



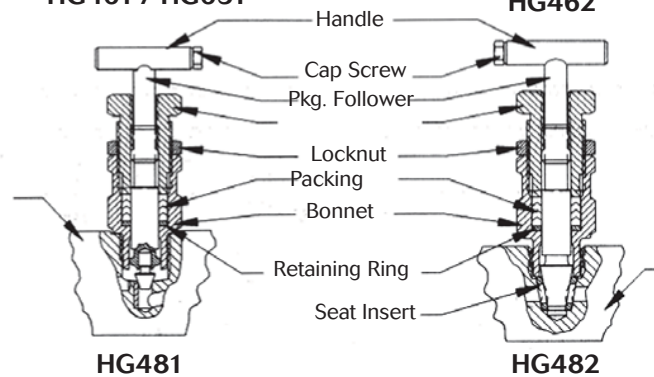
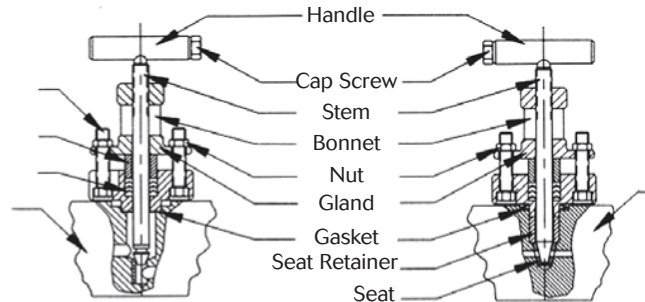
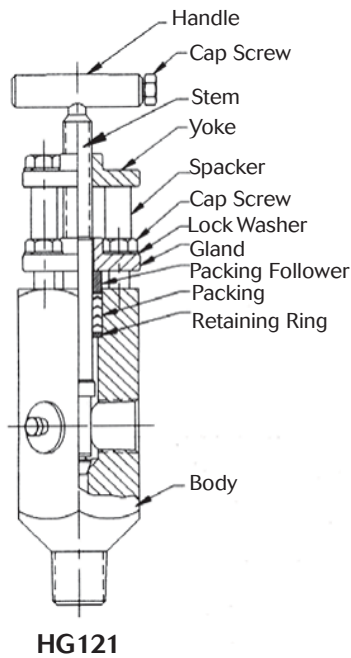
HEX VALVE

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I & M Gauge Valves

Installation & Maintenance Instructions for Gauge Valves: HG12, HG46, HG48, HG65

Warning: Hex Valve Gauge Valves must only be used, installed, and repaired in accordance with these Installation & Maintenance Instructions. Observe all applicable public and company codes and regulations. In the event of leakage or other malfunction, call a qualified service person; continued operation may cause system failure or a general hazard.



Packing Disassembly

- **HG121**
 1. Loosen the handle cap screw and remove handle.
 2. Remove the yoke cap screws and thread the yoke from the stem.
 3. Remove the gland cap screws, gland, and packing follower.
 4. Put the handle back on the stem and after retightening the cap screw, use the handle to pull the stem out of the body, which will remove the packing and retaining ring.

- **HG461/462/651**
 1. Remove the gland cap screw nuts.
 2. Slide the gland and packing follower up the stem and remove the packing from the bonnet.

- **HG481/482**
 1. Loosen the handle cap screw and remove handle.
 2. Remove packing nut and packing follower from bonnet.
 3. Remove the packing from the bonnet.

Packing Reassembly

- **HG121**
 1. Inspect stem and packing chamber bore. Replace stem if damaged or shows evidence of corrosion in the area of the packing. Make sure stem and bore are clean and free of packing or debris. Use solvent only to clean the stem and packing chamber bore.
 2. Lubricate the stem in the packing area with an Anti-Seize compound such as "THRED-GARD".
 3. Install the stem in the body.

4. With the handle removed from the stem, install the retaining ring first onto the stem, followed by the pieces of packing. Packing rings should be pushed into the packing chamber one at a time with a blunt instrument or a cylinder that fits over the stem. Do not use a screwdriver or knife.
5. Put the packing follower over the stem before installing the gland (*flange without threads in the center*), and then assemble the two short cap screws.
6. Tighten the two cap screws evenly and with just enough torque to seal the packing.
7. Put the yoke cap screw spacers in place and thread the yoke on the stem until the yoke cap screws can be installed. **(Caution: Make sure the stem is not against the body seat before tightening the cap screws).**
8. Tighten these yoke cap screws only enough to compress the lock washer against the yoke and spacer. Make sure the stem does not bind, but rotates smoothly.

▪ **HG461/462/651**

1. Inspect stem and packing chamber bore. Replace stem if damaged or shows evidence of corrosion in the area of the packing. (The bonnet must be removed from the body by removing the four bonnet bolts to replace the stem. If the bonnet is removed, replace the bonnet gasket before reinstalling the bonnet. The bonnet bolt threads must be cleaned and lubricated prior to installation. (Torque the bolts to 90 in-lbs.)
2. Lubricate the stem in the packing area with an Anti-Seize compound such as "THRED-GARD".
3. Install the three pieces of Teflon Chevron packing, or three pieces of braided or graphite packing, one piece at a time.
4. Install the packing follower and gland, and tighten the two gland cap screw nuts evenly and with just enough torque to seal the packing.

▪ **HG481/482**

1. Inspect stem and packing chamber bore. Replace stem if damaged or shows evidence of corrosion in the area of the packing. (The bonnet must be removed from the body to replace the stem. Lubricate the bonnet threads prior to reinstalling bonnet into body and torque it to *55 ft-lbs for carbon steel and 90 ft-lbs for SST*). Note: bonnet retaining pin should be installed again to prevent inadvertent bonnet removal.
2. Lubricate the stem in the packing area with an Anti-Seize compound such as "THRED-GARD".

3. With the retaining ring in the packing chamber, install the four pieces of Teflon Chevron packing, or four pieces of braided or graphite packing, one piece at a time.
4. Install the packing follower and packing nut, and tighten with just enough torque to seal the packing.
5. Put the handle back on stem and retighten cap screw.

Packing Adjustment

1. Loosen the packing gland (or packing nut) and rotate the stem back and forth a few times before making any adjustments to packing compression.
2. After tightening the packing gland (or packing nut), again rotate the stem back and forth.

Repairing Valve Seats

▪ **Integral Seat HG121**

If valve seats are leaking due to slight wire drawing or scale build-up on the seat, porting tools are available from the factory for reseating the body seat.

▪ **Soft Seat HG462/482**

1. Remove the bonnet from the body. Using a 3/16" diameter rod, remove the old soft seat by placing the end of the rod through the center flow hole of the seat and, with the rod pivoting on top of the body, popping the seat out through the bonnet port.
2. Install new soft seat in body, lining up the holes in the center of the seat and the body waterway. Put the rod through the seat hole and body waterway to keep the holes aligned when the bonnet is installed.
3. Install the bonnet to the following torque values: 90 in-lbs for HG462 bonnet bolts, 45 ft-lbs for HG482 bonnet.

Note: The HG48 bonnet retaining pin should be reinstalled to prevent inadvertent bonnet removal.

Caution: Stem should not hit rod during assembly.