

Application

Parker D1V Series hydraulic directional control valves are high performance, direct operated 4-way valves. They are available in 2 or 3 position styles. They are manifold mounted valves, which conform to NFPA's D03/CETOP 3 mounting patterns. These valves were designed for industrial and mobile hydraulic applications which require high cycle rates, long life, high efficiency and low power consumption.

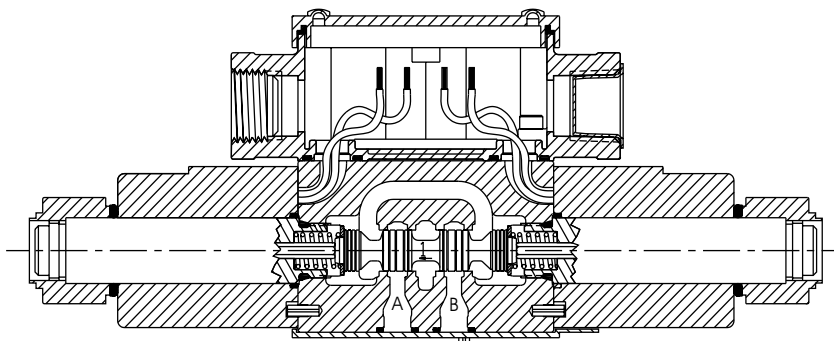
Operation

Parker's D1V Series directional control valves consist of a four chamber style body, and a case hardened sliding spool. The spool is directly shifted by an 8-watt solenoid.

Features

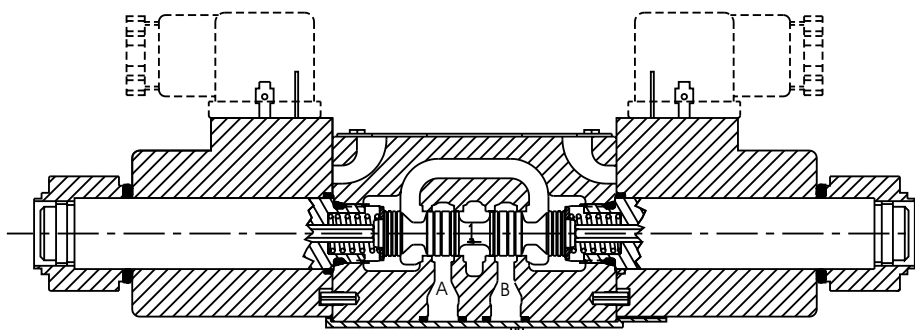
- Easy access mounting bolts.
- 207 Bar (3000 PSI) pressure rating.
- Flows up to 12 GPM (45 LPM).
- Rugged four land spools.
- Low pressure drop.
- Phosphate finished body.
- CSA approved.
- Three electrical connection options.

D1VW Solenoid Operated Conduit Box Style



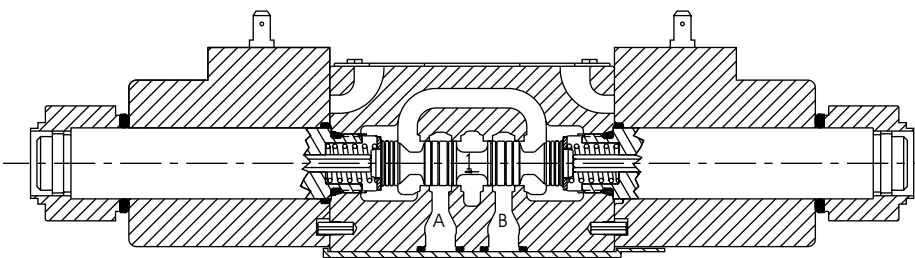
- Easy access mounting bolts.
- Waterproof (NEMA 4 rated).
- No tools required for coil removal.
- 17 spool styles available.
- DC lights available (CSA approval for solenoids and lights).

D1VW Solenoid Operated Hirschmann (DIN) Style



- Easy access mounting bolts.
- DIN Style (43650) Hirschmann.
- 17 spool styles available.
- No tools required for coil removal.
- Easy coil replacement.
- DC lights available (CSA approval for solenoids and lights).

D1VW Solenoid Operated Dual Spade Style



- Easy access mounting bolts.
- 17 spool styles available.
- No tools required for coil removal.
- Easy coil replacement.

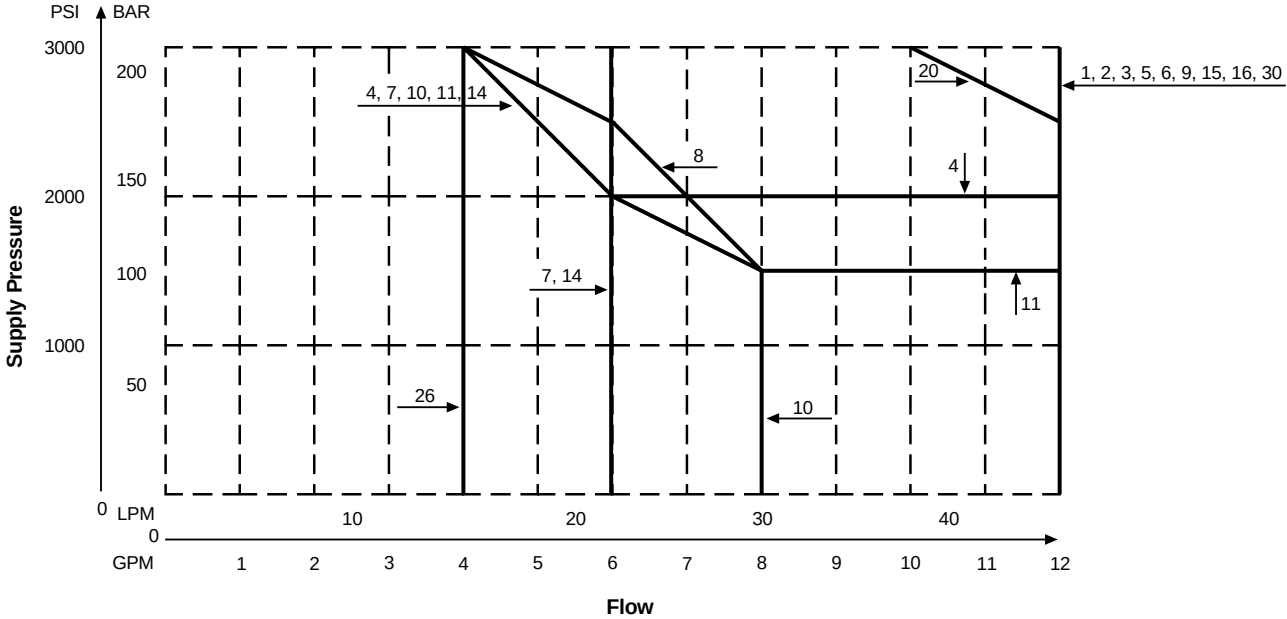


Quick Reference Data

Model	Spool Symbol	Maximum Flow, LPM (GPM) 207 Bar (3000 PSI) w/o Malfunction	Model	Spool Symbol	Maximum Flow, LPM (GPM) 207 Bar (3000 PSI) w/o Malfunction
		D1VW			D1VW
D1V*1		45 (12)	D1V*10		15 (4)
D1V*2		45 (12)	D1V*11		15 (4)
D1V*3		45 (12)	D1V*14		15 (4)
D1V*4		15 (4)	D1V*15		45 (12)
D1V*5		45 (12)	D1V*16		45 (12)
D1V*6		45 (12)	D1V*20		37 (10)
D1V*7		15 (4)	D1V*26		15 (4)
D1V*8		15 (4)	D1V*30		45 (12)
D1V*9		45 (12)			

Center or De-energized position is indicated by P, A, B & T port notation.

Performance Curves — Shift Limits



Example:

Determine the maximum allowable flow of a D1V Series valve (#20 spool) at 83 Bar (1200 PSI) supply pressure. Locate the curve marked "20". At 83 Bar (1200 PSI) supply pressure, the maximum flow is 45 L/M (12 GPM). At 207 Bar (3000 PSI), the flow is 37 L/M (10 GPM).

Important Notes for Switching Limit Charts

- Shift limits charted for equal flow A and B ports. Unequal A and B port flows may reduce shift limits.

Pressure Drop vs. Flow

The table to the right provides the flow vs. pressure drop curve reference for the D1VW 8-Watt Series valves by spool type.

The chart below demonstrates graphically the performance characteristics of the D1VW 8-watt valve. The 8-watt coil and other design features of the D1VW accommodate a maximum flow of 45 LPM (12 GPM) at 207 Bar (3000 PSI).

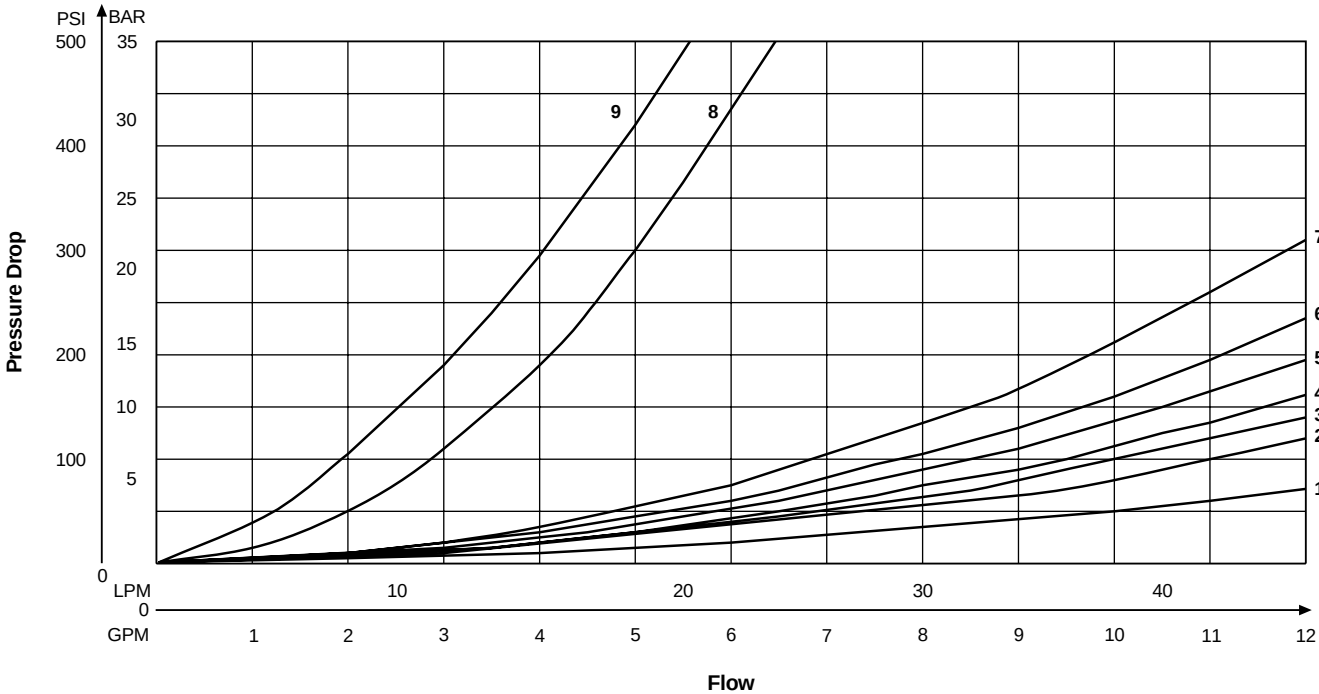
Viscosity Correction Factor

Viscosity (SSU)	75	150	200	250	300	350	400
% of DP (Approx.)	93	111	119	126	132	137	141
Curves were generated using 100 SSU hydraulic oil. For any other viscosity, pressure drop will change per chart.							

D1VW 8 Watt Pressure Drop Reference Chart — Curve Number

Spool No.	Shifted				Center Condition							
	P → A	P → B	B → T	A → T	(P → T)	(B → A)	(A → B)	(P → A)	(P → B)	(A → T)	(B → T)	
1	3	3	1	1	—	—	—	—	—	—	—	
2	2	2	1	1	2	1	1	2	2	1	1	
3	5	5	1	1	—	—	—	—	—	1	—	
4	4	4	1	1	—	—	—	—	—	1	1	
5	4	5	2	2	—	—	—	7	—	—	—	
6	2	2	4	4	—	7	7	7	7	—	—	
7	6	4	1	2	4	—	—	—	2	—	1	
8	6	6	6	6	7	—	—	—	—	—	—	
9	6	6	7	7	3	—	—	—	—	—	—	
10	6	5	—	—	—	—	—	—	—	—	—	
11	6	6	2	2	—	—	—	—	—	9	9	
14	6	4	1	2	4	—	—	2	—	1	—	
15	5	5	1	1	—	—	—	—	—	—	1	
16	4	5	2	2	—	—	—	—	7	—	—	
20	4	5	2	3	—	—	—	—	—	—	—	
26	2	8	—	—	—	—	—	—	—	—	—	
30	2	3	1	1	—	—	—	—	—	—	—	

Performance Curves





General Description

The D1VW 8-watt directional control valves are high-performance, 4-chamber, direct operated, wet armature solenoid 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

- 17 spool styles available.
- Three electrical connection options.
- Lights available (CSA approval available for solenoids and lights).
- Easy access mounting bolts.
- Waterproof (NEMA 4 rated).
- CSA approved.
- No tools required for coil removal.

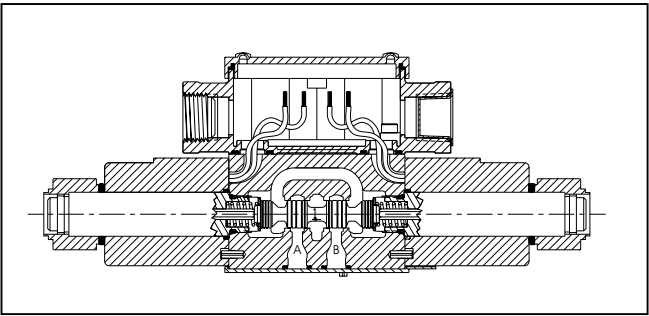
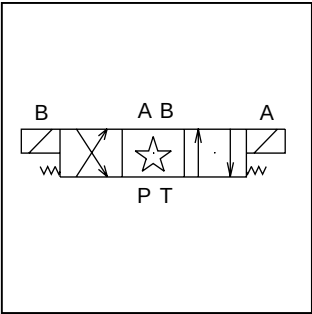
Response Time

Nominal response time (milliseconds) at 207 Bar (3000 PSI) is 45 LPM (12 GPM).

Solenoid Type	Pull-In	Drop-Out
DC	80	34

Specifications

Mounting Pattern	NFPA D03, CETOP 3; NG 6
Mounting Interface	DIN 24340-A6 ISO 4401-AB-03-4-A CETOP R35H 4.2-4-03, NFPA D03
Maximum Pressure	P, A, B 207 Bar (3000 PSI) Standard CSA  207 Bar (3000 PSI) Tank: 103 Bar (1500 PSI) Standard CSA  103 Bar (1500 PSI)



Solenoid Ratings

Insulation System	Class F
Allowable Deviation from rated voltage	-10% to +15%
Armature	Wet pin type
CSA file LR60407	

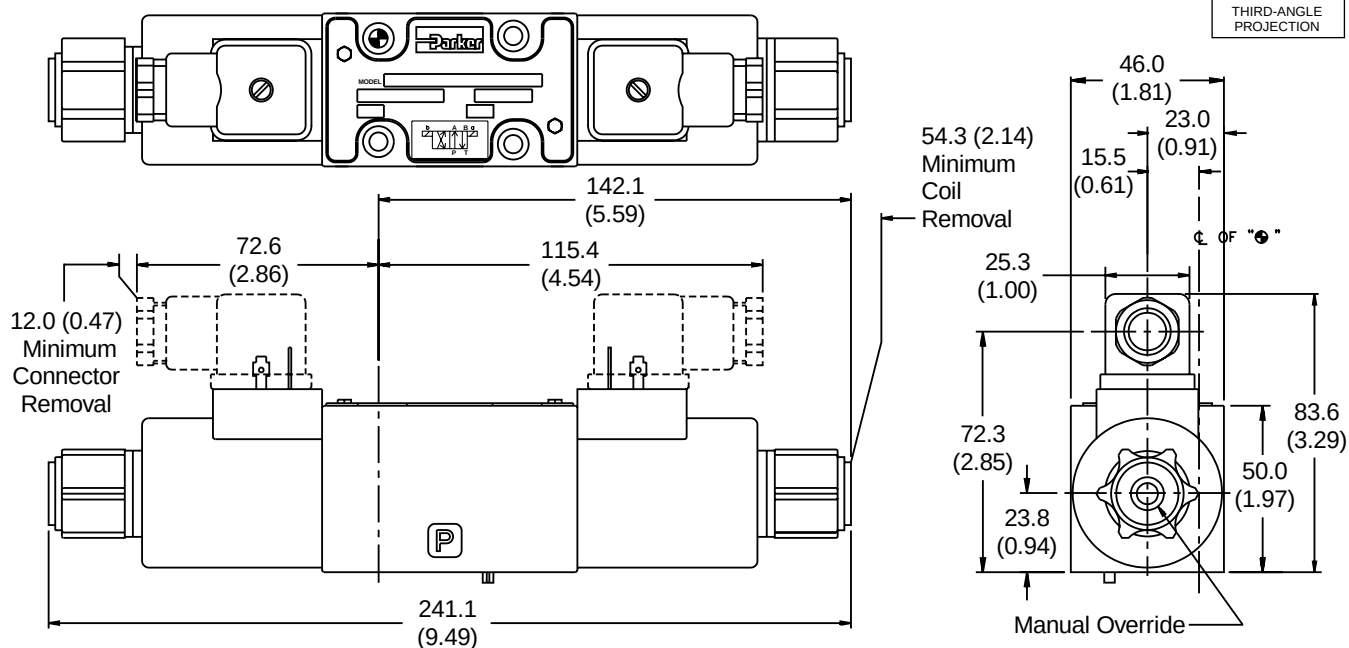
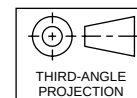
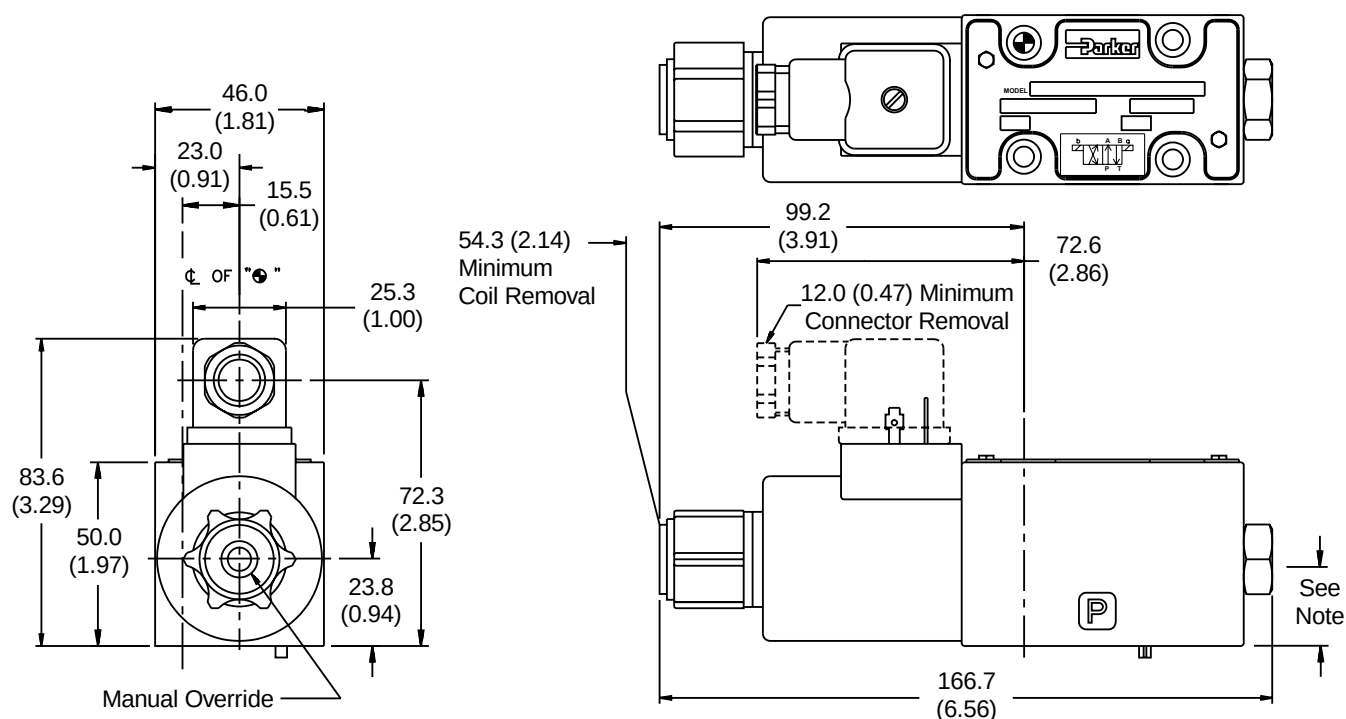
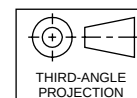
Leadwire length 6" from coil face.

D1VW Solenoid Electrical Characteristics†

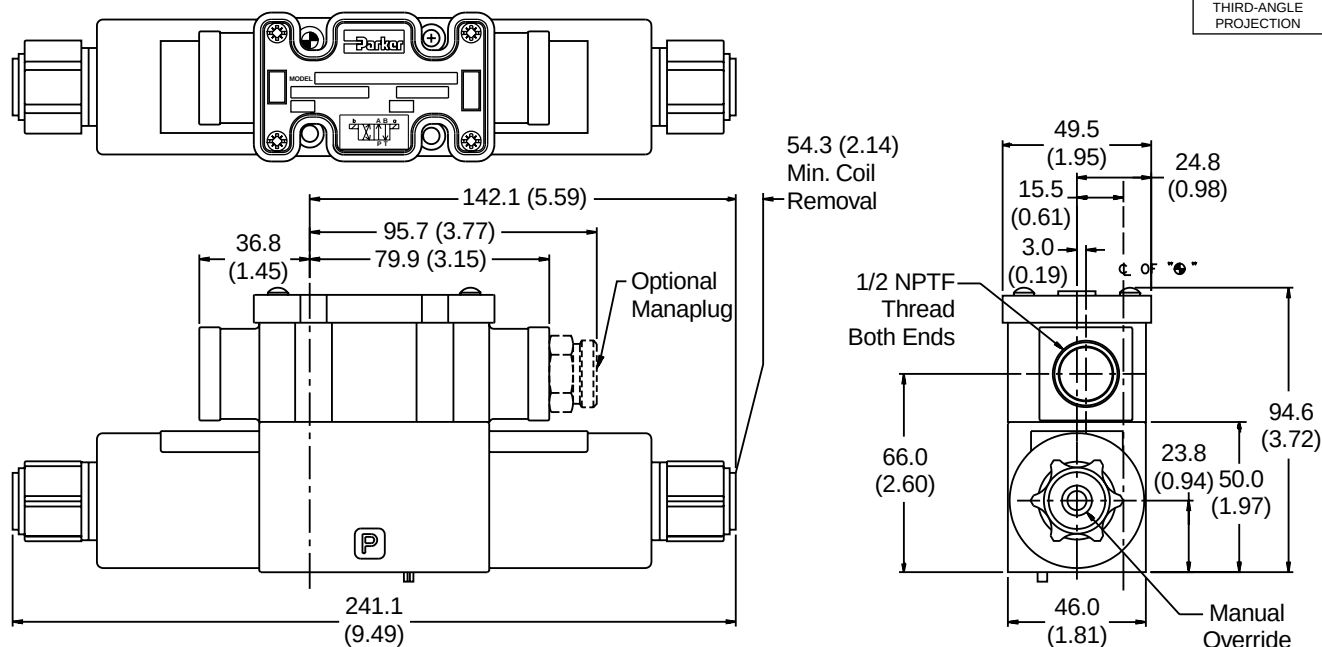
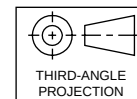
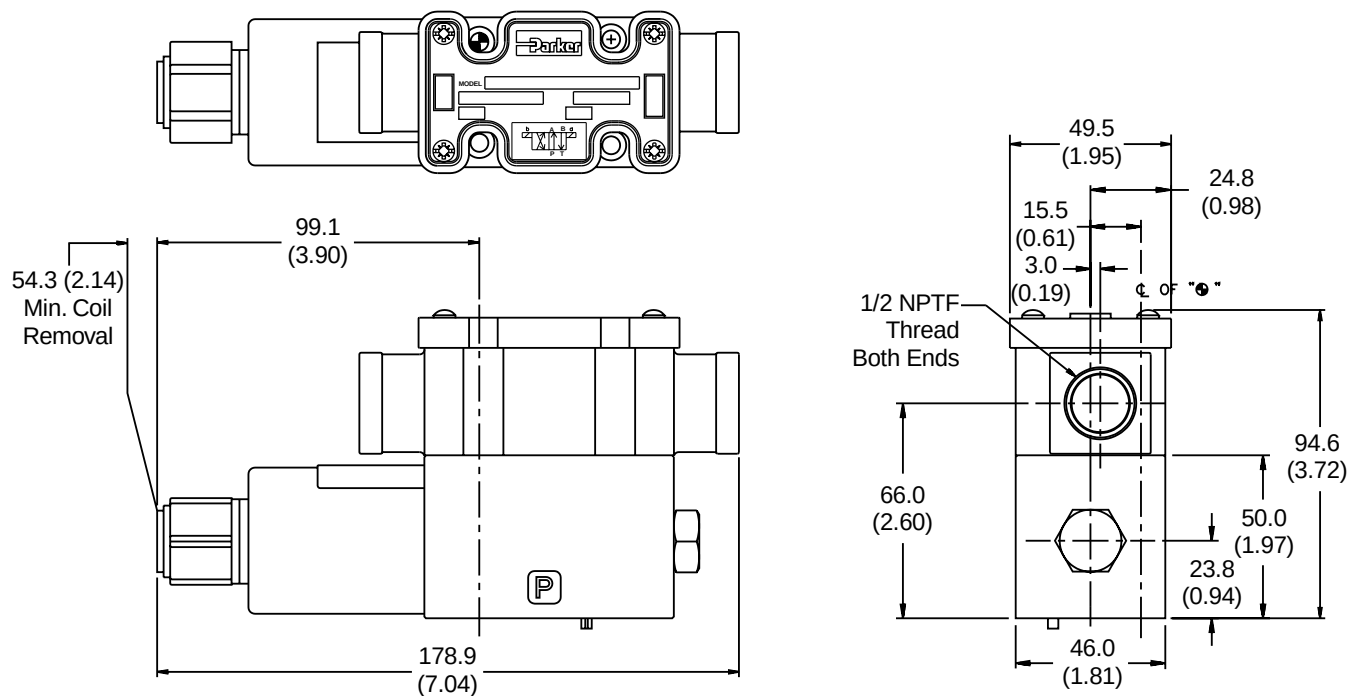
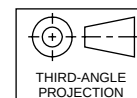
Solenoid Code	Nominal Volts/Hz	In Rush Amps	Holding Amps	Watts
K	12 VDC	—	.67	8
J	24 VDC	—	.33	8

† Based on nominal voltage at 22°C (72°F).

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

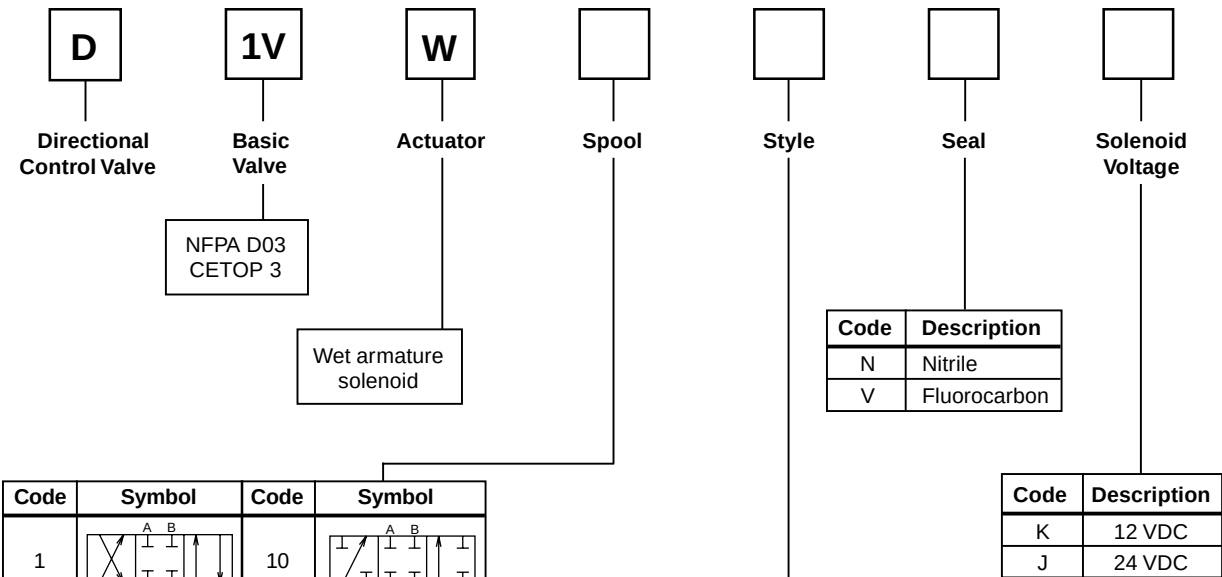
A**Hirschmann, Double DC Solenoid****Hirschmann, Single DC Solenoid****Note:** 22.0mm (0.87") from bottom of bolt hole counterbore.

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

**Conduit Box, Double DC Solenoid
with Variation 6 (Manaplug)****Conduit Box, Single DC Solenoid**

Standard Valves

A



Code	Symbol	Code	Symbol
1		10	
2		11	
3		14	
4		15	
5		16	
6		20*	
7		26*	
8*, 9**		30**	

* 8, 20 & 26 spools have closed crossover
** 9 & 30 spools have open crossover

Code	Description	Symbol
B *	Single solenoid, 2 position, spring offset P to A and B to T in offset position	
C	Double solenoid, 3 position, spring centered.	
D †	Double solenoid, 2 position, detent	
E	Single solenoid, 2 position, spring centered. P to B and A to T when energized.	
H *	Single solenoid, 2 position, spring offset. P to B and A to T in offset position.	
K	Single solenoid, 2 position. Spring centered. P to A and B to T when energized.	

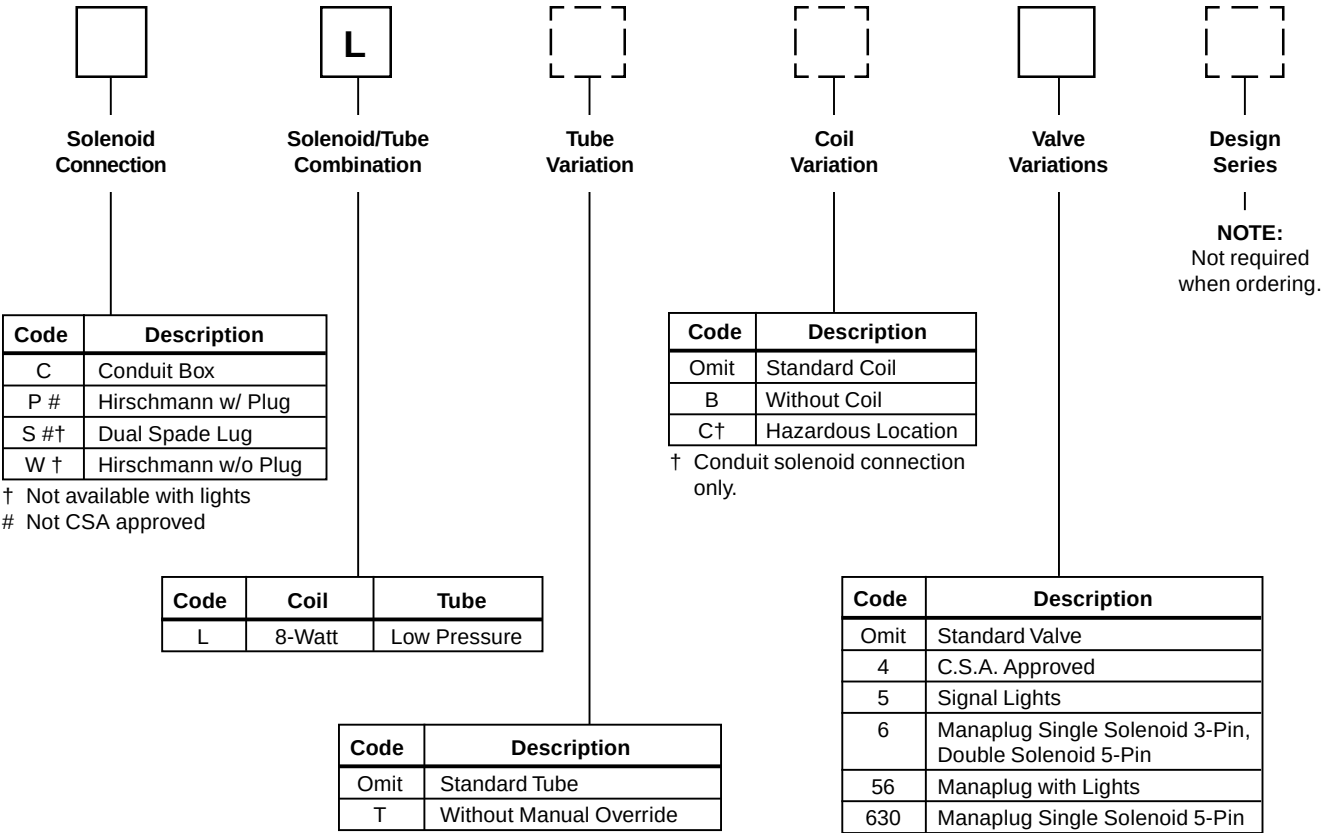
* Only spools 20, 26 & 30.
† Only spools 20 & 30.

This condition varies with spool code

Valve schematic symbols are per NFPA/ANSI standards, providing flow P to A when energizing solenoid A. Note operators reverse sides for #8 and #9 spools. See installation information for details.



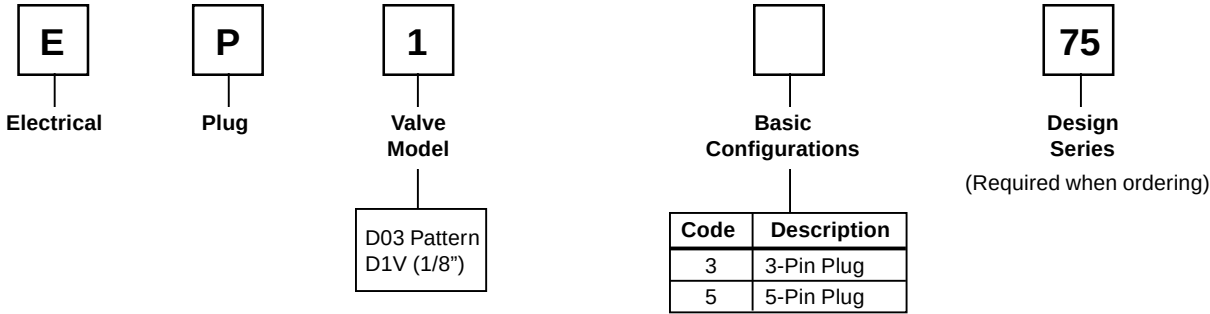
Standard Valves



Valve Weight:
Single Solenoid 1.36 kg (3.0 lbs)
Double Solenoid 1.6 kg (3.5 lbs)
Standard Bolt Kit:
BK209

Manaplugs – Electrical Plug

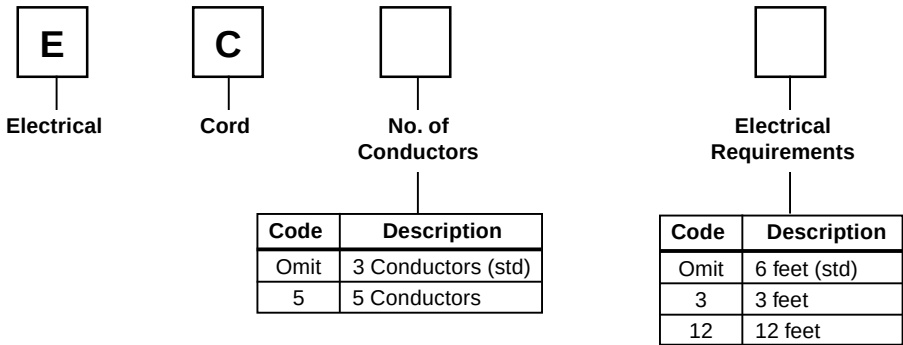
A



Hirschmann – Female Connector



Electrical Cords

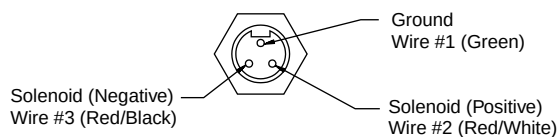


Conduit Box (connection option C)

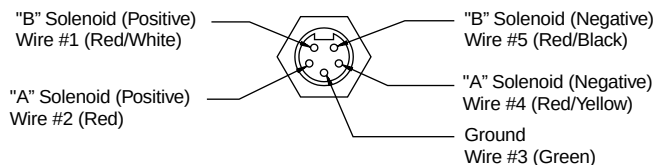
- Interface – 152.4 cm (6.0 inch) lead wires, 18 awg.
– NEMA 4 rated
– Waterproof

Manaplug (valve variations 6, 56, 630)

- Interface – Brad Harrison Plug
– 3-Pin for Single Solenoid
– 5-Pin for Double Solenoid



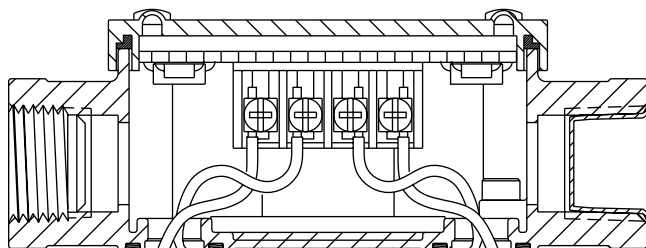
3-Pin Manaplug (Mini) with Lights
Single Solenoid Valves



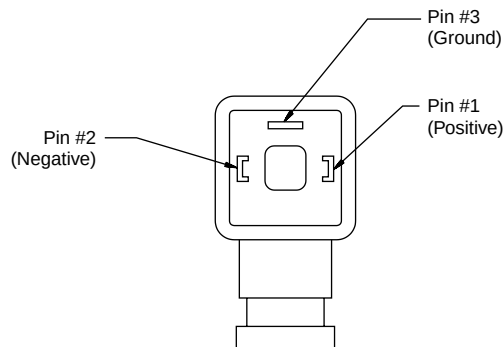
5-Pin Manaplug (Mini) with Lights
Single and Double Solenoid Valves
("A" and "B" Solenoids Reversed for #8 and #9 Spools)

Signal Lights (valve variation 5)

- Interface – LED



Hirschmann Plug with Lights



Face View of Plug