

V050 SERIES

DIRECTIONAL CONTROL VALVE



TAKE CONTROL

Take control with Muncie Power Products' V050 directional control valve. The V050 is constructed with high-grade iron castings and nickel-plated spools for use in high pressure applications and can be configured with many different spool, control and positioner options. The V050 is designed for flow rates up to 16 GPM (60 LPM), and offers superior performance in a compact package. Muncie Power Products takes pride in supplying the highest quality products along with outstanding service and support.



KEY FEATURES

- High-grade iron castings allow for high pressure capabilities for the most extreme applications
- Nickel-plated spools resist wear allowing for long life under high pressure conditions
- Tight tolerances and precision machining keep internal spool leakages low
- Internal oil core design allows for high flow rates and low pressure drops
- Load-checks on work sections and inlet relief valves are standard
- Versatile design can be configured with different spool, control positioner and accessory options
- Work sections are pre-assembled and 100% tested prior to shipping

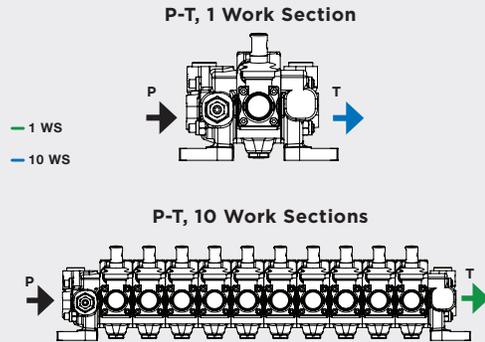
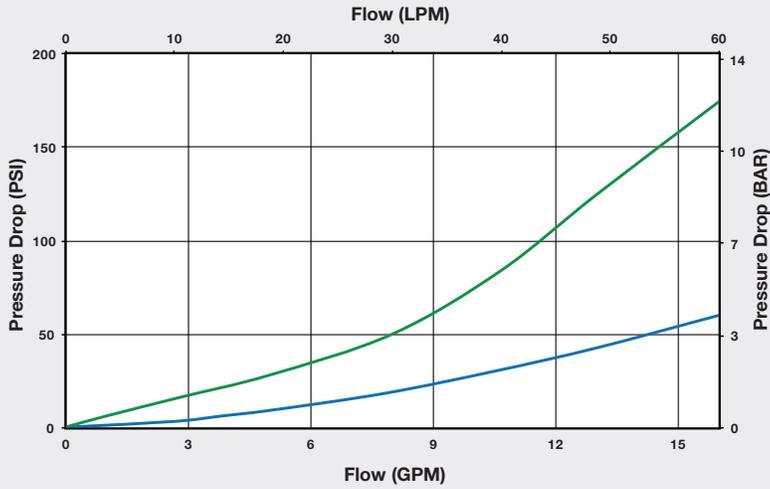
Additional options available, lead times may vary.

TECH SPECS

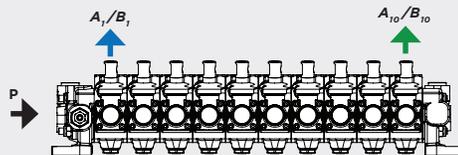
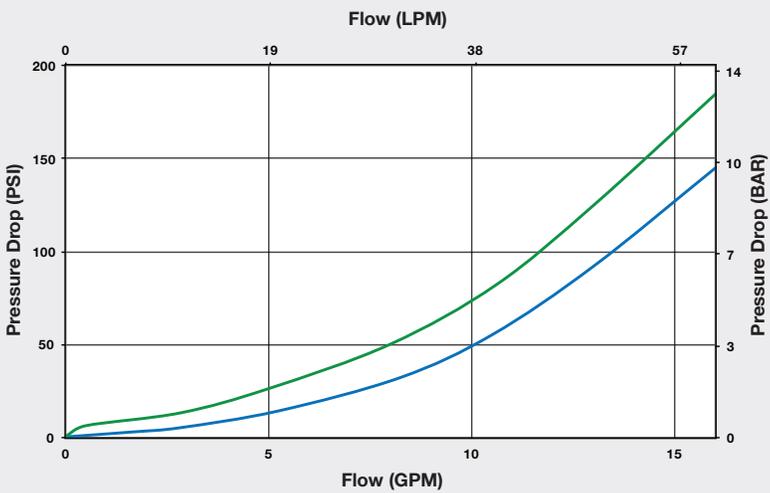
DESIGN TYPE	SECTIONAL
Maximum Work Sections	10
Circuit Types	Open center parallel, series, tandem and closed center
Flow Capacity	Nominal: 13 GPM (50 LPM) Maximum: 16 GPM (60 LPM)
Maximum Pressure	1 – 3 sections: 5,440 PSI (375 BAR) 4 – 6 sections: 5,075 PSI (350 BAR) 7 – 10 sections: 4,710 PSI (325 BAR)
Maximum Back Pressure	365 PSI (25 BAR)
Recommended Filtration	20 / 18 / 15 (ISO 4406:1999)
Oil Viscosity Range	60 to 1,360 SUS (10 to 300 cSt)
Oil Temperature Range	-20 to 180°F (-29 to 82°C)
Recommended Oil Temperature	85 to 140°F (30 to 60°C)
Approximate Weights (Standard Options)	Inlet: 3.51 lbs. (1.6 Kg) Outlet: 2.6 lbs. (1.2 Kg) Work Section: 4.4 lbs. (2.0 Kg)

PRESSURE DROP CURVES

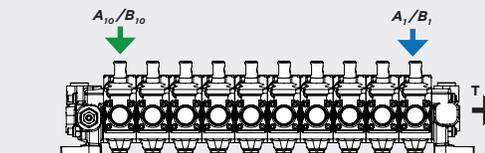
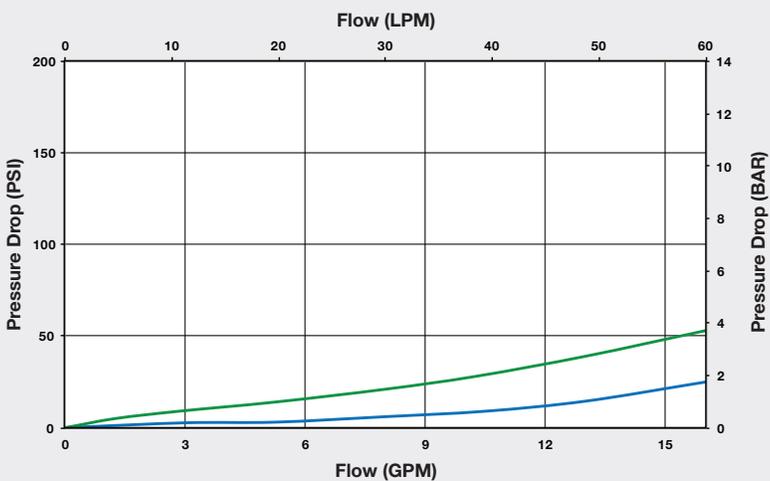
Open Center, Pressure to Tank (P-T)



Pressure to Work Ports (P-A_x/B_x)



Work Ports to Tank (A_x/B_x-T)



DIMENSIONS

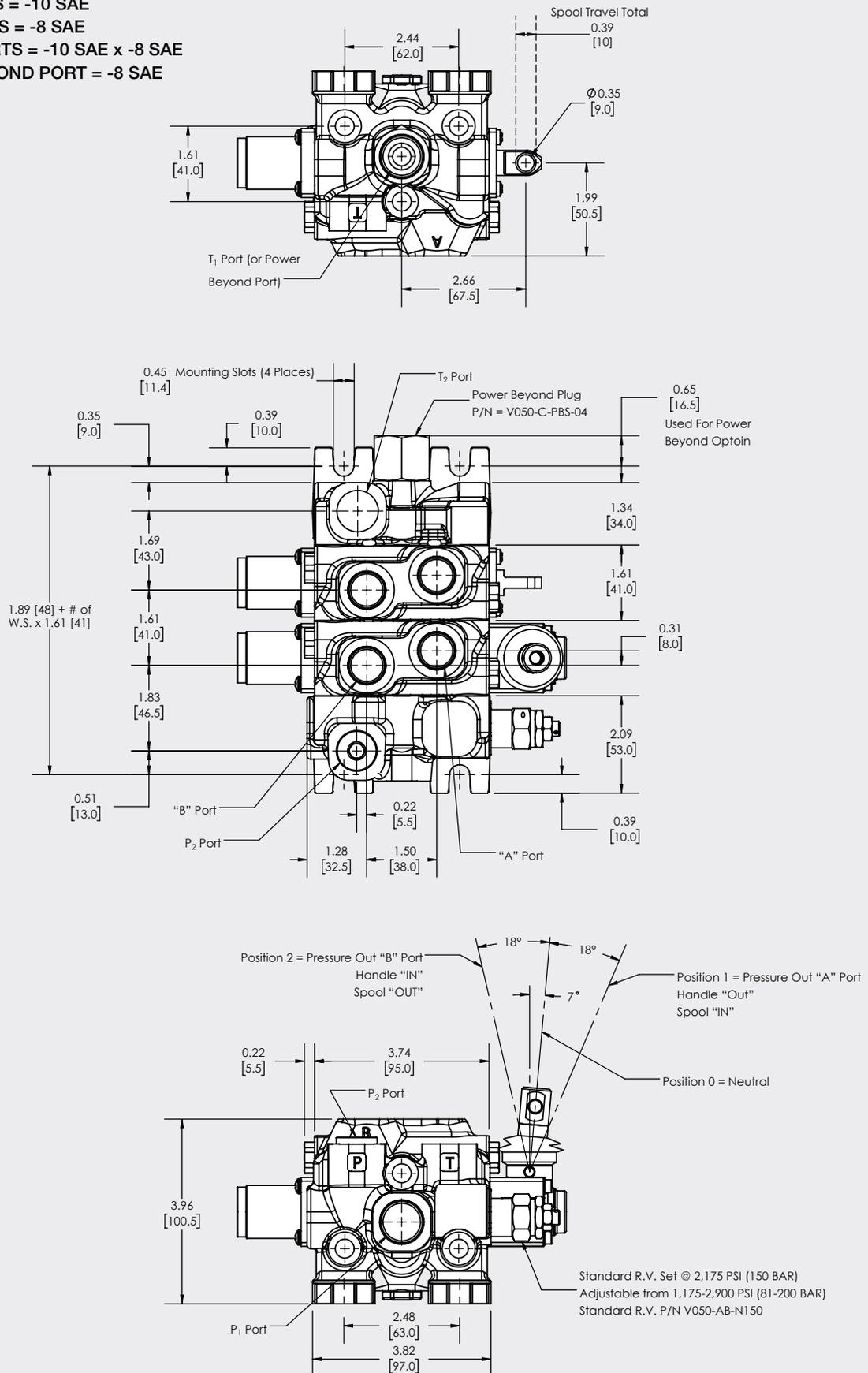
PORT SIZE AND TYPE

INLET PORTS = -10 SAE

WORK PORTS = -8 SAE

OUTLET PORTS = -10 SAE x -8 SAE

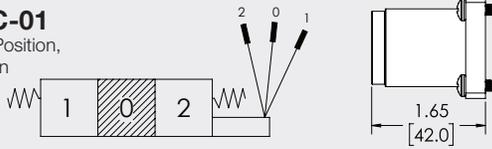
POWER BEYOND PORT = -8 SAE



BACK-CAP OPTIONS

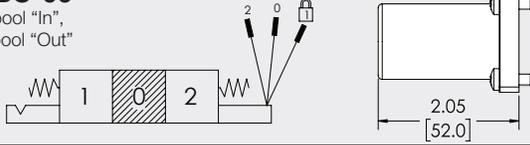
V050-BC-01

Standard 3 Position,
Spring Return



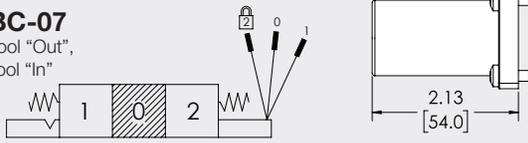
V050-BC-06

Detent Spool "In",
Spring Spool "Out"



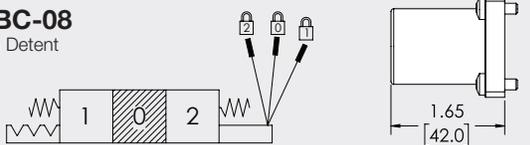
V050-BC-07

Detent Spool "Out",
Spring Spool "In"



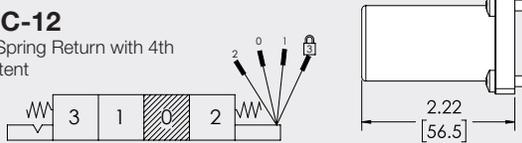
V050-BC-08

3 Position Detent



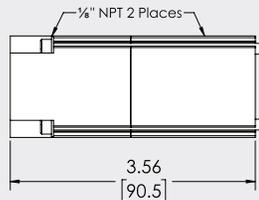
V050-BC-12

3 Position Spring Return with 4th
position detent



V050-BC-33

Pneumatic Shift,
On/Off or Proportional
(Use w/Control Type
AA, AE or AJ)



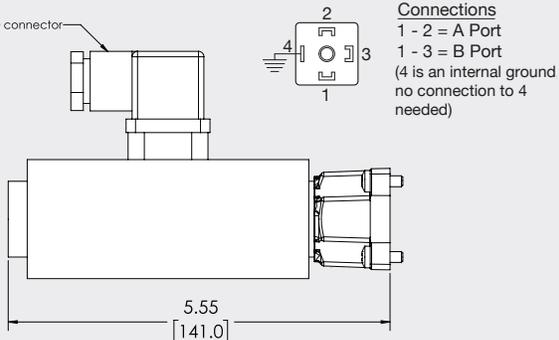
V050-BC-35 (Comes w/single acting spool "AB")

V050-BC-36 (Comes w/double acting spool "AC")

V050-BC-37 (Comes w/motor spool "AJ")

On/Off (Bang-Bang) Electrical Control
(Use w/Control Type DE)

DIN 4360 connector



Connections

1 - 2 = A Port

1 - 3 = B Port

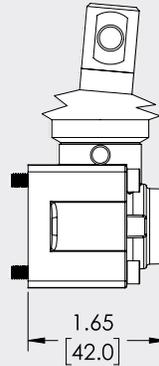
(4 is an internal ground
no connection to 4
needed)

CONTROL OPTIONS

V050-CT-AA

Standard Lever Cap

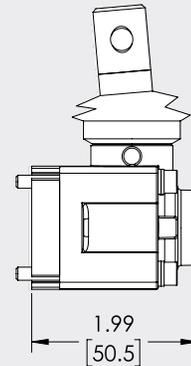
Note: Handle lever not included
P/N for Handle: VLVH-01B-164



V050-CT-AB

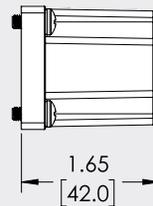
Lever Cap for Float Spool (4th POS. Detent)

Note: Handle lever not included
P/N for Handle: VLVH-01B-164



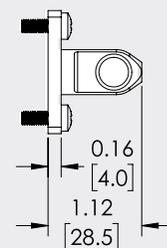
V050-CT-AE

Spool Cover for
Back-cap Control



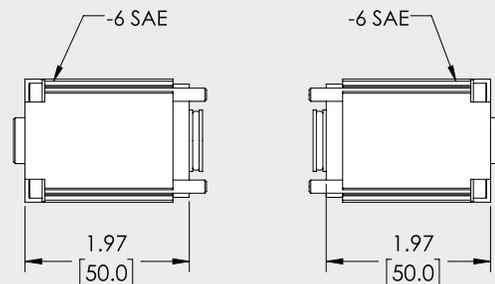
V050-CT-AJ

Spool Eye Only for
Direct Connection
(Spool End Not Part of Kit)



V050-CT-BG

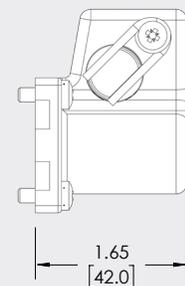
Low Pressure, Dual Sided, Hydraulic Control



V050-CT-DE

Lever Cap for electric shift

Note: Handle lever not included
P/N: VLVH-01C-133



INLET SECTIONS

V050-A-FM-7SX-N-150

V050 Valve Series _____

Section Type: _____

A = Inlet

Port Size & Type: _____

FM = -10 SAE top and end

Inlet Options: _____

7SX = Inlet with relief valve (standard)

8SX = Inlet without relief valve (plugged)

Relief Valve Setting:

150 = 2,175 PSI (150 BAR)

XXX = No relief valve option

(Use w/8SX option)

Relief Valve Adjustment Range:

B = 145 - 1,160 PSI (10 - 80 BAR)

N = 1,175 - 2,900 PSI (81 - 200 BAR)

"N" is Standard Option

R = 2,915 - 5,510 PSI (201 - 380 BAR)

X = No relief valve (used w/8SX option)

INLET RELIEF VALVES

V050-AB-N-150

V050 Valve Series _____

Section Type: _____

AB = Use with inlet and mid-section only

Relief Valve Setting (in BAR):

See setting options in "Inlet Sections"

Relief Valve Adjustment Range:

See RV adjustment range in "Inlet Sections"

SPRING CODE	B	N	R
Standard Settings	1,160 PSI (80 Bar)	2,175 PSI (150 BAR)	3,000 PSI (210 BAR)

MID SECTIONS

V050-B-FM-E53-N-150

V050 Valve Series _____

Section Type: _____

B = Mid-section

Port Size & Type: _____

FM = -10 SAE top and side

Relief Valve Setting:

See setting options in "Inlet Sections"

Relief Valve Adjustment Range:

See RV adjustment range in "Inlet Sections"

Mid-section Type:

E51 = Split flow mid-outlet*

E53 = Combined flow mid-inlet with RV

*Split flow mid-outlet utilize 2 inlet sections on the valve assembly, and the mid-outlet acts as the outlet for each inlet

OUTLETS

V050-C-FL-3DX-XXX

V050 Valve Series _____

Section Type: _____

C = Outlet

Port Size & Type: _____

FL = -8 SAE top x -10 SAE end

FC = -8 SAE top & end

(use w/power beyond option 6DX)

Additional Outlet Options:

XXX = No options

Outlet Type:

3DX = Standard outlet

6DX = Outlet with power beyond

(Part number for power beyond sleeve only: V050-C-PBS-04)

MODEL NUMBER CONSTRUCTION

WORK SECTIONS

V050-AB-AA-01 FC-02-X

V050 Valve Series

Spool Type:

- AB = 3P3W, Single acting cylinder, pressure out B port
- AC = 3P4W, double acting cylinder
- AJ = 3P4W, bi-rotational motor
- AM = 4P4W, double acting cylinder w/float (4th position detent)

Control Type:

- AA = Handle control actuator (handle not included)*
- AB = Lever cap for float spool "AM" (handle not included)*
- AE = Spool cover for Back-Cap controls
- AJ = Spool eye only for direct connection
- BG = Low pressure hydraulic control
- DE = Handle control actuator for electric shift options 35, 36, and 37**

Back-cap Positioners & Controls:

- 00 = No Back-Cap, used with "BG" control
- 01 = 3 position, spring return
- 06 = Detent spool IN, Spring spool OUT
- 07 = Detent spool OUT, Spring spool IN
- 08 = 3 position detent
- 12 = 3 position, spring return w/4th position detent
- 33 = Pneumatic positioning (on/off or proportional)
- 35 = On/Off (bang-bang) 12V electrical control for single acting spool (use w/spool code AB)***
- 36 = On/Off (bang-bang) 12V electrical control for double acting spool (use w/spool code AC)***
- 37 = On/Off (bang-bang) 12V electrical control for motor spool (use w/spool code AJ)***

Special Features:

- X = No option (standard)

Work Port Options:

- 02 = Machined w/steel plugs (standard)

RV Set @ 1,000 PSI (70 BAR)

adjustable from 435-1,160 PSI (30-80 BAR)

- 03 = RV on A port, set at 1,000 PSI (70 BAR)
- 04 = RV on B port, set at 1,000 PSI (70 BAR)
- 05 = RV on A & B port, set at 1,000 PSI (70 BAR)

RV Set @ 1,800 PSI (125 BAR)

adjustable from 1,175-2,900 PSI (81-200 BAR)

- 14 = RV on A port, set at 1,800 PSI (125 BAR)
- 15 = RV on B port, set at 1,800 PSI (125 BAR)
- 16 = RV on A & B port, set at 1,800 PSI (125 BAR)

Anti-cavitation Valves

- 11 = Anti-cav on A port
- 12 = Anti-cav on B port
- 13 = Anti-cav on A & B port

Note: Additional port accessory valve options available on request, lead times may apply)

Port Type

- FC = -8 SAE

* Handle kit to be ordered separately

Standard handle kit P/N: VLVH-01B-164

Length: 6.5" (164mm)

** Handle kit to be ordered separately

for electric shift lever cap "DE" P/N: VLVH-01C-133

*** Option "35-37" must be used with Control Type "DE"

STUD KITS

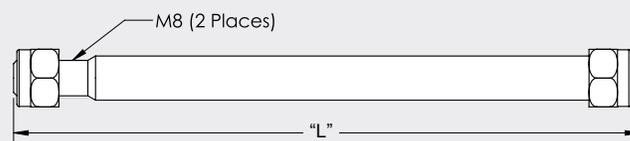
V050-T-01

V050 Valve Series

T = Tie Rod

Number of Work Sections

01-10 (1-10 Work Sections)

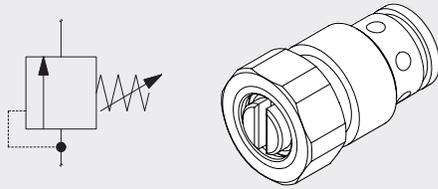


Note: Torque to 22 lb.ft (30 Nm)

NO. OF WORK SECTIONS	1	2	3	4	5	6	7	8	9	10
"L" (in/mm)	4.59 / 116.5	6.20 / 157.5	7.81 / 198.5	9.43 / 239.5	11.04 / 280.5	12.66 / 321.5	14.27 / 362.5	15.88 / 403.5	17.50 / 444.5	19.11 / 485.5

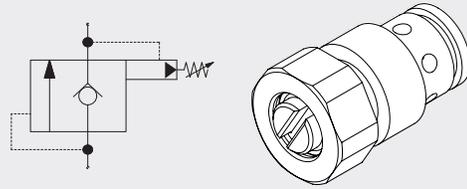
WORK PORT OPTIONS

W30 -RELIEF VALVE

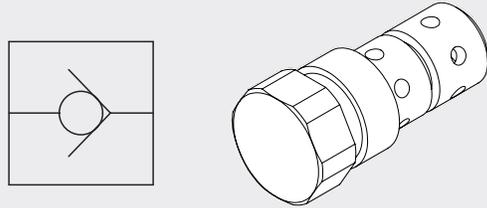


W33 -R.V. + ANTI-CAV VALVE

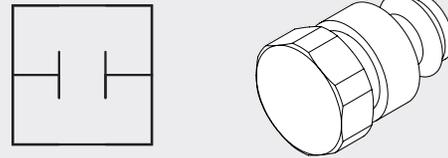
(Pilot Operated RV + Anti-Cav)



W04 -ANTI-CAV VALVE



WCX -STEEL PLUG



V050-W30-N-125

V250 Valve Series

Work Port Option:

W30 = Work Port RV

W33 = Work Port RV + Anti-Cav

W04 = Work Port Anti-Cav Only

WCX = Blanking Plug

Setting Range:

See RV adjustment range in "inlet sections"

X = No range, used w/ W04 or WCX

Relief Valve Setting (in BAR):

Standard Settings:

035 = 500 PSI

070 = 1,000 PSI

125 = 1,800 PSI

150 = 2,175 PSI

170 = 2,500 PSI

210 = 3,000 PSI

XXX = No Setting, used w/W04 & WCX

ORDER EXAMPLE

If you would like to order an assembled valve, you will need to order each item separately. The order in which parts are entered is how the valve will be built from left to right. On the right is an example of a 3 work section valve order:

PART NUMBER	QTY.	DESCRIPTION
V050-A-FM-7SX-N150	1	Inlet with relief valve
V050-AJ-AA-01-FC-02-X	2	Work section 1 & 2
V050-AC-AJ-01-FC-05-X	1	Work section 3
VLVH-01B-164	2	6.5" (164mm) handle kits for WS 1 & 2
V050-C-FL-3DX-XXX	1	Standard outlet
V050-T03	1	Stud kit for 3 section assembly



**Muncie[®]
Power
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