D08H Pattern Directional Control Valves

Also refer to "Directional Valve Features, Selection and Operating Recommendations" (dynexdcvoperating.pdf)

USA Headquarters
Dynex/Rivett Inc.
770 Capitol Drive
Pewaukee, WI 53072  U.S.A.
Tel: 262-691-2222
FAX: 262-691-0312
E-mail: sales@dynexhydraulics.com

Power Units & Systems
Dynex/Rivett Inc.
54 Nickerson Road
Ashland, MA 01721  U.S.A.
Tel: 508-881-5110
FAX: 508-881-6849
E-mail: ashland@dynexhydraulics.com

European Sales
Dynex/Rivett Inc.
Unit C5 Steel Close, Little End Road, Eaton Socon,
Huntingdon, Cambs. PE19 8TT  United Kingdom
Tel: +44 (0) 1480 213980
FAX: +44 (0) 1480 405662
E-mail: sales@dynexhydraulics.co.uk

For more information visit our web site:
www.dynexhydraulics.com

BROCHURE NOTES:
Consult the Dynex sales department for a review of any application which requires operating above the rated flows or pressures, or higher than normal operating temperatures.

Specifications shown were in effect when published. Since errors or omissions are possible, contact your sales representative for the most current specifications before ordering. Dynex reserves the right to discontinue or change designs at any time without incurring any obligation.
VALVE DESCRIPTION

D08H valves provide high flow capability, 80 percent greater than D08 valves.

These valves operate efficiently, with large internal flow passages and uniform flow areas throughout the body coring. Low pressure drop is enhanced with the use of the special Dynex mounting pattern with larger ports.

For a description of spools, operators and application information, see dynexdcvoperating.pdf.

Mounting

Subplate, N.F.P.A. D08 (CETOP 8) pattern, with auxiliary “X” and “Y” ports for external pilot and drain.

Rated Flow

80 U.S. gpm (303 L/min) nominal; 165 U.S. gpm (625 L/min) maximum.

Rated Pressure

5000 psi (350 bar).

Tank Port Pressure (Maximum)

Standard External Drain: 5000 psi (350 bar).

Internal Drain (“ID” Option):
Solenoid models, 1500 psi (105 bar);
Solenoid models with “HT” Option, AC models, 2300 psi (160 bar), DC models, 3000 psi (210 bar);
Air piloted models, 3000 psi (210 bar).

Response Time (Full Stroke)

Spring Centered Models:
Solenoid Energized, 40-45 ms.
Spring Returned, 40 ms.

Spring Offset Models:
Solenoid Energized, 50 ms.
Spring Returned, 75 ms.

Flow Curve Reference

<table>
<thead>
<tr>
<th>Flow Path</th>
<th>Spool Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>P→A</td>
<td>E</td>
</tr>
<tr>
<td>P→B</td>
<td>E</td>
</tr>
<tr>
<td>A→T</td>
<td>D</td>
</tr>
<tr>
<td>B→T</td>
<td>C</td>
</tr>
<tr>
<td>P→T</td>
<td>B</td>
</tr>
</tbody>
</table>

6600 Series Solenoid Piloted Models

Pilot Pressure:
Minimum, 65 psi (5 bar);
Maximum, 5000 psi (350 bar).

Solenoids:
These models use a D03 valve as a pilot. Models are available with standard AC or DC solenoids. Optional Plug-In-Terminal Solenoids fit DIN Connector, Standard 43650 Form A (“Hirschmann” type).

See dynexdcvoperating.pdf for “Electrical Connections” and “Explosion Proof Option”.

6800 Series Hydraulic Piloted Models

Pilot Pressure:
Minimum, 110 psi (8 bar), except models with Code 3 internal operator, 65 psi (5 bar); Maximum, 5000 psi (350 bar).

Required Volume (to shift spool full stroke): 1.71 in³ (28.0 cm³).

6900 Series Air Piloted Models

These models use an air piloted D03 valves as a pilot.

Air Pilot Pressure:
Minimum, 40 psi (3 bar);
Maximum, 200 psi (14 bar).

Required Volume (to shift spool full stroke): 0.22 in³ (3.6 cm³).

VALVE EFFICIENCY

Efficiency for all models is shown by the typical performance curves, above. The table identifies the appropriate pressure drop curve for each spool and flow path.

For example, in the table under spool Type 5, curve “E” is called out to determine the pressure drop for P→A. Looking at the curves, “E” indicates a drop of about 55 psi at 80 U.S. gpm (3.8 bar at 303 L/min).

To determine total “loop” drop, the individual pressure drops for P→A and B→T (or P→B and A→T) must be added.
INSTALLATION AND DIMENSIONS

Valve Mounting
The top drawing shows the standard N.F.P.A. D08 (CETOP 8) mounting surface. The drawing below shows the recommended mounting surface with larger ports providing lower pressure drop. Dynex D08H valves will mount on either pattern.

Port o-rings are included with valves. Mounting bolts must be ordered separately: .500-13 U.N.C. Threaded x 1.50 inch (38,1 mm), Grade 8 or better, six required. Recommended mounting torque is 55 lb•ft (75 N•m).

Pilot and Drain Options
The “Section X-X” drawing shows the location of the plug for standard external drain on solenoid and air piloted models.

To convert to external pilot, remove the “access plug” (see main drawings) to install plug, 1/16-27 N.P.T.F., part number 10062450.

Solenoid Model Dimensions
Dimensions are shown for both AC and DC solenoids. DC configuration is shown printed in gray.

The overall length of a single solenoid model (not shown) is 12.68 inches (322.1 mm), the same as a double solenoid model (determined by the length of the main valve).

Weight (Mass):
Single Solenoid,
AC, 9.3 lb (4.2 kg); DC, 9.8 lb (4.4 kg).
Double Solenoid,
AC, 10.0 lb (4.5 kg); DC, 11.3 lb (5.1 kg).
Explosion Proof Solenoids

“EP” solenoids with special enclosures are approved by UL and CSA for use in hazardous locations.

The overall length of models with a single “EP” solenoid (not shown) is 12.68 inches (322.1 mm), the same as a double solenoid model (determined by the length of the main valve).

Weight (Mass):
- Single Solenoid, 41 lb (18.6 kg);
- Double Solenoid, 47 lb (21.3 kg).

Direct Hydraulic Pilot Operated

As shown, these models use a crossover block to direct pilot pressure from auxiliary ports “X” and “Y”.

Weight (Mass):
- 33 lb (15.0 kg).

“X” and “Y” Port Function

<table>
<thead>
<tr>
<th>Model</th>
<th>Port “X”</th>
<th>Port “Y”</th>
</tr>
</thead>
<tbody>
<tr>
<td>681</td>
<td>Actuator A</td>
<td>External Drain</td>
</tr>
<tr>
<td>682</td>
<td>External Drain</td>
<td>Actuator B</td>
</tr>
<tr>
<td>685</td>
<td>Actuator A</td>
<td>Actuator B</td>
</tr>
</tbody>
</table>

Air Piloted Models

The overall length of a single actuator model (not shown) is 12.68 inches (322.1 mm), the same as a double solenoid model (determined by the length of the main valve).

Weight (Mass):
- Single Actuator, 35 lb (15.9 kg);
- Double Actuator, 36 lb (16.3 kg).

D08H SUBPLATE AND BOLT KITS

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subplate:</td>
<td>Side Ports, Pattern for S.A.E. 1-1/2 inch Flange (Code 62)</td>
</tr>
<tr>
<td>PSO24-F-D08H-1.50</td>
<td></td>
</tr>
<tr>
<td>Mounting Bolt Kit:</td>
<td></td>
</tr>
<tr>
<td>P24-BK</td>
<td>Six .500-14 U.N.C. Threaded x 1.50 inch (38.1 mm)</td>
</tr>
</tbody>
</table>
**TYPICAL MODEL CODE**

<table>
<thead>
<tr>
<th>Valve Type</th>
<th>Design Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 Subplate Mounted Directional Control</td>
<td>6 6 4 5 – D08H – 115DF – R – T – CH – 1 0</td>
</tr>
<tr>
<td>6 Solenoid Operated</td>
<td></td>
</tr>
<tr>
<td>8 Hydraulic Piloted</td>
<td></td>
</tr>
<tr>
<td>9 Air Piloted</td>
<td></td>
</tr>
</tbody>
</table>

**Actuator**

<table>
<thead>
<tr>
<th>6 Solenoid Operated</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 Hydraulic Piloted</td>
</tr>
<tr>
<td>9 Air Piloted</td>
</tr>
</tbody>
</table>

**Valve Size**

D08H

- N.F.P.A. D08 (CETOP 8) Mounting Pattern with auxiliary "X" port (external pilot) and "Y" port (external drain)

**Reverse Flow Option**

R Reverse Flow (Code 4 Operator Only)

**Solenoid Options**

- BH3A 3-pin Connector for single solenoid models on port 'A' end
- BH3B 3-pin Connector for single solenoid models on port 'B' end
- BH5A 5-pin Connector for single or double solenoid models on port 'A' end
- BH5B 5-pin Connector for single or double solenoid models on port 'B' end

**C** CSA and UL Recognized Coils (Etched with Symbol)

**CG** Cable Grip for .38 to .44 inch (9.5 to 11.1 mm) O.D. machine tool cable

**HT** High Pressure Tank Port: 2300 psi (160 bar) maximum AC models; 3000 psi (210 bar) maximum DC models

**M** Hand Actuated Manual Override

**SL** Solenoid Lights (available 115DF AC only)

**T** Terminal Strip

**General Options**

- CH Flow Control (Pilot Choke) – 3000 psi (210 bar) maximum pressure
- ID Internal Drain
- XP External Pilot

**Spools**

- 5
- 6
- 8
- 9
- 56
- 58

**Internal Operator**

- Two Position: Spring Offset (P→B), Actuator Offset (P→A)
- Two Position: Spring Offset (P→A), Actuator Offset (P→B)
- Two Position: Actuator Offset, Detented
- Two Position: Spring Centered, Actuator Offset
- Three Position: Spring Centered, Actuator Offset

**Electrical Options**

<table>
<thead>
<tr>
<th>Standard AC Solenoids (Dual Frequency):</th>
<th>Standard DC Solenoids:</th>
</tr>
</thead>
<tbody>
<tr>
<td>24DF 24V/60Hz, 24V/50Hz</td>
<td>12DC 12VDC</td>
</tr>
<tr>
<td>115DF 115V/60Hz, 110V/50Hz</td>
<td>24DC 24VDC</td>
</tr>
<tr>
<td>230DF 230V/60Hz, 220V/50Hz</td>
<td></td>
</tr>
<tr>
<td>460DF 460V/60Hz, 440V/50Hz</td>
<td></td>
</tr>
</tbody>
</table>

**Plug-In Terminal AC Solenoids:**

| 115HA 115V/60Hz, 110V/50Hz          | 12HD 12VDC               |
| 230HA 230V/60Hz, 220V/50Hz         | 24HD 24VDC               |

**Explosion-Proof AC Solenoids:**

| 115EP 115V/60Hz                     | 12EP 12VDC               |
| 110EP 110V/50Hz                     | 24EP 24VDC               |
| 220EP 220V/50Hz                     |                        |

**Option not available with “EP” solenoid models.**

**Option not available with “Plug-In Terminal” solenoid models.**

**Available with 115DF solenoids only.**

**Closed Crossover**

**Open Crossover**

**Fits DIN Connector Standard 43650 Form A (“Hirschmann” type).**

---

For most spools, normal flow is actuator offset P→A. For Spool Types 56 or 58, normal flow is actuator offset P→B.