Screw-in cartridge valve packages for applications up to 350 bar (5000 psi) and 300 L/min (80 USgpm)





cuit maker solutions	K-4	RGV-30 - Regenerative valve	K-54
1 - Flow control	K-10	RGV-90 - Regenerative valve	K-56
2 - Flow control	K-12	RLV-30 - Regenerative valve	K-58
3 - Flow control	K-14	RLV-90 - Regenerative valve	K-60
4 - Flow control	K-16	SCR-1 - Cross port relief	K-62
C-1 - Flow control	K-18	1UL255 - Unloading valve	K-64
C-2 - Flow control	K-20	Special housings - bolt on solutions	K67
C-3 - Flow control	K-22	Dual cross-over relief package for	14 00
C-4 - Flow control	K-24	H&T series motors	К-68
C1-12 - Pump control	K-26	Dual cross-over relief package for 2000 series disc valve motors	K69
C1-16 - Pump control	K-28	1CESHHT35/1CEESHHT35 - Motor	
C2-12 - Pump control	K-30	mounted valves	K-70
C2-16 - Pump control	K-32	1CESH2K95/1CEESH2K95 - Motor mounted valves	K-72
RR-8 - Flow control	K-34	1CLLROMP150 - Motor mounted relief	K-74
RR-10 - Flow control	K-36	1CEOMP35/1CEEOMP35 - Motor mounted valves	K-78
RR-16 - Flow control	K-38	1CEHT35/1CEEHT35 - Motor mounted valves	K-79
V-8 - Unloading/Relief valve	K-40	1CE2K95/1CEE2K95 - Motor mounted valves	K-81
V-10 - Unloading/Relief valve	K-42	1CEOMP35/1CEEOMP35 - Motor mounted valves	K-83
V-12 - Solenoid vented relief valve	K-44	1CESHOMP35/1CEESHOMP35 -	
V-16 - Solenoid vented relief valve	K-46	Motor mounted valves	K-86
V-20 - Solenoid vented relief valve	K-48	1CESHOMS95/1CEESHOMS95 - Motor mounted valves	K-88
V-10 - Relief valve	K-50		
V-16 - Relief valve	K-52		
V-20 - Solenoid vented relief valve V-10 - Relief valve V-16 - Relief valve	K-48 K-50 K-52	1CESHOMS95/1CEESHOMS95 - Motor mounted valves	I

Valve locator

Functional symbol



Flow Typic Model Cavity rating press	cal sure Page
Flow control, full range adjustable L/min (USgpm) bar ((psi)
-C-1 Inline 36 (9) 210 (3	3000) K-10
-C-2 Inline 57 (15) 210 (3	3000) K-12
-C-3 Inline 114 (30) 210 (3	3000) K-14
-C-4 Inline 190 (50) 210 (3	3000) K-16

Model	Cavity	Flow rating	Typical pressure	Page	
Flow control, full range adjustable		L/min (USgpm)	bar (psi)		
FRC-1	Inline	36 (9)	210 (3000)	K-18	
FRC-2	Inline	57 (15)	210 (3000)	K-20	
FRC-3	Inline	114 (30)	210 (3000)	K-22	
FRC-4	Inline	190 (50)	210 (3000)	K-24	





Model	Cavity	Flow rating	Typical pressure	Page
Pump control, single pump circulation		L/min (USgpm)	bar (psi)	
PCC1-12	Inline	114 (30)	210 (3000)	K-26
PCC1-16	Inline	228 (60)	210 (3000)	K-28

	S	52		2	
G	, wy				T1
	I	Р		Т	

Model	Cavity	Flow rating	Typical pressure	Page
Pump control, single pump circulation		L/min (USgpm)	bar (psi)	
PCC2-12	Inline	114 (30)	5-210 (3000)	K-30
PCC2-16	Inline	228 (60)	10-210 (3000)	K-32

Typical pressure

bar (psi) 210 (3000)

210 (3000) 210 (3000)

210 (3000)

210 (3000)

Page

K-40 K-42

K-44

K-46

K-48

Valve locator

Functional symbol



Model	Cavity	Flow rating	Typical pressure	Page
Flow control, relief on priority flow		L/min (USgpm)	bar (psi)	
PFRR-8	Inline	15 (4)	7-210 (3000)	K-34
PFRR-10	Inline	57 (15)	7-210 (3000)	K-36
PFRR-16	Inline	152 (40)	7-210 (3000)	K-38

Flow rating

Cavity

		т
Ĺ	Ļi	

- т	Relief valve, solenoid actuated		L/min (USgpm)
	SRV-8	Inline	23 (6)
	SRV-10	Inline	57 (15)
	SRV-12	Inline	114 (30)
	SRV-16	Inline	225 (60)
	SRV-20	Inline	300 (80)

Model





Model	Cavity	Flow rating	Typical pressure	Page
Cross port relief		L/min (USgpm)	bar (psi)	
CRV-10	Inline	26 (20)	210 (3000)	K-50
CRV-16	Inline	303 (80)	172 (2500)	K-52

Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

Valve locator

Functional symbol



Model	Cavity	Flow rating	Typical pressure	Page
Regenerative valve, pressure		L/min (USgpm)	bar (psi)	
RGV-30	Inline	57 (15)	210 (3000)	K-54
RGV-90	Inline	114 (30)	210 (3000)	K-56

Model	Cavity	Flow rating	Typical pressure	Page
Regenerative valve, pressure		L/min (USgpm)	bar (psi)	
RLV-30	Inline	57 (15)	210 (3000)	K-58
RLV-90	Inline	114 (30)	210 (3000)	K-60



Κ

Valve locator

Functional symbol



Model	Cavity	Flow rating	Typical pressure	Page
Relief valve, cross port solenoid		L/min (USgpm)	bar (psi)	
SCR-1		114 (30)	210 (3000)	K-62





Model	Cavity	Flow rating	Typical pressure	Page
Unloading valve		L/min (USgpm)	bar (psi)	
1UL255		200 (52)	350 (5000)	K-64

Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

Valve locator

Functional symbol



Model	Cavity	Flow rating	Typical pressure	Page
Motor mounted relief		L/min (USgpm)	bar (psi)	
H & T Motors		76 (20)	210 (3000)	K-68
2000 Motors		76 (20)	210 (3000)	K-69
OMP		150 (40)	350 (5000)	K-74
OMS		150 (40)	350 (5000)	К



Model	Cavity	Flow rating	Typical pressure	Page	
Motor mounted OCV with brake shuttle		L/min (USgpm)	bar (psi)		
H & T Motors		60 (15)	210 (3000)	K-70	
2000 Motors		60 (15)	210 (3000)	K-72	
OMP		30 (8)	270 (4000)	K-74	
OMS		90 (23)	270 (4000)	K-76	



M1	M2	
	C C	T2
 V1	V2	

Model	Cavity	Flow rating	Typical pressure	Page	
Motor mounted P.O. check with brake shuttle		L/min (USgpm)	bar (psi)		
H & T Motors		60 (15)	210 (3000)	K-78	
2000 Motors		60 (15)	210 (3000)	K-80	

Model	Cavity	Flow rating	Typical pressure	Page
Motor mounted OCV		L/min (USgpm)	bar (psi)	
OMP		30 (8)	270 (4000)	K-83
OMS		90 (23)	270 (4000)	K-85

Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

Section overview

What are circuit makers?

Circuit Maker Products are pre-engineered packages. These packages are designed with from 2 to 4 screw–in cartridge valves for generic, repetitive circuit control functions.

All of the products in this catalog are rated at 210 bar (3000 psi) and have either SAE or BSPP port options. Our selection of Circuit Maker pre-engineered packages consists of the following basic units:

- · Single and multiple pump control packages
- Solenoid actuated relief valve packages
- Flow control packages
- Cross port relief packages
- Cross port relief with shuttle and solenoid vent
- Pressure sensitive regeneration packages with and without load locking
- Motor mounted counterbalance valve
- Motor mounted PO check valves
- Motor mounted relief valves

Typical applications

Circuit Maker packages can be used in a wide variety of stationary and, on and off highway applications. The are designed to solve a multitude of repeatable, generic application requirements that are encountered in day to day hydraulic circuits. These packages are ideal solutions for specialty machine requirements and low volume options on high volume applications.

Pump control packages -

These are suitable for any single or multiple pump application where individual pump output flow does not exceed 228 l/min (60 USgpm). They are used to provide air-bleed, start-up and relief protection.

Solenoid actuated relief valve packages –

These can be used wherever remote relief or venting control is required for flows up to 300 L/min (80 USgpm). Normally open versions lend themselves to markets where fail safe and "dead man" control are important. Normally closed versions lend themselves to markets such as machine tool, where energy savings can be obtained by selective unloading of pump flow.

Flow control packages -

These packages are used with both fixed and variable pump systems to provide constant output flow for the main or branch circuits. Packages offered provide for maintaining either:

- Cylinder or motor speed; free reverse flow for table positioning, conveyor systems and presses.
- Controlled flow for steering systems.

Cross port relief valve packages –

These packages are used with bi-directional actuators. The circuit maker provides actuator protection from overload conditions.

Pressure sensitive regeneration packages –

Pressure sensitive regeneration packages provide a means of extending a cylinder as fast as possible without additional pump flow by diverting rod end flow to the head end to accelerate the load. When the pressure in the head end reaches a predetermined level related to the load, the valve closes off and the cylinder returns to normal speed. Typical applications are for outriggers/ stabilizers in mobile markets and machine tool traverse in industrial markets.

Pressure sensitive regeneration packages with load locking –

Pressure sensitive regeneration packages provide a means of extending a cylinder as fast as possible without additional pump flow by diverting rod end flow to the head end to accelerate the load. When the pressure in the head end reaches a predetermined level related to the load, the valve closes off and the cylinder returns to normal speed. The load locking feature provides stability as the system is now working with an oil column under pressure in addition to the mechanical structure. Typically used with mobile crane and other similar vehicles to ensure stability when swinging loads. This package has an advantage over alternative systems that use solenoid actuated blocking pins. In the event of a power failure, it is still possible to lower the vehicle/load.

Features and Benefits

- Quick solutions that are ready to use
- Quick delivery at low cost
- Flexibility

Quick solutions:

Circuit Maker packages are pre-engineered packaged solutions for generic, repeatable requirements. They have specific coil voltage, coil connector, flow settings adjustment and pressure setting adjustment options that permit tailoring to application requirements.

Quick delivery/low cost:

Circuit Maker packages have already been engineered to satisfy generic, repetitive circuit needs. There are no scheduling or time related problems, or engineering charges to be recovered.

Flexibility:

Screw-in cartridge valves and housings are sold either separately or as pre-assembled packages. This permits last minute assembly of packages and local tailoring of individual valve options.

FC-1 - Flow control

Pressure compensated, restrictive type, full range adjustable Up to 36 L/min (9 USgpm) • 210 bar (3000 psi)



Operation

This standard valve package is used in a circuit where flow rates must be constantly maintained, regardless of changes in upstream or downstream pressure. Also where a full range of flow adjustments is required.

Features

Pressure compensation, full flow range adjustment, aluminum in-line type housing, Screw and knob adjustment options. All components in the package are true cartridges and can be removed from the housing without disturbing the plumbing.

Performance data

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)
Maximum regulated flow	Up to 36 L/min (9 USgpm)
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.

Viton is a registered trademark of E. I. DuPont

Description

Full range adjustable restrictive pressure compensated flow control package

Performance characteristics



FC-1 - Flow control

Pressure compensated, restrictive type, full range adjustable Up to 36 L/min (9 USgpm) • 210 bar (3000 psi)

Model code	FC – 1 1 2	(V) – A 3 4	** _ ** _ 5 6	00
1 Function FC - Fully adjustable pressure	4 Valve housin A - Aluminum	ng material		7 Special features 00 - None
2 Maximum rated flow	5 Port size	Port size	Housing number	(Only required if valve has special features, omitted if "00".)
1 - 34 L/min (9 USgpm)	4G	1/2" BSPP	02-178279	_
3 Seal material	8T	SAE 8	02-178280	
Blank - Buna-N V - Viton®	6 Adjustment	t type F	low rate	_
Viton is a registered trademark of E. I. DuPont.	K1 - Knob* K2 - Knob S1 - Screw H1 - Handwheel *180° rotation	1 3 3 3	9 L/min (5 USgpm) 4 L/min (9 USgpm) 4 L/min (9 USgpm) 4 L/min (9 USgpm)	_

Composition chart

Adjustment	Cartridge	Description	Maximum flow
K1 Knob	MRV2-10-K-0-05	Flow restrictor, adjustable, semi-rotary spool	19 L/min (5 USgpm)
K2 - Knob	MRV2-10-K-0-10	Flow restrictor, adjustable, semi-rotary spool	34 L/min (9 USgpm)
S1 - Screw	FCV7-10-S-0-NV	Flow restrictor, adjustable, needle type	34 L/min (9 USgpm)
H1 - Hand Knob	FCV7-10-K-0-NV	Flow restrictor, adjustable, needle type	34 L/min (9 USgpm)
-	PCS3-10-0-80	Pressure compensator, spool type	40 L/min (12 USgpm)

Dimensions

mm (inch)



Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

FC-2 - Flow control

Pressure compensated, restrictive type, full range adjustable Up to 57 L/min (15 USgpm) • 210 bar (3000 psi)



Operation

This standard valve package is used in a circuit where flow rates must be constantly maintained, regardless of changes in upstream or downstream pressure. Also where a full range of flow adjustments is required.

Pressure compensation, full flow range adjustment, aluminum in-line type housing, Screw and knob adjustment options. All components in the package are true cartridges and can be removed from the

housing without disturbing the

Features

plumbing.

Performance data

Fluids

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) Maximum regulated flow Up to 57 L/min (15 USgpm) 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.

Description

Full range adjustable restrictive pressure compensated flow control package.

Performance characteristics



Κ

FC-2 - Flow control

Pressure compensated, restrictive type, full range adjustable Up to 57 L/min (15 USgpm) • 210 bar (3000 psi)

Model code	-C - 2	(V) – A 3 4	** _ ** _ 5 6	00
Function FC - Fully adjustable pressure compensated flow control Maximum rated flow	 4 Valve housin A - Aluminum 5 Port size 	g material		7 Special features 00 - None (Only required if valve has special features, omitted if "00".)
2 - 57 L/min (15 USapm)	Code	Port size	Housing number	
	6G	3/4" BSPP	02-178281	_
3 Seal material	12T	SAE 12	02-178282	
Blank - Buna-N V - Viton®	6 Adjustment	type	Flow rate	
Viton is a registered trademark of E.I. DuPont	K1 - Knob* K2 - Knob S1 - Screw H1 - Handwheel *180° rotation		38 L/min (10 USgpm) 57 L/min (15 USgpm) 57 L/min (15 USgpm) 57 L/min (15 USgpm)	_

Composition chart

Adjustment	Cartridge	Description	Maximum flow
K1 Knob	MRV2-10-K-0-10	Flow restrictor, adjustable, semi-rotary spool	38 L/min (10 USgpm)
K2 - Knob	MRV2-10-K-0-15	Flow restrictor, adjustable, semi-rotary spool	57 L/min (15 USgpm)
S1 - Screw	FCV7-10-S-0-NV	Flow restrictor, adjustable, needle type	57 L/min (15 USgpm)
H1 - Hand Knob	FCV7-10-K-0-NV	Flow restrictor, adjustable, needle type	57 L/min (15 USgpm)
_	PCS3-16-0-80	Pressure compensator, spool type	114 L/min (30 USgpm)

Dimensions

mm (inch)





Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

FC-3 - Flow control

Pressure compensated, restrictive type, full range adjustable Up to 114 L/min (30 USgpm) • 210 bar (300 psi)



Description Full range adjustable restrictive pressure

package.

compensated flow control

Operation

This standard valve package is used in a circuit where flow rates must be constantly maintained, regardless of changes in upstream or downstream pressure. Also where a full range of flow adjustments is required.

Features

Pressure compensation, full flow range adjustment, aluminum in-line type housing, Screw and knob adjustment options. All components in the package are true cartridges and can be removed from the housing without disturbing the plumbing.

Performance data

Ratings and specifications

· ·	
Performance data is typical with fluid at 21,8 cST (105 SUS) a	and 49°C (120°F)
Typical application pressure (all ports)	210 bar (3000 psi)
Maximum regulated flow	Up to 114 L/min (30 USgpm)
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.

Performance characteristics



FC-3 - Flow control

Pressure compensated, restrictive type, full range adjustable Up to 114 L/min (30 USgpm) • 210 bar (300 psi)

Model code	FC _ 3	(V) _ A 3 4	** _ ** _ 5 6	00
1 Function FC - Fully adjustable pressure	4 Valve hous A - Aluminum	ing material		7 Special features 00 - None
2 Maximum rated flow	5 Port size			(Only required if valve has special features, omitted if "00".)
3 - 114 L/min (30 USgpm)	Code	Port size	Housing number	
	8G	1" BSPP	02-178283	_
3 Seal material Blank - Buna-N	16T	SAE 16	02-178284	
V - Viton®	6 Adjustmen	it type	Flow rate	
E.I. DuPont	K1 - Knob* K2 - Knob S1 - Screw H1 - Handwheel *180° rotation		76 L/min (20 USgpm) 114 L/min (30 USgpm) 114 L/min (30 USgpm) 114 L/min (30 USgpm)	

Composition chart

Adjustment	Cartridge	Description	Maximum flow
K1 - Knob	MRV2-16-K-0-20	Flow restrictor, adjustable, semi-rotary spool	76 L/min (20 USgpm)
K2 - Knob	MRV2-16-K-0-30	Flow restrictor, adjustable, semi-rotary spool	114 L/min (30 USgpm)
S1 - Screw	FCV6-16-S-0-NV	Flow restrictor, adjustable	114 L/min (30 USgpm)
H1 - Hand Knob	FCV6-16-K-0-NV	Flow restrictor, adjustable	114 L/min (30 USgpm)
_	PCS3-16-0-80	Pressure compensator, spool type	114 L/min (30 USgpm)

Dimensions mm (inch)

Ø 10,7 (Ø 0.42) thru 2 plcs. 59,1 53,3 (2.33)(2.10) REG 100,8 (3.97) q 17,0 (0.67) 126,2 (4.97) 138,9 (5.47)



Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

FC-4 - Flow control

Pressure compensated, restrictive type, full range adjustable Up to 190 L/min (50 USgpm) • 210 bar (3000 psi)



Operation

This standard valve package is used in a circuit where flow rates must be constantly maintained, regardless of changes in upstream or downstream pressure. Also where a full range of flow adjustments is required.

Features

Pressure compensation, full flow range adjustment, aluminum in-line type housing, Screw and knob adjustment options. All components in the package are true cartridges and can be removed from the housing without disturbing the plumbing.

Performance data

Ratings and	specifications
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Performance data is typical with f	luid at 21,8 cST (105 SUS) and 49°C (120°F)
Typical application pressure (all ports)	210 bar (3000 psi)
Maximum regulated flow	Up to 190 L/min (50 USgpm)
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.

Description

Full range adjustable restrictive pressure compensated flow control package.

Pressure Characteristics



FC-4 - Flow control

Pressure compensated, restrictive type, full range adjustable Up to 190 L/min (50 USgpm) • 210 bar (3000 psi)

Model code	-C - 4 1 2	(V) – A 3 4	** _ ** _ 5 6	00
1 Function	4 Valve hou	using material		7 Special features
FC - Fully adjustable pressure	A - Aluminum			00 - None
compensated flow control	5 Port size			Only required if valve has special features, omitted if "00".)
2 Size	Code	Port size	Housing number	
4 - 190 L/min (50 USgpm)	12G	1 1/4" BSPP	02-178285	
3 Seal material	20T	SAE 20	02-178286	
Blank - Buna-N V - Viton®	6 Adjustme	ent type Fl	ow rate	
Viton is a registered trademark of	K1 - Knob*	19	90 L/min (50 USgpm)	
E.I. DuPont	*180° rotation			

Composition chart

Adjustment	Cartridge	Description	Maximum flow
K1 - Knob	NV1-20-K-0	Needle Valve	190 L/min (50 USgpm)
_	PCS3-20-0-80	Pressure compensator, spool type	200 L/min (53 USgpm)

Dimensions

mm (inch)





FRC-1 - Flow control

Pressure compensated, restrictive type, full range adjustable with reverse flow check Up to 36 L/min (9 USgpm) • 210 bar (3000 psi)



Description

Full range adjustable restrictive pressure compensated flow control package with free reverse flow.

Operation

This standard valve package is used in a hydraulic circuit where flow rates must be constantly maintained, regardless of changes in upstream or downstream pressure. Also where a full range of flow adjustments is required. It also provides free reverse flow.

Features

Pressure compensation, full flow range adjustment, aluminum in-line type housing, Screw and knob adjustment options. All components in the package are true cartridges and can be removed from the housing without disturbing the plumbing.

Performance data

Ratings and specifications

Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C (120°F)	
ypical application pressure (all ports)	210 bar (3000 psi)
Aaximum regulated flow	Up to 36 L/min (9 USgpm)
emperature range	-40° to 120°C (-40° to 248°F)
luids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.

Performance characteristics



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FRC-1 - Flow control

Pressure compensated, restrictive type, full range adjustable with reverse flow check Up to 36 L/min (9 USgpm) • 210 bar (3000 psi)

Model code F	RC - 1	(V) – A 3 4	** - ** - 5 6	00
1 Function	4 Valve hous	ing material		7 Special features
FRC - Fully adjustable pressure	A - Aluminum			00 - None
compensated flow control with reverse flow check	5 Port size			(Only required if valve has special features, omitted if "00".)
	Code	Port size	Housing number	
2 Maximum rated flow	4G	1/2" BSPP	02-178287	
1 - 34 L/min (9 USgpm)	8T	SAE 8	02-178288	
3 Seal material	6 Adjustmen	t type F	low rate	
Blank - Buna-N V - Viton®	K1 - Knob*	1	9 L/min (5 USgpm)	-
Viton is a registered trademark of F I	K2 - Knob	3	84 L/min (9 USgpm)	
DuPont	S1 - Screw	3	84 L/min (9 USgpm)	
	H1 - Handwheel *180° rotation	3	34 L/min (9 USgpm)	
				_

Composition chart

Adjustment	Cartridge	Description	Maximum flow
K1 - Knob	MRV2-10-K-0-05	Flow restrictor, adjustable, semi-rotary spool	19 L/min (5 USgpm)
K2 - Knob	MRV2-10-K-0-10	Flow restrictor, adjustable, semi-rotary spool	34 L/min (9 USgpm)
S1 - Screw	FCV7-10-S-0-NV	Flow restrictor, adjustable, needle type	34 L/min (9 USgpm)
H1 - Hand Knob	FCV7-10-K-0-NV	Flow restrictor, adjustable, needle type	34 L/min (9 USgpm)
_	CV3-10-P-0-10	Check valve	76 L/min (20 USgpm)
-	PCS3-10-0-80	Pressure compensator, spool type	40 L/min (12 USgpm)

Dimensions

mm (inch)



Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

K-19

FCV7-10-*-0-NV or

FRC-2 - Flow control

Pressure compensated, restrictive type, full range adjustable with reverse flow check Up to 57 L/min (15 USgpm) • 210 bar (3000 psi)



Description

Full range adjustable restrictive pressure compensated flow control package with free reverse flow.

Operation

This standard valve package is used in a hydraulic circuit where flow rates must be constantly maintained, regardless of changes in upstream or downstream pressure. Also where a full range of flow adjustments is required. It also provides free reverse flow.

Features

Pressure compensation, full flow range adjustment, aluminum in-line type housing, Screw and knob adjustment options. All components in the package are true cartridges and can be removed from the housing without disturbing the plumbing.

Performance data

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)
Maximum regulated flow	Up to 57 L/min (15 USgpm)
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.

Performance characteristics



FRC-2 - Flow control

Pressure compensated, restrictive type, full range adjustable with reverse flow check Up to 57 L/min (15 USgpm) • 210 bar (3000 psi)

Model code F	RC –	2 (V) -	- A *	* _ ** 5 6	- 00 7	
1 Function FRC - Fully adjustable pressure compensated flow	4 Va A - Alun	alve housing mate	erial		0	7 Special features 0 - None
control with reverse flow check	5 Pc	ort size			fe —	eatures, omitted if "00".)
2 Maximum rated flow	Code 6G	3/4"	BSPP (2-178289		
2 - 57 L/min (15 USgpm)	12T	SAE 1	2 C	2-178290		
3 Seal material Blank - Buna-N	6 A	djustment type	Flow ra	ate		
V - Viton®	K1 - Kno	b*	38 L/m	in (10 USgpm)		
Viton is a registered trademark of E.I. DuPont	K2 - Kno S1 - Scr	ob ew	57 L/m 57 L/m	in (15 USgpm) in (15 USgpm)		
	H1 - Hai *180° rot	ndwheel ation	57 L/m	in (15 USgpm)		

Composition chart

Adjustment	Cartridge	Description	Maximum flow
K1 - Knob	MRV2-10-K-0-10	Flow restrictor, adjustable, semi-rotary spool	38 L/min (10 USgpm)
K2 - Knob	MRV2-10-K-0-15	Flow restrictor, adjustable, semi-rotary spool	57 L/min (15 USgpm)
S1 - Screw	FCV7-10-S-0-NV	Flow restrictor, adjustable, needle type	57 L/min (15 USgpm)
H1 - Hand Knob	FCV7-10-K-0-NV	Flow restrictor, adjustable, needle type	57 L/min (15 USgpm)
_	CV3-10-P-0-10	Check valve	76 L/min (20 USgpm)
_	PCS3-16-0-80	Pressure compensator, spool type	114 L/min (30 USgpm)

Dimensions

mm (inch)



Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

FCV7-10-*-0-NV or

FRC-3 - Flow control

Pressure compensated, restrictive type, full range adjustable with reverse flow check Up to 114 L/min (30 USgpm) • 210 bar (3000 psi)



Description

Full range adjustable restrictive pressure compensated flow control package with free reverse flow.

Operation

This standard valve package is used in a hydraulic circuit where flow rates must be constantly maintained, regardless of changes in upstream or downstream pressure.

Also where a full range of flow adjustments is required. It also provides free reverse flow.

Features

Pressure compensation, full flow range adjustment, aluminum in-line type housing, Screw and knob adjustment options. All components in the package are true cartridges and can be removed from the housing without disturbing the plumbing.

Performance data

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)
Maximum regulated flow	Up to 114 L/min (30 USgpm)
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.

Performance characteristics



Κ

FRC-3 - Flow control

Pressure compensated, restrictive type, full range adjustable with reverse flow check Up to 114 L/min (30 USgpm) • 210 bar (3000 psi)

Mod	el code F	RC - 3	(V) – A 3 4	** – ** – L L L L	00
1 FRC	Function Fully adjustable pressure compensated flow control with reverse flow check	 4 Valve housin A - Aluminum 5 Port size 	ng material		7 Special features 00 - None (Only required if valve has special features, omitted if "00".)
2	Maximum rated flow	Code	Port size	Housing number	
3 - 11	5 L/min (30 LlSanm)	8G	1" BSPP	02-178291	_
		16T	SAE 16	02-178292	
3 Blan V - V Viton i DuPon	Seal material k - Buna-N iton® s a registered trademark of E.I. t	6 Adjustment K1 - Knob* K2 - Knob S1 - Screw H1 - Handwheel	type	Flow rate 76 L/min (20 USgpm) 114 L/min (30 USgpm) 114 L/min (30 USgpm) 114 L/min (30 USgpm)	_

Composition chart

Adjustment	Cartridge	Description	Maximum flow
K1 - Knob	MRV2-16-K-0-20	Flow restrictor, adjustable, semi-rotary spool	76 L/min (20 USgpm)
K2 - Knob	MRV2-16-K-0-30	Flow restrictor, adjustable, semi-rotary spool	114 L/min (30 USgpm)
S1 - Screw	FCV6-16-S-0-NV	Flow restrictor, adjustable, needle type	114 L/min (30 USgpm)
H1 - Hand Knob	FCV6-16-K-0-NV	Flow restrictor, adjustable, needle type	114 L/min (30 USgpm)
_	CV1-16-P-0-5	Check valve	151 L/min (40 USgpm)
_	PCS3-16-0-80	Pressure compensator, spool type	114 L/min (30 USgpm)

Dimensions

mm (inch)



FRC-4 - Flow control

Pressure compensated, restrictive type, full range adjustable with reverse flow check Up to 190 L/min (50 USgpm) • 210 bar (3000 psi)



Description

flow.

Full range adjustable restrictive pressure

compensated flow control

package with free reverse

Operation

This standard valve package is used in a hydraulic circuit where flow rates must be constantly maintained, regardless of changes in upstream or downstream pressure. Also where a full range of flow adjustments is required. It also provides free reverse flow.

Features

Pressure compensation, full flow range adjustment, aluminum in-line type housing, Screw and knob adjustment options. All components in the package are true cartridges and can be removed from the housing without disturbing the plumbing.

Performance data

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)
Maximum regulated flow	Up to 190 L/min (50 USgpm)
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.

Performance characteristics



FRC-4 - Flow control

Pressure compensated, restrictive type, full range adjustable with reverse flow check Up to 190 L/min (50 USgpm) • 210 bar (3000 psi)

Model code	RC –	4 (V) – 2 3	A ** 4 5	- ** - 6	00
1 Function FRC - Fully adjustable pressure compensated flow control with reverse	4 Va A - Alur	alve housing mater	al		 7 Special features 00 - None (Only required if valve has special features, omitted if "00".)
flow check 2 Maximum rated flow 4 - 190 L/min (50 USgpm)	Code 12G 20T	Port si 1 1/4"	ize Housi BSPP 02-178 02-178	i ng number 293	
3 Seal material Blank - Buna-N V - Viton®	6 A K1 - Kno	djustment type	Flow rate	(50 USgpm)	_ _
Viton is a registered trademark of E.I. DuPont	*180° rot	ation			_

Composition chart

Adjustment	Cartridge	Description	Maximum flow
K1 - Knob	NV1-20-K-0	Needle valve	190 L/min (50 USgpm)
_	CV2-20-P-0-5	Check valve	220 L/min (60 USgpm)
_	PCS3-20-0-80	Pressure compensator, spool type	200 L/min (53 USgpm)

Dimensions

mm (inch)



Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

PCC1-12 - Pump control

Single pump circuits

Up to 114 L/min (30 USgpm) • 5-210 bar (75-3000 psi)



Description

Pump control manifold for single pump circuits.

Operation

This standard valve package is used for air-bleed and start-up in single pump power units. It also provides main system relief protection.

Performance data

Features

Multiple tank ports for mounting convenience, direct reservoir mounting capability by using T port. Both T port and mounting holes have O-ring seals mounting surface. Aluminum in-line type housing, Tamper proof and adjustable relief options, gauge port. All components in the package are true cartridges and can be removed from the housing without disturbing the plumbing.

Ratings and specifications	
Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C (120°F)	
Typical application pressure range (all ports)	5-210 bar (75-3000 psi)
Maximum regulated flow	Up to 114 L/min (30 USgpm)
Temperature range	-40° to 120°C (-40° to 248°F)
Reseat pressure	90% of crack pressure
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.

Pressure drop

Flow - L/min (21,8 cSt oil @ 49°) 0 80 100 20 40 60 300 -18 16 Lessence Drop - 200 150 100 50 Pressure Drop - bar 50 -2 0 0 5 10 20 25 30 15 Flow - USgpm (105 SUS oil @ 120° F)

Pressure override



Κ

PCC1-12 - Pump control

Single pump circuits Up to 114 L/min (30 USgpm) • 5-210 bar (75-3000 psi)

Model code PC	C1 - 12	(V) – ³	* – A 4 5	** – ** 	/ *** - 00
1 Function	4 Reli	ief control	7 Pro	essure range	8 Pressure setting -
pump circuits	K - Knob		in psi.		Example:
	- Screw	S - Screw		0 bar (75-1500 psi)	10 - 1000 psi
2 Size	5 //al	vo housing moto	30 - 10-2	10 bar (150-3000 psi)	10.5 - 1050 psi
12 - 12 size			iai —		9 Special features
3 Seal material					00 - None
Blank - Buna-N V - Viton®	6 Por	t size			(Only required if valve has special features, omitted if "00".)
Viton is a registered trademark of E	Code	P, SYS, T2	Т1	Gauge	
DuPont	6G	3/4" BSPP	1/2" BSPP	1/4" BSPP	
	12T	SAE 12	SAE 8	SAE 4	

Composition chart

Cartridge	Description	Maximum flow	Quantity
VF1-10-F-025	Velocity fuse	23 L/min (6 USgpm)	1
CV11-12-P-0-20	Check valve	113 L/min (30 USgpm)	1
RV11-12-*-0-**	Relief valve	113 L/min (30 USgpm)	1

Dimensions

mm (inch)



PCC1-16 - Pump control

Single pump circuits Up to 228 L/min (60 USgpm) • 10-210 bar (150-3000 psi)



Operation

This standard valve package is used for air-bleed and start-up in single pump power units. It also provides main system relief protection.

Performance data

Ratings and specifications

Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C (120°F) Typical application pressure range (all ports) Maximum regulated flow Up to 228 L/min (60 USgpm) Temperature range -40° to 120°C (-40° to 248°F) Reseat pressure 90% of crack pressure Fluids All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.

Features

Multiple tank ports for

mounting convenience, direct

reservoir mounting capability

O-ring seals mounting surface.

by using T port. Both T port

and mounting holes have

Description

Pump control manifold for single pump circuits.

Pressure drop

Pressure override





Aluminum in-line type housing, Tamper proof and

adjustable relief options,

in the package are true

cartridges and can be

gauge port. All components

removed from the housing

without disturbing the plumbing.

PCC1-16 - Pump control

Single pump circuits Up to 228 L/min (60 USgpm) • 10-210 bar (150-3000 psi)



Composition chart

Cartridge	Description	Maximum flow	Quantity
VF1-10-F-025	Velocity fuse	23 L/min (6 USgpm)	1
CV2-20-P-0-30	Check valve	228 L/min (60 USgpm)	1
RV5-16-*-0-30	Relief valve	303 L/min (80 USgpm)	1

Dimensions

mm (inch)



Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

PCC2-12 - Pump control

Multiple pump circuits Up to 114 L/min (30 USgpm) • 5-210 bar (75-3000 psi)



Operation

This standard valve package is used to provide air-bleed, start-up and relief protection for each pump in multiple pump circuits. The check valve position in the circuit isolates the other pumps from the valve assembly.

Performance data

Features

Individual relief pressure setting for each pump in the system, multiple tank ports for mounting convenience, direct reservoir mounting capability by using T port. Both T port and mounting holes have O-ring seals mounting surface. Aluminum in-line type housing, tamper proof and adjustable relief options, gauge port. All components in the package are true cartridges and can be removed from the housing without disturbing the plumbing.

Ratings and specifications	
Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C (120°F)	
Typical application pressure range (all ports)	5 - 210 bar (75 - 3000 psi
Maximum regulated flow	Up to 114 L/min (30 USgpm)
Temperature range	-40° to 120°C (-40° to 248°F)
Reseat pressure	90% of crack pressure
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.

Description

Pump control manifold for multiple pump circuits.

Pressure drop



Pressure override



PCC2-12 - Pump control

Multiple pump circuits Up to 114 L/min (30 USgpm) • 5-210 bar (75-3000 psi)

Model code PCC2	2 – 12 J	(V) – * 3 4	- A	** <u> </u>	/ ** - 00 8 9
Function For a control for single pump circuits Size	4 Relief (C - Cap K - Knob S - Screw	control	7 Pre Note: Cod in psi. 15 - 5-100 30 - 10-2	e based on pressure o based on pressure D bar (75-1500 psi)	9 Special features 00 - None (Only required if valve has special features, omitted if "00".)
 12 - 12 size 3 Seal material Blank - Buna-N 	5 Valve housing material A - Aluminum		8 Pre user requ Example	essure setting - lested in 50 psi steps.	
V - Viton® Viton is a registered trademark of E.I. DuPont	6 Port siz	ze	10 - 1000 10.5 - 109) psi 50 psi	
	Code 6G	P, SYS, T2 3/4" BSPP	T1 1/2" BSPP	Gauge 1/4" BSPP	

SAE 8

SAE 4

Composition chart

Cartridge	Description	Maximum flow	Quantity
VF1-10-F-025	Velocity fuse	23 L/min (6 USgpm)	1
CV11-12-P-0-20	Check valve	113 L/min (30 USgpm)	1
RV11-12-*-0-**/	Relief valve	113 L/min (30 USgpm)	1

SAE 12

12T



mm (inch)



PCC2-16 - Pump control

Multiple pump circuits Up to 228 L/min (60 USgpm) • 10-210 bar (150-3000 psi)



Description

Pump control manifold for multiple pump circuits.

Operation

This standard valve package is used to provide air-bleed, start-up and relief protection for each pump in multiple pump circuits. The check valve position in the circuit isolates the other pumps from the valve assembly.

Performance data Ratings and specifications

Features

Individual relief pressure setting for each pump in the system, multiple tank ports for mounting convenience, direct reservoir mounting capability by using T port. Both T port and mounting holes have O-ring seals mounting surface. Aluminum in-line type housing, tamper proof and adjustable relief options, gauge port. All components in the package are true cartridges and can be removed from the housing without disturbing the plumbing.

Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C (120°F,)
Typical application pressure range (all ports)	10-210 bar (150-3000 psi)
Maximum regulated flow	Up to 228 L/min (60 USgpm)
Temperature range	-40° to 120°C (-40° to 248°F)
Reseat pressure	90% of crack pressure
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.

Pressure drop



Pressure override



PCC2-16 - Pump control

Multiple pump circuits Up to 228 L/min (60 USgpm) • 10-210 bar (150-3000 psi)

Model code	PCC2	16 	(V) 	* 4	A 5	** 6	**	/ **	00 9
1 Function PCC2 - Pump control for pump circuits	4 or single C - K - S -	Relie Cap Knob Screw	f control	Г іі	7 Pre lote: Cod n psi. 20 - 10-2	essure range le based on pre 10 bar (150-3	essure 000 psi)	9 Sp 00 - Non (Only requir features, or	ecial features e red if valve has special mitted if "00".)
2 Size 16 - 16 size	5 ————————————————————————————————————	Valve Aluminu	e housing mat o	erial	8 Pre	essure settir lested in 50 p	1g - si steps.		
Blank - Buna-N V - Viton®				1	0 - 10 0.5 - 10	100 psi 150 psi			
DuPont	6 Irk of E.I.	Port	size	-					
	Coc	le	P, SYS, T2	T1		Gauge			
	8G		1" BSPP	3/4"	SPP	1/4" BSPP			
	16T		SAF 16	SAF	2	SAF 4			

Composition chart

Cartridge	Description	Maximum flow	Quantity
VF1-10-F-025	Velocity fuse	23 L/min (6 USgpm)	1
CV2-20-P-0-30	Check valve	228 L/min (60 USgpm)	1
RV5-16-*-0-30/	Relief valve	303 L/min (80 USgpm)	1

Dimensions

mm (inch)



PFRR-8 - Flow control

Pressure compensated, priority type, with relief on priority flow 15 L/min (4 USgpm) • 7-210 bar (100-3000 psi)



Operation

This standard valve package is used to maintain constant flow to priority circuits when input flow is greater than required, regardless of changes in upstream or downstream pressure. It will bypass the rest of the flow to an auxiliary circuit or to tank. Relief valve on a priority port limits pressure on a priority port, as well as ensures bypass flow when there is no demand on priority circuit.

Features

Priority flow pressure compensation, all ports except T can be pressurized to 210 bar (3000 psi). Aluminum in-line type housing, tamper proof and adjustable relief options, gauge port. All components in the package are true cartridges and can be removed from the housing without disturbing the plumbing.

Performance data

Ratings and specifications

Performance data is typical with fluid at 21,8 cST (10:	5 SUS) and 49°C (120°F)
Typical application pressure range	7-210 bar (100-3000 psi)
Maximum inlet flow	15 L/min (4 USgpm)
Regulated flow range	0.4-8 L/min (0.1-2.5 USgpm)
Internal leakage	82 cm³/min (5 in³/min) max @ 210 bar (3000 psi)
Temperature range	-40° to 120°C (-40° to 248°F)
Reseat pressure	90% of crack pressure
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.

Description

Fixed priority flow control with relief on priority flow port.

Typical flow regulation



Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

PFRR-8 - Flow control

Pressure compensated, priority type, with relief on priority flow 15 L/min (4 USgpm) • 7-210 bar (100-3000 psi)

Model code PFRR –	8 (V) – 2 3	* _ 4	A **	- ** / ·	** - ** - 00 8 9 10
1 Function PFRR - Pressure compensated priority flow control with relief	4 Relief contr C - Cap K - Knob	ol	7 Pressure Note: Code based in psi.	range I on pressure	9 Flow setting Customer must specify flow: 0.4 - 8L/min (0.1 - 2.5 USgpm)
on priority port 2 Size 8 - 8 size	 S - Screw Valve housi A - Aluminum 	ng material	3 - 3-20 bar (50- 20 - 40-140 bar 36 - 20-250 bar	-300 psi) (600-2000 psi) (300-3600 psi)	10 Special features00 - None(Only required if valve has special
3 Seal material Blank - Buna-N V - Viton®			user requested Example: 10 - 1000 psi 10.5 - 1050 psi	in 50 psi steps.	features, omitted if "00".)
Viton is a registered trademark of E.I. DuPont	6 Port size				
	Code 3G	P, Bypass 3/8" BSPP	3/8" BSPP	Gauge 1/4" BSPP	O2-178273
	8T	SAE 8	SAE 8	SAE 4	02-178274

Composition chart

Cartridge	Description	Quantity
PFR5-8-F-0-**	Priority flow regulator	1
RV1-8-*-0-**	Relief valve	1



mm (inch)



Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

PFRR-10 - Flow control

Pressure compensated, priority type, with relief on priority flow Up to 57 L/min (15 USgpm) • 7-210 bar (100-3000 psi)



Operation

This standard valve package is used to maintain constant flow to priority circuits when input flow is greater than required, regardless of changes in upstream or downstream pressure. It will bypass the rest of the flow to an auxiliary circuit or to tank. Relief valve on a priority port limits pressure on a priority port, as well as ensures bypass flow when there is no demand on priority circuit.

Features

Priority flow pressure compensation, all ports except T can be pressurized to 210 bar (3000 psi). Aluminum in-line type housing, tamper proof and adjustable relief options, gauge port. All components in the package are true cartridges and can be removed from the housing without disturbing the plumbing.

Performance data

Ratings and specifications Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C (120°F) Typical application pressure range 7-210 bar (100-3000 psi) Maximum inlet flow 57 L/min (15 USgpm) Regulated flow range 0.38-22.7 L/min (0.1-6 USgpm) Internal leakage 82 cm3/min (5 in3/min) max @ 210 bar (3000 psi) -40° to 120°C (-40° to 248°F) Temperature range Reseat pressure 90% of crack pressure Fluids All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.

Description

Fixed priority flow control with relief on priority flow port.

Typical flow regulation

 A - Port 3, priority (regulated) outlet pressurized
 B - Port 2, bypass outlet pressurized



Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.
PFRR-10 - Flow control

Pressure compensated, priority type, with relief on priority flow Up to 57 L/min (15 USgpm) • 7-210 bar (100-3000 psi)

Model code PFRR –	10 (V) 2 3	_ * _ 4	A ** - 3	** / ¹	** - ** - 00 8 9 10
1 Function PFRR - Pressure compensated priority flow control with relief on priority port	4 Relief cont C - Cap K - Knob S - Screw	rol	7 Pressure range Note: Code based on pre in psi. 3 - 3-20 bar (50-300	essure	9 Flow setting Customer must specify flow: 0.38 - 22.7L/min (0.1 - 6 USgpm)
 2 Size 10 - 10 size 3 Seal material Block Runs N 	5 Valve housing material A - Aluminum		 20 - 7-140 bar (100-2000 psi) 35 - 17-240 bar (250-3500 psi) 8 Pressure setting - user requested in 50 psi steps. Example: 		10 Special features 00 - None (Only required if valve has special features, omitted if "00".)
V - Viton® Viton is a registered trademark of E.I. DuPont	6 Port size	P. Bypass	10 - 1000 psi 10.5 - 1050 psi Priority, T	Gauge	Housing number
	4G	3/8" BSPP	1/2" BSPP	1/4" BSPP	02-178275
	10T	SAE 8	SAE 8	SAE 4	02-178276

Composition chart

Cartridge	Description	Quantity
PFR1-10-F-0-**	Priority flow regulator	1
RV5-10-*-0-35/	Relief valve	1



mm (inch)





PFRR-16 - Flow control

Pressure compensated, priority type, with relief on priority flow 152 L/min (40 USgpm) • 7-210 bar (100-3000 psi)



Operation

This standard valve package is used to maintain constant flow to priority circuits when input flow is greater than required, regardless of changes in upstream or downstream pressure. It will bypass the rest of the flow to an auxiliary circuit or to tank. Relief valve on a priority port limits pressure on a priority port, as well as ensures bypass flow when there is no demand on priority circuit.

Features

Priority flow pressure compensation, all ports except T can be pressurized to 210 bar (3000 psi). Aluminum in-line type housing, tamper proof and adjustable relief options, gauge port. All components in the package are true cartridges and can be removed from the housing without disturbing the plumbing.

Performance data

Ratings and specifications

Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C	(120°F)
Typical application pressure range	7-210 bar (100-3000 psi)
Maximum inlet flow	152 L/min (40 USgpm)
Regulated flow range	1.9-113 L/min (0.5-30 USgpm)
Internal leakage	82 cm³/min (5 in³/min) max @ 210 bar (3000 psi)
Temperature range	-40° to 120°C (-40° to 248°F)
Reseat pressure	90% of crack pressure
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.

Description

Fixed priority flow control with relief on priority flow port.

Typical flow regulation

- A Port 3, priority (regulated) outlet pressurized
- **B** Port 2, bypass outlet pressurized



Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

PFRR-16 - Flow control

Pressure compensated, priority type, with relief on priority flow 152 L/min (40 USgpm) • 7-210 bar (100-3000 psi)



Composition chart

Cartridge	Description	Quantity
PFR1-16-F-0-**	Priority flow regulator	1
RV5-10-*-0-**/**	Relief valve	1



mm (inch)



Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

SRV-8 - Unloading/relief valve

Normally open or normally closed 23 L/min (6 USgpm) • 210 bar (3000 psi)

Normally Closed Version

Normally Open Version



Operation

This standard valve package is designed for pump unloading via solenoid valve activation and pump relief, when the solenoid valve is not activated and system pressure reaches relief valve setting.

Features

Normally closed and normally open options, tamper proof or adjustable relief options. Low power requirements, gauge port. Aluminum in-line type housing, number of voltage and connector options. All components in the package are true cartridges and can be removed from the housing without disturbing the plumbing.

Performance data

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)
Flow rating	23 L/min (6 USgpm)
Internal leakage	5 drops/min @ 80% of crack pressure
Reseat pressure	80% of crack pressure
Typical vented ∆P	4 bar (60 psi) at rated flow
Coil specifications	Power requirements: 16 watts Coil duty: Continuous from 85% to 110% of nominal voltage (AC coils are internally rectified)
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.

Description

Solenoid actuated relief valve.

Pressure drop (unloading)



Pressure override



SRV-8 - Unloading/relief valve

Normally open or normally closed 23 L/min (6 USgpm) • 210 bar (3000 psi)

Model code SRV _	8 2	(V) _ * _ * 	– A	** _ ** / · └┘ └┘ └ 7 8	*** – ** – 00 9 10 11
 Function SRV - Solenoid actuated relief valve Size 	5 P - leal R - Hai G - Tar E-7	Relief control <proof adjustment<br="" screw="">ndknob adjustment nperproof cap (See page for dimensions)</proof>	8 R Note: Co in psi. 9 10 - 7-10 20 - 35	elief Pressure range ode based on pressure 00 bar (100-1450 psi) - 210 bar (500-3000 psi)	10 Connector types GS - ISO 4400 DIN 43650 connector PS - 1/2" NPT conduit WS - Lead wire
 8 - 8 size 3 Seal material Blank - Buna-N V - Viton[®] Viton is a registered trademark of E.I. DuPont 	6 \ A - Alu 7	/alve housing materia minum Port size	I 9 Va 12D - 24D - 120A - 240A -	oltage rating 12 VDC 24 VDC 120 VAC 240 VAC	11 Special features 00 - None (Only required if valve has special features, omitted if "00".)
	Code	Р, Т	Gauge	Housing number	
4 Туре	3G	3/8" BSPP	1/4" BSPP	02-178306	
C - Normally closed O - Normally open	8T	SAE 8	SAE 4	02-178307	

Composition chart

Cartridge	Description	Quantity
SV5-8-0-0-**	2 way/2 position N.O. poppet solenoid valve	1
SV5-8-C-0-**	2 way/2 position N.C. poppet solenoid valve	1
1DR30-*-**-*	Relief valve, direct acting	1

Dimensions

mm (inch)





Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

SRV-10 - Unloading/relief valve

Normally open or normally closed 57 L/min (15 USgpm) • 210 bar (3000 psi)

Normally closed version



Normally open version



Operation

This standard valve package is designed for pump unloading via solenoid valve activation and pump relief, when the solenoid valve is not activated and system pressure reaches relief valve setting.

. ...

Features

Normally closed and normally open options, tamper proof or adjustable relief options. Low power requirements, gauge port. Aluminum in-line type housing, number of voltage and connector options. All components in the package are true cartridges and can be removed from the housing without disturbing the plumbing.

Performance data

49°C (120°F)
210 bar (3000 psi)
57 L/min (15 USgpm)
80 cm³/min (5 in³/min) @ 210 bar (3000 psi)
80% of crack pressure
7 bar (100 psi) at rated flow
Power requirements: 18 watts Coil duty: continuous from 85% to 110% of nominal voltage (AC coils are internally rectified)
-40° to 120° C (-40° to 248° F)
All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20, etc.

Description

Solenoid actuated relief valve.

Pressure drop (unloading)



Pressure override



SRV-10 - Unloading/relief valve

Normally open or normally closed 57 L/min (15 USgpm) • 210 bar (3000 psi)

Model code SRV _ 1	10 (V) 2 3		* _ A	** _ ** / 7 8	*** – ** – 00 9 10 11
 Function SRV - Solenoid actuated relief valve Size 	5 Relie C - Cap K - Knob S - Screw	f control	8 Re Note: Co in psi. 3 - 3-20 35 -17-2	elief Pressure range de based on pressure bar (50-300 psi) 40 bar (250-300 psi)	 10 Connector types G - ISO 4400 DIN 43650 connector P - 1/2" NPT conduit W - Leadwire
 10 - 10 size 3 Seal material Blank - Buna-N V - Viton® 	6 Valve A - Aluminu	housing materia	al 9 Vo 12D - 2 24D - 2 115A - 2 230A - 2	Ditage rating 12 VDC 24 VDC 115 VAC 230 VAC	11 Special features 00 - None (Only required if valve has special features, omitted if "00".)
Viton is a registered trademark of E.I. DuPont	7 Port	size		Housing number	
4 Type	4G	1/2" BSPP	1/4" BSPP	02-178308	
C - Normally closed O - Normally open	10T	SAE 10	SAE 4	02-178309	

Composition chart

Cartridge	Description	Quantity
SV5-10-0-0-**	2 way/2 position N.O. poppet solenoid valve	1
SV1-10-C-0-**	2 way/2 position N.C. poppet solenoid valve	1
RV5-10-*-0-**	Relief valve, pilot operated	1

Dimensions

mm (inch)





Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

Eaton Hydraulic Screw-in Cartridge Valves (SiCV) E-VLSC-MC001-E6-January 2018 www.eaton.com

K-43



SRV-12 - Solenoid vented relief valve

Normally open or normally closed 100 L/min (26 USgpm) • 210 bar (3000 psi)

Normally closed version



Normally open version



Description

Solenoid actuated vented relief valve.

Operation

Performance data

This standard valve package is designed for pump unloading via solenoid valve activation to control remotely ventable relief valve and system relief, when the solenoid valve is not activated.

Features

Normally closed and normally open options, tamper proof or adjustable relief options. Low power requirements, gauge port. Aluminum in-line type housing, number of voltage and connector options. All components in the package are true cartridges and can be removed from the housing without disturbing the plumbing.

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)
Flow rating	100 L/min (26 USgpm)
Internal leakage	35 milliliters/min @ 280 bar
Reseat pressure	Refer datasheet of 1VR100 in Section E
Typical vented ΔP	Refer datasheet of 1VR100 in Section E
Coil specifications	Power requirements: 16 watts Coil duty: Continuous from 85% to 110% of nominal voltage (AC coils are internally rectified)
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.

Pressure drop curves





SRV-12 - Solenoid vented relief valve

1

1

1

Normally open or normally closed 100 L/min (26 USgpm) • 210 bar (3000 psi)

Model code SRV _	12 2	(SV)_ * _ 3 4	* – A 5 6	** _ ** / J L_J L_J 7 8	**** – *** – 00 9 10 11
1 Function SRV - Solenoid actuated ventable relief valve	5 P - Lea Adj - G - Ter	Relief control akproof Screw ustments nper Proof Cap	8 F Note: C in psi. 20 - 10	Celief pressure range ode based on pressure -210 bar (145-3000 psi	10 Connector types GS - ISO 4400 DIN 43650 connector PS - 1/2" NPT conduit
 2 Size 12 - 12 size 3 Seal material S- Nitrile (for use with most industrial hydraulic oils) 	6 N A - Alu	/alve housing mat Iminum	erial 9 V 12D - 24D - 120A - 240A	Oltage rating 12 VDC 24 VDC 120 VAC 240 VAC	VS - LeadWire Special features OO - None (Only required if valve has specia features_omitted if "00")
 V - Viton[®] (for high temperatures and most special fluid applications) 	7 I	Port size		Hausing number	
Viton is a registered trademark of E.I. DuPont	6W	3/4" BSPP	1/4" BSPP	6030455-001	-
4 Type C - Normally closed O - Normally open	12T Comp	SAE 12	SAE 4	6030455-002	_
	- Cartric	lge	Description		Quantity

SV5-8-0-0-**

SV5-8-C-0-**

1VR100***-P*-** *

Di	m	eı	ns	io	ns

mm (inch)



2 way/2 position N.O. poppet solenoid valve

2 way/2 position N.C. poppet solenoid valve

Vented relief valve

SRV-16 - Solenoid vented relief valve

Normally open or normally closed 225 L/min (60 USgpm) • 210 bar (3000 psi)

Normally closed version



Operation

This standard valve package is designed for pump unloading via solenoid valve activation and pump relief, when the solenoid valve is not activated and system pressure reaches relief valve setting.

Features

Normally closed and normally open options, tamper proof or adjustable relief options. Low power requirements, gauge port. Aluminum in-line type housing, number of voltage and connector options. All components in the package are true cartridges and can be removed from the housing without disturbing the plumbing.

Performance data

Ratings and specif	ications	
Performance data is ty	pical with fluid at 21,8 cST (105 SUS) and	49°C (120°F)
Typical application pre	ssure (all ports)	210 bar (3000 psi)
Flow rating		225 L/min (60 USgpm)
Internal leakage		160 L/min (10 in³/min) @ 210 bar (3000 psi)
Reseat pressure		80% of crack pressure
Typical vented ∆P		8 bar (120 psi) at rated flow
Coil specifications	Power requirements: Coil duty:	16 watts Continuous from 85% to 110% of nominal voltage (AC coils are internally rectified)
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.

Normally open version



Pressure drop (unload)



Pressure override



Description

Κ

Solenoid actuated relief valve.

SRV-16 - Solenoid vented relief valve

Normally open or normally closed 225 L/min (60 USgpm) • 210 bar (3000 psi)

Model code SRV –	16 (V) – * 2 3 4	· - *	- A ** - ** / ·	*** - ** - 00 9 10 11
1 Function SRV - Solenoid actuated relief valve	5 Relief contro C - Cap K - Knob S - Screw	bl	 8 Relief Pressure range Note: Code based on pressure in psi. 15 - 3-100 bar (50-1500 psi) 30 - 70-210 bar (1000-3000 psi) 	10 Connector types GS -ISO 4400 DIN 43650 connector PS - 1/2" NPT conduit WS - Lead wire
 2 Size 16 - 16 size 3 Seal material Blank - Buna-N V - Viton[®] 	6 Valve housin A - Aluminum	g material	 9 Voltage rating 12D - 12 VDC 24D - 24 VDC 120A - 125 VAC 240A - 240 VAC 	Information Special features 00 - None (Only required if valve has special features, omitted if "00".)
Viton is a registered trademark of E.I. DuPont	7 Port size			
4 Type	Code	P, T		
C - Normally closed	0U 16T	SAE 16		
	12T	SAE 12	SAE 4	

Composition chart

Cartridge	Description	Quantity
SV4-8-0-0-**	2 way/2 position N.O. poppet solenoid valve	1
SV4-8-C-0-0-**	2 way/2 position N.C. poppet solenoid valve	1
RV8-8-*-0-**	Relief valve	1
DPS2-16-V-F-0-80	Differential pressure sensing valve	1

Dimensions

mm (inch)



SRV-20 - Solenoid vented relief valve

Normally open or normally closed 300 L/min (80 USgpm) • 210 bar (3000 psi)

Normally closed version



Normally open version

Þ

Operation

Performance data

This standard valve package is designed for pump unloading via solenoid valve activation and pump relief, when the solenoid valve is not activated and system pressure reaches relief valve setting.

Features

Normally closed and normally open options, tamper proof or adjustable relief options. Low power requirements, gauge port. Aluminum in-line type housing, number of voltage and connector options. All components in the package are true cartridges and can be removed from the housing without disturbing the plumbing.

Ratings and specifi	cations	
Performance data is typ	ical with fluid at 21,8 cST (105 SUS) and	49°C (120°F)
Typical application pres	ssure (all ports)	210 bar (3000 psi)
Flow rating		300 L/min (80 USgpm)
Internal leakage		160 cm³/min (10 in³/min) @ 210 bar (3000 psi)
Reseat pressure		80% of crack pressure
Typical vented ∆P		9 bar (135 psi) at rated flow
Coil specifications	Power requirements: Coil duty:	16 watts Continuous from 85% to 110% of nominal voltage (AC coils are internally rectified)
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.

Pressure drop (unloading)



Pressure override





Description

G

Solenoid actuated relief valve.

SRV-20 - Solenoid vented relief valve

Normally open or normally closed 300 L/min (80 USgpm) • 210 bar (3000 psi)

Model code SRV –	20 (V 2 3	/) _ * _ * _	- A	** – ** / [[7 8	*** – ** – 00 9 10 11
1 Function SRV - Solenoid actuated relief valve	5 Reli C - Cap K - Knob S - Screw	ef control	8 Relie Note: Code b in psi.	f Pressure range based on pressure	 Connector types GS - ISO 4400 DIN 43650 connector PS - 1/2" NPT conduit
2 Size 20 - 20 size	6 Valv A - Alumir	e housing material num	30 - 70-210 9 Volta	ge rating	WS - Leadwire 11 Special features 00 - None
3 Seal material Blank - Buna-N V - Viton® Viton is a registered trademark of E.I. DuPont	_		12D - 12 (24D - 24) 120A - 125 240A - 240	/DC VAC VAC	(Only required if valve has special features, omitted if "00".)
4 Type	7 Port	P, T	Gauge	Housing	
O - Normally open	20T	SAE 20	SAE 4	02-178312	

Composition chart

•		
Cartridge	Description	Quantity
SV4-8-0-0-**	2 way/2 position N.O. poppet solenoid valve	1
SV4-8-C-0-**	2 way/2 position N.C. poppet solenoid valve	1
RV8-8-*-0-**	Relief valve	1
DPS2-20-V-F-0-80	Differential pressure sensing valve	1

02-178313



SV4-8-C-0-** NC SV4-8-0-0-** NO RV-8-8-*-0 DPS2-20-V-F-0-80 72,6 (2.86)
 76.2

 83,8

 (3.30)

 106,6

 (4.20)
 50,8 (2.00) Ø 10,7 (Ø 0.42) thru 2 plcs. þ d 106,6 (4.20) 138,9 (5.47) 31,4 (1.24) 33,0 (1.30) 60,9 (2.40) **-**62,7 (2.47)

CRV-10 - Relief valve

Cross port 76 L/min (20 USgpm) • 17-210 bar (250-3000 psi)



Operation

This standard valve package is used to provide pressure relief for bi-directional motors and cylinders.

Features

Tamper proof and adjustable relief options. Aluminum in-line type housing.

All components in the package are true cartridges and can be removed from the housing without disturbing the plumbing.

Performance data

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)	17-210 bar (250-3000 psi)
Flow rating	76 L/min (20 USgpm)
Reseat pressure	90% of crack pressure
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.

Description

Cross port relief valve.

Pressure override



CRV-10 - Relief valve

Cross port 76 L/min (20 USgpm) • 17-210 bar (250-3000 psi)

Model code CRV	- 10 (V) - * - 2 3 4	A ** - ** 5 6 7	/ ** . 	- 00
1 Function CRV - Cross-port relief valve	4 Relief control C - Cap	6 Port size	Port size	Housing number
2 Size	K - Knod S - Screw	3G 8T	3/8" BSPP SAE 8	02-178476 889185
10 - 10 size 3 Seal material Blank - Buna-N V - Viton® Viton is a registered trademark of	5 Valve housing material A - Aluminum	 Pressure Range Note: Code based on pressure in psi. 6 - 6-40 bar (100-600 psi) 36 - 40-250 bar (600-3600 psi) 		9 Special Features 00 - None (Only required if valve has special features, omitted if "00".)
E.I. DuPont		 8 Pressure Settin user requested in 50 P Example: 10 - 1000 psi 10.5 - 1050 psi 	ig - SI steps	

Composition chart

Cartridge	Description	Quantity
RV3A-10-*-0-**	Relief valve	2

Dimensions

mm (inch)



Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

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CRV-16 - Relief valve

Cross port 303 L/mim (80 USgpm) • 17-172 bar (250-2500 psi)



Description

Cross port relief valve.

Operation

This standard valve package is used to provide pressure relief for bi-directional motors and cylinders.

Features

Tamper proof and adjustable relief options. Aluminum in-line type housing.

All components in the package are true cartridges and can be removed from the housing without disturbing the plumbing.

Performance data

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)	17-172 bar (250-2500 psi)
Flow rating	300 L/min (80 USgpm)
Reseat pressure	90% of crack pressure
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.

Pressure override



K

CRV-16 - Relief valve

Cross port 303 L/mim (80 USgpm) • 17-172 bar (250-2500 psi)

Model code CRV	- 16 (V) - * - 1 2 3 4	A *** – ** 5 6 7	/ ** - 	- 00
1 Function CRV - Cross-port relief valve	4 Relief control C - Cap	6 Port size	Port size	Housing number
2 Size	S - Screw	8G 16T	1" BSPP SAE 16	02-178477 889189
 16 - 16 size 3 Seal material Blank - Buna-N V - Viton[®] Viton is a registered trademark of E.I. DuPont 	5 Valve housing material A - Aluminum	 7 Pressure range 9 Sp 00 - Non 25 - 17-175 bar (250-2500 psi) 8 Pressure setting - 		9 Special features 00 - None (Only required if valve has special features, omitted if "00".)
		user requested in 50 P Example: 10 - 1000 psi 10.5 - 1050 psi	PSI steps	

Composition chart

Cartridge	Description	Quantity
RV3A-16-*-0-**	Relief valve	2

Dimensions

mm (inch)



Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

RGV-30 - Regenerative valve

Pressure sensitive 30 L/min (8 USgpm) • 210 bar (3000 psi)



Operation

This standard valve package provides means for fast extension of a cylinder at low pressure without additional pump flow. This package diverts rod end flow to the head end in order to accelerate the load. When the load induced pressure reaches a predetermined level, the valve closes off. Rod end oil is automatically diverted to tank and the full pump pressure is applied, allowing maximum force to develop at lower speed.

When applying pressure sensitive regenerative valves consider the following: Rod to diameter ratio. The pressure required to move a cylinder. Losses due to high flows and seal friction may prevent a circuit from staying in regeneration.

Features

Automatic kick out of regenerative operation made via load pressure sensing. Tamper proof and adjustable pressure setting options. Provides a smooth transition and decrease of the regenerative flow through use of a counterbalance valve. Aluminum in-line type housing.

Performance data

Ratings and specifications

210 bar (3000 psi)
30 L/min (8 USgpm)
-40° to 120° C (-40° to 248° F)

Notes: Regeneration circuits apply only to single rod cylinders in extension direction.

Description

Pressure sensitive regenerative valve package.

Pressure drop

- A Port CR to CH
- **B** Port VR to CR



Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

RGV-30 - Regenerative valve

Pressure sensitive 30 L/min (8 USgpm) • 210 bar (3000 psi)

1 Function	1	2 3 4 4 Relief control	5 6 6 Port size	7 8	9
regeneratio	ensitive in valve	F - Screw adjustment N - Fixed - State pressure	Code	Port size	e Housing number
		setting required	46	1/2" BSPF	6029951-001
2 Size 30 - 10 size		5 Valve housing material	7 Pressure ra	ange*	8 Pressure setting -
3 Seal mater	ial	A - Aluminum	Note: Code based c	on pressure	user requested in 50 PSI steps
Blank - Buna-N V - Viton®			ın psi. 20 - 70 - 210 bar. : 100 bar	std. setting	10 - 1000 psi 10.5 - 1050 psi
Viton is a registered tra E.I. DuPont	ademark of		*System pressure is lin (3000 psi)	mited to 210 bar	9 Special features
Composition cha	rt	n Quantity			(Only required if valve has special features, omitted if "00".)
1CE30-F-20-S-5	Counterbala	nce valve 1			
DPS2-10-S-F-0-80	Differential	pressure sensing 1			
566395	Sense check	kit 1			
Combined Flow (pump flow plus regenerative flow	$= \frac{Db}{Dr^2}$	² X Pump Flow	Retraction Flow (flow out of the l end during retrac	pind = $\frac{D}{Db^2}$	Db ² - Dr ² X Pump Flow
Dimensions mm (inch)		1CE30-F-2055 SENSE CHECK DP52-10-S-F-80 31.8 (1.25) CH	CR (CR (CR (CR (CR (CR (CR (CR (CR (CR (8-3 (69)	46.4 [1.83] 26.3 [1.04] 75.4 [2.97]
Note: This valve pack not be used as a load load lowering control	kage should d holding or I valve.	- 34.8 [1.37] - 90.2 [3.55] - 113.5 [4.47] - 26.2 [4.97]		2 X Ø8.73 [0.344]	IHRU 17.8 17.8 17.8 17.8 10.701 20.8 10.821 10.821 50.0 11.971

Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

RGV-90 - Regenerative valve

Pressure sensitive

90 L/min (23 USgpm) • 210 bar (3000 psi)



Operation

This standard valve package provides means for fast extension of a cylinder at low pressure without additional pump flow. This package diverts rod end flow to the head end in order to accelerate the load. When the load induced pressure reaches a predetermined level, the valve closes off. Rod end oil is automatically diverted to tank and the full pump pressure is applied, allowing maximum force to develop at lower speed.

When applying pressure sensitive regenerative valves consider the following: Rod to diameter ratio. The pressure required to move a cylinder. Losses due to high flows and seal friction may prevent a circuit from staying in regeneration.

Features

Automatic kick out of regenerative operation made via load pressure sensing. Tamper proof and adjustable pressure setting options. Provides a smooth transition and decrease of the regenerative flow through use of a counterbalance valve. Aluminum in-line type housing.

Performance data

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)
Maximum regenerative flow Regeneration diminishes progressively above setting of 1CE90	90 L/min (23 USgpm)
Temperature range	-40° to 102° C (-40° to 248° F)

Notes: Regeneration circuits apply only to single rod cylinders in extension direction.

Description

Pressure sensitive regenerative valve package.

Pressure drop

- A Port CR to CH
- **B** Port VR to CR



RGV-90 - Regenerative valve

Pressure sensitive 90 L/min (23 USgpm) • 210 bar (3000 psi)

Model code	RGV	_ 90	(V) _	*	A *** _	** / **	_ 00	
	1	2	3	4 5	6	7 8	9	
1 Function		4 Reli	ef control	l	6 Port size			
RGV - Pressure ser	nsitive	F - Screw	adjustmen	t	Code	Port size	e Hous	ing number
		setting red	quired	55010	6G	3/4" BSPF	° 60299	14-001
2 Size 90 - 12 size		5 Valve housing material		12T SAE 12 7 Pressure range*		8 Pressure setting -		
3 Seal materia Blank - Buna-N	al	A - Aluminum		Note: Code based in psi. 20 - 70 - 225 bai 100 bar	l on pressure r. std. setting	user requested in 50 PSI steps Example: 10 - 1000 psi 10.5 - 1050 psi 9 Special features		
✔ - Viton [®] Viton is a registered trac DuPont	demark of E.I.				*System pressure is limited to 210 bar (3000 psi)			
Composition char	t						00 - None (Only required if v features, omitted	alve has special if "00".)
Cartridge	Description	1	Quantity	y				
	Differential p		 					
JF32-10-3-F-0-00 		iessure sensinų	1					
Combined Flow (pump flow plus regenerative flow)	$= \frac{Db^2}{Dr^2}$	— X Pump	Flow		Retraction Flov (flow out of the end during retr	v E e bind = action) Db ²	$\frac{Db^2}{2}$ X Pump	Flow
Dimensions mm (inch)		DPS2-16	-S-F-0-80		D-F-20S4		59.0 [2.32]	
Notes: This valve pac	kage should	88.1 [3.47] 2.3 (0.09]				Ø10.71 [0.422] THRU, 2 PLAC	100.8 (3.97) ES 23.4 ES (0.92)	
not be used as a load load lowering control	holding or valve.		-	108.0 	51.6		-	

Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

RLV-30 - Regenerative valve

With load locking 30 L/min (8 USgpm) • 210 bar (3000 psi)



Operation

This standard valve package provides means for fast extension of a cylinder at low pressure without additional pump flow. This package diverts rod end flow to the head end in order to accelerate the load. When the load induced pressure reaches a predetermined level, the valve closes off. Rod end oil is automatically diverted to tank and the full pump pressure is applied, allowing maximum force to develop at lower speed.

When applying pressure sensitive regenerative valves consider the following: Rod to diameter ratio. The pressure required to move a cylinder. Losses due to high flows and seal friction may prevent a circuit from staying in regeneration.

Features

Automatic kick out of regenerative operation made via load pressure sensing. Tamper proof and adjustable pressure setting options. Provides a smooth transition and decrease of the regenerative flow through use of a counterbalance valve. Provides manual override on POC cartridge to lower the load in the event of power loss. Aluminum in-line type housing.

Performance data

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)
Maximum regenerative flow Regeneration diminishes progressively above setting of 1CE30	30 L/min (8 USgpm)
Temperature range	-40° to 120° C (-40° to 248° F)

Notes: Regeneration circuits apply only to single rod cylinders in extension direction.

Description

Pressure sensitive regenerative valve package with load locking.

Pressure drop

- **A** Port CR to CH **B** - Port VR to CR
- **C** Port VH to CH



Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

RLV-30 - Regenerative valve

With load locking 30 L/min (8 USgpm) • 210 bar (3000 psi)

Model code	RLV	- 30 (V)	_ * _ L L 4	A *** -	- ** / ** 	- 00
1 Function RLV - Pressure sens regeneration valve v	sitive with load	4 Relief co F - Screw adjus N - Fixed - Stare	ntrol tment pressure	6 Port siz	20 Port siz 1/2" RSP	P 6029965-001
2 Size 10 - 10 size 3 Seal material Blank - Buna-N V - Viton®		5 Valve housing material A - Aluminum		10T 7 Pressur	SAE 10	6029964-001 8 Pressure setting -
				in psi. 20 - 70 - 210 b 100 bar *System pressure	ear. std. setting	steps Example: 10 - 1000 psi 10.5 - 1050 psi
Composition chart	emark of E.I.			(3000 psi)		9 Special features 00 - None (Only required if valve has special features, omitted if "00".)
Cartridge	Descrip	tion	Quantity			
1CE30-F-*20-*-4	Counterb	alance valve	1			
DPS2-10-S-F-0-80	Differenti	ial pressure sensing	1			
4CK30-1S3	Pilot oper	ated check valve	1			
566395	Sense ch	eck kit	1			
Application notes Formulas to calcula (where Db = Bore I Combined Flow (pump flow plus	te flow in re Diameter ar = $\frac{Db^2}{2}$	egeneration circu nd Dr = Rod Diam — X Pump Flow	its are: neter)	Regenerative (flow out rod Retraction Fle (flow out of t end during re	e Flow Db end) =	$\frac{2 - Dr^{2}}{Dr^{2}} X Pump Flow$ $\frac{Db^{2}}{p^{2} - Dr^{2}} X Pump Flow$
Dimensions mm (inch)	¥ال	4CK30-	1CE SENSE CHE DPS2-10-S-F-80 1S3 - VH - T	30-F-2055		46.4 (1.83) 26.3 (1.04)

Notes: This valve package should not be used as a load holding or load lowering control valve.

68.3 [2.69]

Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

-2 XØ0.344

75.4 [2.97]

18.3 [0.72]

19.1 [0.75]

- 37.4 [1.47] ----

56.4 [2.22]

CR

СН 🖵

-- 60.2 [2.37]

- 115.6 [4.55]

138.9 [5.47]

151.6 [5.97]

- 36.6 [1.44]

NCH

RLV-90 - Regenerative valve

With load locking 90 L/min (23 USgpm) • 210 bar (3000 psi)



Operation

This standard valve package provides means for fast extension of a cylinder at low pressure without additional pump flow. This package diverts rod end flow to the head end in order to accelerate the load. When the load induced pressure reaches a predetermined level, the valve closes off. Rod end oil is automatically diverted to tank and the full pump pressure is applied, allowing maximum force to develop at lower speed.

When applying pressure sensitive regenerative valves consider the following: Rod to diameter ratio. The pressure required to move a cylinder. Losses due to high flows and seal friction may prevent a circuit from staying in regeneration.

Features

Automatic kick out of regenerative operation made via load pressure sensing. Tamper proof and adjustable pressure setting options. Provides a smooth transition and decrease of the regenerative flow through use of a counterbalance valve. Provides manual override on POC cartridge to lower the load in the event of power loss. Aluminum in-line type housing.

Performance data

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)
Maximum regenerative flow Regeneration diminishes progressively above setting of 1CE90	90 L/min (23 USgpm)
Temperature range	-40° to 120° C (-40° to 248° F)
Notos: Pagaparatian airquita apply only to single red avlinders in avtension	diraction

Notes: Regeneration circuits apply only to single rod cylinders in extension direction.

Description

Pressure sensitive regenerative valve package with load locking.

Pressure drop

A - Port CR to CH **B** - Port VR to CR

\boldsymbol{C} - Port VH to CH



Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

K-60

RLV-90 - Regenerative valve

With load locking 114 L/min (30 USgpm) • 210 bar (3000 psi)

Model code	RLV	- 90	(V) – * –	A *** –	. ** / ** -	- 00
		2	3 4	5 6	7 8	9
1 Function		4 Relie	ef control	6 Port siz	e	
RLV - Pressure ser	nsitive	F - Screw a	adjustment	Code	Port Size	Housing number
holding check valve	w/ 10a0 e	ting require	Stare pressure set-	6G	3/4" BSPP	02-178936
				12T	SAE 12	02-178935
2 Size		5 Valve	e housing material			
90 - 12 size		A - Alumini	um	7 Pressur	e range*	8 Pressure setting - user
				Note: Code ba	ased on pressure	requested in 50 PSI steps
3 Seal mater	ial			in psi.	ar atd catting	Example:
Blank - Buna-N				100 bar	al. stu setting	10 - 1000 psi 10.5 - 1050 psi
V - Viton®	tradomark of			*System pressure	e is limited to	
E.I. DuPont				210 bar (3000 ps	si)	9 Special features
						00 - None
Composition cha	irt					(Only required if valve has special features, omitted if "00".)
Cartridge	Description	on	Quantity			
1CE90-F-20-*-4	Counterbala	ance valve	1			
DPS2-16-S-F-0-80	Differential	l pressure sensing	1			
POC1-12-S-0-005	Pilot operat	ted check valve	1			
566395	Sense chec	k kit	1			
Application Not	es					
Formulas to calcu	late flow in r	regeneration	circuits are:	Regenerative	Flow Db ²	- Dr ²
(where Db = Bore	e Diameter a	ind Dr = Rod	Diameter)	(flow out rod	end) =	X Pump Flow
Combined Flow	Db	2			D	r ²
(pump flow plus	=	— X Pump I	Flow	Retraction Flo	bw D	b²
regenerative flow	/) Dr ²	2		(flow out of th	ne bind =	X Pump Flow
				end during re	traction) Db ²	- Dr ²
			10			
			4CK90-1	53	_	
			SENSE CHECK			
						\downarrow
			F	₹\	59.0 [2.32]	

Dimensions

mm (inch)

Notes: This valve package should not be used as a load holding or load lowering control valve.





Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

SCR-1 - Cross port relief

With shuttle and solenoid vent Up to 114 L/min (30 USgpm) • 210 bar (3000 psi)

Normally Open Version



Operation

This standard valve package is used to provide pressure line relief for bi-directional motors and cylinders. With the addition of a remotely controlled shuttle valve, allowance is made for motor slip or cylinder dump conditions.

Performance data

Features

Normally closed and normally open options. Tamper proof or adjustable relief options, gauge port. Low power requirements, number of voltages and connectors options. Aluminum in line type housing. All components in the package are true cartridges and can be removed from the housing without disturbing the plumbing.

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)
Flow rating	114 L/min (30 USgpm)
Reseat pressure	90% of crack pressure
Coil specifications Power requirements: Coil duty:	16 watts Magnet wire – UL class N rated (200° C) Continuous from 85% to 110% of nominal voltage (AC coils are internally rectified)
Temperature range	-40° to 120° C (-40° to 248° F)

Notes: Regeneration circuits apply only to single rod cylinders in extension direction.



Pressure drop

A - 30 - pressure range code

B - 15 - pressure range code



Description

Κ

Cross port relief with shuttle and solenoid vent.

SCR-1 - Cross port relief

With shuttle and solenoid vent Up to 114 L/min (30 USgpm) • 210 bar (3000 psi)

Model code SCR –	1 (V) - * 3 4	- * - 5	A *	** ** / ** 	- *** * L 10 1
1 Function	5 F	Relief contro	ol			10 Voltage
SCR - Solenoid actuated crossover relief valve with shuttle	C - Cap K - Kno S - Scre) b ew				12D - 12 VDC 24D - 24 VDC 120A - 120 VA 240A - 240 VA
2 Size	6 V	/alve housin	ng material			11 Connec
3 Seal material	A - Alui 7 P	Port size				GS - ISO 4400 connecto
Blank - Buna-N	Code	V1, V2	Gauge	Drain	Housing number	WS - Leadwire
V - Viton®	6G	3/4" BSPP	1/4" BSPP	3/8" BSPP	02-178938	
DuPont DuPont	12T	SAE 12	SAE 4	SAE 6	02-178937	12 Special
4 Type C - Normally closed	8 P Note: (in psi.	Pressure ran Code based o	nge* on pressure	9 Pre user requ Example:	ssure setting - ested in 50 psi steps	00 - None (Only required if v. features, omitted

O - Normally open

Composition chart

Dimensions

mm (inch)

Cartridge	Description	Quantity
VRV11-12-*-0-**/	Ventable relief valve	2
DSV2-8-B-0	Shuttle valve	1
SV5-8-C-0-**	Solenoid valve, N.C.	1
SV5-8-0-0-**	Solenoid valve, N.O.	1

15 - 5-100 bar (75-1500 psi) 30 - 10-210 bar (150-3000 psi) *System pressure is limited to 210 bar (3000 psi)

0	Vo	ltage	rating

00 12

C (C (C

tor types

DIN 43650 ٥r conduit

features

alve has special if "00".)



10 - 1000 psi

10.5 - 1050 psi

Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

1UL255 - Unloading valve

Two pump Up to 200 L/min (40 USgpm) • 350 bar (5000 psi)



Operation

Pump inlet to P1 and P2 is combined to give maximum flow at low pressure. When the load pressure increases to the valve setting the high flow (low pressure) pump is bypassed from P1 to tank allowing nearly all system power to be used for the high pressure pump. (See graph for the pressure drop of the dumped flow). The system relief valve provides protection by limiting the maximum pressure in the system line.

Features

This is a self contained system including two replaceable cartridges with full adjustment through their respective ranges. Hardened working components give long, trouble-free life and single body reduces plumbing to a minimum.

Performance data

Ratings and specifications

Performance data is typical with fluid at 32 cST (150 SUS)	
Rated flow	low flow/high pressure (P2 150 L/min (40 USgpm) high flow/low pressure (P1)) 200 L/min (52 USgpm)
Max setting	350 bar (5000 psi)
Cartridge material	Working parts hardened & ground steel External surface zinc plated
Body material	Standard - steel
Mounting position	Unrestricted
Weight	3.15 kg (6.93 lbs)
Seal kit number	SK671 (Nitrile) SK671V (Viton)
Recommended filtration level	BS5540/4 Class 18/13 (25 micron nominal)
Operating Temp	-30°C to +90°C (-22° to 194° F)
Nominal viscosity range	5 to 500 cSt

Viton is a registered trademark of E.I. DuPont

Pressure drop

Flow - L/min 40 80 120 160 200 240 0 20.7 300 17.2 250 13.8 200 Pressure - psi Pressure - bar 10.3 150 P1 - T 100 6.9 3.5 50 0 10 20 40 50 60 30 Flow - US gpm

Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

Description

Two-pump unloader valves

combinations of two (or more)

pumps to give high flow at low pressure and high pressure at low flow. The valves bypass the flow from the low

pressure pump(s) to tank at a pre-set pressure. This allows pump selection to give, for example, rapid advance and

high power compaction with the most economic usage

of system components and energy requirements.

are used in systems with

1UL255 - Unloading valve

Up to 200 L/min (40 USgpm) • 350 bar (5000 psi)



Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

- Additional products, product lines, and services offered by Eaton -



Ease of Doing Business





 Product Advisor (PVM, VMQ, DG-70, Proportional and Servo Valves)

Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

Special housings - bolt on solutions

cartridge valves & manifolds for spool & disk valve motors

We manufacture solutions

Designing hydraulic systems with Eaton-Vickers Cartridge Valves & Manifolds is a cost effective way of bringing your design into production well within the most demanding of production schedules. Minimizing the use of hoses, tubing and fittings will reduce production and assembly time significantly.

Features

- Compatible with Eaton H & T series spool valve motors, and most 2000 series disk valve motors
- Aluminum Manifolds
 Anodized Black
- Pre-set cartridges to your specifications
- 100% production tested assembly
- Wide range of settings available
- · Intelligent model code
- Manifolds are available with out cartridge valves, or pre-assembled and tested to your specifications
- Manifolds and motors can be supplied as a pre-assembled package
- Dual counterbalance valve (with integral shuttle valve), dual pilot operated check valve and dual cross port relief valve packages are available



Eaton H Series Hydraulic Motor

Dual cross-over relief package for H&T series motors

Cartridge valves & manifolds for spool valve motors

Dual crossover relief valve assembly

This valve assembly provides motor over-pressure protection in both directions of rotation, while supplying the return or lower pressure side of the motor with makeup oil. If closed center valving is used, an additional function is controlled braking.

Typical applications are vehicle propulsion and motor work circuits in which pressure limiting is required.

How to order

Complete pre-assembled packages are specified using the RV3A-10 model code. Option "A" must be selected for the cage seals, position 6 of the model code is "H". To order the manifold separately, without the two RV3A cartridges, order the part number 4997062-001.

Ratings and specifications

	701/ : (00110)
Rated flow	76 L/min(200Sgpm)
Rated pressure	210 bar (3000psi)
Internal leakage (maximum)	less than 5 drops/min @ 85% of nominal setting
Manifold sub-assembly only	4997060
Installation kit (includes cap screws, washers and o-rings)	02-372492
For detailed apositions refer to the DV/2A 10 data sheet on page E 210	

For detailed specifications refer to the RV3A-10 data sheet on page E-210



Dual cross-over relief package for 2000 series disc valve motors

Cartridge valves & manifolds for spool valve motors

Dual crossover relief valve assembly

This valve assembly provides motor over-pressure protection in both directions of rotation, while supplying the return or lower pressure side of the motor with makeup oil. If closed center valving is used, an additional function is controlled braking.

Typical applications are vehicle propulsion and motor work circuits in which pressure limiting is required.

How to order

Complete pre-assembled packages are specified using the RV3A-10 model code. Option "A" must be selected for the cage seals, position 6 of the model code is "2K". To order the manifold separately, without the two RV3A cartridges, order 4997060-001

Ratings and specifications

Rated flow	76 L/min(20USgpm)
Rated pressure	210 bar (3000psi)
Internal leakage (maximum)	less than 5 drops/min @ 85% of nominal setting
Manifold sub-assembly only	4997060-001
Installation kit (includes cap screws, washers and o-rings)	02-372492
For detailed apositions refer to the DV/2A 10 data sheet on page F 14	

For detailed specifications refer to the RV3A-10 data sheet on page E-14

Functional symbol



Dimensions



This manifold package may not be suitable for application with all 2000 series motors - please check installation dimensions carefully.

Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

-1,98

[0.078]

88,14

[3.470]

1,98 -

[0.078]

1CESHHT35/1CEESHHT35 - Motor mounted valves

H & T mounting pattern single and dual overcenter valve with brake release shuttle



1CESHHT35*A

Operation

The check section allows

free flow into the actuator

then holds and locks the load

against movement. The pilot

will give controlled movement

when pilot pressure is applied.

The relief section is normally

least 1.3 times the maximum

load induced pressure but the

pressure required to open the valve and allow movement

depends on the pilot ratio of

usage, a choice of pilot ratios

the valve. For optimization

of load control and energy

set to open at a pressure at

assisted relief valve section



ICESHH135^B

The pressure required to open the valve and start actuator movement can be calculated as follows:

Pilot Pressure =

(Relief Setting) - (Load Pressure) Pilot Ratio



Pilot ratios

- 2.5:1 Best suited for extremely unstable applications such as long booms or flexible frameworks.
- 5:1 Best suited for applications where load varies (Standard) and machine structure can induce instability
- 10:1 Best suited for applications where the load remains relatively constant.

is available.

Performance data

Ratings and specifications

Figures based on: Oil Temp = 40°C Viscosity = 32 cSt (150 SU	JS)		
Rated flow			30 L/min (8 USgpm)
Max setting		Max load in	duced
		Pressure: Relief setting	270 bar (4000 psi) 350 bar (5000 psi)
Cartridge material		Working parts ha Exter	ardened & ground steel mal surface zinc plated
Body material		Standard alu	ninium (up to 210 bar*) Steel (up to 350 bar)
Mounting position			Unrestricted
Cavity Number			A6610 (See section M)
Torque cartridge into cavity			45 Nm (33 ibs ft)
Weight (inc cartridges)		1CESHHT35 1CEESHHT35	2.29 kg (5.04 lbs) 2.34 kg (5.15 lbs)
Seal kit number	1CESHHT35 1CEESHHT35	9900828-000 (Buna-N) 9900828-000 (Buna-N)	9900829-000 (Viton) 9900829-000 (Viton)
Recommended filtration level		BS5540/4 Class 18/	/13 (25 micron nominal)
Operating Temp		-30°C to	o +90°C (-22° to 194°F)
Leakage		0.3 mill	iL/min nominal (5 dpm)
Nominal viscosity range			5 to 500 cSt
Installation Kit (includes cap screws, washers, and o-rings)			9900834-000 (Buna-N) 9900835-000 (Viton)

Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

Description

Overcenter Valves give static and dynamic control of loads by regulating the flow into and out of hydraulic actuators. When installed close to or within an actuator, the overcenter valve will stop runaway in the event of hose burst and if open center directional control valves are used, will allow thermal expansion relief of the hydraulic fluid.

These dual overcenter valves also contain a brake release shuttle valve which ensures that pressure is applied to a brake release circuit regardless of whether pressure is applied to ports "A" or "B". These multifunction valves are normally used for the static and dynamic control of systems using motors or semi-rotaryactuators.

1CESHHT35/1CEESHHT35 - Motor mounted valves

H & T mounting pattern single and dual overcenter valve with brake release shuttle



Pressure setting (cart B)

0 - Std factory setting

1500 - 1500 psi

11 Pilot ratio

AXP13032-01-N AXP13032-01-V

Cavity plug part number

10 Seals

S – Buna-N SV – VitoN

2 - 2.5:1

10 - 10:1

5 – 5:1

Nitrile



9

1 Basic code

1CEESHHT35 – Double Cartridge and Body **1CESHHT35*A** – Single overcenter in line A-"A" **1CESHHT35*B** – Single overcenter in line B-"B"

2 Adjustment means

F – Screw Adjustment

3 Housing material

- A Aluminum
- **S –** Steel

4

	Port size	Dual housing number		
Code	"A" & "B"	Brake	Aluminum	Steel
4W	1/2" BSP	1/4" BSP	6025216-001	6025216-003
10H	SAE 10	SAE 4	6025216-002	
10T	SAE 10	SAE 4		6025216-004

5 Port acted upon

A – A Port B – B Port AB – A & B Ports (dual)

6 Pressure range (cart A)

Note: Code Based on pressure in bar.

- **20** (2.5:1 and 5:1): 70-210 bar. Std setting 100 bar.
- (10:1): 100-210 bar. Std setting 100 bar. **35** – (2.5:1 and 5:1): 100-350 bar. Std setting 210 bar. (10:1): 120-350 bar. Std setting 210 bar.

7 Pressure setting (cart A)

0 – Std factory setting **1500** – 1500 psi

8 Pressure range (cart B)

Note: Code Based on pressure in bar.

- **20** (2.5:1 and 5:1): 70-210 bar. Std setting 100 bar.
- (10:1): 100-210 bar. Std setting 100 bar. **35** – (2.5:1 and 5:1): 100-350 bar. Std setting 210 bar. (10:1): 120-350 bar. Std setting 210 bar.







Note: Note: For applications over 210 bar (3000 psi), please consult our technical department or use the steel body option. Cartridges must not be adjusted above the safe working pressure of the motor.

Tightening torque of "F" adjuster locknut - 20 to 25 Nm Check motor mounting compatibility before specifying.

K-71

1CESH2K95/1CEESH2K95 - Motor mounted valves

2k mounting pattern single and dual overcenter valves with brake release shuttle



Description

Overcenter Valves give static and dynamic control of loads by regulating the flow into and out of hydraulic actuators. When installed close to or within an actuator, the overcenter valve will stop runaway in the event of hose burst and if open center directional control valves are used, will allow thermal expansion relief of the hydraulic fluid.

These dual overcenter valves also contain a brake release shuttle valve which ensures that pressure is applied to a brake release circuit regardless of whether pressure is applied to ports "A" or "B". These multifunction valves are normally used for the static and dynamic control of systems using motors or semi-rotary actuators.



The check section allows free flow into the actuator then holds and locks the load against movement. The pilot assisted relief valve section will give controlled movement when pilot pressure is applied. The relief section is normally set to open at a pressure at least 1.3 times the maximum load induced pressure but the pressure required to open the valve and allow movement depends on the pilot ratio of the valve. For optimization of load control and energy usage, a choice of pilot ratios is available.

Δ

Performance data

Ratings and specifications

Figures based on: Oil Temp = 40°C Viscosity = 32 cSt (150 SUS)

Rated flow		90 L/min (23 USgpm)
Max setting	Max load induced	
		Pressure: 270 bar (4000 psi Relief setting: 350 bar (5000 psi
Cartridge material		Working parts hardened & ground stee External surface zinc plated
Body material		Standard aluminium (up to 210 bar* Steel (up to 350 bar
Mounting position		Unrestricted
Cavity Number		A12336 (See section M
Torque cartridge into cavity		60 Nm (44 ibs ft
Weight (inc cartridges)		1CESH2K95 2.32 kg (5.10 lbs 1CEESH2K95 2.42 kg (5.32 lbs
Seal kit number	1CESH2K95 1CEESHT35	9900826-000 (Buna-N) 9900827-000 (Viton 9900826-000 (Buna-N) 9900827-000 (Viton
Recommended filtration level		BS5540/4 Class 18/13 (25 micron nominal
Operating Temp		-30°C to +90°C (-22° to 194°F
Leakage		0.3 milliL/min nominal (5 dpm)
Nominal viscosity range		5 to 500 cS
Installation Kit (includes cap screws, washers, and o-rings)		9900830-000 (Buna-N 9900831-000 (Viton

Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

"A" Brake "B"

1CESH2K95*A

"A" Brake "B' 1CEESH2K95

The pressure required to open the valve and start actuator movement can be calculated as follows:

Pilot Pressure =

(Relief Setting) - (Load Pressure) **Pilot Ratio**

Pilot Ratios

- 4:1 Best suited for applications where load varies and machine structure can induce instability
- 8:1 Best suited for applications where the load remains relatively constant.

Other ratios available upon request
1CESH2K95/1CEESH2K95 - Motor mounted valves

2K Mounting pattern single and dual overcenter valves with brake release shuttle





The pressure required to

open the valve and start

calculated as follows:

Pilot Pressure =

actuator movement can be

(Relief Setting) - (Load Pressure)

Pilot Ratio



Description

Overcenter Valves give static and dynamic control of loads by regulating the flow into and out of hydraulic actuators. When installed close to or within an actuator, the overcenter valve will stop runaway in the event of hose burst and if open center directional control valves are used, will allow thermal expansion relief of the hydraulic fluid.

These dual overcenter valves also contain a brake release shuttle valve which ensures that pressure is applied to a brake release circuit regardless of whether pressure is applied to ports "A" or "B". These multifunction valves are normally used for the static and dynamic control of systems using motors or semi-rotary actuators.

Operation

The check section allows free flow into the actuator then holds and locks the load against movement. The pilot assisted relief valve section will give controlled movement when pilot pressure is applied. The relief section is normally set to open at a pressure at least 1.3 times the maximum load induced pressure but the pressure required to open the valve and allow movement depends on the pilot ratio of the valve. For optimization of load control and energy usage, a choice of pilot ratios is available.

Performance data

Figures based on: Oil Temp = 40°C Viscosity = 32 cSt (150 SUS)				
Rated flow			90 L/min (23	USgpm)
Max setting	Max load induced			
		Pressure: Relief setting:	270 bar (40 350 bar (50	000 psi) 000 psi)
Cartridge material		Working parts ha Extern	rdened & grour nal surface zinc	nd steel c plated
Body material		Standard alun	ninium (up to 21 Steel (up to 3	10 bar*) 350 bar)
Mounting position			Unre	stricted
Cavity Number		A	12336 (See sec	ction M)
Torque cartridge into cavity			60 Nm (4	4 ibs ft)
Weight (inc cartridges)		1CESH2K95 1CEESH2K95	2.32 kg (5 2.42 kg (5	5.10 lbs) 5.32 lbs)
Seal kit number	1CESH2K95 1CEESHT35	9900834-000(Buna-N) 9900836-000 (Buna-N)	9900835-000 9900837-000) (Viton)) (Viton)
Recommended filtration level		BS5540/4 Class 18/	13 (25 micron n	nominal)
Operating Temp		-30°C to	+90°C (-22° to	o 194°F)
Leakage		0.3 milli	L/min nominal	(5 dpm)
Nominal viscosity range			5 to	500 cSt
Installation Kit (includes cap screws, washers, and o-rings)		9	900828-000 (E 9900829-000	Buna-N) (Viton)

Pilot ratios

- 4:1 Best suited for applications where load varies and machine structure can induce instability
- 8:1 Best suited for applications where the load remains relatively constant.

Other ratios available upon request

Whore measurements are critical re	quast cartified drawings	W/o reserve the right to chan	an enocifications without notico
where measurements are childen re	quest certineu urawings.	vve reserve the hynt to chan	ue specifications without notice

1CLLROMP150 - Motor mounted relief

150 L/min (40 USgpm) 350 bar (5000 psi)



Operation

Pressure acts over one of two differential areas forcing the poppet back allowing relief flow to the other port. This being a single cartridge is ideal for mounting on to a motor in a special housing.

Features

Single cartridge relieving in both directions cutting down space requirements, giving full adjustment through its range on both pressures at the same time.

Performance data

Ratings and specifications

Figures based on: Oil Temp = 40°C Viscosity = 32 cSt (1	50 SUS)
Rated Flow	150 L/min (40 USgpm)
Max Setting	350 bar (5000 psi)
Cartridge Material	Working parts hardened and ground steel. External steel surfaces black oxide.
Body Material	Standard aluminium (up to 210 bar*) Add Suffix '377' for steel option
Mounting Position	Unrestricted
Cavity Number	A878 (See Section M)
Torque Cartridge into Cavity	60 Nm (44 lbs ft)
Weight	1.46 kg (3.21 lbs)
Seal Kit Number	SK1280 (Nitrile) SK1280V (Viton)
Recommended Filtration Level	BS5540/4 Class 18/13 (25 micron nominal)
Operating Temp	-30°C to +90°C (-22° to 194°F)
Leakage	5 milliL/min
Nominal Viscosity Range	5 to 500 cSt

Description

Pressure drop

Cartridge only



Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

This is a direct acting bi-directional relief valve designed to protect both lines in a circuit from over pressurization by relieving oil to the other line. Ideal for use with motors or directional valves as a emergency relief. Differential area, fast acting, poppet valve.

1CLLROMP150 - Motor mounted relief

150 L/min (40 USgpm) 350 bar (5000 psi)



Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

1CLLROMS150 - Motor mounted relief

150 L/min (40 USgpm) 350 bar (5000 psi)



Operation

Pressure acts over one of two differential areas forcing the poppet back allowing relief flow to the other port. This being a single cartridge is ideal for mounting on to a motor in a special housing.

Features

Single cartridge relieving in both directions cutting down space requirements, giving full adjustment through its range on both pressures at the same time.

Performance data

Ratings and specifications

Figures based on: Oil Temp = 40°C Viscosity =	32 cSt (150 SUS)
Rated Flow	150 L/min (40 USgpm)
Max Setting	350 bar (5000 psi)
Cartridge Material	Working parts hardened and ground steel. External steel surfaces black oxide.
Body Material	Standard aluminium (up to 210 bar*) Add Suffix '377' for steel option
Mounting Position	Unrestricted
Cavity Number	A878 (See Section M)
Torque Cartridge into Cavity	60 Nm (44 lbs ft)
Weight	1.46 kg (3.21 lbs)
Seal Kit Number	SK1280 (Nitrile) SK1280V (Viton)
Recommended Filtration Level	BS5540/4 Class 18/13 (25 micron nominal)
Operating Temp	-30°C to +90°C (-22° to 194°F)
Leakage	5 milliL/min
Nominal Viscosity Range	5 to 500 cSt

Description

This is a direct acting bidirectional relief valve designed to protect both lines in a circuit from over pressurization by relieving oil to the other line. Ideal for use with motors or directional valves as a emergency relief. Differential area, fast acting, poppet valve.

Pressure drop

Cartridge only



Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

1CLLROMS150 - Motor mounted relief

150 L/min (40 USgpm) 350 bar (5000 psi)

Model code	1CLLROMS	6150 – F 4 2	W – 35 S BK 3 4 5 6	
1 Basic code 1CLLROMS150 - Cartridge an Body	3 Port s d Code 4W	Size Port size 1/2" BSP	Housing number AXP24059-4W-S	6 Mounting BK - Bolt Kit
2 Adjustment means F - Screw Adjustment	 4 Adjustion range Note: Code in bar. 35 - 114-350 280 bar* Std setting r * Cartridges m the safe working 	stable pressure based on pressure bar. Std setting made at 14 L/min ust not be adjusted above og pressure of the motor	 5 Seals S - Nitrile (For use with most industrial hydraulic oils) SV - Viton (For high temperature and most special fluid applications) 	
Dimensions mm (inch)	Tightening adjuster loo	torque of "F" knut - 20 to 25 Nm	Note: For applications over 210 bar (3000 psi), please consult our technical department or use the steel body option.	



Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

1CEOMP35/1CEEOMP35 - Motor mounted valves

OMP mounting pattern single and dual overcenter valves







Description

Overcenter valves give static and dynamic control of loads by regulating the flow into and out of hydraulic actuators. When installed close to or within an actuator, the overcenter valve will stop runaway in the event of hose burst and if open center directional control valves are used, will allow thermal expansion relief of the hydraulic fluid.

The overcenter cartridge is ideal for mounting directly into a cavity machined in the body of the cylinder, motor or rotary actuator. The cartridge can also be mounted directly to the ports via a specifically machined body as part of a Hydraulic Integrated Circuit or single unit, or contained within one of our standard line bodies.

Single overcenter valves are normally used when the load is unidirectional, for example an aerial platform or crane and dual overcenter valves are used for controlling loads in both directional for motor applications or for cylinders going over center.

Operation

The check section allows free flow into the actuator then holds and locks the load against movement. The pilot assisted relief valve section will give controlled movement when pilot pressure is applied. The relief section is normally set to open at a pressure at least 1.3 times the maximum load induced pressure but the pressure required to open the valve and allow movement depends on the pilot ratio of the valve. For optimization of load control and energy usage, a choice of pilot ratios is available.

Performance data

Ratings and specifications

Figures based on: Oil Temp = 40°C Viscosity = 32 cSt (150 SUS)			
Rated flow	30 L/min (8 USgpm)		
Max setting	Max load induced		
-	Pressure: 270 bar (4000 psi) Relief setting: 350 bar (5000 psi)		
Cartridge material	Working parts hardened & ground steel External surface zinc plated		
Body material	Standard aluminium (up to 210 bar*) Add suffix '377' for steel option		
Mounting position	Unrestricted		
Cavity Number	A6610 (See section M)		
Torque cartridge into cavity	45 Nm (33 ibs ft)		
Weight (inc cartridges)	1CEOMP35 1.6 kg (3.52 lbs) 1CEEOMP35 1.66 kg (3.65 lbs)		
Seal kit number	1CEOMP35 SK1285 (Nitrile) SK1285V (Viton) 1CEEOMP35 SK1284 (Nitrile) SK1284V (Viton)		
Recommended filtration level	BS5540/4 Class 18/13 (25 micron nominal)		
Operating Temp	-30°C to +90°C (-22° to 194°F)		
Leakage	0.3 milliL/min nominal (5 dpm)		
Nominal viscosity range	5 to 500 cSt		

The pressure required to open

the valve and start actuator

as follows:

Pilot Pressure =

movement can be calculated

(Relief Setting) - (Load Pressure)

Pilot Ratio

Pilot Ratios

- 2.5:1 Best suited for extremely unstable applications such as long booms or flexible frameworks.
- 5:1 Best suited for applications where load varies (Standard) and machine structure can induce instability
- 10:1 Best suited for applications where the load remains relatively constant.

Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

1CEHT35/1CEEHT35 - Motor mounted valves

H & T Mounting pattern single and dual overcenter valves





The pressure required to

open the valve and start

calculated as follows:

Pilot Pressure =

actuator movement can be

(Relief Setting) - (Load Pressure)

Pilot Ratio



1CEEHT35

Pilot Ratios

2.5:1 Best suited for

frameworks.

5:1 Best suited for

extremely unstable

applications such as

applications where load

varies (Standard) and

induce instability

10:1 Best suited for

constant

machine structure can

applications where the

load remains relatively

long booms or flexible

Description

Overcenter valves give static and dynamic control of loads by regulating the flow into and out of hydraulic actuators. When installed close to or within an actuator, the overcenter valve will stop runaway in the event of hose burst and if open center directional control valves are used, will allow thermal expansion relief of the hydraulic fluid. The overcenter cartridge is ideal for mounting directly into a cavity machined in the body of the cylinder, motor or rotary actuator.

The cartridge can also be mounted directly to the ports via a specifically machined body as part of a Hydraulic Integrated Circuit or single unit, or contained within one of our standard line bodies.

Single overcenter valves are normally used when the load is unidirectional, for example an aerial platform or crane and dual overcenter valves are used for controlling loads in both directional for motor applications or for cylinders going over center.

Operation

The check section allows free flow into the actuator then holds and locks the load against movement. The pilot assisted relief valve section will give controlled movement when pilot pressure is applied. The relief section is normally set to open at a pressure at least 1.3 times the maximum load induced pressure but the pressure required to open the valve and allow movement depends on the pilot ratio of the valve. For optimization of load control and energy usage, a choice of pilot ratios is available.

Performance data

Ratings and specifications

Figures based on: Oil Temp = 40°C Viscosity = 32 cSt (150 SUS	5)	
Rated flow		30 L/min (8 USgpm)
Max setting		Max load induced Pressure: 270 bar (4000 psi) Relief setting: 350 bar (5000 psi)
Cartridge material		Working parts hardened & ground steel External surface zinc plated
Body material		Standard aluminium (up to 210 bar*) Steel (up to 350 bar)
Mounting position		Unrestricted
Cavity Number		A6610 (See section M)
Torque cartridge into cavity		45 Nm (33 ibs ft)
Weight (inc cartridges)		1CEOMP35 1.6 kg (3.52 lbs) 1CEEOMP35 1.66 kg (3.65 lbs)
Seal kit number	1CEHT35 1CEEHT35	9900834-000 (Buna-N) 9900835-000 (Viton) 9900836-000 (Buna-N 9900837-000 (Viton)
Recommended filtration level		BS5540/4 Class 18/13 (25 micron nominal)
Operating Temp		-30°C to +90°C (-22° to 194°F)
Leakage		0.3 milliL/min nominal (5 dpm)
Nominal viscosity range		5 to 500 cSt
Installation Kit (includes cap screws, washers, and o-rings)		9900828-000 (Buna-N) 9900829-000 (Viton)

Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

1CEHT35/1CEEHT35 - Motor mounted valves

H & T Mounting pattern single and dual overcenter valves



1CE2K95/1CEE2K95 - Motor mounted valves

2K Mounting pattern single and dual overcenter valves



The pressure required to

open the valve and start

calculated as follows:

Pilot Pressure =

actuator movement can be

(Relief Setting) - (Load Pressure)

Pilot Ratio

Description

Overcenter valves give static and dynamic control of loads by regulating the flow into and out of hydraulic actuators. When installed close to or within an actuator, the overcenter valve will stop runaway in the event of hose burst and if open center directional control valves are used, will allow thermal expansion relief of the hydraulic fluid.

The overcenter cartridge is ideal for mounting directly into a cavity machined in the body of the cylinder, motor or rotary actuator. The cartridge can also be mounted directly to the ports via a specifically machined body as part of a Hydraulic Integrated Circuit or single unit, or contained within one of our standard line bodies.

Single overcenter valves are normally used when the load is unidirectional, for example an aerial platform or crane and dual overcenter valves are used for controlling loads in both directional for motor applications or for cylinders going over center.

Operation

The check section allows free flow into the actuator then holds and locks the load against movement. The pilot assisted relief valve section will give controlled movement when pilot pressure is applied. The relief section is normally set to open at a pressure at least 1.3 times the maximum load induced pressure but the pressure required to open the valve and allow movement depends on the pilot ratio of the valve. For optimization of load control and energy usage, a choice of pilot ratios is available.

Performance data

Ratings and specifications

Figures based on: Oil Temp = 40°C Viscosity = 32 cSt (150 SUS)	
Rated flow		90 L/min (23 USgpm)
Max setting	Max load induced	
		Pressure: 270 bar (4000 psi) Relief setting: 350 bar (5000 psi)
Cartridge material		Working parts hardened & ground steel External surface zinc plated
Body material		Standard aluminium (up to 210 bar*) Steel (up to 350 bar)
Mounting position		Unrestricted
Cavity Number		A12336 (See section M)
Torque cartridge into cavity		60 Nm (44 ibs ft)
Weight (inc cartridges)		1CE2K95 2.16 kg (4.75 lbs) 1CEE2K95 2.26 kg (4.97 lbs)
Seal kit number	1CE2K95 1CEE2K95	9900826-000 (Buna-N) 9900827-000 (Viton) 9900826-000 (Buna-N) 9900827-000 (Viton)
Recommended filtration level		BS5540/4 Class 18/13 (25 micron nominal)
Operating Temp		-30°C to +90°C (-22° to 194°F)
Leakage		0.3 milliL/min nominal (5 dpm)
Nominal viscosity range		5 to 500 cSt
Installation Kit (includes cap screws, washers, and o-rings)		9900830-000 (Buna-N) 9900831-000 (Viton)

Pilot Ratios

- 4:1 Best suited for applications where load varies and machine structure can induce instability
- 8:1 Best suited for applications where the load remains relatively constant.

Other ratios available upon request

Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

1CE2K95/1CEE2K95 - Motor mounted valves

2K Mounting pattern single and dual overcenter valves



Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

1CEOMS95/1CEEOMS95 - Motor mounted valves

OMS Mounting pattern single and dual overcenter valves

M1

V/1

CT1

1CEEOMS95





Description

Overcenter valves give static and dynamic control of loads by regulating the flow into and out of hydraulic actuators. When installed close to or within an actuator, the overcenter valve will stop runaway in the event of hose burst and if open center directional control valves are used, will allow thermal expansion relief of the hydraulic fluid.

The overcenter cartridge is ideal for mounting directly into a cavity machined in the body of the cylinder, motor or rotary actuator. The cartridge can also be mounted directly to the ports via a specifically machined body as part of a Hydraulic Integrated Circuit or single unit, or contained within one of our standard line bodies.

Single overcenter valves are normally used when the load is unidirectional, for example an aerial platform or crane and dual overcenter valves are used for controlling loads in both directional for motor applications or for cylinders going over center.

Operation

The check section allows free flow into the actuator then holds and locks the load against movement. The pilot assisted relief valve section will give controlled movement when pilot pressure is applied. The relief section is normally set to open at a pressure at least 1.3 times the maximum load induced pressure but the pressure required to open the valve and allow movement depends on the pilot ratio of the valve. For optimization of load control and energy usage, a choice of pilot ratios is available.

M1

V1

1CEOMS95-2

M2

V2

CT2

Performance data

Ratings and specifications

Figures based on: Oil Temp = 40°C Viscosity = 32 cSt (150 SUS)	
Rated flow	90 L/min (23 USgpm)
Max setting	Max load induced
	Pressure: 270 bar (4000 psi) Relief setting: 350 bar (5000 psi)
Cartridge material	Working parts hardened & ground steel External surface zinc plated
Body material	Standard aluminium (up to 210 bar*) Add suffix '377' for steel option
Mounting position	Unrestricted
Cavity Number	A12336 (See section M)
Torque cartridge into cavity	60 Nm (44 ibs ft)
Weight (inc cartridges)	1CEOMS95 2.16 kg (4.75 lbs) 1CEEOMS95 2.26 kg (4.97 lbs)
Seal kit number	1CEOMS95 SK1282 (Nitrile) SK1282V (Viton) 1CEEOMS95 SK795 (Nitrile) SK795V (Viton)
Recommended filtration level	BS5540/4 Class 18/13 (25 micron nominal)
Operating Temp	-30°C to +90°C (-22° to 194°F)
Leakage	0.3 milliL/min nominal (5 dpm)
Nominal viscosity range	5 to 500 cSt

The pressure required to open the valve and start actuator movement can be calculated as follows:

Pilot Pressure =

(Relief Setting) - (Load Pressure) Pilot Ratio

Pilot Ratios

4:1 Best suited for applications where load varies and machine structure can induce instability

M2

V2

CT2

8:1 Best suited for applications where the load remains relatively constant.

Other ratios available upon request

Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

1CEOMP35/1CEEOMP35 - Motor mounted valves

OMP Mounting pattern single and dual overcenter valves



1CEOMS95/1CEEOMS95 - Motor mounted valves

OMS Mounting pattern single and dual overcenter valves



1CESHOMP35/1CEESHOMP35 - Motor mounted valves

OMP Mounting pattern single and dual overcenter valve with brake release shuttle



1CESHOMP35-1

Description

Overcenter Valves give static and dynamic control of loads by regulating the flow into and out of hydraulic actuators. When installed close to or within an actuator, the overcenter valve will stop runaway in the event of hose burst and if open center directional control valves are used, will allow thermal expansion relief of the hydraulic fluid.

These dual overcenter valves also contain a brake release shuttle valve which ensures that pressure is applied to a brake release circuit regardless of whether pressure is applied to ports V1 or V2. These multifunction valves are normally used for the static and dynamic control of systems using motors or semi-rotary actuators.

Operation

The check section allows free flow into the actuator then holds and locks the load against movement. The pilot assisted relief valve section will give controlled movement when pilot pressure is applied. The relief section is normally set to open at a pressure at least 1.3 times the maximum load induced pressure but the pressure required to open the valve and allow movement depends on the pilot ratio of the valve. For optimization of load control and energy usage, a choice of pilot ratios is available.

Performance data

Ratings and specifications

Figures based on: Oil Temp = 40°C Viscosity = 32 cSt (150 SUS) Rated flow 30 L/min (8 USgpm) Max setting Max load induced Pressure: 270 bar (4000 psi) Relief setting: 350 bar (5000 psi) Cartridge material Working parts hardened & ground steel External surface zinc plated Body material Standard aluminium (up to 210 bar*) Add suffix '377' for steel option Mounting position Unrestricted A6610 (See section M) Cavity Number Torque cartridge into cavity 45 Nm (33 ibs ft) 2.29 kg (5.04 lbs) 2.34 kg (5.15 lbs) Weight 1CESHOMP35 (inc cartridges) 1CEESHOMP35 1CESHOMP35 SK1285 (Nitrile) SK1285V (Viton) Seal kit number SK1284 (Nitrile) SK1284V (Viton) 1CEESHOMP35 Recommended filtration level BS5540/4 Class 18/13 (25 micron nominal) -30°C to +90°C (-22° to 194°F) **Operating Temp** 0.3 milliL/min nominal (5 dpm) Leakage Nominal viscosity range 5 to 500 cSt

The pressure required to

calculated as follows:

Pilot Pressure =

open the valve and start

(Relief Setting) - (Load Pressure)

Pilot Ratio

actuator movement can be

Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

Κ

Pilot ratios

- 2.5:1 Best suited for extremely unstable applications such as long booms or flexible frameworks
 - applications where load varies (Standard) and machine structure can induce instability
- 10:1 Best suited for applications where the load remains relatively constant.

5:1 Best suited for

1CESHOMP35/1CEESHOMP35 - Motor mounted valves

OMP Mounting pattern single and dual overcenter valve with brake release shuttle



1CESHOMS95/1CEESHOMS95 - Motor mounted valves

OMS Mounting pattern single and dual overcenter valves with brake release shuttle



1CESHOMS95-1

Description

Overcenter Valves give static and dynamic control of loads by regulating the flow into and out of hydraulic actuators. When installed close to or within an actuator, the overcenter valve will stop runaway in the event of hose burst and if open center directional control valves are used, will allow thermal expansion relief of the hydraulic fluid.

These dual overcenter valves also contain a brake release shuttle valve which ensures that pressure is applied to a brake release circuit regardless of whether pressure is applied to ports V1 or V2. These multifunction valves are normally used for the static and dynamic control of systems using motors or semi-rotary actuators.

Operation

The check section allows free flow into the actuator then holds and locks the load against movement. The pilot assisted relief valve section will give controlled movement when pilot pressure is applied. The relief section is normally set to open at a pressure at least 1.3 times the maximum load induced pressure but the pressure required to open the valve and allow movement depends on the pilot ratio of the valve. For optimization of load control and energy usage, a choice of pilot ratios is available.

M1

СТЗ

B1 B2 V2

as follows:

Pilot Pressure =

The pressure required to open

the valve and start actuator

movement can be calculated

(Relief Setting) - (Load Pressure)

Pilot Ratio

V1

1CESHOMS95-2

M2

M1

CT3

Pilot ratios

V1

1CEESHOMS95

4.1

8:1

B1 B2 V2

Best suited for

load varies and

Best suited for

Other ratios available

upon request

induce instability

applications where

relatively constant.

the load remains

applications where

machine structure can

CT1

M2

CT2

Performance data

Ratings and specifications

Figures based on: Oil Temp = 40°C Viscosity = 32 cSt (150 SUS)	
Rated flow	90 L/min (23 USgpm)
Max setting	Max load induced Pressure: 270 bar (4000 psi Relief setting: 350 bar (5000 psi
Cartridge material	Working parts hardened & ground steel External surface zinc plated
Body material	Standard aluminium (up to 210 bar*) Add suffix '377' for steel option
Mounting position	Unrestricted
Cavity Number	A12336 (See section M)
Torque cartridge into cavity	60 Nm (44 ibs ft)
Weight (inc cartridges)	1CESHOMS95 2.32 kg (5.10 lbs) 1CEESHOMS95 2.42 kg (5.32 lbs)
Seal kit number	1CESHOMS95 SK1282 (Nitrile) SK1282V (Viton) 1CEESHOMS95 SK795 (Nitrile) SK795V (Viton)
Recommended filtration level	BS5540/4 Class 18/13 (25 micron nominal)
Operating Temp	-30°C to +90°C (-22° to 194°F)
Leakage	0.3 milliL/min nominal (5 dpm)
Nominal viscosity range	5 to 500 cSt

Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

1CESHOMS95/1CEESHOMS95 - Motor mounted valves

OMS Mounting pattern single and dual overcenter valves with brake release shuttle



Tightening torque of "F" adjuster locknut - 20 to 25 Nm

Check motor mounting compatibility before specifying.

Where measurements are critical request certified drawings. We reserve the right to change specifications without notice.

 \bigcirc

91.00 (3.58)

32.00

21.00

42.00 (1.65)

90.00 (3.54)

35.00 (1.38) 127.00 (5.00)

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