F·T•**N** Vickers

Pressure Control

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



Model	Typical Application Pressure bar (psi)	Rated Flow L/min (USgpm)	Page
Pressure control	s - Introduction		E-3
Relief Valves			
RV1-8			E-4
RV8–8			E-6
RV6-10			E-8
RV10-10			E-10
RV1-10			E-12
RV3-10			E-14
RV8-10			E-16
RV5–10			E-18
RV2–10			E-20
RV4–10			E-22
RV1-12			E-24
RV3-12			E-26
Ventable Relief V			201
		114 (30)	E-36
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		15 (4)	F-38
Pressure Sequen			E-40
•		23 (6)	E 50
			E-72
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ADV1-16			E-76

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 freeflow 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 mainstage 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 preselected 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.

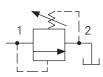
Fluid Cleanliness

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.

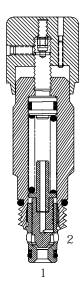
Description

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

Functional Symbol



Sectional View



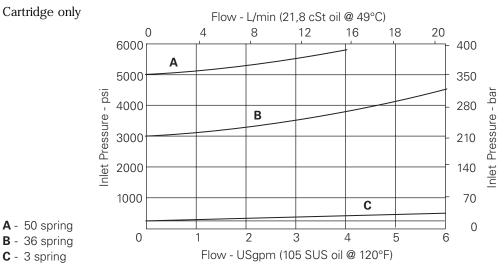
Operation

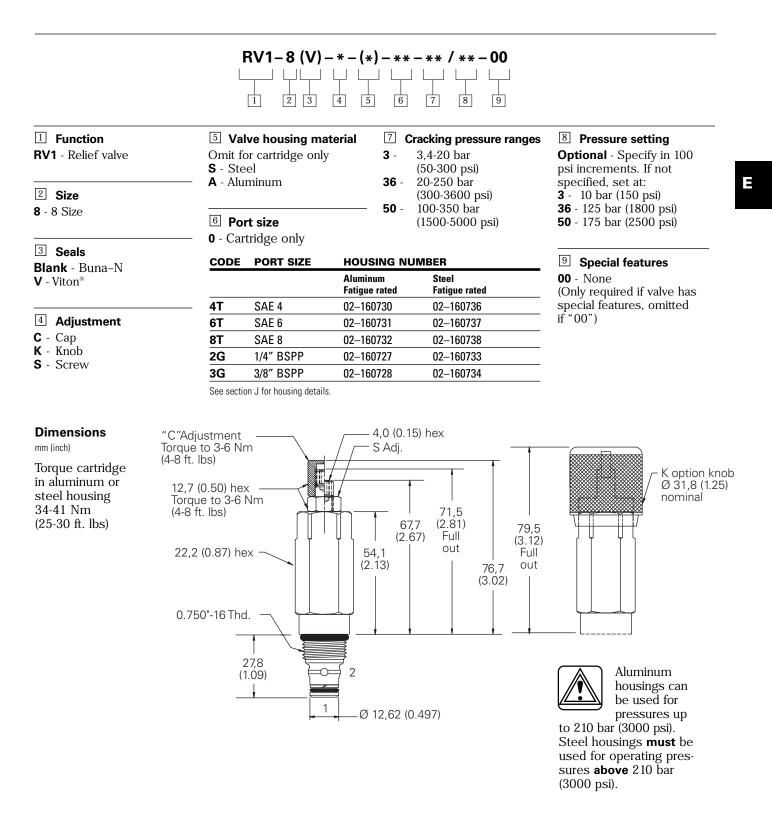
The RV1-8 remains closed until the predetermined setting is reached at port 1. The poppet then lifts off the seat and allows flow from port 1 to port 2.

RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8	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	For 3 & 36 cracking pressure22,7 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





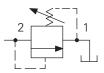
RV8-8

Relief valve Poppet, differential area

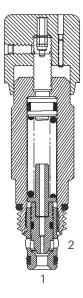
Description

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

Functional Symbol



Sectional View



Operation

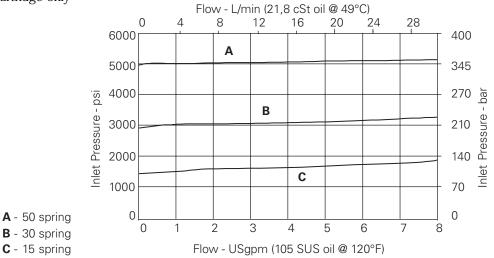
The RV8-8 remains closed until the predetermined setting is reached at port 2. The force created by the pressure acting on the differential poppet area lifts the poppet off the seat and allows flow from port 2 to port 1.

RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 c	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



 Function RV8 - Relief valve Size 8 - 8 Size 	(Omit f S - Ster A - Alur			artridge only Cracking pressure ranges 3,4-100 bar (50-1500 psi) 70-210 bar (1000-3000 psi) 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)
3 Seals Blank - Buna–N V - Viton®	CODE	PORT SIZE	HOUSING NU Aluminum Fatigue rated	JMBER Steel Fatigue rated	 9 Special features 00 - None (Only required if valve has
 4 Adjustment C - Cap K - Knob S - Screw 	4T 6T 8T 2G 3G See sectio	SAE 4 SAE 6 SAE 8 1/4" BSPP 3/8" BSPP on J for housing details.	02–160730 02–160731 02–160732 02–160727 02–160728	02–160736 02–160737 02–160738 02–160733 02–160734	special features, omitted if "00")
Dimensions mm (inch) Torque cartridge in aluminum or steel housing 34-41 Nm (25-30 ft. lbs)	"C"Adjustment Torque to 3-6 Nm (4-8 ft. lbs) 12,7 (0.50) hex Torque to 3-6 Nm (4-8 ft. lbs) 22,2 (0.87) hex - 0.750"-16 Thd.		4,0 hex (0.15) "S" Adjust 67,8 (2.67) 53,8 (2.13) 2 0 2 0 12,62 (0.	tment 72,6 (2.85) 81 out 76,5 (3.02) 76,5 (3.02)	20) U U JII

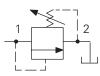
RV6-10

Relief valve Ball type, direct acting

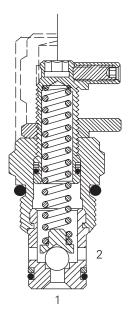
Description

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

Functional Symbol



Sectional View



Application Note

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

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.

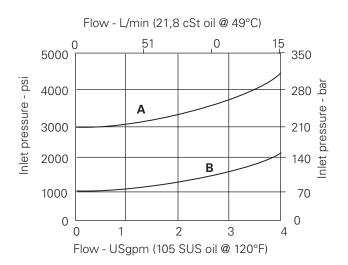
RATINGS AND SPECIFICATIONS

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)	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
- ${\boldsymbol{\mathsf{B}}}$ 20 spring



RV6 – 10 (V) – * – (S) – ** – ** / ** – 00					
1 Function RV6 - Relief valve		rt size tridge only			
	CODE	PORT SIZE	HOUSING NU	JMBER	
2 Size10 - 10 Size			Aluminum Light duty	Aluminum Steel Fatigue rated	Fatigue rated
IU - 10 Size	3B	3/8" BSPP	02–175462	_	_
	2G	1/4" BSPP	_	876702	02–175102
3 Seals	3G	3/8" BSPP	_	876703	02–175103
Blank - Buna–N V - Viton®	6H	SAE 6	_	876700	_
	8H	SAE 8	_	876701	_
	6Т	SAE 6	566151	_	02–175100
4 Adjustment	8T	SAE 8	_	-	02–175101
C - Cap	See section	on J for housing details	i.		

K - Knob

S - Screw

T - Tamper-proof

5 Valve housing material Blank - Aluminum

S - Steel

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 $\boxed{7}$ 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)

"C"Adjustment, "T" Adjustment 19,1 (0.75) hex "S" Adjustment "K"Adjustment Ø 38,1 (1.50) 46,0 (1.81)41,4 (1.53) 25,4 (1.00) hex 0.875"-14 Thd. Aluminum housings can 31,8 be used for (1.25)pressures up 2 to 210 bar (3000 psi). Steel housings **must** be used for operating pres-Ø 15,80 (0.622)

sures above 210 bar

(3000 psi).

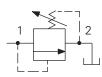
RV10-10

Relief valve Poppet, direct acting, low pressure

Description

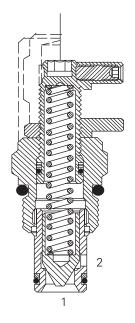
The RV10-10 is a direct acting, poppet type, screw-in cartridge relief valve.

Functional Symbol



Sectional View

E-10



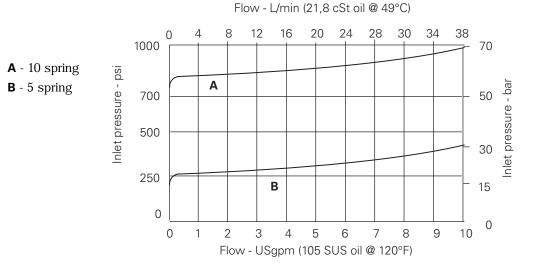
Operation

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) 70 bar (1000 psi) Typical application pressure (all ports) 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 C-10-2 Cavity Standard housing materials Aluminum Temperature range -40° to 120°C (-40° to 248°F) All general purpose hydraulic fluids such as: Fluids MIL-H-5606, SAE 10, SAE 20, etc. Cleanliness code 18/16/13 Filtration Weight cartridge only 0,22 kg (0.48 lbs) 565803 Buna-N Seal kits 566086 Viton® Viton is a registered trademark of E.I. DuPont

Pressure Override Curves



RV10-10 (V) - * - ** - ** / ** - 00 4 5 6 1 2 3 7 8

1 Function	CODE	PORT SIZE	HOUSING NU	JMBER	6 Cracking pressure range
RV10 - Relief valve			Aluminum Light duty	Aluminum Fatigue rated	2 - 1,73-17
	3B	3/8" BSPP	02-175462	_	bar (25-250 psi) 5 - 3,5-35 bar (50-500 psi)
2 Size	6T	SAE 6	566151	_	10 - 17-70 bar
10 - 10 Size	2G	1/4" BSPP	_	876702	(250-1000 psi)
	3G	3/8" BSPP	_	876703	
3 Seals	6H	SAE 6	-	876700	Setting pressure
Blank - Buna-N	8H	SAE 8	_	876701	Within ranges in 6
V - Viton [®]	See section	on J for housing detail	S.		Blank - Normal factory setting at approximate

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)

- 0 psi)
- (50-500 psi)
 - psi)

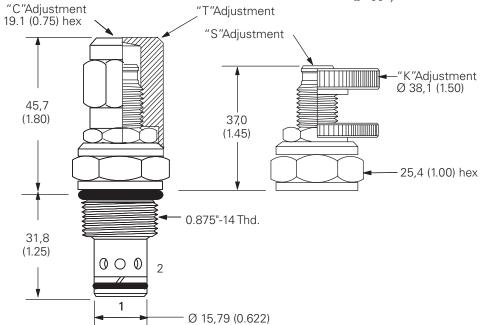
Ξ

sure

6 actory 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

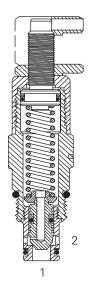
Description

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

Functional Symbol



Sectional View



Operation

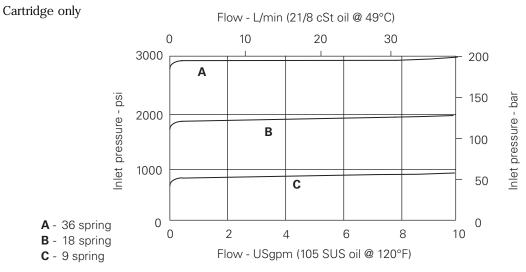
This valve remains closed from port 1 to port 2 until the predetermined setting

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) 210 bar (3000 psi)
Cartridge fatigue pressure (infinite life	e) 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



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

I Function

6 Port size0 - Cartridge only

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 - Ste	el

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

3.5-20 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)

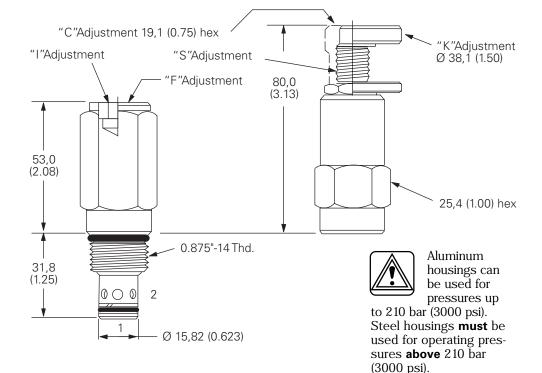
9 Special features

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



mm (inch)

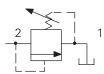
Torque cartridge in housing **A** - 47-54 Nm (35-40 ft. lbs) **S** - 68-75 Nm (50-55 ft. lbs)



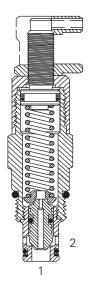
Description

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

Functional Symbol



Sectional View



Operation

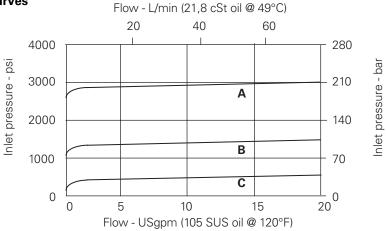
This valve remains closed from port 2 to port 1 until the predetermined setting has been reached at port 2. The poppet is unseated and allows flow out of port 1.

RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (10	5 SUS) and 49°C (120°F)
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
- 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			
		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)

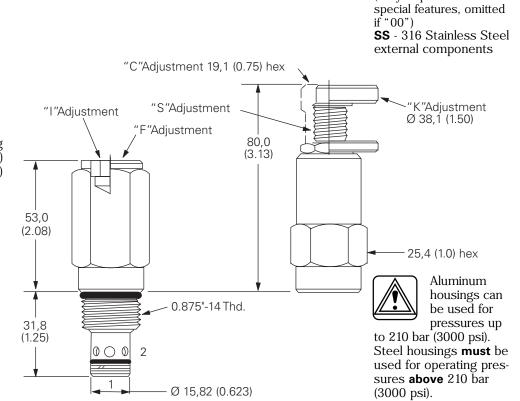
9 Setting pressure

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

(Only required if valve has

00 - None



RV8-10

Relief valve Poppet, differential area, high pressure

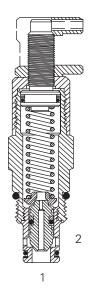
Description

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

Functional Symbol



Sectional View

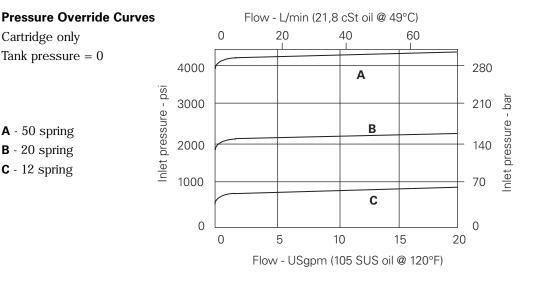


Operation

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

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	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



Cartridge only

A - 50 spring

B - 20 spring **C** - 12 spring

Tank pressure = 0

W8 - Relief valve 0 - Cartridge only Comparisons CODE PORT SiZE HOUSING NUMBER Code PORT SiZE PORT SiZE Code PORT SiZE PORT SiZE Size Size Size Code PORT SiZE PORT SiZE Size Social Size Size Code Size Social Features Portion* Size Size Code Size Social features			10 (V) – * – (S 3 4 5 6		
Image: Single backup ring so shown 38 3/8" BSPP 02-175462 - - 38 3/8" BSPP - 876702 02-175102 - 30 3/8" BSPP - 876703 02-175103 30 3/8" BSP - 876702 02-175103 31 Size - 876701 - 32 Size - 876701 - 33 Size - - 02-175100 34 Sale 6 - 876701 - 35 Sale 8 - - 02-175100 36 3/8" BSP - - 02-175100 37 Sale 8 - - 02-175100 38 Sale 8 - - 02-175100 39 Sale 8 - - 02-175100 31 Sale 8 - - 02-175100 31 Sale 8 - - 02-175100 32 Sale 8 - - 02-175100 32 Sale 50 bar -<	Function RV8 - Relief valve	0 - Cartridge only			
$\begin{array}{c} \textbf{Lyb} \textbf{tdy} & \textbf{Fatige rated} \\ Fatig$		CODE PORT SIZ			Cánal
is shown363656* $1/2$ thickness backup ing an each side of O-ring (for rross port relief applications)36 $3/8$ PSPP- 376702 $02-175102$ 37 26 $1/4^{2}$ PSPP- 376702 $02-175102$ 38Sate 6- 876700 -39Size0- $02-175102$ 30Size- $02-175100$ -31Size- 075701 -31Size- $02-175100$ -33Size $02-175100$ 34Sate 8 $02-175100$ 35Seals $02-175100$ 36Seals $02-175100$ 37Sate 8 $02-175100$ 38Sate 8 $02-175100$ 39Seals $02-175100$ 39Sate 8 $02-175100$ 39Sate 8 $02-175100$ 39Sate 8 $02-175100$ 30Sate 8Sate 831Sate 8 $02-175100$ 32Sate 8Sate 7 $00-10250$ ps)Sate 7.000 ps)33Sate 834Sate 7 $02-175100$ Sate 7.16 7.14 7.10035Steel $02-175100$ 36Sate 7.15 Nm (50-55 ft. lbs)- $02-175100$ $02-175100$ <td></td> <td></td> <td></td> <td></td> <td></td>					
A. 1/2 Hickness backup ring moreach side of Ording (for ross port relief applications)2G 3/8" BSPP- 976702 976703 02-175102 00 03G 3/8" BSP - 	as shown	3B 3/8" BSPF	P 02–175462	_	_
rooss port relief applications)GHSAE 6976700BSAE 8-876701O-02-175100BTSAE 8-02-175101See section J for housing details.(550-5000 psi)BCracking pressure range9Secting pressure within ranges in \mathbb{B} CapSee section J for housing details.(550-5000 psi)CapSec Section J for housing details.(550-5000 psi)CapSec Section J for housing details.(550-5000 psi)CapSec Section J for housing details.Secting pressure within ranges in \mathbb{B} Bank - AluminumSo - 38-350 bar9Secting a pressure within ranges in \mathbb{B} CapCap (100-1250 psi)10.5 - 72.4 bar (1000 psi)Secting a particular section of the particular section	A - 1/2 thickness backup ring	2G 1/4" BSPF	-	876702	02–175102
Image: Second	on each side of O-ring (for	3G 3/8" BSPF	P _	876703	02–175103
Image: Size 10 - 10 Size 6T SAE 6 566151 - 02-175100 Image: Seals Slank - Buna-N / Viton" Se section J for housing details. (550-5000 psi) Image: Special features on the system range on the system of the system range on the system of the system range on the system range on the system of the system range on the system of	cross port relief applications)	6H SAE 6	_	876700	_
0 : 10 Size 8T SAE 8 - - 02-175101 Sees section J for housing details. (550-5000 psi) Special features 00 - None Shah - Buna-N * 3,45-30 bar (50-450 psi) (50-450 psi) Special features 00 - None See section J for housing details. (100-1250 psi) 12 - 7.86 bar (100-1250 psi) See secting in 3,45 bar (50 psi) See secting in 3,45 bar (50 psi) See secting in 3,45 bar (50 psi) So Cap 10 - 175 bar (100-1250 psi) 25 - 17-175 bar (100-1250 psi) See secting in 3,45 bar (50 psi) See secting in 3,45 bar (50 psi) See secting in 3,45 bar (50 psi) So Xalve housing material stank - Aluminum 50 - 38-350 bar 10 - 70 bar (1000 psi) S'Adjustment (19,1 (0.75) hax Secting in 3,45 (1.50) Dimensions in fight (12,0) (2,08) "I"Adjustment (2,08) S'Adjustment (3,16) 80,0 (3,13) So (3,1,11,50) So 68-75 Nm (50-55 ft. lbs) (2,08) (2,08) (0,15,82 (0,623)) Aluminum housing can be used for operating pressures up to 210 bar (3000 ps). Aluminum housing can be used for operating pressures up to 210 bar (3000 ps).		8H SAE 8	_	876701	_
Image: Seal Salark - Aluminum Some section J for housing details. (550-5000 psi) Image: Seal Salark - Aluminum Some section J for housing cartiled in fichly more than 18 (1.25) Image: Seal Salark - Aluminum Some section J for housing details. (550-5000 psi) Image: Seal Salark - Aluminum Some section J for housing cartiled in fichly more than 19,1 (0.75) hax Image: Seal Salark - Aluminum Some section J for housing cartiled in fichly more than 19,1 (0.75) hax Image: Seal Salark - Aluminum Some section J for housing cartiled in the section J for housing cartiled in housing 12, 25,4 (1.0) hes Image: Seal Salark - Aluminum Some section Some material Salark - Aluminum So - Steel Image: Seal Salark - Aluminum Some section J for housing cartiled in the section J for housing section J for housing Salark - Aluminum Some section J for housing section J for housing section J for housing section J for housing J for the section J for housing section J for housing J for the section J for the section J for the section J for the section J for housing J for the section J for the section J for the section J for the section J for the sectin J for the section J for the section J for th	³ Size	6T SAE 6	566151	_	02–175100
Image: Seals Seals Blank - Buna-N - X100" - Viton" Image: Second pair Image: Seals Secting pressure range Image: Seals - X45-30 bar (100-1250 psi) Image: Second pair Image: Second pair Image: Second pair Image: Second pair <td>0 - 10 Size</td> <td>8T SAE 8</td> <td>_</td> <td>-</td> <td>02–175101</td>	0 - 10 Size	8T SAE 8	_	-	02–175101
Blank - Buna-N Image		See section J for housing	ı details.	(550-5000 p	osi)
 ✓ Viton* ✓ Cracking pressure range 4 - 3,45-30 bar (50-450 psi) 2 - Cap Factory set - Factory set - Internal C Knob S - Screw Itz - 7.86 bar (100-1250 psi) 25 - 17-175 bar (250-2500 psi) 50 - 38-350 bar Sore w Itz - 7.86 bar (100-1250 psi) Sore w Sore w Sore w Sore w Itz - 7.86 bar (100-1250 psi) Sore w Sore w Sore w Sore w Itz - 7.86 bar (100-1250 psi) Sore w Sor					
 Adjustment Solution (50-450 psi) Solution (100-1250 psi) Solution (100-1250 psi) Solution (250-2500 psi) So	Blank - Buna−N ✔ - Viton®	range	9		ure 00 - None
 Cap Scarew Solution Screw Solution Sol	5 Adiustresent				
 Factory set - Internal - Internal - Knob Screw 25 - 17.175 bar (250-2500 psi) 50 - 38.350 bar 50	-				nate if "00")
 Internal Internal 25. 17:175 bar (250-2500 psi) Screw 50. 38-350 bar 50. 38-350 bar 50. 38-350 bar 50. 38-350 bar 50. 72,4 bar (1000 psi) 10. 5 - 72,4 bar (1050 psi) "C"Adjustment 19,1 (0.75) hex "("Adjustment "F"Adjustment "S"Adjustment "S"Adjustment<td></td><td></td><td>psi) m</td><td>id-range. Ûser re</td><td>equested SS - 316 Stainless Steel</td>			psi) m	id-range. Ûser re	equested SS - 316 Stainless Steel
50 - 38-350 bar 50 - 72,4 bar (1050 ps) 10.5 - 72,4 bar (100 ps) 10.5 -		25 - 17-175 bar	Se		. (00 poi)
$\begin{array}{c} 10 - 70 \ bar (1000 \ psi) \\ \hline 10.5 - 72.4 \ bar (1050 \ psi) \\ \hline 10.5 - 72.4 \$			PDI) (-		
Interval E Valve housing material Blank - Aluminum Steel Oimensions mm (inch) Orque cartridge in housing A - 47-54 Nm (35-40 ft. lbs) S - 68-75 Nm (50-55 ft. lbs) I - 47-54 Nm (35-40 ft. lbs) S - 68-75 Nm (50-55 ft. lbs) I - 47-54 Nm (35-40 ft. lbs) S - 68-75 Nm (50-55 ft. lbs) I - 47-54 Nm (35-40 ft. lbs) S - 68-75 Nm (50-55 ft. lbs) I - 47-54 Nm (35-40 ft. lbs) S - 68-75 Nm (50-55 ft. lbs) I - 47-54 Nm (35-40 ft. lbs) S - 68-75 Nm (50-55 ft. lbs) I - 47-54 Nm (35-40 ft. lbs) S - 68-75 Nm (50-55 ft. lbs) I - 47-54 Nm (35-40 ft. lbs) S - 68-75 Nm (50-55 ft. lbs) I - 47-54 Nm (35-40 ft. lbs) S - 68-75 Nm (50-55 ft. lbs) I - 47-54 Nm (35-40 ft. lbs) S - 68-75 Nm (50-55 ft. lbs) I - 47-54 Nm (35-40 ft. lbs) S - 68-75 Nm (50-55 ft. lbs) I - 47-54 Nm (35-40 ft. lbs) S - 68-75 Nm (50-55 ft. lbs) I - 47-54 Nm (35-40 ft. lbs) S - 68-75 Nm (50-55 ft. lbs) I - 47-54 Nm (35-40 ft. lbs) I	S - Screw	50 - 38-350 ba			
inaterial "C"Adjustment 19,1 (0.75) hex ister "S"Adjustment 19,1 (0.75) hex ister "S"Adjustment "S"Adjustment "F"Adjustment (3.13) indicator Sign (1.50) indicator Sign (2.08) ister Sign (2.08) <t< td=""><td></td><td></td><td></td><td></td><td></td></t<>					
inaterial islank - Aluminum - Steel "C"Adjustment 19,1 (0.75) hex Dimensions m (inch) orque cartridge in housing - 47.54 Nm (35-40 ft. lbs) "I"Adjustment 53,0 (2.08) "S"Adjustment "F"Adjustment (3.13) 53,0 (2.08) 0.875*-14 Thd. 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	³ Valve housing				1
Pimensions m (inch) broque cartridge in housing A - 47-54 Nm (35-40 ft. lbs) i - 68-75 Nm (50-55 ft. lbs) Multiple for the second					
Dimensions Im (inch) brque cartridge in housing A - 47-54 Nm (35-40 ft. lbs) S - 68-75 Nm (50-55 ft. lbs) Main um (2.08)	Blank - Aluminum		19,1	(U.75) nex	
Dimensions im (inch) Torque cartridge in housing A - 47-54 Nm (35-40 ft. lbs) 5 - 68-75 Nm (50-55 ft. lbs) 31,8 (1.25) 0 = 0.875"-14 Thd. 0.875"-14 Thd. 0.875"-14 Thd. 0.875"-14 Thd. 0.875"-14 Thd. 0.875"-14 Thd. 0.875"-14 Thd. 0.875"-14 Thd. 0.875"-14 Thd. 0.125 0 = 0.2 0 = 0.2	S - Steel	"l"Adjustment	"	//A 11	"K"Adjustm
Dimensions m(inch) Torque cartridge in housing A - 47-54 Nm (35-40 ft. lbs) B - 68-75 Nm (50-55 ft. lbs) (3.13) (3.13) (3.13) (3.13) (3.13) (3.13) (3.13) (3.13) (3.13) (3.13) (2.08) (2.08) (2.08) (2.08) (2.08) (3.13) (2.08) (2.08) (3.13) (2.08) (2.08) (2.08) (2.08) (3.13) (2.08) (2.08) (2.08) (3.13) (2.08) (2				Adjustment	
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$\begin{array}{c} \text{forque cartridge in housing} \\ \textbf{A} - 47.54 \text{ Nm (35-40 ft. lbs)} \\ \textbf{S} - 68.75 \text{ Nm (50-55 ft. lbs)} \end{array} \\ \begin{array}{c} 53,0 \\ (2.08) \\ \hline \\ $		<u> </u>			
$\begin{array}{c} \text{forque cartridge in housing} \\ \textbf{A} - 47.54 \text{ Nm (35-40 ft. lbs)} \\ \textbf{S} - 68.75 \text{ Nm (50-55 ft. lbs)} \end{array} \\ \begin{array}{c} 53,0 \\ (2.08) \\ \hline \\ $					
Forque cartridge in housing A - 47-54 Nm (35-40 ft. lbs) B - 68-75 Nm (50-55 ft. lbs) 31,8 (1.25) $0 \odot 0$ 2 $0 \odot 0$ 2 $0 \odot 0$ 2 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0					
orque cartridge in housing A - 47-54 Nm (35-40 ft. lbs) B - 68-75 Nm (50-55 ft. lbs) (2.08)		53.0			
A - 47-54 Nm (35-40 ft. lbs) 31,8 (1.25) $0 \odot 0$ 1 $0 \odot 0$ 0 $0 \odot 0$ 0 0 0 0 0 0 0	Corque cartridge in housing				
$\begin{array}{c} 1.25 \\ 1.25 \\ 1.25 \\ 1 \\ 1 \\ 1 \\ 0 \\ 1 \\ 1 \\ 0 \\ 1 \\ 0 \\ 1 \\ 1$					
31,8 (1.25) 0 0 0 2 1 0 0 15,82 (0.623) A minimum housings can be used for pressures up to 210 bar (3000 psi). Steel housings must be used for operating pres- sures above 210 bar	5 - 68 - 75 Nm (50 - 55 ft. lbs)				25,4 (1.0)
31,8 (1.25) 0 0 0 2 1 0 0 15,82 (0.623) 0 15,82 (0.623) 0 0 0 2 0 0 0 2 0 0 0 2 0 0 0 2 0 0 0 15,82 (0.623) 0 0 0 15,82 (0.623)					
31,8 (1.25) 0 0 0 2 1 0 0 15,82 (0.623) 0 15,82 (0.623) 0 0 0 2 0 0 0 2 0 0 0 2 0 0 0 2 0 0 0 15,82 (0.623) 0 0 0 15,82 (0.623)		¥			<u>↓</u>
31,8 (1.25) 0 0 0 2 1 0 0 15,82 (0.623) A duminant housings can be used for pressures up to 210 bar (3000 psi). Steel housings must be used for operating pres- sures above 210 bar				875"-14 Thd	
be used for pressures up to 210 bar (3000 psi). Steel housings must be used for operating pres- sures above 210 bar				070 14 1110.	
0 0 0 2 pressures up 1 Ø 15,82 (0.623) Steel housings must be used for operating pressures sures above 210 bar		(1.25)			be used for
to 210 bar (3000 psi). 1 Ø 15,82 (0.623) to 210 bar (3000 psi). Steel housings must be used for operating pres- sures above 210 bar			$0 \bigcirc 0 2$		
Steel housings must be used for operating pres- sures above 210 bar		Ţ			to 210 bar (3000 psi).
sures above 210 bar		V			Steel housings must be
				15,82 (0.623)	used for operating pres-
(3000 psi).					

Ε

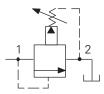
RV5-10

Relief valve Pilot operated, high pressure

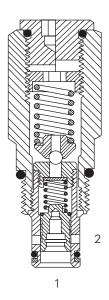
Description

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

Functional Symbol



Sectional View



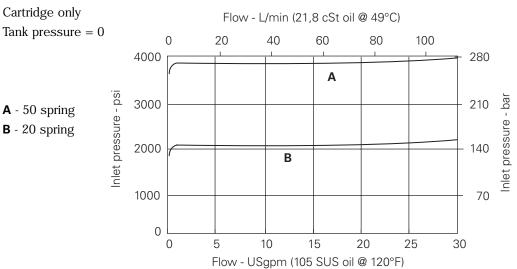
Operation

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

RATINGS AND SPECIFICATIONS

5 SUS) and 49°C (120°F)
350 bar (5000 psi)
350 bar (5000 psi)
114 L/min (30 USgpm)
114 cc/min (7cu in/min @ 350 bar (5000 psi)
C-10–2
Aluminum or steel
-40° to 120°C (-40° to 248°F)
All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Cleanliness code 18/16/13
0,22 kg (0.48 lbs)
565803 Buna–N 566086 Viton®
565806 Buna–N 889627 Viton® Viton is a registered trademark of E.I. DuPont

Pressure Override Curves



П

 Function RV5 - Relief valve 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) Size 10 - 10 Size 		rt size tridge only PORT SIZE 3/8″ BSPP 1/4″ BSPP	HOUSI Aluminum Light duty	NG NUMBER		8 Cracking pressure range
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	3B 2G 3G	3/8″ BSPP	Aluminum	NG NUMBER		3 - 3,4-20 bar
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	2G 3G					(50-300 psi)
shown A - 1/2 thickness backup ring on each side of O-ring (for cross port relief applications) 3 Size	2G 3G		Light duty	Aluminum	Steel	20 - 7-140 bar (100-2000 psi)
ring on each side of O-ring (for cross port relief applications) 3 Size	2G 3G		00 475400	Fatigue rated	Fatigue rated	35 - 17-240 bar
(for cross port relief applications) Image: state	3G	1/4" BSPP	02–175462	-		(250-3500 psi)
applications) Image: Size			_	876702	02-175102	50 - 35-350 bar
3 Size	<u>6H</u>	3/8" BSPP	_	876703	02–175103	(500-5000 psi)
	~ • •	SAE 6	_	876700		9 Setting pressure
10 - 10 Size	<u>8H</u>	SAE 8	-	876701		9 Setting pressure Within ranges in 8
	<u>6</u> T	SAE 6	566151	-	02–175100	Blank - Normal factory
4 Seals	8T	SAE 8	-		02–175101	setting at approximate
Blank - Buna-N	H10H	SAE 10*	-	4997062-001	_	mid-range. User requested
V - Viton®		SAE 10**	_	4997060-001 age for Eaton H or T s	_	settings in 3,45 bar (50 psi) steps, coded as in the
 F - Fixed 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) 	psi), only a See sectio	available with RV5 on J for housing de "I" Adjustme	A option and alum stails. "C 19, nt "S - "F	"Adjustment - 1 (0.75) hex 5"Adjustment - "Adjustment	g is 210 bar (3000	 10.5 - 72,4 bar (1050 psi) Special features O0 - None (Only required if valve has special features, omitted if "00") SS - 316 Stainless Steel external components "K"Adjustment, Ø 38,1 (1.50) 25,4 (1.00) hex Aluminum housings can be used for pressures up to 210 bar (3000 psi).

- 9

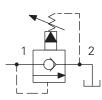
RV2-10

Relief Valve Pilot operated with reverse free flow check

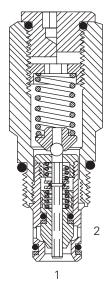
Description

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

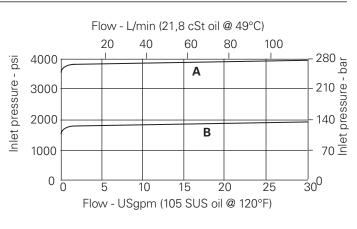
Performance data is typical with fluid at 21,8 cSt (1	05 SUS) and 49°C (120°F)
Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	350 bar (5000 psi)
Rated flow range	12–114 L/min (3–30 USgpm)
Internal leakage	5 drops/min @ 85% of Pressure Setting
Reverse 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

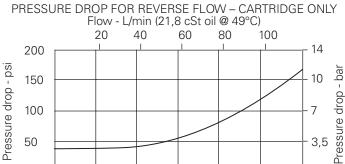
Pressure Override Curves

Cartridge only Tank pressure = 0

A - 50 Spring







____0 30

25

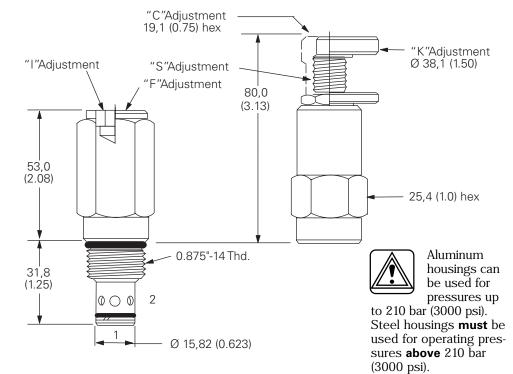
П

		2 – 10 (V) – _	* (*) - 	- ** - * [6 7			
Function RV2 - Relief valve	6 Port size0 - Cartridge only						
2 Size	CODE	PORT SIZE	HOUS	ING NUM	BER		
10 - 10 Size			Aluminu Light du		Aluminum Fatique rated	Steel Fatio	ie rated
	3B	3/8" BSPP	02–175	•	_		
3 Seals	2G	1/4" BSPP	_		876702	02–1	75102
31ank - Buna−N ✔ - Viton®	3G	3/8" BSPP	_		876703	02-1	75103
	6H	SAE 6	_		876700	_	
4 Adjustment	8H	SAE 8	-		876701	-	
- Сар	6Т	SAE 6	566151		_	02-1	75100
- Factory set	8T	SAE 8	_		_	02–1	75101
 I - Internal K - Knob S - Screw Valve housing material Blank - Aluminum S - Steel 		n J for housing details acking pressure 3,5-20 bar (50-30 -140 bar 100-2000 psi) 7-240 bar 250-3500 psi) 35-350 bar	range	Within I Blank - setting mid-ran settings	ting pressure ranges in 7 Normal factory at approximate ge. User reque in 3,45 bar (50 roded as in the	ested) psi)	 9 Special features 00 - None (Only required if valve has special features, omitted if "00") SS - 316 Stainless Steel external components
		500-5000 psi)		followin 10 - 70	g examples: bar (1000 psi) 2,4 bar (1050 p		

Dimensions

mm (inch)

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

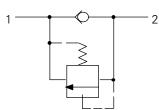


Thermal relief with reverse flow check valve

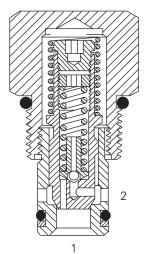
Description

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

Functional Symbol



Sectional View



Operation

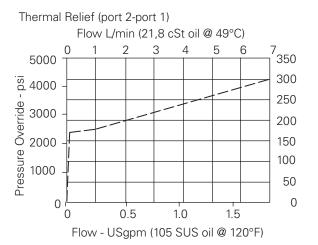
This valve has a dual function. In the first function the valve acts as a check valve and remains closed until the spring bias is overcome at port 1. The poppet is unseated and allows flow from port 1 to port 2. The second function acts as a thermal relief. The valve remains closed until the predetermined setting is reached. The valve allows expansion flow from port 2 to port 1.

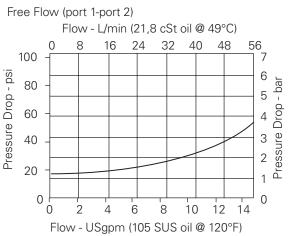
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SU	US) and 49°C (120°F)
Typical application pressure (all ports)	350 bar (5000 psi)
Rated flow – check valve – relief valve	45 L/min (12 USgpm) 1 L/min (0.25 USgpm)
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
	VILUITIS & TEYISLETEU LIDUEITIDIK UT E.I. DUFUTI

Pressure Override & Free Flow Curves

Cartridge only





RV4 - 10 (V) - F - (S) - ** - 50 / ** - 001 2 3 4 5 6 7 8 9

1 Function

6 Port size 0 - Cartridge only

RV - Check valve w/thermal relief

Teller	CODE	CODE PORT SIZE HOUSING NUMBER					
2 Size			Aluminum Light duty	Aluminum Fatigue rated	Steel Fatigue rated		
10 - 10 Size	3B	3/8" BSPP	02-175462	_	_		
	2G	1/4" BSPP	_	876702	02–175102		
	3G	3/8" BSPP	_	876703	02–175103		
3 Seals	6H	SAE 6	_	876700	_		
Blank - Buna-N	8H	SAE 8	_	876701	_		
V - Viton®	6Т	SAE 6	566151	_	02–175100		
	— 8Т	SAE 8	_	_	02–175101		
4 Adjustment	0	10 1 1 1 1 1					

4 Adjustment

F - Factory set

5 Valve housing material

Blank - Aluminum S - Steel

See section J for housing details.

- **7** Cracking pressure range
- 50 -28-350 bar (400-5000 psi)

8 Setting pressure

Within ranges in $\boxed{7}$

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)

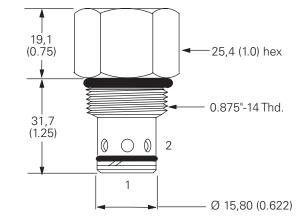
9 Special features

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

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).

Description

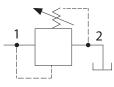
Operation

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

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

RATINGS AND SPECIFICATIONS

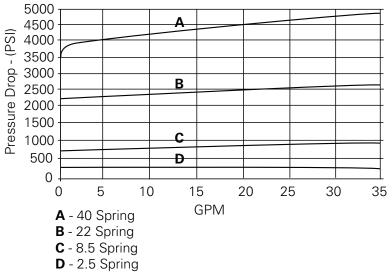
Functional Symbol

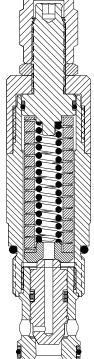


Sectional View

Performance data is typical with fluid at 23,3 cST (111 SUS	S) 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.





П

RV1 - 12 1 2	., ., .,	*** - (U) XX/ XX 6 7 8 9	XX 10
1 Function RV1 - Relief Valve	6 Port Size	HOUSING NUMBER	
² Size 12 - 12 Size		C-12-2 C-12-2U Aluminum Aluminum Fatigue rated Fatigue rated	C-12-2 C-12-2U Steel Steel Fatigue rated Fatigue rated
³ Seal Material	4G 1/2" BSPP	30189-1 30189-2	30915-1 30915-2
Blank - Buna N / - Viton	6G 1/4" BSPP 10T SAE 10 12T SAE 12	31090-1 31090-2 31087-1 31087-2 31088-1 31088-2	30916-1 30916-1 30913-1 30913-2 30914-1 30914-2
 Adjustment Cap Cap Knob Factory Set Screw Valve Housing Material Omit for catridge only A - Aluminum S - Steel 	 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) 	 Pressure setting Within ranges in 8 Blank - Normal Factory Setting at approximate midrange Optional - User requested settings in 3,45 bar (50 psi) steps, coded as in the follow- ing examples: 10 - 70 bar (1000 psi) 10.5 - 72,4 bar (1050 psi) Special Features O0 - 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)	95.4 [3.75]		
	44.7 [1.76] "2"	Ø 23.73-23.77 [.934936]	Aluminum housing can be used for pressures up to 22 bar (3000 psi). Steel housings must be use for operating pressures

ADJUSTMENT CODE C

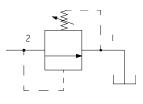
bar (3000 psi). Steel housings must be used for operating pressures above 210 bar (3000 psi).

Description

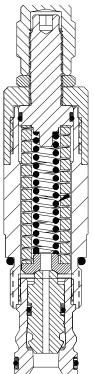
Operation

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

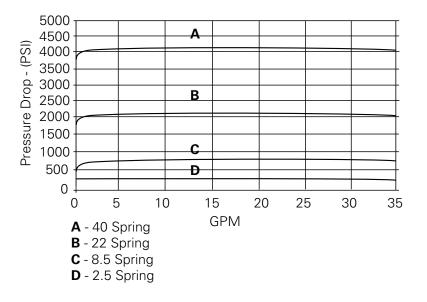


Sectional View



Cartridge fatigue pressure (infinite life) Rated flow Cracking pressure ranges Temperature range Cavity Fluids Filtration Standard housing materials Cartridge only Cartridge only Cavity C-12- Covity C-12- Covity C-12- Covity C-12- Covity C-12- Covity C-12- Covity C-12- Covity C-12- Covity C-12- Covity C-12- Covity C-12- Covity C-12- Covity C-12- Covity C-12- Covity C-12- Covity C-12- Covity C-12- Covity C-12- Covity	RATINGS AND SPECIFICATIONS	
Cartridge fatigue pressure (infinite life) Rated flow Cracking pressure ranges Temperature range Cavity Fluids Filtration Standard housing materials Cartridge only Cartridge only Cavity C-12- Covity C-12- Covity C-12- Covity C-12- Covity C-12- Covity C-12- Covity C-12- Covity C-12- Covity C-12- Covity C-12- Covity C-12- Covity C-12- Covity C-12- Covity C-12- Covity C-12- Covity C-12- Covity C-12- Covity C-12- Covity	Performance data is typical with fluid at 23,3 cST	(111 SUS) and 49°C (120°F)
Rated flow132 L/min (35 USgpmCracking pressure ranges3,4-275 bar (50-4000 psiTemperature range-40° to 120°C (-40° to 248°FCavityC-12-FluidsAll general purpose hydraulic fluids such as MIL-H-5606, SAE 10, SAE 20, etcFiltrationCleanliness code 18/16/1Standard housing materialsC-12-2 or C-12-21Weight cartridge only0,49 kg (1.08 lbsSeal kit02-165889 (Buna-N), 02-165888 (Viton®)	Typical application pressure (all ports)	350 bar (5000 psi)
Cracking pressure ranges3,4-275 bar (50-4000 psiTemperature range-40° to 120°C (-40° to 248°FCavityC-12-FluidsAll general purpose hydraulic fluids such as MIL-H-5606, SAE 10, SAE 20, etcFiltrationCleanliness code 18/16/1Standard housing materialsC-12-2 or C-12-21Weight cartridge only0,49 kg (1.08 lbsSeal kit02-165889 (Buna-N), 02-165888 (Viton®)	Cartridge fatigue pressure (infinite life)	350 bar (5000 psi)
Temperature range -40° to 120°C (-40° to 248°F Cavity C-12- Fluids All general purpose hydraulic fluids such as MIL-H-5606, SAE 10, SAE 20, etc Filtration Cleanliness code 18/16/1 Standard housing materials C-12-2 or C-12-21 Weight cartridge only 0,49 kg (1.08 lbs Seal kit 02-165889 (Buna-N), 02-165888 (Viton®	Rated flow	132 L/min (35 USgpm)
Cavity C-12- Fluids All general purpose hydraulic fluids such as MIL-H-5606, SAE 10, SAE 20, etc Filtration Cleanliness code 18/16/1 Standard housing materials C-12-2 or C-12-21 Weight cartridge only 0,49 kg (1.08 lbs Seal kit 02-165889 (Buna-N), 02-165888 (Viton®	Cracking pressure ranges	3,4-275 bar (50-4000 psi)
Fluids All general purpose hydraulic fluids such as MIL-H-5606, SAE 10, SAE 20, etc Filtration Cleanliness code 18/16/1 Standard housing materials C-12-2 or C-12-20 Weight cartridge only 0,49 kg (1.08 lbs Seal kit 02-165889 (Buna-N), 02-165888 (Viton®	Temperature range	-40° to 120°C (-40° to 248°F)
MIL-H-5606, SAE 10, SAE 20, etc Filtration Cleanliness code 18/16/1 Standard housing materials C-12-2 or C-12-21 Weight cartridge only 0,49 kg (1.08 lbs Seal kit 02-165889 (Buna-N), 02-165888 (Viton®	Cavity	C-12-2
Standard housing materials C-12-2 or C-12-2l Weight cartridge only 0,49 kg (1.08 lbs Seal kit 02-165889 (Buna-N), 02-165888 (Viton®	Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.
Weight cartridge only 0,49 kg (1.08 lbs Seal kit 02-165889 (Buna-N), 02-165888 (Viton®	Filtration	Cleanliness code 18/16/13
Seal kit 02-165889 (Buna-N), 02-165888 (Viton®	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)	-	х	-	(*)	***	-	(U)	XX/	хх	хх
1	23		4		5	6		7	8	9	10

1 Function

6 Port Size

RV3 - Relief Valve	CODE	PORT SIZE	HOUSING NU	MBER		
2 Size 12 - 12 Size			C-12-2 Aluminum Fatigue rated	C-12-2U Aluminum Fatigue rated	C-12-2 Steel Fatigue rated	C-12-2U Steel Fatigue rated
³ Seal Material	4G	1/2" BSPP	30189-1	30189-2	30915-1	30915-2
Blank - Buna N	6G	3/4" BSPP	31090-1	31090-2	30916-1	30916-1
V - Viton	10T	SAE 10	31087-1	31087-2	30913-1	30913-2
	12T	SAE 12	31088-1	31088-2	30914-1	30914-2

4 Adjustment

C - Cap

- K Knob
- F Factory Set
- S Screw

5 Valve Housing Material

- Omit for catridge only
- A Aluminum
- S Steel

- 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

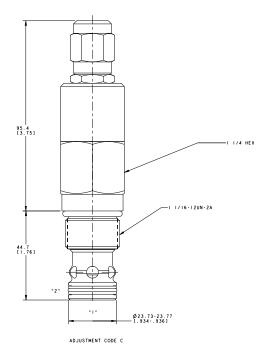
Within ranges in 8 Blank - Normal Factory Setting at approximate midrange **Optional** - User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples: **10** - 70 bar (1000 psi) 10.5 - 72,4 bar (1050 psi)

10 Special Features

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

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).

Description

Operation

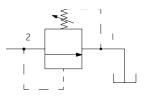
The RV8-12 is a direct acting, poppet type screw-in cartridge relief valve.

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.

RATINGS AND SPECIFICATIONS

Functional Symbol

Sectional View



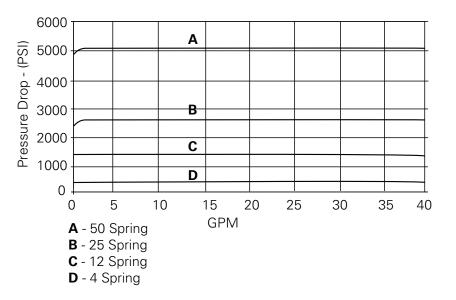
Typical application pressure (all ports) Cartridge fatigue pressure (infinite life)

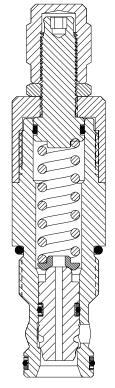
Performance data is typical with fluid at 23,3 cST (111 SUS) and 49°C (120°F)

Cartridge fatigue pressure (infinite life)	350 bar (5000 psi)
Cartridge laugue pressure (infinite file)	
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

350 bar (5000 psi)

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





RV8	- 12 (V)	- 3	(-	(*)	***	-	(U)	XX/	хх	хх
1	23	4		5	6		7	8	9	10

1 Function

⁶ Port Size

			-
RV8	- R	elie	ef Valve

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	
	4G 6G 10T	4G 1/2" BSPP 6G 3/4" BSPP 10T SAE 10	C-12-2 Aluminum Fatigue rated 4G 4G 1/2" BSPP 30189-1 6G 3/4" BSPP 31090-1 10T SAE 10 31087-1	C-12-2 Aluminum Fatigue rated C-12-2U Aluminum Fatigue rated C-12-2U Aluminum Fatigue rated 4G 1/2" BSPP 30189-1 30189-2 6G 3/4" BSPP 31090-1 31090-2 10T SAE 10 31087-1 31087-2	C-12-2 Aluminum Fatigue rated C-12-2U Aluminum Fatigue rated C-12-2U Aluminum Fatigue rated C-12-2 Steel Fatigue rated 4G 1/2" BSPP 30189-1 30189-2 30915-1 6G 3/4" BSPP 31090-1 31090-2 30916-1 10T SAE 10 31087-1 31087-2 30913-1	

4 Adjustment

C - Cap

- K Knob
- S Screw

5 Valve Housing Material

A - Aluminum

S - Steel

- 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

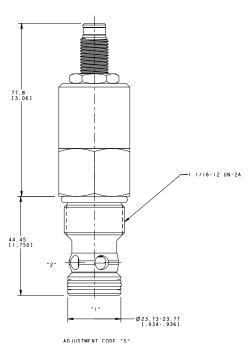
Within ranges in 8 Blank - Normal Factory Setting at approximate midrange **Optional** - User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples: **10** - 70 bar (1000 psi) 10.5 - 72,4 bar (1050 psi)

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.

RATINGS AND SPECIFICATIONS

Operation

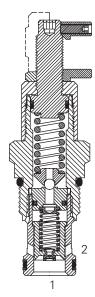
This valve is normally closed until the predetermined setting is reached, which causes the pilot section to open. This allows

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

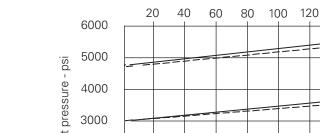
Functional Symbol

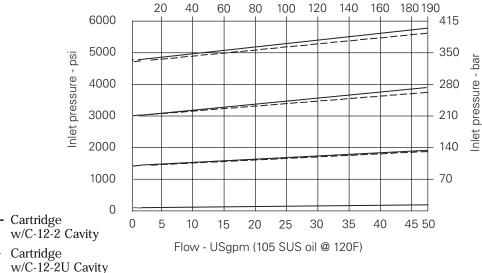


Sectional View



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





Flow - L/min (21,8 cSt oil @ 49C)

Pressure Override Curves

RV11-12

Function RV11 - Relief value	<u> </u>		r t size tridge only				
2 Size12 - 12 Size		CODE	PORT SIZE	HOUSING NU C-12-2-U Aluminum Fatigue rated	MBER 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
3 Seals		12T	SAE 12	02-160645	02-160644	02-169790	02-169782
Blank - Buna-N		4G	1/2" BSPP	02-161116	02-161118	02-172512	02-172062
V - Viton®		6G	3/4" BSPP	02-161115	02-161117	02-162922	02-169665
5 Valve housing S - Steel A - Aluminum	-	50* - *Must be	(250-300 psi) 24-350 bar (350-5000 psi) ordered as a cartridge eel housing	setting steps only or follow 10 - 7	inge. User request gs in 3,45 bar (50 , coded as in the ring examples: 0 bar (1000 psi) 72,4 bar (1050 psi)	psi)	,
Dimensions							
mm (inch) Torque cartridge in housing A - 81-95 Nm (60-70 ft. lbs) S - 102-115 Nm (75-85 ft. lbs)	"C"Adjustm 19.1 (0.75) 31,7 (1.25)) hex —		76,2 (3.00) Nominal	A "K" Adjustme 73,0 (2.88) Nominal	nt	"S" Adjustment 4,8 (0.18) hex

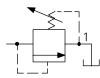
RV3-16

Relief valve Poppet type, differential area

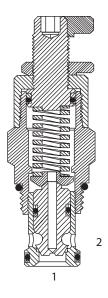
Description

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

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

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

Pressure Override Curves

Cartridge only

A - 50 spring

B - 35 spring

	R \ 		- * - (S) - ** - * - (S) - * *	* - ** / ** - (9	
Function RV3 - Relief valve		rt size tridge only				
	CODE	PORT SIZE	HOUSING NU	JMBER		
2 Size			Aluminum light duty	Aluminum Fatigue rated	Steel Fatigue rated	
16 - 16 Size	6B	3/4" BSPP	02-175463	_	_	
	4G	1/2" BSPP	_	876716	02-175106	
3 Seals	6G	3/4" BSPP	_	876718	02–175107	
Blank - Buna-N	10H	SAE 10	_	876717	_	
V - Viton®	12H	SAE 12	_	566113	_	
	10T	SAE 10	_	-	02-175104	
4 Adjustment	12T	SAE 12	566149	-	02-175105	
C - Cap K - Knob S - Screw	See section	on J for housing detai	ls.			

5 Valve housing material Blank - Aluminum

S - Steel

- **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 7Blank - 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)

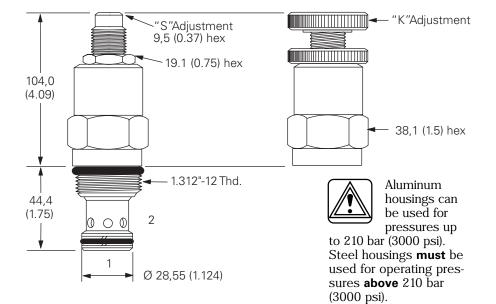
9 Special features

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

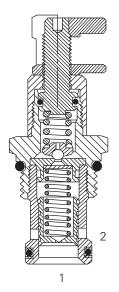
Description

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

Functional Symbol



Sectional View



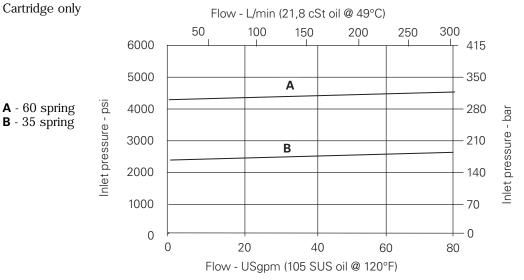
Operation

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





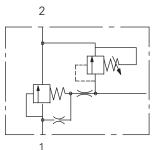
	RV5	- 16 (V) - * -	- (S) –	***-**/**-00 6 7 8 9		
I Function	6 Po					
RV3 - Relief valve	0 - Cartridge only					
	CODE PORT SIZE		HOUSING NUMBER		Steel	
2 Size 16 - 16 Size			light dut		Fatigue rated	
	6B	3/4" BSPP	02–175			
3 Seals	<u>4G</u>	1/2" BSPP	_	876716	02–175106	
3 Seals Blank - Buna−N V - Viton®	6G	3/4" BSPP	-	876718	02–175107	
	<u>10H</u> 12H	SAE 10 SAE 12	_	<u>876717</u> 566113		
	10T	SAE 10	_	_	02–175104	
4 Adjustment	12T	SAE 12	566149	_	02–175105	
S - Screw C - Cap K - Knob	See sectio	on J for housing details.				
 Valve housing material Blank - Aluminum S - Steel 	60 -	34-210 bar (500-3000 psi) 70-415 bar (1000-6000 psi)		Within ranges in 7 Blank - Normal factory setting at approximate mid-range. User request settings in 3,45 bar (50 p steps, coded as in the following examples: 10 - 70 bar (1000 psi) 10.5 - 72,4 bar (1050 psi)	psi)	
Dimensions mm (inch)	"C"Ad	djustment				
Torque cartridge in housing A - 108-122 Nm (80-90 ft. lbs) S - 136-149 Nm (100-110 ft. lbs)	60 (2.3			- "S"Adjustment 6,3 (0.25) hex 57,1 (2.25)	"K"Adjustment	
	44 (1.7			← 1.312"-12 Thd.	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).	

Pilot operated ventable relief valve

Description

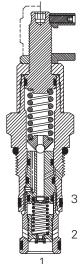
The VRV11-12 is a pilot operated, sliding spool, adjustable, cartridge type vented relief valve. The

Functional Symbol



3

Sectional View



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 stetting is achieved.

RATINGS AND SPECIFICATIONS

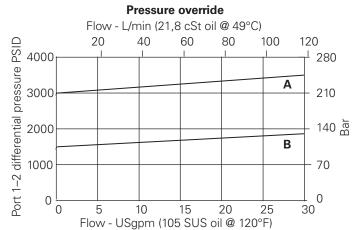
Performance data is typical with fluid at 21,8	cSt (105 SUS) and 49°C (120°F)		
Typical application pressure	210 bar (3000 psi)		
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)		
Rated flow	114 L/min (30 USgpm)		
Reseat pressure	More than 90% of crack pressure		
Hysteresis	Less than 3 bar (45 psi)		
Internal leakage, port 1 to port 2	82 m L/min (5 in³/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



Vented free flow pressure drop Flow - L/min (21,8 cSt oil @ 49°C) 20 40 60 80 100 120 20 Port 1–2 differential pressure PSID 200 ⊥ 14 4000 Port 1-2 free flow PSID 150 10 3000 Bar 7 100 2000 50 3,5 1000 0 0 0 0 5 10 15 20 30 25 0 5 Flow - USgpm (105 SUS oil @ 120°F)



VRV11-	- 12 (V)	- * -	- (*)	- ***·	- * * ,	/ ** -	- 00
							9

02-178270

02-178271

1 Function

6 Port size 0 - Cartridge only

4G

6G

VRV11 - Ventable relief valve

vuive	• caranage only						
	CODE	PORT SIZE	HOUSING NU	MBER			
			Aluminum Fatigue rated	Stee Fatiç			
	10T	SAE 10	02-178268	02–			
	12T	SAE 12	02-178269	02–			

1/2" BSPP

3/4" BSPP

See section J for housing details.

3 Seals

2 Size

12 - 12 Size

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

Dimensions

mm (inches)

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



(150-3000 psi)

8 Setting pressure

Steel

Fatigue rated

02-160996 02-160997

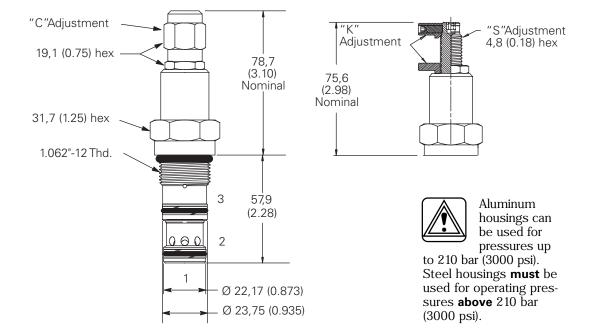
02-160994

02-160995

Within ranges in $\boxed{7}$ 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")



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 subsystems regardless of pressure variations in the primary system. In addition to

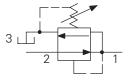
the reducing function, this valve also provides a flow path from the reduced pressure port to the tank port. If pressure in the secondary circuit exceeds the desired pressure, the valve opens this flow path to relieve excess pressure to

Operation

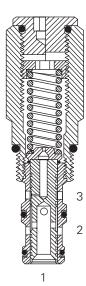
This valve is normally open, allowing flow from port 2 to port 1. Port 3 must be vented. Once the pressure setting is reached at port 1, the spool shifts to restrict the inlet flow at port 2. This regulates the pressure at port 1. If pressure at port 1

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

Functional Symbol



Sectional View



exceeds the predetermined tank. **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) 165 bar (2400 psi) 210 bar (3000 psi) Cartridge fatigue pressure (infinite life) 15 L/min (4 USgpm) Rated flow Cavity Standard housing materials Aluminum -40° to 120°C (-40° to 248°F) Temperature range All general purpose hydraulic fluids such as: Fluids MIL-H-5606, SAE 10, SAE 20, etc. Filtration Cleanliness code 18/16/13

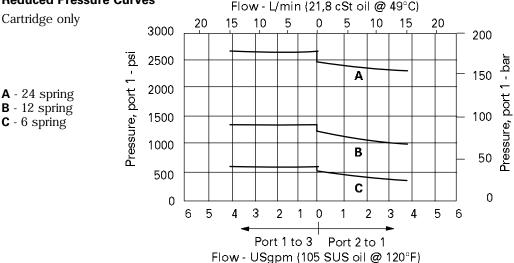
0,24 kg (0.54 lbs) 565804 Buna-N 889599 Viton® Viton is a registered trademark of E.I. DuPont

C-10-3

Reduced Pressure Curves

Weight cartridge only

Seal kits



			B 4 5 6	i 7 8			
1 Function	5 Po				7 Factory set reduced		
PRV1 - Pressure reducing/	0 - Cart	tridge only			pressure		
relieving valve	CODE	PORT SIZE	HOUSING NUMBER		Within ranges in 6 Blank - Normal factory		
			Aluminum Light duty	Aluminum Fatigue rated	setting at approximate		
	3B	3/8" BSPP	02–173358		 mid-range. Üser requested settings in 3,45 bar (50 psi) 		
10 - 10 Size	6T	SAE 6	566162	_	steps, coded as in the		
	2G	1/4" BSPP	_	876705	following examples:		
3 Seals	3G	3/8" BSPP	_	876714	- 10 - 70 bar (1000 psi)		
Blank - Buna-N	6H	SAE 6	_	876704	- 10.5 - 72,4 bar (1050 psi)		
V - Viton®	8H	SAE 8	_	876711			
		on J for housing details.			8 Special features		
C - Cap F - Factory set I - Internal K - Knob S - Screw Dimensions "I nm (inch) Torque cartridge in aluminum housing 47-54 Nm (35-40 ft. lbs)	2 - 3 6 - 7 12 - 1 (24 - 3						
	46,0 (1.81)		● 0.875"-14 Th 3 2 _ Ø 15,80 (0.6 Ø 17,40 (0.68	22)	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).		

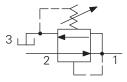
Pressure reducing/ relieving valve Pilot operated

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 subsystems regardless of pressure variations in the primary system. In addition to

Functional Symbol



Sectional View



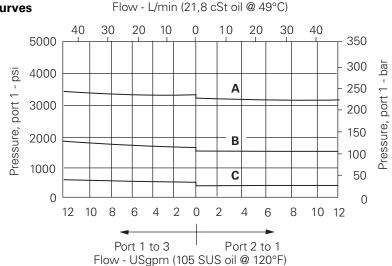
the reducing function, this valve also provides a flow path from the reduced pressure port to the tank port. If pressure in the secondary circuit exceeds the desired pressure, the valve opens this flow path to relieve excess pressure to tank.

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.

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)	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

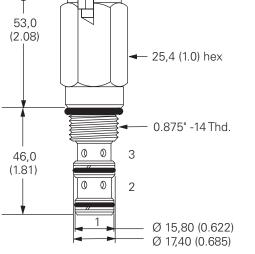
Π

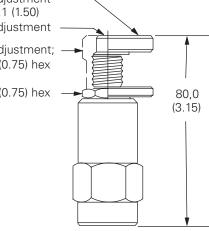
Function Fressure reducing/relieving valve		ort size rtridge only PORT SIZE	HOUSI	NG NUMB	ER		
² Size			Aluminu Light dut		Aluminum Fatique rated	Steel Fatigue	rated
10 - 10 Size	3B	3/8" BSPP	02-173		-	-	Tateu
3 Seals	2G	1/4″ BSPP	_		876705	02–175	5127
Blank - Buna-N	3G	3/8″ BSPP	_		876714	02-175	
V - Viton [®]	6H	SAE 6	_		876704	_	
	8H	SAE 8	_		876711	_	
Adjustment	6Т	SAE 6	566162		_	02-175	5124
C - Cap F - Factory	8T	SAE 8	_		_	02–175	5125
5 Valve housing material Blank - Aluminum S - Steel	3 - 20 - 35 -	racking pressure 3,5-20 bar (50-30 7-140 bar (100-2000 psi) 17-240 bar (250-3500 psi)	00 psi)	pressure Within ra Blank - I setting a mid-rang settings steps, co following 10 - 70 b	anges in 2 Normal factor t approximate e. User reque in 3,45 bar (5 oded as in the g examples: par (1000 psi) 2,4 bar (1050 p	y ested 0 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)	" Adjust 53, (2.0			,4 (1.0) he	"K" A Ø 38 "S" A "C" A	djustment ,1 (1.50) djustment djustment (0.75) hex	
Aluminum housings can be used for	46,		, 0.8 3	375" -14 Th		(0.75) hex	80, (3.1)

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



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 subsystems regardless of pressure variations in the primary system. In addition to

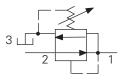
the reducing function, this valve also provides a flow path from the reduced pressure port to the tank port. If pressure in the secondary circuit exceeds the desired pressure, the valve opens this flow path to relieve excess pressure to tank.

Operation

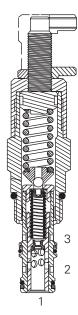
This valve is normally open, allowing flow from port 2 to port 1 (port 3 must be vented). Once the pressure setting is reached at port 1, the spool shifts to restrict the inlet flow at port 2, which regulates the pressure at port 1. If pressure at port 1 exceeds the

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

Functional Symbol



Sectional View



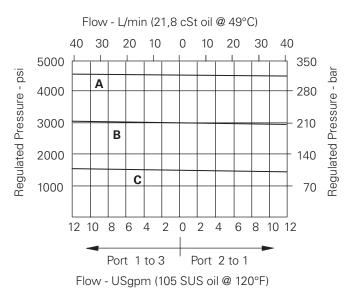
RATINGS AND SPECIFICATIONS	
Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)
Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	350 bar (5000 psi)
Rated flow	45 L/min (12 USgpm)
Cracking pressure	15 – 8,5–100 bar (125–1500 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



PRV12-	10 (V)	- * - (S)	- ** -	- * * /	′ * * – 00
		4 5			89

I Function

² Size

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

10 - 10 Size 3 Seals Blank - Buna-N V - Viton®

4 Adjustment

PRV12 - Pressure reducing/relieving valve

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	

5 Valve housing material

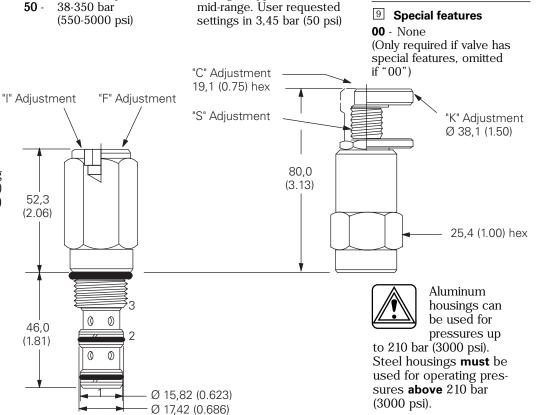
Blank - Aluminum

S - Steel

 Cracking pressure range
 8,5-100 bar (125-1500 psi)
 17,0-210 bar (250-3000 psi)
 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)



Dimensions

mm (inch)

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

PRV11-12

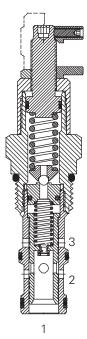
Pressure reducing valve Pilot operated

Description

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

Functional Symbol

Sectional View

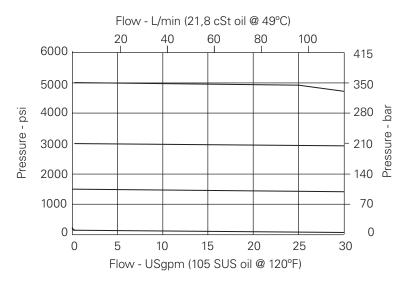


Operation

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.

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 @ 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

Aluminum

Fatigue rated

02-160642

02-160646

02-161817

02-161816

HOUSING NUMBER

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

 \boldsymbol{A} - Aluminum

Dimensions

mm (inch)

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

7	Cracking pressure range
	- 10-100 bar (150-1500 psi)

(150-1500 psi) **30** - 17-210 bar (250-3000 psi) **50** - 20-350 bar (350-5000 psi)

⁶ Port size

10T

12T

4G

6G

0 - Cartridge only

CODE PORT SIZE

SAE 10

SAE 12

See section J for housing details.

1/2" BSPP

3/4" BSPP

Factory set reduced pressure

Steel

Fatigue rated

02-161070

02-169816

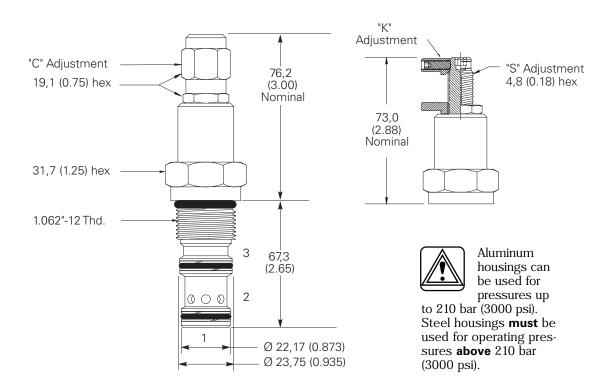
02-169815

02-169814

Within ranges in 7 Blank - Normal factory setting at approximate midrange. 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 features00 - None

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



П

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 subsystems 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.

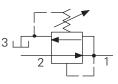
RATINGS AND SPECIFICATIONS

Operation

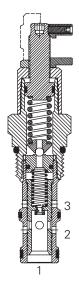
The PRV12-12 is normally open, allowing flow from port 2 to port 1 (port 3 must be vented). Once the pressure setting is reached at port 1, the spool shifts to restrict the inlet flow at port 2, which regulates the pressure at port 1. If pressure at port 1 exceeds the prede-

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

Functional Symbol

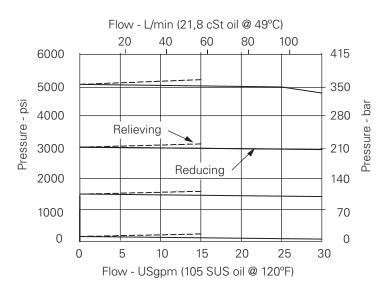


Sectional View



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

PRV1	2-12
------	------

D Function PRV12 - Pressure reducing/relieving valve	0 - Ca	ort size urtridge only PORT SIZE	HOUSING	NUMBER	3	
² Size			Aluminum Fatigue rateo		eel tigue rated	
12 - 12 Size	10T	SAE 10	02-160642		-161070	
³ Seals	12T	SAE 12	02–160646	02	-169816	
Blank - Buna-N	<u>4G</u>	1/2" BSPP	02–161817		-169815	
/ - Viton®	6G	3/4" BSPP tion J for housing details	02–161816	02	-169814	
 4 Adjustment 5 - Screw C - Cap K - Knob 	7 C 15 -	Fracking pressure 10-100 bar (150-1500 psi)	р	ressure	y set reduced	 9 Special features 00 - None (Only required if valve has
 ⁵ Valve housing material Dmit for cartridge only S - Steel A - Aluminum 	30 - 50 -	17-210 bar (250-3000 psi) 24-350 bar (350-5000 psi)	B se m se st	lank - No etting at a id-range. ettings in eps, code	rmal factory approximate User requested 3,45 bar (50 psi) ed as in the examples:	special features, omitted if "00")
Dimensions nm (inch)			10) - 70 bar	(1000 psi) bar (1050 psi)	
0	djustme	nt —		1	"K"	"S" Adjustmer
5 - 102-115 Nm 75-85 ft. lbs)	(0.75) h	-		76,2 (3.00)	Adjustment 73,0 (2.88) Nominal	4,8 (0.18) hex
31,7	' (1.25) h	ex				

Π

— Ø 22,17 (0.873) — Ø 23,75 (0.935)

used for operating pressures above 210 bar

(3000 psi).

PRV2-16

Pressure reducing/ relieving valve Pilot operated

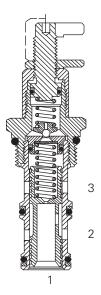
Description

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

Functional Symbol

3 Ш

Sectional View



Operation

Curve

Cartridge only

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,

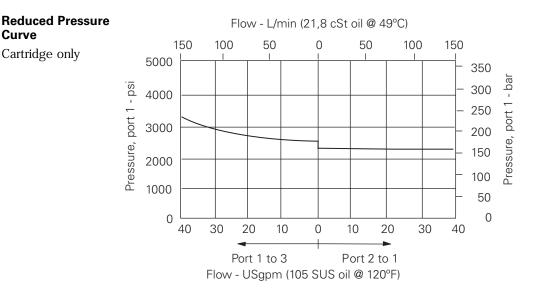
the spool shifts to restrict the inlet flow at port 2. This regulates the pressure at port 1. If pressure at port 1 exceeds the predetermined

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

RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (10	05 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	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



		RV2 – 16 (V)	- * - (S	5) - *** - ** / ** - 0 1 1 1 1 1 1 6 7 8 5	0 9
1 Function		ort size			
PRV2 - Pressure reducing/relieving valve		rtridge only			
reducing/relieving valve	CODE	PORT SIZE	Aluminu	ING NUMBER M Aluminum	Steel
2 Size			Light du		Fatigue rated
16 - 16 Size	6B	3/4" BSPP	02–175		
10 - 10 Size	4G	1/2" BSPP	-	876720	02–175131
	6G	3/4" BSPP	-	876722	02–175132
3 Seals	<u>10H</u>	SAE 10	-	876721	
Blank - Buna-N V - Viton®	<u>12H</u>	SAE 12	_	876723	-
Viton	<u>10T</u>	SAE 10	-	-	02–175129
4 Adjustment	<u>12T</u>	SAE 12 ion J for housing details	566152	-	02–175130
C - Cap K - Knob S - Screw 5 Valve housing material S - Steel A - Aluminum	30 - 60 -	racking pressure 34-210 bar (500-3000 psi) 70-415 bar (1000-6000 psi)	e range	 Factory set reduced pressure Within ranges in 7 Blank - Normal factory setting at approximate mid-range. User requeste settings in 3,45 bar (50 p steps, coded as in the following examples: 10 - 70 bar (1000 psi) 10.5 - 72,4 bar (1050 psi) 	00 - None (Only required if valve has special features, omitted if "00") ed ssi)
Dimensions mm (inch) Torque cartridge in housing A - 108-122 Nm (80-90 ft. lbs S - 136-149 Nm (100-110 ft. 1	4,7 (0. s)	justment 18) hex 57,1 (2.25)		"C" Adjustment 60,3 (2.37) 38.1 (1.50) hex 1.312"-12 Thd.	"K" Adjustment
		71,5 (2.81)		3 2 — Ø 26,95 (1.061) — Ø 28,55 (1.124)	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).

Π

PSV2-8

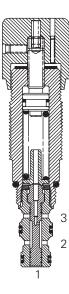
Pressure sequence valve Direct acting, external pilot, internal drain

Description

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

Functional Symbol

Sectional View



Operation

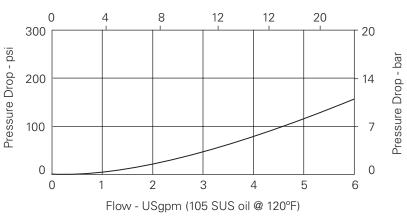
The PSV2-8 remains closed until the predetermined pressure is reached at port 1, which then allows flow from port 3 to port 2.

RATINGS AND SPECIFICATIONS

S) and 49°C (120°F)
210 bar (3000 psi)
210 bar (3000 psi)
13 – 3,4–90 bar (50–1300 psi) 30 – 35–210 bar (500–3000 psi)
23 L/min (6 USgpm)
More than 90% of cracking pressure
82 cm³/min. (5 in³/min) @ 210 bar (3000 psi)
less than 3 bar (45 psi)
-40° to 120°C (-40° to 248°F)
С-8-3
All general purpose hydraulic fluids such as:
MIL-H-5606, SAE 10, SAE 20, etc.
Cleanliness code 18/16/13
Aluminum
0,21 kg (0.47 lbs)
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



Flow - L/min (21,8 cSt oil @ 49°C)

1 Function PSV2 - Pressure sequence	Omit fo	Ive housing mat or cartridge only		range	ce pressure	8 Pressure setting Optional - Specify in 100 psi
² Size 8 - 8 Size	A - Alur Maximu 210 bar	minum um operating pre r (3000 psi)	essure	30 - 35-210) bar (50-1300 psi)) bar 3000 psi)	increments If not specified, set at: 13 - 44 bar (650 psi) 30 - 100 bar (1500 psi)
³ Seals Blank - Buna-N ✔ - Viton®	6 Poi 0 - Cart	rt size tridge only				9 Special features
4 Adjustment	CODE	PORT SIZE		SING NUMBER		00 - None (Only required if valve has
C - Cap K - Knob			Alumin Fatigue	e rated		special features, omitted if "00")
5 - Screw	4T	SAE 4	02-16			n (;; ;
	<u>6Т</u> 2G	SAE 6 1/4" BSPP	02-16			
	2G 3G	3/8" BSPP	02-10			
	-	on J for housing details.		<u>.</u>		
Dimensions mm (inch) Torque cartridge in						
aluminum or steel housing			6" Adjust ,0 (0.15)			
"C" Adjustment				<u>₹</u>		
12,7 (0.50) hex	53,8 (2.13)	(2.	(2. F	76,5 (3.02) 1,3 .81) 5ull but	79,2 (3.12) Full out	K option knob Ø 31,8 (1.25) nominal 22,2 (0.87) hex
			<u> </u>			
0.750"-16Thd.		}		40,9 (1.61)	-	
		1	ð14,2 (0			

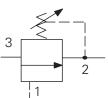
PSV4-8

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

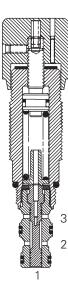
Description

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

Functional Symbol



Sectional View



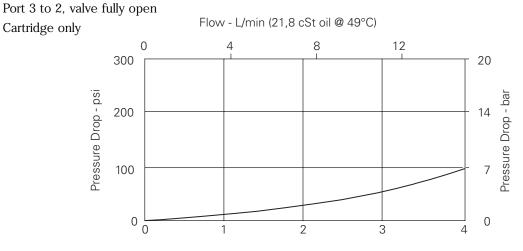
Operation

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.

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	C8-3
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® Vitas is a registered todered of 5 J Dulast
	Viton is a registered trademark of E.I. DuPont

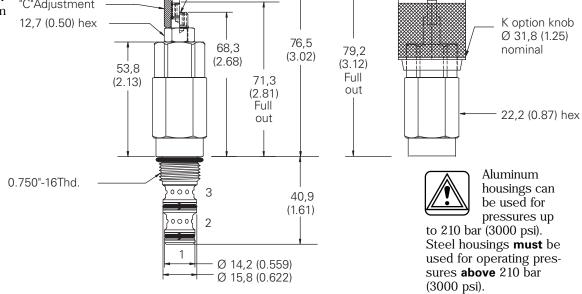
Pressure Drop Curve



Flow in USgpm (105 SUS oil @ 120°F)

Ξ

I Function PSV4 - Pressure sequence valve	0 - Ca	0 - Cartridge only CODE PORT SIZE HOUSING NUMBER				 Special features 00 - None (Only required if valve h 	
² Size 3 - 8 Size	4T	SAE 4	Alumin Fatigue 02–160	rated	Steel Fatigue rated 02-160745	 special features, omitted if "00") 	
³ Seals Blank - Buna-N ✔ - Viton®	6T 2G 3G	SAE 6 1/4" BSPP 3/8" BSPP	02-160 02-160 02-160 02-160	742 739	02–160746 02–160743 02-160744		
 4 Adjustment C - Cap K - Knob S - Screw 	☐ S range		•	Optio	ressure setting nal - Specify in	_	
 5 Valve housing material Dmit for cartridge only 6 - Steel A - Aluminum 	15 - 30 - 50 -	28-100 bar (400-1500 psi) 3,4-210 (50-3000 psi) 124-350 bar (1800-5000 psi)		If not 15 - 5 30 - 1	si increments. specified, set at: 2 bar (750 psi) 00 bar (1500 psi) 75 bar (2500 psi)		
Dmit for cartridge only S - Steel	30 -	(400-1500 psi) 3,4-210 (50-3000 psi) 124-350 bar		If not 15 - 5 30 - 1	specified, set at: 2 bar (750 psi) 00 bar (1500 psi) 75 bar (2500 psi) ent		



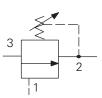
PSV2-10

Pressure sequence valve Direct acting, external pilot, internal drain

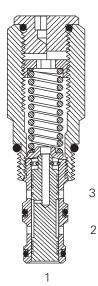
Description

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

Functional Symbol



Sectional View



Operation

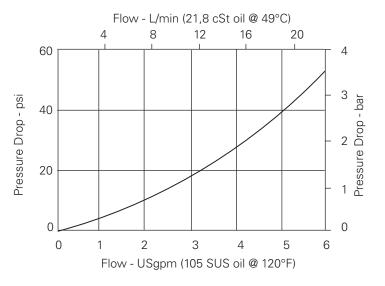
This valve is normally closed until a predetermined pressure is applied at port 1. The spool then shifts and allows flow from port 3 to port 2.

RATINGS AND SPECIFICATIONS

05 SUS) and 49°C (120°F)
210 bar (3000 psi)
210 bar (3000 psi)
165 bar (2400 psi)
23 L/min (6 USgpm)
C-10–3
Aluminum
-40° to 120°C (-40° to 248°F)
All general purpose hydraulic fluids such as: MIL–H–5606, SAE 10, SAE 20, etc.
Cleanliness code 18/16/13
0,24 kg (0.53 lbs)
565804 Buna–N 889599 Viton® Viton is a registered trademark of E.I. DuPont

Pressure Drop Curve

Cartridge only



Ξ

		PSV2 – 10	(V) - * - ** <u> </u>	- ** / ** - ()0
I Function		ort size	7 Setting pressure		
PSV2 - Pressure sequence valve		rtridge only PORT SIZE	HOUSING NU	JMBER	Within ranges in 6 Blank - Normal factory
² Size 10 - 10 Size			Aluminum Light duty	Aluminum Fatigue rated	setting at approximate mid-range. User requested
10 - 10 Size	<u>3B</u>	3/8" BSPP	02–173358	_	settings in 3,45 bar (50 psi) steps, coded as in the
3 Seals	6T	SAE 6	566162	-	following examples:
Blank - Buna-N	2G	1/4" BSPP	_	876705	10 - 70 bar (1000 psi)
V - Viton®	3G	3/8" BSPP	-	876714	10.5 - 72,4 bar (1050 psi)
4 Adjustment	<u>6H</u> 8H	SAE 6 SAE 8	_	876704 876711	8 Special features
C - Cap F - Factory I - Internal		on J for housing details		070711	00 - None (Only required if valve has special features, omitted
K - Knob S - Screw	range 2 - 3,	equence pressu 5-14 bar (50-200 40 bar (100-600	() 9 psi) 24 - 3	14-80 bar 200-1200 psi) 80-165 bar 400-2400 psi)	if "00")
Dimensions mm (inch) Torque cartridge in housing A - 47-54 Nm (35-40 ft. lbs)		ustment 58,0 (2.28) 46,0 (1.81)	25,4 0 3 0 1		S" Adjustment I,8 (0.18) hex "C" Adjustment Ø 38,1 (1.50) 85,0 (3.34) 25,4 (1.0) hex

PSV4-10

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

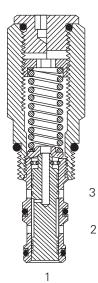
Description

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

Functional Symbol



Sectional View



Operation

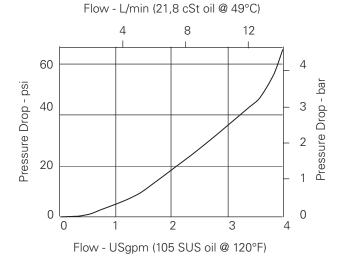
This valve is normally closed until a predetermined pressure is applied at port 1. The spool then shifts and allows flow from port 3 to port 2.

RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (10	95 SUS) and 49°C (120°F)
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 – 1	0 (V) – ∗ – (S) – ↓ ↓ ↓ ↓ ↓ 3 4 5		00	
I Function PSV4 - Pressure sequence valve	6 Port size 0 - Cartridge only CODE PORT SIZ		UMBER		
² Size		Aluminum	Aluminum	Steel	
10 - 10 Size	3B 3/8" BSPF	Light duty 02–173358	Fatigue rated	Fatigue rated	
	2G 1/4" BSPF		876705	02–175127	
3 Seals	3G 3/8″ BSPF		876714	02–175128	
Blank - Buna-N ✔ - Viton®	6H SAE 6	_	876704	-	
	8H SAE 8	_	876711	_	
4 Adjustment	6T SAE 6	566162	_	02–175124	
- Cap - Factory	8T SAE 8	_	_	02–175125	
 Internal K - Knob S - Screw 	See section J for housing			10 - 70 bar (1000 ps	
5 Valve housing material Blank - Aluminum S - Steel	 7 Sequence pr range 5 - 3,5-30 bar 9 - 7-62 (100-9 14 - 14-95 bar (200-1400) 28 - 20-190 bar (300-2800) 56 - 35-380 bar (500-5600) 	(50-450 psi) With Blam setti mid- setti step follo psi) ssi) step follo "S" A	Setting pressure nin ranges in 7 nk - Normal factory ng at approximate range. User reques ngs in 3,45 bar (50 s, coded as in the wing examples: djustment 0.18) hex	10.5 - 72,4 bar (1050 9 Special features 00 - None) psi) 5 7e has
Dimensions mm (inch)	"I" Adjustment	"F" Adjustn	85,0	"K" Adjustment Ø 38,1 (1.50)	
Torque cartridge in housing A - 47-54 Nm (35-40 ft. lbs) S - 68-75 Nm (50-55 ft. lbs)	58,0 (2.28)	25,4 (1.0)	(3.34)	25,4 (1.0) hex	
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).	46,0 (1.81)	0.875"-14 0 3 0 2 Ø 15,82 (0			

____ Ø 17,42 (0.686)

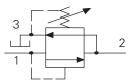
PSV1-10

Pressure sequence valve Direct acting, internal pilot, external drain

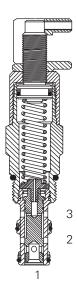
Description

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

Functional Symbol



Sectional View



Operation

Cartridge only

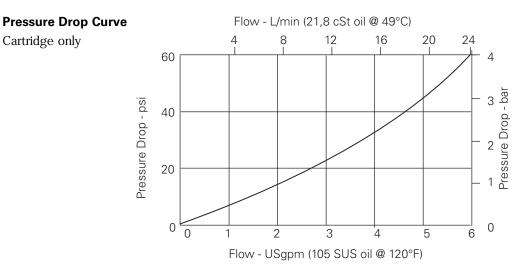
This valve is normally closed until a predetermined pressure is reached at port 1. The spool then

shifts and allows flow to port 2. Port 3 must be vented.

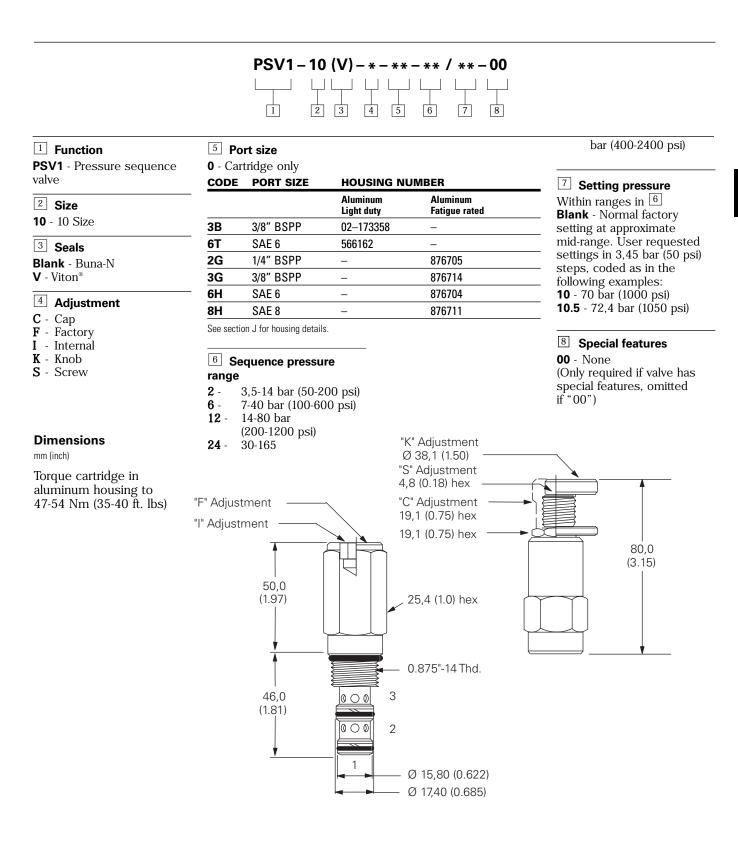
RATINGS AND SPECIFICATIONS

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



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PSV5-10

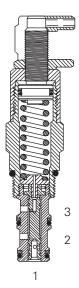
Pressure sequence valve Direct acting, internal pilot external drain, high pressure

Description

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

Functional Symbol

Sectional View



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.

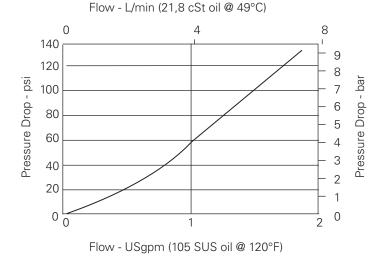
RATINGS AND SPECIFICATIONS

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)	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



Ξ

	PSV5 – 10 (V		•* – ** / ** – 0)0 9
I Function PSV5 - Pressure sequence valve	6 Port size0 - Cartridge onlyCODE PORT SIZE	HOUSING NU	MBER	
² Size		Aluminum	Aluminum	Steel
10 - 10 Size	3B 3/8" BSPP	Light duty 02–173358	Fatigue rated	Fatigue rated
	2G 1/4" BSPP	_	876705	02–175127
3 Seals	3G 3/8″ BSPP	_	876714	02–175128
Blank - Buna-N V - Viton®	6H SAE 6	_	876704	_
	8H SAE 8	_	876711	_
4 Adjustment	6T SAE 6	566162	_	02–175124
C - Cap F - Factory	8T SAE 8	_	_	02–175125
 I - Internal K - Knob S - Screw 	See section J for housing detail	S		
5 Valve housing material Blank - Aluminum S - Steel	 7 Sequence pressurange 5 - 3,5-30 bar (50-44) 9 - 7-60 bar (100-90) 14 - 14-95 bar (200-1400 psi) 28 - 20-190 bar (300-2800 psi) 56 - 35-380 bar (500-5600 psi) 	Withi 50 psi) Blanl 0 psi) settin mid-ra settin steps follow	etting pressure n ranges in 7 c - Normal factory g at approximate ange. User request gs in 3,45 bar (50 p , coded as in the ring examples:	
Dimensions	"I" Adjustment	"S" A	djustment djustment 0.18) hex	•
Torque cartridge in housing A - 47-54 Nm (35-40 ft. lbs) S - 68-75 Nm (50-55 ft. lbs)	58,0 (2.28)	"F" Adju	stment 85,0 (3.34) 0) hex	"K" Adjustment Ø 38,1 (1.50) 25,4 (1.0) hex
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).	46,0 (1.81) 0	0 3 0 2	14 Thd. 2 (0.623) (0.686)	

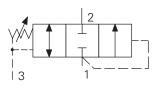
PSV3-10

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

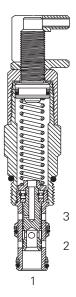
Description

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

Functional Symbol



Sectional View



Operation

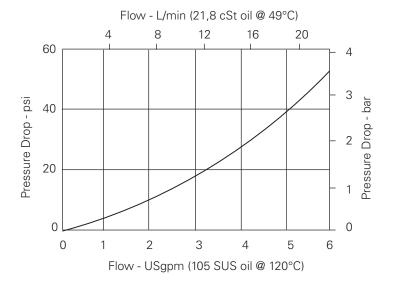
This valve is normally closed until a predetermined pressure is applied at port 1. The spool then shifts and allows flow from port 1 to port 2. When port 3 is pressurized the spool shifts to allow free flow from port 2 to port 1.

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



Cartridge only



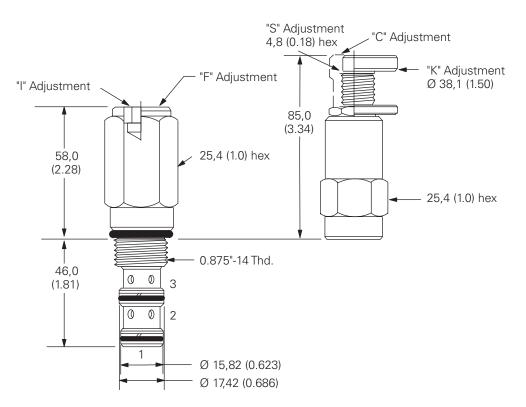
		PSV3 – 10	(V) – * – ** 3 4 5	-** / ** - 00	
1 Function		rt size			7 Setting pressure
PSV3 - Pressure sequence valve		tridge only PORT SIZE	HOUSING N	JMBER	Within ranges in 6 Blank - Normal factory
² Size			Aluminum Light duty	Aluminum Fatigue rated	setting at approximate mid-range. User requested
10 - 10 Size	3B	3/8" BSPP	02–173358	-	settings in 3,45 bar (50 psi)
3 Seals	6T	SAE 6	566162	_	steps, coded as in the
Blank - Buna-N	2G	1/4" BSPP	_	876705	 following examples: 10 - 70 bar (1000 psi)
V - Viton®	3G	3/8" BSPP	_	876714	10.5 - 72,4 bar (1050 psi)
4 Adjustment	6H	SAE 6	_	876704	
4 Adjustment C - Cap	8H	SAE 8	_	876711	8 Special features
 F - Factory I - Internal K - Knob S - Screw 	6 Se	on J for housing detail		14-80 bar	00 - None (Only required if valve has special features, omitted if "00")
	4 - 5-2	5-14 bar (50-200 28 bar (75-400 p	psi)	(200-1200 psi) 30-165 bar (400-2400 psi)	

6 - 7-40 bar (100-600 psi)

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

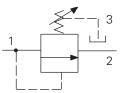
The PSV7-10 is a direct acting, spool type, internally piloted, externally drained screw-in cartridge pressure sequence valve.

Operation

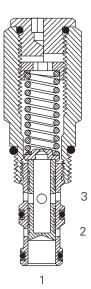
This valve is normally closed until a predetermined pressure is reached at port 1. The spool then shifts and allows flow from port 1 to port 2. Port 3 must be vented.

RATINGS AND SPECIFICATIONS

Functional Symbol



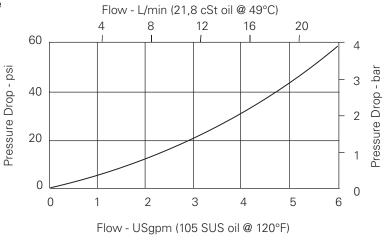
Sectional View



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	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®

Pressure Drop Curve

Cartridge only



Viton is a registered trademark of E.I. DuPont

PSV7-	- 10 (V)	- * -	- * * -	- * * /	/ ** -	- 00
		4	5	6	7	8

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 NU	JMBER	
		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)

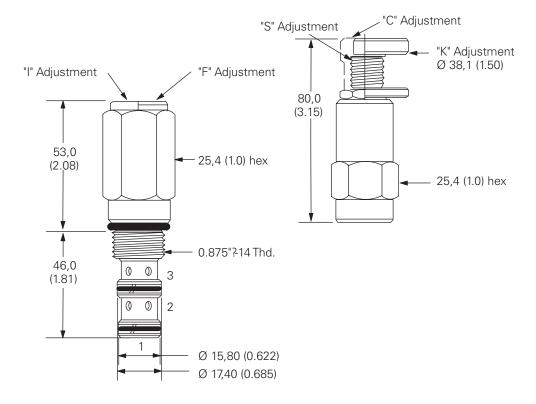
8 Special features

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

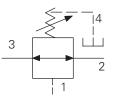
Description

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

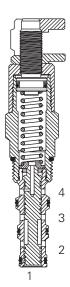
Operation

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



Performance data is typical with fluid at 21,8 cSt (10	05 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-10–4
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

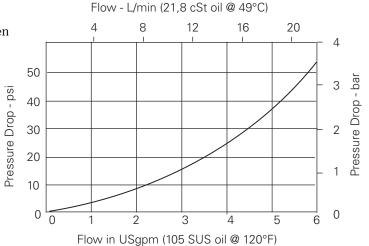


RATINGS AND SPECIFICATIONS

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

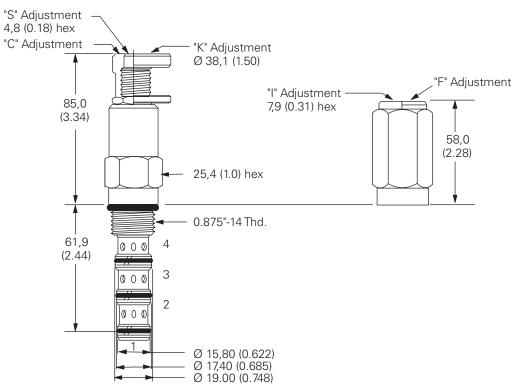


				** – ** / ** – 00	
I Function PSV8 - Pressure sequence valve		rt size tridge only PORT SIZE		S NUMBER	7 Setting pressure Within ranges in 6 Blank - Normal factory
2 Size 10 - 10 Size	3B	3/8" BSPP	Aluminum Light duty 02–179705	Aluminum Fatigue rated	setting at approximate mid-range.User requested settings in 3,45 bar (50 psi)
 3 Seals Blank - Buna-N V - Viton[®] 4 Adjustment 	6T 2G 3G 6H	SAE 6 1/4" BSPP 3/8" BSPP SAE 6	<u> </u>		 steps, coded as in the following examples: 10 - 70 bar (1000 psi) 10.5 - 72,4 bar (1050 psi)
C - Cap F - Factory I - Internal K - Knob		SAE 8 on J for housing deta quence pressi		876713	 B Special features 00 - None (Only required if valve has special features, omitted
S - Screw	range 2 - 3,5	5-14 bar (50-20 28 bar (75-400	1 0 psi)	 2 - 14-80 bar (200-1200 psi) 2 - 28-165 bar (400-2400 psi) 	if "00")

Dimensions

mm (inch)

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



EATON Vickers Screw-In Cartridge Valves V-VLOV-MC001-E4 September, 2007

PSV10-10

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

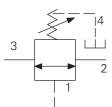
Description

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

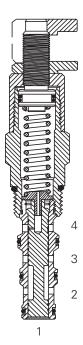
Operation

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



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-10–4
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



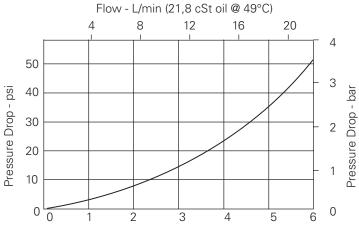
Caution

RATINGS AND SPECIFICATIONS

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





Ξ

1 Function PSV10 - Pressure sequence valve	0 - Ca	Port size artridge only E PORT SIZE	HOUSING N	IUMBER	 Setting pressure Within ranges in 6 Blank - Normal factory
² Size			Aluminum Light duty	Aluminum Fatigue rated	setting at approximate mid-range. User requested
10 - 10 Size	3B	3/8" BSPP	02–179705	-	settings in 3,45 bar (50 psi)
³ Seals	6Т	SAE 6	566161	_	steps, coded as in the
Blank - Buna-N	2G	1/4" BSPP	_	876709	 following examples: 10 - 70 bar (1000 psi)
▼ - Viton®	3G	3/8" BSPP	_	876715	10.5 - 72,4 bar (1050 psi)
4 Adjustment	6H	SAE 6	_	876708	
4 Adjustment C - Cap	8H	SAE 8	_	876713	8 Special features
F - Factory	See sec	tion J for housing detai	ls.		00 - None
S - Screw	range 2 - 3 4 - 5	Sequence pressu 9 ,5-14 bar (50-20 -28 bar (75-400 - 40 bar (100-60	0 psi) 24 - psi)	14-80 bar (200-1200 psi) 28-165 bar (400-2400 psi)	if "00")
Dimensions ^{mm (inch)} Torque cartridge in housing 47-54 Nm (35-40 ft. lbs)	"C" Adjı	85,0 (3.34)			
			25,	4 (1.0) hex	
		61,9 (2.44)	0 0 4 0.8	75" -14 Thd.	

PSV11-12

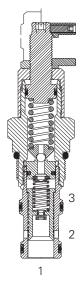
Pressure sequence valve Pilot operated, internal pilot, external drain

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.

Functional Symbol

Sectional View



Operation

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

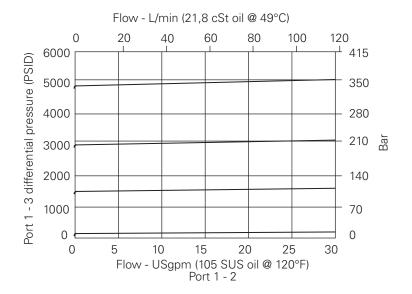
RATINGS AND SPECIFICATIONS

Performance data is typical with flui	d at 21,8 cSt (105 SUS) and 49°C (120°F)
Typical application pressure (all port	s) 350 bar (5000 psi)
Cartridge fatigue pressure (infinite li	fe) 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 in³/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
		4 5	6	7	8	9

Steel

Fatigue rated

02-160996

02-160997

02-160994

02-160995

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

Dimensions

mm (inch)

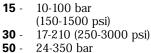
Torque cartridge in housing A - 81-95 Nm (60-70 ft. lbs) **S** - 102-115 Nm (75-85 ft. lbs)

CODE PORT SIZE		HOUSING NU	HOUSING NUMBER			
		Aluminum Fatigue rated	Stee Fatig			
10T	SAE 10	02-178268	02–			
12T	SAE 12	02–178269	02–			
4G	1/2" BSPP	02–178270	02–			
6G	3/4" BSPP	02–178271	02–			
See sectio	n J for housing details					
7						

Sequence pressure range

6 Port size

0 - Cartridge only



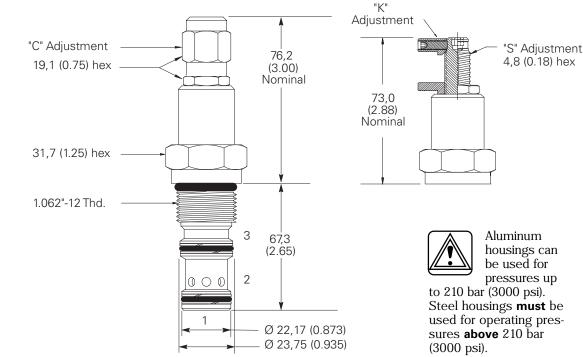
(350-5000 psi)

8 Setting pressure

Within ranges in 7Blank - 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")



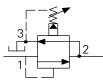
PSV1-16

Pressure sequence valve Pilot operated, internal pilot, external drain

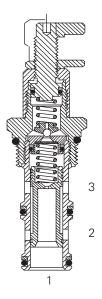
Description

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

Functional Symbol



Sectional View



Operation

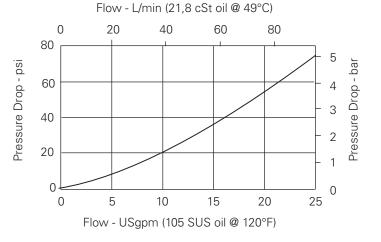
This valve is normally closed until a predetermined pressure is reached at port 1. The spool then shifts and allows flow to port 2. Port 3 must be vented.

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
		4	5	6	7	8	9

566152

I Function

2 Size

16 - 16 Size

3 Seals

6 Port size

10T

12T

PSV1	- Pressure sequence
valve	

	1 011 3120	
0 -	Cartridge only	

	CODE	PORT SIZE	HOUSING NU	UMBER	
	_		Aluminum Light duty	Aluminum Fatigue rated	
	6B	3/4" BSPP	02–175465	_	
, ,	4G	1/2" BSPP	_	876720	
	- 6G	3/4" BSPP	_	876722	
	10H	SAE 10	_	876721	
na-N	12H	SAE 12	_	876723	

Blank - Buna-N V - Viton[®]

- 4 Adjustment
- **C** Cap
- **K** Knob
- S Screw
- **D** Sciew

5 Valve housing material

Blank - Aluminum

S - Steel

See section J for housing details.

SAE 10

SAE 12

 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

Steel Fatigue rated

02-175131

02-175132

02-175129

02-175130

_

_

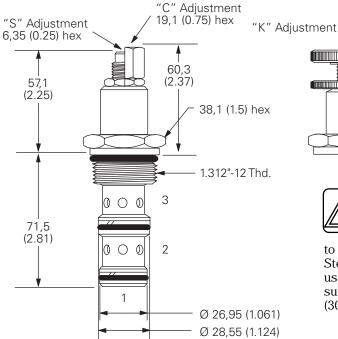
_

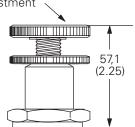
00 - None (Only required if valve has special features, omitted if "00")

Dimensions

mm (inch)

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







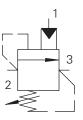
Aluminum housings can be used for pressures up

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

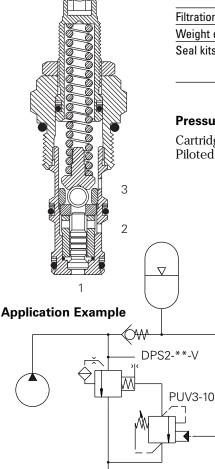
Description

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

Functional Symbol



Sectional View



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 reseat 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.

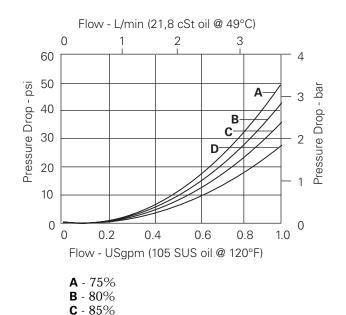
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (10	05 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

D - 90%

Pressure Drop Curves

Cartridge only Piloted full open



Ε

Function UV3 - Pilot unloading valve		ort size rtridge only				 Pressure range 15 - 20-100 bar
Size		PORT SIZE	HOUSING	G NUMBER		(300-1500 psi) 30 - 100-210 bar
- 10 Size			Aluminum Light duty	Alumin Fatigue		(1500-3000 psi)
Seals	6Т	SAE 6	566162	_		8 Unloading pressure
ank - Buna-N	3B	3/8" BSPP	02-173358			setting
Viton®	<u>6H</u>	SAE 6	_	876704		Within ranges in $\boxed{7}$
Adjustment	8H 2G	SAE 8 1/4" BSPP	_	87671		Blank - Normal factory setting at approximate
- Cap	2G 3G	3/8" BSPP	_	87671		mid-range. User requeste
Screw		ion J for housing detail		0/0/14	T	settings in 3,45 bar (50 participation steps, coded as in the
Dimensions mm (inch) Torque cartridge in aluminum housing to 47-54 Nm (35-40 ft. lbs)	46,0 (1.81) 46,0 (1.81)		7 8 8 9 • "C" A	of unloading 1 5 - 75% 6 - 80% 5 - 85% 6 - 90% adjustment (1.0) hex 5"-14 Thd.	pressure 39,0 (1.53)	 Special features None (Only required if valve has special features, omitted if "00") "S" Adjustment Maximum Torque to 1,3 N (10 lbf ft)

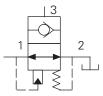
EATON Vickers Screw-In Cartridge Valves V-VLOV-MC001-E4 September, 2007

Accumulator discharge valve

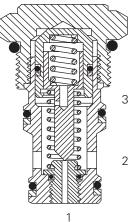
Description

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

Functional Symbol



Sectional View



Operation

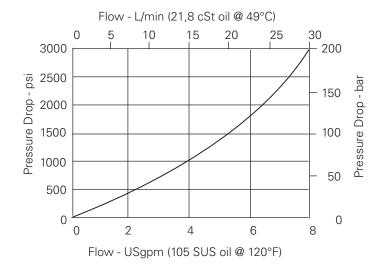
In its unpiloted position, this valve remains open between port 1 and port 2 until sufficient pilot pressure is applied to port 3. Flow is then blocked from port 1 to port 2.

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



Ξ

		ADV1 –	16 – (V) – ** 16 – (V) – ** 2 3 4	• * - 100 - 00 	
I Function ADV1 - Accumulator		o rt size rtridge only			5 Pilot area ratio Port 3: Port 1 - 100:1
discharge valve		CODE PORT SIZE HOUSING NUMBER		JMBER	(Minimum pilot pressure at
² Size	_		Aluminum Light duty	Aluminum Fatigue rated	— port 3 - 4 bar (60 psi)
16 - 16 Size	6B	3/4" BSPP	02-175471	_	6 Special features
3 Seals	12T	SAE 12	566414	_	00 - None
Blank - Buna-N	4G	1/2" BSPP	_	02–160676	 (Only required if valve has special features, omitted
V - Viton®	6G	3/4" BSPP	_	876726	if "00")
	10H	SAE 10	_	876725	
	12H	SAE 12	_	876727	

See section J for housing details.

Dimensions

mm (inch)

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

