

## D08H Pattern Directional Control Valves

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

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#### 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.*



## Valves Control Flow to 165 U.S. gpm (625 L/min)

### SPECIFICATIONS

#### General

For a description of spools, operator functions, electrical options and operating recommendations refer to *dynexdcvoperating.pdf*.

#### Mounting

Subplate, N.F.P.A. D08 (CETOP 8) pattern, with auxiliary "X" port and "Y" port.

#### Rated Flow

Nominal: 80 U.S. gpm (303 L/min);  
Maximum: 165 U.S. gpm (625 L/min)

#### Rated Pressure

5000 psi (350 bar)

#### Tank Port Pressure (Maximum)

Standard External Drain:

5000 psi (350 bar)

Internal Drain:

1500 psi (105 bar), Solenoid

Internal Drain with "HPT" Option:

2300 psi (160 bar), A.C.;

3000 psi (210 bar), D.C.

Hydraulic Piloted:

5000 psi (350 bar)

Air Piloted:

3000 psi (210 bar)

#### 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.

#### Hydraulic Piloted Models

Pilot Pressure:

Minimum, 110 psi (8 bar) except models with Code 3 internal operators, 65 psi (5 bar);  
Maximum, 5000 psi (350 bar)

Volume:

Maximum required to shift spool full stroke, 1.71 in<sup>3</sup> (28,0 cm<sup>3</sup>)

#### Air Piloted Models

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

Oil Pilot Pressure:

Minimum, 65 psi (5 bar);

Maximum, 5000 psi (350 bar)

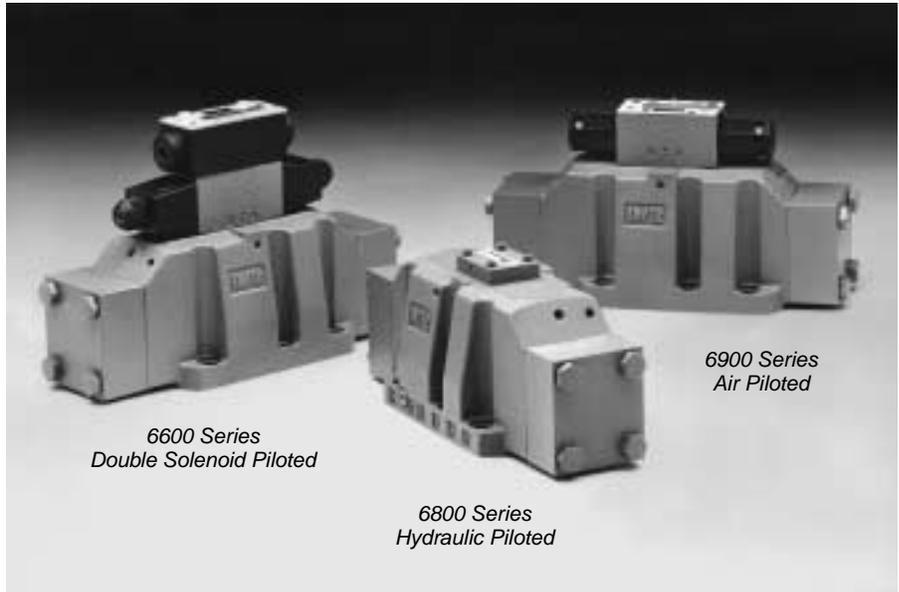
Air Pilot Pressure:

Minimum, 40 psi (3 bar);

Maximum, 200 psi (14 bar)

Volume:

Maximum required to shift spool full-stroke, 0.220 in<sup>3</sup> (3,6 cm<sup>3</sup>)



### TYPICAL PERFORMANCE

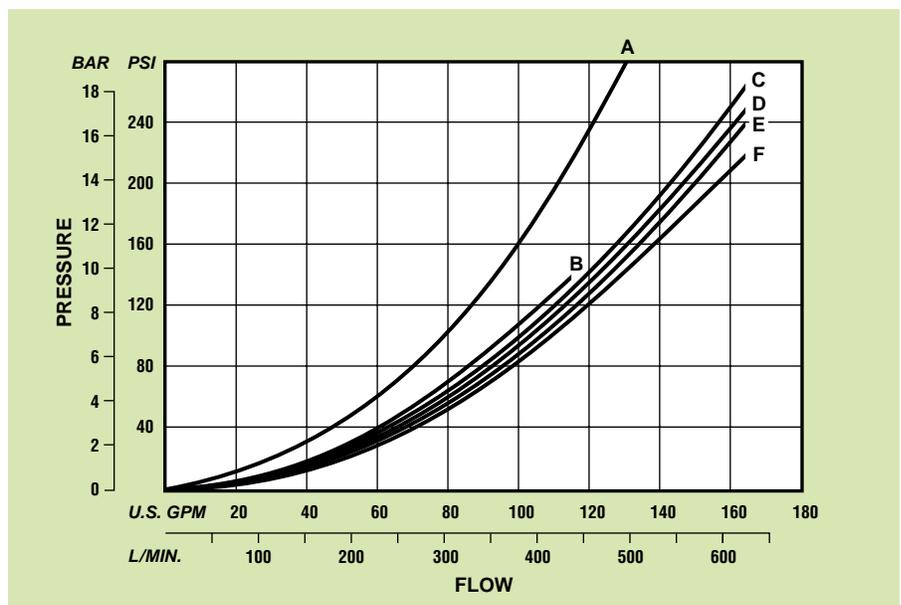
The curves show resistance to flow for various spool types. The table identifies the appropriate pressure drop curve for each spool and flow path.

To determine total "loop" drop the individual pressure drops for P→A and B→T (or P→B and A→T) must be added together.

### CURVE REFERENCE

Flow Path	Spool Type				
	5	6	8	56	58
P→A	E	F	F	F	F
P→B	E	F	F	F	F
A→T	D	E	E	E	E
B→T	C	D	E	C	C
P→T	—	B	—	A	A

### PRESSURE DROP (ΔP)



## Installation and Dimensions

### GENERAL 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. The Dynex D08H valve will mount on either pattern.

Both drawings show the minimum flush or raised surface required. Mounting face must be flat within 0.0004 inch/4.0 inches (0,010 mm/102 mm) with a surface finish of 32 microinch (0,80 µm) AA.

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

### SOLENOID MODEL DIMENSIONS

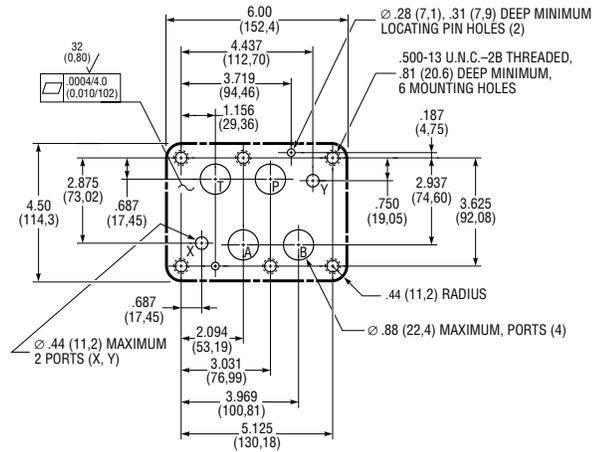
These models use a D03 valve as a pilot valve.

Section X-X below shows the location of plug for standard external drain on solenoid and air piloted models.

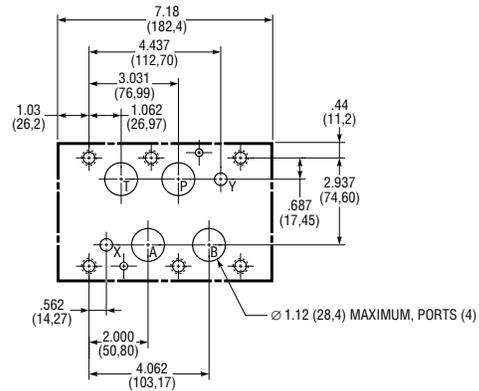
For conversion to external pilot, remove the "access plug" (see main drawing) to install plug, 1/16-27 N.P.T.F., part number 10062450.

### Weight (Mass)

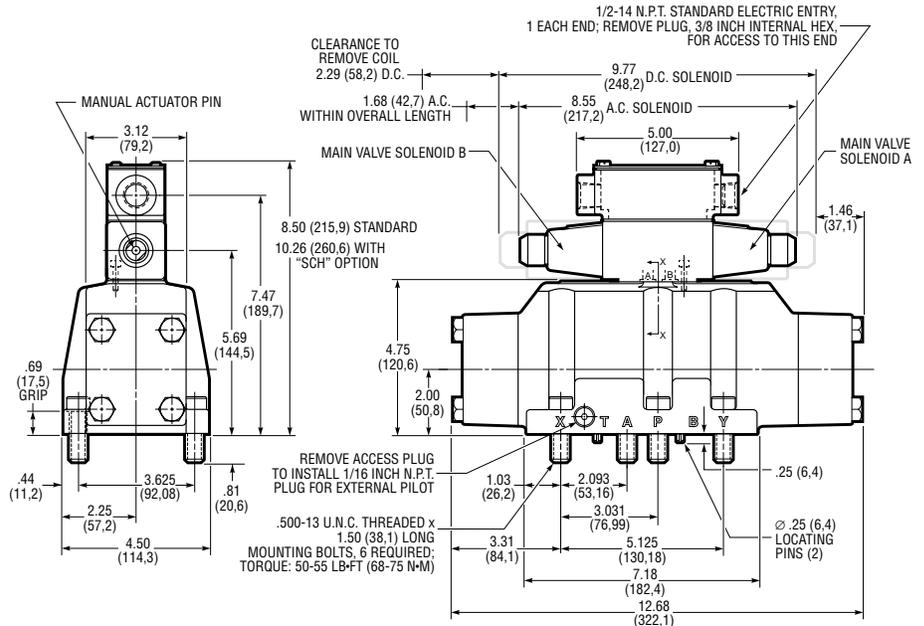
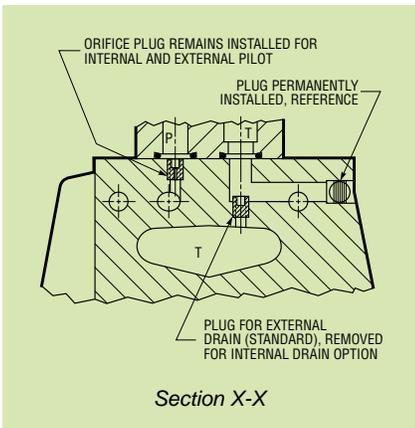
- Single Solenoid:  
 A.C., 36.0 lb (16,3 kg);  
 D.C., 36.5 lb (16,6 kg)
- Double Solenoid:  
 A.C., 37.0 lb (16,8 kg);  
 D.C., 38.2 lb (17,3 kg)



Minimum Mounting Surface, N.F.P.A. D08 (CETOP 8) Pattern



Recommended Mounting Surface for Best Flow Performance (Special Dynex Pattern)



6600 Series, Double Solenoid Piloted Models

## EXPLOSION PROOF SOLENOIDS

These models use a D03 pilot valve with explosion proof solenoids ("EPW"). The solenoids with special enclosures are approved by *UL* and *CSA* for use in hazardous locations.

Overall length of models with single "EPW" solenoid is 12.68 inches (322,1 mm), the same as the double actuator model (length of the main valve).

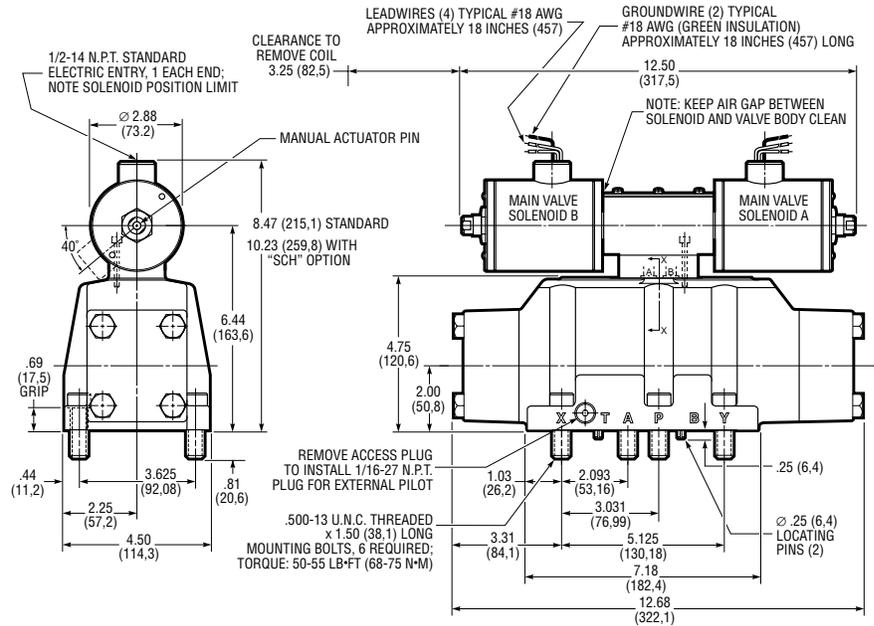
Note that a spacer plate provides mounting clearance for solenoids. A spacer kit, KV00301065, and bolt kit, P25-BK-24, are available for conversions.

### UL Classification

Class I, Group C,D;  
Class II, Group E,F,G

### Weight (Mass)

Single Solenoid: 41 lb (18,6 kg);  
Double Solenoid: 47 lb (21,3 kg)



6600 Series, Double "EPW" Solenoid Models

## HYDRAULIC PILOTED MODELS

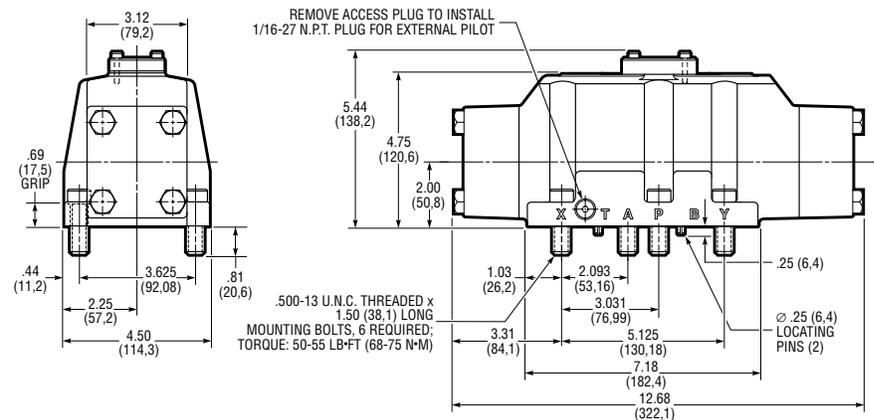
As shown, these models use a crossover block to direct flow from auxiliary ports "X" and "Y".

### Weight (Mass)

33 lb (15,0 kg)

### "X" AND "Y" PORT FUNCTIONS

Model	Port "X"	Port "Y"
681*	Actuator A	External Drain
682*	External Drain	Actuator B
685*	Actuator A	Actuator B



6800 Series, Direct Hydraulic Piloted Models

## AIR PILOTED MODELS

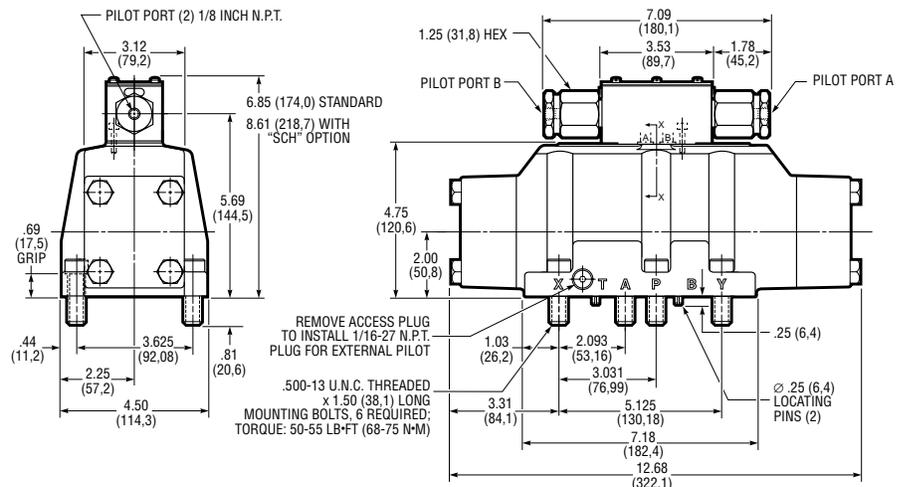
These models use an air piloted D03 valve as a pilot.

Single and double actuator models are available. Overall length of a single actuator model is 12.68 inches (322,1 mm), the same as a double actuator model (length of the main valve).

For reference, the length of the D03 single actuator pilot valve (not shown) is 5.56 inches (141,2 mm).

### Weight (Mass)

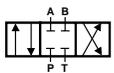
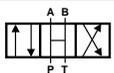
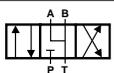
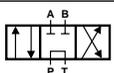
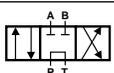
Single Actuator: 35 lb (15,9 kg);  
Double Actuator: 36 lb (16,3 kg)



6900 Series, Double Air Piloted Models

## Typical Model Code

6      6      4      5 — D08H — 115/DF — R — CH — 1      0

<p style="text-align: center; border-top: 1px solid black; border-bottom: 1px solid black;"><b>Valve Type</b></p> <p>6 — Subplate Mounted Directional Control</p>	<p style="text-align: center; border-top: 1px solid black; border-bottom: 1px solid black;"><b>Spools</b></p> <p>5 </p> <p>6 </p> <p>8 </p> <p>56<sup>①</sup> </p> <p>58<sup>②</sup> </p> <p style="font-size: small;">① Closed Crossover ② Open Crossover</p>	<p style="text-align: center; border-top: 1px solid black; border-bottom: 1px solid black;"><b>Reverse Internal Operator (Code 4 Only)</b></p> <p>R — Two Position; Spring Centered, Actuator Offset (P→B)</p>	<p style="text-align: center; border-top: 1px solid black; border-bottom: 1px solid black;"><b>Modification Number</b></p> <p style="text-align: center; border-top: 1px solid black; border-bottom: 1px solid black;"><b>Design Number</b></p>	<p style="text-align: center; border-top: 1px solid black; border-bottom: 1px solid black;"><b>Options</b></p> <p><b>SOLENOID OPTIONS:</b></p> <p>C — CSA and UL Recognized Coils (Etched with Symbol)<sup>①</sup>  M — Hand Actuated Manual Override<sup>②</sup>  T — Terminal Strip<sup>②③</sup>  CG — Cable Grip, for .38 to .44 inch (9,5 to 11,1 mm) O.D. machine tool cable<sup>②③</sup>  SL — Solenoid Lights (Available 115/DF A.C. Only)<sup>②③</sup>  HPT — High Pressure Tank Port  2300 psi (160 bar) maximum A.C. models  3000 psi (210 bar) maximum D.C. models  BH3A — 3-pin Connector (N.F.P.A. standard T3.539-1980), for single solenoid models, on port "A" end of valve<sup>②③④</sup>  BH3B — 3-pin Connector, for single solenoid models, on port "B" end of valve<sup>②③④</sup>  BH5A — 5-pin Connector for single or or double solenoid models on port "A" end of valve<sup>②③④</sup>  BH5B — 5-pin Connector for single or or double solenoid models on port "B" end of valve<sup>②③④</sup></p> <p><b>GENERAL OPTIONS:</b></p> <p>ID — Internal Drain  XP — External Pilot  CH — Flow Control (Pilot Choke)<sup>⑤</sup></p> <p style="font-size: x-small;">① Available with 115/DF solenoids only. For other voltages, consult the Dynex sales department  ② Option not available with "EPW" solenoid models.  ③ Option not available with "Plug-In-Terminal" solenoid models.  ④ N.F.P.A. standard T3.539-1980; A.N.S.I. standard B93.55M-1981.  ⑤ Models with this option are rated to 3000 psi (210 bar) maximum.</p>
<p style="text-align: center; border-top: 1px solid black; border-bottom: 1px solid black;"><b>Actuator</b></p> <p>6 — Solenoid Operated  8 — Direct Hydraulic Piloted  9 — Air Pilot Operated</p>	<p style="text-align: center; border-top: 1px solid black; border-bottom: 1px solid black;"><b>Internal Operator</b></p> <p>1 — Two Position; Spring Offset (P→B), Actuator Offset (P→A)  2 — Two Position; Spring Offset (P→A), Actuator Offset (P→B)  3 — Two Position; Actuator Offset, Detented  4 — Two Position; Spring Centered, Actuator Offset (P→A)  5 — Three Position; Spring Centered, Actuator Offset</p>			
<p style="text-align: center; border-top: 1px solid black; border-bottom: 1px solid black;"><b>Valve Size</b></p> <p>D08H — 80 U.S. gpm (302 L/min) Nominal Flow, N.F.P.A. D08 (CETOP 8) Pattern with auxiliary "X" port (external pilot) and "Y" port (external drain)</p>				
		<p style="text-align: center; border-top: 1px solid black; border-bottom: 1px solid black;"><b>Electrical – Solenoid Options</b></p> <p><b>STANDARD SOLENOIDS:</b></p> <p>24/DF — Dual Frequency, 24/60, 24/50  115/DF — Dual Frequency, 115/60, 110/50  230/DF — Dual Frequency, 230/60, 220/50  460/DF — Dual Frequency, 460/60, 440/50  12VDC — Direct Current, 12 Volts  24VDC — Direct Current, 24 Volts  115/60 EPW — Explosion Proof Solenoids  110/50 EPW — Explosion Proof Solenoids  220/50 EPW — Explosion Proof Solenoids</p> <p><b>PLUG-IN TERMINAL SOLENOIDS:<sup>①</sup></b></p> <p>115/HAC — Dual Frequency, 115/60, 110/50  230/HAC — Dual Frequency, 230/60, 220/50  12/HDC — Direct Current, 12 Volts  24/HDC — Direct Current, 24 Volts</p> <p style="text-align: center; font-size: small;">For Other Voltages, Consult the Dynex Sales Department</p>		

<sup>①</sup> Fits DIN Connector Standard 43650 (Hirschmann GDM 209).