Safety Bulletin		
No: SB077	**Rev: 0**	**Date: March 12, 2013**
500/650-ECI/S-900/1350 and 500/650-HCI/S-750 Torque Bushing Clevises		

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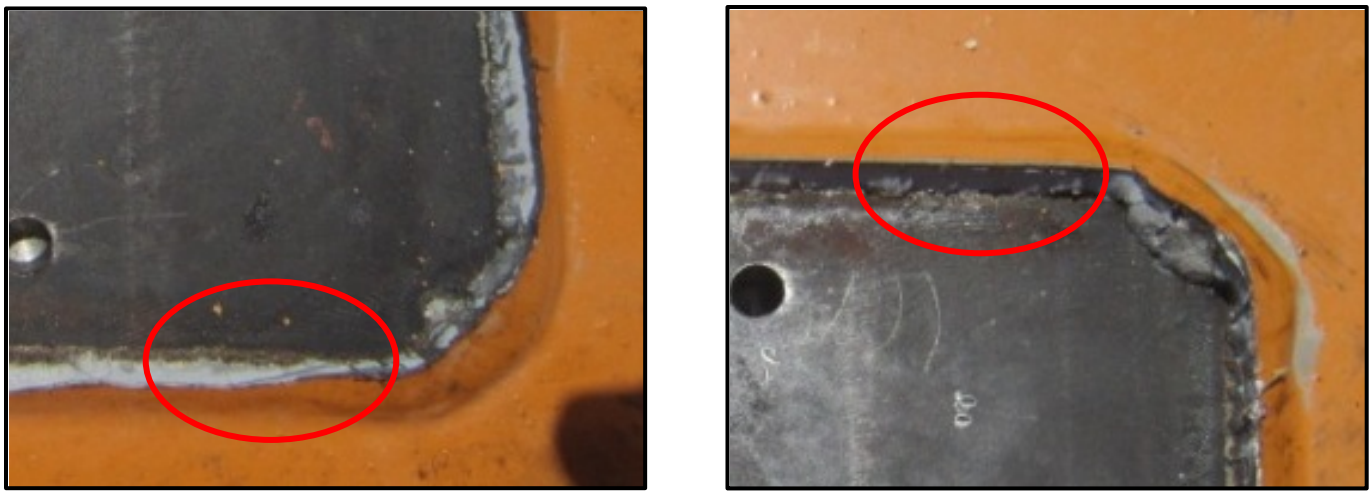
BACKGROUND INFORMATION:

An incident has occurred where the extend frame clevises on a torque bushing used on a 500-ECI-1350 Top Drive failed at the welds during a drilling ahead operation (see Figure 1). A preliminary investigation points to a lack of fusion between the weld material and the clevises as the significant contributing factor in this failure. Figure 2a shows the failed weld; Figure 2b shows a portion of the weld with evidence of lack of fusion. TESCO has 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 (TESCO part number 14728 Rev 9) has been issued to assist in the rework of all existing units.

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.

a) b)

Figure 1: Overall failure of the extend frame clevises



a) b)

Figure 2: (a) fractured weld, (b) area of weld showing lack of fusion

AFFECTED PRODUCTS:

TESCO has identified eleven torque bushings used for 500/650-ECI/S-900/1350 and 500/650-HCI/S-750 Top Drive Systems manufactured and delivered since 2010 that require action. The eleven torque bushings are identified by serial number as per Table 1:

122750-1-720336-1	**122750-1-720336-2**	**122750-1-720336-3**	**122750-1-720336-4**
122750-1-720336-5	**103676-1-720336-1**	**141706-2-720336-1**	**141706-2-720336-2**
141707-2-720336-1	**141707-2-720336-2**	**141708-2-720336-1**	

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 practicable:

1. The welds attaching the clevises to the torque bushing front plate (part number 14728) 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 revision 9 of (part number 14728).
2. Ensure that the rework is performed by a qualified welder using an approved weld procedure specification suitable for A514.

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.

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