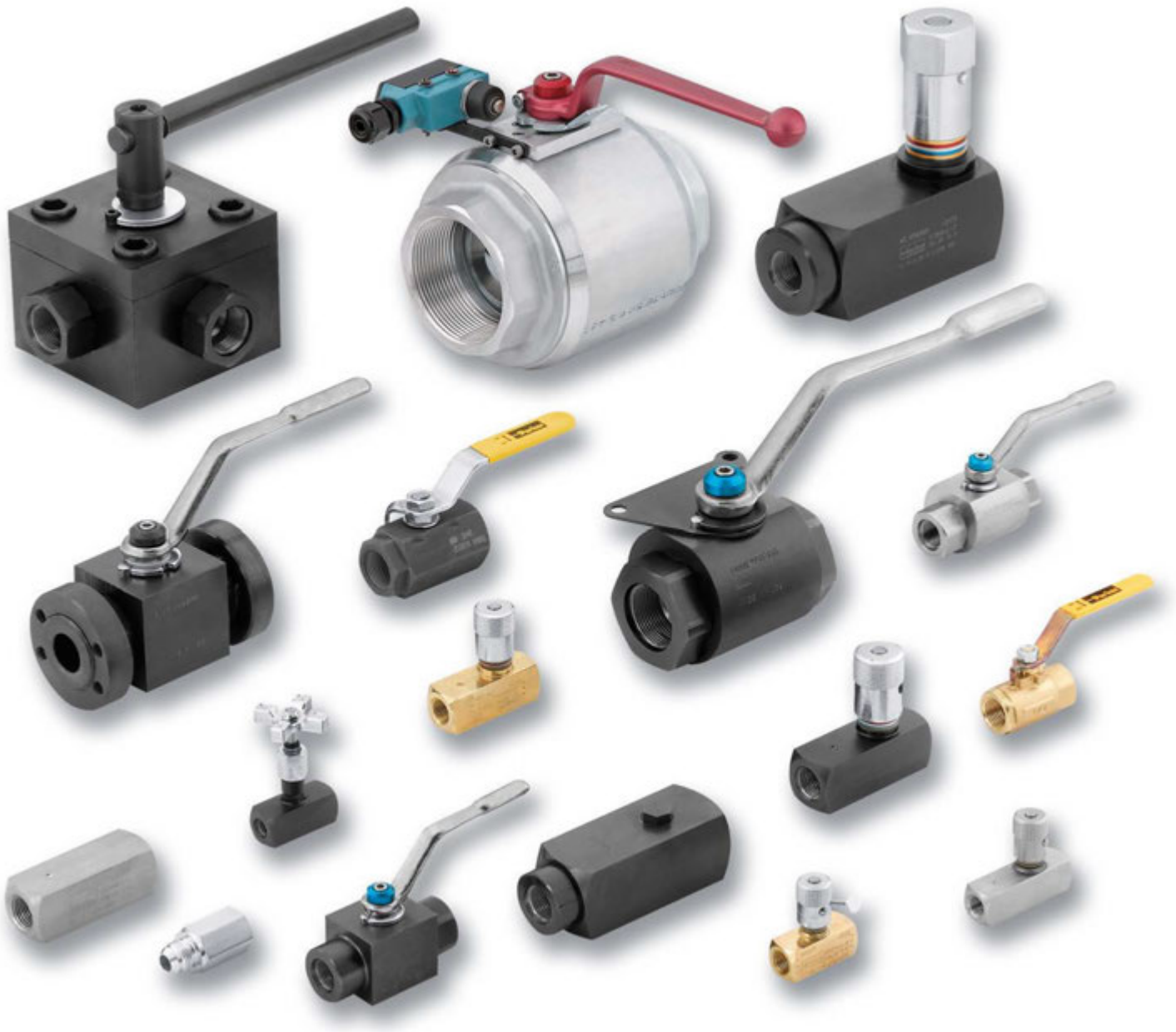


Colorflow® and Ball Valves

Industrial Flow Control, Check, Gauge Control

Catalog HY14-3300/US

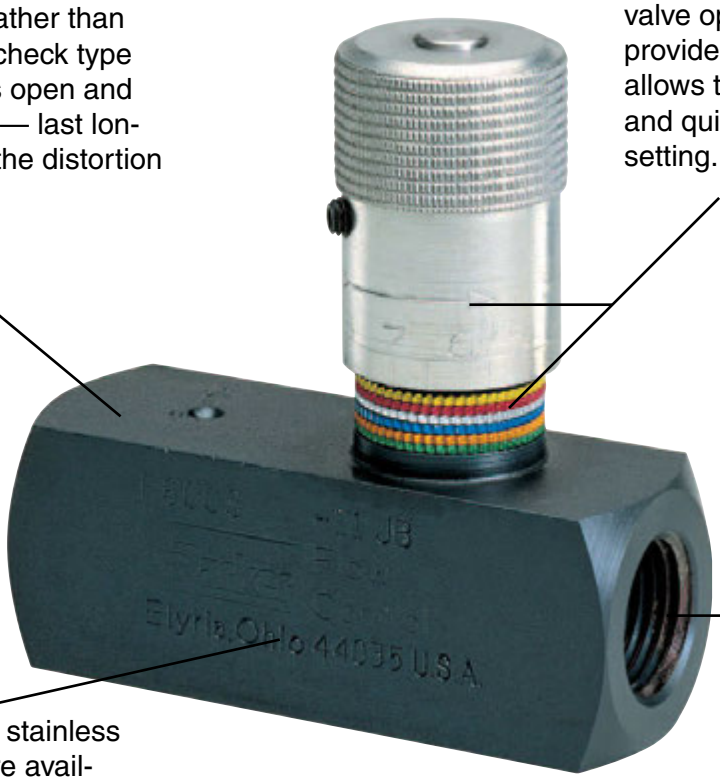
aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding

Parker

ENGINEERING YOUR SUCCESS.

Fully guided poppets are used on Colorflow valves rather than the less durable ball-check type construction. Poppets open and close more smoothly — last longer — and eliminate the distortion of seats and springs.

The exclusive “Colorflow” feature on metering, flow control, and needle valves gives highly visible check-points for setting valve openings. This feature also provides a reference point that allows the valve to be accurately and quickly reset to a previous setting.



Colorflow valves are available with a variety of porting options.

Steel, brass or stainless steel bodies are available, all of which include stainless steel needles as standard.

WARNING: Colorflow valves are not repairable

⚠ WARNING – USER RESPONSIBILITY

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

- This document and other information from Parker-Hannifin Corporation, its subsidiaries and authorized distributors provide product or system options for further investigation by users having technical expertise.
- The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalog and in any other materials provided from Parker or its subsidiaries or authorized distributors.
- To the extent that Parker or its subsidiaries or authorized distributors provide component or system options based upon data or specifications provided by the user, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the components or systems.

OFFER OF SALE

The items described in this document are hereby offered for sale by Parker-Hannifin Corporation, its subsidiaries or its authorized distributors. This offer and its acceptance are governed by the provisions stated in the detailed “Offer of Sale” elsewhere in this document or available at www.parker.com/hydraulicvalve.

SAFETY GUIDE

For safety information, see Safety Guide SG HY14-1000 at www.parker.com/safety or call 1-800-CParker.

Cat HY14-3300-frtcvr.indd, dd

Parker Hannifin Corporation
Hydraulic Valve Division
Elyria, Ohio, USA

General Description

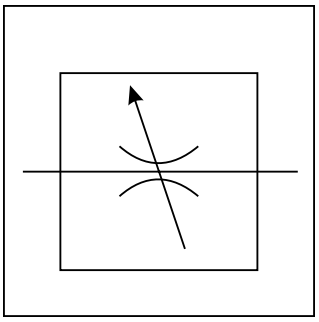
Series N needle valves are ideal as speed controls on hydraulic and pneumatic systems where a reverse flow check is not needed. They provide excellent control and a reliable shut-off in a very small envelope.

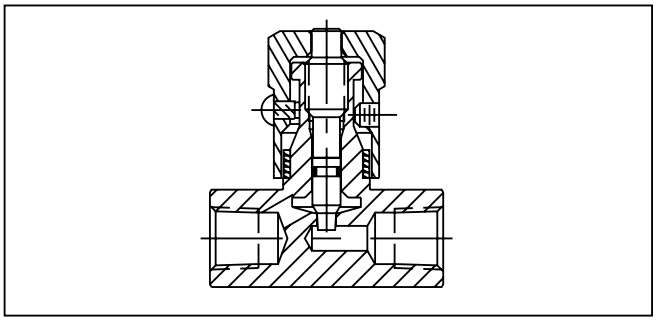
Operation

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.



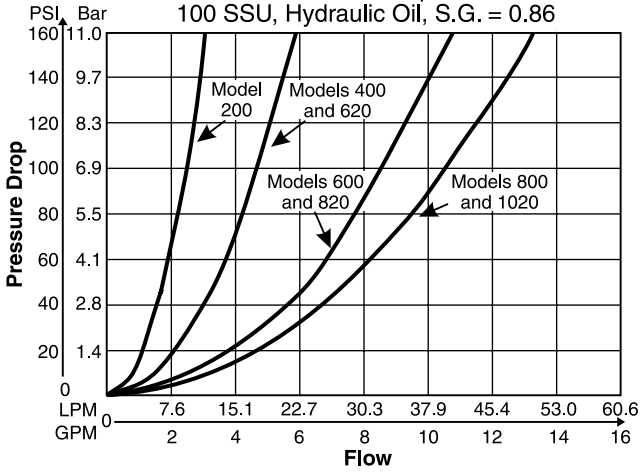


Specifications

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	Steel - Zinc plated
	Needle	416 Stainless Steel
	Stainless Steel Bodies	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	

Performance Curves

Controlled Flow vs. Pressure Drop
Needle Full Open
100 SSU, Hydraulic Oil, S.G. = 0.86



Controlled Flow vs. Pressure Drop
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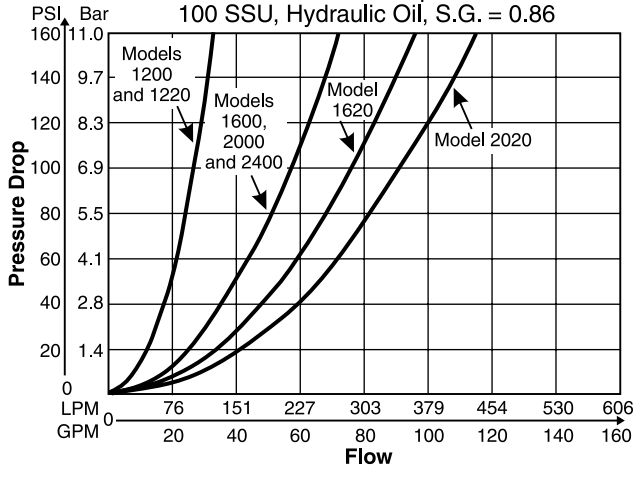


Options | N Series N | Size | Material | Needle Options | Other Options | Seal Compound | Design Series

NOTE: Not required when ordering.

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

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.

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.

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

Code	Description
Omit	Standard Knob
T *	Tamperproof
F	Finger Screw

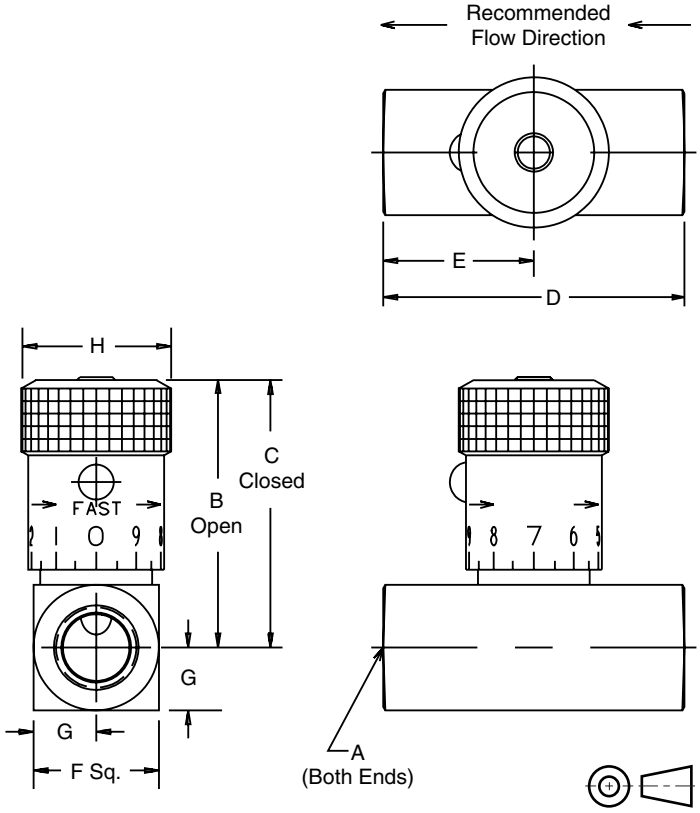
* Not available above 1200 size.

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

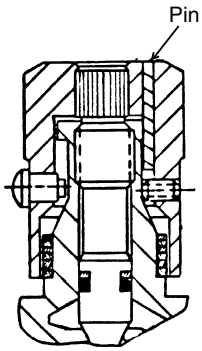
Model Number	Max Flow LPM (GPM)	Effective Orifice Area Control Flow in.²	Effective Control Flow C_v
N200	11 (3)	0.0102	0.230
N420	11 (3)	0.0102	0.230
N400	19 (5)	0.0194	0.443
N620	19 (5)	0.0194	0.443
N600	30 (8)	0.0344	0.787
N820	30 (8)	0.0344	0.787
N800	57 (15)	0.0427	0.976
N1020	57 (15)	0.0427	0.976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

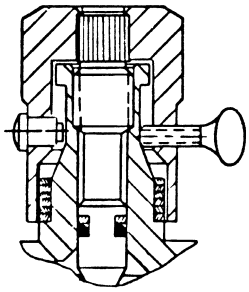
Inch equivalents for millimeter dimensions are shown in (**)



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