

**General Description**

Series D1VA and D1VP directional control valves are high performance, 4 and 5-chamber, direct operated, air and oil pilot controlled, 3 or 4-way valves. They are available in 2 or 3-position and conform to NFPA's D03, CETOP 3 mounting patterns.

**Features**

- Low pilot pressure required.  
 D1VA – 4.1 Bar (60 PSI) minimum  
 D1VP – 15.2 Bar (220 PSI) minimum

**Air Operated**

**Shift Volume.** The air pilot chamber requires a volume of 1.8 cc (.106 in.<sup>3</sup>) for complete shift from center to end.

**Pilot Piston.** The pilot piston area is 506 mm<sup>2</sup> (.785 in.<sup>2</sup>). Pilot piston stroke is 3.4 mm (.135 in.).

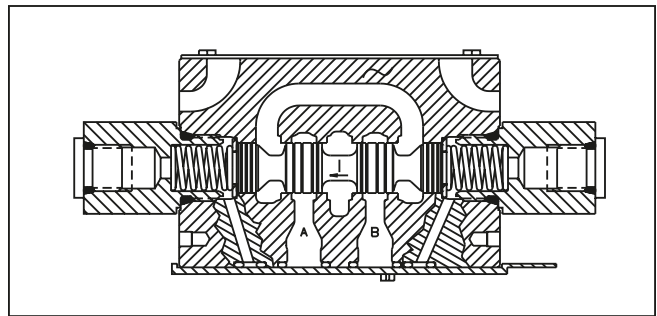
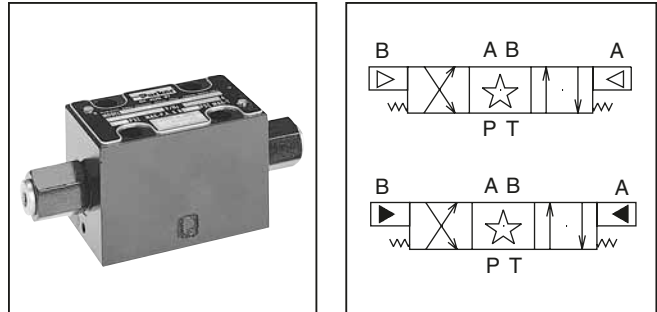
**Response Time.** Response time will vary with pilot line size, pilot line length, pilot pressure, air control valve shift time and air valve flow capacity (Cv).

**Oil Operated**

**Shift Volume.** The hydraulic pilot chamber requires a volume of 0.7 cc (.042 in.<sup>3</sup>) for complete shift from center to end.

**Pilot Piston.** The hydraulic piston area is 198 mm<sup>2</sup> (.307 in.<sup>2</sup>). Pilot piston stroke is 3.4 mm (.135 in.).

**Response Time.** Response time will vary with pilot line size, pilot line length, pilot pressure, pilot valve shift time and oil valve flow capacity (GPM).

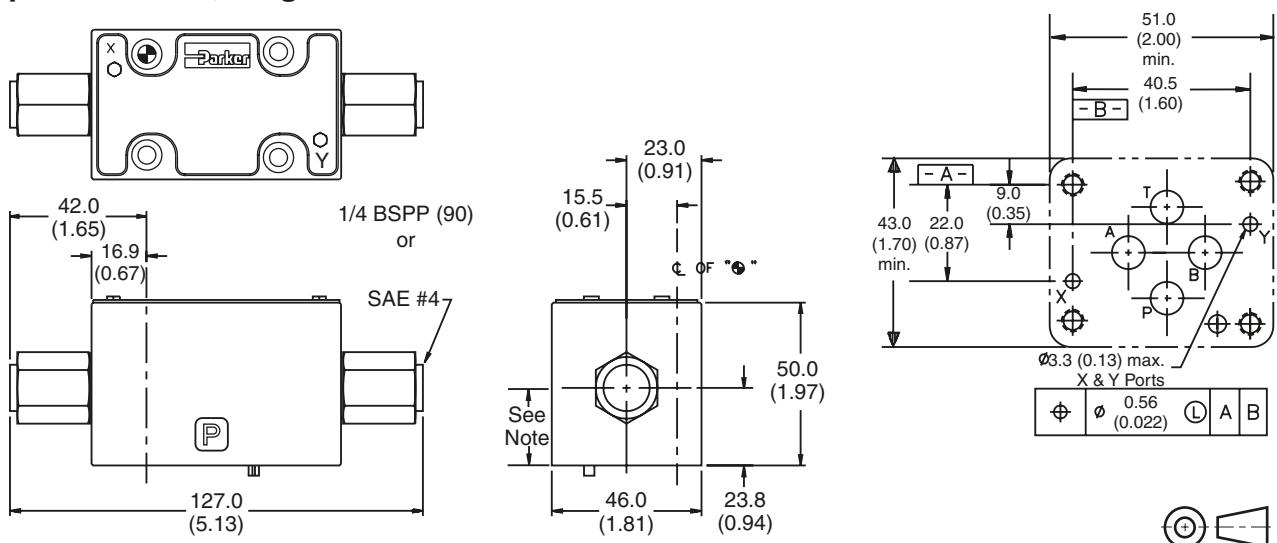


**Specifications**

<b>Mounting Pattern</b>	NFPA D03, CETOP 3, NG 6
<b>Maximum Pressure</b>	Operating: 345 Bar (5000 PSI) Tank Line: D1VA 34 Bar (500 PSI) D1VP 207 Bar (3000 PSI)
<b>Maximum Flow</b>	See Reference Data
<b>Pilot Pressure</b>	D1VA: Air Minimum 4.1 Bar (60 PSI) Air Maximum 10.2 Bar (150 PSI) D1VP: Oil Minimum 15.2 Bar (220 PSI) Oil Maximum 207 Bar (3000 PSI)

**Dimensions** – Inch equivalents for millimeter dimensions are shown in (\*\*)

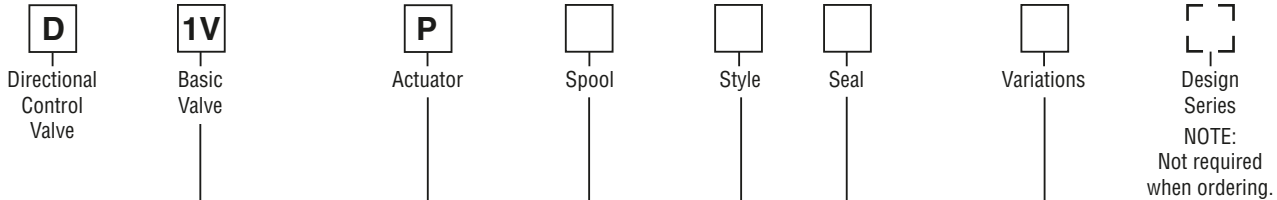
**Oil Operated D1VP, Single and Double Pilot**



**Note:** 22.0 mm (0.87") from bottom of bolt hole counterbore to bottom of valve.



**A**



NFPA D03  
 CETOP 3

Oil  
 Operator

Code	Description
<b>Omit</b>	<b>Standard</b>
P10*	Monitor Switch
4F	Heavy Duty Detent
90	BSPB Threads

\* Not available on C and D styles.  
 Not CE or CSA approved.

Code	Description
N	Nitrile
V	Fluorocarbon

Code	Symbol
001	
002	
004	
008*	
009**	
020*	
026*	
030**	
081	
082	

Code	Description	Symbol
B#	Single operator, two position spring offset. P to A and B to T in offset position.	
C	Double operator, three position, spring centered.	
D	Double operator, two position, detent.	
E#	Two position, spring centered. P to B and A to T in shifted position.	
H#	Single operator, two position, spring offset. P to B and A to T in offset position.	
K#	Two position, spring centered. P to A and B to T in shifted position.	

# D available with 020 and 030 spools only.  
 B & H available with 020, 026 and 030 spools only.  
 E & K not available with 020, 026 and 030 spools.

This condition varies with spool code.

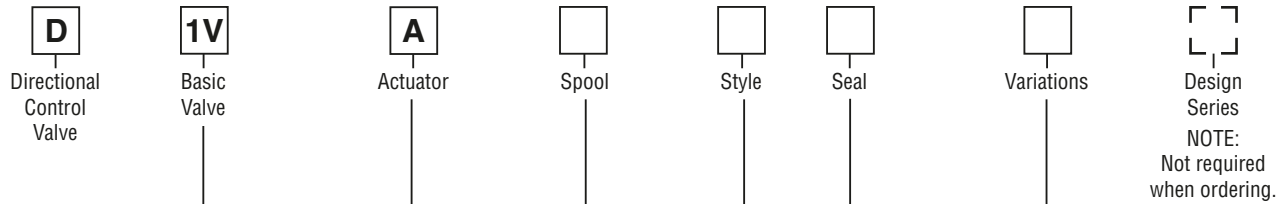
Valve schematic symbols are per NFPA/ANSI standards, providing flow P to A when energizing operator X. Note operators reverse sides for #008 and #009 spools. See installation information for details.

\* 008, 020 and 026 spools have closed crossover.  
 \*\* 009 and 030 spools have open crossover.

**Valve Weight:** 1.90 kg (4.2 lbs.)  
**Standard Bolt Kit:** BK209 10–24x1.25  
**Metric Bolt Kit:** BKM209 M5–0.8x30mm  
**Seal Kit:**  
 Nitrile SKD1VP  
 Fluorocarbon SKD1VPV

**Bold: Designates Tier I products and options.**

**Non-Bold: Designates Tier II products and options. These products will have longer lead times.**



NFPA D03  
 CETOP 3

Air  
 Operator

Code	Description
<b>Omit</b>	<b>Standard</b>
P10*	Monitor Switch
90	1/4 BSPP Threads

\* Not available on C & D styles.  
 Not CE or CSA approved.

Code	Description
<b>N</b>	<b>Nitrile</b>
<b>V</b>	<b>Fluorocarbon</b>

Code	Symbol
<b>001</b>	
<b>002</b>	
<b>004</b>	
<b>008*</b>	
<b>009**</b>	
<b>081</b>	
<b>082</b>	

\* 008 spool has closed crossover.  
 \*\* 009 spool has open crossover.

Code	Description	Symbol
<b>B</b>	<b>Single operator, two position spring offset. P to A and B to T in offset position.</b>	
<b>C</b>	<b>Double operator, three position, spring centered.</b>	
<b>D</b>	<b>Double operator, two position, detent.</b>	
<b>E</b>	Two position, spring centered. P to B and A to T in shifted position.	
<b>H</b>	<b>Single operator, two position, spring offset. P to B and A to T in offset position.</b>	
<b>K</b>	Two position, spring centered. P to A and B to T in shifted position.	

Valve schematic symbols are per NFPA/ANSI standards, providing flow P to A when energizing operator A. Note operators reverse sides for #008 and #009 spools. See installation information for details.

This condition varies with spool code.

- Valve Weight:** 1.60 kg (3.5 lbs.)
- Standard Bolt Kit:** BK209 10–24x1.25
- Metric Bolt Kit:** BKM209 M5–0.8x30mm  
Grade 8 bolts required
- Seal Kit:**
  - Nitrile SKD1VA
  - Fluorocarbon SKD1VAV

**Bold: Designates Tier I products and options.**

**Non-Bold: Designates Tier II products and options. These products will have longer lead times.**

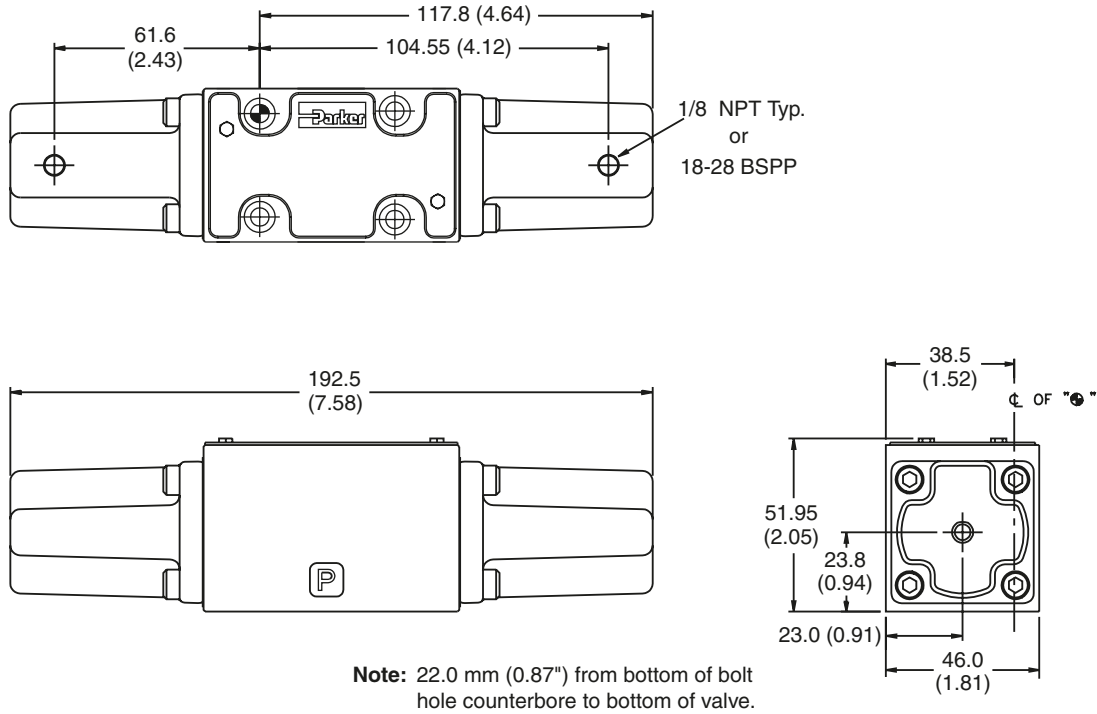
D1.indd, dd



Inch equivalents for millimeter dimensions are shown in (\*\*)

**A**

**Air Operated D1VA, Double Pilot**



**Air Operated D1VA, Single Pilot**

