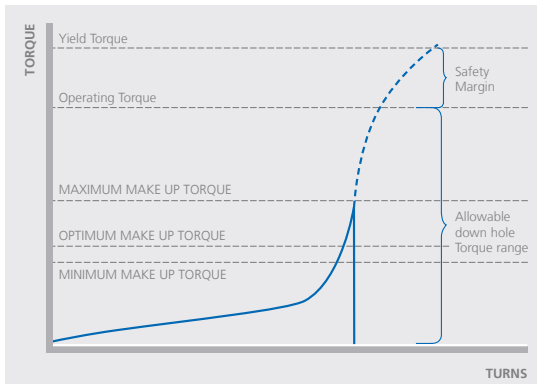


Wedge™ Series Make up Acceptance

TenarisHydril Wedge™ Series connections exhibit substantially different computer graph profiles to those produced by shouldered connections. By design Wedge™ Series connections do not have the requirement for shoulder torques. If however the computer make up system requires the input of shoulder parameters, program any appropriate value into the computer.

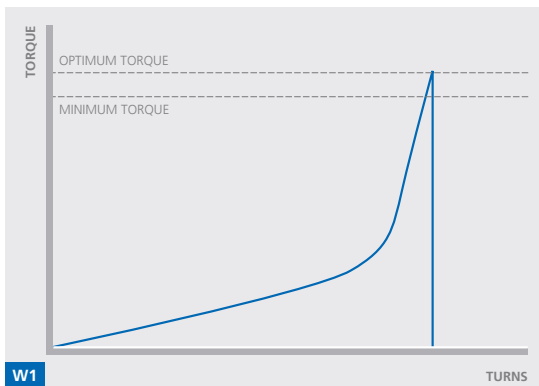
Essentially the thread build portion of a Wedge™ Series computer graph has a smooth 'ski slope' transition into a rapid torque climb as the connection assembles. A gradual change in slope on the upper portion of the torque-turn graph may be observed. Additionally, some Wedge™ Series connections have visual indicators of correct make up position which should also be checked after applying the correct make up torque. Refer to the connection specific running guidelines for information on make up indicators applicable to each connection.



Always assemble Wedge™ Series connections to the correct make up torques as indicated in the product data sheet. Above maximum make up torque is the operational torque window, within which the connection can function depending on downhole parameters and application. For operations above maximum make-up torque, please contact a Tenaris representative for more information. Above the operational torque is the safety margin which the connection should not be exposed to and under no circumstance should yield torque be approached. The computer graphs depicted in this section are applicable to both doped variant and Dopeless® connections.

Some connections within Wedge™ Series 400 allow for pin-to-pin or pin-to-shoulder contact under certain conditions; this results in distinctive make up graph profiles. Refer to the connection specific running guidelines for details.

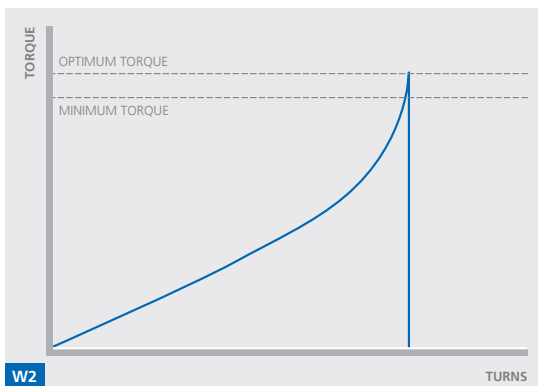
COMPUTER GRAPH WEDGET[™] SERIES



ACCEPTABLE

Standard profile graph for a Wedge[™] Series connection.

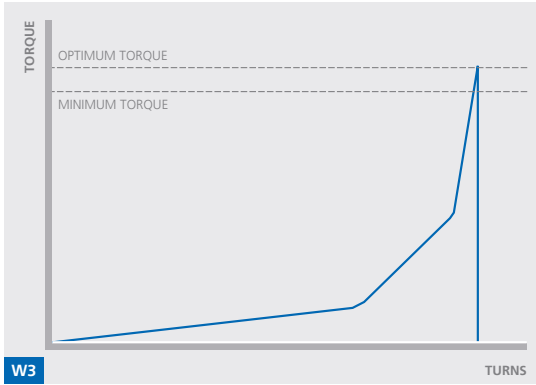
COMPUTER GRAPH WEDGE™ SERIES



If a graph similar to the one above is observed, the make-up indicator should be checked to ensure the connection has fully engaged. If found to be the case, the assembly can be accepted. Thereafter, all similar graphs can be accepted as long as any make up indicators are checked and indicate the connection has reached the correct make up position.

If no indicator is present the connections should be broken out and inspected and if found to be acceptable the make-up loss should be marked on the pin end and the connections reassembled, thereupon the make-up loss mark can be checked to ensure correct assembly point has been reached. The make-up loss for the connection is indicated on the product data sheet.

COMPUTER GRAPH WEDGE™ SERIES



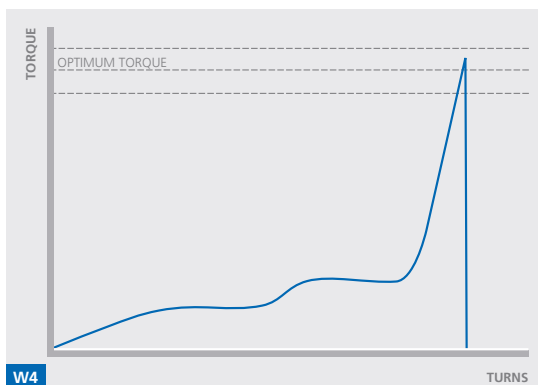
W3

TURNS

ACCEPTABLE

Wedge™ Series 600 connections may also exhibit a more distinctive make up profile such as above.

COMPUTER GRAPH WEDGE™ SERIES



ACCEPTABLE

Minor oscillations during assembly.

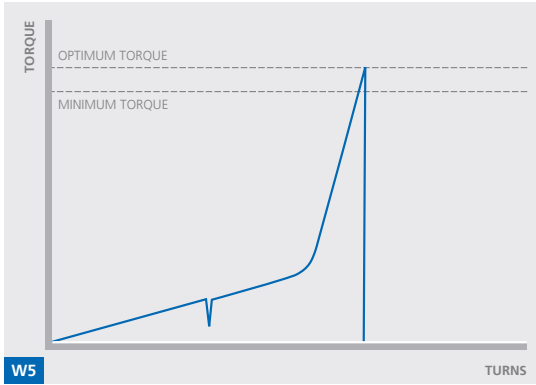
Possible Causes

- Pipe movement during spin in.
- Excessive thread compound application.
- Pipe OD contact from external equipment.
- Excessive spin in speed.

Recommendations

- Reduce quantity of thread compound applied respecting application guidelines.
- Stabilize pipe during make up.
- Reduce spin in speed.

COMPUTER GRAPH WEDGET[™] SERIES



ACCEPTABLE

Tong slip returning to same thread build path.

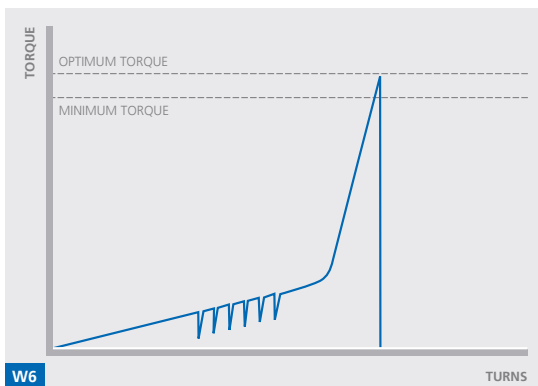
Possible Causes

- Clogged tong dies.
- Worn tong dies.
- Incorrect dies or tong jaws.
- Tong not level.
- Snub line movement.
- Wet or oil covered pipe OD.

Recommendations

- Clean or replace dies.
- Check tong jaws are correct for pipe OD.
- Ensure tong is level.
- Clean pipe OD.
- Check snub line.

COMPUTER GRAPH WEDGE™ SERIES



UNACCEPTABLE

Multiple tong slips.

Possible Causes

- Clogged tong dies.
- Worn tong dies.
- Incorrect dies or tong jaws.
- Tong not level.
- Snub line movement.
- Wet or oil covered pipe OD.

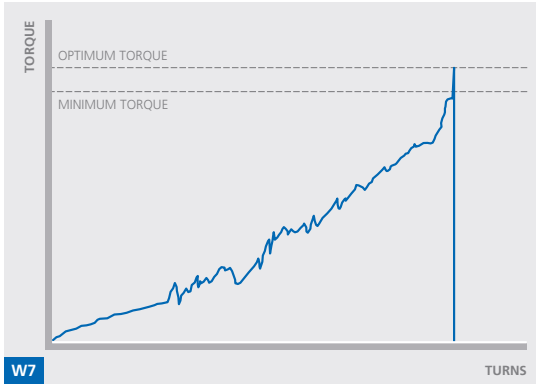
Recommendations

- Break out, clean and inspect both connections for damage.
- If no damage found re-apply thread compound then re-make up connection.

Take action to prevent reoccurrence

- Clean or replace tong dies.
- Ensure tong and back up is level and dies contact pipe OD evenly.

COMPUTER GRAPH WEDGET[™] SERIES



UNACCEPTABLE

High thread interference.

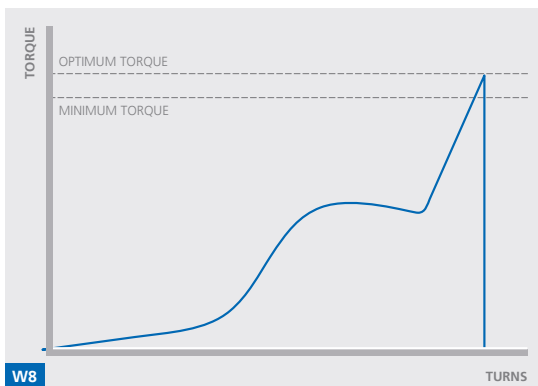
Possible Causes

- Galled threads.
- Damaged threads.
- Pipe movement during spin in.
- Incorrect thread compound.
- Contaminated thread compound.
- Contaminated connections.
- Misalignment.

Recommendations

- Break out, clean and inspect both connections for damage.
- If no damage found re-apply thread compound then re-make up connection.
- Ensure thread compound is correct type and is not contaminated.
- Stabilize pipe during make up.
- Ensure threads are completely clean prior to applying thread compound.
- Remedy misalignment.

COMPUTER GRAPH WEDGE™ SERIES



UNACCEPTABLE

Excessive hump effect.

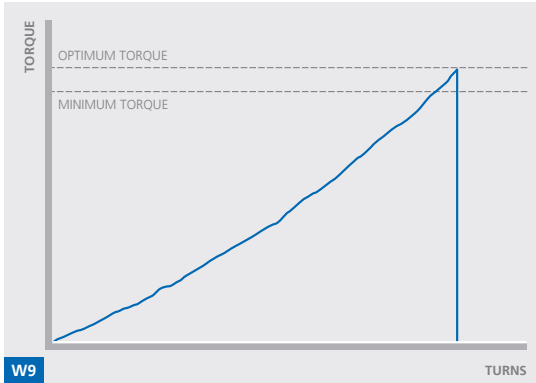
Possible Causes

- Pipe movement during spin in.
- Incorrect thread compound.
- Contaminated thread compound.
- Running compound not homogenised.
- Excessive thread compound.
- Misalignment.

Recommendations

- Break out first graph displaying this profile, clean and inspect both connections for damage.
- If no damage found re-apply thread compound then re-make up connection.
- If no damage found accept further graphs of similar type.
- Ensure thread compound is correct type and is not contaminated.
- Reduce quantity of thread compound applied ensuring all threads are covered.
- Stabilize pipe during make up.
- Ensure threads are completely clean prior to applying thread compound.
- Remedy misalignment.

COMPUTER GRAPH WEDGET™ SERIES



UNACCEPTABLE

The graph above has no identifiable 'wedging' effect; therefore, the make-up indicator should be checked to verify correct make up position has been attained then the connection should be broken out, inspected and if both pin and box are acceptable re-assembled.

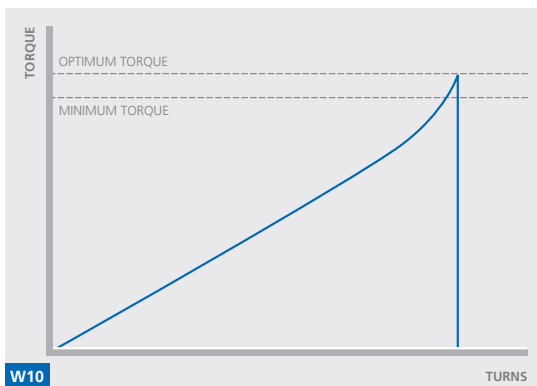
For subsequent make-ups, reduce the amount of thread compound if possible, as this could be causing this graph profile.

If the second graph exhibits the same profile repeat disassembly, upon a third make-up exhibiting the same graph profile the connection

should be broken out, inspected and if both pin and box are acceptable the pin connection should be replaced. The replaced pin connection can be used on a subsequent make up.

If the connection has no make-up indicator, mark the final make-up position of box face onto the pin end then break out the connections. Check the distance from pin nose to the scribed mark against the indicated make-up loss from the data sheet, if the connection did not attain correct final make up position segregate pin connection for further analysis and replace with a new joint.

COMPUTER GRAPH WEDGE™ SERIES



UNACCEPTABLE

The graph above has minimal evident 'wedging' effect. Therefore, the make-up indicator should be checked to verify correct make up position has been attained prior to the connection being broken out, inspected and if both pin and box are acceptable re-assembled. Thereafter all similar make up graphs can be accepted as long as correct assembly position is verified as having been attained by checking the makeup indicator for each make up.

For subsequent make-ups, reduce the amount of thread compound if possible, as this could be causing this graph profile.

If the connection has no make-up indicator mark the final make up position of box face onto the pin end. Break out the connections and inspect, check the distance from pin nose to the mark against the indicated make up loss on the data sheet. If the connections are acceptable re-make the connections and check the scribed make up loss mark to verify correct position, if it has been attained accept the assembly.

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