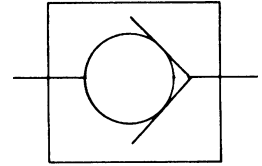


## Series CS Check Valves



Manatrol Series CS Check Valves permit free flow in one direction, and total shutoff automatically in the reverse direction.

Stainless steel poppets, not balls, are standard on all Series CS Check Valves. Poppets eliminate chatter and, minimize wear.

Operating pressures: 3000 PSI (210 Bar) max.

Cracking Pressures, nominal: 5 PSI (0.3 Bar)

Standard Options: 20 PSI (1.3 Bar)  
65 PSI (4.5 Bar)

(Other cracking pressures may be available on request)

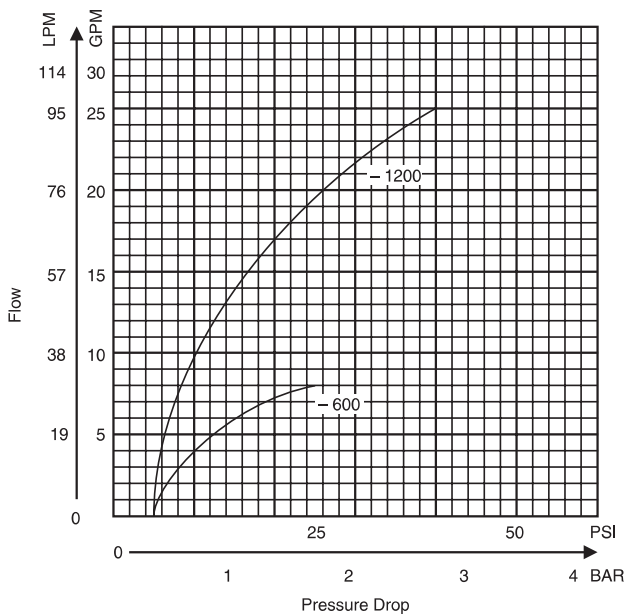
Poppet Style: Solid metal poppet



### Quick Reference Data Chart

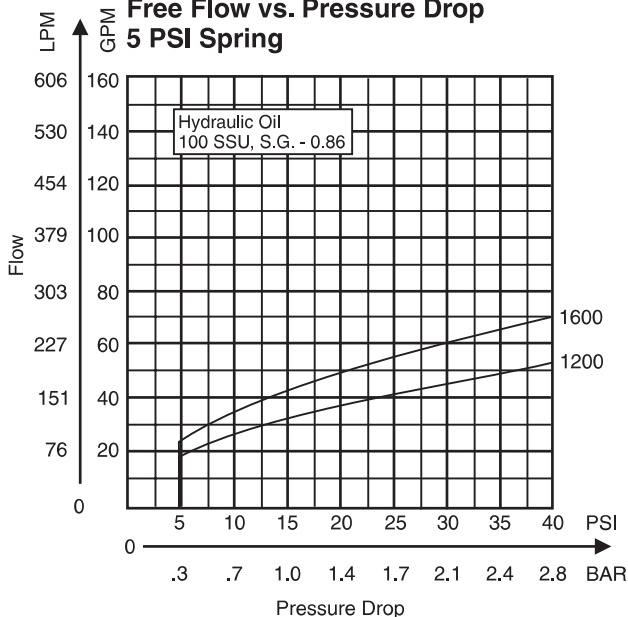
Model Number	Port Size	Rate GPM (L/M)	Free Flow C <sub>v</sub> GPM	Orifice area, in <sup>2</sup>	ΔP at Max. Flow PSI (Bar)
CS400	1/4	5 (23)	1.56	0.068	9 (0.6)
CS600	3/8	8 (30)	2.27	0.099	11 (0.8)
CS800	1/2	15 (45)	5.11	0.224	8 (0.6)
CS1200	3/4	25 (100)	7.95	0.348	13 (0.9)
CS1600	1	40 (150)	10.35	0.453	13 (0.9)

**Performance Data**



Flow vs. Pressure Drop

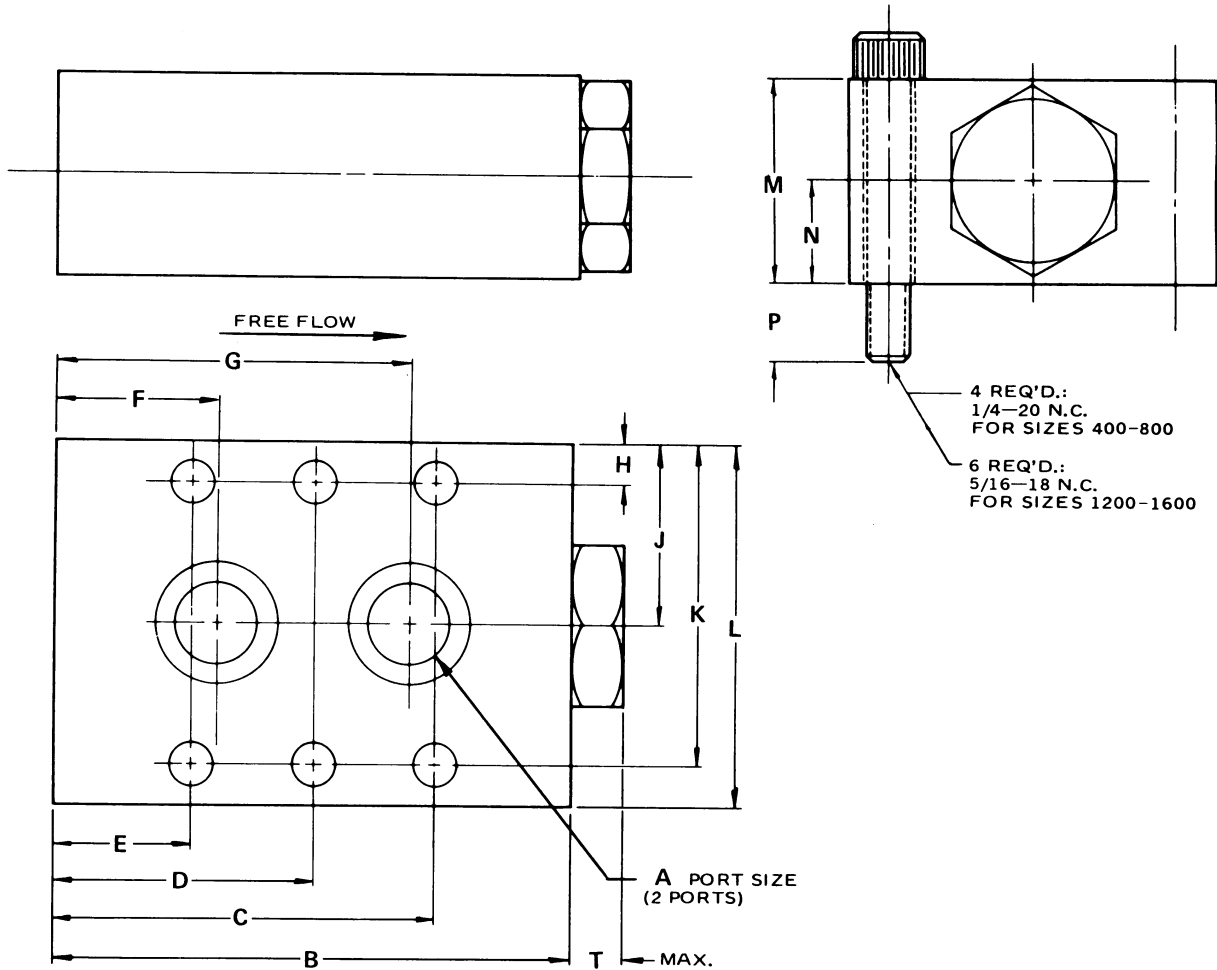
**“CS” Series 1200 thru 1600  
Free Flow vs. Pressure Drop  
5 PSI Spring**



# Dimensions

## Check Valve, Subplate-mounted

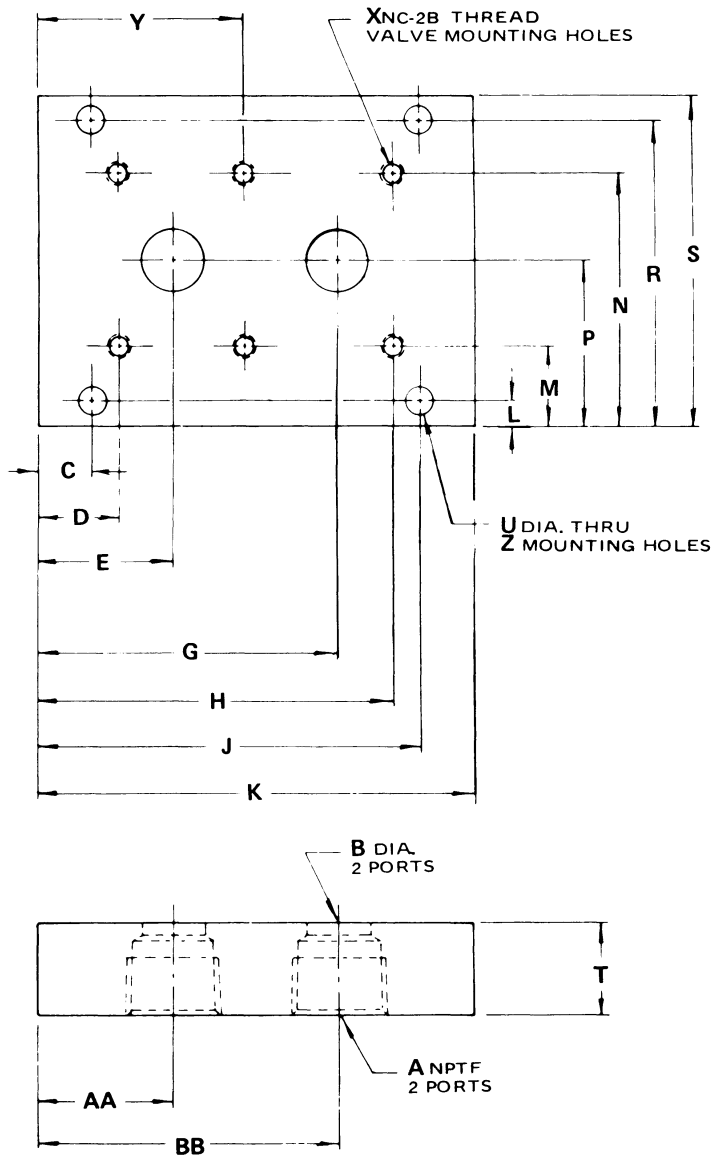
Models CS400S through CS1600S



Valve Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P	T	Weight LB. (Kg)
CS400S	.28 (7.1)	2.50 (63.5)	1.93 (49.0)	—	.56 (14.2)	.75 (19.1)	1.75 (44.5)	.21 (5.3)	.87 (22.1)	1.53 (38.9)	1.75 (44.5)	.87 (22.1)	.43 (10.9)	.39 (9.9)	.31 (7.9)	1.1 (0.5)
CS600S	.40 (10.2)	2.75 (51.6)	2.03 (69.9)	—	.71 (18.0)	.87 (22.1)	1.87 (47.5)	.25 (6.4)	1.00 (25.4)	1.75 (44.5)	2.00 (50.8)	1.00 (25.4)	.50 (12.7)	.51 (13.0)	.32 (8.1)	1.6 (0.7)
CS800S	.47 (11.9)	3.18 (80.7)	2.34 (59.4)	—	.84 (21.3)	1.00 (25.4)	2.19 (55.6)	.25 (6.4)	1.12 (28.4)	2.00 (50.8)	2.25 (57.2)	1.25 (31.8)	.62 (15.7)	.52 (13.2)	.32 (8.1)	2.3 (1.0)
CS1200S	.68 (17.3)	4.09 (103.9)	3.54 (89.9)	2.04 (51.8)	.54 (13.7)	.99 (25.1)	3.12 (79.2)	.31 (7.9)	1.37 (34.8)	2.43 (61.7)	2.75 (69.9)	1.75 (44.5)	.87 (22.1)	.57 (14.5)	.42 (10.7)	5.1 (2.3)
CS1600S	.87 (22.1)	5.00 (127.0)	4.37 (111.0)	2.50 (63.5)	.62 (15.7)	1.37 (34.8)	3.62 (91.9)	.31 (7.9)	1.50 (38.1)	2.68 (68.1)	3.00 (76.2)	2.00 (50.8)	1.00 (25.4)	.57 (14.5)	.42 (10.7)	7.6 (3.5)

### Subplate

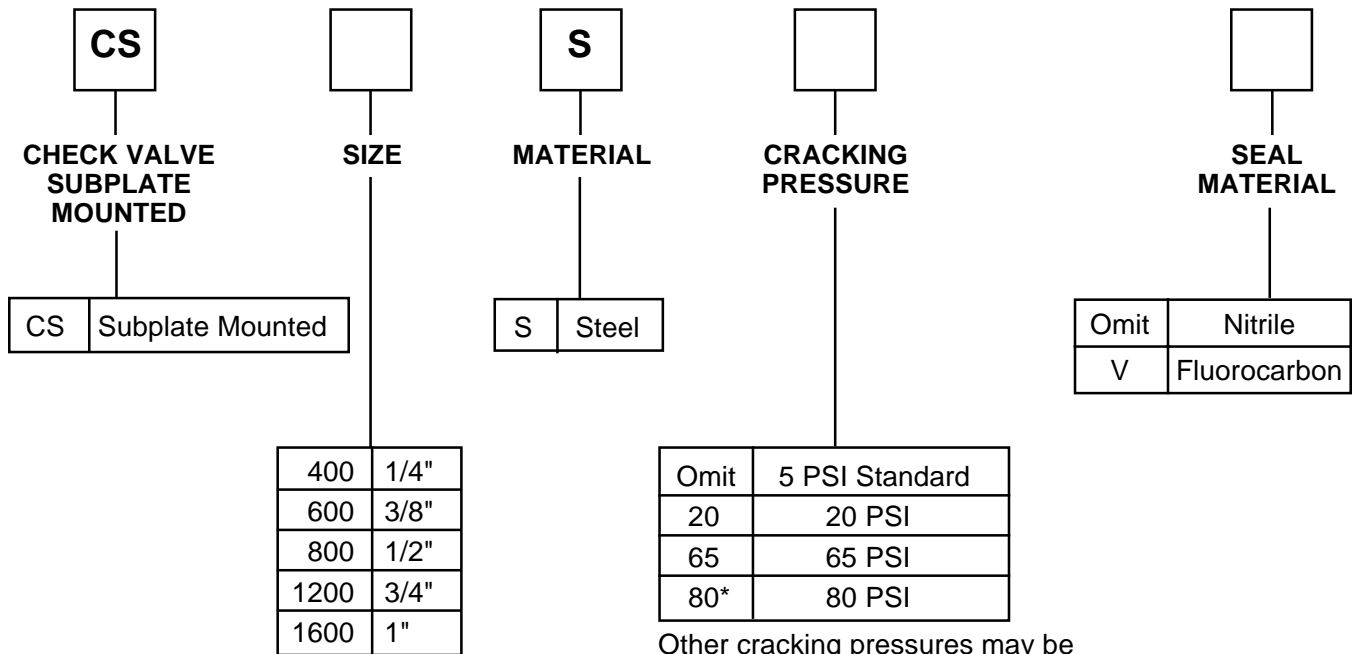
Reference Data Only  
(Subplates are not available)



Valve Numbers					
	CS 400	CS 600	CS 800	CS 1200	CS 1600
A	1/4"	3/8"	1/2"	3/4"	1"
B	.281 (7.1)	.406 (10.3)	.469 (11.9)	.656 (16.7)	.875 (22.2)
C	.375 (9.5)	.375 (9.5)	.500 (12.7)	.344 (8.7)	1.500 (38.1)
D	.562 (14.3)	.843 (21.4)	.875 (22.2)	.750 (19.1)	1.125 (28.6)
E	.750 (19.1)	1.000 (25.4)	1.031 (26.2)	1.188 (30.2)	1.875 (47.6)
G	1.750 (44.5)	2.000 (50.8)	2.219 (56.4)	3.328 (84.5)	4.125 (104.8)
H	1.938 (49.2)	2.156 (54.8)	2.375 (60.3)	3.750 (95.3)	4.875 (123.8)
J	2.125 (54.0)	2.625 (66.7)	2.750 (69.9)	4.156 (105.6)	4.500 (114.3)
K	2.50 (63.5)	3.00 (76.2)	3.25 (82.6)	4.50 (114.3)	6.00 (152.4)
L	.344 (8.7)	.250 (6.4)	.438 (11.1)	.344 (8.7)	.343 (8.7)
M	.844 (21.4)	.750 (19.1)	1.125 (28.6)	1.062 (27.0)	1.062 (27.0)
N	2.156 (54.8)	2.250 (57.2)	2.875 (73.0)	3.188 (81.0)	3.438 (87.3)
P	1.500 (38.1)	1.500 (38.1)	2.000 (50.8)	2.125 (54.0)	2.250 (57.2)
R	2.656 (67.5)	2.750 (69.9)	3.562 (90.5)	3.906 (99.2)	4.156 (105.6)
S	3.00 (76.2)	3.00 (76.2)	4.00 (101.6)	4.25 (108.0)	4.50 (114.3)
T	1.125 (28.6)	1.125 (28.6)	1.125 (28.6)	1.125 (28.6)	1.250 (31.8)
U	.281 (7.1)	.281 (7.1)	.359 (9.1)	.422 (10.7)	.422 (10.7)
X	1/4-20	1/4-20	1/4-20	5/16-18	5/16-18
Y	—	—	—	2.250 (57.2)	3.000 (76.2)
Z	4 Holes	4 Holes	4 Holes	6 Holes	6 Holes
AA	.750 (19.1)	1.000 (25.4)	1.031 (26.2)	1.188 (30.2)	1.875 (47.6)
BB	1.750 (44.5)	2.000 (50.8)	2.219 (56.4)	3.328 (84.5)	4.125 (104.8)



**Ordering Information**



Other cracking pressures may be available on request.

\*80 PSI cracking pressure available on 1200 size and smaller.

**Bolt Kits** To order bolt kits, specify bolt kit number

Valve	Bolt Kit	Bolt Specification *	Bolt Torque
CS400S	BK01	1/4-20 x 1-1/4"	13 Ft.-Lbs.
CS600S	BK02	1/4-20 x 1-1/2"	13 Ft.-Lbs.
CS800S	BK04	1/4-20 x 1-3/4"	13 Ft.-Lbs.
CS1200S	BK08	5/16-18 x 2-1/4"	27 Ft.-Lbs.
CS1600S	BK10	5/16-18 x 2-1/2"	27 Ft.-Lbs.

\*Use SAE Grade 8 or Better.