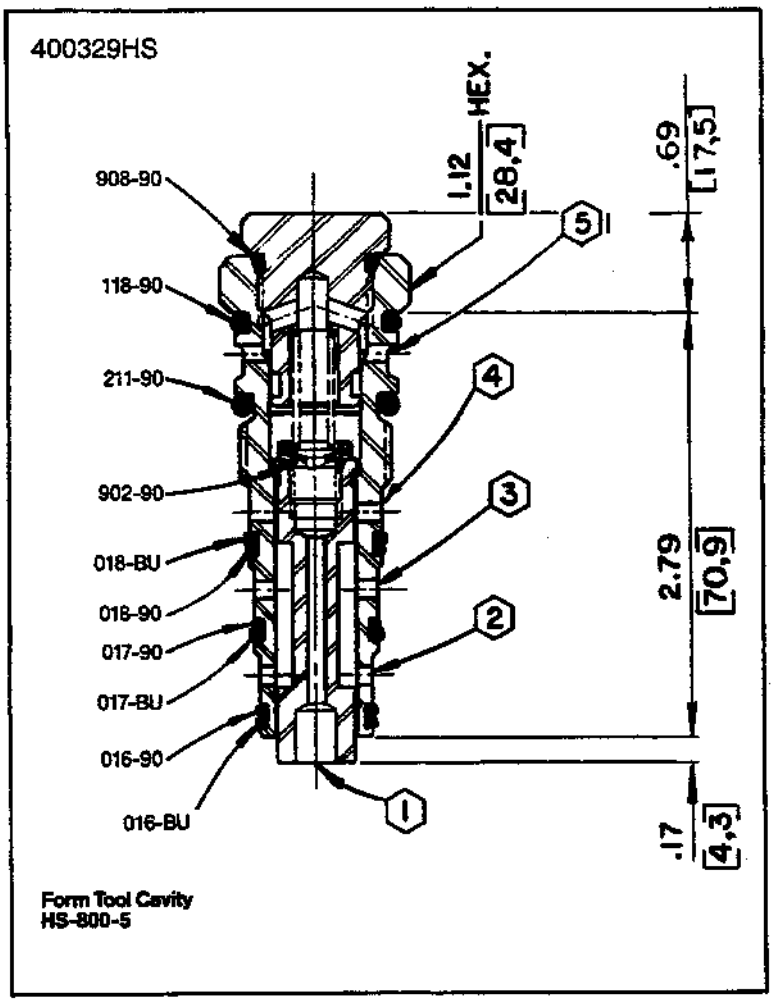
VALVE, SCREW-IN CARTRIDGE

HS3W800

ENGINEERING | 1



Data Sheet — **Three-Way Directional Control Valve**



Application

Pressure selection from either of two sources to a system can be made by actuating this HS3W cartridge valve with a pilot valve.

Operation

The HS3W valve is available for two-way pilot operation (spring returned) or four-way pilot operation. Electric, pneumatic or manual operated valves can be connected to pilot ports. Normal spool position (from spring force or port 5 pressure) connects port 2 to port 3. Pressure at port 1 (port 5 drained) shifts plunger to connect port 4 to port 3. In the case of four-way or double two-way piloted valves—if equal pressures are applied to ports 1 and 5 at the same time, the larger area on the port 5 end of the spool will tend to move the spool to its normal position. In the case of single piloted valve, port 5 must be connected to drain.

Features

Valve is constructed of steel parts, all operating parts are hardened and cartridge is designed for easy service or field repair.

Specifications

Maximum operating pressure—
5000 psi (345 bar)
Maximum pilot pressure (to shift valve)—
45 psi (3,1 bar)
Viscosity range—27-30 SSU at 100°F
35-2000 SSU at 100°F
Seals—Viton
Operating temperature—-40°F to 350°F
(-39,6°C to 175°C)
Filtration—Maintain SAE Class 5, ISO 17/14
Seal kit—HSSK-800-U

Telephone: (414) 327-1700
Fax: (414) 327-0532

OILGEAR
2300 So. 51st. Street
Milwaukee, WI USA 53219

Reissued: Nov., 1995

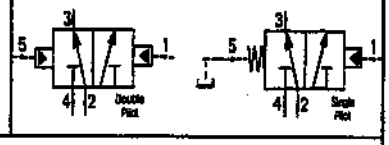
DS 80350-C6.1

Oilgear

VALVE, SCREW-IN CARTRIDGE

HS3W800

ENGINEERING | 2



Data Sheet — Three-Way Directional Control Valve

How To Order

Screw-in Cartridge

HS3W800-__

	Pilot
SP	Single Pilot
DP	Double Pilot

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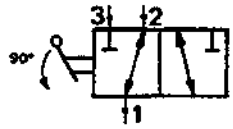
VALVE, SCREW-IN CARTRIDGE

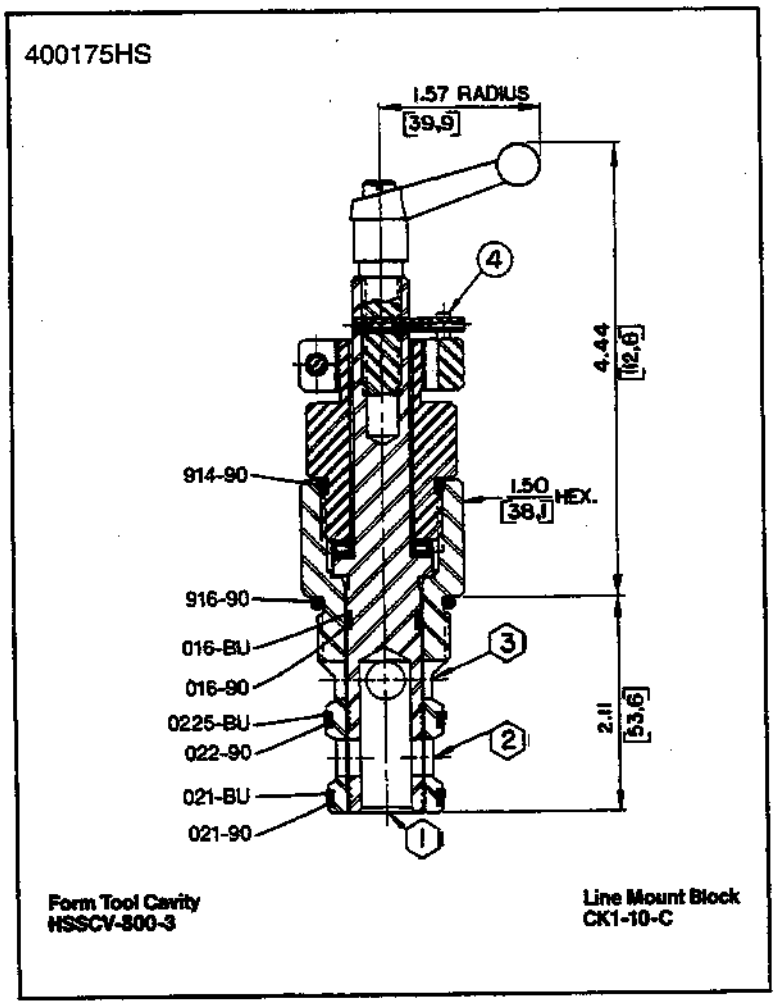
27 USGPM Δ 100 PSI
(102,2 LPM Δ 6,9 Bar)

HS3W800-90

ENGINEERING | 1



Data Sheet — **Three-Way Directional Control Valve**



Application

The HS3W cartridge valve is used to connect one (common) port to either of two other ports, when manual lever is turned 90°.

Operation

Type HS3W-90 cartridge valve has a hollow main spool. Holes are drilled thru the circumference of the main spool. A lever is connected to the main spool. In one position of the lever, the holes in the spool line up with matching holes in the body and allow flow between hollow spool (port 1) and port 2. Rotating the lever 90° dis-aligns port 2 holes and lines up holes in spool with port 3—allowing flow between ports 1 and 3. The lever can be positioned after the valve has been installed, by lifting, rotating and releasing the handle.

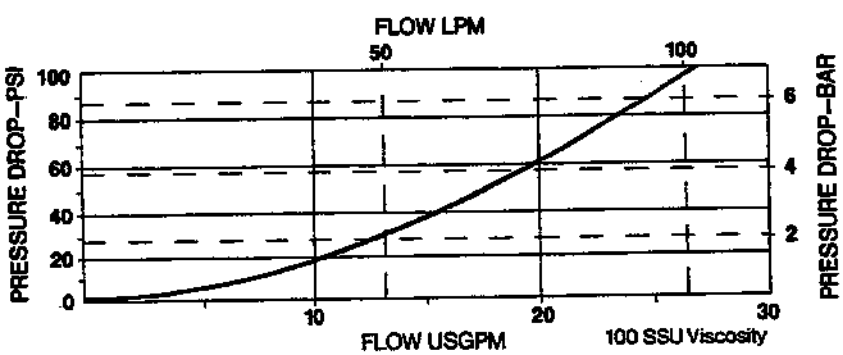
Features

The lever can be positioned anywhere within a 360° circle. The valve is constructed of steel parts, operating parts are hardened and cartridge is designed for easy field service or repair.

Specifications

Maximum flow—27 USgpm Δ 100 psi
(102,2 lpm Δ 6,9 bar)
Maximum operating pressure—
5000 psi (345 bar)
Viscosity range—27-30 SSU at 100°F
35-2000 SSU at 100°F
Seals—Viton
Operating temperature—-40°F to 350°F
(-39,6°C to 175°C)
Filtration—Maintain SAE Class 5, ISO 17/14
Seal kit—HSSK-800-L

Performance Curve



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DS 80350-C7.1

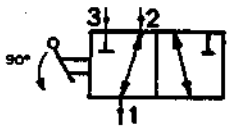
Oilgear

VALVE, SCREW-IN CARTRIDGE

27USGPM△100PSI
(102,2 LPM △ 6,9 Bar)

HS3W800-90

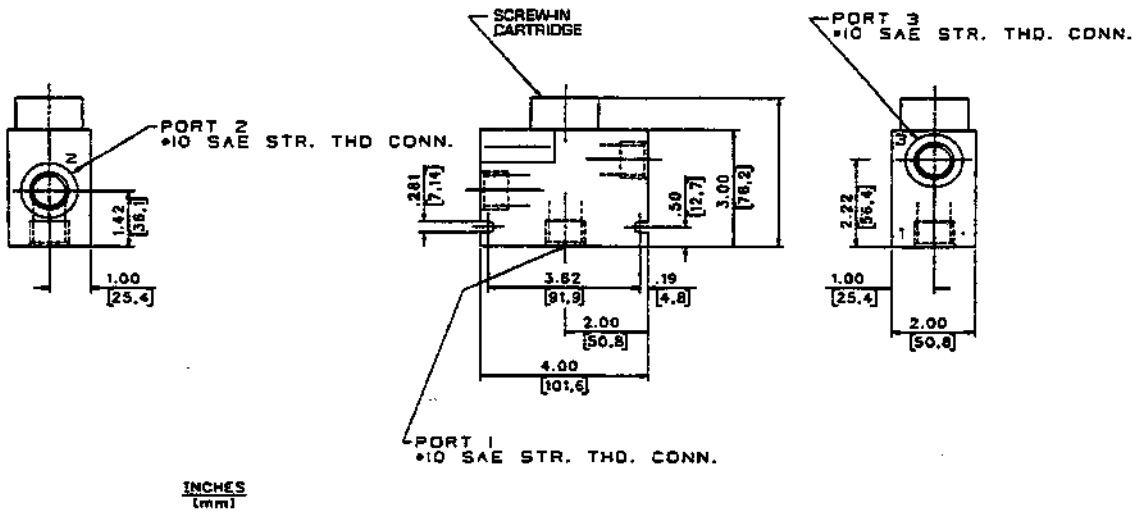
ENGINEERING | 2



Data Sheet — Three-Way Directional Control Valve

Line Mount Specifications

HS3W800-90/CK1-10-C



How To Order

Screw-In Cartridge Only

HS3W800-90

Cartridge With Line Mount Block

HS3W800-90/CK1-10-C

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