

<b>Safety Bulletin</b>			 Tesco Corporation 5616 – 80th Avenue SE Calgary, Alberta, Canada T2C 4N5 Tel: 1-877-TESCO-77 (North America) Tel: 1 (713) 359-7195 (AMSS 24-hour support) Tel: 1 (713) 359-7295 (International) Email: <a href="mailto:bulletins@tescocorp.com">bulletins@tescocorp.com</a> <a href="http://www.tescocorp.com">www.tescocorp.com</a> <a href="http://www.tescoparts.com">www.tescoparts.com</a>
<b>No: SB034</b>	<b>Rev: 2</b>	<b>Date: May 23, 2013</b>	
<b>Safety Lynch Pin Hazard, Shear Pin for Dual Pin Torque Track</b>			 <b>TESCO</b> ®

## BACKGROUND INFORMATION

A top drive was seriously damaged when a safety lynch pin (Figure 2) failed to retain a shear pin from a bolted dual-pin torque track connector (TESCO part number 19219). This occurred when the drilling crew was removing a joint of pipe from the mouse hole. As the travelling assembly was being hoisted to clear the joint of pipe from the mouse hole, the torque bushing impacted the shear pin (Figure 1), causing the travelling assembly to stop abruptly and the pipe to “sling shot” in the mouse hole. Immediately prior to this, the rig had experienced an extended period of rough drilling, first while drilling through a layer of gravel and then when working a sticky gravel seam. This extended period of rough drilling to work the pipe through the gravel resulted in the entire rig experiencing substantial vibration. The safety lynch pin was never found.



Version	Date (D/M/Y)	ECN	Description of changes
Rev 0			Initial release of document
Rev 1	30 January 2009		
Rev 2	23 May 2013	097-0253	Replace lynch pin 13760 with 5033626

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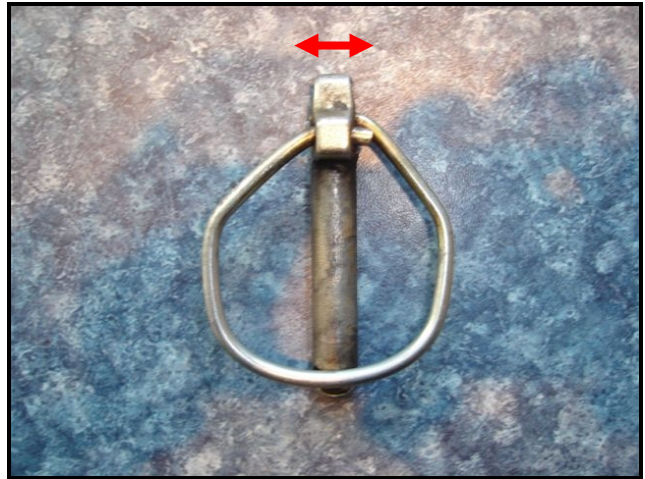
**Figure 1: Shear pin wedged between torque track and torque bushing**



**Figure 2: Intended use of the safety lynch pin (TESCO part number 13760)**



**Figure 3: Safety lynch pin side view (TESCO part number 13760)**



**Figure 4: Safety lynch pin top view (TESCO part number 13760)**

### **Dual Locking Safety Lynch Pin (TESCO part number 13760)**

The 11.5mm safety lynch pin is a part commonly used in agriculture, mining, and military. The locking mechanism consists of two features. The first locking feature is the over-center spring (see Figure 3, “A”) that is rated by the manufacturer to have a retention force of 80N to 120N (18 lbs to 27 lbs). The second locking feature is the safety-catch which is an undercut to the receiver slot in the pin body (see Figure 3, “B”), that works by requiring the spring be slightly deformed in order to release the spring from the pin body. It was found that some safety lynch pins had been erroneously supplied from a different model series that was missing the receiver slot. It was further discovered that, depending on the condition of the spring, the safety-catch might not be engaged fully or at all. The ends of the spring loop can move laterally in the holes at the end of the pin (Figure 4). If the spring ends are pushed far into the holes, the spring loop is slightly shortened and tends to lock more firmly in the safety-catch. If the spring ends are pulled out however, the spring loop becomes lengthened and subsequently its lock in the safety-catch may be weakened. Depending on the amount of vibration being experienced, if the safety-catch is not fully operational it is conceivable that the spring force might not be adequate to retain the spring loop and that the safety lynch pin could become disengaged.

To ensure the spring loop remains closed in all situations, TESCO has found that the spring loop can be securely retained with a single loop of 0.041" safety wire, which passes through a 1/8" hole drilled near the receiver slot (Figure 3).

## AFFECTED PRODUCT

All TESCO Top Drives utilizing the dual-pin torque track where dual locking safety lynch pins (TESCO part number 13760) are used in the torque track installation.

### General Assembly

TESCO Part No.	Description	Serial No.	Mfg. Date
19219	Kit,Connector,Dual Pin,Bolt-On,12"x8",Track,Torque	All	All
970190	Torque Track Set,Dual-Pin (Std),(12"x8")	All	All
1530032	Torque Track Set,Dual Pin,4"x12"	All	All
5007361	Torque Track Set,Dual Pin (Std),12"x8",ESI	All	All
5009307	Spares (Rental Fleet),Critical,Rig-up Kit,ESI,(For part# 5008275)	All	All
5009623	Kit,Spares,Level 1,Rig-up,ESI	All	All
5013222	Kit,Rig-Up,500-ESI-1350,Rig # 3D 86	All	All
5013625	Spares(Rental Fleet),Critical,Section12-Torque System,ESI	All	All
5022077	Torque Track Set,Dual Pin, High Torque,4"x12"	All	All
720525	Kit,Connector,Dual Pin,Weld-On,Std,Track,Torque	All	All

## ACTION REQUIRED

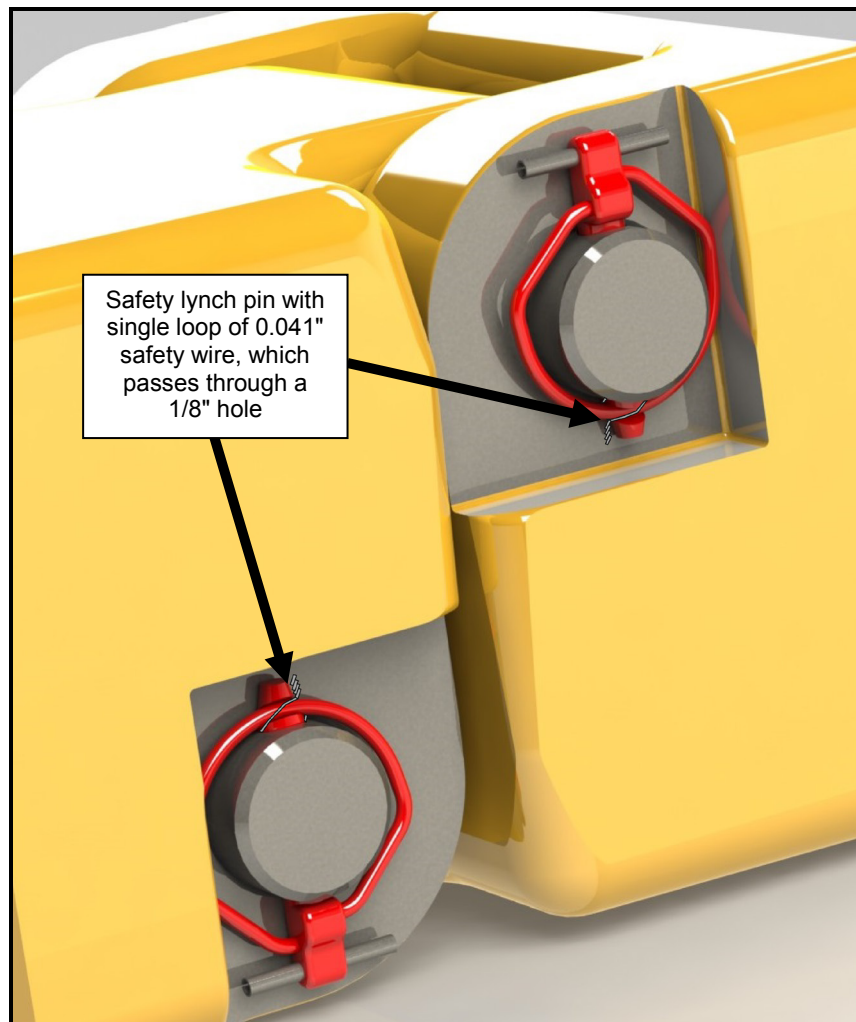
Customers must immediately inspect all safety lynch pins used in the torque track installation and remove and replace any that are not equipped with the receiver slot feature. Customers must test the safety catch on each safety lynch pin and remove and replace any that are not satisfactorily secure in the safety catch action. All safety lynch pins (TESCO part number 13760) must be remanufactured according to TESCO drawing 5033626 (Figure 6). Customers must back up the safety catch on every safety lynch pin with a single loop of 0.041" safety wire.

Customers are reminded that according to all of TESCO Maintenance Guides, the torque path is to have daily inspection and specifically that all connections are to be inspected for any damage or decay. Such daily inspection is to be documented on TESCO daily checklists including details such as date, time, Rig, Rig Supervisor, and the Inspector who performed the inspection.

Inspectors must:

- Familiarize themselves with both locking features of the safety lynch pin
- Ensure the spring loop has adequate tension to lock firmly in the safety-catch
- Know how to tell the difference between a safety lynch pin and a regular lynch pin (with and without the receiver slot feature, respectively)

If customers choose not to remanufacture safety lynch pins, TESCO will supply one set of the safety lynch pin (TESCO part number 5033626, Figure 5) and safety wire to replace any faulty or decayed safety lynch pin used on the torque path in concert with the shear pin (TESCO part number 13902). The new safety lynch pin and safety wire will be made available for torque tracks currently in operation, and can be collected by customers at a local TESCO service center.



**Figure 5: Intended use of the safety lynch pin (TESCO part number 5033626)**



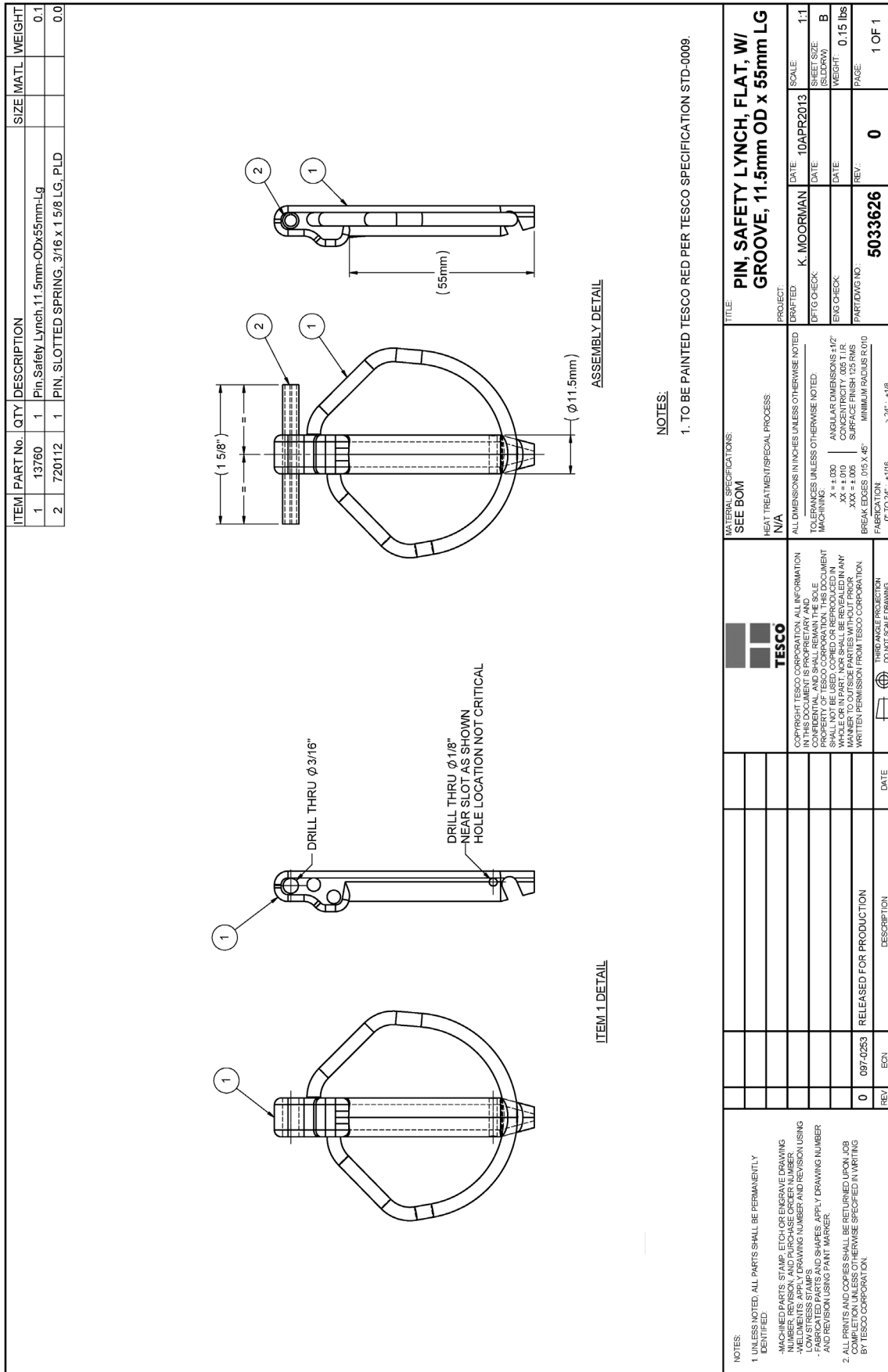


Figure 6: TESCO drawing 5033626