



OIL SOLUTIONS

PO Box 38  
Strathfieldsaye, VIC, 3551  
1800 OIL SOL  
1800 645 765

[sales@oilsolutions.com.au](mailto:sales@oilsolutions.com.au)

[www.oilsolutions.com.au](http://www.oilsolutions.com.au)

"For All Your Hydraulic Needs"

CONTINENTAL



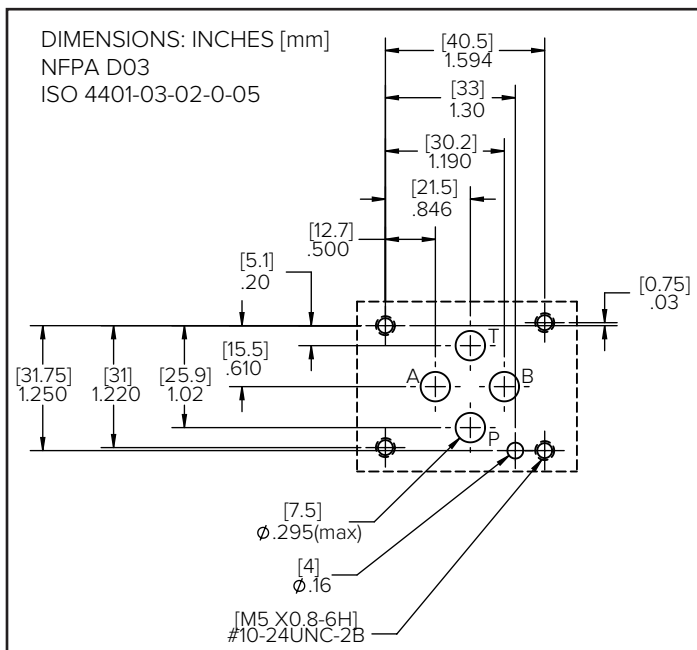
HYDRAULICS

## P03MSV-CC/CA/CB

PILOT OPERATED  
COUNTERBALANCE VALVE

**MODULAR VERSION**  
**NFPA D03 ISO 4401-03**

### MOUNTING INTERFACE



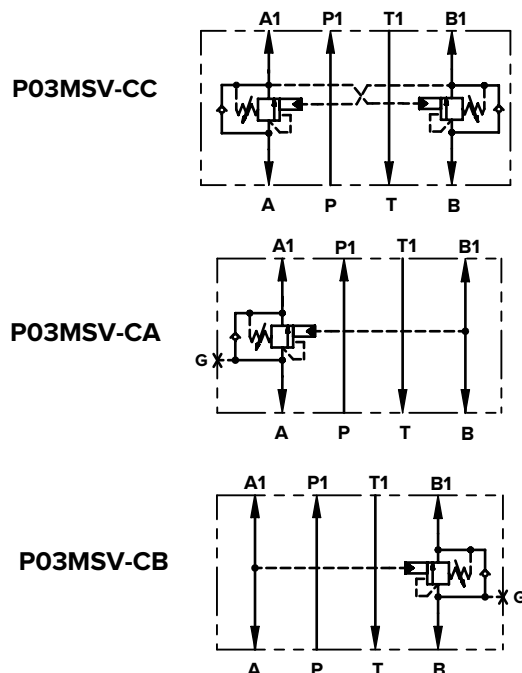
### OPERATING PRINCIPLE

- The P03MSV-C counterbalance valves with pilot assist are designed to control an overrunning load or hold a load in position by maintaining a back pressure on the outlet of the cylinder. An integral check valve allows for free flow in the reverse direction. Valve conforms to NFPA D03/ISO 4401-03 standard for valve mounting interface.
- This valve can also be used as a brake valve in hydraulic motor circuits for a controlled deceleration.
- Counterbalance valves should be set at least 130% of maximum pressure due to load.
- Backpressure adds to the valve setting by (1.0 + pilot ratio) times the backpressure.
- Reverse flow will open the check at about 25 psi [1.7 bar].
- 3.75 turns of adjustment CCW from Min. to Max. pressure setting.

### PERFORMANCES (measured with mineral oil of viscosity 36cSt at 120°F [50°C])

Maximum operating pressure	PSI [bar]	3000 [210]
Max Flow rate	GPM [l/min]	15 [57]
Max valve leakage at reseal	5 drops per min	
Pressure adjustment range: Code 150 Code 300	400-1500 PSI [28-105 bar] 1000-2500 PSI [70-175 bar]	
Pilot ratio: Code 150 Code 300	3:1 4.5:1	
Check Valve cracking pressure	25 PSI [1.7 bar]	
Adjustment Range:	No. of CCW turns from Min. to Max. setting	3.75
Reseat	>85% of setting	
Ambient temperature range	F° [C°]	-4 to 140 [-20 to +60]
Fluid temperature range	F° [C°]	-4 to 176 [-20 to +80]
Fluid viscosity range	cST	100 - 400
Fluid contamination degree	According to ISO 4406: 1999 Class 19/17/14	
Recommended viscosity	cST	25
Mass: P03MSV-CC P03MSV-CA, CB	Lbs [kg]	1.67 [0.76] 1.14 [0.52]

### HYDRAULIC SYMBOLS



## 1 • IDENTIFICATION CODE

<b>P03MSV - C</b>			<b>-</b>			<b>-</b>			<b>-</b>			<b>-</b>			<b>A - C</b>																				
<b>VALVE TYPE</b>			<b>CONTROL PORT</b>			<b>SEAL MATERIAL</b>			<b>MATERIAL SELECTION</b>			<b>DESIGN LETTER</b>																							
PRESSURE CONTROL			<table border="1"> <tr> <th>CODE</th> <th>PORT</th> </tr> <tr> <td>A</td> <td>A</td> </tr> <tr> <td>B</td> <td>B</td> </tr> <tr> <td>C</td> <td>A &amp; B</td> </tr> </table>			CODE	PORT	A	A	B	B	C	A & B	<table border="1"> <tr> <th>CODE</th> <th>DESC.</th> </tr> <tr> <td>A</td> <td>BUNA-N</td> </tr> <tr> <td>G</td> <td>VITON</td> </tr> </table>			CODE	DESC.	A	BUNA-N	G	VITON	<table border="1"> <tr> <th>CODE</th> <th>DESCRIPTION</th> </tr> <tr> <td>A</td> <td>ALUMINUM</td> </tr> </table>			CODE	DESCRIPTION	A	ALUMINUM						
CODE	PORT																																		
A	A																																		
B	B																																		
C	A & B																																		
CODE	DESC.																																		
A	BUNA-N																																		
G	VITON																																		
CODE	DESCRIPTION																																		
A	ALUMINUM																																		
<b>VALVE SERIES</b>						<b>PRESSURE ADJUSTMENT RANGE</b>			<b>MECHANICAL</b>																										
<table border="1"> <tr> <th>CODE</th> <th>NFPA SIZE</th> </tr> <tr> <td>03</td> <td>D03 INTERFACE</td> </tr> </table>			CODE	NFPA SIZE	03	D03 INTERFACE				<table border="1"> <tr> <th>CODE</th> <th>PSI</th> <th>BAR</th> <th>PILOT RATIO</th> </tr> <tr> <td>150</td> <td>400-1500</td> <td>28-105</td> <td>3:1</td> </tr> <tr> <td>300</td> <td>1000-2500</td> <td>70-175</td> <td>4.5:1</td> </tr> </table>			CODE	PSI	BAR	PILOT RATIO	150	400-1500	28-105	3:1	300	1000-2500	70-175	4.5:1	<table border="1"> <tr> <th>CODE</th> <th>DESCRIPTION</th> </tr> <tr> <td>OMIT</td> <td>STD W/ SOC HEAD ADJ.</td> </tr> </table>			CODE	DESCRIPTION	OMIT	STD W/ SOC HEAD ADJ.				
CODE	NFPA SIZE																																		
03	D03 INTERFACE																																		
CODE	PSI	BAR	PILOT RATIO																																
150	400-1500	28-105	3:1																																
300	1000-2500	70-175	4.5:1																																
CODE	DESCRIPTION																																		
OMIT	STD W/ SOC HEAD ADJ.																																		
<b>VALVE FUNCTION</b>																																			
<table border="1"> <tr> <th>CODE</th> <th>FUNCTION</th> <th>AVAIL WITH PORTS</th> </tr> <tr> <td>C</td> <td>COUNTERBALANCE</td> <td>A, B, A &amp; B</td> </tr> </table>			CODE	FUNCTION	AVAIL WITH PORTS	C	COUNTERBALANCE	A, B, A & B																											
CODE	FUNCTION	AVAIL WITH PORTS																																	
C	COUNTERBALANCE	A, B, A & B																																	

## 2 • HYDRAULIC FLUIDS

Use mineral oil-based hydraulic fluids HL or HM type, according to ISO 6743-4. For these fluids, use NBR seals (code A). 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 176°F [80°C] causes a faster degradation of the fluid and of the seals characteristics.

The fluid must be preserved in its physical and chemical characteristics.

## 3 • OVERALL AND MOUNTING DIMENSIONS

