

Phoenix Precision's N6S soft seated needle valves are designed for both the engineer and the instrumentation technician. For applications where optimum flow, bi-directional capability, or a fully roddable design is required, the soft seat gives maximum repeatability, and the replacement of the seat, if necessary, is both easy and economical. The bonnet is pinned for safety, and the large handles with rounded corners are designed for ease of operation. The N6S is available in an O-ring stem seal design or with a packed bonnet, along with a variety of seat materials to meet most applications. As with all Phoenix valves, the packing is below the threads to prevent process contamination and corrosion. All Phoenix valves are built and tested in accordance with MSS SP105, which includes hydrostatic testing of the body at 150% rated pressure, seat leakage test of 110% rated pressure, and material test reports on body, bonnet, and stem as standard.

Phoenix Precision has taken the guess work out of specifying valves. Phoenix Precision valves are designed and tested to meet or exceed the specifications below:

- ▶ ASME B31.1 Power Piping
- ▶ ASME B31.3 Process Piping
- ▶ MSS SP-61 & ASME B16.34
- ▶ API 598 Valve Inspection and Testing
- ▶ MSS-SP105 Instrument Valves for Code Applications
- ▶ MSS-SP99 Instrument Valves
- ▶ MSS-SP25 Standard Marking Systems for Valves, Fittings, and Flange Unions
- ▶ NACE MR0175/ISO 15156 for all 316SS valves and A105CS body/316SS bonnet (SC-Material Code) valves in services with less than 50 ppm of chlorides

- ▶ ISO 9001:2000(E) Certified
- ▶ ABSA Design Registered CRN# 0C06740.2

- ▶ All valve assemblies are hydrotested at 150% of rated pressure as standard (shell test)
- ▶ All valves assemblies pass a seat leakage test at 110% of rated pressure as standard (seat test)
- ▶ MTR's on body, bonnet, and stem as standard
- ▶ All pressure component materials are sourced from U.S., Canada or Europe
- ▶ All packing below stem threads to prevent corrosion and contamination
- ▶ Metal body to bonnet seals are in compression not tension
- ▶ Back-seating to prevent stem blowout and provide a metal to metal secondary stem seal in full open position
- ▶ All stem threads are rolled for superior strength and to prevent galling
- ▶ O-ring stem seals come with additional Teflon™ top and bottom back-up rings
- ▶ Dust cap prevents lubricant washout and keeps contaminants out of bonnet assembly

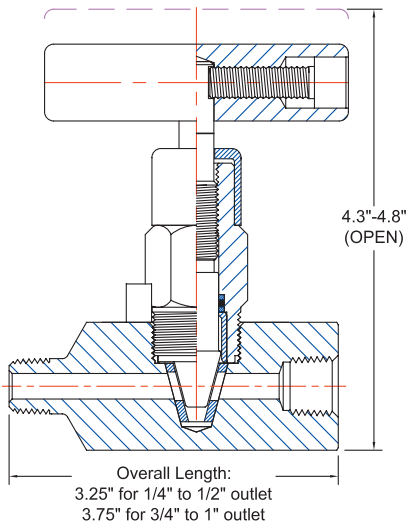


N6S™ SOFT SEAT
O-ring Bonnet



N6S™ SOFT SEAT
Packed Bonnet

O-ring Bonnet Valve



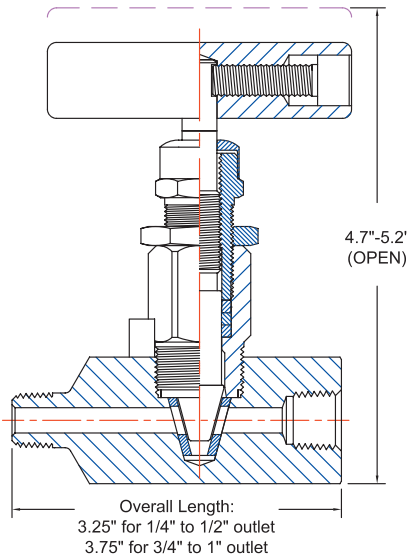
Specifications:

Type: Standard valve, Soft Seat
 Flow: Straight through
 Rating: up to 6000 psi @ 100°F
 (41370 kPa @ 38°C)
 Stem: Needle tip or Non-rotating
 Packing: FKM or AflasTM O-ring
 Seat: Soft (DelrinTM, PeekTM or Kel-fTM)
 Handle: Removable
 Bore Size: 3/16", 1/4" and 3/8"
 Inlet Connections: 1/4" to 1" NPT
 Outlet Connections: 1/4" to 1"
 Bonnet Lock: Pin or Plate
 Body Stock: 1.25" sq. to 1.75" sq.
 Weight: 1.5 - 3.0 lbs
 Special Service: O₂ or CL cleaning available*
 *Other specifications or services may be available.

Materials of Construction

CODE	SS	SC	CS
Body	ASTM A182 316SS	ASTM A105CS	ASTM A108CS
Bonnet	ASTM A182 316SS	ASTM A182 316SS	ASTM A108CS
Stem	ASTM A182 316SS	ASTM A182 316SS	ASTM A582 303SS
Insert	ASTM A182 316SS	ASTM A182 316SS	ASTM A108CS
Handle	ASTM A582 303SS	ASTM A582 303SS	ASTM A108CS

Packed Bonnet Valve



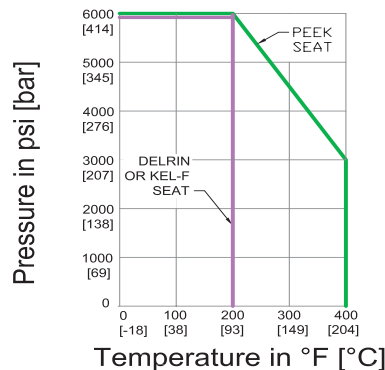
Specifications:

Type: Standard valve, Soft Seat
 Flow: Straight through
 Rating: up to 6000 psi @ 100°F
 (41370 kPa @ 38°C)
 Stem: Needle tip or Non-rotating
 Packing: PTFE
 Seat: Soft (DelrinTM, PeekTM or Kel-fTM)
 Handle: Removable
 Bore Size: 3/16", 1/4" and 3/8"
 Inlet Connections: 1/4" to 1" NPT
 Outlet Connections: 1/4" to 1"
 Bonnet Lock: Pin or Plate
 Body Stock: 1.25" sq. to 1.75" sq.
 Weight: 1.6 - 3.0 lbs
 Special Service: O₂ or CL cleaning available*
 *Other specifications or services may be available.

Materials of Construction

CODE	SS	SC	CS
Body	ASTM A182 316SS	ASTM A105CS	ASTM A108CS
Bonnet	ASTM A182 316SS	ASTM A182 316SS	ASTM A108CS
Stem	ASTM A182 316SS	ASTM A182 316SS	ASTM A582 303SS
Adjuster	ASTM A582 303SS	ASTM A582 303SS	ASTM A108CS
Insert	ASTM A182 316SS	ASTM A182 316SS	ASTM A108CS
Handle	ASTM A582 303SS	ASTM A582 303SS	ASTM A108CS

Pressure vs. Temperature Chart 6000 psi (Soft Seat)



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

MODEL NUMBERING SYSTEM

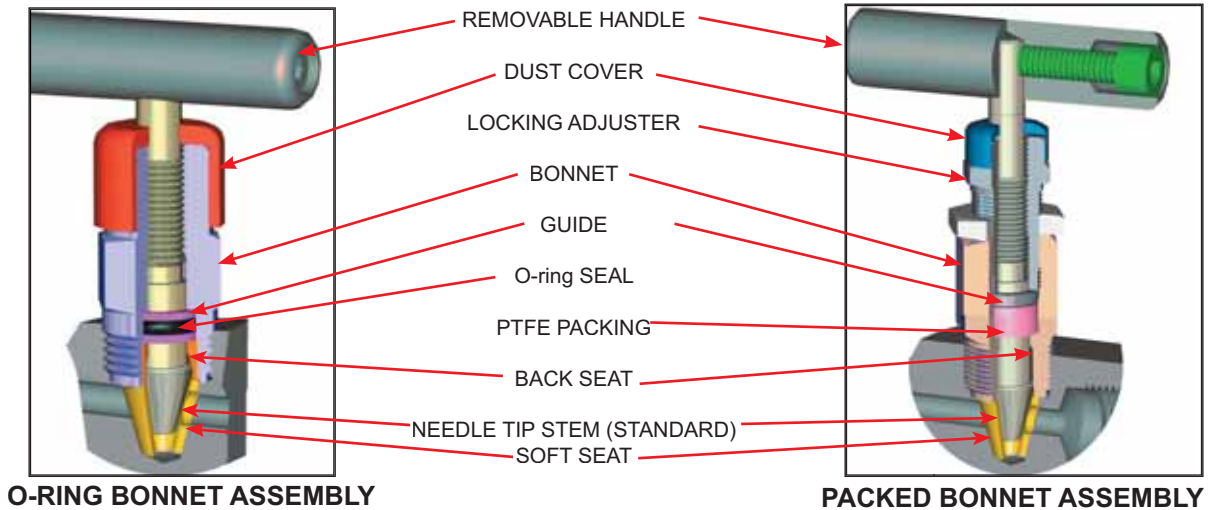
Phoenix	Orifice Size	Type	Inlet Size	Inlet Type	Outlet Size	Outlet Type	Material	Packing	Seat	Stem Tip
P	3=3/16"	N6S	4=1/4"	F=FNPT	4=1/4"	F=FNPT	SS=ASTM A182 316/316L	A=Aflas™	D=Delrin™	Needle Tip Standard (leave blank)
	4=1/4"		6=3/8"	M=MNPT	6=3/8"	M=MNPT	SC=ASTM A105 CS**	V=FKM	P=Peek™	NR= Non-Rotating Needle Tip
	6=3/8"		8=1/2"	MS*=Male Socketweld	8=1/2"	MS*=Male Socketweld	CS=ASTM A108 CS**	T=PTFE	K=Kel-F™	
			12=3/4"	FS*=Female Socketweld	12=3/4"	FS*=Female Socketweld	C5=ASTM A350 LF2			
			16=1"	FT=Female Tube Fitting	16=1"	FT=Female Tube Fitting	N4=Monel™ 400			
							N6=Inconel™ 625			
							N8=Inconel™ 825			
							N2=Hastelloy™ C276			
EXAMPLE: P4N6S4M4FCSTD = 1/4" Orifice, 1/4" MNPT Inlet, 1/4" FNPT Outlet, A108CS Body, PTFE Packing, Delrin™ Seat, Needle Tip Stem										
P	4	N6S	4	M	4	F	CS	T	D	
*For socket weld (SW) connections, specify MS or FS. **For code applications, A108 CS is unacceptable, A105 CS must be selected for CS valves.										

OPTION CODES	DESCRIPTION
LB	Bonnet Lock
CC	Chlorine Clean
OC	Oxygen Clean
TG	SS Tag
SGI	Sour Gas ISO NACE Latest Rev.
PM	Panel Mount
N4	Monel™ 400 Stem
N5	Monel™ 500 Stem
N6	Inconel™ 625 Stem
N8	Inconel™ 825 Stem
N2	Hastelloy™ C276 Stem

SEAL & SEAT MATERIAL TEMPERATURE RATING

Code	Description	MIN. TEMP	MAX. TEMP
A	Aflas™	15°F (-10°C)	400°F (204°C)
V	FKM	-20°F (-29°C)	400°F (204°C)
T	PTFE	-65°F (-54°C)	450°F (232°C)
D	Delrin™	-40°F (-40°C)	200°F (93°C)
P	Peek™	-40°F (-40°C)	400°F (204°C)
K	Kel-F™	-100°F (-73°C)	200°F (93°C)

BONNET AND STEM DESIGN DETAILS



For further information please contact:

Phoenix Precision Ltd.
2620 21st Street N.E.
Calgary, Alberta T2E 7L3
Phone:(403) 291-3154
Fax: (403) 291-3292
email: phoenix@phoenixprecision.ca
www.phoenixprecision.ca

Distributor:



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