

Series VDP

Introduction	Enbloc Directional Control Valves	E3-E4
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Series VDP11

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Series VDP12*

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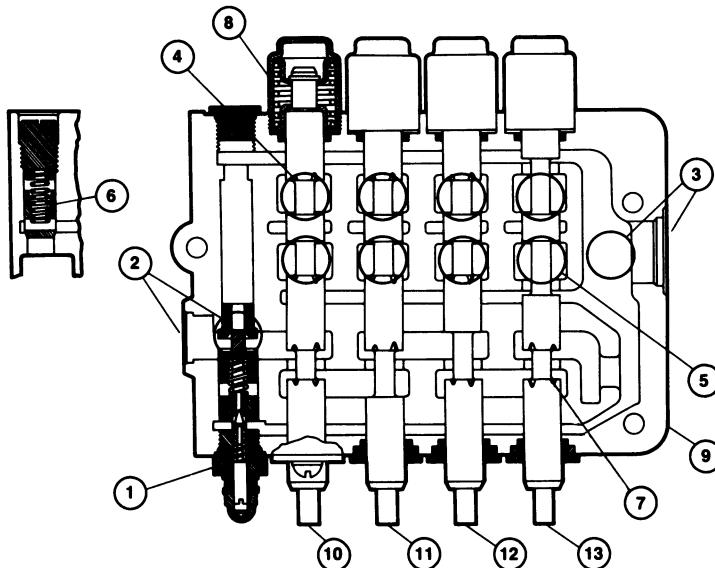
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VDP11 & VDP12H



E

Select models with up to six* chrome-plated and ground spools (items 10, 11, 12 & 13) available in double-acting, single-acting, and motor configurations. Meter precisely thanks to specifically designed precision spool notches (item 7). Pilot operated relief valves (item 1) insure quiet operation with minimum pressure spike. Each spool has individual load drop checks (item 6) standard.

Specify standard spring return to neutral positioning (item 8) or standard position holding detents. High pressure carry over is available on all models. Each valve has the flexibility of a top or side inlet (item 2) and a top or side outlet (item 3). For a complete list of options, see page B-18. All stocked valves include a spring-return, double-acting spool and a main relief set at 1750 PSI. All other components and options listed can be installed by your Distributor or by us.

Whether you are designing a Mobile circuit or want to add Mobile valve performance capability to another type of product, we are ready, willing and able to help.

Features:

- Pressures to 3500 PSI (VDP11 limited to 2000 PSI)

- Flows to 25 GPM
- Pilot operated adjustable relief valve
- Top & side ports
- High pressure carry over (power beyond) port
- Superior metering
- Open center standard, can be converted to closed center
- Parallel circuit
- Load drop checks
- Spring return to neutral or detented spool control

An enbloc directional control valve consists of a body with internal passages which are connected and disconnected by a moveable part referred to as a spool. A directional control valve will start, stop, direct fluid flow to a hydraulic cylinder or motor.

Parker's enbloc valves provide a space saving one piece iron construction (item 9) which requires a minimum of installation space. Control the independent or simultaneous operation of one or more cylinders (items 4 & 5) or hydraulic motors at one time with Parker open center enbloc directional control valves.

*6 Spool VDP12 only

**E**

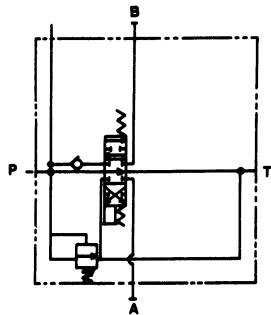
- Fluids:** Viscosity range at operating temperature between 30-1000 SSU (1-220 cSt.). Oil should have maximum antiwear properties, rust, oxidation and anti-foam treatment or meet SAE J183. For applications requiring other fluids, please contact the Division.
- Temperature Range:** -20°F (-29°C) to 185°F (85°C). For applications requiring higher operating temperatures, please contact the Division.
- Filtration:** For maximum system component life, the system should be protected from contamination at a level not to exceed 214 particles greater than 10 microns per milliliter of fluid. A Parker full-flow filter with a Beta 10 rating of at least 2.2 should provide this level of cleanliness if maintained properly and never allowed to go into by-pass condition.
- Special Applications:** Consult your Parker representative for any applications that do not meet the above criteria.

Multi-Spool Control Valves

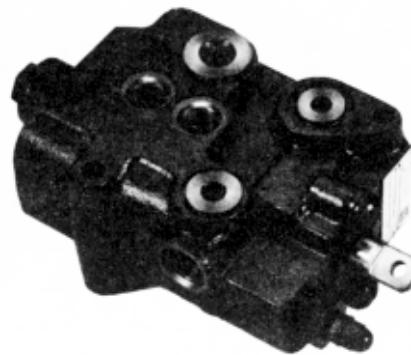
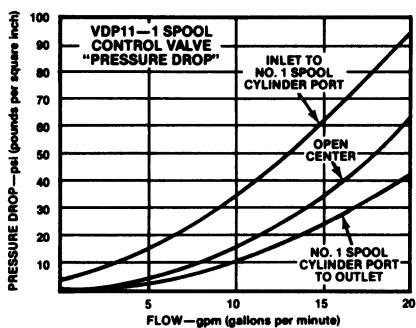
1, 2, 3, 4, 5 Spool

- Flows to 20 GPM
- Operating pressure 2000 PSI
- Relief valve adjustable from 600 to 2000 PSI
- High pressure carry over (power beyond)-See Page 12.
- Dimensions & Porting-See Page 6.
- Accessories, Options & Kits-See Pages 11, 12, 13, 14.
- How to order-See Pages 15, 16.

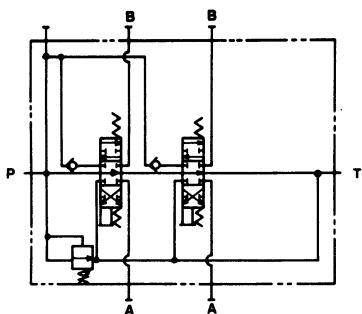
VDP11 - One Spool



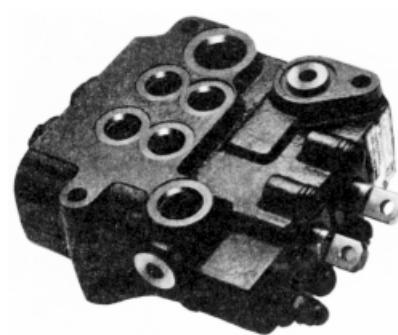
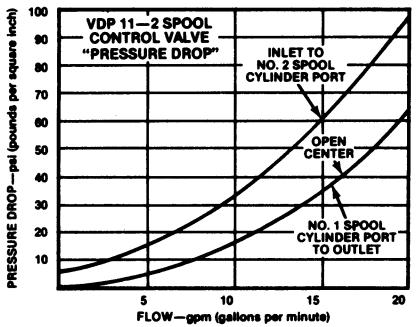
Double acting "D" spool shown

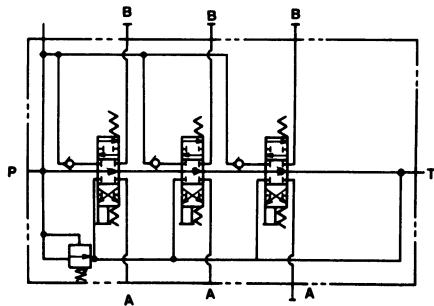
**E**

VDP11 - Two Spool

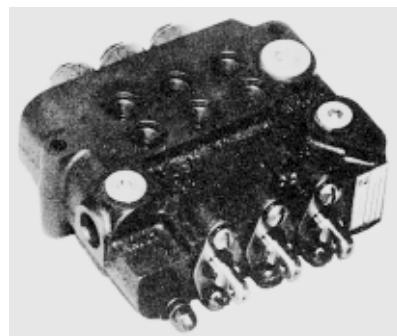
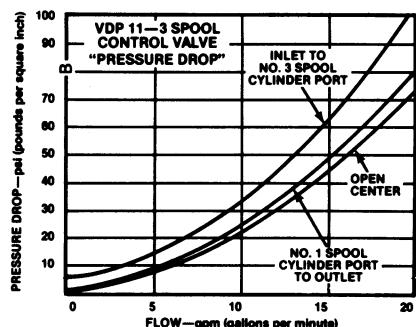
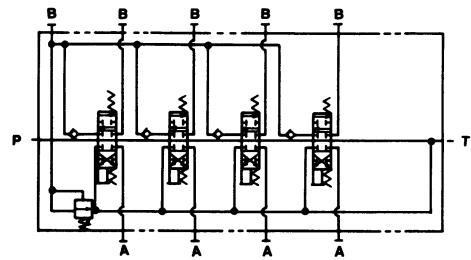


Double acting "D" spool shown

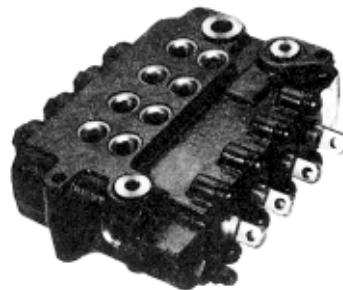
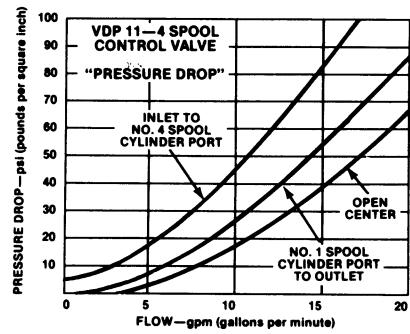
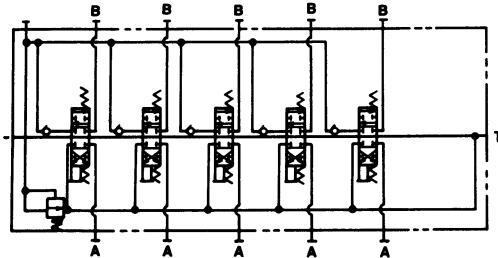


VDP11 - Three Spool

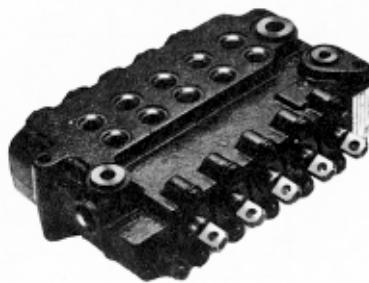
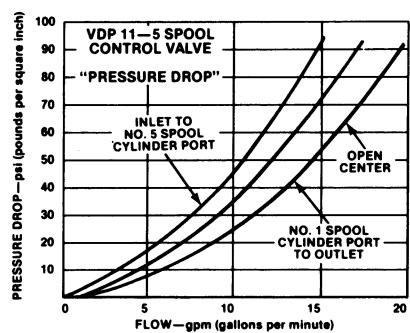
Double acting "D" spool shown

**E****VDP11 - Four Spool**

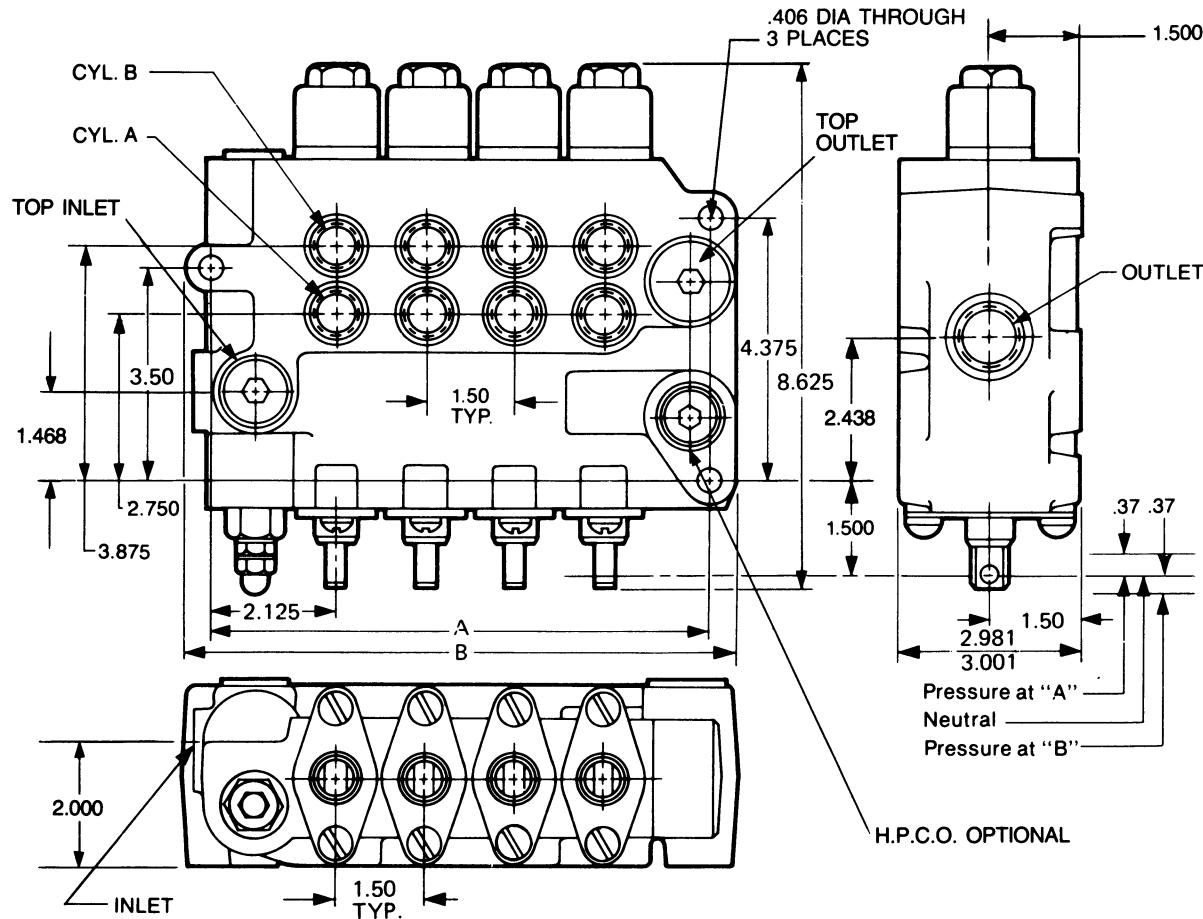
Double acting "D" spool shown

**VDP11 - Five Spool**

Double acting "D" spool shown



For millimeter equivalents multiply inch dimensions X 25.4.



Double Acting "D" Spool Shown

VDP 11 SPOOL TRAVEL (each direction)

P	S	D	C
.37	.37	.37	.31

Spool eye is shown in neutral position.

VARIABLE DIMENSIONS - VDP11

1 SPOOL	2 SPOOL	3 SPOOL	4 SPOOL	6 SPOOL
"A" 3.88	5.38	6.88	8.38	9.88
"B" 4.19	6.312	7.812	9.312	10.812

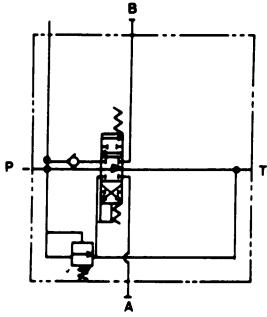
CYLINDER PORTS	LOCATION	
	INLET	OUTLET
-8 SAE	-10 SAE TOP & SIDE	-12 SAE TOP & SIDE

Multi-Spool Control Valves 1, 2, 3, 4, 6 Spool

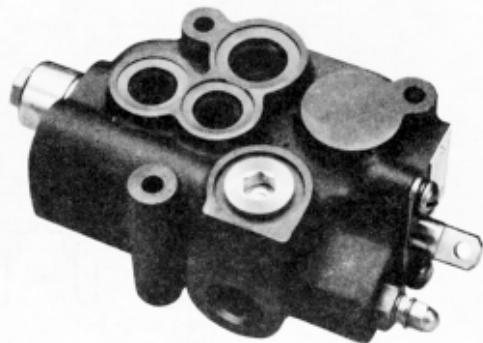
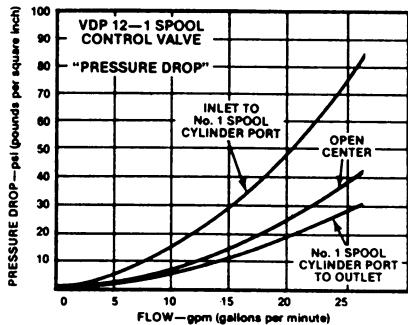
(VDP12 is available only in six spool configurations,
2000 PSI operating pressure)

- Flows up to 25 GPM
- Operating pressure to 3500 PSi
- Relief value adjustable from 600 to 3500 PSi
- High pressure carry over (power beyond)-See Page 12.
- Dimensions & Porting-See Pages 9, 10.
- Accessories, Options & Kits-See Pages 11, 12, 13, 14.
- How to order-See Pages 15, 16.

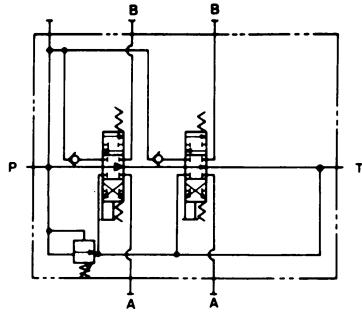
VDP12H - One Spool



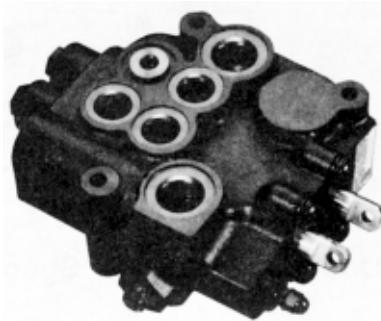
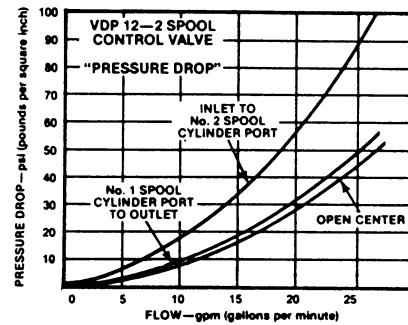
Double acting "D" spool shown



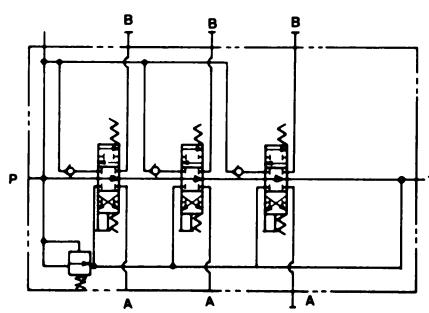
VDP12 - Two Spool



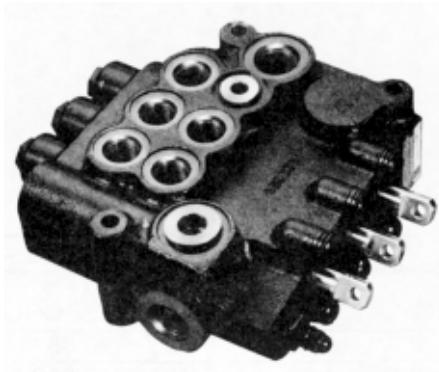
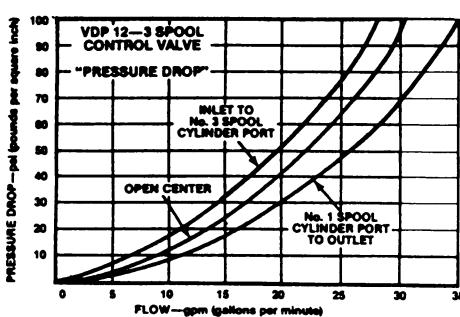
Double acting "D" spool shown

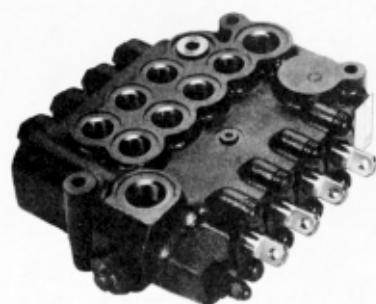
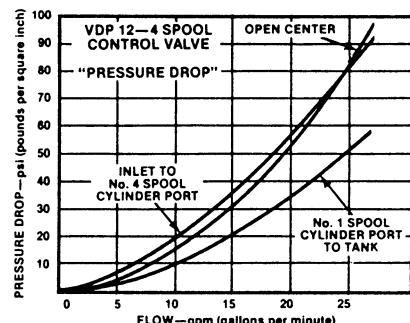
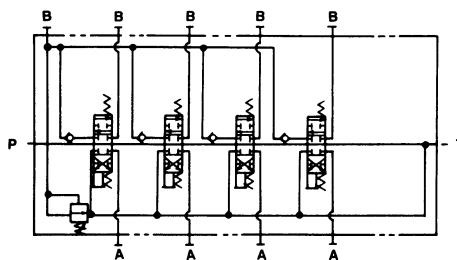


VDP12 - Three Spool

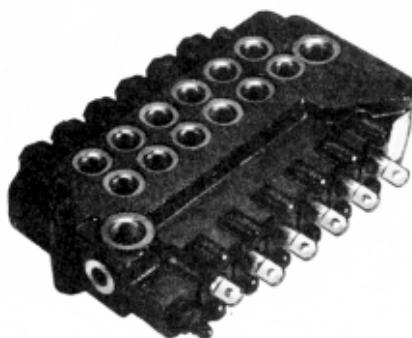
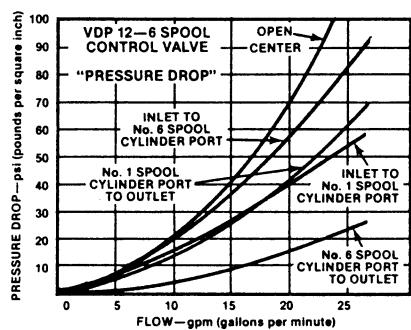
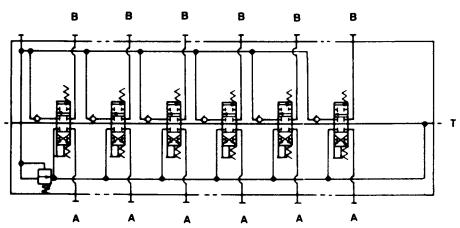


Double acting "D" spool shown



VDP12 - Four Spool

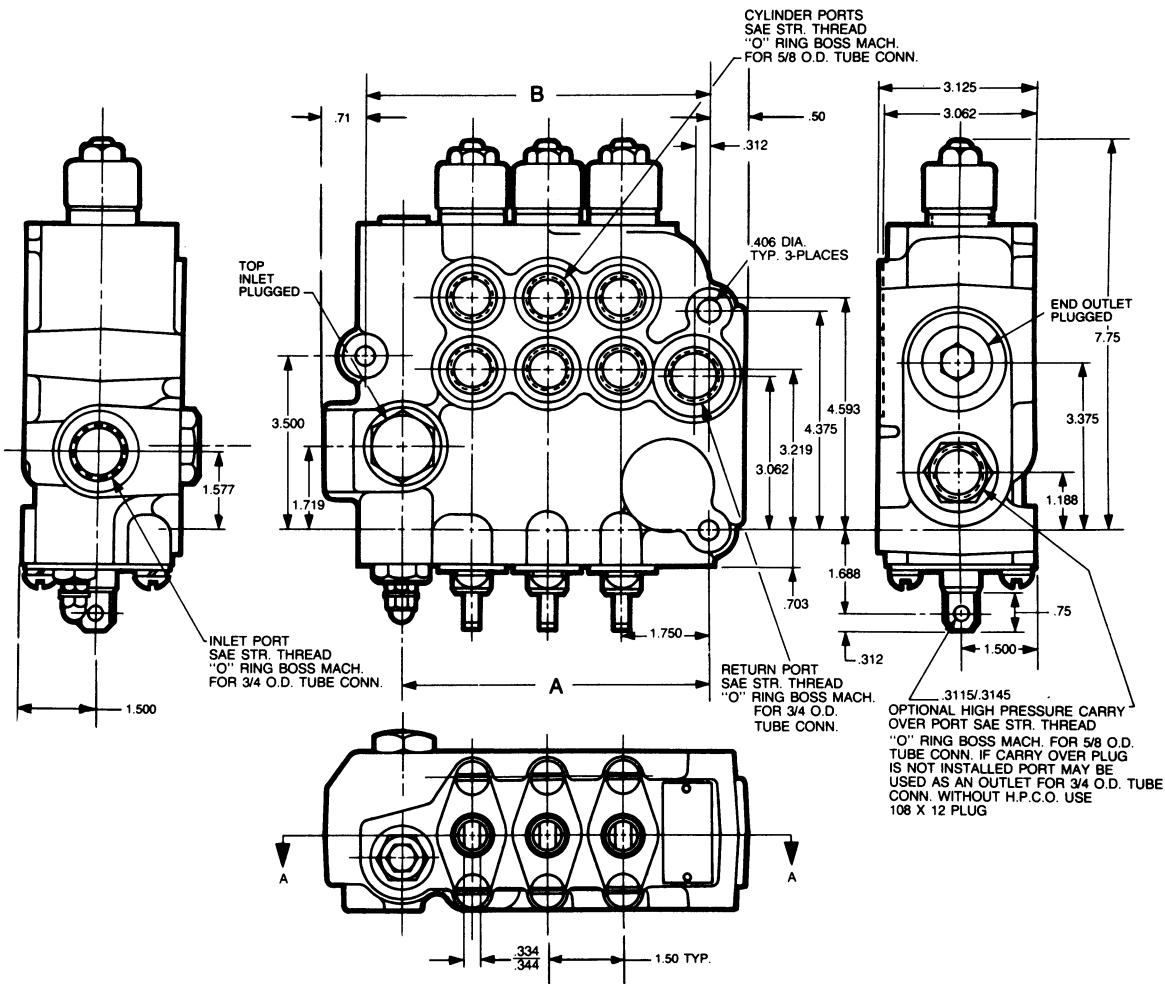
Double acting "D" spool shown

VDP12 - Six Spool

Double acting "D" spool shown

E

For millimeter equivalents multiply inch dimensions X 25.4.



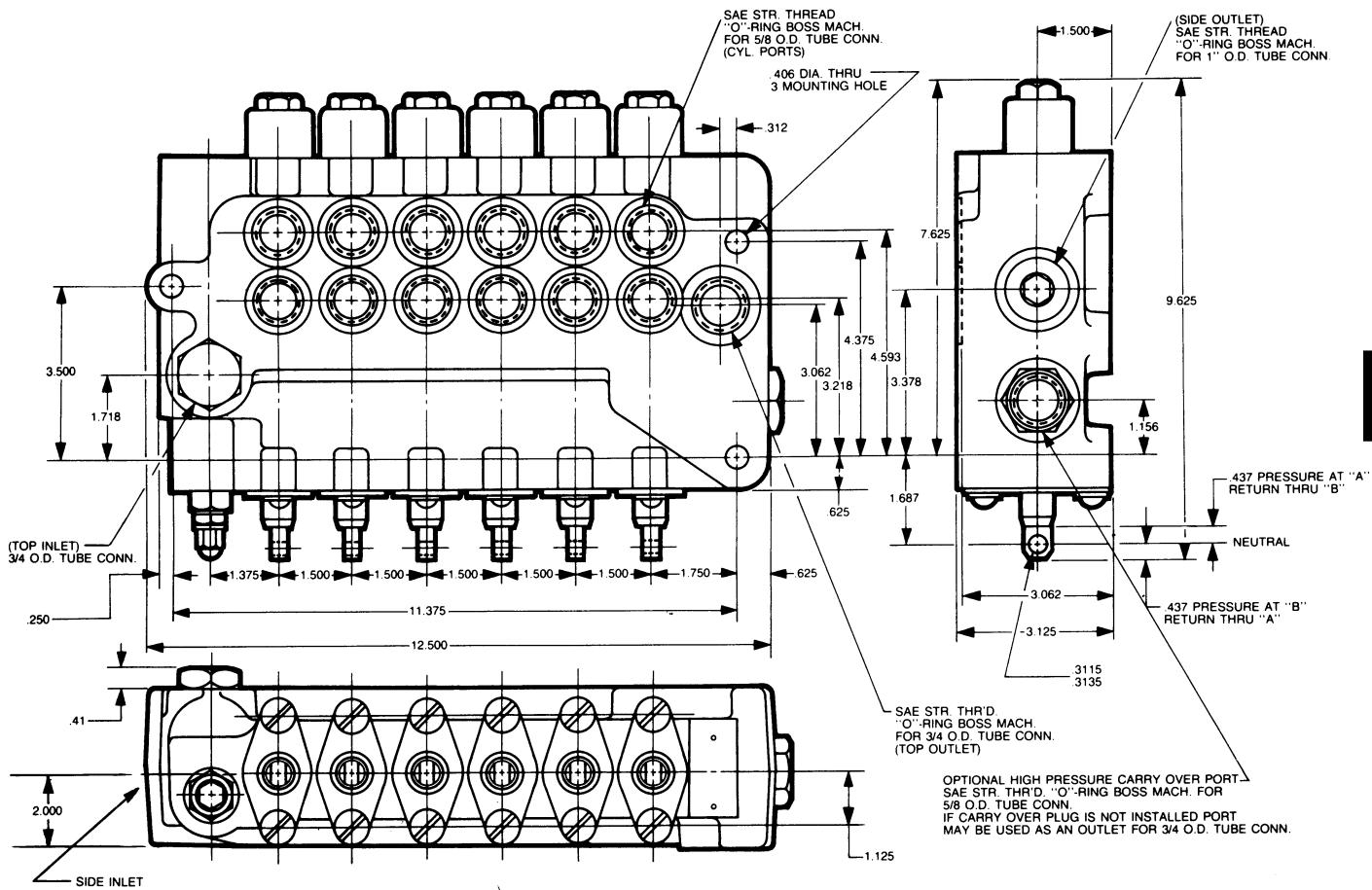
VDP 12H SPOOL TRAVEL (each direction)

P	S	D	C
.406	.406	.437	.312

VARIABLE DIMENSIONS - VDP12H

1 SPOOL	2 SPOOL	3 SPOOL	4 SPOOL	5 SPOOL
"A" 3.125	4.625	6.125	7.625	9.125
"B" 3.825	5.325	6.875	8.325	9.825

For millimeter equivalents multiply inch dimensions X 25.4.



E

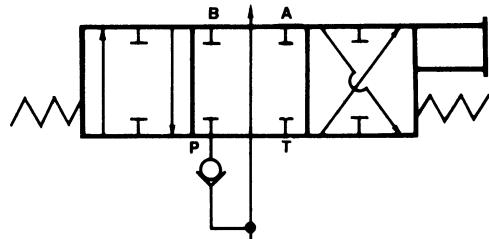
**VDP 12 SPOOL TRAVEL
 (each direction)**

P	S	D	C
.437	.437	.437	.312

Spool Configurations

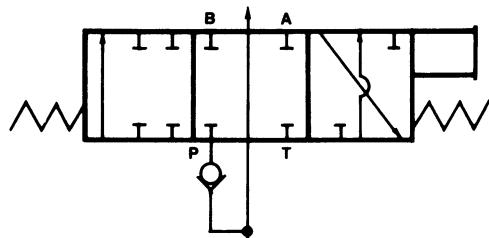
“D” Spool (Double Acting Spool)

In the neutral mode, pump flow is open to tank, and both cylinder ports are blocked. By shifting the spool in, pump flow is connected to the A port and the B port is open to tank. By shifting the spool out, pump flow is connected to the B port and the A port is open to tank. The most common application of this spool is in a circuit using a double acting cylinder.



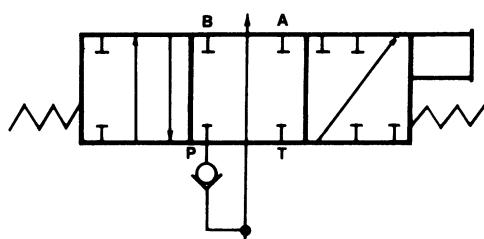
“P” Spool (Single Acting Spool)

E
In the neutral mode, pump flow is open to tank, and the cylinder port is blocked. By shifting the spool out, pump flow is connected to the B port. By shifting the spool in, the B port is open to tank. The A port is not used.



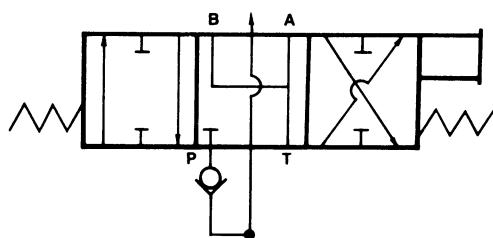
“S” Spool (Single Acting Spool)

In the neutral mode, pump flow is open to tank and the cylinder port is blocked. By shifting the spool in, pump flow is connected to the A port. By shifting the spool out, the A port is open to tank. The B port is not used.



“C” Spool (Motor Spool)

In the neutral mode, pump flow is open to tank and both cylinder ports are also open to tank (this allows a motor to gradually coast to a stop). By shifting the spool in, pump flow is connected to the A port and the B port is open to tank. By shifting the spool out, pump flow is connected to the B port and the A port is open to tank. The most common application of this spool is in a circuit with a hydraulic motor.

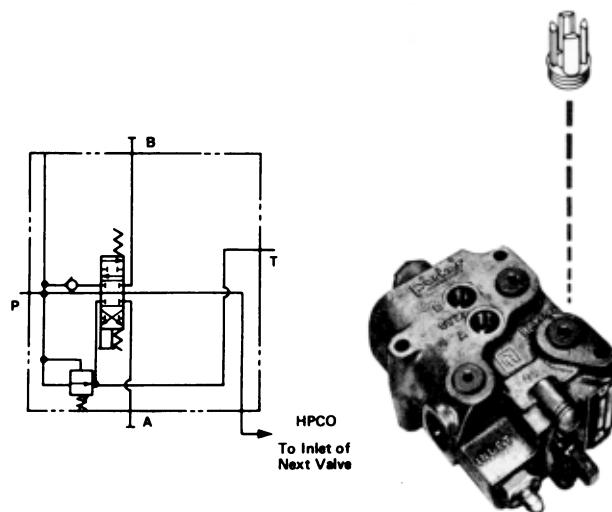


High Pressure Carry Over (Power Beyond) VDP11

- High pressure carry over is used for piping flow to another valve in the system. Flow from this port should be piped to the inlet of the second valve. Flow to the second valve is available only when all spools in the first valve are in neutral position.

Caution:

- When using H.P.C.O. all valves must be piped to tank.
- Do not pipe from outlet of first valve to inlet of second valve. Pipe tank line of first valve to tank; pipe H.P.C.O. line of first valve directly to the inlet of the second valve.
- VDP11 H.P.C.O. port machining located on top of valve.
- Use by inserting H.P.C.O. sleeve 572023 and install standard SAE fitting for piping second valve.
- H.P.C.O. port size is -8 SAE straight thread.
- For closed center operation, install H.P.C.O. and plug it.



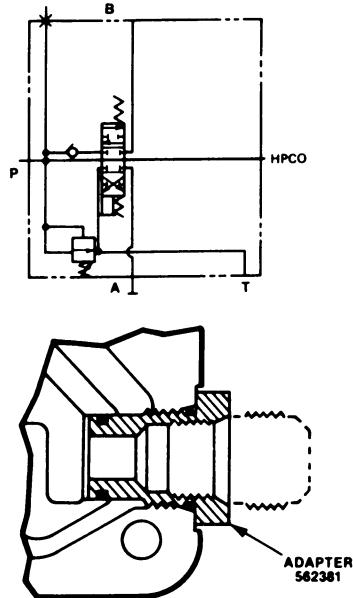
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High Pressure Carry Over

- High pressure carry over is used for piping flow to another valve in the system. Flow from this port should be piped to the inlet of the second valve. Flow to the second valve is available only when all spools in the first valve are in neutral position.

Caution:

- When using H.P.C.O. all valves must be piped to tank.
- Do not pipe from outlet of first valve to inlet of second valve. Pipe tank line of first valve to tank; pipe H.P.C.O. line of first valve directly to the inlet of the second valve.
- VDP12 and VDP12H H.P.C.O. port machining is on the side of the valve.
- Use by inserting special adapter 562381 and install standard SAE fitting for piping second valve.
- H.P.C.O. port size is -10 SAE.
- For closed center operation, install H.P.C.O. and plug it.

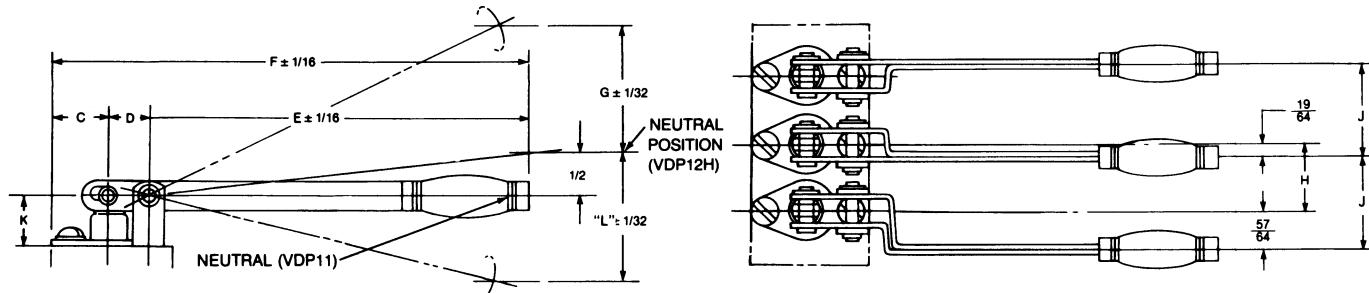


Handles

VDP11&12 Handles (Three Spool Shown) Travel Shown For "D" Spool.

Dimensional Data										
MODEL	C	D	E	F	G	H	J	K	L	
VDP11	1-1/2	1-1/8	8-11/16	11-1/16	2-17/32	1-1/2	2-3/32	1	2-3/4	
VDP12H	1-1/2	27/32	8-11/16	11-1/16	3-1/16	1-1/2	2-3/32	63/64	3-1/16	

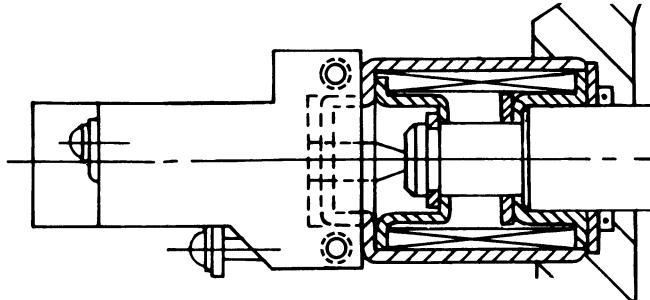
For metric equivalents multiply inch dimension x 25.4.



E Seal & Repair Kits are available from stock — Consult factory.

Electric Switches and Spool Caps

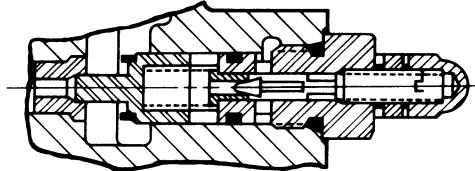
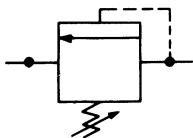
These are generally used in an energy savings manner on fork lift trucks. These switches are fitted on the cap end of the spool. As the spool is shifted, the switch closes an electric circuit. The circuit controls a pump connected to an electric motor. As the motor and pump are engaged, the pump supplies pressure and flow to the valve; enabling the operator to raise and lower the forks or tilt the forks.



Main Relief

The main relief functions as the main pressure regulating device. It is a pilot operated type relief. By pilot operation, the main piston and spring stage of the relief is piloted by a dart and a stiff spring. The pilot stage handles low

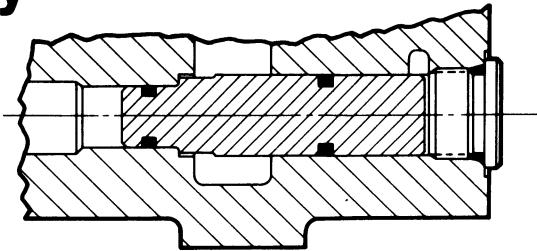
flows at high pressures. The main stage handles high flows at low pressures. By using the two together, large flows can be handled at high pressures without the typical instabilities associated with a direct acting relief.



Plug For Main Relief Cavity

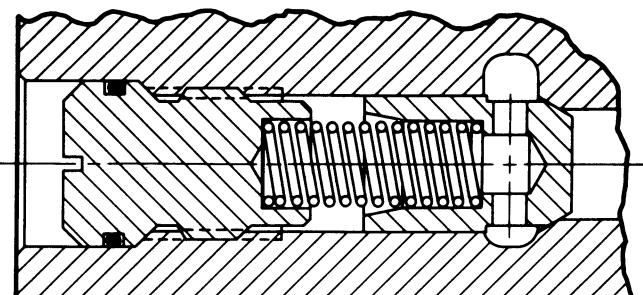
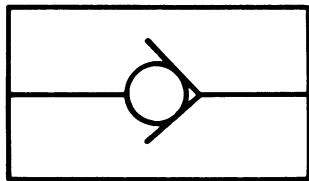
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Some applications require no main relief. Included in these applications are closed center circuits and accumulator circuits where, an external unloader is used; and a power-beyond circuit where two or more valves have the same pressure requirements.



Load Drop Checks

This check within the valve prevents a momentary load drop as a spool is being shifted. It is a standard feature in our valves.

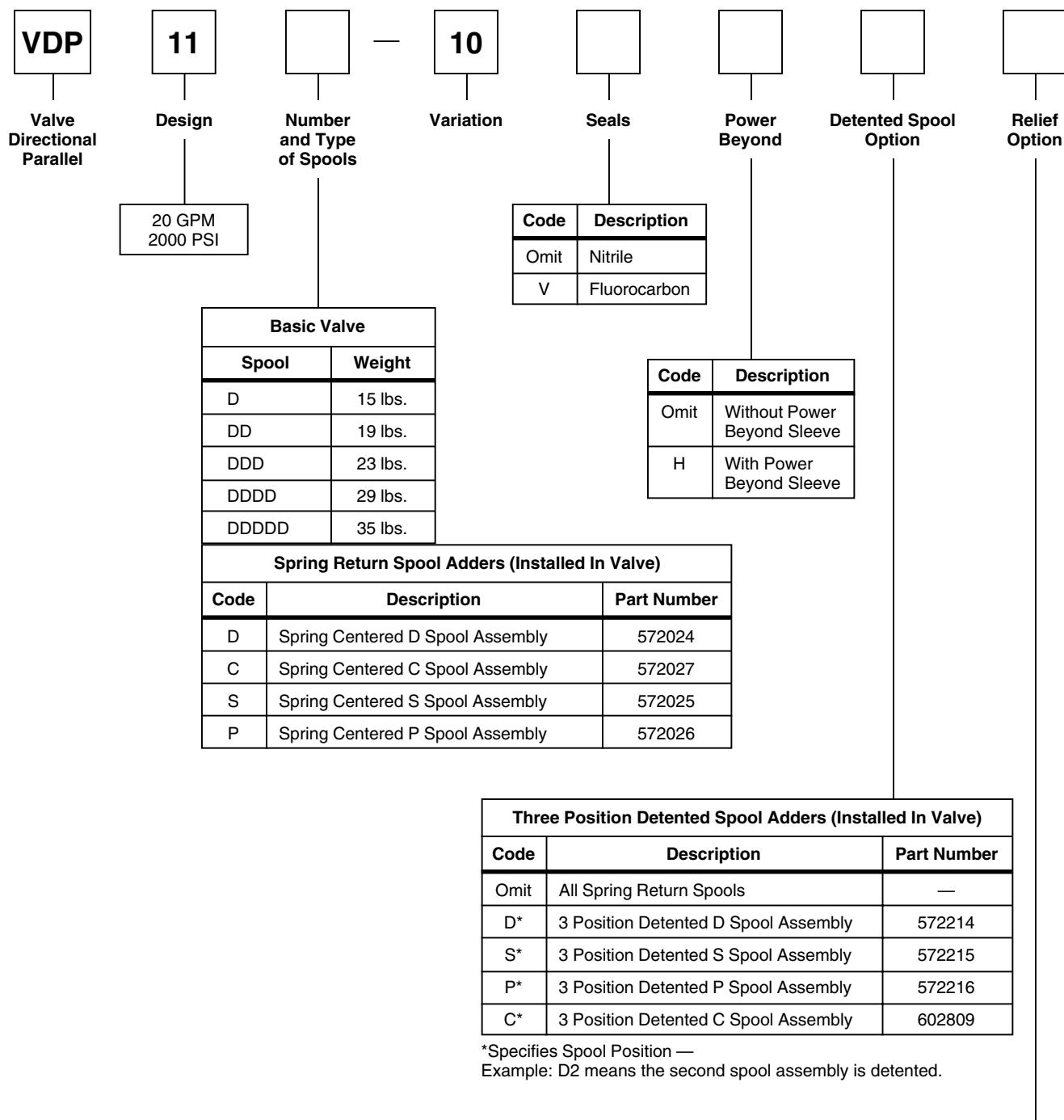


Valve Data Sheet

System:	Closed Center <input type="checkbox"/> Open Center <input type="checkbox"/>	Pump Flow _____ GPM
		System Temperature _____ °F
Main Relief:	Plugged <input type="checkbox"/> Installed <input type="checkbox"/>	Setting: _____ PSI at _____ GPM
Porting:		
Inlet:	Side <input type="checkbox"/> Top <input type="checkbox"/> Size _____	Outlet: Side <input type="checkbox"/> Cylinder Top <input type="checkbox"/> Port Size _____ Size _____
H.P.C.O. Installed:	Yes <input type="checkbox"/> No <input type="checkbox"/>	Valve Model: VDP11 <input type="checkbox"/> VDP12 <input type="checkbox"/> VDP12H <input type="checkbox"/>

Options

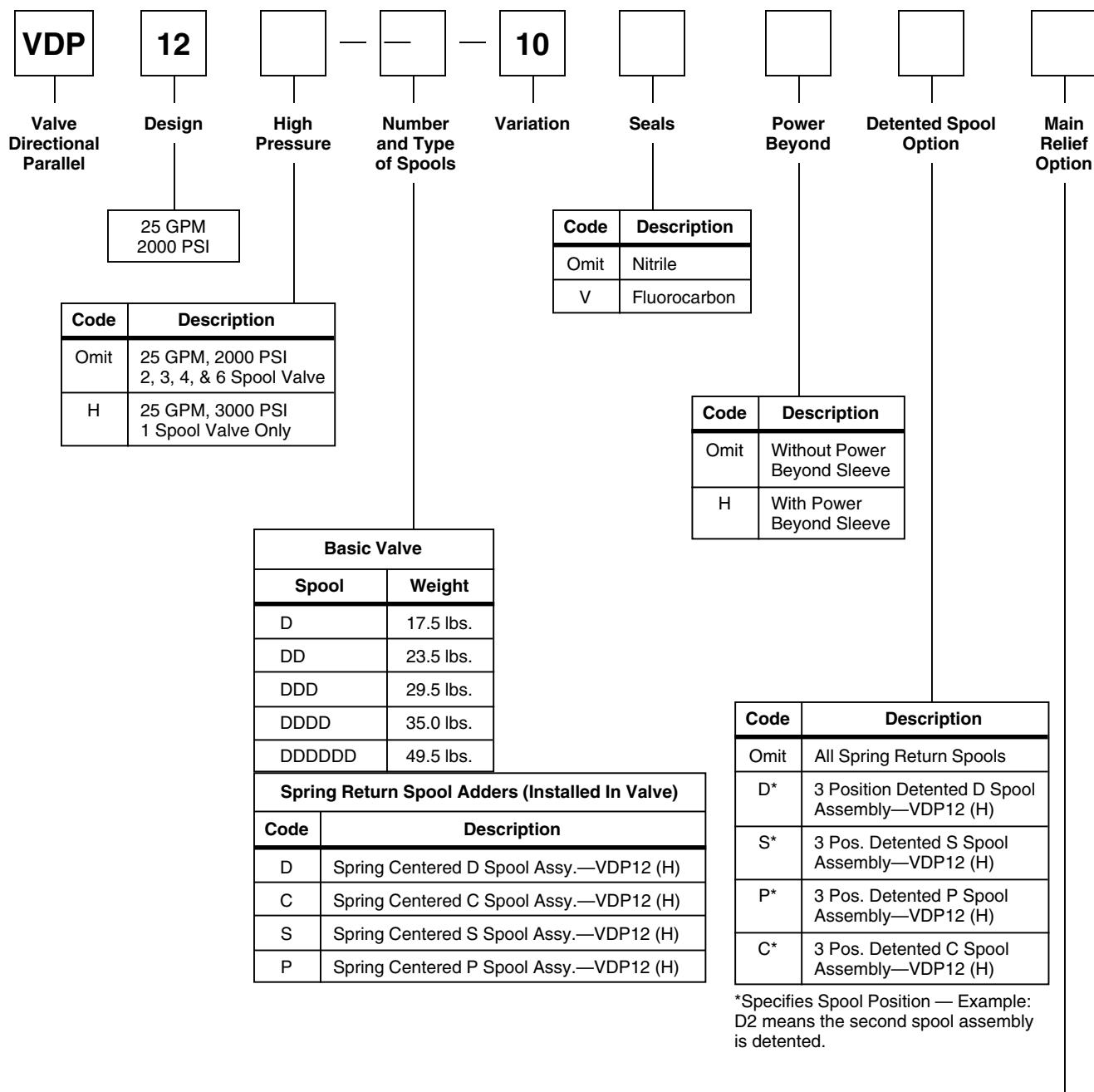
	Spool Number 1	2	3	4	5	6	VDP11 Only	VDP12 Only
Spool Type (D, C, P, or S)	<input type="checkbox"/>							
Spring Return	<input type="checkbox"/>							
3 Position Detent	<input type="checkbox"/>							
Counterbalance - A Port	<input type="checkbox"/>							
Counterbalance - B Port	<input type="checkbox"/>							
Electric Switches	<input type="checkbox"/>							
Handles	<input type="checkbox"/>							

Ordering Information**Enbloc Directional Control Valves
Series VDP11**

Please Specify in Writing as Separate Line Items	
Part Number	Description
572016	One Spool Handle Assembly
572017	Two Spool Handle Assembly
572018	Three Spool Handle Assembly
572019	Four Spool Handle Assembly
602842	Five Spool Handle Assembly
665330	Switch Assembly
635794	Spool Cap for Switch Assembly

Code	Description
Omit	Main Relief Installed and set at 1750 PSI & 1 GPM
***	Main Relief at other settings Times 10 = PSI (180 = 1800 PSI)
NR	Plugged Relief

Note: Switch Assemblies and Handles shipped with valve, but not installed to prevent damage in transit.

Ordering Information**Enbloc Directional Control Valves
Series VDP12**

Please Specify in Writing as Separate Line Items	
Part Number	Description
825067	One Spool Handle Assy.—VDP12H
572017	Two Spool Handle Assy.—VDP12
572018	Three Spool Handle Assy.—VDP12
572019	Four Spool Handle Assy.—VDP12
602672	Six Spool Handle Assy.—VDP12
665330	Switch Assembly
635794	Spool Cap for Switch Assembly

Note: Part numbers for individual spool assemblies are listed on page 5.

Code	Description
Omit	Main Relief Installed and set at 1750 PSI & 1 GPM
***	Main Relief at other settings Times 10 = PSI (180 = 1800 PSI)
NR	Plugged Relief

Note: Switch Assemblies and Handles shipped with valve, but not installed to prevent damage in transit.

What Are Parker's Auxiliary Control Valves?

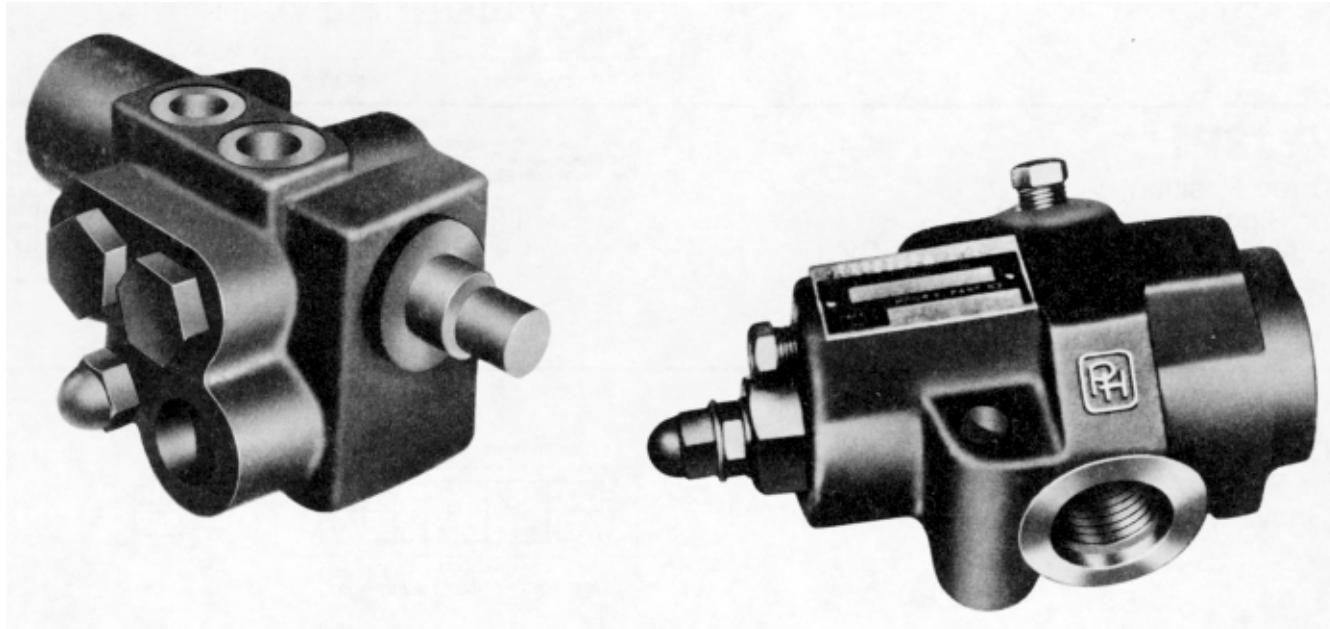
Parker's auxiliary control valves feature the same tough, durable, one piece iron construction as our enbloc valves. These rugged auxiliary control valves are designed for long trouble-free service under the most demanding operating conditions.

Parker's VY13 valve leads off this series. The VY13 is more of a directional control valve than an auxiliary control valve. A hardened, chrome-plated spool provides precise control for both single acting and double acting cylinders. Ball checks in the cylinder ports maintain the load position as the spool is shifted back to neutral. A built in main relief provides protection from pressure surges. The VY13 valve's primary application is in the small garden tractor industry.

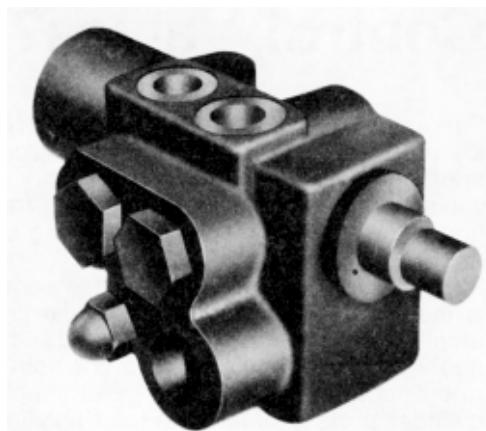
The VPRP5B relief valve has the flexibility of being offset or in-line mounted. The valve is pilot operated and screw adjustable. The VPRP5B will handle 300-3000 PSI at up to 30 GPM. The VPRP5B can be used in both Mobile and non-Mobile applications.

Rely upon Parker application assistance in selecting the best valve for your requirements...Parker manufacturing, expertise and quality control to assure consistent, dependable performance.

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- Valve Body:** Material — High Tensile Gray Iron Casting. Ports — SAE Straight Thread. "O" Ring Boss For 1/4 O.D. Tube Connections.
- Check Valve:** Ball Checks to maintain load position with valve in neutral.
- Relief Valve:** Screw adjustable.
- Spool:** Metering — .380 spool travel assures precise positioning. Material — Hardened steel to resist corrosion and wear.
- Handles:** Optional — See reverse side for dimensions.
- Spool Control:** Spools furnished with spring return to neutral from operating positions.
- Operating Temperature:** -20°F (-29°C) to 185°F (85°C).
- A version of this valve without the relief and/or without the checks is available. Please consult the factory for a VY03.

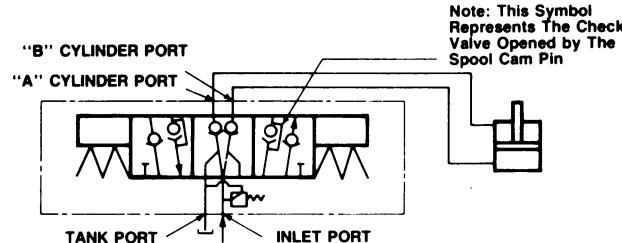


Individual Load Checks for each Cylinder Port. 2000 PSI Operating Pressure.

VY13D1

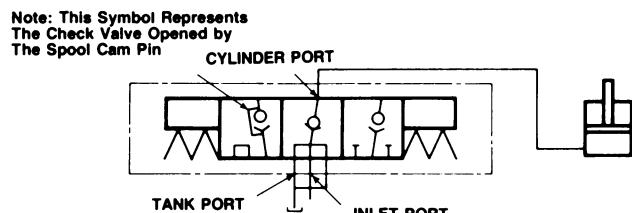
Three Position,
for Double Acting Cylinders.

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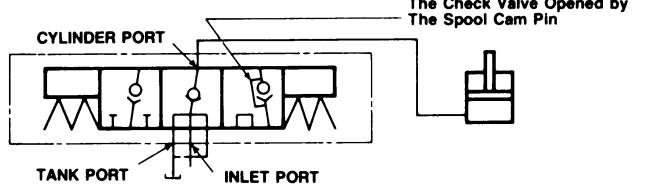
VY13P1

Three Position,
for Single Acting Cylinders.
(Pull Valve Spool out to Power Cyl.)



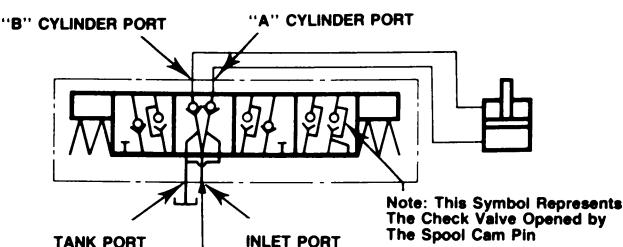
VY13S1

Three Position,
for Single Acting Cylinders.
(Shove Valve Spool in to Power Cyl.)



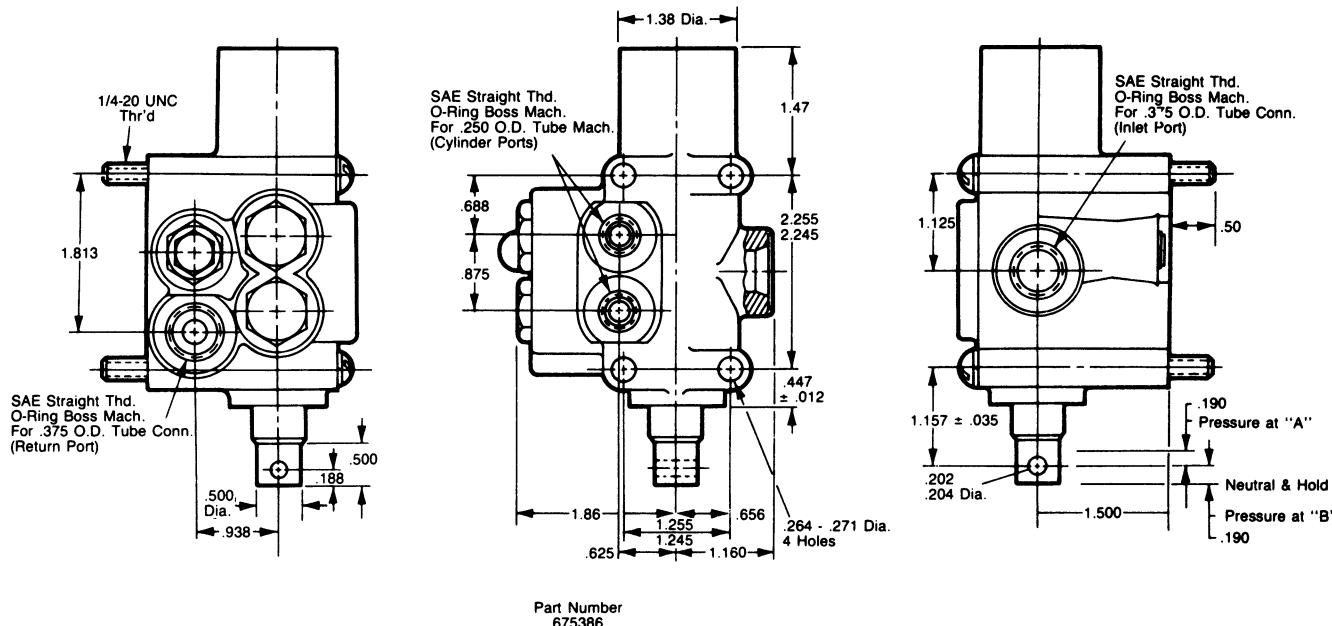
VY13F**

Four Position,
for Double Acting Cylinders
That Require A Float Function.



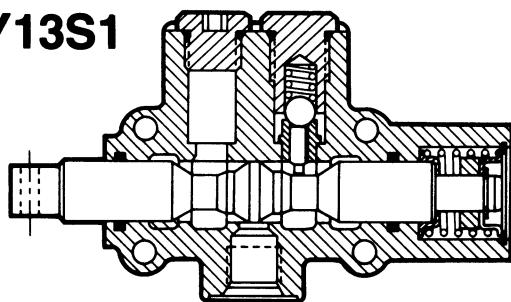
How To Order:
Select from above models

Auxiliary Control Valve Dimensions

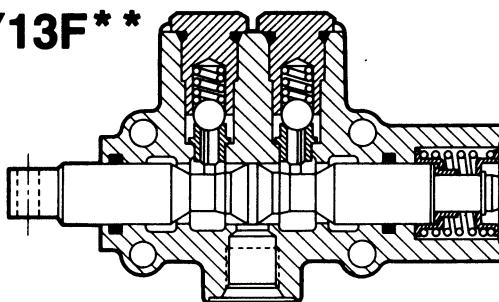


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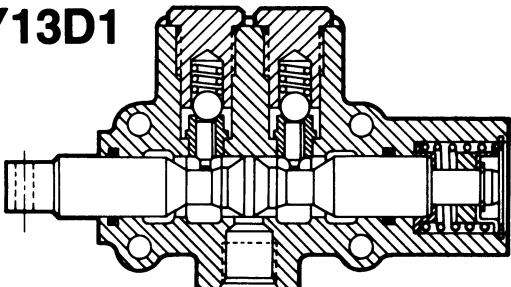
VY13S1



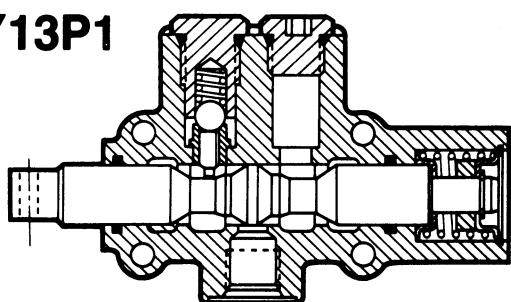
VY13F**



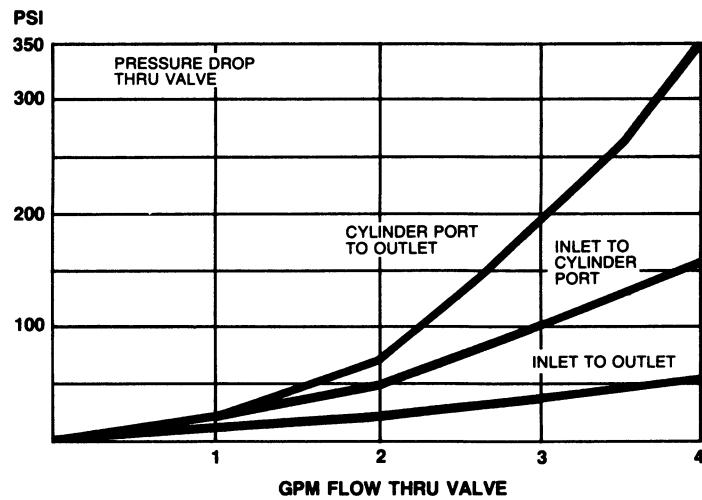
VY13D1



VY13P1



Note: Seal & Repair Kits are available from stock —
Consult factory.



Pilot Operated Relief Valve

General Specifications:

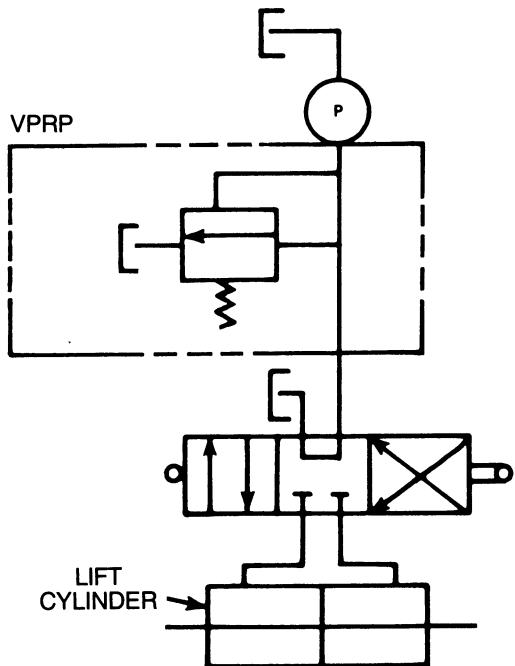
- Unit is a pilot operated in-line or offset mounted relief valve. It can be used in circuits with widely varying flow rates and still maintain a constant pressure within the circuit.
- Pressure adjustment is from 500-2500 PSI STD.
- Maximum recommended flow is 30 GPM.
- Operating temperature: -20°F (-29°C) to 185°F (85°C).
- Seal compound: BUNA-N.
- Porting: See chart.
- Material: Cast iron body with hardened steel seats and plungers.
- Reseating pressure 95% of cracking pressure.
- Optional pressure ranges available for 300-1000 PSI setting and 2500-3000 PSI setting.



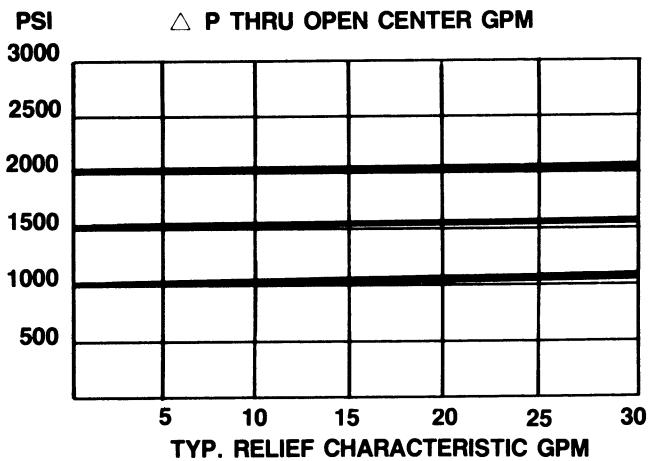
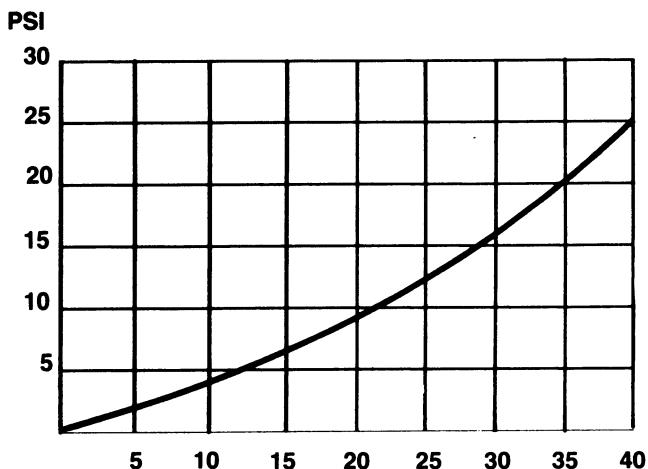
VPRP5B

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Typical Applications

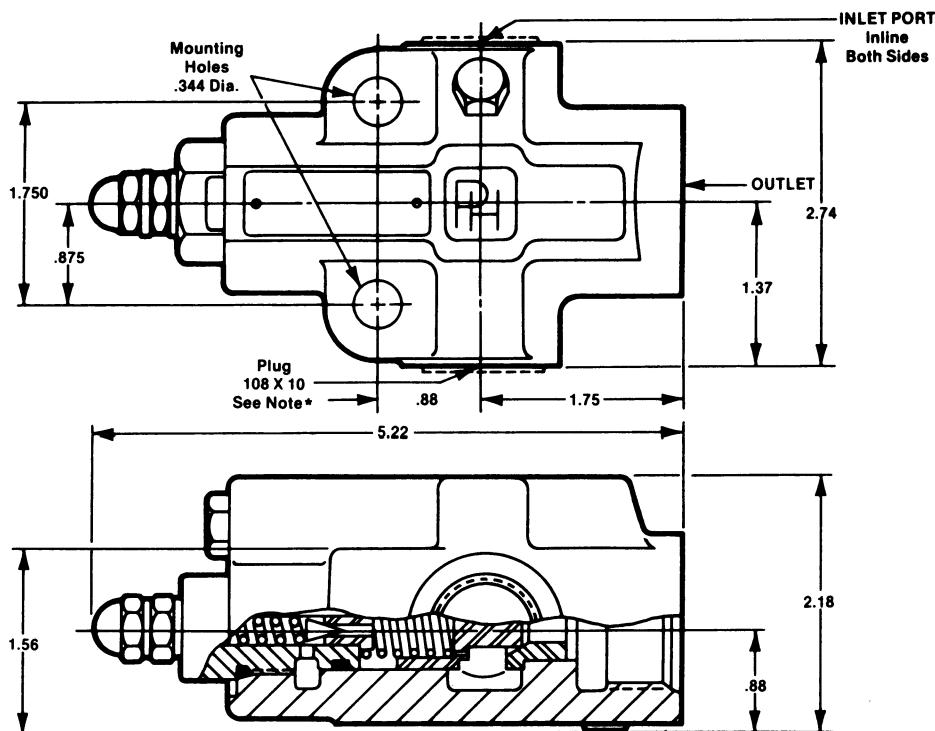


Typical Performance



Dimensions

For millimeter equivalents multiply inch dimensions X 25.4.



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Ordering Information

VPRP5B-3-A-A-175

CODE	ADJUSTMENT
3	Screw

CODE ***
Three Digit Code Number Shall Represent 10% of Cracking Pressure

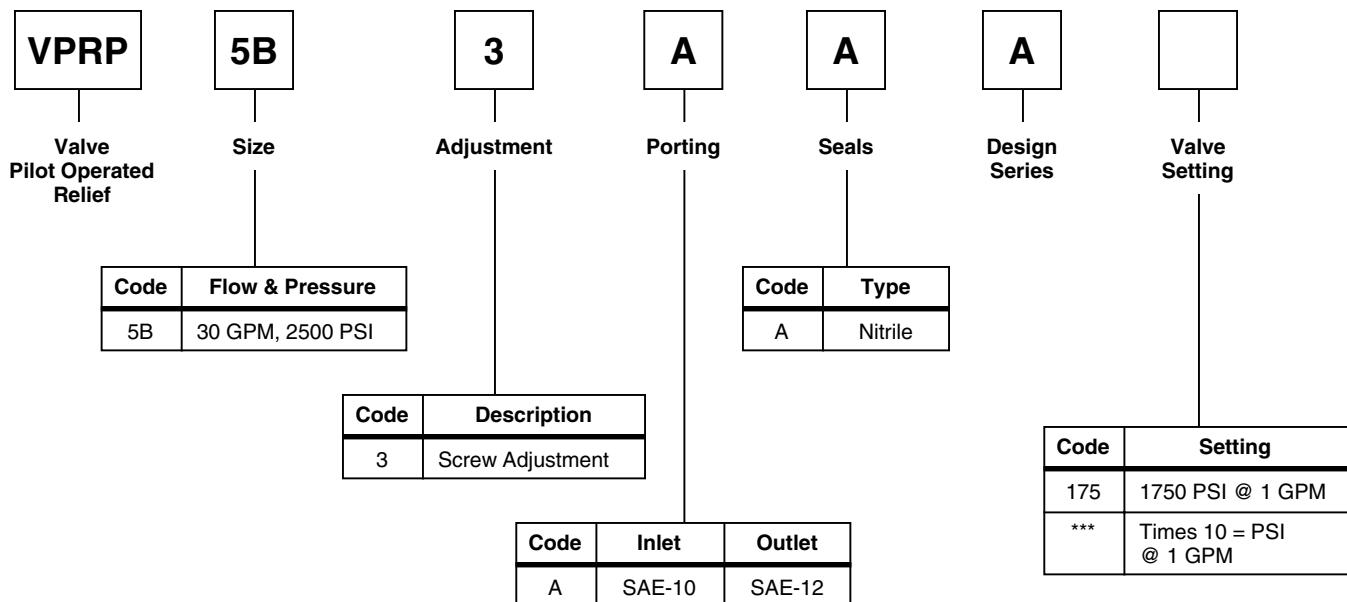
Pressure setting must be specified on your purchase order. 175 = 1750 PSI

Note*: If valve is used as angle rather than in-line relief add one 108 x 10 plug.

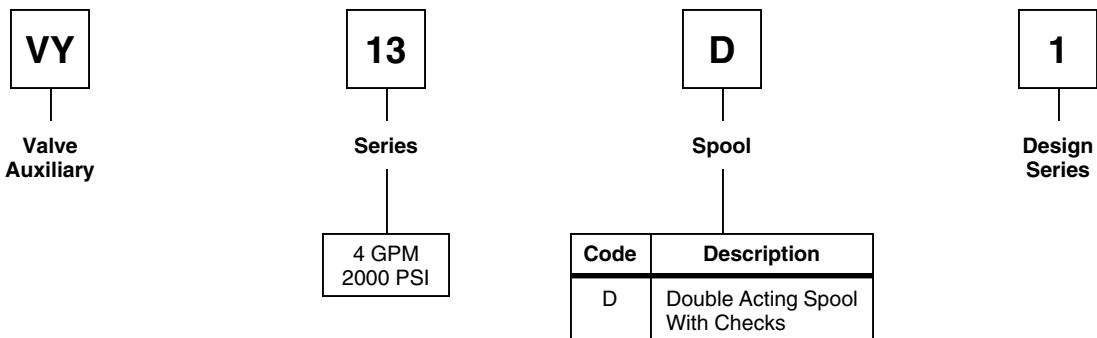
CODE	INLET	OUTLET
A	7/8-14 UNF-2B	1-1/16-12 UNF-2B

CODE	SEAL COMPOUND
A	Buna "N"

Note: Seal & Repair Kits are available from stock — Consult factory.



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Service Parts

Common Service Parts For VPRP 5B	
Part Number	Description
592644P	VPRP5 Main Relief Assembly
835127K	VPRP5 Seal Kit
10HP50N-S	VPRP5 Inlet Plug (when valve is used in-line)

Common Service Parts For VY 13 D1	
Part Number	Description
835131K	Seal Kit
835132K	Main Relief Rebuild Kit
686051P	Main Relief Assembly

Common Service Parts For VDP 11	
Part Number	Description
572027P	Spring Centered C Spool Assembly
572025P	Spring Centered S Spool Assembly
572026P	Spring Centered P Spool Assembly
572024P	Spring Centered D Spool Assembly
572214P	3 Position Detented D Spool Assembly
572215P	3 Position Detented S Spool Assembly
572216P	3 Position Detented P Spool Assembly
602809P	3 Position Detented C Spool Assembly
572023	HPCO (Power Beyond) Sleeve
572016	One Spool Handle Assembly
572017	Two Spool Handle Assembly
572018	Three Spool Handle Assembly
572019	Four Spool Handle Assembly
602842	Five Spool Handle Assembly
592644P	Main Relief Valve Assembly
562095P	Load Check Assembly
885023AP	Spool Cap Assembly
635794	Spool Cap for Switch Assembly
665330	Switch Assembly
612087P	Main Relief Plug Assembly
775273	Bleeder Plug for 775725 Spool Cap
885014-1	One Spool Valve Nitrile Seal Kit — VDP11
885014-2	Two Spool Valve Nitrile Seal Kit — VDP11
885014-3	Three Spool Valve Nitrile Seal Kit — VDP11
885014-4	Four Spool Valve Nitrile Seal Kit — VDP11
885014-5	Five Spool Valve Nitrile Seal Kit — VDP11
885012-1	One Spool Valve Fluorocarbon Seal Kit — VDP11
885012-2	Two Spool Valve Fluorocarbon Seal Kit — VDP11
885012-3	Three Spool Valve Fluorocarbon Seal Kit — VDP11
885012-4	Four Spool Valve Fluorocarbon Seal Kit — VDP11
885012-5	Five Spool Valve Fluorocarbon Seal Kit — VDP11
885017-1	One Spool Valve Nitrile Rebuild Kit — VDP11
885017-2	Two Spool Valve Nitrile Rebuild Kit — VDP11
885017-3	Three Spool Valve Nitrile Rebuild Kit — VDP11
885017-4	Four Spool Valve Nitrile Rebuild Kit — VDP11
885017-5	Five Spool Valve Nitrile Rebuild Kit — VDP11
885016-1	One Spool Valve Fluorocarbon Rebuild Kit — VDP11
885016-2	Two Spool Valve Fluorocarbon Rebuild Kit — VDP11
885016-3	Three Spool Valve Fluorocarbon Rebuild Kit — VDP11
885016-4	Four Spool Valve Fluorocarbon Rebuild Kit — VDP11
885016-5	Five Spool Valve Fluorocarbon Rebuild Kit — VDP11

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Common Service Parts For VDP 12, 12H	
Part Number	Description
562352P	Spring Centered C Spool Assembly — VDP12
562093P	Spring Centered S Spool Assembly — VDP12
562094P	Spring Centered P Spool Assembly — VDP12
562092P	Spring Centered D Spool Assembly — VDP12
562251P	3 Position Detented D Spool Assembly — VDP12
562252P	3 Position Detented S Spool Assembly — VDP12
562253P	3 Position Detented P Spool Assembly — VDP12
572261P	3 Position Detented C Spool Assembly — VDP12
825487	Spring Centered C Spool Assembly — VDP12H
805605P	Spring Centered S Spool Assembly — VDP12H
805606P	Spring Centered P Spool Assembly — VDP12H
805607P	Spring Centered D Spool Assembly — VDP12H
975011P	3 Position Detented D Spool Assembly — VDP12H
825074	3 Position Detented P Spool Assembly — VDP12H
975012	3 Position Detented C Spool Assembly — VDP12H
562381	HPCO (Power Beyond) Fitting — VDP12 & 12H
572016	One Spool Handle Assembly — VDP12
825067	One Spool Handle Assembly — VDP12H
572017	Two Spool Handle Assembly — VDP12
572018	Three Spool Handle Assembly — VDP12
572019	Four Spool Handle Assembly — VDP12
602672	Six Spool Handle Assembly — VDP12
592644P	Main Relief Valve Assembly — VDP12 & 12H
715253P	Main Relief Valve Assembly — VDP12H
612087P	Main Relief Valve Plug Assembly — VDP12 & 12H
562095P	Load Check Assembly — VDP12
572434	Load Check Assembly — VDP12H
885023AP	Spool Cap Assembly — VDP12 or VDP12H
775273	Bleeder Plug for 775725 Spool Cap
635794	Spool Cap for Switch Assembly — VDP12 & 12H
665330	Switch Assembly — VDP12 & 12H
885015-1	One Spool Valve Nitrile Seal Kit — VDP12 & 12H
885015-2	Two Spool Valve Nitrile Seal Kit — VDP12 & 12H
885015-3	Three Spool Valve Nitrile Seal Kit — VDP12 & 12H
885015-4	Four Spool Valve Nitrile Seal Kit — VDP12 & 12H
885015-6	Six Spool Valve Nitrile Seal Kit — VDP12
885013-1	One Spool Valve Fluorocarbon Seal Kit — VDP12 & 12H
885013-2	Two Spool Valve Fluorocarbon Seal Kit — VDP12 & 12H
885013-3	Three Spool Valve Fluorocarbon Seal Kit — VDP12 & 12H
885013-4	Four Spool Valve Fluorocarbon Seal Kit — VDP12 & 12H
885013-6	Six Spool Valve Fluorocarbon Seal Kit — VDP12
885019-1	One Spool Valve Nitrile Rebuild Kit — VDP12 & 12H
885019-2	Two Spool Valve Nitrile Rebuild Kit — VDP12 & 12H
885019-3	Three Spool Valve Nitrile Rebuild Kit — VDP12 & 12H
885019-4	Four Spool Valve Nitrile Rebuild Kit — VDP12 & 12H
885019-6	Six Spool Valve Nitrile Rebuild Kit — VDP12
885018-1	One Spool Valve Fluorocarbon Rebuild Kit — VDP12 & 12H
885018-2	Two Spool Valve Fluorocarbon Rebuild Kit — VDP12 & 12H
885018-3	Three Spool Valve Fluorocarbon Rebuild Kit — VDP12 & 12H
885018-4	Four Spool Valve Fluorocarbon Rebuild Kit — VDP12 & 12H
885018-6	Six Spool Valve Fluorocarbon Rebuild Kit — VDP12