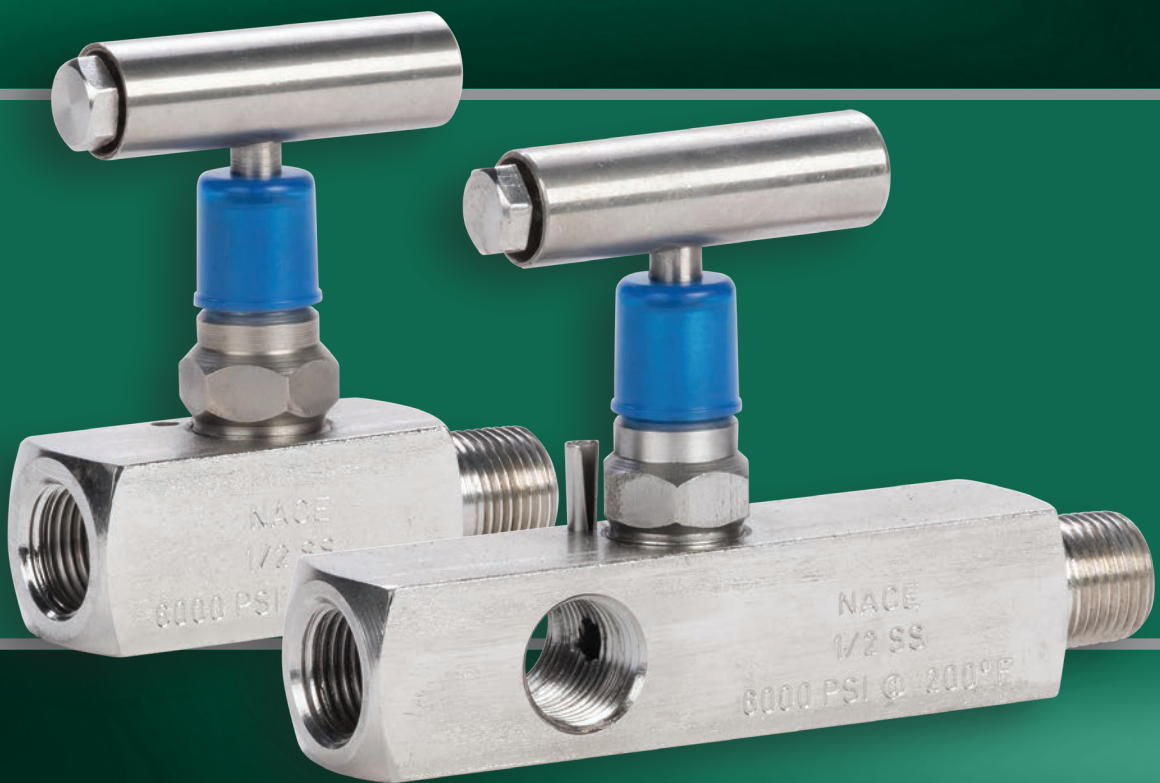# TULSA VALVE

NEEDLE & GAUGE VALVES

FIELD PROVEN VALVES PROVIDING YEARS OF COST EFFECTIVE, EFFICIENT, SAFE AND RELIABLE SERVICE.

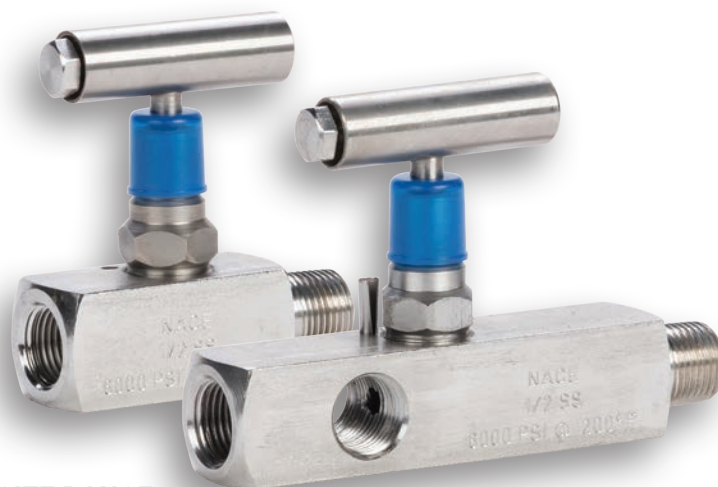# NEEDLE & GAUGE VALVES

DESCRIPTION

Needle & Gauge valves from Tulsa Valve are the result of comprehensive engineering, precision manufacturing and exhaustive inspection and testing

FEATURES

Designed to alleviate problems with:

- Internal contamination
- Bonnet and stem blow-out
- Seat failure and leakage
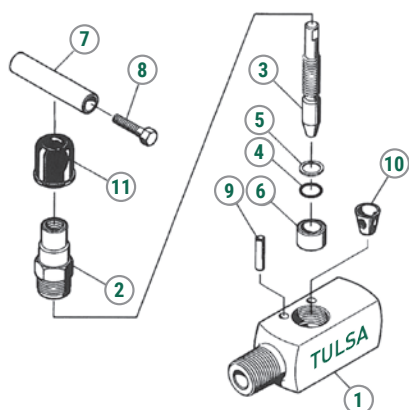- Steam wear and shortened service life

SIZE RANGE

- ¼", ½", ¾", and 1"
- Pressure ratings 6,000 and 10,000 psi.
- Carbon Steel and 316 Stainless Steel
- NACE*

*NACE Valves- Sour Gas Valve Assembly - Valves are manufactured of 316SS. All parts RC 22 or I ess to meet NACE MR-01-75 standards. Working pressures same as standard valves

ISO 9001:2000 Certified
Certificate No. C2007-01814

PARTS AND MATERIALS

INDEX	DESCRIPTION	MATERIALS	
		Carbon Steel	**Stainless Steel NACE***
1	Body	AISI 1215 or 12L14	316 Stainless (or CF8M)
2	Bonnet	AISI 1215 or 12L14	316 Stainless
3	Stem	316 Stainless (or CF8M)	
4	Stem Seal	Viton	
5	Stem Seal Back-Up Ring	Viton	
6	Sleeve	AISI 1215 or 12L14	316 Stainless
7	Handle	AISI 1215 or 12L14	303 Stainless
8	Handle Screw	Carbon Steel	18-8 Stainless
9	Bonnet Locking Pin	Spring Steel	18-8 Stainless
10	Seat (soft seat only)	Nylon	
11	Boat	Polyethylene	

HARD SEATED NEEDLE VALVE
Maximum Working Pressure vs. Temperature

Viton Stem Seal

Working Pressure - PSI (y-axis: 0 to 10,000)
Temperature - F° (x-axis: 0 to 400)
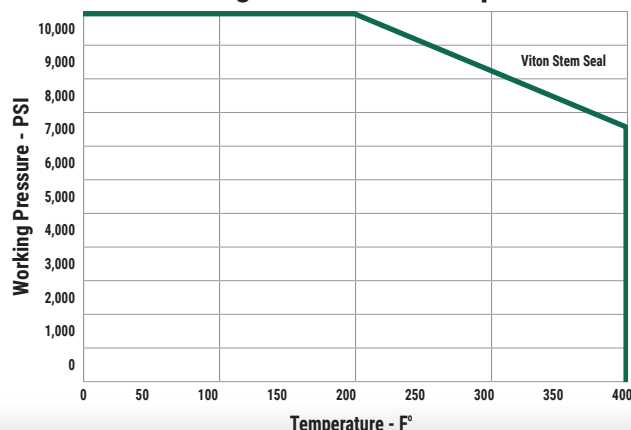
RATINGS
Soft Seat: 6,000 psi @ 200° F Max
Hard Seat: See chart at left
High Temperature Packing: Viton is standard material in all valves

FLOW COEFFICIENT
Method of Calculating Flow: the flow Coefficient "CV" of a valve is the flow rate of water (gallons/minute) through a fully opened valve, with a pressure drop of 1 psi across the valve. To find the flow of liquid through the valve from the flow coefficient (CV), use the following formula:

$$QL = CV \sqrt{\frac{\triangle P}{G}}$$

QL = flow rate of liquid (gal./min.)
P = differential pressure across the valve (psi)
G = specific gravity of liquid (for water, G = 1)

To find the flow of gas through a flags through a valve, use the following formula:

$$0g = 61\ DV \sqrt{\frac{\triangle P}{G}}$$

{ For nautical flow $\frac{\triangle P}{F_2}$ less than 1.0 }

0g - flow rate of gas (CFM at SIP)
F_2 outlet pressure (psi)
g = Specific gravity of gas; g air = 1,000

PART NUMBERS & ENGINEERING DATA

SERIES 102 AND 102N
### SOFT SEAT
RATING: 6,000 WOG AT 200°F

CONSTRUCTION: Heavy duty barstock body, precision threaded bonnet with bonnet locking pin, back seat stem design, G-ring stem seal, Nylon replaceable soft seat.
END TO END: Standard Male x Female
END THREADS: ASME B1.20.1
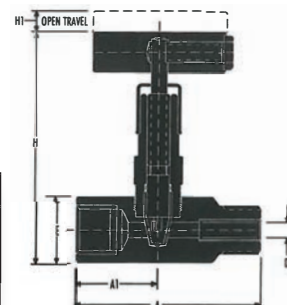
DIMENSIONS / SPECIFICATIONS									
Valve Size	Carbon Steel 102 Series Part #	Stainless Steel 102N Series Part #	WT	A	A1	H	H1	D	E
1/4"	102-145	102N-145	1.53	3.38	1.44	3.93	0.3	0.25	1.13
1/2"	102-125	102N-125	1.53	3.38	1.44	3.93	0.3	0.25	1.13
3/4"	102-345	102N-345	6.4	5.5	2.13	5.38	0.55	0.44	2
1"	102-105	102N-105	6.4	5.5	2.13	5.38	0.55	0.44	2

## SERIES 101 AND 101N
HARD SEAT
RATING: 10,000 WOG AT 200°F

CONSTRUCTION: Heavy duty barstock body, precision threaded bonnet with bonnet locking pin, back seat stem design, O-ring stem seal, metal-to-metal stem seating.
END TO END: Standard Male x Female
END THREADS: ASME B1.20.1
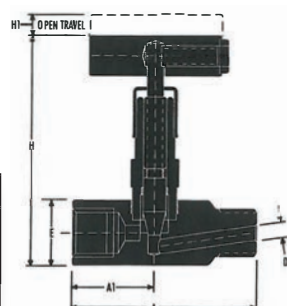
DIMENSIONS / SPECIFICATIONS									
Valve Size	Carbon Steel 101 Series Part #	Stainless Steel 101N Series Part #	WT	A	A1	H	H1	D	E
1/4"	101-145	101N-145	1.53	3.38	1.44	4	0.3	0.25	1.13
1/2"	101-125	101N-125	1.53	3.38	1.44	4	0.3	0.25	1.13
3/4"	101-345	101N-345	1.55	3.38	1.44	5.45	0.3	0.25	1.13
1"	101-105	101N-105	6.4	5.5	2.13	5.45	0.55	0.44	2

SERIES 104 AND 104N
SOFT SEAT
**RATING: 6,000 WOG AT 200°F**

CONSTRUCTION: Heavy duty barstock body, precision threaded bonnet with bonnet locking pin, bock seat stem design, O-ring stem seal, Nylon replaceable soft seat.
END TO END: Standard Male x 3 Female
END THREADS: ASME B1.20.1
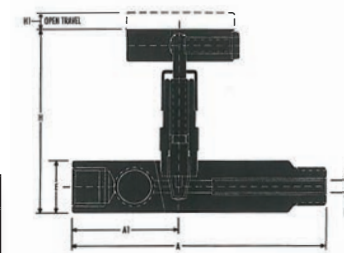
DIMENSIONS / SPECIFICATIONS									
Valve Size	Carbon Steel 104 Series Part #	Stainless Steel 104N Series Part #	WT	A	A1	H	H1	D	E
1/2"	104-125	104N-125	2.29	5.56	2.38	3.93	0.3	0.25	1.13

SERIES 103 AND 103N
HARD SEAT
RATING: 10,000 WOG AT 200°F

CONSTRUCTION: Heavy duty barstock body, precision threaded bonnet with bonnet locking pin, back seat stem design, O-ring stem seal, metal-metal stem seating.
END TO END: Standard Male x 3 Female
END THREADS: ASME B1.20.1
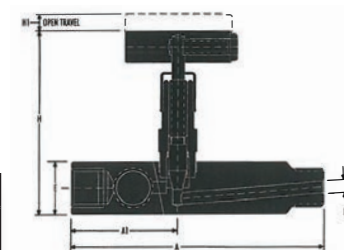
DIMENSIONS / SPECIFICATIONS									
Valve Size	Carbon Steel 103 Series Part #	Stainless Steel 103N Series Part #	WT	A	A1	H	H1	D	E
1/2"	103-125	103N-125	2.29	5.56	2.38	4	0.25	0.25	1.13

TULSA VALVE

LEADERS IN THE VALVE INDUSTRY

Tulsa Valve is a USA based OEM for a wide range of commonly used valves. The increasing demands to design valves that are more efficient, along with ease of operation, have put Tulsa Valve into a leading position in the industry.

GUARANTEED AGAINST DEFECTS

Tulsa Valve products are guaranteed against defects of material workmanship for One (1) Year from date of invoice provided such products are used normally and within the service and pressure range for which they were manufactured. This guarantee is limited to the repair, replacement or repayment of purchase price. Under no conditions will Tulsa Valve be liable for claim of labor for removal, repair or replacement of Tulsa Valve products, or any other consequential damage.

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