

PowerFlow™ D03 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
- 5,000 PSI rated at full rated flow
- Matches D03, D05, and D08 mounting patterns

Product Description

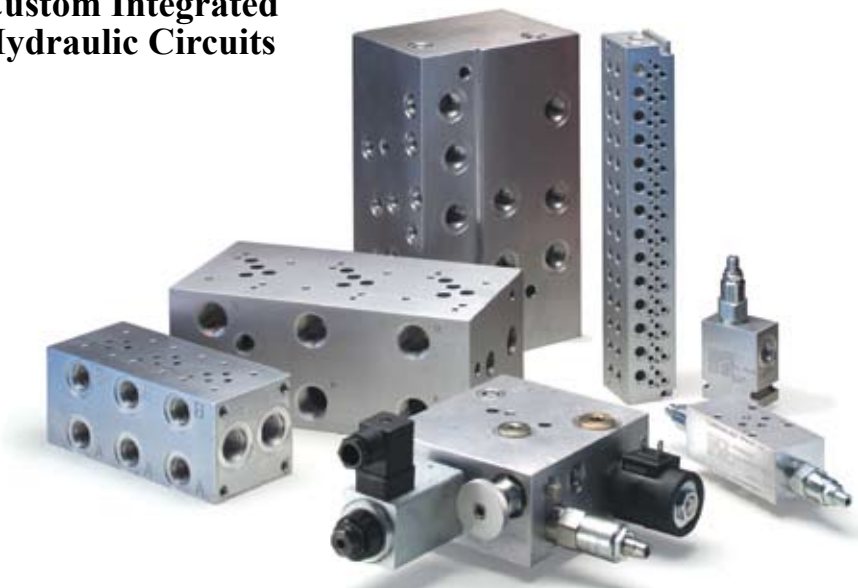
Modular stack valves are designed to install between the valve and its mounting surface. This will eliminate plumbing connections and reduce space requirements. Continental Hydraulics has a full range including check, flow control, relief, reducing, sequencing, shuttle valves and counterbalance valves.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

Bodies are manufactured of either aluminum (3000 PSI) or ductile (5000 PSI) to meet your pressure requirements. Our bodies use industry common cavities. All cartridges are 100% tested functionally.

Specifications

- Flow: Up to 120 GPM
- Pressure: Up to 5,000 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 5000 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 either aluminum or continuous cast ductile materials Pressure rated to 3000 PSI for aluminum and 5000 PSI for ductile. Ports available are NPTF, SAE, BSPP, ISO and BSPT

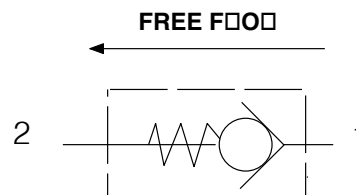
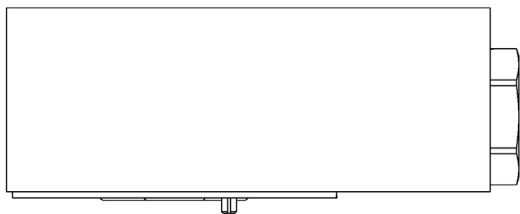
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C03MSV-DP / C03MSV-DT

CHECK VALVE, DIRECT OPERATED



DESCRIPTION

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

OPERATIONS

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

FEATURES & BENEFITS

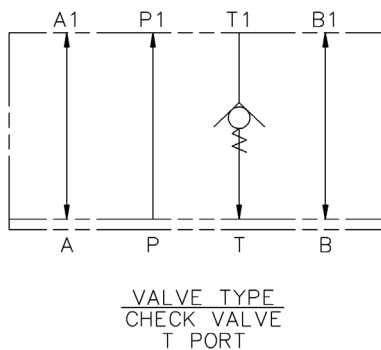
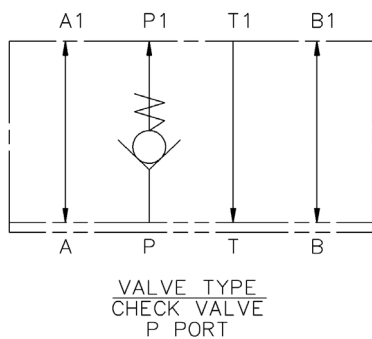
- All external parts are zinc plated for long life against elements.
- All cartridges are 100% functionally tested.
- Industrial common cavities.

SPECIFICATIONS

Flow: 20 GPM (75 L/M) Nominal

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

Estimated Shipping Weight: 2 # Aluminum

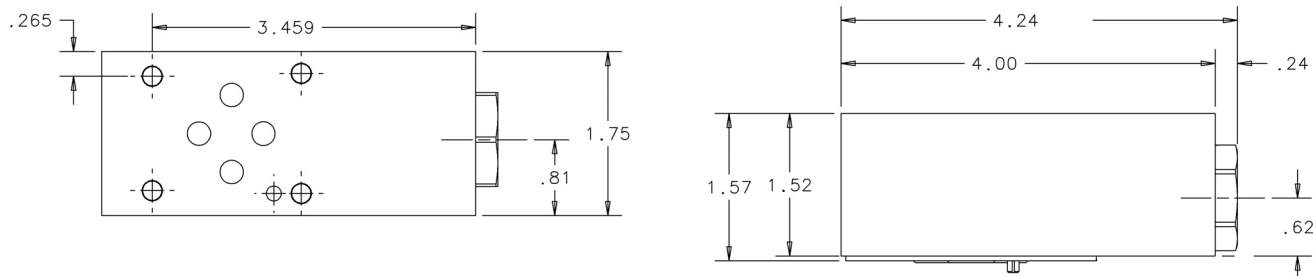


C03MSV-DP / C03MSV-DT

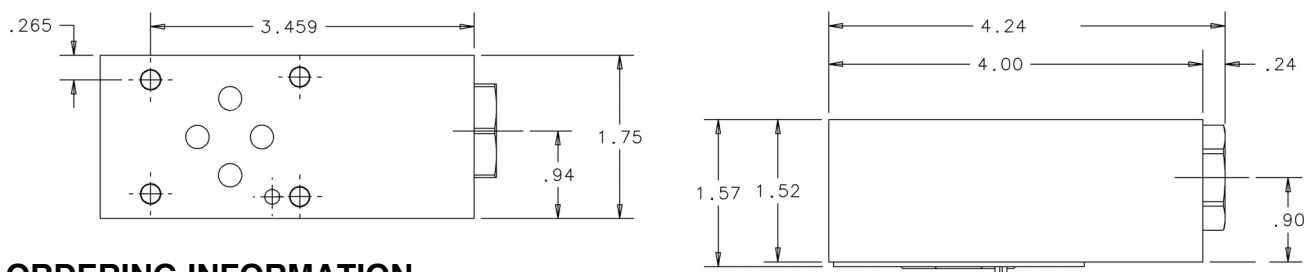
CHECK VALVE, DIRECT OPERATED

DIMENSIONS

C03MSV-DP



C03MSV-DT



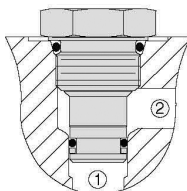
ORDERING INFORMATION

C03MSV — D				SELECT ONE	—	SELECT ONE	—	SELECT ONE	—	SELECT ONE	—	DESIGN
FUNCTION	SIZE	STYLE	TYPE	CONTROL PORT		CRACKING PRESSURE		SEALS		BODY MATERIAL		
CHECK VALVE	NFPA D03 NG6 (CETOP 3)	MODULAR STACK VALVE	DIRECT OPERATED GUIDED POPPET	CODE	LOCATION	CODE	PRESSURE	CODE		CODE		
				P	P PORT	5	5 PSI	A	BUNA N (STD)	A	ALUMINUM (STD)	
				T	T PORT	70	70 PSI	G	VITON			

Body Only Assembly (DP or DT):

Aluminum (Part No.) - 552469K

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



General Information:

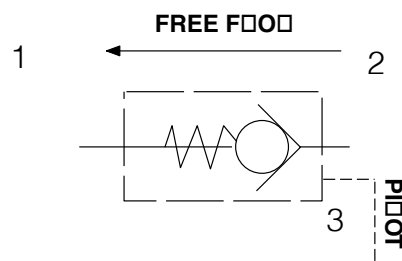
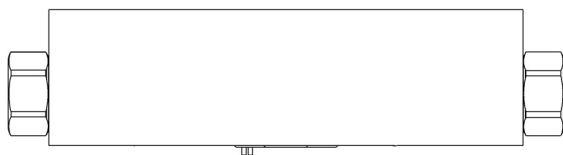
Cartridge cavity is HydraForce VC10-2 with a flow pattern set up for checked flow port 2 to port 1.

Cartridge #	CV10-20-0-N-5	Buna N	5 PSI
	CV10-20-0-V-5	Viton	5 PSI
	CV10-20-0-N-70	Buna N	70 PSI
	CV10-20-0-V-70	Viton	70 PSI

TYPICAL ORDERING CODE: **C03MSV-DP-70-AA**

C03MSV-PA / C03MSV-PB / C03MSV-PC

CHECK VALVE, PILOT OPERATED



DESCRIPTION

Utilizes a cartridge-type, guided poppet, and 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 work port when at least one-third of the load induced pressure is sensed in the opposing work port.

FEATURES & BENEFITS

- All external parts are zinc-plated for long life against elements.
- All cartridges are 100% tested functionally.
- Uses Sun T-11A cavity.

SPECIFICATIONS

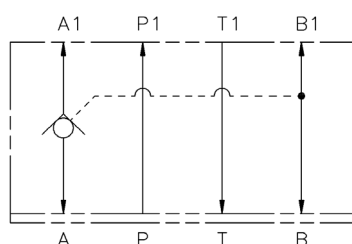
Valve Bodies: 3000 PSI (207 Bar) = Aluminum (2024-T4)

Flow: 15 GPM (57 L/M) Nominal

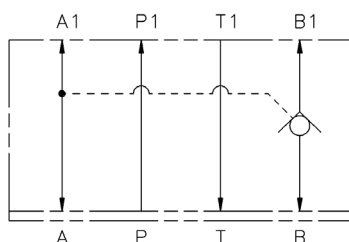
Pilot Ratio: 3:1

Internal Leakage: 1 drop per minute maximum at 5000 PSI

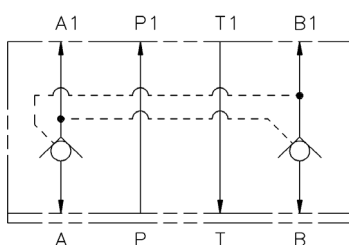
Estimated Shipping Weight: 2 # Aluminum



VALVE TYPE
PILOT OPERATED
CHECK VALVE
A PORT



VALVE TYPE
PILOT OPERATED
CHECK VALVE
B PORT



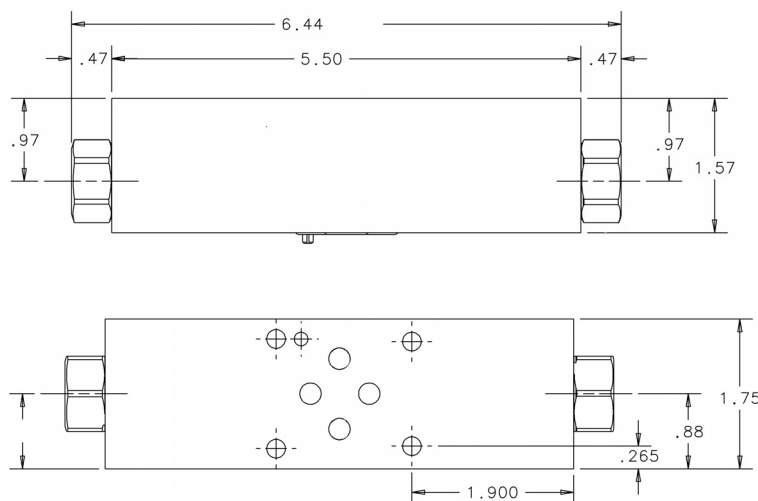
VALVE TYPE
PILOT OPERATED
CHECK VALVE
A & B PORT

C03MSV-PA / C03MSV-PB / C03MSV-PC

CHECK VALVE, PILOT OPERATED

DIMENSIONS

C03MSV-PA, PB and PC



ORDERING INFORMATION

C03MSV — P

SELECT ONE

SELECT ONE

SELECT ONE

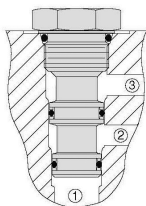
SELECT ONE

DESIGN

FUNCTION	SIZE	STYLE	TYPE	CONTROL PORT		CRACKING PRESSURE		SEALS		BODY MATERIAL	
CHECK VALVE	NFFPA D03 NG6 (CETOP 3)	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 (STD)
				B	B PORT	75	75 PSI	G	VITON		
				C	A & B PORT						

Body Only Assembly:

Code A, B & C:
Aluminum (Part No.) - 550424K



General Information:

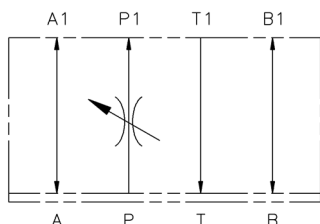
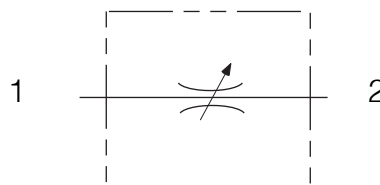
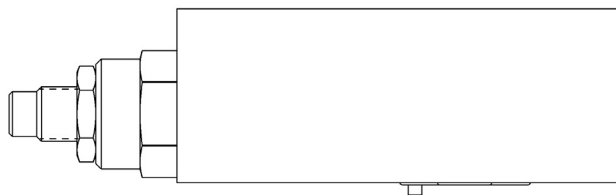
Cartridge cavity is Sun T-11A with flow pattern set up for checked flow port 1 to port 2, with port 3 as the pilot signal.

Cartridge #	CKCB-XCN	Buna N	30 PSI
	CKCB-XEN	Buna N	75 PSI
	CKCB-XCV	Viton	30 PSI
	CKCB-XEV	Viton	75 PSI

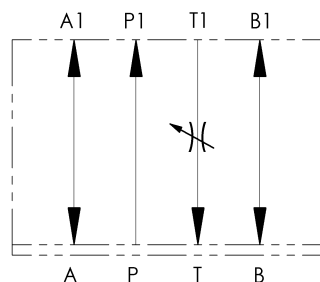
TYPICAL ORDERING CODE: **C03MSV-PA-30-AA**

F03MSV-NIP / F03MSV-NOT

FLOW CONTROL VALVE, NON-COMPENSATED



VALVE TYPE
FLOW CONTROL VALVE
METER-IN
P-PORT



VALVE TYPE
FLOW CONTROL VALVE
METER-OUT
T-PORT

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.

SPECIFICATIONS

Flow: 12 GPM (45 L/M) Nominal

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

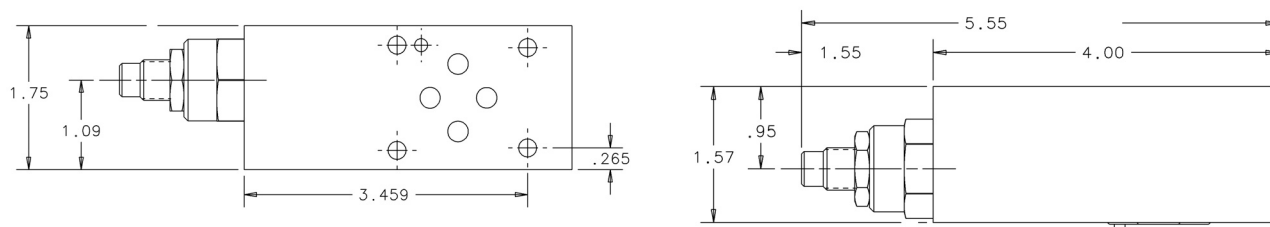
Estimated Shipping Weight: 2 # Aluminum

F03MSV-NIP / F03MSV-NOT

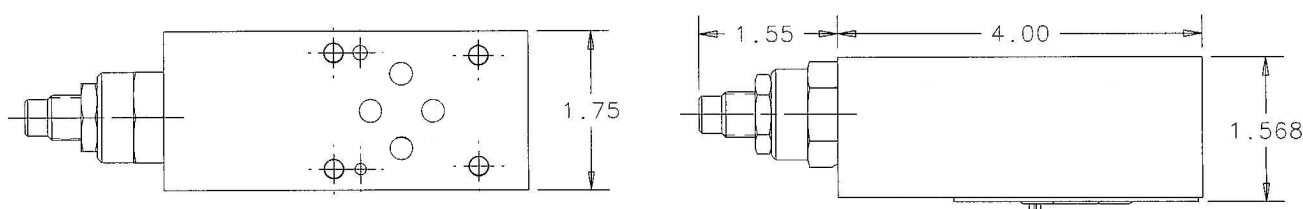
FLOW CONTROL VALVE, NON-COMPENSATED

DIMENSIONS

F03MSV-NIP



F03MSV-NOT



ORDERING INFORMATION

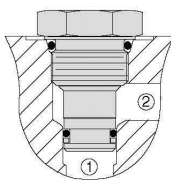
F03MSV		N		SELECT ONE		SELECT ONE		SELECT ONE		DESIGN	
FUNCTION	SIZE	STYLE	TYPE	CONTROL PORT		SEALS		BODY MATERIAL			
FLOW CONTROL VALVE	NFPA D03 NG6 (CETOP 3)	MODULAR STACK VALVE	NON- COMPENSATED	CODE	LOCATION	CODE		CODE		MAX. PS	
				IP	P PORT (Meter-In)	A	BUNA N (STD)	A	ALUMINUM (STD)	3000 PSI	
				OT	T PORT (Meter-Out)	G	VITON				

Body Only Assembly

NIP:
Aluminum (Part No.) - 552973K

NOT:
Aluminum (Part No.) - 552469K

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



General Information

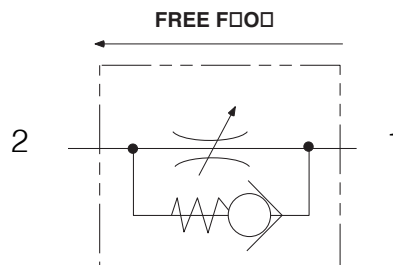
Cartridge cavity is HydraForce VC10-2 with a flow pattern set up for flow port 1 to port 2.

Cartridge # NV10-20A-0-N Buna N
NV10-20A-0-V Viton

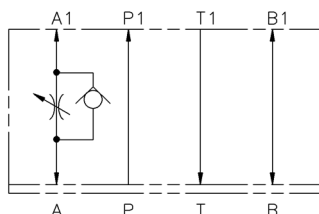
TYPICAL ORDERING CODE: **F03MSV-NIP-AA**

F03MSV-NDA / F03MSV-NDB / F03MSV-NDC

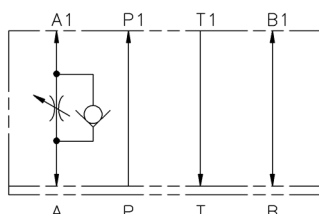
FLOW CONTROL VALVE, NON-COMPENSATED WITH CHECK



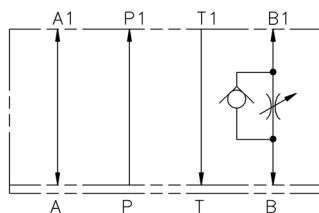
VALVE TYPE
FLOW CONTROL VALVE
WITH CHECK
METER-OUT
A PORT



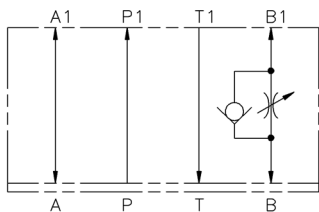
VALVE TYPE
FLOW CONTROL VALVE
WITH CHECK
METER-IN
A PORT



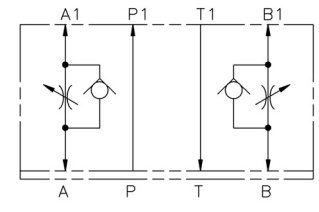
VALVE TYPE
FLOW CONTROL VALVE
WITH CHECK
METER-OUT
B PORT



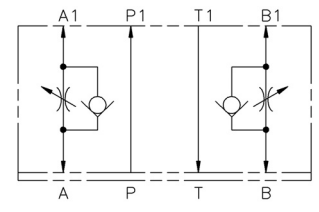
VALVE TYPE
FLOW CONTROL VALVE
WITH CHECK
METER-IN
B PORT



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.
- Industry common cavity.

SPECIFICATIONS

Flow: 12 GPM (45 L/M) Nominal

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

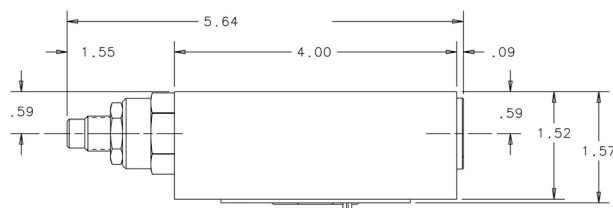
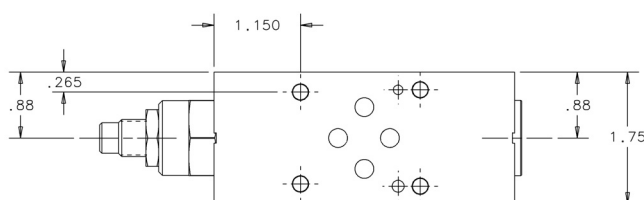
Estimated Shipping Weight: 2 # Aluminum

F03MSV-NDA / F03MSV-NDB / F03MSV-NDC

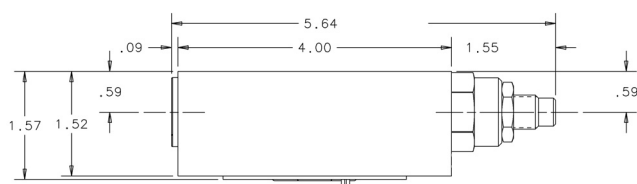
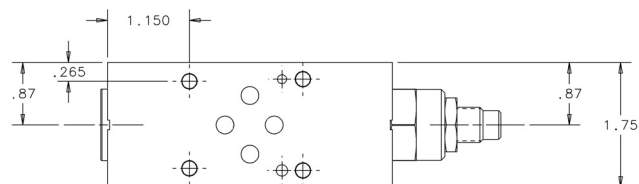
FLOW CONTROL VALVE, NON-COMPENSATED WITH CHECK

DIMENSIONS

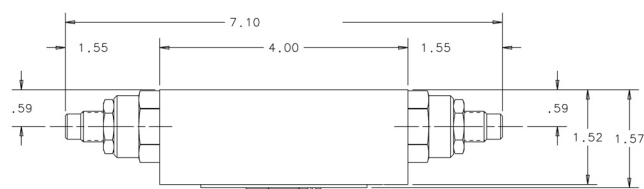
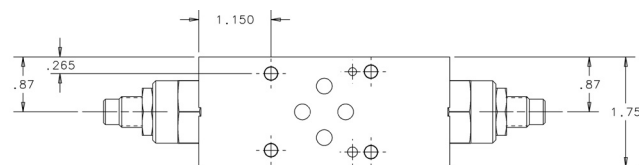
F03MSV-NDA



F03MSV-NDB



F03MSV-NDC



ORDERING INFORMATION

F03MSV — ND

SELECT ONE

SELECT ONE

SELECT ONE

DESIGN

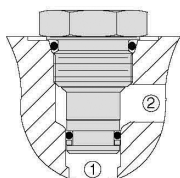
FUNCTION	SIZE	STYLE	TYPE	CONTROL PORT		SEALS		BODY MATERIAL		
				CODE	LOCATION	CODE		CODE		MAX. PSI
				A	A PORT	A	BUNA N (STD)	A	ALUMINUM (STD)	3000 PSI
				B	B PORT					
				C	A & B PORT	G	VITON			

Body Only Assembly:

Code A, B, & C

Aluminum (Part No.) - 553081K

Includes Seal Retainer Plate,
O-rings, Locating Pin & Plug on A-B
code.



General Information:

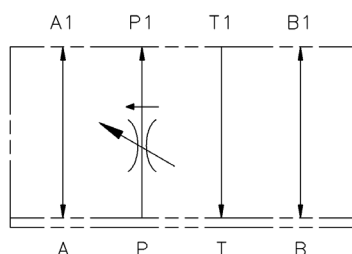
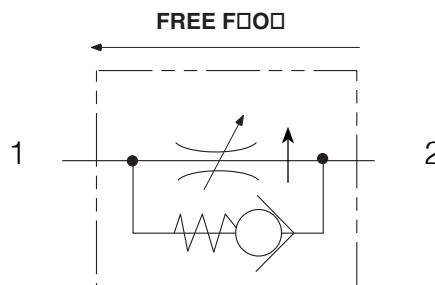
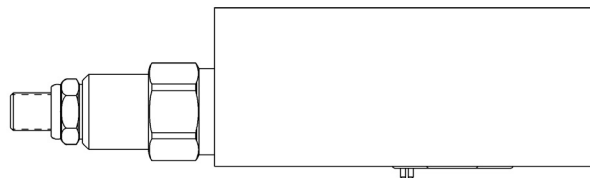
Cartridge cavity is HydraForce VC10-2 with a flow pattern set up for metered flow port 2 to port 1 with free flow port 1 to port 2.

Cartridge # FC10-20A-0-N Buna N
FC10-20A-0-V Viton

TYPICAL ORDERING CODE: **F03MSV-NDA-AA**

F03MSV-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 designed to minimize floor variation.
- All external parts are zinc-plated for long life against elements.
- All cartridges are 100% functionally tested.
- Uses Sun T-13A Cavity.
- 5 turns of adjustment.
- 10 PSI free flow check cracking pressure.
- 18 cu.in./min. leakage at shut-off.

SPECIFICATIONS

Flow: .1 to 6 GPM (23 L/M) Nominal
See performance chart

Flow Accuracy: Less than $\pm 5\%$ with a minimum of 200 PSI pressure differential.

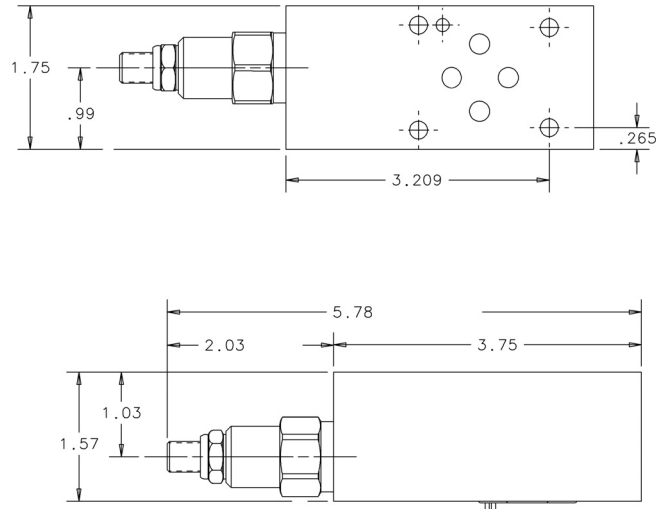
Valve Bodies: 3000 PSI (207 Bar) = Aluminum (2024-T4)

Estimated Shipping Weight: 2 # Aluminum

FLOW CONTROL VALVE, PRESSURE COMPENSATED WITH CHECK

DIMENSIONS

F03MSV-CIP



ORDERING INFORMATION

F03MSV — **C** **I** **P** — — —

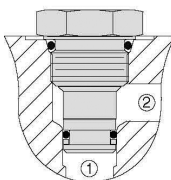
SELECT ONE SELECT ONE DESIGN

FUNCTION	SIZE	STYLE	TYPE	VALVE FUNCTION	CONTROL PORT		SEALS		BODY MATERIAL		
FLOW CONTROL VALVE	NFPA	MODULAR	PRESSURE	I METER-IN	CODE	LOCATION	CODE		CODE		PSI RATED
	D03	STACK	COMPENSATED		P	P PORT	A	BUNA N (STD)	A	ALUMINUM (STD)	3000 PSI
	NG6 (CETOP 3)	VALVE					G	VITON			

Body Only Assembly:

Aluminum (Part No.) - 552951K

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



General Information:

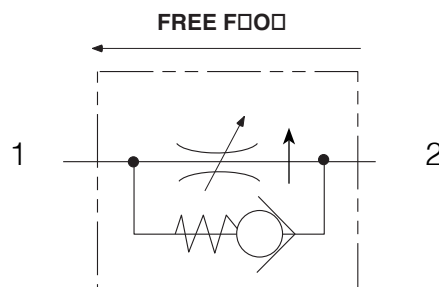
Cartridge cavity is Sun T-13A with a flow pattern set up for metered flow port 1 to port 2 and free flow port 2 to port 1.

Cartridge # FDDB-LAN Buna N
 FDDB-LAV Viton

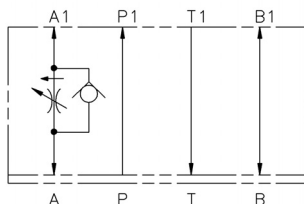
TYPICAL ORDERING CODE: **F03MSV-CIP-AA**

F03MSV-CDA / F03MSV-CDB / F03MSV-CDC

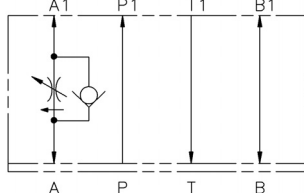
FLOW CONTROL VALVE, PRESSURE COMPENSATED WITH CHECK



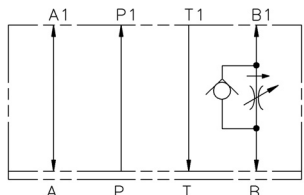
VALVE TYPE
FLOW CONTROL VALVE
WITH CHECK
METER-OUT
A PORT



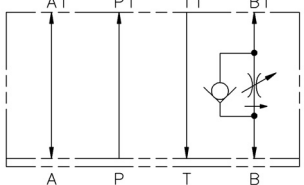
VALVE TYPE
FLOW CONTROL VALVE
WITH CHECK
METER-IN
A PORT



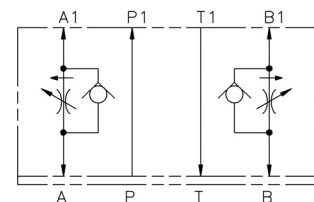
VALVE TYPE
FLOW CONTROL VALVE
WITH CHECK
METER-OUT
B PORT



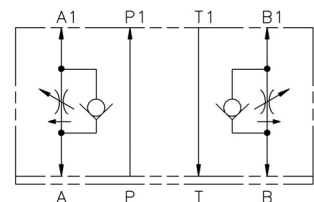
VALVE TYPE
FLOW CONTROL VALVE
WITH CHECK
METER-IN
B PORT



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.
- 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-13A cavity.
- 5 turns of adjustment.

SPECIFICATIONS

Flow: .1 to 6 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)

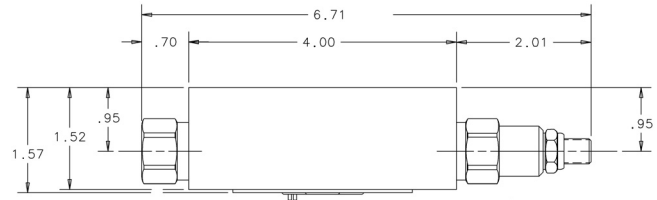
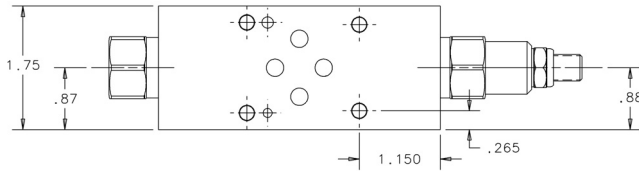
Estimated Shipping Weight: 2 # Aluminum

F03MSV-CDA / F03MSV-CDB / F03MSV-CDC

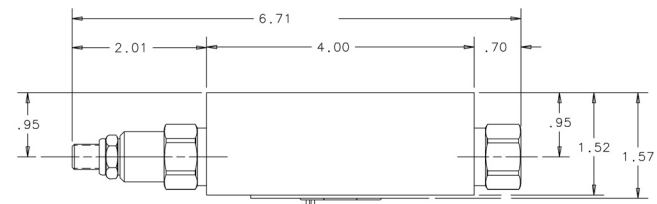
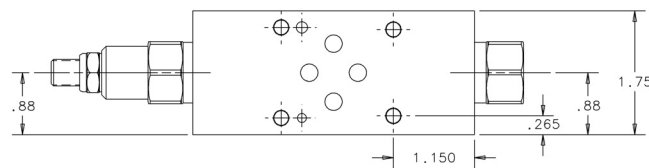
FLOW CONTROL VALVE, PRESSURE COMPENSATED WITH CHECK

DIMENSIONS

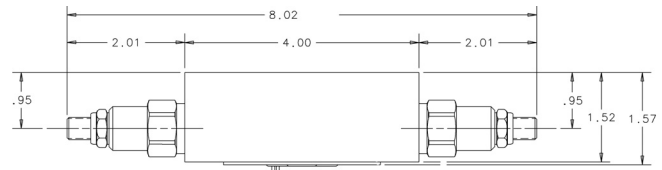
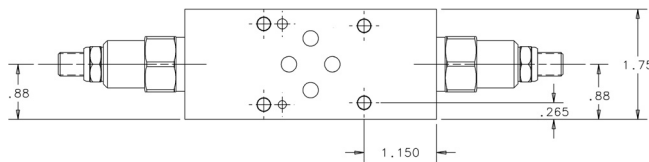
F03MSV-CDA



F03MSV-CDB



F03MSV-CDC



ORDERING INFORMATION

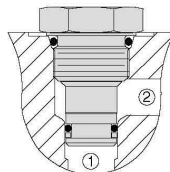
F03MSV — C D				SELECT ONE	SELECT ONE	SELECT ONE	DESIGN			
FUNCTION	SIZE	STYLE	TYPE	VALVE FUNCTION	CONTROL PORT		SEALS		BODY MATERIAL	
FLOW CONTROL VALVE	NFPA	MODULAR	PRESSURE COMPENSATED	METER-IN OR METER-OUT WITH REVERSE CHUCK	CODE	LOCATION	CODE		CODE	
	D03	STACK			A	A PORT	A	BUNA N (STD)	A	ALUMINUM (STD)
	NG6 (CETOP 3)	VALVE			B	B PORT				
					C	A & B PORT	G	VITON		

Body Only Assembly:

Code A, B & C

Aluminum (Part No.) - 550425K

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



General Information:

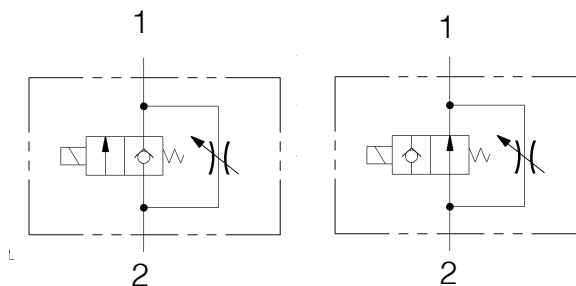
- Cartridge cavity is Sun T-13A with a flow pattern set up for metered flow port 1 to port 2 and free flow port 2 to port 1.

Cartridge # FD8A-LAN Buna N
 FD8A-LAV Viton

TYPICAL ORDERING CODE: **F03MSV-CDA-AA**

F03MSV-NSIP

TWO SPEED FLOW CONTROL, DIRECT OPERATED



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.

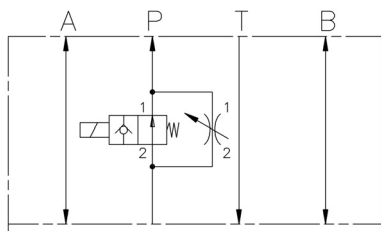
FEATURES & BENEFITS

- 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.

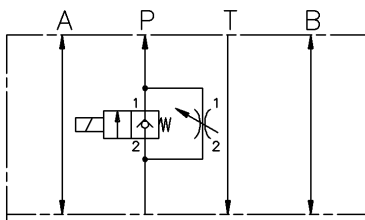
SPECIFICATIONS

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

Estimated Shipping Weight: 3 # Aluminum



VALVE TYPE NORMALLY OPEN
TWO SPEED VALVE WITH FULL FLOW AND METERED
FLOW WHEN ENERGIZED

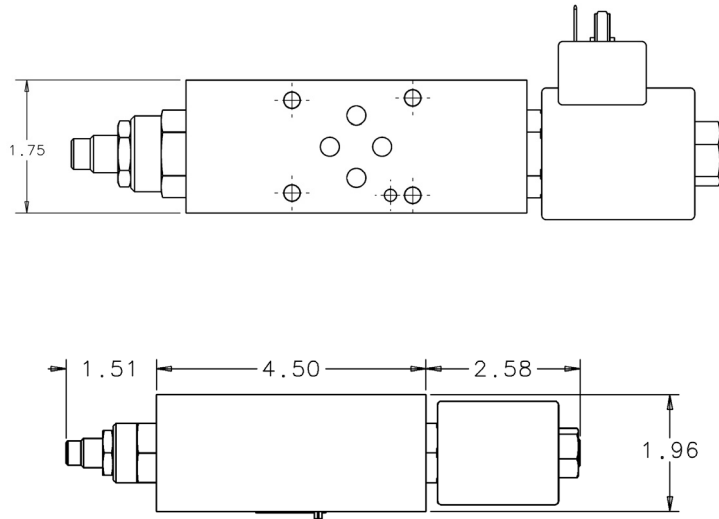


VALVE TYPE NORMALLY CLOSED
TWO SPEED VALVE WITH FULL FLOW AND METERED
FLOW WHEN ENERGIZED

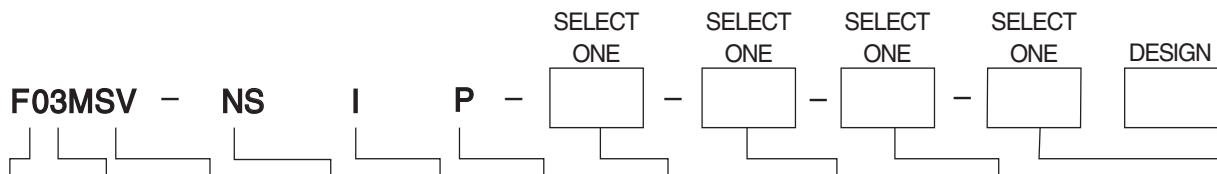
TWO SPEED FLOW CONTROL, DIRECT OPERATED

DIMENSIONS

F03MSV-NSIP



ORDERING INFORMATION

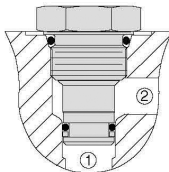


FUNCT.	SIZE	STYLE	TYPE	FUNCT.	CONTROL PORT	SOLENOID FUNCTION		SEALS		BODY MATERIAL		MECHANICAL/ELECTRICAL	
FLOW CONTROL VALVE	NFPA D03 NG6 (CETOP 3)	MODULAR STACK VALVE	NON-COMPENSATED DUAL SPEED WITH SOLENOID	DIRECT OPERATED	P PORT (METER-IN)	CODE	NORMAL POSITION	CODE		CODE		CODE	DESCRIP.
						NO	OPEN	A	BUNA N (STD)	A	ALUMINUM (STD)	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.) - 552241K

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



General Information:

Cartridge cavity is a HydraForce VC10-2 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 # NV10-20A-0-N Buna N
NV10-20A-0-V Viton

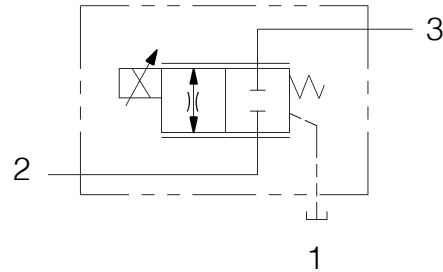
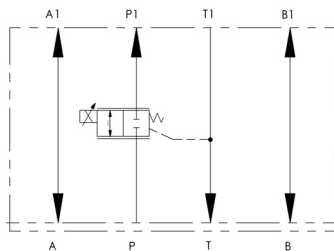
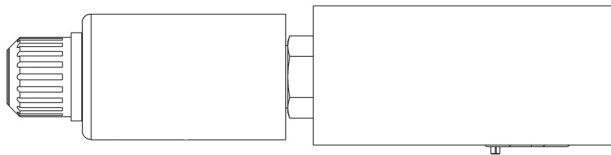
Electrical Cartridge # SV10-20-0-N-**** Buna N Normally Closed
SV10-20-0-V-**** Viton Normally Closed
SV10-21-0-N-**** Buna N Normally Open
SV10-21-0-V-**** Viton Normally Open

**** = Coil Voltage

TYPICAL ORDERING CODE: **F03MSV-NSIP-NO-AA-115AG**

EF03MSV-D

PROPORTIONAL FLOW CONTROL, DIRECT OPERATED



TYPICAL PERFORMANCE SPECIFICATIONS*

		Code 16	4.3 gpm	16.2 lpm
		Code 28	7.5 gpm	28.4 lpm
MAXIMUM OPERATING PRESSURE	Ports 2 and 3		300 psi	207 bar
TYPICAL RESPONSE TIME †	10 to 90% Spool Travel		25 ms	
	90 to 10% Spool Travel		45 ms	
	30 to 90% Spool Travel		20 ms	
	(Nominal) 90 to 30% Spool Travel		30 ms	
SPOOL STROKE	Closed to open		1.20 in.	3.05 mm
HYSTERESIS	With Dither		< 6%	
THRESHOLD	With Dither		< 3%	
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 (I ² 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	

*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.

†NOTE: Response times are effected by pressure, viscosity and flow rate.

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 C10-3 mounting cavity.
- Coil uses standard DIN 43650 Connector.

SPECIFICATIONS

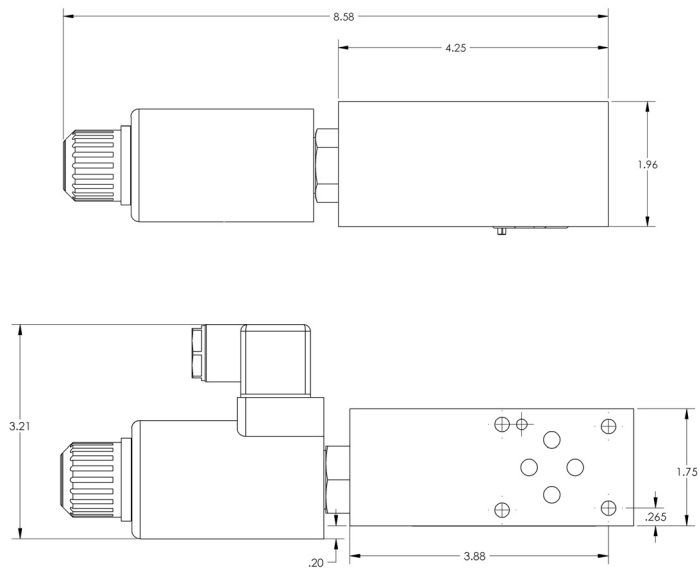
Valve Bodies: 3000 PSI (207 Bar) = Aluminum (2024-T4)

Estimated Shipping Weight: 3 # Aluminum

PROPORTIONAL FLOW CONTROL, DIRECT OPERATED

DIMENSIONS

EF03MSV-D



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

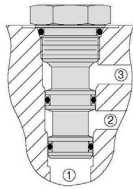
ORDERING INFORMATION

EF03MSV – D			SELECT ONE		G		D		SELECT ONE		L		DESIGN	
FUNCT.	SIZE	STYLE	FUNCT.	FLOW		SEALS		ELECTRICAL		SOLENOID		SOLENOID MFG.		
FLOW CONTROL VALVE	NFPA	MODULAR	DIRECT OPERATED	CODE	NOMINAL FLOW (GPM) AT 10 bar (145 PSI) PRESSURE DROP (FULL OPEN)	CODE		CODE		CODE	(SEE BELOW)	CODE		
	D03	STACK VALVE		16	16 LITER (4.3 GPM)	G	VITON	D	DIN 43650 SOLENOID CONNECTOR	12	12 VDC	L	LISK	
	NG6 (CETOP 3)	VALVE		28	28 LITER (7.5 GPM)					24	24 VDC			

Body Only Assembly:

Aluminum (Part No.) - 1001121K

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



General Information

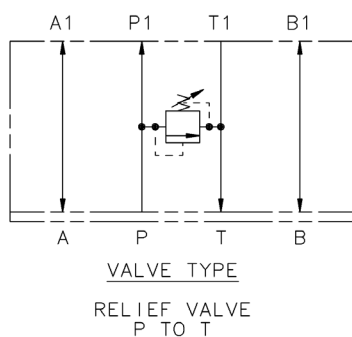
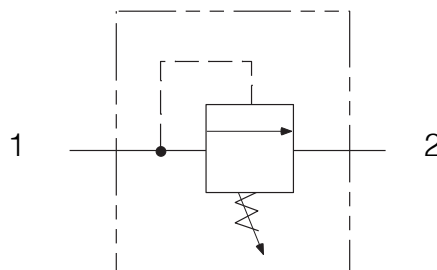
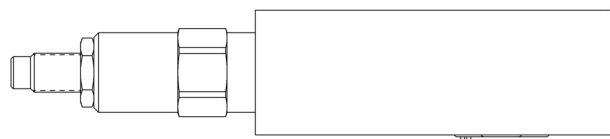
Cartridge cavity is C10-3 with a flow pattern set up for metered flow
port 2 to port 3 and port 1 going back to reservoir.

Cartridge #:	EF10C-D16-GD-12L	12 VDC, 16 Liters
	EF10C-D16-GD-24L	24 VDC, 16 Liters
	EF10C-D28-GD-12L	12 VDC, 28 Liters
	EF10C-D28-GD-24L	24 VDC, 28 Liters

TYPICAL ORDERING CODE: EF03MSV-D16-GD-12L

P03MSV-RP

PRESSURE RELIEF VALVE, PILOT OPERATED / BALANCED SPOOL



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

SPECIFICATIONS

Flow: 30 GPM (113 L/M) Nominal

Internal Leakage: 115cc/min (7 cu. In/min)

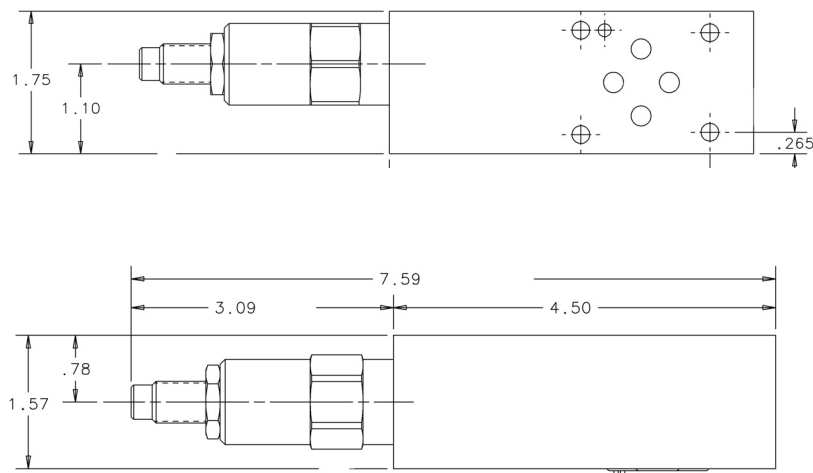
Valve Bodies: 3000 PSI (207 Bar) = Aluminum (2024-T4)

Estimated Shipping Weight: 2 # Aluminum

PRESSURE RELIEF VALVE, PILOT OPERATED / BALANCED SPOOL

DIMENSIONS

P03MSV-RP



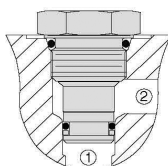
ORDERING INFORMATION

P03MSV		—	R	P	—	<div>SELECT ONE</div>	—	<div>SELECT ONE</div>	—	<div>SELECT ONE</div>		<div>DESIGN</div>
FUNCTION	SIZE	STYLE	TYPE	CONTROL PORT	PRESSURE RANGE		SEALS		BODY MATERIAL			
PRESSURE CONTROL VALVE	NFPA	MODULAR	RELIEF	P PORT	CODE	PRESSURE	CODE		CODE			
	D03	STACK	VALVE		150	150-1500 PSI	A	BUNA N (STD)	A	ALUMINUM (STD)		
	NG6 (CETOP 3)	VALVE	300		400-3000 PSI	G	VITON					

Body Only Assembly:

Aluminum (Part No.) - 552481K

Includes O-rings & Locating Pin.



General Information

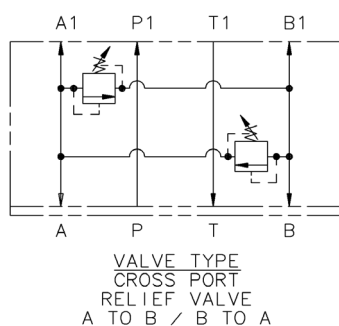
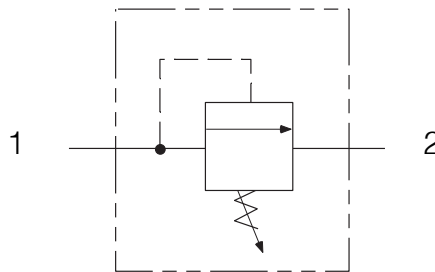
Cartridge cavity is HydraForce VC10-2 with a flow pattern set up for relief flow port 1 to port 2.

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: **P03MSV-RP-150-AA**

P03MSV-XC

CROSS PORT VALVE, PILOT OPERATED / BALANCED SPOOL



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 opposing work port.

FEATURES & BENEFITS

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

SPECIFICATIONS

Flow: 30 GPM (113 L/M) Nominal

Internal Leakage: 115cc/min (7 cu. In/min)

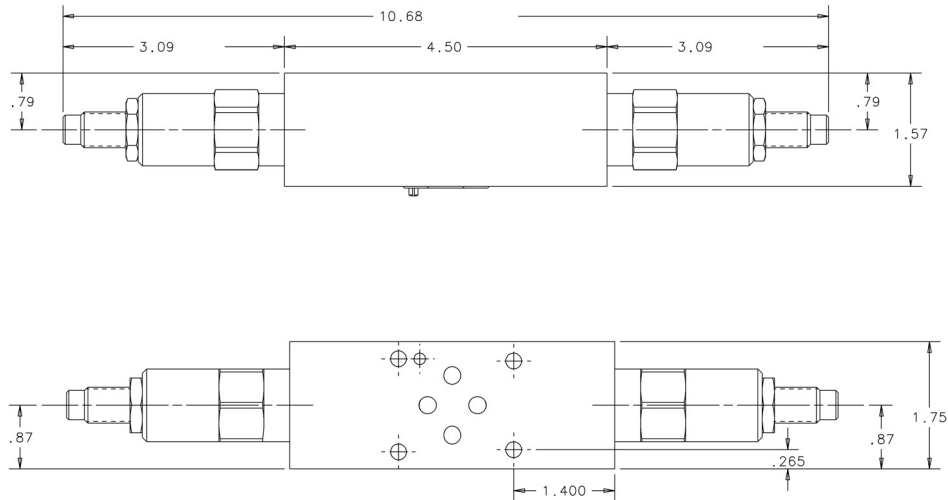
Valve Bodies: 3000 PSI (207 Bar) = Aluminum (2024-T4)

Estimated Shipping Weight: 2 # Aluminum

CROSS PORT VALVE, PILOT OPERATED / BALANCED SPOOL

DIMENSIONS

P03MSV-XC



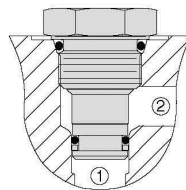
ORDERING INFORMATION

P03MSV		—	X	C	—	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 CONTROL VALVE	NFPA D03 NG6 (CETOP 3)	MODULAR STACK VALVE	CROSSPORT RELIEF VALVE	A & B PORT	CODE	PRESSURE	CODE		CODE		
					150	150-1500 PSI	A	BUNA N (STD)	A	ALUMINUM (STD)	
					300	400-3000 PSI	G	VITON			

Body Only Assembly:

Aluminum (Part No.) - 552482K

Includes O-rings & Locating Pin.



General Information

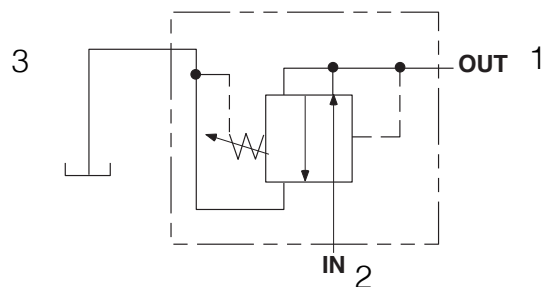
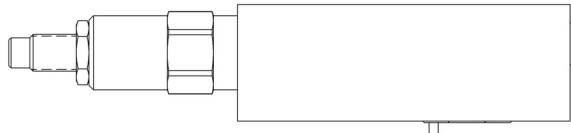
Cartridge cavity is HydraForce VC10-2 with a flow pattern set up for relief flow port 1 to port 2.

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: **P03MSV-XC-150-AA**

P03MSV-PDRA / P03MSV-PDRB / P03MSV-PDRP

PRESSURE REDUCING / RELIEVING VALVE, PILOT OPERATED, SLIDING SPOOL



DESCRIPTION

This pilot-operated hydraulic pressure reducing/relieving valve acts as a pressure-regulating device for a secondary circuit. It features a sliding spool and screw-in cartridge.

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 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

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

SPECIFICATIONS

Flow: 15 GPM (56 L/M) Nominal

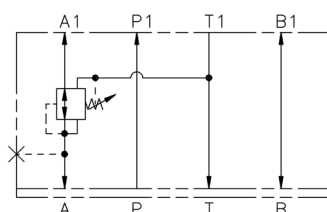
Pilot Control

Internal Leakage: .13 GPM (.49 L/M) Nominal

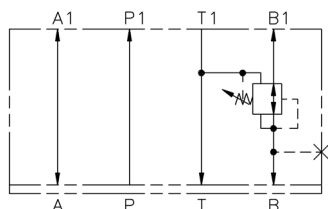
Valve Bodies: 2500 PSI (175 Bar) = Aluminum (2024-T4)

Gauge Port: #4 SAE Straight Thread

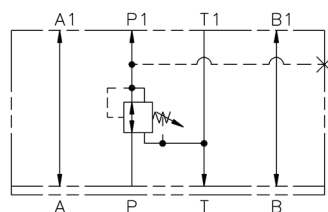
Estimated Shipping Weight: 2 # Aluminum



VALVE TYPE
PRESSURE REDUCING/
RELIEVING VALVE
A-PORT



VALVE TYPE
PRESSURE REDUCING/
RELIEVING VALVE
B-PORT



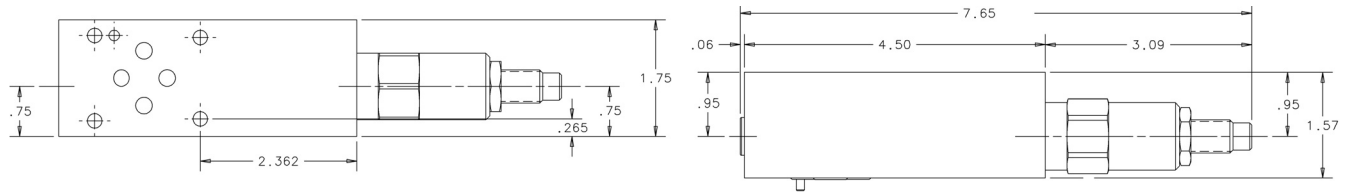
VALVE TYPE
PRESSURE REDUCING/
RELIEVING VALVE
P-PORT

P03MSV-PDRA / P03MSV-PDRB / P03MSV-PDRP

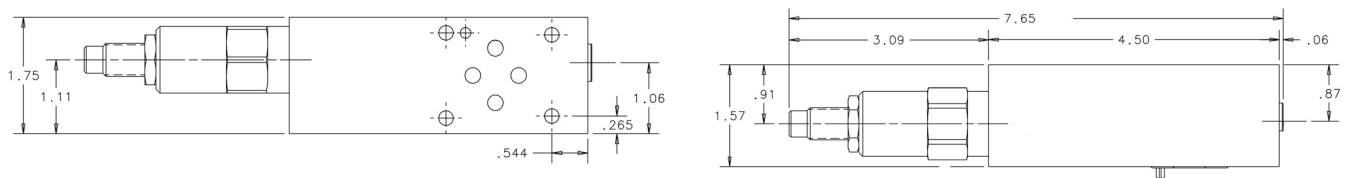
PRESSURE REDUCING / RELIEVING VALVE, PILOT OPERATED, SLIDING SPOOL

DIMENSIONS

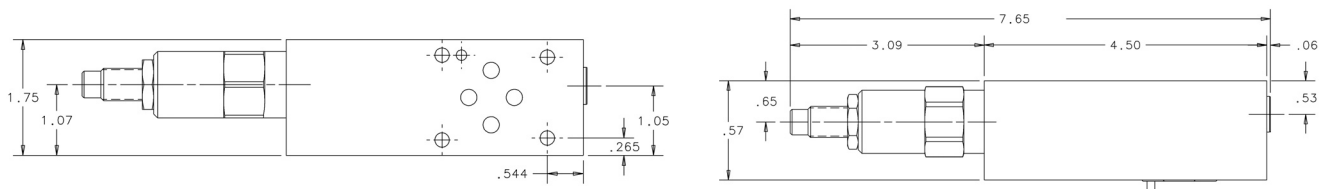
P03MSV-PDRA



P03MSV-PDRB



P03MSV-PDRP



ORDERING INFORMATION

P03MSV — PDR

SELECT ONE

SELECT ONE

SELECT ONE

SELECT ONE

DESIGN

FUNCTION	SIZE	STYLE	VALVE FUNCTION	CONTROL PORT		ADJUSTMENT RANGE		SEALS		BODY MATERIAL	
PRESSURE CONTROL VALVE	NFPA	MODULAR	REDUCING/ RELIEVING PILOT OPERATED	CODE	LOCATION	CODE	PRESSURE (PSI)	CODE		CODE	
	D03	STACK		A	A PORT	150	150-1500	A	BUNA N (STD)	A	ALUMINUM (STD)
	NG6 (CETOP 3)	VALVE		B	B PORT	300	400-3000	G	VITON		
				P	P PORT						

Body Only Assembly:

PDRA

Aluminum (Part No.) - 552493K

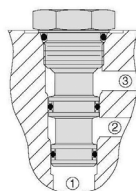
PDRB

Aluminum (Part No.) - 552483K

PDRP

Aluminum (Part No.) - 552484K

Includes O-rings & Locating Pin.



General Information

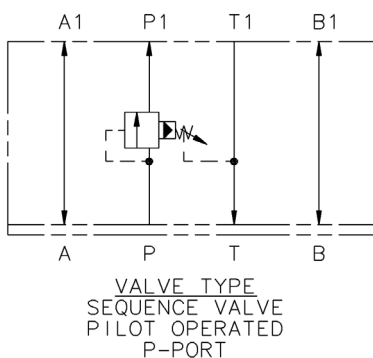
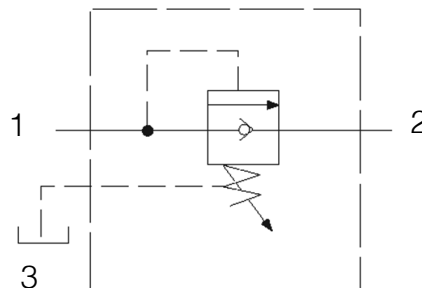
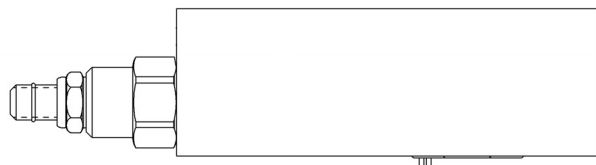
Cartridge cavity is HydraForce VC10-3 with a flow pattern set up for reduced pressure from port 2 to port 1 with port 3 to reservoir.

Cartridge #:	PR10-36A-0-N-15	Buna N	1500 PSI
	PR10-36A-0-V-15	Viton	1500 PSI
	PR10-36A-0-N-30	Buna N	3000 PSI
	PR10-36A-0-V-30	Viton	3000 PSI

TYPICAL ORDERING CODE: **P03MSV-PDRA-150-AA**

P03MSV-SP

SEQUENCE VALVE, POPPET TYPE WITH FREE REVERSE FLOW



DESCRIPTION

This 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

- 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-11A Cavity.

SPECIFICATIONS

Flow: 15 GPM (56 L/M) Nominal

Internal Leakage: 2 IN³/min/1000 psi

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

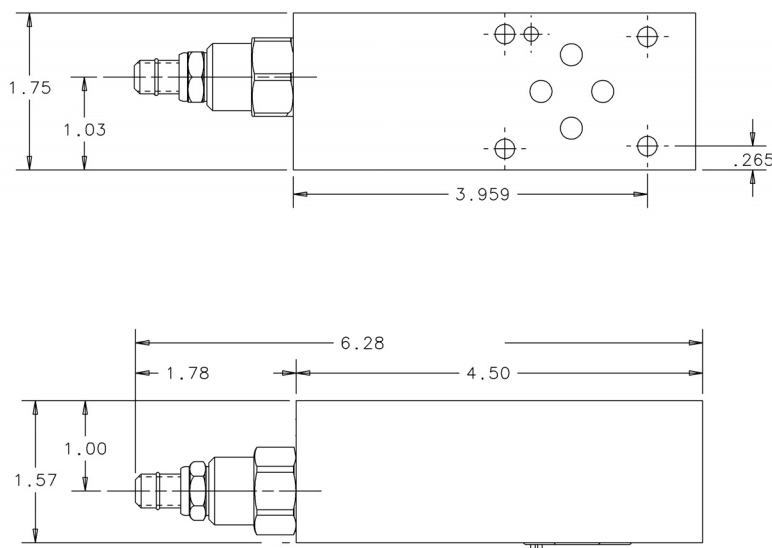
Estimated Shipping Weight: 2 # Aluminum

P03MSV-SP

POPPET TYPE WITH FREE REVERSE FLOW

DIMENSIONS

P03MSV-SP



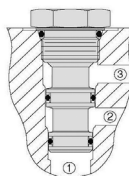
ORDERING INFORMATION

<div> <div>P03MSV</div> <div>—</div> <div>S</div> <div>—</div> <div>P</div> <div>—</div> <div>SELECT ONE</div> <div>—</div> <div>SELECT ONE</div> <div>—</div> <div>SELECT ONE</div> <div>—</div> <div>DESIGN</div> </div>											
FUNCTION	SIZE	STYLE	TYPE	CONTROL PORT	PRESSURE RANGE		SEALS		BODY MATERIAL		
PRESSURE CONTROL VALVE	NFPA	MODULAR	PRESSURE SEQUENCE VALVE	P PORT	CODE	PRESSURE	CODE		CODE		
	D03	STACK			150	50-1500 PSI	A	BUNA N (STD)	A	ALUMINUM (STD)	
	NG6 (CETOP 3)	VALVE			300	100-3000 PSI	G	VITON			

Body Only Assembly:

Aluminum (Part No.) - 550479K

Includes O-rings & Locating Pin.



General Information

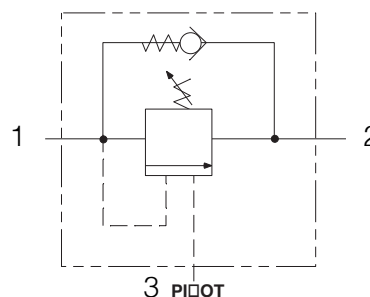
Cartridge cavity is Sun T-11A with a flow pattern set up for sequence flow port 1 to port 2 & port 3 as the drain.

Cartridge #:	RSDC-LBN	Buna N	1500 PSI
	RSDC-LAN	Buna N	3000 PSI
	RSDC-LBV	Viton	1500 PSI
	RSDC-LAV	Viton	3000 PSI

TYPICAL ORDERING CODE: **P03MSV-SP-150-AA**

P03MSV-CA / P03MSV-CB / P03MSV-CC

COUNTERBALANCE, PILOT OPERATED



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

This 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 the valve to the outlet port and then blocks reverse flow until pilot pressure inversely proportional to the load pressure is sensed at the opposite work port modulating out flow from the work port back to the valve.

FEATURES & BENEFITS

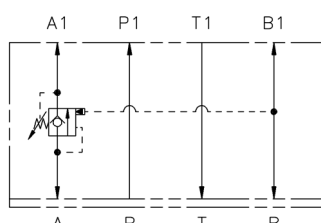
- Leak proof screw adjustment.
- Adjustment screw cannot be backed out of the valve.
- All external parts are zinc-plated for long life against elements.
- All cartridges are 100% tested functionally.
- Uses Sun T-11A Cavity.

SPECIFICATIONS

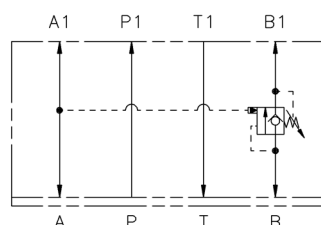
Flow: Nominal
Pilot Ratio: 3:1 for 1500 PSI, 4.5:1 for 3000 PSI
Internal Leakage: 5 drops per minute maximum at PSI below crack pressure

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

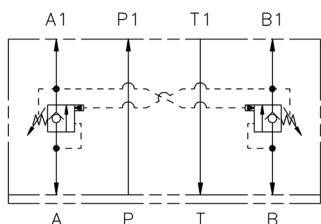
Estimated Shipping Weight: 2 # Aluminum



VALVE TYPE
COUNTERBALANCE VALVE
A PORT



VALVE TYPE
COUNTERBALANCE VALVE
B PORT



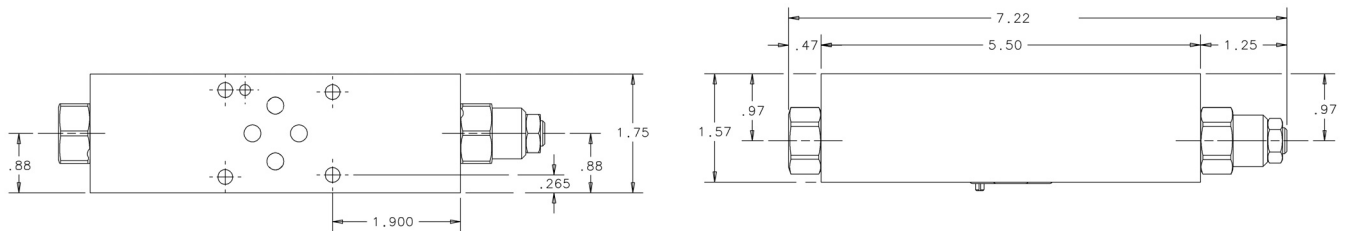
VALVE TYPE
COUNTERBALANCE VALVE
A & B PORT

P03MSV-CA / P03MSV-CB / P03MSV-CC

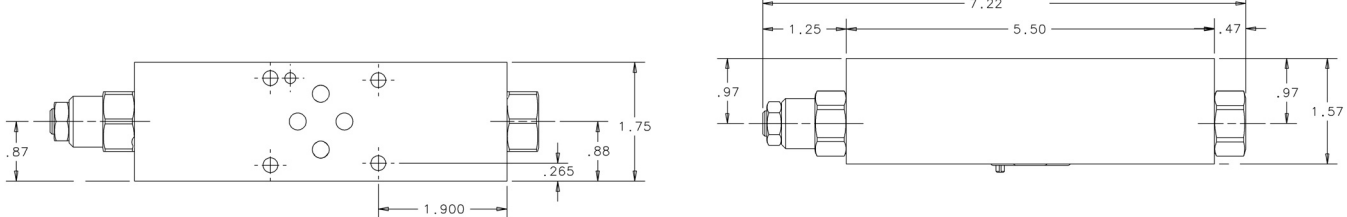
COUNTERBALANCE, PILOT OPERATED

DIMENSIONS

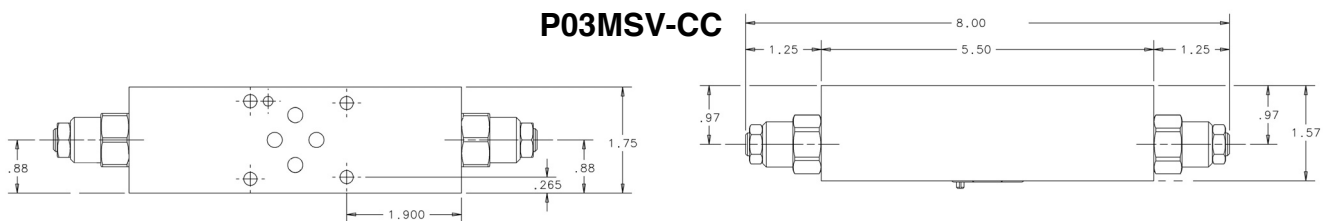
P03MSV-CA



P03MSV-CB



P03MSV-CC



ORDERING INFORMATION

P03MSV — C

SELECT ONE

SELECT ONE

SELECT ONE

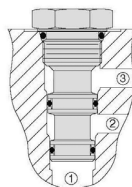
SELECT ONE

DESIGN

FUNCTION	SIZE	STYLE	TYPE	CONTROL PORT		ADJUSTMENT RANGE		SEALS		BODY MATERIAL	
PRESSURE CONTROL VALVE	NFPA D0 3 NG6 (CETOP 3)	MODULAR STACK VALVE	COUNTER- BALANCE VALVE	CODE	LOCATION	CODE	PRESSURE (PSI)	CODE		CODE	
				A	A PORT	150	400-1500 PSI	A	BUNA N (STD)	A	ALUMINUM (STD)
				B	B PORT	300	1000-2500 PSI	G	VITON		
				C	A & B PORT						

Body Only Assembly:

Aluminum (Part No.) - 550424K



General Information

Cartridge cavity is Sun T-11A 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 #:	CBCA-LIN	Buna N	1500 PSI
	CBCG-LKN	Buna N	3000 PSI
	CBCA-LIV	Viton	1500 PSI
	CBCG-LKV	Viton	3000 PSI

TYPICAL ORDERING CODE: **P03MSV-CA-150-AA**

P03MSV-RCC / P03MSV-BCC

PRESSURE CONTROL VALVE ACCESSORIES



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 in 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

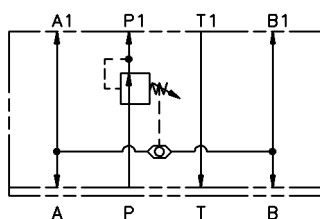
- Low friction seal on the pilot piston.
- All external parts are zinc-plated for long life against elements.
- All cartridges are 100% tested functionally.
- Uses Sun T-11A Cavity for cartridge.
- Uses HydraForce VC04-B3 Cavity for shuttle.

SPECIFICATIONS

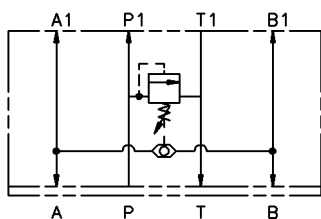
Flow:	RCC	10 GPM (37 L/M) Nominal
	BCC	15 GPM (56 L/M) Nominal

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

Estimated Shipping Weight: 2 # Aluminum



VALVE TYPE
PRESSURE COMPENSATOR
(RESTRICTIVE)



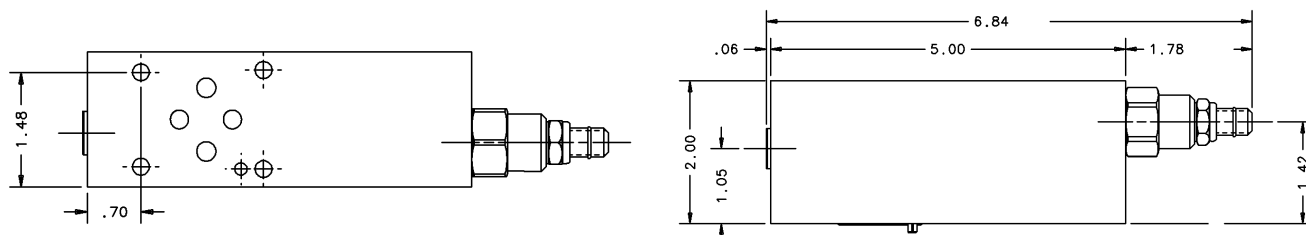
VALVE TYPE
PRESSURE COMPENSATOR
(BY-PASS)

P03MSV-RCC / P03MSV-BCC

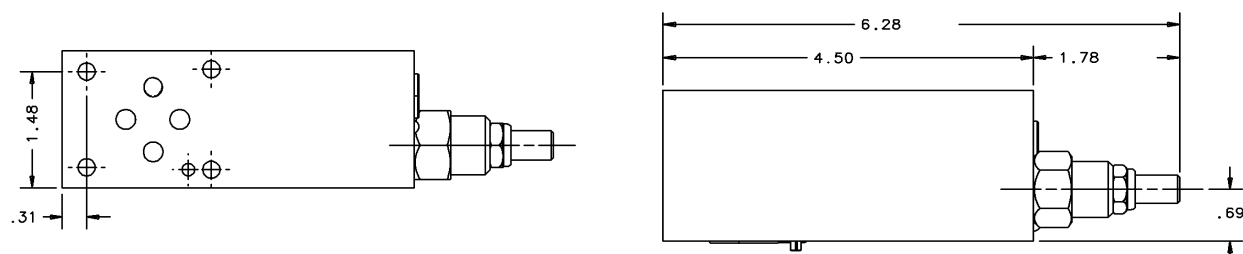
PRESSURE CONTROL VALVE ACCESSORIES

DIMENSIONS

P03MSV-RCC



P03MSV-BCC



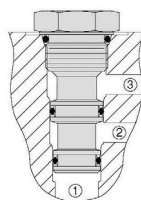
ORDERING INFORMATION

P03MSV			SELECT ONE <div></div>		SELECT ONE <div></div>		SELECT ONE <div></div>		SELECT ONE <div></div>		SELECT ONE <div></div>		DESIGN LETTER <div></div>	
FUNCTION	SIZE	STYLE	CODE	DESCRIPTION	PORT		PRESSURE RANGE			SEALS		BODY MATERIAL		
PRESSURE CONTROL VALVE	NFPA	MODULAR	RC	PRESSURE COMPENSATOR (RESTRICTIVE)	CODE	PORT	CODE	PSI	BAR	CODE		CODE		PSI RATED
	D03	STACK	BC	PRESSURE COMPENSATOR (BY-PASS)	C	A & B PORT	040	60-400	4.1-27.5	A	BUNA N (STD)	A	ALUMINUM (STD)	3000 PSI
	NG6 (CETOP 3)	VALVE		G						VITON				

Body Only Assembly:

RCC
Aluminum (Part No.) - 552978K

BCC
Aluminum (Part No.) - 552990K



General Information

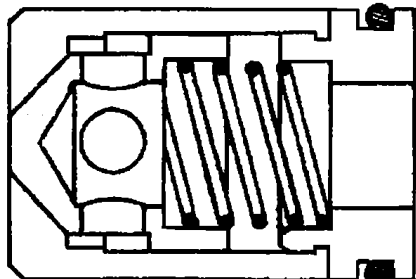
Cartridge cavity is Sun T-11A with RCC flow pattern set up for cartridge flowing port 2 to port 1. Port 3 is A or B sensor. BCC flow pattern set up for cartridge flowing port 1 to port 2. Port 3 is A or B sensor.

Cartridge #:	RCC	PBDB-LQN	Buna N
		PBDB-LQV	Viton
	BCC	RSDC-LQN	Buna N
		RSDC-LQV	Viton
	Shuttle	LS04-B30-0-N	Buna N
		LS04-B30-0-V	Viton

TYPICAL ORDERING CODE: **P03MSV-RCC-040-AA**

CDC-12 CHECK VALVE

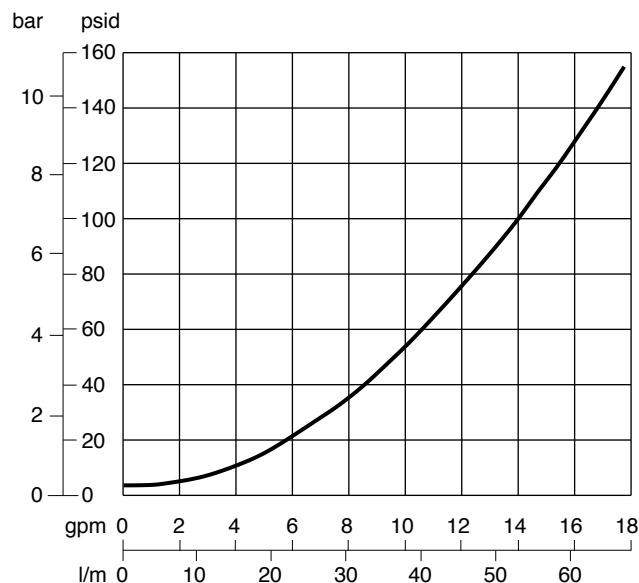
DIRECT-OPERATED, CARTRIDGE



DESCRIPTION

The check valve is designed to be installed in a cavity in the subplate or manifold, and is held in place by the directional valve or manifold valve.

TYPICAL PRESSURE DROP



All pressure drops shown on this data page are based on 100 SUS fluid viscosity and 0.87 specific gravity.

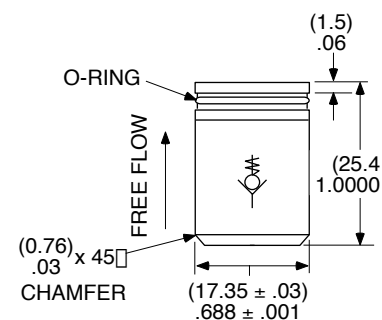
For any other specific gravity (G_1), the pressure drop (ΔP_1) will be approximately $\Delta P_1 = \Delta P (G_1/G)$.

TYPICAL PERFORMANCE SPECIFICATIONS

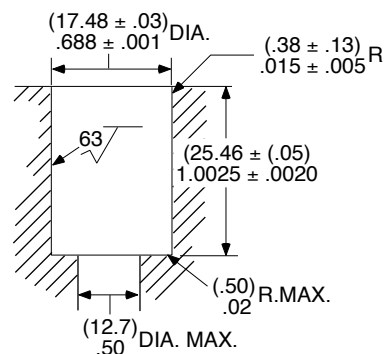
FLOW RATES	Maximum	18 gpm	68 l/m
MAXIMUM OPERATING PRESSURE		3500 psi	241 bar
INTERNAL LEAKAGE (Across Check) 3500 psi, 100 SUS		2 cipm	33 ml/m
CRACK PRESSURE	Minimum	4 psi	.28 bar
	Maximum	8 psi	.55 bar
SEALS	VITON		
WEIGHT		.25 lbs.	0.1 kg

DIMENSIONS SHOWN IN:
(MILLIMETERS)
INCHES

CARTRIDGE



CARTRIDGE CAVITY DETAIL

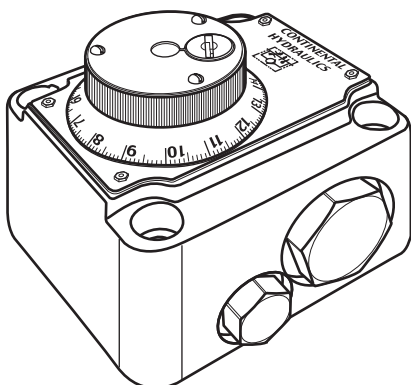


ORDERING INFORMATION

CDC - 12

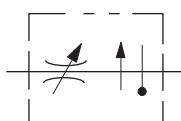
F12M FLOW CONTROL VALVE

LOCKABLE, PRESSURE COMPENSATED

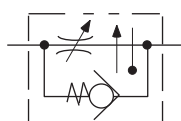


DESCRIPTION

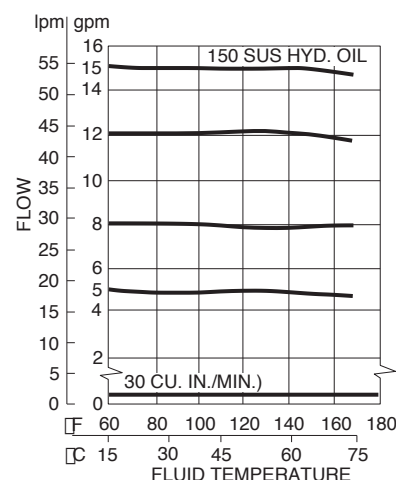
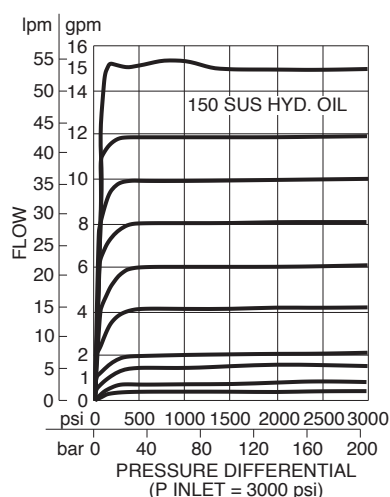
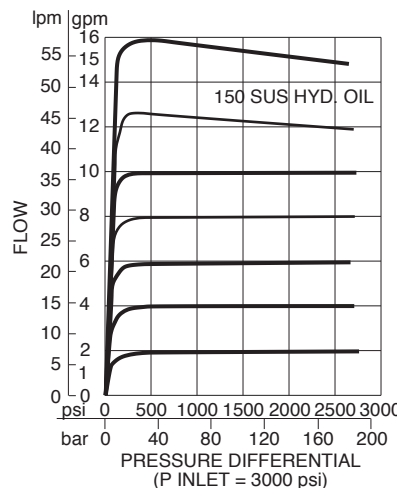
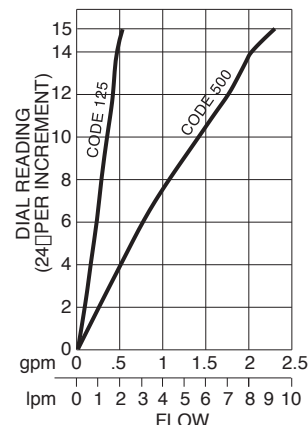
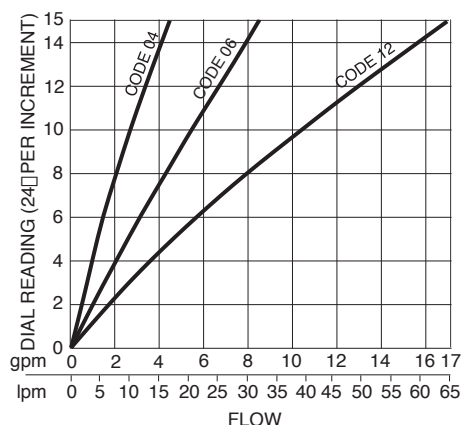
The Flow Control Valve is pressure compensated to maintain constant flow out of the valve regardless of pressure changing to the inlet or outlet port. Exclusive internal pressure balancing allows easy adjustment of flow setting under pressure. Pressure compensation will maintain preset flow with 1 to 5%, depending on the basic flow range, as long as there is 150 psi pressure differential between the inlet and outlet ports. The dial is calibrated for easy and repeatable flow settings. Continental Hydraulics' unique sharp edged orifice design means that the valve is immune to temperature or fluid viscosity changes. This valve is internally drained, therefore, eliminating the drain piping.



NO CHECK



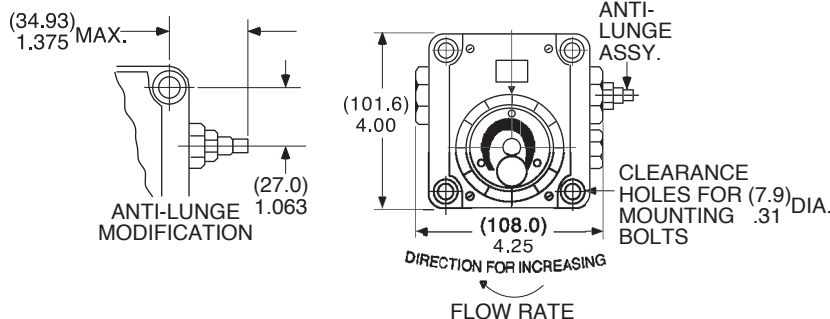
WITH CHECK



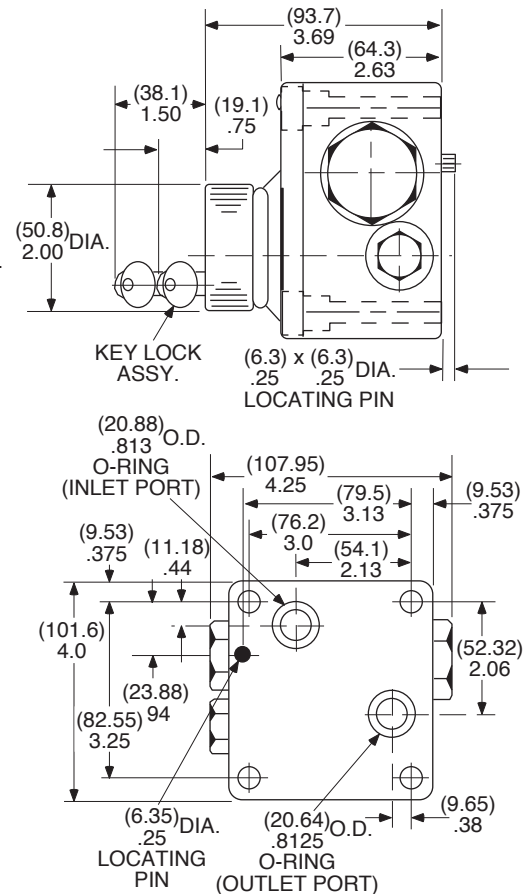
F12M

LOCKABLE, PRESSURE COMPENSATED

STANDARD DIMENSIONS



DIMENSIONS SHOWN IN: (MILLIMETERS)
INCHES



ANTI-LUNGE ASSEMBLY

When the flow control valve is initially activated, there is a very short time lapse before the pressure compensator spool reaches the controlling position. The anti-lunge device provides an adjustable mechanical stop to prevent the spool from over opening. Follow these steps to adjust the anti-lunge device:

1. Set the desired flow control speed setting;
2. Turn the device clockwise until the feed rate slows slightly;
3. Reverse the adjustment screw one-half turn.
4. Repeat these steps each time the flow setting

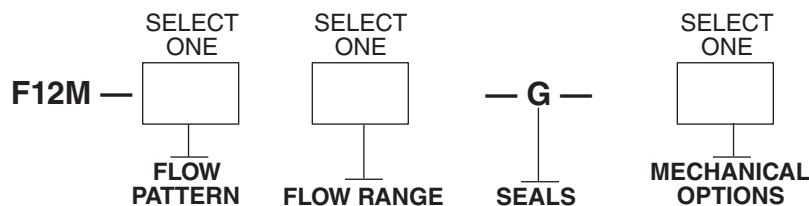
STANDARD KEY LOCK ASSEMBLY

This lock prevents tampering with the valve setting. Place the supplied allen head inch into the screw head and turn clockwise to lock the setting. Two keys are supplied and all locks will use the same key.

APPROXIMATE
FLOW CHANGE
PER DIAL
INCREMENT

SPOOL CODE	GPM
125	.03
500	.15
04	.25
08	.60
12	1.00

ORDERING INFORMATION



BASIC VALVE

- FLOW CONTROL
- PRESSURE/TEMP. COMPENSATED
- NFPA 2F06 MOUNTING
- 12 GPM NOMINAL FLOW
- 3000 PSI MAXIMUM OPERATING PRESSURE

CODE	OPTION	CODE	MAX.	SEALS	CODE	DESCRIPTION
A	Return Check	125	125 cipm	VITON SEALS STANDARD	OMIT	STANDARD KEY LOCK
		500	500 cipm			
B	With Return Check	04	4 gpm		F	ANTI-LUNGE & STD. KEY LOCK
		08	8 gpm			
		12	12 gpm			

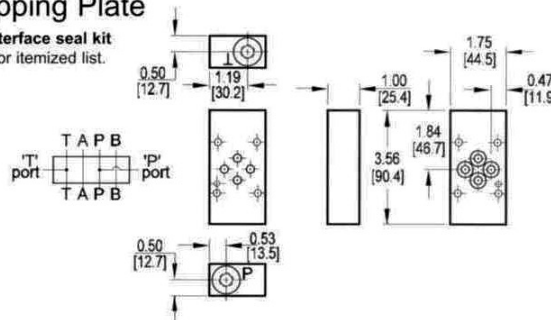
NOTES:

- Use subplate No. S2F06-C50-B.
- 1/2" NPT, Bottom ported.
- Bolt kit B2F06-225.

TYPICAL ORDERING CODE: **F12M-A04-G-F**

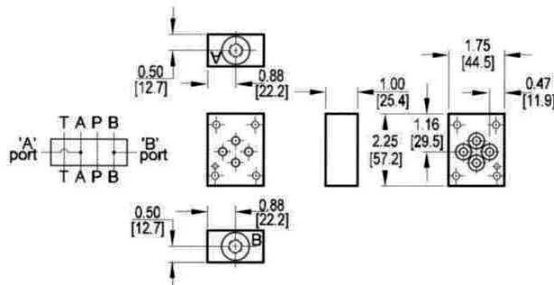
P and T Port Tapping Plate

Tapping Plate hardware / interface seal kit is supplied. See page 164 for itemized list.



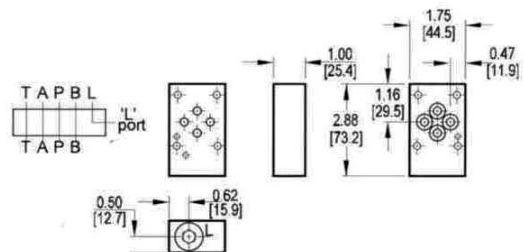
A and B Port Tapping Plate

Tapping Plate hardware / interface seal kit is supplied. See page 164 for itemized list.



L Port Tapping Plate

Tapping Plate hardware / interface seal kit is supplied. See page 164 for itemized list.



Specifications, descriptions, and dimensional data are subject to correction or change without notice or incurring obligation. Download latest catalog page revisions at www.damanifolds.com.

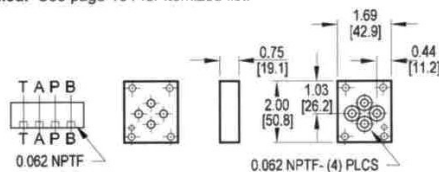
Ordering Information

Material	Valve Pattern	Product Type	Circuit	Port Threads
Material A Aluminum - 6061-T6 3000† psi • 20.7 MPa D Ductile Iron - D4512 5000† psi • 34.5 MPa † Working pressure should be considered in accordance with ISO 4413 to determine appropriate material type.	Valve Pattern D03 ISO 4401-03-02 NFFPA T3.5:1-D03 See Tech Information	Product Type TP Tapping Plate	Circuit PT P and T ports provided AB A and B ports provided L L port provided	Port Threads 4P 0.25-18 NPTF ANSI B1.20.3 4S -4 SAE ISO 11926; SAE 1926 4B 0.25-19 BSPP ISO 1179; BS 2779 4M M10 x 1.0 ISO 6149 4T 0.25-19 BSPT ISO 7; BS 21

D03 TAPPING PLATES

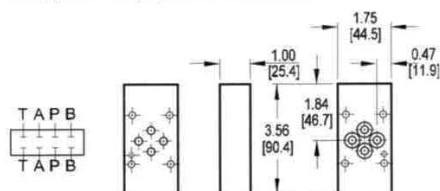
Orifice Tapping Plate

Tapping Plate hardware / interface seal kit is supplied. See page 164 for itemized list.



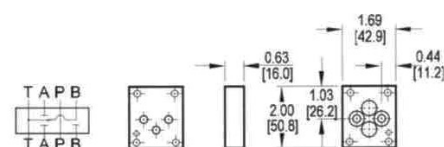
Spot Drilled Tapping Plate

Tapping Plate hardware / interface seal kit is supplied. See page 164 for itemized list.



B to T vent Tapping Plate

Tapping Plate hardware / interface seal kit is supplied. See page 164 for itemized list.



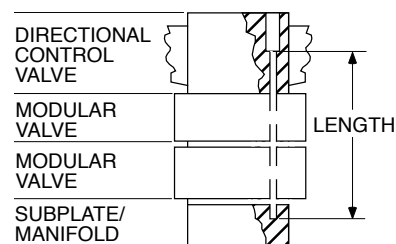
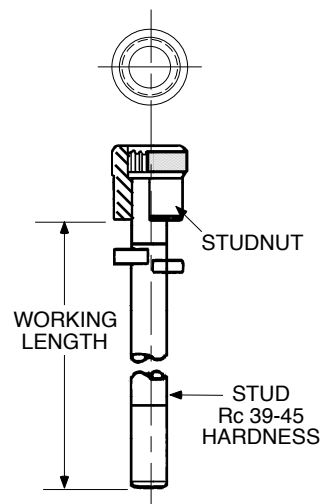
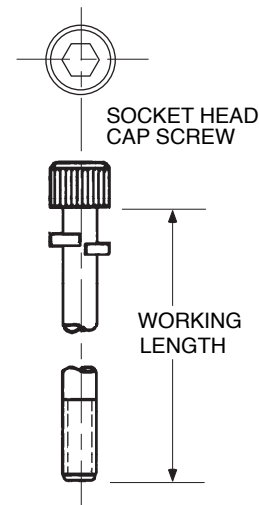
Specifications, descriptions, and dimensional data are subject to correction or change without notice or incurring obligation. Download latest catalog page revisions at www.damanifolds.com.

Ordering Information

Material	Valve Pattern	Product Type	Circuit																						
<table><tr><th colspan="2">Material</th></tr><tr><td>A</td><td>Aluminum - 6061-T6 3000† psi • 20.7 MPa</td></tr><tr><td>D</td><td>Ductile Iron - D4512 5000† psi • 34.5 MPa</td></tr></table> <p>† Working pressure should be considered in accordance with ISO 4413 to determine appropriate material type.</p>	Material		A	Aluminum - 6061-T6 3000† psi • 20.7 MPa	D	Ductile Iron - D4512 5000† psi • 34.5 MPa	<table><tr><th colspan="2">Valve Pattern</th></tr><tr><td>D03</td><td>ISO 4401-03-02 NFPA T3.5.1-D03 See Tech Information</td></tr></table>	Valve Pattern		D03	ISO 4401-03-02 NFPA T3.5.1-D03 See Tech Information	<table><tr><th colspan="2">Product Type</th></tr><tr><td>TP</td><td>Tapping Plate</td></tr></table>	Product Type		TP	Tapping Plate	<table><tr><th colspan="2">Circuit</th></tr><tr><td>SD</td><td>Spot drilled ports</td></tr><tr><td>OP</td><td>Orifice plate</td></tr><tr><td>BTV</td><td>B to T vent plate</td></tr></table>	Circuit		SD	Spot drilled ports	OP	Orifice plate	BTV	B to T vent plate
Material																									
A	Aluminum - 6061-T6 3000† psi • 20.7 MPa																								
D	Ductile Iron - D4512 5000† psi • 34.5 MPa																								
Valve Pattern																									
D03	ISO 4401-03-02 NFPA T3.5.1-D03 See Tech Information																								
Product Type																									
TP	Tapping Plate																								
Circuit																									
SD	Spot drilled ports																								
OP	Orifice plate																								
BTV	B to T vent plate																								

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) MODULAR 1.57 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) MODULAR 3.44 4.00	BD08-1020	BOLT	(260.0) 10.25	(1.81) 4.00
	VALVE + (2)(101.6) MODULAR 4.00 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) MODULAR 3.44 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
	DIRECTIONAL VALVE ONLY	BD10-250	BOLT	(63.8) 2.50	(1.19) 2.63
VALVE					
F12M NFPA 2F06 KIT: (4) 5/16"-18NC FASTENERS (4) 5/16" LOCKWASHERS	FLOW CONTROL	B2F06-225	BOLT	(57.8) 2.25	(0.11) 0.25



When reliability and durability count....count on Continental Hydraulics!

Continental Hydraulics is a world leading hydraulic components manufacturer. Since 1955 we've been designing and manufacturing hydraulic equipment to withstand the most demanding applications. Continental Hydraulics is ISO 9001:2000 Certified.

Our Approach

Continental Hydraulics welcomes the opportunity to work with you to help design your hydraulic system from the ground up. Our Application specialists and our trained local support Distributors can advise you of the most efficient, cost-effective components available off the shelf, or work with you on custom designs to meet your needs.

Product Characteristics

Continental Hydraulic's products are designed to provide maximum overall value. Reliability, durability, and efficiency are designed in. Ease of maintenance, quiet operation and low operating costs are common design features.

Product Lineup

Pumps

- PVR Vane Pumps, rugged duty pumps for medium pressure applications
- PVX Vane Pumps, quiet pumps for higher pressure applications
- HPV Piston Pumps, efficient pumps for higher pressure applications

Valves

- D03/5/8/10 Directional Control Valves, for a variety of applications
- D03/5/8 Proportional Control Valves offer more control options, from programmable On-board amplifiers to panel and Euro card mounts.
- Modular Stack Valves for controlling flows and pressures in industrial and/or mobile applications
- Cartridge Valves for controlling flows and pressures in compact applications

Power Units

- Little Champ series for smaller and/or economical applications
- 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

Continental Hydraulics manufactured components are covered by a 3 year warranty!

How can we help you?

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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

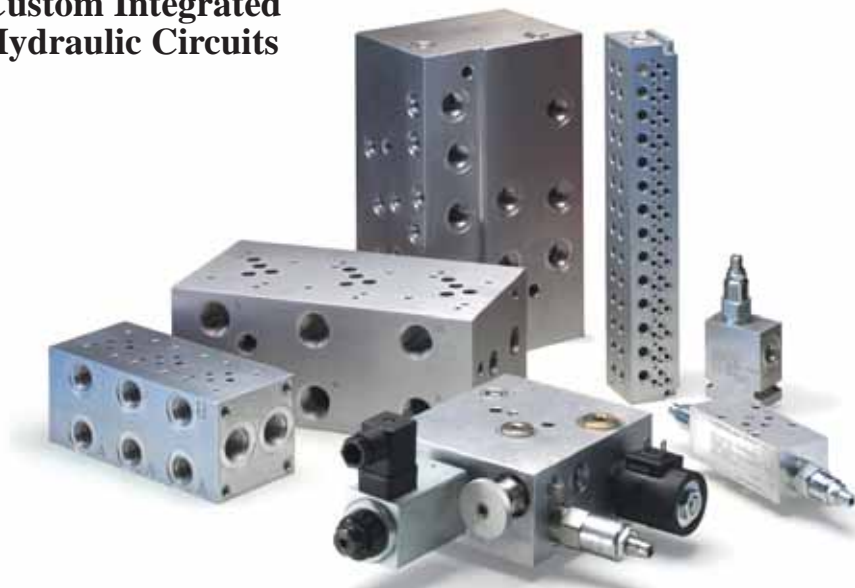
Modular stack valves are designed to install between the valve and its mounting surface. This will eliminate plumbing connections and reduce space requirements. Continental Hydraulics has a full range including check, flow control, relief, reducing, sequencing, shuttle valves and counterbalance valves.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

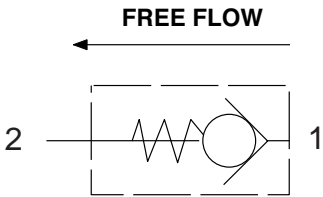
TABLE OF CONTENTS

MODULAR STACK VALVES: NFPA D05, CETOP 5 & NG 10

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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

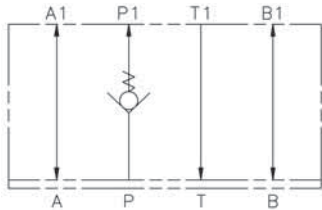
This valve allows free flow in one direction and blocks flow in the opposite direction.

FEATURES & BENEFITS

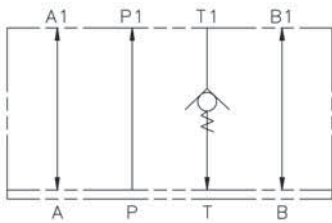
- All external parts are zinc plated for long life against elements
- All aluminum bodies are anodized
- All cartridges are 100% functionally tested
- Industrial common cavities

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



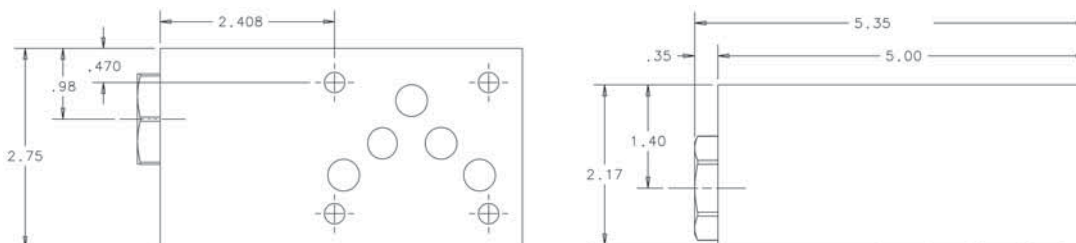
VALVE TYPE
CHECK VALVE
T PORT

C05MSV-DP / C05MSV-DT

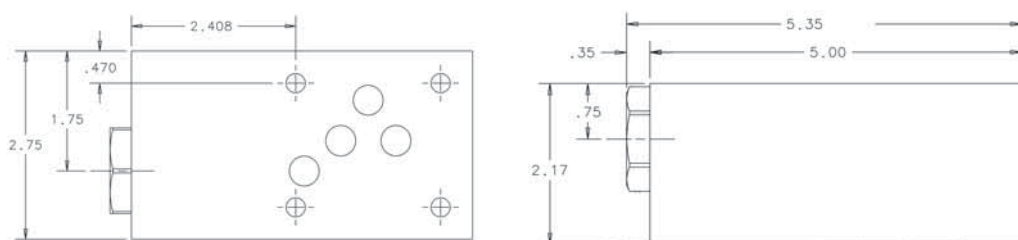
CHECK VALVE, DIRECT OPERATED

DIMENSIONS

C05MSV-DP



C05MSV-DT

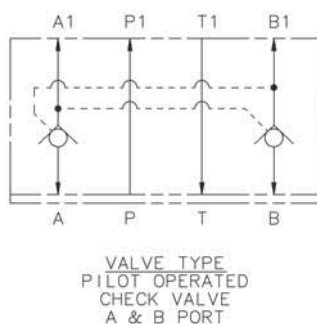
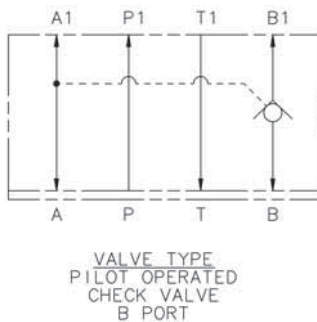
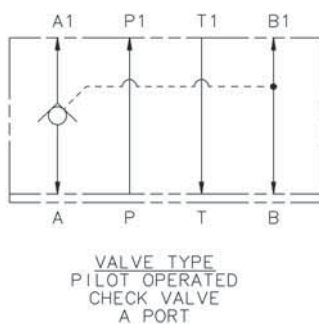
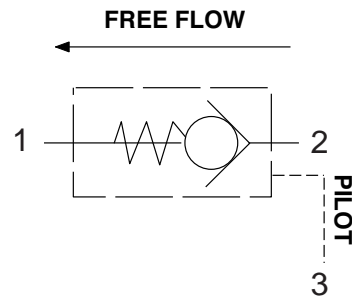


ORDERING INFORMATION

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

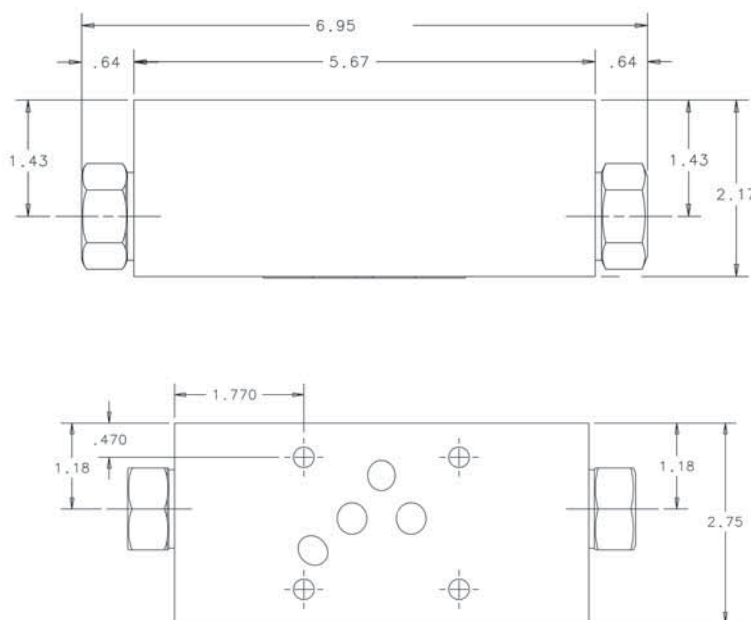
Valve Bodies:	3000 PSI (207 Bar) = Aluminum (2024-T4)
Flow:	30 GPM (113 L/M) Nominal
Pilot Ratio:	3 to 1
Internal Leakage:	5 drops per minute maximum at 5000 PSI
Estimated Shipping Weight:	5 # Aluminum

C05MSV-PA / C05MSV-PB / C05MSV-PC

CHECK VALVE, PILOT OPERATED

DIMENSIONS

C05MSV-PA / C05MSV-PB / C05MSV-PC



ORDERING INFORMATION

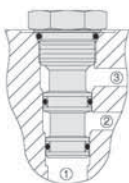
C05MSV — P													
			SELECT ONE	—		SELECT ONE	—		SELECT ONE	—			
FUNCTION	SIZE	STYLE	TYPE	CONTROL PORT		CRACKING PRESSURE		SEALS		BODY MATERIAL			
CHECK VALVE	NFPA D05 NG10 (CETOP 5)	MODULAR STACK VALVE	PILOT OPERATED GUIDED POPPET	CODE	LOCATION	CODE	PRESSURE	CODE		CODE			
				A	A PORT	30	30 PSI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

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:

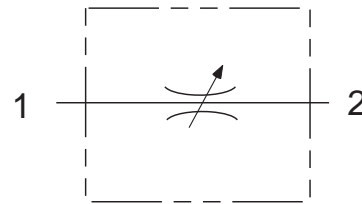
- Cartridge cavity is Sun T-2A with flow pattern set up for checked flow port 1 to port 2, with port 3 as the pilot signal.
- Cartridge #

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

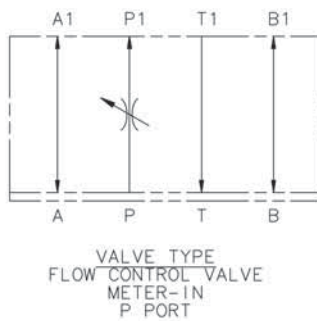


DESCRIPTION

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

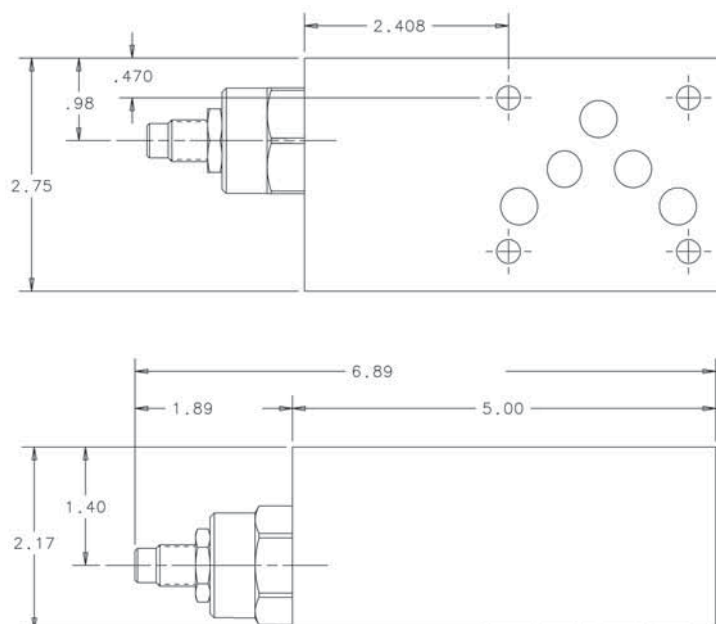
Flow:	30 GPM (113 L/M) Nominal
Internal Leakage:	3 drops per minute maximum at 5000 PSI
Valve Bodies:	3000 PSI (207 Bar) = Aluminum (2024-T6)
Estimated Shipping Weight:	5 # Aluminum

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 D05 NG10 (CETOP 5)	MODULAR STACK VALVE	NON-COMPENSATED	CODE	LOCATION	CODE		CODE
				P	P PORT	A	BUNA N (STD)	A
						G	VITON	
								ALUMINUM

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

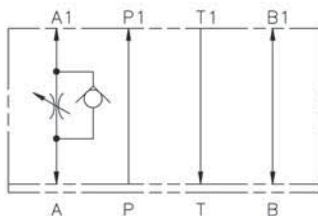
TYPICAL ORDERING CODE: **F05MSV-NIP-AA**

F05MSV-NDA / F05MSV-NDB / F05MSV-NDC

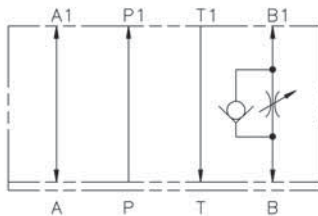
FLOW CONTROL VALVE, NON-COMPENSATED WITH CHECK



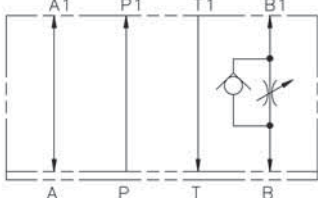
VALVE TYPE
FLOW CONTROL VALVE
WITH CHECK
METER-OUT
A PORT



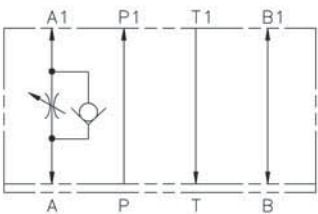
VALVE TYPE
FLOW CONTROL VALVE
WITH CHECK
METER-IN
B PORT



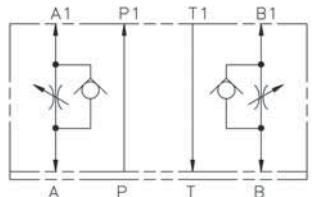
VALVE TYPE
FLOW CONTROL VALVE
WITH CHECK
METER-OUT
B PORT



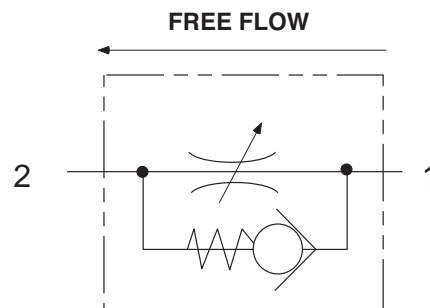
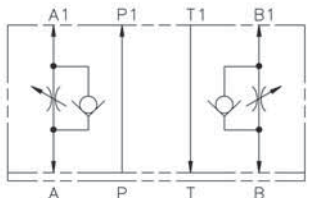
VALVE TYPE
FLOW CONTROL VALVE
WITH CHECK
METER-IN
A PORT



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

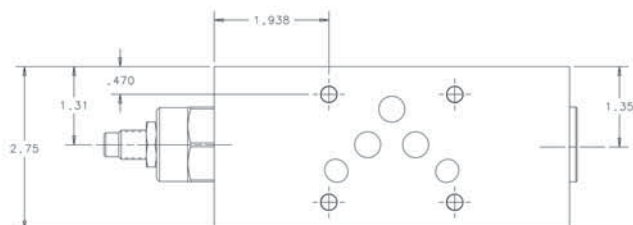
Flow:	30 GPM (113 L/M) Nominal
Internal Leakage:	Maximum 3 drops per minute
Valve Bodies:	3000 PSI (207 Bar) = Aluminum (2024-T4)
Estimated Shipping Weight:	5 # Aluminum

F05MSV-NDA / F05MSV-NDB / F05MSV-NDC

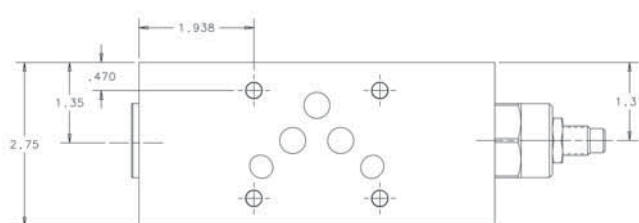
FLOW CONTROL VALVE, NON-COMPENSATED WITH CHECK

DIMENSIONS

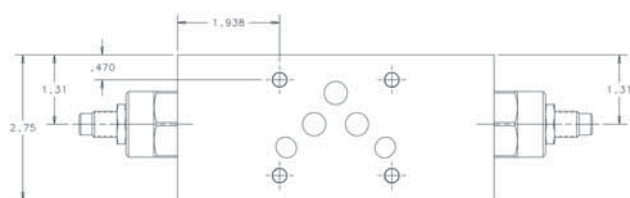
F05MSV-NDA



F05MSV-NDB



F05MSV-NDC



ORDERING INFORMATION

F05MSV

ND

SELECT ONE

SELECT ONE

SELECT ONE

DESIGN

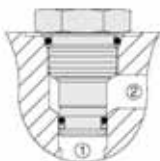
FUNCTION	SIZE	STYLE	TYPE	CONTROL PORT		SEALS		BODY MATERIAL	
FLOW CONTROL VALVE	NFPA D05 NG10 (CETOP 5)	MODULAR STACK VALVE	NON- COMPENSATED Meter-In or Meter-Out	CODE	LOCATION	CODE		CODE	
				A	A PORT	A	BUNA N (STD)	A	ALUMINUM
				B	B PORT				
				C	A & B PORT	G	VITON		

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.



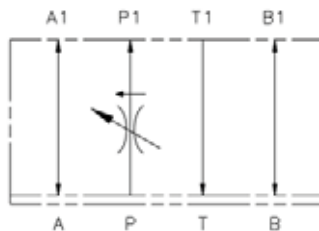
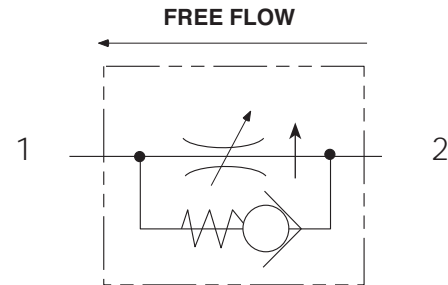
General Information:

- 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

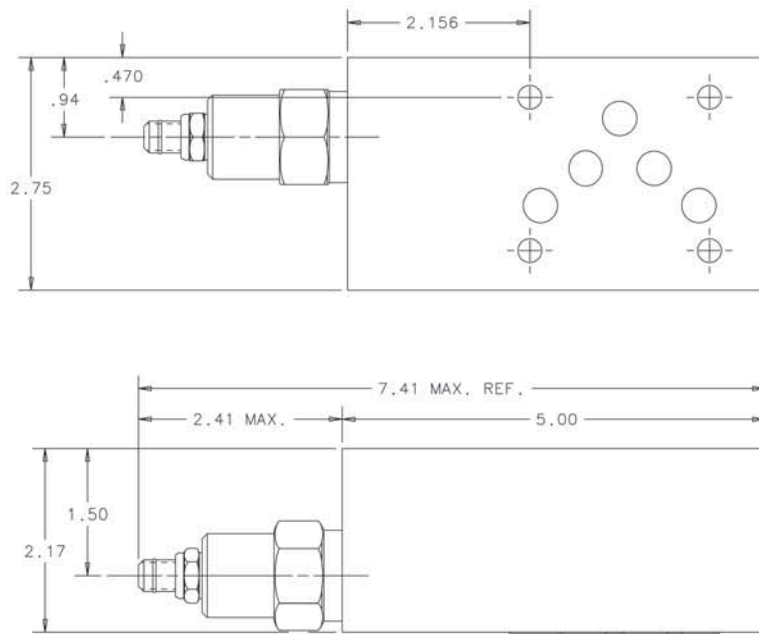
- Sharp edge orifice to minimize floor variation
- All external parts are zinc-plated for long life against elements
- All cartridges are 100% functionally tested
- Uses Sun T-5A Cavity
- 5 turns of adjustment
- 10 PSI reverse flow check cracking pressure
- 18 cu.in./min. leakage at shut-off

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

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	CODE	LOCATION	CODE	BUNA N (STD)	CODE	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.



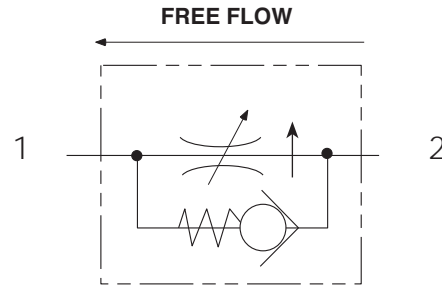
General Information:

- 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

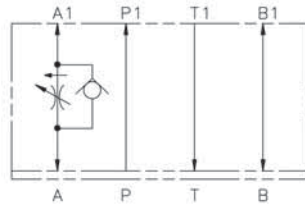
TYPICAL ORDERING CODE: **F05MSV-CIP-AA**

F05MSV-CDA / F05MSV-CDB / F05MSV-CDC

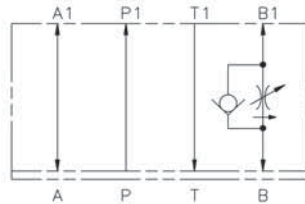
FLOW CONTROL VALVE, PRESSURE COMPENSATED WITH CHECK



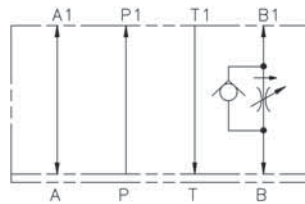
VALVE TYPE
FLOW CONTROL VALVE
WITH CHECK
METER-OUT
A PORT



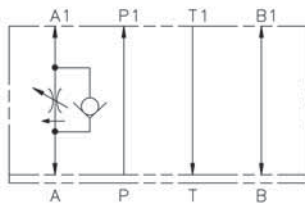
VALVE TYPE
FLOW CONTROL VALVE
WITH CHECK
METER-IN
B PORT



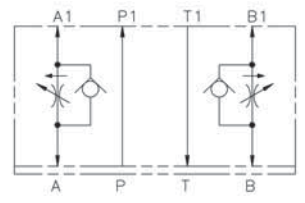
VALVE TYPE
FLOW CONTROL VALVE
WITH CHECK
METER-OUT
B PORT



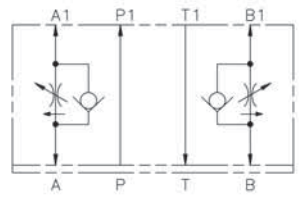
VALVE TYPE
FLOW CONTROL VALVE
WITH CHECK
METER-IN
A PORT



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)

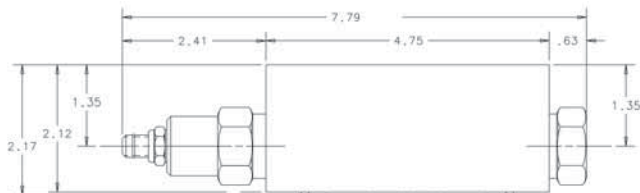
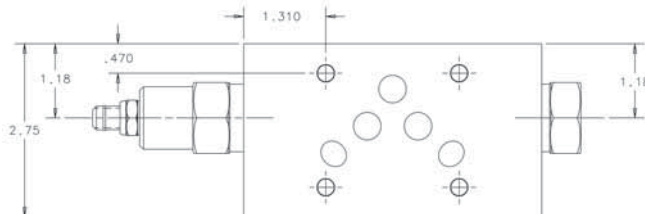
Estimated Shipping Weight: 5 # Aluminum

F05MSV-CDA / F05MSV-CDB / F05MSV-CDC

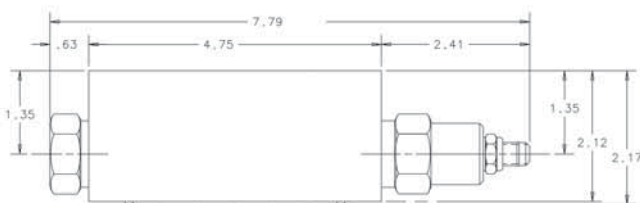
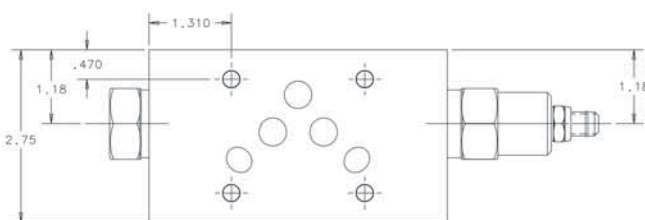
FLOW CONTROL VALVE, PRESSURE COMPENSATED WITH CHECK

DIMENSIONS

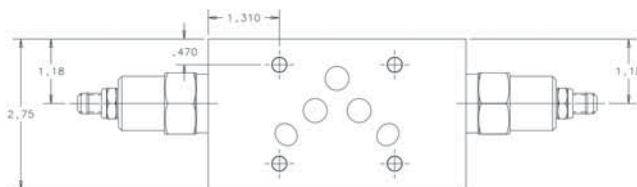
F05MSV-CDA



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	MODULAR STACK VALVE	PRESSURE COMPENSATED	CODE	FUNCTION	CODE	LOCATION	CODE		CODE	
	D05			D	METER-IN OR METER-OUT W/REVERSE CHECK	A	A PORT	A	BUNA N (STD)	A	ALUMINUM
	NG10 (CETOP 5)					B	B PORT		VITON		
						C	A & B PORT	G			

Body Only Assembly:

Code A, B & C Control Port

Aluminum (Part No.) — 550473K

Includes Seal Retainer Plate, & O-rings.



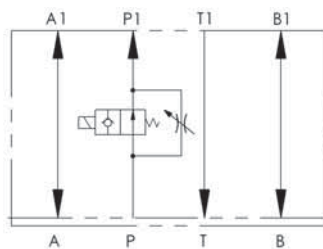
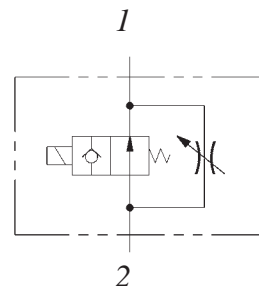
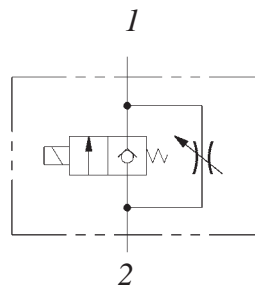
General Information:

- 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 FDCB-LAV BUNA N Viton

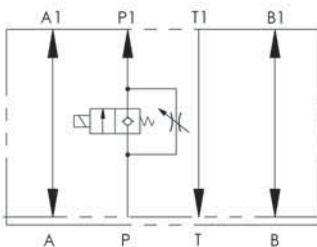
TYPICAL ORDERING CODE: **F05MSV-CDA-AA**

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)

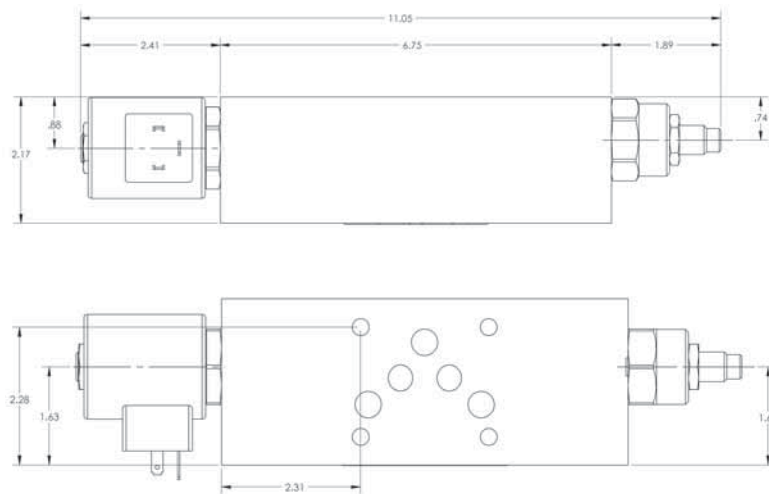
Estimated Shipping Weight: 5 # Aluminum

F05MSV-NSIP

COUNTERBALANCE VALVE, DIRECT OPERATED

DIMENSIONS

F05MSV-NSIP



ORDERING INFORMATION

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

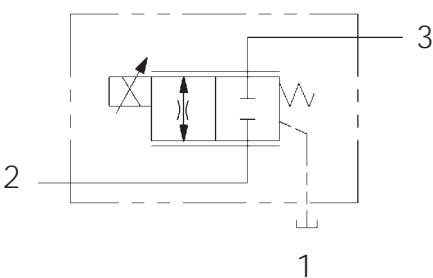
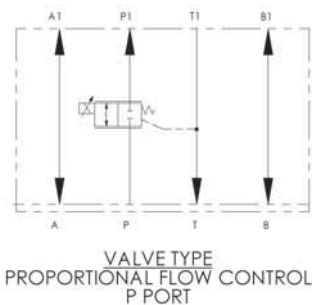
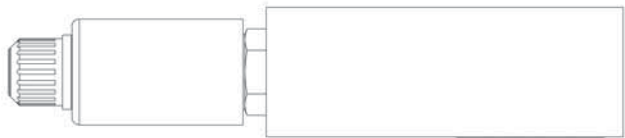
- Cartridge cavity is a HydraForce VC12-2 with a flow pattern set up for metered flow port 2 to port 1.
- Electrical valve flow is from port 2 to port 1.
- Needle Valve Cartridge # NV12-20A-0-N NV12-20A-0-V Buna N Viton
- Electrical Cartridge # SV12-20-0-N-** SV12-20-0-V-** SV12-21-0-N-** SV12-21-0-V-**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

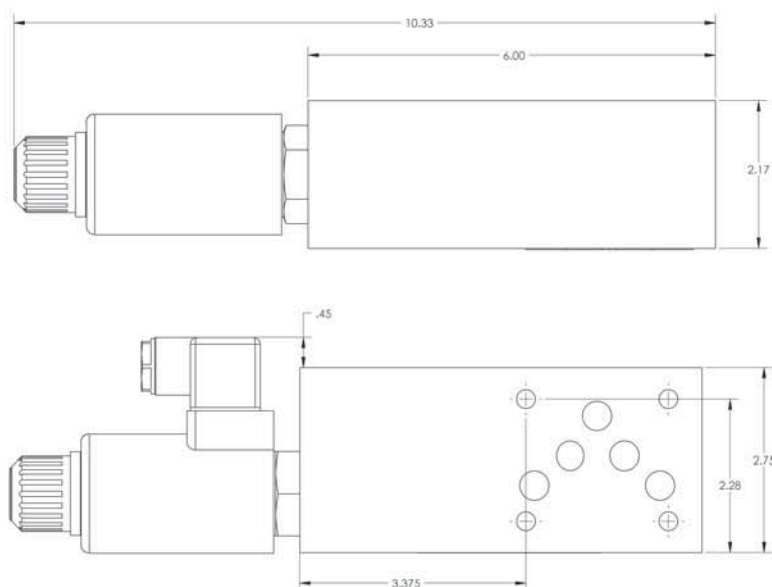
*NOTE: Data taken with fluid temperature at 120°F. (49°C.) and viscosity at 100 SUS (20.6 Cs), inlet pressure @ 1000 psi (69 bar) using Continental Hydraulics ECM4 electronic controller.

EF05MSV-D

PROPORTIONAL FLOW CONTROL, DIRECT OPERATED

DIMENSIONS

EF05MSV-D



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

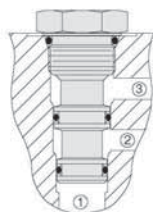
ORDERING INFORMATION

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

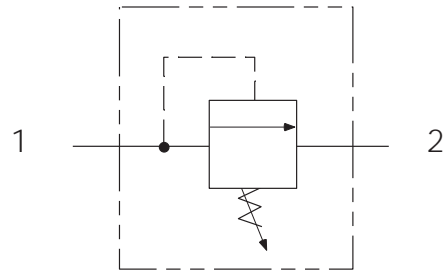
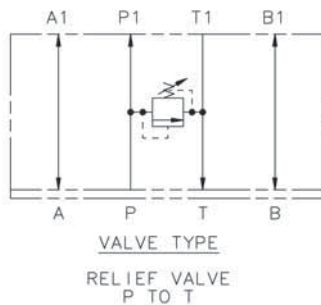
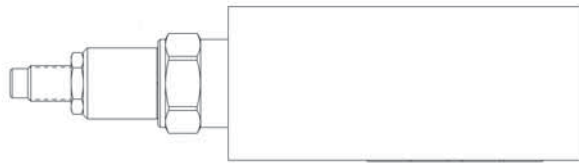
- Cartridge cavity is C12-3 with a flow pattern set up for metered flow port 2 to port 3 and port 1 going back to reservoir.
- Cartridge #:

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

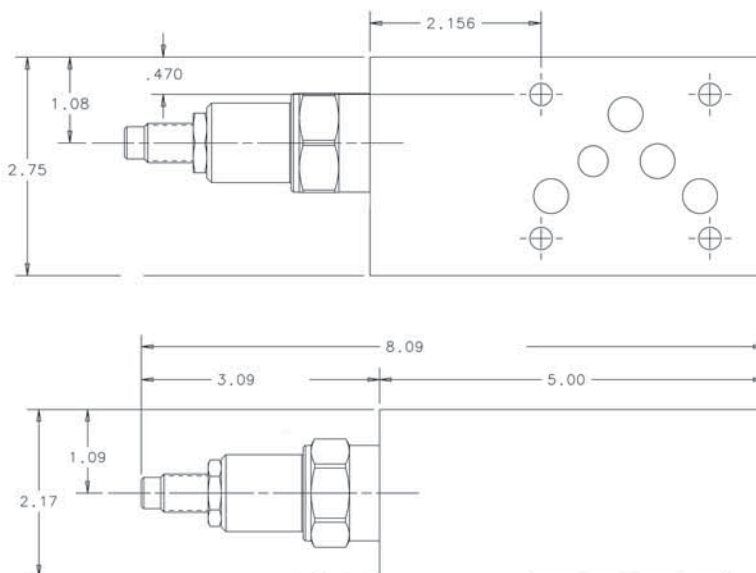
Flow:	30 GPM (113 L/M) Nominal
Internal Leakage:	Maximum 115cc per minute
Valve Bodies:	3000 PSI (207 Bar) = Aluminum (2024-T4)
Estimated Shipping Weight:	5 # Aluminum

P05MSV-RP

PRESSURE RELIEF VALVE, PILOT OPERATED

DIMENSIONS

P05MSV-RP

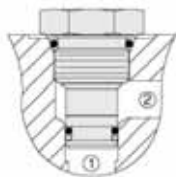


ORDERING INFORMATION

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**

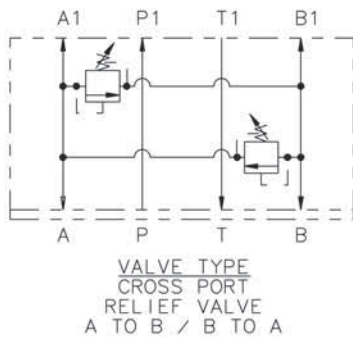
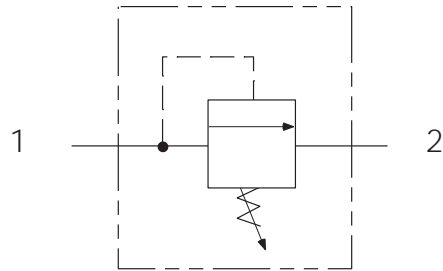
- Cartridge cavity is HydraForce VC12-2 with a flow pattern set up for relief flow port 1 to port 2.
- Cartridge #:

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

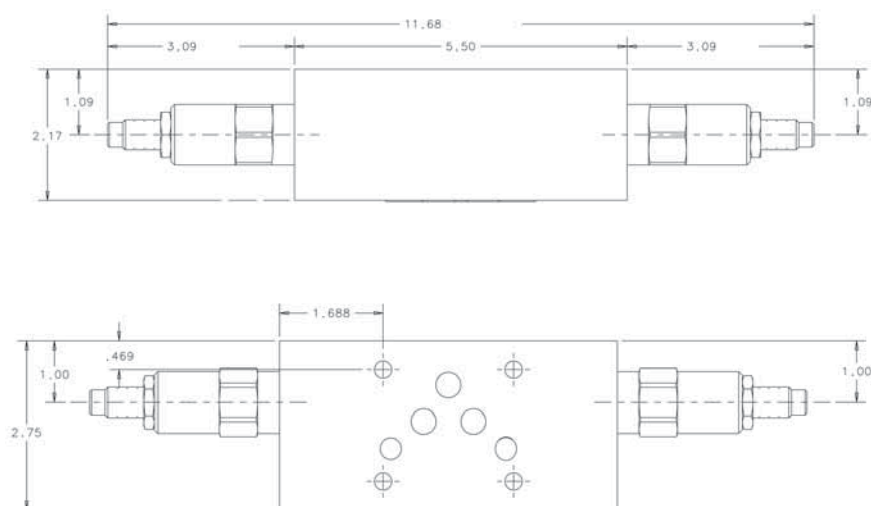
Flow:	30 GPM (113 L/M) Nominal
Internal Leakage:	Maximum 115cc per minute
Valve Bodies:	3000 PSI (207 Bar) = Aluminum (2024-T4)
Pilot Ratio:	3 to 1
Estimated Shipping Weight:	5 # Aluminum

P05MSV-XC

CROSS PORT RELIEF VALVE, PILOT OPERATED

DIMENSIONS

P05MSV-XC



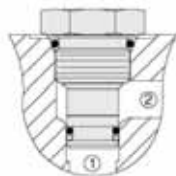
ORDERING INFORMATION

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**

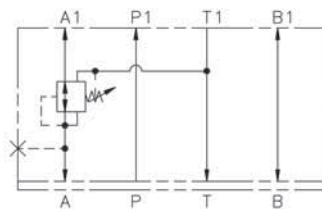
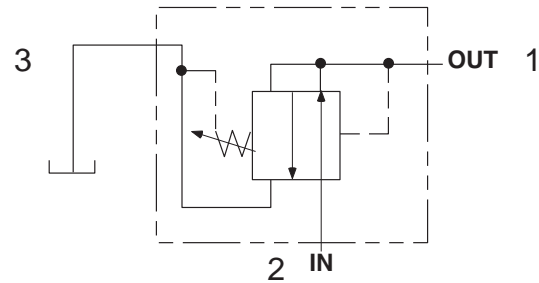
- Cartridge cavity is HydraForce VC10-2 with a flow pattern set up for relief flow port 1 to port 2.
- Cartridge #:

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

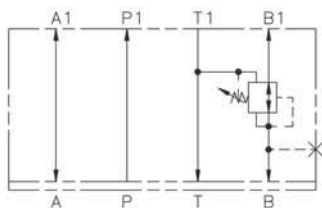
TYPICAL ORDERING CODE: **P05MSV-XC-150-AA**

P05MSV-PDRA / P05MSVPDRB / P05MSV-PDRP

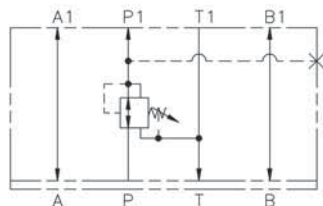
PRESSURE REDUCING/RELIEVING VALVE, PILOT OPERATED



VALVE TYPE
PRESSURE REDUCING/
RELIEVING VALVE
A-PORT



VALVE TYPE
PRESSURE REDUCING/
RELIEVING VALVE
B-PORT



VALVE TYPE
PRESSURE REDUCING/
RELIEVING VALVE
P-PORT

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

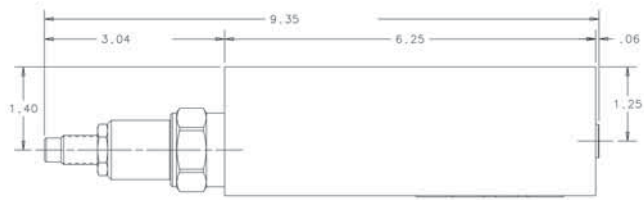
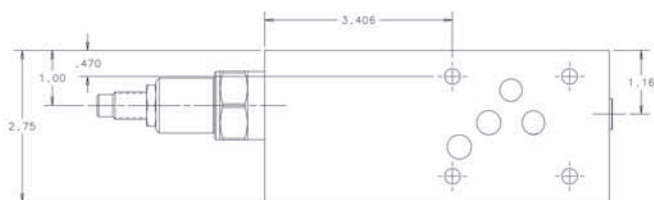
Flow:	30 GPM (113 L/M) Nominal
Internal Leakage:	Maximum 115cc per minute
Valve Bodies:	3000 PSI (207 Bar) = Aluminum (2024-T4)
Estimated Shipping Weight:	5 # Aluminum

P05MSV-PDRA / P05MSV-PDRB / P05MSV-PDRP

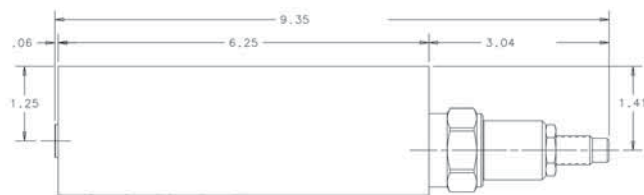
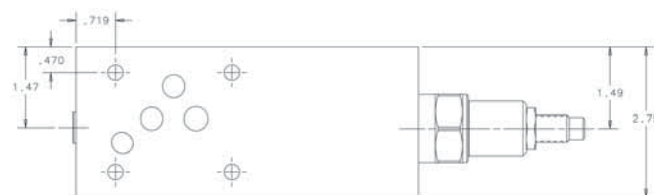
PRESSURE REDUCING/RELIEVING VALVE, PILOT OPERATED

DIMENSIONS

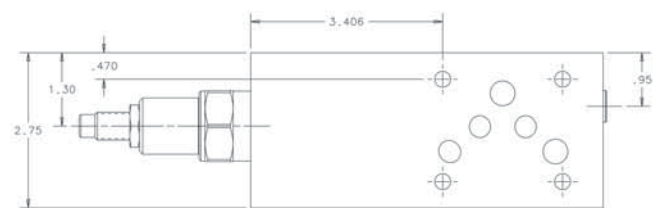
P05MSV-PDRA



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

Body Only Assembly:

PDRA

Aluminum (Part No.) — 552939K

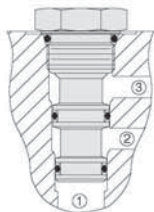
PDRB

Aluminum (Part No.) — 552940K

PDRP

Aluminum (Part No.) — 552941K

Includes O-rings & Locating Pin.



General Information

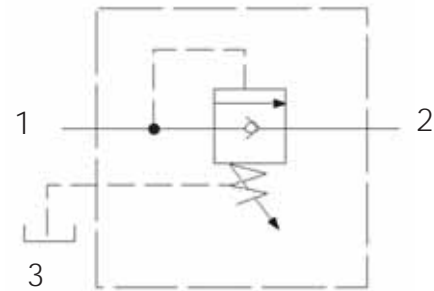
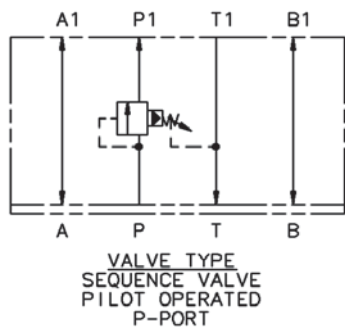
- Cartridge cavity is HydraForce VC12-3 with a flow pattern set up for reduced pressure from port 2 to port 1 with port 3 to reservoir.
- Cartridge #:

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

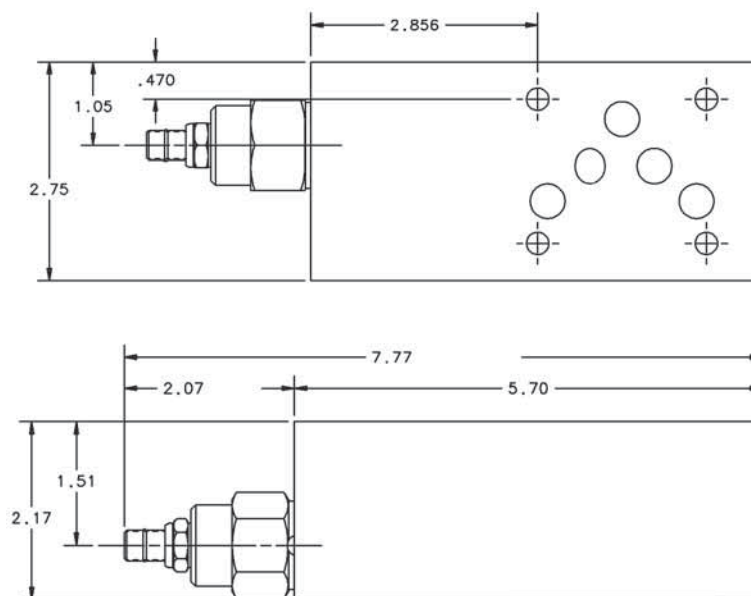
Flow:	30 GPM (113 L/M) Nominal
Internal Leakage:	Maximum 3 cu. in. per minute @ 100 PSI
Valve Bodies:	3000 PSI (207 Bar) = Aluminum (2024-T4)
Estimated Shipping Weight:	5 # Aluminum

P05MSV-SP

PRESSURE SEQUENCE VALVE, POPPET TYPE WITH FREE REVERSE FLOW

DIMENSIONS

P05MSV-SP



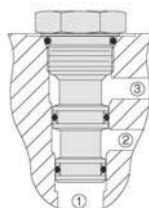
ORDERING INFORMATION

P05MSV		S	P	SELECT ONE		SELECT ONE		SELECT ONE		DESIGN	
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

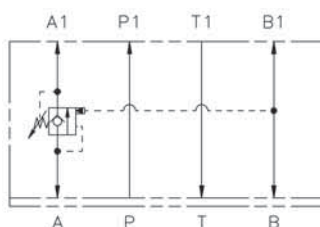
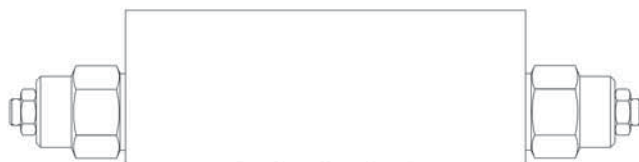
- Cartridge cavity is Sun T-2A with a flow pattern set up for sequence flow port 1 to port 2 & port 3 as the drain.
- Cartridge #:

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

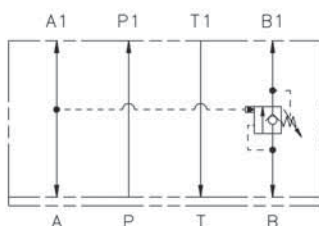
TYPICAL ORDERING CODE: **P05MSV-SP-150-AA**

P05MSV-CA / P05MSV-CB / P05MSV-CC

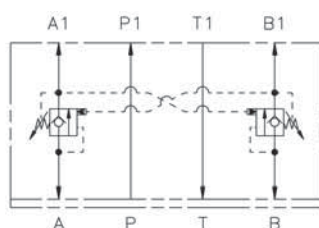
COUNTERBALANCE VALVE, PILOT OPERATED



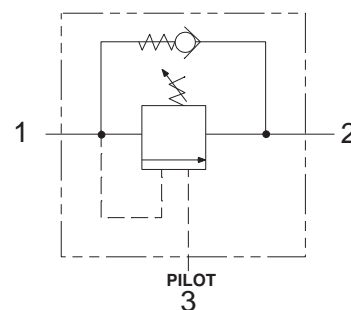
VALVE TYPE
COUNTERBALANCE VALVE
A PORT



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

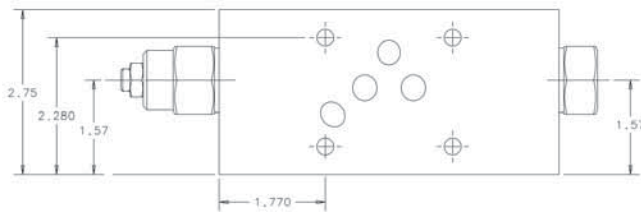
Flow:	30 GPM (113 L/M) Nominal
Pilot Ratio:	3:1
Internal Leakage:	Maximum 5 drops per minute
Valve Bodies:	3000 PSI (207 Bar) = Aluminum (2024-T4)
Estimated Shipping Weight:	5 # Aluminum

P05MSV-CA / P05MSV-CB / P05MSV-CC

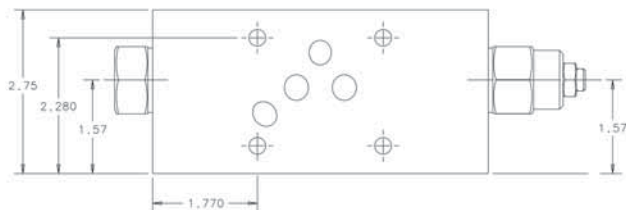
COUNTERBALANCE VALVE, PILOT OPERATED

DIMENSIONS

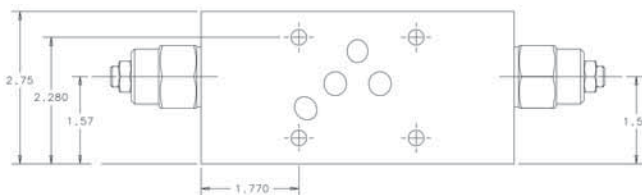
P05MSV-CA



P05MSV-CB



P05MSV-CC



ORDERING INFORMATION

P05MSV — C

SELECT
ONE

SELECT
ONE

SELECT
ONE

SELECT
ONE

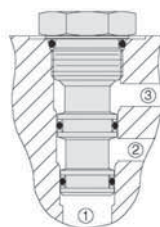
DESIGN

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

Body Only Assembly:

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

Includes O-rings & Locating Pin.



General Information

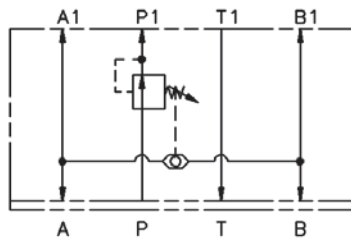
- Cartridge cavity is Sun T-2A with a flow pattern set up for blocked flow port 1 to port 2, free flow port 2 to port 1 & port 3 as the pilot signal.
- Cartridge #:

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

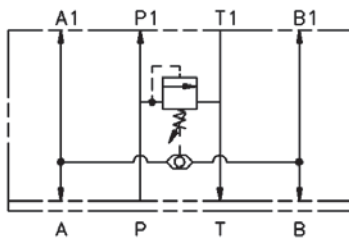
TYPICAL ORDERING CODE: **P05MSV-CB-150-AA**

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)

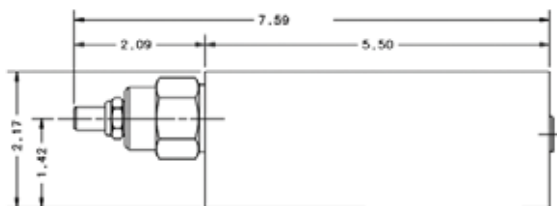
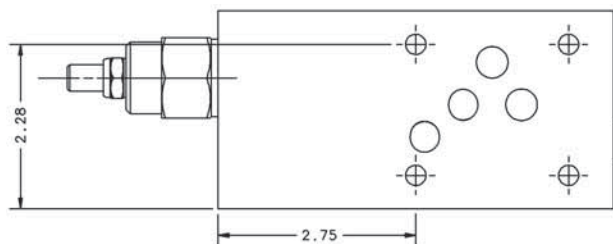
Estimated Shipping Weight: 5 # Aluminum

P05MSV-RCC / P05MSV-BCC

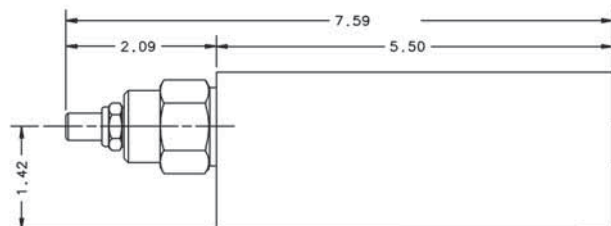
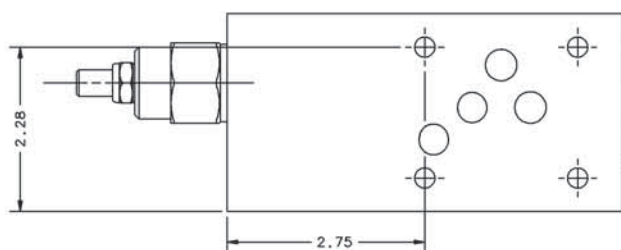
VALVE ACCESSORIES, PRESSURE CONTROL VALVE

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		

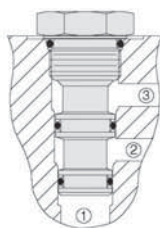
Body Only Assembly:

RCC

Aluminum (Part No.) — 552986K

BCC

Aluminum (Part No.) - 552991K



General Information

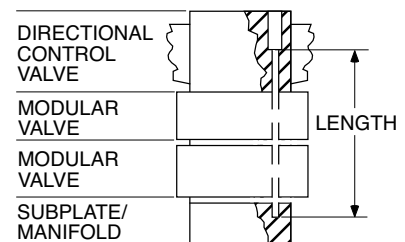
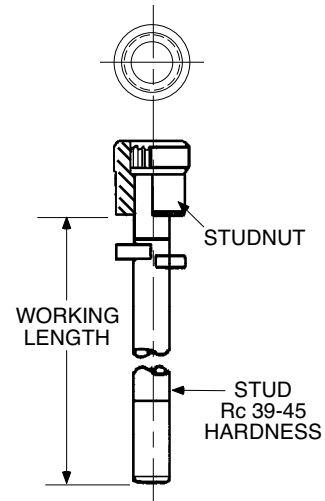
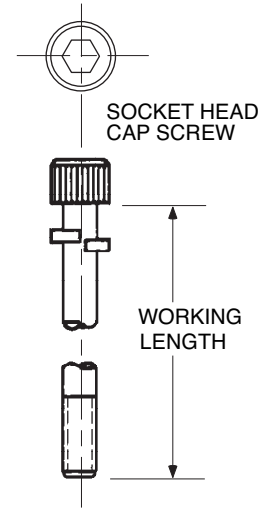
- Cartridge cavity is Sun T-2A with RCC flow pattern set up for cartridge flowing port 2 to port 1. Port 3 is A or B sensor. BCC flow pattern set up for cartridge flowing port 1 to port 2. Port 3 is A or B sensor.
- Cartridge #:

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) MODULAR 1.57 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) MODULAR 3.44 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) MODULAR 3.44 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



When reliability and durability count.... count on Continental Hydraulics!

Continental Hydraulics is a world leading hydraulic components manufacturer. Since 1955 we've been designing and manufacturing hydraulic equipment to withstand the most demanding applications. Continental Hydraulics is ISO 9001:2000 Certified.

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Product Characteristics

Continental Hydraulic's products are designed to provide maximum overall value. Reliability, durability, and efficiency are designed in. Ease of maintenance, quiet operation and low operating costs are common design features.

Product Lineup

Pumps

- PVR Vane Pumps, rugged duty pumps for medium pressure applications
- PVX Vane Pumps, quiet pumps for higher pressure applications
- HPV Piston Pumps, efficient pumps for higher pressure applications

Valves

- D03/05/05A/05B/07/08/10 Directional Control Valves, for a variety of applications.
- D03/05/05A/05B/07/08/10 Proportional Control Valves offer more control options, from programmable On-board amplifiers to rail mount controllers.
- Modular Stack Valves for controlling flows and pressures in industrial and/or mobile applications
- Cartridge Valves for controlling flows and pressures in compact applications

Power Units

- Little Champ series for smaller and/or economical applications
- 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

Continental Hydraulics manufactured components are covered by a 3 year warranty!

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PowerFlow™ D08 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

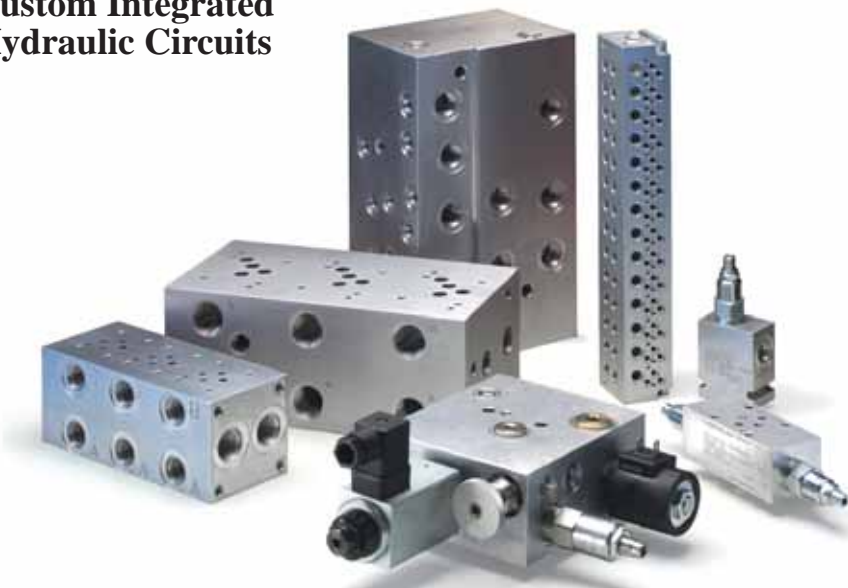
Modular stack valves are designed to install between the valve and its mounting surface. This will eliminate plumbing connections and reduce space requirements. Continental Hydraulics has a full range including check, flow control, relief, reducing, sequencing, shuttle valves and counterbalance valves.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

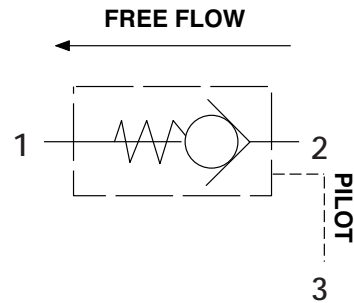
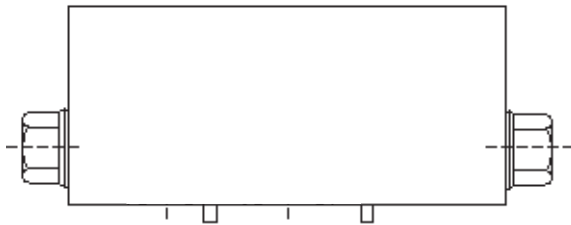
TABLE OF CONTENTS

MODULAR STACK VALVES: NFPA D08, CETOP 8 & NG25

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C08MSV-PA / C08MSV-PB / C08MSV-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 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
- Uses Sun T-19A cavity
- Anodized aluminum

SPECIFICATIONS

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

Flow: 120 GPM (424 L/M) nominal

Pilot Ratio: 3 to 1

Internal Leakage: 1 drop per minute maximum at 5000 PSI

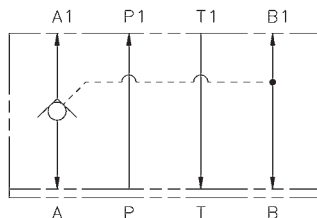
Operating Temperature: Fluid temperature up to 200°F. will not appreciably affect valve performance, however, from a safety standpoint, temperatures above 130°F. are not recommended.

Operating Media: All general purpose hydraulic fluids such as MIL-H-5606, SAE #10, SAE #20, etc.

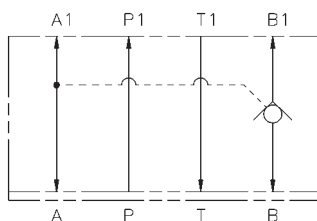
Filtration: 25 microns acceptable; 10 microns preferred

Estimated Shipping

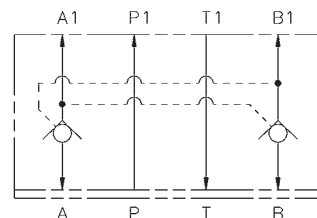
Weight: 18 # Aluminum



VALVE TYPE
PILOT OPERATED
CHECK VALVE
A-PORT



VALVE TYPE
PILOT OPERATED
CHECK VALVE
B-PORT



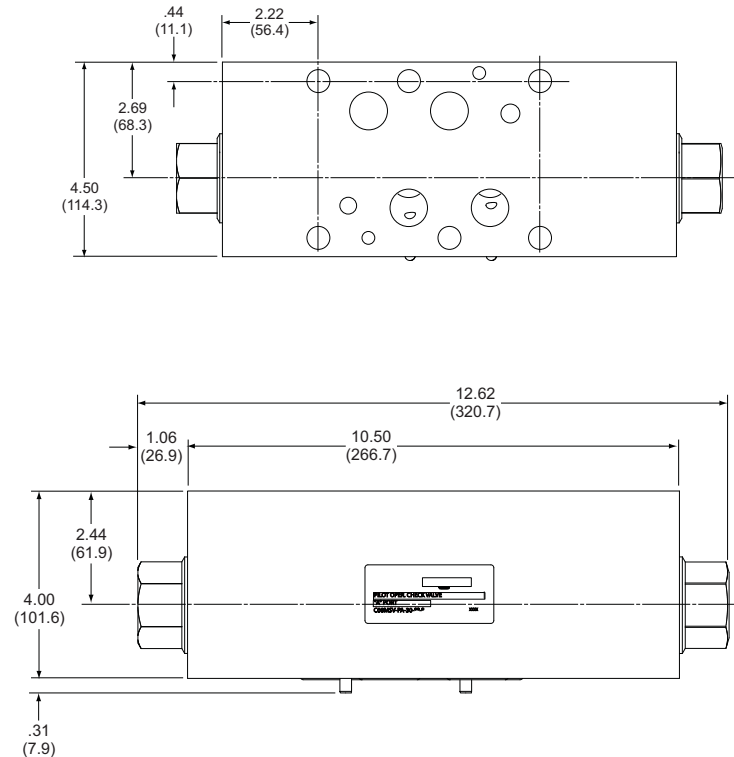
VALVE TYPE
PILOT OPERATED
CHECK VALVE
A - B PORT

C08MSV-PA / C08MSV-PB / C08MSV-PC

CHECK VALVE, PILOT OPERATED

DIMENSIONS

C08MSV-PA / C08MSV-PB / C08MSV-PC

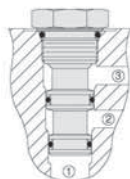


ORDERING INFORMATION

C08MSV — P				SELECT ONE		— 30 —		A —		SELECT ONE		DESIGN	
FUNCTION	SIZE	STYLE	TYPE	CONTROL PORT		CRACKING PRESSURE		SEALS		BODY MATERIAL			
CHECK VALVE	NFPA D08 NG25 (CETOP 8)	MODULAR STACK VALVE	PILOT OPERATED	CODE	LOCATION	CODE	PRESSURE	CODE		CODE			
				C	A & B PORT	30	30 PSI	A	BUNA N	A	ALUMINUM		
				A	A PORT								
				B	B PORT								

Body Only Assembly:

Code A, B, C Control Port:
Aluminum (Part No.) — 552875K
Includes O-rings & Locating Pin.



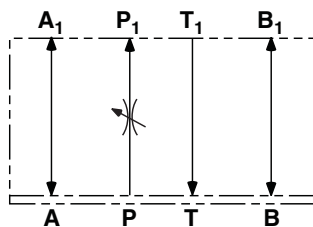
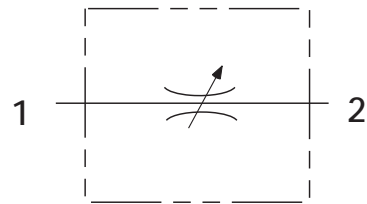
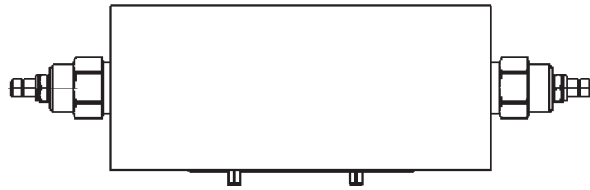
General Information:

- Cartridge cavity is Sun T-19A with flow pattern set up for checked flow port 1 to port 2, with port 3 as the pilot signal.
- Cartridge # CKIB-XCN Buna N

TYPICAL ORDERING CODE: **C08MSV-PC-30-AA**

F08MSV-NIP

FLOW CONTROL VALVE, NON-COMPENSATED



VALVE TYPE

FLOW CONTROL VALVE
P PORT

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
- Uses Sun T-18A cavity
- Industry common cavity
- Anodized aluminum

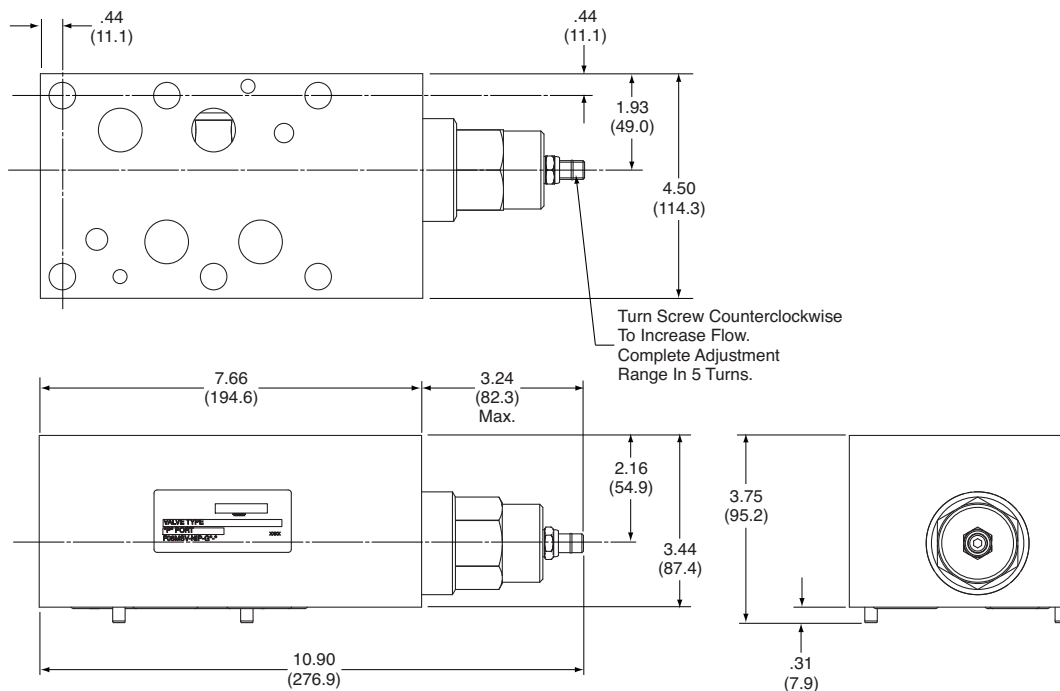
SPECIFICATIONS

Flow:	60 GPM (225 L/M) nominal
Internal Leakage:	5 drops per minute maximum at 5000 PSI (350 Bar)
Valve Bodies:	3000 PSI (207 Bar) = Aluminum (2024-T6)
Estimated Shipping Weight:	18 # Aluminum

F08MSV-NIP

FLOW CONTROL VALVE, NON-COMENSATED

DIMENSIONS



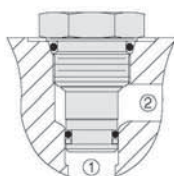
ORDERING INFORMATION

F08MSV		—	NI	P	—	A	—	SELECT ONE	DESIGN
FUNCTION	SIZE	STYLE	TYPE	CONTROL PORT		SEALS		BODY MATERIAL	
				CODE	LOCATION	CODE		CODE	
				P	P PORT	A	BUNA N	A	ALUMINUM

Body Only Assembly:

Aluminum (Part No.) — 552802K

Includes O-rings & Locating Pin.



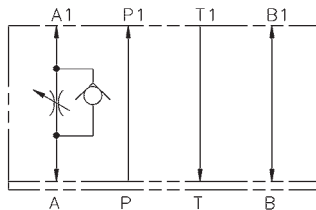
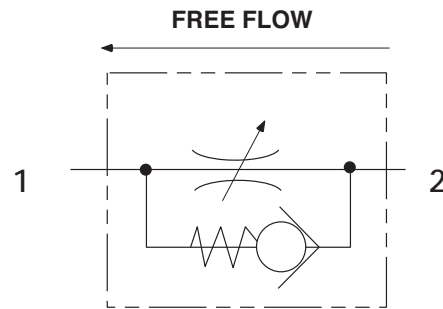
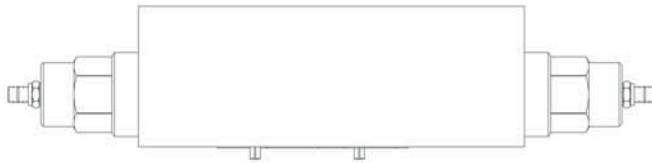
General Information:

- Cartridge cavity is Sun T18A with port flow pattern set up for cartridge flowing port 1 to port 2.
- Cartridge #: NFFC-LGN Buna N

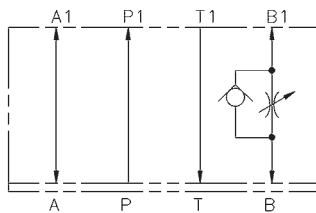
TYPICAL ORDERING CODE: **F08MSV-NIP-AA**

F08MSV-NOA / F08MSV-NOB / F08MSV-NOC

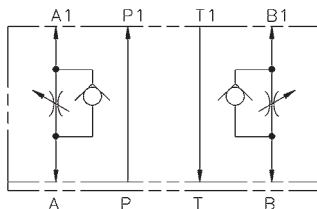
FLOW CONTROL VALVE, NON-COMPENSATED WITH CHECK



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



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



VALVE TYPE
FLOW CONTROL VALVE
WITH CHECK
METER-OUT
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
- Uses Sun T-18A cavity
- Anodized aluminum

SPECIFICATIONS

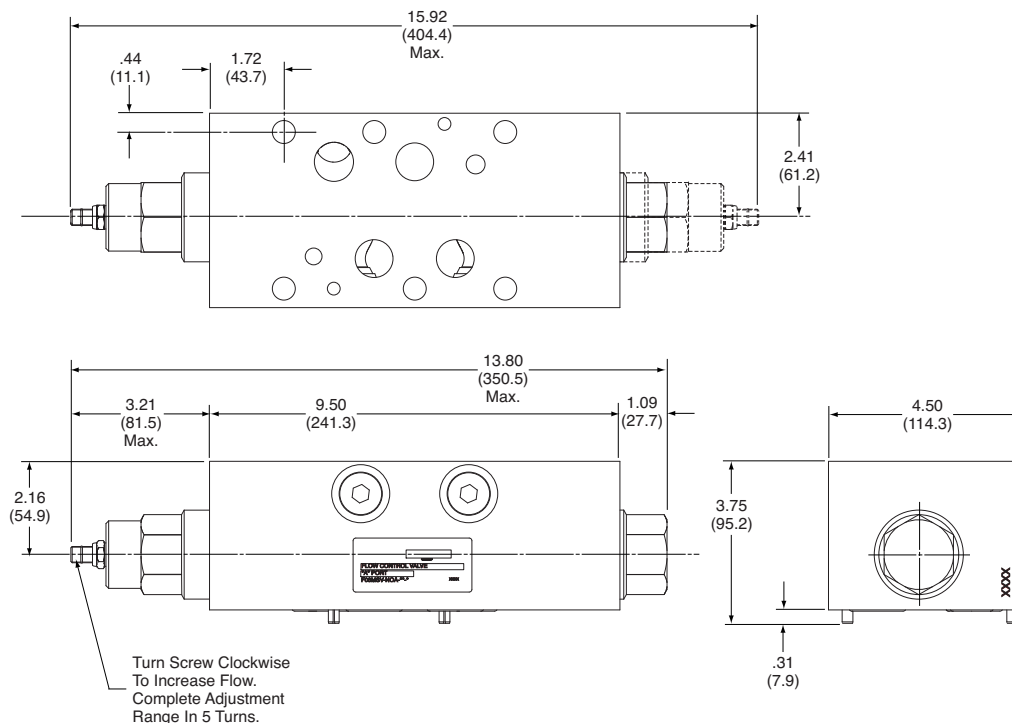
Flow:	60 GPM (225 L/M) nominal
Internal Leakage:	5 drops per minute maximum at 5000 PSI (350 Bar)
Valve Bodies:	3000 PSI (207 Bar) = Aluminum (2024-T4)
Estimated Shipping Weight:	18 # Aluminum

F08MSV-NOA / F08MSV-NOB / F08MSV-NOC

FLOW CONTROL VALVE, NON-COMENSATED WITH CHECK

DIMENSIONS

F08MSV-NOA / F08MSV-NOB / F08MSV-NOC



ORDERING INFORMATION

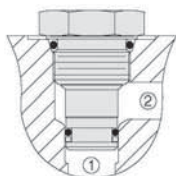
F08MSV — NO — A DESIGN

FUNCTION	SIZE	STYLE	TYPE	CONTROL PORT		SEALS		BODY MATERIAL	
FLOW CONTROL VALVE	NFPA D08 NG25 (CETOP 8)	MODULAR STACK VALVE	NON-COMPENSATED WITH CHECK (Meter-Out)	CODE	LOCATION	CODE		CODE	
				C	A & B PORT	A	BUNA N	A	ALUMINUM
				A	A PORT				
				B	B PORT				

Body Only Assembly

Aluminum (Part No.) — 552927K

Includes O-rings & Locating Pin



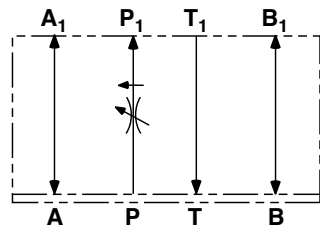
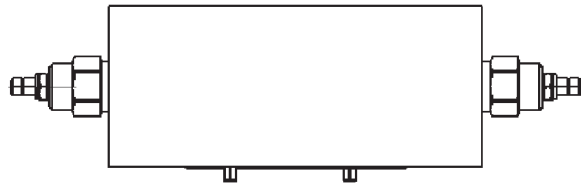
General Information

- Cartridge cavity is SUN T-18A with flow pattern metered from port 1 to port 2, free flow from port 2 to port 1
- Cartridge NCGB-LCN Buna N

TYPICAL ORDERING CODE: **F08MSV-N0C-AA**

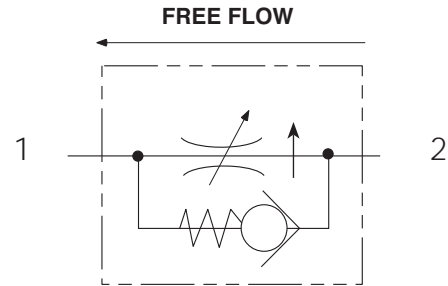
F08MSV-CIP

FLOW CONTROL VALVE, PRESSURE COMPENSATED



VALVE TYPE

PRESSURE COMPENSATED FLOW
CONTROL VALVE
METER IN P PORT



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
- Uses Sun T-18A cavity
- Anodized aluminum

SPECIFICATIONS

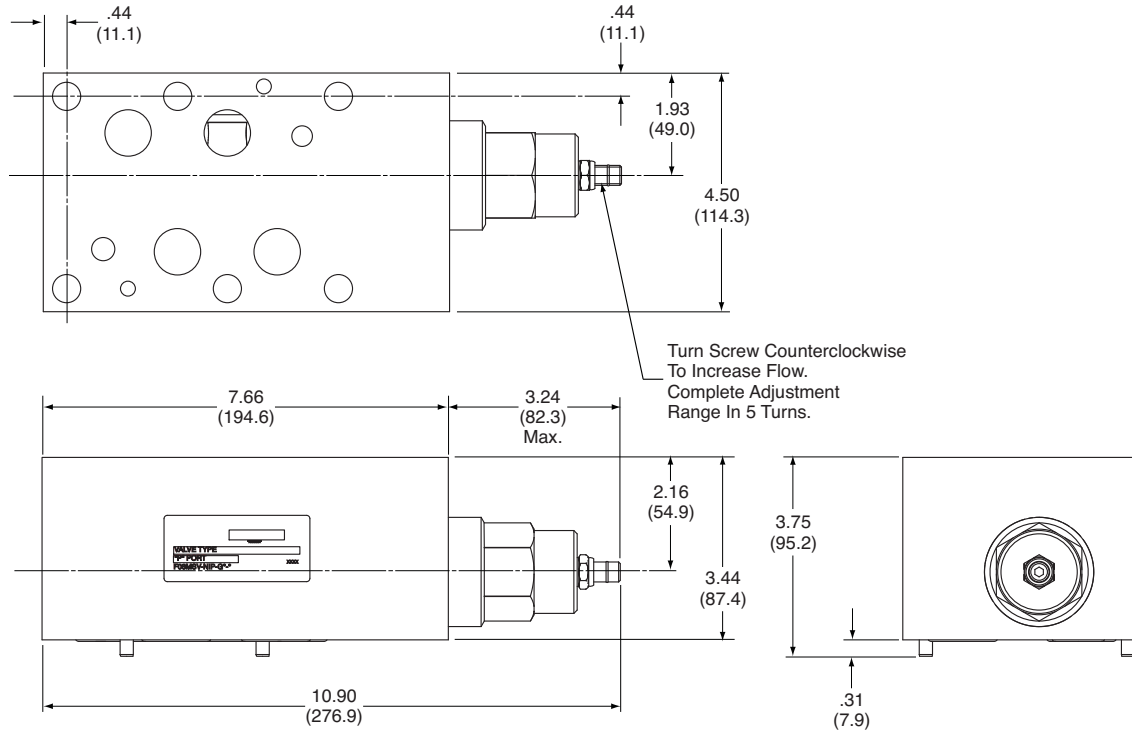
Flow: 50 GPM (190 L/M) nominal

Valve Bodies: 3000 PSI (207 Bar) = Aluminum (2024-T6)

Estimated Shipping Weight: 18 # Aluminum

FLOW CONTROL VALVE, PRESSURE-COMENSATED

DIMENSIONS



ORDERING INFORMATION

F08MSV

CI

P

A

SELECT
ONE

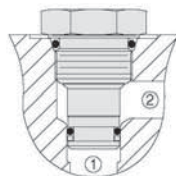
DESIGN

FUNCTION	SIZE	STYLE	TYPE	CONTROL PORT		SEALS		BODY MATERIAL	
FLOW CONTROL VALVE	NFPA	MODULAR	PRESSURE	CODE	LOCATION	CODE		CODE	
	D08 NG25 (CETOP 8)	STACK VALVE	COMPENSATED	P	P PORT	A	BUNA N	A	ALUMINUM

Body Only Assembly:

Aluminum (Part No.) — 552802K

Includes O-rings & Locating Pin



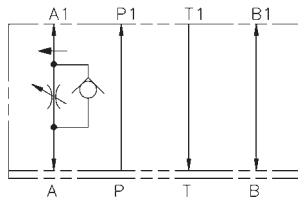
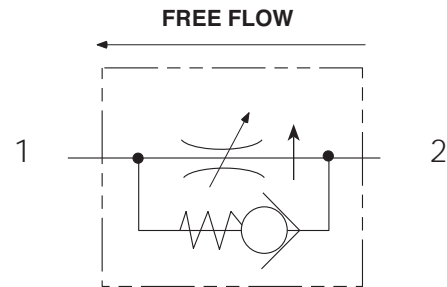
General Information:

- Cartridge cavity is Sun T18A with port flow pattern set up for cartridge flowing port 1 to port 2.
- Cartridge FDFA-LAN Buna N

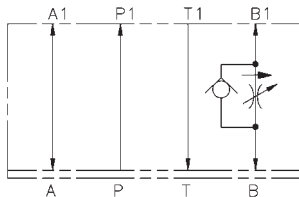
TYPICAL ORDERING CODE: **F08MSV-CIP-AA**

F08MSV-COA / F08MSV-COB / F08MSV-COC

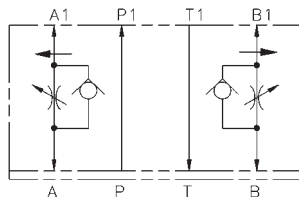
FLOW CONTROL VALVE, PRESSURE COMPENSATED WITH CHECK



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



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



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

DESCRIPTION

This is a pressure compensated, fully adjustable flow control valve with reverse flow 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 flow variation
- All external parts are zinc-plated for long life against elements
- Uses Sun T-18A cavity
- 10 PSI reverse free flow check cracking pressure
- Minimum 18 cu. in./min. leakage at shutoff
- All cartridges are 100% tested functionally
- Anodized aluminum

SPECIFICATIONS

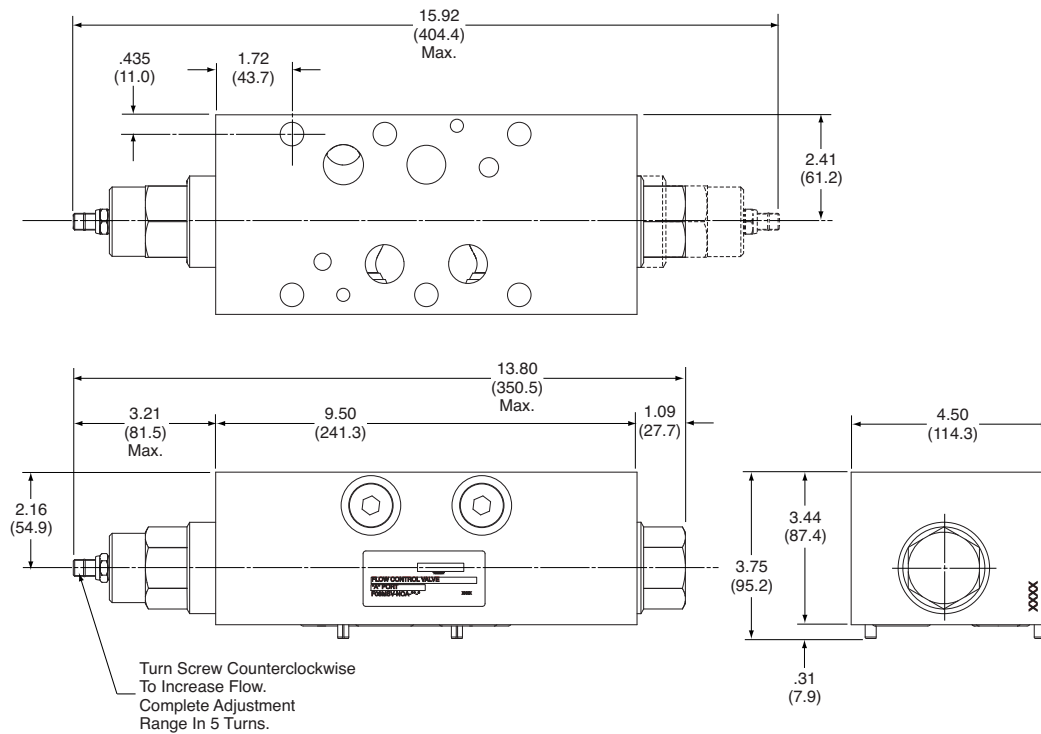
Flow:	50 GPM (190 L/M) nominal
Flow Accuracy:	Less than $\pm 5\%$ with a minimum of 200 PSI pressure differential
Valve Bodies:	3000 PSI (207 Bar) = Aluminum (2024-T4)
Estimated Shipping Weight:	18 # Aluminum

F08MSV-COA / F08MSV-COB / F08MSV-COC

FLOW CONTROL VALVE, PRESSURE-COMENSATED WITH CHECK

DIMENSIONS

F08MSV-COA / F08MSV-COB / F08MSV-COC



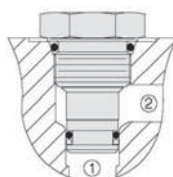
ORDERING INFORMATION

F08MSV — CO				SELECT ONE		SELECT ONE		DESIGN	
					A				
FUNCTION	SIZE	STYLE	TYPE	PORT		SEALS		BODY MATERIAL	
				CODE	LOCATION	CODE		CODE	
FLOW CONTROL VALVE	NFPA DO8 NG25 (CETOP 8)	MODULAR STACK VALVE	PRESSURE COMPENSATED WITH CHECK (METER-OUT)	A	A PORT	A	BUNA N	A	ALUMINUM
				B	B PORT				
				C	A & B PORT				

Body Only Assembly

Aluminum (Part No.) — 552927K

Includes O-rings & Locating Pin



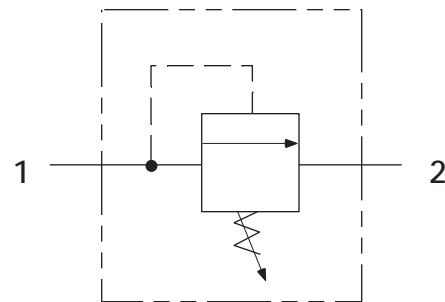
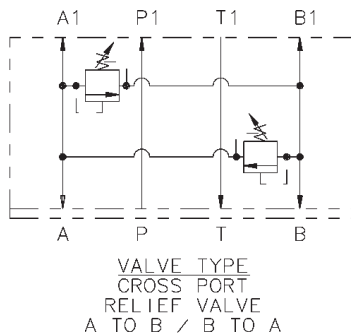
General Information

- Cartridge cavity is SUN T-18A with flow pattern metered from port 1 to port 2, free flow from port 2 to port 1
- Cartridge FDFA-LAN Buna N

TYPICAL ORDERING CODE: **F08MSV-COC-AA**

P08MSV-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 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-3A cavity
- Anodized aluminum

SPECIFICATIONS

Flow: 48 GPM (181 L/M) nominal

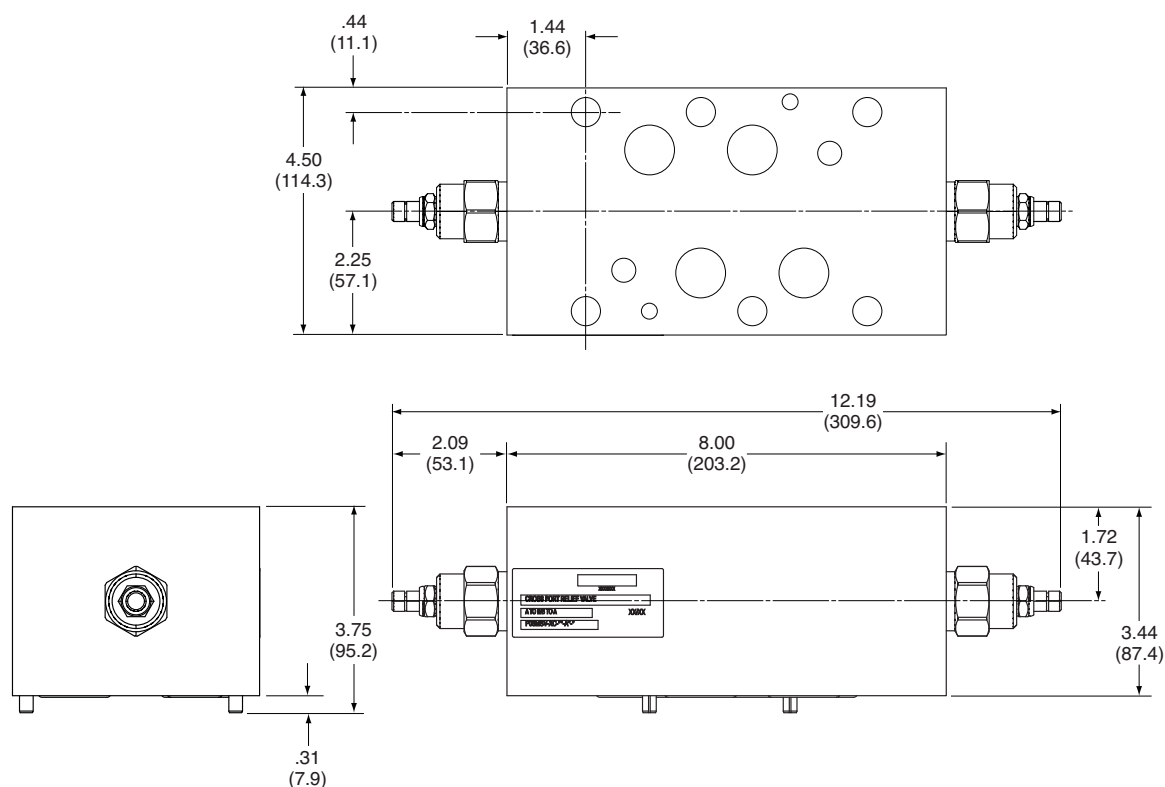
Valve Bodies: 3000 PSI (207 Bar) =
Aluminum (2024-T4)

Estimated Shipping
Weight: 18 # Aluminum

P08MSV-XC

CROSS PORT RELIEF VALVE, PILOT OPERATED

DIMENSIONS



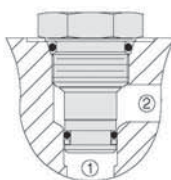
ORDERING INFORMATION

P08MSV — X C — <input type="text"/> — A — <input type="text"/> DESIGN <input type="text"/>											
FUNCTION	SIZE	STYLE	TYPE	CONTROL PORT		PRESSURE RANGE		SEALS		BODY MATERIAL	
PRESSURE	NFPA	MODULAR	CROSSPORT	CODE	LOCATION	CODE	PRESSURE	CODE		CODE	
CONTROL	D08	STACK	RELIEF	C	A & B PORT	150	50-1500 PSI	A	BUNA N	A	ALUMINUM
VALVE	NG25 (CETOP 8)	VALVE	VALVE			300	100-3000 PSI				

Body Only Assembly:

Aluminum (Part No.) — 1001206K

Includes O-rings & Locating Pin.



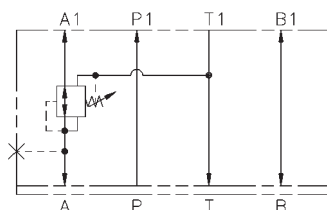
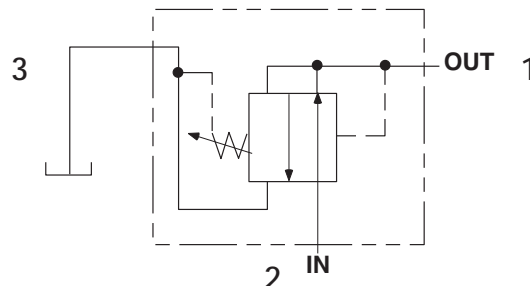
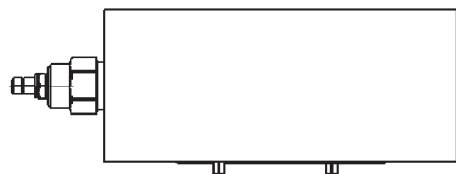
General Information:

- Cartridge cavity is HydraForce C12-2 with flow pattern set up for cartridge flowing from port 1 to port 2.
- Cartridge # RPGE-LBN Buna N 150
RPGE-LAN Buna N 300

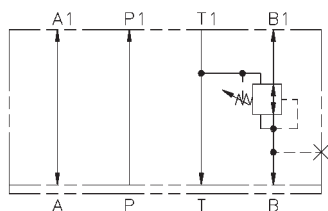
TYPICAL ORDERING CODE: **P08MSV-XC-150-AA**

P08MSV-PDRA / P08MSV-PDRB / P08MSV-PDRP

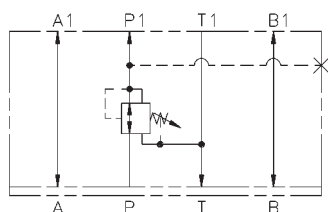
PRESSURE REDUCING / RELIEVING VALVE, PILOT OPERATED



VALVE TYPE
PRESSURE REDUCING/
RELIEVING VALVE
A-PORT



VALVE TYPE
PRESSURE REDUCING/
RELIEVING VALVE
B-PORT



VALVE TYPE
PRESSURE REDUCING/
RELIEVING VALVE
P-PORT

DESCRIPTION

This pilot operated hydraulic pressure reducing/relieving valve acts as a pressure-regulating device for a secondary circuit. It features a sliding spool and screw-in cartridge.

OPERATIONS

This 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 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
- Uses Sun T-19A cavity
- Anodized aluminum

SPECIFICATIONS

Flow: 120 GPM (424 L/M) nominal

Valve Bodies: 2500 PSI (175 Bar) = Aluminum (20224-T4)

Gauge Post: #4 SAE Straight Thread

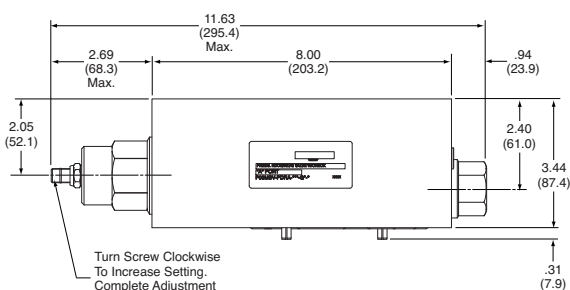
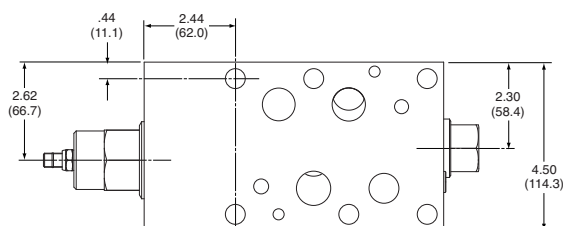
Estimated Shipping Weight: 18 # Aluminum

P08MSV-PDRA / P08MSV-PDRB / P08MSV-PDRP

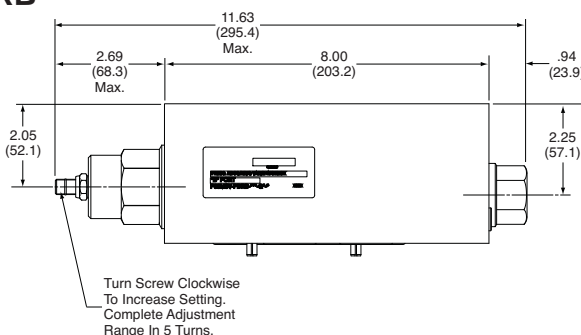
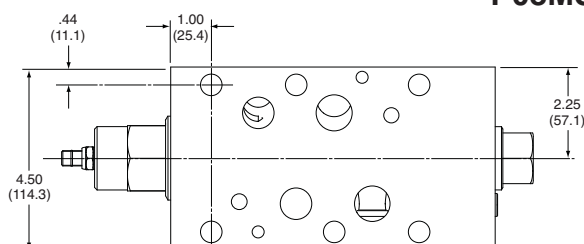
PRESSURE REDUCING / RELIEVING VALVE, PILOT OPERATED

DIMENSIONS

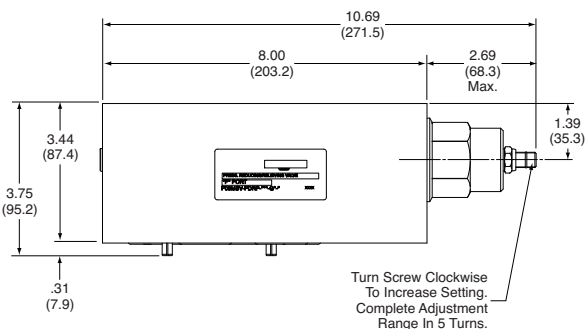
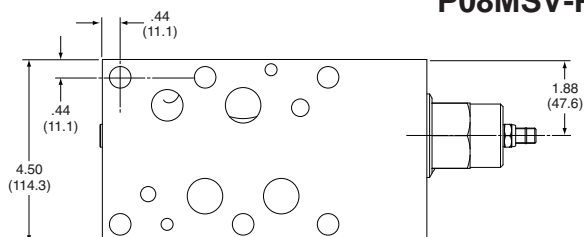
P08MSV-PDRA



P08MSV-PDRB



P08MSV-PDRP



ORDERING INFORMATION

P08MSV — PDR

SELECT ONE

SELECT ONE

A

SELECT ONE

DESIGN

FUNCTION	SIZE	STYLE	VALVE FUNCTION	CONTROL PORT		ADJUSTMENT RANGE		SEALS		BODY MATERIAL	
PRESSURE CONTROL VALVE	NFPA D08 NG25 (CETOP 8)	MODULAR STACK VALVE	REDUCING/ RELIEVING PILOT OPERATED	CODE	LOCATION	CODE	PRESSURE	CODE		CODE	
				A	A PORT	150	50-1500 PSI	A	BUNA N	A	ALUMINUM
				B	B PORT						
				P	P PORT	300	100-3000 PSI				

Body Only Assembly:

PDRA

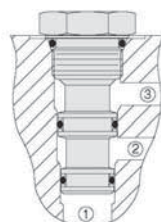
Aluminum (Part No.) — 552928K

PDRB

Aluminum (Part No.) — 552929K

PDRP

Aluminum (Part No.) — 552930K



General Information:

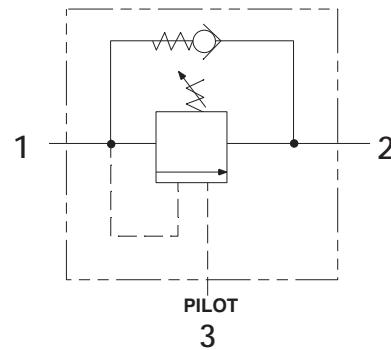
- Cartridge cavity is Sun T-19A with flow pattern set up for cartridge flowing from port 2 to port 1. Port 3 is tank.
- Cartridge # PPJB-LBN Buna N 150
PPJB-LAN Buna N 300

Includes O-rings & Locating Pin

TYPICAL ORDERING CODE: **P08MSV-PDRP-300-AA**

P08MSV-CA / P08MSV-CB / P08MSV-CC

COUNTERBALANCE VALVE, PILOT OPERATED



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.

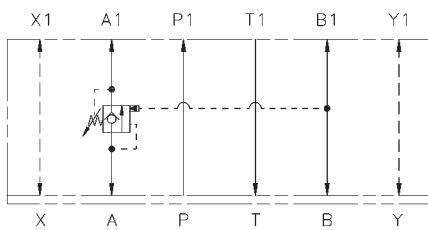
This valve is a modulating device that allows free flow from port 2 to port 1 and then blocks reverse flow until pilot pressure inversely proportional to the load pressure is sensed at port 3, modulating out flow from port 1 to port 2.

FEATURES & BENEFITS

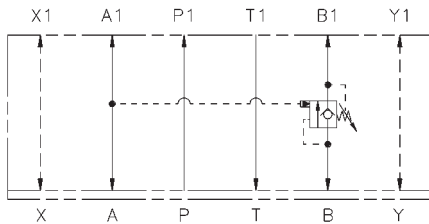
- Leakproof screw adjustment
- Adjustment screw cannot be backed out of valve
- All external parts are zinc-plated for long life against elements
- All cartridges are 100% tested functionally
- Uses Sun T-19A cavity
- Anodized aluminum
- Low hysteresis and reliable operation

SPECIFICATIONS

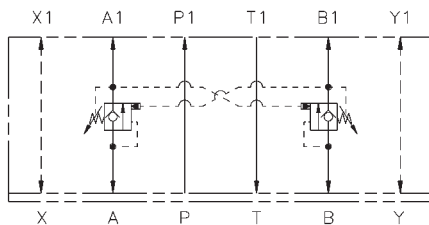
Flow:	120 GPM (424 L/M) nominal Refer to performance chart
Pilot Ratio:	3 to 1
Internal Leakage:	5 drops per minute maximum at 100 PSI below crack pressure
Valve Bodies:	3000 PSI (207 Bar) = Aluminum (2024-T4)
Estimated Shipping Weight:	18 # Aluminum



VALVE TYPE
COUNTERBALANCE VALVE
A PORT



VALVE TYPE
COUNTERBALANCE VALVE
B PORT



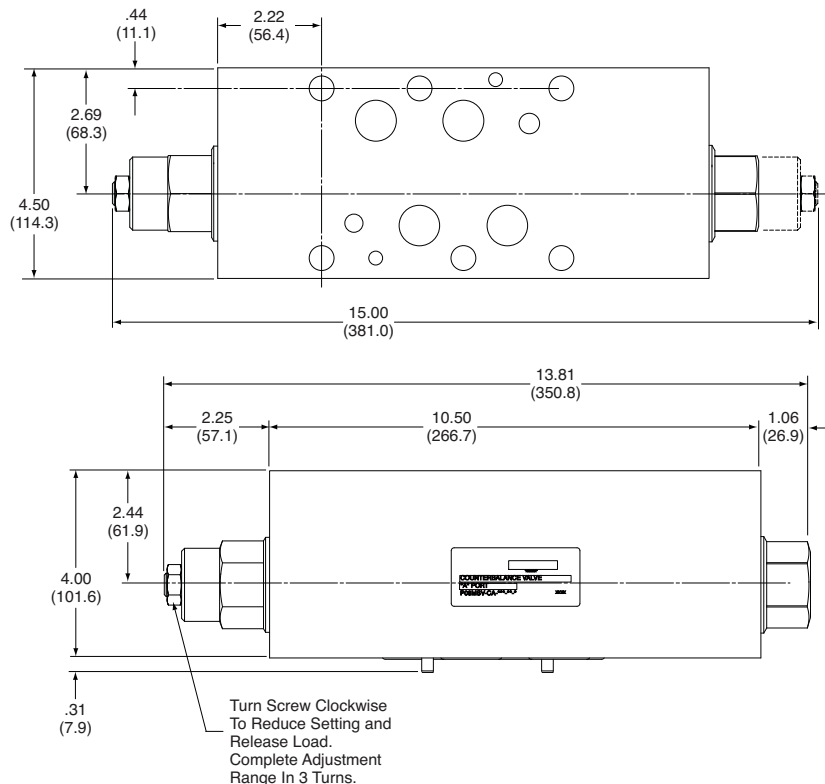
VALVE TYPE
COUNTERBALANCE VALVE
A & B PORT

P08MSV-CA / P08MSV-CB / P08MSV-CC

COUNTERBALANCE VALVE, PILOT OPERATED

DIMENSIONS

P08MSV-CA / P08MSV-CB / P08MSV-CC



ORDERING INFORMATION

P08MSV — C — — — A — —

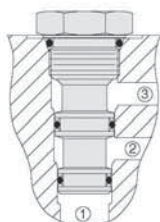
SELECT ONE SELECT ONE SELECT ONE DESIGN

FUNCTION	SIZE	STYLE	TYPE	CONTROL PORT		CRACKING PRESSURE		SEALS		BODY MATERIAL	
PRESSURE	NFPA	MODULAR	COUNTER-	CODE	LOCATION	CODE	PRESSURE	CODE		CODE	
CONTROL	D08	STACK	BALANCE	A	A PORT	150	400-1500 PSI	A	BUNA N	A	ALUMINUM
VALVE	NG25 (CETOP 8)	VALVE	VALVE	B	B PORT	300	1000-2500 PSI	A	BUNA N	A	ALUMINUM
				C	A & B PORT						

Body Only Assembly:

Aluminum (Part No.) — 552875K

Includes O-rings & Locating Pin.



General Information:

- Cartridge cavity is Sun T19A with flow pattern set up for cartridge flowing port 1 to port 2. Free flow from port 2 to port 1. Port 3 is pilot pressure.
- Cartridge #

CBIA-LIN	Buna N	150
CBIA-LHN	Buna N	300

TYPICAL ORDERING CODE: **P08MSV-CB-150-AA**

P08MSV-RCC / P08MSV-BCC

PRESSURE COMPENSATOR



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

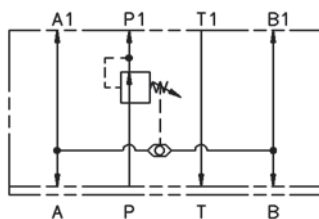
The valve controls the pressure drop by sensing the pressures in port A & B which is added to the spring setting causing the valve to open or close so it maintains a constant pressure drop. This will improve your system performance when widely changing loads are seen.

FEATURES & BENEFITS

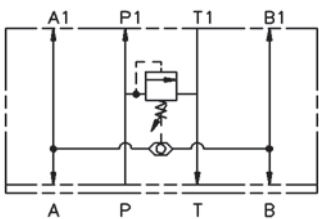
- Low friction seal on the pilot piston
- All external parts are zinc-plated for long life
- All cartridges are 100% tested functionally
- Uses Sun T-19A cavity for cartridge
- Uses HydraForce VC04-B3 cavity for shuttle
- Anodized aluminum

SPECIFICATIONS

Flow:	RCC 120 GPM (424 L/M) nominal BCC 80 GPM (302 L/M) nominal
Internal Leakage:	5 drops per minute maximum at 5000 PSI (350 Bar)
Valve Bodies:	3000 PSI (207 Bar) = Aluminum (2024-T4)
Estimated Shipping Weight:	18 # Aluminum



VALVE TYPE
PRESSURE COMPENSATOR
(RESTRICTIVE)



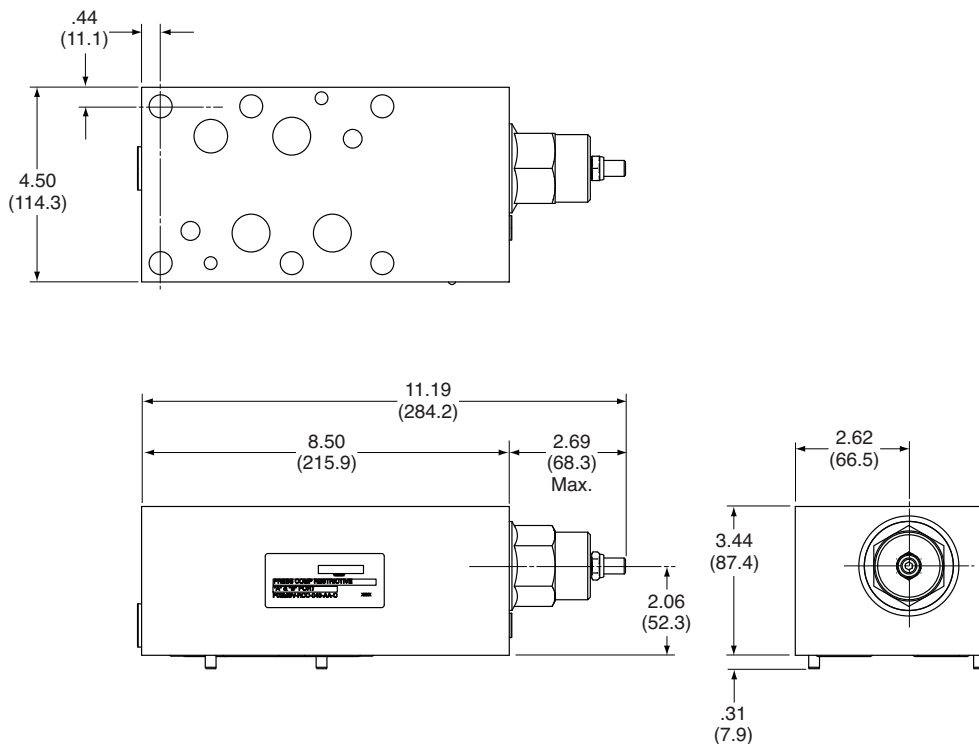
VALVE TYPE
PRESSURE COMPENSATOR
(BY-PASS)

P08MSV-RCC / P08MSV-BCC

PRESSURE COMPENSATOR

DIMENSIONS

P08MSV-RCC / P08MSV-BCC



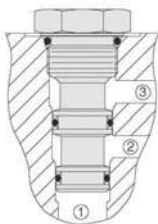
P08MSV			SELECT ONE <div></div>		C	040			A	SELECT ONE <div></div>		DESIGN LETTER <div></div>	
FUNCTION	SIZE	STYLE	DESCRIPTION		PORT		PRESSURE RANGE			SEALS		BODY MATERIAL	
PRESSURE CONTROL VALVE	NFPA	MODULAR	CODE		CODE	PORT	CODE	PSI	BAR	CODE		CODE	
	D08	STACK VALVE	RC	PRESSURE COMPENSATOR (RESTRICTIVE)	C	A & B PORT	040	60-400	4.1-27.5	A	BUNA N	A	ALUMINUM
	NG25 (CETOP 8)		BC	PRESSURE COMPENSATOR (BY-PASS)									

Body Only Assembly: Buna N RCC

Aluminum (Part No.) — 552987K

BCC

Aluminum (Part No.) — 552987K



General Information

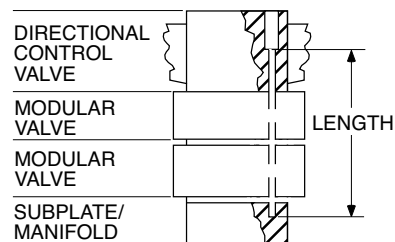
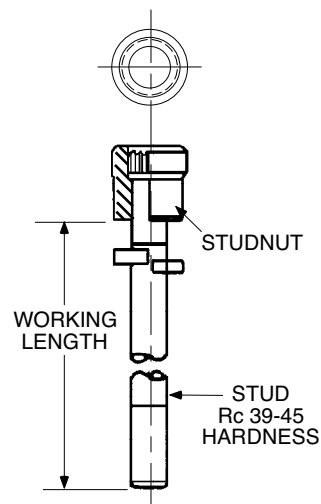
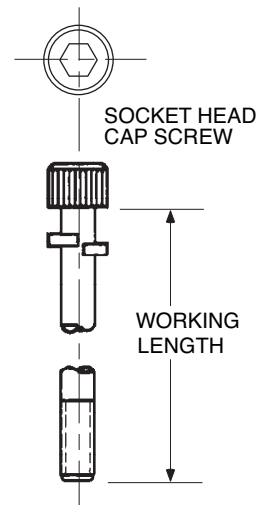
- Cartridge cavity is SUN T-19A with RCC flow pattern set up for cartridge flowing port 2 to port 1. Port 3 is A or B sensor. BCC flow pattern set up for cartridge flowing port 1 to port 2. Port 3 is A or B sensor.

Cartridge #	RCC	PBJB-LQN	Buna N
	BCC	RSJC-LEN	Buna N
	Shuttle	LS04-B30-0-N	Buna N

TYPICAL ORDERING CODE: **P08MSV-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) MODULAR 1.57 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) MODULAR 3.44 4.00	BD08-1020	BOLT	(260.0) 10.25	(1.81) 4.00
	VALVE + (2)(101.6) MODULAR 4.00 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) MODULAR 3.44 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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Our Approach

Continental Hydraulics welcomes the opportunity to work with you to help design your hydraulic system from the ground up. Our Application specialists and our trained local support Distributors can advise you of the most efficient, cost-effective components available off the shelf, or work with you on custom designs to meet your needs.

Product Characteristics

Continental Hydraulic's products are designed to provide maximum overall value. Reliability, durability, and efficiency are designed in. Ease of maintenance, quiet operation and low operating costs are common design features.

Product Lineup

Pumps

- PVR Vane Pumps, rugged duty pumps for medium pressure applications
- PVX Vane Pumps, quiet pumps for higher pressure applications
- HPV Piston Pumps, efficient pumps for higher pressure applications

Valves

- D03/05/05A/05B/07/08/10 Directional Control Valves, for a variety of applications.
- D03/05/05A/05B/07/08/10 Proportional Control Valves offer more control options, from programmable On-board amplifiers to rail mount controllers.
- Modular Stack Valves for controlling flows and pressures in industrial and/or mobile applications
- Cartridge Valves for controlling flows and pressures in compact applications

Power Units

- Little Champ series for smaller and/or economical applications
- 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

Continental Hydraulics manufactured components are covered by a 3 year warranty!

How can we help you?

Contact your Continental Hydraulics representative for solutions to your toughest hydraulics problems. Whether it's reducing your operating expenses, or increasing your production capability, you can count on Continental Hydraulics!





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CONTINENTAL



CONTINENTAL HYDRAULICS

C03MSV-P*

PILOT OPERATED CHECK VALVE

C03MSV-P* - PILOT OPERATED CHECK VALVE



PRECISE

C03MSV-P*

PILOT OPERATED CHECK VALVE



DESCRIPTION

This valve utilizes a guided spool and poppet-seat check valves as a blocking or load-holding device for high pressure applications.

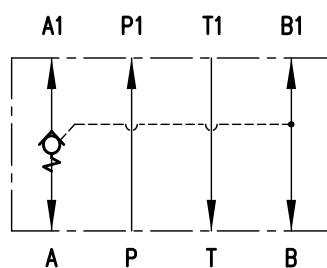
OPERATIONS

This valve allows free flow from the directional control valve work port to the load and blocks flow in the opposite direction. Flow is allowed from the load to the directional control valve work port when 30% of the load induced pressure is sensed in the opposing directional control valve work port.

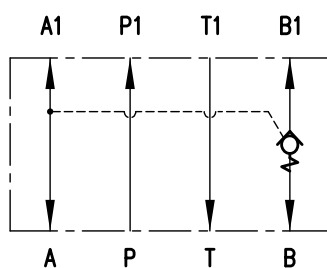
TYPICAL PERFORMANCE SPECIFICATIONS

MAXIMUM OPERATING PRESSURE		5000 psi	350 bar
CRACKING PRESSURE		43 psi	3 bar
MAXIMUM FLOW RATE	Controlled Lines	13 gpm	50 l/min
	Free Lines	20 gpm	75 l/min
PILOT RATIO		3.4:1	
MOUNTING SURFACE		NFPA D03 ISO 4401-03-02-0-05	
WEIGHT		2.87 lbs	1.3 Kg

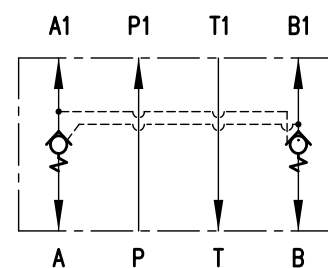
AVAILABLE VERSIONS



C03MSV-PA



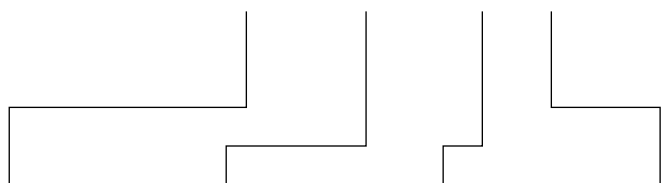
C03MSV-PB



C03MSV-PC

IDENTIFICATION CODE

C03MSV-P - **43** - **C** - _____ DESIGN LETTER



CONTROL PORT	
A	Port A
B	Port B
C	Port A and B

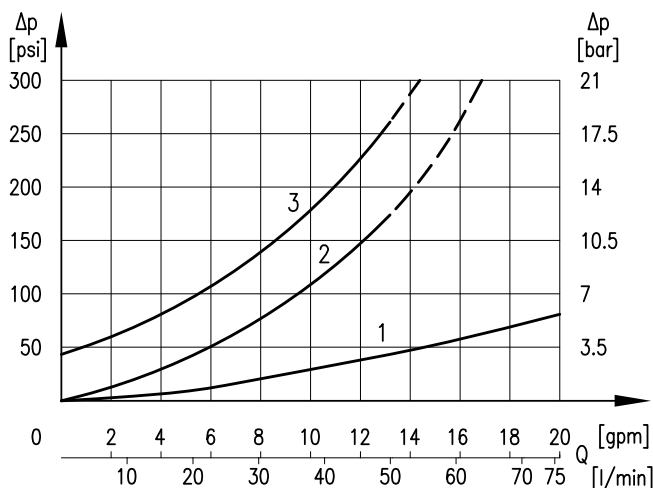
CRACKING PRESSURE	
43	43 psi

SEAL	
A	Buna (STD)
G	Viton

BODY MATERIAL	
C	Cast Iron

TYPICAL ORDERING CODE:
C03MSV-PA-43-AC-C

PERFORMANCE CURVE



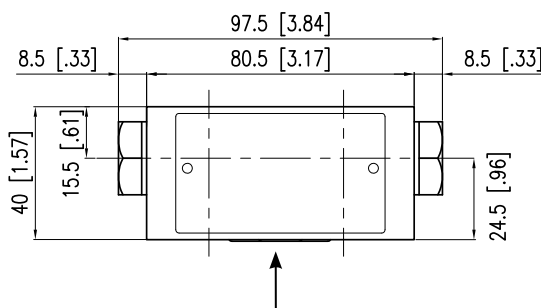
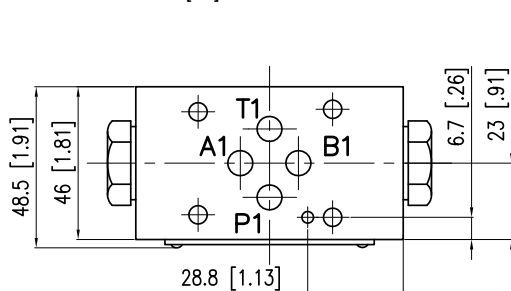
VALVE	FLOW CURVE NUMBER					
	A1→A	B1→B	P→P1	T→T1	A→A1	B→B1
C03MSV-PA	3	3	1	1	2	1
C03MSV-PB	3	3	1	1	1	2
C03MSV-PC	3	3	1	1	2	2

NOTE:

Values obtained with oil viscosity of 36 cSt at 122°F (50°C).

DIMENSIONS

Dimensions in mm [IN]



Mounting surface with sealing rings: Qty. 4 O-Ring AS568-012 90 Shore A

SEAL KIT

BUNA SEAL KIT	1013661
VITON SEAL KIT	1013662

ABOUT CONTINENTAL HYDRAULICS

Rugged, durable, high-performance, efficient—the reason Continental Hydraulics' products are used in some of the most challenging applications across the globe. With a commitment to quality customer support and innovative engineering, Continental's pumps, valves, power units, mobile and custom products deliver what the markets demand. Continental has been serving the food production, brick and block, wood products, automotive and machine tool industries since 1962. Learn how our products survive some of the most harsh environments.

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CONTINENTAL



HYDRAULICS



CONTINENTAL HYDRAULICS

C05MSV-P*

PILOT OPERATED CHECK VALVE



C05MSV-P* - PILOT OPERATED CHECK VALVE

C05MSV-P*

PILOT OPERATED CHECK VALVE



DESCRIPTION

This valve utilizes a guided spool and poppet-seat check valves as a blocking or load-holding device for high pressure applications.

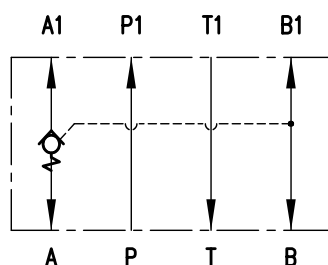
OPERATIONS

This valve allows free flow from the directional control valve work port to the load and blocks flow in the opposite direction. Flow is allowed from the load to the directional control valve work port when 40% of the load induced pressure is sensed in the opposing directional control valve work port.

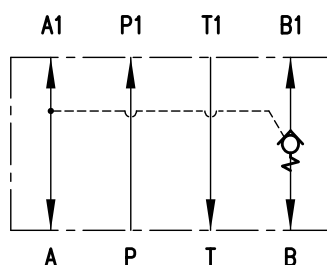
TYPICAL PERFORMANCE SPECIFICATIONS

MAXIMUM OPERATING PRESSURE		4600 psi	320 bar
CRACKING PRESSURE		30 psi	2 bar
MAXIMUM FLOW RATE		32 gpm	120 l/min
PILOT RATIO		2.3 : 1	
DECOMPRESSION RATIO		14.9 : 1	
MOUNTING SURFACE		NFPA D05 ISO 4401-05-04-0-05	
WEIGHT	C05MSV-PC	4.9 lbs	2.2 kg
	C05MSV-PA -PB	4.2 lbs	1.9 kg

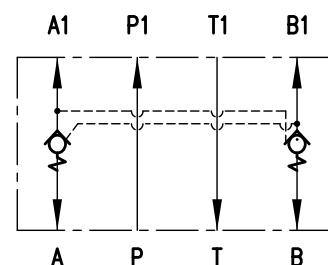
AVAILABLE VERSIONS



C05MSV-PA



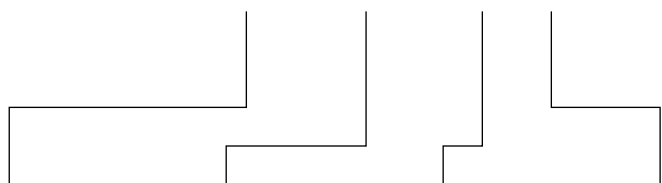
C05MSV-PB



C05MSV-PC

IDENTIFICATION CODE

C05MSV-P - **30** - **C** - _____ DESIGN LETTER



CONTROL PORT	
A	Port A
B	Port B
C	Port A and B

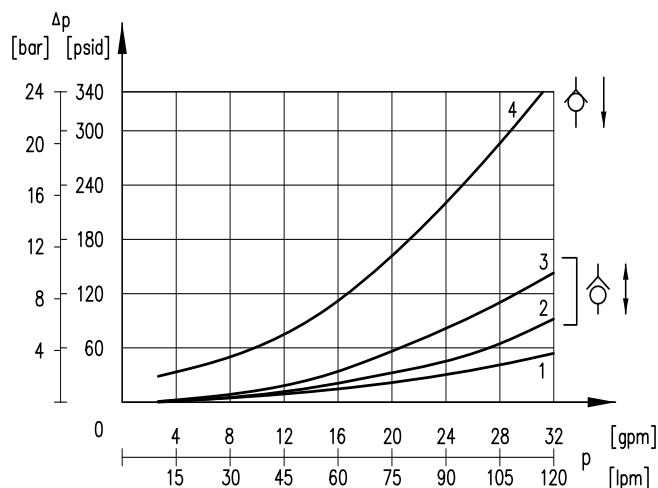
CRACKING PRESSURE	
30	30 psi

SEAL	
A	Buna (STD)
G	Viton

BODY MATERIAL	
C	Cast Iron

TYPICAL ORDERING CODE:
C05MSV-PA-30-AC-C

PERFORMANCE CURVE



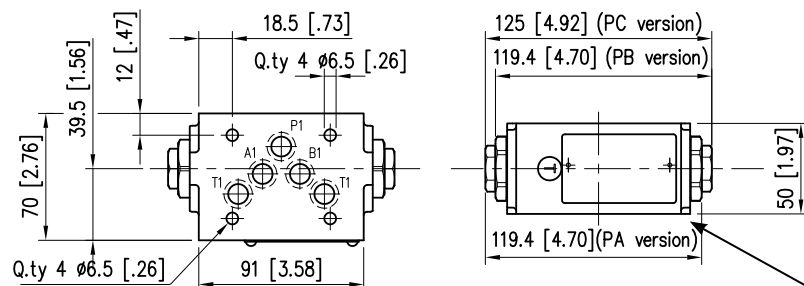
VALVE	FLOW CURVE NUMBER					
	A1→A	B1→B	P→P1	T→T1	A→A1	B→B1
C05MSV-PA	4	4	1	1	2	-
C05MSV-PB	4	4	1	1	-	2
C05MSV-PC	4	4	1	1	3	3

NOTE:

Values obtained with oil viscosity of 170 SUS (36 cSt) at 122°F (50°C).

DIMENSIONS

Dimensions in mm [IN]



SEAL KIT

BUNA SEAL KIT	1013665
VITON SEAL KIT	1013666

Mounting surface with sealing rings: 5 O-Ring type AS568-014 - 90 shore A

ABOUT CONTINENTAL HYDRAULICS

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HYDRAULICS

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CONTINENTAL HYDRAULICS

F03MSV-ND*

FLOW CONTROL VALVE, NON-COMPENSATED WITH CHECK

F03MSV-ND* - FLOW CONTROL VALVE, NON-COMPENSATED WITH CHECK



F03MSV-ND*

FLOW CONTROL VALVE, NON-COMPENSATED WITH CHECK



DESCRIPTION

This modular stack valve is a non-compensated flow control valve with a check valve for reverse free flow.

OPERATIONS

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

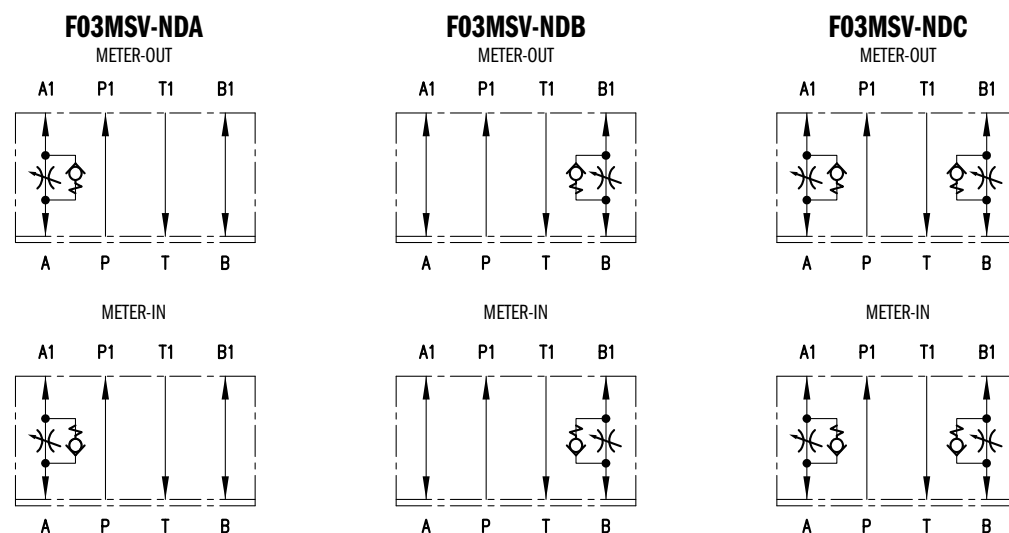
Meter-in or meter-out configuration is determined by the orientation of the body to mounting surface.

Available with flow control function on line A, B, or both A + B.

TYPICAL PERFORMANCE SPECIFICATIONS

MAXIMUM OPERATING PRESSURE		5000 psi	350 bar
CRACKING PRESSURE		7 psi	0.5 bar
MAXIMUM FLOW RATE	Controlled Lines	13 gpm	50 l/min
	Free Lines	20 gpm	75 l/min
MINIMUM FLOW RATE	Controlled Lines with $\Delta P = 145$ psi	≤ 0.015 gpm	≤ 0.06 l/min
MOUNTING SURFACE		NFPA D03 ISO 4401-03-02-0-05	
WEIGHT		2.87 lbs	1.3 kg

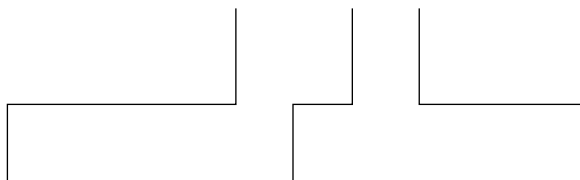
AVAILABLE VERSIONS



IDENTIFICATION CODE

F03MSV-ND ☐ - ☐ **C** - ☐

DESIGN LETTER



CONTROL PORT	
A	Port A
B	Port B
C	Port A and B

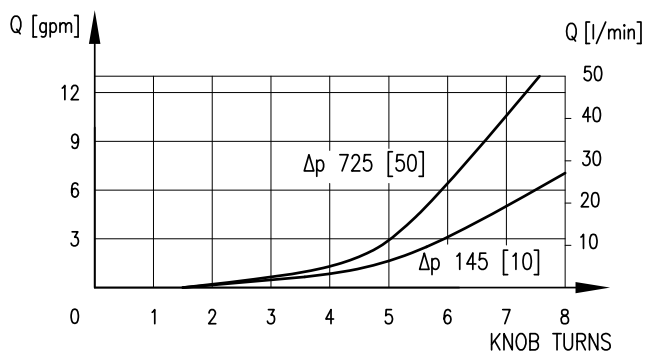
SEAL	
A	Buna (STD)
G	Viton

BODY MATERIAL	
C	Cast Iron

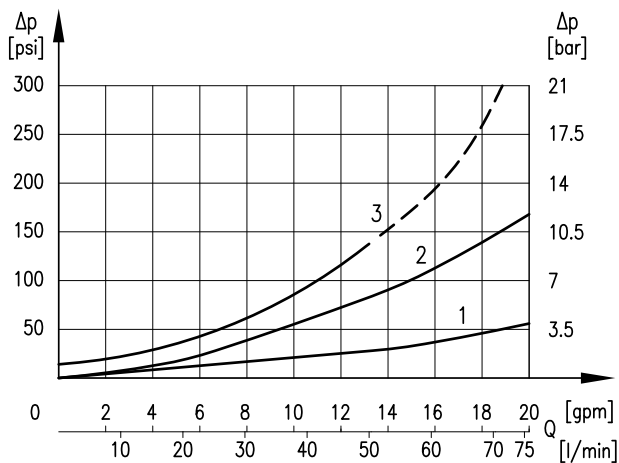
TYPICAL ORDERING CODE:
F03MSV-NDA-AC-D

PERFORMANCE CURVES

CONTROLLED PORT ADJUSTMENT



PRESSURE DROPS Δp - Q



CURVE	FLOW PATH
1	P port, T port
2	A port or B port w/o flow control
3	Reverse free flow thru check

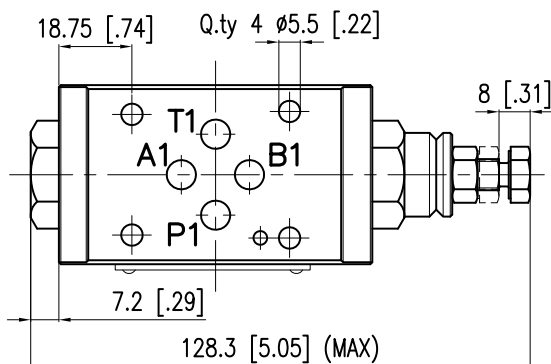
NOTE:

Values obtained with oil viscosity of 36 cSt at 122°F (50°C).

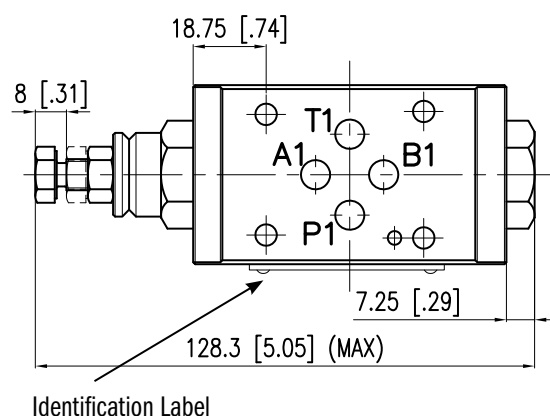
DIMENSIONS

Dimensions in mm [IN]

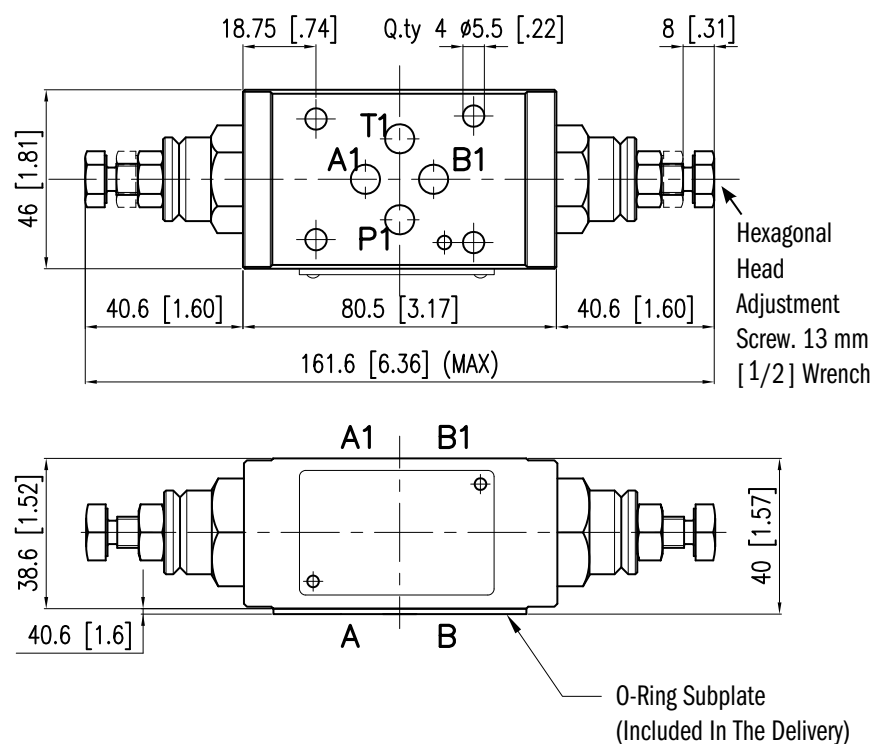
F03MSV-NDA



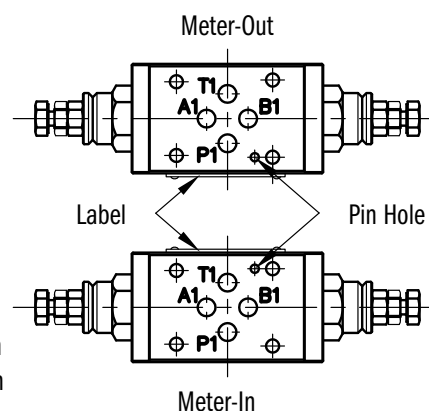
F03MSV-NDB



F03MSV-NDC



MOUNTING - TOP VIEW



NOTE:

Remove directional control valve locator pin when configuring for meter-in.

APPLICATION DATA

FLUIDS

All pressure drops shown on these data pages are based on 170 SUS fluid viscosity and 0.87 specific gravity. For any other specific gravity (G1) the pressure drop (ΔP) will be approx. $\Delta P_1 = \Delta P (G1/G)$. See the chart for other viscosities.

FLUID VISCOSITIES	Cst	10	14.5	32	36	43	54	65	76	86	108	216	324	400
	SUS	60	75	150	170	200	250	300	350	400	500	1000	1500	1900
MULTIPLIER		0.77	0.81	0.97	1.00	1.04	1.10	1.15	1.20	1.24	1.31	1.56	1.72	1.83

Use mineral oil-based hydraulic fluids HL or HM type, according to ISO 6743-4. For these fluids, use NBR seals. For fluids HFDR type (phosphate esters) use FPM seals (code G). For the use of other kinds of fluid such as HFA, HFB, HFC, please consult our technical department.

Using fluids at temperatures higher than 180 °F causes the accelerated degradation of seals as well as degradation of the fluids physical and chemical properties.

From a safety standpoint, temperatures above 130 degrees F are not recommended.

RANGE TEMPERATURES:	Ambient	- 4 to +130 °F	-20 to +54 °C
	Fluid	- 4 to +180 °F	-20 to +82 °C
FLUID VISCOSITY	Range	60 -1900 SUS	10 - 400 cSt
	Recommended	120 SUS	25 cSt
FLUID CONTAMINATION		ISO 4406:1999 Class 20/18/15	

SEAL KIT

BUNA SEAL KIT	1013661
VITON SEAL KIT	1013662

ABOUT CONTINENTAL HYDRAULICS

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HYDRAULICS

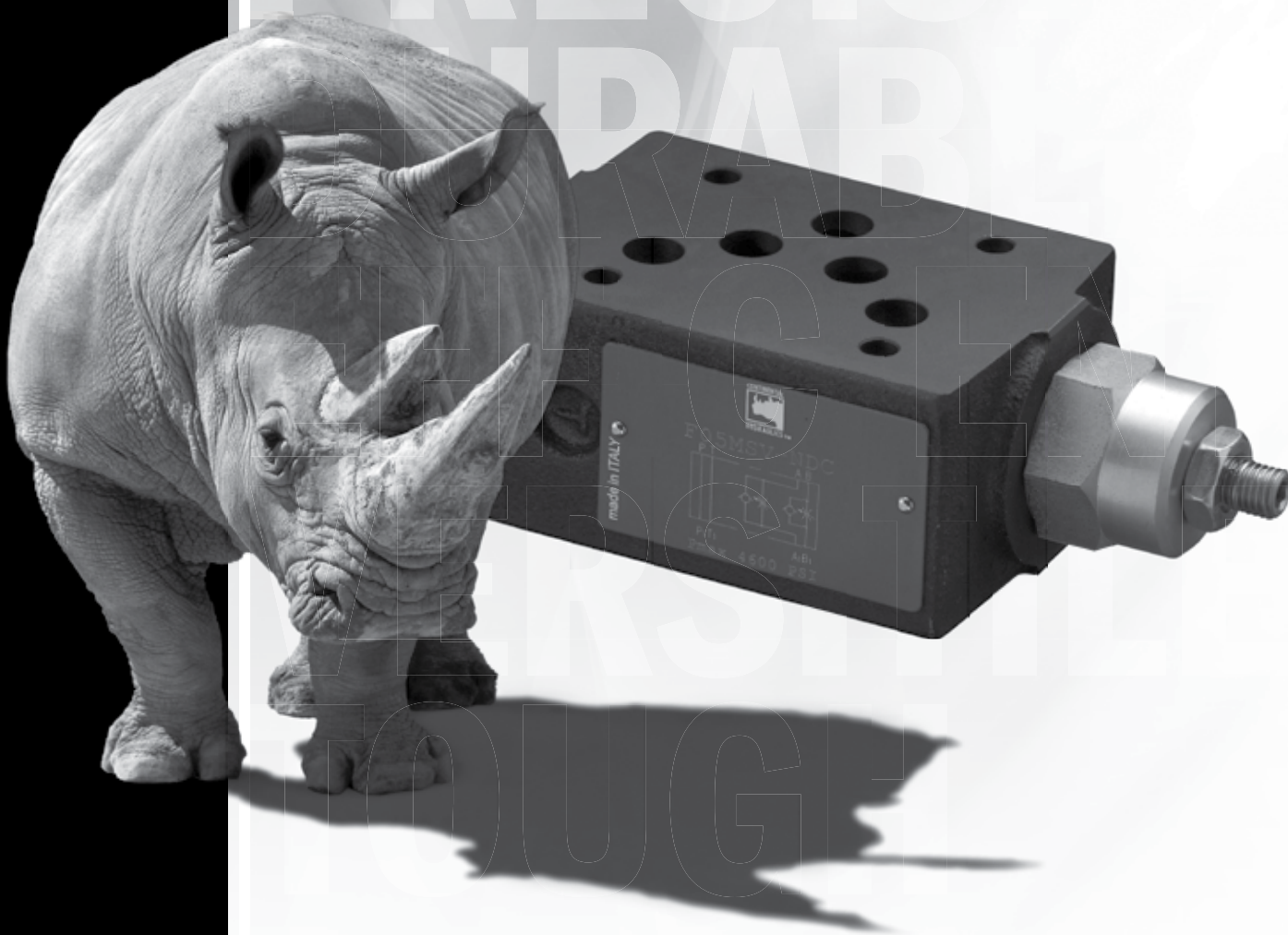


CONTINENTAL HYDRAULICS

F05MSV-N*

FLOW CONTROL VALVE, NON-COMPENSATED WITH CHECK

F05MSV-N* - FLOW CONTROL VALVE, NON-COMPENSATED WITH CHECK



DURABLE

F05MSV-N*

FLOW CONTROL VALVE, NON-COMPENSATED WITH CHECK



DESCRIPTION

This is a non-compensated flow control valve with a check valve for reverse free flow.

OPERATIONS

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

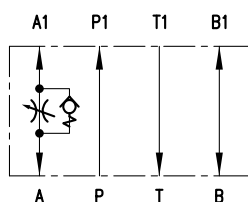
Available with check valve on line A, B or both lines, for meter-in and meter-out.

TYPICAL PERFORMANCE SPECIFICATIONS

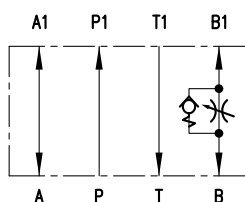
MAXIMUM OPERATING PRESSURE		4600 psi	320 bar
CRACKING PRESSURE		7 psi	0.5 bar
MAXIMUM FLOW RATE		32 gpm	120 l/min
MOUNTING SURFACE		NFPA D05 ISO 4401-05-04-0-05	
WEIGHT	With One Cartridge	5.1 lbs	2.3 kg
	With Two Cartridges	5.5 lbs	2.5 kg

AVAILABLE VERSIONS

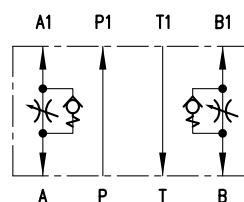
F05MSV-N0A



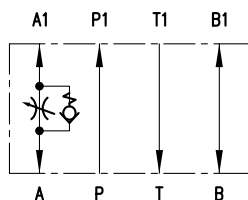
F05MSV-N0B



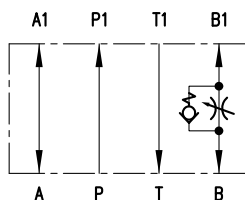
F05MSV-N0C



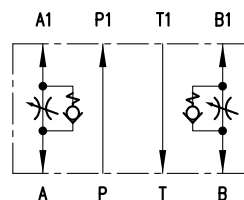
F05MSV-N1A



F05MSV-N1B



F05MSV-N1C



IDENTIFICATION CODE

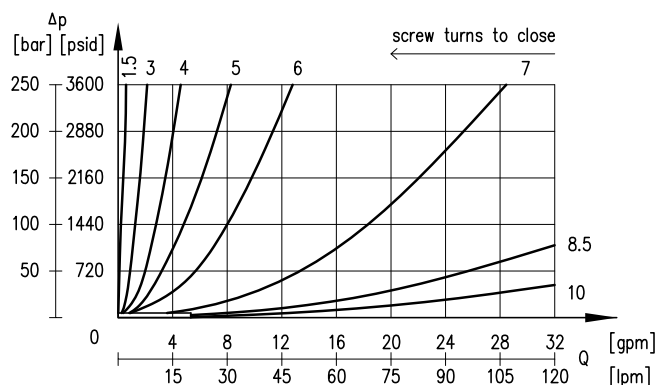
F05MSV-N - **C** - _____ DESIGN LETTER

METER IN/METER OUT		CONTROL PORT		SEAL		MECHANICAL		BODY MATERIAL	
I	In	A	Port A	A	Buna (STD)	OMIT	Adjustment Screw (STD)	C	Cast Iron
O	Out	B	Port B	G	Viton	K	Adjustment Knob		
		C	Port A and B						

TYPICAL ORDERING CODE:
F05MSV-NIA-AC-F

PERFORMANCE CURVES

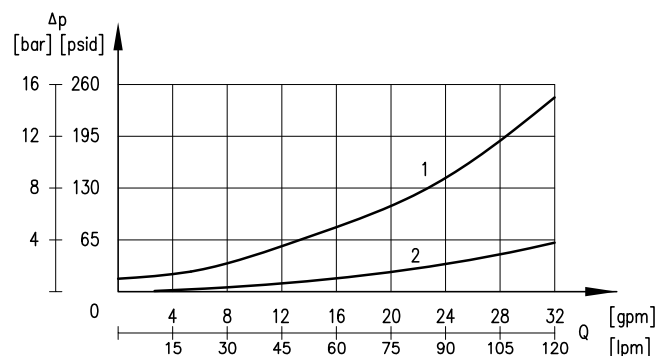
FLOW ADJUSTMENT



NOTES:

- Controlled flow as a function of pressure drop with different restrictor opening values.
- Values obtained with oil viscosity of 170 SUS (36 cSt) at 122°F (50°C).

PRESSURE DROPS Δp - Q



NOTES:

- Pressure drops through the check valve with restrictor all closed.
- Pressure drops through the free ports.

Dimensions in mm [IN]



APPLICATION DATA

FLUIDS

All pressure drops shown on these data pages are based on 170 SUS fluid viscosity and 0.87 specific gravity. For any other specific gravity (G1) the pressure drop (ΔP) will be approx. $\Delta P_1 = \Delta P (G1/G)$. See the chart for other viscosities.

FLUID	Cst	10	14.5	32	36	43	54	65	76	86	108	216	324	400
VISCOSITIES	SUS	60	75	150	170	200	250	300	350	400	500	1000	1500	1900
MULTIPLIER		0.77	0.81	0.97	1.00	1.04	1.10	1.15	1.20	1.24	1.31	1.56	1.72	1.83

Use mineral oil-based hydraulic fluids HL or HM type, according to ISO 6743-4. For these fluids, use NBR seals. For fluids HFDR type (phosphate esters) use FPM seals (code G). For the use of other kinds of fluid such as HFA, HFB, HFC, please consult our technical department.

Using fluids at temperatures higher than 180 °F causes the accelerated degradation of seals as well as degradation of the fluids physical and chemical properties.

From a safety standpoint, temperatures above 130 degrees F are not recommended.

SEAL KIT

BUNA SEAL KIT	1013665
VITON SEAL KIT	1013666

ABOUT CONTINENTAL HYDRAULICS

Rugged, durable, high-performance, efficient—the reason Continental Hydraulics' products are used in some of the most challenging applications across the globe. With a commitment to quality customer support and innovative engineering, Continental's pumps, valves, power units, mobile and custom products deliver what the markets demand. Continental has been serving the food production, brick and block, wood products, automotive and machine tool industries since 1962. Learn how our products survive some of the most harsh environments.

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HYDRAULICS

CONTINENTAL HYDRAULICS

P03MSV-PDR*

PRESSURE REDUCING / RELIEVING VALVE

P03MSV-PDR* - PRESSURE REDUCING / RELIEVING VALVE



EFFICIENT

P03MSV-PDR*

PRESSURE REDUCING / RELIEVING VALVE



DESCRIPTION

The P03MSV-PDR valve is a modular three-way spool type direct operated pressure reducing / relieving valve. It is available with fixed or variable adjustment.

This valve is available with reduced pressure control on port A, B or P.

The valve construction provides good adjustment sensitivity with reduced drainage flow. The drainage is connected to line T inside the valve.

The three-way design provides protection of the secondary circuit from pressure surges since it allows a reverse flow from the actuator to the T discharge line.

The variable adjustment version is supplied with a hexagonal head adjustment screw.

The fixed adjustment version is available preset to 285 psi (20 bar) 360 psi (25 bar) or 430 psi (30 bar) pressure.

OPERATIONS

The valve is normally open passing hydraulic fluid freely from P to P1 until the control port pressure reaches the pressure setting. The valve will shift to deliver just enough flow to maintain the controlled pressure. The valve will divert flow to the T port to relieve the control port pressure when it exceeds the pressure setting.

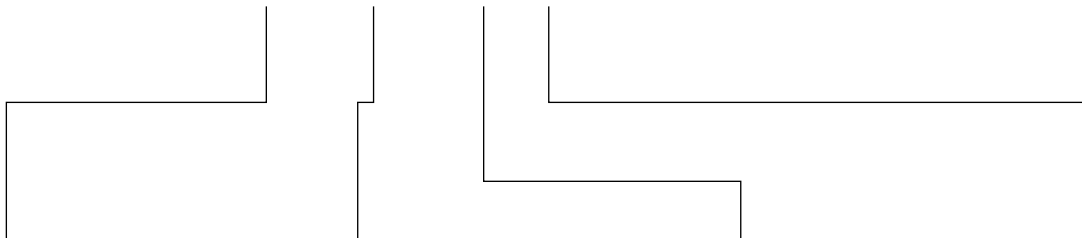
TYPICAL PERFORMANCE SPECIFICATIONS

MAXIMUM OPERATING PRESSURE		5000 psi	350 bar
MAXIMUM PRESSURE	T Port	145 psi	10 bar
MAXIMUM FLOW RATE	Controlled Lines	13 gpm	50 l/min
	Free Lines	20 gpm	75 l/min
	Drainage	≤ 4.9 in ³ /min	≤ 0.08 l/min
MOUNTING SURFACE		NFPA D03 ISO 4401-03-02-0-05	
WEIGHT		3.1 lbs	1.4 Kg

RANGE TEMPERATURES	Ambient	-4 to +130 °F	-20 to +54 °C
	Fluid	-4 to +180 °F	-20 to +82 °C
FLUID VISCOSITY	Range	60-1900 SUS	10-400 cSt
	Recommended	120 SUS	25 cSt
FLUID CONTAMINATION		ISO 4406:1999 Class 20/18/15	

IDENTIFICATION CODE

P03MSV-PDR - - **C** - _____ DESIGN LETTER



CONTROL PORT	
A	Port A
B	Port B
P	Port P

ADJUSTMENT	
F28	285 psi (20 bar) Fixed
F36	360 psi (25 bar) Fixed
F43	430 psi (30 bar) Fixed
A50	45 - 500 psi (3 - 35 bar) Adj.
A100	145 - 1000 psi (10 - 70 bar) Adj.
A200	430 - 2000 psi (30 - 140 bar) Adj.
A400	870 - 4000 psi (60 - 280 bar) Adj.

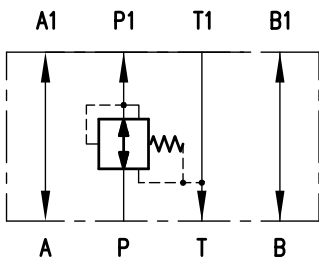
SEAL	
A	Buna (STD)
G	Viton

BODY MATERIAL	
C	Cast Iron

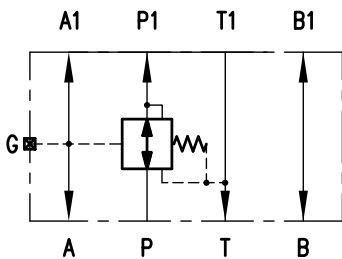
TYPICAL ORDERING CODE:
P03MSV-PDRP-F28-AC-C

AVAILABLE VERSIONS - FIXED ADJUSTMENT

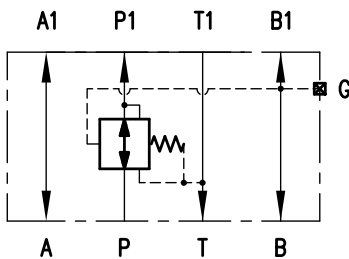
P03MSV-PDRP-F*



P03MSV-PDRA-F*

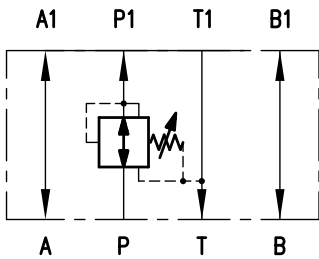


P03MSV-PDRB-F*

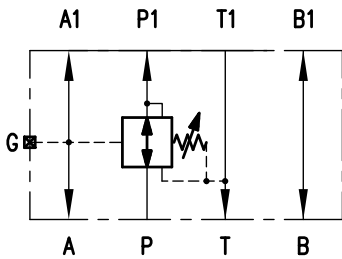


AVAILABLE VERSIONS - VARIABLE ADJUSTMENT

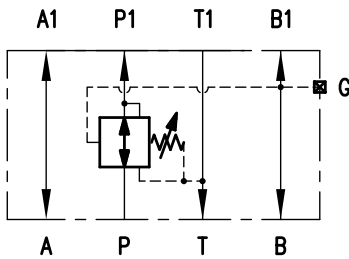
P03MSV-PDRP-A*



P03MSV-PDRA-A*

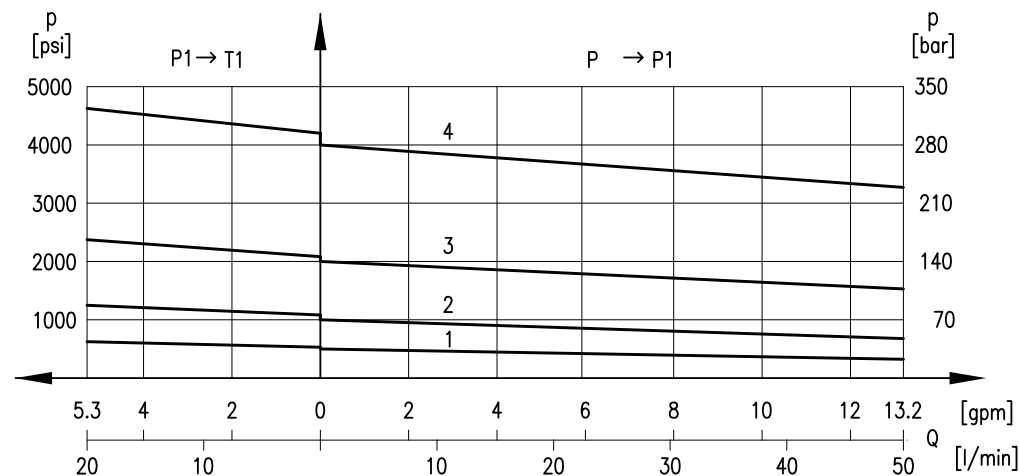


P03MSV-PDRB-A*



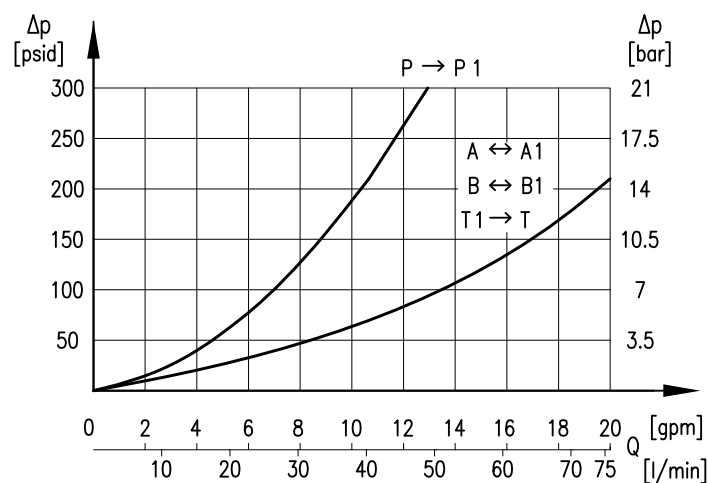
CHARACTERISTICS - VARIABLE ADJUSTMENT

PRESSURE REGULATION



CURVE	PRESSURE CODE
1	A50
2	A100
3	A200
4	A400

PRESSURE DROPS Δp - Q



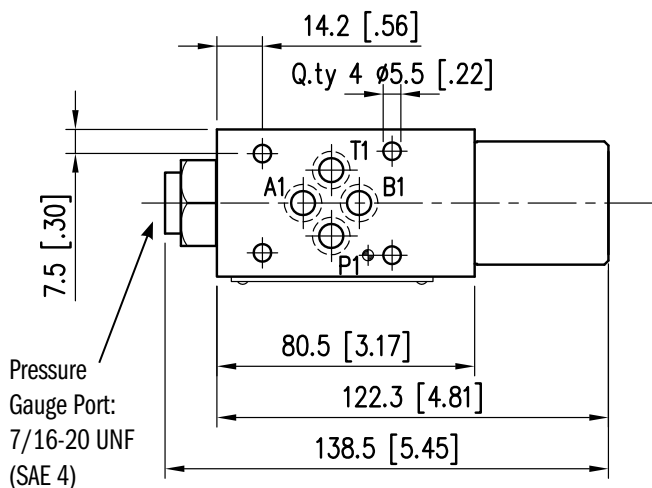
NOTE:

Curves obtained with mineral oil with viscosity of 170 SUS (36 cSt) at 122°F (50°C).

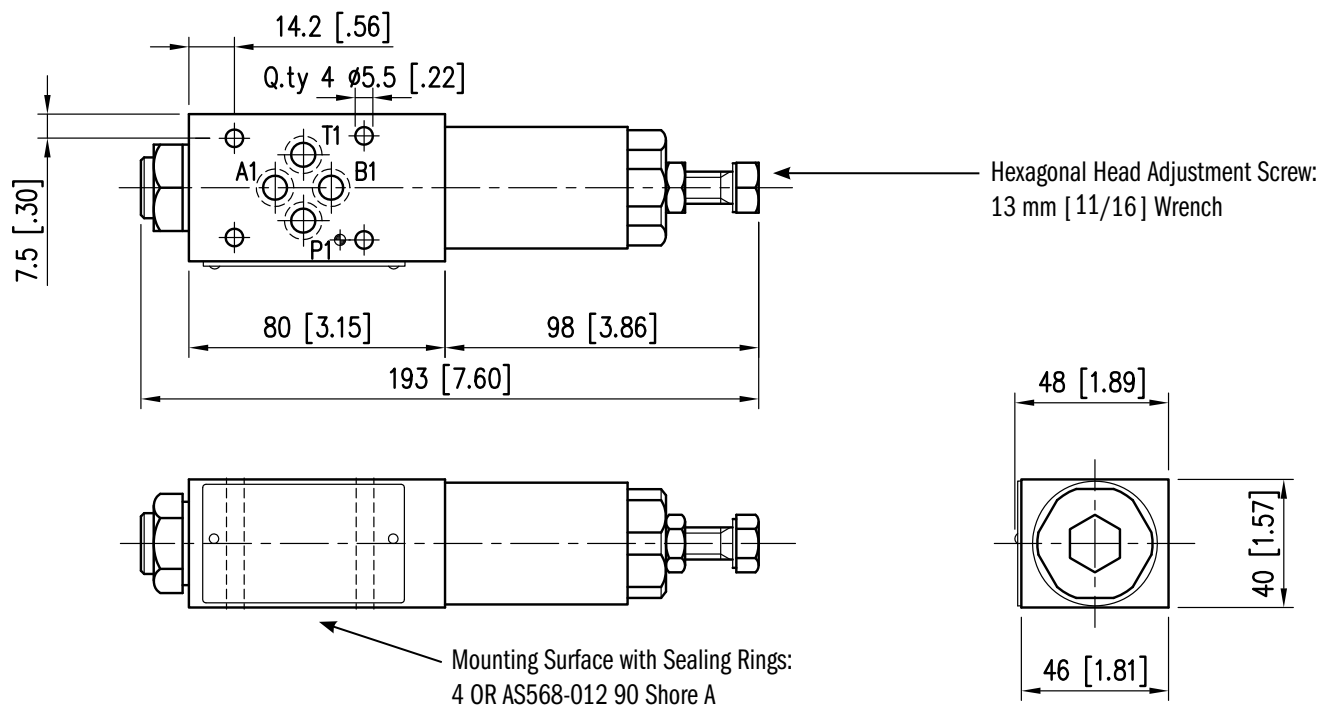
DIMENSIONS

Dimensions in mm [IN]

FIXED ADJUSTMENT



VARIABLE ADJUSTMENT



SEAL KIT

BUNA SEAL KIT	1013661
VITON SEAL KIT	1013662

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