Safety Bulletin		
No: SB062	**Rev: 0**	**Date: March 12, 2013**
Over-Stressed Torque Restraint On 350-EXI-600 Top Drive		

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BACKGROUND INFORMATION:

Two issues have been identified where the lugs on the TESCO 350-EXI-600 Top Drive torque restraint can become over-stressed and fail during operation.

Issue 1: When the 350-EXI-600 Top Drive is extended all the way out, and the torque track has an excessively dirty or rough surface (or the torque bushing linings excessively worn), the extend frame could become locked in that position. The top drive would not easily retract back in without simultaneous lowering or shaking of the top drive, which could result in the upper clevis weld of the EXI torque bushing front plate being sheared off. Consequently, prolonged shaking of the top drive while it is extended or stuck has the potential to cause severe damage to equipment.

Issue 2: An investigation has also found that a lack of fusion between the weld material and the clevises was a significant contributing factor in this failure. TESCO identified a single vendor that had provided faulty torque bushing products since 2010. As a field retrofit procedure, TESCO is recommending to grind out the existing welds and replace them with a revised weld. A revised drawing of the front plate (810331 Rev4) has been issued to assist in the rework of all existing units.

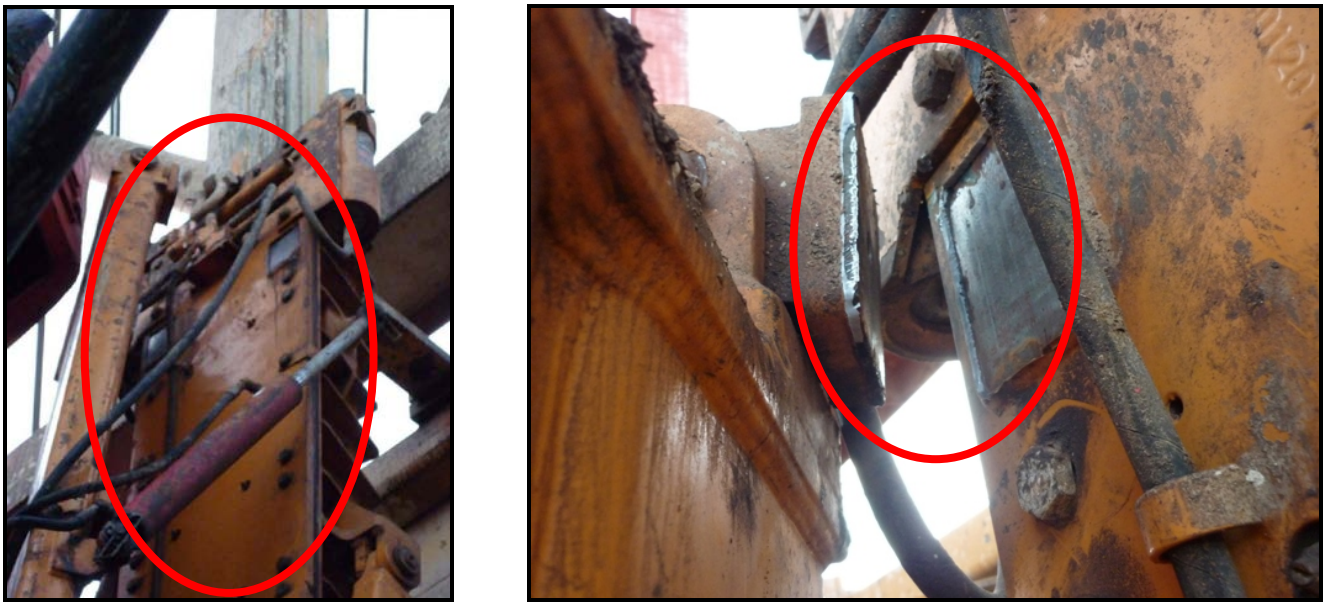

Figure 1: Upper clevis weld of EXI torque bushing front plate sheared off from top drive

Version	Date (D/M/Y)	ECN	Description of Bulletin Changes
Rev 0	12/Mar/2013	097-0193	Initial release of document

Notwithstanding the fact that this incident did not result in significant damage, if a similar failure were to occur while rotating, severe damage (up to and including injury or death) could result from the top drive rotating unrestrained in the mast. TESCO advises that the top drive should not be used to provide rotation (drilling, torqueing of connections, etc.) until such time as a repair is undertaken.

AFFECTED PRODUCTS:

TESCO has identified twelve torque bushings used for 350-EXI-600 Top Drive Systems manufactured and delivered since 2010 that require action. The twelve torque bushings are identified by serial number as per Table 1:

135168-3-840049-1	135168-3-840049-2	136722-3-840049-1	136722-3-840049-2
141706-3-840049-1	141706-3-840049-2	141706-3-840049-3	141708-2-720336-1
141708-3-840049-1	141708-3-840049-2	141708-3-840049-3	011433-1-840049-1

Table 1: Serial numbers of affected torque bushings

ACTION REQUIRED:

TESCO is investigating whether the weld quality issue identified as a significant contributor to this failure was an isolated case or a systematic problem. Given that the consequences of failure may be severe and include the possibility of unrestrained rotation of the top drive in the mast, the following actions should be implemented as soon as it is practical:

1. The welds attaching the clevises to the torque bushing front plate (TESCO part number 810331, Figure 2) are to be fully ground out and replaced with 3/4" fillet welds under an approved weld procedure for A514 grade material (Quenched and Tempered 100 ksi yield plate) as specified in drawing 810331 Rev4.
2. Ensure that the rework is performed by a qualified welder using an approved weld procedure specification suitable for A514.
3. New cylinders (TESCO part number 0926) are to be installed with cylinder stop tubes (TESCO part number 5012642) to prevent the cylinders from locking when fully extended.

   Note: This will limit the extend feature to 57" instead of 60".

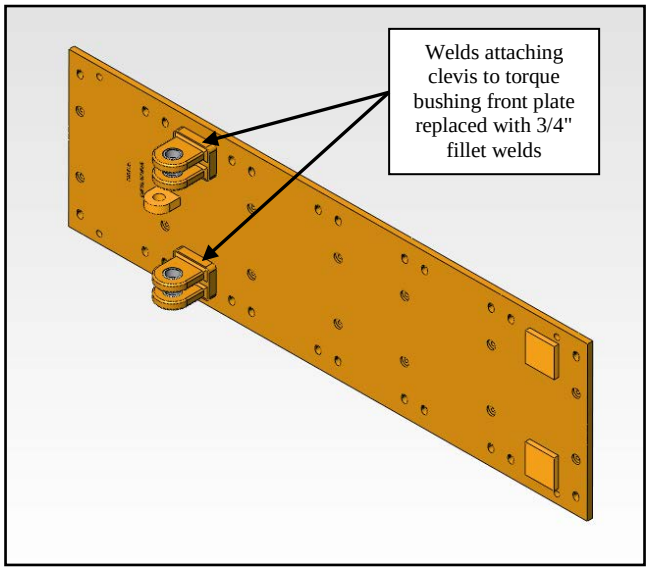

Figure 2: EXI torque bushing front plate

Until such time these actions can be taken, a safety sling with a capacity of 5 tons and sufficient slack to allow for full extend should be attached between the torque bushing and the top drive yoke to prevent a potential dropped object incident.