

# General Utility Service Needle Valves

## GU Series Maintenance Instructions



### Kit Contents

- Packing
- Bonnet gasket
- Handle lock nut
- Roll pin
- Lubricant with MSDS
- Instructions

### Required Tools

- Pliers or wire cutters
- Pic (dental style)
- Threaded bolt - 4GU series: 1/4 in. or 7 mm  
8GU series: 5/16 in. or 9 mm  
16 GU series: 3/8 in. or 10 mm or 11 mm
- Torque wrench, capable of 0 to 2200 in.-lbs (0 to 250 N·m)
- Crow's foot (See Table 1.)

Table 1 Tool Sizes

Component	Valve Series		
	4GU	8GU	16GU
Bonnet	21 mm or 13/16 in.	28 mm or 1 1/8 in.	38 mm or 1 1/2 in.
Gland lock nut	19 mm or 3/4 in.	26 mm or 1 in.	38 mm or 1 1/2 in.
Gland nut	13 mm or 1/2 in.	17 mm or 11/16 in.	24 mm or 15/16 in.
Handle nut	8 mm or 5/16 in.	8 mm or 5/16 in.	8 mm or 5/16 in.

### ⚠ WARNING

**Before servicing any installed valve, you must:**

- depressurize the system
- cycle the valve
- purge the valve.

### ⚠ WARNING

**Residual material may be left in the valve and the system.**

### Bonnet Seal Replacement

1. Using pliers or a wire cutter, remove the **roll pin** from the **body**.
2. Unscrew the **bonnet assembly** from the **body**.
3. Remove the **bonnet seal** and **bonnet seal ring** from the **body**, discarding the bonnet seal.  
Note: Use pliers to unscrew the bonnet seal and bonnet seal ring if they stay on the bonnet, being careful to not damage the bonnet threads.
4. Place the **bonnet seal ring** and new **bonnet seal** into the **body recesses**.
5. Apply provided lubricant to the **bonnet threads**. Thread the bonnet into the body.
6. Fully back-out the **stem**.
7. Torque the **bonnet hex** according to Table 2.
8. Press the new **roll pin** into the exposed hole on the body.

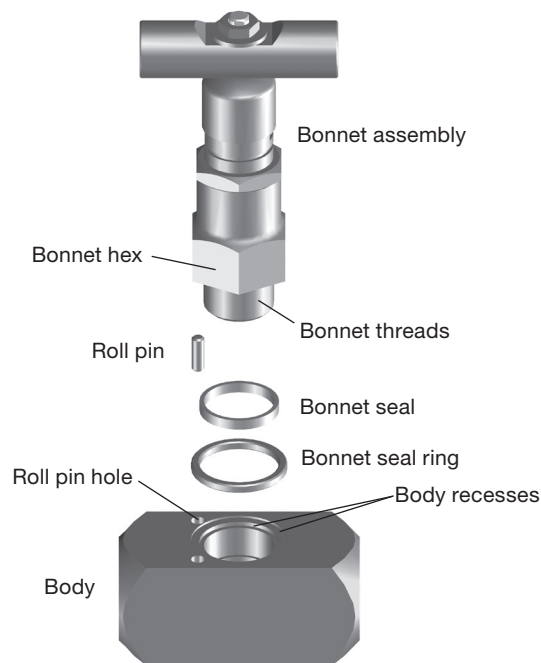


Fig. 1

Table 2 Torque Values, in.-lb (N·m)

Valve Series	Bonnet	Gland Nut	Gland Lock Nut
4GU	650 (73.4)	180 to 300 (20.3 to 33.9)	180 (20.3)
8GU	1100 (124)	240 to 360 (27.1 to 40.7)	180 (20.3)
16GU	2200 (249)	600 to 720 (67.8 to 81.4)	180 (20.3)

## Packing Replacement

1. Using pliers or a wire cutter, remove the **roll pin** from the **body**.
2. Remove the **handle lock nut**, **washer**, **handle**, and **shroud**. Discard the handle lock nut. Set the other parts aside.
3. Loosen the **gland lock nut** and the **gland nut**.
4. Remove the **bonnet** assembly from the **body**. Set aside the **bonnet seal ring**. Discard the **bonnet seal**.
5. Prevent the **stem** from turning while unscrewing the **gland nut** from the **bonnet** and stem.
6. Push up on the **needle** until it stops, and slide the **stem** off the needle.
7. Remove the **needle** by pushing it back down through the **bonnet**.
8. Remove the **gland** from the **bonnet** by turning the bonnet so the external threads are facing up and tapping on a hard surface. If the gland does not fall out, use a pic to remove it, being careful not to damage the bonnet. Set the gland aside.
9. See **Required Tools** for bolt sizes then thread a bolt through the top of the **packing** until the tip just protrudes through the bottom of the packing. Pull the packing out through the top of the **bonnet**. If the bolt threads do not grip the packing, push the bolt end off-center, then remove the packing. Discard the packing.
10. Insert the **needle** into the bottom of the **bonnet**, pushing on the needle until it stops.
11. Place a **new packing** and the **gland** over the **needle** and into the **bonnet**, oriented as shown in Fig. 2.
12. Apply lubricant to the **stem threads**, and thread the stem into the bottom of the **gland nut** until only the **stem knuckle** is exposed.
13. Lubricate the **gland nut** threads and the **stem knuckle**. Slide the knuckle onto the head of the **needle**. Push the gland nut into the **bonnet** and tighten one turn.
14. Prevent the **bonnet** and **gland nut** from turning and unscrew the **stem** from the top of the gland nut until it stops. Thread the gland nut into the bonnet until it stops.
15. Place the **bonnet seal ring** and new **bonnet seal** into the **body recesses**.
16. Apply provided lubricant to the **bonnet threads**. Thread the bonnet into the body.
17. Fully back-out the **stem**.
18. Torque the **bonnet** according to Table 2.
19. Press the new **roll pin** into the exposed **hole** on the body.
20. Torque the **gland nut** according to Table 2.
21. Torque the **gland lock nut** against the **bonnet** according to Table 2. For anti-tamper assemblies, proceed to step 24.
22. Standard handle:
  - Place the **shroud**, **handle**, and **washer** onto the **stem**.
  - Tighten the **handle lock nut** onto the **stem**.

23. Locking handle:
  - Place the **locking handle**, **locking handle label**, and **washer** onto the stem.
  - Tighten the **handle lock nut** onto the stem.
24. Test for proper operation.

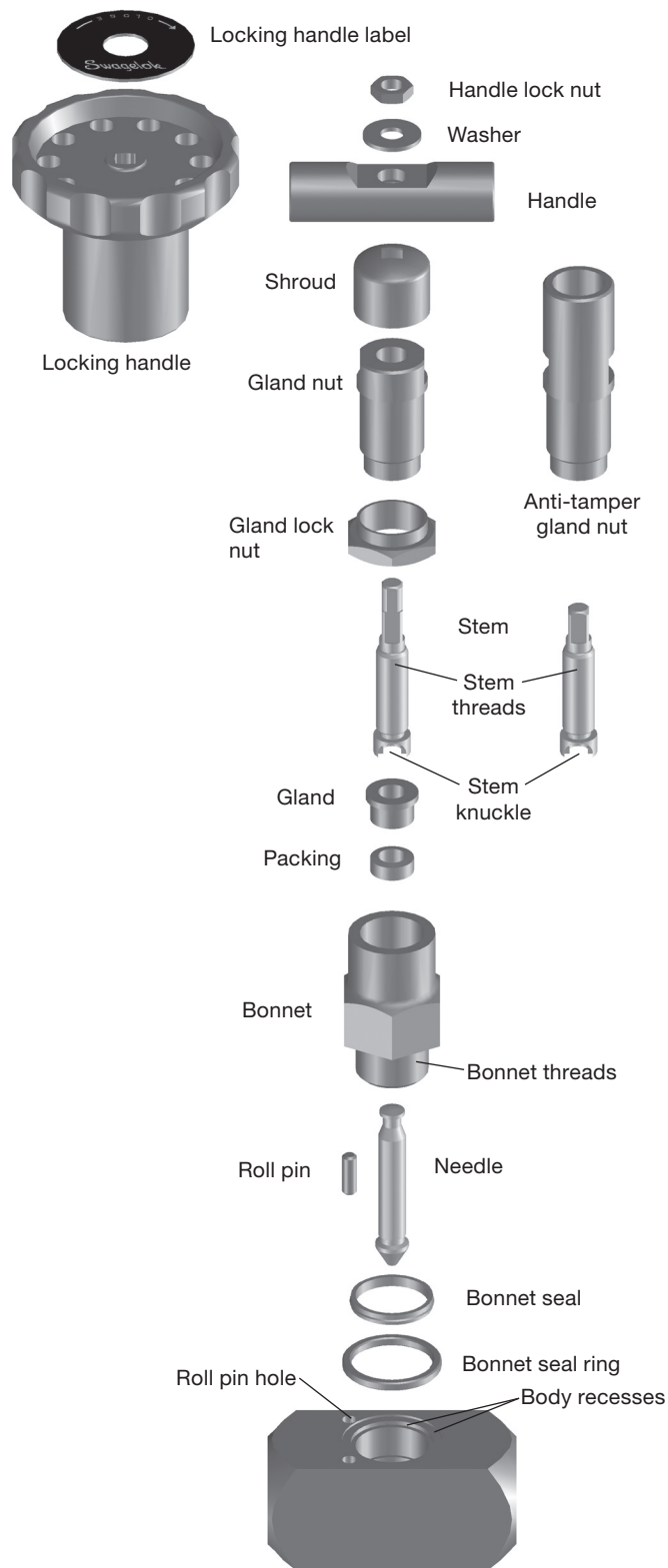


Fig. 2