



Model: Sigma	Feb. 29, 2024
Serial #: N/A	
Product Bulletin # TDS-249 Rev 1	

Sigma Back-Up Wrench Cylinder Rod

Issue

On a Sigma 500T top drive, the Back-up Wrench (BUW) cylinder rod unscrewed from the piston due to vibration. As a result, the BUW positioner separated from the BUW outer tube and descended 10ft to the rig floor.

Affected Units

All Sigma Top Drives Back-up Wrenches utilizing double acting cylinders (Canrig part # H13248).

Recommended Actions

1. Inspect the BUW by removing the tool joint clamp of the lower well control valve (LWCV) and fully retracting the BUW cylinder. After the BUW is fully retracted, measure the gap between the end of the outer tube and the top surface of the boss of the inner tube as shown in Figure 1 on page 2.

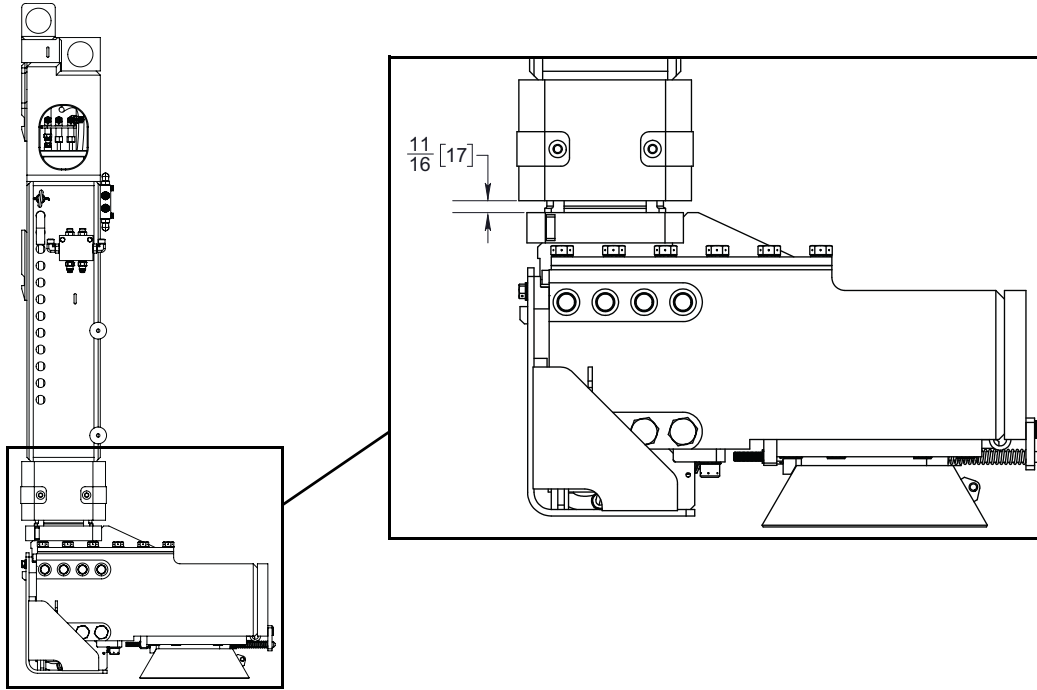


Figure 1: BUW retracted measurement

2. The expected measurement of this gap should be $11/16$ " , but ensure the measurement taken in Figure 1 is no more than $1-3/16$ ". Inspect this dimension on a weekly basis until the cylinder is replaced with a new cylinder that provides a permanent solution. If the measure is over the specified maximum distance, remove the BUW cylinder and replace it. If a spare unit isn't available, contact your Canrig representative or RIGLINE 24/7™.
3. Safety securement is required to ensure retention of the inner tube assembly. Apply the safety securement kit (P/N: AY25846) in the field following the instructions below.

Table 1: Kit, Field, BUW, Safety Securement (P/N: AY25846)

Item	Qty	Canrig P/N	Description
1	2	DT26999	PLATE, 1/2", BUW, SAFETY SECUREMENT
2	1	DT27000	PIN, 1"DIA, BUW, SAFETY SECUREMENT
3	2	M19-4012-010	EYEBOLT, SHLD TYPE, 1/2-13UNC x 1 1/2
4	2	M10207	PIN, COTTER, 3/16 X 1.50
5	180 in.	M21-2003-010	WIRE ROPE, 1/4, 7 x 19, STAINLESS
6	4	M19-3010-010	FERRULE, 1/4, OVAL, ALUMINUM

4. Raw material cut for weld plate (item 1) inner tube weldment detail shown in Figure 2.

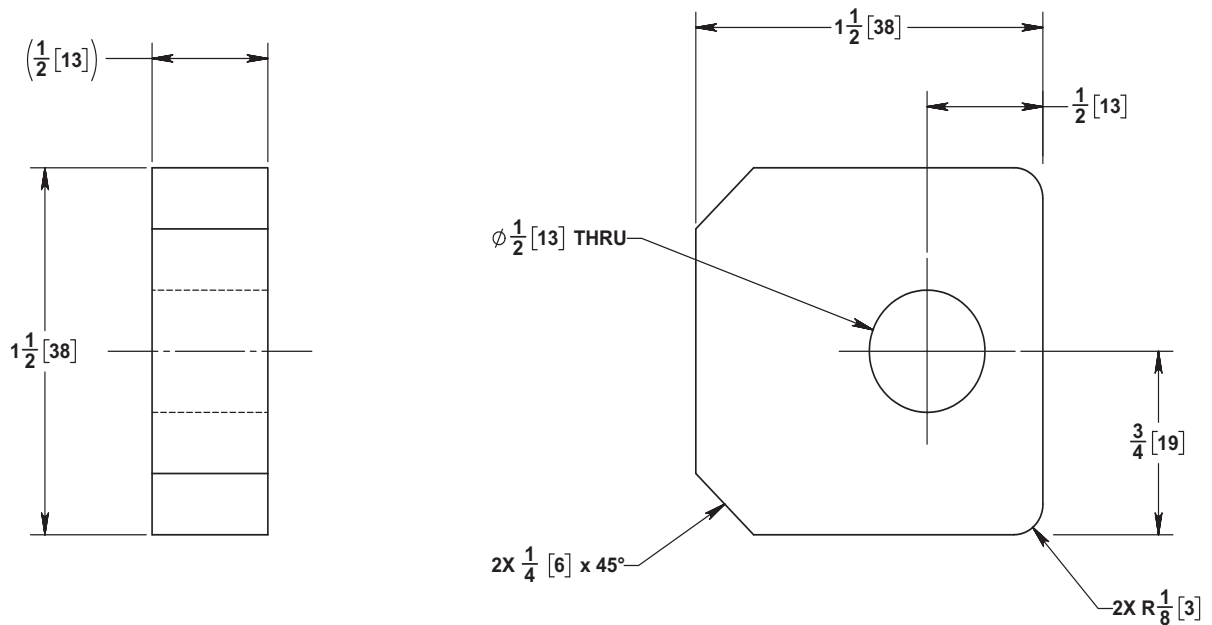


Figure 2: Item 1 (DT26999), A572-50 Weld plate size 1/2 x 1 1/2 x 1 1/2 (QTY 2)

5. Weld the 1/2" plate (item 1) to the inner tube boss as shown in Figure 3.

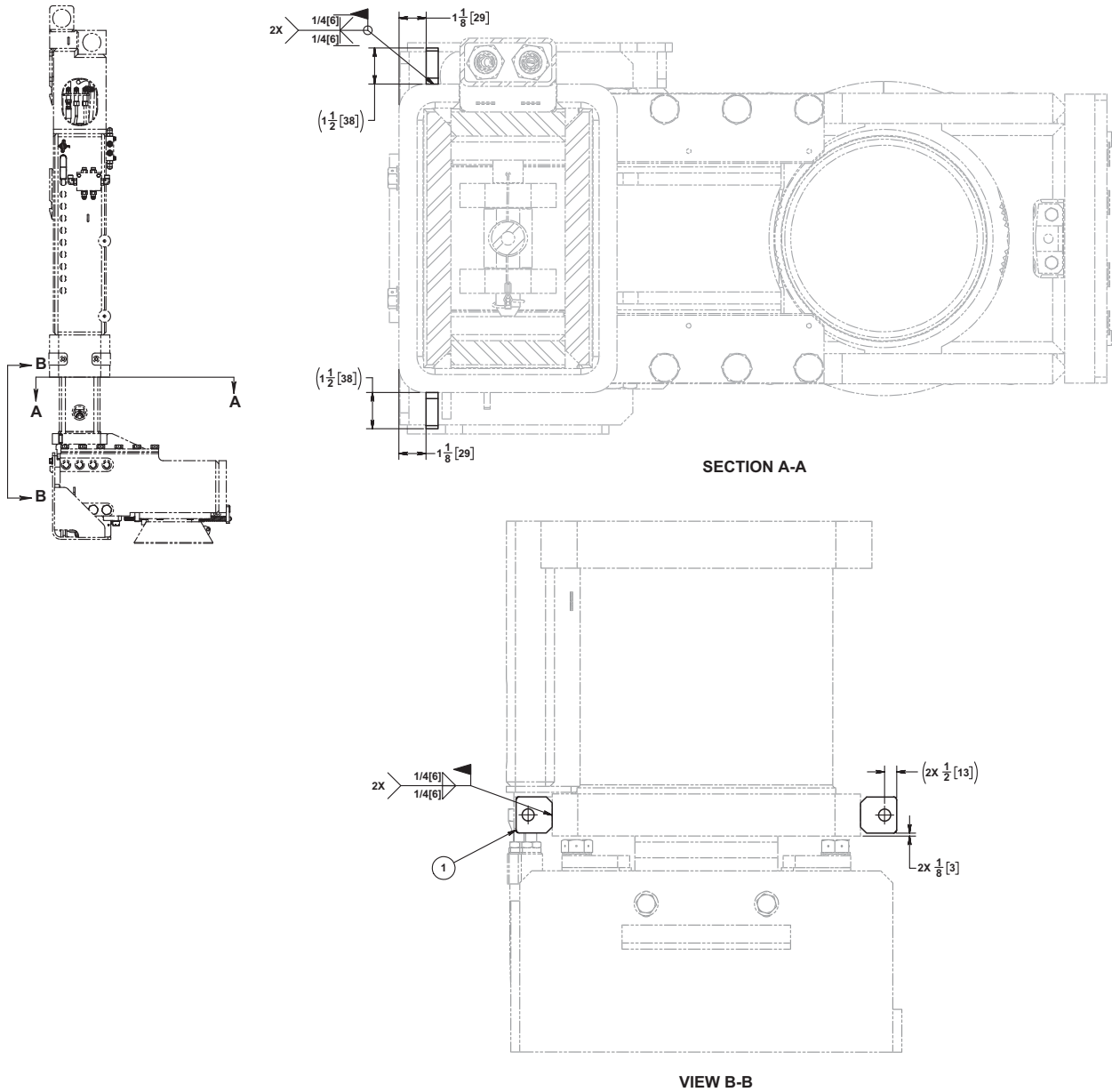


Figure 3: Item 1 (DT26999) Welded plate location

6. Raw material cut for the pin (item 2) (P/N: DT27000) is shown in Figure 4.

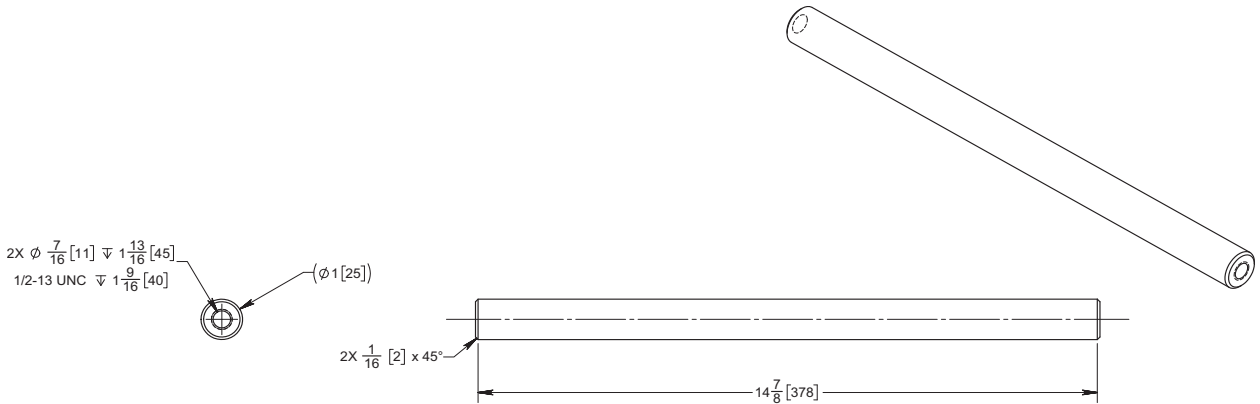


Figure 4: Item 2 (DT27000), 4140 Round Bar size 1 Ø x 15 (QTY 1)

7. On a workstation, hand tighten the eye bolts (item 3) on the pin (item 2) and drill two 7/32" diameter holes for the cotter pins (item 4) as shown in Figure 5.

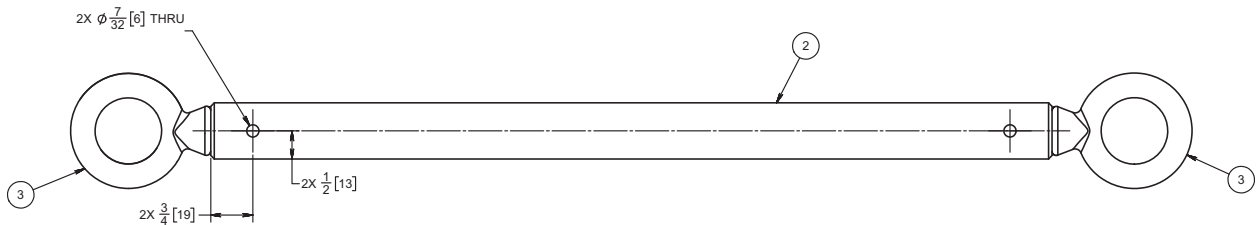


Figure 5: Item 2 (pin) drilled hole detail for installation of item 4 (cotter pin)

- Lower the BUW to the calibrated retracted position for the desired operating height and install the pin and eye bolts (items 2 and 3) in the hole directly above the stop pin and install the cotter pins (item 4). See Figure 6 on page 6
- Lower the BUW to the calibrated extended position for the desired operating height and use 1/4" safety wire (item 5) and 1/4" ferrules (item 6) to safely secure the weld plate (item 1) and the eye bolt (item 3) together on both sides, as shown in Figure 6 on page 6. Refer to Canrig Specification 701.

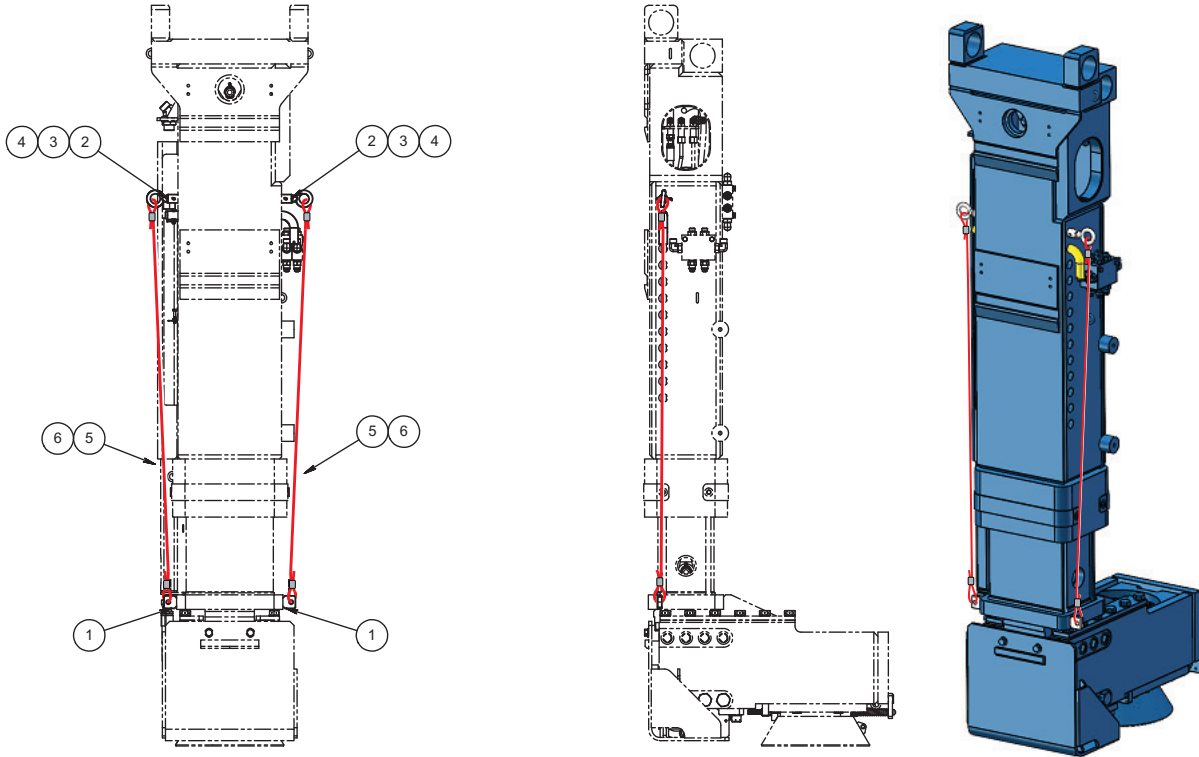


Figure 6: Safety securement detail for the calibrated extended position

Canrig is working on a permanent solution and will issue a bulletin as soon as the new cylinder is available to order.