

NEW

DELTROL

fluid products
DIVISION OF DELTROL CORP 



DPOR, DRVK, DPRR, DPS3, DPSK
5,000 psi Pressure Control Valves

DPOR-080

Adjustable Pilot Operated Relief Valve

DESCRIPTION

An adjustable, pilot operated spool cartridge valve designed to limit flow in hydraulic circuits.

OPERATION

The DPOR-080 prevents flow from ① to ② until pressure at ① exceeds the set crack pressure and opens the pilot section. The pilot flow creates a pressure differential across the spool which causes the valve to open allowing flow from ① to ② and thus protecting the circuit from over pressurization.



FEATURES AND BENEFITS

- Rapid response to pressure surges.
- Quiet operation.
- High accuracy of pilot operated design.
- Hardened parts for long life.
- DPOR-080-S has an adjustment screw that can be locked in place. DPOR-080-H has a hidden, tamper resistant style adjustment.
- Adjustment prevents spring from going solid.
- Industry common cavity.
- Compact size.
- High flow capacity.



SPECIFICATIONS

Operating Pressure: 5000 psi (345 Bar)

Flow: 20 GPM (75.7 L/min)

Internal Leakage: 5 in³/mi (82 cc/min) max at 3000 psi (207 Bar)

Crack Pressure

Defined: Determined at .25 GPM (1.0 L/min)

Re-Set Pressure: Nominal 80% of crack pressure

Standard Spring

Ranges: 300 to 5000 psi (20 to 345 Bar)
Preset: See HOW TO ORDER below

Temperature: -30°F to +250°F (-35°C to +120°C)

Recommended

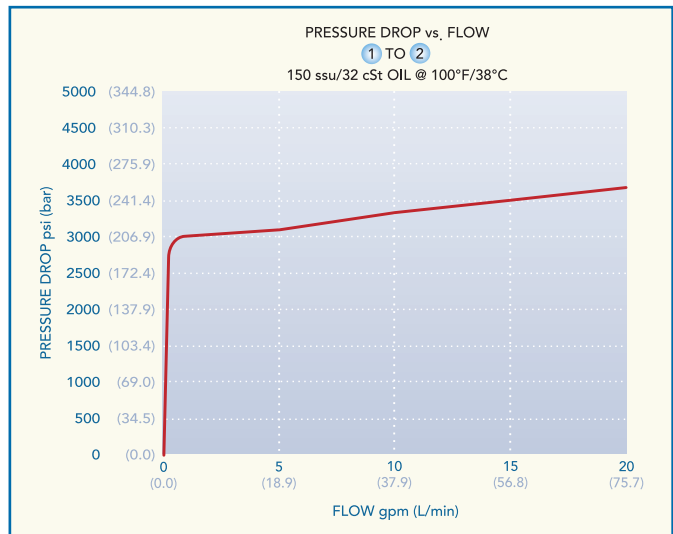
Filtration: ISO 17/15/13

Fluids: Mineral-based fluids; Consult factory for other fluid compatibility

Cavity: 080-2

Cavity Tool: See catalog

PRESSURE DROP VS. FLOW



HOW TO ORDER

DPOR - 080 - U - * - XX/ ** - ****

Pilot Operated Relief Valve

Cavity/Seal

SEAL COMPOUND
N = Buna N
V = Viton
U = Urethane

S = Screw Adjustment Style
H = Hidden Adjustment Style

SPRING RANGES¹
20 = 300 - 2000 PSI (20 to 138 Bar)
Preset: 300 PSI (20 Bar)
50 = 2000 to 5000 PSI (138 to 345 Bar)
Preset: 4000 PSI (276 Bar)

BODY PORTING¹¹

2N = 1/4 PTF
3N = 3/8 PTF
6T = SAE 6
8T = SAE 8
Omit for Cartridge Only

FACTORY PRESET PSI
50 PSI increments
Example: 2550 = 2550 PSI
Omit for Standard

¹U = Urethane option required for pressures above 3000 psi (207 Bar)

¹¹Other porting options available - consult factory.

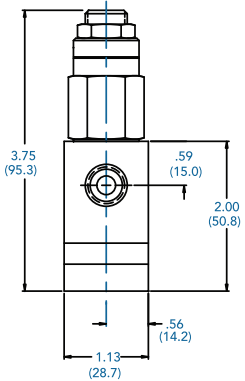
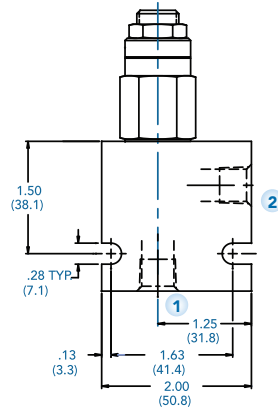
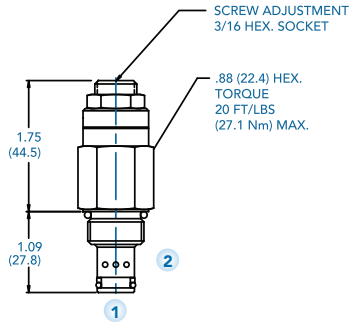
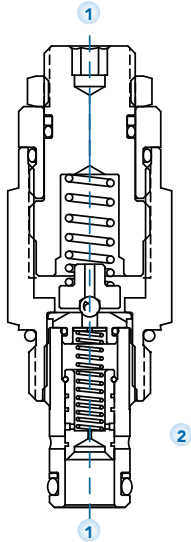
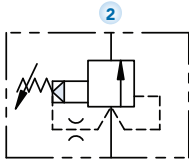
DPOR-080*-S

Adjustable Pilot Operated Relief Valve

SCREW ADJUSTMENT

USASI/ISO

INSTALLATION DIMENSIONS



() Parentheses = Millimeters

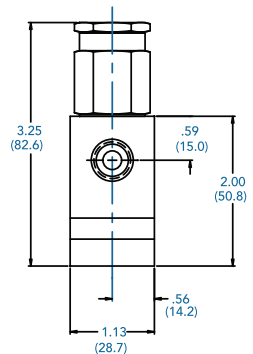
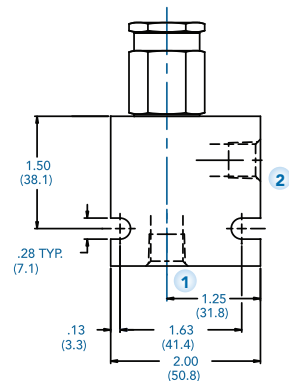
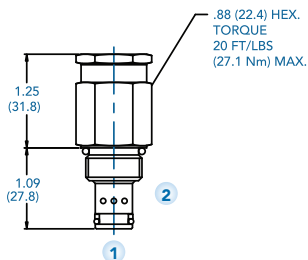
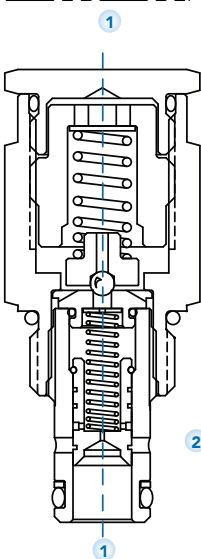
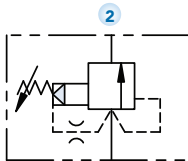
DPOR-080*-H

Adjustable Pilot Operated Relief Valve

HIDDEN ADJUSTMENT

USASI/ISO

INSTALLATION DIMENSIONS



() Parentheses = Millimeters

DRVK-080

Pilot Operated Kick-Down Relief Valve

DESCRIPTION

An adjustable, pilot operated spool cartridge valve designed to allow flow to actuator circuits until a predetermined pressure is attained, then to discharge flow back to tank at a low pressure.

OPERATION

Flow is blocked from port ① to ② until system pressure exceeds the valve setting allowing flow through the pilot section to pass out of the vent port. As flow passes through the pilot section the resulting differential pressure shifts the main spool to unload the system to a predetermined low pressure. When the system pressure is reduced below 50 psi (3.4 bar), the valve will reset itself and again block flow from port ① to ②.

Flow is blocked from port ② to ①.
Pressure at port ② is added to valve setting.

FEATURES AND BENEFITS

- Quiet operation.
- High accuracy of pilot operated design.
- Hardened parts for long life.
- DRVK-080-S has an adjustment screw that can be locked in place.
- DRVK-080-H has a hidden, tamper resistant style adjustment.
- Adjustment prevents spring from going solid.
- Industry common cavity.
- Compact size.
- High flow capacity.



SPECIFICATIONS

Operating Pressure: 5000 psi (345 Bar)
 Flow: 10 GPM (37.9 L/min)
 Internal Leakage: 5 in³/mi (82 cc/min) max at 80% of crack pressure

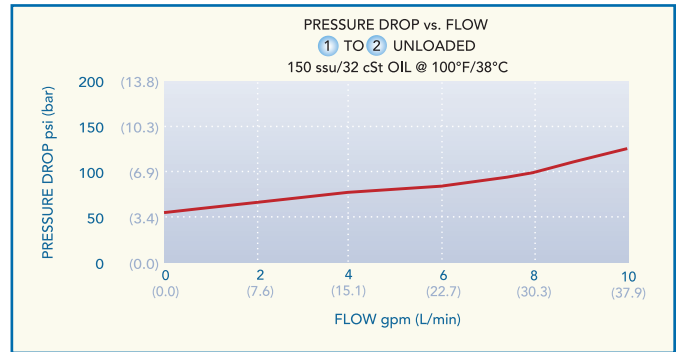
Crack Pressure
 Defined: Determined at .25 GPM (1.0 L/min)
 Re-Set Pressure: When Port 2 pressure is below 50 psi (3.4 Bar), valve will reset to original pressure setting.

Standard Spring
 Ranges: 400 to 5000 psi (28 to 345 Bar)
 Preset: See HOW TO ORDER

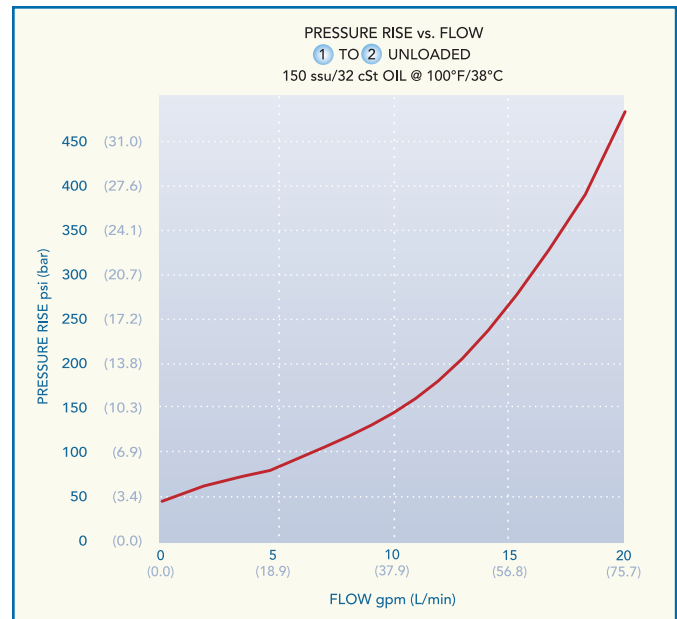
Temperature: -30°F to +250°F (-35°C to +120°C)
 Recommended
 Filtration: ISO 17/15/13
 Fluids: Mineral-based fluids; Consult factory for other fluid compatibility

Cavity: 080-2
 Cavity Tool: See catalog

PRESSURE DROP VS. FLOW



PRESSURE RISE VS. FLOW



HOW TO ORDER

DRVK - 080 - U - * - XX/ ** - ****

Kick-Down Relief Valve

Cavity/Seal

SEAL COMPOUND
 N = Buna N
 V = Viton
 U = Urethane

S = Screw Adjustment Style
 H = Hidden Adjustment Style

SPRING RANGES[†]

15 = 400 - 1500 PSI (28 to 103 Bar)
 Preset: 500 PSI (34 Bar)
 40 = 1000 - 4000 PSI (69 to 276 Bar)
 Preset: 2000 PSI (139 Bar)
 50 = 2000 to 5000 PSI (138 to 345 Bar)
 Preset: 4000 PSI (276 Bar)

BODY PORTING^{††}
 2N = 1/4 PTF
 3N = 3/8 PTF
 6T = SAE 6
 8T = SAE 8
Omit for Cartridge Only

FACTORY PRESET PSI
 50 PSI increments
 Example:
 2550 = 2550 PSI
Omit for Standard

[†]U = Urethane option required for pressures above 3000 psi (207 Bar)

^{††}Other porting options available - consult factory.

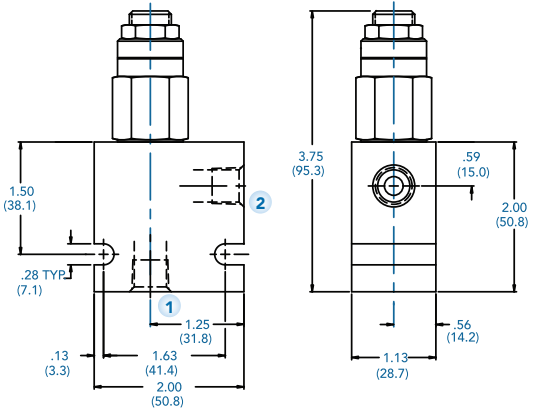
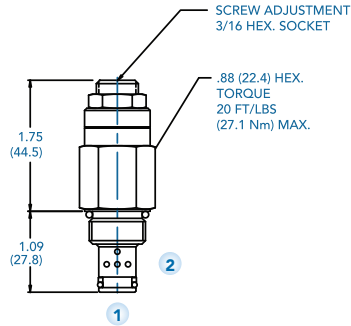
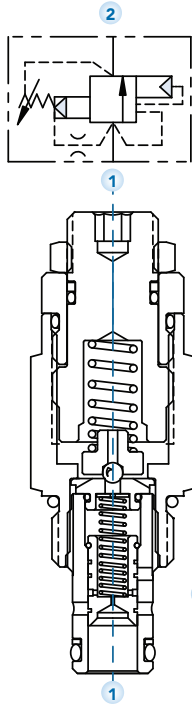
DRVK-080-*-S

Pilot Operated Kick-Down Relief Valve

SCREW ADJUSTMENT

USASI/ISO

INSTALLATION DIMENSIONS



() Parentheses = Millimeters

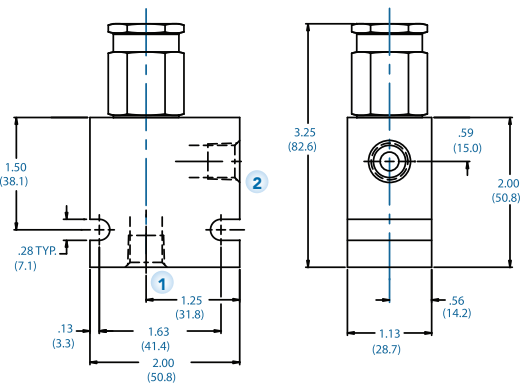
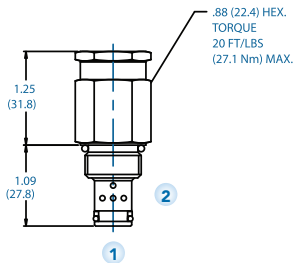
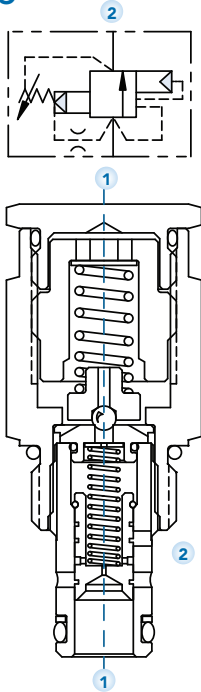
DRVK-080-*-H

Pilot Operated Kick-Down Relief Valve

HIDDEN ADJUSTMENT

USASI/ISO

INSTALLATION DIMENSIONS



() Parentheses = Millimeters

DPRR-080

Pilot Operated Pressure Reducing/Relieving Valve

DESCRIPTION

An adjustable, pilot operated spool cartridge valve designed to regulate pressure in secondary circuits.

OPERATION

The DPRR-080 in steady state will allow bi-directional flow between ① and ② with spring chamber ③ vented. When the preset pressure at ① is achieved, the spool throttles to regulate pressure at ① by restricting flow at ②.

The valve will relieve ① to ③.

FEATURES AND BENEFITS

- Hardened precision spool and sleeve for long life.
- Variety of pressure ranges.
- High accuracy of pilot operated design.
- Adjustment prevents spring from going solid.
- DPRR-080-S has an adjustment screw that can be locked in place. DPRR-080-H has a hidden, tamper resistant style adjustment.
- Industry common cavity.
- Compact size.



SPECIFICATIONS

Operating Pressure: 5000 psi (345 Bar)

Flow: 6 GPM (22.7 L/min)

Internal Leakage: 5 in³/mi (82 cc/min) max at 3000 psi (207 Bar)

Standard Spring

Ranges: 300 to 5000 psi (20 to 345 Bar)

Preset: See How To Order below

Temperature: -30°F to +250°F (-35°C to +120°C)

Recommended

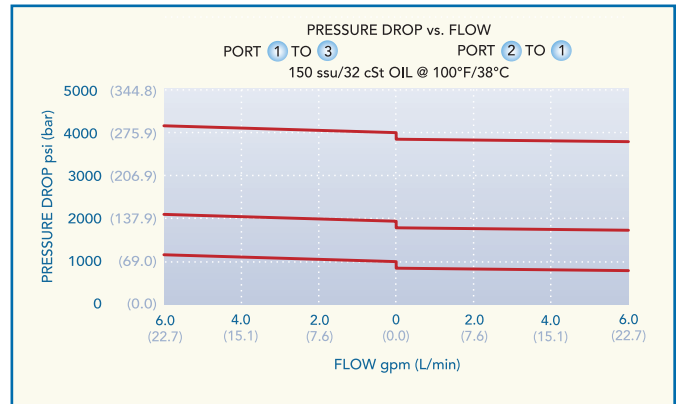
Filtration: ISO 19/15

Fluids: Mineral-based fluids; Consult factory for other fluid compatibility

Cavity: 080-3

Cavity Tool: See catalog

PRESSURE DROP VS. FLOW



HOW TO ORDER

DPRR - 080 - * - * - XX/ *** - ****

Reducing/Relieving Valve

Cavity/Seal

SEAL COMPOUND
N = Buna N
V = Viton
U = Urethane

S = Screw Adjustment Style
H = Hidden Adjustment Style

SPRING RANGES*

20 = 300 - 2000 PSI (20 to 138 Bar)
Preset: 300 PSI (20 Bar)
40 = 1800 to 4000 PSI (124 to 276 Bar)
Preset: 3000 PSI (207 Bar)
50 = 2000 to 5000 PSI (138 to 345 Bar)
Preset: 4000 PSI (276 Bar)

BODY PORTING**

2N = 1/4 PTF
3N = 3/8 PTF
6T = SAE 6
8T = SAE 8
Omit for Cartridge Only

FACTORY PRESET PSI

50 PSI increments
Example: 2550 = 2550 PSI
Omit for Standard

*U = Urethane option required for pressures above 3000 psi (207 Bar)

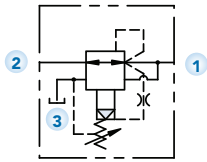
**Other porting options available - consult factory.

DPRR-080-*-S

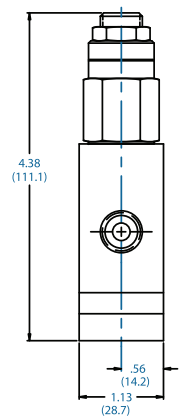
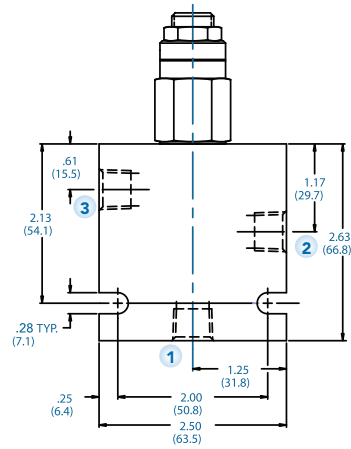
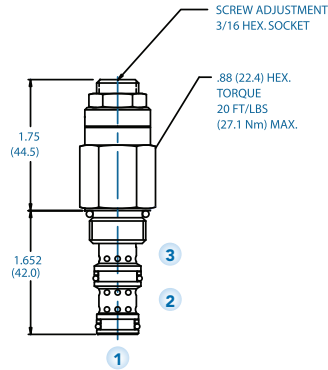
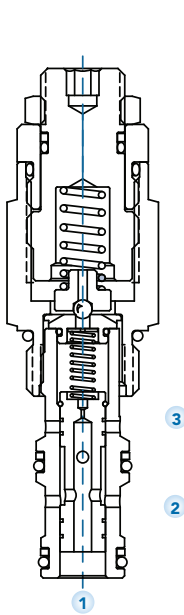
Pilot Operated Pressure Reducing/Relieving Valve

SCREW ADJUSTMENT

USASI/ISO



INSTALLATION DIMENSIONS



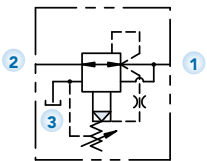
() Parentheses = Millimeters

DPRR-080-*-H

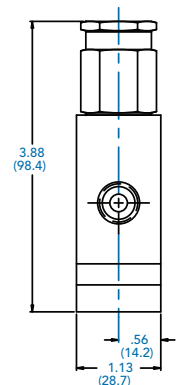
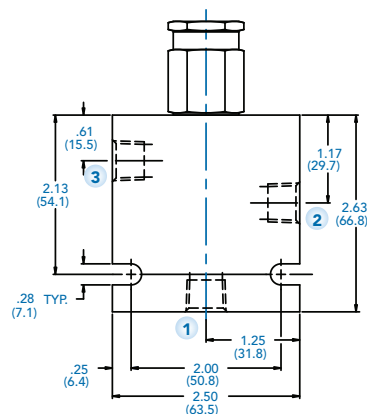
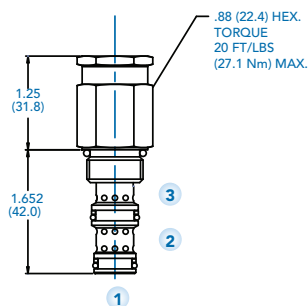
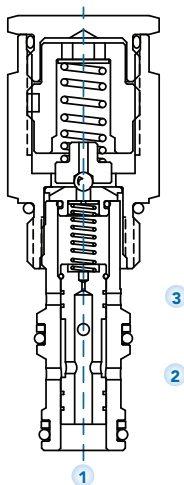
Pilot Operated Pressure Reducing/Relieving Valve

HIDDEN ADJUSTMENT

USASI/ISO



INSTALLATION DIMENSIONS



() Parentheses = Millimeters

DPS3-080

Pilot Operated Sequence Valve

DESCRIPTION

An adjustable, pilot operated spool cartridge valve designed to direct oil to a circuit when a predetermined pressure has been reached.

OPERATION

The DPS3-080 in steady state blocks flow at ① while allowing flow from ② to ③. When the preset pressure at ① is achieved the pilot section opens. This pilot flow creates a pressure differential across the spool, which causes the spool to shift to allow flow from ① to ②.

FEATURES AND BENEFITS

- Hardened precision spool and sleeve for long life.
- Variety of pressure ranges.
- High accuracy of pilot operated design.
- Adjustment prevents spring from going solid.
- DPS3-080-S has an adjustment screw that can be locked in place. DPS3-080-H has a hidden, tamper resistant style adjustment.
- Industry common cavity.
- Compact size.



SPECIFICATIONS

Operating Pressure: 5000 psi (345 Bar)

Flow: 6 GPM (22.7 L/min)

Internal Leakage: 5 in³/mi (82 cc/min) max at 3000 psi (207 Bar)

Standard Spring

Ranges: 300 to 5000 psi (20 to 345 Bar)
Preset: See HOW TO ORDER below

Temperature: -30°F to +250°F (-35°C to +120°C)

Recommended

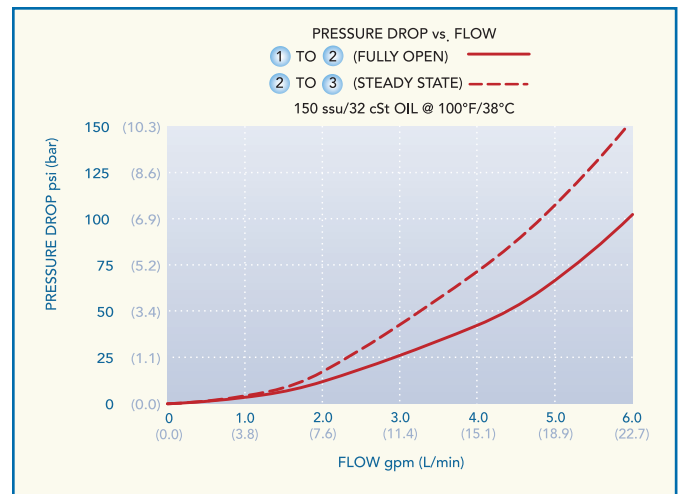
Filtration: ISO 19/15

Fluids: Mineral-based fluids; Consult factory for other fluid compatibility

Cavity: 080-3

Cavity Tool: See catalog

PRESSURE DROP VS. FLOW



HOW TO ORDER

DPS3 - 080 - U - * - XX/ *** - ****

Pilot Operated Sequence Valve

Cavity/Seal

SEAL COMPOUND¹
U = Urethane

S = Screw Adjustment Style
H = Hidden Adjustment Style

SPRING RANGES
15 = 300 - 2500 PSI (20 to 103 Bar)
Preset: 300 PSI (20 Bar)
50 = 1000 to 5000 PSI (69 to 345 Bar)
Preset: 3000 PSI (207 Bar)

BODY PORTING^{**}
2N = 1/4 PTF
3N = 3/8 PTF
6T = SAE 6
8T = SAE 8
Omit for Cartridge Only

FACTORY PRESET PSI
50 PSI increments
Example: 2550 = 2550 PSI
Omit for Standard

¹Other options available - consult factory.

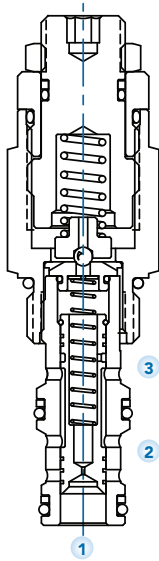
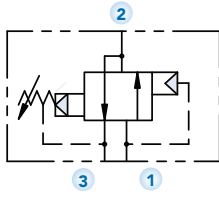
^{**}Other porting options available - consult factory.

DPS3-080-*-S

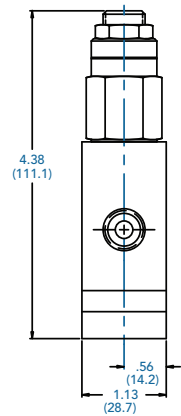
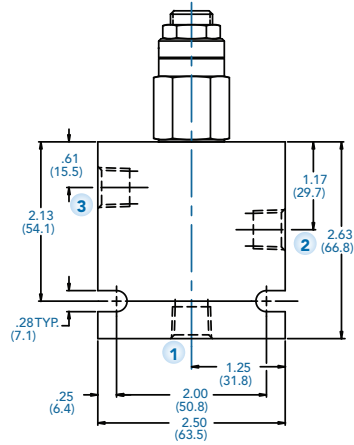
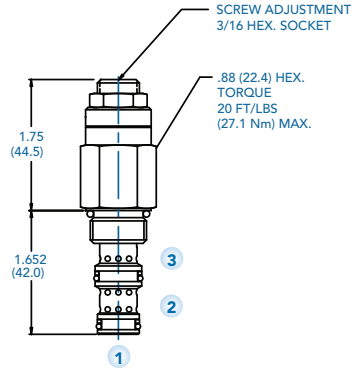
Pilot Operated Sequence Valve

SCREW ADJUSTMENT

USASI/ISO



INSTALLATION DIMENSIONS



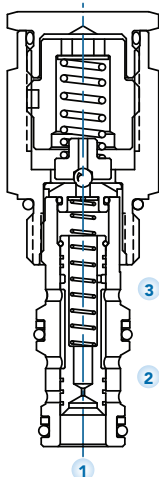
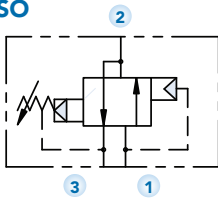
() Parentheses = Millimeters

DPS3-080-*-H

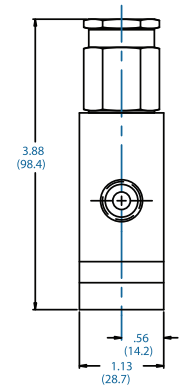
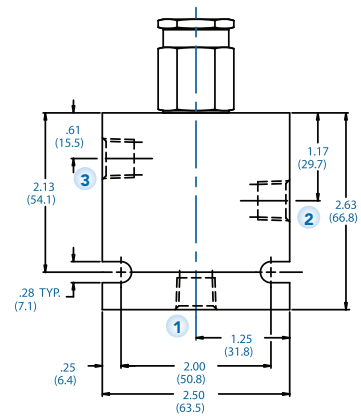
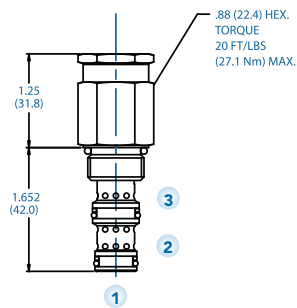
Pilot Operated Sequence Valve

HIDDEN ADJUSTMENT

USASI/ISO



INSTALLATION DIMENSIONS



() Parentheses = Millimeters

DPSK-080

Pilot Operated Kick-Down Sequence Valve

DESCRIPTION

An adjustable, pilot operated spool cartridge valve designed to direct oil to a circuit when a predetermined pressure has been reached.

OPERATION

The DPSK-080 in steady state blocks flow at ① while allowing flow from ② to ③. When the preset pressure at ① is achieved the pilot section opens. This pilot flow creates a pressure differential across the spool, which causes the spool to shift to allow flow from ① to ②.

The spool will not shift back (kick-down) until pressure at ② falls below a predetermined pressure.



FEATURES AND BENEFITS

- Hardened precision spool and sleeve for long life.
- Variety of pressure ranges.
- High accuracy of pilot operated design.
- Adjustment prevents spring from going solid.
- DPSK-080-S has an adjustment screw that can be locked in place. DPSK-080-H has a hidden, tamper resistant style adjustment.
- Industry common cavity.
- Compact size.

SPECIFICATIONS

Operating Pressure: 5000 psi (276 Bar)

Flow: 6 GPM (22.7 L/min)

Internal Leakage: 5 in³/mi (82 cc/min) max at 3000 psi (207 Bar)

Standard Spring

Ranges: 300 to 5000 psi (20 to 276 Bar)

Preset: See HOW TO ORDER below

Re-Set Spring

Pressure: 100 psi (7 Bar)

Temperature: -30°F to +250°F (-35°C to +120°C)

Recommended

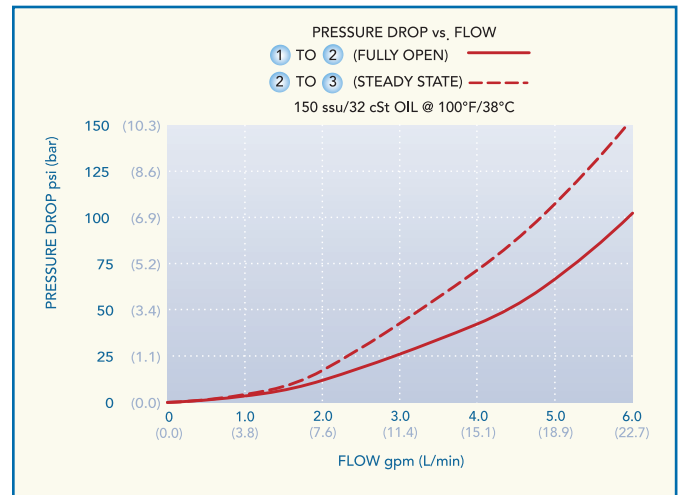
Filtration: ISO 19/15

Fluids: Mineral-based fluids; Consult factory for other fluid compatibility

Cavity: 080-3

Cavity Tool: See catalog

PRESSURE DROP VS. FLOW



HOW TO ORDER

DPSK - 080 - * - * - XX/ *** - ****

Kick-Down Sequence Valve

Cavity/Seal

SEAL COMPOUND
N = Buna N
V = Viton
U = Urethane

S = Screw Adjustment Style
H = Hidden Adjustment Style

SPRING RANGES^{*}
20 = 300 - 2000 PSI (20 to 138 Bar)
Preset: 1000 PSI (103 Bar)
40 = 600 to 5000 PSI (41 to 276 Bar)
Preset: 3000 PSI (207 Bar)

BODY PORTING^{††}

2N = 1/4 PTF
3N = 3/8 PTF
6T = SAE 6
8T = SAE 8
Omit for Cartridge Only

FACTORY PRESET PSI
50 PSI increments
Example: 2550 = 2550 PSI
Omit for Standard

^{*}U = Urethane option required for pressures above 3000 psi (207 Bar)

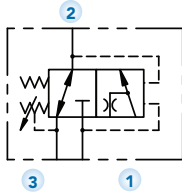
^{††}Other porting options available - consult factory.

DPSK-080-*-S

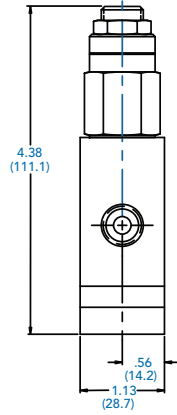
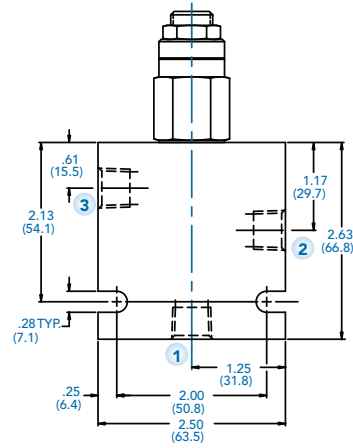
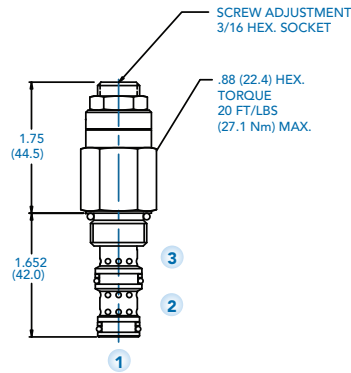
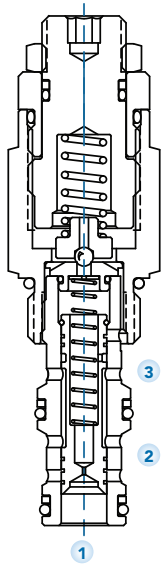
Pilot Operated Kick-Down Sequence Valve

SCREW ADJUSTMENT

USASI/ISO



INSTALLATION DIMENSIONS



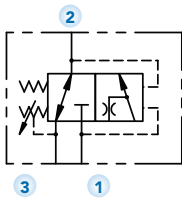
() Parentheses = Millimeters

DPSK-080-*-H

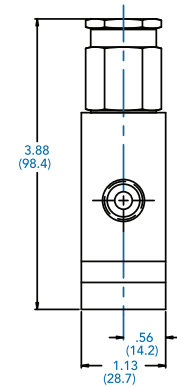
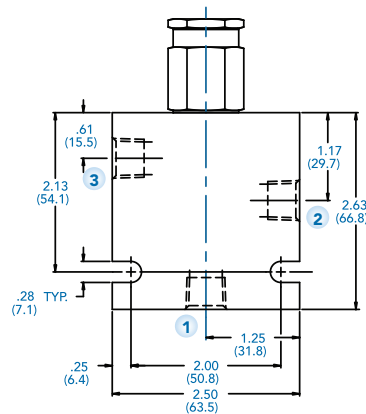
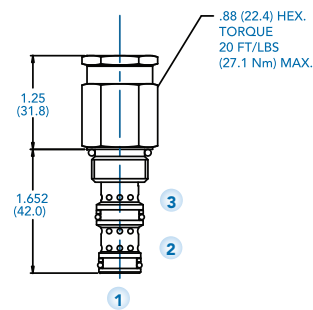
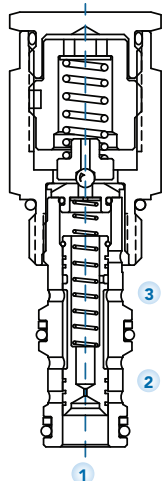
Pilot Operated Kick-Down Sequence Valve

HIDDEN ADJUSTMENT

USASI/ISO



INSTALLATION DIMENSIONS



() Parentheses = Millimeters

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