GX-Type Nuts

Operating Instructions

Pressurize GX-Type Nuts directly using hydraulic handpumps or hydraulic power units. Amtec Hydraclamp GX-Nipple and GX-Coupler high-pressure oil connections are required.

A. Bleeding the Nut

1. Amtec GX-Type Nuts are shipped either fully charged with hydraulic oil, or dry, depending on the design. Through transportation, handling or refilling, air may have been drawn into the pressure chamber of the nut. As with all hydraulic systems, air bubbles must be bled from the nut prior to operation to ensure reliable clamping forces.
2. Clean the threads and contact faces of the GX-Type Nuts, arbors and/or mating tooling. Ensure all tooling is packed solidly together, ready for clamping.
3. Assemble the GX-Nut onto the intended arbor and manually tighten against a continuous counter face, then back-off until the vent screw is in the 12 o'clock position.
4. Open the vent screw on the GX-Nut one full turn using the 6 mm hex wrench provided.
5. Connect the GX-Coupler from the oil pump to the GX-Nipple on the nut (please see website for more details).
6. When using the Amtec Handpump series 114.427.***, rotate the 2-way control valve clockwise until it stops in the "clamp" position.
7. Pump oil at minimum pressure into the GX-Nut until oil flows around the vent screw without air bubbles. Note: keep pressure to a minimum to ensure that the thrust ring is not pushed out.
8. Close the vent screw hand tight, using the 6 mm hex wrench provided, and remove the GX-Coupler from the GX-Nipple by pulling back on the retraction sleeve on the GX-Coupler.
9. Hand tighten the GX-Nut until the thrust ring touches the tooling counter face and check that the thrust ring is also flush with the end face of the nut body.
10. If the thrust ring is not flush with the nut body, reconnect the GX-Coupler to the GX-Nipple, as in Section A, step 5, above. Once the GX-Coupler is securely connected to the GX-Nipple, then rotate the actuator lever on the GX-Coupler to rest against the steel pin. This procedure activates the valve pin in the GX-Coupler, which opens the GX-Nipple to oil passage. Tighten the GX-Nut, using an assist bar in one of the peripheral assist bar holes, until the thrust ring is flush with the end face of the nut body. Excess oil from inside the GX-Nut has been expelled into the pump reservoir.
11. Loosen the GX-Nut 10 to 20 degrees to ensure that only the thrust ring will clamp the tooling when energized, which will provide for easy release of the nut later. Remove the assist bar.
12. Remove the GX-Coupler from the GX-Nipple by pulling back on the retractions sleeve on the GX-Coupler.
13. The GX-Nut is now ready for pressurizing.

B. Install Nuts and Apply Pressure

1. Clean the threads and contact faces of the GX-Type Nuts, arbors and mating tooling. Ensure that all tooling is packed solidly together on the arbor ready for clamping.
2. Assemble the GX-Type Nuts onto the arbors and tighten by hand against the mating tooling. Ensure that the thrust ring is flush with the face of the Amtec Nut.
3. If the thrust ring is not flush with the face of the Amtec Nut then follow steps 10 through 13, Section A, page 44.
4. Loosen the GX-Nut 10 to 20 degrees to ensure that only the thrust ring will clamp the tooling when energized, which will provide for easy release of the nut later. Remove the assist bar.
5. Ensure that the vent screw is hand tight using the 6 mm hex wrench provided.
6. Wipe the end face of the GX-Nipple with a clean thumb to ensure that dirt is not pumped into the nut.
7. Apply the GX-Coupler and operate the handpump. Please see website for more details covering Amtec oil handpumps operating instructions.
8. The GX-Nut is now fully pressurized and ready for operation.

C. Release Pressure and Remove Nuts

1. Wipe the end face of the GX-Nipple with a clean thumb to ensure that dirt is not pumped into the nut.
2. Apply the GX-Coupler and operate the handpump. Please see website for more details on handpumps operation instructions.
3. Since GX-Type Nuts are single acting hydraulic systems, the thrust ring must be manually retracted to the home position. To accomplish this, leave the GX-Coupler in place, insert an assist bar into one of the peripheral assist bar holes in the nut body and tighten the nut onto the arbor until the thrust ring is flush with the end face of the nut body. With the assist bar still in the assist bar hole, loosen the nut 10 to 20 degrees, then remove the bar. All excess oil inside the pressure chamber has been sent to the reservoir.
4. Pull back on the retraction sleeve on the GX-Coupler and remove the coupler from the GX-Nipple.
5. The GX-Nut is now fully de-pressurized and ready for removal by hand.

D. Remarks

1. Do not apply pressure to the GX-Type Nuts when they are off-line. The thrust ring has no retainer and can be forced out of the pressure chamber causing distortion of the thrust ring and possible rupture of the seal.
2. Use only genuine Amtec GX-Nipples, vent screws, seals, thrust rings and handpumps to guarantee clamping reliability.
3. Use only ISO VG 22 or 32 hydraulic oil in the pump reservoir. Keep reservoir cap in place to eliminate dirt and dust.

E. Service

1. For service and spare parts contact your local distributor or Amtec Hydraclamp Inc. directly.