

# V080 SERIES

## DIRECTIONAL CONTROL VALVES



### TAKE CONTROL OF YOUR HYDRAULICS

The V080 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 V080 is designed for flow rates up to 30 GPM (114 LPM), and offers superior performance in a compact package. Muncie Power Products takes pride in supplying the highest quality products along with outstanding service & 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 higher flow rates and low pressure drops, all in a smaller package
- Load-checks and inlet relief valve are standard
- Very versatile design can be configured with many different spool, control, positioner and accessory options
- Work sections are pre-assembled and 100% tested prior to shipping

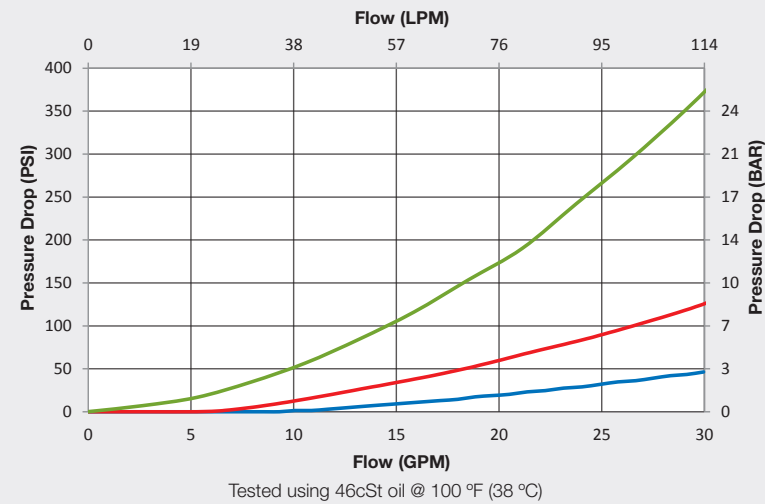
*Additional options available, lead times may apply.*

### TECH SPECS

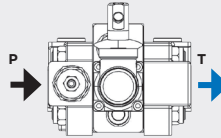
DESIGN TYPE	SECTIONAL
Maximum Work Sections	10
Circuit Types	Open center parallel, series, tandem and closed center
Flow Capacity	Nominal: 21 GPM (80 LPM) Maximum: 30 GPM (114 LPM)
Maximum Pressure	1 – 3 sections: 5,075 PSI (350 BAR) 4 – 6 sections: 4,650 PSI (320 BAR) 7 – 10 sections: 4,350 PSI (300 BAR)
Maximum Back Pressure	365 PSI (25 BAR)
Recommended Filtration	20 / 18 / 15 (ISO 4406:1999)
Oil Viscosity Range	60 to 1,950 SUS (10 to 400 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: 5.1 lbs (2.3 Kg) Outlet: 4.2 lbs (1.9 Kg) Work Section: 8.6 lbs (3.9 Kg)

# PRESSURE DROP CURVES

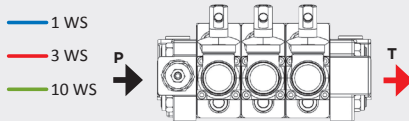
## Open Center, Pressure to Tank (P-T)



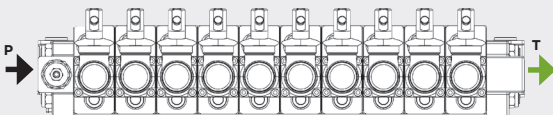
## P-T, 1 Work Section



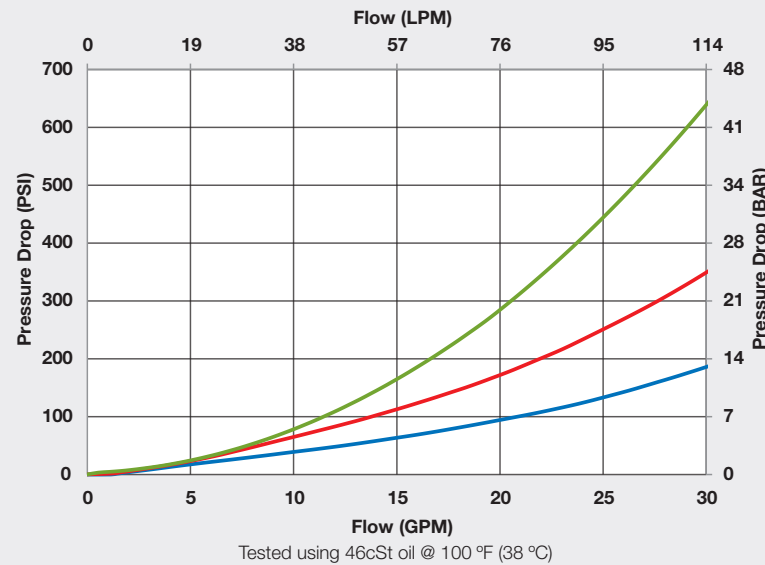
## P-T, 3 Work Sections



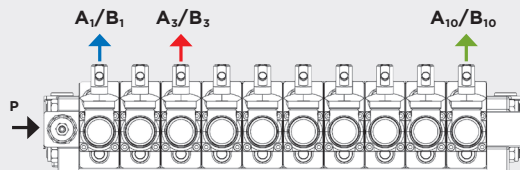
## P-T, 10 Work Sections



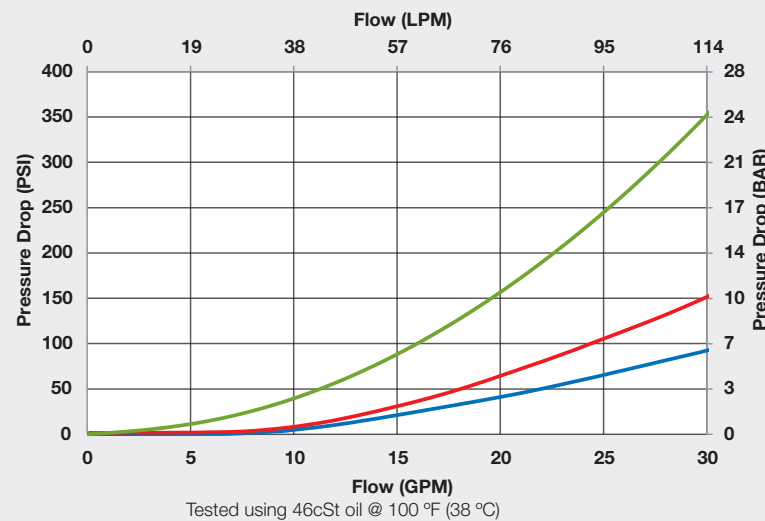
## Pressure to Work Ports (P-Ax/Bx)



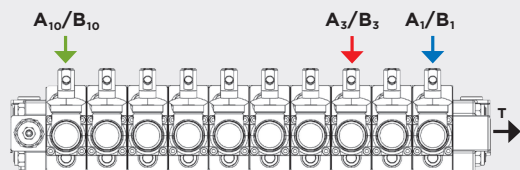
- P-A1/B1
- P-A3/B3
- P-A10/B10



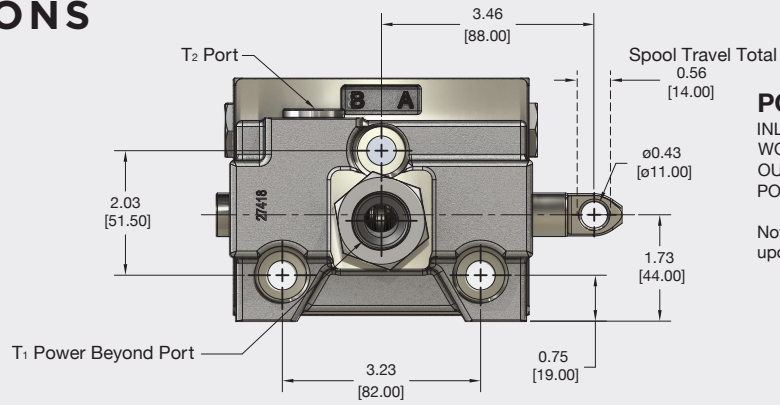
## Work Ports to Tank (Ax/Bx-T)



- A1/B1-T
- A3/B3-T
- A10/B10-T



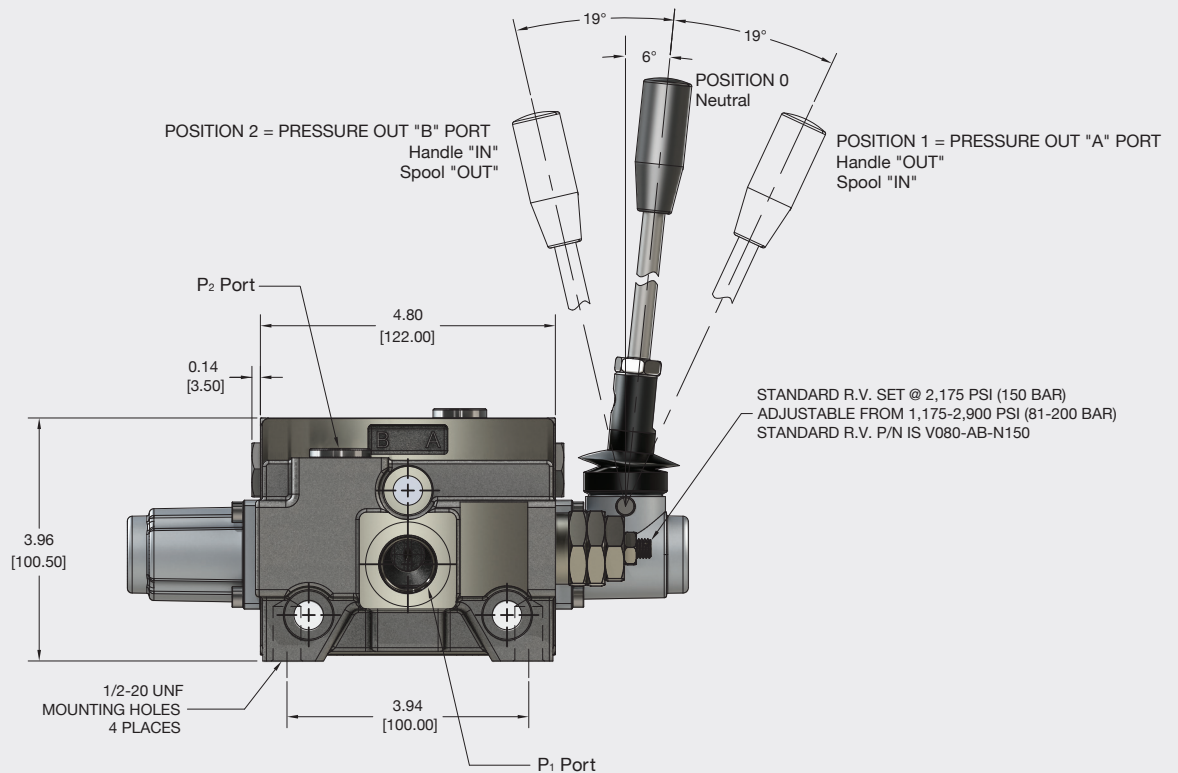
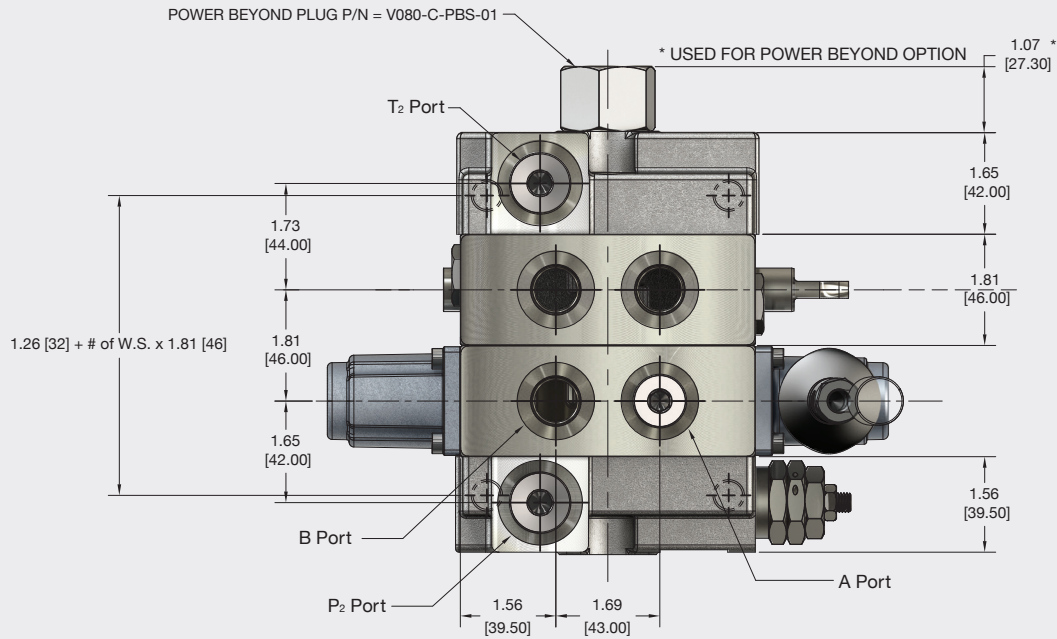
# DIMENSIONS



## PORT SIZE AND TYPE

INLET PORTS = -12 SAE  
 WORK PORTS = -10 SAE (standard)  
 OUTLET PORTS = -12 SAE  
 POWER BEYOND PORT = -10 SAE (standard)

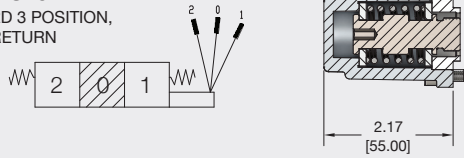
Note: other ports sizes are available upon special request (lead times may apply)



## BACK CAP OPTIONS

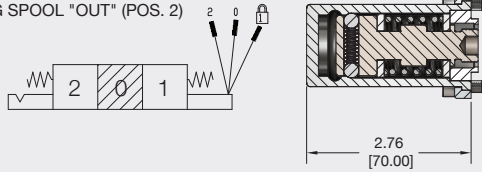
### V080-BC-01

STANDARD 3 POSITION,  
SPRING RETURN



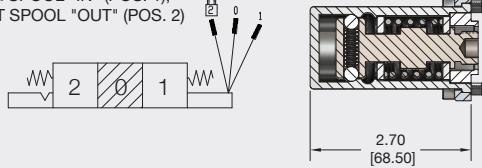
### V080-BC-06

DETENT SPOOL "IN" (POS. 1),  
SPRING SPOOL "OUT" (POS. 2)



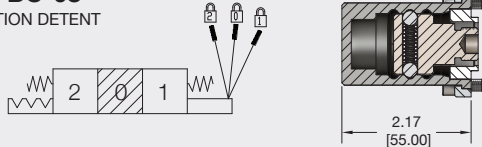
### V080-BC-07

SPRING SPOOL "IN" (POS. 1),  
DETENT SPOOL "OUT" (POS. 2)



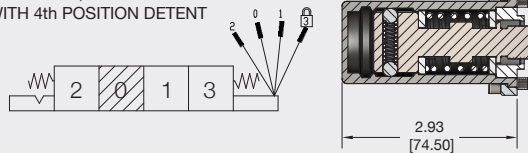
### V080-BC-08

3 POSITION DETENT



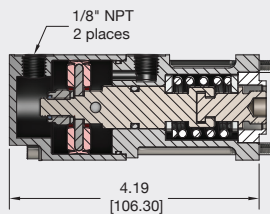
### V080-BC-12

3 POSITION, SPRING RETURN  
WITH 4th POSITION DETENT



### V080-BC-33

PNEUMATIC SHIFT,  
ON/OFF or Proportional  
(use w/ control type AA, AE or AJ)

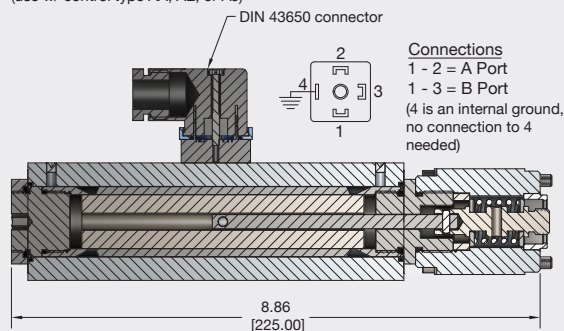


**V080-BC-35** (comes w/ single acting spool "AB")

**V080-BC-36** (comes w/ double acting spool "AC")

**V080-BC-37** (comes w/ motor spool "AJ")

ON/OFF (BANG-BANG) ELECTRICAL CONTROL  
(use w/ control type AA, AE, or AJ)

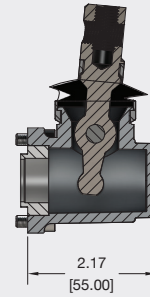


**Note:** Call for other back-cap or control options.

## CONTROL OPTIONS

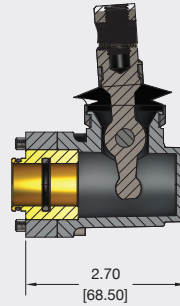
### V080-CT-AA

STANDARD LEVER CAP  
NOTE: HANDLE LEVER  
NOT INCLUDED



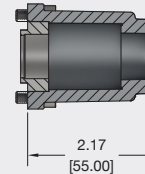
### V080-CT-AB

LEVER CAP FOR FLOAT SPOOL  
(4th POS. DETENT)  
NOTE: HANDLE LEVER  
NOT INCLUDED



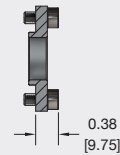
### V080-CT-AE

SPOOL COVER FOR  
BACK-CAP CONTROL



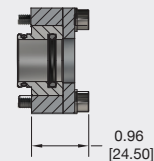
### V080-CT-AJ

SPOOL EYE ONLY FOR  
DIRECT CONNECTION



### V080-CT-AK

SPOOL EYE ONLY FOR FLOAT SPOOL  
(4th POS. DETENT)

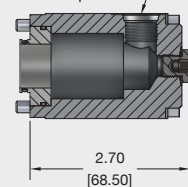
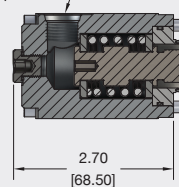


### V080-CT-BG

LOW PRESSURE, DUAL-SIDED, HYDRAULIC CONTROL

-6SAE, 9/16-18 UN2B  
2 places

-6SAE, 9/16-18 UN2B  
2 places



## INLET SECTIONS

### V080-A-FX-7SX-N-150

V080 Valve Series

Section Type:

A = Inlet

Port Size & Type:

FX = -12 SAE top and end

Inlet Options:

7SX = Inlet with relief valve (standard)

8SX = Inlet without relief valve (plugged)

Relief Valve Setting (in BAR):

150 = 2,175 PSI Standard Inlet RV

210 = 3,000 PSI

XXX = No Setting (Used with 8SX Option)

Relief Valve Adjustment Range:

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

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

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

X = No Relief Valve (Used w/ 8SX Option)

## INLET RELIEF VALVES

### V080-AB-N-150

V080 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)

Note: Call for other options.

## MID SECTIONS

### V080-B-FX-E51-N-150

V080 Valve Series

Section Type:

B = Mid-section

Port Size & Type:

FM = -10 SAE top & side (E53 only)

FX = -12 SAE side (E51 only)

Relief Valve Setting (in BAR):

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-outlets utilize 2 inlet sections on the valve assembly, and the mid-outlet acts as the outlet for each inlet.

## OUTLETS

### V080-C-FX-3DX-XXX

V080 Valve Series

Section Type:

C = Outlet

Port Size & Type:

FX = -12 SAE top and end

FN = -10SAE end P.B. port by -12SAE top port  
(use w/ power beyond option 6DX)

Additional Outlet Options:

XXX = No options

Outlet Options:

3DX = Standard outlet

6DX = Outlet with power beyond

(Part number for power beyond plug only: V080-C-PBS-01)

# MODEL NUMBER CONSTRUCTION

## WORK SECTIONS

### V080-AB-AA-01-FM-02-X

**V080 Valve Series**

**Spool Type:**

- AB = 3P3W, Single acting cylinder pressure out B port
- AC = 3P4W, Double acting cylinder
- AJ = 3P4W, Bi-rotational motor, work ports connected to tank in neutral
- AM = 4P4W, Double acting cylinder w/ float (4th position detent)

**Control Type:**

- AA = Lever cap (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
- AK = Spool eye only for direct connection with float spool "AM"
- BG = Low pressure hydraulic control

**Back-cap Positioners & Controls:**

- 00 = No positioner, use with BG control type
- 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 with 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 or RV+AC 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)
- 08 = RV+AC on A & B port, set at 1,000 PSI (70 BAR)

**RV or RV+AC 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)
- 19 = RV+AC 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:**

FM = -10 SAE (standard)

**\* Handle kit to be ordered separately**

Standard handle kit P/N: VLH-01A-210  
Length: 8.25" (210mm)

**\*\*Options 35-37 recommended control type is "AA" other options are "AJ" or "AE".**

**Cable Control Kit Part Number: RVC-HK-233**

## STUD KITS

### V080-T-01

**V080 Valve Series**

**T = Tie rod**

**Number of Work Sections**

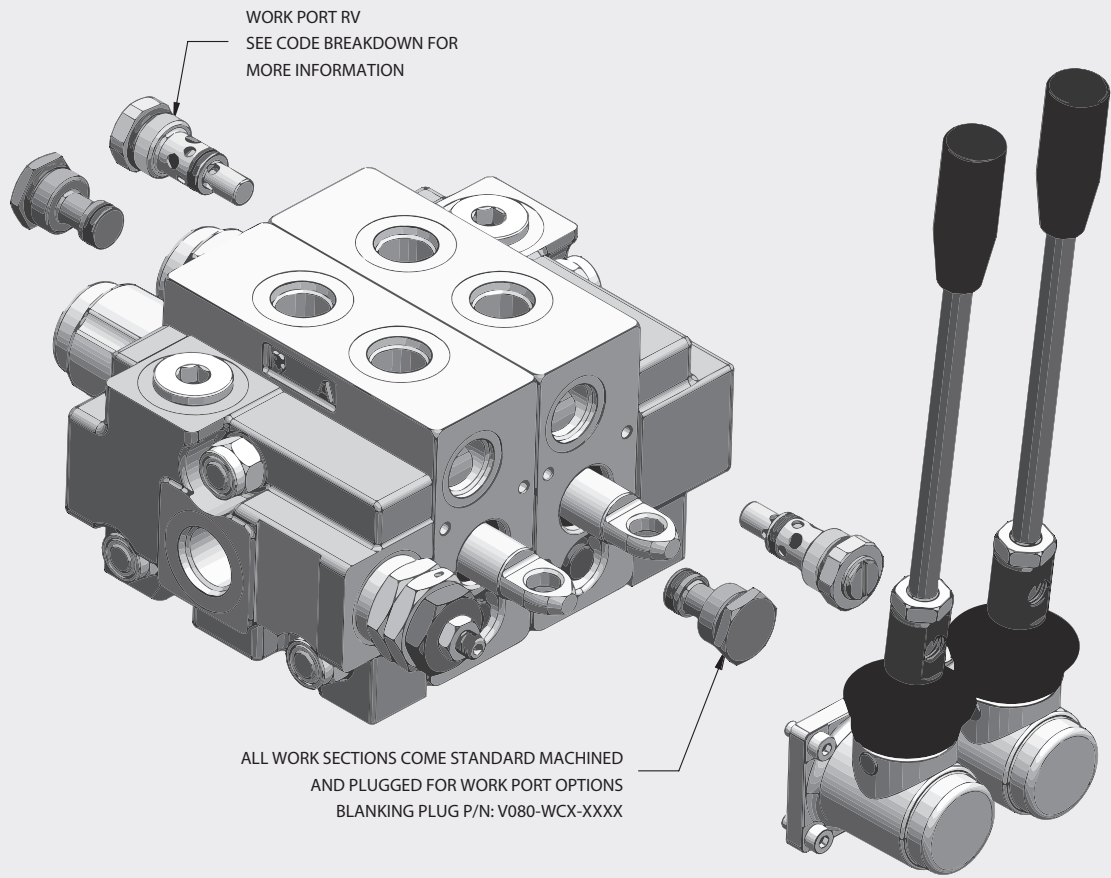
01 - 10

NO. OF WORK SECTIONS	1	2	3	4	5	6	7	8	9	10
"L" (in/mm)	4.7 / 120	6.5 / 166	8.3 / 212	10.2 / 258	12.0 / 304	13.8 / 350	15.6 / 396	17.4 / 442	19.2 / 488	21.0 / 534





# WORK PORT OPTIONS



## V080-W30-N-125

**V080 Valve Series** \_\_\_\_\_  
**Work Port Option:** \_\_\_\_\_  
W30 = Work Port RV  
W33 = Work Port RV + Anti-Cav  
W04 = Work Port Anti-Cav Only  
WCX = Blanking Plug

**NOTE:** V080 work port relief valves are low profile to avoid interference with control options. To achieve full adjustment range of relief valve spring, spacer shims must be used. V080 work port RV shim kit P/N = **V080-W30-SHIMKIT**

**RV 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

**Relief Valve Adjustment Range:**  
See RV Adjustment Range in "inlet sections"  
X = No Range, used w/ W04 & WCX

## ORDER EXAMPLE

If you would like to order a valve assembly, you will have 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
V080-A-FX-7SX-N150	1	Inlet with relief valve
V080-AC-AA-01-FM-02-X	2	Work section 1 & 2
V080-AC-AJ-33-FM-05-X	1	Work section 3
VLVH-01A-210	2	8.25" (210 mm) handle kits for WS 1 & 2
V080-C-FX-3DX-XXX	1	Standard outlet
V080-T03	1	Stud kit for 3 section assembly

