



**ANCILLARY
SPECIFICATION
(GENERIC)**

SECTION	V	
Prepared By	GJR	10/26/09
Approved Engineer	RJH	10/20/09
Approved Dir Engr	DR	10/21/09
Approved GGM QA	GTF	10/29/09
REVISION	006	10/16/09

SUBJECT: FULL LENGTH DRIFT/END DRIFT INSPECTION PROCEDURE

1.0 SCOPE

1.1 This document sets forth the procedure for the drifting of Hunting proprietary connections.

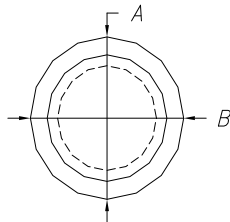
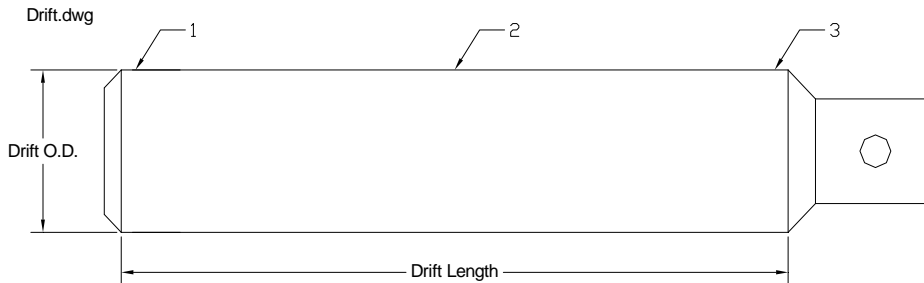
2.0 REFERENCES

- 2.1 The latest edition of the following documents shall form part of this specification:
- 2.1.1 API Specification 5CT
 - 2.1.2 API RP5A5

3.0 EQUIPMENT

- 3.1 The following equipment is required to perform a drift inspection:
- 3.1.1 Appropriate size drift for product being inspected.
 - 1. Drift Length Tolerance: -0.000" to +0.125"
 - 2. Drift Diameter Tolerance: -0.000 to +0.005"

NOTE: The drift length tolerance is for that length of the drift that is within the given drift diameter tolerance. The taper or bevel shall not be part of the specified drift length. See Fig. # 1.



Note: O.D.-1, O.D.-2, and O.D.-3, shall be measured in both positions A and B (90° apart).

O.D.-1, O.D.-2, O.D.-3, and Drift Length are critical dimensions.

Fig. # 1: Drift critical dimensions.

- 3.1.2 Appropriate size O.D. micrometer or equivalent.
- 3.1.3 Appropriate size vernier dial caliper or equivalent.
- 3.1.4 Appropriate size steel scale or equivalent.
- 3.1.5 Bright light source or equivalent.



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4.0 CERTIFICATION

- 4.1 The O.D. micrometer shall be calibrated in accordance with the manufacturer's specifications on a four (4) month interval or prior to the start of each manufacturing order.
- 4.2 The vernier dial caliper shall be calibrated in accordance with the manufacturer's specifications on a four (4) month interval or prior to the start of each manufacturing order.
- 4.3 Certifying agency shall issue a written certification of O.D. micrometer / vernier dial caliper calibration. The document shall include the following data:
 - 4.3.1 Name of certifying agency
 - 4.3.2 Name of individual performing calibration
 - 4.3.3 Specification to which gage was calibrated
 - 4.3.4 Date calibration was performed
 - 4.3.5 Date next calibration due
 - 4.3.6 Gage description
 - 4.3.7 Gage serial number
 - 4.3.8 Calibrator Serial Number
- 4.4 Recalibration and certification are required anytime a gage is dropped or following any repairs to the assembly or dial indicator.

5.0 VERIFICATION

- 5.1 Verify that the appropriate O.D. micrometer or vernier dial caliper has been procured.
- 5.2 Verify that the procured gages are within valid certification dates.
- 5.3 Using a properly calibrated vernier dial caliper or O.D. micrometer, measure the drift diameter to the nearest 0.001" on each end and in the middle of the drift. Measure with sufficient number of readings to determine the largest and the smallest diameters. Record the measurements.
- 5.4 Using a steel scale, measure the overall length of the mandrel excluding rounded or tapered leading edges.
- 5.5 Measuring devices shall be the same temperature as the drift mandrel. (The same temperature means within 5°F of each other after being stabilized for 30 minutes.)
- 5.6 If a drift mandrel is found to be out of tolerance, all tubes drift tested between that time and the previous acceptable verification shall be redrifting with an acceptable drift.

NOTE: Any drift mandrel found to be out of tolerance shall not be used.



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6.0 VERIFICATION FREQUENCY

- 6.1 The drift mandrel's specified length and diameters shall be verified at the following frequency:
- 6.1.1 Prior to the start of an order.
 - 6.1.2 At the start of each shift.
 - 6.1.3 At shift change.
 - 6.1.4 After the final shift of the day.
 - 6.1.5 At the completion of the order.

7.0 INSPECTION FREQUENCY

- 7.1 A full length drift shall be performed as required by the purchase order at a 100% frequency.

7.2 For threaded and coupled pipe, an end drift shall be performed following each coupling buck-on at a 100% frequency.

8.0 INSPECTION PROCEDURE

- 8.1 Assure the drift mandrel is at the same temperature as the pipe being inspected.
- 8.2 Remove thread protectors and visually inspect to assure the pipe to be inspected is clean. Using a bright light source verify that the tube I.D. is free of debris.
- 8.3 Using appropriate caution to prevent damage to any threaded or machined surface, carefully insert the appropriate drift mandrel inside the tube I.D. from the box end.
- 8.4 Insert the drift mandrel to a depth in the tube equal to the length of the drift into the I.D. for end drifting or equal to the entire length of the tube for full length drift. Use a force equal to or less than the weight of the mandrel.
- 8.5 Use appropriate caution to prevent damage to the threaded area when removing the drift mandrel from the tube I.D.

9.0 ACCEPTANCE/REJECTION

- 9.1 If the drift mandrel passes freely through the required drift length, the tube has passed the drift test and is acceptable.
- 9.2 Any tube in which the mandrel does not pass freely through the required drift length or stops due to an obstruction shall be rejected.
- 9.3 All tubes that fail the drift test shall have a red paint band painted adjacent to the box and a red paint band in the area that the drift stopped with the words "No Drift to XX.XXX" stenciled clearly adjacent to the red band, where XX.XXX is the size of the drift.
- 9.4 All rejects shall be clearly identified as "reject" to protect against out-of-tolerance material being shipped as prime material.
- 9.5 Any discrepancies shall be clarified and dispositioned by Hunting's Q.A. Department before any further processing or delivery.



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10.0 REWORK

- 10.1 All tubes which fail the drift test shall be visually inspected on both O.D. and I.D. to assure the tube straightness and tube cleanliness on the I.D. surface.
- 10.2 Following a cleaning of the tube I.D. surface, re-drift the tube in accordance with 8.3 - 8.5.
- 10.3 Acceptance/rejection shall be as specified above in Section 9.0 of this document.

NOTE: In case of dispute, a precision steel drift mandrel made to the appropriate ISO/API dimensions shall be used to resolve whether the lengths are acceptable or rejectable.

11.0 IDENTIFICATION

- 11.1 All tubes that pass the drift test shall be stenciled "END DRIFT" or "FULL LENGTH DRIFT" adjacent to the box as applicable.
- 11.2 All tubes that fail the drift test shall be painted as described on section 9.0 of this document.