



CONNECTION TECHNOLOGY PRODUCT SPECIFICATION

SECTION	II	
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REVISION	001	

SUBJECT: COUPLING MAKE UP

1.0 SCOPE

- 1.1. This document sets forth the specification for the mill end make up or bucking of the Hunting Connection Technology (HCT) connectors.
 - 1.1.1. This specification is applicable to **TEC-LOCK WEDGE-COUPLED** connectors.

2.0 DEFINITION

- 2.1. Make up shall be defined as the power tight application of a coupling or box connector to a pin connector.

3.0 EQUIPMENT

- 3.1. The following list of equipment is required for the make up or buck on of couplings to connector.
 - 3.1.1. Appropriate size, grade, type box connector or coupling to match the pipe and pin connector.
 - 3.1.2. An adequate supply of clean, uncontaminated thread compound.

NOTE 1: For thread compounds, please refer to Hunting's website to verify the current Recommended Thread Compounds approved by Hunting – Per Connection List. To access the list, visit www.hunting-intl.com, click in “Connection Technology” and look for the link: “Recommended Thread Compounds approved by Hunting.”

NOTE 2: For TLW-C, Hunting has standardized the use of SealLube™ on the mill end coupling make up as follows:

- SealLube™ LTF 4444

- 3.1.3. Thread lubricant application brushes (Model 58235 moustache brush recommended)
- 3.1.4. Power tongs capable of producing the required torque range.
- 3.1.5. The power and back up tongs shall have sufficient dies, evenly spaced around the coupling and pipe circumference such that an even gripping pressure is applied, both axially and circumferentially to prevent distortion of the coupling.

CAUTION: For thin wall products, the use of a stiffener, handling plug, or thread protector is recommended to prevent damage to the open end of the coupling.

- 3.1.6. Appropriate connection datasheet with the specified torque values for the appropriate size, weight, and grade.
- 3.1.7. **OPTIONAL** – Torque turn monitoring system.
- 3.1.8. Hunting field service kit comprised of caliper and pit gauge (four (4) month calibration frequency)

4.0 CERTIFICATION

- 4.1. The torque unit shall be calibrated for accuracy every six (6) months.

5.0 Dump Test

- 5.1. Dump test shall be conducted prior to casing run. Failure to verify dump test could result in premature dump of torque prior to acceptable optimal torque and or over torque of connection.
- 5.2. When conducting a dump test, the torque applied at test will depend on the wall thickness of the casing body. Consideration should be given to “THIN WALL” casing. This will have to be evaluated by the qualified HCT representative on location at that time. It is recommended, in questionable thin wall casing dump tests, that 65% of the connection optimal torque be utilized. If

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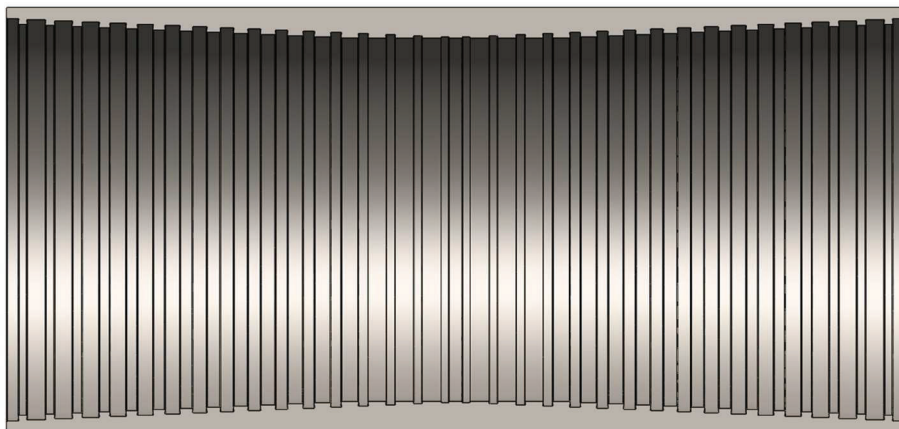
- the dump test results are questionable, contact HCT Quality Assurance for guidance.
- 5.3. When conducting multiple dump tests on casing, it is crucial that the Hunting representative have the tong operator release the jaws and remove the tongs from casing. Tongs are to be applied at a different area on the casing for sequential dump tests. Failure to do so may result in excessive die penetration or point loading which can jeopardize the integrity of the casing.

6.0 MAKE UP PROCEDURE

- 6.1. Thoroughly clean and visually inspect both sides of the connection to be made up.
- 6.1.1. Ensure that the pin thread starts, and full form threads are free from tears or burrs.
- 6.1.2. Ensure that the coupling or box connector is free from burrs or tears on the starting threads and throughout the full formed thread length.
- 6.1.3. Both connectors shall be free from any debris such as chips, shavings, dirt, or other foreign particles that could create galling or damage to the connection during make up.

Mill end assembly procedure:

No SealLube[®] application on the Box End



Apply a light coat of SealLube[®] only to the Pin End

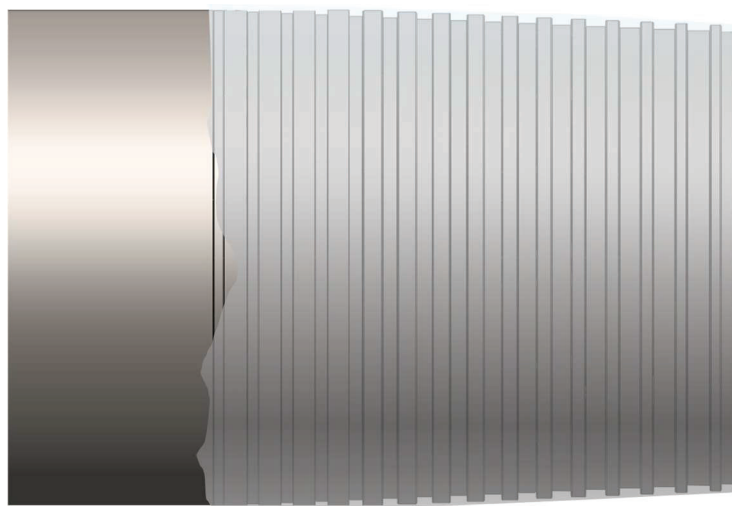


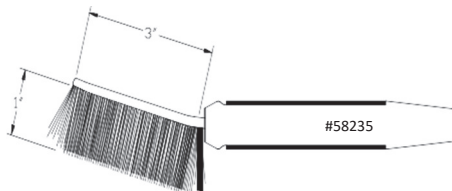
Figure A

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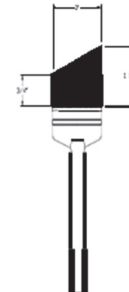
Do Not Use
Bottle Brush



Preferred Moustache Brush
#58235



Alternate Acceptable
Modified Paint Brush



- 6.2. Apply the box or coupling to the pin end by hand to the hand tight position.
- 6.3. Position the connection in the power tongs. See Figure B for the proper buck on unit die position,

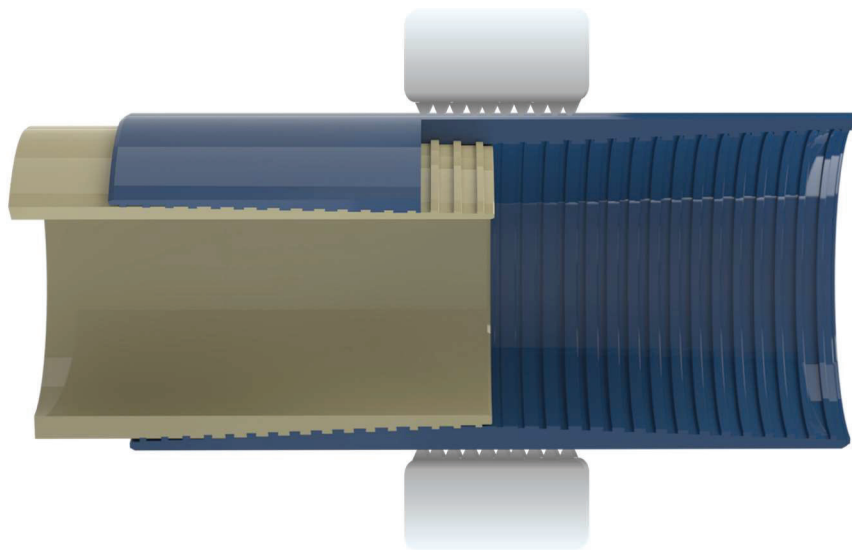


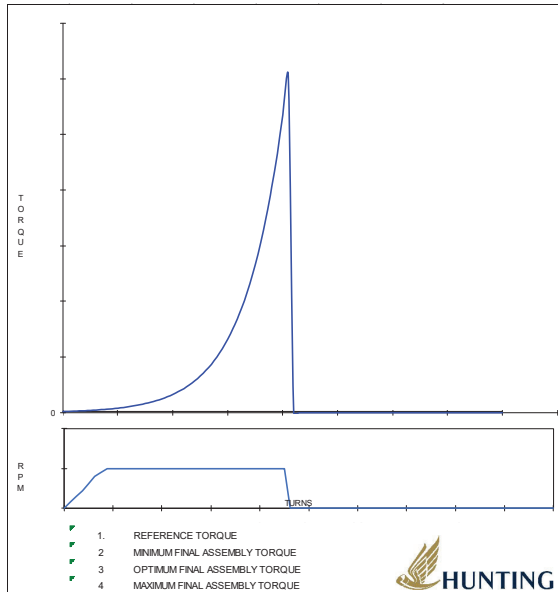
Figure B

- 6.4. Apply the specified torque to the connection at 5-20 RPM. Make up speed should not exceed 20 RPM. Make up speed should not vary excessively during make up and should be continuous with no gear changing.
- 6.5. **OPTIONAL – Make-Up Torque/Turn Monitoring**
 - 6.5.1. Torque-Turn Equipment.
A torque-turn/time or torque/turn monitoring system should be utilized. Monitoring equipment should be capable of resolving torque to 1/100th of a turn increments as a minimum. The monitoring equipment should be capable of dumping during the make up by either the computer technician or when maximum parameters are reached. The load cells used with the torque monitoring equipment should be calibrated every six (6) months, traceable to the appropriate national standard.
 - 6.5.2. If the optional torque/turn monitoring equipment is used, a make up torque-turn graph should be generated for every connection.

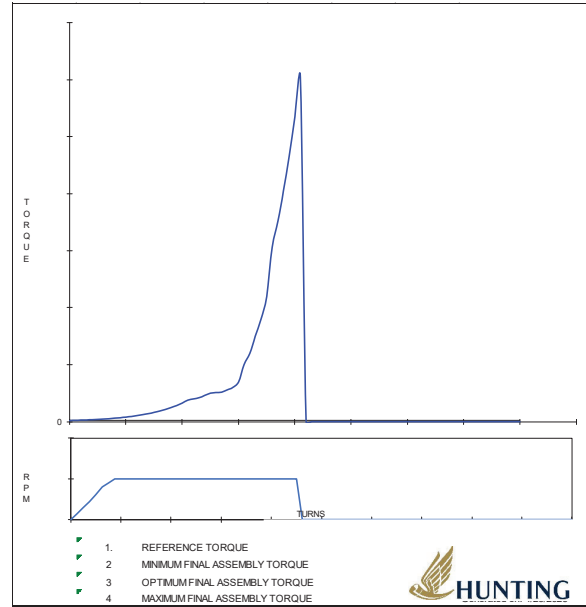
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7.0 MAKE UP ACCEPTANCE AND REJECTION

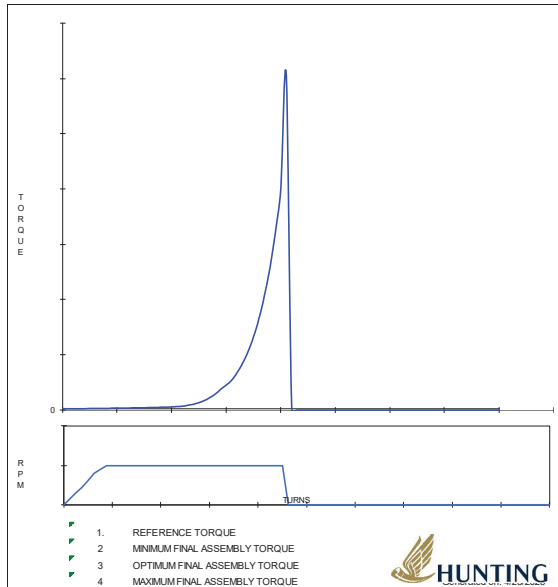
7.1. Acceptable make up graph shall be as follows:



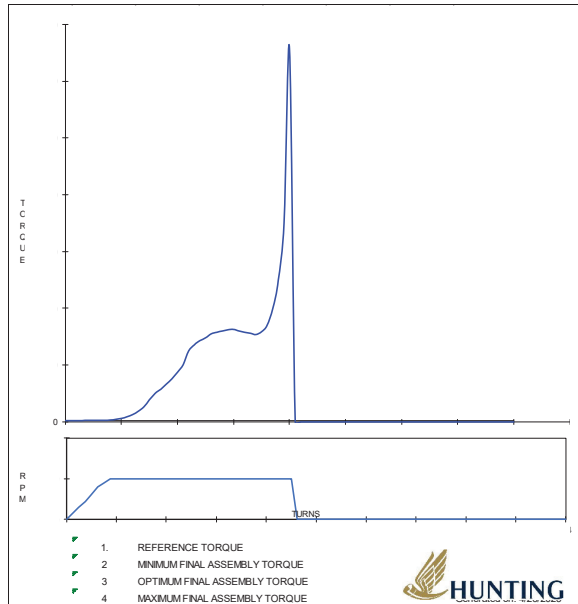
GOOD GRAPH



GOOD GRAPH



GOOD GRAPH



GOOD GRAPH

Examples of acceptable make up graphs. For reference only

7.2. End drift the made up connection in accordance with the **AS-004 Drifting**.