



**SUBJECT:** Revised Operational Requirements for Adjustable Bend Housing/Fixed Bend Housings

**CHANGE; DESCRIPTION; REASON:**

In the past, the Toro Drilling Motor Handbook listed recommendations for drill-string rotation in order to prolong Motor life. Toro Downhole Tools is revising these recommendation regarding the rotation of the drill-string when utilizing a Motor with either an ABH (Adjustable Bend Housing) or a Fixed Bend Housing.

**Revised Recommendations:**

ABH Angle	Recommended Rotation of Drill-String
0.00 - 1.00 degrees	Allowable (65 RPM or less)
1.22 - 1.76 degrees	Permissible for short periods (50 RPM or less)
2.00 degrees	Not Recommended

Fixed Bend Angle	Recommended Rotation of Drill-String
0.00 - 2.00 degrees	Allowable (65 RPM or less)
2.12 - 2.25 degrees	Permissible for short periods (50 RPM or less)
2.42 - 3.00 degrees	Not Recommended

**OPERATION / INSTRUCTIONS:**

The operator is to be cautioned that the amount of angle and amount of rotation can play a significant role in the ABH unthreading downhole during rotation, especially during Motor stalls. Care should be utilized when determining ABH angle and drill string rotation to avoid threaded connection unthreading during operation.

Additionally, the number of bending cycles at higher fixed bends and higher RPM can reduce the fatigue life of the threaded connection. Therefore, as with an AHB, care should be utilized when determining Fixed Bend angle and drill string rotation to avoid threaded connection fatigue during operation.

It is recommended that drill-string rotation not exceed these revised specifications.