Technical Bulletin		
No: TB122	**Rev: 0**	**Date: December 14, 2017**
Proper Precautionary Procedures Prior to Performing Welds on Tesco Equipment		

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

☐ **Internal Use Only** ☑ **External Use** ☐ **Mandatory** ☑ **Recommended**

BACKGROUND INFORMATION:

The following guidelines have been created to reduce the likelihood of damaging electrical or electronic equipment when welding or performing weld repairs on Tesco equipment. To avoid unnecessary downtime associated with failures to electrical or electronic equipment, contact your local Tesco representative to ensure that the appropriate safeguards have been implemented prior to welding on Tesco equipment.

If onsite assistance is required for any electronic components, new modifications or add-ons to Tesco equipment, Tesco service centers employ highly skilled certified service technicians that can be contracted to ensure all safeguards are implemented, in addition to performing standard maintenance and commissioning checks during start-up.

NOTE: If you choose to make repairs or modifications without the supervision or use of a Tesco representative, you do so at your own risk and may void any warranty that exists for your product.

AFFECTED PRODUCTS:

- ECI/EMI/EXI/ESI power modules, hydraulic power units and top drives
- HMI/HCI/HXI engine-based top drive units that have electronic control modules (ECMs)
- Automated Catwalks
- Automated Rig Controls (ARC)
- TesTORK
- Casing Drive Systems
- Auxiliary equipment including rig-up kits, HPU stands, hose reels, breakout tools

WELDING GUIDELINES:

I. Load Path Equipment

Under no circumstances will welding be allowed on load path components unless it is done in a Tesco service center and the weld procedure is approved by Tesco Engineering. This includes weld repairs or welds to add on equipment to the load path component. This applies to equipment still under warranty and outside of the warranty period.

Load path equipment is defined as the top drive components that bare the drill or casing string weight. Typically these components are certified to API Spec 8C.

II. Torque Path Equipment

Torque path equipment or components may only be repaired by welding if the weld procedure is approved by Tesco Engineering. These repairs may be done in the field or in any shop provided the immediate environment can be controlled and the welder is qualified to perform the weld repair.

Torque path equipment typically comprises the torque track, torque bushing, extend frame and pins, extend frame mounts, T-bar and T-bar seat, and torque anchor beam.

Version	Date (D/M/Y)	ECN	Description of Bulletin Changes
Rev 0	14/12/2017	157-0093	Initial release of document

III. Tesco Equipment Under Warranty

The practice of repairing welds on any Tesco equipment still under warranty (pertaining to load path and torque path equipment referenced in welding guidelines I and II described above), will void the warranty of any electrical components in question unless:

- The electrical equipment is safeguarded according to Tesco procedures
- A Tesco technician is present to monitor the proper safeguarding of the equipment

IV. Tesco Equipment Outside the Warranty Period

Although Tesco highly recommends that a certified Tesco technician is present to ensure all the appropriate safeguards are implemented to protect your investment, the following guidelines have been created to assist customers in safely performing welding repairs on Tesco equipment.

1. Lock out and tag out all power to the equipment that is being welded on. Refer to rig lock-out procedures prior to commencing.

2. Isolate the equipment being welded on.

   Top Drives

   a) Disconnect all cables to the top drive. This includes the control, power and ground cables where applicable. Note that for ease of disconnect, cables may be unplugged at the power module building as opposed to the top drive.
   b) In the case of Tesco liquid-cooled electric top drives (ECI top drives); disconnect the cooling lines to the top drive motors.
   c) Hydraulic lines may remain connected. This includes closed-loop hydraulic lines on hydraulic top drives.

   Auxiliary Skid

   a) Disconnect all cables to the auxiliary skid. This includes the control, power and ground cables.
   b) Hydraulic lines may remain connected.

   Electric Top Drive Power Module Building

   Avoid welding on electric top drive power module buildings due to the abundance of electronic equipment present. If welding is required, consult a local Tesco representative to ensure the following:

   a) Disconnect the communication cable from the PLC communication card.
   b) Remove ground reference to PLC.
   c) Remove ground reference to VFD(s).
   d) Remove ground reference to DC power supplies, if present.

   Hydraulic Power Units

   a) Isolate the ECM from the diesel engine/prime mover. Disconnect the wiring harness from the ECM, reference applicable OEM manual.
   b) Disconnect or isolate all batteries.
   c) Disconnect the communication cable from the PLC communication card, if applicable.
   d) Remove ground reference to PLC, if applicable.
   e) Remove ground reference to DC power supplies, if present.
   f) Open fuses to PLC and DC power supplies, if applicable.

3. Ensure welding ground clamps (work leads) are placed on the material being welded on as close as practical to the area being welded. Extra precautions should be taken to ensure grounding paths through bearing surfaces are avoided. Improper placement of the welder's ground clamp may lead to electrical and electronic equipment failures.

NOTE: These guidelines are intended as guidance only and are not intended to replace any existing safety procedures that must still be adhered to as it relates to the activity at hand. If unsure if your equipment is affected, contact your regional Tesco service center before proceeding.