



Model: See Affected Units

Serial #: N/A

Mar. 11, 2024

Product Bulletin # TDS-218 Rev 2

Alert



Back-up Wrench Gripper Unintended Movement

NOTICE

A testing procedure has been added on page 7. Perform this test after replacing components as indicated in "Recommendation" on page 2.

Issue

Canrig has been made aware of incidents involving the following unintended movement of the Back-up Wrench (BUW) gripper:

- Unintended closure of the BUW gripper due to back pressure in the hydraulic manifold when using other hydraulic function of top drive that use a large volume of hydraulic fluid such as Pipe handler, torque boost, etc.
- Premature closure of the BUW gripper due to a failed pressure reducing valve.
- Failure to release the gripper due to the low incorrect pressure setting in the pressure reducing valve.

The issues related to the pressure reducing valve only affect top drives with the CDS integration.

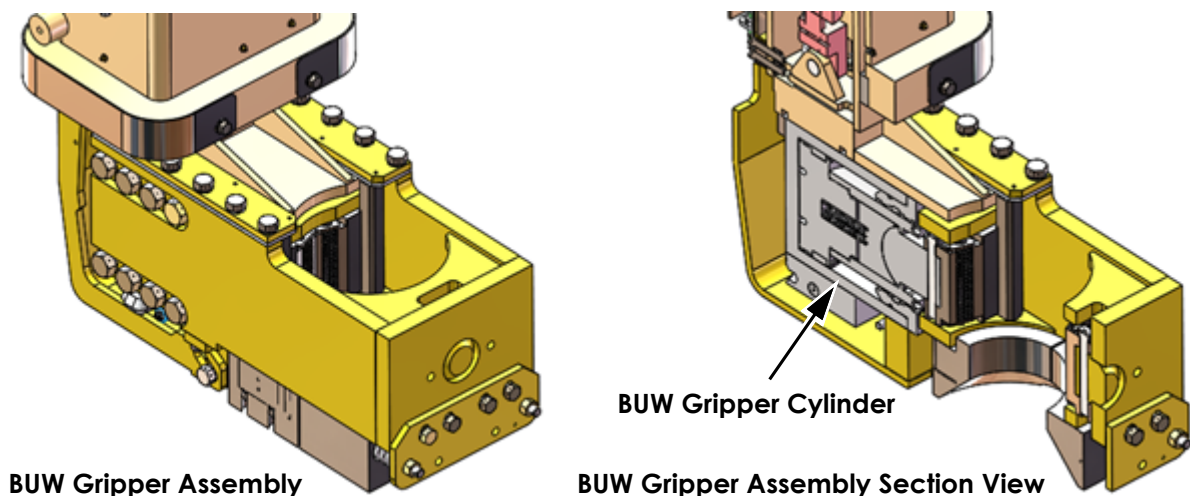


Figure 1: BUW Gripper Assembly



Model: See Affected Units	Mar. 11, 2024
Serial #: N/A	
Alert	

Affected Units

Canrig top drives models C275 through C750.

Recommendation

- If you have experienced this situation contact RIGLINE 24/7™.
- Until the recommended action has been taken, be mindful of this potential movement when using hydraulic functions that use a large volume of hydraulic fluid such as the link tilt, BUW positioner, hydraulic powered lube cooler, or torque boost.
- If the handler rotate lock is not engaged, an unintended extension of the BUW gripper could cause the elevator links to swing. Keep personnel clear of the elevator link swing radius.
- To prevent this situation, remove the pressure reducing valve on station "L" (BUW gripper) of the top drive hydraulic manifold and install the check valve. Contact RIGLINE 24/7™ to order the kit (Canrig P/N: AY25154) and refer to section below "Check Valve Installation" on page 5. See Figure 2 on page 3 for schematic included with check valve stack attached to top drive hydraulic manifold.
- If the kit (Canrig P/N: AY25154) is not being implemented per above, Canrig strongly recommends to remove the pressure reducing sandwich valve and install the BUW solenoid valve (DCV) back on manifold using socket head fasteners (Canrig P/N: SH-10-24-0200). See Figure 3 on page 4 for schematic.
- After removing the 750 psi pressure reducing sandwich valve, ensure the pressure reducing valve cartridge located at the 20L port on the hydraulic manifold is set to 2,000 psi.

NOTICE

Removing the pressure reducing valve will hinder the use of the integrated CDS tool. An additional kit is required to use the CDS tool. Refer to the Canrig product bulletin CDS-001 for further information on the kit required and installation procedure for using integrated CDS tool.

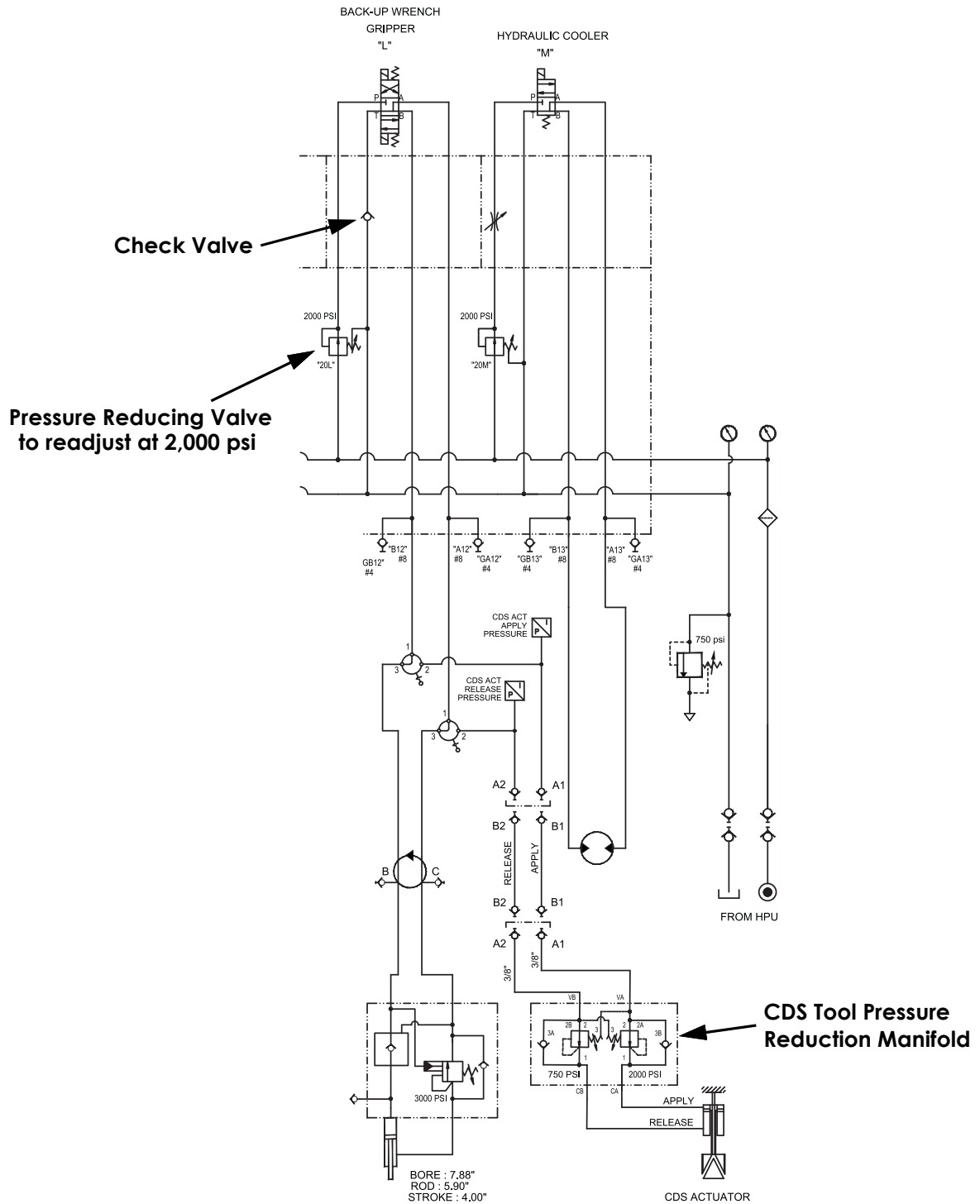


Figure 2: Schematic for the BUW after removing the pressure reducing valve with check valve

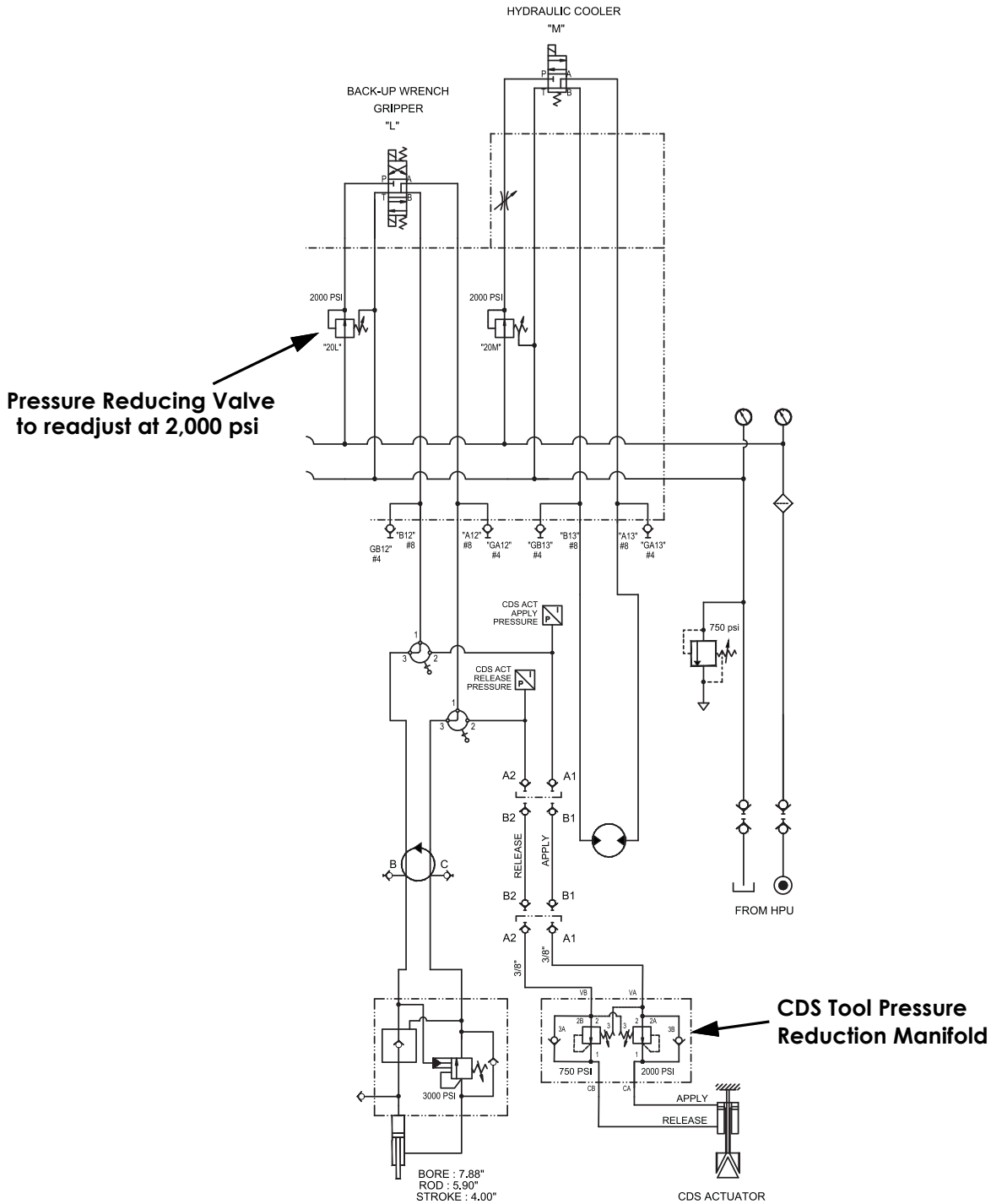


Figure 3: Schematic for the BUW after removing the pressure reducing valve without check valve



Model: See Affected Units	Mar. 11, 2024
Serial #: N/A	
Alert	

Check Valve Installation

Table 1: Check Valve Installation Kit (P/N: AY25154)

Canrig P/N	Description
H07-1010-030	VLV, HYD, CHECK, SANDWICH, D03, CARTRIDGE
SH-10-24-0375	CAPSCR, HEX SOC HD, #10-24UNC x 3.75

1. See Figure 4 to locate the BUW gripper valve bank (station L) on the top drive hydraulic manifold.

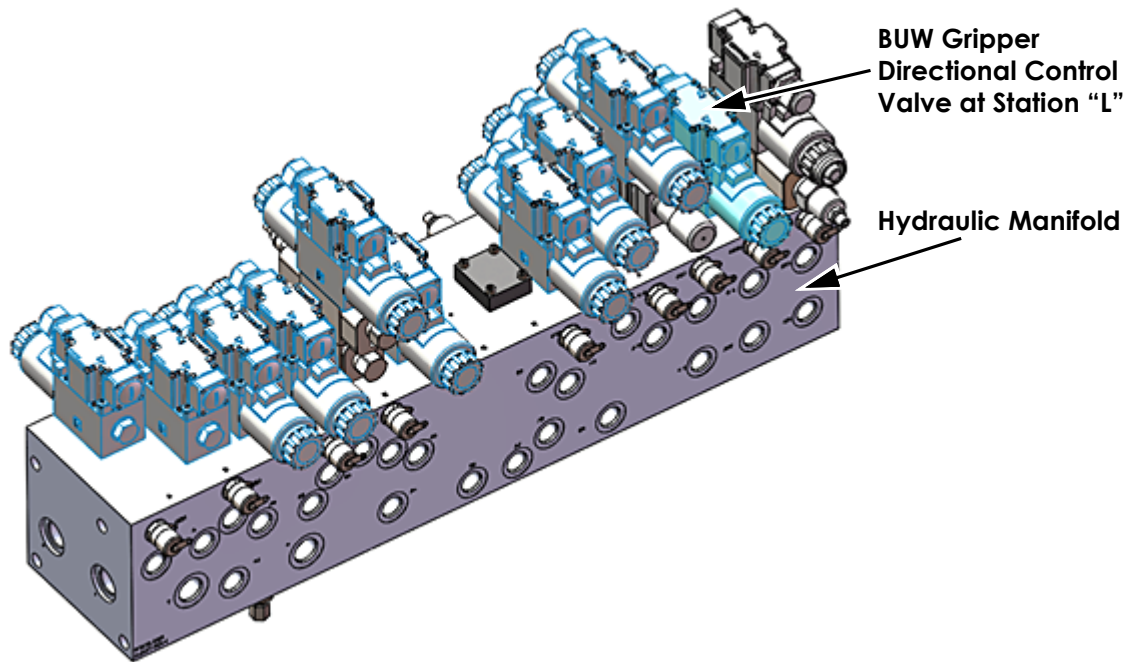


Figure 4: Hydraulic manifold

Alert

2. Unscrew the fasteners to remove the pressure reducing valve (PRV) as shown in Figure 5. If the check valve is not available then install the BUW valve bank using the socket head fasteners (Carrig P/N: SH-10-24-0200).

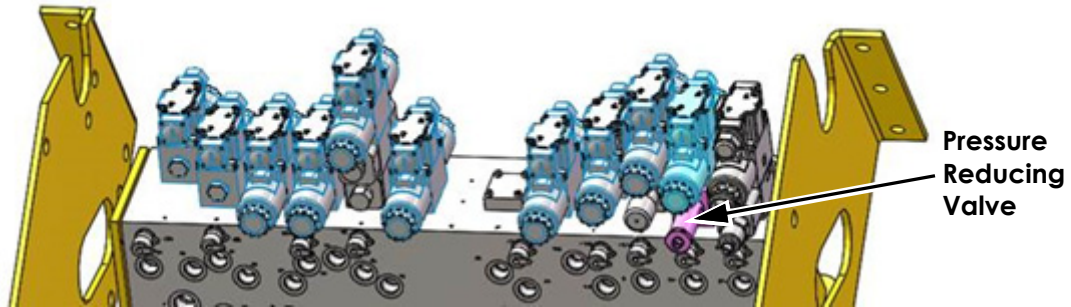


Figure 5: Pressure reducing valve

3. Using the fasteners from the kit, install the check valve assembly (P/N: H07-1010-030) between the BUW gripper DCV and the hydraulic manifold as shown in Figure 6. Torque the fasteners to 6.5 ft-lbs using Loctite[®] 242.

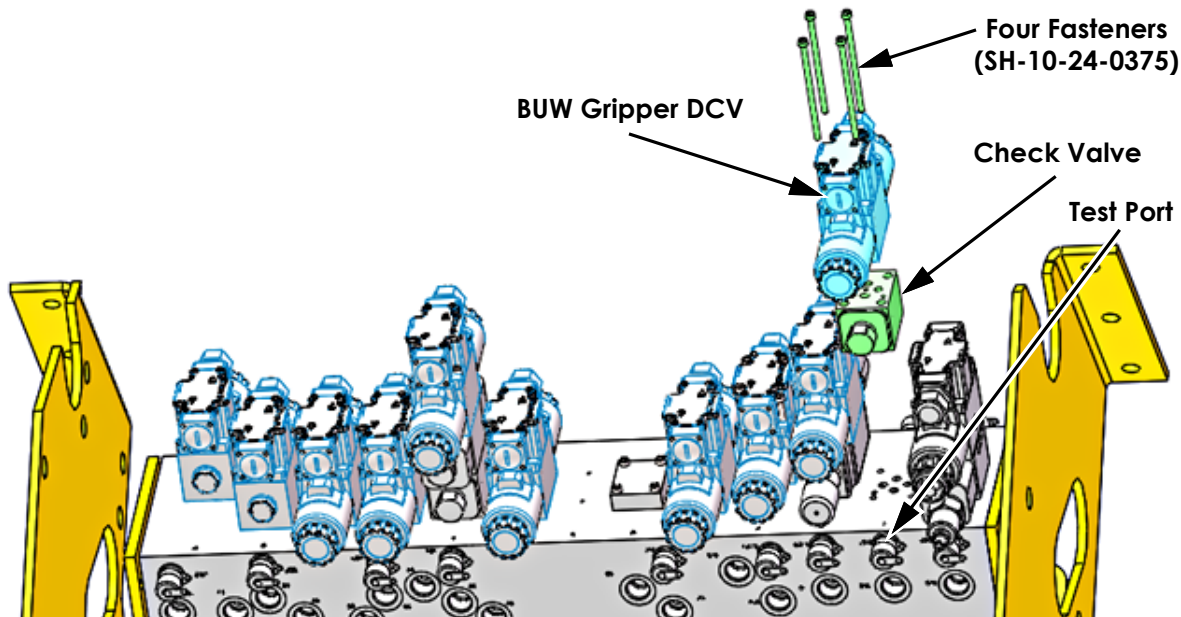


Figure 6: Installing check valve

WARNING

Check valve knob must be oriented toward the hydraulic manifold test port as shown in Figure 6.



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Alert	

Testing Procedure

1. Verify the hydraulic return (tank) pressure of the Back-up Wrench (BUW) Gripper directional control valve (DCV) when the valve is in the central/rest position (coil not activated), the HPU is running, and there is no command from the PLC or manual operation to engage the BUW Gripper cylinder.
2. Install a pressure gauge at test points GA12 and GB12 of the BUW Gripper station on the Top Drive main hydraulic manifold to confirm the return (tank) line pressure.
3. Place the pressure gauges on the test points of the Rotary Manifold at ports B and C on the Outer Sleeve and monitor the BUW Gripper cylinder hydraulic pressure again.
4. Record all these hydraulic pressures to assess whether the check valve or directional valve of the BUW Gripper DCV fails to stay closed without a command. Also, confirm there are no hydraulic leaks on the rotary manifold.
5. If the hydraulic pressure at the BUW Gripper test points are higher than the return pressure on the Top Drive Return Pressure gauge, replace the BUW Gripper DCV and the check valve with new components and repeat Step 2.
6. If the BUW Gripper DCV and check valve are changed and the issue still persists, the seals on the rotary manifold need to be checked to ensure pressure is not transferring from other hydraulic functions.
7. Also, review and verify the code, interlocks, sensors, and electrical wiring to ensure there are no unintended triggers causing the BUW to close unexpectedly.
8. Contact RIGLINE 24/7™ if you need assistance.