

NEEDLE VALVES



- Sizes: 1/4" to 1"
- Pressure Ratings: 6,000 PSI, 10,000 PSI, 15,000 PSI
- NPT, ISO/BSP, Threads
- Stainless Steel (316L, 316, 304, 304L), Monel K400, Monel K500
NACE MR-01-75 & NACE MR-01-03

NEEDLE VALVES

TVI Needle valves have a slender, tapered point at the end of the valve stem that is lowered through the seat to restrict or block flow. Fluid flowing through the Needle valve turns 90 degrees and passes through an orifice that is the seat for a rod with a cone shaped tip. Needle valves are widely used to accurately regulate the flow of liquids and gases at low flow rates. The fine threading of the stem and the large seat area allow for precise resistance to flow. Needle valves are used to control flow into delicate gauges, which might be damaged by sudden surges of fluid under pressure. Needle valves are also used in situations where the flow must be gradually brought to a halt, and at other points where precise adjustments of flow are necessary or where a small flow rate is desired. They can be used as both on/off valves and for throttling service.

TVI Needle valves are often designed with a metal needle (generally brass, bronze, or stainless or other alloys of steel) and an elastomeric seat (generally PVC, CPVC, PTFE, or a wide range of brand name plastics and thermoplastics). While this is the most common form, valves are available that have metal - metal, plastic - plastic, or plastic- metal needles and seats. These variations are usually designed with specific applications in mind, especially situations where corrosion, high or low temperatures or extensive wear are possible. In such cases, it is best to consult with the manufacturer to find which type of valve is best for the application at hand.

TVI Needle valves are used in almost every industry in an incredibly wide range of applications - anywhere control or metering of steam, air, gas, oil, water or other non-viscous liquids is required. They can be found in every industry from aerospace to zoological sciences, every service from gas and liquid dispensation to instrumentation control and cooling to power generation. However, Needle valves should be avoided in applications where the media is viscous, or in the dispensation of slurries. The small flow orifice can easily trap thick materials or solids and become blocked.

TVI Brand Make Needle valves are available in materials like - Steel, Stainless Steel, Brass, Monel , & various Alloy & Non Alloy steel.

Features

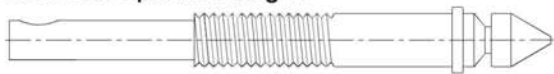
- Materials include high tensile type 316 stainless steel.
- The location of packing is under the thread of valve stem.
- Non-rotating stem and bar stock body design.
- Easy to assemble and replace packing.
- PTFE encapsulated packing provides dependable stem and body sealing.
- Bonnet lock pin to prevent accidental loosening.
- Dust caps are fitted to contain stem lubricant and prevent the ingress of contaminants.
- One piece bonnet with a metal to metal seal to the valve body below the bonnet threads.
- All bonnets are assembled with a locking pin to prevent accidental removal while in service.
- The stem threads are rolled and lubricated to prevent galling and reduce operating torque.
- Panel mounting options available.
- Variety of end configurations includes PMT Tube Fittings, Male/Female NPT, BSPT, BSPP pipe and tube socket weld connections
- Hardened Stem Tip
- Flow Coefficients (Cv) From 0.31 to 1.40
- Orifice Size : 0.138" (3.5mm) to 0.250" (6.4mm)
- Every valves is factory tested.

Formulas

Liquids	Gases (Where $P_2 > .5P_1$)	Gases (Where $P_2 < .5P_1$)	S.G. = Specific Gravity of Gas (M.W. of Air/28.96)
$Q_L = C_v \sqrt{\frac{(P_1 - P_2)(62.4)}{r}}$	$Q_V = (23.18) C_v \sqrt{\frac{(P_1 - P_2)P_2}{(S.G.) T}}$	$Q_V = \frac{(11.59) P_1 C_v}{\sqrt{S.G. (T)}}$	
Where:			
Q_L = Flow (gpm)	r = Density of Liquid (lb/ft ³)	T = Flowing Temperature (°R)	S.G. Air = 1.000
Q_V = Flow (scfm)	P_1 = Upstream Pressure (psia)	(°R = °F + 460)	S.G. Nitrogen = 0.967
P_2 = Downstream Pressure (psia)		r (Water) = 62.4lb/ft ³ @60°F [16°C]	S.G. Oxygen = 1.105
			S.G. Helium = 0.138
			S.G. Hydrogen = 0.0696

Stem Tip Designs

Hard seat Spindle Design :-



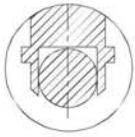
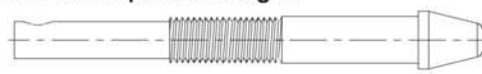
- Spindle is standard for pressure tightness even at elevated temperatures. Regulating Spindle & Soft-seat Spindle are optional.



Non-rotating Metal Vee Tip :-

A non-rotating Vee tip is typically used in high cycle applications to extend the service life of the valve. When the valve is closed, the Vee tip contacts the valve seat, and is driven straight into it without rotating.

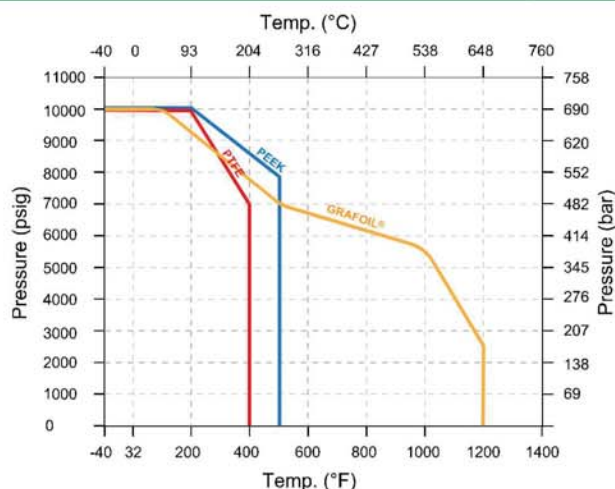
Soft seat Spindle Design :-



Non-rotating Metal Ball Tip:-

A non-rotating Ball tip operates in the same fashion as the non-rotating metal Vee tip but requires less seating torque.

Pressure-Temperature Rating



Body Material	Packing Material	Temperature Rating	Pressure Rating @37° C (100°F)
Stainless steel	PTFE	-54 to 232° C (-65 to 450° F)	413 bar (6,000 psig)
	Grafoil	-54 to 648° C (-65 to 1200° F)	690 bar (10,000 psig)
Carbon steel	PTFE	-29 to 176° C (-20 to 350° F)	413 bar (6,000 psig)
	Grafoil	-29 to 176° C (-20 to 350° F)	690 bar (10,000 psig)

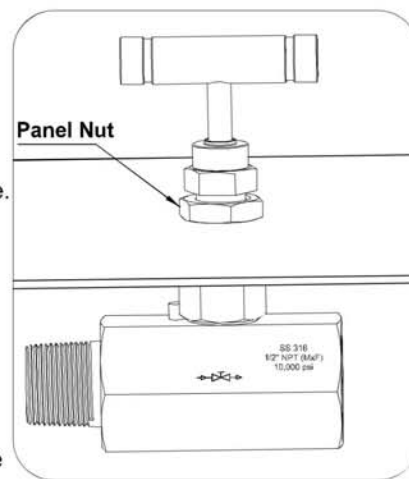
How To Panel Mount

Disassembly

1. Un-tighten the handle set screw using an allen key and remove the handle.
2. Remove the packing nut & panel nut and set aside for later use.
3. Place the valve bonnet in the panel hole.

Reassembly

4. Tighten the panel nut onto the valve bonnet. Keep the panel nut always on the external portion of the panel.
5. Finger tighten the packing nut onto the valve body.
6. Place the round handle on the stem. Align the set screw with the groove on the side of the stem. Tighten the set screw.
7. Fully close the valve and retract the stem two or three turns before torque the packing nut to the torque below.



Applications

- General Plant Service
- Hydraulic and Pneumatic
- Pressure measurement devices
- Instrument isolation
- Condensates
- Venting

Available Options*

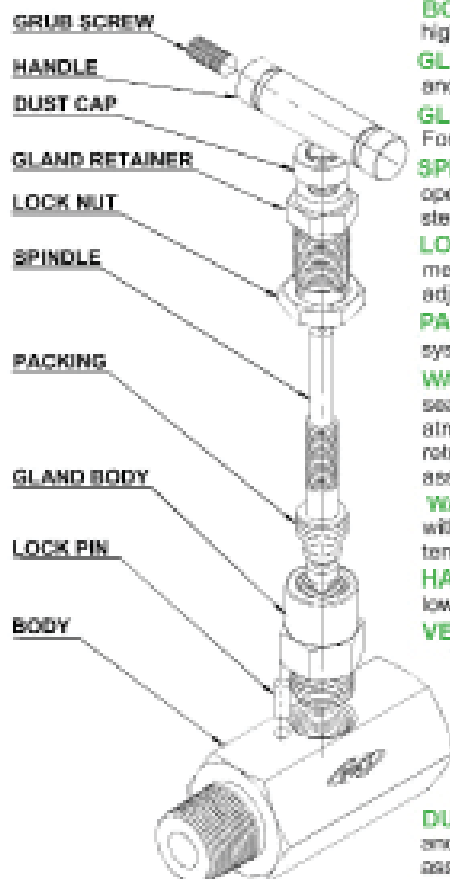
- High Temperature
- High Pressure
- NACE
- Tube End Connection
- Alternates Connection Sizes

Pressure Rating

Valve Size	Orifice	Cv	Max. Working Pressure
1/4"	3.5mm	0.31	10,000 psi (690 kg/cm ²)
3/8"	3.5mm	0.31	
1/2"	4.8mm	0.52	6,000 psi (413 kg/cm ²)
3/4"	6.4mm	1.40	

Design & Materials of Construction

HARD SEAT DESIGN



BODY Forged one piece body construction (no welding) for high strength.

GLAND BODY For maximum packing stability and performance.

GLAND RETAINER Standard Construction For maximum pressure rating.

SPINDLE Designed for low torque operating with high quality micro mirror stem finish for positive gland sealing.

LOCK NUT A secure anti vibration locking mechanism to prevent inadvertent gland adjuster loosening.

PACKING PTFE stem packing seals the system fluid to atmosphere.

WASHER PACKING (OPTIONAL) Annealed sealing washer to ensure complete atmospheric leakage and allowing on site retro-fit of bonnet with 100% re-sealing assurance.

WASHER (OPTIONAL) Metal to metal seal with body suitable for high pressure temperature applications.

HANDLE Removable T-bar handle aids low torque operation.

VEE TIP Self centering, non-rotational VEE tip gives successive positive bubble tight shut off assuring the user of leakage free performance and downstream functional safety.

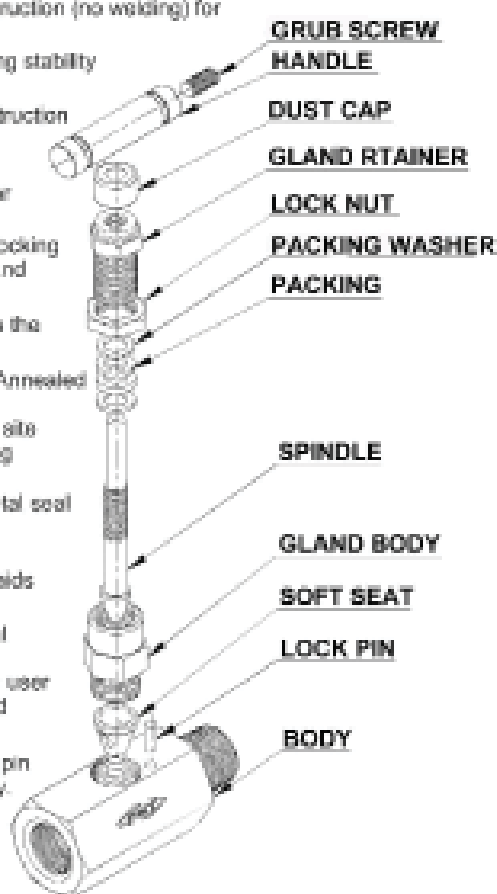
LOCK PIN Safety bonnet lock pin prevents accidental disassembly.

DUST CAP Prevents contamination and lubricant washout of bonnet assembly.

SOFT SEAT PTFE & Delrin Seat to ensure a tight shut off even in abrasive process conditions.

GRUB SCREW For locking the handle.

SOFT SEAT DESIGN



Materials of Construction

ITEM NO.	PART NAME	MATERIALS	QTY.
1	BODY	A479-316L/A-105	1
2	GLAND BODY	A479-316L/A-105	1
3	GLAND RETAINER	A479-316L/A-105	1
4	SPINDLE	A479-316L/304L	1
5	WASHER (OPTIONAL)	A479-316L/304L	1
6	PACKING	PTFE/GRAPHOIL	3
7	PACKING WASHER	SS 316/304	1
8	LOCK NUT	A479-316L/A-105	1
9	HANDLE	SS 304/CS	1
10	GRUB SCREW	STEEL	1
11	DUST CAP	PLASTIC LD	1
12	VEE TIP (OPTIONAL)	A564-630	1
13	LOCK PIN	SS 304/CS	1
14	VENT PLUG (OPTIONAL)	A479-316L/A-105	1
15	SOFT SEAT (OPTIONAL)	PCM	1

Factory Test

Standard Test : Each valve is factory tested with nitrogen at 1000 psig (69 bar) for leakage at the seat and packing, the maximum allowable leak rate of 0.1 sccm.

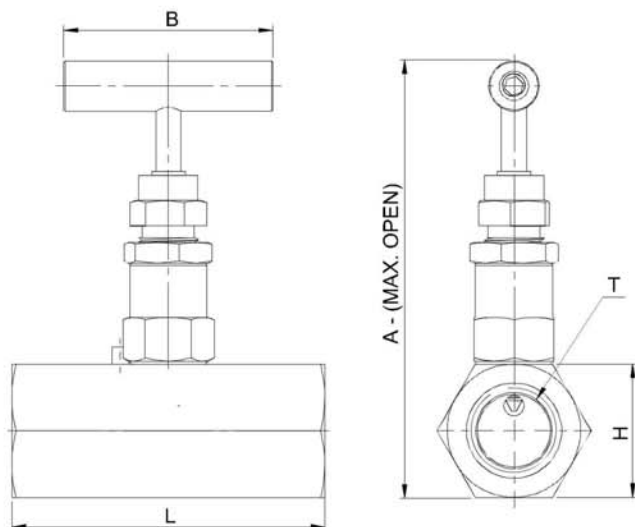
Optional Hydrostatic test : This test is performed with pure water water at 1.5 time the working pressure. Other tests like vibration, temperatures, helium etc are available upon requests.

Packaging

All exposed threads of the products are Protected with plastic caps to prevent damage and each assembly is packed in sealed and clear polyethylene bag for cleanliness and carefully packed in cardboard boxes to prevent transit damage. Each and every package is labeled for proper and easy identification.

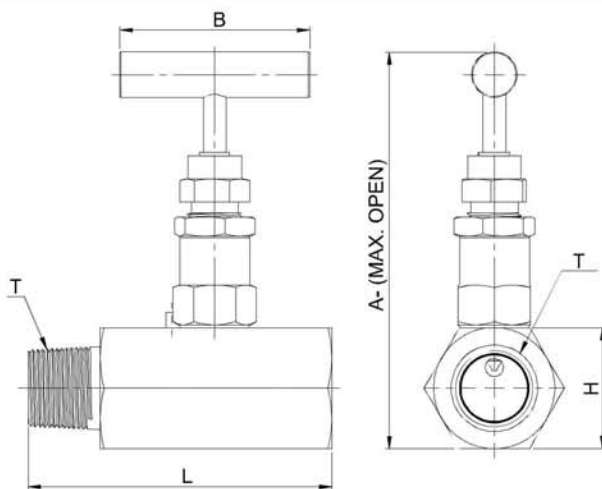
TVI NEEDLE VALVES

Female x Female



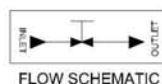
PART NUMBER	T (FEMALE x FEMALE)	LENGTH L	HEX H	HT OPEN A	HANDLE B
TNH-SS-S-4F-4F	1/4"	55	25	96	50
TNH-SS-S-6F-6F	3/8"	55	25	96	50
TNH-SS-S-8F-8F	1/2"	70	32	103	50
TNH-SS-S-12F-12F	3/4"	70	36	107	50
TNH-SS-S-16F-16F	1"	80	45	120	60

Male x Female



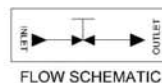
PART NUMBER	T (MALE x FEMALE)	LENGTH L	HEX H	HT OPEN A	HANDLE B
TNH-SS-S-4M-4F	1/4"	60	25	96	50
TNH-SS-S-6M-6F	3/8"	60	25	96	50
TNH-SS-S-8M-8F	1/2"	80	32	103	50
TNH-SS-S-12M-12F	3/4"	80	36	107	50
TNH-SS-S-16M-16F	1"	95	45	120	60

TVI Hex type Needle valve with hard seat and soft seat are designed for use on applications requiring complete isolate or throttling of the media and for high pressure instrument lines. Ideal for use on gas service and some liquid applications. Available with end connections in size 1/4" to 3/4".



Specifications

Max. Pressure	: 6,000 psi (413 bar) @100°F (38°C) 10,000 psi (789 bar) @77°F (25°C)
Seat Type	: Soft Seat /Hard Seat
Gland packing	: PTFE : For temp. -73°C (-99.4°F) to 210°C(410°C) Graphoil : For temp. (180°C 356°F) to 540°C (1001°F)
Materials	: Stainless Steel (316L, 316, 304, 304L), Monel K400, Monel K500, Inconel-718, carbon Steel, NACE MR- 01-75 & NACE MR-01-03 (For Sour gas Service)
Service Medium	: Liquid Gas or Vapor Service
Steam	: Needle (Standard) Ball tip (optional)
Connection	: Screwed / Welded
Handle	: Removable



Note :-

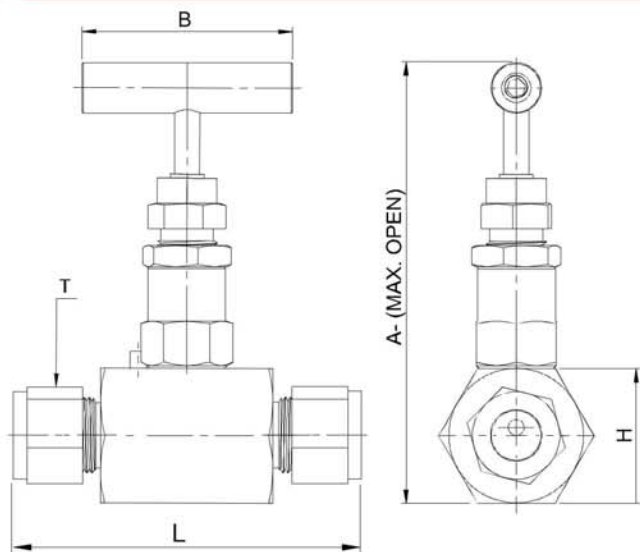
• Other combination sizes available on request. Please contact factory for more details.



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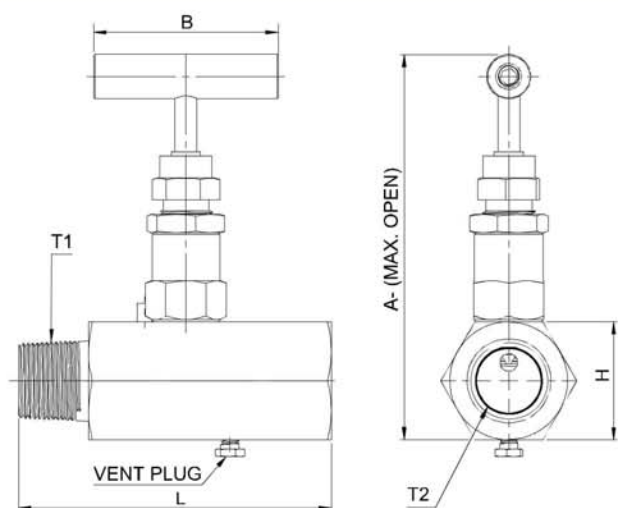
TVI NEEDLE VALVES

TUBE ENDED



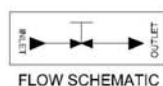
PART NUMBER	T	LENGTH HEX		HT OPEN HANDLE	
	(TUBE END)	L	H	A	B
HXV-SS-S-4TE	1/4"	70	25	96	50
HXV-SS-S-6TE	3/8"	72	25	96	50
HXV-SS-S-8TE	1/2"	76	32	103	50
HXV-SS-S-12TE	3/4"	76	36	107	50

MALE x FEMALE WITH VENT



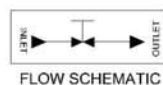
PART NUMBER	T1	T2	LENGTH HEX		HT OPEN HANDLE	
	MALE	FEMALE	L	H	A	B
TNH-SS-S-8M-8F-V	1/2"	1/2"	85	32	103	50
TNH-SS-S-8M-12F-V	1/2"	3/4"	85	32	103	50

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Materials	: Stainless Steel (316L,316, 304,304L), Monel K400, Monel K500, Inconel-718, carbon Steel, NACE MR-01-75 & NACE MR-01-03 (For Sour gas Service)
Service Medium	: Liquid Gas or Vapor Service
Steam	: Needle (Standard) Ball tip (optional)
Connection	: Screwed / Welded
Handle	: Removable



Note :-

• Other combination sizes available on request. Please contact factory for more details.



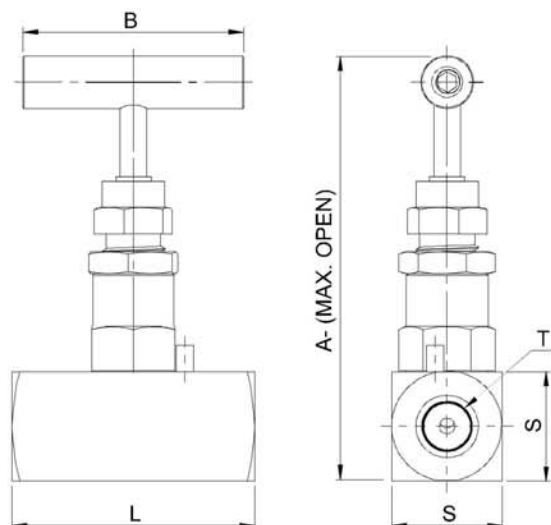
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Texas Valve & Instruments, LLC
8221 Lockheed Ave
Houston, Tx 77061

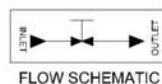
T: 713.645.2100
E: sales@tvi-i.com
Web: tvi-i.com

TVI NEEDLE VALVES

FEMALE X FEMALE



TVI Square type Needle valve with hard seat and soft seat are designed for use on applications requiring complete isolate or throttling of the media and for high pressure instrument lines. Ideal for use on gas service and some liquid applications. Available with end connections in size 1/4" to 3/4".



Specifications

PART NUMBER	T (FEMALE x FEMALE)	LENGTH SQUARE L	S	HT OPEN A	HANDLE B
TNS-SS-S-4F-4F	1/4"	55	25	96	50
TNS-SS-S-6F-6F	3/8"	55	25	96	50
TNS-SS-S-8F-8F	1/2"	65	28	103	50
TNS-SS-S-12F-12F	3/4"	70	38	109	50
TNS-SS-S-16F-16F	1"	80	45	120	60

Max. Pressure : 6,000 psi (413 bar)
@100°F (38°C)
10,000 psi (789 bar)
@77°F (25°C)

Seat Type : Soft Seat / Hard Seat

Gland packing : **PTFE** : For temp. -73°C (-99.4°F) to 210°C (410°C)
Graphoil : For temp. (180°C 356°F) to 540°C (1001°F)

Materials : Stainless Steel (316L, 316, 304, 304L), Monel K400, Monel K500, Inconel-718, carbon Steel, NACE MR-01-75 & NACE MR-01-03 (For Sour gas Service)

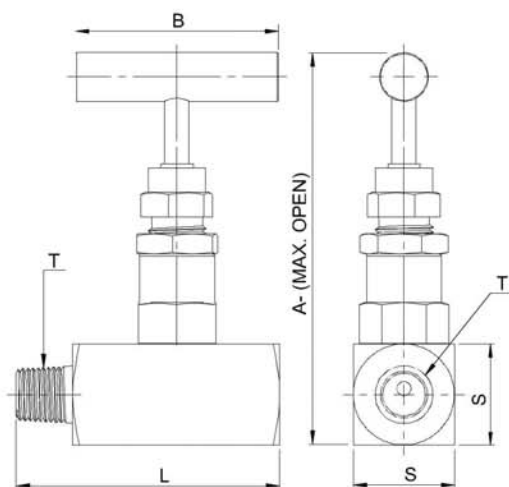
Service Medium : Liquid Gas or Vapor Service

Steam : Needle (Standard)
Ball tip (optional)

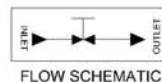
Connection : Screwed / Welded

Handle : Removable

MALE X FEMALE



PART NUMBER	T (MALE x FEMALE)	LENGTH SQUARE L	S	HT OPEN A	HANDLE B
TNS-SS-S-4M-4F	1/4"	65	25	96	50
TNS-SS-S-6M-6F	3/8"	65	25	96	50
TNS-SS-S-8M-8F	1/2"	75	28	103	50
TNS-SS-S-12M-12F	3/4"	75	38	109	50
TNS-SS-S-16M-16F	1"	95	45	120	60



Note :-

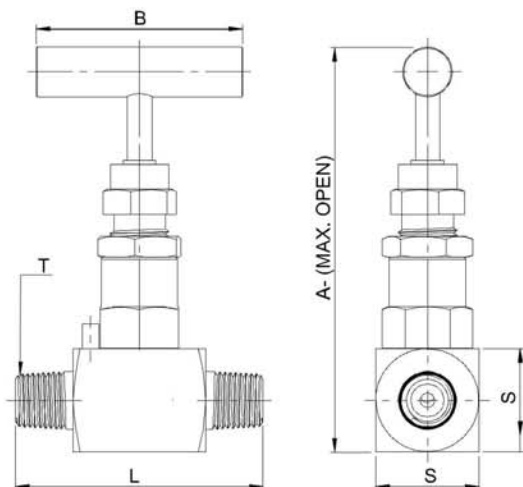
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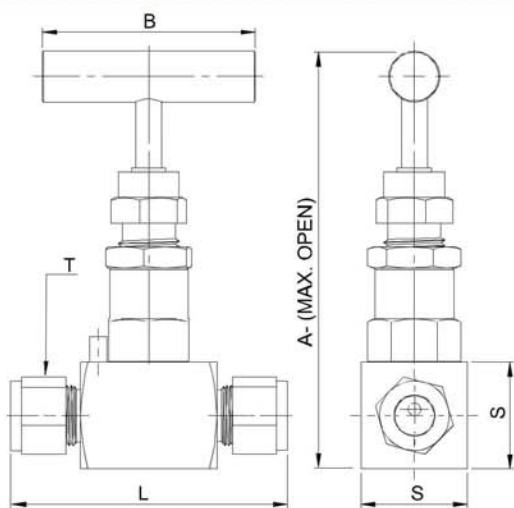
TVI NEEDLE VALVES

MALE X FEMALE



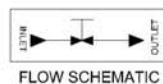
PART NUMBER	T (MALE x FEMALE)	LENGTH L	SQUARE S	HTOPEN A	HANDLE B
TNS-SS-S-4M-4M	1/4"	65	25	96	50
TNS-SS-S-6M-6M	3/8"	65	25	96	50
TNS-SS-S-8M-8M	1/2"	76	28	103	50
TNS-SS-S-12M-12M	3/4"	80	38	109	50
TNS-SS-S-16M-16M	1"	95	45	120	60

TUBE ENDED



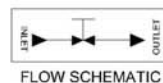
PART NUMBER	T (TUBE END)	LENGTH L	SQUARE S	HTOPEN A	HANDLE B
TNS-SS-S-4T-4T	1/4"	65	25	96	50
TNS-SS-S-6T-6T	3/8"	65	25	96	50
TNS-SS-S-8T-8T	1/2"	70	28	103	50
TNS-SS-S-12T-12T	3/4"	70	38	109	50

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Service Medium	: Liquid Gas or Vapor Service
Steam	: Needle (Standard) Ball tip (optional)
Connection	: Screwed / Welded
Handle	: Removable



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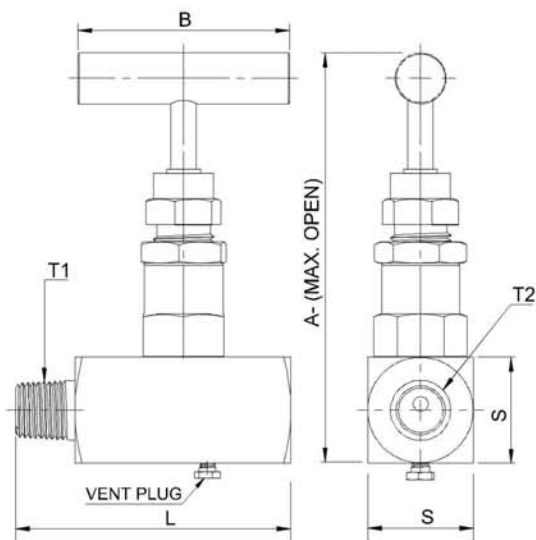
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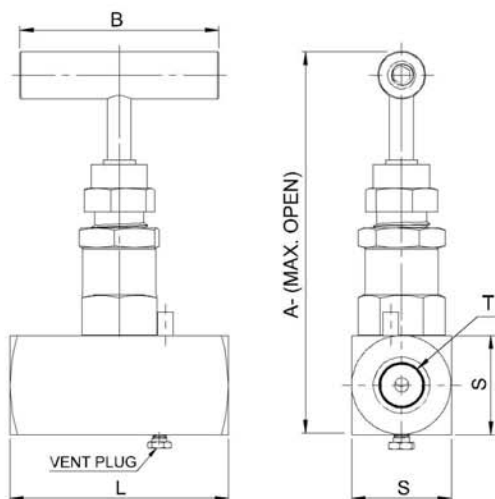
TVI NEEDLE VALVES

Male x Female With Vent



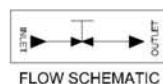
PART NUMBER	T1	T2	LENGTH		HT OPEN HANDLE	
	MALE	FEMALE	L	S	A	B
TNS-SS-S-8M-8F-V	1/2"	1/2"	85	32	103	50
TNS-SS-S-8M-12F-V	3/4"	1/2"	85	32	103	50

Female x Female With Vent



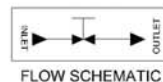
PART NUMBER	T	LENGTH		HT OPEN HANDLE	
	(FEMALE x FEMALE)	L	S	A	B
TNS-SS-S-8F-8F-V	1/2"	85	32	103	50
TNS-SS-S-12F-12F-V	3/4"	85	32	103	50

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Steam	: Needle (Standard) Ball tip (optional)
Connection	: Screwed / Welded
Handle	: Removable



Note :-

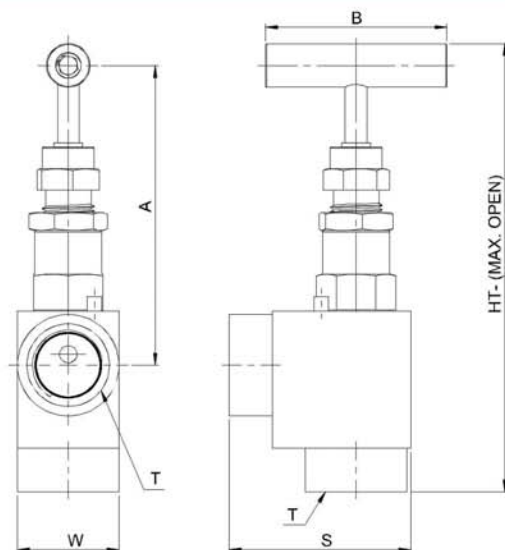
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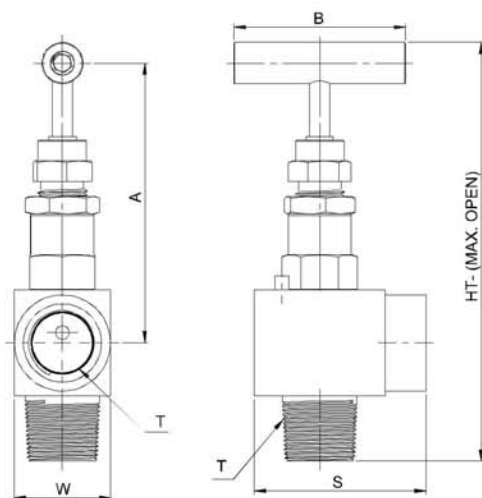
TVI NEEDLE VALVES

Female x Female



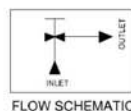
PART NUMBER	T (FEMALE x FEMALE)	S	W	B	A	HT-OPEN
TNA-SS-S-4F-4F	1/4"	38	25	50	77	109
TNA-SS-S-6F-6F	3/8"	38	25	50	77	109
TNA-SS-S-8F-8F	1/2"	50	28	50	80	121

Male x Female



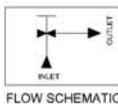
PART NUMBER	T (MALE x FEMALE)	S	W	B	A	HT-OPEN
TNA-SS-S-4M-4F	1/4"	38	25	50	77	109
TNA-SS-S-6M-6F	3/8"	38	25	50	77	109
TNA-SS-S-8M-8F	1/2"	50	28	50	80	121

TVI Angle type Needle valve with hard seat and soft seat are designed for use on applications requiring complete isolate or throttling of the media and for high pressure instrument lines. ideal for use on gas service and some liquid applications. Available with end connections in size 1/4" to 3/4".



Specifications

Max. Pressure	: 6,000 psi (413 bar) @100°F (38°C) 10,000 psi (789 bar) @77°F (25°C)
Seat Type	: Soft Seat /Hard Seat
Gland packing	: PTFE : For temp. -73°C (-99.4°F) to 210°C(410°C) Graphoil : For temp. (180°C 356°F) to 540°C (1001°F)
Materials	: Stainless Steel (316L,316, 304,304L), Monel K400, Monel K500, Inconel-718, carbon Steel, NACE MR- 01-75 & NACE MR-01-03 (For Sour gas Service)
Service Medium	: Liquid Gas or Vapor Service
Steam	: Needle (Standard) Ball tip (optional)
Connection	: Screwed / Welded
Handle	: Removable



Note :-

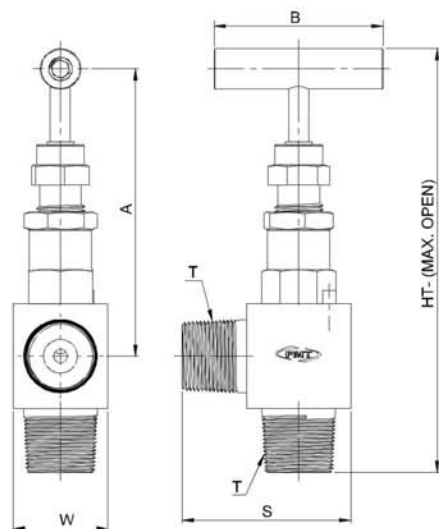
• Other combination sizes available on request. Please contact factory for more details.



Dimensions are for reference only and are subjected to change.

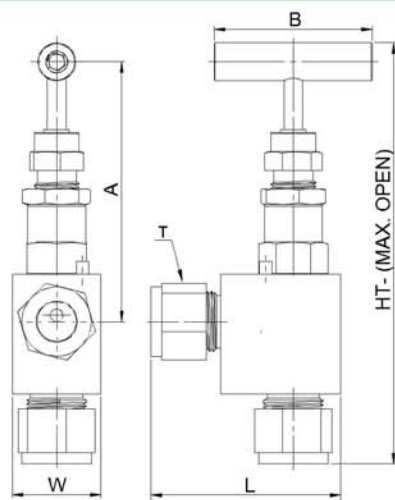
TVI NEEDLE VALVES

Male x Male



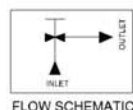
PART NUMBER	T (MALE x MALE)	S	W	B	A	HT-OPEN
TNA-SS-S-4M-4M	1/4"	38	25	50	77	109
TNA-SS-S-6M-6M	3/8"	38	25	50	77	109
TNA-SS-S-6M-6M	1/2"	50	28	50	80	121

Tube Ended



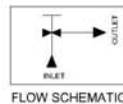
PART NUMBER	T (TUBE END)	L	W	B	A	HT-OPEN
TNA-SS-S-4T-4T	1/4"	56	25	50	74	129
TNA-SS-S-6T-6T	3/8"	58	25	50	74	129
TNA-SS-S-8T-8T	1/2"	60	28	50	80	131

TVI Angle type Needle valve with hard seat and soft seat are designed for use on applications requiring complete isolate or throttling of the media and for high pressure instrument lines. Ideal for use on gas service and some liquid applications. Available with end connections in size 1/4" to 3/4".



Specifications

Max. Pressure	: 6,000 psi (413 bar) @100°F (38°C) 10,000 psi (789 bar) @77°F (25°C)
Seat Type	: Soft Seat /Hard Seat
Gland packing	: PTFE : For temp. -73°C (-99.4°F) to 210°C(410°C) Graphoil : For temp. (180°C 356°F) to 540°C (1001°F)
Materials	: Stainless Steel (316L, 316, 304, 304L), Monel K400, Monel K500, Inconel-718, carbon Steel, NACE MR- 01-75 & NACE MR-01-03 (For Sour gas Service)
Service Medium	: Liquid Gas or Vapor Service
Steam	: Needle (Standard) Ball tip (optional)
Connection	: Screwed / Welded
Handle	: Removable



Note :-

• Other combination sizes available on request. Please contact factory for more details.



Dimensions are for reference only and are subjected to change.

High Pressure Needle Valves

PRESSURE RATING :- 15,000 PSI

TVI High Pressure Needle Valve 15,000 PSI is designed for leak free closure, regulation and management of fluids in process systems. With a wide variety of port sizes, end connections, style, temperature and pressure tolerance **TVI** Needle Valve are critical for instrumentation, fluid and process control system.

High Pressure Needle valve can be Manufacture up to Working Pressure 15,000 psi & Burst pressure up to 15,000 psi. High Pressure Needle valves are widely used for Severe Service Operation as regulating and shut off type in critical High pressure up to 10,000 psi.

TVI High Pressure Needle valves are available in Steel , Stainless Steel , Brass Materials & can be applicable for Fluids like water , Oil , Petrol , Grease, chemicals , viscous gases. Needle valves can be made in Forged body & also in Solid bar stock body.

TVI Brand Make Needle valves are available in materials like - Steel , Stainless Steel , Steel Phosphatised / Yellow chrometize / trivalent Zinc Blue Passivation.

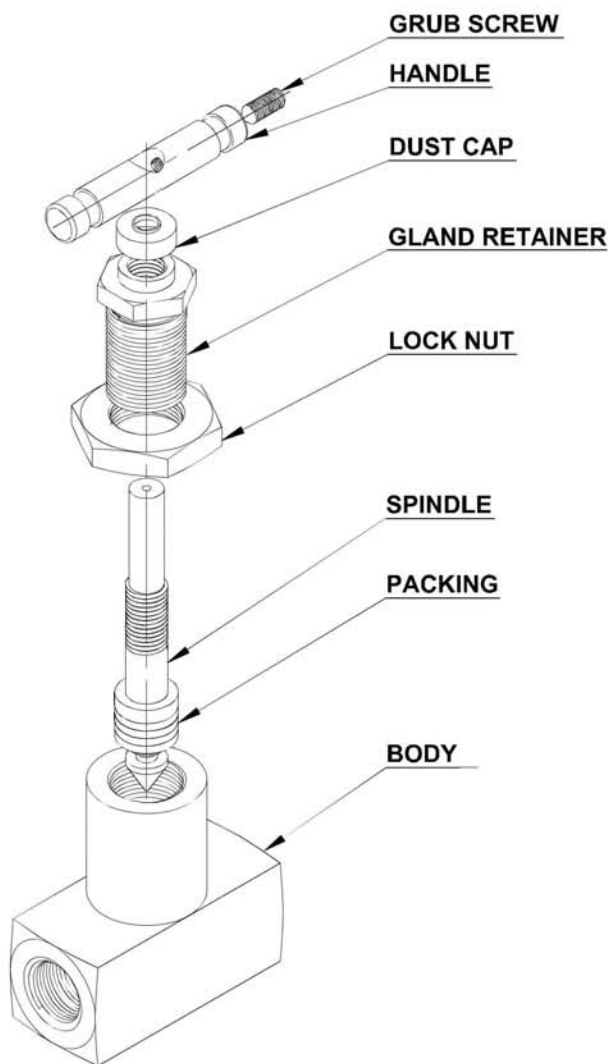
High Pressure Needle Valve Special Features

- Valve bodies through 10,000 psi are high tensile Type 316 stainless steel, 15,000 psi valve bodies are 17-4 PH stainless steel.
- Their rugged construction provides assurance of fail-safe operation at pressures ranging to 15,000 PSI (1030 bar).
- Available in a variety of Body styles, the valves are designed for operation at temperatures ranging from -100° to +600°F (-73° to +315°C).
- Stem packing below the threads prevents thread galling & contamination.
- Easy handling even at high pressure (switching through 90°)
- Low torque operating T bar handle..

Features

- Materials include high tensile type 316 stainless steel.
- One piece bonnet with a metal to metal seal to the valve body below the bonnet threads.
- Non-rotating stem and bar stock body design.
- Easy to assemble and replace packing.
- Bonnet lock pin to prevent accidental loosening.
- Dust caps are fitted to contain stem lubricant and prevent the ingress of contaminants.
- The stem threads are rolled and lubricated to prevent galling and reduce operating torque.
- The material of packing gland and upper stem have been selected to achieve reduced handle torque and extended thread cycle life.
- 100% factory test. Every valve is tested with nitrogen for leak-tight performance at its maximum working pressure.

Design & Materials of Construction



BODY Forged one piece body construction (no welding) for high strength.

GLAND RETAINER Standard Construction For maximum pressure rating.

SPINDLE Designed for low torque operating with high quality micro mirror stem finish for positive gland sealing.

LOCK NUT A secure anti vibration locking mechanism to prevent inadvertent gland adjuster loosening.

PACKING PTFE stem packing seals the system fluid to atmosphere.

HANDLE Removable T-bar handle aids low torque operation.

FLOATING CONICAL TIP Self centering, non-rotational VEE tip gives successive positive bubble tight shut off assuring the user of leakage free performance and down stream functional safety.

DUST CAP Prevents contamination and lubricant washout of bonnet assembly.

GRUB SCREW For locking the handle.

Materials of Construction

ITEM NO.	PART NAME	MATERIALS	QTY.
1	BODY	A479-316L/A-105	1
2	SPINDLE (STEM)	A479-316L/A-105	1
3	GLAND RETAINER	A479-316L/A-105	1
4	LOCK NUT	A479-316L/A-105	1
5	HANDLE	SS 304/CS	1
6	PACKING	PTFE	3
7	PACKING WASHER	A479-316L/A-105	2
8	GRUB SCREW	STEEL	1
9	FLOATING CONICAL TIP	A564-630	1
10	DUST CAP	PLASTIC	1

Testing

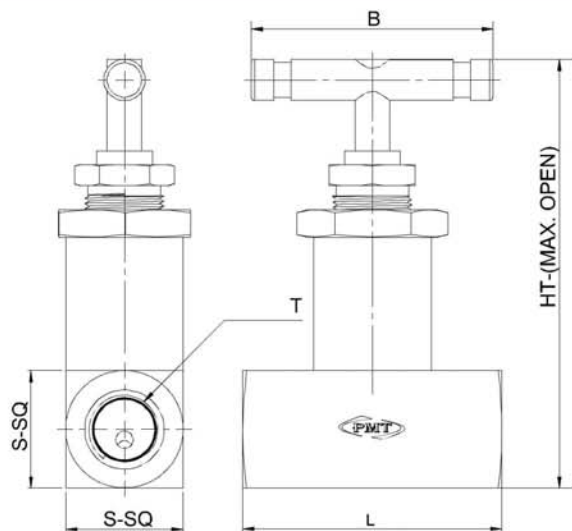
Each valve is Hydrostatically tested in accordance with MSS-SP-99. This procedure includes testing of the body cavity. Hydrostatic test is performed with pure water or other liquid of similar or lower viscosity at 1.5 times and seat leakage test at 1.1 times of the maximum working pressure. Other tests like vibration, temperatures, helium etc are available upon requests.

Packaging

All exposed threads of the products are Protected with plastic caps to prevent damage and each assembly is packed in sealed and clear polyethylene bag for cleanliness and carefully packed in cardboard boxes to prevent transit damage. Each and every package is labeled for proper and easy identification.

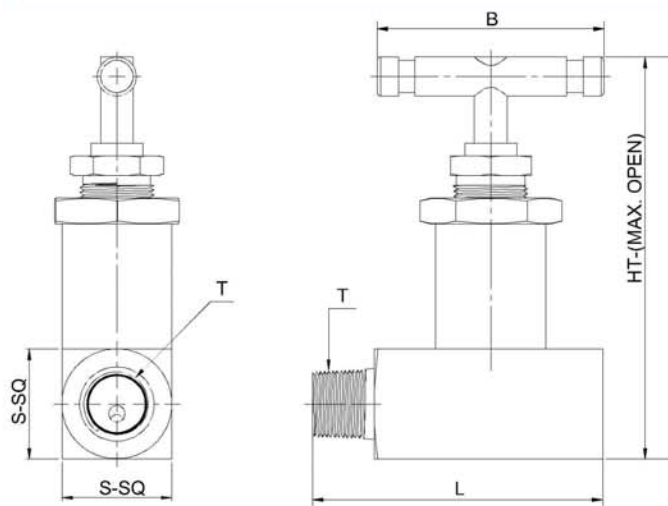
TVI NEEDLE VALVES

Female x Female



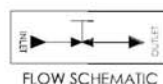
PART NUMBER	T (FEMALE x FEMALE)	ORIFICE	L	S-SQ	B	HT-OPEN
TNP-SS-S-4F-4F	1/4"	5mm	55	25	60	86
TNP-SS-S-4F-4F	3/8"	5mm	55	28	60	86
TNP-SS-S-4F-4F	1/2"	5mm	75	34	70	98
TNP-SS-S-4F-4F	3/4"	5mm	80	38	70	98

Male x Female



PART NUMBER	T (MALE x FEMALE)	ORIFICE	L	S-SQ	B	HT-OPEN
TNP-SS-S-4M-4F	1/4"	3.5mm	60	25	60	86
TNP-SS-S-6M-6F	3/8"	3.5mm	60	28	60	86
TNP-SS-S-8M-8F	1/2"	4.8mm	82	34	70	98
TNP-SS-S-12M-12F	3/4"	6.4mm	87	38	70	98

TVI High pressure Needle valve with hard seat and are designed for use on applications requiring complete isolate or throttling of the media and for high pressure instrument lines. Ideal for use on gas service and some liquid applications. Available with end connections in size 1/4" to 1".

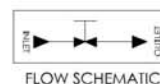


Specifications

Max. Pressure	: 10,000 psi (789 bar) @100°F (38°C) 15,000 psi (1034 bar) @77°F (25°C)
Seat Type	: Hard Seat
Gland packing	: PTFE : For temp. -73°C (-99.4°F) to 210°C(410°C) Graphoil : For temp. (180°C 356°F) to 540°C (1001°F)
Materials	: Stainless Steel (316L, 316, 304, 304L), Monel K400, Monel K500, Inconel-718, carbon Steel, NACE MR-01-75 & NACE MR-01-03 (For Sour gas Service)
Service Medium	: Liquid Gas or Vapor Service
Steam	: Needle (Standard) Ball tip (optional)
Connection	: Screwed / Welded
Handle	: Removable

Note :-

• Other combination sizes available on request. Please contact factory for more details.



Dimensions are for reference only and are subjected to change.

Low Temperature Needle Valves

BODY Forged one piece body construction (no welding) for high strength.

GLAND BODY For maximum packing stability and performance.

SPINDLE Designed for low torque operating with high quality micro mirror stem finish for positive gland sealing.

GLAND NUT A secure anti vibration locking mechanism to prevent inadvertent gland adjuster loosening.

GLAND BUSH Annealed sealing washer to ensure complete atmospheric leakage and allowing on site retro-fit of bonnet with 100% re-sealing assurance.

PACKING PTFE stem packing seals the system fluid to atmosphere.

HANDLE Removable T-bar handle aid low torque operation.

LOCK PIN Safety bonnet lock pin prevents accidental disassembly.

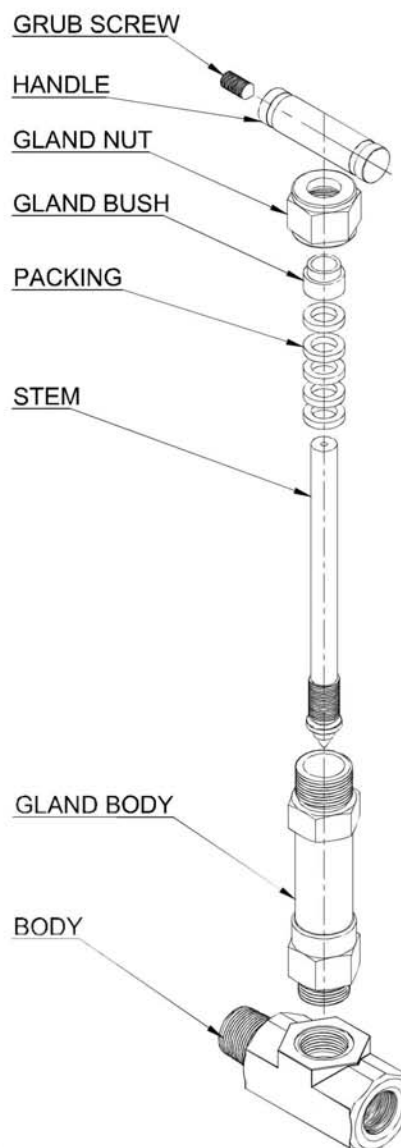
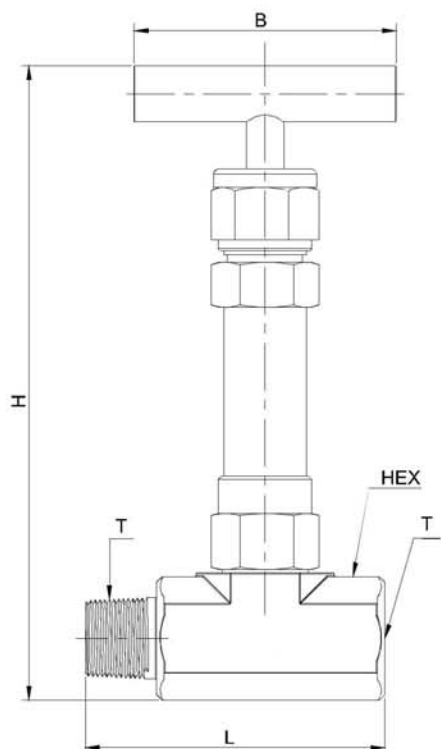
DUST CAP Prevents contamination and lubricant washout of bonnet assembly.

SOFT SEAT PTFE & Delrin Seat to ensure a tight-shut off even in abrasive process conditions.

GRUB SCREW For locking the handle.

Features

- Upper packing provides secondary containment system above the bellows
- Hydraulic-formed multilayer bellows enhanced cycle life
- Non-rotating stem tip eliminates galling within the seat area
- Strictly controlled bellows stroke to improve safety and cycle life
- Suitable to working temperature °F (°C) -321 (-196) to 176 (80)
- Suitable to working Pressure, psig (bar) 6000 (413)



PART NUMBER	T (MALE x FEMALE)	ORIFICE	L	HEX	B	HT-OPEN
TNC-SS-S-4M-4F	1/4"	3.5mm	60	25	60	152
TNC-SS-S-6M-6F	3/8"	3.5mm	60	28	60	152
TNC-SS-S-8M-8F	1/2"	4.8mm	80	34	70	190
TNC-SS-S-12M-12F	3/4"	6.4mm	80	38	70	190
TNC-SS-S-16M-16F	1"	6.4mm	95	45	70	230

Dimensions are for reference only and are subjected to change.

High Temperature Needle Valves

BODY Forged one piece body construction (no welding) for high strength.

GLAND BODY For maximum packing stability and performance.

GLAND NUT Standard Construction For maximum pressure rating.

STEM Designed for low torque operating with high quality micro mirror stem finish for positive gland sealing.

PANEL NUT A secure anti vibration locking mechanism to prevent inadvertent gland adjuster loosening.

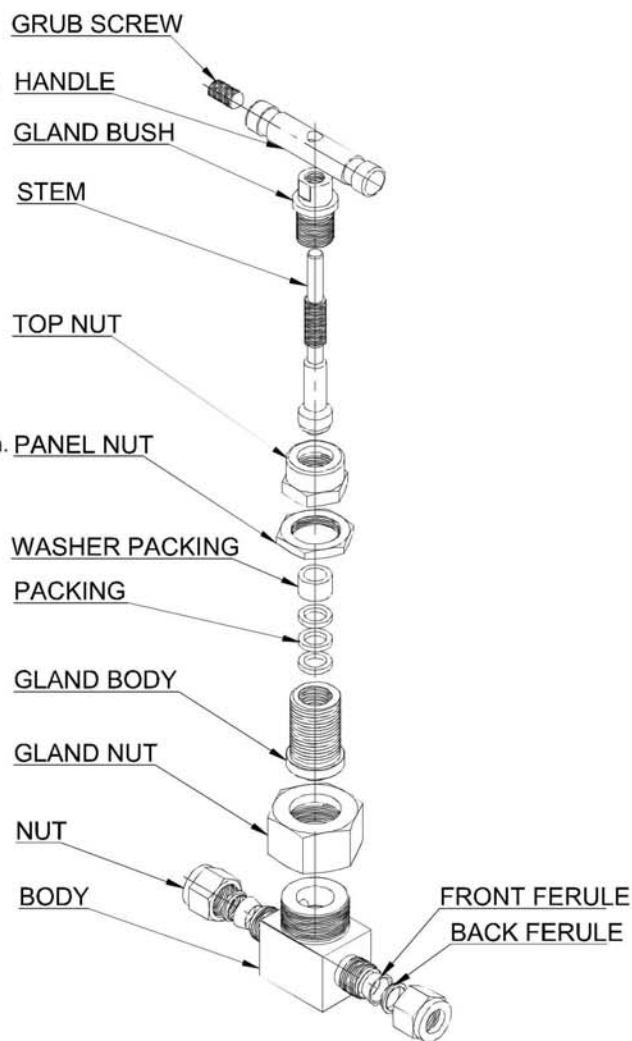
PACKING PTFE stem packing seals the system fluid to atmosphere.

WASHER PACKING Annealed sealing washer to ensure complete atmospheric leakage and allowing on site retro-fit of bonnet with 100% re-sealing assurance.

GLAND BUSH Metal to metal seal with body suitable for high pressure temperature applications.

HANDLE Removable T-bar handle aids low torque operation.

GRUB SCREW For locking the handle.



Features

- Material: 316SS, Titanium, Other Material on request.
- Working Pressure: upto 10000 psi (689 bar)
- Working Temperature : -65°F to 1200°F (-53°C to 648°C)
- End Connection Type : Metric and Fractional tube fittings, NPT threads, ISO/BSP threads, Weldend
- End Connection Size : 1/8" to 3/4" and 3mm to 20mm

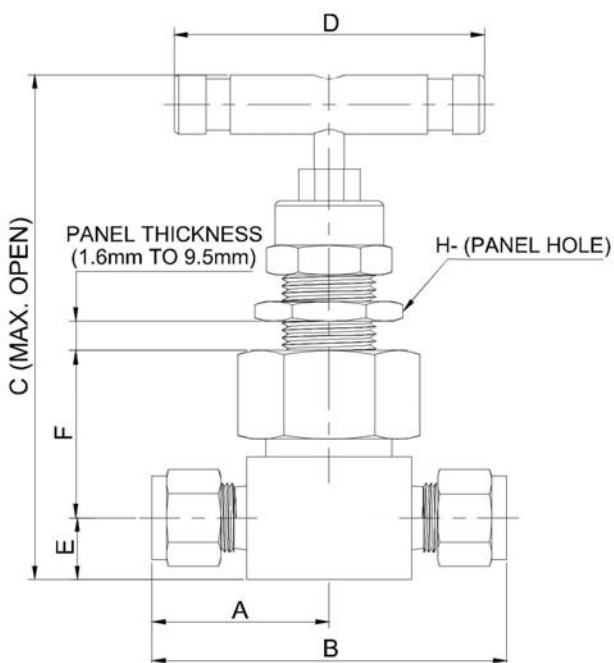
Order Info

A	Body Material	B	Valve Series	C	DN	D	End Connection Type						
	316 = 316 SS 304 = 304 SS 321 = 321 SS TI = Titanium 400 = Alloys 400 C276 = Alloys C-276		N4 = Union-bonnet Needle Valve		4 = 4.0mm 6 = 6.0mm 10 = 10.0 mm		M = Metric Tube Fitting F = Fractional Tube Fitting MTB = Metric Butt Weld TB = Fractional Butt Weld MTS = Metric Socket Weld TS = Fractional Socket Weld UMB = Union Butt Weld						
E	End Connection Size												
Code	2	3	4	6	8	10	12	14	16	18	20	22	25
Fractional	1/8 in.		1/4 in.	3/8 in.	1/2 in.		3/4 in.		1 in.				
Metric		3mm			8mm	10mm	12mm	14mm	16mm	18mm	20mm	22mm	25mm

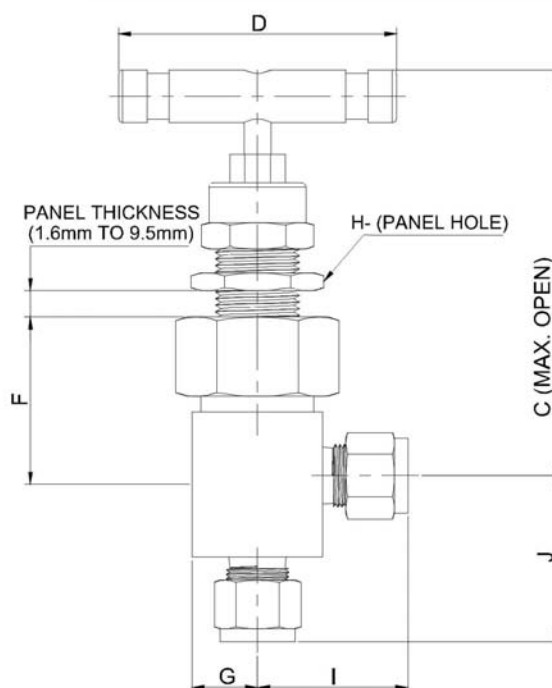
Straight 2-way type is standard for N4 series Needle valve add A as a suffix if angle type is required e.g. : 316-N4 10-F8-A

TVI NEEDLE VALVES

Straight Pattern



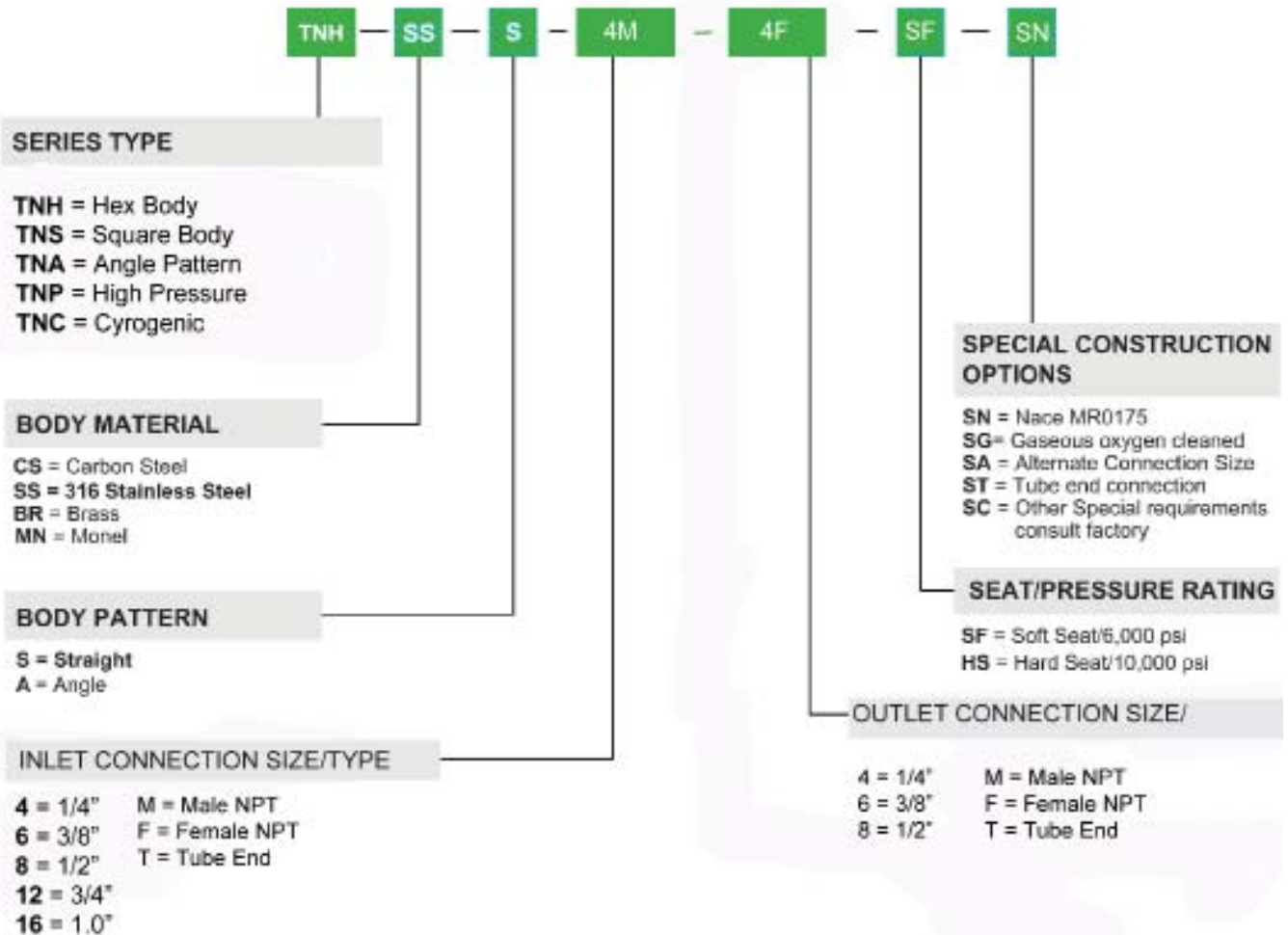
Angle Pattern



End Connection	Size	DN (mm)	Cv	Size (mm)									
Inlet / Outlet				A	B	C	D	E	F	G	H	I	J
Fractional Tube fitting	3/8 in.	6.0	0.86	35.8	71.6	94.0	65.0	12.7	34.5	12.7	19.8	32.8	42.2
	1/2 in.	10.0	2.18	38.6	77.2							35.6	41.9
	3/4 in.			49.8	99.6	123.0	75.0	19.8	43.5	17.5	22.8	42.7	42.7
NPT(F)	1/4 in.	6.0	0.86	28.4	56.8	123.0	75.0	12.7	34.5	12.7	19.8	25.4	28.4
	3/8 in.	10.0	2.18	39.6	79.2							33.3	42.9
	1/2 in.			41.1	82.2							-	-
	3/4 in.			39.6	79.2							33.3	42.9
NPT(F)				41.1	82.2							-	-

Part Number	Connection
TNT-SS-S-6T-6T	
TNT-SS-S-8T-8T	
TNT-SS-S-12T-12T	
TNT-SS-S-4F-4F	
TNT-SS-S-6F-6F	
TNT-SS-S-8F-8F	
TNT-SS-S-12F-12F	

ORDERING TREE



EXAMPLE: TNH-SS-S-4M-4F-SF-SN

TNH = Hex Body Valve
 SS = 316 SS
 S = Straight Pattern
 4M = 1/4" Male NPT
 4F = 1/4" Female NPT
 SF = Soft Seat-6,000 psi
 SN = Nace MRO175

For more information please contact our factory.