

1. Scope

This document is to be used for field make-up acceptance of the Rattler® Connection.

This procedure shall be used in conjunction with FT-RP-000 General Running Procedure and the latest revision of the Connection Data Sheet (CDS). Where conflicts exist, this connection-specific running procedure and CDS shall govern.

1.1. Product Description

Rattler® Connection:

- Threaded and Coupled
- Conventional Shouldered
- Thread sealing



Figure 1 – Product Image

1.2. Approvals

Created	Angela Hill – Product Engineer	08/26/2026
Reviewed	Israel Martinez – Quality Director	09/01/2026
Approved	Wesley Ott – Director of Engineering	09/01/2026

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1.4. Reference Documents

Document Number	Document
FT-RP-000	General Running Procedure
FT-FI-001	Fermata Connections Field Visual Inspection and Repair Requirements

Available online: fermata-connections.com/running-procedures/

*Always confirm the most current Running Procedure through the online portal or by contacting Field Service.

2. Connection Running

For general running see FT-RP-000 General Running Procedure

Fermata® strongly recommends using a Fermata® certified thread representative for all casing runs. If not used, the operator is responsible for ensuring all make-ups meet Fermata® criteria.

See Section 4.1 in the FT-RP-000 General Running Procedure for Field Service details.

2.1. Connection Compatibility

2.1.1. Rattler® Compatibility

Different weights of Rattler® are compatible within the same pipe OD size. Make-up and operating torque shall be limited to the specification of the lowest rated component. Always compare Connection Data Sheet torque specifications of both configurations and choose the lower one. Example:

Connection end 1, make-up torque: 20,000ft.lbs; operating torque: 35,000ft.lbs

Connection end 2, make-up torque: 15,000ft.lbs; operating torque: 30,000ft.lbs

➔ Make-up the connection to 15,000ft.lbs and limit operating torque to 30,000ft.lbs

2.1.2. Rattler® with BTC Compatibility

Rattler® has limited compatibility with API BTC (Buttress Compatible) in differing weights within the same OD. Careful consideration of the performance properties of the weakest connection must be made by the operator. Table 1 describes the make-up and performance criteria:

Table 1: Rattler/API BTC Compatibility

Configuration	Pin End	Box End	Makeup Criteria	Performance
1	Rattler®	Rattler®	Rattler®	Rattler®
2	Rattler®	API BTC	API BTC	API BTC*
3	API BTC	Rattler®	Rattler®	API BTC*

(*) The string may retain Rattler® performance if the API BTC connection is limited to accessories at the toe of the string and thread lock compound is used (ex: float equipment). Accessories threaded to API BTC used higher in the string (ex: air lock sub) will limit the string to API BTC performance.

2.2. Thread Compound Application

See FT-RP-000 General Running Procedure Section 4.2 for thread compound application.

2.2.1. Approved Compounds

- BOL 2000
- BOL 72733, or API Modified.

2.2.2. Compound Amount

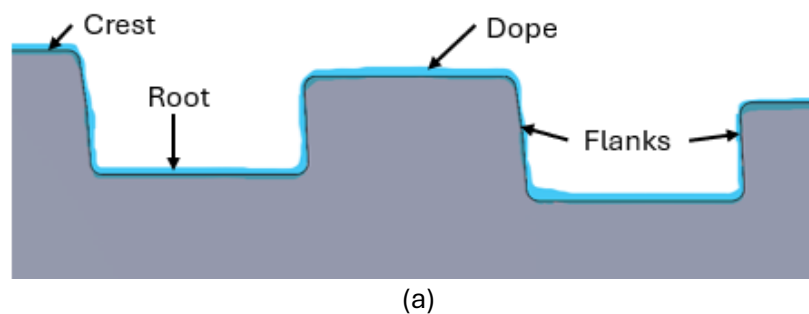
Refer to Table 2 for the required thread compound volume:

Table 2: Thread Compound Amount

OD (inches)	Volume (mL)
4.500	10.0
5.000	11.0
5.500	12.0
6.000	14.0
7.000	17.0
7.625	19.0
8.625	22.0
9.625	25.0
10.750	28.0

2.2.3. Thread Compound Application

- Apply thread compound only on the pin connection.
- Coat full thread form (flanks, roots, and crests).
- No compound on the pin face.



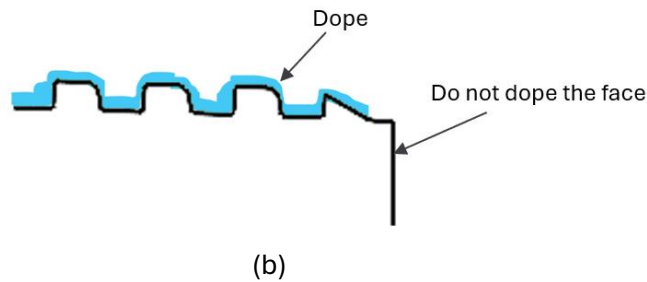


Figure 2 – Compound on the thread form (a) and **no** compound on the pin face (b).

See Figure 3 and Figure 4 for visual reference.



Figure 3 – Pin Connection Application



Figure 4 – Box Connection (no compound)

2.3. Connection Make-Up

2.3.1. General

See FT-RP-000 General Running Procedure

2.3.2. Rattler® Torque-Turn Plot

- Verify the make-up result against Figure 5.
- For Rattler®, shoulder torque occurs when the pin noses contact. This event appears as a distinct spike on the torque-turn plot and should occur between 5% and 90% of final make-up torque.

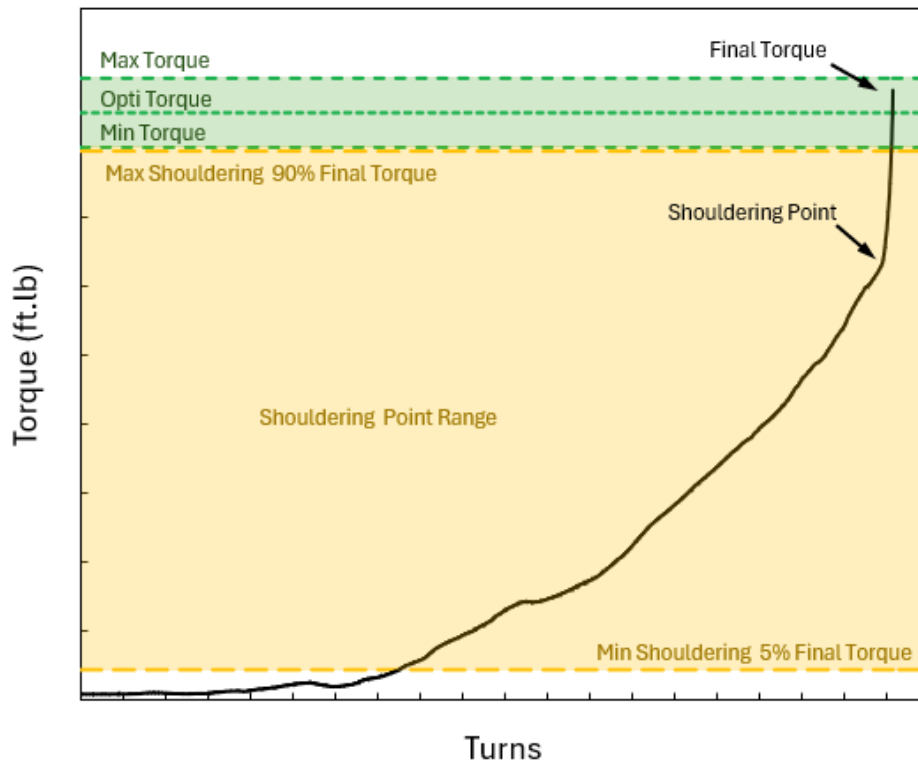


Figure 5 – Rattler® Torque-Turn Signature

2.3.3. Make-up Acceptance Criteria

Connections are accepted based on required graph elements (2.3.2), and Knurling/Triangle stamp make-up indicators.

2.3.3.1. Make-up Indicator

Verification of connection make-up can be made by checking the triangle stamp or knurling.

Triangle:

- To locate the triangle there is a 1" wide X 24" long white paint stripe is applied to the field end pin.
- After make-up, the box face must be within a tolerance of ± 0.063 " from the triangle base.

Knurl:

- The knurl is applied around the circumference of the pin.
- After make-up, locate a region around the circumference that has full knurl width indented. The box face must be within a tolerance of ± 0.063 " from the knurl base.

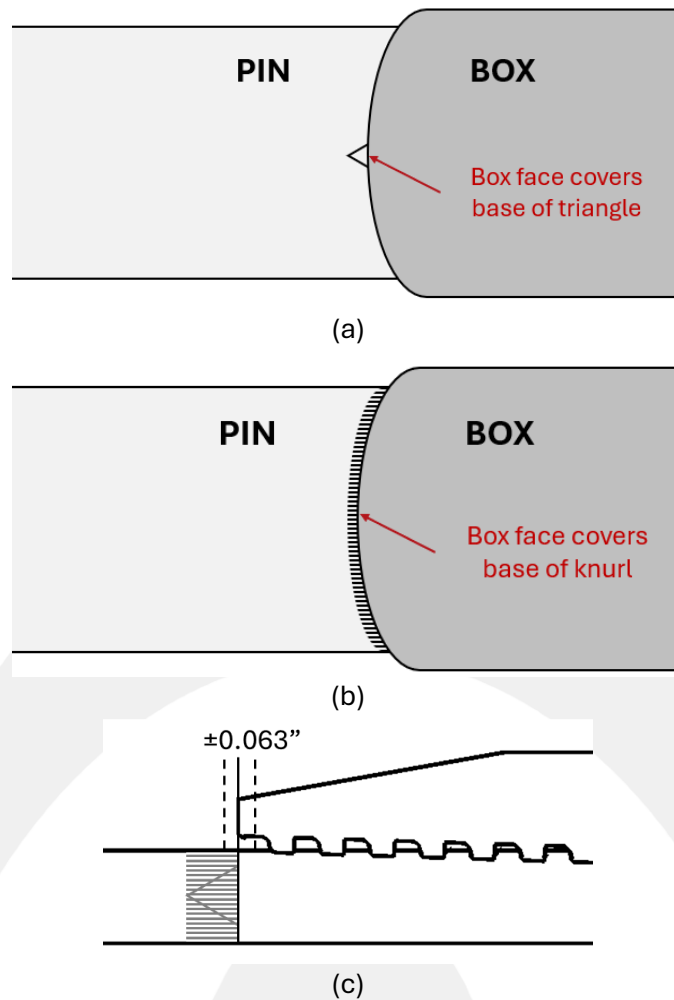
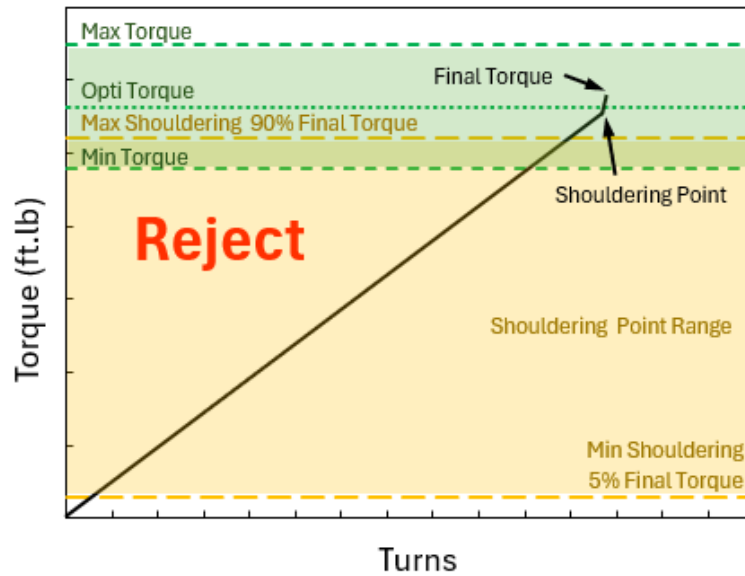


Figure 6 – Triangle stamp after make-up (a), knurl after make-up (b), and (c) position tolerance.

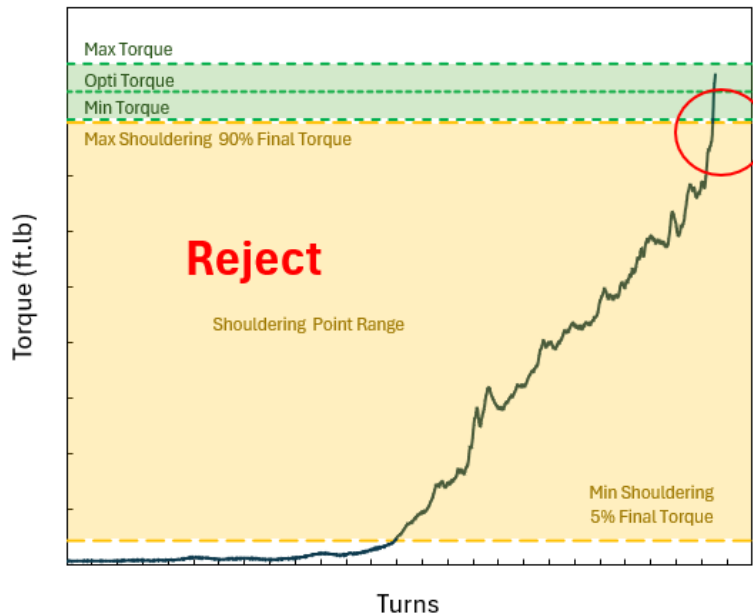
2.3.3.2. Graph Acceptance

- Figure 5 shows an example of an acceptable make-up signature.
- Figure 7 shows examples of unacceptable make-up graphs.
- Contact Fermata® Support for any graph irregularity's acceptance.
- See FT-RP-000 General Running Procedure for further examples.



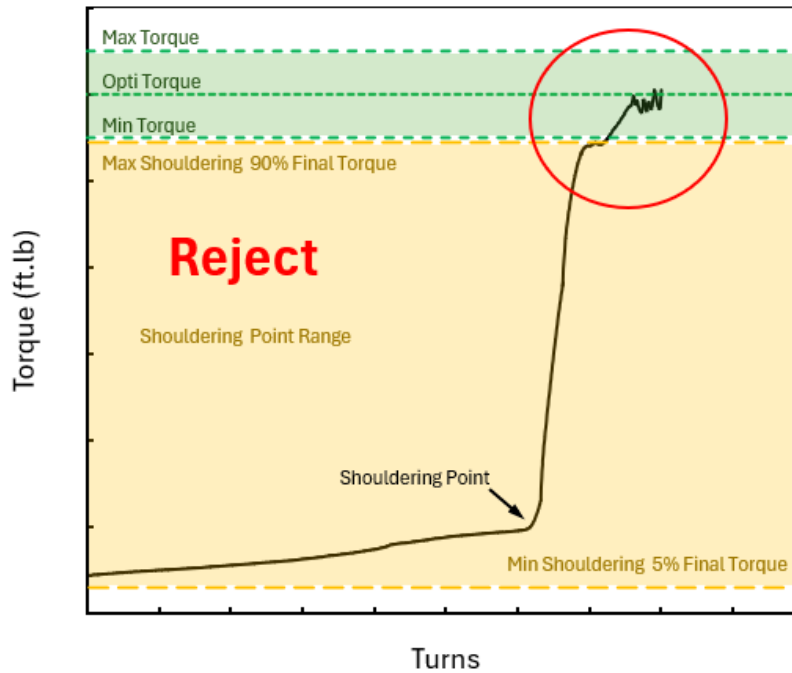
NOTE: High shoulder – Break-out, inspect, and remake to max torque.

(a)



NOTE: Irregular torque build just before the optimum torque is reached. Break-out, inspect the connection, and remake with less thread compound.

(b)



NOTE: Yielding – Break-out, lay down pin and box joint, set aside for inspection.

(c)

Figure 7 – Examples (a), (b) and (c) of unacceptable make-up graphs.

Contact Information:

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