# 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** | *Stainless steel*<br>6000 psig @ 70° F (414 Bar @ 21° C)<br>*Carbon steel*<br>5000 psig @ 70° F (345 Bar @ 21° C)<br>*Brass*<br>3000 psig @ 70° F (207 Bar @ 21° C) |
| **OPERATING TEMPERATURE RANGE** | *Dyna-Pak®/Metal stem tip*<br>-65° to +450° F (-54° to +232° C)<br>*Dyna-Pak®/PCTFE stem tip*<br>-20° to +250° F (-29° to +121° C)<br>*Graph-Lock®/Metal stem tip*<br>-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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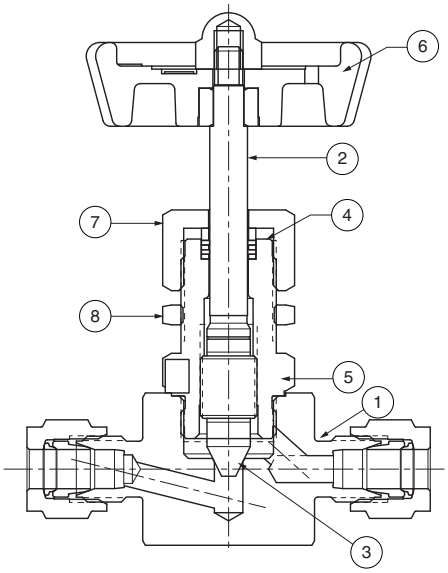
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# 2100 Series

## Materials of Construction

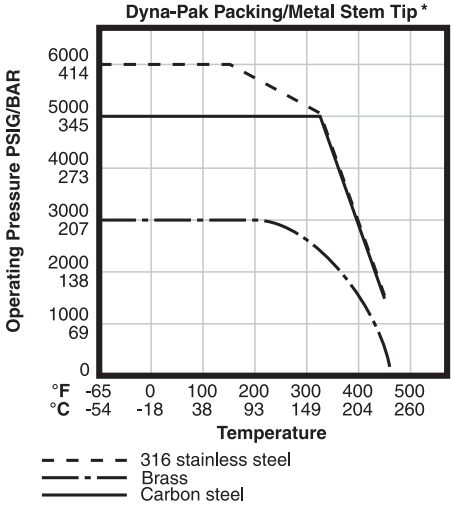
| | DESCRIPTION | BRASS | 316 STAINLESS STEEL | CARBON STEEL |
|---|---|---|---|---|
| 1 | Body | Brass | 316 stainless steel | Carbon steel |
| 2 | Stem | 316 stainless steel | 316 stainless steel | Carbon steel |
| 3 | *Stem tip*<br>soft<br>hard | <br>PCTFE<br>17-4PH stainless steel | <br>PCTFE<br>17-4PH stainless steel | <br>PCTFE<br>17-4PH stainless steel |
| 4 | *Stem packing*<br>Dyna-Pak® packing<br>High temperature packing | <br>TFE/brass wafers<br>— | <br>TFE/316 stainless steel wafers<br>Graph-Lock® TFE wafers | <br>TFE/316 stainless steel wafers<br>Graph-Lock® TFE wafers |
| 5 | Bonnet | Brass | 316 stainless steel | Carbon steel |
| 6 | *Handle*<br>Valve w/Dyna-Pak® packing<br>Valve w/high temperature packing | <br>ABS wheel, black<br>— | <br>ABS wheel, black<br>Aluminum cross, red | <br>ABS wheel, black<br>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 |

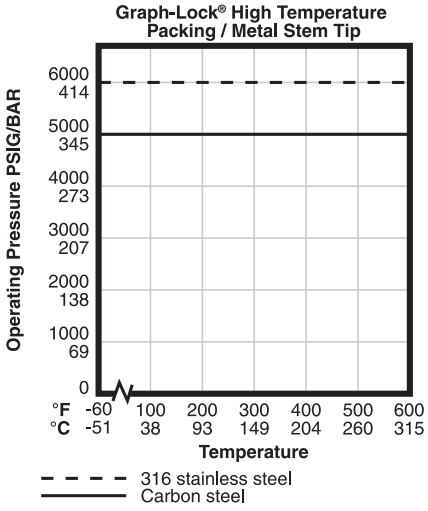
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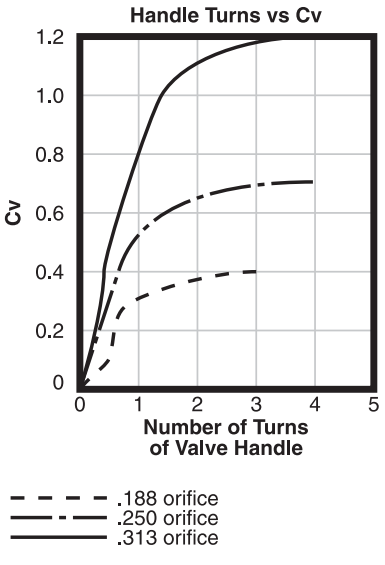



*Regulating stem tip shown*

## Pressure vs. Temperature Curves



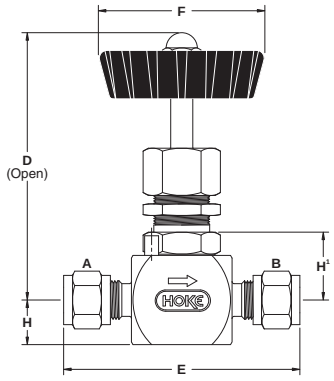

**Curves for PCTFE stem tip are the same as above but limited to -20° to +250°F (-29° to +121 °C)*

# 2100 Series

## Dimensions

### 2100 Series: Globe Pattern

| INLET A | OUTLET B | | D | E | F HARD SEAT | F SOFT SEAT | F METAL HANDLE | H | H[1] |
|---|---|---|---|---|---|---|---|---|---|
| ¼″ Gyrolok® | ¼″ Gyrolok® | inch | 3¼ | 2 1⁄16 | 1⅞ | — | — | ½ | 2 5⁄32 |
| | | mm | 83 | 68 | 48 | — | — | 13 | 20 |
| ¼″ female NPT | ¼″ female NPT | inch | 3¼ | 2 | 1⅞ | 1⅜ | 2⅜ | ½ | ¾ |
| | | mm | 83 | 51 | 48 | 35 | 60 | 13 | 19 |
| ⅜″ Gyrolok® | ⅜″ Gyrolok® | inch | 3 5⁄16 | 2 1⁄16 | 1⅞ | 1⅞ | — | ½ | ¾ |
| | | mm | 84 | 68 | 48 | 48 | — | 13 | 19 |
| ½″ Gyrolok® | ½″ Gyrolok® | inch | 3 5⁄16 | 2 5⁄16 | 1⅞ | — | — | ½ | ¾ |
| | | mm | 84 | 75 | 48 | — | — | 13 | 19 |
| ½″ male NPT | ½″ female NPT | inch | 3¾ | 2¾ | 1⅞ | — | — | ⅝ | 3 1⁄32 |
| | | mm | 95 | 70 | 48 | — | — | 16 | 25 |
| ½″ female NPT | ½″ female NPT | inch | 3¾ | 2½ | 2⅜ | 1⅞ | 2⅜ | ⅝ | 1 5⁄16 |
| | | mm | 95 | 64 | 60 | 48 | 60 | 16 | 24 |



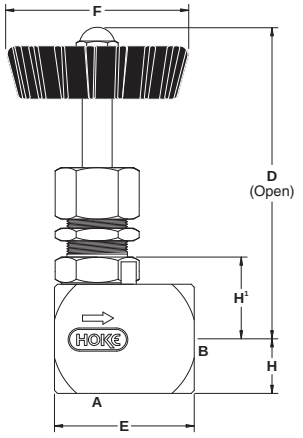
*Globe pattern*

*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 | | D | E | F HARD SEAT | F SOFT SEAT | H | H[1] |
|---|---|---|---|---|---|---|---|---|
| ¼″ female NPT | ¼″ female NPT | inch | 3 5⁄16 | 1 7⁄16 | 1⅞ | 1⅜ | 9⁄16 | 1 3⁄16 |
| | | mm | 84 | 37 | 48 | 35 | 14 | 21 |
| ⅜″ female NPT | ⅜″ female NPT | inch | 3⅜ | 1½ | 1⅞ | — | ⅝ | ⅞ |
| | | mm | 86 | 38 | 48 | — | 16 | 22 |

*Dimensions for reference only, subject to change.*

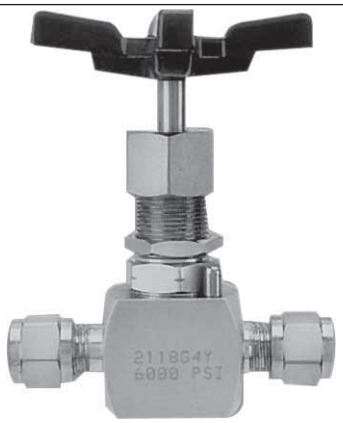


*Angle pattern*

**Panel mounting dimensions**

Panel hole for ½″ models = 4 9⁄64″ (19.4 mm) diameter
for all other models = 4 1⁄64″ (16.2 mm) diameter
Panel thickness = 3⁄16″ (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 INLET | END CONNECTIONS OUTLET | ORDER BY PART NUMBER BRASS | ORDER BY PART NUMBER 316 STAINLESS STEEL | ORDER BY PART NUMBER CARBON STEEL | ORIFICE (IN INCHES) | Cv |
|---|---|---|---|---|---|---|
| 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 INLET | END CONNECTIONS OUTLET | ORDER BY PART NUMBER 316 STAINLESS STEEL | ORDER BY PART NUMBER CARBON STEEL | ORIFICE (IN INCHES) | Cv |
|---|---|---|---|---|---|
| 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 |



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# 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 | |
|---|---|---|---|---|---|
| INLET | OUTLET | BRASS | 316 STAINLESS STEEL | (IN INCHES) | Cv |
| 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 | |
|---|---|---|---|---|---|
| INLET | OUTLET | BRASS | 316 STAINLESS STEEL | (IN INCHES) | Cv |
| ¼″ female NPT | ¼″ female NPT | — | 2122F4Y | 0.188 | 0.40 |
| ⅜″ female NPT | ⅜″ 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.

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