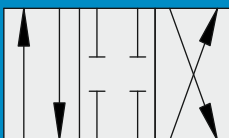
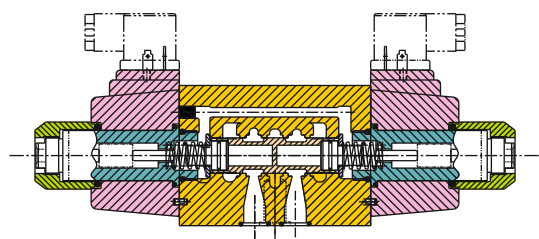


SOLENOID OPERATED DIRECTIONAL CONTROL VALVES



SERIES – DCV1-5



Basic Characteristics

Operating Pressure (maximum) - 315 bar (4500 psi)

Ports P, A & B – 315 Bar (4500 psi)

Ports Ta & Tb – 120 Bar (1700 psi) AC Sol.
160 Bar (2300 psi) DC Sol.

Rated Capacity (maximum) -

DCV1-5-20 = 120 L/min.

Mounting Surface - ISO Size 05 , NFPA D02,

DIN 24340 (NG10)

Mounting Subplate-

DCV1-5-20 = VC20180

Approx. Weights

DCV1-5-20 – With AC coil

Single solenoid Model = 4.0 kg

Double solenoid Model = 4.5 kg

DCV1-5-20 – With DC Coil

Single solenoid Model = 4.8 kg

Double Solenoid Model = 6.3 kg

General Description

A range of four-port solenoid operated directional control valves with four-land spool design to facilitate provision of smooth, variable valve response speeds.

The initial launch includes :-

- AC & DC wet-armature solenoid options with ISO 4450 (DIN 43650) electrical connection & manual overrides.
- Variable speed change over potential in all DC models; see Response Times section.
- Different spool types, in spring-offset, spring-centered & detented arrangements.

ORDERING INFORMATION

DCV 1 - 5 - * * - * - * - 20

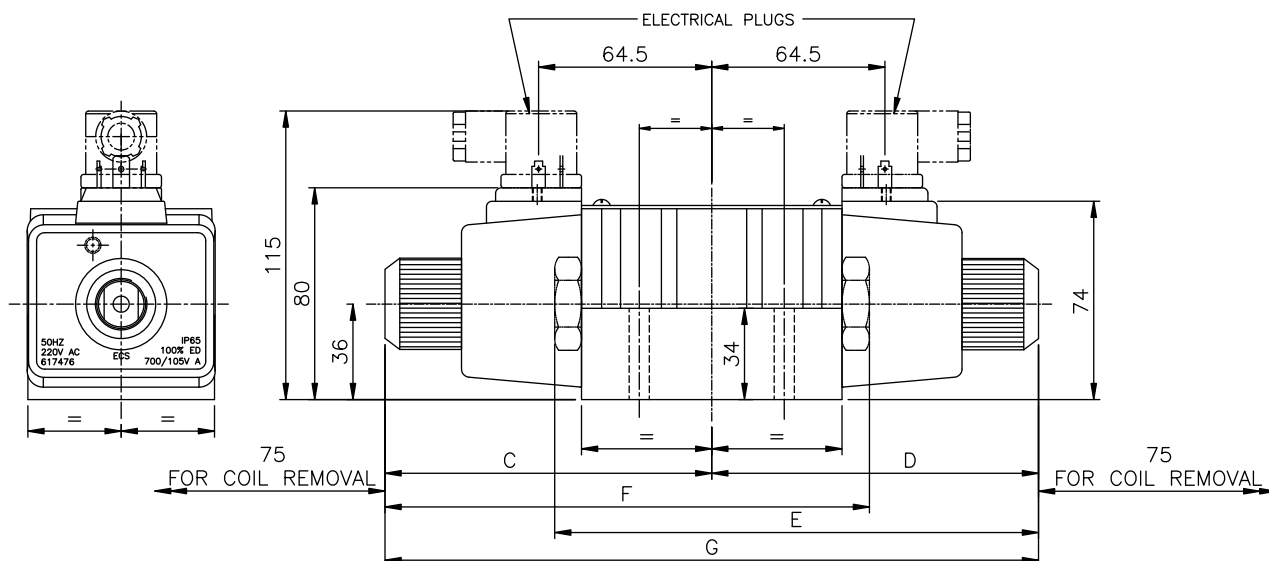
1
2
3
4
5
6
7
8

1. Model Code - DCV
2. Model Series - 1
3. Arrangement – CETOP5
4 Spool Type
• 0
• 2
• 6

5. Spring location – A – Spring offset, Single Solenoid AL – Same as 'A' but left hand build B – Spring centered, single solenoid BL – Same as 'B' but left hand build C – Spring centered
6. Connector C0 – Without plugin connector C1 – with plug in connector C2 – with plug in connector & light indicator
7. Voltage – A110 / A115 – AC Coil A220 / A230 – AC Coil D24 – DC Coil
8. Design No – 20 (Subject to change)

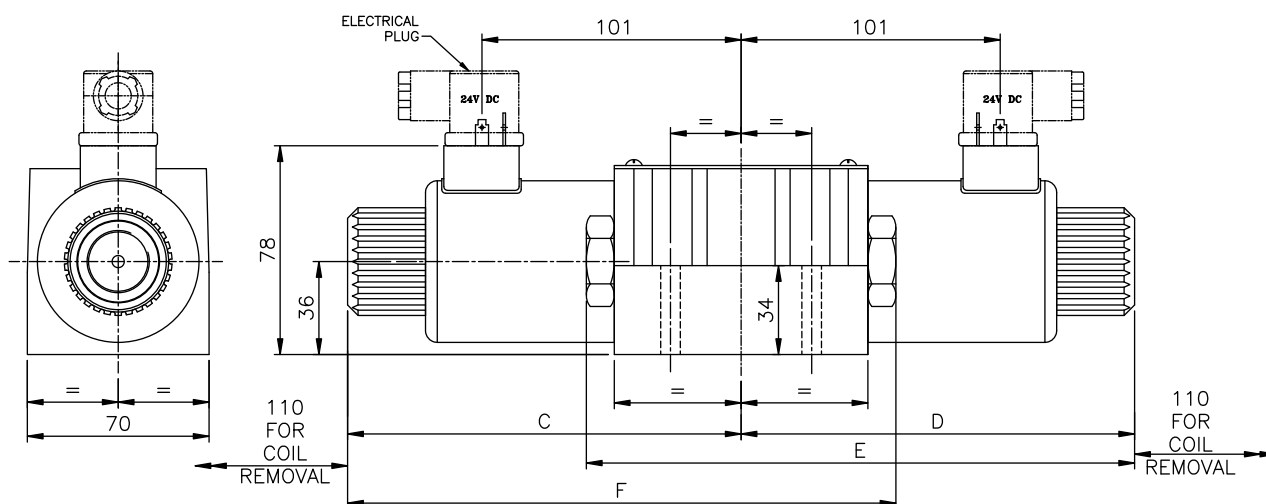
Typical Model Code :- **DCV1-5-6C-C2-A220-20**

With AC Coil

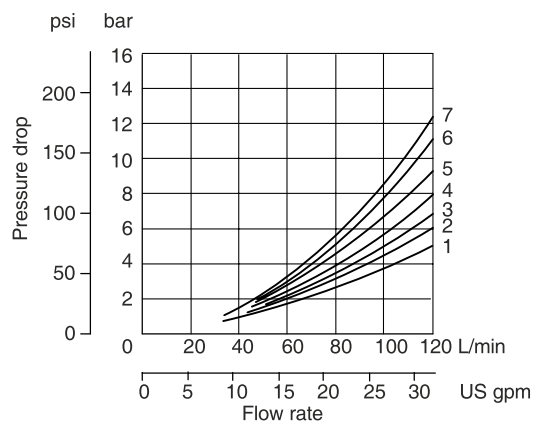


MODEL	SOLENOID AT	C	D	E	F	G	Manual Overrides Option
DCV1-5-*A(L)/B(L)	PORT A END	123	-	-	182	-	No overrides at either end, Omit for standard plain overrides in solenoid end(s) only
	PORT B END	-	123	182	-	-	
DCV1-5-*A(L)/B(L)	PORT A END	138	-	-	223	-	Water-resistant overrides in both ends of single-solenoid valves
	PORT B END	-	138	223	-	-	
DCV1-5-*A(L)/B(L)	PORT A END	123	-	-	195	-	standard overrides in both ends of single-solenoid valves
	PORT B END	-	123	195	-	-	
DCV1-5-*C	PORT BOTH END	123	123	-	-	246	No overrides at either end, Omit for standard plain overrides in solenoid ends only
DCV1-5-*C	PORT BOTH END	138	138	-	-	276	Water-resistant override(s) in solenoid end(s)

With DC Coil



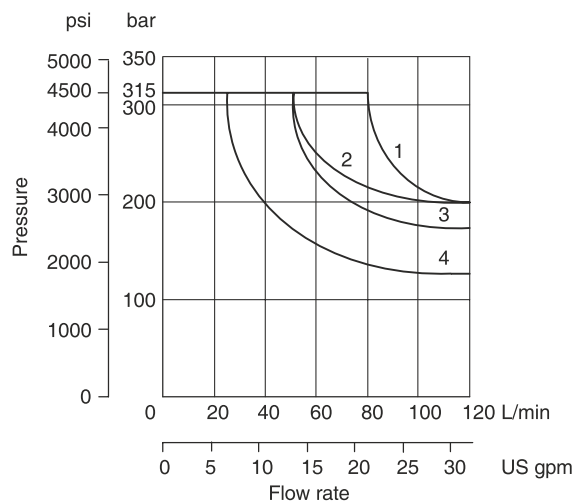
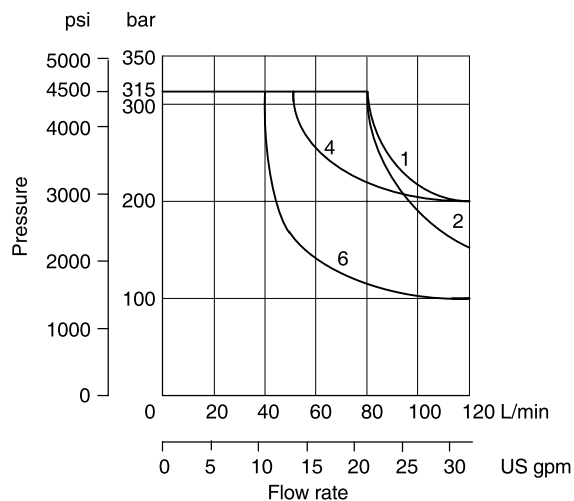
MODEL	SOLENOID AT	C	D	E	F	G	Manual Overrides Option
DCV1-5-*A(L)/B(L)	PORT A END	156	-	-	215	-	No overrides at either end, Omit for standard plain overrides in solenoid end(s) only
	PORT B END	-	156	215	-	-	
DCV1-5-*A(L)/B(L)	PORT A END	185	-	-	230	-	Water-resistant overrides in both ends of single-solenoid valves
	PORT B END	-	185	270	-	-	
DCV1-5-*A(L)/B(L)	PORT A END	156	-	-	228	-	standard overrides in both ends of single-solenoid valves
	PORT B END	-	156	228	-	-	
DCV1-5-*C	PORT BOTH END	156	156	-	-	312	No overrides at either end, Omit for standard plain overrides in solenoid ends only
DCV1-5-*C	PORT BOTH END	185	185	-	-	370	Water-resistant override(s) in solenoid end(s)

Pressure Drops – Typical With petroleum oil at 36 CST (170 SUS) & a specific gravity of 0.87

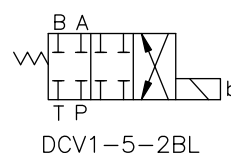
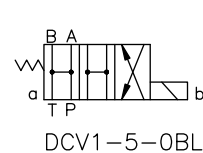
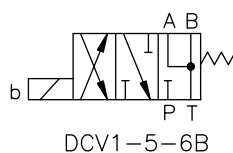
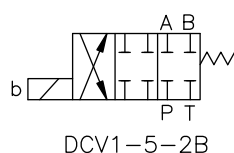
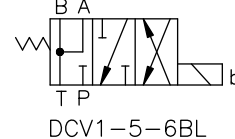
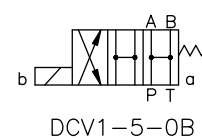
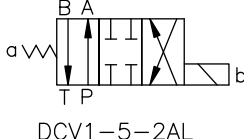
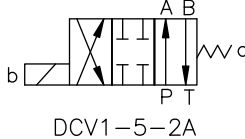
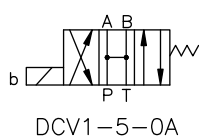
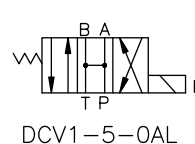
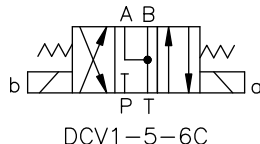
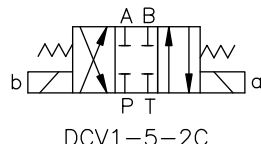
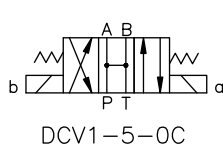
Spool/spring code	Spool positions covered	P to A	P to B	A to T	B to T	P to T
0A(L)	Both	2	2	4	5	-
0B(L) & DC	De-energized	-	-	-	-	3▲
	Energized	1	1	6	7	-
2A(L)	Both	3	3	5	6	-
2B(L), 2C	All	2	2	4	5	-
6B(L) & 6C	De-energized	-	-	5●	6▼	-
	Energized	3	3	6	7	-

▲ A and B blocked ▼ A blocked ● B blocked

Max. Flow Rates :- Based on warm solenoid(s) operating at 10% below rated Voltage.
Valve spools having simultaneous equal flow rates from P to A or B & from B or A to T

AC Solenoid Valves**DC Solenoid Valves**

Spool/spring code	AC valve graph curve	DC valve graph curve
0A(L)	3	2
0B(L) & 0C	2	4
2A(L)	3	2
2B(L), 2C	1	1
6C	4	6



Response Times, Typical :-

Time taken from when signal is first applied at the solenoid until the spool completes its travel. Based on DCV1-5-2C at 60L/min (16 USgpm) from P to A to B to T & at 160 Bar (2320 psi) with petroleum oil at 36 cSt (168 SUS) & 50° C (122° F)

AC energizing	:- 30 ms
AC de- energizing	:- 40 ms
DC energizing	:- 120 ms
DC de- energizing	:- 45 ms *

❖ In pure switched conditions, devoid of the effects of any suppression diodes and full-wave rectifiers.

Hydraulic fluids :-

The extreme operating viscosity range is from 500 to 13 cSt (2300 to 70 SUS) but the recommended running is 54 to 13 cSt (245 to 70 SUS).

Temperature Limits :-

Minimum ambient = -20°C (-4°F)

Maximum ambient =

AC 50Hz Valves - 50°C (122°F)

AC 60Hz Valves - 40°C (104°F)

DC Valves - 70°C (158°F)

Fluid Temperatures

	Petroleum oil	Water containing
Min.	-20°C (-4°F)	+10°C (+50°F)
Max.*	+70°C (+158°F)	+54°C (+130°F)

* To obtain optimum service life from both fluid & hydraulic system, 60°C (150°F), normally is the maximum Temperature except for water-containing fluids.

