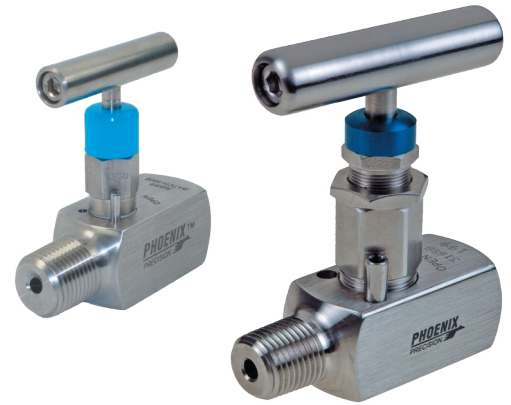


## SOFT SEAT NEEDLE VALVE

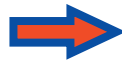
### 3/16", 1/4" and 3/8" Bore Soft Seat Valve

Soft seat needle valves are designed for use with various instrumentation equipment and can be installed to control, isolate, measure, calibrate, equalize, drain or vent the pressure of gases and liquids. Phoenix's roddable needle valves are of bar stock construction and are available in various materials, sizes, sealing styles, end connections and stem types. The main features of Phoenix needle valves are robust stems, tapered stem tips, bubble tight seals and pinned bonnets with packing below the threads to prevent process contamination.

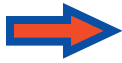


### Standard Features

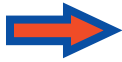
Hydrotested at 150% of rated pressure (shell test). Nitrogen gas tested to 2000 psi.



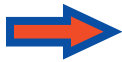
Seat tightness (zero leakage) verified to 110% of rated pressure. Nitrogen gas tested to 2000 psi.



Packing below stem threads



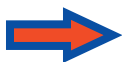
Metal body-to-bonnet seals are in compression, not tension



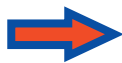
Stem threads are rolled, not cut



8 RMS stem finish



V-Style Teflon™ packing



Pressure component materials sourced from the US, Canada or Europe



### Benefits

Complies with ASME B31.1 & B31.3 shell testing procedures as standard. Ensures structural integrity of valve.

Complies with ASME B31.1 & B31.3 seat testing procedures as standard. Ensures zero leakage at seats for proper calibration.

Prevents corrosion of critical stem threads

Mitigates risk of stress cracking

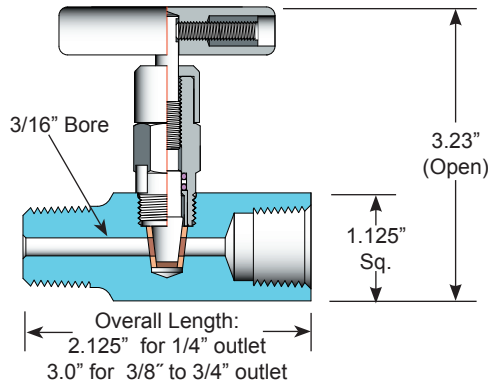
Higher quality stem for longer service life

Extended packing life

30-40% less operational torque and less frequent packing adjustments than traditional Teflon™ packed valves

Reliable material traceability. MTR's provided with every order for pressure containing components.

### P3N6S Assembly

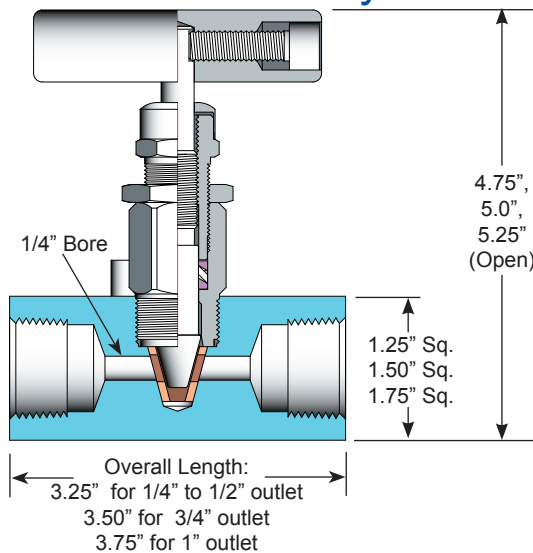


#### Specifications:

Type: **P3N6S** Valve, Roddable Pattern  
 Rating: Up to 6000 psi @ 100°F (41370 kPa @ 38°C)  
 Stem: Tapered Plug Tip  
 Packing: Viton<sup>™</sup>, Aflas<sup>™</sup> O-ring or Teflon<sup>™</sup>  
 Seat: Delrin<sup>™</sup>  
 Handle: Removable  
 Bore Size: 3/16"  
 Inlet Connections: 1/4" to 1/2" NPT, 3/4" for Male NPT Only)  
 Outlet Connections: 1/4" to 1/2" NPT  
 Bonnet Lock: Pin or Plate  
 Body Stock: 1.125" square  
 Weight: 0.9 - 1.0 lbs  
 Special Service: O<sub>2</sub> or CL cleaning available\*

\*Other specifications or services may be available.

### P4N6S Assembly

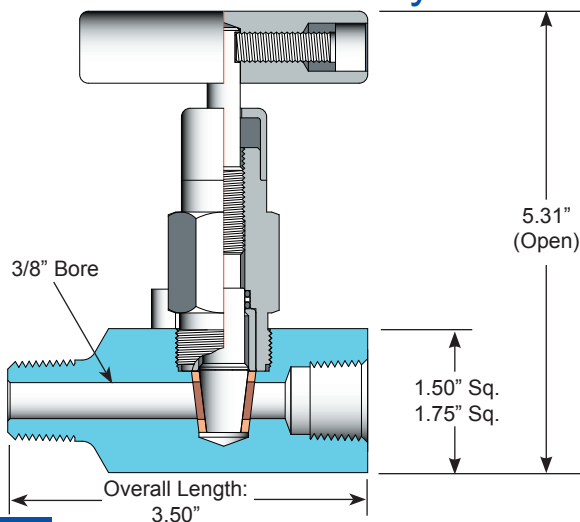


#### Specifications:

Type: **P4N6S** Valve, Roddable Pattern  
 Rating: Up to 6000 psi @ 100°F (41370 kPa @ 38°C)  
 Stem: Tapered Plug Tip  
 Packing: Viton<sup>™</sup>, Aflas<sup>™</sup> O-ring or Teflon<sup>™</sup>  
 Seat: Delrin<sup>™</sup>  
 Handle: Removable  
 Bore Size: 1/4"  
 Inlet Connections: 1/4" to 1/2", 3/4", 1" NPT  
 Outlet Connections: 1/4" to 1/2", 3/4", 1" NPT  
 Bonnet Lock: Pin or Plate  
 Body Stock: 1.25", 1.50" or 1.75" square  
 Weight: 1.5 - 1.6 lbs  
 Special Service: O<sub>2</sub> or CL cleaning available\*

\*Other specifications or services may be available.

### P6N6S Assembly

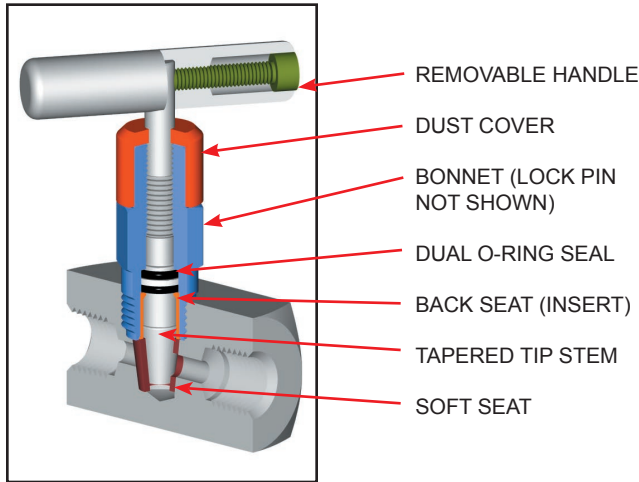


#### Specifications:

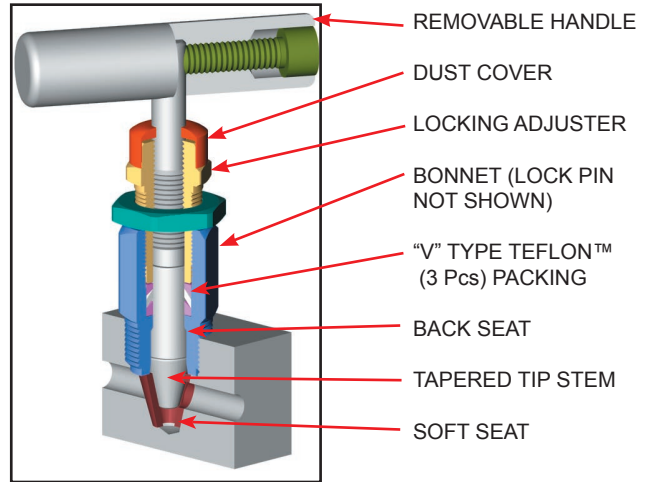
Type: **P6N6S** Valve, Roddable Pattern  
 Rating: Up to 6000 psi @ 100°F (41370 kPa @ 38°C)  
 Stem: Non-rotating Tapered Plug Tip  
 Packing: Viton<sup>™</sup>, Aflas<sup>™</sup> O-ring or Teflon<sup>™</sup>  
 Seat: Delrin<sup>™</sup>, Tefzel<sup>™</sup> (2000 psi Rating)  
 Handle: Removable  
 Bore Size: 3/8"  
 Inlet Connections: 1/2" to 3/4" NPT, 1" for Male NPT Only)  
 Outlet Connections: 1/2" to 3/4" NPT  
 Bonnet Lock: Pin or Plate  
 Body Stock: 1.50" square  
 Weight: 1.9 - 2.1 lbs  
 Special Service: O<sub>2</sub> or CL cleaning available\*

\*Other specifications or services may be available.

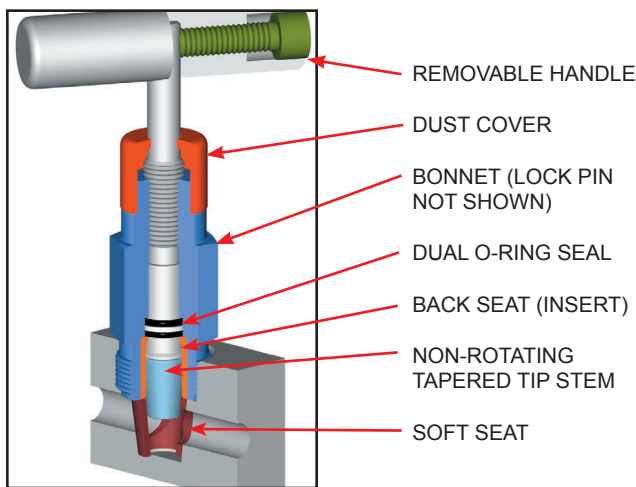
### 3/16" Bonnet Assembly



### 1/4" Bonnet Assembly



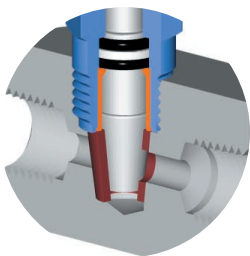
### 3/8" Bonnet Assembly



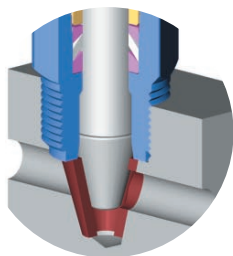
#### Materials of Construction

Code	SS	SC	CS
Body	ASTM A182 316SS	ASTM A105 CS	ASTM A108 CS
Bonnet	ASTM A182 316SS	ASTM A182 316SS	ASTM A108 CS
Stem	ASTM A182 316SS	ASTM A182 316SS	ASTM A582 303SS
Adjuster	ASTM A582 303SS	ASTM A582 303SS	ASTM A108 CS
Insert	ASTM A182 316SS	ASTM A182 316SS	ASTM A108 CS
Handle	ASTM A582 303SS	ASTM A582 303SS	ASTM A108 CS

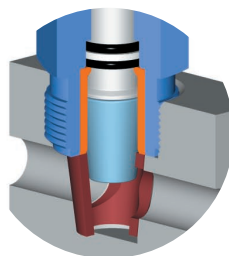
### Stem and Seat Configurations



3/16" Bore

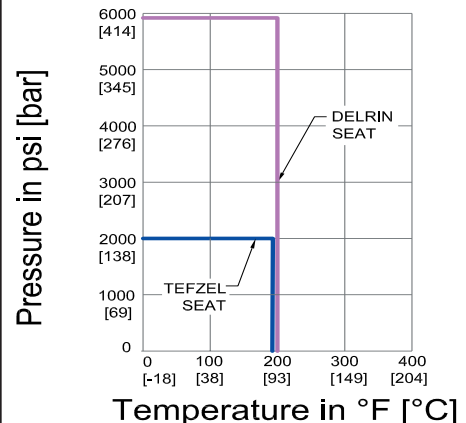


1/4" Bore



3/8" Bore

#### Pressure vs. Temperature Chart 6000 psi (Soft Seat)



Note: Packing material ratings based on manufacturer's specifications. Approximations only. Phoenix does not represent these values as finite. They are provided only as representative values.

Phoenix	Orifice Size	Type	Inlet Size	Inlet Type	Outlet Size	Outlet Type	Material	Packing	Seat	Stem Tip	Option Codes	Description
P	3=3/16"	N6S	4=1/4" (P3, P4 Only)	F=FNPT	4=1/4" (P3, P4 Only)	F=FNPT	SS=ASTM A182 316/316L	A=Aflas <sup>TM</sup>	D=Delrin <sup>TM</sup>	Tapered Plug Tip Standard (leave blank)	LB	Bonnet Lock
	4=1/4"	NA6H= Angle Body	6=3/8" (P3, P4) Only	M=MNPT	6=3/8" (P3, P4) Only	M=MNPT	SC=ASTM A105 CS*	V=Viton <sup>TM</sup> (FKM)	Z= Tefzel <sup>TM</sup> (P6 Only)		CC	Chlorine Clean
	6=3/8"		8=1/2"		8=1/2"		CS=ASTM A108 CS*	T=Teflon <sup>TM</sup> (PTFE)			OC	Oxygen Clean
			12=3/4" (Male only)		12=3/4"		C5=ASTM A350 LF2				TG	SS Tag
			16=1" (Male only)				N4=Monel <sup>TM</sup> 400				SGL	Sour Gas ISO NACE Latest Rev.
							N6=Inconel <sup>TM</sup> 625				RA (R)(B)	Round Handle Aluminum (Red) (Blue) (P3 Only)
							N8=Inconel <sup>TM</sup> 825				RC	Round Handle C.S. (P3 Only)
							N2=Hastelloy <sup>TM</sup> C276				RS	Round Handle S.S. (P3 Only)
EXAMPLE: P3N6S4M4FCVS = Phoenix, 3/16" Orifice, N6S, 1/4" MNPT Inlet, 1/4" FNPT Outlet, A108 CS Body, FKM Packing, Delrin <sup>TM</sup> Seat, Tapered Plug Tip Stem												
<b>P</b>	<b>3</b>	<b>N6S</b>	<b>4</b>	<b>M</b>	<b>4</b>	<b>F</b>	<b>CS</b>	<b>V</b>	<b>D</b>		PM	Panel Mount
*For code applications, A108 CS is unacceptable, A105 CS must be selected for CS valves.												
											N4	Monel <sup>TM</sup> 400 Stem
											N5	Monel <sup>TM</sup> 500 Stem
											N6	Inconel <sup>TM</sup> 625 Stem
											N8	Inconel <sup>TM</sup> 825 Stem
											N2	Hastelloy <sup>TM</sup> C276 Stem

**Use with Confidence, Phoenix Precision Products Meet the Following Specifications:**

- ✓ ASME B31.1 Power Piping
- ✓ ASME B31.3 Process Piping
- ✓ ASME B16.34 Valves - Flanged, Thread, and Welding End
- ✓ API 598 Valve Inspection and Testing
- ✓ MSS SP-25 Standard Marking Systems for Valves, Fittings and Flange Unions
- ✓ MSS SP-99 Instrument Valves
- ✓ MSS SP-105 Instrument Valves for Code Applications
- ✓ NACE MR0175 for all 316SS valves and A105CS body/316SS bonnet (SC Material Code)

**Seal and Seat Material Temperature Rating**

Code	Description	MIN. TEMP	MAX. TEMP
A	Aflas <sup>TM</sup>	15°F (-10°C)	400°F (204°C)
V	Viton <sup>TM</sup>	-20°F (-29°C)	400°F (204°C)
T	Teflon <sup>TM</sup>	-65°F (-54°C)	450°F (232°C)
D	Delrin <sup>TM</sup>	-40°F (-40°C)	200°F (93°C)
Z	Tefzel <sup>TM</sup>	-300°F (-185°C)	300°F (150°C)

**For further information please contact:**



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