



Vickers

Pressure Control

Direct and pilot operated pressure control valves for applications up to 350 bar (5000 psi) and 300 L/min (80 USgpm)

E



Pressure Controls

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Pressure Controls

Section introduction

This section gives basic specifications for Vickers pressure control threaded cartridge valves. Its purpose is to provide a quick, convenient reference tool when choosing Vickers cartridge valves or designing a system using these components.

Eaton offers a full range of Vickers direct and pilot operated relief, reducing, sequence and unloading valves. In general, the direct operated products are faster in response while pilot operated types have a flatter pressure/flow characteristic.

Relief Valves

When selecting a relief valve for a specific application, consideration should be given to the following

- **Direct operated poppet types – RV1 and RV10**

Suitable for continuous duty with reliable fast response, the RV10 being a low pressure, low cost option. These valves are also suitable for piloting the DPS2 logic elements.

- **Pilot operated poppet type with reverse free-flow check – RV2**

Use as a service line relief where anticavitation make-up is required. It may also be applied as an internally piloted counterbalance valve in a service line.

- **Direct operated poppet type, differential area models – RV3 and RV8**

Sometimes termed a “differential area relief valve”. A fast acting valve, highly tolerant of contaminant and providing an alternative flow path, frequently beneficial in manifold layout. Utilized in CRV3 cross-line relief packages.

- **Pilot operated spool type – RV5 and RV11**

Well suited for repetitive, continuous duty with a low pressure-override characteristic.

- **Direct operated ball type – RV6**

A fast-acting valve for intermittent duty. This low flow, low cost valve may be used as a pilot section for a larger main-stage valve, or piloting logic elements.

Reducing Valves

Two types are available:

- Direct operated with relieving feature – PRV1
- Pilot operated with relieving feature – PRV2 and PRV12
- Pilot operated without relieving feature

Sequence Valves

A complete range of sequence functions is available, including:

- Normally-closed and normally-open models
- Internal and external pilot options
- Internal and external drain options
- Two and three position models

Externally drained models may be used as relief valves in circuits with alternating pressure and tank line functions.

Accumulator Unloading Valves

Valves that allow accumulators to be charged to a pre-selected maximum pressure at which the pump is unloaded. The pump does not cut-in until the accumulator pressure has decayed to a pre-selected percentage of maximum pressure. The low-flow PUV3 model can be used as a stand alone model for low flow applications, or as a pilot stage in two-stage arrangements for higher flows.

Accumulator Discharge Valve

This valve is designed to ensure that an accumulator will discharge when pilot pressure is lost, e.g. on pump shutdown.

Fluid Cleanliness

Proper fluid condition is essential for long and satisfactory life of hydraulic components and systems. Hydraulic fluid must have the correct balance of cleanliness, materials, and additives for protection against wear of components, elevated viscosity, and inclusion of air.

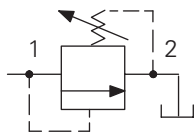
RV1-8

Poppet, direct acting

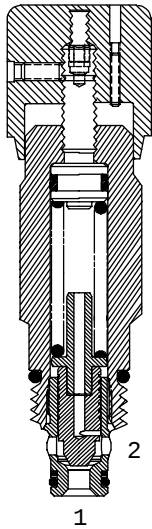
Description

The RV1-8 is a direct acting, poppet type screw-in cartridge relief valve.

Functional Symbol



Sectional View



Operation

The RV1-8 remains closed until the predetermined setting is reached at port 1. The poppet then lifts off the seat and allows flow from port 1 to port 2.

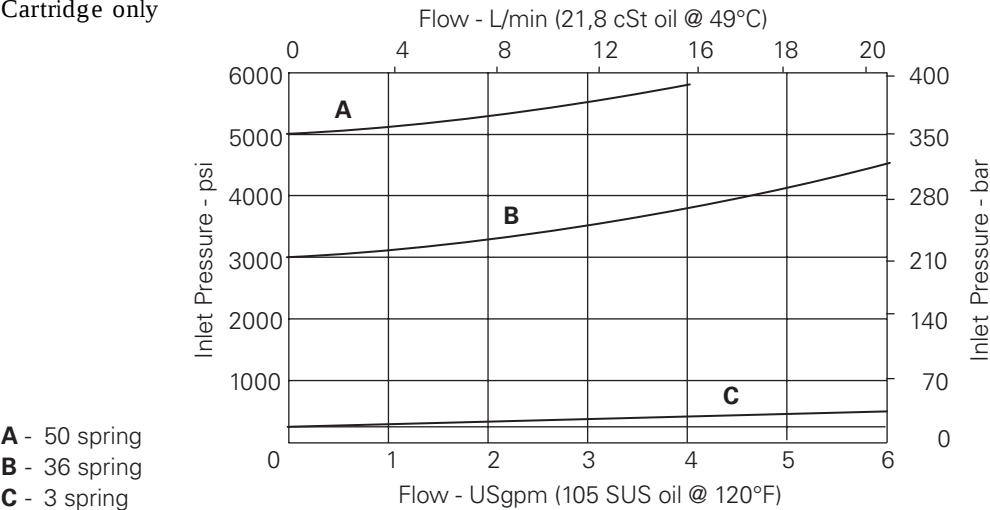
RATINGS AND SPECIFICATIONS

<i>Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)</i>	
Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	280 bar (4000 psi)
Rated flow	For 3 & 36 cracking pressure 22,7 L/min (6 USgpm) For 50 cracking pressure 15,1 L/min (4 USgpm)
Cracking pressure ranges	3 – 3,4–20 bar (50–300 psi) @ 22,7 L/min (6 USgpm) 36 – 20–250 bar (300–3600 psi) @ 22,7 L/min (6 USgpm) 50 – 100–350 bar (1500–5000 psi) @ 15,1 L/min (4 USgpm)
Reseat pressure	More than 90% of cracking pressure
Internal leakage, port 1 to 2	5 drops / min. at 80% of cracking pressure
Temperature range	-40° to 120°C (-40° to 248° F)
Cavity	C-8-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Standard housing materials	Aluminum or steel
Weight cartridge only	0,20 kg (0.43 lbs)
Seal kits	02-165875 Buna-N 02-165877 Viton®

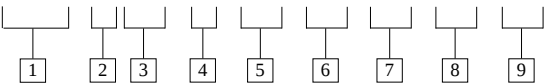
Viton is a registered trademark of E.I.DuPont

Pressure Override Curves

Cartridge only



RV1- 8 (V) - * - (*) - ** - ** / ** - 00



1 Function

RV1 - Relief valve

2 Size

8 - 8 Size

3 Seals

Blank - Buna-N

V - Viton®

4 Adjustment

C - Cap

K - Knob

S - Screw

5 Valve housing material

Omit for cartridge only

S - Steel

A - Aluminum

6 Port size

0 - Cartridge only

7 Cracking pressure ranges

3 - 3,4-20 bar
(50-300 psi)

36 - 20-250 bar
(300-3600 psi)

50 - 100-350 bar
(1500-5000 psi)

8 Pressure setting

Optional - Specify in 100 psi increments. If not specified, set at:

3 - 10 bar (150 psi)

36 - 125 bar (1800 psi)

50 - 175 bar (2500 psi)

9 Special features

00 - None

(Only required if valve has special features, omitted if "00")

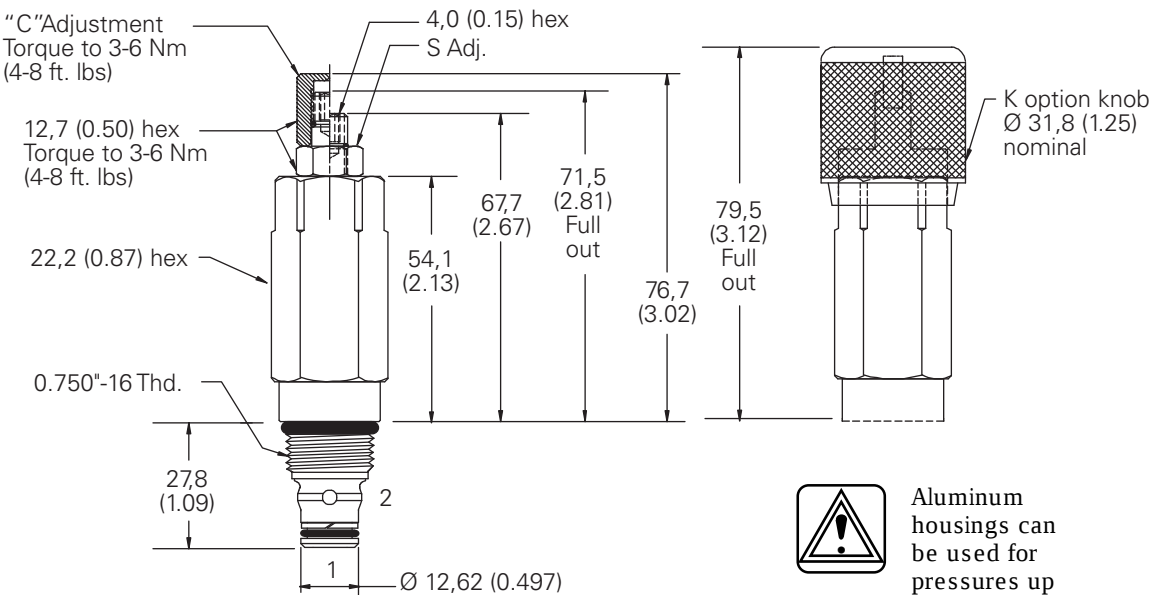
CODE	PORT SIZE	HOUSING NUMBER	
		Aluminum Fatigue rated	Steel Fatigue rated
4T	SAE 4	02-160730	02-160736
6T	SAE 6	02-160731	02-160737
8T	SAE 8	02-160732	02-160738
2G	1/4" BSPP	02-160727	02-160733
3G	3/8" BSPP	02-160728	02-160734

See section J for housing details.

Dimensions

mm (inch)

Torque cartridge
in aluminum or
steel housing
34-41 Nm
(25-30 ft. lbs)



Aluminum housings can be used for pressures up to 210 bar (3000 psi). Steel housings **must** be used for operating pressures **above** 210 bar (3000 psi).

RV8-8

Relief valve
Poppet, differential area

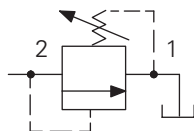
Description

The RV8-8 is a direct acting differential area, poppet type, screw-in cartridge relief valve.

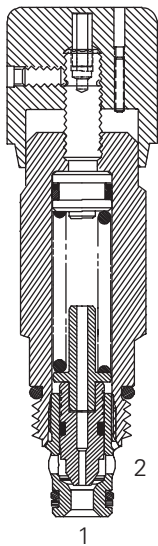
Operation

The RV8-8 remains closed until the predetermined setting is reached at port 2. The force created by the pressure acting on the differential poppet area lifts the poppet off the seat and allows flow from port 2 to port 1.

Functional Symbol



Sectional View



RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

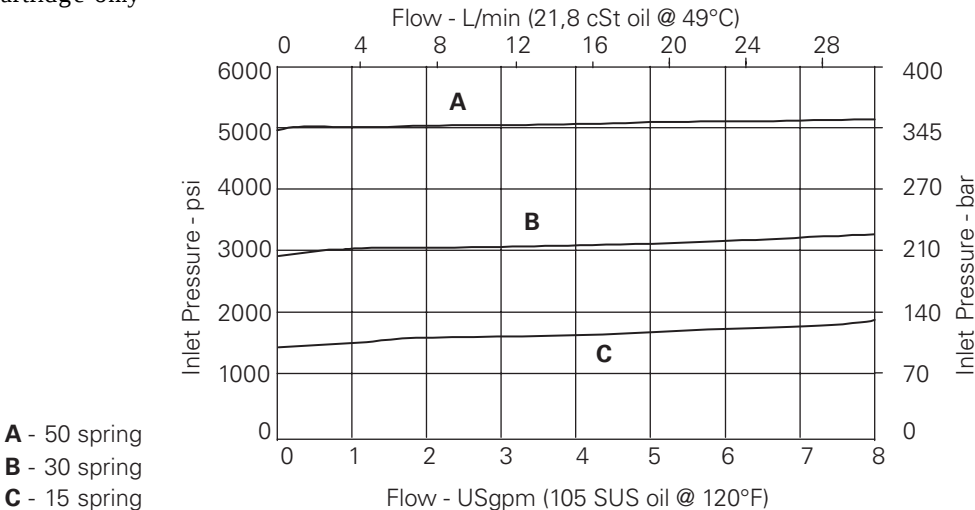
Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	280 bar (4000 psi)
Rated flow	30 L/min (8 USgpm)
Cracking pressure ranges	15 – 3,4–100 bar (50–1500 psi) 30 – 70–210 bar (1000–3000 psi) 50 – 70–350 bar (1000–5000 psi)

Internal leakage, port 2 to port 1	Less than 5 drops / min. @ 80% of cracking pressure
Temperature range	-40° to 120°C (-40° to 248°F)
Cavity	C-8-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Standard housing materials	Aluminum or steel
Weight cartridge only	0,20 kg (0.43 lbs)
Seal kits	02-165875 Buna-N 02-165877 Viton®

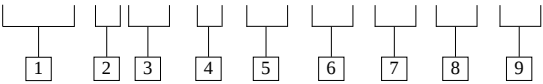
Viton is a registered trademark of E.I. DuPont

Pressure Override Curves

Cartridge only



RV8-8 (V) - * - (*) - ** - ** / ** - 00



1 Function
RV8 - Relief valve

2 Size
8 - 8 Size

3 Seals
Blank - Buna-N
V - Viton®

4 Adjustment
C - Cap
K - Knob
S - Screw

5 Valve housing material
(Omit for cartridge only)
S - Steel
A - Aluminum

6 Port size

0 - Cartridge only
7 Cracking pressure ranges
15 - 3,4-100 bar (50-1500 psi)
30 - 70-210 bar (1000-3000 psi)
50 - 70-350 bar (1000-5000 psi)

8 Pressure setting
Optional - Specify in 100 psi increments. If not specified, set at:
15 - 52 bar (750 psi)
30 - 100 bar (1500 psi)
50 - 175 bar (2500 psi)

CODE	PORT SIZE	HOUSING NUMBER	
		Aluminum Fatigue rated	Steel Fatigue rated
4T	SAE 4	02-160730	02-160736
6T	SAE 6	02-160731	02-160737
8T	SAE 8	02-160732	02-160738
2G	1/4" BSPP	02-160727	02-160733
3G	3/8" BSPP	02-160728	02-160734

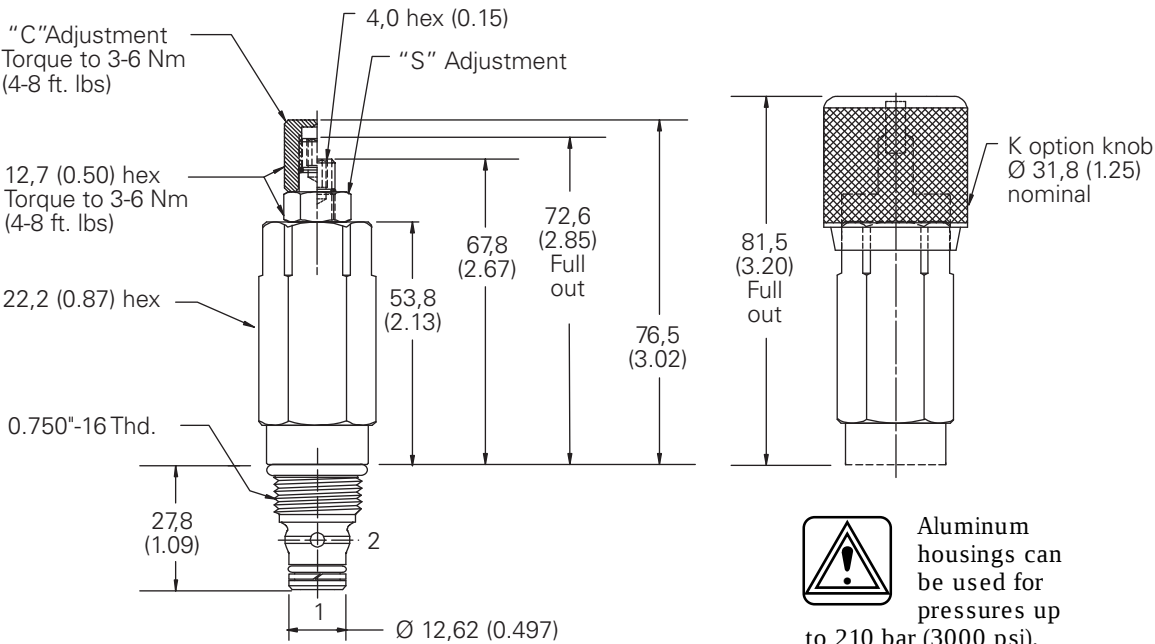
See section J for housing details.

9 Special features
00 - None
(Only required if valve has special features, omitted if "00")

Dimensions

mm (inch)

Torque cartridge
in aluminum or
steel housing
34-41 Nm
(25-30 ft. lbs)



Aluminum housings can be used for pressures up to 210 bar (3000 psi). Steel housings **must** be used for operating pressures **above** 210 bar (3000 psi).

RV6-10

Relief valve
Ball type, direct acting

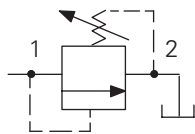
Description

The RV6-10 is a direct acting, ball type, screw-in cartridge relief valve.

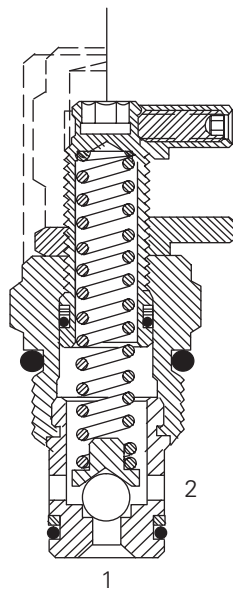
Operation

This valve remains closed from port 1 to port 2 until the predetermined setting has been reached at port 1. The poppet then unseats, allowing flow out port 2.

Functional Symbol



Sectional View



Application Note

This valve is intended for low flow, pilot relief applications with mild duty cycles only.

RATINGS AND SPECIFICATIONS

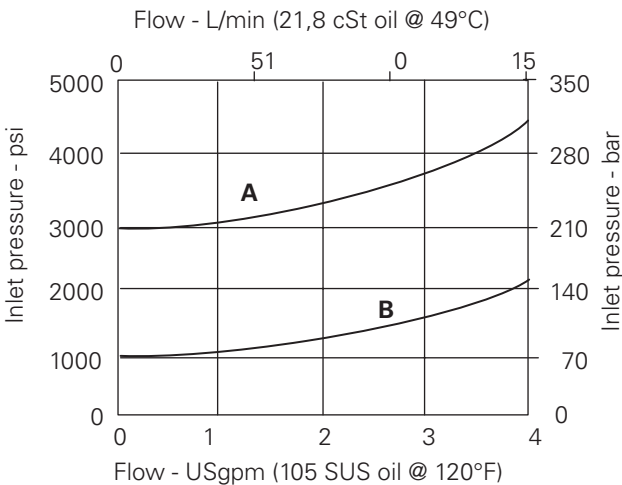
<i>Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)</i>	
Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	15 L/min (4 USgpm)
Internal leakage	5 drops/min @ 90% of Pressure Setting
Cavity	C-10-2
Standard housing materials	Aluminum or steel
Temperature range	-40° to 120°C (-40° to 248°F)
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Weight cartridge only	0,22 kg (0.48 lbs)
Seal kits	565803 Buna-N 566086 Viton®

Viton is a registered trademark of E.I. DuPont

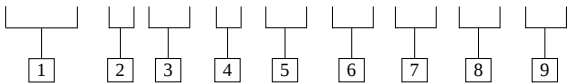
Pressure Override Curves

Cartridge only
Tank pressure = 0

A - 50 spring
B - 20 spring



RV6-10 (V) - * - (S) - ** - ** / ** - 00



1 Function
RV6 - Relief valve

2 Size
10 - 10 Size

3 Seals
Blank - Buna-N
V - Viton®

4 Adjustment
C - Cap
K - Knob
S - Screw
T - Tamper-proof

5 Valve housing material
Blank - Aluminum
S - Steel

6 Port size
0 - Cartridge only

CODE	PORT SIZE	HOUSING NUMBER		
		Aluminum Light duty	Aluminum Steel Fatigue rated	Fatigue rated
3B	3/8" BSPP	02-175462	—	—
2G	1/4" BSPP	—	876702	02-175102
3G	3/8" BSPP	—	876703	02-175103
6H	SAE 6	—	876700	—
8H	SAE 8	—	876701	—
6T	SAE 6	566151	—	02-175100
8T	SAE 8	—	—	02-175101

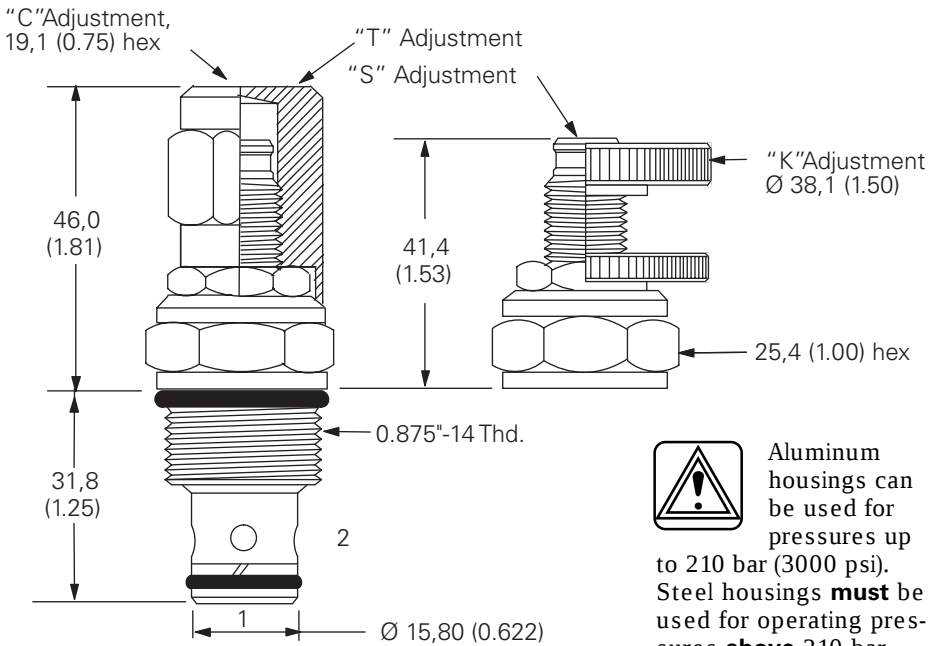
See section J for housing details.

7 Cracking pressure range
25 - 3,4-175 bar
(50-2500 psi)
50 - 140-350 bar
(2000-5000 psi)

8 Factory set pressure
Within ranges in **7**
Blank - Normal factory
setting at approximate
mid-range. User requested
settings in 3,45 bar (50 psi)
steps, coded as in the
following examples:
10 - 70 bar (1000 psi)
10.5 - 72,4 bar (1050 psi)

9 Special features
00 - None
(Only required if valve has
special features, omitted
if "00")

Dimensions
mm (inch)
Torque cartridge in housing
A - 47-54 Nm (35-40 ft. lbs)
S - 68-75 Nm (50-55 ft. lbs)



 Aluminum housings can be used for pressures up to 210 bar (3000 psi). Steel housings **must** be used for operating pressures **above** 210 bar (3000 psi).

RV10-10

Relief valve
Poppet, direct acting,
low pressure

Description

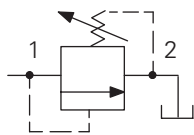
The RV10-10 is a direct acting, poppet type, screw-in cartridge relief valve.

Operation

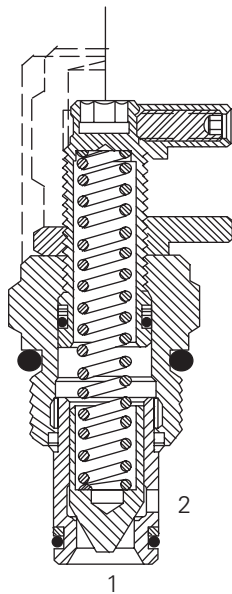
This valve remains closed from port 1 to port 2 until the predetermined setting has been reached at port 1.

The poppet is unseated and allows flow out of port 2.

Functional Symbol



Sectional View

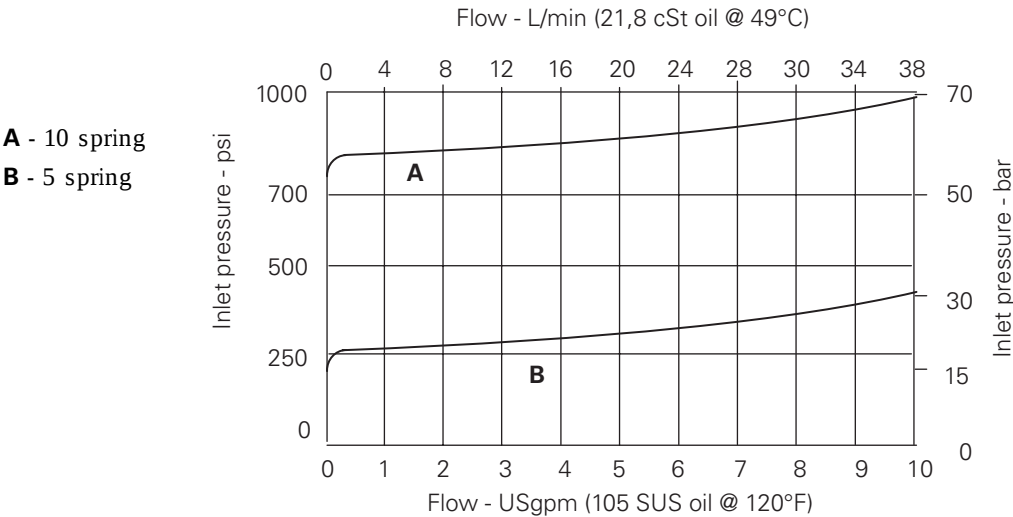


RATINGS AND SPECIFICATIONS

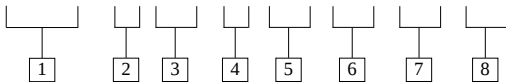
<i>Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)</i>	
Typical application pressure (all ports)	70 bar (1000 psi)
Cartridge fatigue pressure (infinite life)	70 bar (1000 psi)
Rated flow	38 L/min (10 USgpm)
Internal leakage	5 drops/min @ 90% of Pressure Setting
Cavity	C-10-2
Standard housing materials	Aluminum
Temperature range	-40° to 120°C (-40° to 248°F)
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Weight cartridge only	0,22 kg (0.48 lbs)
Seal kits	565803 Buna-N 566086 Viton®

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Pressure Override Curves



RV10 – 10 (V) – * – * – * – * – * – * / ** – 00



1 Function
RV10 - Relief valve

2 Size
10 - 10 Size

3 Seals
Blank - Buna-N
V - Viton®

4 Adjustment
C - Cap
K - Knob
S - Screw
T - Tamper-proof

Dimensions
mm (inch)
Torque cartridge in
aluminum housing
47-54 Nm (35-40 ft. lbs)

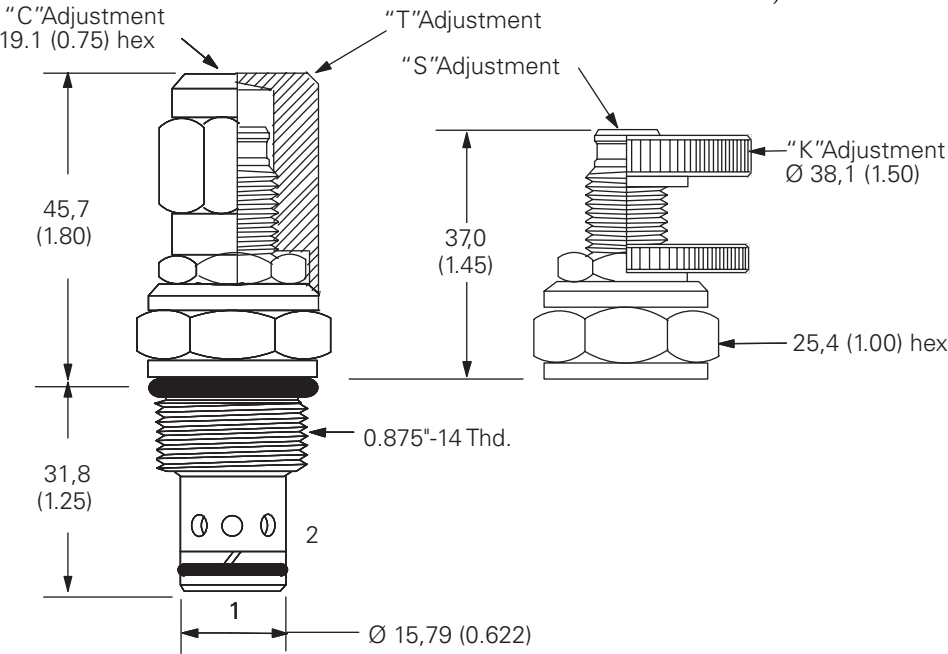
CODE	PORT SIZE	HOUSING NUMBER	
		Aluminum Light duty	Aluminum Fatigue rated
3B	3/8" BSPP	02-175462	–
6T	SAE 6	566151	–
2G	1/4" BSPP	–	876702
3G	3/8" BSPP	–	876703
6H	SAE 6	–	876700
8H	SAE 8	–	876701

See section J for housing details.

6 Cracking pressure range
2 - 1,73-17
bar (25-250 psi)
5 - 3,5-35 bar (50-500 psi)
10 - 17-70 bar
(250-1000 psi)

7 Setting pressure
Within ranges in **6**
Blank - Normal factory
setting at approximate
mid-range. User requested
settings in 3,45 bar (50 psi)
steps, coded as in the
following examples:
10 - 70 bar (1000 psi)
9.5 - 65 bar (950 psi)

9 Special features
00 - None
(Only required if valve has
special features, omitted
if "00")



RV1-10

Relief valve
Poppet, direct acting

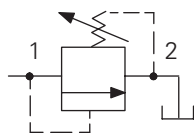
Description

The RV1-10 is a direct acting, poppet type, screw-in cartridge relief valve.

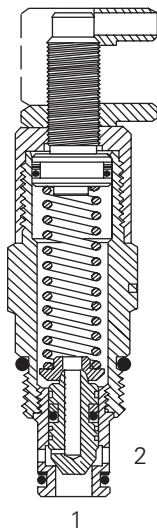
Operation

This valve remains closed from port 1 to port 2 until the predetermined setting has been reached at port 1. The poppet is unseated and allows flow out of port 2.

Functional Symbol



Sectional View



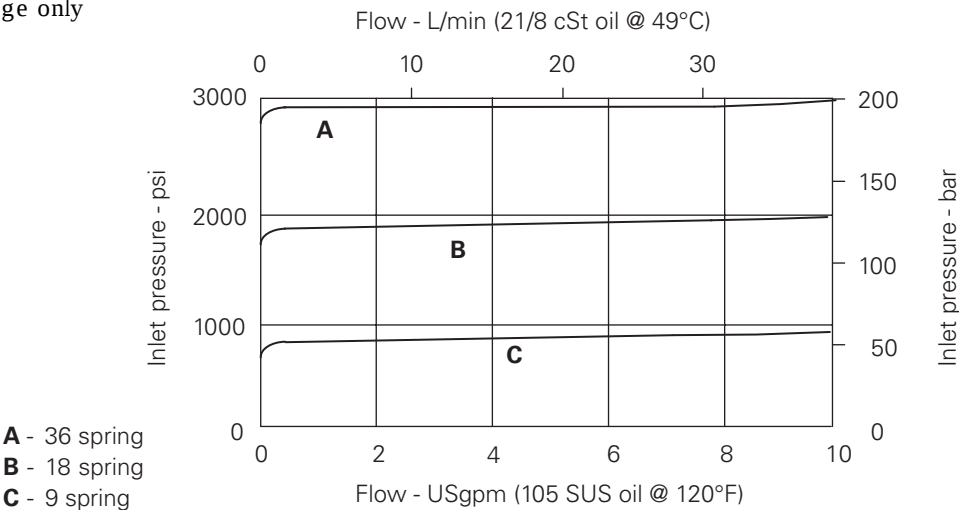
RATINGS AND SPECIFICATIONS

<i>Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)</i>	
Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	30 L/min (8 USgpm)
Internal leakage	5 drops/min @ 85% of Pressure Setting
Cavity	C-10-2
Standard housing materials	Aluminum or steel
Temperature range	-40° to 120°C (-40° to 248°F)
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Weight cartridge only	0,22 kg (0.48 lbs)
Seal kits	565803 Buna-N 566086 Viton®

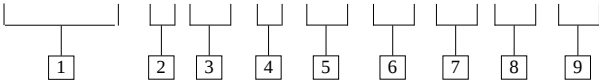
Viton is a registered trademark of E.I. DuPont

Pressure Override Curves

Cartridge only



RV1(A) – 10 (V) – * – (*) – ** – ** / ** – 00



1 Function

RV1 - Relief valve - Standard
RV1A - Relief Valve - with 1/2 thickness back-up ring on each side of o-ring (for cross port relief applications)

2 Size

10 - 10 Size

3 Seals

Blank - Buna-N
V - Viton®

4 Adjustment

C - Cap
F - Factory set
I - Internal
K - Knob
S - Screw

5 Valve housing material

Blank - Aluminum
S - Steel

6 Port size

0 - Cartridge only

CODE	PORT SIZE	HOUSING NUMBER		
		Aluminum Light duty	Aluminum Fatigue rated	Steel Fatigue rated
3B	3/8" BSPP	02-175462	–	–
2G	1/4" BSPP	–	876702	02-175102
3G	3/8" BSPP	–	876703	02-175103
6H	SAE 6	–	876700	–
8H	SAE 8	–	876701	–
6T	SAE 6	566151	–	02-175100
8T	SAE 8	–	–	02-175101

See section J for housing details.

7 Cracking pressure range

3 - 3,5-20 bar (50-300 psi)
9 - 7- 62 bar (100-900 psi)
18 - 17-124 bar (250-1800 psi)
30 - 34-210 bar (500-3000 psi)
36 - 210-250 bar (1800-3600 psi)

8 Setting pressure

Within ranges in 7
Blank - Normal factory setting at approximate mid-range. User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:
10 - 70 bar (1000 psi)
10.5 - 72,4 bar (1050 psi)

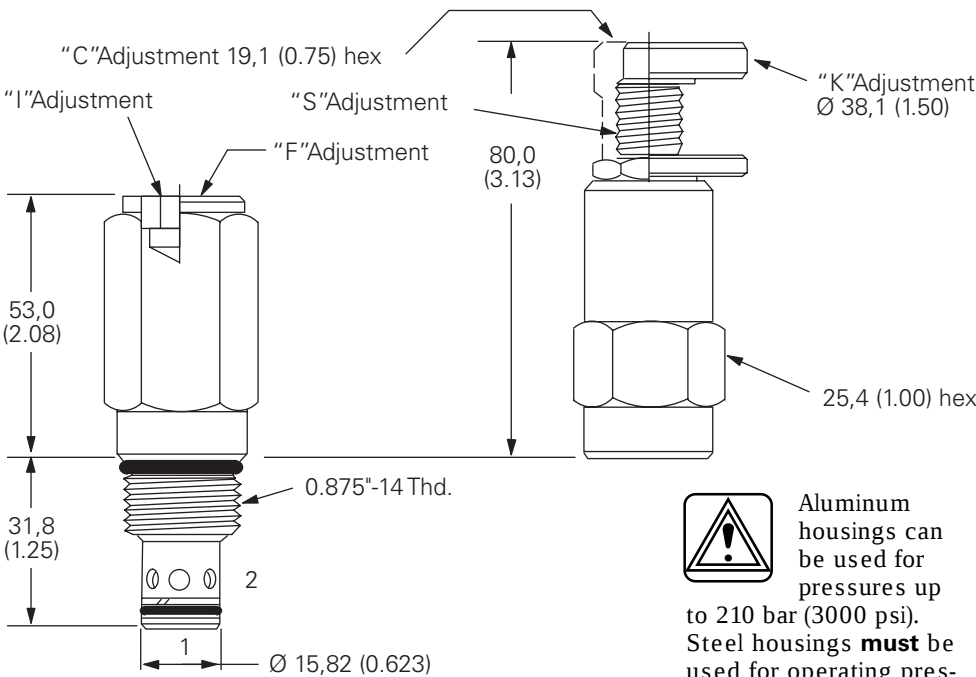
9 Special features

00 - None
(Only required if valve has special features, omitted if "00")
SS - 316 Stainless Steel external components

Dimensions

mm (inch)

Torque cartridge in housing
A - 47-54 Nm (35-40 ft. lbs)
S - 68-75 Nm (50-55 ft. lbs)



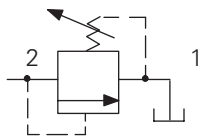
RV3-10

Relief Valve
Poppet, differential area

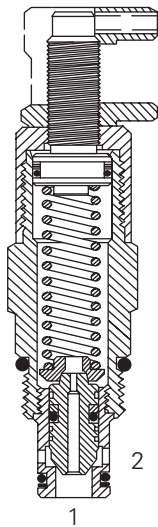
Description

The RV3-10 is a direct acting, differential area, poppet type, screw-in cartridge relief valve.

Functional Symbol



Sectional View



Operation

This valve remains closed from port 2 to port 1 until the predetermined setting has been reached at port 2. The poppet is unseated and allows flow out of port 1.

RATINGS AND SPECIFICATIONS

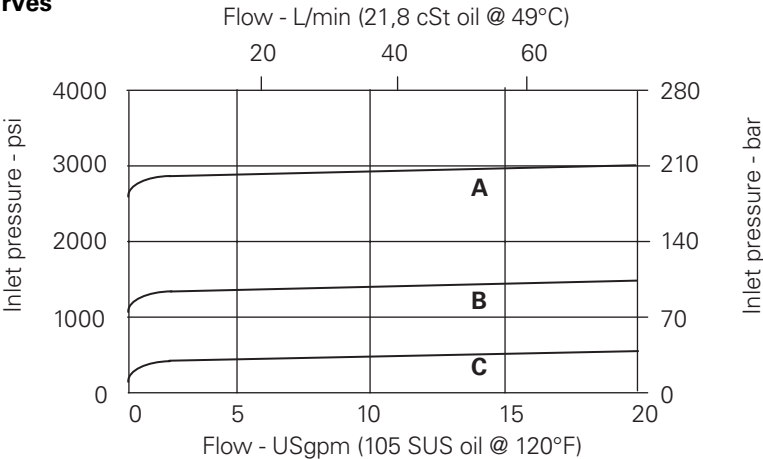
<i>Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)</i>	
Typical application pressure (all ports)	250 bar (3600 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	76 L/min (20 USgpm)
Internal leakage	5 drops/min @ 85% of Pressure Setting
Cavity	C-10-2
Standard housing materials	Aluminum or steel
Temperature range	-40° to 120°C (-40° to 248°F)
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Weight cartridge only	0,22 kg. (0.48 lbs.)
Seal kits	– RV3 565803 Buna-N 566086 Viton® – RV3A (with double backup rings) 565806 Buna-N 889627 Viton®

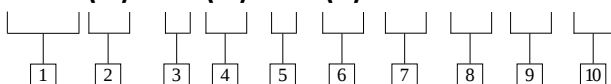
Viton is a registered trademark of E.I. DuPont

Pressure Override Curves

Cartridge only
Tank pressure = 0

- A - 36 spring
- B - 18 spring
- C - 6 spring



RV3 (A) – 10 (V) – * – (*) – ** – ** / ** – 00**1 Function****RV3** - Relief valve**2 Cage seals**

Blank - Single backup ring
A - 1/2 thickness backup ring on each side of O-ring (for cross port relief applications)

3 Size**10** - 10 Size**4 Seals**

Blank - Buna-N
V - Viton®

5 Adjustment

C - Cap
F - Factory set
I - Internal
K - Knob
S - Screw

6 Valve housing material

Blank - Aluminum
S - Steel

7 Port size**0** - Cartridge only

CODE	PORT SIZE	HOUSING NUMBER		
		Aluminum Light duty	Aluminum Fatigue rated	Steel Fatigue rated
3B	3/8" BSPP	02-175462	—	—
2G	1/4" BSPP	—	876702	02-175102
3G	3/8" BSPP	—	876703	02-175103
6H	SAE 6	—	876700	—
8H	SAE 8	—	876701	—
6T	SAE 6	566151	—	02-175100
8T	SAE 8	—	—	02-175101
H10H	SAE 10*	—	4997062-001	—
2K10H	SAE 10**	—	4997060-001	—

* Bolt on, dual cross over relief valve package for **Eaton H or T series motors**** Bolt on, dual cross over relief valve package for **Eaton 2000 series motors**

(Note: Two cartridges are installed in this special housing, both are set to the same crack pressure specified in model code position 9, maximum allowed setting is 210 bar (3000 psi), only available with RV3A option and aluminum housing.)

See section J for housing details.

8 Cracking pressure range

- 3** - 3,5-20 bar (50-300 psi)
6 - 7-41 bar (100-600 psi)
9 - 14-62 bar (200-900 psi)
18 - 20-124 bar (300-1800 psi)
36 - 41-250 bar (600-3600 psi)

9 Setting pressure

Within ranges in **8**
Blank - Normal factory setting at approximate mid-range. User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:
10 - 70 bar (1000 psi)
10.5 - 72,4 bar (1050 psi)

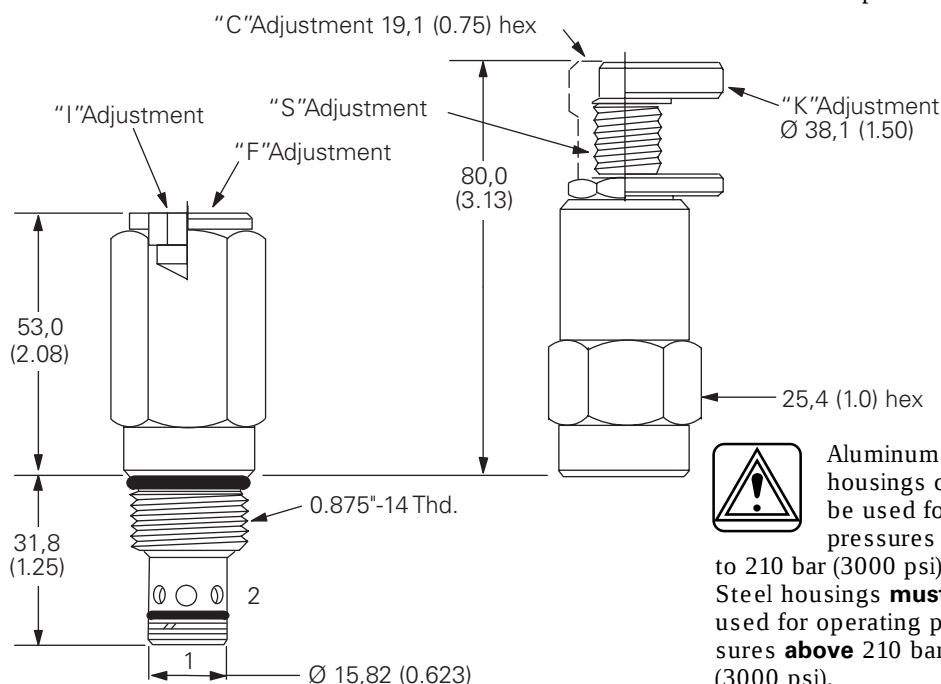
Special features

00 - None
 (Only required if valve has special features, omitted if "00")
SS - 316 Stainless Steel external components

Dimensions

mm (inch)

Torque cartridge in housing
A - 47-54 Nm (35-40 ft. lbs)
S - 68-75 Nm (50-55 ft. lbs)



Aluminum housings can be used for pressures up to 210 bar (3000 psi). Steel housings **must** be used for operating pressures **above** 210 bar (3000 psi).

RV8-10

Relief valve
Poppet, differential area,
high pressure

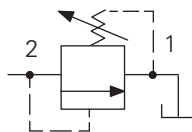
Description

The RV8-10 is a direct acting, poppet type, differential area screw-in cartridge relief valve.

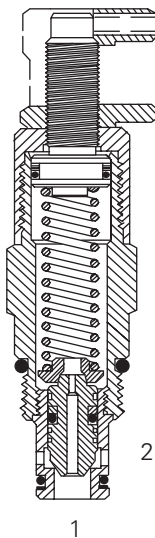
Operation

This valve remains closed from port 2 to port 1 until the predetermined setting has been reached at port 2. The poppet then unseats, allowing flow out port 1.

Functional Symbol



Sectional View



RATINGS AND SPECIFICATIONS

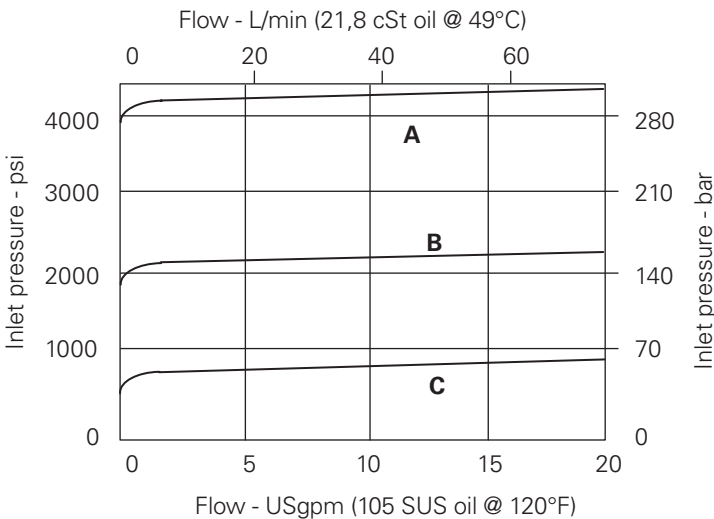
<i>Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)</i>	
Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	350 bar (5000 psi)
Rated flow	76 L/min (20 USgpm)
Internal leakage	5 drops/min @ 85% of Pressure Setting
Cavity	C-10-2
Standard housing materials	Aluminum or steel
Temperature range	-40° to 120°C (-40° to 248°F)
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Weight cartridge only	0,22 kg (0.48 lbs)
Seal kits	- RV8 565803 Buna-N 566086 Viton® - RV8A 565806 Buna-N 889627 Viton®

Viton is a registered trademark of E.I. DuPont

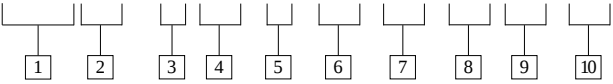
Pressure Override Curves

Cartridge only
Tank pressure = 0

- A - 50 spring
- B - 20 spring
- C - 12 spring



RV8 (A) – 10 (V) – * – (S) – ** – ** / ** – 00



1 Function

RV8 - Relief valve

2 Cage seals

Blank - Single backup ring as shown
A - 1/2 thickness backup ring on each side of O-ring (for cross port relief applications)

3 Size

10 - 10 Size

4 Seals

Blank - Buna-N
V - Viton®

5 Adjustment

C - Cap
F - Factory set
I - Internal
K - Knob
S - Screw

6 Valve housing material

Blank - Aluminum
S - Steel

Dimensions

mm (inch)

Torque cartridge in housing
A - 47-54 Nm (35-40 ft. lbs)
S - 68-75 Nm (50-55 ft. lbs)

7 Port size

0 - Cartridge only

CODE	PORT SIZE	HOUSING NUMBER		
		Aluminum Light duty	Aluminum Fatigue rated	Steel Fatigue rated
3B	3/8" BSPP	02-175462	–	–
2G	1/4" BSPP	–	876702	02-175102
3G	3/8" BSPP	–	876703	02-175103
6H	SAE 6	–	876700	–
8H	SAE 8	–	876701	–
6T	SAE 6	566151	–	02-175100
8T	SAE 8	–	–	02-175101

See section J for housing details.

(550-5000 psi)

8 Cracking pressure range

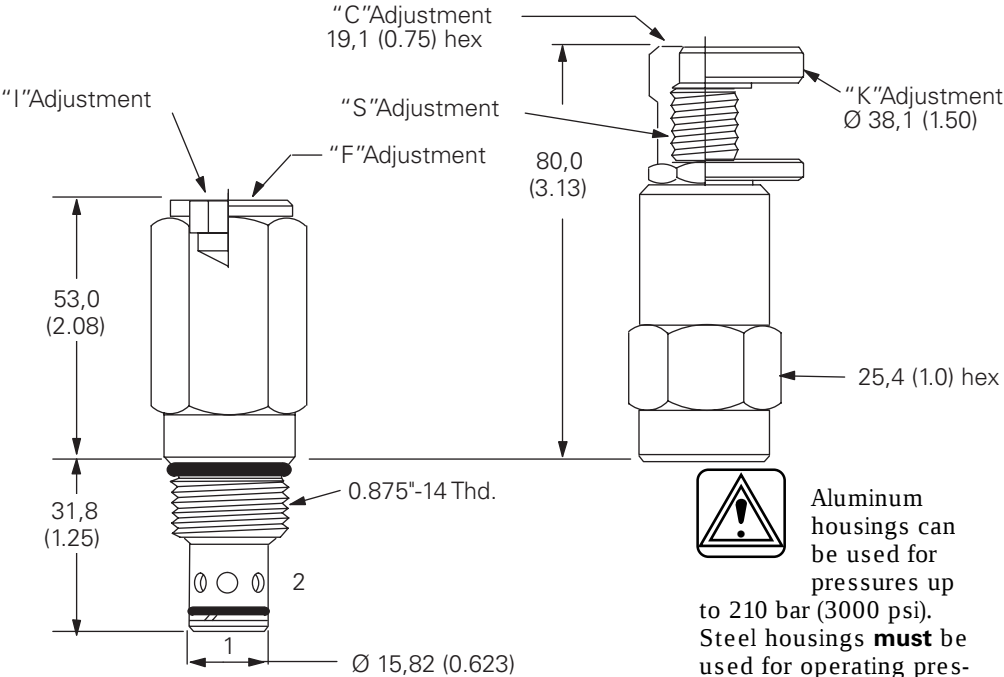
4 - 3,45-30 bar (50-450 psi)
12 - 7-86 bar (100-1250 psi)
25 - 17-175 bar (250-2500 psi)
50 - 38-350 bar

9 Setting pressure

Within ranges in 8
Blank - Normal factory setting at approximate mid-range. User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:
10 - 70 bar (1000 psi)
10.5 - 72,4 bar (1050 psi)

Special features

00 - None
(Only required if valve has special features, omitted if "00")
SS - 316 Stainless Steel external components



Aluminum housings can be used for pressures up to 210 bar (3000 psi). Steel housings **must** be used for operating pressures **above** 210 bar (3000 psi).

RV5-10

Relief valve
Pilot operated,
high pressure

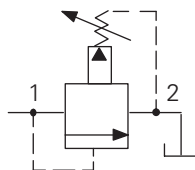
Description

The RV5-10 is a pilot operated, spool type, screw-in cartridge relief valve.

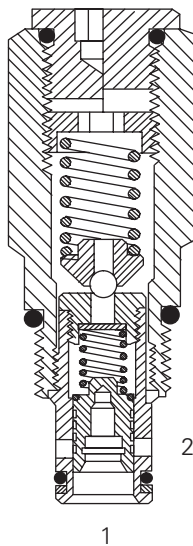
Operation

This valve remains closed from port 1 to port 2 until the predetermined setting has been reached at port 1. The spool then shifts, allowing flow out port 2.

Functional Symbol



Sectional View



RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

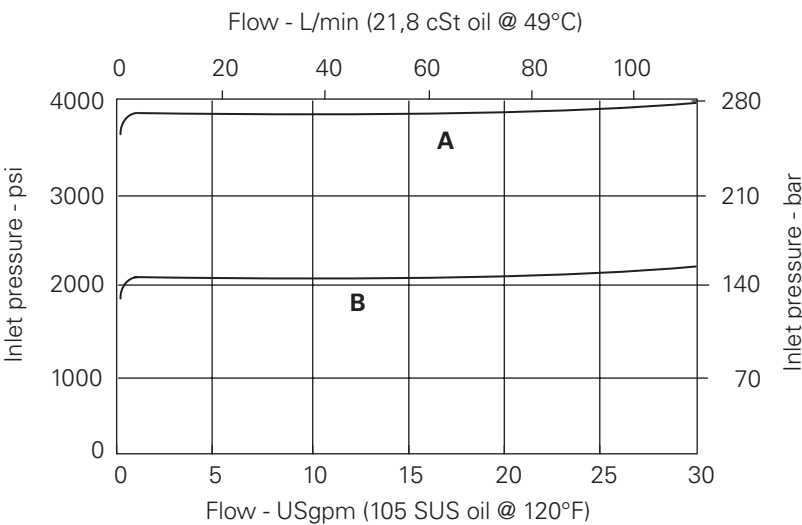
Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	350 bar (5000 psi)
Rated flow	114 L/min (30 USgpm)
Internal leakage, port 1 to port 2	114 cc/min (7cu in/min @ 350 bar (5000 psi))
Cavity	C-10-2
Standard housing materials	Aluminum or steel
Temperature range	-40° to 120°C (-40° to 248°F)
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Weight cartridge only	0,22 kg (0.48 lbs)
Seal kits	- RV5 565803 Buna-N 566086 Viton® - RV5A 565806 Buna-N 889627 Viton®

Viton is a registered trademark of E.I. DuPont

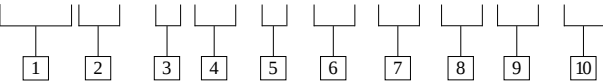
Pressure Override Curves

Cartridge only
Tank pressure = 0

A - 50 spring
B - 20 spring



RV5 (A) – 10 (V) – * – (S) – ** – ** / ** – 00



1 Function

RV5 - Relief valve

2 Cage seals

Blank - Single backup ring as shown

A - 1/2 thickness backup ring on each side of O-ring (for cross port relief applications)

3 Size

10 - 10 Size

4 Seals

Blank - Buna-N

V - Viton®

5 Adjustment

C - Cap

F - Fixed

I - Internal

K - Knob

S - Screw

6 Valve housing material

Blank - Aluminum

S - Steel

7 Port size

0 - Cartridge only

CODE	PORT SIZE	HOUSING NUMBER		
		Aluminum Light duty	Aluminum Fatigue rated	Steel Fatigue rated
3B	3/8" BSPP	02-175462	–	–
2G	1/4" BSPP	–	876702	02-175102
3G	3/8" BSPP	–	876703	02-175103
6H	SAE 6	–	876700	–
8H	SAE 8	–	876701	–
6T	SAE 6	566151	–	02-175100
8T	SAE 8	–	–	02-175101
H10H	SAE 10*	–	4997062-001	–
2K10H	SAE 10**	–	4997060-001	–

* Bolt on, dual cross over relief valve package for **Eaton H or T series motors**

** Bolt on, dual cross over relief valve package for **Eaton 2000 series motors**

(Note: Two cartridges are installed in this special housing, both are set to the same crack pressure specified in model code position 9, maximum allowed setting is 210 bar (3000 psi), only available with RV5A option and aluminum housing.)

See section J for housing details.

8 Cracking pressure range

3 - 3,4-20 bar (50-300 psi)

20 - 7-140 bar (100-2000 psi)

35 - 17-240 bar (250-3500 psi)

50 - 35-350 bar (500-5000 psi)

9 Setting pressure

Within ranges in **8**

Blank - Normal factory setting at approximate mid-range. User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:

10 - 70 bar (1000 psi)

10.5 - 72,4 bar (1050 psi)

Special features

00 - None

(Only required if valve has special features, omitted if "00")

SS - 316 Stainless Steel external components

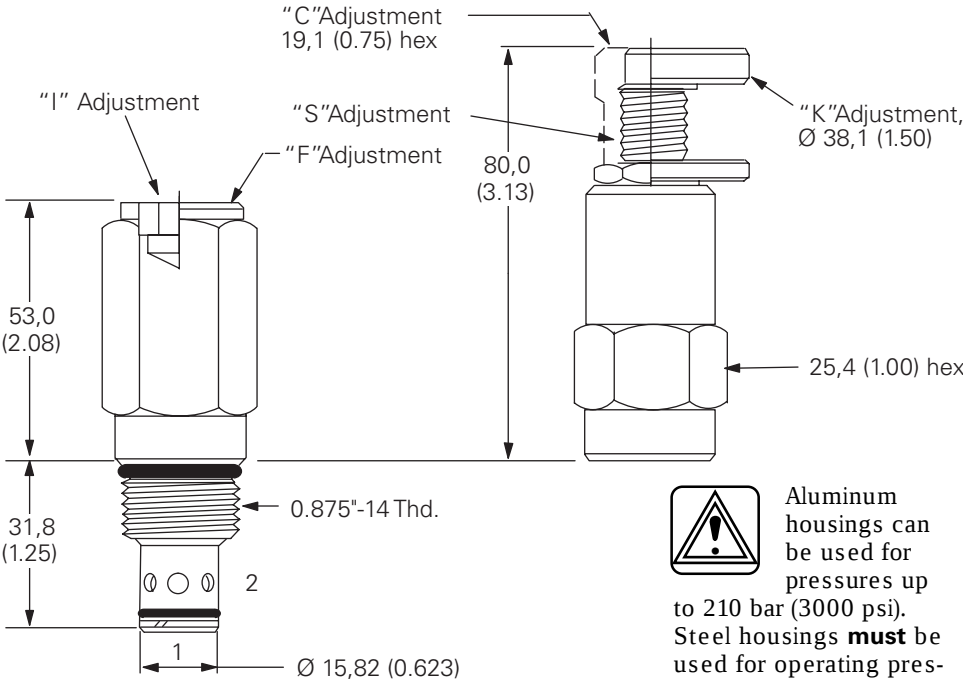
Dimensions

mm (inch)

Torque cartridge in housing

A - 47-54 Nm (35-40 ft. lbs)

S - 68-75 Nm (50-55 ft. lbs)



Aluminum housings can be used for pressures up to 210 bar (3000 psi). Steel housings **must** be used for operating pressures **above** 210 bar (3000 psi).

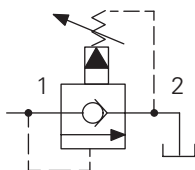
RV2-10

Relief Valve
Pilot operated with reverse
free flow check

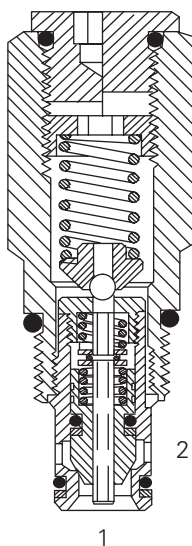
Description

The RV2-10 is a pilot operated, poppet type, screw-in cartridge relief valve with reverse free flow check.

Functional Symbol



Sectional View



Operation

This valve remains closed from port 1 to port 2 until the predetermined setting

has been reached at port 1. The poppet is unseated and allows flow out of port 2.

RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

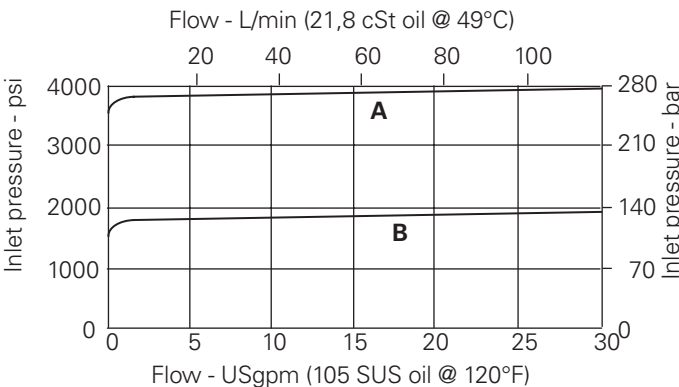
Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	350 bar (5000 psi)
Rated flow range	12–114 L/min (3–30 USgpm)
Internal leakage	5 drops/min @ 85% of Pressure Setting
Reverse free flow check	3 bar (45 psi)
Cavity	C-10–2
Standard housing materials	Aluminum or steel
Temperature range	–40° to 120°C (–40° to 248°F)
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Weight cartridge only	0,22 kg (0.48 lbs)
Seal kits	565803 Buna–N 566086 Viton®

Viton is a registered trademark of E.I. DuPont

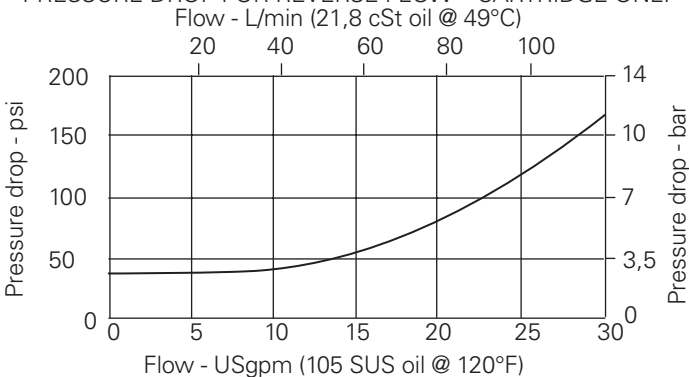
Pressure Override Curves

Cartridge only
Tank pressure = 0

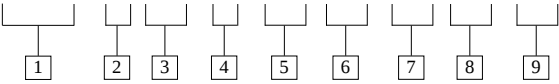
A - 50 Spring
B - 20 Spring



PRESSURE DROP FOR REVERSE FLOW – CARTRIDGE ONLY



RV2-10 (V) - * - (*) - ** - ** / ** - 00



1 Function

RV2 - Relief valve

2 Size

10 - 10 Size

3 Seals

Blank - Buna-N

V - Viton®

4 Adjustment

C - Cap

F - Factory set

I - Internal

K - Knob

S - Screw

5 Valve housing material

Blank - Aluminum

S - Steel

6 Port size

0 - Cartridge only

CODE	PORT SIZE	HOUSING NUMBER		
		Aluminum Light duty	Aluminum Fatigue rated	Steel Fatigue rated
3B	3/8" BSPP	02-175462	—	—
2G	1/4" BSPP	—	876702	02-175102
3G	3/8" BSPP	—	876703	02-175103
6H	SAE 6	—	876700	—
8H	SAE 8	—	876701	—
6T	SAE 6	566151	—	02-175100
8T	SAE 8	—	—	02-175101

See section J for housing details.

7 Cracking pressure range

3 - 3,5-20 bar (50-300 psi)

20 - 7-140 bar
(100-2000 psi)

35 - 17-240 bar
(250-3500 psi)

50 - 35-350 bar
(500-5000 psi)

8 Setting pressure

Within ranges in 7

Blank - Normal factory
setting at approximate
mid-range. User requested
settings in 3,45 bar (50 psi)
steps, coded as in the
following examples:

10 - 70 bar (1000 psi)

10.5 - 72,4 bar (1050 psi)

9 Special features

00 - None

(Only required if valve has
special features, omitted
if "00")

SS - 316 Stainless Steel
external components

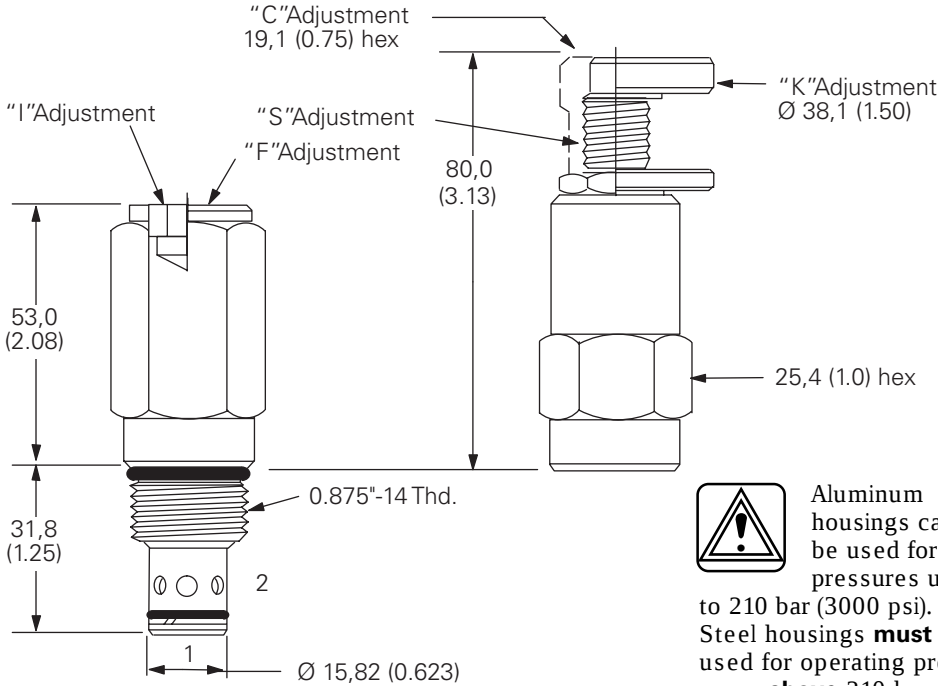
Dimensions

mm (inch)

Torque cartridge in housing

A - 47-54 Nm (35-40 ft. lbs)

S - 68-75 Nm (50-55 ft. lbs)



Aluminum housings can be used for pressures up to 210 bar (3000 psi). Steel housings **must** be used for operating pressures **above** 210 bar (3000 psi).

RV4-10

Thermal relief with reverse
flow check valve

Description

The RV4-10-F is a direct acting, poppet type, screw-in cartridge type thermal relief with reverse flow check valve.

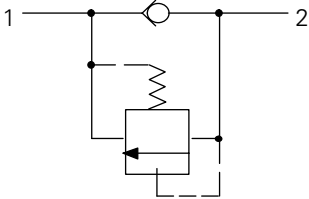
Operation

This valve has a dual function. In the first function the valve acts as a check valve and remains closed until the spring bias

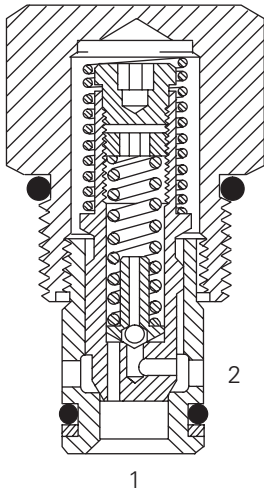
is overcome at port 1. The poppet is unseated and allows flow from port 1 to port 2. The second function acts as a thermal relief.

The valve remains closed until the predetermined setting is reached. The valve allows expansion flow from port 2 to port 1.

Functional Symbol



Sectional View



RATINGS AND SPECIFICATIONS

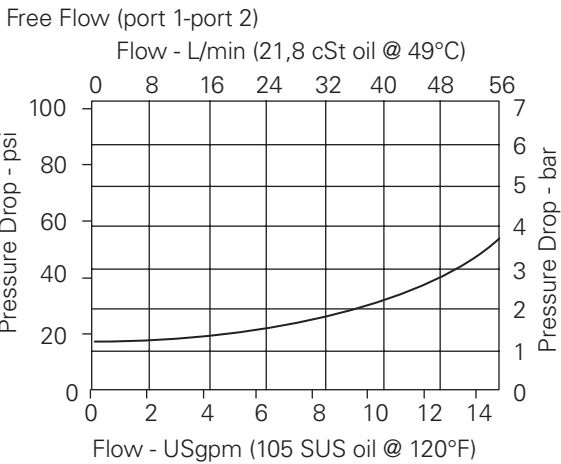
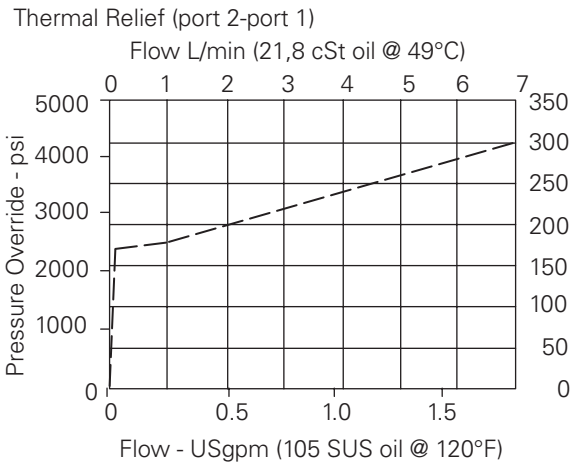
Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	350 bar (5000 psi)
Rated flow	45 L/min (12 USgpm)
– check valve	1 L/min (0.25 USgpm)
– relief valve	
Relief cracking pressure ranges	28 - 350 bar (400 - 5000 psi)
Check valve cracking pressure	1,24 bar (18 psi)
Reseat pressure	More than 90% of cracking pressure
Internal leakage, port 2 to port 1	5 drops/min at cracking pressure
Cavity	C-10-2
Standard housing materials	Aluminum or steel
Temperature range	-40° to 120°C (-40° to 248°F)
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Weight cartridge only	0,11 kg (0.25 lbs)
Seal kits	565803 Buna-N 566086 Viton®

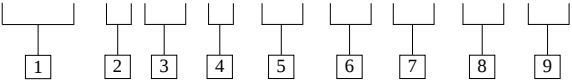
Viton is a registered trademark of E.I. DuPont

Pressure Override & Free Flow Curves

Cartridge only



RV4 – 10 (V) – F – (S) – ** – 50 / ** – 00



1 Function

RV - Check valve w/thermal relief

2 Size

10 - 10 Size

3 Seals

Blank - Buna–N
V - Viton®

4 Adjustment

F - Factory set

5 Valve housing material

Blank - Aluminum
S - Steel

Dimensions

mm (inch)

Torque cartridge in housing

A - 47-54 Nm (35-40 ft. lbs)

S - 68-75 Nm (50-55 ft. lbs)

6 Port size

0 - Cartridge only

CODE	PORT SIZE	HOUSING NUMBER		
		Aluminum Light duty	Aluminum Fatigue rated	Steel Fatigue rated
3B	3/8" BSPP	02–175462	–	–
2G	1/4" BSPP	–	876702	02–175102
3G	3/8" BSPP	–	876703	02–175103
6H	SAE 6	–	876700	–
8H	SAE 8	–	876701	–
6T	SAE 6	566151	–	02–175100
8T	SAE 8	–	–	02–175101

See section J for housing details.

7 Cracking pressure range

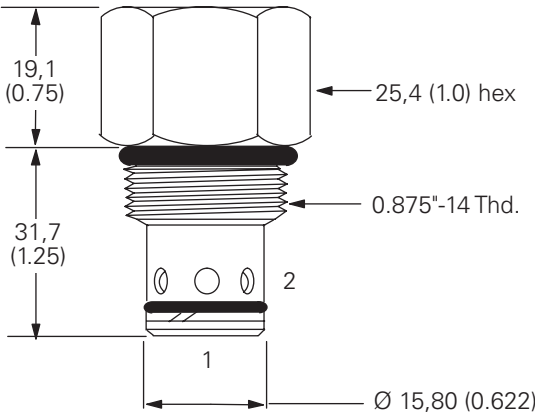
50 - 28-350 bar
(400-5000 psi)

8 Setting pressure

Within ranges in 7
User must specify settings
in 7 bar (100 psi) steps,
coded as in the following
examples:
10 - 70 bar (1000 psi)
25 - 175 bar (2500 psi)

9 Special features

00 - None
(Only required if valve has
special features, omitted
if “00”)



Aluminum housings can be used for pressures up to 210 bar (3000 psi). Steel housings **must** be used for operating pressures **above** 210 bar (3000 psi).

RV1-12

Relief Valve

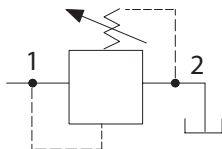
Description

The RV1-12 is a direct acting, poppet type screw-in cartridge relief valve.

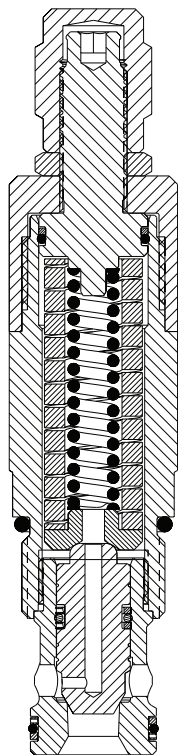
Operation

The RV1-12 remains closed until the predetermined setting is reached at port 1. The poppet then lifts off the seat and allows flow from port 1 to port 2.

Functional Symbol



Sectional View

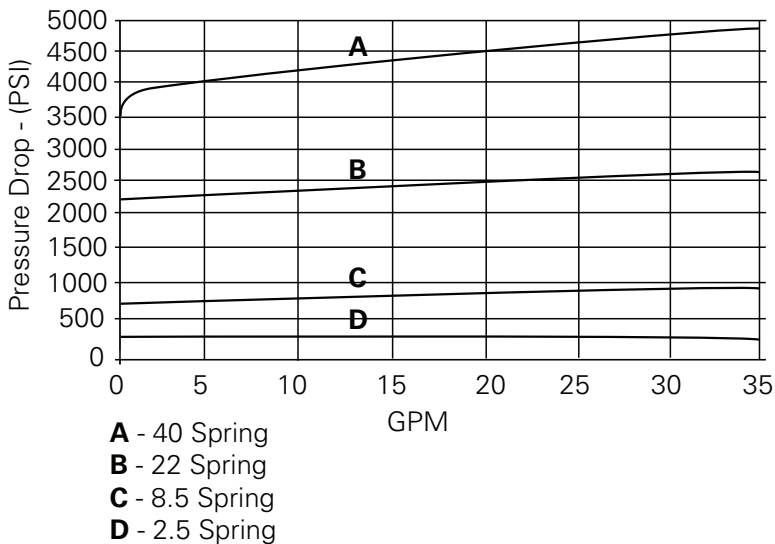


RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 23,3 cST (111 SUS) and 49°C (120°F)

Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	350 bar (5000 psi)
Rated flow	114 L/min (30 USgpm)
Cracking pressure ranges	3,4-275 bar (50-4000 psi)
Temperature range	-40° to 120°C (-40° to 248°F)
Cavity	C-12-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Standard housing materials	C-12-2 or C-12-2U
Weight cartridge only	0,49 kg (1.08 lbs)
Seal kit	02-165881 (Buna-N), 02-165888 (Viton®) Viton is a registered trademark of E.I. DuPont

Endurance tested to 1 million cycles at full rated flow and pressure.



RV1 - 12 (V) - X - (*) *** - (U) XX/ XX XX
 1 2 3 4 5 6 7 8 9 10

1 Function
RV1 - Relief Valve

2 Size
 12 - 12 Size

3 Seal Material
Blank - Buna N
V - Viton

4 Adjustment
C - Cap
K - Knob
F - Factory Set
S - Screw

5 Valve Housing Material
 Omit for cartridge only
A - Aluminum
S - Steel

6 Port Size

CODE	PORT SIZE	HOUSING NUMBER			
		C-12-2 Aluminum Fatigue rated	C-12-2U Aluminum Fatigue rated	C-12-2 Steel Fatigue rated	C-12-2U Steel Fatigue rated
4G	1/2" BSPP	30189-1	30189-2	30915-1	30915-2
6G	1/4" BSPP	31090-1	31090-2	30916-1	30916-1
10T	SAE 10	31087-1	31087-2	30913-1	30913-2
12T	SAE 12	31088-1	31088-2	30914-1	30914-2

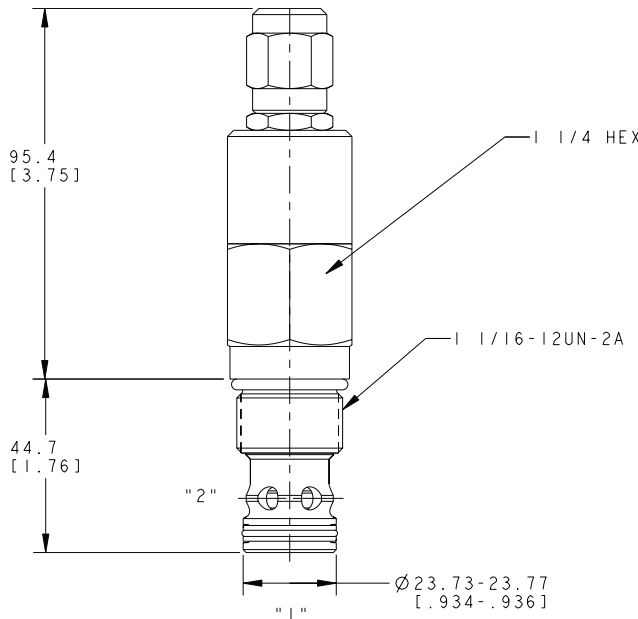
7 Cavity
Blank - Cavity without undercut
U - Cavity with undercut

8 Cracking pressure ranges
2.5 - 3,4-17 bar (50-250 psi)
8.5 - 13-55 bar (200-850 psi)
22 - 20-150 bar (300-2200 psi)
40 - 40-275 bar (600-4000 psi)

9 Pressure setting
 Within ranges in **8**
Blank - Normal Factory Setting at approximate mid-range
Optional - User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:
10 - 70 bar (1000 psi)
10.5 - 72,4 bar (1050 psi)

10 Special Features
00 - None
 (Only required if valve has special features, omitted if "00")

Dimensions
 mm (inch)
 Torque cartridge in housing
A - 81-95 Nm (60-70 ft. lbs)
S - 102-115 Nm (75-85 ft. lbs)



ADJUSTMENT CODE C



Aluminum housings can be used for pressures up to 210 bar (3000 psi). Steel housings must be used for operating pressures above 210 bar (3000 psi).

RV3-12

Relief Valve

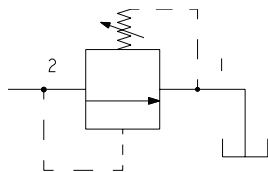
Description

The RV3-12 is a direct acting, poppet type screw-in cartridge relief valve.

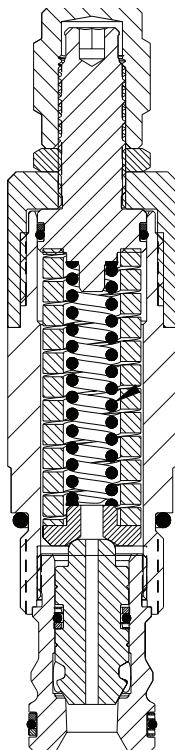
Operation

The RV3-12 remains closed until the predetermined setting is reached at port 1. The poppet then lifts off the seat and allows flow from port 1 to port 2.

Functional Symbol



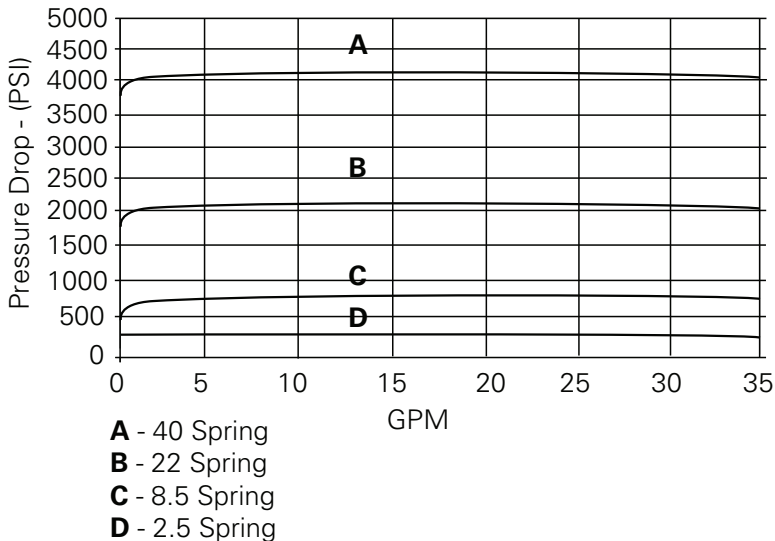
Sectional View



RATINGS AND SPECIFICATIONS

<i>Performance data is typical with fluid at 23,3 cST (111 SUS) and 49°C (120°F)</i>	
Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	350 bar (5000 psi)
Rated flow	132 L/min (35 USgpm)
Cracking pressure ranges	3,4-275 bar (50-4000 psi)
Temperature range	-40° to 120°C (-40° to 248°F)
Cavity	C-12-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Standard housing materials	C-12-2 or C-12-2U
Weight cartridge only	0,49 kg (1.08 lbs)
Seal kit	02-165889 (Buna-N), 02-165888 (Viton®) Viton is a registered trademark of E.I. DuPont

Endurance tested to 1 million cycles at full rated flow and pressure.



RV3	-	12 (V)	-	X	-	(*)	***	-	(U)	XX/	XX	XX
1		2 3		4		5	6		7	8	9	10

1 Function
RV3 - Relief Valve

2 Size
12 - 12 Size

3 Seal Material
Blank - Buna N
V - Viton

4 Adjustment
C - Cap
K - Knob
F - Factory Set
S - Screw

5 Valve Housing Material
Omit for cartridge only
A - Aluminum
S - Steel

6 Port Size

CODE	PORT SIZE	HOUSING NUMBER			
		C-12-2 Aluminum Fatigue rated	C-12-2U Aluminum Fatigue rated	C-12-2 Steel Fatigue rated	C-12-2U Steel Fatigue rated
4G	1/2" BSPP	30189-1	30189-2	30915-1	30915-2
6G	3/4" BSPP	31090-1	31090-2	30916-1	30916-1
10T	SAE 10	31087-1	31087-2	30913-1	30913-2
12T	SAE 12	31088-1	31088-2	30914-1	30914-2

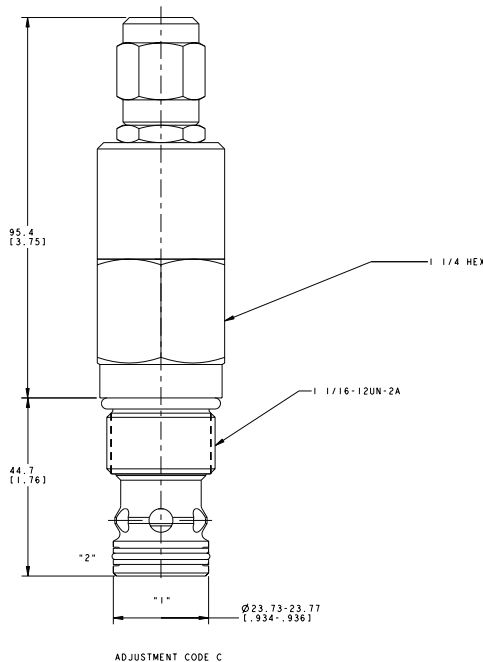
7 Cavity
Blank - Cavity without undercut
U - Cavity with undercut

8 Cracking pressure ranges
2.5 - 3,4-17 bar (50-250 psi)
8.5 - 13-55 bar (200-850 psi)
22 - 20-150 bar (300-2200 psi)
40 - 40-275 bar (600-4000 psi)

9 Pressure setting
Within ranges in **8**
Blank - Normal Factory Setting at approximate mid-range
Optional - User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:
10 - 70 bar (1000 psi)
10.5 - 72,4 bar (1050 psi)

10 Special Features
00 - None
(Only required if valve has special features, omitted if "00")

Dimensions
mm (inch)
Torque cartridge in housing
A - 81-95 Nm (60-70 ft. lbs)
S - 102-115 Nm (75-85 ft. lbs)



Aluminum housings can be used for pressures up to 210 bar (3000 psi). Steel housings must be used for operating pressures above 210 bar (3000 psi).

RV8-12

Relief Valve

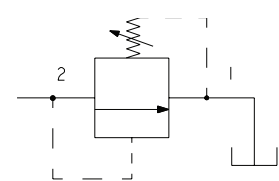
Description

The RV8-12 is a direct acting, poppet type screw-in cartridge relief valve.

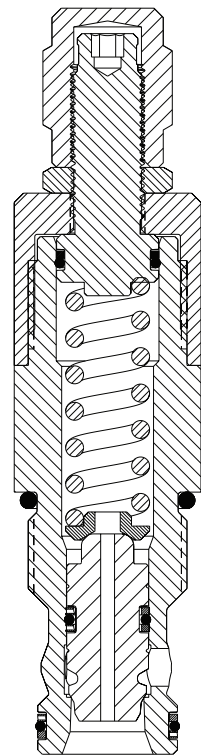
Operation

The RV8-12 remains closed until the predetermined setting is reached at port 1. The poppet then lifts off the seat and allows flow from port 1 to port 2.

Functional Symbol



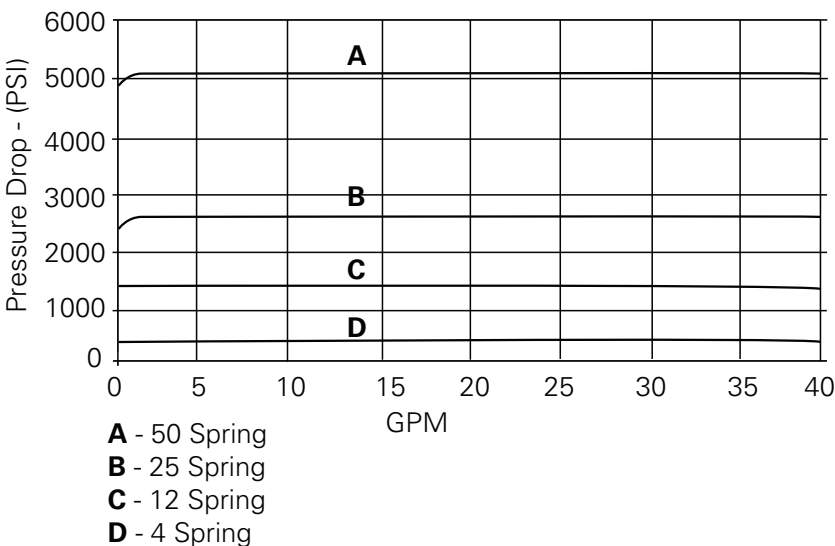
Sectional View



RATINGS AND SPECIFICATIONS

<i>Performance data is typical with fluid at 23,3 cST (111 SUS) and 49°C (120°F)</i>	
Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	350 bar (5000 psi)
Rated flow	132 L/min (35 USgpm)
Cracking pressure ranges	3,4-275 bar (50-4000 psi)
Temperature range	-40° to 120°C (-40° to 248°F)
Cavity	C-12-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Standard housing materials	C-12-2 or C-12-2U
Weight cartridge only	0,43 kg (0.94 lbs)
Seal kit	02-165889 (Buna-N), 02-165888 (Viton®) Viton is a registered trademark of E.I. DuPont

Endurance tested to 1 million cycles at full rated flow and pressure.



RV8 - 12 (V) - X - (*) *** - (U) XX/ XX XX
 1 2 3 4 5 6 7 8 9 10

1 Function
RV8 - Relief Valve

2 Size
 12 - 12 Size

3 Seal Material
Blank - Buna N
V - Viton

4 Adjustment
C - Cap
K - Knob
S - Screw

5 Valve Housing Material
 Omit for cartridge only
A - Aluminum
S - Steel

6 Port Size

CODE	PORT SIZE	HOUSING NUMBER			
		C-12-2 Aluminum Fatigue rated	C-12-2U Aluminum Fatigue rated	C-12-2 Steel Fatigue rated	C-12-2U Steel Fatigue rated
4G	1/2" BSPP	30189-1	30189-2	30915-1	30915-2
6G	3/4" BSPP	31090-1	31090-2	30916-1	30916-1
10T	SAE 10	31087-1	31087-2	30913-1	30913-2
12T	SAE 12	31088-1	31088-2	30914-1	30914-2

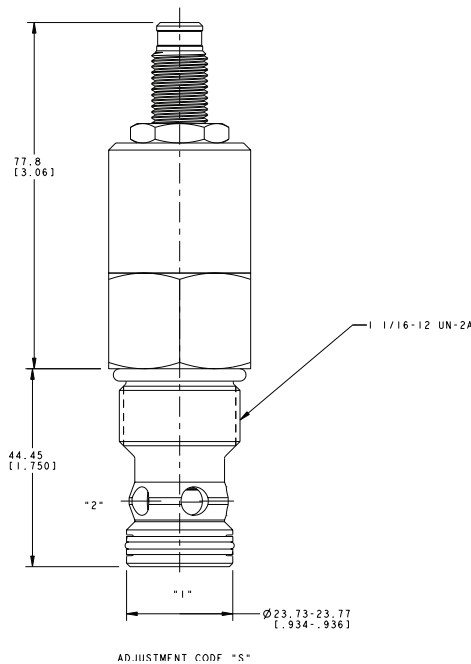
7 Cavity
Blank - Cavity without undercut
U - Cavity with undercut

8 Cracking pressure ranges
4 - 3,4-350 bar (50-5000 psi)
12 - 13-85 bar (200-1250 psi)
25 - 20-170 bar (300-2500 psi)
50 - 40-350 bar (600-5000 psi)

9 Pressure setting
 Within ranges in **8**
Blank - Normal Factory Setting at approximate mid-range
Optional - User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:
10 - 70 bar (1000 psi)
10.5 - 72,4 bar (1050 psi)

10 Special Features
00 - None
 (Only required if valve has special features, omitted if "00")

Dimensions
 mm (inch)
 Torque cartridge in housing
A - 81-95 Nm (60-70 ft. lbs)
S - 102-115 Nm (75-85 ft. lbs)



Aluminum housings can be used for pressures up to 210 bar (3000 psi). Steel housings must be used for operating pressures above 210 bar (3000 psi).

RV11-12

Relief valve
Pilot operated,

Description

The RV11-12 is a screw-in cartridge type, pilot operated, sliding spool, adjustable relief valve designed for use as a pressure limiting

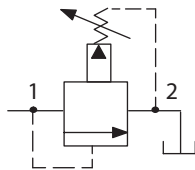
device in hydraulic circuits. The sliding spool design smoothly regulates pressure in any hydraulic system with a low hysteresis.

Operation

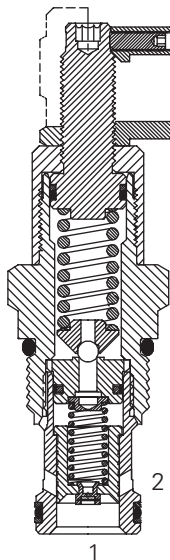
This valve is normally closed until the predetermined setting is reached, which causes the pilot section to open. This allows

the main relief section to open, relieving from port 1 to port 2.

Functional Symbol



Sectional View



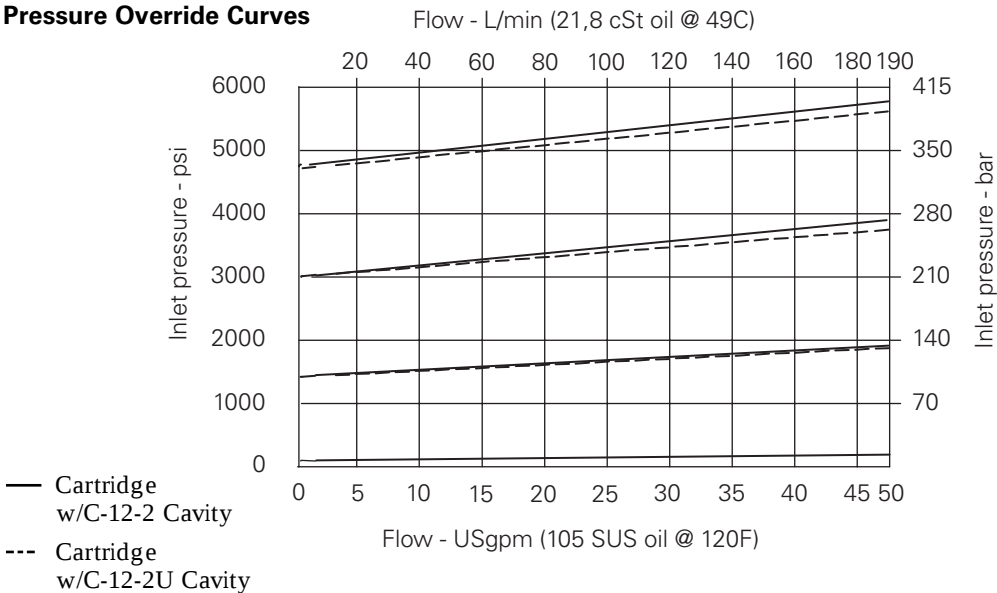
RATINGS AND SPECIFICATIONS

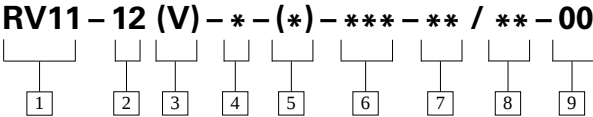
Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	350 bar (5000 psi)
Rated flow	190 L/min (50 USgpm)
Reseat pressure	More than 90% of crack pressure
Hysteresis	Less than 3 bar (45 psi)
Internal leakage, port 1 to port 2	131 cc/min (8cu in/min@350 bar) (5000 psi)
Overshoot	Less than 20% of max. press. range with flow step of 30 USgpm at pressure rise rate of 100,000 psi/sec
Repeatability	+/- 1% maximum pressure range
Cavity	C-12-2 or C-12-2U
Standard housing materials	Aluminum or steel
Temperature range	-40° to 120°C (-40° to 248°F)
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Weight cartridge only	0,3 kg (0.68 lbs)
Seal kits	02-165889 Buna-N 02-165888 Viton®

Viton is a registered trademark of E.I. DuPont

Pressure Override Curves





1 Function
RV11 - Relief valve

2 Size
12 - 12 Size

3 Seals
Blank - Buna-N
V - Viton®

4 Adjustment
S - Screw
C - Cap
K - Knob

5 Valve housing material
S - Steel
A - Aluminum

6 Port size
0 - Cartridge only

CODE	PORT SIZE	HOUSING NUMBER			
		C-12-2-U Aluminum Fatigue rated	C-12-2 Aluminum Fatigue rated	C-12-2-U Steel Fatigue rated	C-12-2 Steel Fatigue rated
10T	SAE 10	02-160641	02-160640	02-169817	02-169744
12T	SAE 12	02-160645	02-160644	02-169790	02-169782
4G	1/2" BSPP	02-161116	02-161118	02-172512	02-172062
6G	3/4" BSPP	02-161115	02-161117	02-162922	02-169665

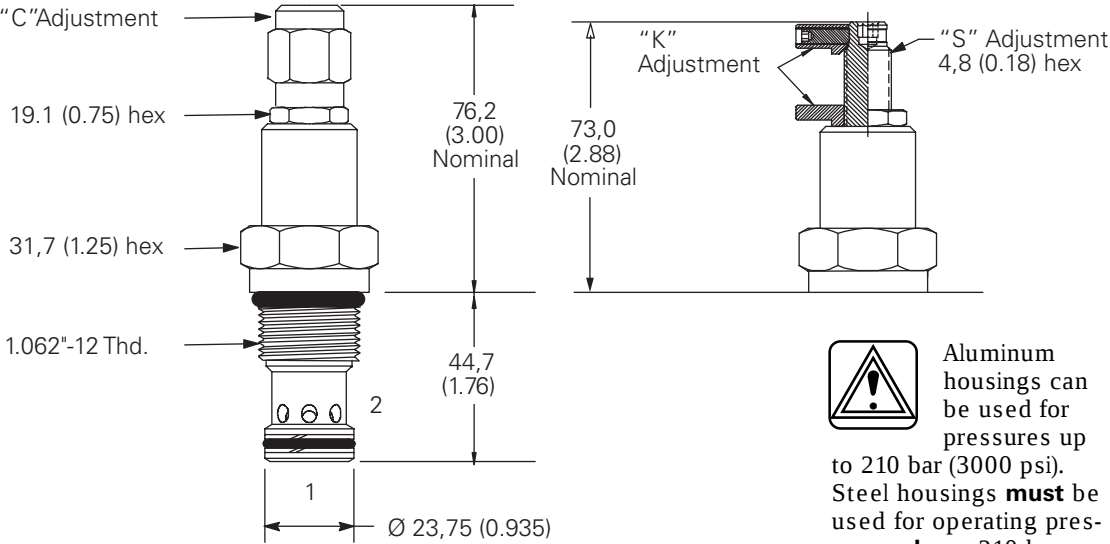
See section J for housing details.

7 Cracking pressure range
15 - 10-100 bar
(150-1500 psi)
30 - 17-210 bar
(250-300 psi)
50* - 24-350 bar
(350-5000 psi)
*Must be ordered as a cartridge only or
with a steel housing

8 Setting pressure
Within ranges in **7**
Blank - Normal factory
setting at approximate
mid-range. User requested
settings in 3,45 bar (50 psi)
steps, coded as in the
following examples:
10 - 70 bar (1000 psi)
10.5 - 72,4 bar (1050 psi)

9 Special features
00 - None
(Only required if valve has
special features, omitted
if "00")

Dimensions
mm (inch)
Torque cartridge
in housing
A - 81-95 Nm
(60-70 ft. lbs)
S - 102-115 Nm
(75-85 ft. lbs)



 Aluminum housings can be used for pressures up to 210 bar (3000 psi). Steel housings **must** be used for operating pressures **above** 210 bar (3000 psi).

RV3-16

Relief valve
Poppet type,
differential area

Description

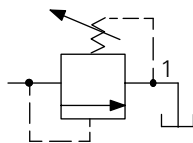
The RV3-16 is a direct acting, differential area poppet type, screw-in cartridge relief valve.

Operation

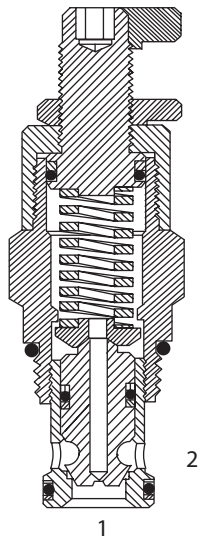
This valve remains closed from port 2 to port 1 until the predetermined setting has been reached at port 1.

2. The poppet is unseated and allows flow out of port 1.

Functional Symbol



Sectional View



RATINGS AND SPECIFICATIONS

<i>Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)</i>	
Typical application pressure	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	350 bar (5000 psi)
Rated flow	30-303 L/min (8-80 USgpm)
Cavity	C-16-2
Standard housing materials	Aluminum or steel
Temperature range	-40° to 120°C (-40° to 248°F)
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Weight cartridge only	0,71 kg (1.57 lbs)
Seal kits	565810 Buna-N 889609 Viton®

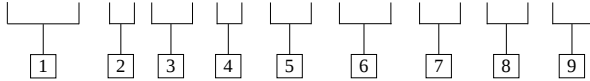
Viton is a registered trademark of E.I. DuPont

Pressure Override Curves

Cartridge only

A - 50 spring
B - 35 spring

RV3-16 (V) - * - (S) - *** - ** / ** - 00



1 Function
RV3 - Relief valve

2 Size
16 - 16 Size

3 Seals
Blank - Buna-N
V - Viton®

4 Adjustment
C - Cap
K - Knob
S - Screw

5 Valve housing material
Blank - Aluminum
S - Steel

6 Port size
0 - Cartridge only

CODE	PORT SIZE	HOUSING NUMBER		
		Aluminum light duty	Aluminum Fatigue rated	Steel Fatigue rated
6B	3/4" BSPP	02-175463	—	—
4G	1/2" BSPP	—	876716	02-175106
6G	3/4" BSPP	—	876718	02-175107
10H	SAE 10	—	876717	—
12H	SAE 12	—	566113	—
10T	SAE 10	—	—	02-175104
12T	SAE 12	566149	—	02-175105

See section J for housing details.

7 Cracking pressure range
5 - 3,5-35 bar (50-500 psi)
13 - 35-90 bar (300-1300 psi)
35 - 83-240 bar (1200-3500 psi)
50 - 140-350 bar (2000-5000 psi)

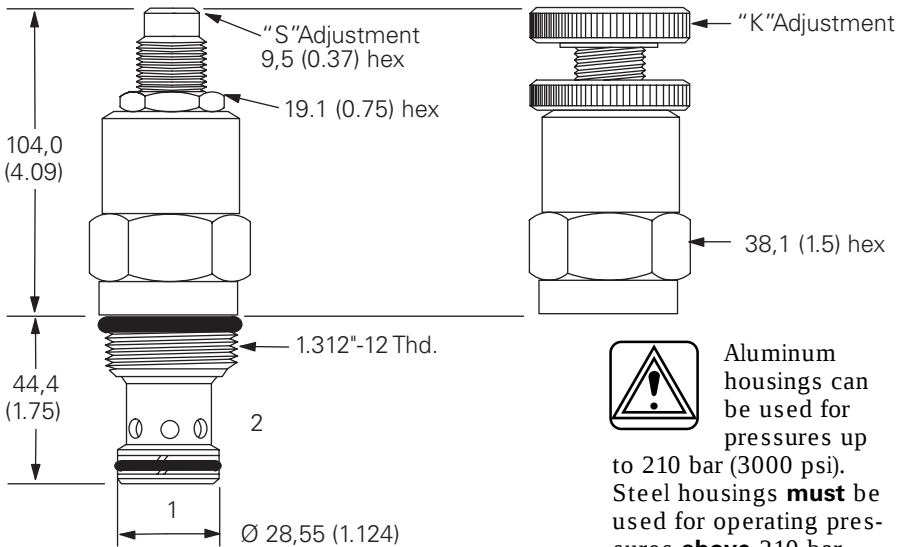
8 Setting pressure
Within ranges in **7**
Blank - Normal factory setting at approximate mid-range. User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:
10 - 70 bar (1000 psi)
10.5 - 72,4 bar (1050 psi)

9 Special features
00 - None
(Only required if valve has special features, omitted if "00")
SS - 316 Stainless Steel external components

Dimensions

mm (inch)

Torque cartridge in housing
A - 108-122 Nm (80-90 ft. lbs)
S - 136-149 Nm (100-110 ft. lbs)



RV5-16

Relief valve
Pilot operated

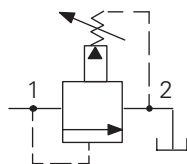
Description

The RV5-16 is a pilot operated, spool type, screw-in cartridge relief valve.

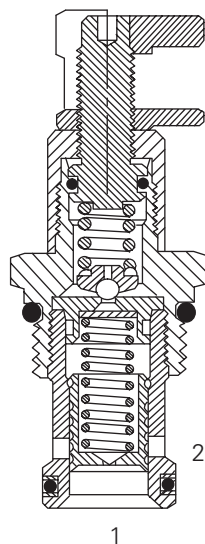
Operation

This valve remains closed from port 1 to port 2 until the predetermined setting has been reached at port 1. The spool then shifts, allowing flow out port 2.

Functional Symbol



Sectional View



RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

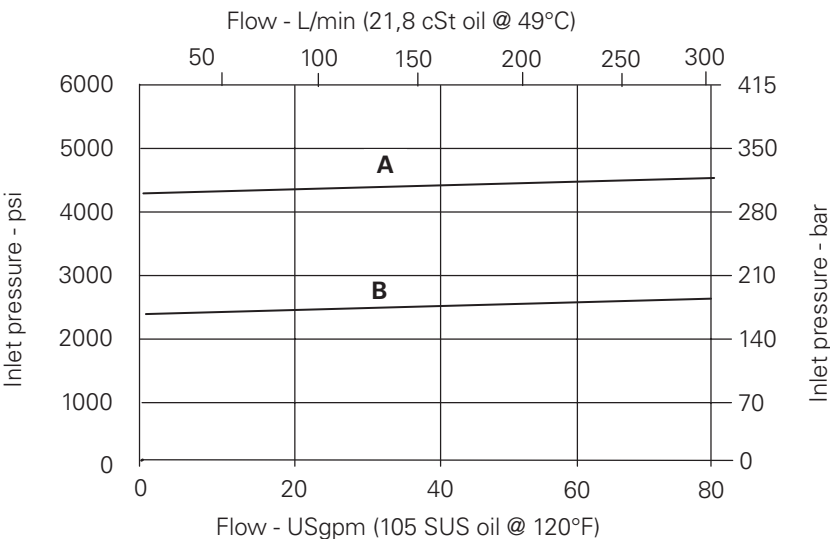
Typical application pressure(all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	350 bar (5000 psi)
Rated flow	303 L/min (80 USgpm)
Internal leakage, port 1 to port 2	164 cc/min (10cu in/min@350 bar (5000 psi)
Cavity	C-16-2
Standard housing materials	Aluminum or steel
Temperature range	-40° to 120°C (-40° to 248°F)
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Weight cartridge only	0,71 kg (1.57 lbs)
Seal kits	889631 Buna-N 889635 Viton®

Viton is a registered trademark of E.I. DuPont

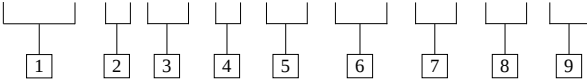
Pressure Override Curves

Cartridge only

A - 60 spring
B - 35 spring



RV5 – 16 (V) – * – (S) – *** – ** / ** – 00



1 Function
RV3 - Relief valve

2 Size
16 - 16 Size

3 Seals
Blank - Buna-N
V - Viton®

4 Adjustment
S - Screw
C - Cap
K - Knob

5 Valve housing material
Blank - Aluminum
S - Steel

Dimensions
mm (inch)

Torque cartridge in housing
A - 108-122 Nm
(80-90 ft. lbs)
S - 136-149 Nm
(100-110 ft. lbs)

6 Port size
0 - Cartridge only

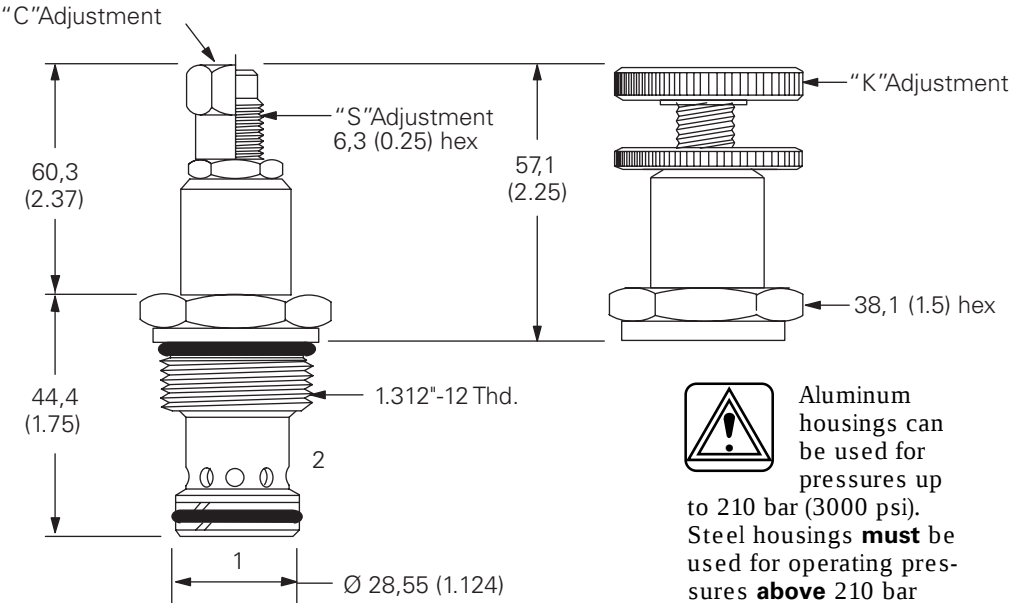
CODE	PORT SIZE	HOUSING NUMBER		
		Aluminum light duty	Aluminum Fatigue rated	Steel Fatigue rated
6B	3/4" BSPP	02-175463	–	–
4G	1/2" BSPP	–	876716	02-175106
6G	3/4" BSPP	–	876718	02-175107
10H	SAE 10	–	876717	–
12H	SAE 12	–	566113	–
10T	SAE 10	–	–	02-175104
12T	SAE 12	566149	–	02-175105

See section J for housing details.

7 Cracking pressure range
30 - 34-210 bar
(500-3000 psi)
60 - 70-415 bar
(1000-6000 psi)

8 Setting pressure
Within ranges in **7**
Blank - Normal factory setting at approximate mid-range. User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:
10 - 70 bar (1000 psi)
10.5 - 72,4 bar (1050 psi)

9 Special features
00 - None
(Only required if valve has special features, omitted if "00")



VRV11-12

Pilot operated ventable relief valve

Description

The VRV11-12 is a pilot operated, sliding spool, adjustable, cartridge type vented relief valve. The

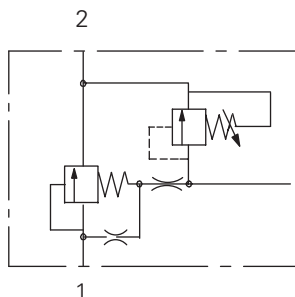
valve is designed for use as a pressure limiting device in hydraulic circuits which can be operated remotely. The

sliding spool design smoothly regulates pressure in any hydraulic system and provides low hysteresis.

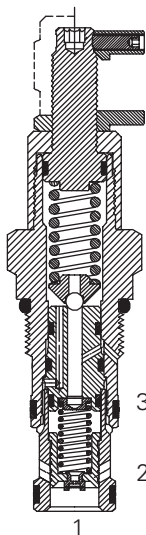
Operation

In its normally closed state, the valve allows flow from port 1 to port 2 when port 3 is vented, or the main spring setting is achieved.

Functional Symbol



Sectional View



RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	114 L/min (30 USgpm)
Reseat pressure	More than 90% of crack pressure
Hysteresis	Less than 3 bar (45 psi)
Internal leakage, port 1 to port 2	82 m L/min (5 in ³ /min) @80% cracking pressure
Overshoot	Less than 20% of max. press. range with flow step of 30 USgpm at pressure rise rate of 100,000 psi/sec.
Repeatability	+/- 1% maximum pressure range
Cavity	C-12-3S
Standard housing materials	Aluminum or steel
Temperature range	-40° to 120° C (-40° to 248°F)
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Weight cartridge only	0,4 kg (0.89 lbs)
Seal kits	02-180095 Buna-N 02-165887 Viton®

Viton is a registered trademark of E.I. DuPont

Performance characteristics

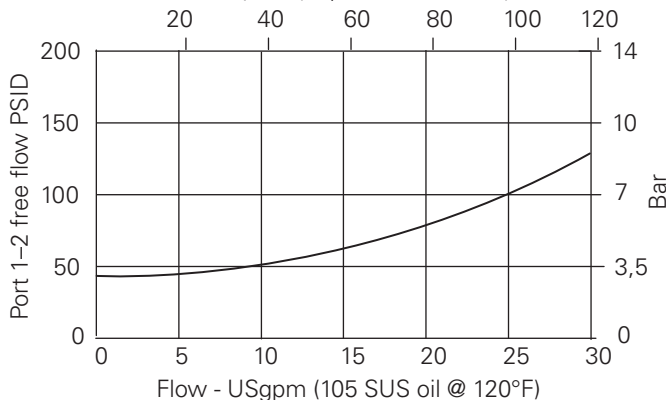
Cartridge only

A - 30 spring

B - 15 spring

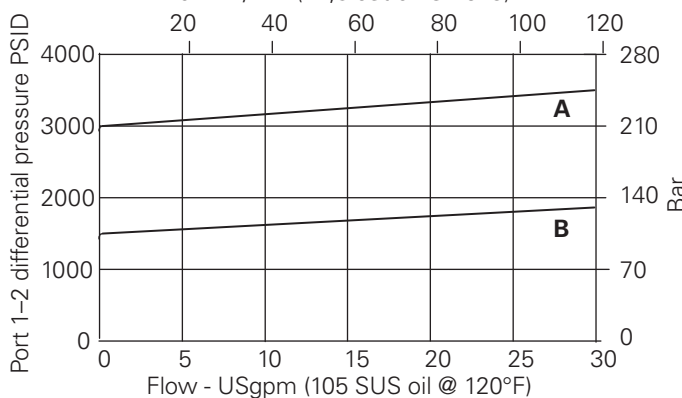
Vented free flow pressure drop

Flow - L/min (21,8 cSt oil @ 49°C)

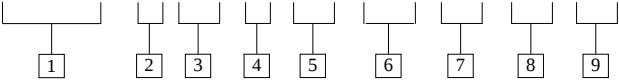


Pressure override

Flow - L/min (21,8 cSt oil @ 49°C)



VRV11 – 12 (V) – * – () – *** – ** / ** – 00



1 Function
VRV11 - Ventable relief valve

2 Size
12 - 12 Size

3 Seals
Blank - Buna-N
V - Viton®

4 Adjustment
S - Screw
C - Cap
K - Knob

5 Valve housing material
Omit for cartridge only
Blank - Aluminum
S - Steel

6 Port size
0 - Cartridge only

CODE	PORT SIZE	HOUSING NUMBER	
		Aluminum Fatigue rated	Steel Fatigue rated
10T	SAE 10	02-178268	02-160996
12T	SAE 12	02-178269	02-160997
4G	1/2" BSPP	02-178270	02-160994
6G	3/4" BSPP	02-178271	02-160995

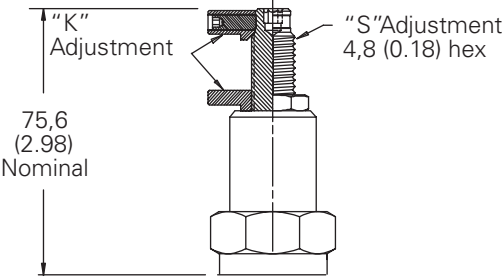
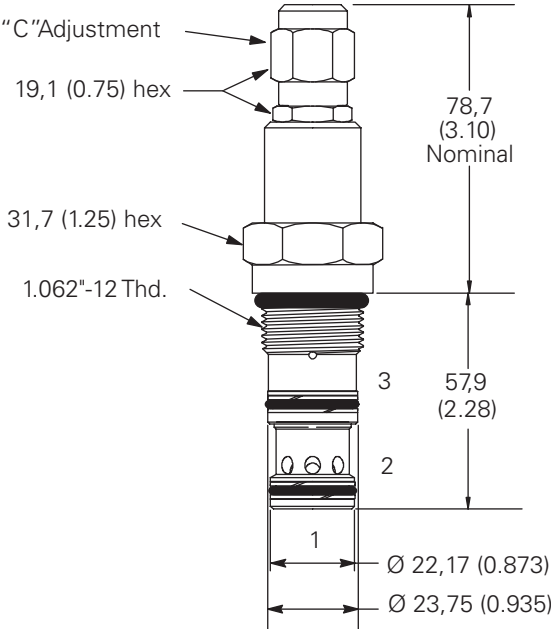
See section J for housing details.

7 Cracking pressure range
15 - 5-100 bar
(75-1500 psi)
30 - 10-210 bar
(150-3000 psi)

8 Setting pressure
Within ranges in **7**
Blank - Normal factory
setting at approximate
mid-range. User requested
settings in 3,45 bar (50 psi)
steps, coded as in the
following examples:
10 - 70 bar (1000 psi)
10.5 - 72,4 bar (1050 psi)

9 Special features
00 - None
(Only required if valve has
special features, omitted
if "00")

Dimensions
mm (inches)
Torque cartridge
in housing
A - 81-95 Nm
(60-70 ft. lbs)
S - 102-115 Nm
(75-85 ft. lbs)



Aluminum
 housings can
 be used for
 pressures up
 to 210 bar (3000 psi).
 Steel housings **must** be
 used for operating pres-
 sures **above** 210 bar
 (3000 psi).

PRV1-10

Pressure reducing/
relieving valve
Direct acting

Description

The PRV1-10 is a direct acting, spool-type, screw-in cartridge pressure reducing/relieving valve.

This valve maintains a constant secondary (lower) pressure in hydraulic sub-systems regardless of pressure variations in the primary system. In addition to

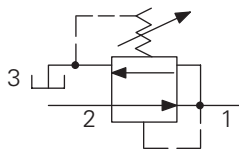
the reducing function, this valve also provides a flow path from the reduced pressure port to the tank port. If pressure in the secondary circuit exceeds the desired pressure, the valve opens this flow path to relieve excess pressure to tank.

Operation

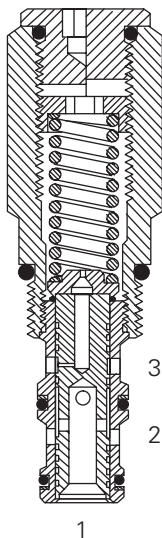
This valve is normally open, allowing flow from port 2 to port 1. Port 3 must be vented. Once the pressure setting is reached at port 1, the spool shifts to restrict the inlet flow at port 2. This regulates the pressure at port 1. If pressure at port 1 exceeds the predetermined

setting of the valve, the spool will shift further and relieve excess pressure through port 3.

Functional Symbol



Sectional View



RATINGS AND SPECIFICATIONS

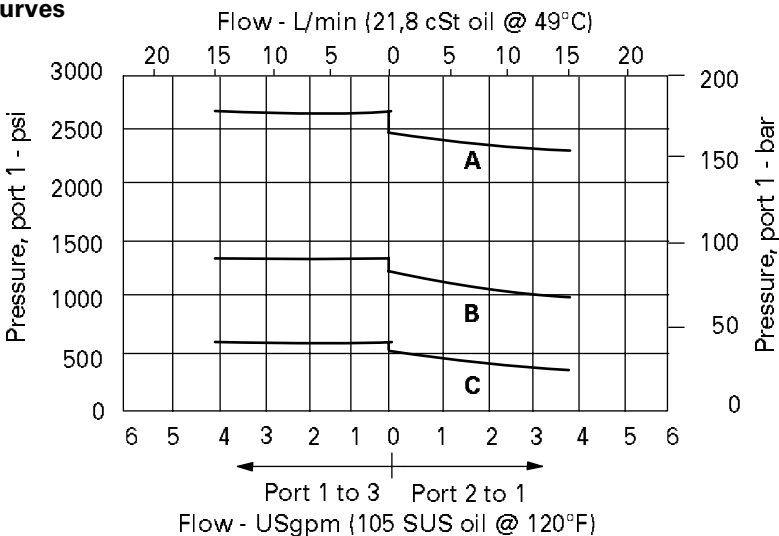
<i>Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)</i>	
Typical application pressure(all ports)	165 bar (2400 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	15 L/min (4 USgpm)
Cavity	C-10-3
Standard housing materials	Aluminum
Temperature range	-40° to 120°C (-40° to 248°F)
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Weight cartridge only	0,24 kg (0.54 lbs)
Seal kits	565804 Buna-N 889599 Viton®

Viton is a registered trademark of E.I. DuPont

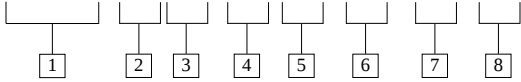
Reduced Pressure Curves

Cartridge only

- A - 24 spring
- B - 12 spring
- C - 6 spring



PRV1 – 10 (V) – * – * – * – * / * – * – 00



1 Function

PRV1 - Pressure reducing/relieving valve

2 Size

10 - 10 Size

3 Seals

Blank - Buna-N
V - Viton®

4 Adjustment

C - Cap
F - Factory set
I - Internal
K - Knob
S - Screw

5 Port size

0 - Cartridge only

CODE	PORT SIZE	HOUSING NUMBER	
		Aluminum Light duty	Aluminum Fatigue rated
3B	3/8" BSPP	02-173358	–
6T	SAE 6	566162	–
2G	1/4" BSPP	–	876705
3G	3/8" BSPP	–	876714
6H	SAE 6	–	876704
8H	SAE 8	–	876711

See section J for housing details.

6 Pressure range

2 - 3,5-14 bar (50-200 psi)
6 - 7-40 bar (100-600 psi)
12 - 14-85 bar (200-1200 psi)
24 - 30-165 bar (400-2400 psi)

7 Factory set reduced pressure

Within ranges in 6
Blank - Normal factory setting at approximate mid-range. User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:
10 - 70 bar (1000 psi)
10.5 - 72,4 bar (1050 psi)

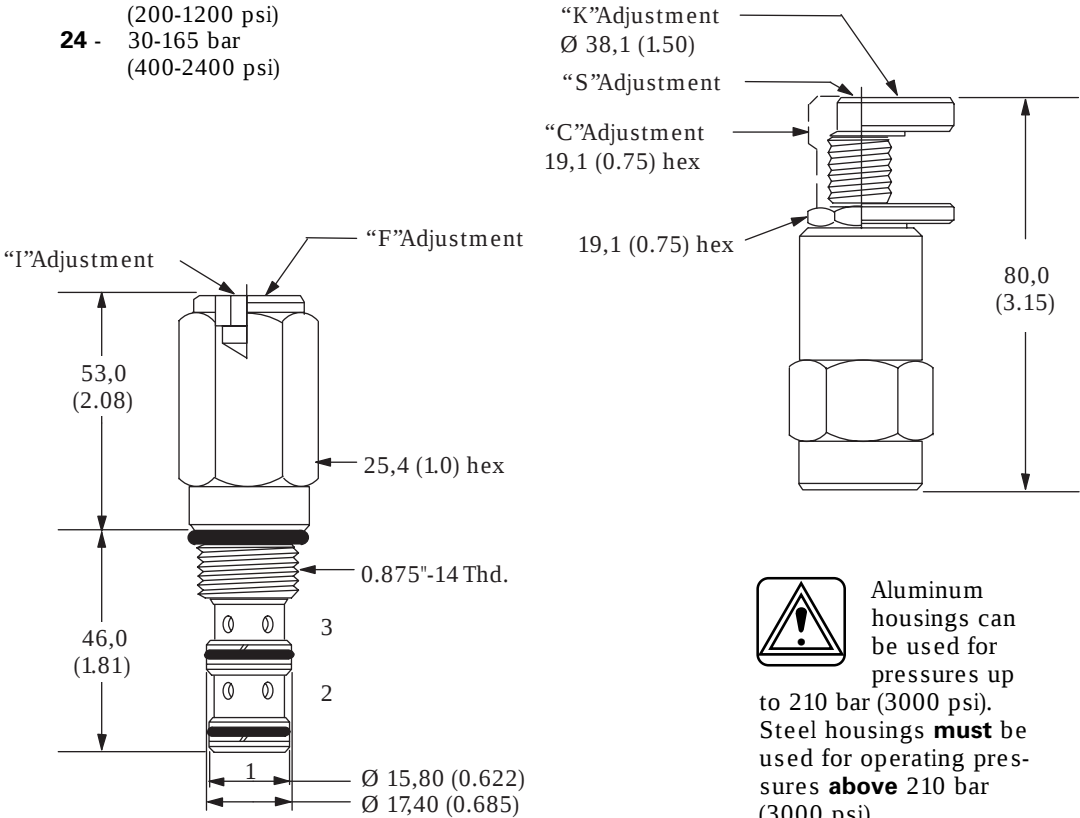
8 Special features

00 - None
(Only required if valve has special features, omitted if "00")
SS - 316 Stainless Steel external components

Dimensions

mm (inch)

Torque cartridge in aluminum housing
47-54 Nm
(35-40 ft. lbs)



Aluminum housings can be used for pressures up to 210 bar (3000 psi). Steel housings **must** be used for operating pressures **above** 210 bar (3000 psi).

PRV2-10

Pressure reducing/
relieving valve
Pilot operated

Description

The PRV2-10 is a **pilot operated**, spool type screw-in cartridge pressure reducing/relieving valve. This valve maintains a constant secondary (lower) pressure in hydraulic sub-systems regardless of pressure variations in the primary system. In addition to

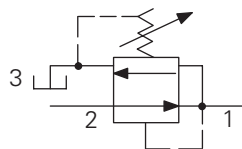
the reducing function, this valve also provides a flow path from the reduced pressure port to the tank port. If pressure in the secondary circuit exceeds the desired pressure, the valve opens this flow path to relieve excess pressure to tank.

Operation

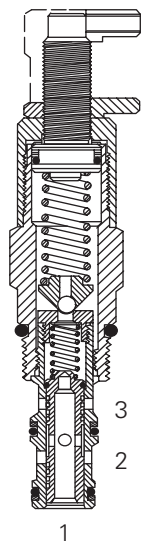
This valve is normally open, allowing flow from port 2 to port 1. Port 3 must be vented. Once the pressure setting is reached at port 1, the spool shifts to restrict the inlet flow at port 2. This regulates the pressure at port 1. If pressure at port 1 exceeds the predetermined

setting of the valve, the spool will shift further and relieve excess pressure through port 3.

Functional Symbol



Sectional View



RATINGS AND SPECIFICATIONS

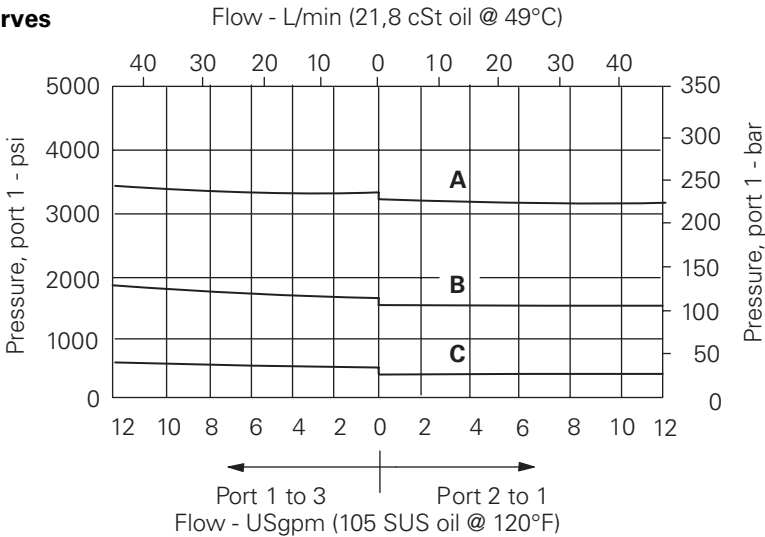
<i>Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)</i>	
Typical application pressure(all ports)	240 bar (3500 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	38 L/min (10 USgpm)
Cavity	C-10-3
Standard housing materials	Aluminum or steel
Temperature range	-40° to 120°C (-40° to 248°F)
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Weight cartridge only	0,24 kg (0.54 lbs)
Seal kits	565804 Buna-N 889599 Viton®

Viton is a registered trademark of E.I. DuPont

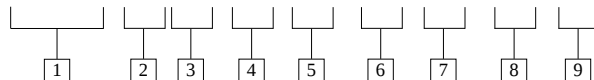
Reduced Pressure Curves

Cartridge only

- A - 35 spring
- B - 20 spring
- C - 3 spring



PRV2-10 (V) - * - (S) - ** - ** / ** - 00



1 Function

PRV2 - Pressure reducing/relieving valve

2 Size

10 - 10 Size

3 Seals

Blank - Buna-N
V - Viton®

4 Adjustment

C - Cap
F - Factory
I - Internal
K - Knob
S - Screw

5 Valve housing material

Blank - Aluminum
S - Steel

6 Port size

0 - Cartridge only

CODE	PORT SIZE	HOUSING NUMBER		
		Aluminum Light duty	Aluminum Fatigue rated	Steel Fatigue rated
3B	3/8" BSPP	02-173358	—	—
2G	1/4" BSPP	—	876705	02-175127
3G	3/8" BSPP	—	876714	02-175128
6H	SAE 6	—	876704	—
8H	SAE 8	—	876711	—
6T	SAE 6	566162	—	02-175124
8T	SAE 8	—	—	02-175125

See section J for housing details.

7 Cracking pressure range

3 - 3,5-20 bar (50-300 psi)
20 - 7-140 bar (100-2000 psi)
35 - 17-240 bar (250-3500 psi)

8 Factory set reduced pressure

Within ranges in 7
Blank - Normal factory setting at approximate mid-range. User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:
10 - 70 bar (1000 psi)
10.5 - 72,4 bar (1050 psi)

9 Special features

00 - None
(Only required if valve has special features, omitted if "00")
SS - 316 Stainless Steel external components

Dimensions

mm (inch)

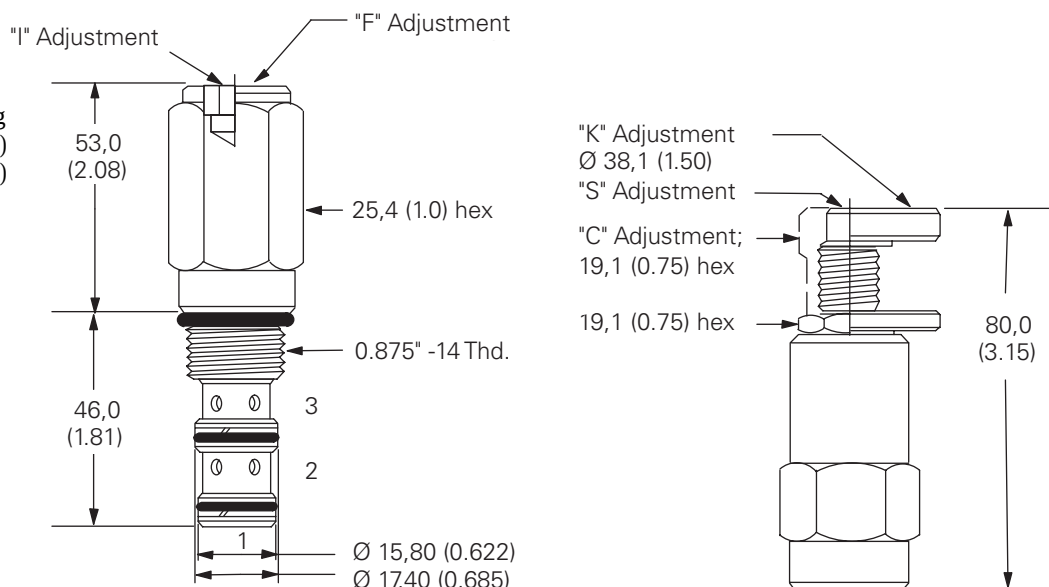
Torque cartridge in housing

A - 47-54 Nm (35-40 ft. lbs)

S - 68-75 Nm (50-55 ft. lbs)



Aluminum housings can be used for pressures up to 210 bar (3000 psi). Steel housings **must** be used for operating pressures **above** 210 bar (3000 psi).



PRV12-10

Pressure reducing/
relieving valve

Pilot operated,
high pressure

Description

The PRV12-10 is a **pilot operated**, spool type, screw-in cartridge pressure reducing/relieving valve. This valve maintains a constant secondary (lower) pressure in hydraulic sub-systems regardless of pressure variations in the primary system. In addition to

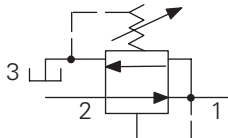
the reducing function, this valve also provides a flow path from the reduced pressure port to the tank port. If pressure in the secondary circuit exceeds the desired pressure, the valve opens this flow path to relieve excess pressure to tank.

Operation

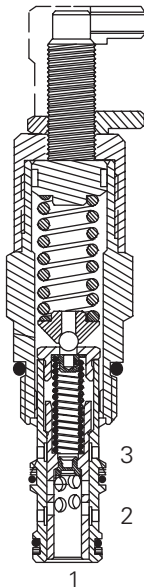
This valve is normally open, allowing flow from port 2 to port 1 (port 3 must be vented). Once the pressure setting is reached at port 1, the spool shifts to restrict the inlet flow at port 2, which regulates the pressure at port 1. If pressure at port 1 exceeds the

predetermined setting of the valve, the spool will shift further and relieve excess pressure through port 3.

Functional Symbol



Sectional View



RATINGS AND SPECIFICATIONS

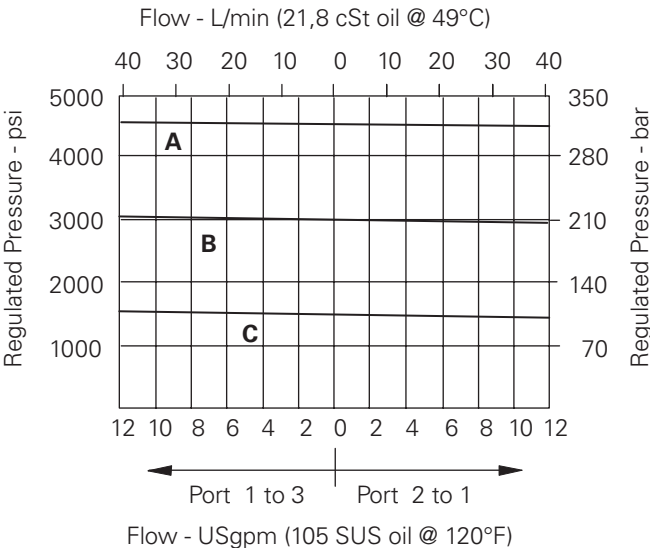
<i>Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)</i>	
Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	350 bar (5000 psi)
Rated flow	45 L/min (12 USgpm)
Cracking pressure	15 – 8,5–100 bar (125–1500 psi) 30 – 17,0–210 bar (250–3000 psi) 50 – 38– 350 bar (550–5000 psi)
Cavity	C-10-3
Standard housing materials	Aluminum or steel
Temperature range	-40° to 120°C (-40° to 248°F)
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Weight cartridge only	0,24 kg (0.54 lbs)
Seal kits	565804 Buna-N 889599 Viton®

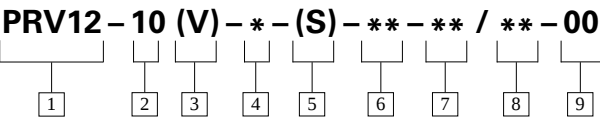
Viton is a registered trademark of E.I. DuPont

Reduced Pressure Characteristics

Cartridge only
(max. setting)

- A - 50 spring
- B - 33 spring
- C - 15 spring





1 Function
PRV12 - Pressure
reducing/relieving valve

2 Size
10 - 10 Size

3 Seals
Blank - Buna-N
V - Viton®

4 Adjustment
C - Cap
F - Factory set
I - Internal
K - Knob
S - Screw

5 Valve housing material
Blank - Aluminum
S - Steel

6 Port size
0 - Cartridge only

CODE	PORT SIZE	HOUSING NUMBER		
		Aluminum Light duty	Aluminum Fatigue rated	Steel Fatigue rated
3B	3/8" BSPP	02-173358	—	—
2G	1/4" BSPP	—	876705	02-175127
3G	3/8" BSPP	—	876714	02-175128
6H	SAE 6	—	876704	—
8H	SAE 8	—	876711	—
6T	SAE 6	566162	—	02-175124

7 Cracking pressure range
15 - 8,5-100 bar
(125-1500 psi)
30 - 17,0-210 bar
(250-3000 psi)
50 - 38-350 bar
(550-5000 psi)

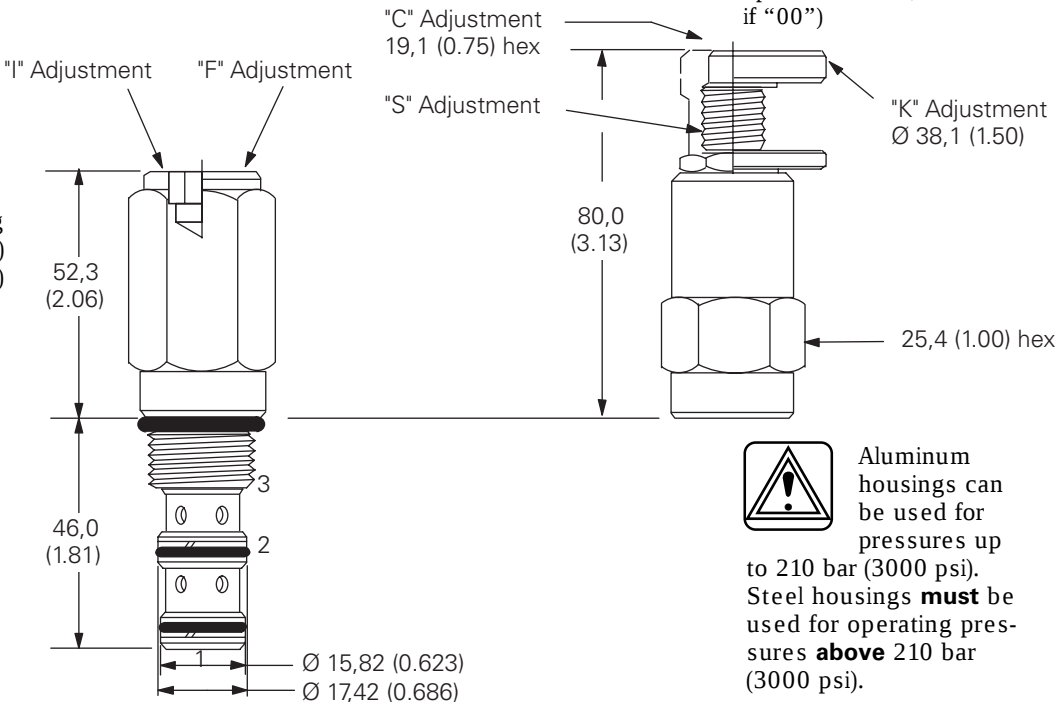
8 Factory set reduced pressure
Within ranges in **7**
Blank - Normal factory
setting at approximate
mid-range. User requested
settings in 3,45 bar (50 psi)

steps, coded as in the
following examples:
10 - 70 bar (1000 psi)
10.5 - 72,4 bar (1050 psi)

9 Special features
00 - None
(Only required if valve has
special features, omitted
if "00")

Dimensions
mm (inch)

Torque cartridge in housing
A - 47-54 Nm (35-40 ft. lbs)
S - 68-75 Nm (50-55 ft. lbs)



Aluminum
 housings can
 be used for
 pressures up
 to 210 bar (3000 psi).
 Steel housings **must** be
 used for operating pres-
 sures **above** 210 bar
 (3000 psi).

PRV11-12

Pressure reducing valve
Pilot operated

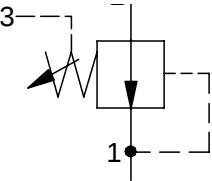
Description

The PRV11-12 is a screw-in cartridge type, **pilot operated**, sliding spool, adjustable pressure reducing valve.

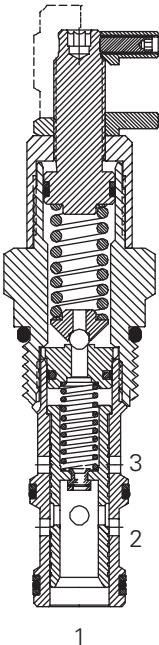
Operation

The PRV11-12 is normally open, allowing flow from port 2 to port 1 (port 3 must be vented). Once the pressure setting is reached at port 1, the spool shifts to restrict the inlet flow at port 2, which regulates the pressure at port 1.

Functional Symbol



Sectional View

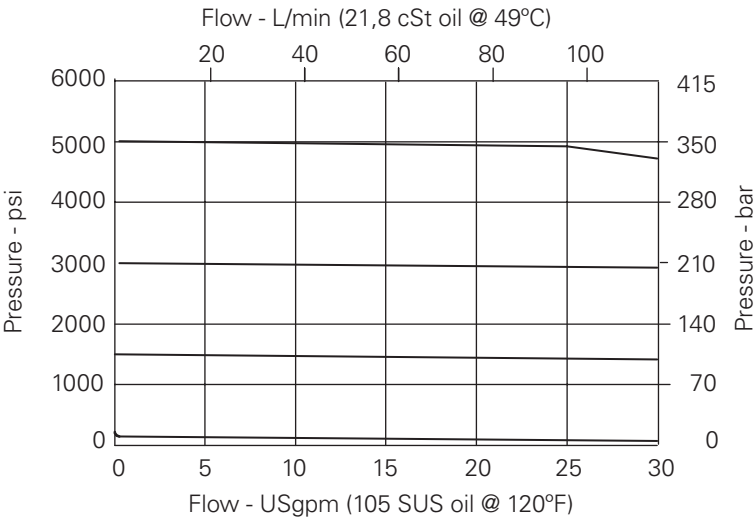


RATINGS AND SPECIFICATIONS

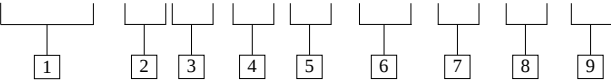
<i>Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)</i>	
Typical application pressure	350 bar (5000 psi) Port 2 to 1 @ 57 L/min (15 USgpm) 210 bar (3000 psi) Port 2 to 1 @ 114 L/min (30 USgpm)
Cartridge fatigue pressure (infinite life)	350 bar (5000 psi)
Rated flow	114 L/min (30 USgpm)
Internal leakage	189 mL/min (11.6 in³)
Cavity	C-12-3
Standard housing materials	Aluminum or steel
Temperature range	-40° to 120°C (-40° to 248° F)
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Weight cartridge only	0,4 kg (0.89 lbs)
Seal kits	02-180095 Buna-N 02-165887 Viton®
Viton is a registered trademark of E.I. DuPont	

Reduced Pressure Characteristics

Cartridge only



PRV11 – 12 (V) – * – (*) – *** – ** / ** – 00



1 Function
PRV11 - Pressure reducing valve

2 Size
12 - 12 Size

3 Seals
Blank - Buna-N
V - Viton®

4 Adjustment
S - Screw
C - Cap
K - Knob

5 Valve housing material
Omit for cartridge only
S - Steel
A - Aluminum

6 Port size
0 - Cartridge only

CODE	PORT SIZE	HOUSING NUMBER	
		Aluminum Fatigue rated	Steel Fatigue rated
10T	SAE 10	02-160642	02-161070
12T	SAE 12	02-160646	02-169816
4G	1/2" BSPP	02-161817	02-169815
6G	3/4" BSPP	02-161816	02-169814

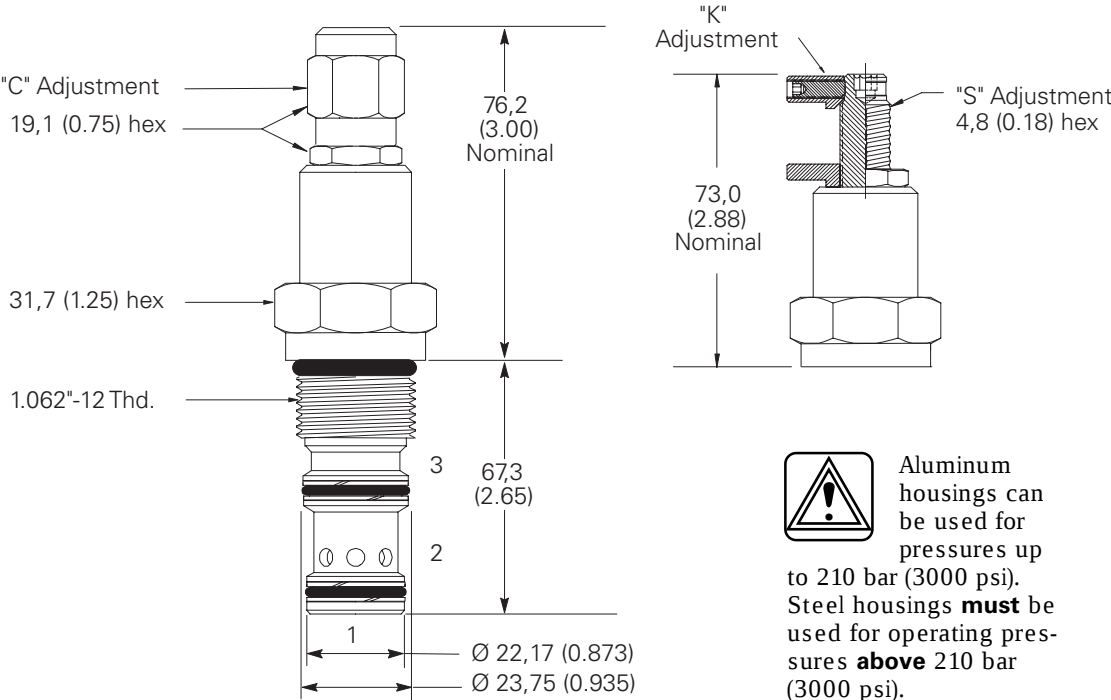
See section J for housing details.

7 Cracking pressure range
15 - 10-100 bar
(150-1500 psi)
30 - 17-210 bar
(250-3000 psi)
50 - 20-350 bar
(350-5000 psi)

8 Factory set reduced pressure
Within ranges in **7**
Blank - Normal factory setting at approximate mid-range. User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:
10 - 70 bar (1000 psi)
10.5 - 72,4 bar (1050 psi)

9 Special features
00 - None
(Only required if valve has special features, omitted if "00")

Dimensions
mm (inch)
Torque cartridge n housing
A - 81-95 Nm
(60-70 ft. lbs)
S - 102-115 Nm
(75-85 ft. lbs)



PRV12-12

Pressure reducing/
relieving valve
Pilot operated

Description

The PRV12-12 is a **pilot operated**, sliding spool, adjustable cartridge type pressure reducing relieving valve. This valve maintains a constant secondary (lower) pressure in hydraulic sub-systems regardless of pressure variations in the primary system. In addition to

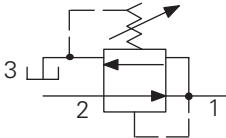
the reducing function, this valve also provides a flow path from the reduced pressure port to the tank port. If pressure in the secondary circuit exceeds the desired pressure, the valve opens this flow path to relieve excess pressure to tank.

Operation

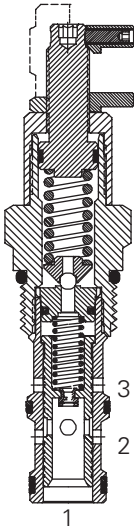
The PRV12-12 is normally open, allowing flow from port 2 to port 1 (port 3 must be vented). Once the pressure setting is reached at port 1, the spool shifts to restrict the inlet flow at port 2, which regulates the pressure at port 1. If pressure at port 1 exceeds the prede-

termined setting of the valve, the spool will shift further and relieve excess pressure through port 3.

Functional Symbol



Sectional View



RATINGS AND SPECIFICATIONS

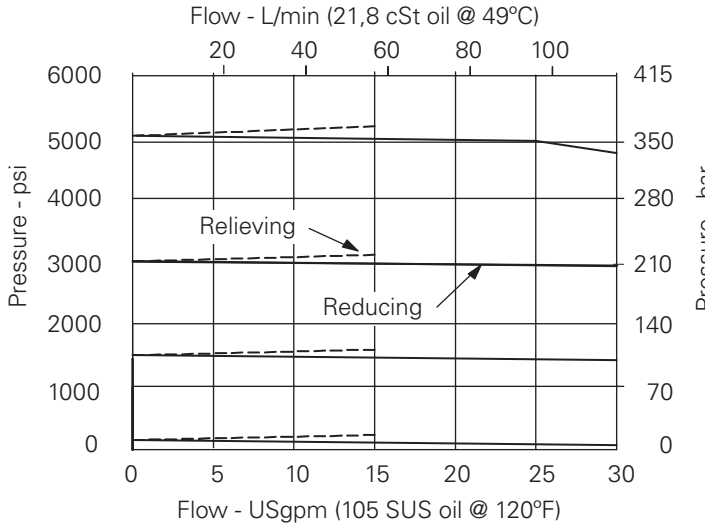
Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

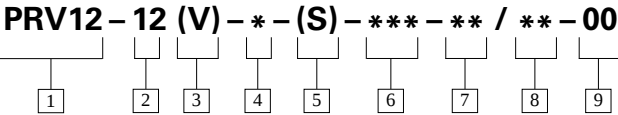
Typical application pressure	350 bar (5000 psi) Port 2 to 1 and 1 to 3 @ 57 L/min (15 USgpm) 210 bar (3000 psi) Port 2 to 1 @ 114 L/min (30 USgpm)
Cartridge fatigue pressure (infinite life)	350 bar (5000 psi)
Rated flow	114 L/min (30 USgpm)
Internal leakage	1,0 L/min (0.25 USgpm)
Cavity	C-12-3
Standard housing materials	Aluminum or steel
Temperature range	-40° to 120°C (-40° to 248°F)
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Weight cartridge only	0,4 kg (0.89 lbs)
Seal kits	02-165872 Buna-N 02-165886 Viton®

Viton is a registered trademark of E.I. DuPont

Reduced Pressure Characteristics

Cartridge only





1 Function
PRV12 - Pressure
reducing/relieving valve

2 Size
12 - 12 Size

3 Seals
Blank - Buna-N
V - Viton®

4 Adjustment
S - Screw
C - Cap
K - Knob

5 Valve housing material
Omit for cartridge only
S - Steel
A - Aluminum

Dimensions
mm (inch)

Torque cartridge
in housing
A - 81-95 Nm
(60-70 ft. lbs)
S - 102-115 Nm
(75-85 ft. lbs)

6 Port size
0 - Cartridge only

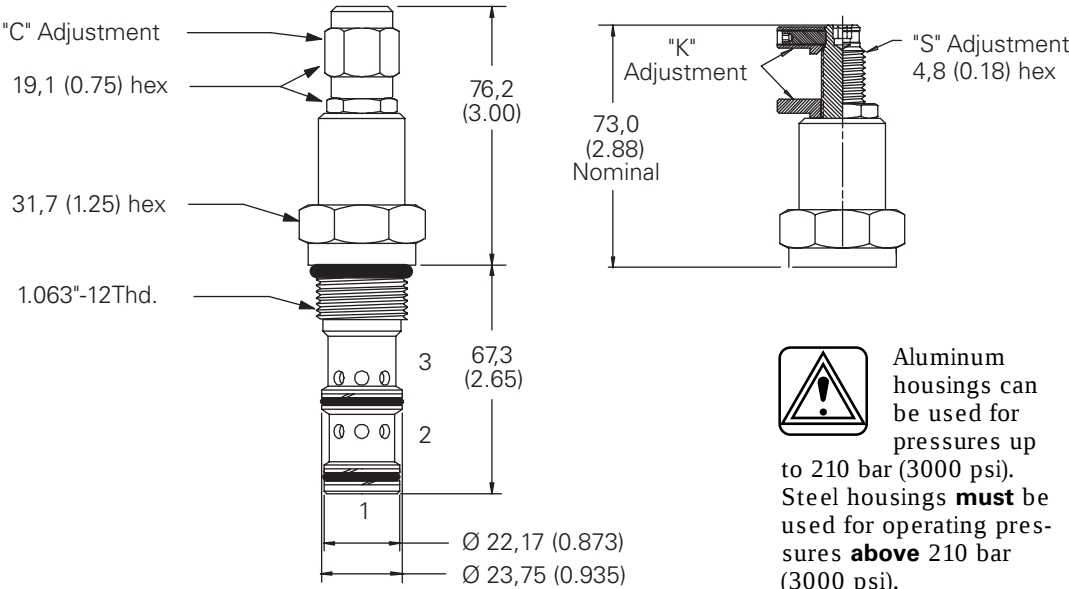
CODE	PORT SIZE	HOUSING NUMBER	
		Aluminum Fatigue rated	Steel Fatigue rated
10T	SAE 10	02-160642	02-161070
12T	SAE 12	02-160646	02-169816
4G	1/2" BSPP	02-161817	02-169815
6G	3/4" BSPP	02-161816	02-169814

See section J for housing details.

7 Cracking pressure range
15 - 10-100 bar
(150-1500 psi)
30 - 17-210 bar
(250-3000 psi)
50 - 24-350 bar
(350-5000 psi)

8 Factory set reduced pressure
Within ranges in **7**
Blank - Normal factory
setting at approximate
mid-range. User requested
settings in 3,45 bar (50 psi)
steps, coded as in the
following examples:
10 - 70 bar (1000 psi)
10.5 - 72,4 bar (1050 psi)

9 Special features
00 - None
(Only required if valve has
special features, omitted
if "00")



PRV2-16

Pressure reducing/
relieving valve
Pilot operated

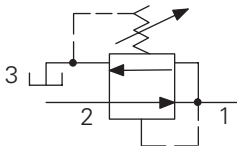
Description

The PRV2-16 is a **pilot operated**, spool type screw-in cartridge pressure reducing/relieving valve.

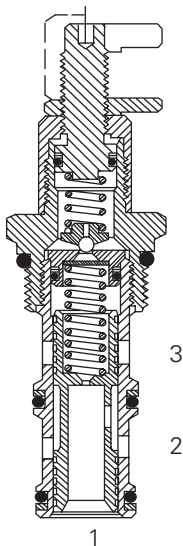
Operation

This valve is normally open, allowing flow from port 2 to port 1. Port 3 must be vented. Once the pressure setting is reached at port 1, the spool shifts to restrict the inlet flow at port 2. This regulates the pressure at port 1. If pressure at port 1 exceeds the predetermined setting of the valve, the spool will shift further and relieve excess pressure through port 3.

Functional Symbol



Sectional View



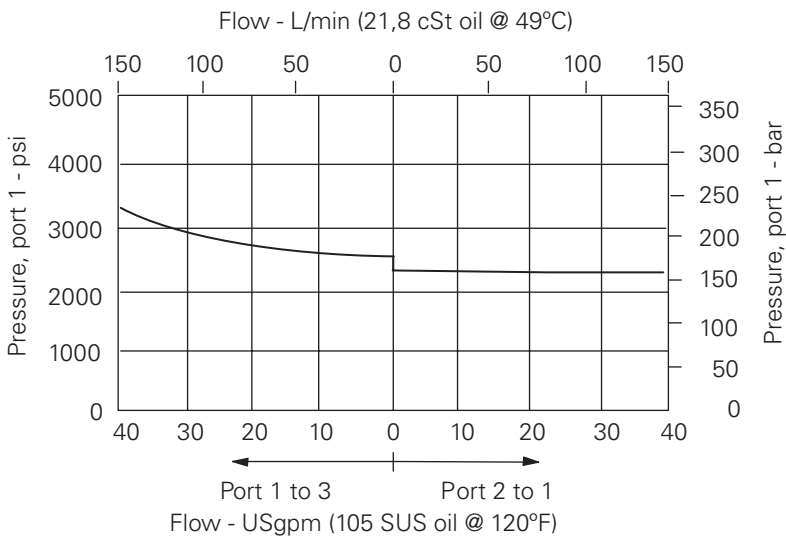
RATINGS AND SPECIFICATIONS

<i>Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)</i>	
Typical application pressure(all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	350 bar (5000 psi)
Rated flow	151 L/min (40 USgpm)
Cavity	C-16-3
Standard housing materials	Aluminum or steel
Temperature range	-40° to 120°C (-40° to 248°F)
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Weight cartridge only	0,40 kg (0.89 lbs)
Seal kits	565811 Buna-N 889610 Viton®

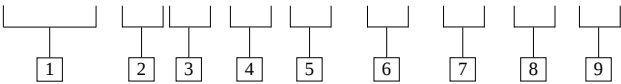
Viton is a registered trademark of E.I. DuPont

Reduced Pressure Curve

Cartridge only



PRV2 - 16 (V) - * - (S) - * - ** / ** - 00**



1 Function

PRV2 - Pressure reducing/relieving valve

2 Size

16 - 16 Size

3 Seals

Blank - Buna-N
V - Viton®

4 Adjustment

C - Cap
K - Knob
S - Screw

5 Valve housing material

S - Steel
A - Aluminum

6 Port size

0 - Cartridge only

CODE	PORT SIZE	HOUSING NUMBER		
		Aluminum Light duty	Aluminum Fatigue rated	Steel Fatigue rated
6B	3/4" BSPP	02-175465	—	—
4G	1/2" BSPP	—	876720	02-175131
6G	3/4" BSPP	—	876722	02-175132
10H	SAE 10	—	876721	—
12H	SAE 12	—	876723	—
10T	SAE 10	—	—	02-175129
12T	SAE 12	566152	—	02-175130

See section J for housing details.

7 Cracking pressure range

30 - 34-210 bar
(500-3000 psi)
60 - 70-415 bar
(1000-6000 psi)

8 Factory set reduced pressure

Within ranges in **7**
Blank - Normal factory setting at approximate mid-range. User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:
10 - 70 bar (1000 psi)
10.5 - 72,4 bar (1050 psi)

9 Special features

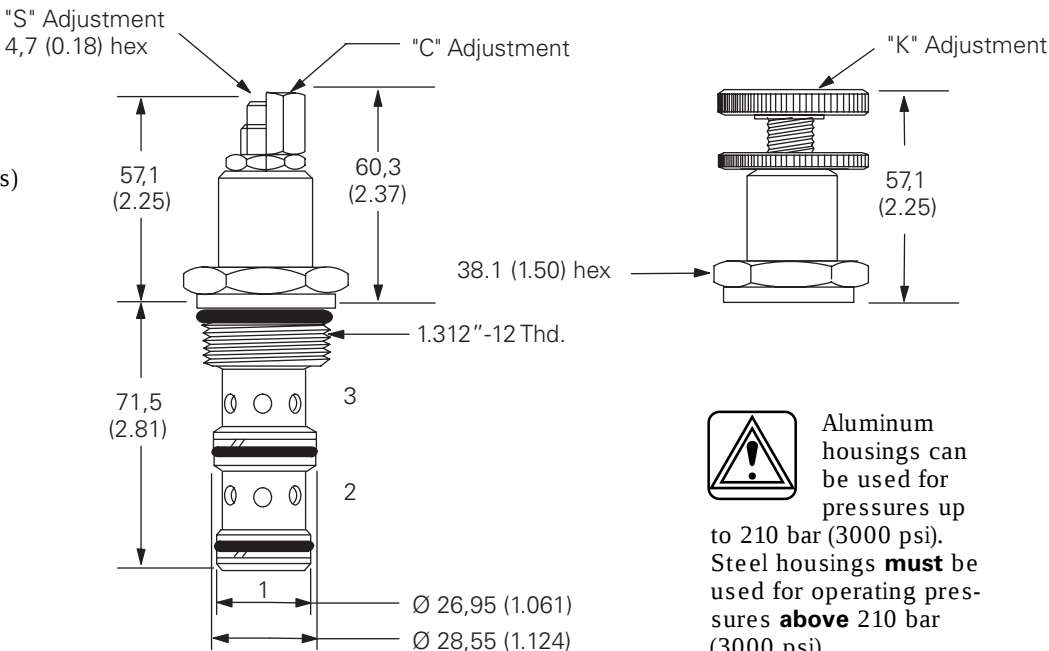
00 - None
(Only required if valve has special features, omitted if "00")

Dimensions

mm (inch)

Torque cartridge in housing

A - 108-122 Nm (80-90 ft. lbs)
S - 136-149 Nm (100-110 ft. lbs)



Aluminum housings can be used for pressures up to 210 bar (3000 psi). Steel housings **must** be used for operating pressures **above** 210 bar (3000 psi).

PSV2-8

Pressure sequence valve
Direct acting, external pilot,
internal drain

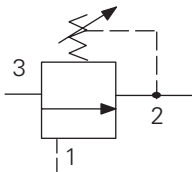
Description

The PSV2-8 is an externally piloted, direct acting, sliding spool, adjustable, pressure sequence valve.

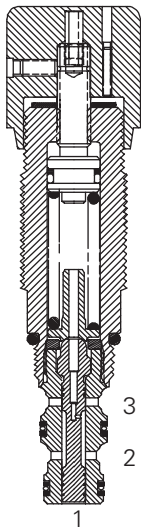
Operation

The PSV2-8 remains closed until the predetermined pressure is reached at port 1, which then allows flow from port 3 to port 2.

Functional Symbol



Sectional View



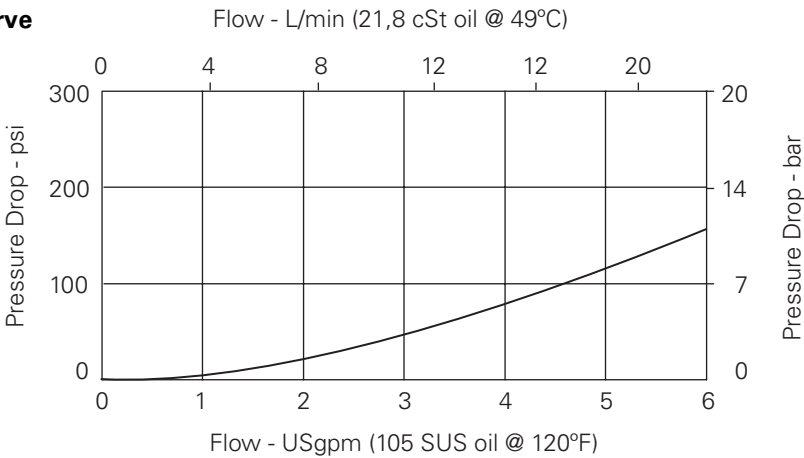
RATINGS AND SPECIFICATIONS

<i>Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)</i>	
Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Sequence pressure ranges	13 – 3,4–90 bar (50–1300 psi) 30 – 35–210 bar (500–3000 psi)
Rated flow	23 L/min (6 USgpm)
Reseat pressure	More than 90% of cracking pressure
Internal leakage	82 cm³/min. (5 in³/min) @ 210 bar (3000 psi)
Hysteresis	less than 3 bar (45 psi)
Temperature range	-40° to 120°C (-40° to 248°F)
Cavity	C-8-3
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Standard housing materials	Aluminum
Weight cartridge only	0,21 kg (0.47 lbs)
Seal kits	02-160755 Buna N 02-160756 Viton®

Viton is a registered trademark of E.I. DuPont

Pressure Drop Curve

Port 3 to 2,
valve fully open
Cartridge only



- 00** - None
(Only required if valve has special features, omitted if "00")

See section J for housing details.

Technical drawings of the 1000 Series 1/2" NPT x 1/2" NPT Fitting. The left drawing is a side view showing the fitting's dimensions and components. The right drawing is a top view showing the fitting's profile and the K option knob.

Left Drawing (Side View):

- Steel housing** (top left label)
- "S" Adjustment** (top right label, 4,0 (0.15) hex)
- "C" Adjustment** (middle left label, 12,7 (0.50) hex)
- 53,8 (2.13)** (height dimension)
- 68,3 (2.68)** (height dimension)
- 71,3 (2.81) Full out** (height dimension)
- 76,5 (3.02)** (height dimension)
- 0.750"-16Thd.** (thread specification)
- 3** (part number)
- 2** (part number)
- 1** (part number)
- Ø14,2 (0.559)** (inner diameter)
- Ø15,8 (0.622)** (outer diameter)
- 40,9 (1.61)** (height dimension)

Right Drawing (Top View):

- 79,2 (3.12) Full out** (height dimension)
- K option knob Ø 31,8 (1.25) nominal** (knob specification)
- 22,2 (0.87) hex** (hex dimension)

PSV4-8

Pressure sequence valve
Direct acting, external pilot,
internal drain, high pressure

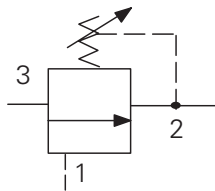
Description

The PSV4-8 is an external pilot, direct acting, sliding spool, adjustable, pressure sequence valve.

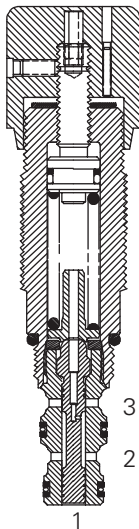
Operation

The PSV4-8 remains closed until a predetermined pressure is applied at pilot port 1, which then allows flow from port 3 to port 2.

Functional Symbol



Sectional View



RATINGS AND SPECIFICATIONS

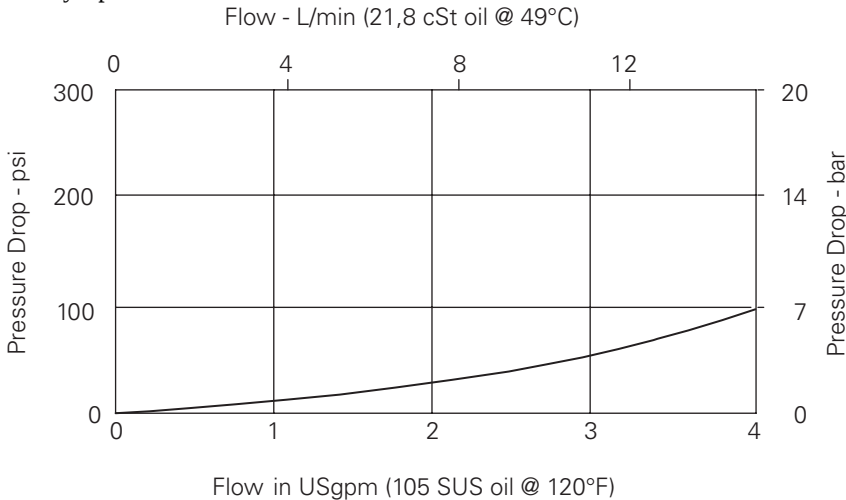
Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	280 bar (4000 psi)
Rated flow	15 L/min (4 USgpm)
Sequence pressure ranges	15 – 28–100 bar (400–1500 psi) 30 – 3,4–210 bar (50–3000 psi) 50 – 124–350 bar (1800–5000 psi)
Reseat pressure	More than 90% of cracking pressure
Internal leakage	5 in³/min @ 210 bar (3000 psi)
Hysteresis	less than 3 bar (45 psi)
Temperature range	-40° to 120°C (-40° to 248°F).
Cavity	C-8-3
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Standard housing materials	Aluminum or steel
Weight cartridge only	0,21 kg (0.47 lbs)
Seal kits	02-160755 Buna N 02-160756 Viton®

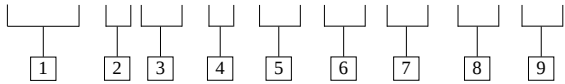
Viton is a registered trademark of E.I. DuPont

Pressure Drop Curve

Port 3 to 2, valve fully open
Cartridge only



PSV4-8 (V) - * - (*) - ** - ** / ** - 00



1 Function

PSV4 - Pressure sequence valve

2 Size

8 - 8 Size

3 Seals

Blank - Buna-N
V - Viton®

4 Adjustment

C - Cap
K - Knob
S - Screw

5 Valve housing material

Omit for cartridge only
S - Steel
A - Aluminum

6 Port size

0 - Cartridge only

CODE	PORT SIZE	HOUSING NUMBER	
		Aluminum Fatigue rated	Steel Fatigue rated
4T	SAE 4	02-160741	02-160745
6T	SAE 6	02-160742	02-160746
2G	1/4" BSPP	02-160739	02-160743
3G	3/8" BSPP	02-160740	02-160744

See section J for housing details.

7 Sequence pressure range

15 - 28-100 bar
(400-1500 psi)
30 - 3,4-210
(50-3000 psi)
50 - 124-350 bar
(1800-5000 psi)

8 Pressure setting

Optional - Specify in
100 psi increments.
If not specified, set at:
15 - 52 bar (750 psi)
30 - 100 bar (1500 psi)
50 - 175 bar (2500 psi)

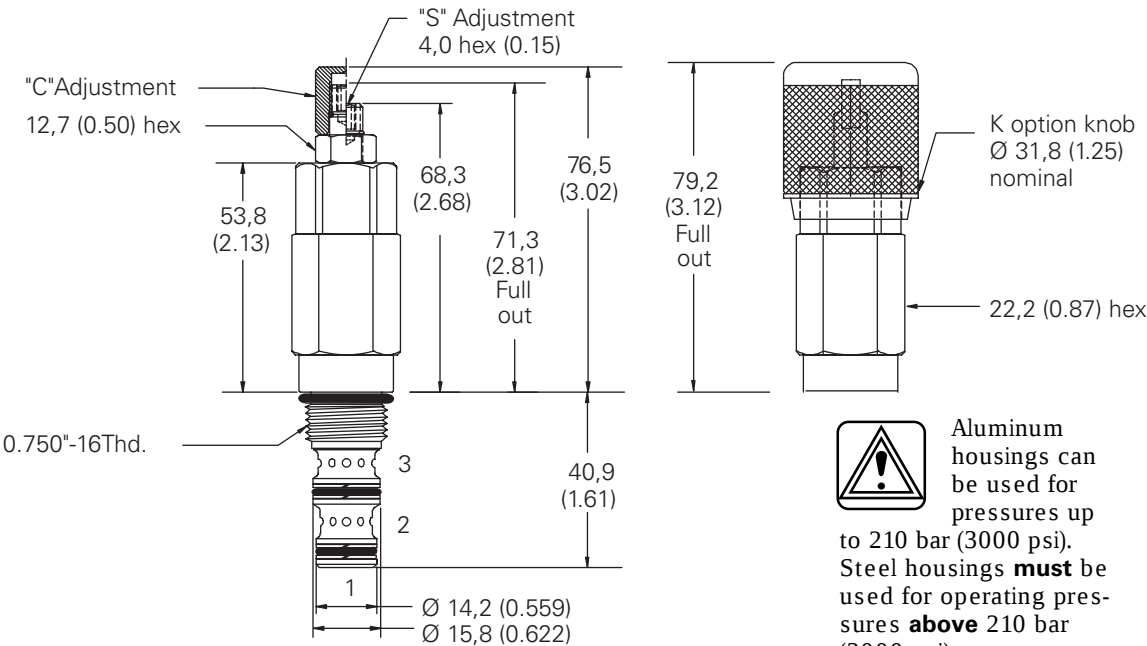
9 Special features

00 - None
(Only required if valve has
special features, omitted
if "00")

Dimensions

mm (inch)

Torque cartridge in
steel or aluminum
housing 34-41 Nm
(25-30 ft. lbs)



PSV2-10

Pressure sequence valve
Direct acting, external pilot,
internal drain

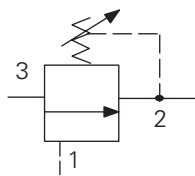
Description

The PSV2-10 is a direct acting, spool type, externally piloted, internally drained screw-in cartridge pressure sequence valve.

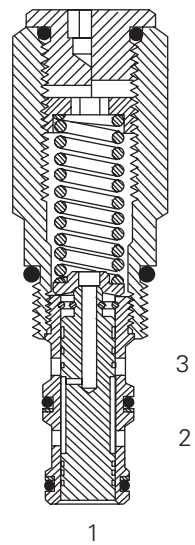
Operation

This valve is normally closed until a predetermined pressure is applied at port 1. The spool then shifts and allows flow from port 3 to port 2.

Functional Symbol



Sectional View



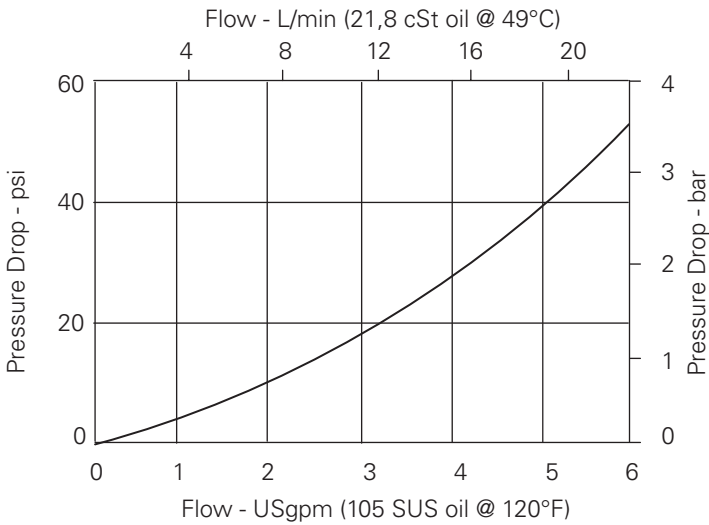
RATINGS AND SPECIFICATIONS

<i>Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)</i>	
Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Maximum sequence pressure	165 bar (2400 psi)
Rated flow	23 L/min (6 USgpm)
Cavity	C-10-3
Standard housing materials	Aluminum
Temperature range	-40° to 120°C (-40° to 248°F)
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Weight cartridge only	0,24 kg (0.53 lbs)
Seal kits	565804 Buna-N 889599 Viton®

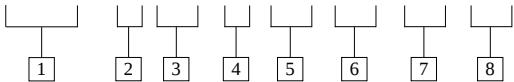
Viton is a registered trademark of E.I. DuPont

Pressure Drop Curve

Cartridge only



PSV2 – 10 (V) – * – ** – ** / ** – 00



1 Function

PSV2 - Pressure sequence valve

2 Size

10 - 10 Size

3 Seals

Blank - Buna-N
V - Viton®

4 Adjustment

C - Cap
F - Factory
I - Internal
K - Knob
S - Screw

5 Port size

0 - Cartridge only

CODE	PORT SIZE	HOUSING NUMBER	
		Aluminum Light duty	Aluminum Fatigue rated
3B	3/8" BSPP	02-173358	–
6T	SAE 6	566162	–
2G	1/4" BSPP	–	876705
3G	3/8" BSPP	–	876714
6H	SAE 6	–	876704
8H	SAE 8	–	876711

See section J for housing details.

6 Sequence pressure range

2 - 3,5-14 bar (50-200 psi)
6 - 7-40 bar (100-600 psi)

12 - 14-80 bar
(200-1200 psi)
24 - 30-165 bar
(400-2400 psi)

7 Setting pressure

Within ranges in 6
Blank - Normal factory setting at approximate mid-range. User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:
10 - 70 bar (1000 psi)
10.5 - 72,4 bar (1050 psi)

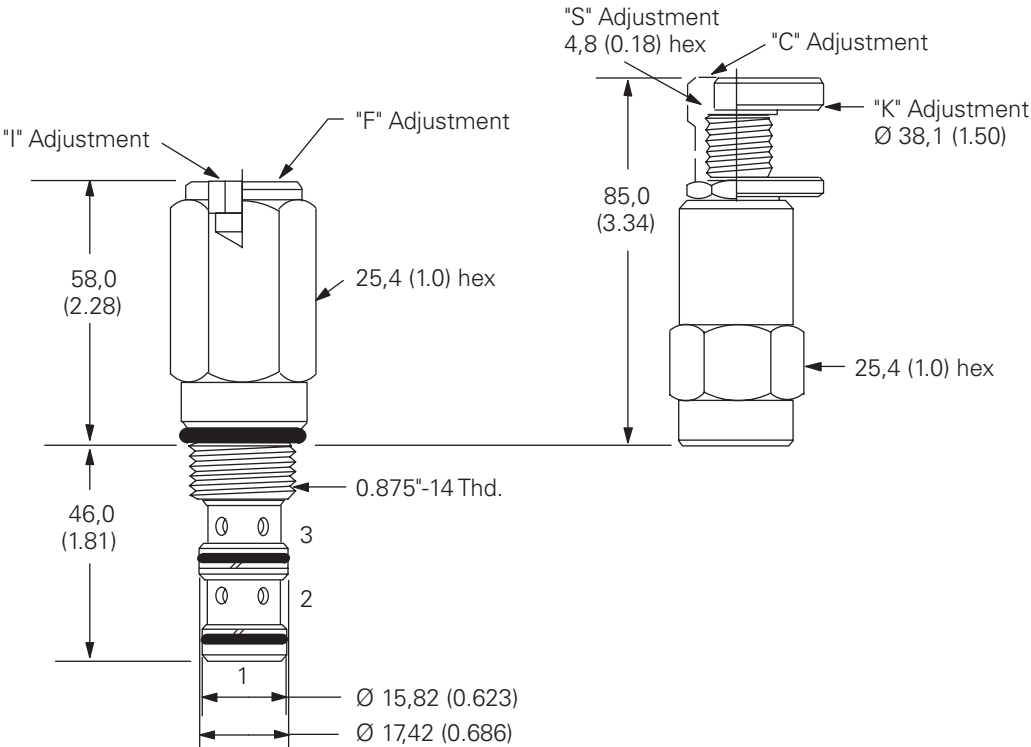
8 Special features

00 - None
(Only required if valve has special features, omitted if "00")

Dimensions

mm (inch)

Torque cartridge in housing
A - 47-54 Nm (35-40 ft. lbs)



E

PSV4-10

Pressure sequence valve
Direct acting, external pilot,
internal drain, high pressure

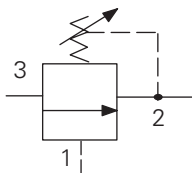
Description

The PSV4-10 is a direct acting, spool type, externally piloted, internally drained screw-in cartridge pressure sequence valve.

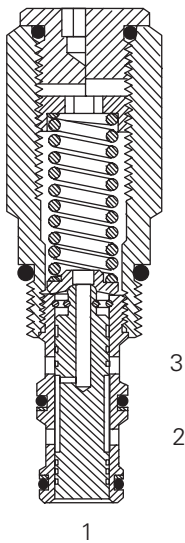
Operation

This valve is normally closed until a predetermined pressure is applied at port 1. The spool then shifts and allows flow from port 3 to port 2.

Functional Symbol



Sectional View



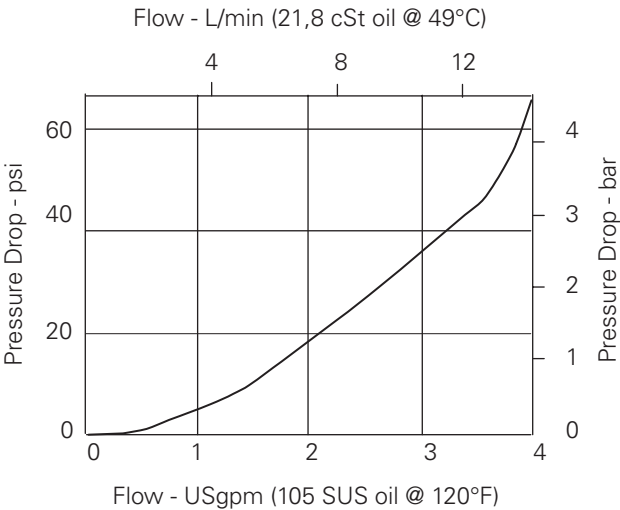
RATINGS AND SPECIFICATIONS

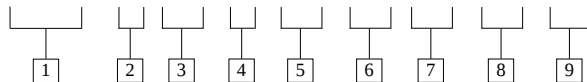
<i>Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)</i>	
Typical application pressure, ports 2 and 3	210 bar (3000 psi)
Maximum sequence pressure, port 1	380 bar (5600 psi)
Cartridge fatigue pressure (infinite life)	165 bar (2400 psi)
Rated flow	15 L/min (4 USgpm)
Cavity	C-10-3
Standard housing materials	Aluminum or steel
Temperature range	-40° to 120°C (-40° to 248°F)
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Weight cartridge only	0,24 kg (0.53 lbs)
Seal kits	565804 Buna-N 889599 Viton®

Viton is a registered trademark of E.I. DuPont

Pressure Drop Curve

Cartridge only



PSV4 – 10 (V) – * – (S) – ** – ** / ** – 00**1 Function**

PSV4 - Pressure sequence valve

2 Size

10 - 10 Size

3 Seals

Blank - Buna-N
V - Viton®

4 Adjustment

C - Cap
F - Factory
I - Internal
K - Knob
S - Screw

5 Valve housing material

Blank - Aluminum
S - Steel

6 Port size

0 - Cartridge only

CODE PORT SIZE HOUSING NUMBER

		Aluminum Light duty	Aluminum Fatigue rated	Steel Fatigue rated
3B	3/8" BSPP	02-173358	–	–
2G	1/4" BSPP	–	876705	02-175127
3G	3/8" BSPP	–	876714	02-175128
6H	SAE 6	–	876704	–
8H	SAE 8	–	876711	–
6T	SAE 6	566162	–	02-175124
8T	SAE 8	–	–	02-175125

See section J for housing details.

7 Sequence pressure range

5 - 3,5-30 bar (50-450 psi)
9 - 7-62 (100-900 psi)
14 - 14-95 bar (200-1400 psi)
28 - 20-190 bar (300-2800 psi)
56 - 35-380 bar (500-5600 psi)

8 Setting pressure

Within ranges in **7**
Blank - Normal factory setting at approximate mid-range. User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:

10 - 70 bar (1000 psi)

10.5 - 72,4 bar (1050 psi)

9 Special features

00 - None
(Only required if valve has special features, omitted if "00")

Dimensions

mm (inch)

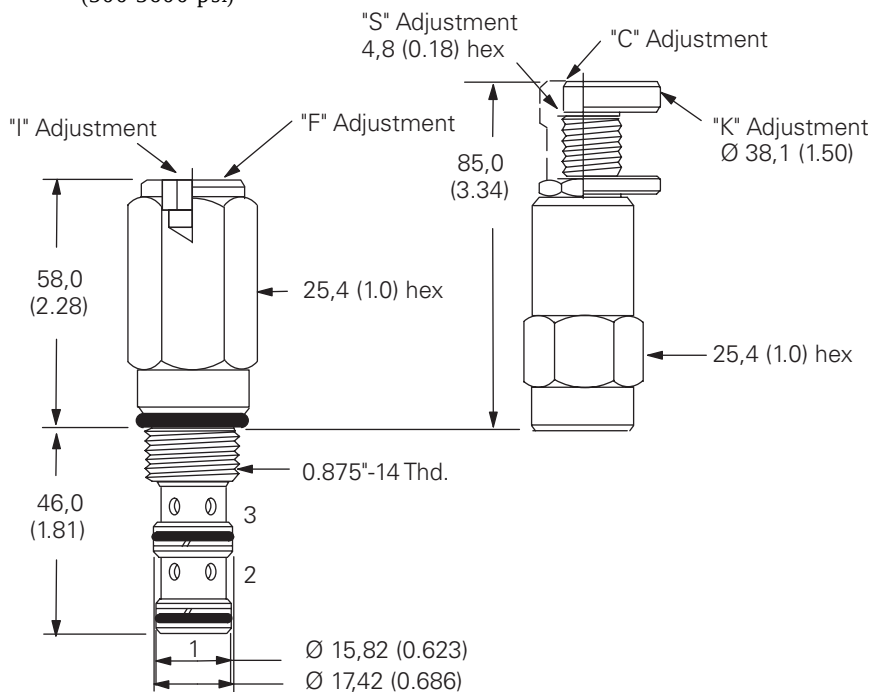
Torque cartridge in housing

A - 47-54 Nm (35-40 ft. lbs)

S - 68-75 Nm (50-55 ft. lbs)



Aluminum housings can be used for pressures up to 210 bar (3000 psi). Steel housings **must** be used for operating pressures **above** 210 bar (3000 psi).



PSV1-10

Pressure sequence valve
Direct acting, internal pilot,
external drain

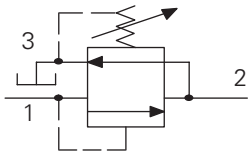
Description

The PSV1-10 is a direct acting, spool type, internally piloted, externally drained screw-in cartridge pressure sequence valve.

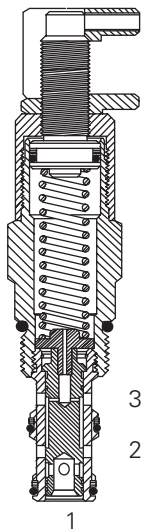
Operation

This valve is normally closed until a predetermined pressure is reached at port 1. The spool then shifts and allows flow to port 2. Port 3 must be vented.

Functional Symbol



Sectional View



RATINGS AND SPECIFICATIONS

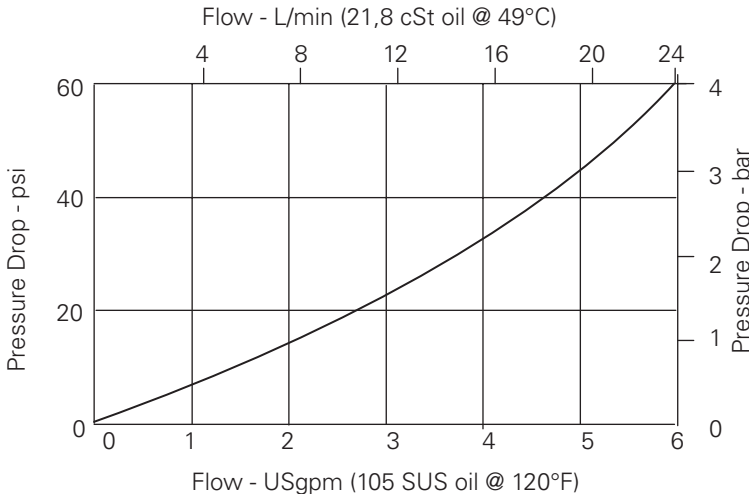
Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Maximum sequence pressure	165 bar (2400 psi)
Rated flow	23 L/min (6 USgpm)
Cavity	C-10-3
Standard housing materials	Aluminum
Temperature range	-40° to 120°C (-40° to 248°F)
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Weight cartridge only	0,24 kg (0.53 lbs)
Seal kits	565804 Buna-N 889599 Viton®

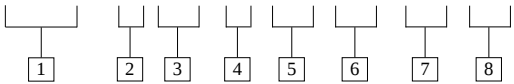
Viton is a registered trademark of E.I. DuPont

Pressure Drop Curve

Cartridge only



PSV1 – 10 (V) – * – ** – ** / ** – 00



1 Function

PSV1 - Pressure sequence valve

2 Size

10 - 10 Size

3 Seals

Blank - Buna-N
V - Viton®

4 Adjustment

C - Cap
F - Factory
I - Internal
K - Knob
S - Screw

Dimensions

mm (inch)

Torque cartridge in aluminum housing to 47-54 Nm (35-40 ft. lbs)

5 Port size

0 - Cartridge only

CODE	PORT SIZE	HOUSING NUMBER	
		Aluminum Light duty	Aluminum Fatigue rated
3B	3/8" BSPP	02-173358	–
6T	SAE 6	566162	–
2G	1/4" BSPP	–	876705
3G	3/8" BSPP	–	876714
6H	SAE 6	–	876704
8H	SAE 8	–	876711

See section J for housing details.

6 Sequence pressure range

2 - 3,5-14 bar (50-200 psi)
6 - 7-40 bar (100-600 psi)
12 - 14-80 bar (200-1200 psi)
24 - 30-165

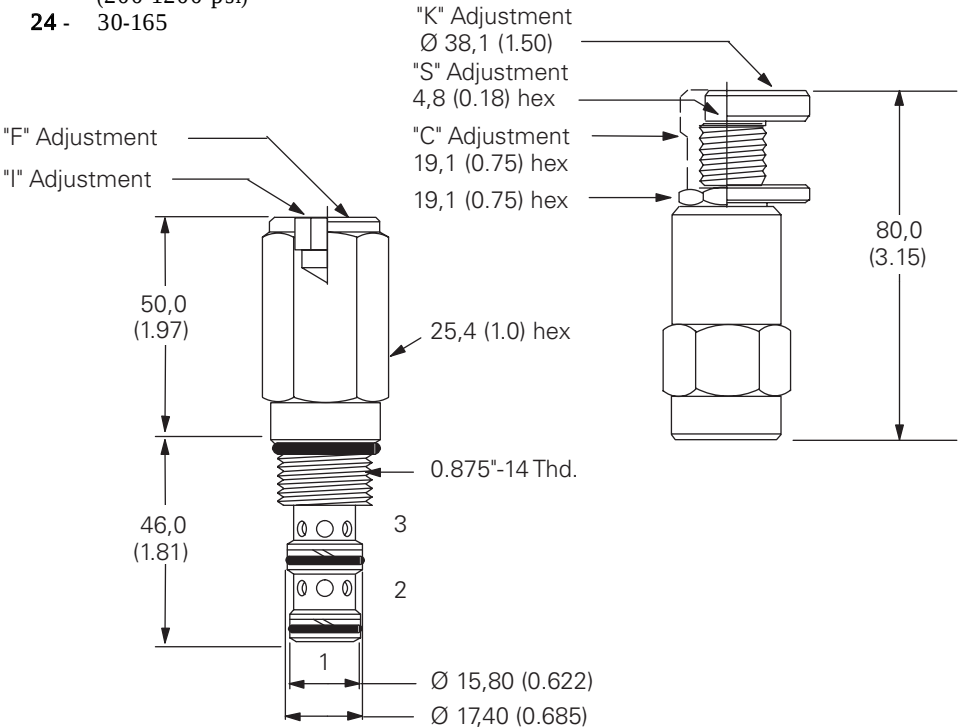
bar (400-2400 psi)

7 Setting pressure

Within ranges in 6
Blank - Normal factory setting at approximate mid-range. User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:
10 - 70 bar (1000 psi)
10.5 - 72,4 bar (1050 psi)

8 Special features

00 - None
(Only required if valve has special features, omitted if "00")



PSV5-10

Pressure sequence valve
Direct acting, internal pilot
external drain, high pressure

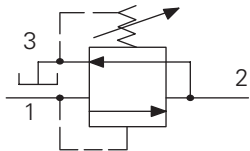
Description

The PSV5-10 is a direct acting, spool type, internally piloted, externally drained screw-in cartridge pressure sequence valve.

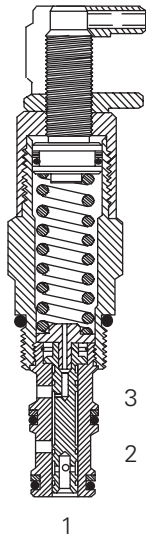
Operation

This valve is normally closed until a predetermined pressure is reached at port 1. The spool then shifts and allows flow to port 2. Port 3 must be vented.

Functional Symbol



Sectional View



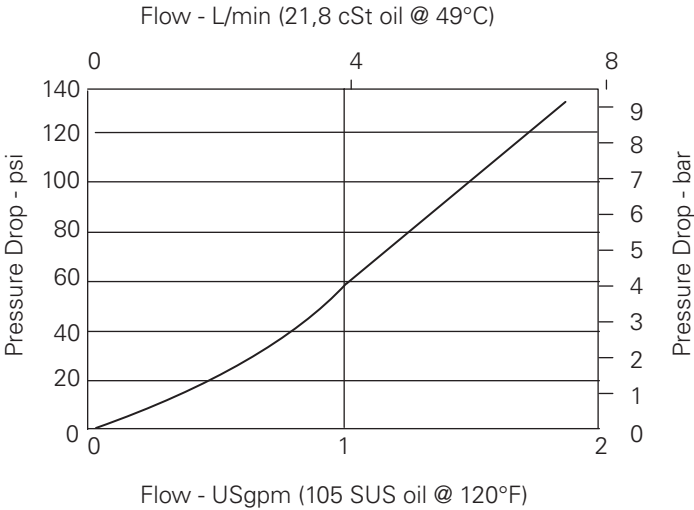
RATINGS AND SPECIFICATIONS

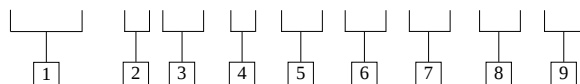
<i>Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)</i>	
Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	190 bar (2800 psi)
Maximum sequence pressure	380 bar (5600 psi)
Rated flow	8 L/min (2 USgpm)
Cavity	C-10-3
Standard housing materials	Aluminum or steel
Temperature range	-40° to 120°C (-40° to 248°F)
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Weight cartridge only	0,24 kg (0.53 lbs)
Seal kits	565804 Buna-N 889599 Viton®

Viton is a registered trademark of E.I. DuPont

Pressure Drop Curve

Cartridge only



PSV5 – 10 (V) – * – (*) – ** – ** / ** – 00**1 Function**

PSV5 - Pressure sequence valve

2 Size

10 - 10 Size

3 Seals

Blank - Buna-N
V - Viton®

4 Adjustment

C - Cap
F - Factory
I - Internal
K - Knob
S - Screw

5 Valve housing material

Blank - Aluminum
S - Steel

6 Port size

0 - Cartridge only

CODE PORT SIZE HOUSING NUMBER

		Aluminum Light duty	Aluminum Fatigue rated	Steel Fatigue rated
3B	3/8" BSPP	02-173358	–	–
2G	1/4" BSPP	–	876705	02-175127
3G	3/8" BSPP	–	876714	02-175128
6H	SAE 6	–	876704	–
8H	SAE 8	–	876711	–
6T	SAE 6	566162	–	02-175124
8T	SAE 8	–	–	02-175125

See section J for housing details.

7 Sequence pressure range

5 - 3,5-30 bar (50-450 psi)
9 - 7-60 bar (100-900 psi)
14 - 14-95 bar (200-1400 psi)
28 - 20-190 bar (300-2800 psi)
56 - 35-380 bar (500-5600 psi)

8 Setting pressure

Within ranges in **7**

Blank - Normal factory setting at approximate mid-range. User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:

10 - 70 bar (1000 psi)

10.5 - 72,4 bar (1050 psi)

8 Special features

00 - None
(Only required if valve has special features, omitted if "00")

Dimensions

mm (inch)

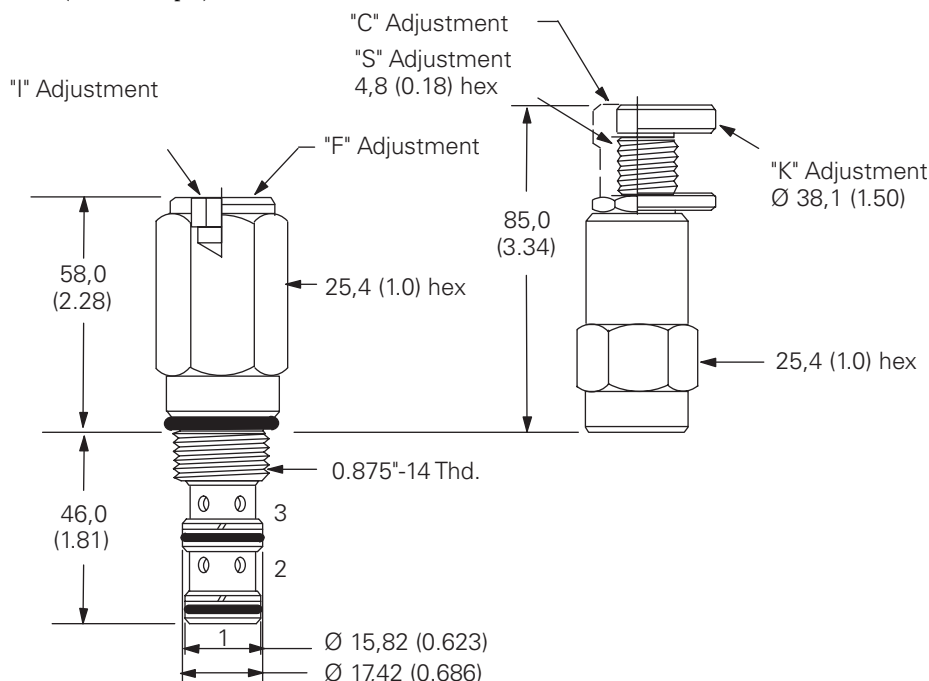
Torque cartridge in housing

A - 47-54 Nm (35-40 ft. lbs)

S - 68-75 Nm (50-55 ft. lbs)



Aluminum housings can be used for pressures up to 210 bar (3000 psi). Steel housings **must** be used for operating pressures **above** 210 bar (3000 psi).



PSV3-10

Pressure sequence valve
Direct acting, internal or
external pilot/drain

Description

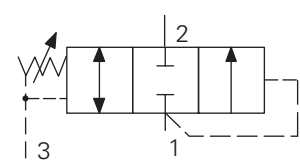
The PSV3-10 is a direct acting, spool type, internally or externally, piloted screw-in cartridge pressure sequence valve.

Operation

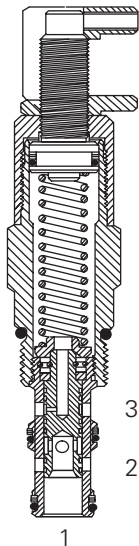
This valve is normally closed until a predetermined pressure is applied at port 1. The spool then shifts and allows flow from

port 1 to port 2. When port 3 is pressurized the spool shifts to allow free flow from port 2 to port 1.

Functional Symbol



Sectional View



RATINGS AND SPECIFICATIONS

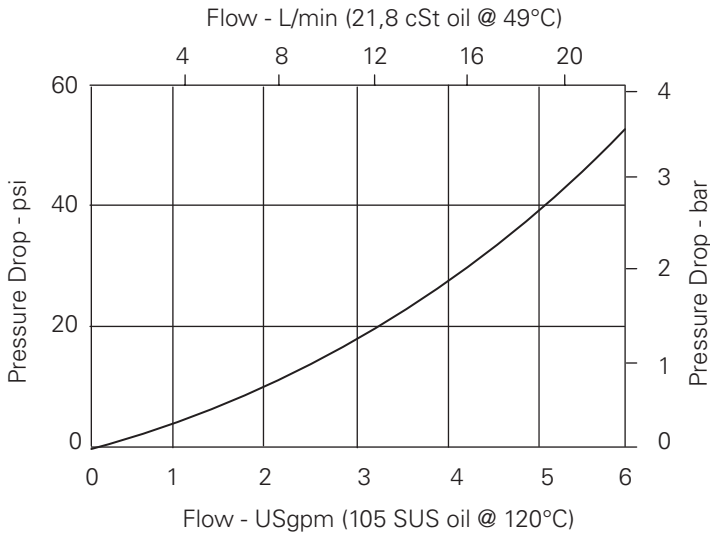
Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Maximum sequence pressure	165 bar (2400 psi)
Rated flow	23 L/min (6 USgpm)
Cavity	C-10-3
Standard housing materials	Aluminum
Temperature range	-40° to 120°C (-40° to 248°F)
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Weight cartridge only	0,24 kg (0.53 lbs)
Seal kits	565804 Buna-N 889599 Viton®

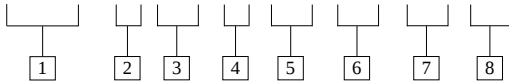
Viton is a registered trademark of E.I. DuPont

Pressure Drop Curve

Cartridge only



PSV3 – 10 (V) – * – ** – ** / ** – 00



1 Function

PSV3 - Pressure sequence valve

2 Size

10 - 10 Size

3 Seals

Blank - Buna-N
V - Viton®

4 Adjustment

C - Cap
F - Factory
I - Internal
K - Knob
S - Screw

5 Port size

0 - Cartridge only

CODE	PORT SIZE	HOUSING NUMBER	
		Aluminum Light duty	Aluminum Fatigue rated
3B	3/8" BSPP	02-173358	–
6T	SAE 6	566162	–
2G	1/4" BSPP	–	876705
3G	3/8" BSPP	–	876714
6H	SAE 6	–	876704
8H	SAE 8	–	876711

See section J for housing details.

6 Sequence pressure range

2 - 3,5-14 bar (50-200 psi)	12 - 14-80 bar (200-1200 psi)
4 - 5-28 bar (75-400 psi)	24 - 30-165 bar (400-2400 psi)
6 - 7-40 bar (100-600 psi)	

7 Setting pressure

Within ranges in **6**
Blank - Normal factory setting at approximate mid-range. User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:
10 - 70 bar (1000 psi)
10.5 - 72,4 bar (1050 psi)

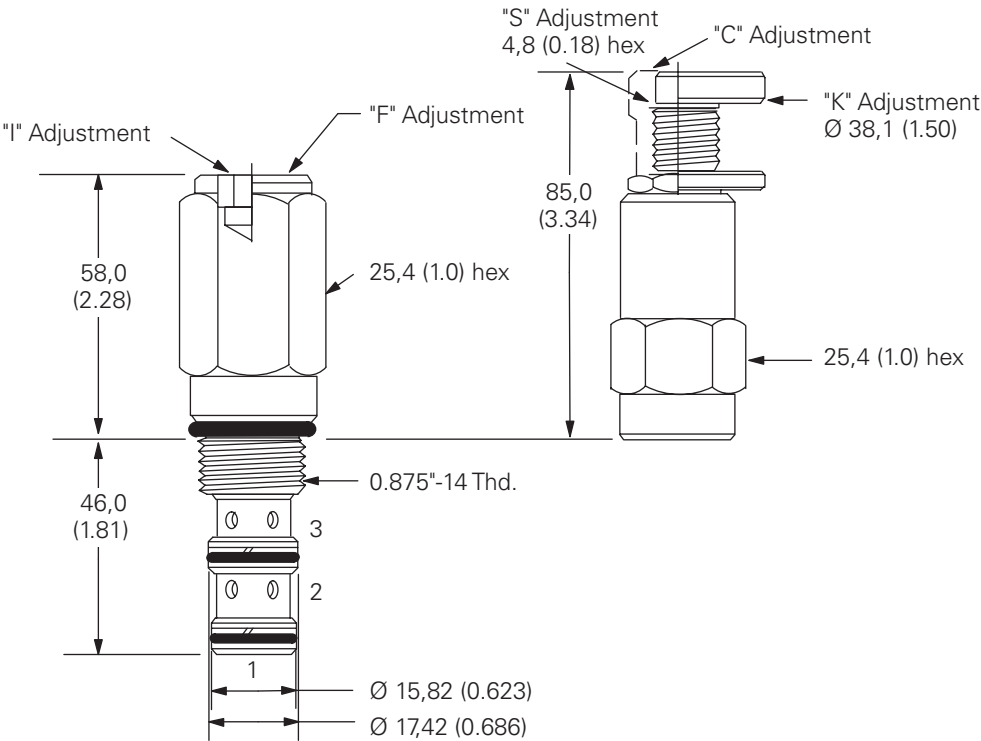
8 Special features

00 - None
(Only required if valve has special features, omitted if "00")

Dimensions

mm (inch)

Torque cartridge in housing
47-54 Nm (35-40 ft. lbs)



PSV7-10

Pressure sequence valve
Direct acting, internal pilot,
external drain

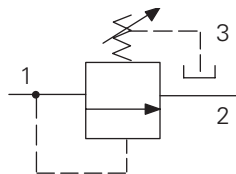
Description

The PSV7-10 is a direct acting, spool type, internally piloted, externally drained screw-in cartridge pressure sequence valve.

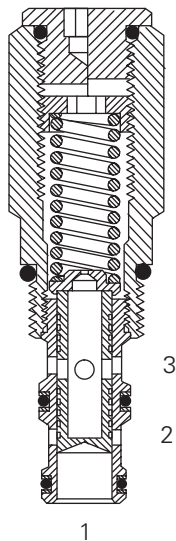
Operation

This valve is normally closed until a predetermined pressure is reached at port 1. The spool then shifts and allows flow from port 1 to port 2. Port 3 must be vented.

Functional Symbol



Sectional View



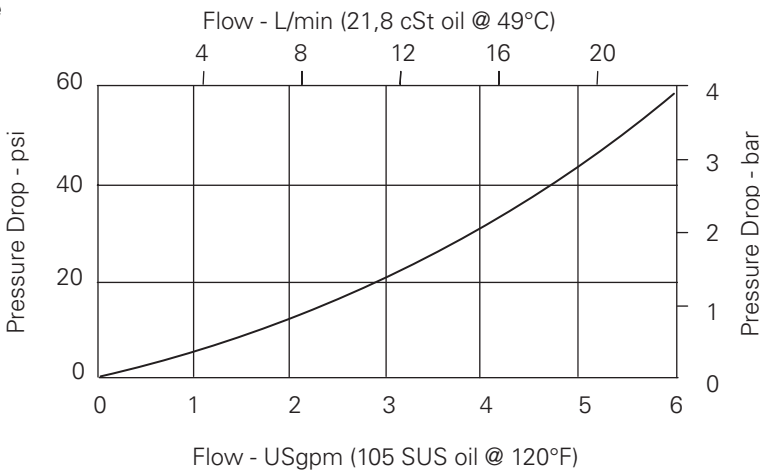
RATINGS AND SPECIFICATIONS

<i>Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)</i>	
Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Maximum sequence pressure	125 bar (1800 psi)
Rated flow	23 L/min (6 USgpm)
Cavity	C-10-3
Standard housing materials	Aluminum
Temperature range	-40° to 120°C (-40° to 248°F)
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Weight cartridge only	0,24 kg (0.53 lbs)
Seal kits	565804 Buna-N 889599 Viton®

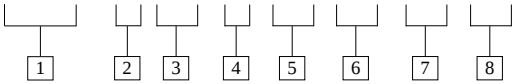
Viton is a registered trademark of E.I. DuPont

Pressure Drop Curve

Cartridge only



PSV7 – 10 (V) – * – ** – ** / ** – 00



1 Function

PSV7 - Pressure sequence valve

2 Size

10 - 10 Size

3 Seals

Blank - Buna-N
V - Viton®

4 Adjustment

C - Cap
F - Factory
I - Internal
K - Knob
S - Screw

5 Port size

0 - Cartridge only

CODE	PORT SIZE	HOUSING NUMBER	
		Aluminum Light duty	Aluminum Fatigue rated
3B	3/8" BSPP	02-173358	–
6T	SAE 6	566162	–
2G	1/4" BSPP	–	876705
3G	3/8" BSPP	–	876714
6H	SAE 6	–	876704
8H	SAE 8	–	876711

See section J for housing details.

6 Sequence pressure range

2 - 3,5-10 bar (50-150 psi)
3 - 5-20 bar (75-300 psi)
5 - 7-30 bar (100-450 psi)

10 - 14-65 bar (200-950 psi)
18 - 20-125 bar (300-1800 psi)

7 Setting pressure

Within ranges in 6
Blank - Normal factory setting at approximate mid-range. User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:
10 - 70 bar (1000 psi)
10.5 - 72,4 bar (1050 psi)

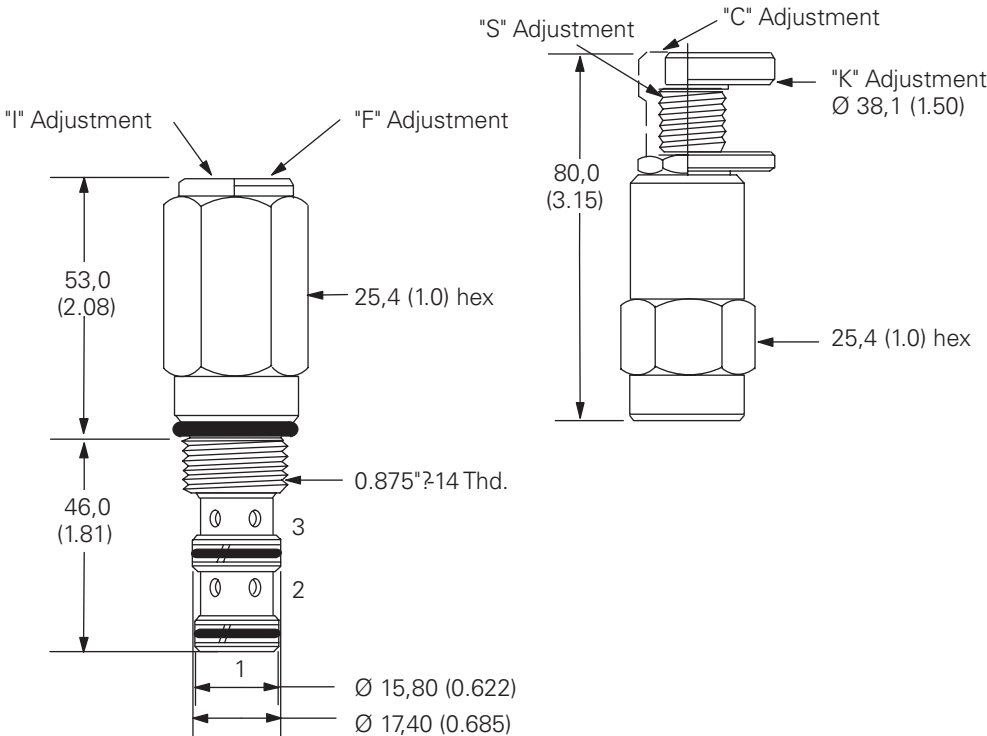
8 Special features

00 - None
(Only required if valve has special features, omitted if "00")
SS - 316 Stainless Steel external components

Dimensions

mm (inch)

Torque cartridge in housing
47-54 Nm (35-40 ft. lbs)



PSV8-10

Pressure sequence valve
Direct acting, external pilot,
external drain, normally
open

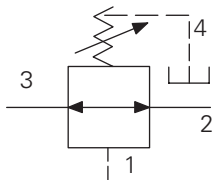
Description

The PSV8-10 is a direct acting, normally open, spool type, externally piloted, externally drained screw-in cartridge pressure sequence valve.

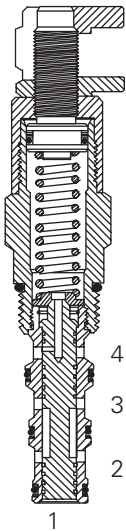
Operation

This valve is normally open from port 3 to port 2 until a predetermined pressure is applied at port 1. The spool then shifts and blocks flow between port 3 and port 2. Port 4 must be vented.

Functional Symbol



Sectional View



RATINGS AND SPECIFICATIONS

<i>Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)</i>	
Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Maximum sequence pressure	165 bar (2400 psi)
Rated flow	23 L/min (6 USgpm)
Cavity	C-10-4
Standard housing materials	Aluminum
Temperature range	-40° to 120°C (-40° to 248°F)
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Weight cartridge only	0,27 kg (0.60 lbs)
Seal kits	889625 Buna-N 566080 Viton®

Viton is a registered trademark of E.I. DuPont

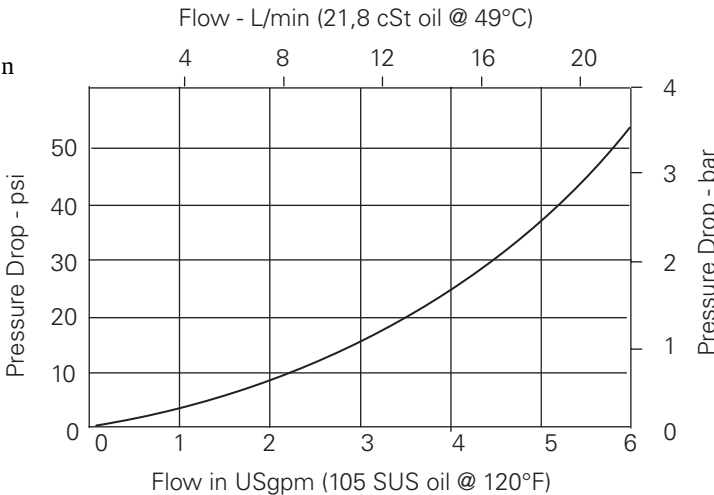


Caution

When sudden pressure or velocity is applied at port 1, an orifice disc may be required.

Pressure Drop Curve

Port 3 to 2, valve fully open
Cartridge only



PSV10-10

Pressure sequence valve
Direct acting, external pilot,
external drain, normally
closed

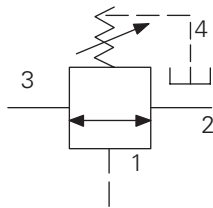
Description

The PSV10-10 is a direct acting, normally closed, spool type, externally piloted, externally drained screw-in cartridge pressure sequence valve.

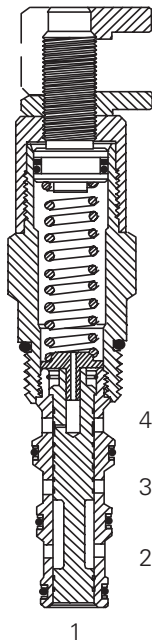
Operation

This valve is normally closed from port 3 to port 2 until a predetermined pressure is applied at port 1. The spool then shifts and allows flow between port 3 and port 2. Port 4 must be vented.

Functional Symbol



Sectional View



RATINGS AND SPECIFICATIONS

<i>Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)</i>	
Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Maximum sequence pressure	165 bar (2400 psi)
Rated flow	23 L/min (6 USgpm)
Cavity	C-10-4
Standard housing materials	Aluminum
Temperature range	-40° to 120°C (-40° to 248°F)
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Weight cartridge only	0,27 kg (0.60 lbs)
Seal kits	889625 Buna-N 566080 Viton®

Viton is a registered trademark of E.I. DuPont

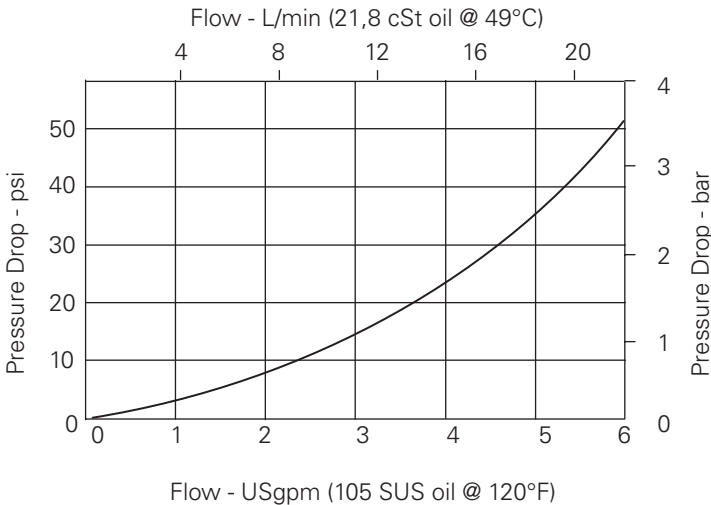


Caution

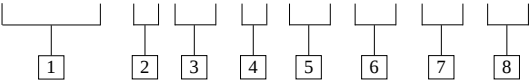
When sudden pressure or velocity is applied at port 1, an orifice disc may be required.

Pressure Drop Curves

Port 3 to 2, valve fully open, spring omitted
Cartridge only



PSV10 – 10 (V) – * – * – * – * / * – 00



1 Function

PSV10 - Pressure sequence valve

2 Size

10 - 10 Size

3 Seals

Blank - Buna-N
V - Viton®

4 Adjustment

C - Cap
F - Factory
I - Internal
K - Knob
S - Screw

5 Port size

0 - Cartridge only

CODE	PORT SIZE	HOUSING NUMBER	
		Aluminum Light duty	Aluminum Fatigue rated
3B	3/8" BSPP	02-179705	–
6T	SAE 6	566161	–
2G	1/4" BSPP	–	876709
3G	3/8" BSPP	–	876715
6H	SAE 6	–	876708
8H	SAE 8	–	876713

See section J for housing details.

6 Sequence pressure range

2 - 3,5-14 bar (50-200 psi)
4 - 5-28 bar (75-400 psi)
6 - 7 - 40 bar (100-600 psi)

12 - 14-80 bar
(200-1200 psi)
24 - 28-165
bar (400-2400 psi)

7 Setting pressure

Within ranges in 6
Blank - Normal factory setting at approximate mid-range. User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:
10 - 70 bar (1000 psi)
10.5 - 72,4 bar (1050 psi)

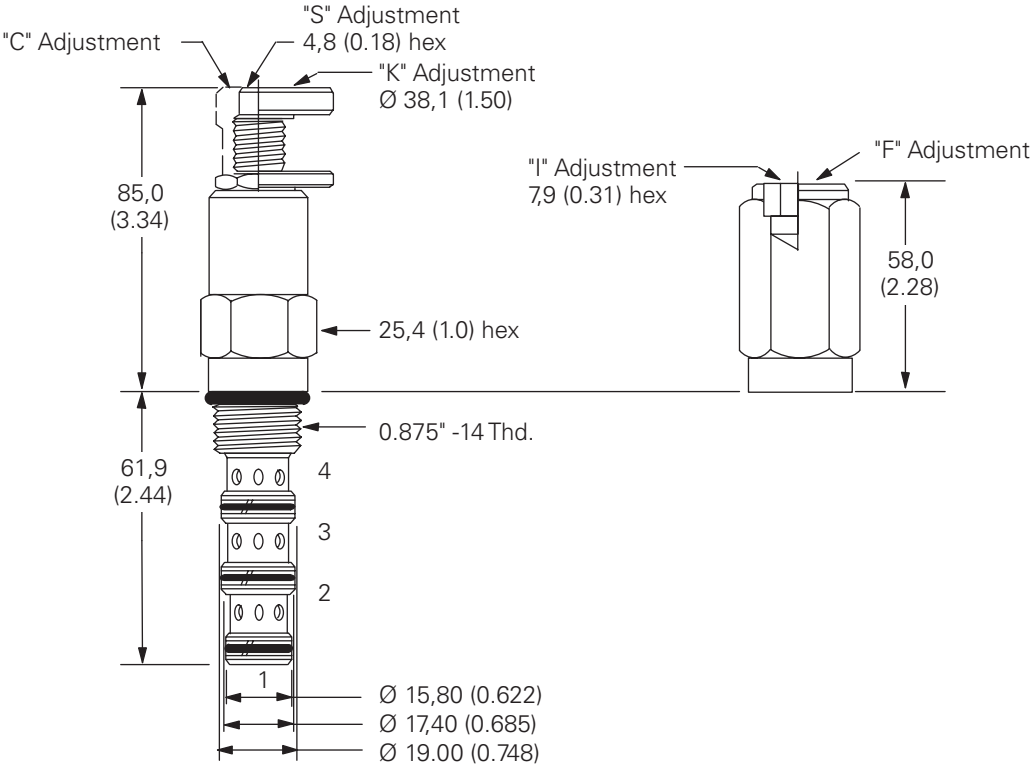
8 Special features

00 - None
(Only required if valve has special features, omitted if "00")

Dimensions

mm (inch)

Torque cartridge in housing
47-54 Nm (35-40 ft. lbs)



PSV11-12

Pressure sequence valve
Pilot operated, internal
pilot, external drain

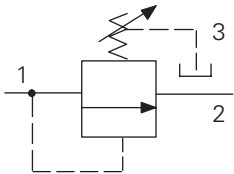
Description

The PSV11-12 is a pilot operated, sliding spool, adjustable, cartridge type pressure sequence valve. This valve, which is internally piloted is used to control the sequence of operations of two or more actuators.

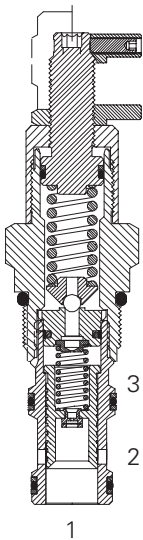
Operation

The PSV11-12 valve remains normally closed until a pre-determined pressure is reached at port 1, which then allows flow to port 2 (port 3 must be vented).

Functional Symbol



Sectional View



RATINGS AND SPECIFICATIONS

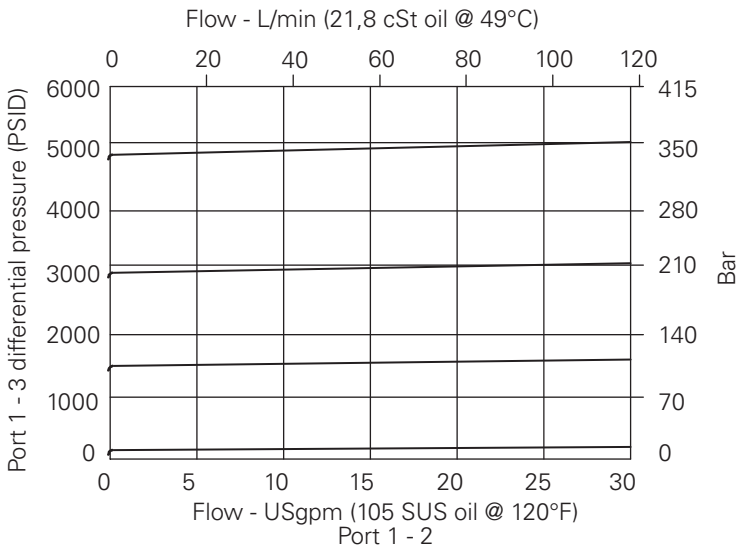
Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	350 bar (5000 psi)
Rated flow	114 L/min (30 USgpm)
Crack pressure set with	1 L/min (0.25 USgpm) from port "1" to "2"
Reseat pressure	More then 90% of crack pressure
Hysteresis	Less than 3 bar (45 psi)
Internal Leakage	189 mL/min (11.6 in ³ /min) @ 80% crack press
Overshoot	Less than 15% of max. press. range with flow step of 30 USgpm at pressure rise rate of 100,000 psi/sec
Repeatability	+/-1% maximum pressure range
Cavity	C-12-3S
Standard housing materials	Aluminum or Steel
Temperature range	-40° to 120°C (-40° to 248°F)
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Weight cartridge only	0,4 kg (0.89 lbs)
Seal kits	02-180095 Buna-N 02-165887 Viton®

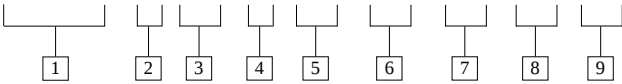
Viton is a registered trademark of E.I. DuPont

Sequence Pressure Override Characteristics

Cartridge only



PSV11 – 12 (V) – * – (*) – * * * – * * / * * – 00



1 Function

PSV11 - Pressure sequence valve

2 Size

12 - 12 Size

3 Seals

Blank - Buna-N
V - Viton®

4 Adjustment

C - Cap
K - Knob
S - Screw

5 Valve housing material

Omit for cartridge only
S - Steel
A - Aluminum

6 Port size

0 - Cartridge only

CODE	PORT SIZE	HOUSING NUMBER	
		Aluminum Fatigue rated	Steel Fatigue rated
10T	SAE 10	02-178268	02-160996
12T	SAE 12	02-178269	02-160997
4G	1/2" BSPP	02-178270	02-160994
6G	3/4" BSPP	02-178271	02-160995

See section J for housing details.

7 Sequence pressure range

15 - 10-100 bar
(150-1500 psi)
30 - 17-210 (250-3000 psi)
50 - 24-350 bar
(350-5000 psi)

8 Setting pressure

Within ranges in 7
Blank - Normal factory setting at approximate mid-range. User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:
10 - 70 bar (1000 psi)
10.5 - 72,4 bar (1050 psi)

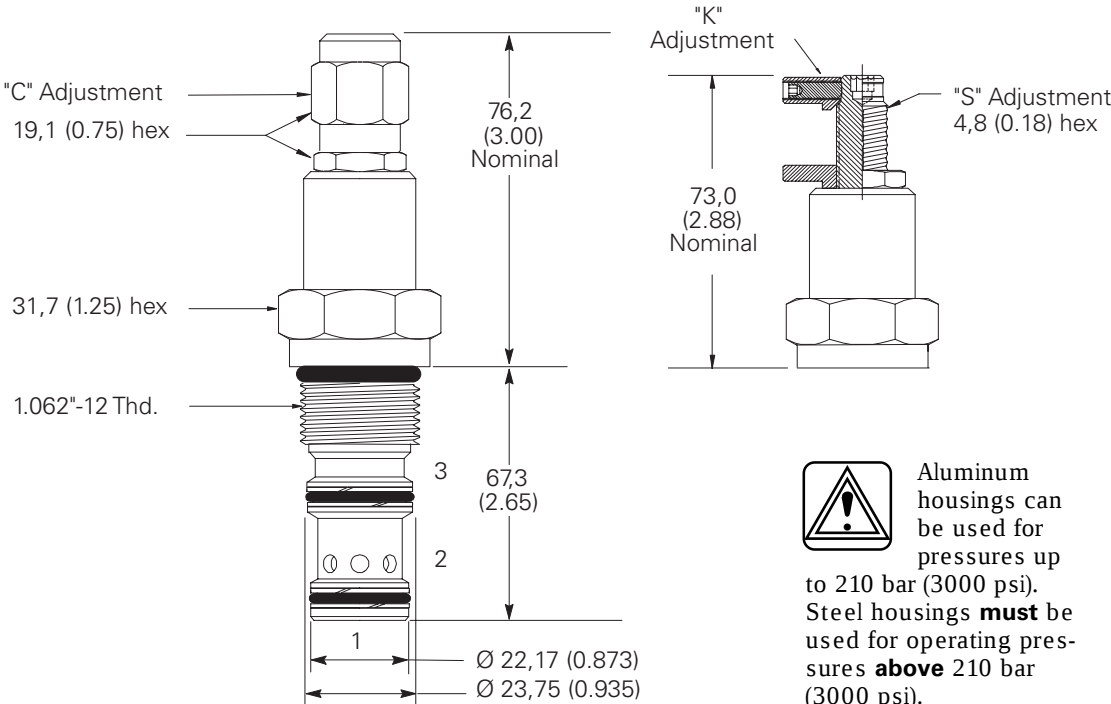
9 Special features

00 - None
(Only required if valve has special features, omitted if "00")

Dimensions

mm (inch)

Torque cartridge in housing
A - 81-95 Nm
(60-70 ft. lbs)
S - 102-115 Nm
(75-85 ft. lbs)



PSV1-16

Pressure sequence valve
Pilot operated, internal
pilot, external drain

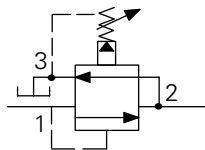
Description

The PSV1-16 is a pilot operated, spool type, internally piloted, externally drained screw-in cartridge pressure sequence valve.

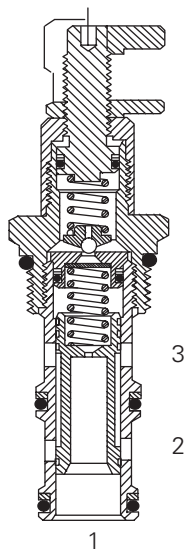
Operation

This valve is normally closed until a predetermined pressure is reached at port 1. The spool then shifts and allows flow to port 2. Port 3 must be vented.

Functional Symbol



Sectional View



RATINGS AND SPECIFICATIONS

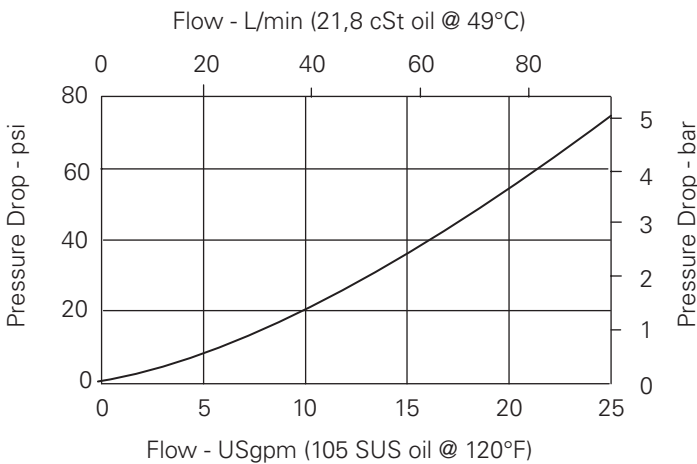
Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	350 bar (5000 psi)
Maximum sequence pressure	415 bar (6000 psi)
Rated flow	95 L/min (25 USgpm)
Cavity	C-16-3
Standard housing materials	Aluminum or steel
Temperature range	-40° to 120°C (-40° to 248°F)
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Weight cartridge only	0,24 kg (0.53 lbs)
Seal kits	565811 Buna-N 889610 Viton®

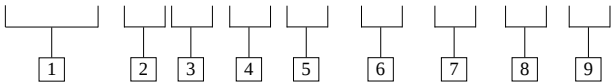
Viton is a registered trademark of E.I. DuPont

Pressure Drop Curve

Port 1 to 2, valve fully open, spring omitted
Cartridge only



PSV1 – 16 (V) – * – (*) – * – ** / ** – 00**



1 Function

PSV1 - Pressure sequence valve

2 Size

16 - 16 Size

3 Seals

Blank - Buna-N
V - Viton®

4 Adjustment

C - Cap
K - Knob
S - Screw

5 Valve housing material

Blank - Aluminum
S - Steel

6 Port size

0 – Cartridge only

CODE	PORT SIZE	HOUSING NUMBER		
		Aluminum Light duty	Aluminum Fatigue rated	Steel Fatigue rated
6B	3/4" BSPP	02-175465	–	–
4G	1/2" BSPP	–	876720	02-175131
6G	3/4" BSPP	–	876722	02-175132
10H	SAE 10	–	876721	–
12H	SAE 12	–	876723	–
10T	SAE 10	–	–	02-175129
12T	SAE 12	566152	–	02-175130

See section J for housing details.

7 Sequence pressure range

30 - 34-210 bar (500-3000 psi)
60 - 70-415 bar (1000-6000 psi)

8 Setting pressure

Within ranges in **7**
Blank - Normal factory setting at approximate mid-range. User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:
10 - 70 bar (1000 psi)
10.5 - 72,4 bar (1050 psi)

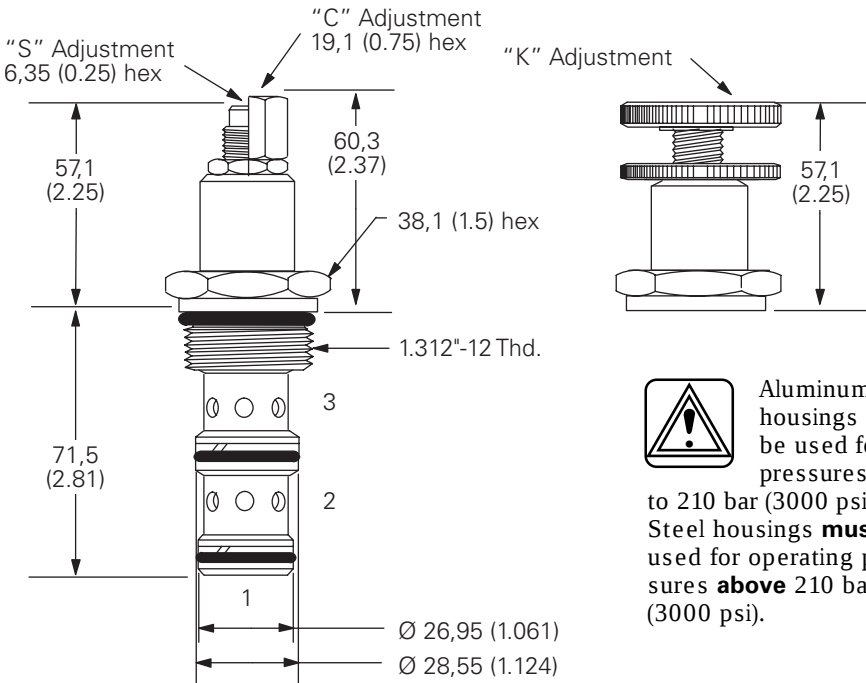
9 Special features

00 - None
(Only required if valve has special features, omitted if "00")

Dimensions

mm (inch)

Torque cartridge in housing
A - 108-122 Nm (80-90 ft. lbs)
S - 136-149 Nm (100-110 ft. lbs)



Aluminum housings can be used for pressures up to 210 bar (3000 psi). Steel housings **must** be used for operating pressures **above** 210 bar (3000 psi).

PUV3-10

Pilot unloading valve

Description

The PUV3 is a two-way, normally closed, externally or internally pilot operated screw-in cartridge type pilot unloading valve.

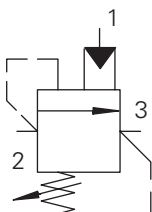
Operation

This valve blocks flow from port 2 to port 3, until either the predetermined spring setting has been reached, or an external pilot has been applied to port 1. At this time flow is then

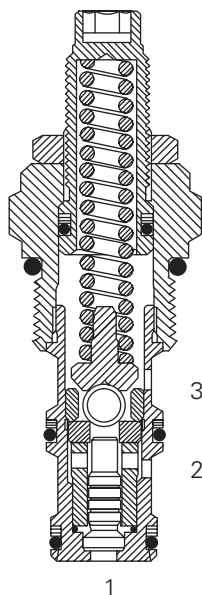
allowed from port 2 to port 3. The valve will reseal at a percentage of the unloading setting as called out in the model code. This valve can be used alone for low flow applications or used

as the pilot stage of a two-stage unloader valve (see application example). The main stage of the unloader is typically a DPS2 logic element.

Functional Symbol



Sectional View



RATINGS AND SPECIFICATIONS

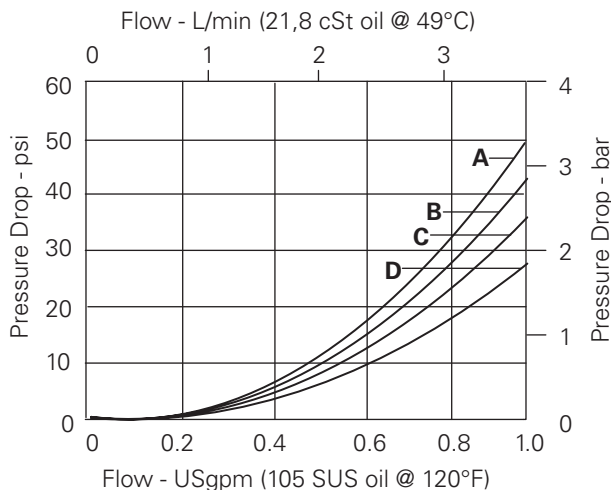
Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	4 L/min (1 USgpm)
Unloading pressure adjustment range	20–210 bar (300–3000 psi)
Cavity	C-10-3
Standard housing materials	Aluminum
Temperature range	-40° to 120°C (-40° to 248°F)
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Weight cartridge only	0,15 kg (0.33 lbs)
Seal kits	565804 Buna-N 889599 Viton®

Viton is a registered trademark of E.I. DuPont

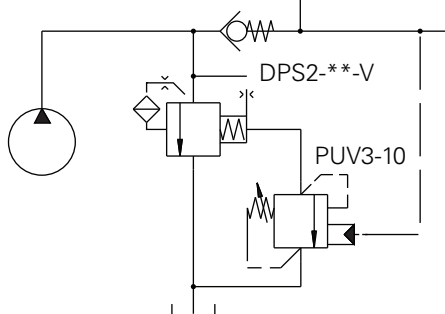
Pressure Drop Curves

Cartridge only
Piloted full open

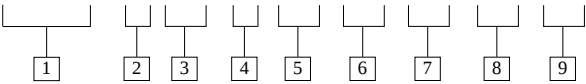


- A - 75%
- B - 80%
- C - 85%
- D - 90%

Application Example



PUV3 – 10 (V) – * – * – * – * – * / * – 00



1 Function
PUV3 - Pilot unloading valve

2 Size
10 - 10 Size

3 Seals
Blank - Buna-N
V - Viton®

4 Adjustment
C - Cap
S - Screw

5 Port size		0 - Cartridge only	
CODE	PORT SIZE	HOUSING NUMBER	
		Aluminum Light duty	Aluminum Fatigue rated
6T	SAE 6	566162	–
3B	3/8" BSPP	02-173358	–
6H	SAE 6	–	876704
8H	SAE 8	–	876711
2G	1/4" BSPP	–	876705
3G	3/8" BSPP	–	876714

See section J for housing details.

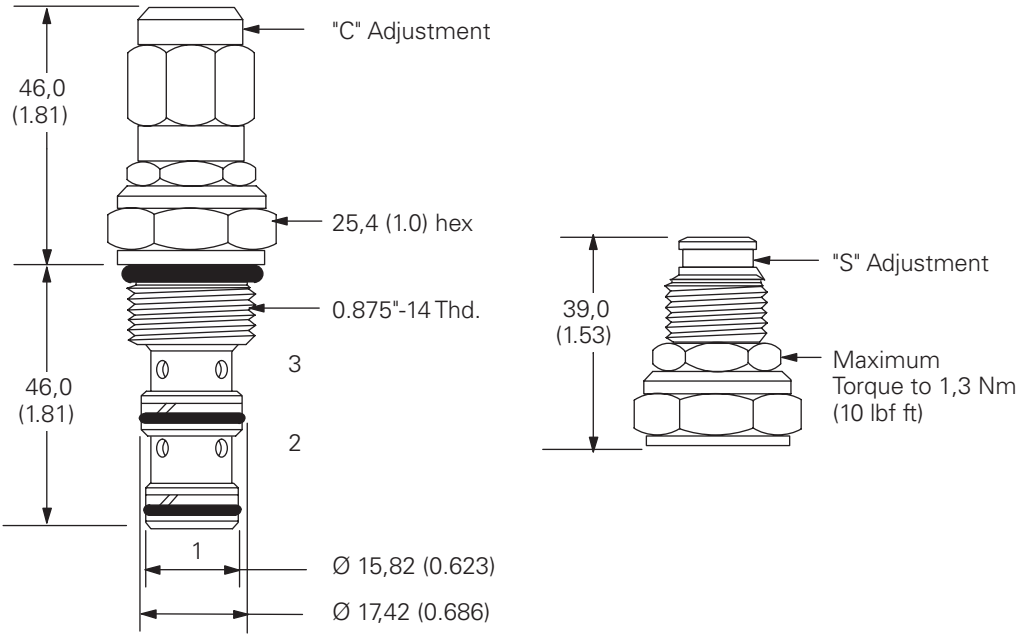
7 Pressure range
15 - 20-100 bar
(300-1500 psi)
30 - 100-210 bar
(1500-3000 psi)

8 Unloading pressure setting
Within ranges in **7**
Blank - Normal factory setting at approximate mid-range. User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:
10 - 70 bar (1000 psi)
9.5 - 65 bar (950 psi)

9 Special features
00 - None
(Only required if valve has special features, omitted if "00")

Dimensions
mm (inch)
Torque cartridge in aluminum housing to 47-54 Nm (35-40 ft. lbs)

6 Loading (closing) pressure, as percentage of unloading pressure
75 - 75 %
80 - 80 %
85 - 85 %
90 - 90 %



ADV1-16

Accumulator discharge
valve

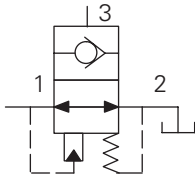
Description

The ADV1-16 is a poppet type, normally open, externally piloted, screw-in cartridge type accumulator discharge valve.

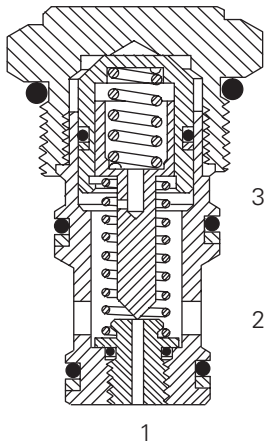
Operation

In its unpiloted position, this valve remains open between port 1 and port 2 until sufficient pilot pressure is applied to port 3. Flow is then blocked from port 1 to port 2.

Functional Symbol



Sectional View



RATINGS AND SPECIFICATIONS

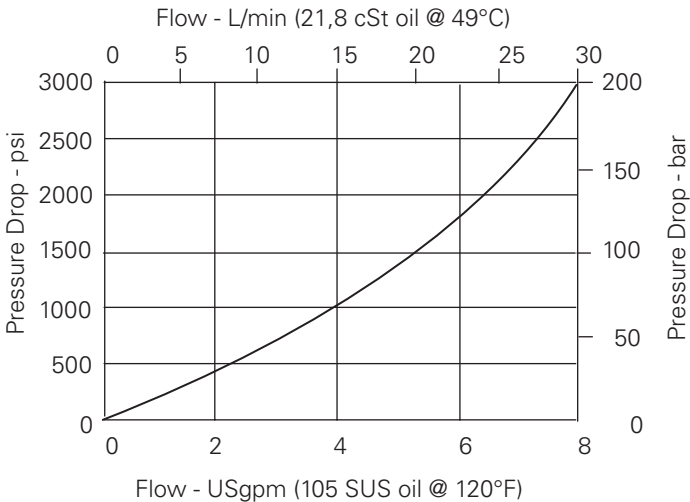
Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	30 L/min (8 USgpm)
Minimum pilot pressure @ port 3	4 bar (60 psi)
Cavity	C-16-3S
Standard housing materials	Aluminum
Temperature range	-40° to 120°C (-40° to 248°F)
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Filtration	Cleanliness code 18/16/13
Pilot ratio	100:1
Weight cartridge only	0,28 kg (0.62 lbs)
Seal kits	565812 Buna-N 889611 Viton®

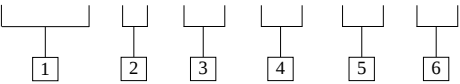
Viton is a registered trademark of E.I. DuPont

Pressure Drop Curve

Cartridge only
Port 3 pilot pressure = 0



ADV1 – 16 – (V) – *** – 100 – 00



- 1

Function
ADV1 - Accumulator
discharge valve
- 2

Size
16 - 16 Size
- 3

Seals
Blank - Buna-N
V - Viton®

4

Port size
0 - Cartridge only

CODE	PORT SIZE	HOUSING NUMBER	
		Aluminum Light duty	Aluminum Fatigue rated
6B	3/4" BSPP	02-175471	–
12T	SAE 12	566414	–
4G	1/2" BSPP	–	02-160676
6G	3/4" BSPP	–	876726
10H	SAE 10	–	876725
12H	SAE 12	–	876727

See section J for housing details.

- 5

Pilot area ratio
Port 3: Port 1 - 100:1
(Minimum pilot pressure at
port 3 - 4 bar (60 psi))
- 6

Special features
00 - None
(Only required if valve has
special features, omitted
if "00")

Dimensions
mm (inch)
Torque cartridge in housing
108-122 Nm (80-90 ft. lbs)

