NORTHEAST CONTROLS INCORPORATED

HYDRAULIC COMPANY OF AMERICA

HYCOA

Quality Today Insures Tomorrow

Revolutionary Patented Shoe Seal

Resilient Positive Sealing for High Performance

Series JR-33 Value-Added Features

1. Patented Shoe Seal provides **Zero Leakage** and Zero Frictional Drag on Crossover.
2. Positive Patented Mechanical Lockdown-No Springs.
3. Exceptionally Low Pressure Drop.
4. Fabricated Steel Construction-Special Configurations and Dimensions are Available, Consult Factory.
5. **"Will Fit"** System-Drop In Replacements for Competitive Valves.
6. Stainless Steel Internal Trim and Moving Parts.
7. Easy Low Torque Operation-Handle Extensions are not Required.
8. No Lubricant Stick Required to Operate.
9. Pressure Ratings to 1600 P.S.I.
10. Flanged or Butt Weld Connection.
11. Compact Open Center Design.
12. Valve Sizes 1 1/2" Through 8".
13. Spectacle Blinds are not Required for Tight Shut-Off.
14. Designed and Tested per API Standards 598 & 614.
15. Complete In-house Testing Facility for Specials and Customer Requirements.

Company History: The Hycoa Story

For decades, industry has been living with sub-optimal transfer valves as a means to control fluid flow through redundant filters and coolers. These cast plug valves had two primary drawbacks, frequent leakage to the offline vessel and extremely difficult operation. Despite the presence of several competitive vendors, the traditional designs went unchanged for years.

This set the stage for HYCOA's CEO, Jay Williams to revolutionize the transfer valve back in 1980 with our patented resilient seal shoe. For the first time, "Zero Leak" and "Transfer Valve" became terms that could be used together.

This new and innovative approach to an old problem offered industry additional advantages. Features such as zero frictional drag during changeover and a positive mechanical lockdown device have turned the JR-33 into a favorite of design and maintenance engineers as well as plant operators.

Of course, success breeds imitation and several other new transfer valves have sprung up in recent years. However, our patented design is still the only one with retractable, fully covered elastomer shoes. This feature is important to reduce operating torque. The retraction feature also avoids dragging an o-ring seal around the valve body bore and causing potential seal wear or damage.

Past, present and future, HYCOA's commitment and focus is with the customer who requires top performance from their transfer valves. We understand the requirements of duplex filter systems, heat exchangers and other critical API auxiliary lube oil sytems. We also understand the requirements of our customers who simply want top performance in their transfer valve.

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JR-33 Transfer Valve

Ordering Information Sheet

Example: **J 6 C B S S 48 B S X**

JR 33

Configuration
6=6 way
3=3 way
L=Twin Pak
(Dual Linked 3 way)

Body Material
C= Carbon
S=304 Stainless Steel
E=316 Stainless Steel

Seals
B=Buna-n (Nitril)
V=Viton (Flourocarbon)
N=Neoprene

Inlet/Outlet Porting
O=Opposite Side Offset I/O
I=Inline I/O
S=Same Side I/O
X=3 Way & Twin Pak

Pressure Rating
S=Standard
H=High

Size

24=1½"	48=3"	96=6"
32=2"	64=4"	128=8"

Equalizing/Fill Line
B=Ball Valve
G=Gate Valve
L=Globe Valve
D=Delete

Flanges
S=Standard (150 or 600 ANSI)
P=Plus 1 (300 or 900 ANSI)
N=Buttweld (37.5°)

Option
X=No option
L=Locking Handle
S=Special
D=High Differential Pressure

Notes

1. The standard flange is 150 pound ANSI for the standard pressure valve and 600 pound ANSI for the high pressure valve. The plus 1 flange is 300 pound and 900 pound ANSI respectively. Other ANSI and SAE flanges are available.
2. The high pressure option is not available in 6" and 8".
3. Standard finish for carbon steel valves is grey alkyd primer.
4. An "S" in the option column will be followed by a 3 digit special number.
5. An equalizing line is required for transfer valve operation. If the delete option is chosen, the customer must provide an equalizing line in their piping. The equalizing line is installed across the high pressure or "dirty side" vessel ports.
6. Standard twinpak inlet/outlet orientation is same side. The configuration may easily be changed to opposite side with a simple modification. This modification can be done in the field or can be factory installed.

Specifications

1. Maximum temperature rating:

Buna-n	250°F
Viton*	350°F
Neoprene	250°F

2. Minimum standard temperature rating: -20°F
3. Maximum pressure rating, carbon steel valves (@ 200°F)

150 lb. ANSI flanged valves	260 psi
300 lb. ANSI and buttweld valves	675psi

600 lb. ANSI and higher varies by size, consult factory

4. Maximum pressure rating, stainless steel valves-consult factory
5. Maximum standard differential pressure rating (inlet to outlet)

Valve sizes 1½" through 4"	50psi
6" valve	23psi**
8" valve	Consult factory

***A high differential pressure option is available. Consult factory.*
**Registered DuPont Trademark*

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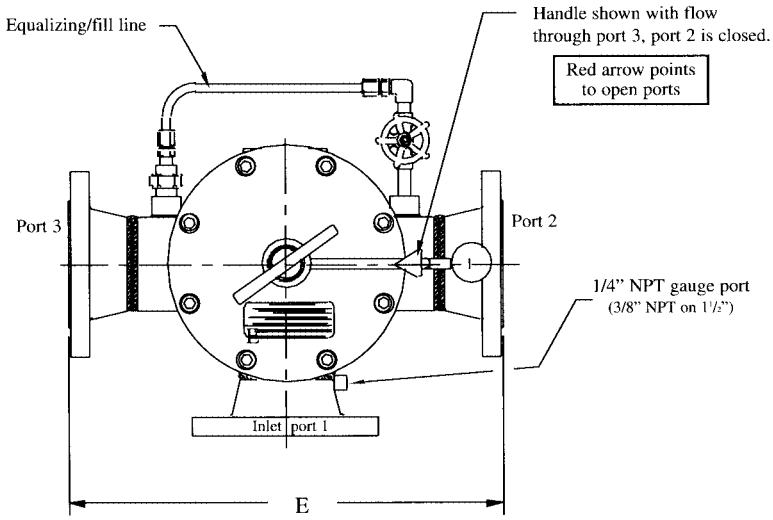
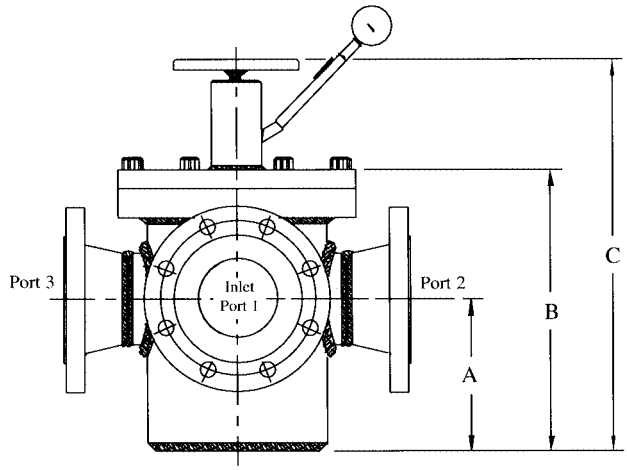
3 Way Transfer Valve

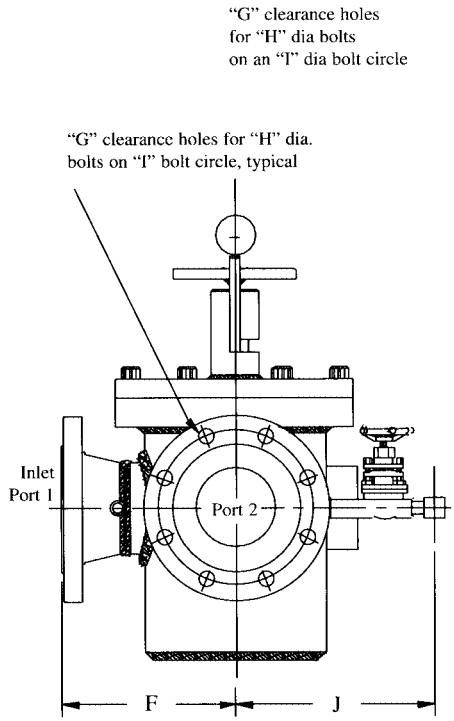
- Class 150 or class 300 ANSI flanges
- Stainless steel trim
- Soft seat-ZERO LEAK

JR-33 Transfer Valve

Shown with equalizing/fill line consisting of gate valve and orifice union







* Approximate Dimensions

SIZE	A	B	C*	D	E	F	G 150#	G 300#	H 150#	H 300#	I 150#	I 300#	J*	WEIGHT Class 150# Flanges
1 1/2"	4 7/16"	9 1/16"	14 13/16"	N/A	10"	5"	4	4	1/2"	3/4"	3 7/8"	4 1/2"	5 1/2"	49#
2"	4 7/16"	9 1/16"	14 13/16"	N/A	12"	7"	4	8	5/8"	5/8"	4 3/4"	5"	6 1/4"	64#
3"	5 3/4"	10 3/4"	16 1/2"	N/A	14"	7"	4	8	5/8"	3/4"	6"	6 5/8"	6 3/4"	104#
4"	7 3/8"	13 5/8"	20 1/2"	N/A	21"	8 1/8"	8	8	5/8"	3/4"	7 1/2"	7 7/8"	7 1/2"	165#
6"	8 3/8"	16 7/8"	21 15/16"	N/A	26"	9 7/8"	8	12	3/4"	3/4"	9 1/2"	10 5/8"	10	301#

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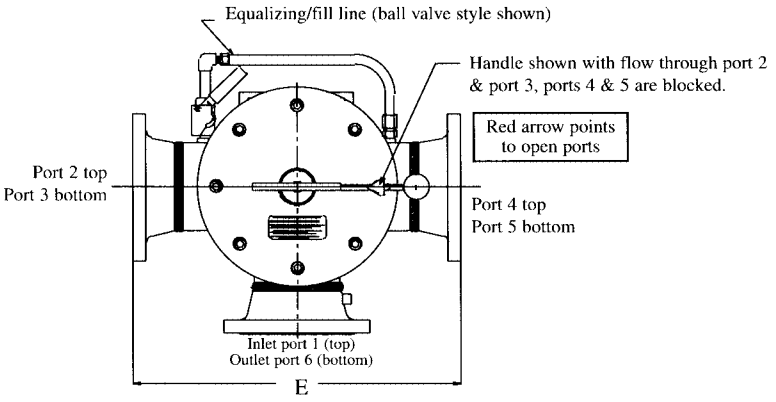
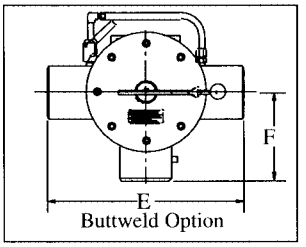
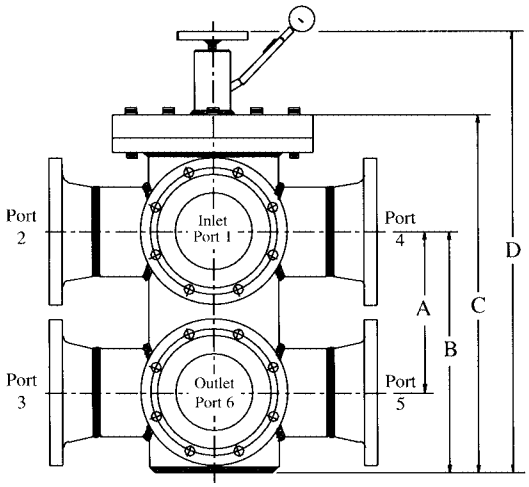
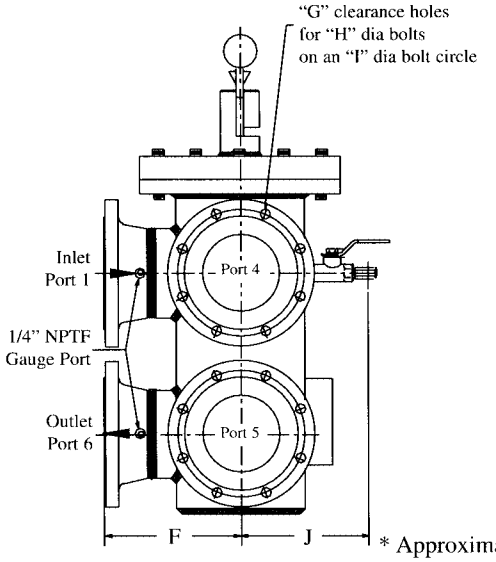
6 Way Transfer Valve-Same Side Porting

- Class 150 or class 300 ANSI flanges, Buttweld pipe nozzles
- Same side inlet/outlet porting-most popular style
- Stainless steel trim
- Soft seat-ZERO LEAK









* Approximate Dimensions

SIZE	A	B	C	D*	E	F	G 150#	G 300#	H 150#	H 300#	I 150#	I 300#	J*	WEIGHT Class 150# Flanges
1 1/2"	6 3/8"	9 13/16"	14 7/16"	20 3/16"	10"	5"	4	4	1/2"	3/4"	3 7/8"	4 1/2"	5 1/2"	76#
2"	6 3/4"	10 1/4"	14 7/16"	20 3/16"	12"	7"	4	8	5/8"	5/8"	4 3/4"	5"	6 1/4"	99#
3" (150#)	7 3/4"	12"	17"	22 3/4"	14"	7"	4	N/A	5/8"	N/A	6"	N/A	6 3/4"	161#
3" (300#)	8 1/2"	12 3/4"	17 3/4"	23 1/2"	14"	7"	N/A	8	N/A	3/4"	N/A	6 5/8"	6 3/4"	200#
4"	10 1/4"	15 5/8"	21 7/8"	28 3/4"	21"	8 3/8"	8	8	5/8"	3/4"	7 1/2"	7 7/8"	7 7/8"	254#
6" (150#)	11 1/2"	18 3/16"	26 1/8"	32 13/16"	26"	9 7/8"	8	N/A	3/4"	N/A	9 1/2"	N/A	10"	431#
6" (300#)	13"	19 3/16"	27 5/8"	34 1/8"	26"	9 7/8"	N/A	12	N/A	3/4"	N/A	10 5/8"	10"	545#
8"	14"	21 1/2"	31 1/8"	35 15/16"	30 1/2"	15 1/4"	8	N/A	3/4"	N/A	11 3/4"	N/A	10"	915#

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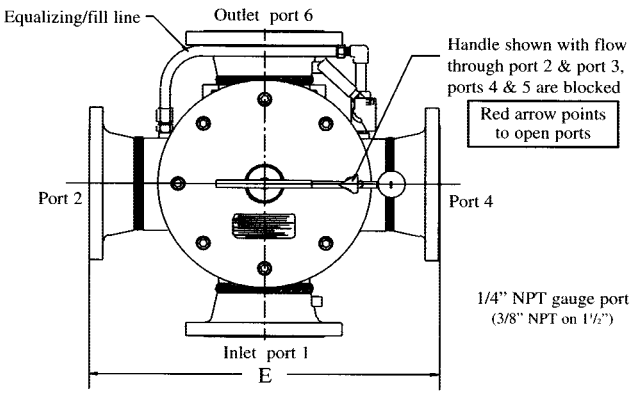
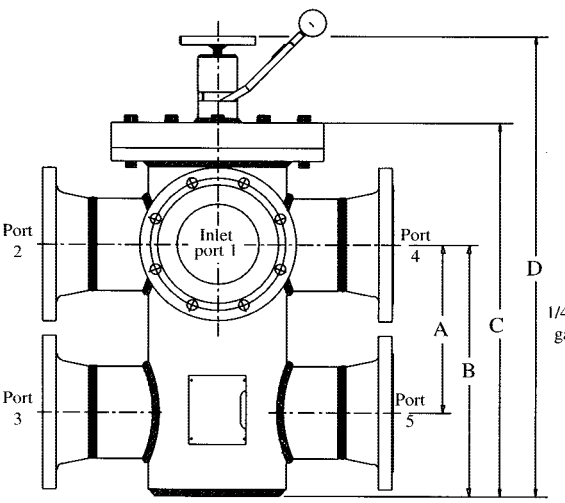
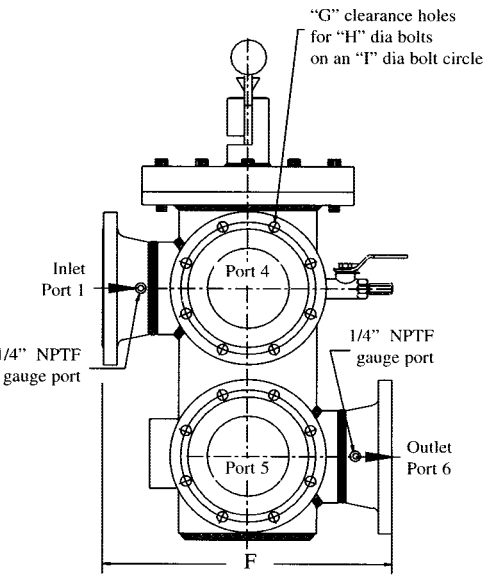
6 Way Transfer Valve-Opposite Side Porting

- Class 150 or class 300 ANSI flanges, Buttweld pipe nozzles
- Opposite side inlet/outlet porting
- Stainless steel trim
- Soft seat-ZERO LEAK



JR-33 Transfer Valve
Shown with ball valve equalizing/fill line





* Approximate Dimensions

SIZE	A	B	C	D*	E	F	G 150#	G 300#	H 150#	H 300#	I 150#	I 300#	WEIGHT Class 150# Flanges
1 1/2"	6 3/8"	9 13/16"	14 7/16"	20 3/16"	10"	10"	4	4	1/2"	3/4"	3 7/8"	4 1/2"	76#
2"	6 3/4"	10 1/4"	14 7/16"	20 3/16"	12"	14"	4	8	5/8"	5/8"	4 3/4"	5"	99#
3" (150#)	7 3/4"	12"	17"	22 3/4"	14"	14"	4	N/A	5/8"	N/A	6"	N/A	161#
3" (300#)	8 1/2"	12 3/4"	17 3/4"	23 1/2"	14"	14"	N/A	8	N/A	3/4"	N/A	6 5/8"	210#
4"	10 1/4"	15 5/8"	21 7/8"	28 3/4"	21"	16 3/4"	8	8	5/8"	3/4"	7 1/2"	7 7/8"	254#
6" (150#)	11 1/2"	18 3/16"	26 1/8"	32 13/16"	26"	19 3/4"	8	N/A	3/4"	N/A	9 1/2"	N/A	431#
6" (300#)	13"	19 3/16"	27 5/8"	34 1/8"	26"	19 3/4"	N/A	12	N/A	3/4"	N/A	10 5/8"	545#
8"	14"	21 1/2"	31 1/8"	35 15/16"	30 1/2"	30 1/2"	8	N/A	3/4"	N/A	11 3/4"	N/A	915#

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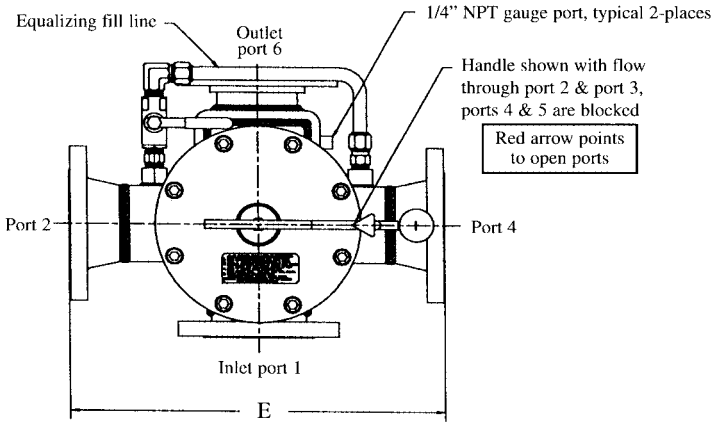
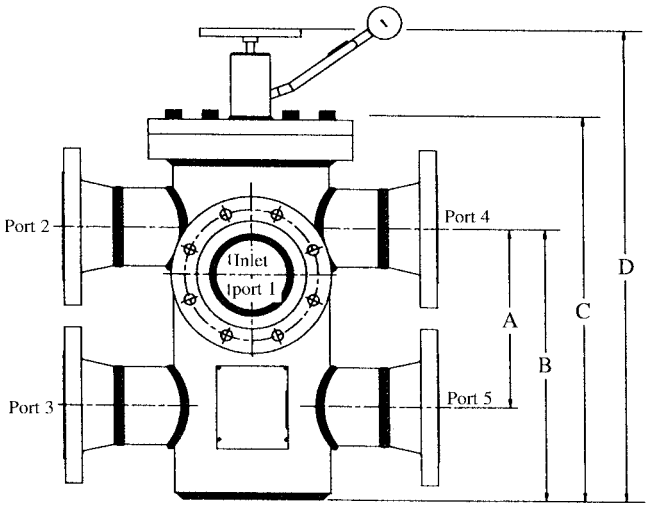
6 Way Transfer Valve-Inline Porting

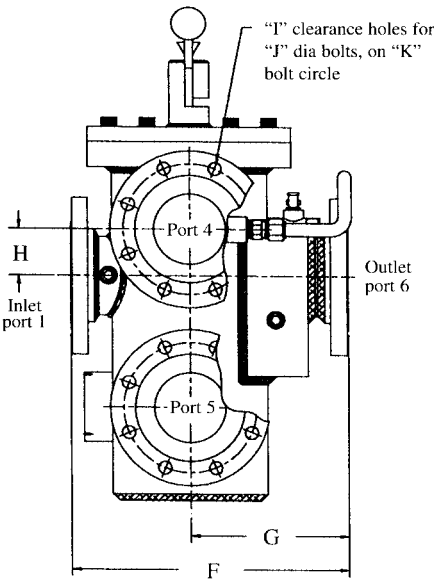
- Class 150 or class 300 ANSI flanges, Buttweld pipe nozzles
- Opposite side inline porting
- Stainless steel trim
- Soft seat-ZERO LEAK



JR-33 Transfer Valve

In-line version shown with ball valve equalizing/fill line





* Approximate Dimensions

SIZE	A	B	C	D*	E	F	G	H	I 150#	I 300#	J 150#	J 300#	K 150#	K 300#	WEIGHT Class 150# Flanges
1 1/2"	6 3/8"	9 13/16"	14 7/16"	20 3/16"	10"	9 3/8"	4 15/16"	1"	4	N/A	1/2"	N/A	3 7/8"	N/A	91#
2"	6 3/4"	10 1/4"	14 7/16"	20 3/16"	12"	12"	6 1/4"	7/16"	4	4	5/8"	5/8"	4 3/4"	5"	114#
3" (150#)	7 3/4"	12"	17"	22 3/4"	14"	12 1/2"	6 7/8"	1/8"	4	N/A	5/8"	N/A	6"	N/A	176#
3" (300#)	8 1/2"	12 3/4"	17 3/4"	23 1/2"	15"	12 1/2"	6 7/8"	1/2"	N/A	8	N/A	3/4"	N/A	6 5/8"	215#
4"	10 1/4"	15 5/8"	21 7/8"	28 3/4"	21"	15 5/8"	9"	2 11/16"	8	8	5/8"	3/4"	7 1/2"	7 7/8"	269#
6" (150#)	11 1/2"	18 3/16"	26 1/8"	32 13/16"	26"	24"	12"	4 3/4"	8	N/A	3/4"	N/A	9 1/2"	N/A	480#

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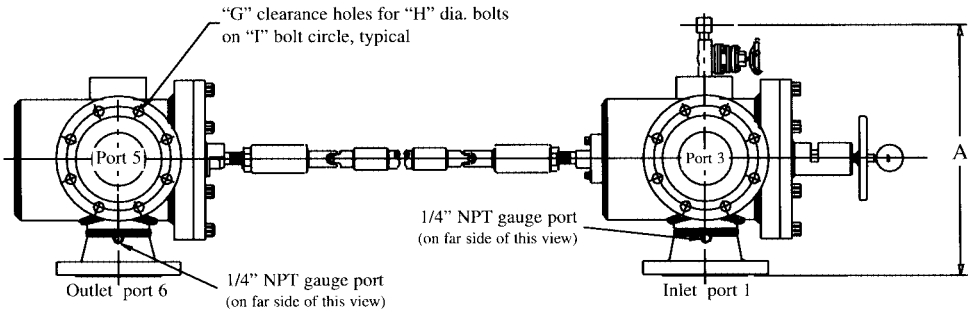
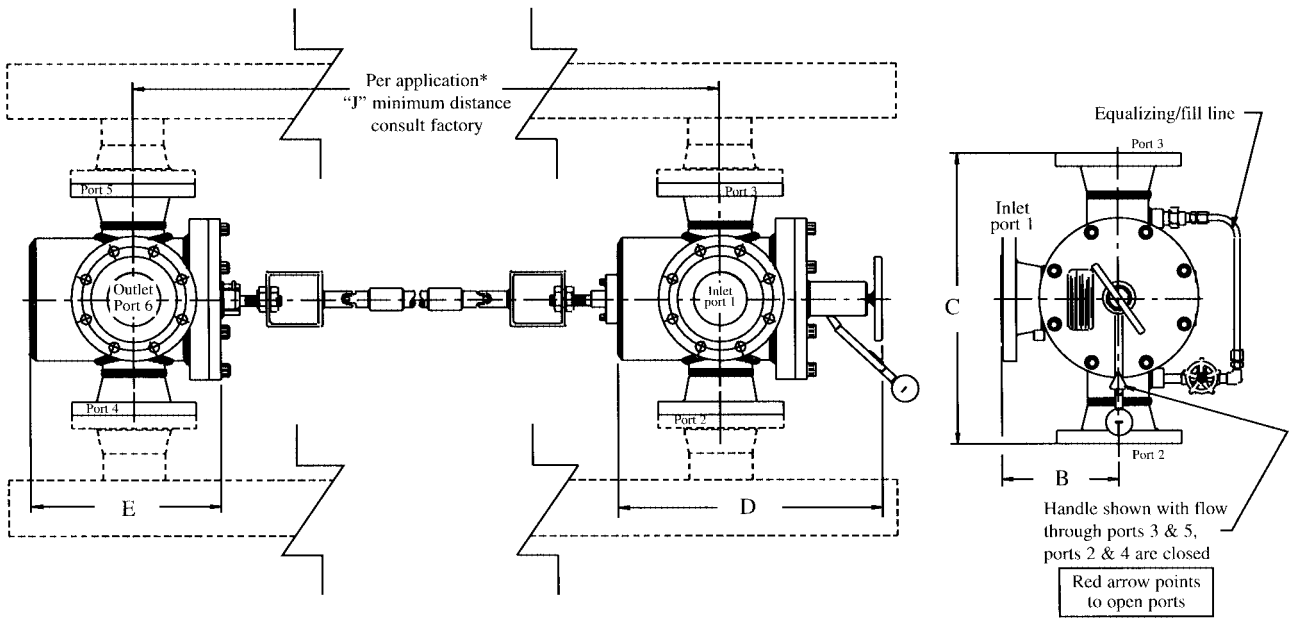
Twin 3 Way Transfer Valve

- Class 150 or class 300 ANSI flanges, Buttweld pipe nozzles
- Opposite side inlet/outlet porting
- Stainless Steel trim
- Soft seat-ZERO LEAK



JR-33 Transfer Valve
Shown with ball valve
equalizing/fill line

"Bottom" 3-way valve **"Top" 3-way valve**



* Approximate Dimensions

SIZE	A	B	C	D*	E	F	G 150#	G 300#	H 150#	H 300#	I 150#	I 300#	J	WEIGHT Class 150# Flanges
1 1/2"	13"	5"	10"	14 13/16"	9 1/16"	N/A	4	4	3/4"	3/4"	3 7/8"	4 1/2"	N/A	100#
2"	15"	7"	12"	14 13/16"	9 1/16"	N/A	4	8	5/8"	5/8"	4 3/4"	5"	N/A	128#
3"	17"	7"	14"	16 1/2"	10 3/4"	N/A	4	8	3/4"	3/4"	6"	6 5/8"	N/A	208#
4"	17"	8 3/8"	21"	19 1/2"	13 3/8"	N/A	8	8	3/4"	3/4"	7 1/2"	7 7/8"	N/A	330#
6"	17"	9 7/8"	26"	21 15/16"	15 1/16"	N/A	8	12	3/4"	3/4"	9 1/2"	10 5/8"	N/A	600#

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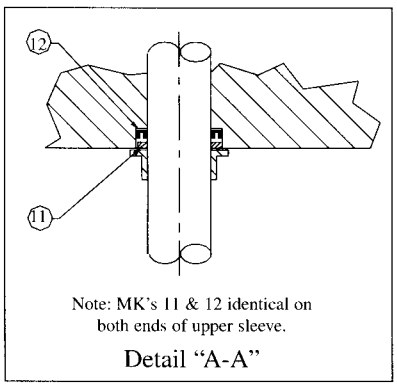
6 Way Transfer Valve Maintenance Data

Bill Of Material		
Mark	**Description**	**Material**
1	Control Rod	SS
2	Upper Sleeve Assembly	S-B
3	Lower Sleeve Assembly	S-B
4	Separator Plate	S
5	Shoe Assembly	*
6	Slide	SS
7	Link	SS
8	Operator Handle Assembly (Ball Handle)	S
9	Roll Pin	SS
10	Bonnet Assembly	SB
11	Seal Retainer	D
12	Lip Seal - Shaft	*
13	Lip Seal, Separator Plate	*
14	O-Ring, Bonnet	*
15	Screw Down Lever (Tee Handle)	S
16	Instruction Tag	

* Material varies per application based on desired operating temperature/pressure common materials include:

Polyurethane
Viton
Buna (Nitrile)
Neoprene

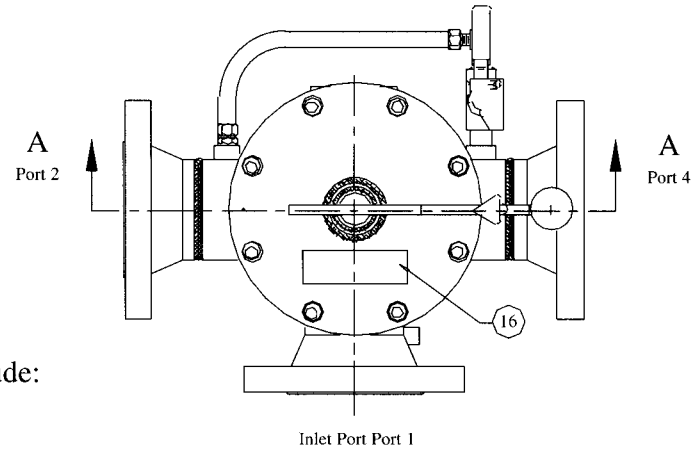
Material
CI - Cast Iron
S - Steel
SS - Stainless Steel
B - Bronze
U - Polyurethane
D - Delrin
L - Lubrithane (Polyurethane)
N - Nitrile (Buna)
V - Viton
NE - Neoprene

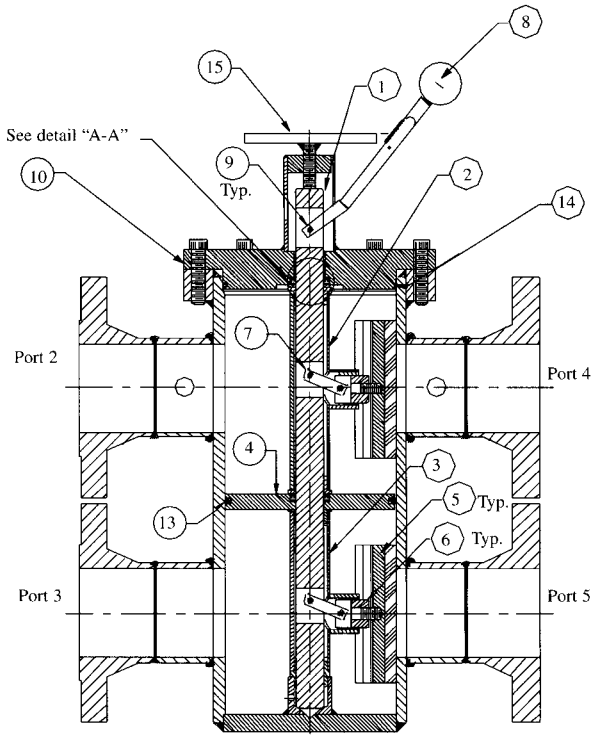


Note: MK's 11 & 12 identical on both ends of upper sleeve.

Detail "A-A"

JR-33 Transfer Valve
6-Way Section View





Section "A-A"

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3 Way and Twin Pack Transfer Valve Maintenance Data

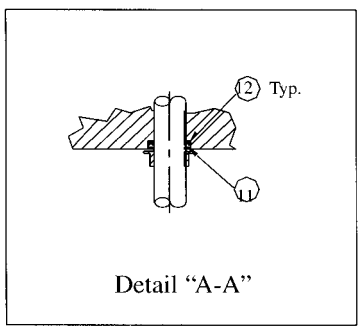
Bill Of Material

Mark	Description	Material
1	Control Rod, Upper Twinpack	SS
2	Control Rod, Lower Twinpack	SS
3	Sleeve Assembly, Twinpack	S-B
4	Bonnet Assembly, Lower Twinpack	S-B
5	Shoe Assembly	*
6	Slide	SS
7	Link	SS
8	Operator Handle Assembly (Ball Handle)	S
9	Roll Pin	SS
10	Bonnet Assembly, Upper Twinpack	S-B
11	Seal Retainer	D
12	Lip Seal - Shaft	*
13	Seal Retainer, Twinpack	S
14	Screwdown Lever Weldment (Tee Handle)	S
15	Bonnet O-Ring	*
16	Instruction Tag	
17	Universal Joint Assembly	S

* Material varies per application based on desired operating temperature/pressure common materials include:

Polyurethane
Viton
Buna (Nitrile)
Neoprene

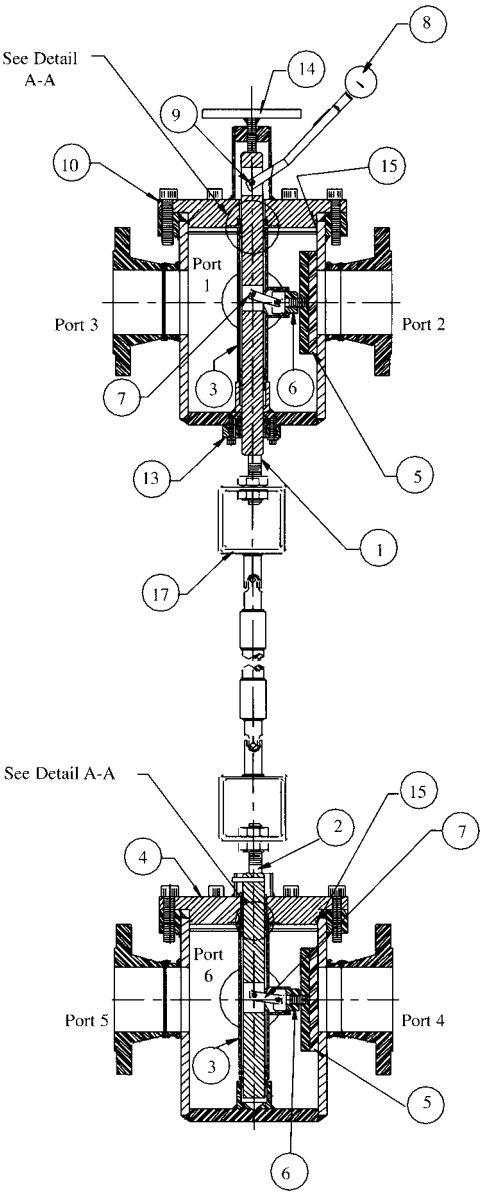
Material
CI - Cast Iron
S - Steel
SS - Stainless Steel
B - Bronze
U - Polyurethane
D - Delrin
L - Lubrithane (Polyurethane)
N - Nitrile (Buna)
V - Viton
NE - Neoprene



Detail "A-A"

JR-33 Transfer Valve
Twinpack Section View

"Top" 3-Way Valve



"Bottom" 3-Way Valve

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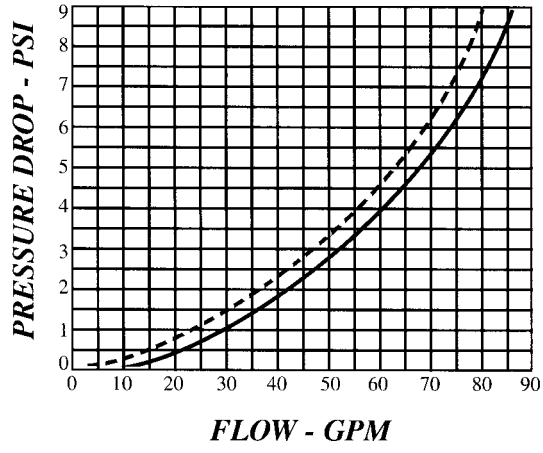
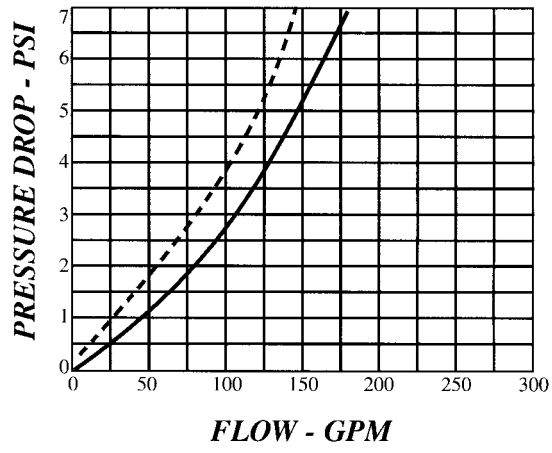
Pressure Drop Curves

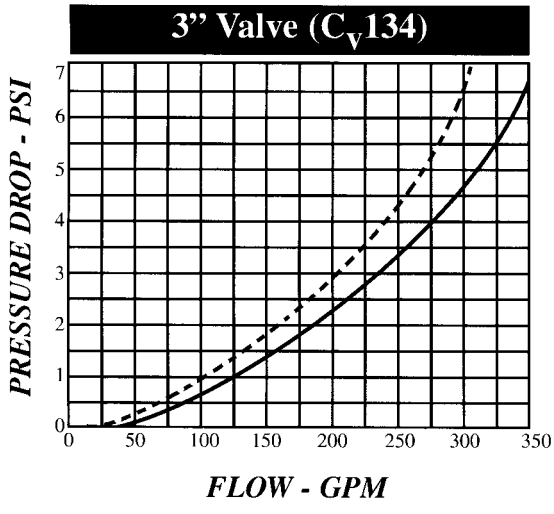
1½" Valve (C_V29.2)



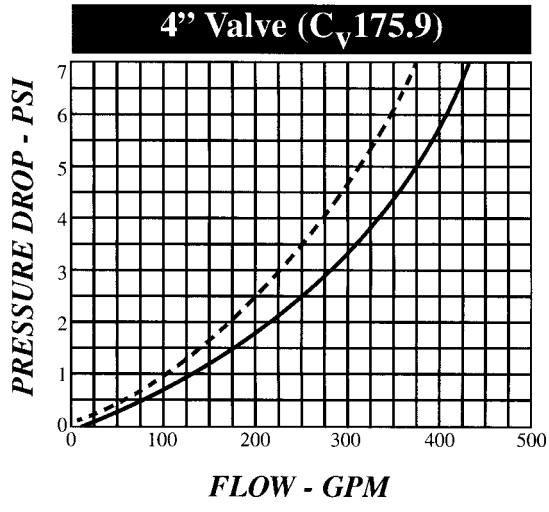
2" Valve (C_V63.2)



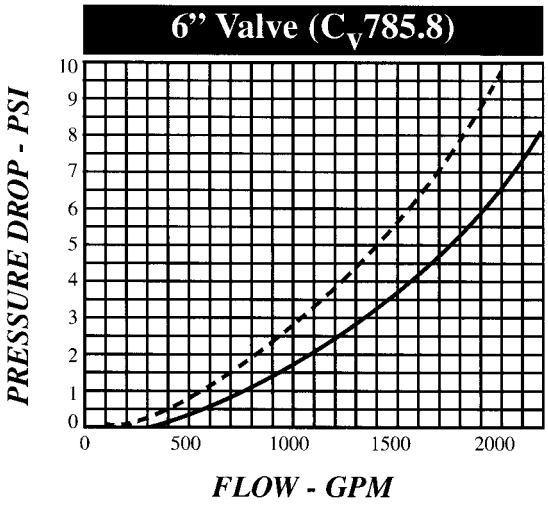
3" Valve (C_V134)



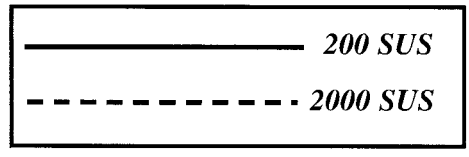
4" Valve (C_V175.9)



6" Valve (C_V785.8)



Pressure Drop Curves



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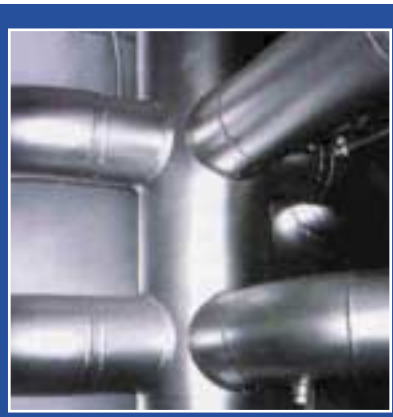
Power plant retrofit valves to replace plug valves

API 614 lube oil skid with Hycoa transfer valves



Intake lube oil transfer valve for large gas turbine manufacturer

8" valves for large frame gas turbine lube oil systems

Warranty: In lieu of all other warranties, expressed or implied. Seller warrants any goods, material or products manufactured by it and furnished by it and furnished hereunder against failure under normal conditions due to defective materials, manufacture or workmanship for a period of one (1) year from the date such products or materials are shipped to buyer. In case of such failure, buyer shall give seller, at seller's office, 100 Williams Drive, Zelienople, PA 16063 prompt written notice thereof and the seller upon receipt of notice shall have the option of repairing or replacing such defective material or products and in no event shall the seller's exceed the furnishing of such replacement material. Liability hereunder shall not extend to or include the dismantling of the defective or any other material or property or the installation of the replacement material or any other property. All replacement material or products are to be shipped F.O.B. destination.

The above warranty does not extend to goods, materials, or products damaged after date of shipment from seller's where the damages not directly due to a defect in material or workmanship, nor does it apply to goods altered or repaired by anyone other than seller's authorized employees. Nor shall this warranty extend to defective goods, materials or products not manufactured in whole or part, by seller.

The above warranty comprises seller's sole and entire warranty obligation and liability to buyer, it's customers and assigns in connection with goods sold hereunder. All other warranties, expressed or implied, including but not limited to warranties of merchantability and fitness, are expressly excluded.

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