

General Description

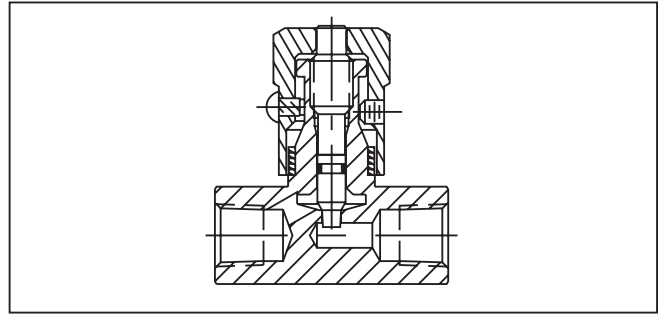
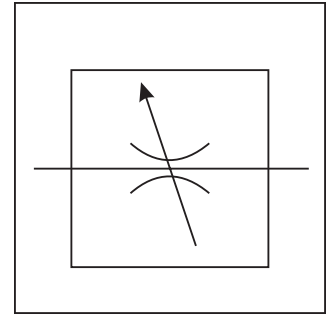
Series N needle valves are ideal as speed controls on hydraulic and pneumatic systems where a reverse flow check is not needed. They provide excellent control and a reliable shut-off in a very small envelope.

Operation

A two-step needle allows fine adjustment at low flow by using the first three turns of the adjusting knob. The next three turns open the valve to full flow, and also provide standard throttling adjustments.

Features

- The exclusive “Colorflow” color-band reference scale on the valve stem is a great convenience and time-saver in setting the valve originally and in returning it to any previous setting.
- A simple set screw locks the valve on any desired setting.
- A tamperproof option (T) feature is also available to prevent accidental or intentional adjustment of flow setting.



Specifications

Maximum Operating Pressure	Brass:	140 Bar (2000 PSI); except for N1600 brass which is 35 Bar (500 PSI)
	Steel & Stainless Steel:	345 Bar (5000 PSI) for 200 thru 1220; 207 Bar (3000 PSI) for all other sizes
Material	Body	See ordering code
	Knob Needle Stainless Steel Bodies	Steel - Zinc plated 416 Stainless Steel 303 Stainless Steel
Temperature Range of Seal Compound	-40°C to +121°C (-40°F to +250°F) Nitrile (standard)	
	-26°C to +205°C (-15°F to +400°F) Fluorocarbon	

WARNING: This product can expose you to chemicals including Lead, Nickel (Metallic), or 1,3-Butadiene which are known to the State of California to cause cancer, and Lead or 1,3-Butadiene which is known to the State of California to cause birth defects and other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Cat3300_02.indd, ddp, 04/19

Options

Code	Description
Omit	NPTF/SAE
★ 8	BSPT
★★ 9	BSPP

★ Code 8 can be used with sizes 400, 600, 800 Steel only

★★ Code 9 can be used with sizes 200, 400, 600, 800, 1200, 1600, 2000

Series N

Size

Code	Size	Code	Size
200 *	1/8"	1020	#10 SAE
400 *†	1/4"	1200 *	3/4"
420	#4 SAE	1220	#12 SAE
600 *†	3/8"	1600 *	1"
620	#6 SAE	1620	#16 SAE
800 *†	1/2"	2000	1 1/4"
820 *	#8 SAE	2020	#20 SAE

* Sizes available in Brass.
 † Sizes available in Stainless Steel.

Material

Code	Description
B	Brass
S	Steel
SS *	Stainless Steel

Series N Brass Valves can be used for both air and oil service.

* Available in 400, 600 and 800 sizes, NPT only.

Needle Options

Code	Description
Omit	Standard
4	Fine Metering (200, 400, 420, 600, 620, 820 sizes)

Other Options

Code	Description
Omit	Standard Knob
T *	Tamperproof
F	Finger Screw

* Not available above 1200 size.

Seal Compound

Code	Description
Omit	Nitrile (Standard)
V	Fluorocarbon (Standard on Stainless Steel)

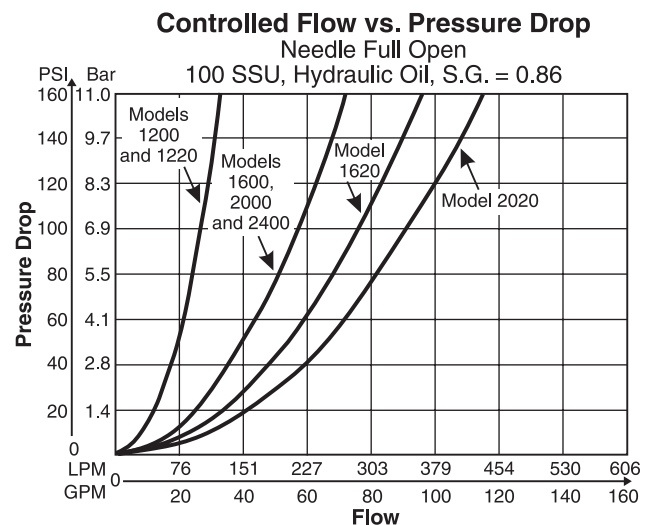
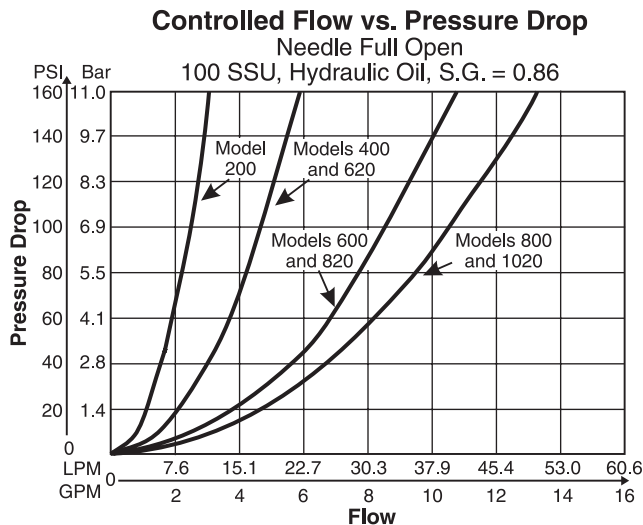
Design Series

NOTE: Not required when ordering.

Model Number	Max. Flow LPM (GPM)	Effective Orifice Area Control Flow in. ²	Effective Control Flow C _v	Model Number	Max. Flow LPM (GPM)	Effective Orifice Area Control Flow in. ²	Effective Control Flow C _v
N200	11 (3)	0.0102	0.230	N1020	57 (15)	0.0427	0.976
N420	11 (3)	0.0102	0.230	N1200	95 (25)	0.1080	2.470
N400	19 (5)	0.0194	0.443	N1220	95 (25)	0.1080	2.470
N620	19 (5)	0.0194	0.443	N1600	151 (40)	0.2300	5.250
N600	30 (8)	0.0344	0.787	N1620	151 (40)	0.3070	7.000
N820	30 (8)	0.0344	0.787	N2000	264 (70)	0.2300	5.250
N800	57 (15)	0.0427	0.976	N2020	264 (70)	0.3710	8.470

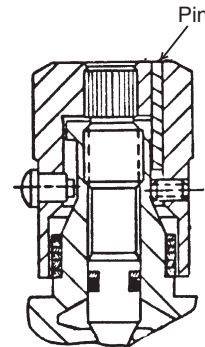
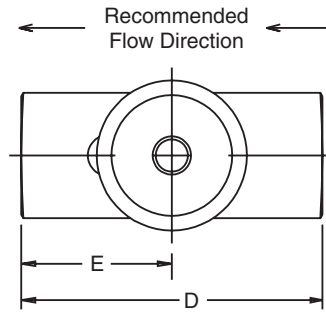
Model Number	Effective Orifice Area Control Flow in. ²	Effective Control Flow C _v
N400-4	0.0044	0.0758
N600-4	0.0097	0.153
N620-4	0.0044	0.0758
N820-4	0.0097	0.153

Performance Curves

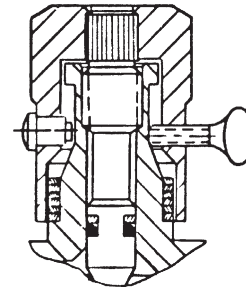


Inch equivalents for millimeter dimensions are shown in (**)

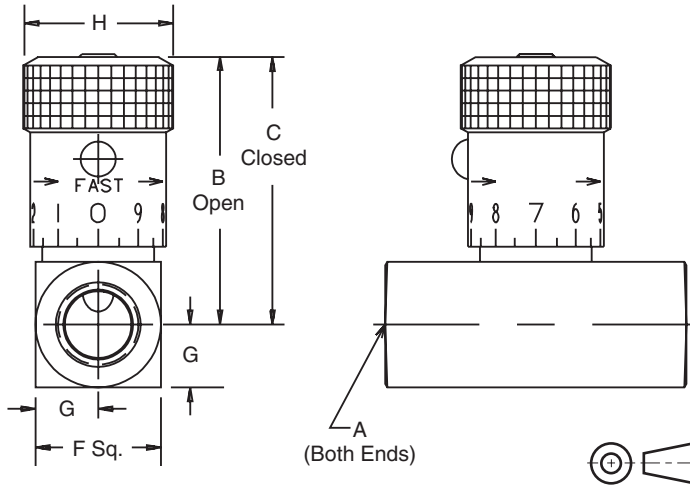
Knob Options



Tamperproof Option (Code "T") permanently locks knob at desired flow setting by installing a pin in predrilled hole.



Finger screw Option (Code "F") provides this thumb-screw in place of set screw.



Model Number	Weight kg (lbs.)	A	B	C	D	E	F	G	H
N200	0.1 (0.3)	1/8-27 NPTF	39.1 (1.54)	35.3 (1.39)	38.1 (1.50)	19.1 (0.75)	15.7 (0.62)	7.9 (0.31)	19.1 (0.75)
N400	0.2 (0.5)	1/4-18 NPTF	45.5 (1.79)	40.4 (1.59)	50.8 (2.00)	25.4 (1.00)	20.6 (0.81)	10.4 (0.41)	20.6 (0.81)
N420	0.1 (0.3)	7/16-20 UNF #4 SAE	41.4 (1.63)	37.6 (1.48)	50.8 (2.00)	25.4 (1.00)	20.6 (0.81)	10.4 (0.41)	19.1 (0.75)
N600	0.4 (0.9)	3/8-18 NPTF	55.4 (2.18)	49.5 (1.95)	63.5 (2.50)	31.8 (1.25)	25.4 (1.00)	12.7 (0.50)	25.4 (1.00)
N620	0.2 (0.5)	9/16-18 UNF #6 SAE	47.8 (1.88)	42.7 (1.68)	60.5 (2.38)	30.2 (1.19)	25.4 (1.00)	12.7 (0.50)	20.6 (0.81)
N800	0.6 (1.3)	1/2-14 NPTF	68.6 (2.70)	61.5 (2.42)	66.5 (2.62)	33.3 (1.31)	31.8 (1.25)	15.7 (0.62)	30.2 (1.19)
N820	0.4 (0.9)	3/4-16 UNF #8 SAE	56.9 (2.24)	51.1 (2.01)	76.2 (3.00)	38.1 (1.50)	28.4 (1.12)	14.2 (0.56)	25.4 (1.00)
N1020	0.6 (1.3)	7/8-14 UNF #10 SAE	68.6 (2.70)	61.5 (2.42)	88.9 (3.50)	44.5 (1.75)	31.8 (1.25)	15.7 (0.62)	30.2 (1.19)
N1200	1.0 (2.2)	3/4-14 NPTF	85.9 (3.38)	71.4 (2.81)	82.6 (3.25)	41.1 (1.62)	38.1 (1.50)	19.1 (0.75)	35.1 (1.38)
N1220	1.0 (2.2)	1 1/6-12 UN #12 SAE	85.9 (3.38)	71.4 (2.81)	101.6 (4.00)	50.8 (2.00)	38.1 (1.50)	19.1 (0.75)	35.1 (1.38)
N1600	2.1 (4.6)	1-11 1/2 NPTF	123.7 (4.87)	106.9 (4.21)	108.0 (4.25)	53.8 (2.12)	44.5 (1.75)	22.4 (0.88)	47.8 * (1.88)
N1620	2.1 (4.6)	1 5/16-12 UN #16 SAE	130.8 (5.15)	114.0 (4.49)	108.0 (4.25)	53.8 (2.12)	57.2 (2.25)	28.4 (1.12)	47.8 * (1.88)
N2000	2.9 (6.4)	1 1/4-11 1/2 NPTF	130.0 (5.12)	113.3 (4.46)	108.0 (4.25)	53.8 (2.12)	57.2 (2.25)	28.4 (1.12)	47.8 * (1.88)
N2020	2.9 (6.4)	1 5/8-12 UN #20 SAE	140.2 (5.52)	123.4 (4.86)	114.3 (4.50)	57.2 (2.25)	69.9 (2.75)	60.5 (2.38)	47.8 * (1.88)

* = Hex