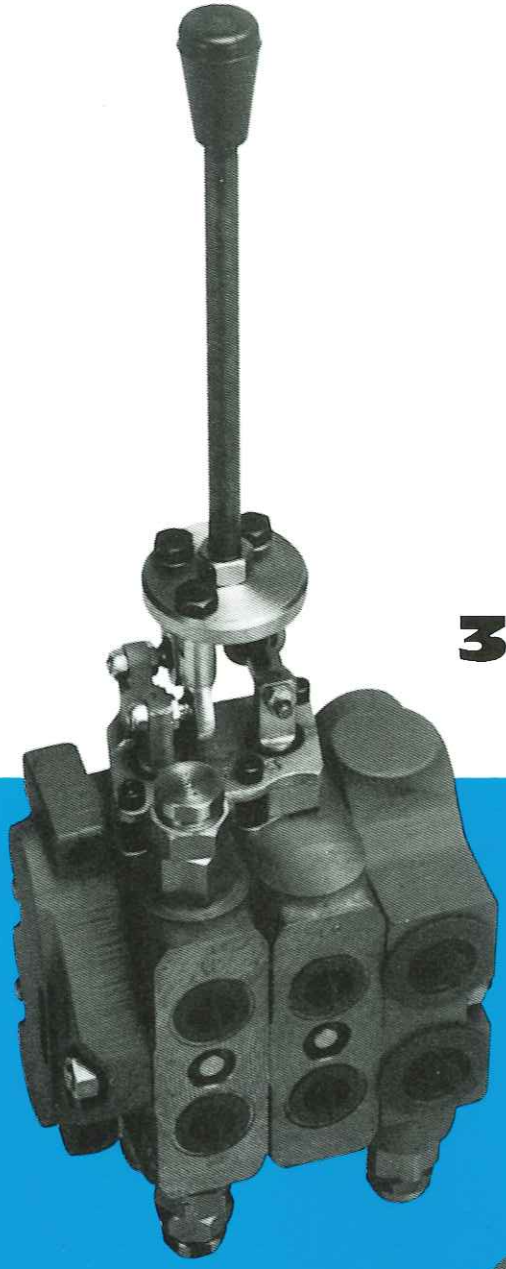
KA18

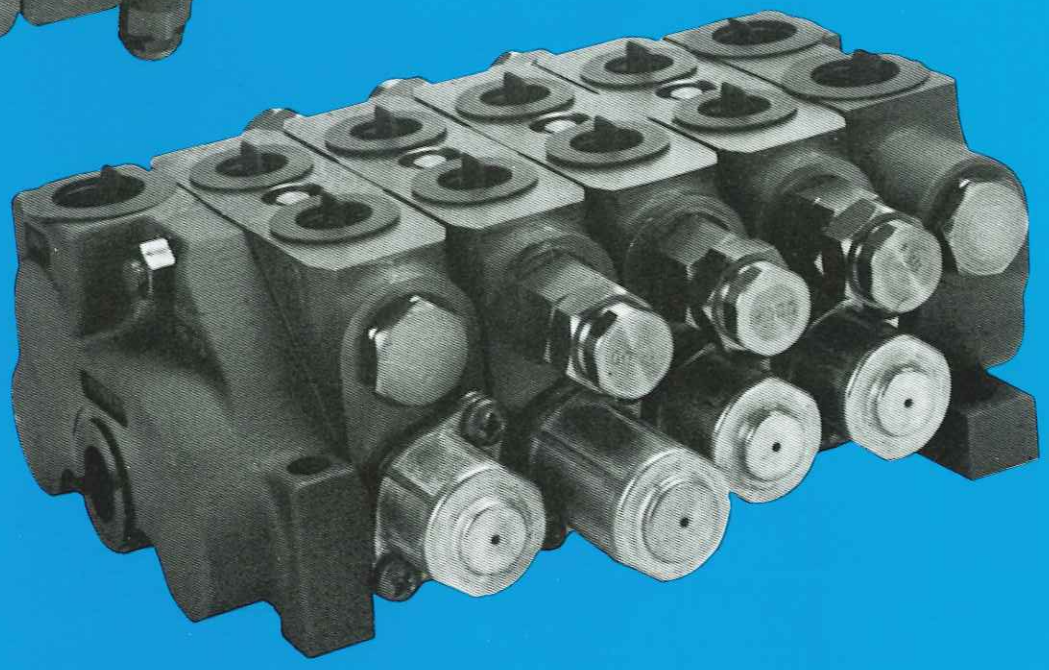
Directional Control Valves

3500 psi • 240 bar
20 gpm • 76 lpm



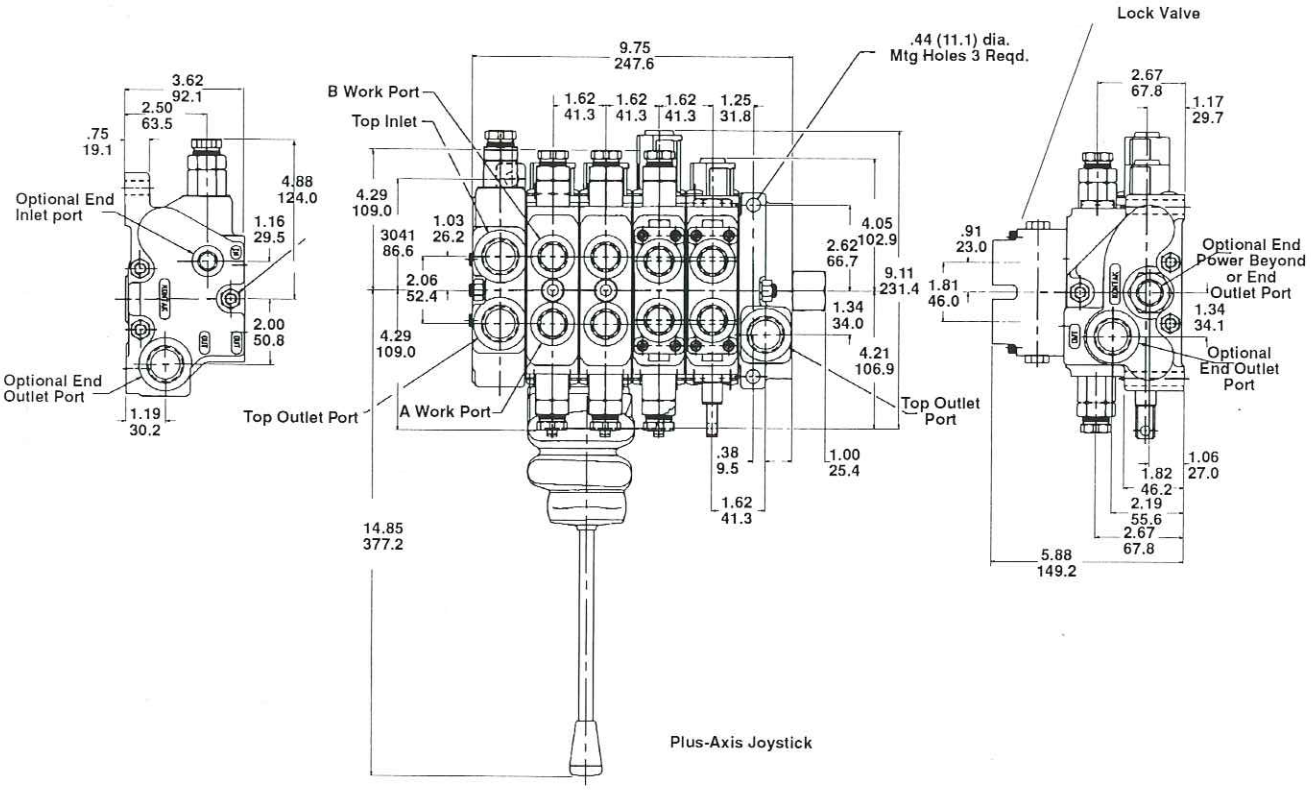
® Commercial Intertech

373 Meuse Argonne • Hicksville OH 43526
Phone (419) 542-6611 • Fax (419) 542-8871



Catalog H-117
2.5MY 7/96
Printed in USA

Dimensions for KA18 Valves



Commercial's Model KA18 valves are the Unit 18 valves that were designed and manufactured by Kontak of Grantham, England. Kontak was purchased by Commercial Intertech Corp. in 1989. The KA18 valves are the first of several Kontak products that will be manufactured in the USA by Commercial.

As with all of our products, a manufacturing based engineering staff will support the application of the KA18 valves. They are also available to fine-tune the valves to meet your rigorous demands in the OEM market place.

Expansion of this product line will be driven by market forces within each continent, but all gains will be shared to make the KA18 valve a truely worldwide product.

At this time, the KA18 valve is available with parallel circuitry and manual operation only. We expect additional features will be added as the market demands.

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Spools offered are for double-acting cylinders and motors, single -acting cylinders, 4-position float or regeneration. Back caps available are spring returned, 3-position detent, 1-position detent with the other position spring returned, and 4th position feel or detent.

Port accessories include anti-cavitation checks, relief valves with A/C and relief valves. The relief valves are screw adjustable and are also offered with a tamper proof feature. This gives you the flexibility of screw adjustment with the protection of slug adjustment R/V.

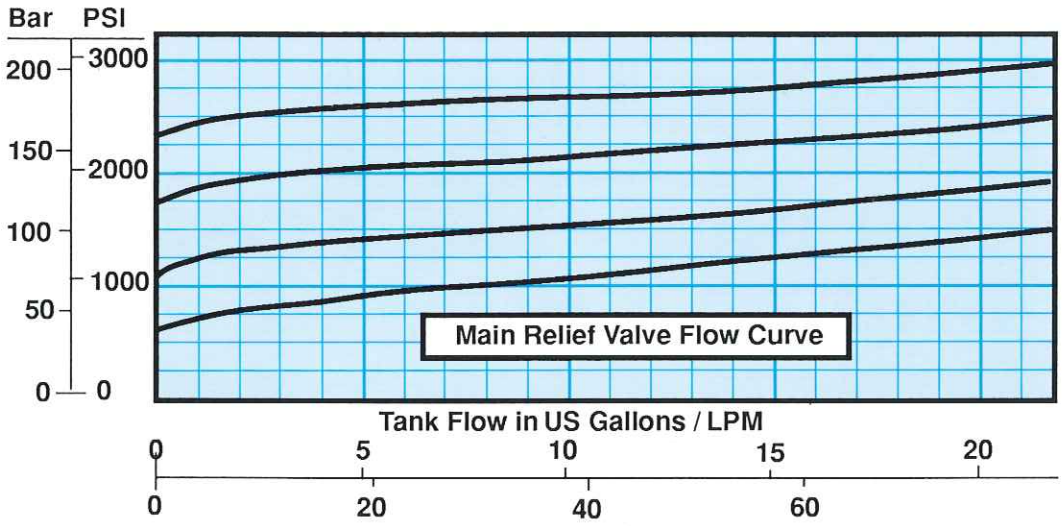
We also offer port valves which can include restrictors to reduce flow in one or both ports. These are useful in controlling speed of a function with an overhung load. Lock valves (pilot operated checks) are available for both ports. These are generally used on stabilizer circuits or with motor spools to ensure that trapped oil does not unseat the check. Handle assemblies are available in various lengths and can be mounted parallel to or perpendicular to the spool. A unique mechanical joystick is referred to as a Plus-Axis assembly. It mounts directly on the valve and controls two work sections with a single lever.

Commercial Intertech

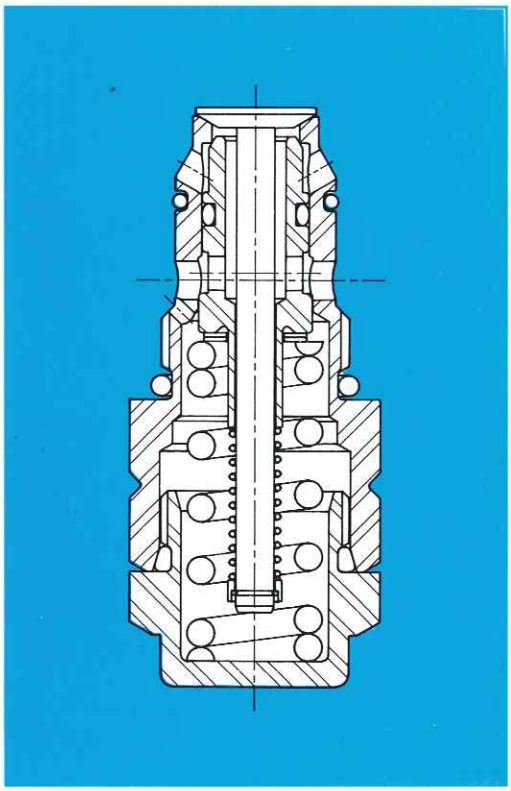
KA18 Valves Relief Valve Performance

Commercial Intertech's Model KA18 directional control valves are available with these system relief valve options:

- Differential area, full flow, screw adjusted R/V
- Differential area, full flow, tamper-proof R/V
- Differential area, full flow, dual pressure R/V
- No relief valve... the cavity is plugged.

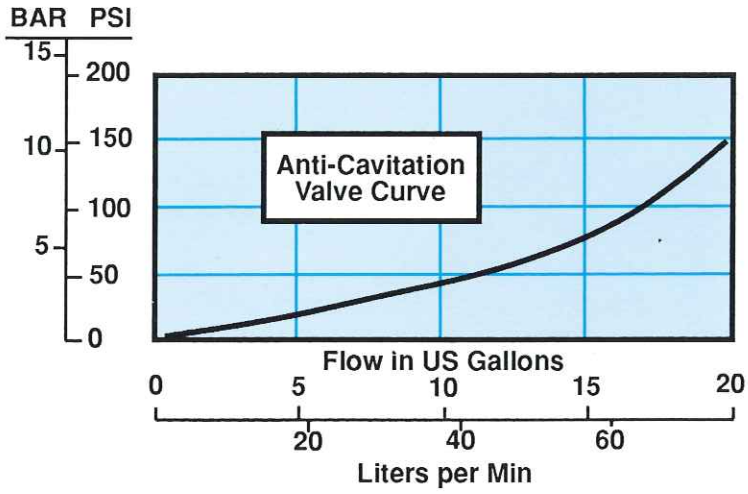


Section Through Typical
Screw-Adjusted Relief Valve with Anti-Cav Check



Circuit Port Options include:

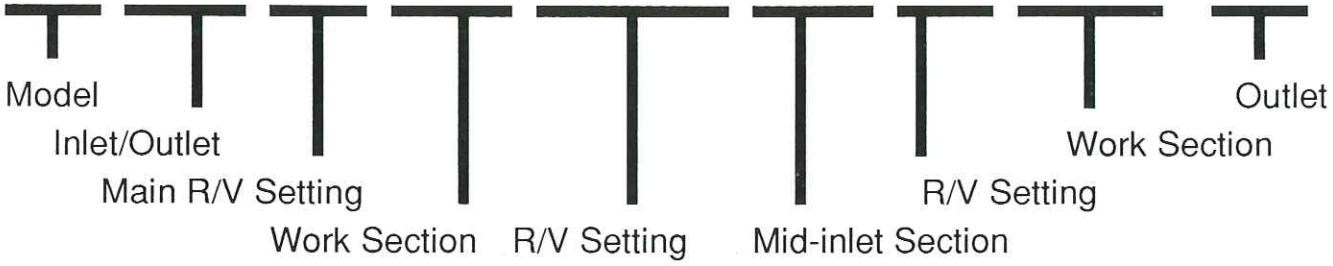
- Differential area R/V with integral anti-cavitation check (with or without tamper-proof feature)
- Anti-cavitation check
- Differential area R/V (with or without tamper-proof)
- Port restrictor for meter in
- Port restrictor for meter out
- Port restrictor for dual-direction restrictor
- Pilot operated check (Lock valve)



How to Order

Sample Code

KA18 -- AS5000 (2000) -- HA433 (2500/2800) -- SA555 (1750) -- LA40024 -- Y550



Combination Inlet / Outlet Sections

AS	5	0	0	0
Function	High-pressure Port on Top (Notes 1 & 2)	Tank Return Port on Top (Note 1)	High-Pressure Port on Side (Note 2)	Tank Return Port on Side

Code	Description
AS =	Inlet with Screw Adj. Relief Valve
AT =	Inlet with Screw Adj.Tamper Proof Relief Valve
AD =	Inlet with Dual Setting R/V
CA =	Inlet without Relief valve

Port Type	Porting Code
No Ports	0
1/2" BSP	1
3/4" BSP	2
SAE-8	3
SAE-10	4
SAE-12	5

Notes: 1. If no ports are required on top, SAE-8 or 1/2" BSP ports will be plugged. If there is only one top port, the other top port will be identical and be plugged.
2. Full size inlet ports are not available simultaneously. Only the SAE-8 port is available if the other port is full sized.

Please direct all inquiries and requests for up-to-date product status to:

® Commercial Intertech

373 Meuse Argonne • Hicksville OH 43526
Phone: (419) 542-6611 • Fax: (419) 542-8871

Work Sections

How to Code Work Sections

L	A	4	0	0	2	4
Function	Operator LH Code / RH Code	A & B Ports Code	Access Valves Port A Code	Port B Code	Port Valves (OPTIONAL) Port A Code	Port B Code
Code Desc.	**See Note 4**	**See Note 3**		**See Note 1**		**See Note 2**
H = DA Cyl **L** = DA Motor **J** = SA Cyl Port B **G** = DA 4 Pos Float **R** = DA 4 Pos Regen	**A** = Spr Retn = **E** **B** = 3 Pos Det= **F** **C** = Spr Ret = **N/A** 4 posDet See Note 3 **D** = Spr Ret = **P** Det Out **H** = Spr Ret = **Q** Det In **T** = Spr Ret = **N/A** 4 pos feel	**1** = 1/2" BSP **3** = SAE-8 **4** = SAE-10	**0** = None **1** = RV+AC **2** = AC Only **3** = R/V Only **4** = R/V + AC Tamper Proof **5** = Plas Clos **8** = R/V Tamper Proof B = D/A to S/A Chg-over Plug	**0** = None **1** = RV+AC **2** = AC Only **3** = R/V Only **4** = R/V + AC Tamper Proof **5** = Plas Clos **8** = R/V Tamper Proof B = D/A to S/ Chg-over Plug	**0** = None **1** = Restrict IN **2** = Rest OUT **3** = Rest Fixed **4** = D/A Lock Val **5** = S/A Lock Val	**0** = None **1** = Restrict IN **2** = Rest OUT **3** = Rest Fixed 4 = D/A Lock Val 5 = S/A Lock Val

Lock Valve Porting is SAE-10 or 1/2" BSP

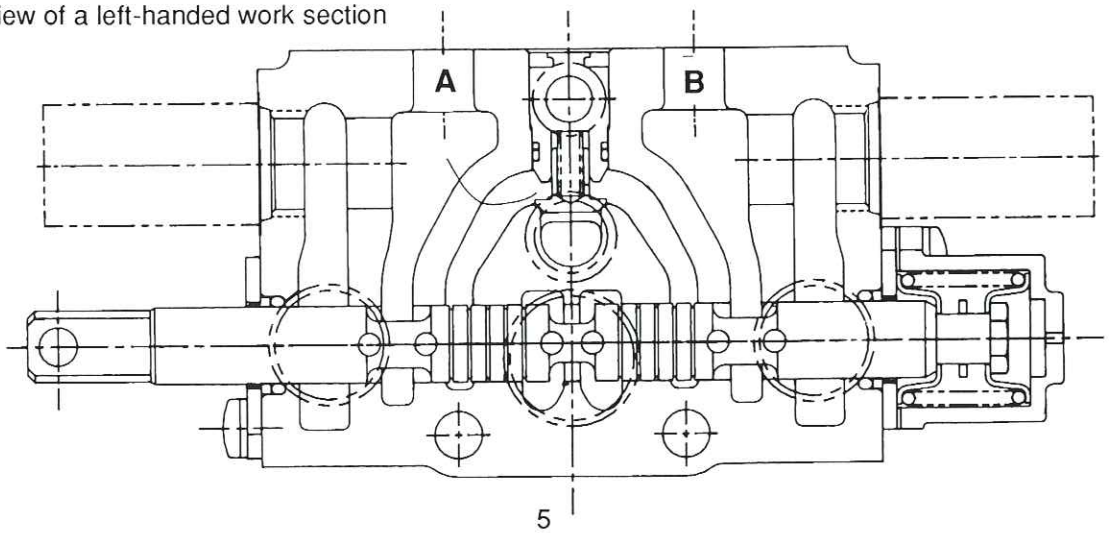
Notes:

1. You must specify the relief valve settings and flows. Port R/V will be set @ 10 gpm unless otherwise noted.
2. If port valves are not required, there is no coding needed, e.g. HA433 completes coding for that section. However, if you specify options for one port, you must also specify coding for the other port.
3. Operator codes **C** and **T** can only be used with function codes **G** and **R**.
4. Motor spools will have transition checks unless requested

The work section housings are symmetrical, therefore the spool can be inserted from either end of the bore. This allows the valve to be assembled for left-handed (flow from left to right as you face the spool pin-eye) or right - handed operation (flow from right to left as you face the spool pin-eye).

	High pressure Port A	**High pressure Port B**
Left-handed valve banks	Push spool in	Pull spool out
Right-handed valve banks	Pull spool out	Push spool in

Upstream view of a left-handed work section



Mid-Inlet Sections

Sample Code

SAS	5	5
Function	High-Pressure	Tank Return

Code Description

SAS = Split flow type with screw adjusted relief valve.
SAT = Split flow with screw adjusted, tamper-proof relief valve
SCA = Split flow with no relief valve
CAS = Combined flow with screw adjusted relief valve
CAT = Combined flow with screw adjusted, tamper-proof relief valve
CCA = Combined flow with no relief valve

Porting Description	Porting Codes KA18
No Ports	0
3/4" BSP	2
SAE-12	5

Outlet Sections

Sample Code

Y	5	5	0
Function	High-pressure Port on side See Note 1	Tank Return Port on Side	Tank Return Port on Top

Code Description

B = Outlet cover - no ports
Z = Standard low-pressure outlet
Y = Standard pressure-beyond outlet
CC = Standard closed-center outlet
DY = Convertible type low-pressure all ports

Porting Description	Porting KA18
No Ports	0
1/2" BSP	1
3/4" BSP	2
SAE-10	4
SAE-12	5

Note 1. Code Y Pressure beyond port are limited to 1/2" BSP or SAE-10.

KA18 Open-Center Pressure Drop

Pressure drop tests were run with oil viscosity @ 20cS and @ 52 to 55ºC.

Commercial Intertech's Model KA18 valve's inlet cover is available with side or top inlet port locations. The alternate position from the main inlet port can be used as a gauge port.

The inlet cover can also be used as an end or top outlet.

Outlet covers are available in two basic styles:

1. Convertible outlet cover which can be used for:
   (a) An end outlet with top or side outlet port locations
   (b) A power beyond outlet with top or side low-pressure ports and a side high pressure port.
   (c) Closed-center outlet with top or side outlet ports.
2. Turn-around end cover for use with inlets with outlet porting.

Flow in: GPM LPM	5 18.9	10 37.9	15 56.8	20 75.7	25 94.7
Number of Sections in Assembly	Values shown are pressure drops in PSI / BAR				
1	3 .2	10 .7	21 1.4	36 2.5	55 3.8
2	6 .4	18 1.2	35 2.4	59 4.1	87 6.0
3	8 .6	25 1.7	51 3.5	83 5.7	121 8.4
4	11 .7	33 2.3	65 4.5	106 7.3	152 10.5
5	13 .9	40 2.8	78 5.4	126 8.7	181 12.5
6	16 1.1	49 3.4	94 6.5	152 10.5	217 15

KA18 Open-Loop Pressure Drop

Values shown are pressure drops in PSI / BAR

Flow in: GPM LPM	5 18.9		10 37.9		15 56.8		20 75.7		25 94.7	
Number of Sections in Assembly	Inlet to Work Port	Work Port To Outlet	Inlet to Work Port	Work Port To Outlet	Inlet to Work Port	Work Port To Outlet	Inlet to Work Port	Work Port To Outlet	Inlet to Work Port	Work Port To Outlet
1	4 .3	2 .15	16 1.1	8 .55	35 2.4	19 1.3	59 4.1	35 2.4	87 6.0	54 3.7
2	5 .33	2 .16	17 1.2	9 .59	37 2.6	20 1.4	64 4.4	38 2.6	94 6.5	56 3.9
3	5 .4	2 .2	18 1.2	9 .6	40 2.8	22 1.5	70 4.8	41 2.8	101 7.0	61 4.2
6	7 :5	3 .2	22 1.6	11 .8	46 3.2	25 1.7	80 5.5	45 3.1	116 8.0	67 4.6

Order Form
For KA18 Valves

Please fillout this form and mail or Fax to:
Commercial Intertech Corp.
373 Meuse Argonne
Hicksville OH 43526
Phone (419) 542-6611
Fax: (419) 542-8871

Valve Type		Pressures		Flows	
LH		PSI		GPM	
RH		BAR		LPM	

INLET TYPE			R/V SETTING
Scr Adj R/V	AS		
Scr Adj R/V Tamper-proof	AT		
Dual Set R/V	AD		
NO R/V	CA		

INLET PORTS		TOP PORTS		SIDE PORTS	
		Inlet	Outlet	Inlet	Outlet
None	0				
1/2" BSPP	1				
3/4" BSPP	2				
SAE-8	3				
SAE-10	4				
SAE-12	5				

OUTLET TYPE		
Cover, NO Ports	B	
Low Pressure	Z	
Pressure Beyond	Y	
Closed Center	CC	
Convertible Low Pressure	DY	

OUTLET PORTS		Side Ports H.P.	Side Ports L.P.	Top Ports L.P.
None	0			
3/4" BSPP	2			
SAE-8	3			
SAE-10	4			
SAE-12	5			

ORIGINATED BY: _____

CUSTOMER _____

CUST PART NO. _____

S.O. NO. _____

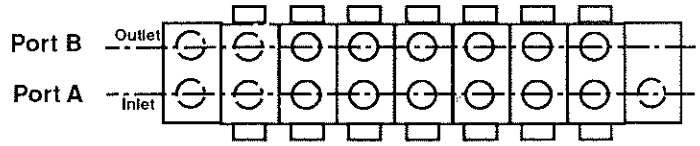
SEWR _____

NOTES: _____

_____

_____

_____



Work Sections											
Function	D/A Cylinder		H								
	D/A Motor		L								
	S/A Cyl @ Port B		J								
	D/A 4 Pos Float		G								
	D/A 4 Pos Regen		R								
Operators	Spring return	LH	A								
		RH	E								
	3-Pos Detent	LH	B								
		RH	F								
	Spring Return 4 pos detent	LH	C								
		RH									
	Spring Return Detent IN	LH	H								
		RH	Q								
	Spring Return Detebt OUT	LH	D								
		RH	P								
	Spring Return 4 pos Feel	LH	T								
		RH									
		LH									
		RH									
Work Ports	1/2" BSPP		1								
	SAE-8		3								
	SAE-10		4								
Acces Valve @ A	None		0								
	R/V + AC		1								
	A/C		2								
	R/V ONLY		3								
	R/V + AC TAMPER		4								
	Plas Closures		5								
	R/V ONLY TAMPER		8								
Access Valve @ B	None		0								
	R/V + AC		1								
	A/C		2								
	R/V ONLY		3								
	R/V + AC TAMPER		4								
	Plas Closures		5								
	R/V ONLY TAMPER		8								
Port Valve @ A	None		0								
	Restrictor IN		1								
	Restrictor OUT		2								
	Restrictor Fixed		3								
	D/A Lock Valve		4								
	S/A Lock Valve		5								
Port Valve @ B	None		0								
	Restrictor IN		1								
	Restrictor OUT		2								
	Restrictor Fixed		3								
	D/A Lock Valve		4								
	S/A Lock Valve		5								
Mid-Inlets	SPL FLO R/V		SAS								
	SPL FLO R/V TAMPER		SAT								
	SPL FLO NO R/V		SCA								
	COMB FLO R/V		CAS								
	COMB FLO R/V TAMPER		CAT								
	COMB FLO NO R/V		CCA								
Top Inlet	None		0								
	3/4"BSPP		2								
	SAE-8		3								
	SAE-10		4								
	SAE-12		5								
Top Outlet	None		0								
	3/4"BSPP		2								
	SAE-8		3								
	SAE-10		4								
	SAE-12		5								
End Inlet	None		0								
	3/4"BSPP		2								
	SAE-8		3								
	SAE-10		4								
	SAE-12		5								
R/V	Pressure										
	Flow										