

## Manatrol Series NS Needle Valves

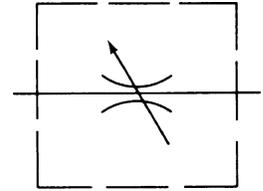
These valves provide excellent speed control and shutoff for hydraulic applications where a reverse-flow check valve is not required. They also take minimum space for installation, conserving space.

The two-step needle valve allows fine tuning at low flow with the first three turns of the adjusting knob, with full-open flow plus conventional precision throttling with the final three turns of the knob.

Exclusive "Colorflow" color bands permit fast, accurate setting and time-saving return to a previous setting.

Maximum working pressure: 3000PSI

Needles: Standard Needle on all models. Fine needle optional on Models NS400 and NS600.

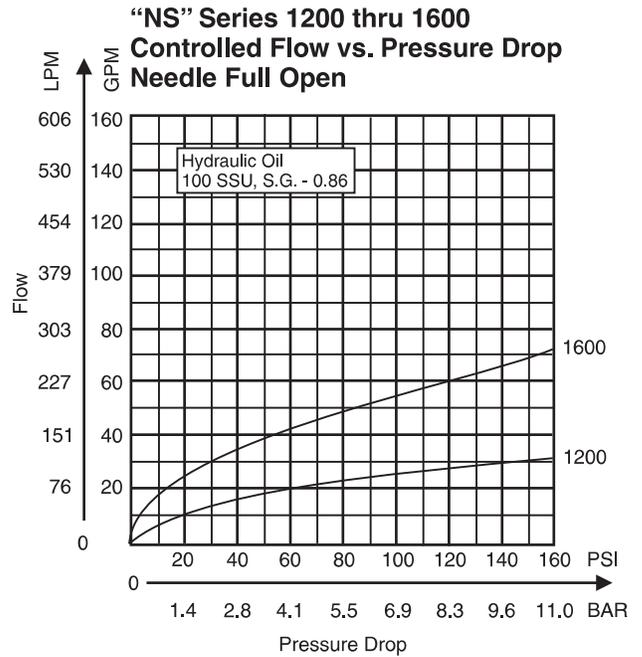
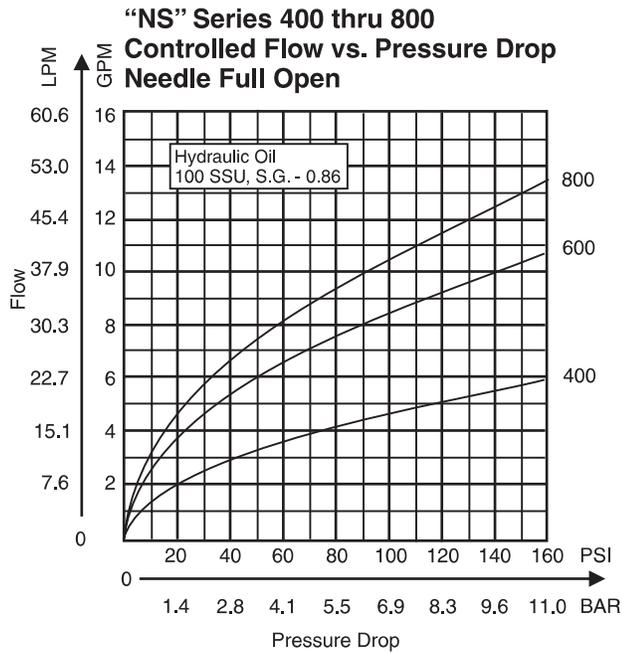


### Quick Reference Data Chart

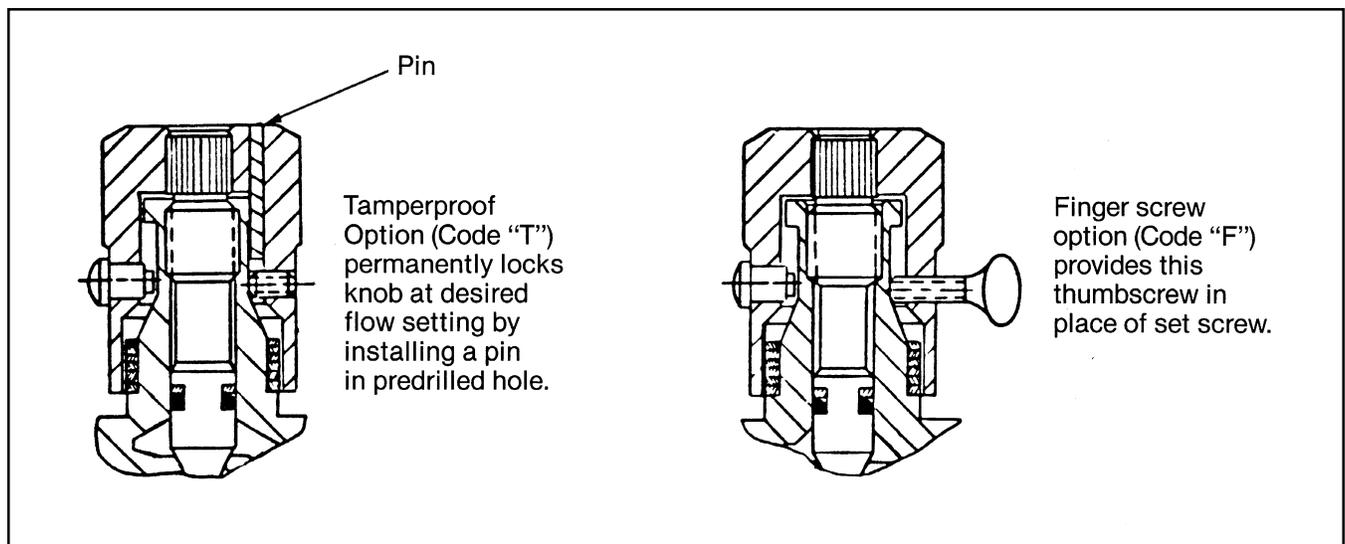
Valve Model	Flow, Max. GPM (L/M)	Orifice Area Control Flow (Sq. In.)	Effective Effective Control Flow $C_v$	Port Size
NS400	5 (19)	.0194	.443	1/4
NS600	8 (30)	.0344	.787	3/8
NS800	15 (57)	.0427	.976	1/2
NS1200	25 (95)	.1080	2.470	3/4
NS1600	40 (151)	.2300	5.250	1



### Performance Data



### Knob Options

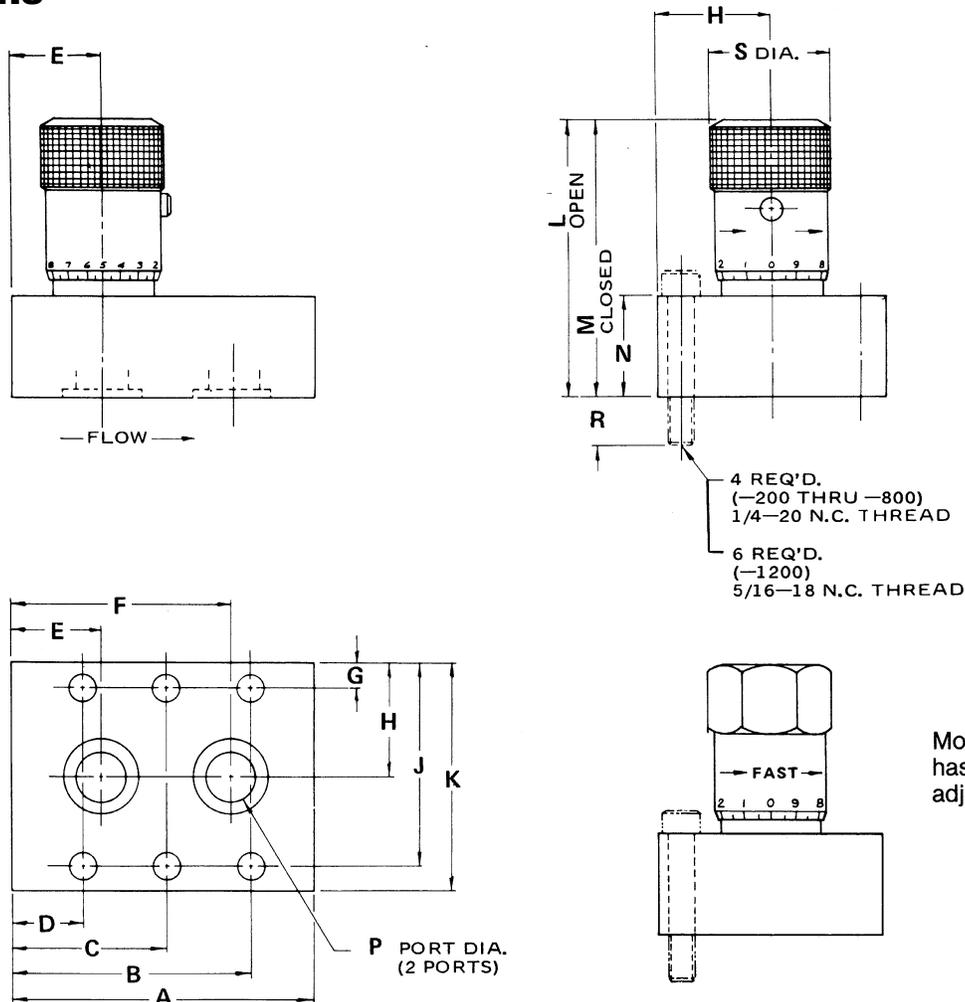


# Manatrol Series NS

## Manifold-Mounted Needle Valves

Models NS400S through NS1600S

### Dimensions



Model NS1600S  
has hex. head  
adjusting knob.

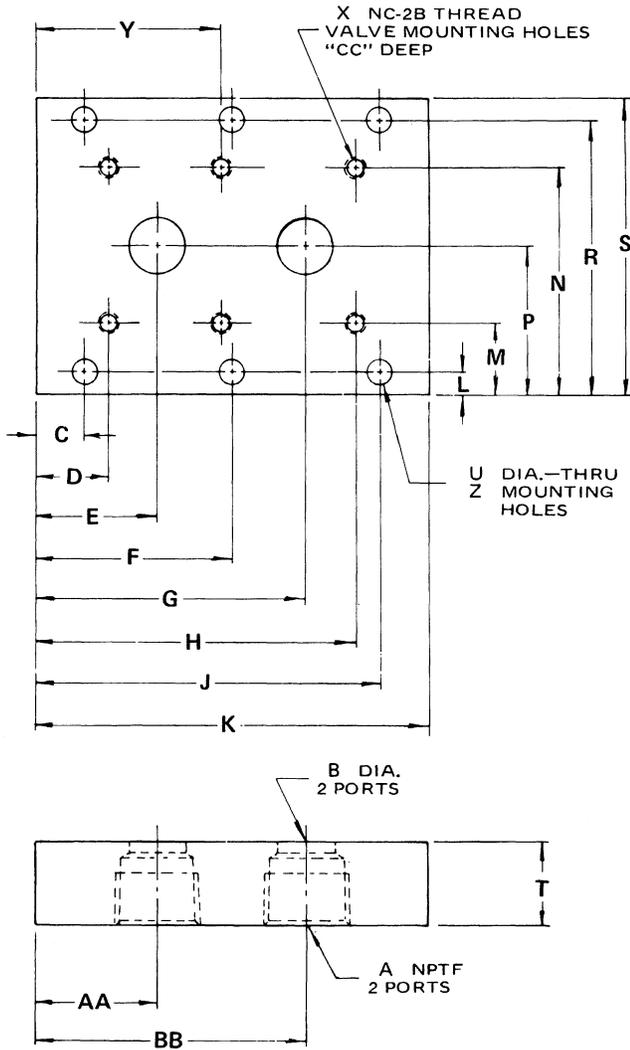


Valve Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	Weight Lb. (Kg)
NS400S	1.88 (47.8)	1.62 (41.1)		.25 (6.4)	.44 (11.2)	1.44 (36.6)	.22 (5.6)	.88 (22.4)	1.53 (38.9)	1.75 (44.5)	2.15 (54.6)	1.95 (49.5)	.88 (22.4)	.28 (7.1)	.44 (11.2)	.81 (20.6)	0.8 (0.4)
NS600S	2.00 (50.8)	1.66 (42.2)		.34 (8.6)	.50 (12.7)	1.50 (38.1)	.25 (6.4)	1.00 (25.4)	1.75 (44.5)	2.00 (50.8)	2.65 (67.3)	2.40 (61.0)	1.00 (25.4)	.34 (8.6)	.50 (12.7)	1.00 (25.4)	1.3 (0.6)
NS800S	2.97 (75.4)	2.23 (56.6)		.73 (18.5)	.89 (22.6)	2.08 (52.8)	.25 (6.4)	1.12 (28.4)	2.00 (50.8)	2.25 (57.2)	3.04 (77.2)	2.75 (69.9)	1.00 (25.4)	.47 (11.9)	.50 (12.7)	1.18 (30.0)	2.3 (1.0)
NS1200S	3.69 (93.7)	3.34 (84.8)	1.84 (46.7)	.34 (8.6)	.78 (19.8)	2.92 (74.2)	.31 (7.9)	1.38 (35.1)	2.44 (62.0)	2.75 (69.9)	3.72 (94.5)	3.13 (79.3)	1.12 (28.4)	.66 (16.8)	.63 (16.0)	1.37 (34.8)	3.7 (2.0)
NS1600S	4.38 (111.3)	4.06 (100.1)	2.19 (55.6)	.31 (7.9)	1.06 (26.9)	3.31 (84.1)	.31 (7.9)	1.50 (38.1)	2.69 (68.3)	3.00 (76.2)	5.51 (140.0)	4.85 (123.2)	1.75 (44.5)	.88 (22.4)	.50 (12.7)	1.87 (47.5)	8.0 (4.0)

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**Subplate Dimensions**  
**Series NS**  
**Needle Valves**

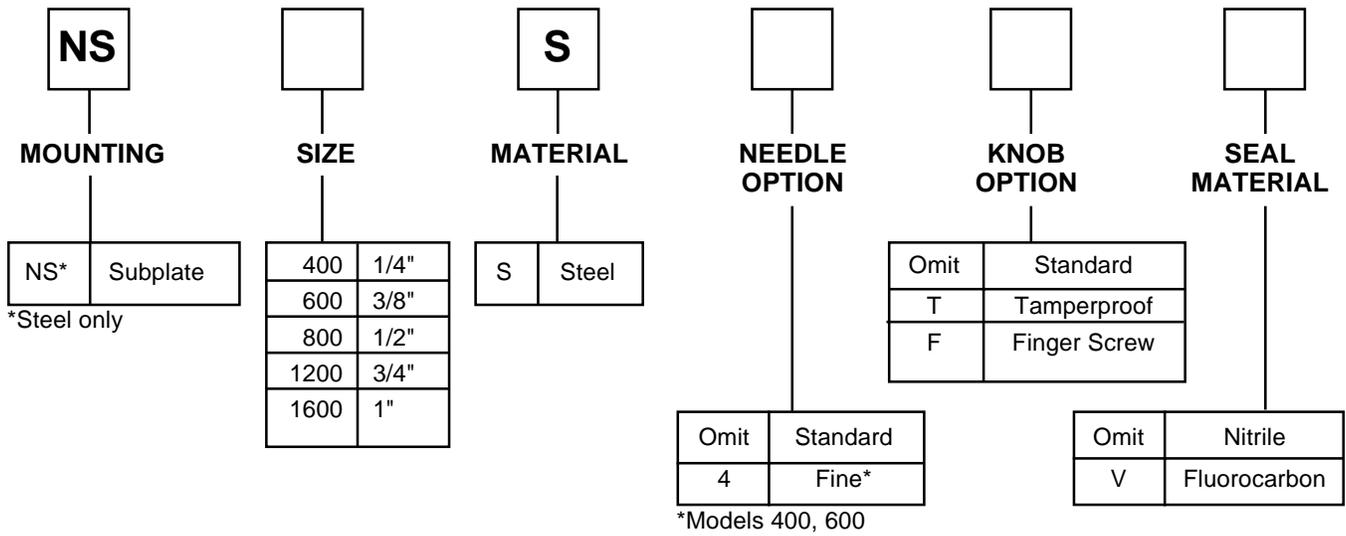
Reference Data Only  
(Subplates are not available)



	Valve Series				
	NS -400	NS -600	NS -800	NS -1200	NS -1600
<b>NPTF Port Size</b>	1/4	3/8	1/2	3/4	1
<b>B</b>	.281 (7.1)	.406 (10.3)	.469 (11.9)	.656 (16.7)	.875 (22.2)
<b>C</b>	.375 (9.5)	.375 (9.5)	.500 (12.7)	.344 (8.7)	.344 (8.7)
<b>D</b>	.562 (14.3)	.843 (21.4)	.875 (22.2)	.750 (19.1)	1.125 (28.6)
<b>E</b>	.750 (19.1)	1.000 (25.4)	1.031 (26.2)	1.188 (30.2)	1.875 (47.6)
<b>G</b>	1.750 (44.5)	2.000 (50.8)	2.219 (56.4)	3.312 (84.1)	4.125 (104.8)
<b>H</b>	1.938 (49.2)	2.156 (54.8)	2.375 (60.3)	3.750 (95.3)	4.875 (123.8)
<b>J</b>	2.125 (54.0)	2.625 (66.7)	2.750 (69.9)	4.156 (105.6)	5.656 (143.6)
<b>K</b>	2.50 (63.5)	3.00 (76.2)	3.25 (82.6)	4.50 (114.3)	6.00 (152.4)
<b>L</b>	.344 (8.7)	.250 (6.4)	.438 (11.1)	.344 (8.7)	.344 (8.7)
<b>M</b>	.844 (21.4)	.750 (19.1)	1.125 (28.6)	1.062 (27.0)	1.062 (27.0)
<b>N</b>	2.156 (54.8)	2.250 (57.2)	2.875 (73.0)	3.188 (81.0)	3.438 (87.3)
<b>P</b>	1.500 (38.1)	1.500 (38.1)	2.000 (50.8)	2.125 (54.0)	2.250 (57.2)
<b>R</b>	2.656 (67.5)	2.750 (69.9)	3.562 (90.5)	3.906 (99.2)	4.156 (105.6)
<b>S</b>	3.00 (76.2)	3.00 (76.2)	4.00 (101.6)	4.25 (108.0)	4.50 (114.3)
<b>T</b>	1.125 (28.6)	1.125 (28.6)	1.125 (28.6)	1.125 (28.6)	1.250 (31.8)
<b>U</b>	.281 (7.1)	.281 (7.1)	.359 (9.1)	.422 (10.7)	.422 (10.7)
<b>X</b>	1/4-20	1/4-20	1/4-20	5/16-18	5/16-18
<b>Y</b>	—	—	—	2.250 (57.2)	3.000 (76.2)
<b>Z</b>	4 Holes	4 Holes	4 Holes	6 Holes	6 Holes
<b>AA</b>	.750 (19.1)	1.000 (25.4)	1.031 (26.2)	1.188 (30.2)	1.875 (47.6)
<b>BB</b>	1.750 (44.5)	2.000 (50.8)	2.219 (56.4)	3.312 (84.5)	4.125 (104.8)
<b>CC</b>	.505 (12.8)	.525 (13.3)	.525 (13.3)	.525 (13.3)	.525 (13.3)



### Ordering Information



### Bolt Kits

Valve	Bolt Kit	Bolt Specification*	Bolt Torque
NS400	BK01	1/4-20 x 1-1/4"	9 Ft.-Lbs.
NS600	BK02	1/4-20 x 1-1/2"	9 Ft.-Lbs.
NS800	BK02	1/4-20 x 1-1/2"	9 Ft.-Lbs.
NS1200	BK05	5/16-18 x 1-3/4"	19 Ft.-Lbs.
NS1600	BK08	5/16-18 x 2-1/4"	19 Ft.-Lbs.

\*Use SAE Grade 8 or Better.

