- Operate the wrench in automatic mode for rotational and horizontal positioning as well as for makeup and breakout cycles whenever possible. To operate fully in automatic mode, ensure the following:
  - Rotate encoder is installed (See Product Bulletin # Wrench 18), enabled, and functional.
  - Horizontal and torque cylinder positional transducers (LVDTs) are installed, enabled, and functional.
  - System, makeup, and breakout transducers are calibrated.
  - Horizontal position settings for park, trip, mouse hole, and hole center are properly set in settings screen in HMI.
  - Rotational position settings for left limit, right limit, hole center, and mouse hole are properly set in settings screen in HMI.
  - If there are any issues with ensuring consistent operation in automatic mode, please contact RigLine 24/7™ to determine corrective action.
- For older wrenches, ensure the horizontal valve section has been upgraded to valve section with sealed electric actuator (See Product Bulletin # Wrench 012 (TM-012))
- On Nabors Pace-X rigs, ensure drawworks handshake is enabled in HMI settings.
- Perform regularly scheduled preventive maintenance checks including the following:
  - Perform preventive maintenance per Canrig TM80 wrench maintenance poster P/N C10175.
  - Visually inspect the undercarriage daily for signs of loose or damaged cap screws.
  - Apply a light clockwise force to each undercarriage cap screw with an open-end hand wrench to check for tightness twice a week.

**Note:**
In order to properly check the cap screws for tightness, it may be necessary to cut the retaining wire attaching the cap screws together.

- Torque loose cap screws to 99 ft-lb with a torque wrench or contact RigLine 24/7™ to assist if a torque wrench is not available. If these same fasteners come loose again, contact RigLine 24/7™ for further instructions.
- Ensure the torque and spinner assembly is level by placing a bubble level on top of the upper tongs. Contact RigLine 24/7™ for leveling instructions.
- Install upgrades recommended in next section

# Upgrade Kit

Canrig recommends installing bumpers on the vertical lift weldment. The bumpers will help protect the heads of the cap screws in case the undercarriage contacts the ground.

The upgrade kit for the bumpers and shear plates is AY51332. See Table 1 for the kit parts list.

**Table 1: Upgrade kit parts list**

| **Canrig P/N** | Qty | Description |
| --- | --- | --- |
| DT50548 | 2 | BUMPER, TM80 UNDERCARRIAGE |

# Upgrade Kit Installation

1. Perform a job safety analysis (JSA).
2. Unless attempting to perform the upgrade with the vertical lift assembly still attached to an operational wrench, skip to step 7.
3. Raise the wrench vertical lift assembly to a comfortable working height and completely support the underside of the assembly with wooden blocks or other supporting device.
4. Lock out and tag out the wrench and HPU, ensuring all electrical power is disconnected.
5. Physically disconnect the cable leading from the wrench to the PLC control box.
6. Dissipate any residual hydraulic pressure in the control lines by manually activating at least two of the valves on the tong valve bank.
7. Properly ground leads to prevent arcing across any internal components such as bearings or cylinders.
8. Isolate the area to be welded with weld blankets to the maximum extent possible.
9. Mask off exposed hydraulic cylinder rods and any other components that could potentially be damaged by weld splatter.
10. Liberally coat the exposed vertical lift cylinder shaft with grease.
11. Remove the paint from the area to be welded approximately two inches beyond the edge of the edge of the future weld seam and clean the newly exposed area with a wire brush.
12. Locate and weld the bumpers as indicated in Figure 2 on page 5. Weld per Canrig procedure CRDT-001 or equivalent. Refer to Figure 3 on page 5 for an illustration of installed bumpers. Note: The bumpers are shown in blue for illustration only.
13. Apply touch-up paint to affected area.