



# 2100 Series

## Bar Stock, Screwed Bonnet Needle Valves

This panel mountable, two-piece design is available in globe and angle patterns for flexibility of installation. Dyna-Pak® packing provides leak-tight sealing with low operating torque. Optional Graph-Lock® packing is available for high-temperature applications. The safety back-seating prevents accidental removal of the stem.



### Typical Applications

- Hydraulic systems
- High temperature service to +600° F (+316° C)
- Gas sampling
- Test stands

### Technical Data

BODY*	316 stainless steel, carbon steel, brass
MAXIMUM OPERATING PRESSURE	<i>Stainless steel</i> 6000 psig @ 70° F (414 Bar @ 21° C) <i>Carbon steel</i> 5000 psig @ 70° F (345 Bar @ 21° C) <i>Brass</i> 3000 psig @ 70° F (207 Bar @ 21° C)
OPERATING TEMPERATURE RANGE	<i>Dyna-Pak®/Metal stem tip</i> -65° to +450° F (-54° to +232° C) <i>Dyna-Pak®/PCTFE stem tip</i> -20° to +250° F (-29° to +121° C) <i>Graph-Lock®/Metal stem tip</i> -60° to 600° F (-51° to 316° C)
ORIFICE SIZES	0.188" (4.8mm), 0.250" (6.4mm), 0.313" (8.0mm)
Cv FACTORS	0.40 to 1.20

\* Consult factory for other materials

### Features & Benefits

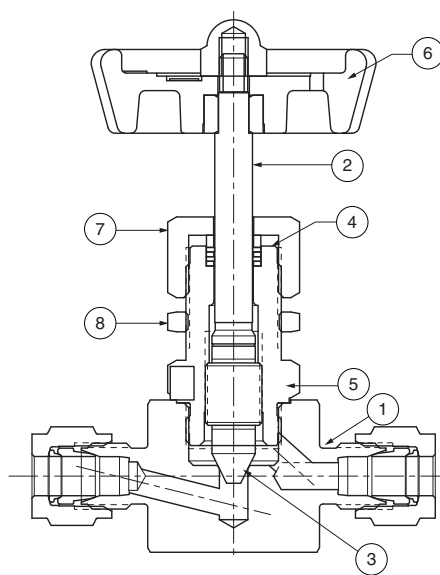
- Safety**
- Back seating provides added sealing protection
  - Lock pin prevents accidental bonnet disengagement
- High pressure capability**
- 316 stainless steel valve maximum working pressure is 6000 psig (414 Bar)
- Extended temperature range**
- Choice of Dyna-Pak® packing or high temperature Graph-Lock® packing
- Versatile**
- Choice of regulating stem tip or metal stem with nonrotating replaceable PCTFE stem tip, with a variety of end connections
- Reliability**
- All valves are tested for bubble-tight leakage at both seat and packing
- Panel mounting**
- Panel mounting is standard on all models
  - Special High Tolerance NPT Thread

needle valves

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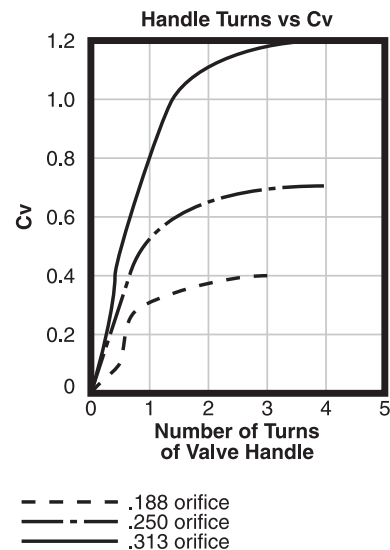
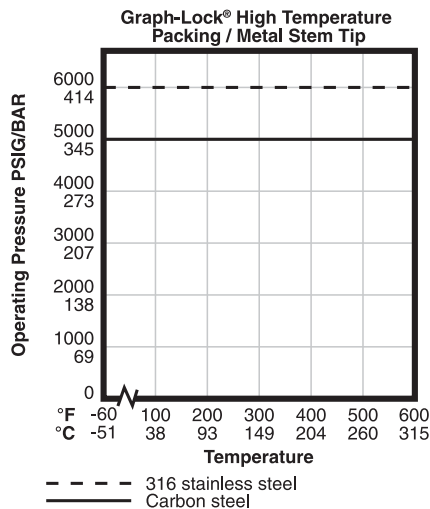
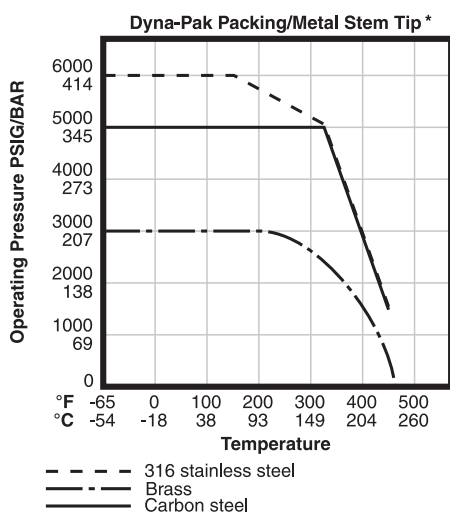
## Materials of Construction

	DESCRIPTION	BRASS	316 STAINLESS STEEL	CARBON STEEL
1	Body	Brass	316 stainless steel	Carbon steel
2	Stem	316 stainless steel	316 stainless steel	Carbon steel
3	Stem tip soft hard	PCTFE 17-4PH stainless steel	PCTFE 17-4PH stainless steel	PCTFE 17-4PH stainless steel
4	Stem packing Dyna-Pak® packing High temperature packing	TFE/brass wafers —	TFE/316 stainless steel wafers Graph-Lock® TFE wafers	TFE/316 stainless steel wafers Graph-Lock® TFE wafers
5	Bonnet Handle	Brass	316 stainless steel	Carbon steel
6	Valve w/Dyna-Pak® packing Valve w/high temperature packing	ABS wheel, black —	ABS wheel, black Aluminum cross, red	ABS wheel, black Aluminum cross, red
7	Packing nut	Brass	316 stainless steel	Carbon steel
8	Panel mounting nut	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass



Regulating stem tip shown

## Pressure vs. Temperature Curves



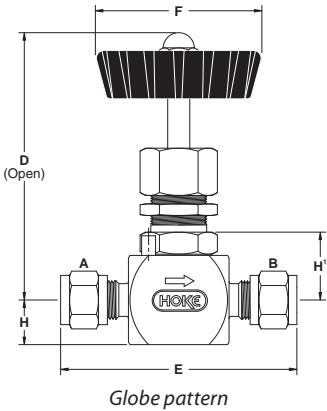
\*Curves for PCTFE stem tip are the same as above but limited to -20° to +250°F (-29° to +121 °C)

# 2100 Series

## Dimensions

### 2100 Series: Globe Pattern

INLET A	OUTLET B	F							
			D	E	HARD SEAT	SOFT SEAT	METAL HANDLE	H	H¹
¼" Gyrolok®	¼" Gyrolok®	inch	3¼	2½ <sub>⁄</sub> ₆	1%	—	—	½	2½ <sub>⁄</sub> ₂
		mm	83	68	48	—	—	13	20
¼" female NPT	¼" female NPT	inch	3¼	2	1%	1%	2%	½	¾
		mm	83	51	48	35	60	13	19
⅜" Gyrolok®	⅜" Gyrolok®	inch	3⅝	2½ <sub>⁄</sub> ₆	1%	1%	—	½	¾
		mm	84	68	48	48	—	13	19
½" Gyrolok®	½" Gyrolok®	inch	3⅝	2⅝	1%	—	—	½	¾
		mm	84	75	48	—	—	13	19
½" male NPT	½" female NPT	inch	3¾	2¾	1%	—	—	⅝	3½ <sub>⁄</sub> ₂
		mm	95	70	48	—	—	16	25
½" female NPT	½" female NPT	inch	3¾	2½	2%	1%	2%	⅝	1⅝
		mm	95	64	60	48	60	16	24

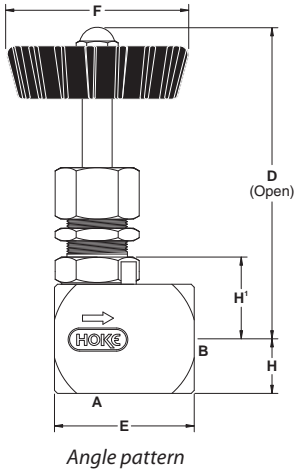


Dimensions for reference only, subject to change.  
\* Use metal handle dimensions for high temperature, 2118 Series valves.

### 2100 Series: Angle Pattern

INLET A	OUTLET B	F						
			D	E	HARD SEAT	SOFT SEAT	H	H <sup>1</sup>
¼" female NPT	¼" female NPT	inch	3⅝	1⅝	1½	1½	⅝	1¾
		mm	84	37	48	35	14	21
⅜" female NPT	⅜" female NPT	inch	3⅝	1½	1½	—	⅝	⅞
		mm	86	38	48	—	16	22

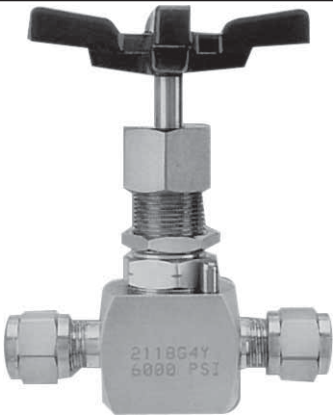
Dimensions for reference only, subject to change.



### Panel mounting dimensions

Panel hole for ½" models = 4¼" (19.4 mm) diameter  
for all other models = 4¼" (16.2 mm) diameter  
Panel thickness = ⅜" (4.7 mm) maximum

## How to Order: Standard Valves



2118G4Y: Globe pattern

### 2100 Series: Globe Pattern

Metal stem tip; Dyna-Pak® packing for service to +450° F (+232° C)

END CONNECTIONS		ORDER BY PART NUMBER			ORIFICE (IN INCHES)	Cv
INLET	OUTLET	BRASS	316 STAINLESS STEEL	CARBON STEEL		
¼" Gyrolok®	¼" Gyrolok®	2112G4B	2112G4Y	—	0.188	0.40
¼" female NPT	¼" female NPT	2112F4B	2112F4Y	2112F4E	0.188	0.40
⅜" Gyrolok®	⅜" Gyrolok®	—	2112G6Y	—	0.250	0.70
⅜" female NPT	⅜" female NPT	2112F6B	2112F6Y	—	0.250	0.70
½" Gyrolok®	½" Gyrolok®	—	2112G8Y	—	0.313	1.20
½" male NPT	½" female NPT	—	2112L8Y	—	0.313	1.20
½" female NPT	½" female NPT	2112F8B	2112F8Y	2112F8E	0.313	1.20

### 2100 Series: Globe Pattern

Metal stem tip; Graph-Lock® high temperature packing for service to +600° F (+316° C)

END CONNECTIONS		ORDER BY PART NUMBER		ORIFICE (IN INCHES)	Cv
INLET	OUTLET	316 STAINLESS STEEL	CARBON STEEL		
¼" Gyrolok®	¼" Gyrolok®	2118G4Y	—	0.188	0.40
¼" female NPT	¼" female NPT	2118F4Y	2118F4E	0.188	0.40
⅜" female NPT	⅜" female NPT	2118F6Y	—	0.250	0.70
½" female NPT	½" female NPT	2118F8Y	2118F8E	0.313	1.20

# 2100 Series



2122F4Y: Angle pattern

## 2100 Series: Globe Pattern

PCTFE stem tip; Dyna-Pak® packing for service to +250° F (+121° C)

END CONNECTIONS		ORDER BY PART NUMBER		ORIFICE (IN INCHES)	Cv
INLET	OUTLET	BRASS	316 STAINLESS STEEL		
¼" female NPT	¼" female NPT	—	2152F4Y	0.188	0.40
½" female NPT	½" female NPT	2152F8B	2152F8Y	0.313	1.20

## 2100 Series: Angle Pattern

Metal stem tip; Dyna-Pak® packing for service to +450° F (+232° C)

END CONNECTIONS		ORDER BY PART NUMBER		ORIFICE (IN INCHES)	Cv
INLET	OUTLET	BRASS	316 STAINLESS STEEL		
¼" female NPT	¼" female NPT	—	2122F4Y	0.188	0.40
¾" female NPT	¾" female NPT	2122F6B	—	0.250	0.70

## Ordering Options

### Spare Parts

Spare parts and repair kits are available for all needle valves. Please contact your distributor for specific information.

### Cleaning and Testing

When ordering, please specify if oxygen cleaning or helium leak testing is required.

### Additional Sizes

Additional sizes and options are available upon special request. Please consult your local HOKE distributor.