

PowerFlow™ D05 Modular Stack Valves



MODULAR STACK VALVES

PRODUCT OVERVIEW

Modular Stack Valves



Features and Benefits

- Reduces assembly time
- Eliminates plumbing for reduced system space and connections
- 3,000 PSI rated at full rated flow
- Matches D03, D05, and D08 mounting patterns

Product Description

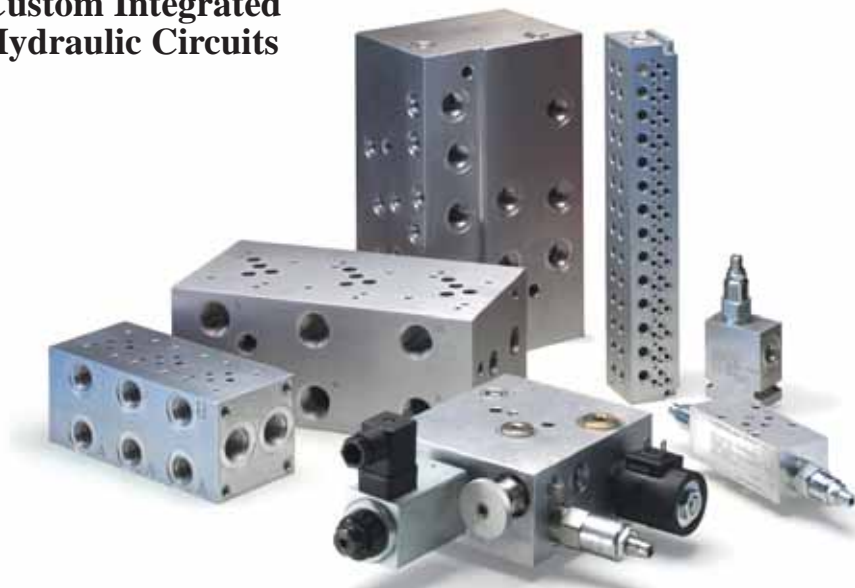
Modular stack valves are designed to install between the valve and its mounting surface. This will eliminate plumbing connections and reduce space requirements. Continental Hydraulics has a full range including check, flow control, relief, reducing, sequencing, shuttle valves and counterbalance valves. Manufactured to NFPA and ANSI/ISO's standards.

Bodies are manufactured of aluminum (3000 PSI). Our bodies use industry common cavities. All cartridges are 100% tested functionally.

Specifications

- Flow: Up to 120 GPM
- Pressure: Up to 3,000 PSI
- Temperature: Up to 200° F.
- Buna Seals

Subplates/Manifolds and Custom Integrated Hydraulic Circuits



Features & Benefits

- Precision machining to meet both NFPA and ANSI/ISO valve patterns
- High flow option
- Pressures up to 3000 PSI
- Available off the shelf for shipping
- Manifolds reduce piping thus reducing possible leakage points
- Parallel, series or custom circuits

Product Description

Continental Hydraulics supply Subplates, manifolds and Custom Block designs to meet your requirements. Our Subplates, Manifolds and custom products are available to match a variety of cartridge valve manufacturer's cavities

We also have a full line of adapter, transition, tapping and cover plates. Adapter plates mount to your existing equipment and allow newer valve patterns to be mounted, saving plumbing time and expense.

Tapping plates allow installation of gauges without external plumbing. Our manifolds are manufactured for D02 through D10 NFPA patterns. Manifolds are available with one to sixteen stations.

Specifications

Manufactured from aluminum materials. Pressure rated to 3000 PSI. Ports available are NPTF, SAE, BSPP, ISO and BSPT

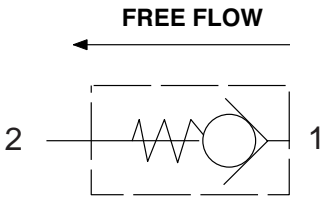
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C05MSV-DP / C05MSV-DT

CHECK VALVE, DIRECT OPERATED



DESCRIPTION

Utilizes a cartridge-type, guided poppet, hydraulic check valve as a blocking or load holding device during high pressure applications.

OPERATIONS

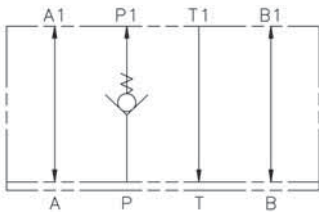
This valve allows free flow in one direction and blocks flow in the opposite direction.

FEATURES & BENEFITS

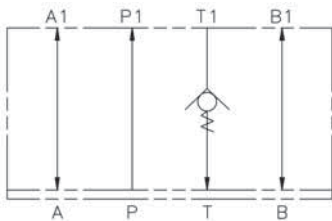
- All external parts are zinc plated for long life against elements
- All aluminum bodies are anodized
- All cartridges are 100% functionally tested
- Industrial common cavities

SPECIFICATIONS

Flow:	25 GPM (94 L/M) Nominal
Internal Leakage:	5 drops per minute @ 5000 PSI
Valve Bodies:	3000 PSI (207 Bar) = Aluminum (2024-T4)
Estimated Shipping Weight:	5 # Aluminum



VALVE TYPE
CHECK VALVE
P PORT



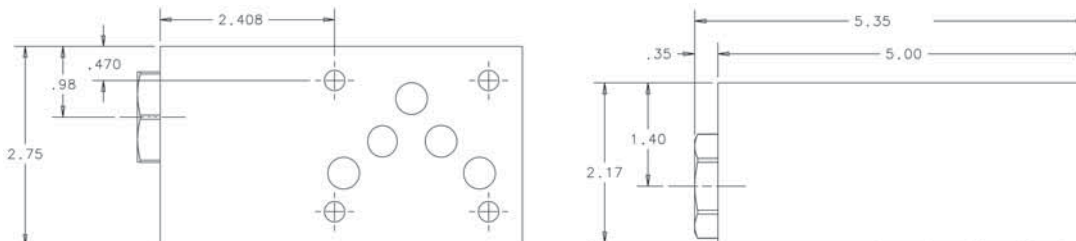
VALVE TYPE
CHECK VALVE
T PORT

C05MSV-DP / C05MSV-DT

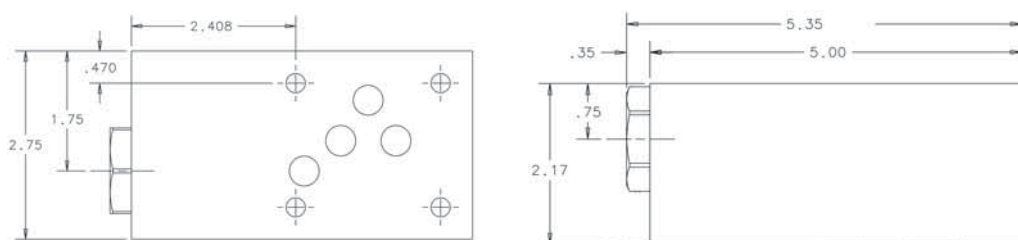
CHECK VALVE, DIRECT OPERATED

DIMENSIONS

C05MSV-DP



C05MSV-DT

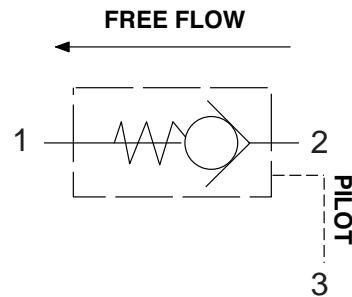


ORDERING INFORMATION

C05MSV — D											
			SELECT ONE			SELECT ONE			SELECT ONE		

C05MSV-PA / C05MSV-PB / C05MSV-PC

CHECK VALVE, PILOT OPERATED



DESCRIPTION

Utilizes a cartridge-type, guided poppet, hydraulic pilot operated check valve as a blocking or load-holding device for high pressure applications.

OPERATIONS

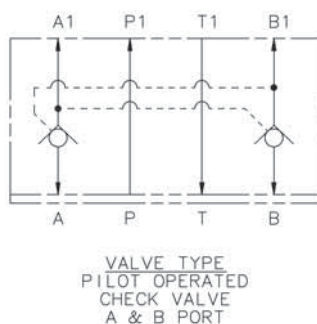
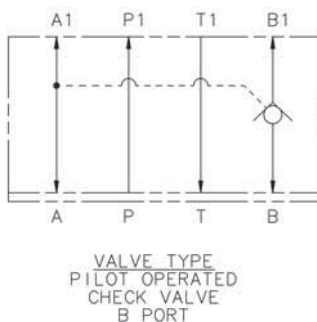
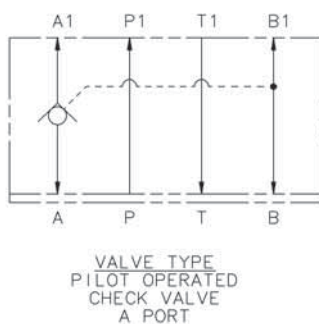
This valve allows free flow from the work port to the outlet port and blocks flow in the opposite direction. Free flow will be allowed from the outlet port to the valve work port when at least one-third of the load induced pressure is sensed in the opposing work port.

FEATURES & BENEFITS

- Low friction seal on the pilot piston
- Separate heavy spring assures fast pilot piston return
- All external parts are zinc-plated for long life against elements
- All cartridges are 100% tested functionally
- Uses Sun T-2A cavity
- Anodized aluminum

SPECIFICATIONS

Valve Bodies:	3000 PSI (207 Bar) = Aluminum (2024-T4)
Flow:	30 GPM (113 L/M) Nominal
Pilot Ratio:	3 to 1
Internal Leakage:	5 drops per minute maximum at 5000 PSI
Estimated Shipping Weight:	5 # Aluminum

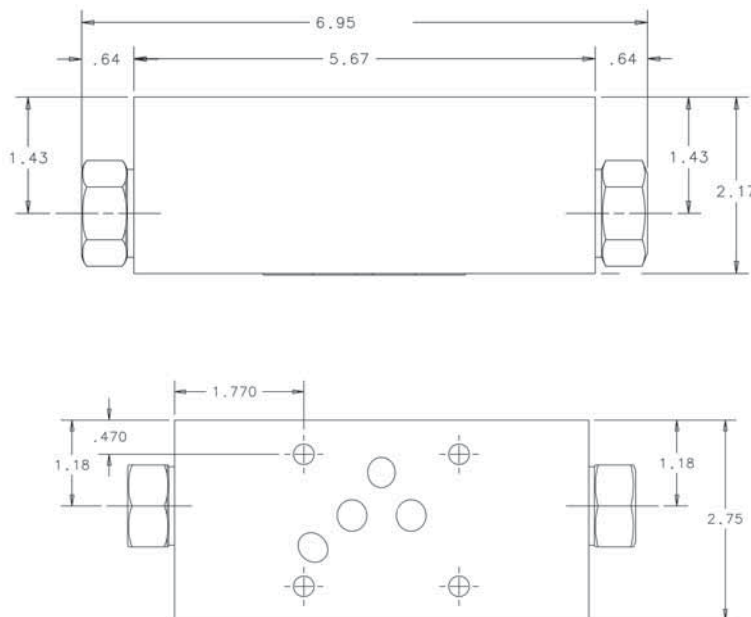


C05MSV-PA / C05MSV-PB / C05MSV-PC

CHECK VALVE, PILOT OPERATED

DIMENSIONS

C05MSV-PA / C05MSV-PB / C05MSV-PC



ORDERING INFORMATION

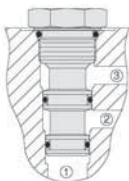
C05MSV — P											
			SELECT ONE	—		SELECT ONE	—		SELECT ONE	—	
FUNCTION	SIZE	STYLE	TYPE	CONTROL PORT		CRACKING PRESSURE		SEALS		BODY MATERIAL	
CHECK VALVE	NFPA D05 NG10 (CETOP 5)	MODULAR STACK VALVE	PILOT OPERATED GUIDED POPPET	CODE	LOCATION	CODE	PRESSURE	CODE		CODE	
				A	A PORT	30	30 PSI	A	BUNA N (STD)	A	ALUMINUM
				B	B PORT						
				C	A & B PORT	75	75 PSI	G	VITON		

Body Only Assembly:

Code A, B, & C Control Port:
Aluminum (Part No.) — 550475K

Includes O-rings & Locating Pin.

NOTE: Cavity plug required for Code A & B.



General Information:

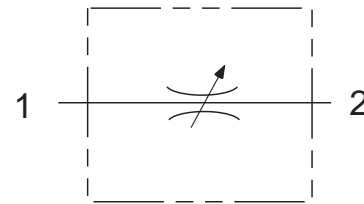
- Cartridge cavity is Sun T-2A with flow pattern set up for checked flow port 1 to port 2, with port 3 as the pilot signal.
- Cartridge #

CKEB-XCN	Buna N	30 PSI
CKEB-XEN	Buna N	75 PSI
CKEB-XCV	Viton	30 PSI
CKEB-XEV	Viton	75 PSI

TYPICAL ORDERING CODE: **C05MSV-PA-30-AA**

F05MSV-NIP

FLOW CONTROL VALVE, NON-COMPENSATED

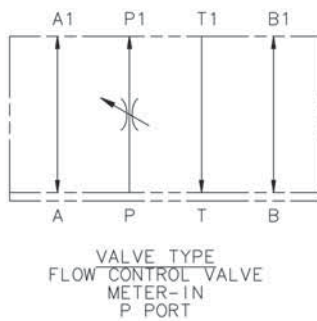


DESCRIPTION

Utilizes a screw-in cartridge type, adjustable poppet type, hydraulic flow control valve.

OPERATIONS

This valve increases its orifice value from fully closed to fully open with counter-clockwise rotation.



FEATURES & BENEFITS

- All external parts are zinc-plated for long life against elements
- All cartridges are 100% tested functionally
- Industry common cavity
- Anodized aluminum

SPECIFICATIONS

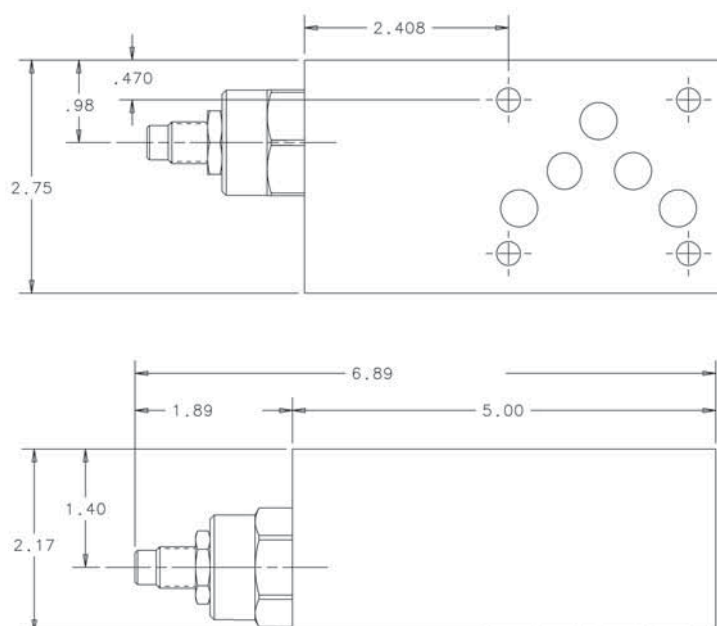
Flow:	30 GPM (113 L/M) Nominal
Internal Leakage:	3 drops per minute maximum at 5000 PSI
Valve Bodies:	3000 PSI (207 Bar) = Aluminum (2024-T6)
Estimated Shipping Weight:	5 # Aluminum

F05MSV-NIP

FLOW CONTROL VALVE, NON-COMPENSATED

DIMENSIONS

F05MSV-NIP



ORDERING INFORMATION

F05MSV		—	NI	P	—	SELECT ONE	SELECT ONE	DESIGN	
FUNCTION	SIZE	STYLE	TYPE	CONTROL PORT		SEALS		BODY MATERIAL	
FLOW CONTROL VALVE	NFPA	MODULAR	NON-	CODE	LOCATION	CODE		CODE	
	D05	STACK	COMPENSATED	P	P PORT	A	BUNA N (STD)	A	ALUMINUM
	NG10 (CETOP 5)	VALVE	G			VITON			

Body Only Assembly

Aluminum (Part No.) — 552950K

Includes O-rings & Locating Pin



General Information

- Cartridge cavity is HydraForce VC12-2 with a flow pattern set up for flow port 1 to port 2.
- Cartridge # NV12-20A-0-N Buna N
NV12-20A-0-V Viton

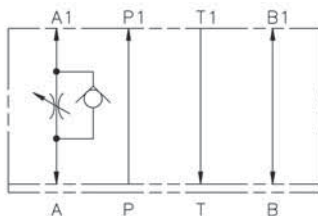
TYPICAL ORDERING CODE: **F05MSV-NIP-AA**

F05MSV-NDA / F05MSV-NDB / F05MSV-NDC

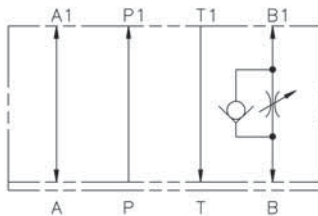
FLOW CONTROL VALVE, NON-COMPENSATED WITH CHECK



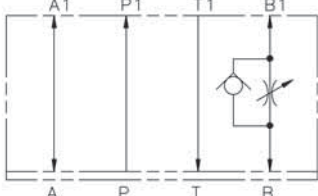
VALVE TYPE
FLOW CONTROL VALVE
WITH CHECK
METER-OUT
A PORT



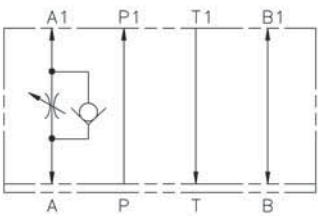
VALVE TYPE
FLOW CONTROL VALVE
WITH CHECK
METER-IN
B PORT



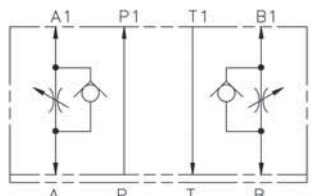
VALVE TYPE
FLOW CONTROL VALVE
WITH CHECK
METER-OUT
B PORT



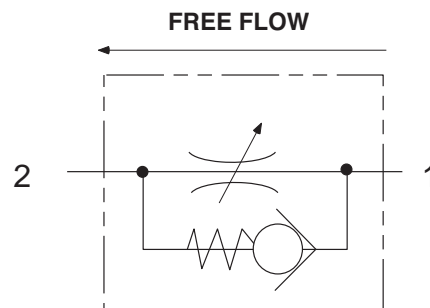
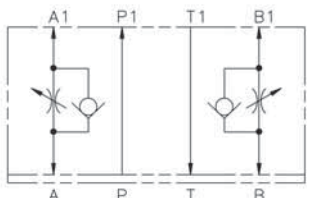
VALVE TYPE
FLOW CONTROL VALVE
WITH CHECK
METER-IN
A PORT



VALVE TYPE
FLOW CONTROL VALVE
WITH CHECK
METER-OUT
A - B PORT



VALVE TYPE
FLOW CONTROL VALVE
WITH CHECK
METER-IN
A - B PORT



DESCRIPTION

Utilizes a screw-in cartridge type, adjustable poppet type, hydraulic flow control valve with free reverse flow check.

OPERATIONS

This valve increases its orifice value from fully closed to fully open with counter-clockwise rotation.

FEATURES & BENEFITS

- All external parts are zinc-plated for long life against elements
- All cartridges are 100% tested functionally
- Anodized aluminum

SPECIFICATIONS

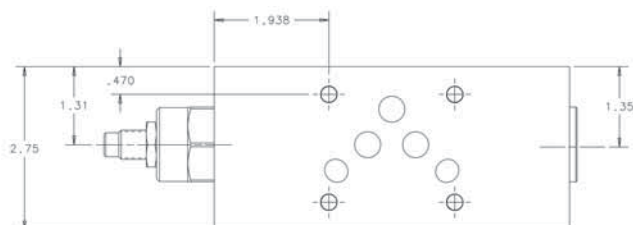
Flow:	30 GPM (113 L/M) Nominal
Internal Leakage:	Maximum 3 drops per minute
Valve Bodies:	3000 PSI (207 Bar) = Aluminum (2024-T4)
Estimated Shipping Weight:	5 # Aluminum

F05MSV-NDA / F05MSV-NDB / F05MSV-NDC

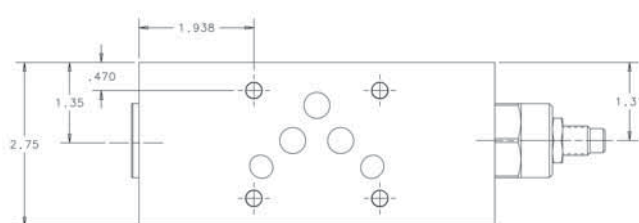
FLOW CONTROL VALVE, NON-COMPENSATED WITH CHECK

DIMENSIONS

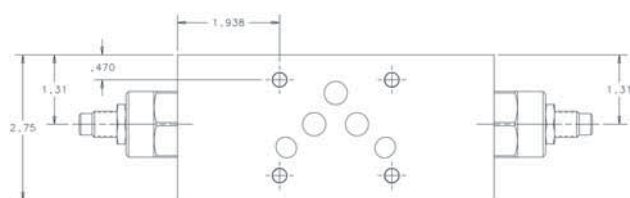
F05MSV-NDA



F05MSV-NDB



F05MSV-NDC



ORDERING INFORMATION

F05MSV

— ND

SELECT ONE

SELECT ONE

SELECT ONE

DESIGN

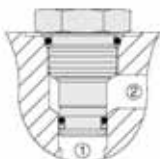
FUNCTION	SIZE	STYLE	TYPE	CONTROL PORT		SEALS		BODY MATERIAL	
FLOW CONTROL VALVE	NFPA D05 NG10 (CETOP 5)	MODULAR STACK VALVE	NON- COMPENSATED Meter-In or Meter-Out	CODE	LOCATION	CODE		CODE	
				A	A PORT	A	BUNA N (STD)	A	ALUMINUM
				B	B PORT				
				C	A & B PORT	G	VITON		

Body Only Assembly:

Code A, B, & C

Aluminum (Part No.) — 553079K

Includes Seal Retainer Plate,
O-rings, Locating Pin, Plug for
Code A & B will be required.



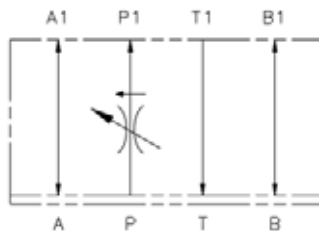
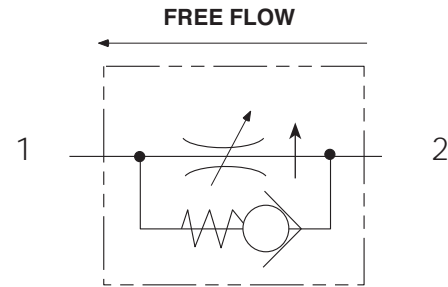
General Information:

- Cartridge cavity is HydraForce VC12-2 with a flow pattern set up for metered flow port 2 to port 1 with free flow port 1 to port 2.
- Cartridge # FC12-20A-0-N Buna N
 FC12-20A-0-V Viton

TYPICAL ORDERING CODE: **F05MSV-NDA-AA**

F05MSV-CIP

FLOW CONTROL VALVE, PRESSURE COMPENSATED WITH CHECK



VALVE TYPE
PRESSURE COMPENSATED
FLOW CONTROL VALVE
METER IN
P PORT

DESCRIPTION

This unit is a pressure compensated, fully adjustable flow control valve with reverse freeflow check.

OPERATION

This valve maintains a constant flow rate regardless of system pressure or load changes. Reverse flow will open the check at 10 PSI.

FEATURES & BENEFITS

- Sharp edge orifice to minimize floor variation
- All external parts are zinc-plated for long life against elements
- All cartridges are 100% functionally tested
- Uses Sun T-5A Cavity
- 5 turns of adjustment
- 10 PSI reverse flow check cracking pressure
- 18 cu.in./min. leakage at shut-off

SPECIFICATIONS

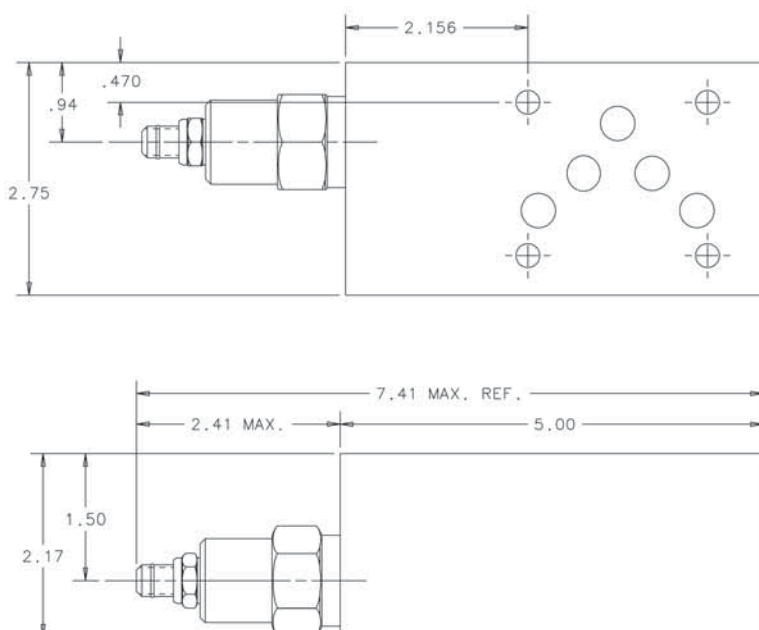
Flow:	1-6 GPM (23 lpm) nominal See performance chart
Flow Accuracy:	Less than $\pm 5\%$ with a minimum of 200 PSI pressure differential
Valve Bodies:	3000 PSI (207 Bar) = Aluminum (2024-T4)
Estimated Shipping Weight:	5 # Aluminum

F05MSV-CIP

FLOW CONTROL VALVE, PRESSURE COMPENSATED WITH CHECK

DIMENSIONS

F05MSV-CIP



ORDERING INFORMATION

F05MSV		CI		P		SELECT ONE		SELECT ONE		DESIGN	
FUNCTION	SIZE	STYLE	TYPE	CONTROL PORT		SEALS		BODY MATERIAL			
FLOW CONTROL VALVE	NFPA	MODULAR	PRESSURE	P	P PORT	A	BUNA N (STD)	A	ALUMINUM		
	D05	STACK	COMPENSATED								
	NG10 (CETOP 5)	VALVE	(METER-IN)				VITON				

Body Only Assembly:

Aluminum (Part No.) — 552937K

Includes Seal Retainer Plate, O-rings & Locating Pin.



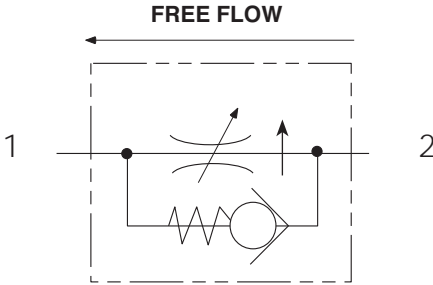
General Information:

- Cartridge cavity is Sun T-5A with a flow pattern set up for metered flow port 1 to port 2 and free flow port 2 to port 1
- Cartridge # FDCB-LAN BUNA N
FDCB-LAV Viton

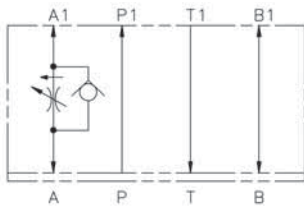
TYPICAL ORDERING CODE: **F05MSV-CIP-AA**

F05MSV-CDA / F05MSV-CDB / F05MSV-CDC

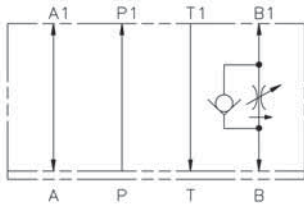
FLOW CONTROL VALVE, PRESSURE COMPENSATED WITH CHECK



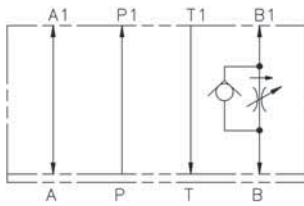
VALVE TYPE
FLOW CONTROL VALVE
WITH CHECK
METER-OUT
A PORT



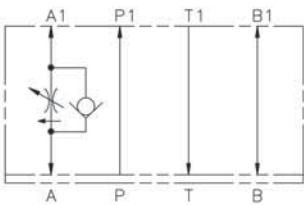
VALVE TYPE
FLOW CONTROL VALVE
WITH CHECK
METER-IN
B PORT



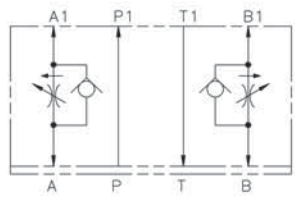
VALVE TYPE
FLOW CONTROL VALVE
WITH CHECK
METER-OUT
B PORT



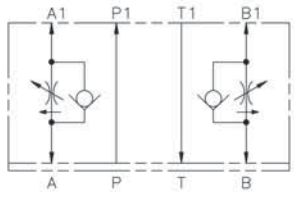
VALVE TYPE
FLOW CONTROL VALVE
WITH CHECK
METER-IN
A PORT



VALVE TYPE
FLOW CONTROL VALVE
WITH CHECK
METER-OUT
A - B PORT



VALVE TYPE
FLOW CONTROL VALVE
WITH CHECK
METER-IN
A - B PORT



DESCRIPTION

This is a pressure compensated, fully adjustable flow control valve with reverse flow check.

OPERATIONS

This valve maintains a constant flow rate regardless of system pressure or load changes. Reverse flow will open the check at 10 PSI.

FEATURES & BENEFITS

- Sharp edge orifice to minimize flow variation.
- Viton seals
- All external parts are zinc-plated for long life against elements
- 10 PSI reverse free flow check cracking pressure
- Minimum 18 cu.in./min. leakage at shutoff
- All cartridges are 100% tested functionally
- Sun T-5A anodized aluminum body
- 5 turns of adjustment

SPECIFICATIONS

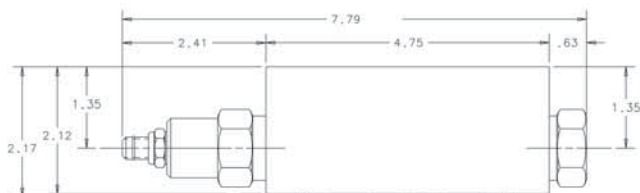
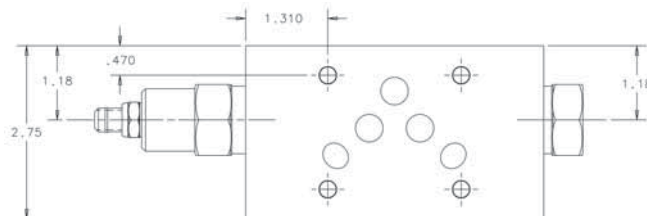
Flow:	.1 to 12 GPM (46 L/M) nominal
Flow Accuracy:	Less than $\pm 5\%$ with a minimum of 200 PSI pressure differential.
Valve Bodies:	3000 PSI (207 Bar) = Aluminum (2024-T4)
Estimated Shipping Weight:	5 # Aluminum

F05MSV-CDA / F05MSV-CDB / F05MSV-CDC

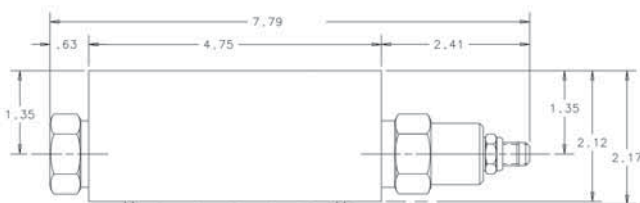
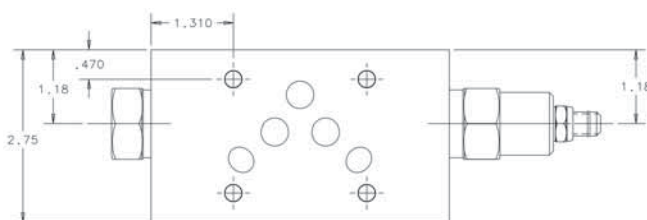
FLOW CONTROL VALVE, PRESSURE COMPENSATED WITH CHECK

DIMENSIONS

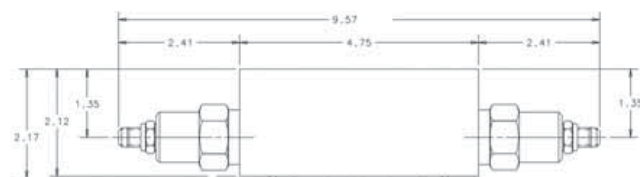
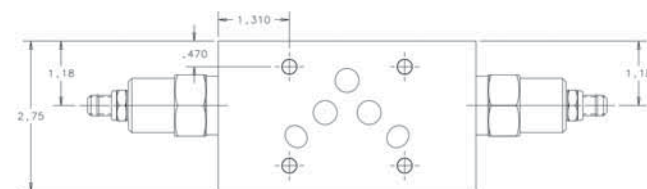
F05MSV-CDA



F05MSV-CDB



F05MSV-CDC



ORDERING INFORMATION

F05MSV		C	D	SELECT ONE		SELECT ONE	SELECT ONE	DESIGN
FUNCTION	SIZE	STYLE	TYPE	VALVE FUNCTION	CONTROL PORT	SEALS	BODY MATERIAL	
FLOW CONTROL VALVE	NFPA D05 NG10 (CETOP 5)	MODULAR STACK VALVE	PRESSURE COMPENSATED	CODE D METER-IN OR METER-OUT W/REVERSE CHECK	CODE A A PORT CODE B B PORT CODE C A & B PORT	CODE A BUNA N (STD) CODE G VITON	CODE A ALUMINUM	

Body Only Assembly:

Code A, B & C Control Port

Aluminum (Part No.) — 550473K

Includes Seal Retainer Plate, & O-rings.



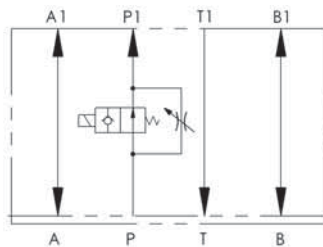
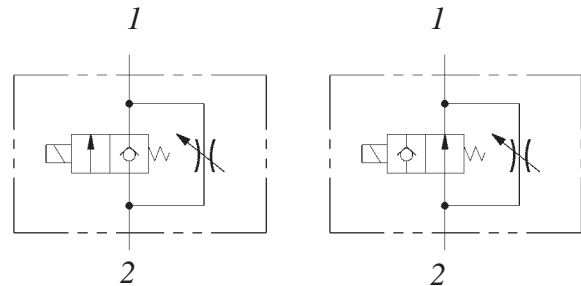
General Information:

- Cartridge cavity is Sun T-5A with port flow pattern set up for cartridge flowing from port 1 to port 2 and free flow port 2 to port 1.
- Cartridge # FDCB-LAN BUNA N
FDCB-LAV Viton

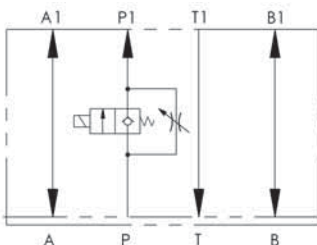
TYPICAL ORDERING CODE: **F05MSV-CDA-AA**

F05MSV-NSIP

TWO SPEED FLOW CONTROL, DIRECT OPERATED



VALVE TYPE
FLOW CONTROL - TWO SPEED
NORMALLY OPEN



VALVE TYPE
FLOW CONTROL - TWO SPEED
NORMALLY CLOSED

DESCRIPTION

Utilizes a direct operated cartridge type electrical poppet valve to allow system flow through or block it off. The fluid will then flow through the needle valve.

OPERATIONS

The cartridge valve design incorporates a single solenoid acting on a poppet. This will either open the poppet allowing flow or close it blocking flow.

When the poppet is in the closed position, the fluid will pass through the adjustable needle valve giving you a restricted flow. This allows full system flow and a restricted flow volume.

FEATURES & BENEFITS

- All external parts are zinc-plated for long life against elements
- All cartridges are 100% tested functionally
- Industry common cavity
- Coil uses standard DIN 43650 Connector

SPECIFICATIONS

Flow: 30 GPM (113 L/M) Nominal
Refer to performance chart

Valve Bodies: 3000 PSI (207 Bar) =
Aluminum (2024-T4)

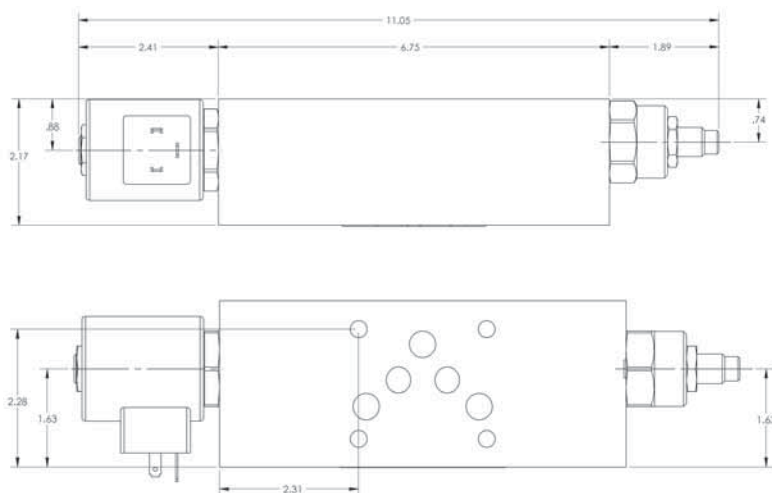
Estimated Shipping Weight: 5 # Aluminum

F05MSV-NSIP

COUNTERBALANCE VALVE, DIRECT OPERATED

DIMENSIONS

F05MSV-NSIP



ORDERING INFORMATION

F05MSV - NS I P -				SELECT ONE		SELECT ONE		SELECT ONE		SELECT ONE		DESIGN	
FUNCT.	SIZE	STYLE	TYPE	FUNCT.	CONTROL PORT	SOLENOID FUNCTION		SEALS		BODY MATERIAL		MECHANICAL/ELECTRICAL	
FLOW CONTROL VALVE	NFPA D05 NG10 (CETOP 5)	MODULAR STACK VALVE	NON-COMPENSATED DUAL SPEED WITH SOLENOID	DIRECT OPERATED	P PORT (METER-IN)	CODE	NORMAL POSITION	CODE		CODE		CODE	DESCRIP.
						NO	OPEN	A	BUNA N (STD)	A	ALUMINUM	12DG	12Vdc Coil DIN 43650
						NC	CLOSED	G	VITON			24DG	24Vdc Coil DIN 43650
												115AG	115 VAC Coil DIN 43650
												230AG	230 VAC Coil DIN 43650

Body Only Assembly:

Aluminum (Part No.) — 1001343K

Optional DIN 43650 Connector:
Grey (Part No.) - VEA-3E
Black (Part No.) - VEA-3F



General Information:

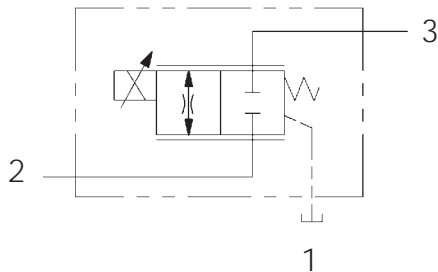
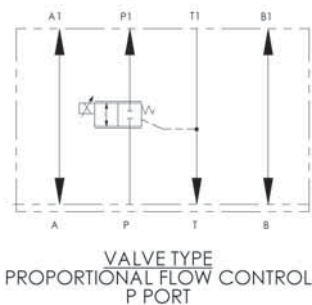
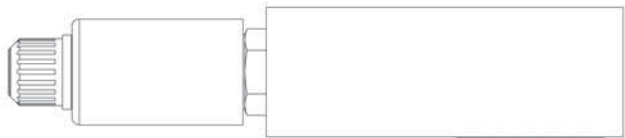
- Cartridge cavity is a HydraForce VC12-2 with a flow pattern set up for metered flow port 2 to port 1.
- Electrical valve flow is from port 2 to port 1.
- Needle Valve Cartridge # NV12-20A-0-N
NV12-20A-0-V Buna N
Viton
- Electrical Cartridge # SV12-20-0-N-**
SV12-20-0-V-** Buna N Normally Closed
SV12-21-0-N-** Viton Normally Closed
SV12-21-0-V-** Viton Normally Open

** = Coil Voltage

TYPICAL ORDERING CODE: **F05MSV-NSIP-NO-AA-115AG**

EF05MSV-D

PROPORTIONAL FLOW CONTROL, DIRECT OPERATED



DESCRIPTION

Utilizes a direct operated cartridge type proportional flow control to create a constant flow between the inlet and the outlet of an orifice or valve.

OPERATIONS

The cartridge valve design incorporates a single proportional solenoid acting directly on a spool via a drive pin and is opposed by an offset spring.

Without current applied to the solenoid the offset spring will hold the valve spool in a blocked flow condition. Applying an electrical current to the solenoid will shift the spool against the spring and create an orifice between ports 2 and 3. This orifice size is proportional to the applied solenoid current.

FEATURES & BENEFITS

- Fewer moving parts
- No minimum pressures
- Hardened spool and sleeve for long life
- Manual override pin
- Low internal leakage
- Uses standard C12-3 mounting cavity
- Coil uses standard DIN 43650 Connector
- Aluminum body only

SPECIFICATIONS

Valve Bodies: 3000 PSI (207 Bar) = Aluminum (2024-T4)

Estimated Shipping Weight: 5 # Aluminum

TYPICAL PERFORMANCE SPECIFICATIONS*

Nominal Flow Capacity	Code 40	10.5 gpm	39.7 lpm
	Code 60	15.8 gpm	59.8 lpm
MAXIMUM OPERATING PRESSURE		3000 psi	207 bar
TYPICAL RESPONSE TIME † (Nominal)	10 to 90% Spool Travel	30 ms	
	90 to 100% Spool Travel	60 ms	
	30 to 90% Spool Travel	25 ms	
	90 to 30% Spool Travel	35 ms	
SPOOL STROKE	Closed to open	1.20 in.	3.05 mm
HYSTERESIS	With Dither	< 5%	
THRESHOLD	With Dither	< 5%	
REPEATABILITY	With Dither	< 3%	
DEADBAND		16% nominal of spool travel	
VOLTAGE (Nominal)	Code 12	12 VDC	
	Code 24	24 VDC	
CURRENT (Maximum)	Code 12	2.2 Amp	
	Code 24	1.1 Amp	
WATTAGE (F R) @ 76° F. (24° C.) (Continuous)	Code 12	19	
	Code 24	19	
COIL RESISTANCE @ 68° F. (20° C.)	Code 12	3.8 Ohms	
	Code 24	15.2 Ohms	
DUTY CYCLE		Continuous @ rated specifications	
FLUID VISCOSITY	Operating	80-350 SUS	
	Maximum	30-4000 SUS	
FLUID CLEANLINESS LEVEL		ISO 4406 Code 16/13 (SAE Class 4) or cleaner	
MOUNTING		Unrestricted	
WEIGHT (Cartridge Only)		2.7 lbs.	1.2 kg

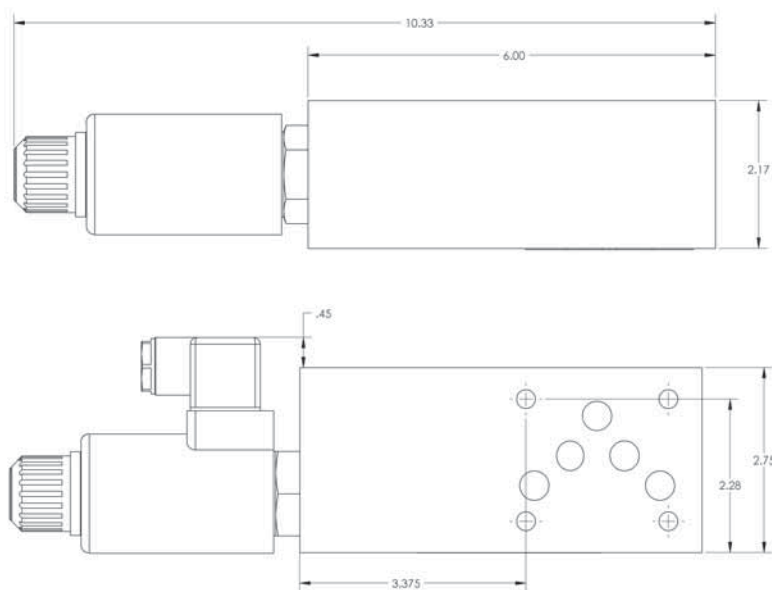
*NOTE: Data taken with fluid temperature at 120°F. (49°C.) and viscosity at 100 SUS (20.6 Cs), inlet pressure @ 1000 psi (69 bar) using Continental Hydraulics ECM4 electronic controller.

EF05MSV-D

PROPORTIONAL FLOW CONTROL, DIRECT OPERATED

DIMENSIONS

EF05MSV-D



Shown with DIN electrical connector for measurement.
Connector must be purchased separately.

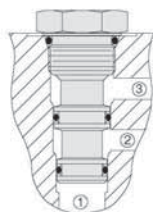
ORDERING INFORMATION

EF05MSV			—	D	SELECT ONE		—	G	D		—	SELECT ONE		L	DESIGN		
FUNCT.	SIZE	STYLE	FUNCT.	FLOW		SEALS		ELECTRICAL		SOLENOID		SOLENOID MFG					
FLOW	NFPA	MODULAR	DIRECT OPERATED	CODE	NOMINAL FLOW (GPM) AT 10 bar (145 PSI) PRESSURE DROP (FULL OPEN)	CODE		CODE		CODE	(SEE BELOW)	CODE					
CONTROL	D05	STACK VALVE		40	40 LITER (10.5 GPM)	G	VITON	D	DIN 43650 SOLENOID CONNECTOR	12	12 VDC	L	LISK				
VALVE	NG10 (CETOP 5)			60	60 LITER (15.8 GPM)					24	24 VDC						

Body Only Assembly:

Aluminum (Part No.) — 1001122K

Optional DIN 43650 Connector:
Grey (Part No.) - VEA-3E
Black (Part No.) - VEA-3F



General Information

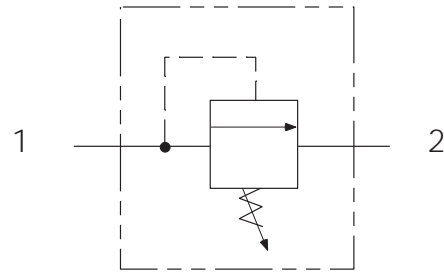
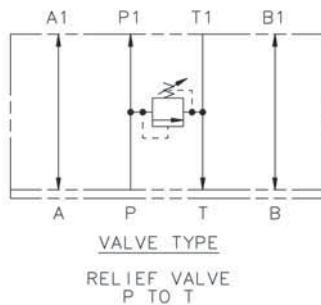
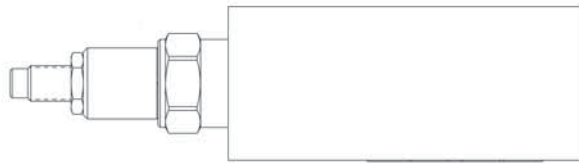
- Cartridge cavity is C12-3 with a flow pattern set up for metered flow port 2 to port 3 and port 1 going back to reservoir.
- Cartridge #:

EF12C-D40-GD-12L	12 VDC, 40 Liters
EF12C-D40-GD-24L	24 VDC, 40 Liters
EF12C-D60-GD-12L	12 VDC, 60 Liters
EF12C-D60-GD-24L	24 VDC, 60 Liters

TYPICAL ORDERING CODE: **EF05MSV-D40-GD-12L**

P05MSV-RP

PRESSURE RELIEF VALVE, PILOT OPERATED



DESCRIPTION

This pilot-operated pressure relief cartridge valve with balanced sliding spool provides accurate, smooth pressure regulation.

OPERATIONS

The valve blocks flow from port 1 to port 2 until sufficient pressure is present at port 1 to force the pilot poppet from its seat, thus opening the valve. This cartridge relief valve offers a smooth transition in response to a load change in a hydraulic circuit.

FEATURES & BENEFITS

- Leakproof screw adjustment cannot be backed out of valve
- Overset protection pilot spring cannot go solid
- All external parts are zinc-plated for long life against elements
- All cartridges are 100% tested functionally
- Industry common cavity
- Anodized aluminum

SPECIFICATIONS

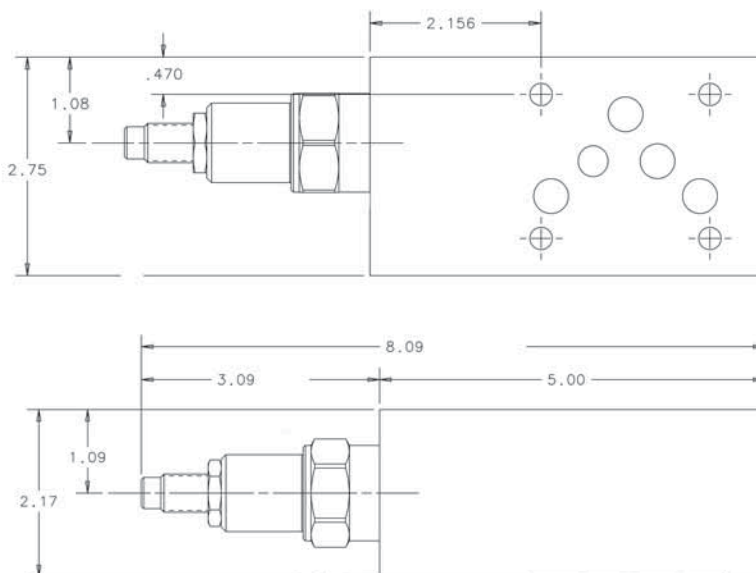
Flow:	30 GPM (113 L/M) Nominal
Internal Leakage:	Maximum 115cc per minute
Valve Bodies:	3000 PSI (207 Bar) = Aluminum (2024-T4)
Estimated Shipping Weight:	5 # Aluminum

P05MSV-RP

PRESSURE RELIEF VALVE, PILOT OPERATED

DIMENSIONS

P05MSV-RP



ORDERING INFORMATION

P05MSV — R P —				SELECT ONE	SELECT ONE	SELECT ONE	DESIGN			
FUNCTION	SIZE	STYLE	TYPE	CONTROL PORT	PRESSURE RANGE		SEALS		BODY MATERIAL	
PRESSURE	NFPA	MODULAR	RELIEF	P PORT	CODE	PRESSURE	CODE		CODE	
CONTROL	D05	STACK	VALVE		150	150-1500 PSI	A	BUNA N (STD)	A	ALUMINUM
VALVE	NG10 (CETOP 5)	VALVE			300	300-3000 PSI	G	VITON		

Body Only Assembly:

Aluminum (Part No.) — 552943K
Ductile (Part No.) — Not Released

**General Information**

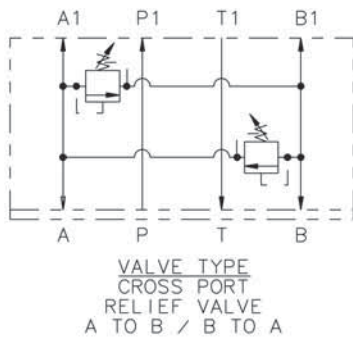
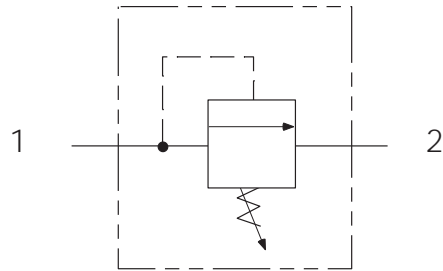
- Cartridge cavity is HydraForce VC12-2 with a flow pattern set up for relief flow port 1 to port 2.
- Cartridge #:

RV12-26A-0-N-15	Buna N	1500 PSI
RV12-26A-0-V-15	Viton	1500 PSI
RV12-26A-0-N-30	Buna N	3000 PSI
RV12-26A-0-V-30	Viton	3000 PSI

TYPICAL ORDERING CODE: **P05MSV-RP-150-AA**

P05MSV-XC

CROSS PORT RELIEF VALVE, PILOT OPERATED



DESCRIPTION

Utilizes a cartridge type, guided poppet, hydraulic operated check valve as a blocking or load-holding device for high pressure applications.

OPERATIONS

The valve allows free flow from the work port to the outlet port and blocks flow in the opposite direction. Free flow will be allowed from the outlet port to the work port when at least one-third of the load induced pressure is sensed in the opposite work port.

FEATURES & BENEFITS

- Low friction seal on the pilot piston
- Separate heavy spring assures fast pilot piston return
- All external parts are zinc-plated for long life against elements
- All cartridges are 100% tested functionally
- Industry common cavity
- Anodized aluminum

SPECIFICATIONS

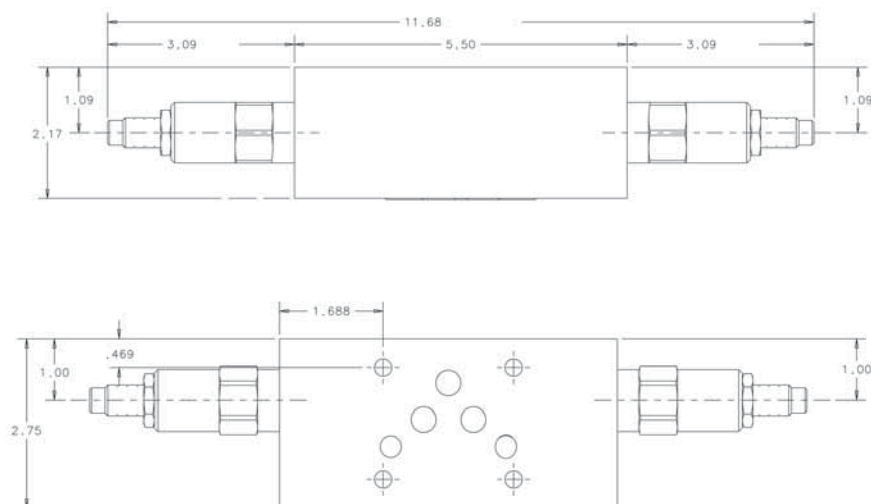
Flow:	30 GPM (113 L/M) Nominal
Internal Leakage:	Maximum 115cc per minute
Valve Bodies:	3000 PSI (207 Bar) = Aluminum (2024-T4)
Pilot Ratio:	3 to 1
Estimated Shipping Weight:	5 # Aluminum

P05MSV-XC

CROSS PORT RELIEF VALVE, PILOT OPERATED

DIMENSIONS

P05MSV-XC



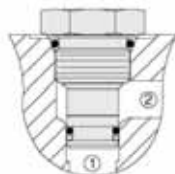
ORDERING INFORMATION

P05MSV		X	C	SELECT ONE		SELECT ONE		SELECT ONE		DESIGN	
FUNCTION	SIZE	STYLE	TYPE	CONTROL PORT		CRACKING PRESSURE		SEALS		BODY MATERIAL	
PRESSURE	NFPA	MODULAR	CROSSPORT	CODE	LOCATION	CODE	PRESSURE	CODE		CODE	
CONTROL	D05	STACK	RELIEF	C	A & B PORT	150	150-1500 PSI	A	BUNA N (STD)	A	ALUMINUM
VALVE	NG10 (CETOP 5)	VALVE	VALVE			300	400-3000 PSI	G	VITON		

Body Only Assembly:

Aluminum (Part No.) — 552944K

Includes O-rings & Locating Pin.



General Information

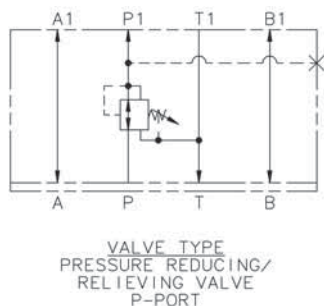
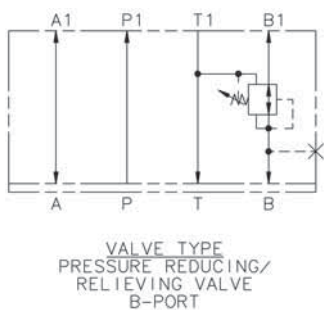
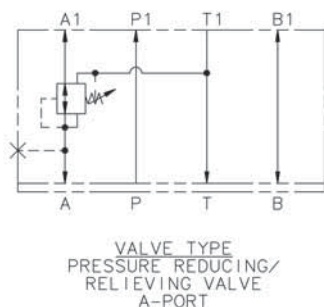
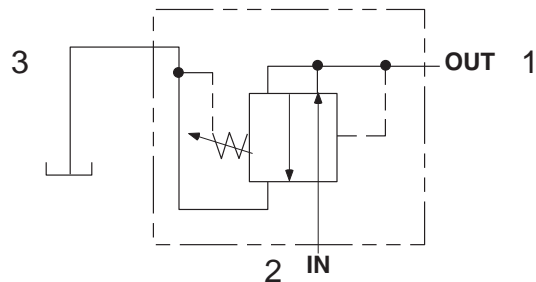
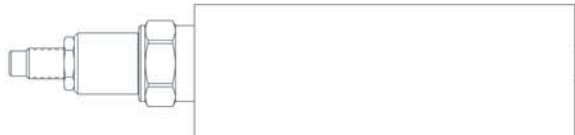
- Cartridge cavity is HydraForce VC10-2 with a flow pattern set up for relief flow port 1 to port 2.
- Cartridge #:

RV10-26A-0-N-15	Buna N	1500 PSI
RV10-26A-0-V-15	Viton	1500 PSI
RV10-26A-0-N-30	Buna N	3000 PSI
RV10-26A-0-V-30	Viton	3000 PSI

TYPICAL ORDERING CODE: **P05MSV-XC-150-AA**

P05MSV-PDRA / P05MSVPDRB / P05MSV-PDRP

PRESSURE REDUCING/RELIEVING VALVE, PILOT OPERATED



DESCRIPTION

Utilizes a pilot-operated hydraulic pressure reducing/relieving valve sliding spool cartridge to act as a pressure-regulating device for a secondary circuit.

OPERATIONS

The valve will allow flow from the inlet port to the controlled port until pressure in the controlled port exceeds the force of the spring bias. Then the spool will shift and restrict. This causes a reduced pressure in the controlled port. The valve will maintain the same pressure as the force of the spring setting regardless of the pressure at the inlet port. In this mode, the valve will also relieve from the controlled port to the drain port, regulating pressure at the controlled port.

FEATURES & BENEFITS

- Low friction seal on the pilot piston
- Separate heavy spring assures fast pilot piston return
- All external parts are zinc-plated for long life against elements
- All cartridges are 100% tested functionally
- Industry common cavity
- Anodized aluminum

SPECIFICATIONS

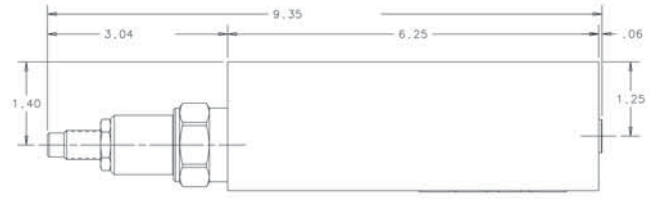
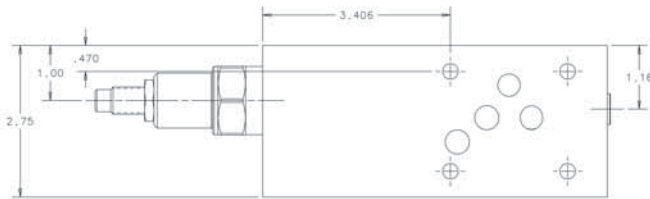
Flow:	30 GPM (113 L/M) Nominal
Internal Leakage:	Maximum 115cc per minute
Valve Bodies:	3000 PSI (207 Bar) = Aluminum (2024-T4)
Estimated Shipping Weight:	5 # Aluminum

P05MSV-PDRA / P05MSV-PDRB / P05MSV-PDRP

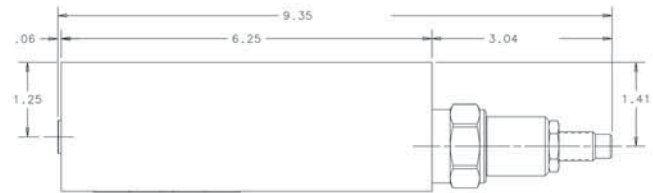
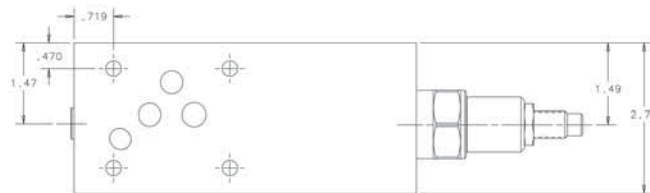
PRESSURE REDUCING/RELIEVING VALVE, PILOT OPERATED

DIMENSIONS

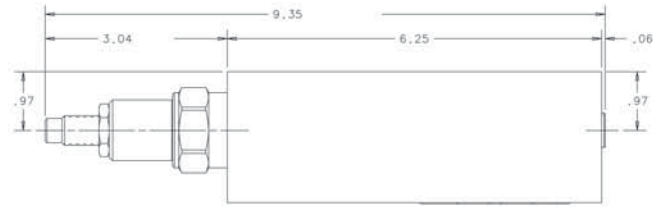
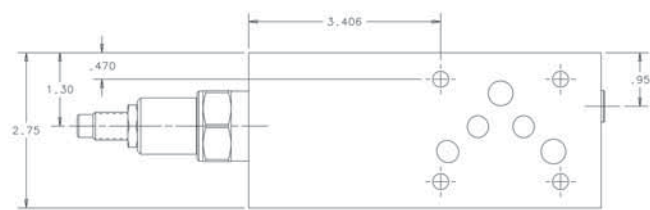
P05MSV-PDRA



P05MSV-PDRB



P05MSV-PDRP



ORDERING INFORMATION

P05MSV — PDR

SELECT ONE

SELECT ONE

SELECT ONE

SELECT ONE

DESIGN

FUNCTION	SIZE	STYLE	VALVE FUNCTION	CONTROL PORT		ADJUSTMENT RANGE		SEALS		BODY MATERIAL	
PRESSURE	NFPA	MODULAR	REDUCING/	CODE	LOCATION	CODE	PRESSURE	CODE		CODE	
CONTROL VALVE	D05	STACK	RELIEVING	A	A PORT	150	100-1500 PSI	A	BUNA N (STD)	A	ALUMINUM
	NG10	VALVE	PILOT	B	B PORT	300	175-3000 PSI	G	VITON		
	(CETOP 5)		OPERATED	P	P PORT						

Body Only Assembly:

PDRA

Aluminum (Part No.) — 552939K

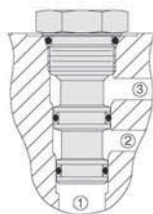
PDRB

Aluminum (Part No.) — 552940K

PDRP

Aluminum (Part No.) — 552941K

Includes O-rings & Locating Pin.



General Information

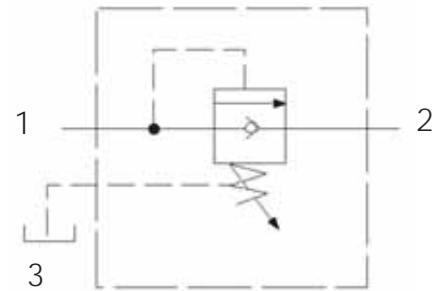
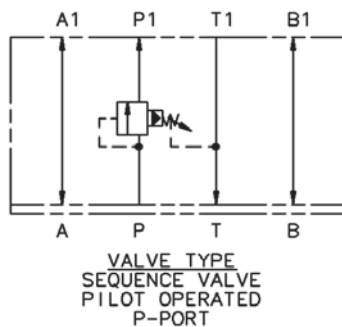
- Cartridge cavity is HydraForce VC12-3 with a flow pattern set up for reduced pressure from port 2 to port 1 with port 3 to reservoir.
- Cartridge #:

PR12-36A-0-N-15	Buna N	1500 PSI
PR12-36A-0-V-15	Viton	1500 PSI
PR12-36A-0-N-30	Buna N	3000 PSI
PR12-36A-0-V-30	Viton	3000 PSI

TYPICAL ORDERING CODE: **P05MSV-PDRA-150-AA**

P05MSV-SP

PRESSURE SEQUENCE VALVE, POPPET TYPE WITH FREE REVERSE FLOW



DESCRIPTION

Pilot-operated, pressure sequence valve uses a screw-in poppet type cartridge with built-in free reverse flow check.

OPERATIONS

The valve blocks flow from the inlet port to the outlet port until sufficient pressure is present at the sense port to force the pilot poppet from its seat, thus opening the valve. This sequence valve offers free reverse flow from the outlet port to the inlet port.

FEATURES & BENEFITS

- Leak proof screw adjustment
- Adjustment screw cannot be backed out of the valve
- All external parts are zinc-plated for long life against elements
- All cartridges are 100% tested functionally
- Uses Sun T-2A Cavity
- Anodized aluminum

SPECIFICATIONS

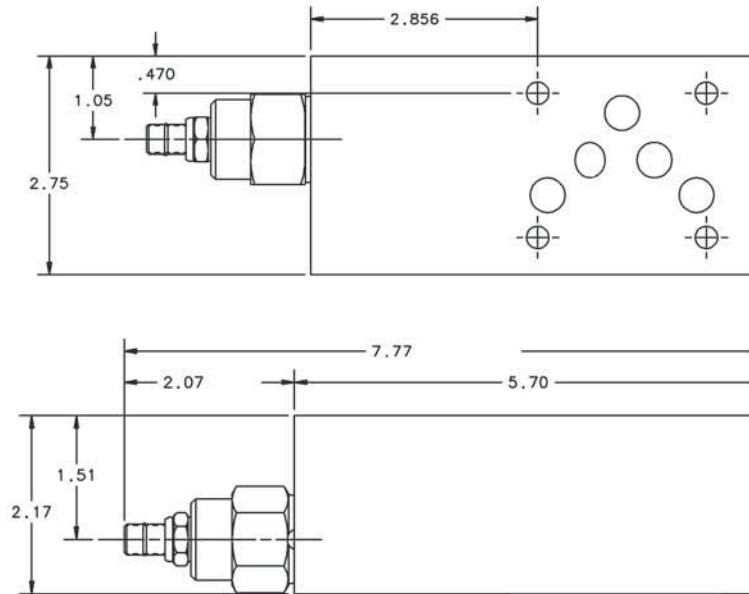
Flow:	30 GPM (113 L/M) Nominal
Internal Leakage:	Maximum 3 cu. in. per minute @ 100 PSI
Valve Bodies:	3000 PSI (207 Bar) = Aluminum (2024-T4)
Estimated Shipping Weight:	5 # Aluminum

P05MSV-SP

PRESSURE SEQUENCE VALVE, POPPET TYPE WITH FREE REVERSE FLOW

DIMENSIONS

P05MSV-SP



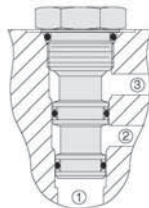
ORDERING INFORMATION

<div>P05MSV — S P — <div>SELECT ONE</div> — <div>SELECT ONE</div> <div>SELECT ONE</div> <div>DESIGN</div></div>										
FUNCTION	SIZE	STYLE	TYPE	CONTROL PORT	PRESSURE RANGE		SEALS		BODY MATERIAL	
PRESSURE	NFPA	MODULAR	PRESSURE	P PORT	CODE	PRESSURE	CODE		CODE	
CONTROL	D05	STACK	SEQUENCE		150	50-1500 PSI	A	BUNA N (STD)	A	ALUMINUM
VALVE	NG10 (CETOP 5)	VALVE	VALVE		300	100-2000 PSI	G	VITON		

Body Only Assembly:

Aluminum (Part No.) — 552946K

Includes O-rings & Locating Pin.



General Information

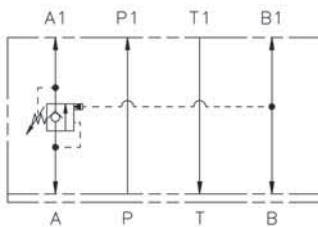
- Cartridge cavity is Sun T-2A with a flow pattern set up for sequence flow port 1 to port 2 & port 3 as the drain.
- Cartridge #:

RSFC-LBN	Buna N	1500 PSI
RSFC-LAN	Buna N	3000 PSI
RSFC-LBV	Viton	1500 PSI
RSFC-LAV	Viton	3000 PSI

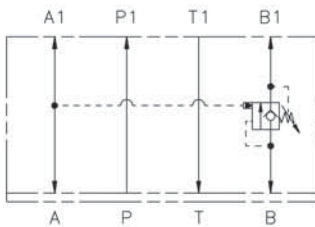
TYPICAL ORDERING CODE: **P05MSV-SP-150-AA**

P05MSV-CA / P05MSV-CB / P05MSV-CC

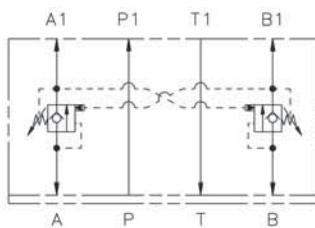
COUNTERBALANCE VALVE, PILOT OPERATED



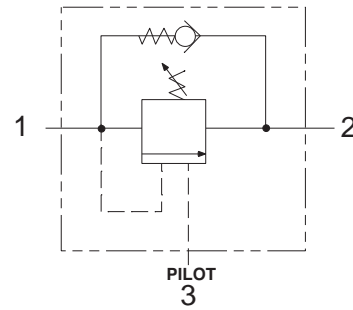
VALVE TYPE
COUNTERBALANCE VALVE
A PORT



VALVE TYPE
COUNTERBALANCE VALVE
B PORT



VALVE TYPE
COUNTERBALANCE VALVE
A & B PORT



DESCRIPTION

Utilizes a cartridge type, guided poppet, hydraulic operated, pilot assisted, counterbalance valve as a blocking or load-holding device for high pressure applications.

OPERATIONS

The valve controls moving load and prevents it from running ahead of the pump and locking the load in any position. It also provides static overload and thermal expansion protection.

This valve is a modulating device that allows free flow from port 2 to port 1 and then blocks reverse flow until pilot pressure inversely proportional to the load pressure is sensed at port 3, modulating out flow from port 1 to port 2.

FEATURES & BENEFITS

- Leak proof screw adjustment
- Adjustment screw cannot be backed out of the valve
- All external parts are zinc-plated for long life against elements
- All cartridges are 100% tested functionally
- Uses Sun T-2A Cavity
- Anodized aluminum
- Low hysteresis and reliable operation

SPECIFICATIONS

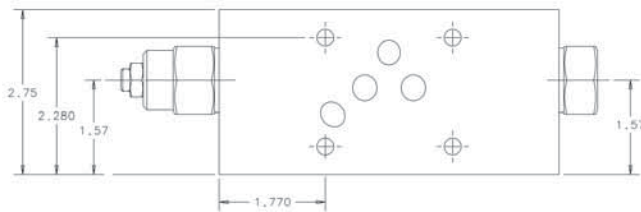
Flow:	30 GPM (113 L/M) Nominal
Pilot Ratio:	3:1
Internal Leakage:	Maximum 5 drops per minute
Valve Bodies:	3000 PSI (207 Bar) = Aluminum (2024-T4)
Estimated Shipping Weight:	5 # Aluminum

P05MSV-CA / P05MSV-CB / P05MSV-CC

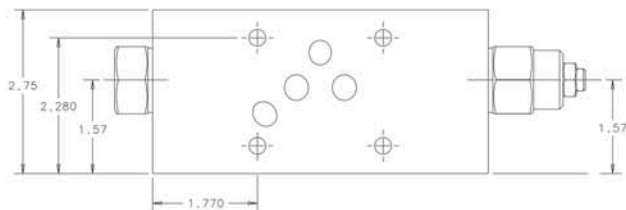
COUNTERBALANCE VALVE, PILOT OPERATED

DIMENSIONS

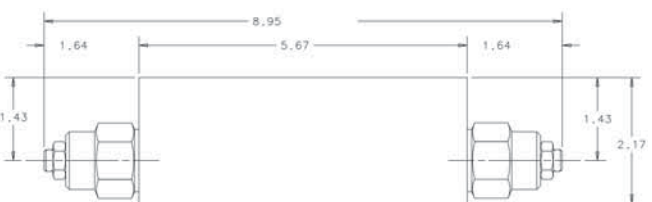
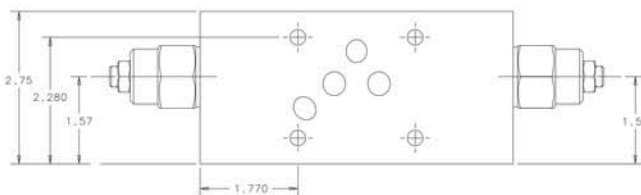
P05MSV-CA



P05MSV-CB



P05MSV-CC



ORDERING INFORMATION

P05MSV — C

SELECT
ONE

SELECT
ONE

SELECT
ONE

SELECT
ONE

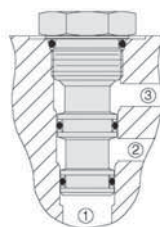
DESIGN

FUNCTION	SIZE	STYLE	TYPE	CONTROL PORT		CRACKING PRESSURE		SEALS		BODY MATERIAL	
PRESSURE CONTROL VALVE	NFPA D05 NG10 (CETOP 5)	MODULAR STACK VALVE	COUNTER- BALANCE VALVE	CODE	LOCATION	CODE	PRESSURE	CODE		CODE	
				A	A PORT	150	400-1500 PSI	A	BUNA N (STD)	A	ALUMINUM
				B	B PORT			G	VITON		
				C	A & B PORT	300	1000-2500 PSI				

Body Only Assembly:

Code A, B & C
Aluminum (Part No.) — 550475K
Ductile (Part No.) - Not Released

Includes O-rings & Locating Pin.



General Information

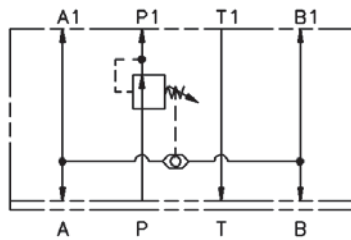
- Cartridge cavity is Sun T-2A with a flow pattern set up for blocked flow port 1 to port 2, free flow port 2 to port 1 & port 3 as the pilot signal.
- Cartridge #:

CBEA-LIN	Buna N	1500 PSI
CBEA-LKN	Buna N	3000 PSI
CBEA-LIV	Viton	1500 PSI
CBEA-LKV	Viton	3000 PSI

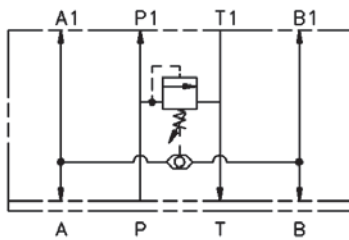
TYPICAL ORDERING CODE: **P05MSV-CB-150-AA**

P05MSV-RCC / P05MSV-BCC

VALVE ACCESSORIES, PRESSURE CONTROL VALVES



VALVE TYPE
PRESSURE COMPENSATOR
(RESTRICTIVE)



VALVE TYPE
PRESSURE COMPENSATOR
(BY-PASS)

DESCRIPTION

Utilizes a cartridge type pressure reducing or relief valve to create a constant pressure differential between the inlet and the outlet of an orifice or valve.

OPERATIONS

The valve controls the pressure drop by sensing the pressures on port A & B which is added to the spring setting causing the valve to open or close so it maintains a constant pressure drop. This will improve your system performance when widely changing loads are seen.

FEATURES & BENEFITS

- Low friction seal on the pilot piston
- All external parts are zinc-plated for long life against elements
- All cartridges are 100% tested functionally
- Uses Sun T-2A Cavity for cartridge
- Uses HydraForce VC04-B3 Cavity for shuttle

SPECIFICATIONS

Flow:	RCC	20 GPM (37 L/M) Nominal
	BCC	30 GPM (56 L/M) Nominal

Valve Bodies:	3000 PSI (207 Bar) = Aluminum (2024-T4)
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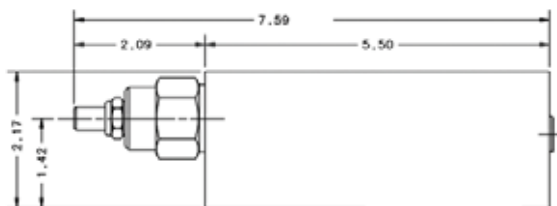
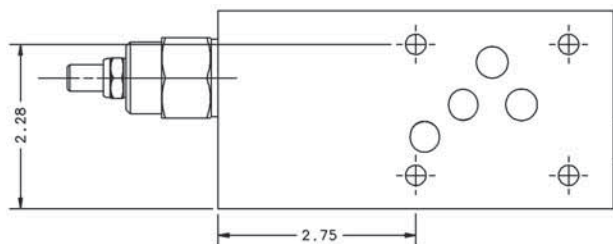
Estimated Shipping Weight:	5 # Aluminum
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P05MSV-RCC / P05MSV-BCC

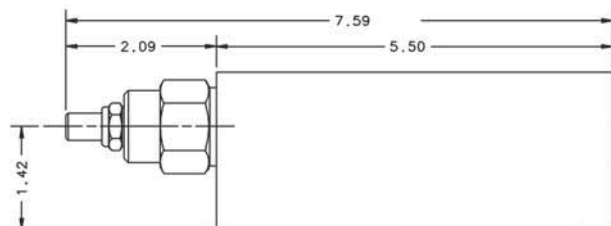
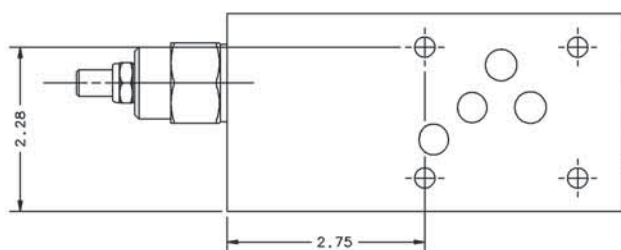
VALVE ACCESSORIES, PRESSURE CONTROL VALVE

DIMENSIONS

P05MSV-RCC



P05MSV-BCC



ORDERING INFORMATION

P05MSV			SELECT ONE		C		040			SELECT ONE		SELECT ONE		DESIGN LETTER	
FUNCTION	SIZE	STYLE	DESCRIPTION		PORT		PRESSURE RANGE			SEALS		BODY MATERIAL			
PRESSURE CONTROL VALVE	NFPA D05 NG10 (CETOP 5)	MODULAR STACK VALVE	CODE RC BC	PRESSURE COMPENSATOR (RESTRICTIVE) PRESSURE COMPENSATOR (BY-PASS)	CODE C	PORT A & B PORT	CODE 040	PSI 60-400	BAR 4.1-27.5	CODE A G	BUNA N (STD) VITON	CODE A	ALUMINUM		

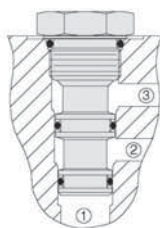
Body Only Assembly:

RCC

Aluminum (Part No.) — 552986K

BCC

Aluminum (Part No.) - 552991K



General Information

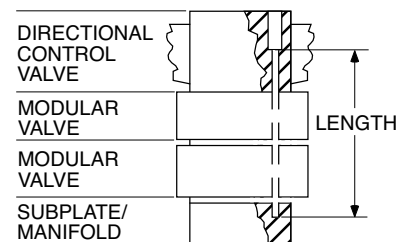
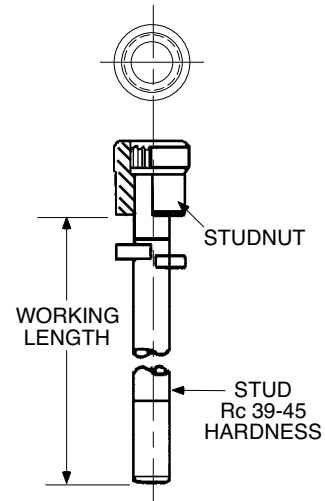
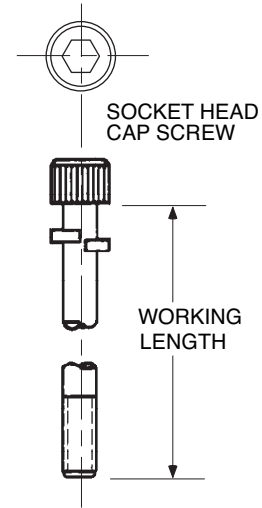
- Cartridge cavity is Sun T-2A with RCC flow pattern set up for cartridge flowing port 2 to port 1. Port 3 is A or B sensor. BCC flow pattern set up for cartridge flowing port 1 to port 2. Port 3 is A or B sensor.
- Cartridge #:

RCC	PBFB-LQN	Buna N
	PBFB-LQV	Viton
BCC	RSFC-LQN	Buna N
	RSFC-LQV	Viton
Shuttle	LS04-B30-0-N	Buna N
	LS04-B30-0-V	Viton

TYPICAL ORDERING CODE: **P05MSV-RCC-040-AA**

VALVE BOLT KITS

MODULAR STACK VALVE	VALVE STACK(MM) INCH	ORDER CODE	TYPE	WORKING LENGTH (MM) INCH	WEIGHT lbs. (kg)
V5M / VD03M NFPA D03 CETOP 3 NG6 KIT: (4) 10-24NC FASTENERS (4) #10 LOCKWASHERS	DIRECTIONAL VALVE ONLY	BD03-100	BOLT	(25.5) 1.00	(0.02) 0.05
	VALVE + (1)(40.0)MODULAR 1.57 STACK	BD03-250	BOLT	(63.8) 2.50	(0.04) 0.08
	VALVE + (1)(50.0)MODULAR 1.96 STACK	BD03-300	BOLT	(76.0) 3.00	(0.05) 0.13
	VALVE + (2)(40.0)MODULAR 1.57 STACK	BD03-4125	BOLT	(104.8) 4.125	(0.08) 0.18
	VALVE +(1)(40.0)+(1)(50.0) 1.57 MODULAR 1.96	BD03-450	BOLT	(114.0) 4.50	(0.09) 0.20
	VALVE + (3)(40.0)MODULAR 1.57 STACK	BD03-575	BOLT	(146.0) 5.75	(0.10) 0.23
	VALVE+ (2) (40.0) MODULAR 1.57 STACK	BD03-460	STUD	(104.8) 4.125	(0.08) 0.18
	VALVE + (3) (40.0)MODULAR 1.57 STACK	BD03-616	STUD	(146.0) 5.75	(0.10) 0.23
V12M / VD0-5M NFPA D05 CETOP 5 NG10 KIT: (4) 1/4-20NC FASTENERS (4) 1/4" LOCKWASHERS	DIRECTIONAL VALVE ONLY	BD05-175	BOLT	(44.6) 1.75	(0.05) 0.11
	VALVE + (1)(55.0)MODULAR 2.17 STACK	BD05-400	BOLT	(102.0) 4.00	(0.10) 0.24
	VALVE + (2)(55.0)MODULAR 2.17 STACK	BD05-6125	BOLT	(155.6) 6.125	(0.20) 0.44
	VALVE + (3)(55.0)MODULAR 2.17 STACK	BD05-825	BOLT	(209.6) 8.25	(0.25) 0.55
	VALVE + (2)(55.0)MODULAR 2.17 STACK	BD05-667	STUD	(155.6) 6.125	(0.20) 0.44
	VALVE + (3)(55.0)MODULAR 2.17 STACK	BD05-884	STUD	(209.6) 8.25	(0.25) 0.55
V50M / VD08M DVS50M NFPA D08 CETOP 8 NG25 (6) 1/2-13NC FASTENERS (6) 1/2" LOCKWASHERS	DIRECTIONAL VALVE ONLY	BD08-275	BOLT	(70.1) 2.75	(0.57) 1.25
	VALVE + (1)(88.9)MODULAR 3.44 STACK	BD08-625	BOLT	(159.4) 6.25	(1.02) 2.25
	VALVE + (1)(101.6)MODULAR 4.00 STACK	BD08-675	BOLT	(172.1) 6.75	(1.08) 2.40
	VALVE + (2)(88.9)MODULAR 3.44 STACK	BD08-9625	BOLT	(244.5) 9.625	(1.70) 3.75
	VALVE +(1) (88.9)+(1)(101.6) 3.44 MODULAR 4.00	BD08-1020	BOLT	(260.0) 10.25	(1.81) 4.00
	VALVE + (2)(101.6)MODULAR 4.0 STACK	BD08-1080	BOLT	(273.0) 10.75	(1.87) 4.13
	VALVE + (2)(88.9)MODULAR 3.44 STACK	BD08-1025	STUD	(244.5) 9.625	(1.70) 3.75
	VALVE +(1) (88.9)+(1)(101.6) 3.44 MODULAR 4.00	BD08-1075	STUD	(260.0) 10.25	(1.81) 4.00
	VALVE +(2)(101.6)MODULAR 4.00 STACK	BD08-1125	STUD	(273.0) 10.75	(1.87) 4.13
V100M / VD10M NFPA D10 CETOP 10 KIT: (6) 3/4-10NC FASTENERS (6) 3/4" LOCKWASHERS	DIRECTIONAL VALVE ONLY	BD10-250	BOLT	(63.8) 2.50	(1.19) 2.63



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- PVX Vane Pumps, quiet pumps for higher pressure applications
- HPV Piston Pumps, efficient pumps for higher pressure applications

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- D03/05/05A/05B/07/08/10 Proportional Control Valves offer more control options, from programmable On-board amplifiers to rail mount controllers.
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- JIC and L-Shape series for larger industrial applications

- Available from fractional horse power and 3 gallon tank size, to 100 horse power, 330 gallon tank, straight out of the catalog.
- Custom Designed and larger units to match your application, exactly

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