



Model: See Affected Units	Apr. 10, 2024
Serial #: N/A	
Product Bulletin # TDS-013 Rev 2	

Alignment of the Mast, Torque Guide and Top Drive

Proper alignment of all components is essential for efficient and safe operation of the top drive system.

Affected Units

All rigs with torque reaction assembly or mid-mast turnbuckle kit installation.

Recommendation

Perform the following alignment procedures:

A. Before Mast Raising

1. Before mast erection, check the centering of the torque guide with respect to the mast. Measurements taken to each side of the mast from the torque guide should be equal to +/- ½ inch.

Adjust the turnbuckles **equal** amounts in **opposite** directions to correct any centering errors. For example, if the torque guide is too close to the driller's side at a particular mounting point, then, extend the driller's side turnbuckle and retract the off-driller's side turnbuckle in equal amounts.

2. Adjust the fore-aft position of the torque guide in the mast according to torque reaction assembly or mid-mast turnbuckle kit installation drawings.

When measuring the fore-aft position, measure at each side to the guide and take the average.

The tolerance for the fore-aft position should be +/- ½ inch.

Correct the fore-aft position by adjusting the two turnbuckles **equally** and in the **same** direction.

3. **Ignore the torsional position of the torque guide at this stage – the torsional position is not controlled by the turnbuckles.**
4. Visually check the straightness of the torque guide both in the side to side and fore-aft planes and make minor adjustment as required.



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5. After initial commissioning, the torque guide turnbuckles should never need to be re-adjusted.
6. It is recommended that the turnbuckles be wired to prevent accidental adjustment or movement due to drilling vibrations.

B. With the Mast Up and the Top Drive Installed

1. Level the mast side-to-side and front to back so that a stand of drill pipe in the elevators hangs over well center.
2. Refer to the guiderunner assembly drawing and adjust the top drive guide runners until the quill is vertical and centered over the rotary table.
 - a. Loosen clamping bolts, 2 turns.
 - b. Move the runners in the desired directions with the jacking nuts.
 - c. The runners should be approximately 1/8 inch loose on the track.
 - d. Re-tighten the clamping bolts as per ENG 725.

The runners are independently adjustable at four points (see Table 1 on page 3):

- Driller's Side Top: DS Top
- Driller's Side Bottom: DS Bottom
- Off-Driller's Side Top: ODS Top
- Off-Driller's Side Bottom: ODS Bottom



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Move the runners in the following directions **with respect to the top drive** to correct the following errors:

Table 1: Runner Direction for Error Correction

	DS Top	DS Bottom	ODS Top	ODS Bottom
Top drive leaning back at the top	Back	Forward	Back	Forward
Top drive leaning forward at the top	Forward	Back	Forward	Back
Top drive too far back	Back	Back	Back	Back
Top drive too far forward	Forward	Forward	Forward	Forward
Top drive off center toward the Driller's side	Back	Back	Forward	Forward
Top drive off center toward the Off-Driller's side	Forward	Forward	Back	Back

Note: The top drive should be able to cleanly stab into pipe set in the slips.

3. If the mast is re-leveled after rig-up, re-tighten the torque guide connection flange bolts at the first flange (immediately above the transport skid section).



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