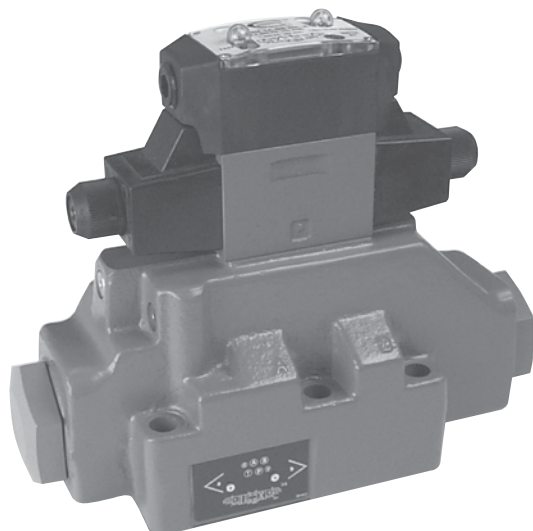


VSD08M

DIRECTIONAL CONTROL VALVES

SOLENOID ACTUATED, PILOT OPERATED



DESCRIPTION

The valves are used in applications requiring high flow rates. Typical flow rates range from 50 to 125 gpm.

TYPICAL PERFORMANCE SPECIFICATIONS

FLOW CAPACITY	Nominal	50 gpm	190 lpm
	Maximum	125 gpm	473 lpm
MAXIMUM OPERATING PRESSURES	P, A, B, X Ports	5000 psi	345 bar
	T w/ext. drain	3000 psi	210 bar
	T w/int. drain	1500 psi	103 bar
	Y port	1500 psi	103 bar
MINIMUM OIL PILOT PRESSURE		70 psi	4.8 bar
MAIN SPOOL DISPLACEMENT	Offset to Offset	1.23 cu. in.	20 ml
	Center to Offset	0.62 cu. in.	10 ml
MAXIMUM CYCLE RATE		up to 300 cpm	
MOUNTING SURFACE		ANSI/B93.7-1986 - D08 ISO 4401 - SIZE 08	
WEIGHT	Single Actuator	33 lbs.	15 kg
	Double Actuator	34 lbs.	15.4 kg
SPOOL CODES AVAILABLE		SEE CHART	

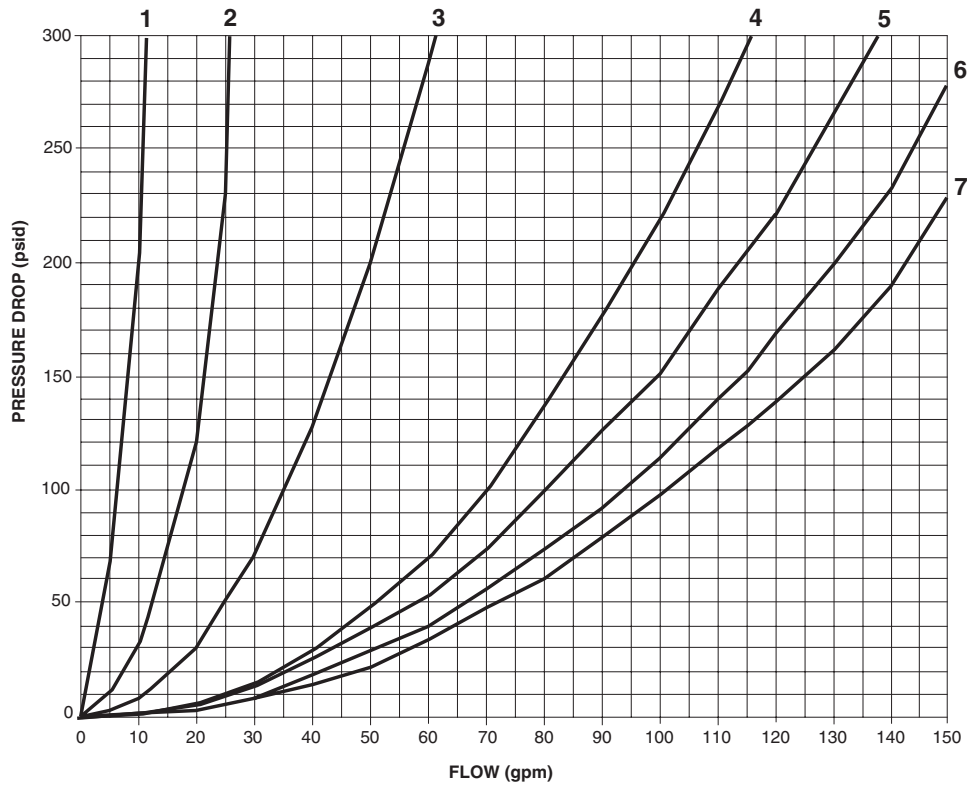
Performance is measured on a four-way circuit (full circuit). Performance may be reduced from that shown if a three-way circuit (half circuit) is used, i.e. A or B port plugged.

All pressure drops shown on this page are based on 100 SUS fluid viscosity, and 0.87 specific gravity. See the chart below for other viscosities

Fluid	CS	14.5	20.5	32	43	54	65	76	86
Viscosities	SUS	75	100	150	200	250	300	350	400
Multiplier		0.93	1.00	1.11	1.19	1.26	1.32	1.37	1.41

For any other specific gravity (G_1), the pressure drop ($?P$) will be will be approximately $?P_1 = ?P (G_1/G)$.

TYPICAL PRESSURE DROP CURVES



FLOW PATH ?P CURVES

SPOOL TYPE	FLOW CURVE NUMBERS								
	SPOOL SHIFTED				SPOOL CENTERED				
	P to A	P to B	A to T	B to T	P to A	P to B	A to T	B to T	P to T
A	7	7	6	6	N/A	N/A	N/A	N/A	N/A
A2	7	7	3	3	N/A	N/A	N/A	N/A	N/A
A3	7	7	2	2	N/A	N/A	N/A	N/A	N/A
B	7	7	6	6	N/A	N/A	N/A	N/A	5
F	7	7	6	6	N/A	N/A	5	5	N/A
F1	7	7	6	6	N/A	N/A	1	1	N/A
F2	7	7	3	3	N/A	N/A	1	1	N/A
F3	7	7	2	2	N/A	N/A	1	1	N/A
G	7	7	6	6	4	4	N/A	N/A	N/A
J	7	7	6	6	N/A	4	N/A	N/A	N/A
K	7	7	6	6	N/A	N/A	5	N/A	N/A
L	5	5	5	5	N/A	N/A	N/A	N/A	4

VSD08M

DIRECTIONAL CONTROL VALVES

SOLENOID ACTUATED, PILOT OPERATED



TYPICAL RESPONSE TIME

NOTE: Shift times are from initial electrical signal to the solenoid to positions indicated in the tabulations below.

SOLENOID CODE	PILOT PRESSURE psi / bar	STANDARD RESPONSE TIME				FASTER RESPONSE TIMES*				Spring Return Spool Position as Indicated Below			
		AC Sol	DC Sol	AC Sol	DC Sol	AC Sol	DC Sol	AC Sol	DC Sol	AC Sol	DC Sol	AC Sol	DC Sol
1		Spool Shifted (offset to offset)		Spool Shifted (offset to offset)		Spool Shifted (offset to offset)		Spool Shifted (offset to offset)		Spool Spring Return (offset to offset)		Spool Return Time to Center	
	500 / 35	225 ms	290 ms	125 ms	180 ms					150 ms		85 ms	
	1000 / 70	150 ms	200 ms	80 ms	120 ms	*	*	*	*	105 ms		60 ms	
	2000 / 140	100 ms	140 ms	50 ms	90 ms					75 ms		40 ms	
	3000 / 210	75 ms	115 ms	40 ms	80 ms					60 ms		35 ms	
2		Spool Shifted (offset to offset)		Spool Shift to Flow (crack) Opposite Cylinder Port		Spool Shifted (offset to offset)		Spool Shift to Flow (crack) Opposite Cylinder Port		No Springs			
	500 / 35	160 ms	220 ms	95 ms	150 ms								
	1000 / 70	110 ms	160 ms	70 ms	120 ms	*	*	*	*				
	2000 / 140	75 ms	120 ms	50 ms	90 ms								
	3000 / 210	60 ms	100 ms	40 ms	80 ms								
3, 5		Spool Shifted (center to offset)		Spool Shift to Flow (crack)		Spool Shifted (center to offset)		Spool Shift to Flow (crack)		Spool Return to Center Position			
	500 / 35	135 ms	200 ms	15-20 ms	55-60 ms	65 ms				70 ms	90 ms		
	1000 / 70	85 ms	140 ms	15-20 ms	55-60 ms	40 ms	*	*	*	70 ms	90 ms		
	2000 / 140	50 ms	100 ms	15-20 ms	55-60 ms	*				75 ms	90 ms		
	3000 / 210	40 ms	80 ms	15-20 ms	55-60 ms					70 ms	90 ms		
6		Spool Shifted (offset to center)				Spool Shifted (offset to center)				Spool Return (center to offset)			
	500 / 35	115 ms	180 ms							125 ms			
	1000 / 70	75 ms	130 ms			*	*	*	*	100 ms			
	2000 / 140	50 ms	90 ms							80 ms			
	3000 / 210	40 ms	80 ms							70 ms			

***NOTE:** Faster response times may be accomplished by the removal of the orifice plug in the pressure line. It is NOT RECOMMENDED for pilot pressures to exceed 2000 psi (140 bar) because of high-pressure transients in the drain line during shifting.

INTERNAL LEAKAGE PER SEALING LAND

PRESSURE (psi)	500	1000	1500	2500	3500	4500	5000
LEAKAGE (cipm)	4	9	16	29	44	-	-

NOTES: Leakage measured with fluid viscosity of 100 SUS.
Leakage at different viscosity is approximately proportional to ratio of viscosity being used and 100 SUS oil.

TYPICAL ELECTRICAL INFORMATION

SOLENOID CODE	VOLTAGE & FREQUENCY	VOLTAGE LIMITS	INRUSH CURRENT (AMPS)	HOLDING CURRENT	HOLDING CURRENT MIN. VOLT.	HOLDING POWER
	VOLTS - Hz.	MIN. - MAX.	MAX.	(AMP)	(AMP)	(WATTS)
33L, 60L	120 - 60	108 - 126	2.10	.49	.39	24
	110 - 50	99 - 116		.58	.45	26
34L, 61L	240 - 60	216 - 252	1.10	.24	.19	24
	220 - 50	198 - 231		.29	.22	26
39L, 68L	120 - 60	108 - 132	1.10	.19	.15	10
	110 - 50	99 - 121		.21	.17	10
42L, 70L	24 DC	21 - 26	1.00	1.00	.88	24
44L, 75L	12 DC	10 - 13	2.00	2.00	1.67	24

SPOOL DESCRIPTION

SPOOL TYPE	SPOOL SYMBOL	
A	A Port End	B Port End
A2 A3	A Port End	B Port End
AC A1C A2C A40C	A Port End	B Port End
B	A Port End	B Port End
E	A Port End	B Port End
F	A Port End	B Port End
F1 F2 F3	A Port End	B Port End
FC F1C F2C	A Port End	B Port End
G	A Port End	B Port End
K	A Port End	B Port End
L	A Port End	B Port End

VSD08M

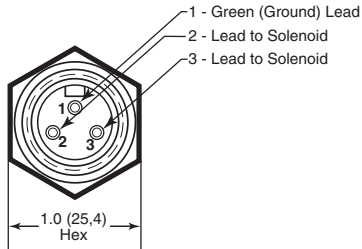
DIRECTIONAL CONTROL VALVES

SOLENOID ACTUATED, PILOT OPERATED

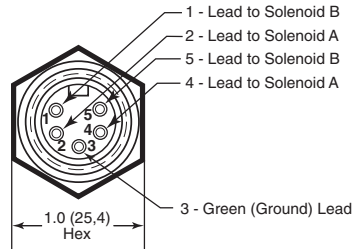


DIMENSIONS

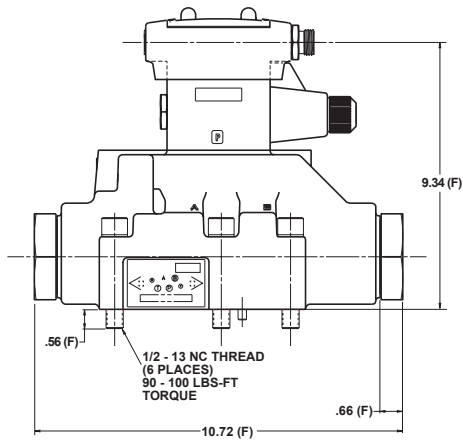
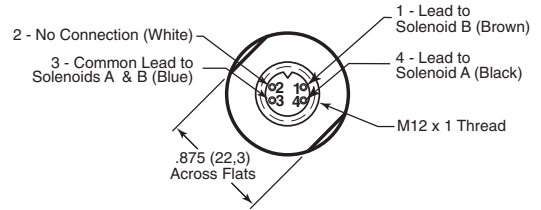
Three Pin Connector, Codes B3A, B3H
Use with single solenoid valve



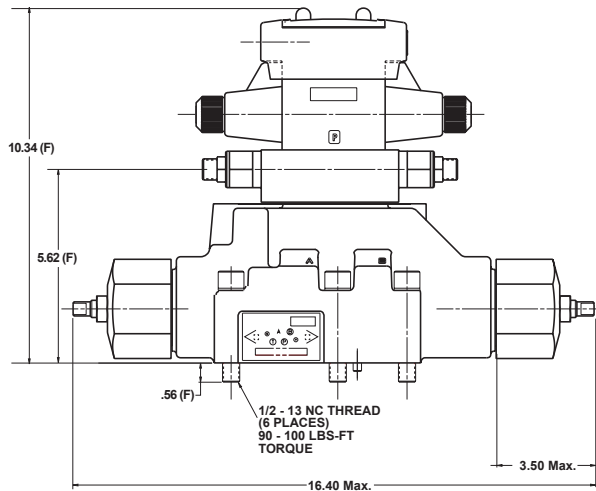
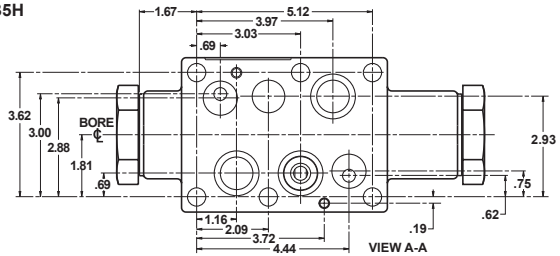
Five Pin Connector, Codes B5A, B5H
Use with single or double solenoid valve



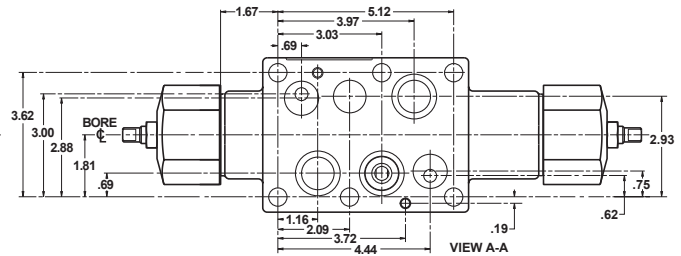
Four Pin Micro-Connector, Codes B4, B4A
Use with single or double solenoid valve
Available with 2-pin DC coils only



B3A
B3H
B4
B4A
B5A
B5H



VSD08M - ** - JJ

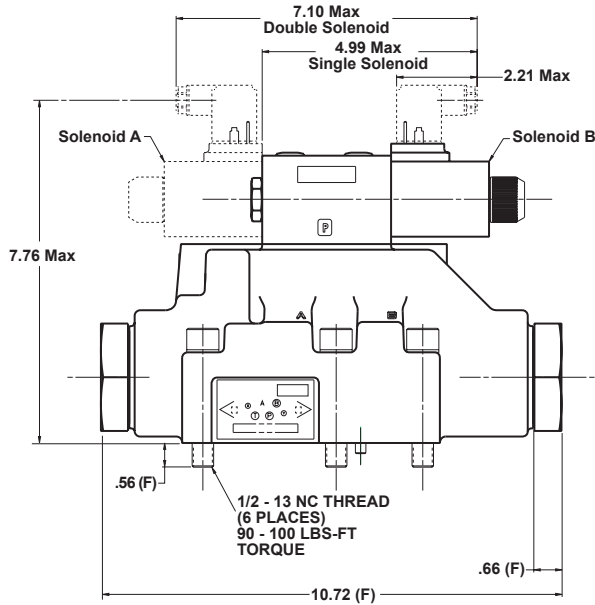


VSD08M

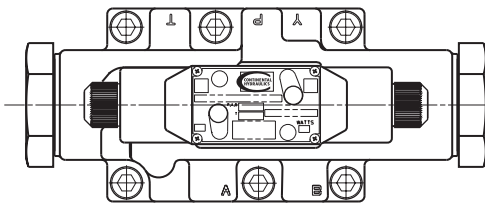
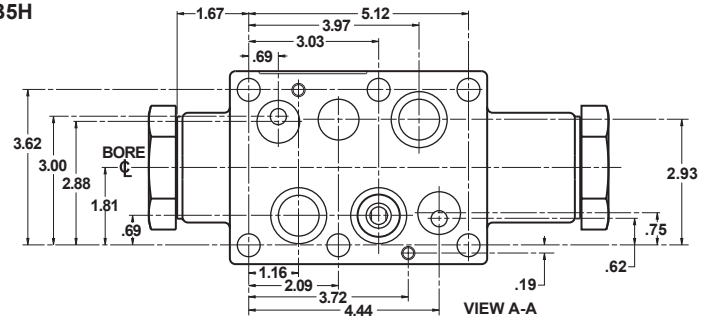
DIRECTIONAL CONTROL VALVES

SOLENOID ACTUATED, PILOT OPERATED

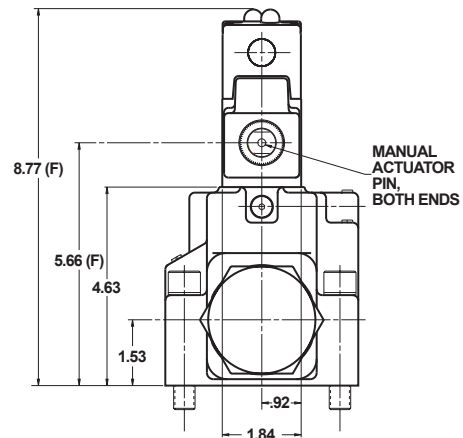
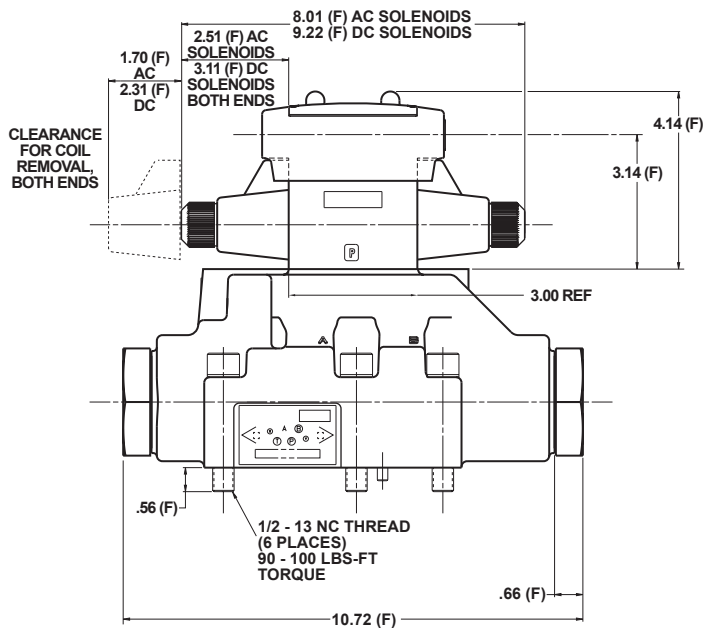
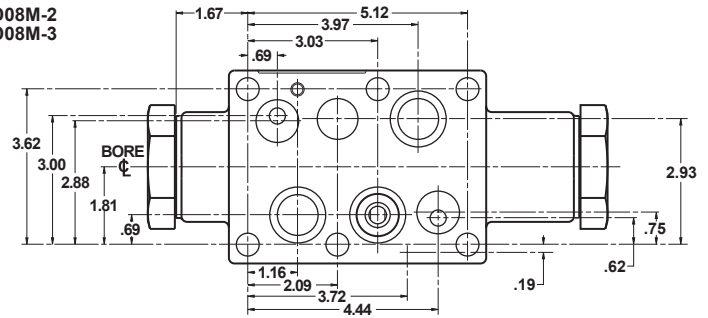
DIMENSIONS



B3A
 B3H
 B4
 B4A
 B5A
 B5H



VSD08M-2
 VSD08M-3



NOTES:
 1. MOUNTING BOLT KIT IS SHIPPED LOOSE WITH VALVE
 2. VSD08M-1, 2 EQUIPPED WITH "A" SPOOL PILOT VALVE
 VSD08M-3, 5 EQUIPPED WITH "F" SPOOL PILOT VALVE

VSD08M

DIRECTIONAL CONTROL VALVES

SOLENOID ACTUATED, PILOT OPERATED



ORDERING INFORMATION

VSD08M — — — **G** — — — — — — **L** — **A**

BASIC VALVE

CODE	SYMBOL
1	<p>Single operator • 2 position Spring offset</p>
2	<p>Double operator • 2 position Detented pilot (No spring)</p>
3*	<p>Double operator • 3 position Spring centered</p>
5*	<p>Single operator • 2 position Spring centered</p>

* Operator identification reversed on "L" spool.

SPOOLS

CODE
REFER TO PAGE 29 FOR SPOOL AVAILABILITY

SEALS

CODE
VITON SEALS STANDARD

ELECTRICAL OPTIONS

CODE	DESCRIPTION
OMIT	DIN STYLE SOLENOIDS
B	TOP ELECT. CONN. BOX W/TERMINAL POSTS, LIGHTS AND SURGE SUPPRESSOR
B3A*	TOP ELECT. CONN. BOX W/3 PIN MALE MINI RECEPTACLE, LIGHTS & SURGE SUPPRESSOR CONNECTOR ON "A" PORT END
B3H*	TOP ELECT. CONN. BOX W/3 PIN MALE MINI RECEPTACLE, LIGHTS & SURGE SUPPRESSOR CONNECTOR ON "B" PORT END
B4A**	TOP ELECT. CONN. BOXW/4 PIN MALE MICRO RECEPTACLE, LIGHTS & SURGE SUPPRESSOR CONNECTOR ON "A" PORT END
B4**	TOP ELECT. CONN. BOXW/4 PIN MALE MICRO RECEPTACLE, LIGHTS & SURGE SUPPRESSOR CONNECTOR ON "B" PORT END
B5A*	TOP ELECT. CONN. BOX W/5 PIN MALE MINI RECEPTACLE, LIGHTS & SURGE SUPPRESSOR CONNECTOR ON "A" PORT END
B5H*	TOP ELECT. CONN. BOX W/5 PIN MALE MINI RECEPTACLE, LIGHTS & SURGE SUPPRESSOR CONNECTOR ON "B" PORT END

SOLENOID MFG.

CODE	DESCRIPTION
L	LISK

SOLENOID

CODE	VOLTAGE
WITH DIN 43650 ELECTRICAL CONNECTIONS	
33	120/110V 60/50 Hz
34	240/220 V 60/50 Hz
42	24 VDC
44	12 VDC
WITH 2 PIN CONNECTIONS	
60	120/110 V 60/50 Hz
61	240/220 V 60/50 Hz
68	120/110 V 60/50 Hz (LOW AMP, LOW FORCE)
70	24 VDC
75	12 VDC

MECHANICAL OPTIONS

CODE	DESCRIPTION
70C*	CHECK VALVE "P" PORT 70 PSI CRACK PRESSURE
JJ	STROKE ADJUSTMENT
KK	ADJUSTABLE PILOT CHOKES
R**	REVERSE MODULE (USE STANDARD PILOT MANUAL)
Z	OVERRIDE FOR SINGLE SOLENOID VALVE
JA	SINGLE STROKE ADJUSTMENT "A" PORT END
JB	SINGLE STROKE ADJUSTMENT "B" PORT END
V	PILOT WITH STEEL OVERRIDE PINS
WD	WASHDOWN

PILOT - DRAIN LOCATION

CODE	PILOT PRESSURE	DRAIN
1*	INTERNAL	EXTERNAL
2	EXTERNAL	EXTERNAL
3*	INTERNAL	INTERNAL
4	EXTERNAL	INTERNAL

* 70C Mechanical Option may be used to insure adequate pilot pressure to fully shift spool on internal pilot pressure valves with open center spools ("B" and "L" spools only).

* 70C Mechanical Option may be used to insure adequate pilot pressure to fully shift spool on internal pilot pressure valves with open center spools ("B" and "L" spools only).

** Available with single solenoid valves codes only.

* Connector conforms to ANSI/B93.55M - 1981.

** Available with codes 70 & 75 only.

TYPICAL ORDERING CODE:
VSD08M-G-L-A