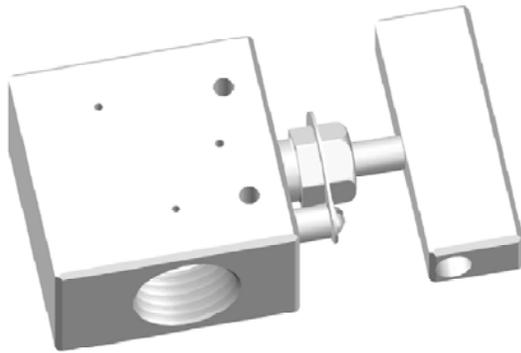


HIGH PRESSURE NEEDLE VALVE

Specifications & Instruction Manual

TSI Flow Products

5656 Wheatley St.
Houston, TX 77091
Phone: (713) 691-0668
Fax: (713) 691-2328



❖ Specifications:

- Pressure rating @ Room Temperature: 30,000 PSIG MAWP
- Orifice Size: 0.094 inch
- Flow Coefficient (Cv): 0.13
- Connection: 9/16" Autoclave fitting

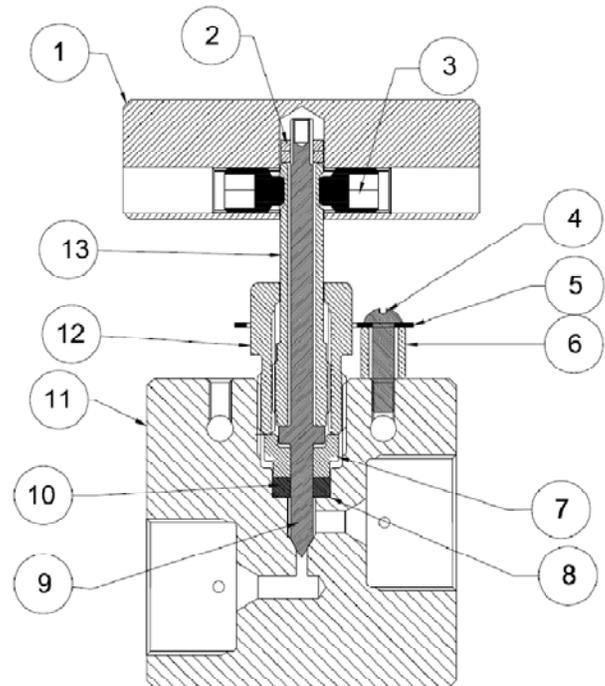
❖ High Pressure Valve Features

- Non-rotating stem prevent stem and seat galling.
- Metal to metal seal achieves longer stem-seat life and excellent corrosion resistance.
- Rigid –precision machining round handle/packing gland.
- Safety locking bracket and weep holes
- Precision anti-extrusion ring.

❖ Available Services:

Service	Stem material
Standard	17-4
NACE 0.05	17-4 Nitride
NACE No limit	Inconel

❖ Section View:



❖ Part List:

1. Stainless Steel Handle
2. Stainless Steel Hex Nut
3. Dog point Set Screw
4. Stainless Steel Round Head Screw
5. Stainless Steel Safety Lock
6. Stainless Steel Spacer
7. Stainless Steel Packing Bushing
8. Stainless Steel Backup Ring
9. Stem
10. PTFE Packing
11. 316 Stainless Steel Valve Body
12. Bonnet
13. Round Handle

- Install the stem (12) into the round handle (13), and lock it with 2 jam nuts (2).

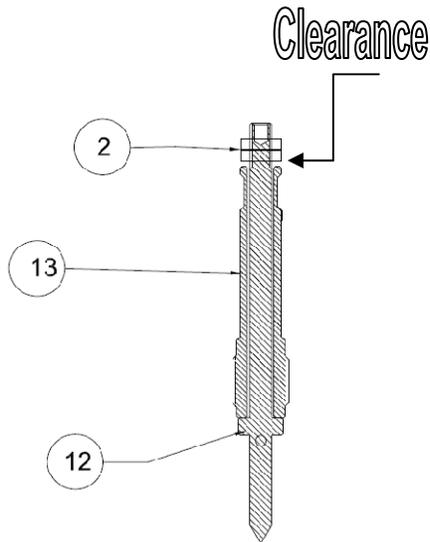


Fig. 1.1

CAUTION:

- There is a clearance required between the nut (2) and the handle (13). This clearance will allow the stem and the handle rotating independently. Therefore, the stem will not rotate when the handle is turned.
 - See the service applications for selecting the right stem material to build the valve.
 - Stem material is available as: 17-4/17-4 Nitride/ INCONEL.
 - A washer between hex nut and handle is optional.
- To set the clearance for the stem (12) and handle (13): Screw the first hex nut (2) until touching the top of the handle; then back up about 0.5 -1 turn and lock it in that position with the 2nd hex nut.

- Apply some grease on the external thread of the handle (13), and install the stem assembly (Fig. 1.1) into the bonnet (12).

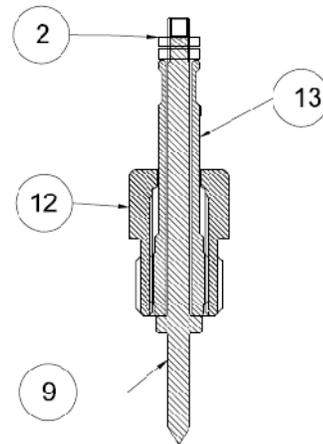


Fig. 1.2

- Turn the handle (13) until it is stopped by the shoulder on the top of the bonnet (12). (Stem moves up). This step will save the stem from damaging the tip in the next step.
- Apply grease on the external thread of the bonnet (12). Install the bonnet assembly (Fig.1.2) into the valve body (11)

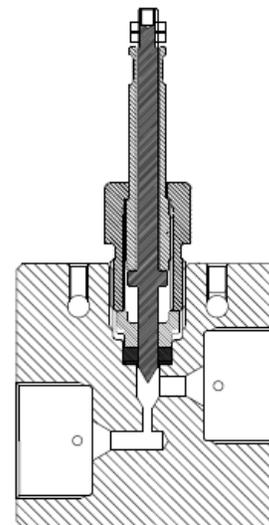


Fig. 1.3

NOTE:

- Do not over-tight bonnet assembly (fig 1.2) into the valve body. This will damage the packing.
- The stem must be back up (up) before installing the bonnet assembly into the valve body.

- **RECOMMENDED TORQUE** Required to screw the bonnet assembly (Fig.12.) into the valve body: **30 N.m (265.5 lb.in).**

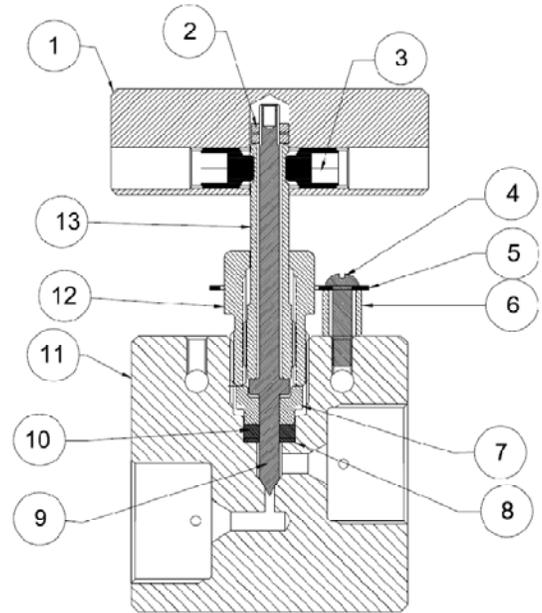
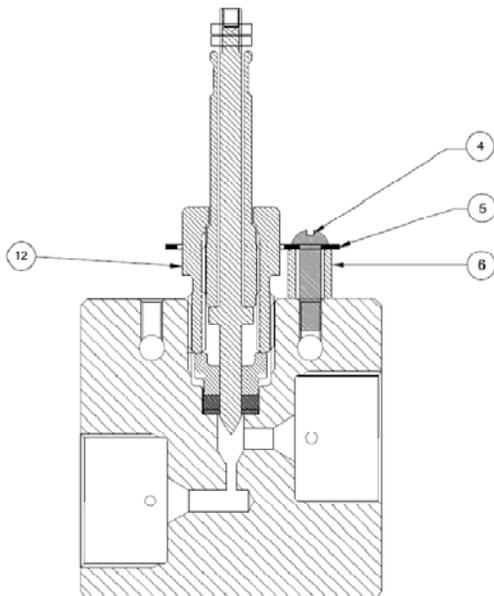


Fig 1.4

- Using screw (4), spacer (6) and bracket (5) to lock the bonnet (12) in safe position.

NOTE:

Adjust two dog point set screws (3) to keep the handle (13) with hex nuts staying at the center of the pocket, so these nut will not touch the handle from one side.



- Install the rectangular handle (1) to the round handle (13), and lock it with 2 dog point screws.

- Turn the valve handle CW and CCW to make sure the valve functioning properly; the stem is moving smoothly without making noise or rotating.
- Fig 1.4 shows the complete **TSI High Pressure Needle Valve**. The valve now is ready for Hydrostatic Pressure Test and ready for service.