DVS50M
*DeACCELATROL® VALVE
SOLENOID ACTUATED, PILOT OPERATED

* U.S. Patent No. 3,213,886

ACCEL./DECEL. HIGH/LOW SPEED
MOTION CONTROL VALVE

TYPICAL PERFORMANCE
SPECIFICATIONS

<table>
<thead>
<tr>
<th>FLOW RANGES</th>
<th>FLOW</th>
<th>Nominal 12-50 gpm</th>
<th>45-190 lpm</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAXIMUM</td>
<td>P, A, B &amp; X Ports</td>
<td>3500 psi</td>
<td>250 psi</td>
</tr>
<tr>
<td>OPERATING</td>
<td>T PORT**</td>
<td>3000 psi</td>
<td>210 psi</td>
</tr>
<tr>
<td>PRESSURES</td>
<td>Y Port (drain)</td>
<td>100 psi</td>
<td>7 bar</td>
</tr>
<tr>
<td>MINIMUM PILOT</td>
<td></td>
<td>250 psi</td>
<td>17 bar</td>
</tr>
<tr>
<td>SUPPLY PRESSURE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAXIMUM CYCLE RATE</td>
<td></td>
<td>250 psi</td>
<td>17 bar</td>
</tr>
<tr>
<td>MOUNTING SURFACE</td>
<td></td>
<td>250 psi</td>
<td>17 bar</td>
</tr>
<tr>
<td>WEIGHT</td>
<td>Code 3</td>
<td>60 lbs.</td>
<td>22.7 kg</td>
</tr>
<tr>
<td></td>
<td>Code 5 or 8</td>
<td>45 lbs.</td>
<td>20.6 kg</td>
</tr>
</tbody>
</table>

** With external drain configuration; include surges.

All pressure drops shown on this data page are based on 100 SUS fluid viscosity and 0.87 specific gravity.

Fluid Viscosities

<table>
<thead>
<tr>
<th>Fluid</th>
<th>CS</th>
<th>SUS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>75</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>150</td>
</tr>
<tr>
<td></td>
<td>150</td>
<td>200</td>
</tr>
<tr>
<td></td>
<td>200</td>
<td>250</td>
</tr>
<tr>
<td></td>
<td>250</td>
<td>300</td>
</tr>
<tr>
<td></td>
<td>300</td>
<td>350</td>
</tr>
<tr>
<td></td>
<td>350</td>
<td>400</td>
</tr>
</tbody>
</table>

Multiplier

| Multiplier | 0.93 | 1.00 | 1.11 | 1.19 | 1.26 | 1.32 | 1.37 | 1.41 |

For any other specific gravity (G1) the pressure drop (ΔP) will be approximately ΔP1 = ΔP (G1/G).

GENERAL SPECIFICATIONS

Recommended Fluid
Petroleum base, water base and most phosphate esters (other fluids are acceptable, but special O-rings may be required).

Fluid Temperature Range
Fluid temperatures up to 200° F will not appreciably affect valve performance, however, from a safety standpoint, temperatures above 130° F are not recommended. The valve is not temperature immune; constant temperatures should be held during operation.

Recommended Operating Viscosity
80 to 350 SUS.

Fluid Operating Viscosity Range
Acceptable start-up viscosity to 2000 SUS. Minimum viscosity to 30 SUS.

Filtration
ISO 18/25 (25 micron).

Mounting Position
Optional; horizontal preferred.

O-Rings
Viton standard.

NFPA Flow Path / Actuating Pattern
Actuating operator “a”--connects flow to cylinder port “A”.
Actuating operator “b”--connects flow to cylinder port “B”.

PRESSURE DROP CURVE
Typical Valve Pressure Drop:
P to (A or B) to (B or A) to T (Full circuit).
Fluid Viscosity: 100 SUS @ 120° F, .87 specific gravity.
TYPICAL MINIMAL RESPONSE TIME INFORMATION

Minimum response time for the valve is determined with the chokes wide open to accelerate from zero to maximum flow, and decelerate from maximum flow to zero flow. Fluid viscosity 100 SUS @ 120° F. Response time for spring centering the valve is 70 milliseconds.

**NOTE:** For faster response times, pilot pressure must be increased. Consult the factory.

**TYPICAL ELECTRICAL & RESPONSE TIME**

* Code 68L valves (low amp force) may not shift on high viscosity (low temperature) fluids. Maximum 1000 SUS start-up recommended.
WARM-UP CIRCUIT SCHEMATIC

Schematics (do not indicate construction)

CODE 3

CODE 5

CODE 8
CONSIDERATIONS FOR WARM-UP CIRCUITS

The DeAccelatrol® valve is not temperature immune. Changes in valve response time can be expected as system fluid viscosities are altered by changes in fluid temperature. The warm-up circuit is used to pre-warm the valve and the circuit solenoid should be actuated when the hydraulic system is run prior to running the machine. This brings the fluid and valve up to operating temperature.

NOTE: Field installable warm-up circuit kits are available. See Valve Accessories section.

CODE W & WW
Warm-Up Circuit Options

CODE J
Adjustable Stroke Option
(w/Code 8 Valve only)

CODE K
Adjustable Choke Option
(w/Code 8 Valve only)
## DVS50M
### DeACCELATROL® VALVE
### SOLENOID ACTUATED, PILOT OPERATED

NFPA D08 SIZE
FOR INTERFACE PATTERN,
SEE MOUNTING SURFACE
SECTION

![Diagram of the Valve](image)

### Dimensions

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Dimensions (MM)</th>
<th>Dimensions (IN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>1/2-14NPT Electrical Connection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BT</td>
<td>5 Pin Sealed Connector</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BSH</td>
<td>2 OR 3 Places 5 Pin Sealed Connector</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CODES 5 & 8

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Dimensions (MM)</th>
<th>Dimensions (IN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>1/2-14NPT Electrical Connection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BT</td>
<td>5 Pin Sealed Connector</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BSH</td>
<td>2 OR 3 Places 5 Pin Sealed Connector</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Notes
- Top Electrical Connector may be rotated 180°
- Minimum clearance for coil removal (each side)
- Manual override pin with optional indicator lights
- External drain port
- External pilot port

### Technical Specifications
- Maximum torque: 25 ft/lbs
- Code B or Code BT
- Code BSH 2 or 3 places 5 pin sealed connector

---

80
**DVS50M**

DeACCELATROL® VALVE

Solenoid Actuated, Pilot Operated

**ORDERING INFORMATION**

**TYPICAL ORDERING CODE:** DVS50M-3A2-G1B-68L

**BASIC VALVE**

- 5-Position Motion Control
- Directional/Acceleration
- D08 Subplate Mounting
- 0-125 GPM Flow Range
- 3500 PSI Maximum Operating Pressure

**SEALS**

- Viton Seals Standard

**FUNCTION**

- CODE: 3
  - ACCELERATION/DECELERATION CONTROL ON BOTH A & B PORTS

- CODE: 5
  - ACCELERATION/DECELERATION CENTER TO 1 SIDE ONLY, "B" SOLENOID

- CODE: 8
  - ACCELERATION/DECELERATION "B" SOLENOID ONLY, SNAP ACTION SOLENOID "A"

**SPOOLS**

- CODE: REFER TO PAGE 77 FOR SPOOL AVAILABILITY

**ELECTRICAL OPTIONS**

- CODE | DESCRIPTION
  - B
    - Top Electrical Box W/O Terminal Posts
  - BT
    - Top Electrical Box With Terminals and Ground
  - BSH
    - Top Electrical Box With 5-Pin Male Receptacle For 1 Or 2 Solenoids
  - OMIT
    - Not Available With DIN Connections

**SOLENOID INDICATOR LIGHTS**

- CODE | DESCRIPTION
  - L3
    - Basic Codes 3 and 8
  - L5
    - Code 5 With Warm-Up 110/120 V
  - L6
    - Codes 3 and 8 With Warm-Up 110/120 V 50/60 Hz

**MECHANICAL OPTIONS**

- CODE | OPTION | USED ON
  - J
    - Adjust Stroke "A" Port
  - K
    - Adjust Choke "A" Port
  - W
    - Warm-Up Circuit
  - WW
    - Warm-Up Circuit
  - Z*
    - Manual Override

**PILOT/DRAIN**

- CODE | OPTION
  - 1
    - Internal Pilot External Drain
  - 2
    - External Pilot External Drain

**SOLENOID**

- CODE | VOLTAGE
  - 60L
    - 110/120 V 50/60 Hz
  - 61L
    - 220/240 V 50/60 Hz
  - 68L
    - 110/120 V 50/60 Hz (Low Amps)
  - 70L
    - 24 VDC
  - 75L
    - 12 VDC
  - 33L
    - 110/120 V 50/60 Hz
  - 34L
    - 220/240 V 50/60 Hz
  - 35L
    - 240/280 V 50/60 Hz
  - 42L
    - 24 VDC
  - 44L
    - 12 VDC

* Internal drain not recommended. If used, back pressure in the "tank" line may cause sudden changes in "ACCEL" and/or "DECEL" rates.

* On single solenoid valve, spring offset plug end.