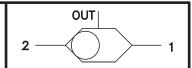


Shuttle Valves

	MODEL	DESCRIPTION	FLOW	CAVITY	PAGE NO.
0UT 2 — 1	BDSV-10-X-2	SHUTTLE VALVE, BALL TYPE, 2-WAY CAVITY	6 GPM	C1020	4-012.0
3 — 1	BDSV-04-X-3 BDSV-08-X-3 BDSV-10-X-3	SHUTTLE VALVE, BALL TYPE, 3-WAY CAVITY	1.5 GPM 3 GPM 6 GPM	C0430 C0830 C1030	4-020.0 4-021.0 4-022.0
2	HOSR-10	HOT OIL SHUTTLE, SPRINGLESS w/RELIEF	6 GPM	C1020	4-042.0
3	HOSV-10-X-C HOSV-10-X-O	HOT OIL SHUTTLE, CLOSED CROSSOVER HOT OIL SHUTTLE, OPEN CROSSOVER	16 GPM 16 GPM	C1040 C1040	4-052.0 4-062.0
4 31	SDSV-08	SHUTTLE, BRAKE RELEASE, CENTERED	5 GPM	C0840	4-101.0
2 4	SDSV-12	SHUTTLE, BRAKE RELEASE, CENTERED	24 GPM	C1240	4-113.0

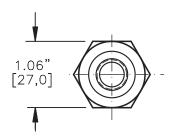


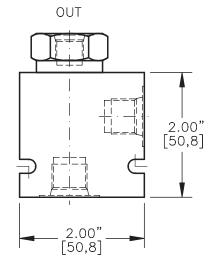


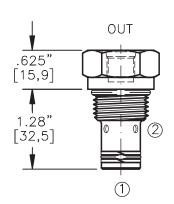


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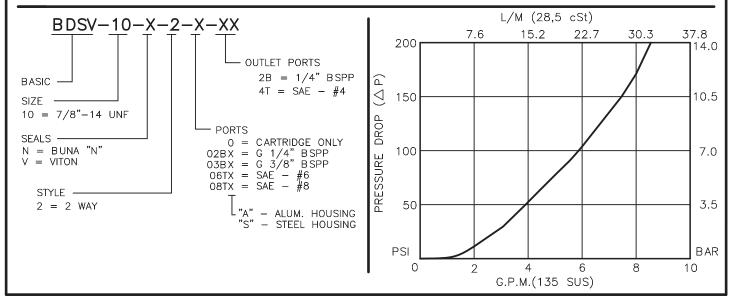
Steel = 55/60 Ft-Lb. [74/81 Nm]Aluminum = 35/40 Ft-Lb. [47/54 Nm]







FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-012.1





SHUTTLE VALVE TWO-POSITION, TWO-WAY, BALL TYPE.

DESCRIPTION

This unit is a SCREW IN, CARTRIDGE TYPE, TWO PORTED WITH EXTERNAL THIRD OUTLET PORT, TWO POSITION. HYDRAULIC SHUTTLE VALVE.

OPERATIONS

This valve senses the higher of the two input pressures port #1 or #2 and routes it to the OUT port.

FEATURES AND BENEFITS

A steel ball and a sharp steel seat assures rugged and reliable performance.

All external carbon steel parts are plated for longer life against the elements. All cartridge valves are 100% functionally tested. Industry common cavity.

SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar] PROOF PRESSURE: 10,000 PSI [700 Bar]

6.0 GPM [23 1/m] nominal. See performance chart.

INTERNAL LEAKAGE: 5 drops/min maxium at 5,000 PSI.

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum - Anodized. 5000 PSI [350 Bar] = Steel - Unplated.

OPERATING TEMPERATURE: -40° to $+250^{\circ}$ F. $[-40^{\circ}$ to $+120^{\circ}$ C.] OPERATING MEDIA: All general purpose hydraulic fluids such as

MIL - H - 5606, SAE - #10, SAE - #20, etc.

INSTALLATION: No restriction.

FILTRATION: 25 microns or better.

SEAL KIT NUMBER: SKN-1022 for buna "N".

SKV-1022 for viton.

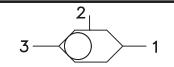
WEIGHT: 0.19 lb [.086 kg] cartridge only. VALVE CAVITY: #C1020, See Page 0-012.0.

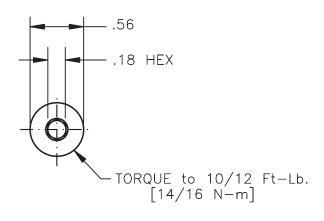
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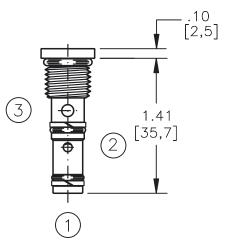
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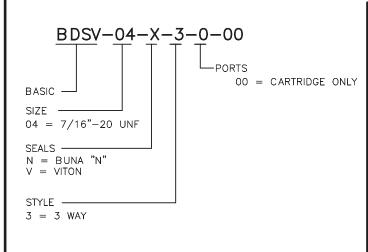
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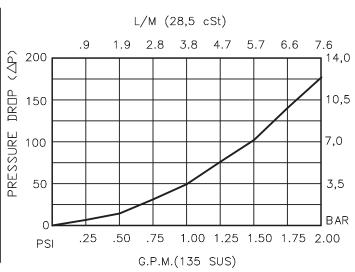
SHUTTLE VALVE TWO-POSITION, THREE-WAY, BALL TYPE.













SHUTTLE VALVE TWO-POSITION, THREE-WAY, BALL TYPE.

DESCRIPTION

This unit is a SCREW IN, CARTRIDGE TYPE, THREE PORTED, TWO POSITION, HYDRAULIC SHUTTLE VALVE.

OPERATIONS

This valve senses the higher of the two input pressures port #1 or #3 and routes it to the output port #2.

FEATURES AND BENEFITS

A steel ball and a sharp steel seat assures rugged and reliable performance.

All external carbon steel parts are plated for longer life against the elements. All cartridge valves are 100% functionally tested. Industry common cavity.

SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar] PROOF PRESSURE: 10,000 PSI [700 Bar]

1.5 GPM [6 I/m] nominal. See performance chart. INTERNAL LEAKAGE: 5 drops/min maxium at 5,000 PSI.

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum - Anodized. 5000 PSI [350 Bar] = Steel - Unplated.

OPERATING TEMPERATURE: -40° to $+250^{\circ}$ F. $[-40^{\circ}$ to $+120^{\circ}$ C.] OPERATING MEDIA: All general purpose hydraulic fluids such as

MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restriction.

FILTRATION: 25 microns or better.

SEAL KIT NUMBER: SKN-0431 FOR BUNA "N"

SKV-0431 FOR VITON "V".

WEIGHT: 0.03 lb [.014kg] cartridge only. VALVE CAVITY: #C0430, See Page 0-030.0.

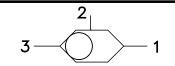
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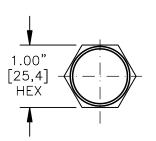
BUCHER hydraulics

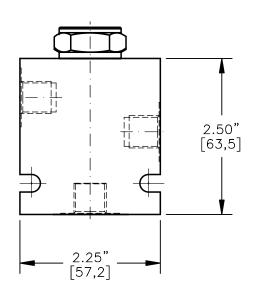
SHUTTLE VALVE TWO-POSITION, THREE-WAY, BALL TYPE.

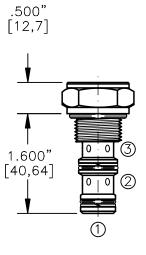


TORQUE:

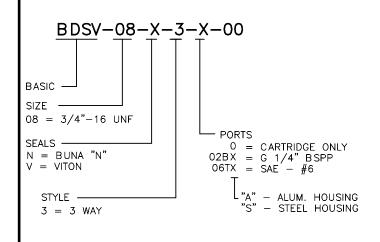
Steel = 35/40 Ft-Lb. [47/54 Nm]Aluminum = 25/30 Ft-Lb. [34/41 Nm]

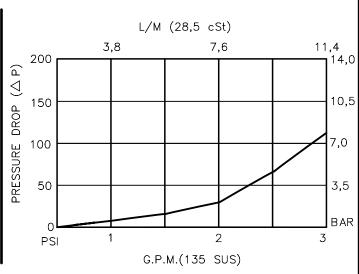






FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-031.1







SHUTTLE VALVE TWO-POSITION, THREE-WAY, BALL TYPE.

DESCRIPTION

This unit is a SCREW IN, CARTRIDGE TYPE, THREE PORTED, TWO POSITION, HYDRAULIC SHUTTLE VALVE.

OPERATIONS

This valve senses the higher of the two input pressures port #1 or #3 and routes it to the output port #2.

FEATURES AND BENEFITS

A steel ball and a sharp steel seat assures rugged and reliable performance.

All external carbon steel parts are plated for longer life against the elements. All cartridge valves are 100% functionally tested. Industry common cavity.

SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]

PROOF PRESSURE: 10,000 PSI [700 Bar]

FLOW: 3.0 GPM [12 I/m] nominal. See performance chart. INTERNAL LEAKAGE: 5 drops/min maxium at 5,000 PSI.

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum - Anodized.

5000 PSI 350 Bar = Steel - Unplated.

OPERATING TEMPERATURE: -40° to $+250^{\circ}$ F. $[-40^{\circ}$ to $+120^{\circ}$ C.] OPERATING MEDIA: All general purpose hydraulic fluids such as

MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restriction.

FILTRATION: 25 microns or better.

SEAL KIT NUMBER: SKN-0831 FOR BUNA "N".

SKV-0831 FOR VITON.

WEIGHT: 0.20 lb [.09 kg] cartridge only. VALVE CAVITY: #C0830, See Page 0-031.0.

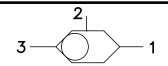
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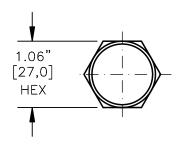


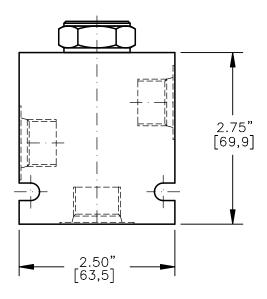


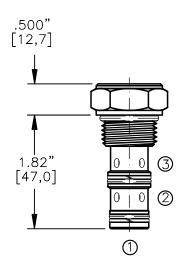


TORQUE:

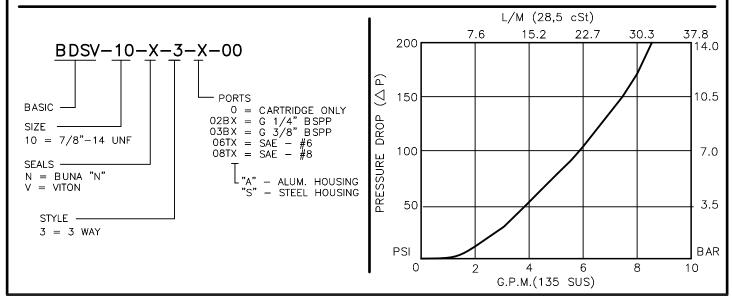
Steel = 55/60 Ft-Lb. [74/81 Nm]Aluminum = 35/40 Ft-Lb. [47/54 Nm]







FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-032.1





SHUTTLE VALVE TWO-POSITION, THREE-WAY, BALL TYPE.

DESCRIPTION

This unit is a SCREW IN, CARTRIDGE TYPE, THREE PORTED, TWO POSITION, HYDRAULIC SHUTTLE VALVE.

OPERATIONS

This valve senses the higher of the two input pressures port #1 or #3 and routes it to the output port #2.

FEATURES AND BENEFITS

A steel ball and a sharp steel seat assures rugged and reliable performance.

All external carbon steel parts are plated for longer life against the elements. All cartridge valves are 100% functionally tested. Industry common cavity.

SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar] PROOF PRESSURE: 10,000 PSI [700 Bar]

FLOW: 6.0 GPM [23 I/m] nominal. See performance chart.

INTERNAL LEAKAGE: 5 drops/min maxium at 5,000 PSI.

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum - Anodized. 5000 PSI [350 Bar] = Steel - Unplated.

OPERATING TEMPERATURE: -40° to $+250^{\circ}$ F. $[-40^{\circ}$ to $+120^{\circ}$ C.]

OPERATING TEMPERATURE: -40 to +250 F. [-40 to +120 C.]
OPERATING MEDIA: All general purpose hydraulic fluids such as

MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restriction.

FILTRATION: 25 microns or better.

SEAL KIT NUMBER: SKN-1031 for buna "n".

SKV-1031 for viton.

WEIGHT: 0.25 lb [.11 kg] cartridge only. VALVE CAVITY: #C1030, See Page 0-032.0.

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HOSR-10

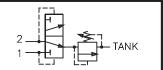
Steel = 55/60 Ft-Lb. [74/81 Nm]

Aluminum = 35/40 Ft-Lb. [47/54 Nm]

TORQUE:

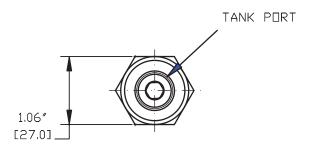


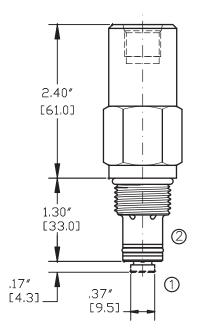




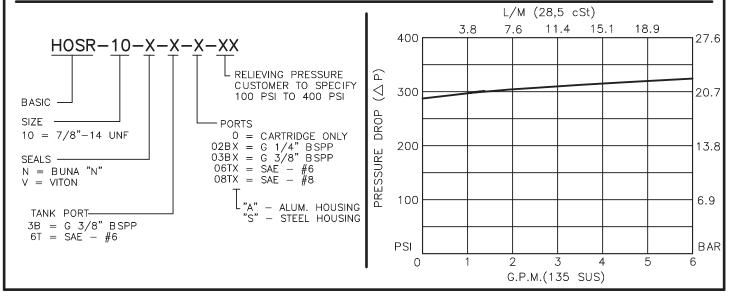
2.00"

[50.8]





NOTE: CAVITY BOTTOM HOLE MUST ALLOW FOR POPPET EXTENSION (.500 DIA) FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-012.1





HOT OIL SHUTTLE VALVE. SPOOL TYPE. SPRINGLESS WITH RELIEF VALVE

DESCRIPTION

This unit is a DIRECT ACTING, SCREW IN CARTRIDGE STYLE, SPOOL TYPE, HYDRAULIC 3—WAY, 2 POS. DIRECTIONAL SHUTTLE VALVE, with built—in ADJUSTABLE RELIEF VALVE which may be used on a hydrostatic transmission to direct charge pump oil to heat exchanger or to tank.

OPERATIONS

This valve with its internal pilots at port 1 or port 2 will allow flow to tank port from the opposite port which is piloted with high pressure, thus removing oil from the low pressure side for cooling or filtration purposes. This valve is springless therefore relying solely on the internal pressure signal to shift it to either side. This valve has a built-in internally adjustable (100 to 400 PSI) relief valve.

FFATURES AND BENEFITS

Hardened precision fitted spool and cage provides reliable, long life. A unibody cage construction provides very low hysteresis and reliable operation.

All external carbon steel parts are plated for longer life against the elements. All cartridge valves are 100% functionally tested. Industry common cavity.

SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar] PROOF PRESSURE: 10,000 PSI [700 Bar]

FLOW: 6.0 GPM [22,8 L/M] nominal. See performance chart.

INTERNAL LEAKAGE: 5 cu.in./min [82 cc/m]

DEFINITION OF CRACK: evident at 0.06 GPM [0.25 LPM]

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum - Anodized. 5000 PSI [350 Bar] = Steel - Unplated.

OPERATING TEMPERATURE: -40° to $+250^{\circ}$ F. $[-40^{\circ}$ to $+120^{\circ}$ C.] OPERATING MEDIA: All general purpose hydraulic fluids such as

MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restriction.

FILTRATION: 25 microns or better.

SEAL KIT NUMBER: SKN-1022 for Buna "N".

SKV-1022 for Viton.

WEIGHT: 0.42 lbs [0,19 kg] cartridge only. VALVE CAVITY: #C1020, See Page 0-012.0.

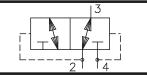
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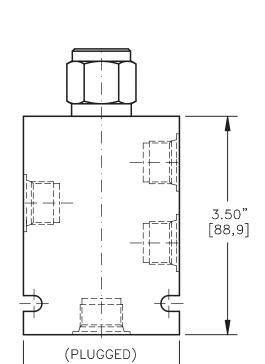


HOT OIL SHUTTLE VALVE SPOOL TYPE, SPRINGLESS.

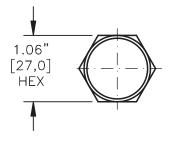


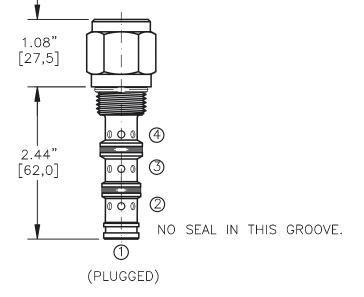
TORQUE:

Steel = 55/60 Ft-Lb. [74/81 Nm] Aluminum = 35/40 Ft-Lb. [47/54 Nm]

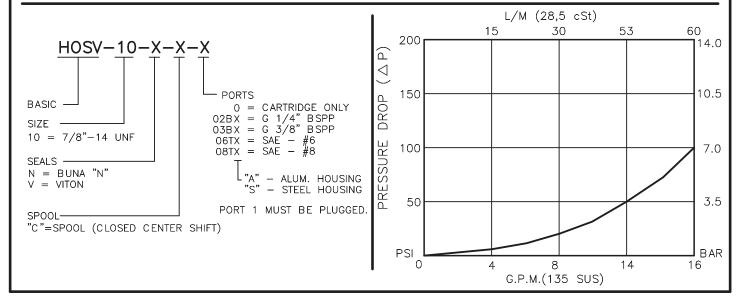


[63,5]





FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-042.1





HOT OIL SHUTTLE VALVE SPOOL TYPE, SPRINGLESS.

DESCRIPTION

This unit is a DIRECT ACTING, SCREW IN CARTRIDGE STYLE, SPOOL TYPE, HYDRAULIC 3—WAY, 2—POS. DIRECTIONAL SHUTTLE VALVE, which may be used on a hydrostatic transmission to direct charge pump oil to heat exchanger or to tank.

OPERATIONS

This valve with its internal pilots at port 2 or port 4 will allow flow to port 3 from the opposite port which is piloted with high pressure, thus removing oil from low pressure side for cooling or filtration purposes. This valve is springless therefore relying solely on the internal pressure signal to shift it to either side. This valve shifts in closed transition.

FEATURES AND BENEFITS

Hardened precision fitted spool & cage provides reliable, long life. A unibody cage construction provides very low hysteresis and reliable operation.

All external carbon steel parts are plated for longer life against the elements. All cartridge valves are 100% functionally tested. Industry common cavity.

SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar] PROOF PRESSURE: 10,000 PSI [700 Bar]

FLOW: 16.0 GPM [60 L/M] nominal. See performance chart.

INTERNAL LEAKAGE: 5 cu.in./min. [85 cc/m].

DEFINITION OF CRACK: evident at 0.06 GPM [0.25 LPM]

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum - Anodized. 5000 PSI [350 Bar] = Steel - Unplated.

OPERATING TEMPERATURE: -40° to $+250^{\circ}$ F. $[-40^{\circ}$ to $+120^{\circ}$ C.] OPERATING MEDIA: All general purpose hydraulic fluids such as

MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restriction.

FILTRATION: 25 microns or better.

SEAL KIT NUMBER: SKN-1042 for bund "N".

 SKV_{1042} for Viton.

WEIGHT: 0.42 lb [.19 kg] cartridge only. VALVE CAVITY: #C1040, See Page 0-042.0.

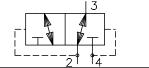
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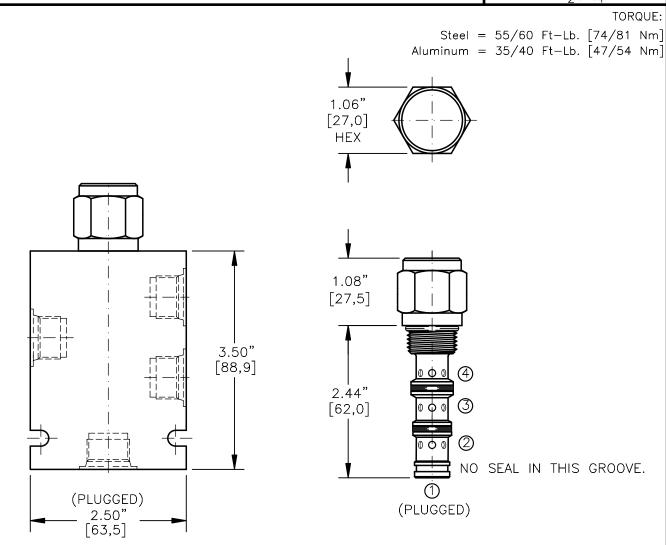
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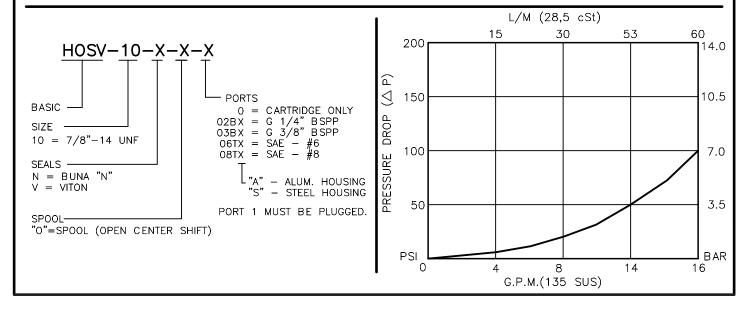








FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-042.1





HOT OIL SHUTTLE VALVE SPOOL TYPE, SPRINGLESS.

DESCRIPTION

This unit is a DIRECT ACTING, SCREW IN CARTRIDGE STYLE, SPOOL TYPE, HYDRAULIC 3—WAY, 2—POS. DIRECTIONAL SHUTTLE VALVE, which may be used on a hydrostatic transmission to direct charge pump oil to heat exchanger or to tank.

OPERATIONS

This valve with it's internal pilots at port 2 or port 4 will allow flow to port 3 from the opposite port which is piloted with high pressure, thus removing oil from low pressure side for cooling or filtration purposes. This valve is springless therefore relying solely on the internal pressure signal to shift it to either side. This valve shifts in open transition.

FEATURES AND BENEFITS

Hardened precision fitted spool & cage provides reliable, long life. A unibody cage construction provides very low hysteresis and reliable operation.

All external carbon steel parts are plated for longer life against the elements. All cartridge valves are 100% functionally tested. Industry common cavity.

SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar] PROOF PRESSURE: 10,000 PSI [700 Bar]

FLOW: 16.0 GPM [60 L/M] nominal. See performance chart.

INTERNAL LEAKAGE: 5 cu.in./min. [85 cc/m].

DEFINITION OF CRACK: evident at 0.06 GPM [0.25 LPM]

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum - Anodized.

5000 PSI [350 Bar] = Steel — Unplated.

OPERATING TEMPERATURE: -40° to $+250^{\circ}$ F. $[-40^{\circ}$ to $+120^{\circ}$ C.] OPERATING MEDIA: All general purpose hydraulic fluids such as

MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restriction.

FILTRATION: 25 microns or better.

SEAL KIT NUMBER: SKN-1042 for Buna "N".

 SKV_1042 for Viton.

WEIGHT: 0.42 lb [.19 kg] cartridge only. VALVE CAVITY: #C1040, See Page 0-042.0.

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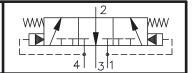
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SDSV-08

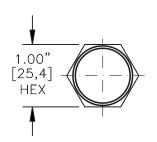
BUCHER hydraulics

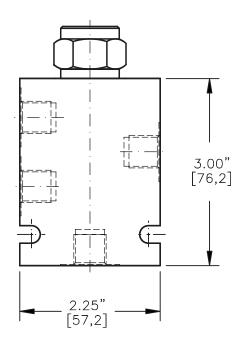
SHUTTLE VALVE, BRAKE RELEASE SPOOL TYPE, SPRING CENTERED.

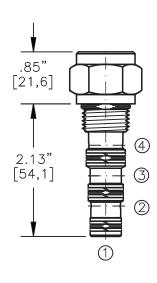


TORQUE:

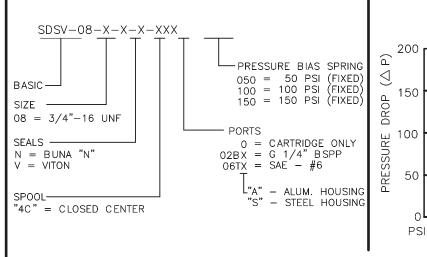
Steel = 35/40 Ft-Lb. [47/54 Nm]Aluminum = 25/30 Ft-Lb. [34/41 Nm]

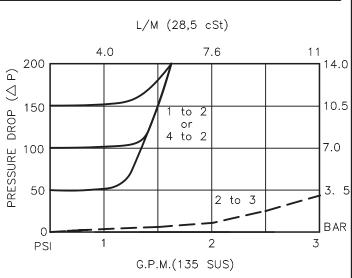






FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-041.1







SHUTTLE VALVE. BRAKE RELEASE. THREE-POSITION, FOUR-WAY, SPRING CENTERED.

DESCRIPTION

This unit is a screw in, cartridge type, four ported spool type, three position, spring centered, hydraulic brake release shuttle valve.

OPERATIONS

This valve senses the higher of the two input pressures port #1 or #4 and routes it to port #2, when pressure on port #1 or #4 is equal the valve will center and route port # 2 to port # 3 (TANK).

FEATURES AND BENEFITS

A hardened steel spool and a hardened steel bore assures rugged and reliable performance.

All external carbon steel parts are plated for longer life against the elements. All cartridge valves are 100% functionally tested. Industry common cavity.

SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar] PROOF PRESSURE: 10,000 PSI [700 Bar]

5.0 GPM [20 1/m] nominal. See performance chart. INTERNAL LEAKAGE: 5 cu.in./min maximum at 5,000 PSI.

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum - Anodized. 5000 PSI [350 Bar] = Steel - Unplated.

OPERATING TEMPERATURE: -40° to $+250^{\circ}$ F. $[-40^{\circ}$ to $+120^{\circ}$ C.] OPERATING MEDIA: All general purpose hydraulic fluids such as

MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restriction. FILTRATION: 25 microns or better.

SEAL KIT NUMBER: SKN-0842 for buna "N".

SKV-0842 for viton.

WEIGHT: 0.24 lb [.11 kg] cartridge only. VALVE CAVITY: #C0840, See Page 0-041.0.

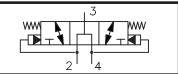
info.el@bucherhydraulics.com

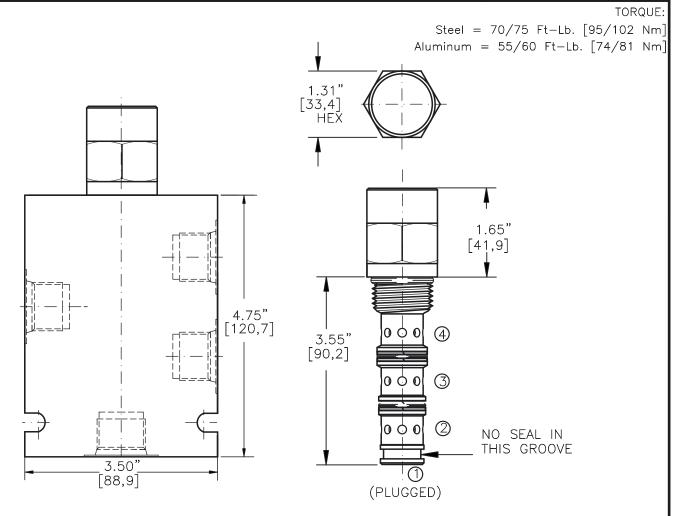
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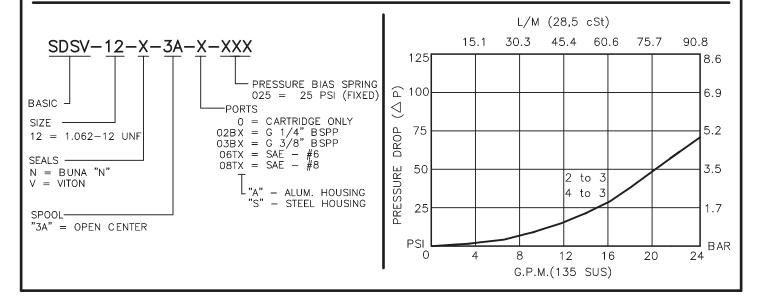


SHUTTLE VALVE, BRAKE RELEASE SPOOL TYPE, SPRING CENTERED.





FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-043.1





SHUTTLE VALVE, BRAKE RELEASE SPOOL TYPE, SPRING CENTERED.

DESCRIPTION

This unit is a SCREW-IN CARTRIDGE TYPE, SPOOL TYPE,

THREE POSITION, SPRING CENTERED, BRAKE RELEASE SHUTTLE VALVE which may be used on a hydrostatic transmission to direct charge pump oil to heat exchanger or to tank.

OPERATIONS

This valve with its internal pilots at port 2 or port 4 will allow flow to port 3 from the opposite port which is piloted with high pressure, thus removing oil from low pressure side for cooling or filtration purposes. This valve is spring centered when both pilot pressures are equal.

This valve shifts in open transition.

FEATURES AND BENEFITS

A hardened steel spool and a hardened steel bore assures rugged and reliable performance.

All external carbon steel parts are plated for longer life against the elements. All cartridge valves are 100% functionally tested. Industry common cavity.

SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]

PROOF PRESSURE: 10,000 PSI [700 Bar]

24.0 GPM [90,0 I/m] nominal. See performance chart.

INTERNAL LEAKAGE: 5 cu.in./min maximum at 5,000 PSI.

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum - Anodized. 5000 PSI [350 Bar] = Steel - Unplated.

OPERATING TEMPERATURE: -40° to $+250^{\circ}$ F. $[-40^{\circ}$ to $+120^{\circ}$ C.] OPERATING MEDIA: All general purpose hydraulic fluids such as

MIL - H - 5606, SAE - #10, SAE - #20, etc.

INSTALLATION: No restriction.

FILTRATION: 25 microns or better.

SEAL KIT NUMBER: SKN-1240 for buna "N".

SKV-1240 for viton.

WEIGHT: 0.94 lb [.43 kg] cartridge only. VALVE CAVITY: #C1240, See Page 0-043.0.

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