


<b>Safety Bulletin</b>			 <b>TESCO</b> <sup>®</sup>	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: SB063</b>	<b>Rev: 1</b>	<b>Date: January 16, 2013</b>		
<b>Improper Crimping of High Voltage Cable Connectors</b>				
<input checked="" type="checkbox"/> <b>Internal Use Only</b> <input type="checkbox"/> <b>External Use</b>			<input type="checkbox"/> <b>Mandatory</b>	<input checked="" type="checkbox"/> <b>Recommended</b>

**BACKGROUND INFORMATION:**

It was discovered that the service loop power cables on the TESCO EXI and ESI-1350 Top Drives were not properly crimped at the 600 volt connector female/male end (Figure 1). The cables were crimped at the lugs using a four-point crimp style. Four-point crimping does not have the necessary grip to securely tighten the lugs. This increases the possibility of the cables parting from the connector at the crimp. As a result, there is potential for the cables to overheat and severely damage equipment during operation.



**Figure 1: Cables improperly crimped at the lugs using a four-point crimp style**

**AFFECTED PRODUCT:**

All service loops used on the EXI and ESI-1350 Top Drives are affected.

Version	Date (D/M/Y)	ECN	Description of Bulletin Changes
Rev 0	09/05/2012	127-0441	Initial release of document
Rev 1	20/12/2013	127-0629	Add ESI-1350 top drive to product affected by crimping issue

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## RECOMMENDED ACTION:

TESCO recommends taking remedial action to correct the issue of cable crimping.

- All service loop power cables must be inspected for possible discoloration (Figure 2 and Figure 3). If there is discoloration on the inside of the power lugs, inspect the style of crimping that was done on the lugs.

**Note:** Discoloration on a six-point crimp may still occur; however, since six-point crimping is much more secure than four-point crimping, the likelihood of discoloration on a six-point crimp is much less likely to happen.

- Remove the outer boot by using a TESCO approved removal tool (TESCO part number 5018050). If the outer boot is damaged, it must be replaced. Appendix B contains more information and instructions on using the removal tool.
- Visually inspect and manually conduct an elongation test on the cable and lug (pull test) to verify that the lug has been properly installed and crimped correctly.
- Check the lug for crimp style. It should be a six-point crimp and not a four-point crimp. If it is crimped as a four-point, the lug will need to be replaced and crimped properly using a TESCO approved six-point crimper and die set. (TESCO part number 8060; Appendix A, Figure 4).

Action: If any connectors require replacement, contact your local TESCO business representative responsible for coordinating repairs. One outer boot removal tool, one six-point crimper tool, and a complete lug set and set of boots is being supplied to the TESCO business units.



Figure 2: Discoloration on the inside of the power lugs



Figure 3: Discoloration on the outside of the power lugs

**APPENDIX A:**

**T&B Part #: 272X100 Model #: TBM14M**

Thomas and Betts (T&B) makes the TBM14M Color-Keyed hydraulic compression tool for copper and aluminum connectors, lugs, C-, H- and bus bar taps for #8 AWG - 1000 MCM wire. The 15-ton dies must be ordered separately in the TNB200 die kit or individually, and are color-keyed and embossed onto the connectors for easy inspection. It features 14-ton compression force, insulated head, rapid-ram advance mechanism, replaceable bypass cartridge and short fiberglass handles.



**Figure 4: TESCO approved six-point crimping tool**

<b>Lug Dies Color Code Reference</b>	
<b>Brown</b>	2 AWG N/A
<b>Green</b>	1 AWG 4 AWG
<b>Pink</b>	1/0 AWG 2 AWG
<b>Black</b>	2/0 AWG 1 AWG (Gold)
<b>Orange</b>	3/0 AWG 1/0 AWG (Tan)
<b>Purple</b>	4/0 AWG 2/0 AWG (Olive)
<b>Yellow</b>	250 kcmil n/a
<b>White</b>	300 kcmil 4/0 AWG
<b>Red</b>	350 kcmil 250 kcmil (313KCMIL)
<b>Brown</b>	500 kcmil 350 kcmil
<b>Black</b>	750 kcmil 650 kcmil (535 & 646)

## APPENDIX B:



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www.rigpower.com

### Instructions for the RMP<sup>®</sup> DT-002 Disassembly Tool

**NOTE:** This tool has been designed for the new RMP<sup>®</sup> II contacts. The heat treated steel of the tool is strong enough to compress the locking fingers and allow removal of the contact from an assembled plug. **DO NOT** attempt to use old style tools on RMP<sup>®</sup> II contacts.

1. Loosen the Cable Clamp.
2. Note the shape of the RMP<sup>®</sup> DT-002 Disassembly Tool. The front flange is for indication of proper insertion.



3. Insert the RMP<sup>®</sup> DT-002 Disassembly Tool into the insulator to compress the spring ring fingers on the contact. Do not use hammers or other devices since excessive force should not be necessary to compress the fingers. When the flange on the tool is flush with the end of the insulator, maximum depth has been achieved. Forcing the tool past this point will damage the tool and the parts.



4. Using a 3/4" diameter wooden dowel 14" long (included), insert the dowel into the center of the Disassembly Tool to force the contact from the insulator. Pull the cable and the contact from the insulator.

**NOTE:** If the contact is to be reused, inspect the locking fingers on the spring ring. If the locking fingers are damaged or missing, do not reuse the contact. It is not possible to replace the locking spring ring in the field.