

Safety Bulletin			 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: bulletins@tescocorp.com www.tescocorp.com www.tescoparts.com
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Delayed Cracking on 500-Ton ESI Yokes			

BACKGROUND INFORMATION:

Delayed cracking was recently discovered on the 500-Ton ESI yoke which connects the TESCO ESI Top Drive to the main block in a drilling rig. The yoke is an essential load path component and cracking on the yoke weld could result in hazardous operating conditions. The yoke is manufactured by fabrication and welding from high tensile plate material in accordance of API 8C specification requirements. During the manufacturing process, the welds are inspected by Magnetic Particle Inspection (MPI) 48 hours after the welds are completed. Although this was done as per specification, prior to service one yoke was found to have delayed cracking which occurred after the 48-hour waiting period.

To prevent delayed cracking on future manufactured yokes, they will be stress relieved immediately after welding. As well, a final MPI will be done on the completed yokes after final machining. This MPI will include the welds, non-machined surfaces and the machined surfaces. The final MPI should allow enough time after welding to confirm that no delayed cracking has occurred. The manufacturing drawings were revised to include these requirements.

Two 500-ESI top drives are in operation at the time of publishing this bulletin. Their yokes were found to be without cracking after inspection, and passed API 8C specification. Units that are shipped to customers (see “Affected Products”) but are not in operation must be treated as detailed in “Action Required” below.

AFFECTED PRODUCTS:

TESCO part number 5004071 (Yoke, Swivel, Machining, 500 ESI). The following ESI Top Drive units are affected:

Top Drive Unit Number	Yoke Serial Number	Associated IRN
945	7932-5004072-2	C52697
947	9115-5004071-2	C55454
961	9115-5004071-4	C55454
962	9100-5004071-2	C55845
963	9115-5004071-3	C57467
964	9100-5004071-10	C56122
980	9100-5004071-3	C59491
982	9100-5004071-9	C56045
983	7932-5004071-2	C52697
984	9100-5004071-11	C56045
986	9100-5004071-12	C56122
1000	7856-5004071-2	C52519
1002	9100-5004071-8	C56121
1003	9115-5004071-1	C59491
1004	9637-5004071-3	C59605
1007	9637-5004071-5	C59306
1102	9637-5004071-3	C59605
1103	9637-5004071-4	C59306

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ACTION REQUIRED:

1. Disassemble the yoke from the links.
2. Remove the paint from all welds by sandblasting. The finish should be to SSPC – SP10 (near white metal).
3. Refer to Figure 3 for weld numbers. MPI welds 1 to 4 in accordance with ASTM E709. The acceptance criteria for the welds shall be in accordance with API 8C Section 8.4.9.2.2.

Important notes regarding the Non-Destructive Examination (NDE):

- a. The serial number of the yoke must be recorded on the MPI and Ultrasonic Testing (UT) reports.
- b. NDE personnel must be qualified and/or certified in accordance with ASNT TC-1A or an equivalent standard.
- c. All NDE instructions must be approved by an ASNT-TC-1A Level III examiner or an examiner qualified to an equivalent standard.

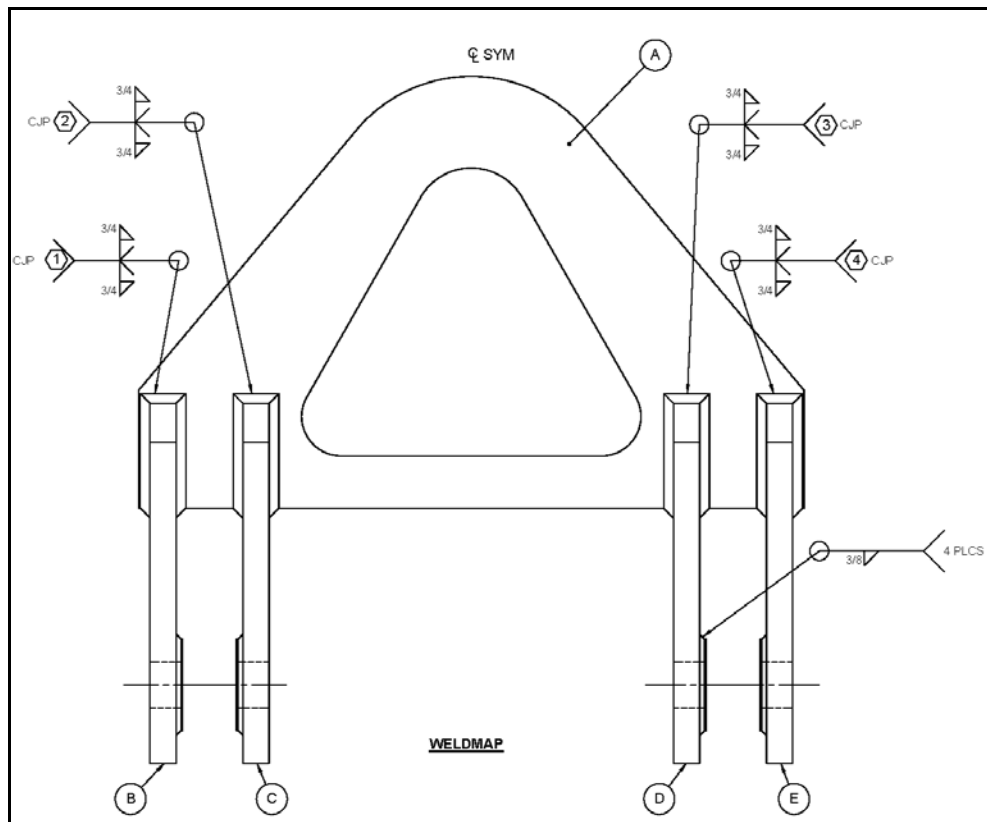


Figure 3: Yoke Weld Locations

4. E-mail the MPI reports to the TESCO Manufacturing QA/QC Engineering Manager at mujeeb_rahman@tescocorp.com for review and dispositioning of the yoke.
5. Mail the original report to the attention of:
Mujeeb Rahman
QA/QC Engineering Manager
Tesco Corporation
5616 – 80th Avenue S.E.
Calgary, Alberta, Canada
T2C 4N5
6. Wait for instructions from the QA/QC Manager before any further steps are taken.

Version	Date (D/M/Y)	ECN	Description of changes
Rev 0	28/05/2012	071-0088	Initial release of document

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