



D05 Directional Control Valves

- WFDG4S*4-01, 60 Design
- Wet Armature Solenoid Operated
- Max Pressure up to 248 Bar (3600 psi)
- Same Day Shipments



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Basic Characteristics

- Max. Pressure: Up to 248 bar (3600 psi) dependent on fluid
- Max. Flow Rates: Up to 95 l/min. (25 USgpm) dependent on spool
- Mounting Pattern: ISO 4401-05/ CETOP 5/NFPA-D05

WFDG4S* models are direct solenoid operated, 4-way directional control valves. Their primary function in a hydraulic circuit is to direct fluid flow to a work cylinder or to control the direction of rotation of a hydraulic motor. Port connections are made by mounting the valve on a manifold or subplate containing the interface.

Valves are available with AC or DC wet armature solenoid(s). Electrical connections to the valve are made in an electrical wiring housing or by various plug - in devices. A ground terminal is provided.

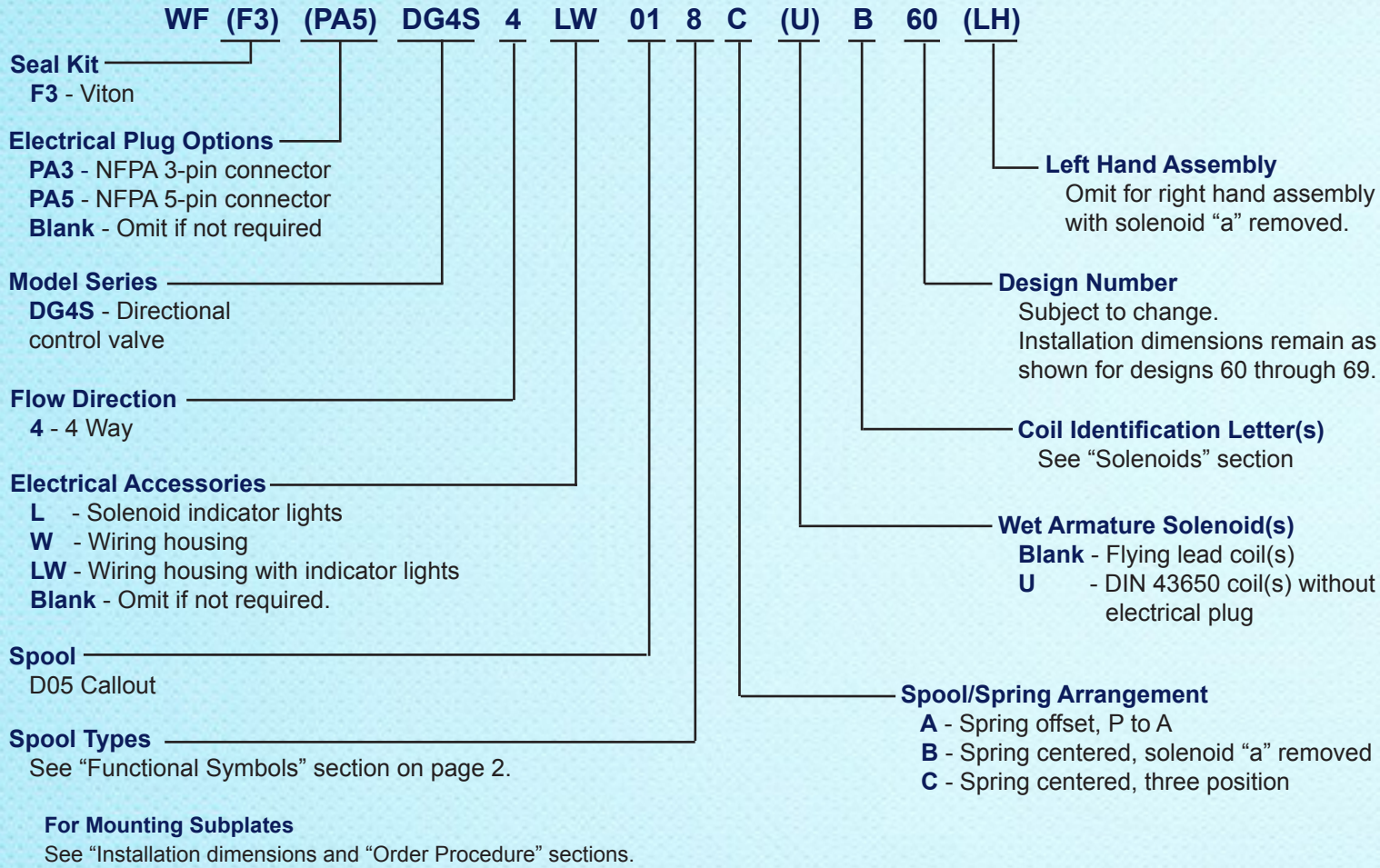
Functional Symbols

Standard Spool Types	Graphic Symbol Center Condition	"A" Models ▲ Spring Offset	"B" Models ▲ Spring Centered	"C" Models Spring Centered
0				
1				
11				
2				
3				
31				
6				
7				
8				
33				

▲ Standard (right hand) build shown. "A" Solenoid omitted.

Note: When solenoid "a" is energized, flow will be "P" to "A". If the solenoid "b" is energized, flow will be "P" to "B". It is accordance with ANSI-B93.9 standard. Solenoid "a" and "b" are identified on the diagram plate on the side of the valve.

Model Code Breakdown



Maximum Pressure

Ports P, A & B: 248 bar (3600 psi)
Port T: 100 bar (1450 psi)

Solenoid Energizing

Spring centered and spring offset valves will be spring positioned unless the solenoid is energized continuously.

Note: Any sliding spool valve, if held shifted under pressure for long periods, may stick and not spring return, due to silting. Therefore, it is recommended that the valve can be cycled periodically to prevent this from occurring.

Response Time

The following response times were measured from the point of energization / de-energization to the point of first indication of inlet pressure change. Response up to full system pressure is dependent on the system's compressed volume and can vary with each application.

Model	Valve Type	AC Solenoid		DC Solenoid	
		Shift	Return	Shift	Return
B/C	Spring Centered	20 ms	40 ms	50 ms	80 ms
A	Spring Offset	18 ms	25 ms	50 ms	60 ms

Solenoid

Solenoid Identification Letter	Solenoid Voltage Rating	Inrush Amps (rms)	Holding Amps (rms)	Holding Watts
B	120 VAC 60 Hz	3.80	0.69	35
	110 VAC 50 Hz	4.10	0.85	33
D	240 VAC 60 Hz	2.10	0.34	36
	220 VAC 50 Hz	2.30	0.45	34
G	12 VDC		3.67	44
H	24 VDC		1.83	44

Drain

Note: Surges of oil in a common line serving these and other valves can be of sufficient magnitude to cause inadvertent shifting of these valves. This is particularly critical in the no spring detented type valves. Separate tank lines, or a vented manifold with a continuous downward path to tank, are required.

Pressure Drops

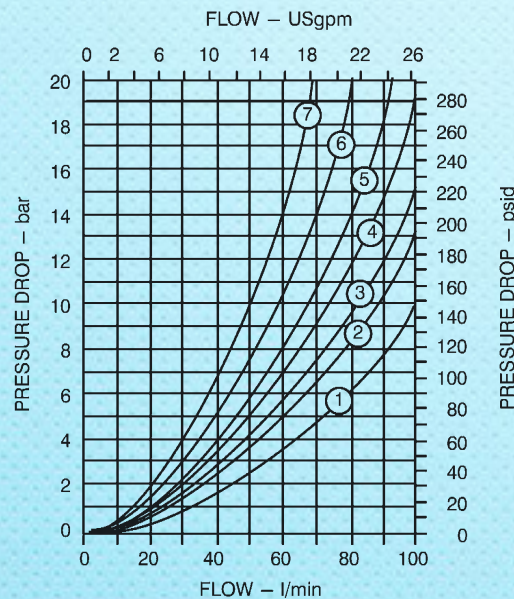
The pressure drop curves give approximate pressure drop (ΔP) when passing 21 cSt (100 SUS) fluid (having .865 specific gravity) through the indicated flow path.

Pressure Drop Curve Reference Chart					
Spool Type	Curve Numbers				
	P-A	B-T	P-B	A-T	P-T
0C	2	1	3	1	2
1C	1	2	3	1	
2C	2	2	3	2	
6C	4	1	4	1	
7C	1	2	1	2	
8C	3	4	3	4	6

Pressure Drop Curve Reference Chart				
Spool Type	Curve Numbers			
	P-A	B-T	P-B	A-T
0A	1	2	2	2
0A (LH)	2	2	2	2
2A	2	2	5	4
2A (LH)	4	4	3	2
6A	2	1	6	3
6A (LH)	4	2	3	2
7A	1	2	2	4
7A (LH)	2	3	2	2

For any other viscosity, the pressure drop (ΔP) will change as follows:

Viscosity cSt (SUS)	14 (75)	32 (150)	43 (200)	54 (250)	65 (300)	76 (350)	86 (400)
% of ΔP (Approx)	93	111	119	126	132	137	141



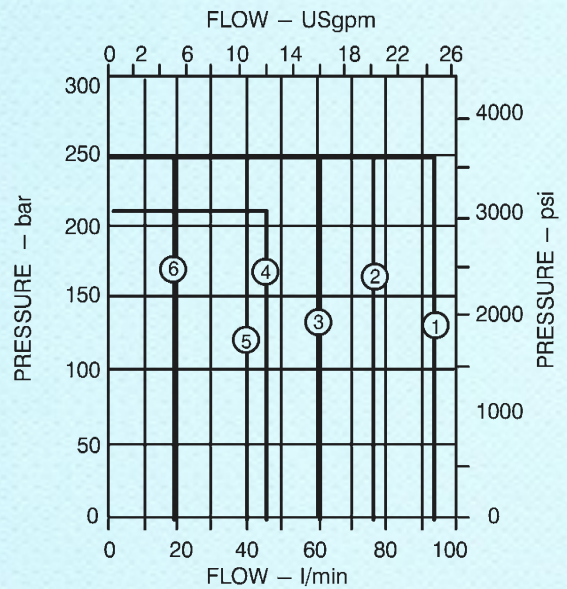
Maximum Flow Data

Maximum recommended flow data is for AC or DC solenoids at 90% nominal voltage in a 4-way circuit with cylinder ports either looped or blocked and containing 2.5 liter (.66 US gpm) compressed volume. Reduced performance may result when certain spools are used in 3-way circuits.

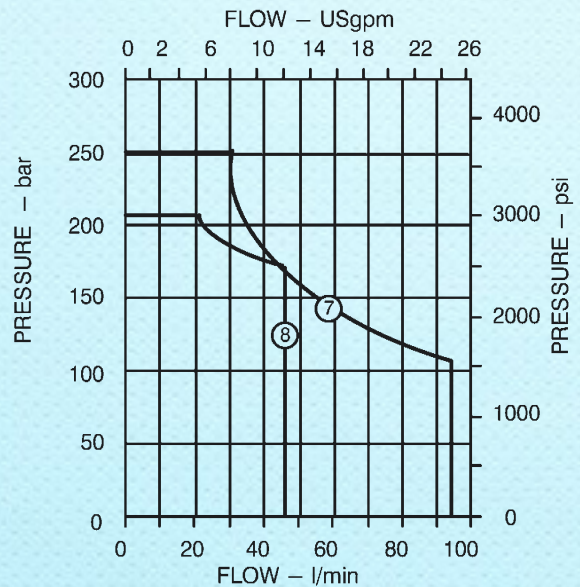
Maximum Flow Chart Reference

Model	Spool Type	Curve AC	Number DC
A	0	1	1
	2	2	2
	6	3	3
	7	2	2
B/C	0	1	1
	1	6	6
	11	6	6
	2	1	1
	3	2	2
	31	2	2
	6	2	2
	7	1	1
	8	4	8
	33	1	1

AC & DC Solenoid Valves



AC & DC Solenoid Valves



Seals / Fluids

Special seals are required for use with phosphate ester type fluids or their blends. Standard seals are suitable for use with water glycol, water-in-oil emulsion fluids, HWBF (95% maximum water content) and petroleum oil.

Application Recommendations

Filtration	ISO 4406 Code 18/15
Operating Temp	20° to 50°C (70° to 120°F)
Fluid Viscosity	16 - 51 cSt (75-250 SUS)

Installation Dimensions in mm (inches)

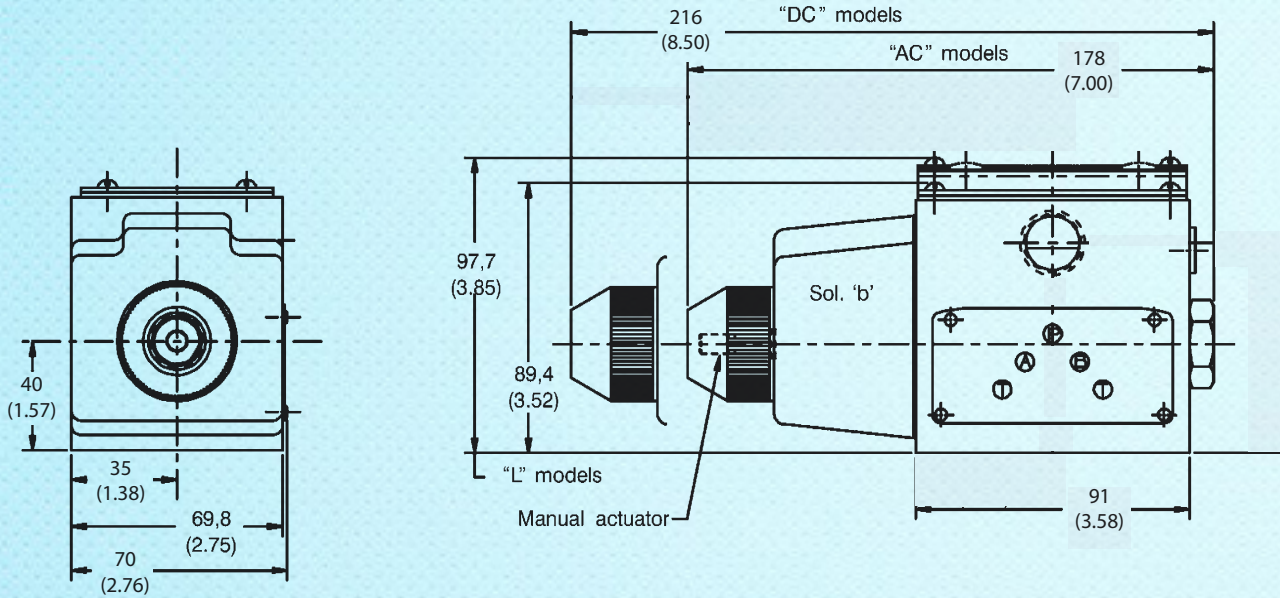
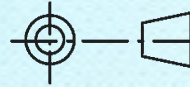
WF Applicable Models:

DG4S4-01*A-*-60 Spring Offset

DG4S4-01*B-*-60 Spring Centered

Right hand model shown. ●

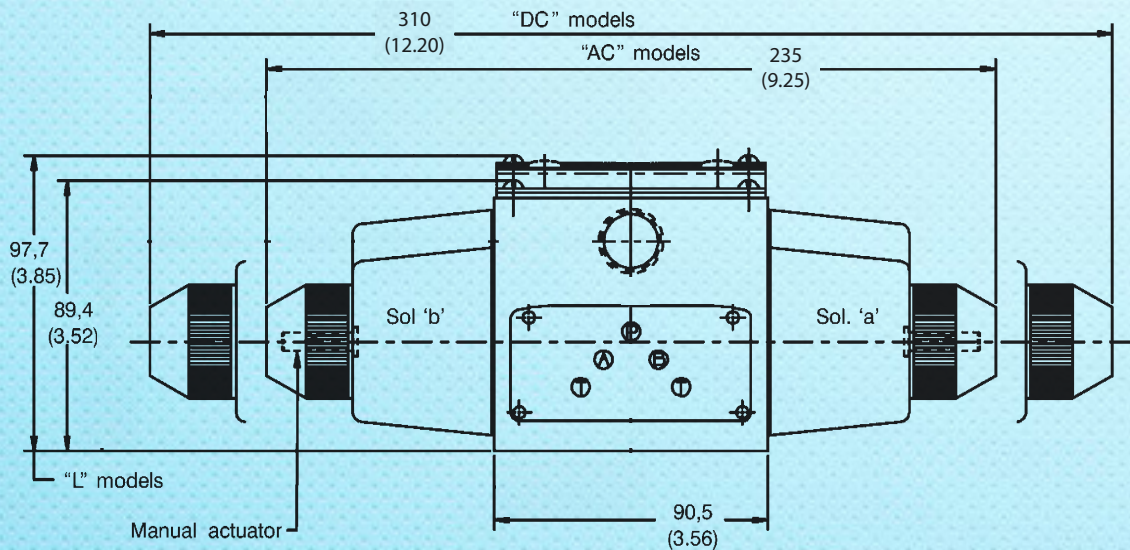
3rd angle projection



- "8B" right hand build model has solenoid 'b' on opposite end ("B" port end).

WF Applicable Models:

DG4S4-01*C-*-60 Spring Centered ●

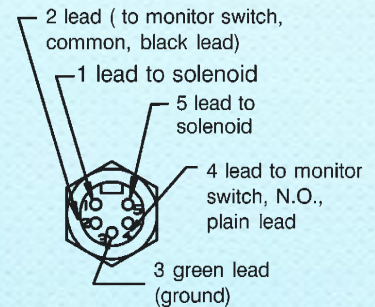
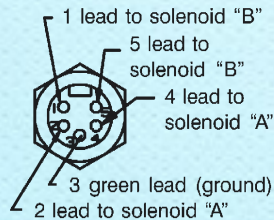
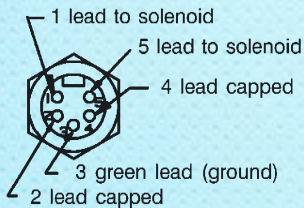
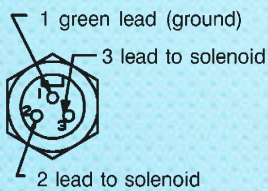
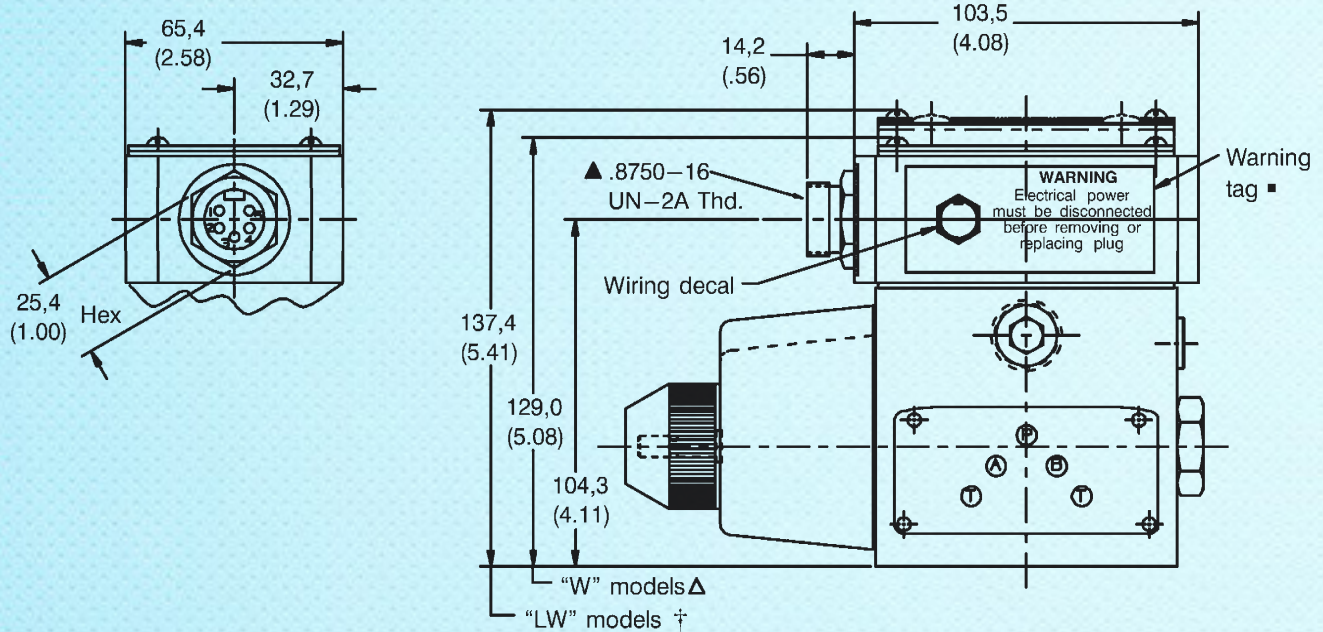


- "8C" models have solenoid designations reversed.

Powered by Customer Service

WF Applicable Models:

- PA3DG4S*W/LW-01*A-*-60
- PA3DG4S*W/LW-01*B-*-60
- PA5DG4S4W/LW-01*C-*-60



PA3DG4S*W/LW-01**-*-60
 A models
 B models

PA5DG4S*W/LW-01**-*-60
 A models
 B models

PA5DG4S4W/LW-01**-*-60
 C models

SPA5DG4S4W/LW-01**-*-60
 A models only

▲ Electrical connection is overall solenoid on single solenoid models, and over "b" solenoid on dual solenoid models. See diagram plate for "b" solenoid location. Electrical rating 600 volts, 3 pole, 10 amps and 5 pole, 8 amps. The female plug to be furnished by customer.

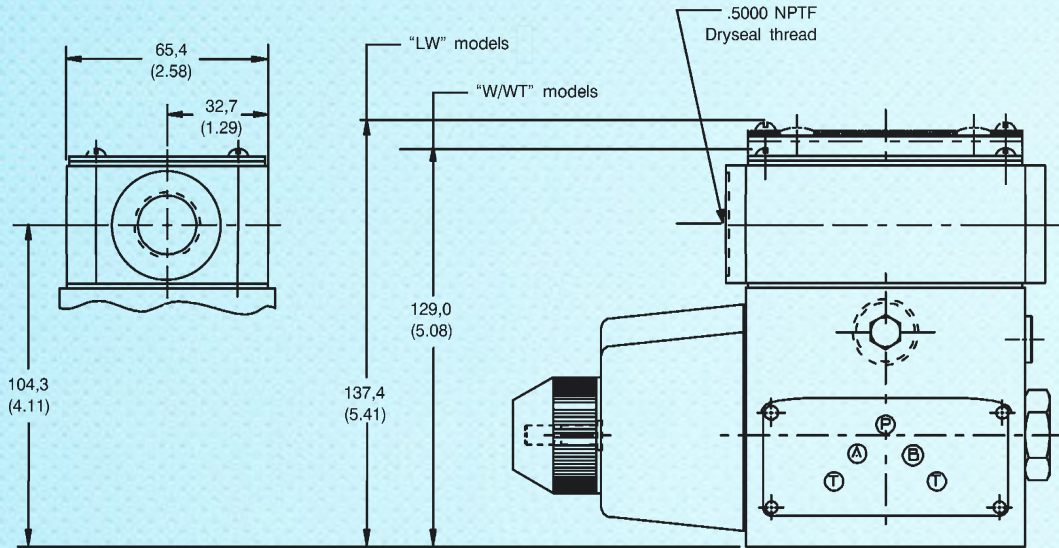
WARNING: Electrical power must be disconnected before removing or replacing this receptacle.

† Receptacle will be prewired directly to the terminals on the solenoid indicator light package.

Δ Receptacle will be prewired to the solenoid eyelets. The connection will be made via No. 6 screws and nuts insulated with black electrical tape.

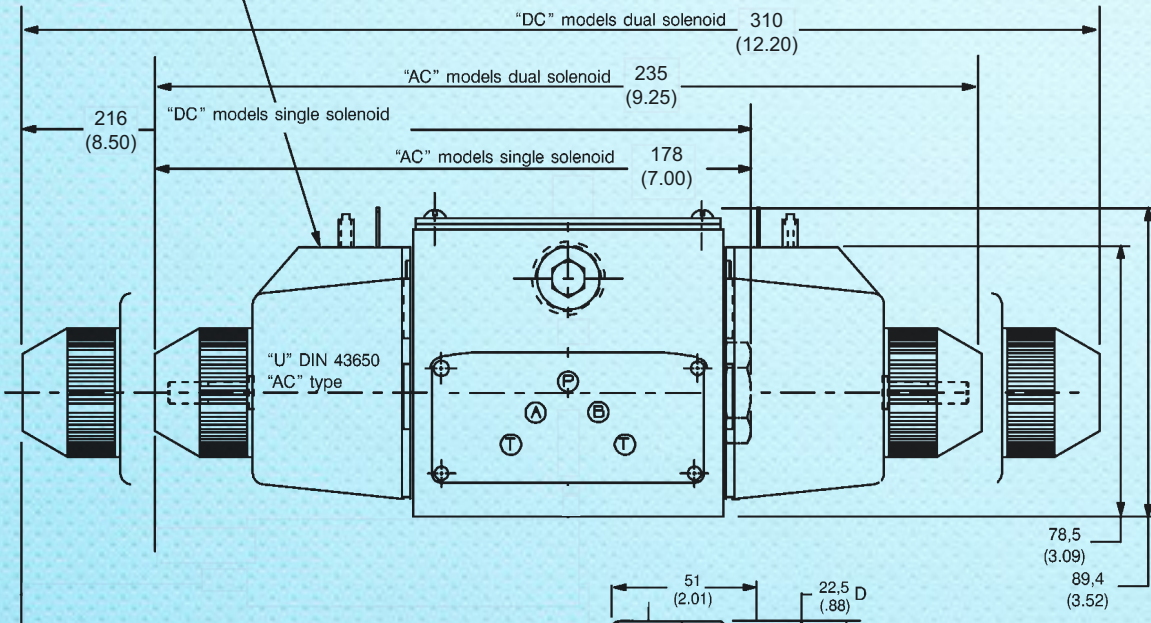
W & LW Models

The housing can be rotated 180° if the connection is required on the opposite end. This connection will readily accept common electrical quick disconnect assemblies on the market. The wiring housing is available with all options.

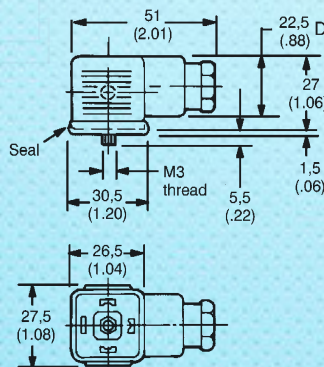


U Models

▲ This interface is used for connecting electrical receptacles conforming to German DIN std 43650.



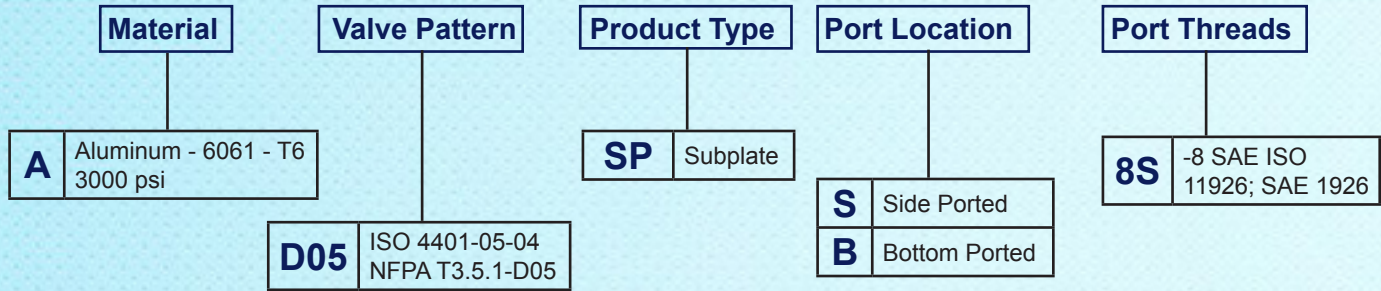
▲ **Plug Connector**
Come with valve and are DIN 43650



Mounting Subplates

If you are interested in ordering our FluiDyne Valves, please contact our customer service representatives with the model code. Don't have a model code or need help building it? Don't hesitate to contact us - we will help you build the correct code. Our valves come with a bolt kit. The subplates must be ordered separately. **Call, Email or LiveChat us Today!**

Ordering Info:

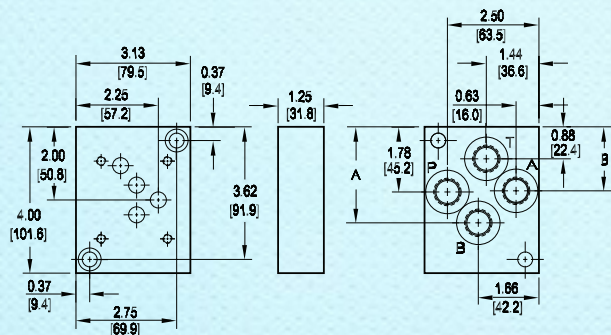
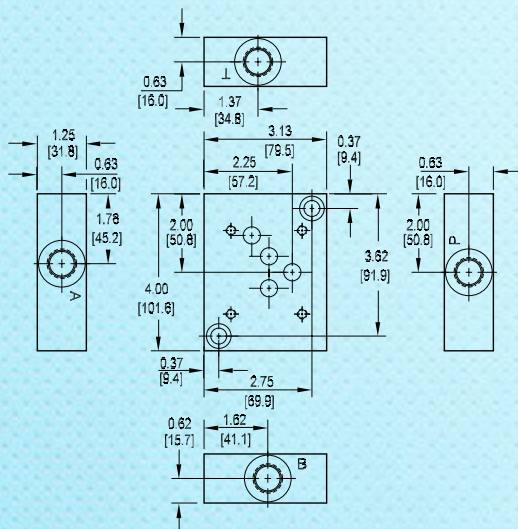


Side Ported Subplate

Valve mtg: UNC 0.25-20 x 0.75 DP or
Metric M6-1.0mm ISO 6H x [19.1] DP
Subplate hardware kit is supplied.
See page 121 for itemized list.

Back Ported Subplate

Valve mtg: UNC 0.25-20 x 0.75 DP or
Metric M6-1.0mm ISO 6H x [19.1] DP
Subplate hardware kit is supplied.
See page 121 for itemized list.



Dimension	A	B
*D05SPB8P	2.63	1.75
*D05SPB8B	2.94	2.00

Subplates, Manifolds & Accessories

Part #	Description	Notes
WF860292	AD05SPS8S Subplate	Side Ported SAE -8
WF860336	AD05SPB8S Subplate	Bottom Ported SAE-8
WF860830	AD05P033S Manifold	3-Station Parallel SAE 3.25" Spacing Without Cavity
WF860742	AD05P043S Manifold	4-Station Parallel SAE 3.25" Spacing Without Cavity
WF860297	AD05P023S/C Manifold	2-Station SAE Ports with Relief Cavity
WF860298	AD05P033S/C Manifold	3-Station SAE Ports with Relief Cavity
WF860302	AD05CPP	Blanking Plate
V889566	RV510S020/	Relief Valve 100-2,000 psi Range
V02-352137	RV510S035/30	Relief Valve set @ 3,000 psi 250-3,000 psi Range
V565814	BLANK PLUG	Blank Cavity Plug

* Call for other models!

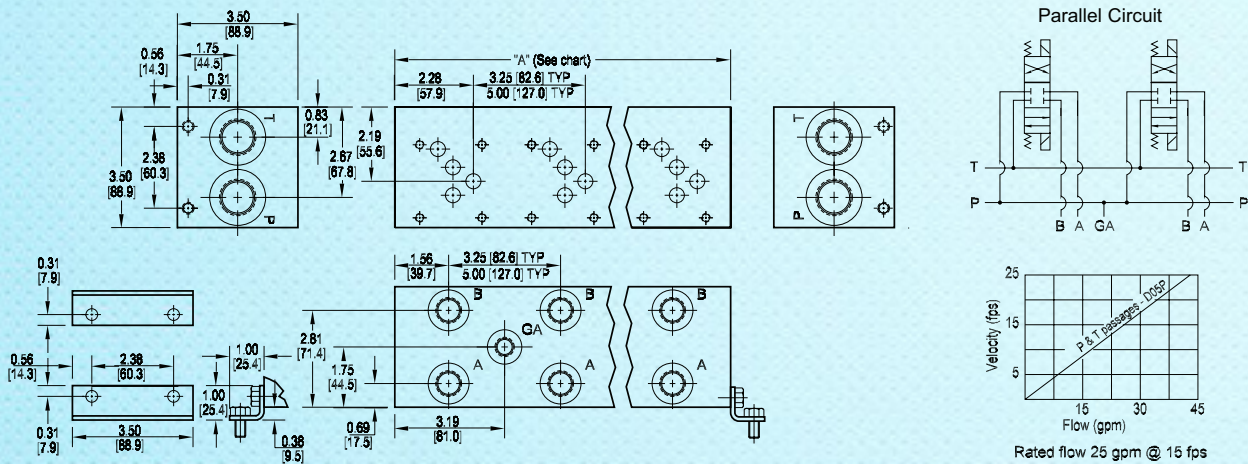
Mounting Manifolds

Ordering Info:

Material	Valve Pattern	Circuit	# of Stations	Valve Spacing	Port Threads	/	Options
A Aluminum-6061-T6 3000 psi	D05 ISO 4401-05-04 NFFPA T3.5.1-D05	P Parallel Circuit Standard Flow	01...10 Aluminum Available with spacing code 3	3 3.25 inch 82.6 mm			C with Relief Cavity Omit - no cavity

	P & T	A & B	GA
P NPTF • ANSI B1.20.3	0.75	0.50	0.25
S SAE • ISO 11926	-12	-8	-6

Standard Flow Parallel Manifold



No. of Stations	*01	02	03	04	05	06	07	08	09	10
"A" length (code 3 spa.) inch	3.25	6.50	9.75	13.00	16.25	19.50	22.75	26.00	29.25	32.50
Apx. weight alum lb	4	8	11	14	17	21	24	27	30	34

*Length of 01 station with relief cavity is 4.50. Gauge port not available on 01 station.

Port Code	Valve Mtg.	Manifold mtg.
P,S	0.25-20 UNC x 0.75 DP	0.31-18 UNC x 0.44 DP

Specifications, descriptions and dimensional data are subject to correction or change without notice or incurring obligation.



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