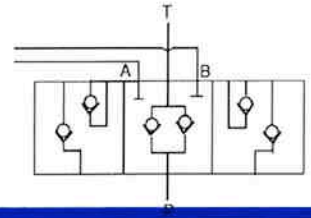




# HYDRAULIC VALVES

## DIRECTIONAL CONTROL SS SERIES Specification Sheet



The CROSS series SS directional control valve offers extremely low leakage with exceptional load holding ability in a small, yet rugged, sectional valve. A single section may be utilized by itself or stacked in series to perform multiple functions giving this valve a unique versatility. Solenoid as well as manual actuators are available. It is compact, yet large enough to accommodate quick disconnect fittings.

### GENERAL SPECIFICATIONS

Number of spools	one or multiple
Rated working pressure	3500 psi (241 bar)
Maximum shock and surge pressure	4500 psi (309 bar)
Rated flow capacity	.7 gpm (26.5 l/m)
Maximum spool leakage (at 1000 psi w/120 SUS oil at 120°F)	5 cc/min
Spool forces: Full Travel: 30 lb.; Into float position: 80-90 lb.; Out of float: 75-85 lb.	
Mounting, any position	1/4"-20 mtg. holes - 2 per section
Weight, 1 spool	.7 lbs.

### MATERIAL SPECIFICATIONS

Body	Ductile iron
Inlet relief plate	Aluminum
Spools	Ground, plated and polished steel alloy
Seals	Buna N

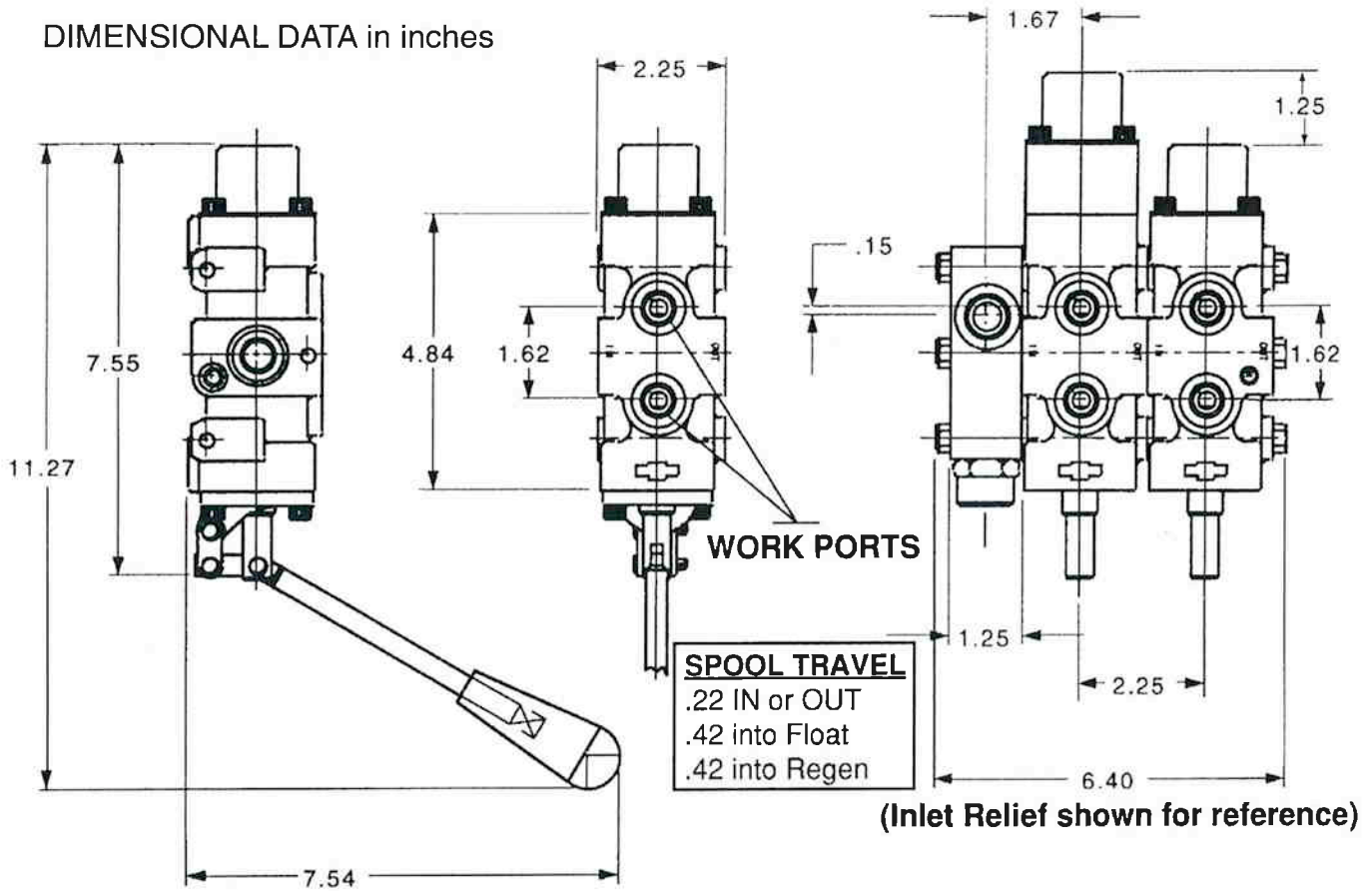
### STANDARD FEATURES

- Series operation
- Excellent spool metering characteristics
- Open center, 4 way 3 position or 4 way, 4 position (float)
- Integral load holding check valves to prevent reverse flow through valve when shifting
- Balanced, select-fit spools to provide minimum leakage, smooth operation
- 9/16-18 (SAE #6) inlet and outlet ports, 9/16-18 (SAE #6) work ports
- May stand alone or be stacked in series
- Built-in power beyond capability
- Complete handle assembly

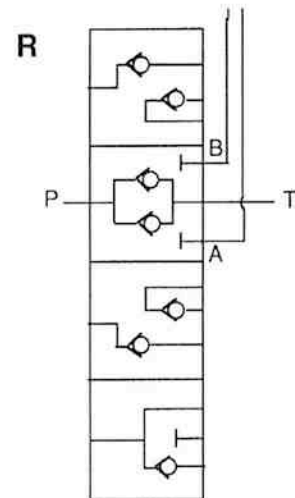
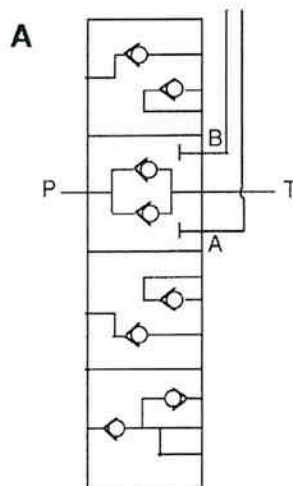
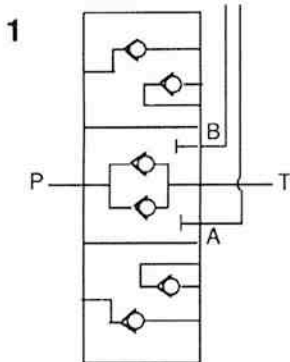
### OPTIONAL FEATURES

- Optional add-on inlet section with differential poppet type relief valve
- High flow spool available for up to 10 gpm
- Single handle actuator with rubber boot
- 3/4-16 (SAE #8) inlet and outlet ports, 3/4-16 (SAE #8) work ports
- Solenoid actuators (12 and 24 volt DC, 120 and 240 volt AC) - complete internal plumbing - no external drains required

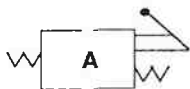
**DIMENSIONAL DATA** in inches



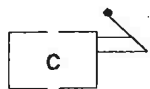
**SPOOL OPTIONS**



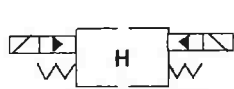
**ACTUATOR OPTIONS**



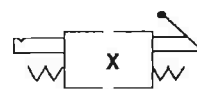
LEVER, SPRING CENTERED



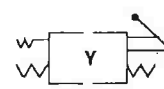
LEVER, NO SPR. CNTR



(also J, K or L)  
 SOLENOID, DC OR AC SPR. CNTR



LEVER,  
 1-POS. DETENT IN,  
 FLOAT POSITION



LEVER,  
 SPR. CTR. W/  
 REGEN FEEL POS.



# HYDRAULIC VALVES

**DIRECTIONAL CONTROL  
SS SERIES  
Specification Sheet**

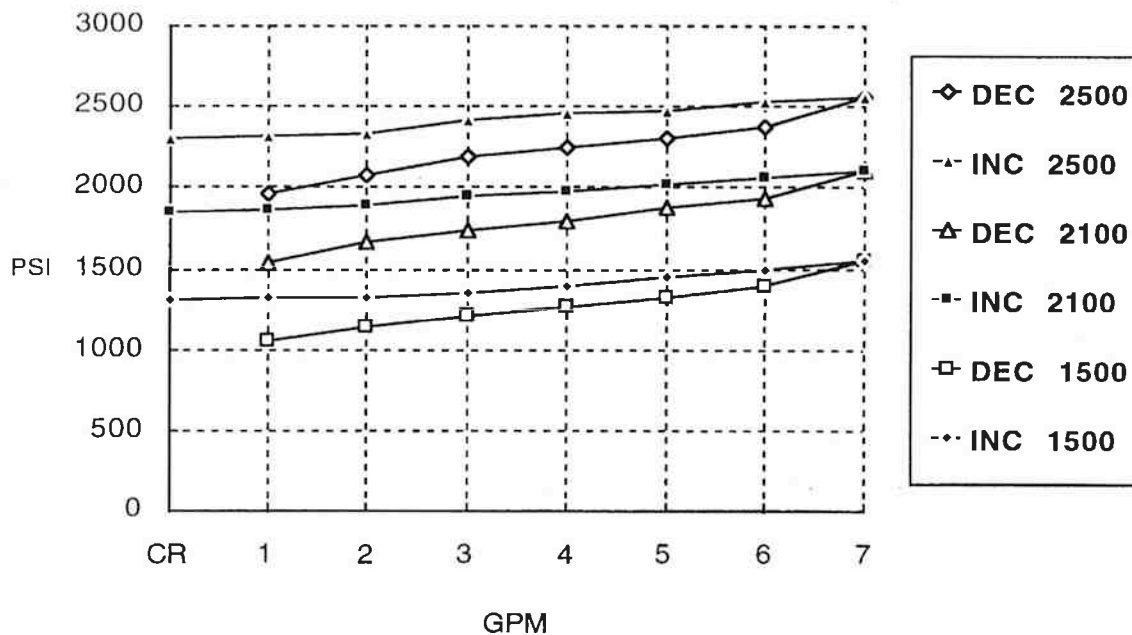
## TYPICAL PERFORMANCE DATA

PRESSURE DROP (with 120 SUS oil at 120°F, 9/16-18 ports)

FLOW RATE in GPM	1	2	3	4	5	6	7	8
<b>SINGLE SPOOL VALVE</b>								
<b>P to A or B</b>	9	14	24	36	50	66	90	113
<b>A or B to T</b>	10	18	28	45	66	87	116	146
<b>P to T</b>	8	10	14	24	31	40	51	64
<b>TWO SPOOL VALVE</b>								
<b>P to T</b>	14	17	24	40	55	72	93	116
<b>A1 or B1 to T</b>	16	24	37	61	90	119	158	199
<b>P to A2 or B2</b>	14	20	32	52	74	98	132	166
P to A1 or B1 same as single spool data; A2 or B2 to tank same as A1 or B1 to tank data of single spool.								
<b>THREE SPOOL VALVE</b>								
<b>P to T</b>	19	24	32	56	79	104	135	170
<b>A1 or B1 to T</b>	22	30	46	77	114	151	200	252
<b>P to A3 or B3</b>	20	27	42	68	98	130	174	219
P to A1 or B1 same as single spool data; P to A2 or B2 same as 2 spool data; A2 or B2 to tank same as A1 or B1 to tank data of two spool; A3 or B3 to tank same as A1 or B1 to tank data of single spool.								
<b>Adder per spool</b>	6	6	9	16	24	32	42	53

(Use adder figure for all ports except last ports to tank or first ports from pump)

## RELIEF VALVE CHARACTERISTICS (120 SUS OIL AT 120°F.)





**ORDERING INFORMATION**

MODEL NO.	SPOOL TYPE	SPOOL ACTION	PORT SIZE & TYPE	HANDLE	HIGH FLOW SPOOL
SS	1 4 way, 3 pos. open center	A 3-position, spring centered	A 9/16-18, SAE #6, all ports	0 Complete handle ass'y. "A" port end.	High flow spool (above 7 gpm)
SSC * (use with optional inlet relief plate)	3 3 way, 3 pos. open center	H Solenoid, 12 volt DC	B 3/4-16, SAE #8, all ports	1 Complete handle ass'y. "B" port end.	
	5 4 way, 3 pos. open center w. motoring spool	J Solenoid, 24 volt DC	C 3/4-16 SAE #8, In & Out. 9/16-18 SAE #6 work ports.	2 Less handle ass'y. "A" port.	
	A 4 way, 4 pos. open center, detented float position	K Solenoid, 120 volt DC		3 Less handle ass'y. "B" port.	
	R 4 way, 4 pos. open center, with regen feel position	L Solenoid, 240 volt DC		4 Less handle w/brackets. "A" port end.	
		Y 4-position, spring centered with regen feel position			
		X 4 pos. spring ctr. to neutral. Detent in float position			

EXAMPLE: SS1AA0 is a manually operated single section with 4 way, 3 position, spring centered open center spool, with 9/16-18 SAE ports and handle assembly "A" port end.

\* Must be last section in stack.

Optional inlet plate may be ordered by specifying port size and pressure relief setting.

Single handle actuator with rubber boot is available on multi-stack units.

Contact CROSS ENGINEERING for specifications.



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