



# GV High Performance Cylinder Actuator



**ITT**

ENGINEERED FOR LIFE

# GV Cylinder Actuator

The GV actuator is the new standard for cylinder actuators on all Fabri-Valve™ products. The GV actuator replaces the FA actuator, providing a number of benefits for the customer.

The GV actuator standard materials of construction are lighter in weight than the FA actuator. This allows for up to a 50 percent weight reduction when compared to the FA actuator for sizes up to 12 inch bore. Lighter weight actuators reduce the amount of external support required and allow for easier installation.

In addition to the light weight components, the GV actuator incorporates design features that enhance performance and extend life.

## Benefits:

- Piston and piston seals with tight tolerances provide long life and resistance to piston gap extrusion.
- The piston wear strip supports the piston for increased seal life and reduced compression set.
- Ductile cast iron rod bearing promotes long life in high load applications.
- Tie rods, head cap, and rear cap are manufactured for corrosion resistance.
- The rod is ground and polished for optimum seal life.
- NPT ports are machined for optimum unrestricted air flow. Port location can be conveniently changed by rotating either head in 90 degree intervals

## Temperature Ratings

### Standard Construction:

Buna-N seals and composite tube (2.5-24 in. bores): -20°F - 220°F (-29°C - 104°C)

### Optional Construction:

Fluorocarbon seals and composite tube (2.5-24 in. bores): -15°F - 325°F (-26°C - 163°C)

### Special Construction:

Buna-N seals and steel tube (all bore sizes): -20°F - 220°F (-29°C - 104°C)

Fluorocarbon seals and steel tube (all bore sizes): -15°F - 400°F (-26°C - 204°C)

## Weight\*

Bore diameter (in.)	Rod diameter (in.)	A	B
		Weight at 0 strokes (lbs.)	Weight per inch of GV actuator (lbs.)
GV with aluminum heads and composite tube			
2.5	0.62	2.7	0.3
3.25	1.00	4.8	0.5
4	1.00	6.3	0.6
5	1.00	11.5	0.7
6	1.00	13.7	0.6
8	1.00	30.3	0.8
10	1.00	56.4	1.1
12	1.38	88.6	1.4
GV with steel heads and composite tube.			
14	1.38	296.9	1.7
16	1.75	386.5	2.7
18	2.00	537.8	3.3
20	2.00	742.2	3.7
22	3.00	983.9	4.9
24	3.50	1359.3	5.8

## Force Chart

Bore size	Theoretical Extend Force (lbs)			
	Supply pressure (psi)			
	60	80	100	150
2.5	295	393	491	736
3.25	498	664	830	1244
4	754	1005	1257	1885
5	1178	1571	1963	2945
6	1696	2262	2827	4241
8	3016	4021	5027	7540
10	4712	6283	7854	11781
12	6786	9048	11310	16965
14	9236	12315	15394	23091
16	12064	16085	20106	30159
18	15268	20358	25447	38170
20	18850	25133	31416	47124
22	22808	30411	38013	57020
24	27143	36191	45239	67858

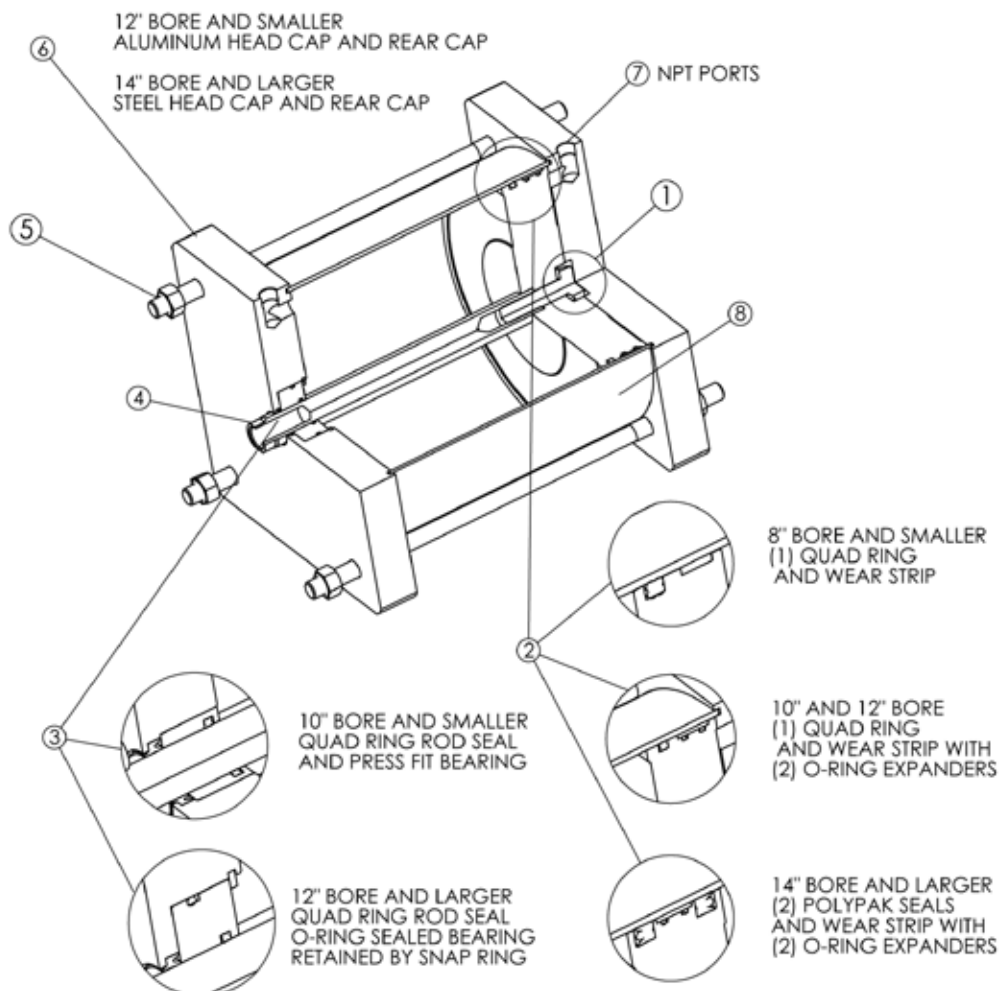
Rod Dia.	Theoretical Retract Force (lbs)			
	Supply pressure (psi)			
	60	80	100	150
0.62	276	369	461	691
1.00	451	601	751	1127
1.00	707	942	1178	1767
1.00	1131	1508	1885	2827
1.00	1649	2199	2749	4123
1.00	2969	3958	4948	7422
1.00	4665	6220	7775	11663
1.38	6696	8928	1160	16740
1.38	9147	12195	15244	22866
1.75	11919	15893	19866	29798
2.00	15080	20106	25133	37699
2.00	18661	24881	31102	46653
3.00	22384	29845	37306	55960
3.50	26566	35421	44277	66415

\*Total cylinder weight (lbs) = A + (B x stroke)

# GV Cylinder Actuator

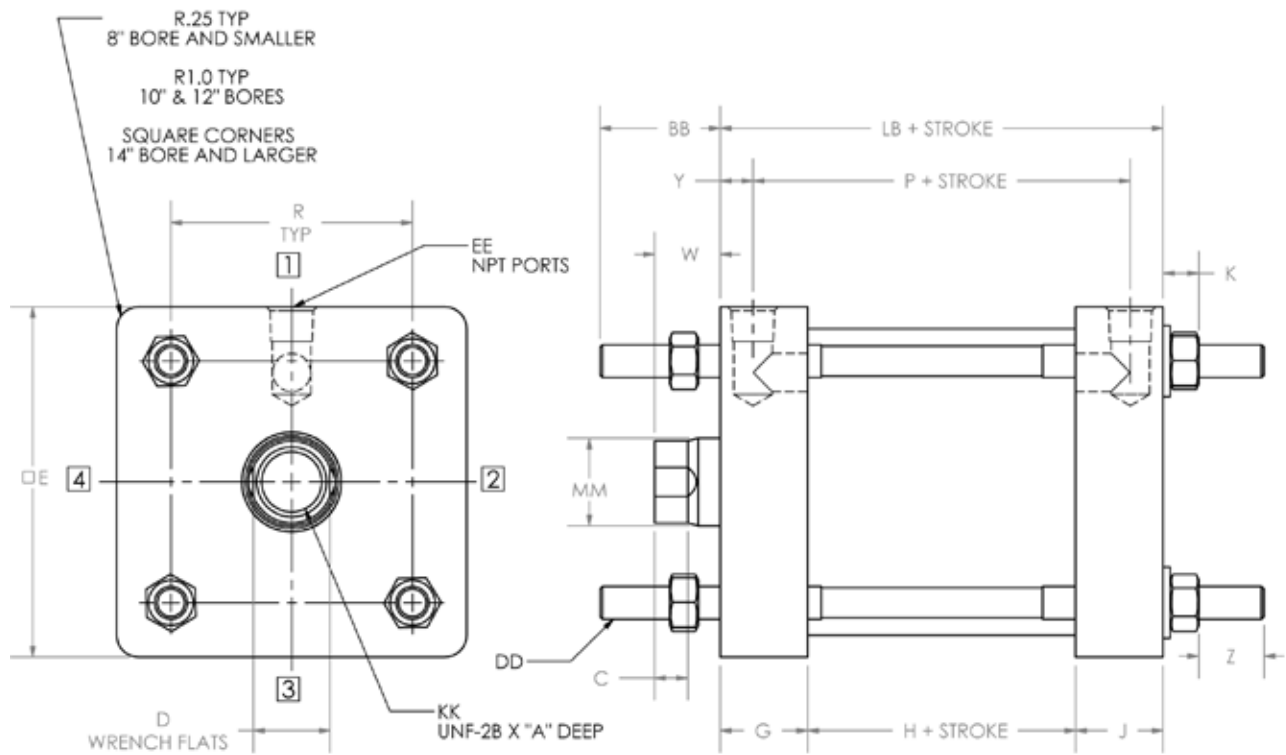
## Part Identification

Item	Component	2 1/2 to 12 inch Bore	14 to 24 inch Bore
1	Piston	High Strength Aluminum	ASTM A36 Steel
2	Piston Seals	Buna Nitrile Quad Ring	Molythane Polypak Seals
2	Wear Strip	Carbon Reinforced PTFE	Carbon Reinforced PTFE
3	Rod Bearing	Ductile Cast Iron	Ductile Cast Iron
4	Rod	Hard Chrome Plated High Strength Alloy Steel	Hard Chrome Plated High Strength Alloy Steel
5	Tie Rod and Nuts	17-4 PH Rod With Zinc Plated Alloy Steel Nuts	17-4 PH Rod With Zinc Plated Alloy Steel Nuts
6	Head Cap and Rear Cap	High Strength Aluminum	ASTM A36 Steel
7	Ports	NPT	NPT
8	Tube	Fiber Reinforced Composite	Fiber Reinforced Composite



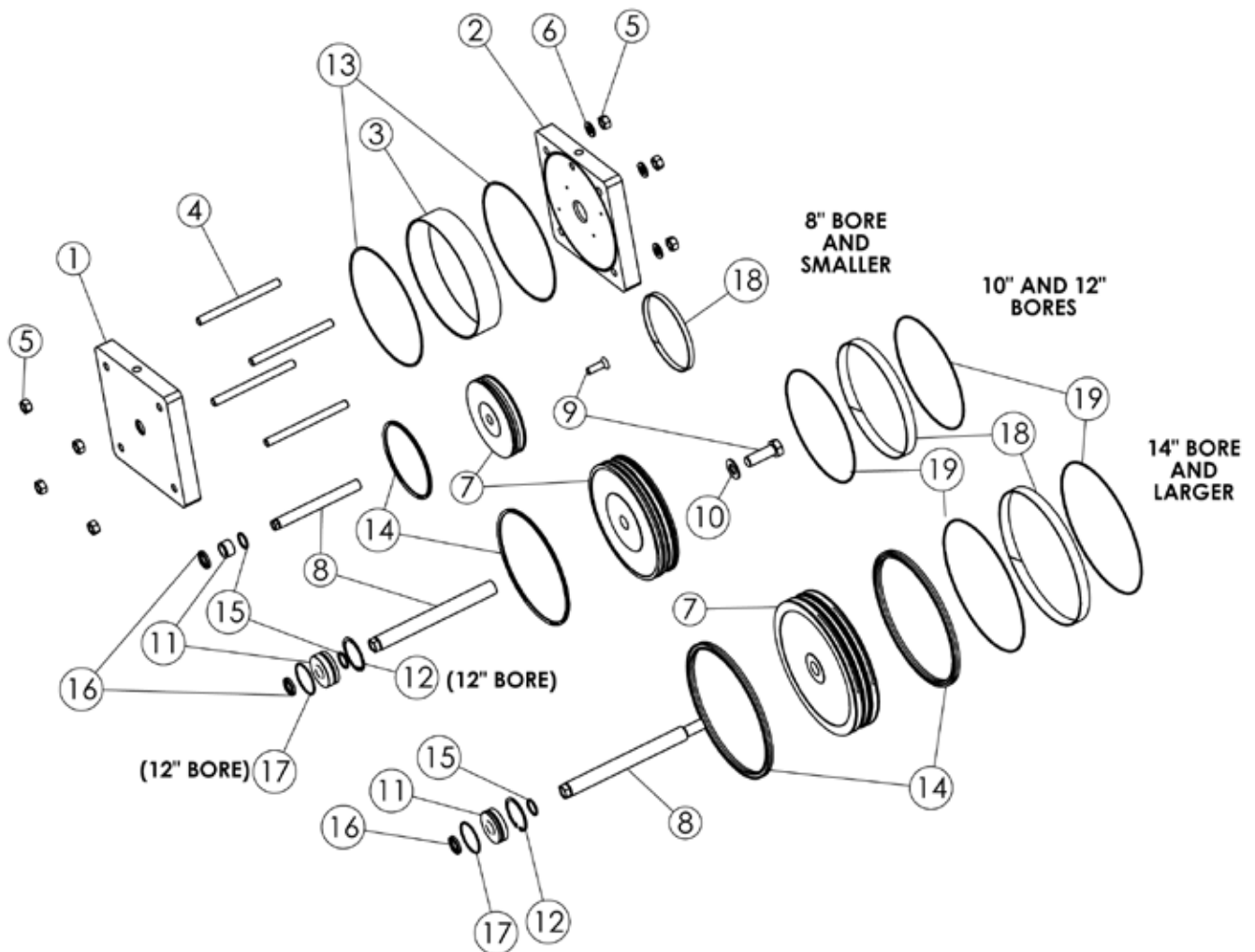
# GV Series Dimensions

Bore	A	C	D	E	G	H	J	K	P	R	W	Y	Z	BB	DD	EE	KK	LB	MM
2.5	0.75	0.25	0.50	3.00	1.00	0.75	1.00	0.32	1.99	2.19	0.62	0.38	0.56	1.12	.31"-24	.25"-18	.44"-20	2.75	0.62
3.25	1.12	0.38	0.88	4.00	1.00	0.75	1.00	0.41	1.99	2.76	0.75	0.38	0.75	1.38	.38"-24	.25"-18	.75"-16	2.75	1.00
4	1.12	0.38	0.88	4.50	1.00	1.00	1.00	0.41	2.12	3.32	0.75	0.44	0.75	1.38	.37"-25	.38"-18	.75"-16	3.00	1.00
5	1.12	0.38	0.88	5.50	1.00	1.00	1.00	0.56	2.12	4.10	0.75	0.44	0.75	1.81	.50"-20	.38"-18	.75"-16	3.00	1.00
6	1.12	0.38	0.88	6.50	1.00	1.25	1.00	0.56	2.38	4.88	0.88	0.44	0.75	1.81	.50"-20	.38"-18	.75"-16	3.25	1.00
8	1.12	0.38	0.88	9.00	1.25	1.50	1.25	0.65	3.12	6.44	0.88	0.44	0.75	2.00	.62"-18	.38"-18	.75"-16	4.00	1.00
10	1.12	0.38	0.88	11.00	1.50	2.00	1.50	0.80	3.88	7.92	1.00	0.56	1.00	2.25	.75"-16	.50"-14	.75"-16	5.00	1.00
12	1.62	0.50	1.12	12.75	1.75	2.25	1.75	0.80	4.44	9.40	1.00	0.56	1.00	2.25	.75"-16	.50"-14	1.00"-14	5.75	1.38
14	1.62	0.50	1.12	14.75	1.50	2.67	1.50	0.78	4.29	10.90	1.00	0.69	1.12	2.50	.88"-14	.75"-14	1.00"-14	5.67	1.38
16	1.62	0.62	1.50	17.00	1.50	2.67	1.50	0.86	4.29	12.59	1.25	0.69	1.12	2.75	1.00"-14	.75"-14	1.00"-14	5.67	1.75
18	2.25	0.75	1.69	19.00	1.75	2.67	1.75	1.00	4.29	14.14	1.50	0.94	1.25	3.25	1.12"-12	.75"-14	1.50"-12	6.17	2.00
20	2.25	0.75	1.69	21.00	2.00	2.67	2.00	1.09	4.29	15.77	1.50	1.19	1.25	3.25	1.25"-12	.75"-14	1.50"-12	6.67	2.00
22	3.50	0.75	2.62	23.00	2.00	3.50	2.00	1.09	5.12	17.15	2.25	1.19	1.25	3.50	1.25"-12	.75"-14	2.25"-12	7.50	3.00
24	3.50	0.75	3.00	25.25	2.50	3.50	2.50	1.09	5.50	18.74	2.25	1.50	1.25	3.50	1.25"-12	.75"-14	2.50"-12	8.50	3.50



# Part Identification

- |                    |                          |                                 |
|--------------------|--------------------------|---------------------------------|
| 1. Head Cap        | 8. Piston Rod            | 15. Rod Seal                    |
| 2. Rear Cap        | 9. Piston to Rod Screw   | 16. Rod Wiper                   |
| 3. Tube            | 10. Piston to Rod Washer | 17. Rod Bearing O-Ring          |
| 4. Tie Rods        | 11. Rod Bearing          | 18. Piston Wear Strip           |
| 5. Tie Rod Nuts    | 12. Retaining Ring       | 19. Wear Strip O-Ring Expanders |
| 6. Tie Rod Washers | 13. Tube Seals           |                                 |
| 7. Piston          | 14. Piston Seals         |                                 |



# Cylinder Sizing (Double Acting/Pneumatic)

Figures 37, 37L, 44, 45, 100, 105, 134

CLEAR FLUID & GAS

Valve Size (Inches)	Cyl. Air Supply Press.(psi).	Line Pressure Differential (psid)												
		5	10	20	30	40	50	60	70	80	90	100	125	150
2	100	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2
	80	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2
	60	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2
	40	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	3 1/4	3 1/4
3	100	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	3 1/4
	80	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	3 1/4	3 1/4
	60	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	3 1/4	3 1/4	3 1/4	4	4
	40	2 1/2	2 1/2	2 1/2	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	4	4	4
4	100	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	3 1/4	3 1/4	3 1/4	3 1/4
	80	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	3 1/4	3 1/4	3 1/4	3 1/4	4	4	
	60	2 1/2	2 1/2	2 1/2	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	4	4	4	5
	40	3 1/4	3 1/4	3 1/4	3 1/4	4	4	4	4	4	4	5	5	5
6	100	2 1/2	2 1/2	2 1/2	3 1/4	3 1/4	3 1/4	3 1/4	4	4	4	4	5	5
	80	2 1/2	2 1/2	3 1/4	3 1/4	3 1/4	4	4	4	4	4	5	5	5
	60	3 1/4	3 1/4	3 1/4	4	4	4	4	5	5	5	5	6	6
	40	4	4	4	5	5	5	5	6	6	6	6	8*	8*
8	100	2 1/2	3 1/4	3 1/4	3 1/4	4	4	4	5	5	5	5	6	6
	80	3 1/4	3 1/4	4	4	4	5	5	5	5	5	6	6	8*
	60	3 1/4	4	4	5	5	5	5	6	6	6	6	8*	8
	40	4	5	5	5	6	6	8*	8*	8*	8*	8	10	10
10	100	3 1/4	3 1/4	4	4	5	5	5	6	6	6	6	8*	8*
	80	3 1/4	4	4	5	5	5	6	6	6	8*	8*	8	8
	60	4	4	5	5	6	6	8*	8*	8*	8*	8	10	10
	40	5	5	6	6	8*	8*	8	8	10	10	10	10	12
12	100	3 1/4	4	4	5	5	6	6	6	8*	8*	8*	8	10
	80	4	4	5	5	6	6	8*	8*	8*	8	8	10	10
	60	5	5	6	6	8*	8*	8	8	8	10	10	10	12
	40	5	6	8*	8*	8	10	10	10	10	12	12	12	14
14	100	4	4	5	5	6	6	8*	8*	8	8	8	10	10
	80	4	5	5	6	8*	8*	8*	8	8	10	10	10	12
	60	5	5	6	8*	8	8	10	10	10	10	10	12	14
	40	6	6	8*	8	10	10	10	12	12	12	14	14	16
16	100	4	5	5	6	8*	8*	8	8	8	10	10	10	12
	80	5	5	6	8*	8*	8	8	10	10	10	10	12	12
	60	5	6	8*	8	8	10	10	10	12	12	12	14	14
	40	6	8*	8	10	10	12	12	12	14	14	14	16	18
18	100	5	5	6	8*	8*	8	8	10	10	10	10	12	12
	80	5	6	8*	8*	8	10	10	10	10	12	12	14	14
	60	6	6	8*	8	10	10	12	12	12	12	14	14	16
	40	8*	8	10	10	12	12	14	14	14	16	16	18	20
20	100	5	5	6	8*	8	10	10	10	10	12	12	12	14
	80	5	6	8*	8	10	10	10	12	12	12	14	14	16
	60	6	8*	8	10	10	12	12	12	14	14	14	16	18
	40	8*	8	10	12	12	14	14	16	16	18	18	20	22
24	100	6	6	8*	8	10	10	12	12	12	14	14	16	16
	80	6	8*	8	10	10	12	12	14	14	14	16	16	18
	60	8*	8	10	12	12	14	14	16	16	16	18	20	22
	40	8	10	12	14	14	16	18	18	20	20	22	24	—
30	100	6	8*	10	10	12	12	14	14	16	16	16	18	20
	80	8*	8	10	12	12	14	16	16	18	18	18	20	22
	60	8	10	12	14	14	16	18	18	20	20	22	24	—
	40	10	12	14	16	18	20	20	22	24	24	—	—	—
36	100	8*	8	10	12	14	14	16	18	18	20	20	22	24
	80	8	10	12	14	16	16	18	20	20	22	22	24	—
	60	10	12	14	16	18	18	20	22	24	24	—	—	—
	40	12	14	16	18	22	24	24	—	—	—	—	—	—

For cylinder sizing for other valve figure numbers, please consult the factory.

Note: For dry solids service consult factory for sizing.

Note: This sizing chart is not for sizing extreme service conditions. If in doubt, do not use this chart...consult the factory.

\* The factory stocks 8" cylinders. However, for large, very price competitive situations that do not require quick shipments (i.e. projects), a slightly less expensive 7" can also be used. Consult factory.

# Cylinder Sizing (Double Acting/Pneumatic)

Figures 37, 37L, 44, 45, 100, 105, 134

## SLURRY SERVICE

Valve Size (Inches)	Cyl. Air Supply Press.(psi).	Line Pressure Differential (psid)												
		5	10	20	30	40	50	60	70	80	90	100	125	150
2	100	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2
	80	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	3 1/4
	60	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	3 1/4
	40	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	4
3	100	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	3 1/4	3 1/4	3 1/4
	80	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	3 1/4	3 1/4	3 1/4	3 1/4	4	4
	60	2 1/2	2 1/2	2 1/2	2 1/2	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	4	4	4	5
	40	2 1/2	2 1/2	3 1/4	3 1/4	3 1/4	3 1/4	4	4	4	4	4	5	5
4	100	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	4	4	5
	80	2 1/2	2 1/2	2 1/2	3 1/4	3 1/4	3 1/4	3 1/4	4	4	4	4	5	5
	60	2 1/2	2 1/2	3 1/4	3 1/4	3 1/4	4	4	4	4	5	5	5	6
	40	3 1/4	3 1/4	4	4	4	5	5	5	5	5	6	6	8*
6	100	2 1/2	2 1/2	3 1/4	3 1/4	4	4	4	4	5	5	5	6	6
	80	2 1/2	3 1/4	3 1/4	4	4	4	5	5	5	6	6	6	8*
	60	3 1/4	3 1/4	4	4	5	5	5	6	6	6	8*	8*	8
	40	4	4	5	5	6	6	6	8*	8*	8*	8	8	10
8	100	3 1/4	3 1/4	4	4	5	5	5	5	6	6	6	8*	8*
	80	3 1/4	4	4	5	5	6	6	6	8*	8*	8*	8*	8
	60	4	4	5	5	6	6	6	8*	8*	8	8	8	10
	40	5	5	6	8*	8*	8	8	10	10	10	10	10	12
10	100	3 1/4	4	5	5	6	6	6	8*	8*	8*	8	8	10
	80	4	4	5	6	6	8*	8*	8*	8	8	10	10	10
	60	4	5	6	8*	8*	8	8	10	10	10	10	12	12
	40	5	6	8*	8	10	10	10	10	12	12	12	12	14
12	100	4	4	5	6	8*	8*	8	8	10	10	10	12	12
	80	4	5	6	8*	8*	8	10	10	10	10	12	12	14
	60	5	6	8*	8	8	10	10	10	12	12	12	14	16
	40	6	8*	8	10	10	12	12	14	14	14	16	16	18
14	100	4	5	6	8*	8	8	10	10	10	10	12	12	14
	80	5	5	8*	8*	8	10	10	10	12	12	12	14	16
	60	5	6	8*	10	10	10	12	12	14	14	14	16	18
	40	6	8*	10	10	12	14	14	14	16	16	18	20	22
16	100	5	5	8*	8	8	10	10	12	12	12	12	14	16
	80	5	6	8*	8	10	10	12	12	12	14	14	16	18
	60	6	8*	8	10	12	12	14	14	14	16	16	18	20
	40	8*	8	10	12	14	14	16	16	18	18	20	22	24
18	100	5	6	8*	8	10	10	12	12	12	14	14	16	18
	80	6	8*	8	10	10	12	12	14	14	16	16	18	20
	60	6	8*	10	12	12	14	14	16	16	18	18	20	22
	40	8	10	12	14	14	16	18	18	20	20	22	24	—
20	100	5	6	8	10	10	12	12	14	14	14	16	18	18
	80	6	8*	10	10	12	14	14	14	16	16	18	20	22
	60	8*	8	10	12	14	14	16	18	18	20	20	22	24
	40	8	10	12	14	16	18	20	20	22	24	24	—	—
24	100	6	8*	10	12	12	14	14	16	16	18	18	20	22
	80	8*	8	10	12	14	16	16	18	18	20	20	22	—
	60	8	10	12	14	16	18	18	20	22	22	24	—	—
	40	10	12	14	18	20	22	22	24	—	—	—	—	—
30	100	8*	10	12	14	16	16	18	20	20	22	22	—	—
	80	8	10	12	16	18	18	20	22	24	24	—	—	—
	60	10	12	14	18	20	22	24	24	—	—	—	—	—
	40	12	14	18	20	24	—	—	—	—	—	—	—	—
36	100	8	10	14	16	18	20	22	24	24	—	—	—	—
	80	10	12	16	18	20	22	24	—	—	—	—	—	—
	60	12	14	18	20	24	—	—	—	—	—	—	—	—
	40	14	16	22	24	—	—	—	—	—	—	—	—	—

For cylinder sizing for other valve figure numbers, please consult the factory.

Note: For dry solids service consult factory for sizing.

Note: This sizing chart is not for sizing extreme service conditions. If in doubt, do not use this chart...consult the factory.

\* The factory stocks 8" cylinders. However, for large, very price competitive situations that do not require quick shipments (i.e. projects), a slightly less expensive 7" can also be used. Consult factory.

# Cylinder Sizing (Double Acting/Pneumatic)

Figure F39

SLURRY/SOLIDS

Valve Size (inches)	Cyl. Air Supply Press.(psi)	Line Pressure Differential (psid)													
		5	10	20	30	40	50	60	70	80	90	100	125	150	
2	100	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	3 1/4
	80	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	3 1/4
	60	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	3 1/4	3 1/4	3 1/4	3 1/4	4
	40	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	4	4	4	5
3	100	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	4	4
	80	2 1/2	2 1/2	2 1/2	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	4	4	4
	60	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	4	4	4	4	4	5	5	5
	40	3 1/4	4	4	4	4	4	4	5	5	5	5	5	6	6
4	100	2 1/2	2 1/2	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	4	4	4	4	5	5	5
	80	3 1/4	3 1/4	3 1/4	3 1/4	4	4	4	4	4	4	5	5	5	5
	60	3 1/4	3 1/4	4	4	4	4	5	5	5	5	5	6	6	6
	40	4	4	5	5	5	5	5	6	6	6	6	8*	8*	8*
6	100	3 1/4	3 1/4	4	4	4	5	5	5	5	5	6	6	6	8*
	80	4	4	4	5	5	5	5	6	6	6	6	6	8*	8*
	60	4	4	5	5	5	6	6	6	8*	8*	8*	8	8	8
	40	5	5	6	6	8*	8*	8*	8	8	8	8	8	10	10
8	100	4	4	5	5	5	6	6	6	6	8*	8*	8	8	8
	80	4	5	5	5	6	6	8*	8*	8*	8*	8	10	10	10
	60	5	5	6	6	8*	8*	8*	8	8	10	10	10	12	12
	40	6	6	8*	8*	8	10	10	10	10	10	12	12	12	14
10	100	4	5	5	6	6	8*	8*	8*	8	8	8	10	10	10
	80	5	5	6	6	8*	8*	8	8	10	10	10	10	12	12
	60	5	6	8*	8*	8	8	10	10	10	10	12	12	14	14
	40	8*	8*	8	10	10	10	10	12	12	12	12	14	14	16
12	100	5	5	6	8*	8*	8	8	10	10	10	10	12	12	12
	80	5	6	8*	8*	8	8	10	10	10	10	12	12	14	14
	60	6	8*	8*	8	10	10	10	10	12	12	14	14	16	16
	40	8*	8	10	10	12	12	14	14	14	16	16	18	18	20
14	100	5	6	8*	8*	8	10	10	10	10	12	12	14	14	14
	80	6	6	8*	8	10	10	10	10	12	12	14	14	16	16
	60	8*	8*	8	10	10	12	12	14	14	14	14	16	16	18
	40	8	10	10	12	12	14	14	16	16	18	18	20	20	22
16	100	6	6	8*	8	10	10	10	12	12	12	14	14	14	16
	80	6	8*	8	10	10	10	12	12	12	14	14	16	16	18
	60	8*	8	10	10	12	12	14	14	16	16	16	18	18	20
	40	10	10	12	14	14	16	16	18	18	20	20	22	22	—
18	100	6	8*	8	10	10	12	12	12	14	14	14	16	16	18
	80	8*	8	10	10	12	12	14	14	14	16	16	18	18	20
	60	8	10	10	12	14	14	16	16	18	18	18	20	20	22
	40	10	10	12	14	16	16	18	18	20	20	22	22	—	—
20	100	8*	8*	10	10	12	12	14	14	14	16	16	18	18	20
	80	8*	8	10	12	12	14	14	16	16	18	18	20	20	22
	60	8	10	12	12	14	16	16	18	18	20	20	22	—	—
	40	10	12	14	16	18	18	20	22	22	—	—	—	—	—
24	100	8*	8	10	12	14	14	16	16	18	18	20	20	22	22
	80	8	10	12	14	14	16	18	18	20	20	22	—	—	—
	60	10	12	14	16	16	18	20	20	22	—	—	—	—	—
	40	12	14	16	18	20	22	—	—	—	—	—	—	—	—
30	100	8	10	12	14	16	18	18	20	22	22	—	—	—	—
	80	10	12	14	16	18	20	20	22	—	—	—	—	—	—
	60	12	12	16	18	20	22	—	—	—	—	—	—	—	—
	40	14	16	20	22	—	—	—	—	—	—	—	—	—	—
36	100	10	12	14	16	18	20	22	—	—	—	—	—	—	—
	80	12	14	16	18	20	22	—	—	—	—	—	—	—	—
	60	12	14	18	22	—	—	—	—	—	—	—	—	—	—
	40	16	16	18	22	—	—	—	—	—	—	—	—	—	—

For cylinder sizing for other valve figure numbers, please consult the factory.

Note: For dry solids service consult factory for sizing.

Note: This sizing chart is not for sizing extreme service conditions. If in doubt, do not use this chart...consult the factory.

\* The factory stocks 8" cylinders. However, for large, very price competitive situations that do not require quick shipments (i.e. projects), a slightly less expensive 7" can also be used. Consult factory.



# Cylinder Sizing (Double Acting/Pneumatic)

Figure C67

## CLEAR FLUID, GAS, OR SLURRY SERVICE

Valve Size (inches)	Cyl. Air Supply Press.(psi)	Line Pressure Differential (psid)												
		5	10	20	30	40	50	60	70	80	90	100	125	150
2	100	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4	3 1/4
	80	4	4	4	4	4	4	4	4	4	4	4	4	4
	60	4	4	4	4	4	4	4	4	4	4	4	4	4
	40	5	5	5	5	5	5	5	5	5	5	5	5	5
3	100	4	4	4	4	4	4	4	4	4	4	4	4	4
	80	4	4	4	4	4	4	4	4	4	4	4	4	4
	60	5	5	5	5	5	5	5	5	5	5	5	5	5
	40	6	6	6	6	6	6	6	6	6	6	6	6	6
4	100	4	4	4	4	4	4	4	4	4	4	4	4	4
	80	5	5	5	5	5	5	5	5	5	5	5	5	5
	60	5	5	5	5	5	5	5	5	5	5	5	5	5
	40	6	6	6	6	6	6	6	6	6	6	6	6	6
6	100	5	5	5	5	5	5	5	5	5	5	5	5	5
	80	5	5	5	5	5	5	5	5	5	5	5	5	5
	60	6	6	6	6	6	6	6	6	6	6	6	6	6
	40	8*	8*	8*	8*	8*	8*	8*	8*	8*	8*	8*	8*	8*
8	100	5	5	5	5	5	5	5	5	5	5	5	6	6
	80	6	6	6	6	6	6	6	6	6	6	6	6	8*
	60	8*	8*	8*	8*	8*	8*	8*	8*	8*	8*	8*	8*	8
	40	8	8	8	8	8	8	8	8	8	8	8	10	10
10	100	6	6	6	6	6	6	6	6	6	6	6	8*	8*
	80	8*	8*	8*	8*	8*	8*	8*	8*	8*	8*	8*	8	8
	60	8*	8*	8*	8*	8*	8*	8*	8*	8*	8*	8	10	10
	40	10	10	10	10	10	10	10	10	10	10	10	10	12
12	100	6	6	6	6	6	6	6	6	8*	8*	8*	8	10
	80	8*	8*	8*	8*	8*	8*	8*	8*	8*	8	8	10	10
	60	8	8	8	8	8	8	8	8	8	10	10	10	12
	40	10	10	10	10	10	10	10	10	10	12	12	12	14
14	100	8*	8*	8*	8*	8*	8*	8*	8*	8	8	8	10	10
	80	8	8	8	8	8	8	8	8	8	10	10	10	12
	60	10	10	10	10	10	10	10	10	10	10	10	12	14
	40	12	12	12	12	12	12	12	12	12	12	14	14	16
16	100	8*	8*	8*	8*	8*	8*	8	8	8	10	10	10	12
	80	8	8	8	8	8	8	8	10	10	10	10	12	12
	60	10	10	10	10	10	10	10	10	12	12	12	14	14
	40	12	12	12	12	12	12	12	12	14	14	14	16	18
18	100	8	8	8	8	8	8	8	10	10	10	10	12	12
	80	10	10	10	10	10	10	10	10	10	12	12	14	14
	60	10	10	10	10	10	10	12	12	12	12	14	14	16
	40	12	12	12	12	12	12	12	14	14	14	16	16	20
20	100	8	8	8	8	8	10	10	10	10	12	12	12	14
	80	10	10	10	10	10	10	10	12	12	12	14	14	16
	60	10	10	10	10	10	12	12	12	14	14	14	16	18
	40	14	14	14	14	14	14	14	16	16	18	18	20	22
24	100	10	10	10	10	10	10	12	12	12	14	14	16	16
	80	10	10	10	10	10	10	12	12	14	14	16	16	18
	60	12	12	12	12	12	14	14	16	16	16	18	20	22
	40	14	14	14	14	14	16	18	18	20	20	22	24	—
30	100	12	12	12	12	12	12	14	14	16	16	16	18	20
	80	12	12	12	12	12	12	14	16	16	18	18	20	22
	60	14	14	14	14	14	14	16	18	18	20	20	22	24
	40	18	18	18	18	18	18	20	20	22	24	24	—	—
36	100	14	14	14	14	14	14	16	16	18	20	20	22	24
	80	14	14	14	14	14	16	16	18	20	22	22	24	—
	60	18	18	18	18	18	18	20	22	24	24	—	—	—
	40	20	20	20	20	20	22	24	24	—	—	—	—	—

For cylinder sizing for other valve figure numbers, please consult the factory.

Note: For dry solids service consult factory for sizing.

Note: This sizing chart is not for sizing extreme service conditions. If in doubt, do not use this chart...consult the factory.

\* The factory stocks 8" cylinders. However, for large, very price competitive situations that do not require quick shipments (i.e. projects), a slightly less expensive 7" can also be used. Consult factory.

# Cylinder Sizing (Double Acting/Pneumatic)

Figures C33, C133, F33, F133

Valve Size (Inches)	Cyl. Air Supply Press.(psi)	Line Pressure Differential (psid)	
		0 - 150	
2	100	4	
	80	4	
	60	5	
	40	6	
3	100	4	
	80	5	
	60	5	
	40	6	
4	100	5	
	80	5	
	60	6	
	40	8*	
6	100	5	
	80	6	
	60	8*	
	40	8	
8	100	6	
	80	8*	
	60	8	
	40	10	
10	100	8*	
	80	8	
	60	10	
	40	10	
12	100	8	
	80	10	
	60	10	
	40	12	
14	100	8	
	80	10	
	60	12	
	40	14	
16	100	10	
	80	10	
	60	12	
	40	14	
18	100	10	
	80	12	
	60	14	
	40	16	
20	100	12	
	80	14	
	60	16	
	40	18	
24	100	14	
	80	16	
	60	18	
	40	22	
30	100	18	
	80	20	
	60	24	
	40	—	
36	100	20	
	80	24	
	60	—	
	40	—	

For cylinder sizing for other valve figure numbers, please consult the factory.

Note: For dry solids service consult factory for sizing.

Note: This sizing chart is not for sizing extreme service conditions. If in doubt, do not use this chart...consult the factory.

\* The factory stocks 8" cylinders. However, for large, very price competitive situations that do not require quick shipments (i.e. projects), a slightly less expensive 7" can also be used. Consult factory.

# Cylinder Sizing (Double Acting/Pneumatic)

XS150

Valve Size inches (DN)	Cyl. Air Supply psi (bar)	Differential Pressure - PSI (bar)														
		0-40 (0-2.8)	50 (3.5)	60 (4.1)	70 (4.8)	80 (5.5)	90 (6.2)	100 (6.9)	125 (8.6)	150 (10)	175 (12.1)	200 (13.8)	225 (15.5)	250 (17.2)	275 (19)	285 (19.7)
2 (50)	100 (6.9)	4**	4**	4**	4**	4**	4**	4**	4**	4**	4**	4**	4**	4**	4**	4**
	80 (5.5)	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	60 (4.1)	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	40 (2.8)	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF
3 (80)	100 (6.9)	5**	5**	5**	5**	5**	5**	5**	5**	5**	5**	5**	5**	5**	5**	5**
	80 (5.5)	5**	5**	5**	5**	5**	5**	5**	5**	5**	5**	5**	5**	5**	5**	5**
	60 (4.1)	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	40 (2.8)	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
4 (100)	100 (6.9)	5**	5**	5**	5**	5**	5**	5**	5**	5**	5**	5**	5**	5	5	5
	80 (5.5)	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	60 (4.1)	5	5	5	5	5	5	5	5	5	5	5	5	6	6	6
	40 (2.8)	6	6	6	6	6	6	6	6	6	6	6	CF	CF	CF	CF
6 (150)	100 (6.9)	5	5	5	5	5	5	5	5	5	5	6	6	6	6	8*
	80 (5.5)	5	5	5	5	5	5	5	5	5	6	6	8*	8*	8*	8*
	60 (4.1)	6	6	6	6	6	6	6	6	6	8*	8*	8*	8	8	8
	40 (2.8)	8*	8*	8*	8*	8*	8*	8*	8*	8*	8	8	CF	CF	CF	CF
8 (200)	100 (6.9)	6**	6**	6**	6**	6**	6**	6**	6**	6	6	8*	8*	8	8	8
	80 (5.5)	6	6	6	6	6	6	6	6	8*	8*	8	8	10	10	10
	60 (4.1)	8*	8*	8*	8*	8*	8*	8*	8*	8	8	10	10	10	10	10
	40 (2.8)	8	8	8	8	8	8	8	10	10	10	CF	CF	CF	CF	CF
10 (250)	100 (6.9)	8**	8**	8**	8**	8**	8**	8**	8**	8**	8	8	10	10	10	10
	80 (5.5)	8**	8**	8**	8**	8**	8**	8**	8**	8	8	10	10	10	10	14**
	60 (4.1)	8**	8**	8**	8**	8**	8**	8	10	10	10	14**	14**	14**	14	14
	40 (2.8)	10	10	10	10	10	10	10	10	14**	14**	14	14	14	CF	CF
12 (300)	100 (6.9)	8**	8**	8**	8**	8**	8**	8**	8	10	10	10	10	14**	14**	14**
	80 (5.5)	8**	8**	8**	8**	8**	8	8	10	10	10	14**	14**	14	14	16
	60 (4.1)	8	8	8	8	8	10	10	10	10	14**	14**	14	14	14	16
	40 (2.8)	10	10	10	10	10	14**	14**	14**	14	14	16	16	CF	CF	CF
14 (350)	100 (6.9)	8**	8**	8**	8**	8	8	8	10	10	10	12	12	12	14	14
	80 (5.5)	8	8	8	8	8	10	10	10	10	12	12	14	14	14	16
	60 (4.1)	10	10	10	10	10	10	10	10	12	14	14	14	16	16	CF
	40 (2.8)	12	12	12	12	12	12	14	14	16	16	CF	CF	CF	CF	CF
16 (400)	100 (6.9)	8**	8**	8	8	8	10	10	10	10	12	12	14	14	14	16
	1680 (5.5)	8	8	8	10	10	10	10	10	12	12	14	14	16	16	CF
	60 (4.1)	10	10	10	10	12	12	12	14	14	16	16	CF	CF	CF	CF
	40 (2.8)	12	12	12	12	14	14	14	16	16	CF	CF	CF	CF	CF	CF
18 (450)	100 (6.9)	8	8	8	10	10	10	10	10	12	12	14	14	16	16	CF
	80 (5.5)	10	10	10	10	10	10	10	12	12	14	14	16	16	CF	CF
	60 (4.1)	10	10	12	12	12	12	14	14	16	16	CF	CF	CF	CF	CF
	40 (2.8)	12	12	14	14	14	16	16	CF	CF	CF	CF	CF	CF	CF	CF
20 (500)	100 (6.9)	10**	10	10	10	10	12	12	12	12	14	16	16	18	18	18
	80 (5.5)	10	10	10	12	12	12	14	14	16	16	18	18	CF	CF	CF
	60 (4.1)	10	12	12	12	14	14	16	18	18	CF	CF	CF	CF	CF	CF
	40 (2.8)	14	14	14	16	16	18	18	CF	CF	CF	CF	CF	CF	CF	CF
24 (600)	100 (6.9)	10	10	12	12	12	14	14	16	16	18	18	CF	CF	CF	CF
	80 (5.5)	10	12	12	14	14	16	16	18	18	CF	CF	CF	CF	CF	CF
	60 (4.1)	12	14	14	16	16	16	18	18	CF	CF	CF	CF	CF	CF	CF
	40 (2.8)	14	16	18	18	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF

CF = Consult factory

\* Cylinder is Oversized. A 7" cylinder is required; however, the factory inventories 8" cylinders.

\*\* Standard factory valve-cylinder combination (Note: Cylinder is slightly oversized).

# Cylinder Sizing

## (Double Acting/Pneumatic)

### XS150-ULV

#### CLEAR FLUID, GAS, OR SLURRY SERVICE

Valve Size inches (DN)	Cyl. Air Supply psi (bar)	Differential Pressure - PSI (bar)									
		0-40 (0-2.8)	50 (3.5)	60 (4.1)	70 (4.8)	80 (5.5)	90 (6.2)	100 (6.9)	125 (8.6)	150 (10)	
2 (50)	100 (6.9)	4**	4**	4**	4**	4**	4**	4**	4**	4**	4**
	80 (5.5)	4	4	4	4	4	4	4	4	4	
	60 (4.1)	4	4	4	4	4	4	4	4	4	
	40 (2.8)	CF	CF	CF	CF	CF	CF	CF	CF	CF	
3 (80)	100 (6.9)	5**	5**	5**	5**	5**	5**	5**	5**	5**	
	80 (5.5)	5**	5**	5**	5**	5**	5**	5**	5**	5**	
	60 (4.1)	5	5	5	5	5	5	5	5	5	
	40 (2.8)	6	6	6	6	6	6	6	6	6	
4 (100)	100 (6.9)	5**	5**	5**	5**	5**	5**	5**	5**	5**	
	80 (5.5)	5	5	5	5	5	5	5	5	5	
	60 (4.1)	5	5	5	5	5	5	5	5	5	
	40 (2.8)	6	6	6	6	6	6	6	6	6	
6 (150)	100 (6.9)	5	5	5	5	5	5	5	5	5	
	80 (5.5)	5	5	5	5	5	5	5	5	5	
	60 (4.1)	6	6	6	6	6	6	6	6	6	
	40 (2.8)	8*	8*	8*	8*	8*	8*	8*	8*	8*	
8 (200)	100 (6.9)	6**	6**	6**	6**	6**	6**	6**	6**	6	
	80 (5.5)	6	6	6	6	6	6	6	6	8*	
	60 (4.1)	8*	8*	8*	8*	8*	8*	8*	8*	8	
	40 (2.8)	8	8	8	8	8	8	8	10	10	
10 (250)	100 (6.9)	8**	8**	8**	8**	8**	8**	8**	8**	8**	
	80 (5.5)	8**	8**	8**	8**	8**	8**	8**	8**	8	
	60 (4.1)	8**	8**	8**	8**	8**	8**	8	10	10	
	40 (2.8)	10	10	10	10	10	10	10	10	14**	
12 (300)	100 (6.9)	8**	8**	8**	8**	8**	8**	8**	8**	8	
	80 (5.5)	8**	8**	8**	8**	8**	8	8	10	10	
	60 (4.1)	8	8	8	8	8	10	10	10	14**	
	40 (2.8)	10	10	10	10	10	14**	14**	14**	14	
14 (350)	100 (6.9)	8**	8**	8**	8**	8	8	8	10	10	
	80 (5.5)	8	8	8	8	8	10	10	10	12	
	60 (4.1)	10	10	10	10	10	10	10	12	14	
	40 (2.8)	12	12	12	12	12	14	14	14	16	
16 (400)	100 (6.9)	8**	8**	8	8	8	10	10	10	12	
	1680 (5.5)	8	8	8	10	10	10	10	12	12	
	60 (4.1)	10	10	10	10	12	12	12	14	14	
	40 (2.8)	12	12	12	12	14	14	14	16	CF	
18 (450)	100 (6.9)	8	8	8	10	10	10	10	12	12	
	80 (5.5)	10	10	10	10	10	12	12	14	14	
	60 (4.1)	10	10	12	12	12	12	14	14	16	
	40 (2.8)	12	12	14	14	14	16	16	CF	CF	
20 (500)	100 (6.9)	10**	10	10	10	10	12	12	12	14	
	80 (5.5)	10	10	10	12	12	12	14	14	16	
	60 (4.1)	10	12	12	12	14	14	14	16	18	
	40 (2.8)	14	14	14	16	16	18	18	CF	CF	
24 (600)	100 (6.9)	10	10	12	12	12	14	14	14	16	
	80 (5.5)	10	12	12	14	14	14	16	16	18	
	60 (4.1)	12	14	14	16	16	16	18	CF	CF	
	40 (2.8)	14	16	18	18	CF	CF	CF	CF	CF	

CF = Consult factory

\* Cylinder is Oversized. A 7" cylinder is required; however, the factory inventories 8" cylinders.

\*\* Standard factory valve-cylinder combination (Note: Cylinder is slightly oversized).



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