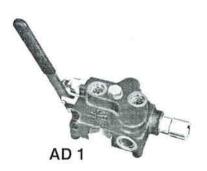


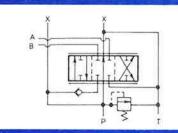
HYDRAULIC VALVES

DIRECTIONAL CONTROL AD SERIES

Specification Sheet







The Cross series AD directional control valves provide good metering characteristics and long dependable service life. Optimum versatility is provided due to the many standard and optional features. Balanced spools are select-fit for minimum leakage and load holding checks prevent load drop when shifting. Parallel flow path permits spools to be operated independently or simultaneously.

GENERAL SPECIFICATIONS

Number of spools	.One,	two
Maximum working pressure	si (206	bar)
Maximum shock and surge pressure	osi (276	bar)
Maximum flow capacity		
Maximum spool leakage (at 1000 psi w/100 SUS oil at 120° F)		
Mounting, any position		
Weight	lbs. (4.5	Kg)
MATERIAL SPECIFICATIONS		
Body	yth cast	iron

STANDARD FEATURES

Integral load holding check valves (prevent reverse flow through valve when shifting)

- Integral differential poppet type relief valve, adjustable (set at 2000 psi, 10 gpm)
- Balanced, select-fit spools (provide minimum leakage, smooth operation)
- External spool seals (permit easy replacement, reduced maintenance cost)
- SAE#10 (5/8") 7/8 14 inlet and outlet ports: SAE#8 (1/2") 3/4 16 work ports
- Complete handle assembly

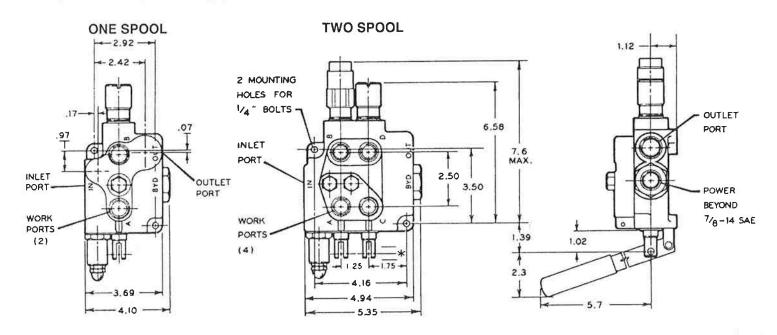
OPTIONAL FEATURES AVAILABLE

- Open or closed center positions, 3-way or 4-way operation, 3-position or 4-position (float position), full open center (motoring spool) and other spool options
- Power beyond (permits use of neutral flow at system pressure); also permits field conversion from closed center to open center (tandem) operation

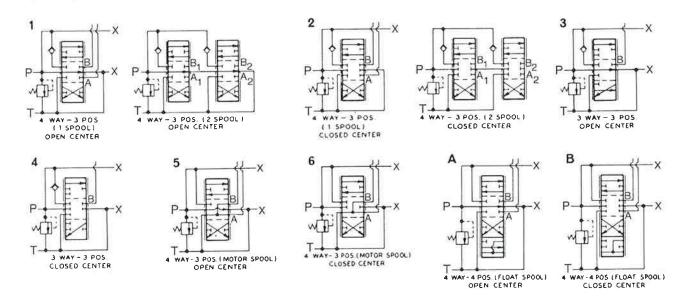
HYDRAULIC VALVES



DIMENSIONAL DATA in inches



SPOOL OPTIONS



ACTUATOR OPTIONS







LEVER 2-POS. DETENT SPRING CENTERED



LEVER
1-POS, DETENT-IN



LEVER 1-POS. DETENT-OUT SPRING CENTERED



LEVER
4-POS. DETENT-IN
FLOAT POSITION
SPRING CENTERED



HYDRAULIC VALVES

AD SERIES
Specification Sheet

TYPICAL PERFORMANCE DATA

PRESSURE DROP (with 100 SUS oil at 120° F, SAE #10 in and out, #8 work ports)

AD 1

FLOW GPM	P-A	P-B	PSI A-T	В-Т	P-T
3	9	5	1	1	2
6	21	20	3	3	5
9	42	40	10	11	11
12	65	63	21	20	20
15	90	87	34	32	32

FLOW		PSI	
GPM	FLOAT	P-A-B-T	P-A-B-T
3	12	10	11
6	23	27	. 29
9	43	53	60
12	65	88	100
15	90	125	140

TO CONVERT	INTO	MULTIPLY BY
GALLONS	LITERS	3.7853
PSI	BAR	0.0690
i		

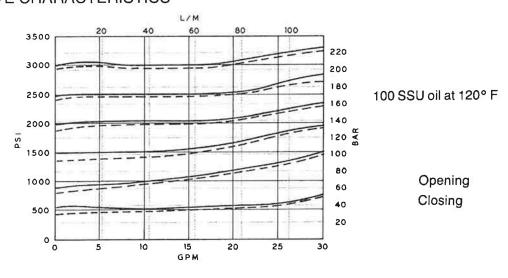
AD 2

FLOW GPM	P-T	P-A	PSI I P-B	P-C	P-D	
3	4	20	18	20	20	
6	12	38	34	40	36	
9	28	62	54	72	58	
12	46	96	82	110	88	
15	71	138	114	156	122	

FLOW	PSI				FLC	AT TA
GPM	A-T	B-T	C-T	D-T	A-B	B-A
3	4	4	4	4	10	10
6	12	12	10	10	32	30
9	24	26	22	20	70	64
12	40	44	36	34	118	108
15	60	66	54	50	180	164

FLOW	PSI					
GРM	PABT	PBAT	PCDT	PDCT		
3	24	24	24	24		
6	52	52	54	48		
9	94	88	98	84		
12	146	134	158	130		
15	212	192	228	286		

RELIEF VALVE CHARACTERISTICS



AD SERIES Specification Sheet

HYDRAULIC VALVES



ORDERING INFORMATION

MODEL NO.	NUMBER- OF SPOOLS	SPOOL TYPE	ACTUATOR OPTIONS	RELIEF VALVE	POWER BEYOND	OUTLET PORT LOCATION	PORT SIZE & TYPE	HANDLE
	1	1	A	Α		0	0	0
AD	Single	4-way, 3-position, open center	3 position Spring centered	1000 psi		End Outlet	SAE #10, 7/8-14 In & Out	Complete handle assembly
	2	2	В	В		P*	SAE #8 ,3/4-16 Work Ports	1
	Double	4-way, 3-position, closed center	3 position manual detent - no spr. ctrg.	1500 psi	-	Top Inlet & Outlet		Less Complete handle assembly
		3	С	С	3	H*	1	2
		3-way, 3-position, open center	manual · no detent · no centering spring	2000 psi	Conversion plug	Top Inlet	1/2" NPTF In & Out, 3/8" NPTF Work Ports	Less Handle only (Link,pins & bracket included)
		4	М	D	4	R	2	
		3-way, 3-position, closed center	2 -position detent, "in& out" spring centering	None	7/8 -14 SAE #10	Rear 3/8" NPTF	SAE #6, 9-16 In & Out & Work Ports	
		5	· N	E	5	Т	3	
		4-way, 3-position, open center w/motoring spool	1 -position detent," in" only,spring centering	Other	Closed center plug	Top Outlet	Other	
		6	Р	F				
		4-way, 3-position, closed center w/motoring spool	1 -position detent, "out" only,spring centering	Adjustable 500-1500 psi (set at 1000)				
		A	х	G				
		4-way, 4-position, open center, detent ffloat position	4-pos. spring centered to neutral. Detent in float.	Adjustable 1500-3500 (set at 2000)				
		В	Y					- 1
		4-way, 4-position, closed center, detent float position	4-pos, spring centered with regen					
		С						
		4-way, 4-position, open center w/ regen feel position						

EXAMPLE: AD2A1XAG4000 is a manually operated double spool valve, the first spool being 4-way, 4 position, open center, spring centered with detent in float position; the <u>second spool</u> being 4-way, 3-position, open centered spring centered. The <u>adjustable relief valve</u> is set at 2000 psi. Power beyond sleeve with 7/8-14 SAE thread. <u>Inlet and outlet ports</u> SAE #10, 7/8-14. <u>Work ports</u> SAE#8, 3/4-16. Complete <u>handle</u> assembly.

Standard Full Line Valves: (See page 6 in Full Line Catalog for additional information.)

- SA2 AD11AG3000 Single spool 3-position, 4-way
- SA22 AD211AAG3000 Double spool 3-position, 4-way
- SAF2 AD2A1XAG3000 Double spool 1st spool 4-position float, 2nd spool 3-position, 4-way

