



HUNTING

**RECOMMENDED
PRACTICE
SEAL-LOCK XP and XP-PC**

Approved	Initials	Date
Prepared	GJR	05/31/12
GM Engr	RSS	05/06/12
QA Mgr	GJR	05/31/12
Revision	003	03/19/12

SUBJECT: FIELD RUNNING AND HANDLING PROCEDURES

1.0 SCOPE

1.1 This document sets forth Hunting’s recommended practice for the field running and handling procedures that should be used in conjunction with the **SEAL-LOCK XP and XP-PC** carbon and chrome tubing product line.

NOTE: SEAL-LOCK XP PC and SEAL-LOCK XP connections are not interchangeable.

2.0 REFERENCES

2.1 The following documents were used for reference in the preparation of this document:
2.1.1 API RP 5C1
2.1.2 API BUL. 5A2

3.0 EQUIPMENT

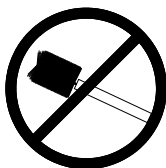
3.1 The following list of equipment should be on location when **SEAL-LOCK XP and XP-PC** tubing is run:
3.1.1 Ample supply of fresh, unopened **approved** thread compound.

NOTE: Hunting recommends Best-O-Life PTC, OCR 325, Clear Glide, Jet Lube Seal Guard, Jet Lube Seal Guard ECF, and Topco II as the tested and approved thread compounds for Hunting premium, metal-to-metal sealing products.

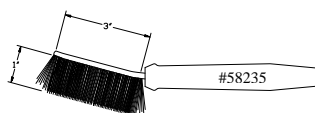
NOTE: Hunting does not recommend API modified thread compound for Hunting proprietary connection. However, when an API modified thread compound is specified by the end user, Hunting has standardized on Best-O-Life 72732/72733 as the API modified thread lubricant used for connection qualification testing. Using another thread lubricant may substantially change the recommended torque range listed on the sales data sheet.

WARNING: Hunting "DOES NOT" recommend any thread lubricant with large particles such as Best-O-Life 2000 on its metal-to-metal sealing connections. It has been proven to compromise connection integrity on Hunting's metal-to-metal sealing connections.

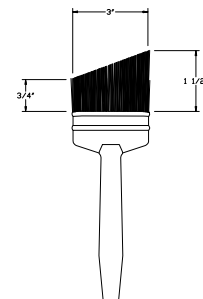
3.1.2 Thread lubricant applicators #58235 moustache brush recommended or 3" paint brush. See attached Figure.



Do Not Use
Bottle Brush



Preferred Moustache Brush #58235



Alternate Acceptable
Modified Paint Brush



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- 3.1.3 Hunting's field service kit.
- 3.1.4 Appropriate sales data sheet.
- 3.1.5 **VISUAL THREAD INSPECTION**, Ancillary Specification.
- 3.1.6 **STEEL IMPERFECTIONS**, Ancillary Specification.
- 3.1.7 Molybdenum disulfide spray
- 3.1.8 **OPTIONAL** - Torque turn monitoring equipment.
- 3.1.9 **OPTIONAL** - WD-40.
- 3.1.10 Stabbing guide

CAUTION: For SEAL-LOCK XP-PC (Plastic Coated Tubular), coating manufacture's procedures/recommended practice should be followed in conjunction with the Hunting recommended practice, FIELD RUNNING AND HANDLING PROCEDURE.

4.0 FIELD RUNNING AND HANDLING PROCEDURES

4.1 Precaution

- 4.1.1 Tubulars should not be stacked higher than five tiers at the rig. (API RP 5C1).
- 4.1.2 Layers should be separated by wooden dunnage so that no weight rests on the connections. (API RP 5C1).
- 4.1.3 Thread protectors should always remain in place when moving or handling tubulars.
- 4.1.4 If a mixed string is to be run, ensure proper identification to accommodate sequence of running.
- 4.1.5 Do not use a welding torch to remove thread protectors. In the event that weather, handling or other conditions make protector removal a difficult or time-consuming procedure, a thread protector removal tool is available from Hunting.
- 4.1.6 Avoid rough handling. Do not unload pipe by dropping.
- 4.1.7 Do not handle more than three joints unless the pipe is packaged or bundled.
- 4.1.8 Handle pipe with hooks with liftable protectors in place.

NOTE: Extreme care must be taken to ensure that liftable protectors are in place, and hooks are securely fastened, to ensure safety while lifting pipe.

NOTE: For CRA material, pipe racks should be coated with a non metallic material.

NOTE: The following precautions should be observed when handling tubing:

- a. Before loading or unloading make sure that the thread protectors are tightly in place. Do not unload pipe by dropping. Avoid rough handling which might damage the threads or ding or dent the body of the pipe. Damaged threads may leak or part. Dents and out-of-roundness may reduce the collapse resistance of the pipe.
Special handling may be required for sour service and CRA material. Impact against adjacent pipe or other objects may cause a local increase in the hardness of the pipe to the extent that they become susceptible to sulfide stress cracking. The owner of pipe that requires special handling requirement should notify his service providers of the applicable special handling requirements and to which pipe the special requirements are applicable.



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- b. When unloading by hand, use rope slings to control the pipe. When rolling down skids, roll pipe parallel to the stack and do not allow pipe to gather momentum or to strike the ends, because even with thread protectors in place there is danger of damaging the threads.
- c. When using a crane, the use of spreader-bar with a choker-sling(s) at each end is the recommended method of handling long pipe. Each choker-sling shall be double wrapped.
- d. When rolling pipe on the rack, keep pipe parallel and do not allow pipe to gather momentum or to strike the ends.

4.2 Preparation

- 4.2.1 Ensure that all necessary running equipment is available and in good condition.
- 4.2.2 Slip type elevators of proper size, in good repair and with the setting plate adjusted properly, should be used.
- 4.2.3 Ensure that slips are of the correct size to accommodate the size, weight and length of the tube.
- 4.2.4 Ensure that the safety clamp is the correct size and in serviceable condition.
- 4.2.5 Check for traveling block alignment.
- 4.2.6 Ensure that all accessories are available and in good condition, including crossovers, handling plugs, float equipment, etc. and if appropriate, that the proper service personnel are present and aware of the procedures.
- 4.2.7 Ensure that an ample supply of the approved thread compound is available. Only fresh, previously unopened containers of compound shall be used.

NOTE: See Section 3.1.1 for recommended thread compounds.

NOTE: Hunting recommends the use of non directional inserts for CRA material in elevators and slips.

- 4.2.8 A stabbing board or a yoke may be required to offer stability for ease of make-up.
- 4.2.9 Ensure that the power tong snub line is at 90° and level with the tong.

NOTE: Ensure that an accurate torque monitoring device (Martin-Decker torque gauge or equivalent) is available, the load cell is for use in the required torque range, and the load cell has been calibrated within the past four (4) months.

NOTE: Hunting recommends the use of a Dillion gage or equivalent to assist in establishing the torque dump on the tong unit.

4.3 Cleaning and Thread Inspection

All tubular connections shall be thoroughly cleaned and dried at the rig prior to running or inspection.

- 4.3.1 Immediately before running, remove protectors from both the pin end and the box end. Clean each connection and protector thoroughly.
- 4.3.2 All compounds that have been applied to the connections and protectors are to be wiped off or washed off using solvent and a non-metallic bristle brush. Wipe out or blow out the solvent from the connection or protector after washing.



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NOTE: Care must be taken to ensure that the cleaning process does not cause environmental pollution.

- 4.3.3 Check and clean the inside of the tubulars to eliminate any foreign material that may fall into the box while stabbing. If compressed air is available, air blast from box to pin. Ensure that there are no bristles left on the threads from cleaning.
- 4.3.4 Drift the pipe and accessory equipment with a clean, properly sized mandrel. Drift shall be performed box to pin, being careful not to damage the box torque shoulder, seal, or threads when placing the mandrel in the joint.
- 4.3.5 Inspect the threaded connections using Hunting's Ancillary Specifications titled **VISUAL THREAD INSPECTION** and **STEEL IMPERFECTIONS**.

NOTE: Repair as required by VISUAL THREAD INSPECTION and/or STEEL IMPERFECTION ANCILLARY SPECIFICATIONS.

- 4.3.6 If any joint shows obvious ovality, it should not be run.
- 4.3.7 Never leave the threads exposed for longer than two hours without corrosion protection. If the connection is cleaned more than two hours but less than twelve hours before the joint is run, a light oil should be used to prevent corrosion. If it will be more than twelve hours until a joint is to be run, reapply thread compound and clean thread protectors.

4.4 Running

- 4.4.1 Handling plugs or thread protectors must be in place whenever tubulars are moved.
- 4.4.2 Joints should be moved to the V-door via a pick-up machine. If a pick-up machine is unavailable, joints should be moved to the V-door by slings or a pick-up line attached to the box end.
- 4.4.3 Elevators or pick-up line with or without pick-up elevators may be used to lift the joint up in the derrick.
- 4.4.4 If CRT (casing running tool) is to be used, remove the thread protector and replace it with a Hunting internal tool guide / handling plug.

NOTE: Hunting connections are not interchangeable with any other connections in the industry. The use of an internal tool guide / handling plug different than the ones designed by Hunting Energy Services for specific connections or applications may result in property damage, injury, or death. Hunting will not be held accountable nor accept any liability if the proper equipment is not utilized for its intended purpose.

- 4.4.5 Clean and re-inspect each connection as it hangs in the derrick. Remove any thread compound, solvent or moisture remaining on the connection after removing the protector.
- 4.4.6 After the connection is clean and dry, apply a light to moderate, even coating of the thread compound to the pin and box connectors.

NOTE: A light to moderate, even coating of thread compound is defined as all thread surfaces, root and crest, seal surfaces and pin face/torque shoulder covered with an even coat of thread compound. However, the thread form should remain clearly visible.



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NOTE: Assure that the box relief groove is not filled with thread compound. If excess thread lubricant is in the groove, remove the excess with a clean, dry rag or paper towel.

NOTE: Adjust the amount of lubricant applied to the pin and box connectors to cause a gradual increase in torque throughout the make-up.

NOTE: An indicator of connection over-lube is during the last one-half of a turn to final make-up position there is no gradual increase of torque even though the pin is continuing to advance into the box.

CAUTION: To much thread lubricant can cause connection damage. The problem is heightened with a high make-up speed.

- 4.4.7 Use an alignment yoke to assist make-up.
- 4.4.8 Stab the pin connector into the box connector.

NOTE: For SEAL-LOCK XP-PC stab the pin connector into the box connector utilizing the appropriate size and weight stabbing guide.

- 4.4.9 If the connection is mis-stabbed, pick up the joint, clean the pin and the box and reinspect.

CAUTION: For SEAL-LOCK XP-PC (Plastic Coated Tubular), coating manufacture's procedures/recommended practice should be followed in conjunction with the Hunting recommended practice, FIELD RUNNING AND HANDLING PROCEDURE.

4.5 Make-up

- 4.5.1 Optional Torque-Turn Equipment.
A torque turn/time or torque/turn monitoring system may be utilized. Monitoring equipment should be capable of resolving torque to 1/100th of a turn increments as a minimum but equipment capable of resolving torque to 1/1000th of a turn encoder should be utilized when available. An enhanced computer display should be part of the torque-turn monitoring equipment and utilized to monitor make up. The monitoring equipment should be capable of dumping during the make-up by either the computer technician or when maximum parameters are reached. As the torque enters the acceptable window, the technician should be able to depress a function key to manually terminate the make-up. The system should be capable of automatic dumping as input parameters are met. The load cells used with the torque monitoring equipment should be calibrated every four months, traceable to the appropriate national standard.
- 4.5.2 Back-up tongs should be placed below the box connector. Use back-up tongs for the first 10 joints or until sufficient weight is generated in the slips to prevent the entire string from rotating.



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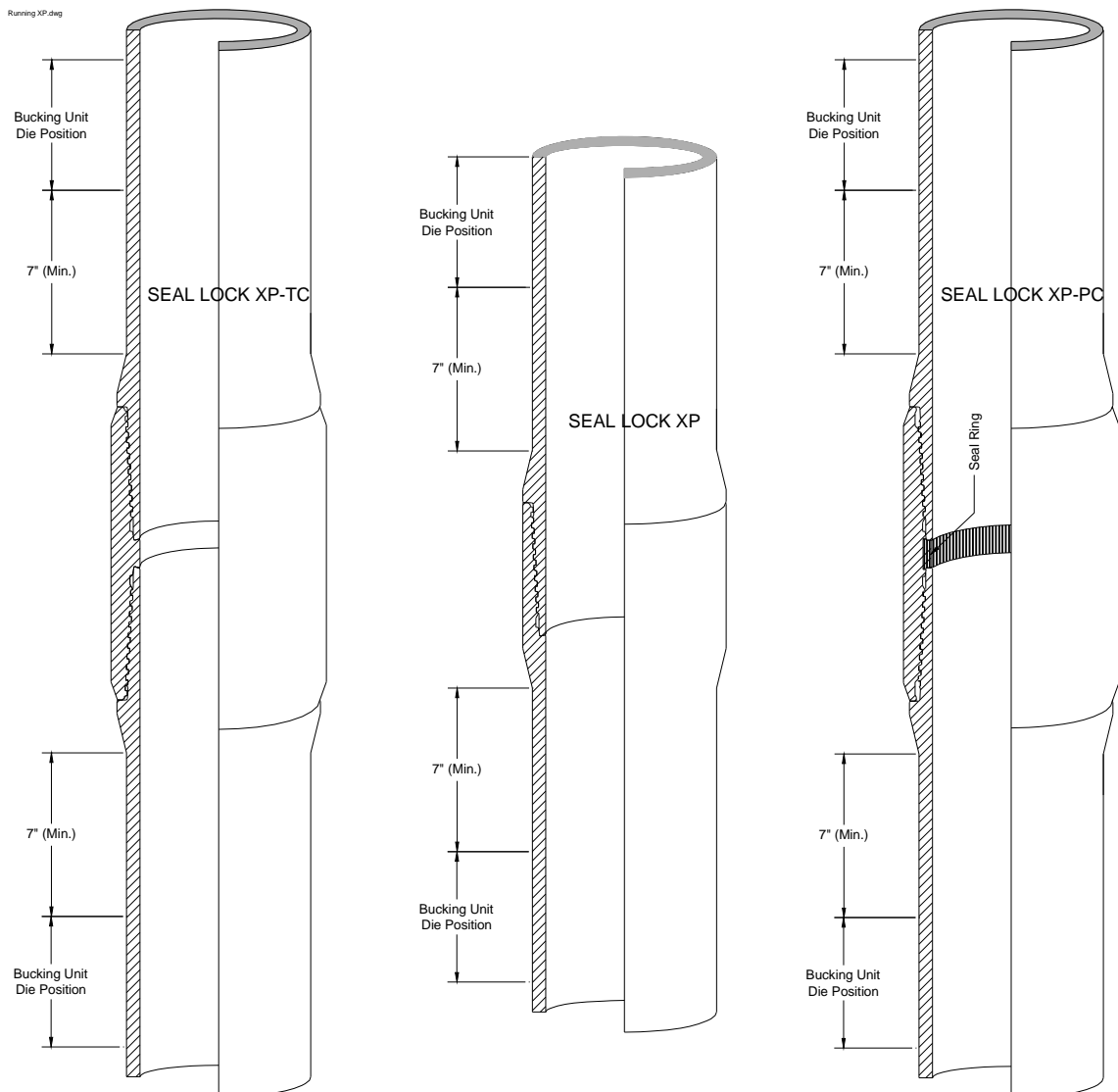
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NOTE: Power and backup tong dies shall be clean and not worn down and shall not leave marks exceeding 0.015" in depth. Excessive marks or sharp-bottomed marks must be removed. Removal may be by filing only; grinding is prohibited.

4.5.3 Position the power tongs approximately 7" above the box connector, as shown on the following illustration:





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NOTE: For CRA material the connection shall be started by hand and/or with a strap wrench.

NOTE: Do not allow the stabber to rock the tube during make-up.

4.5.4 Apply the specified torque to the connection at 3 - 6 RPM. Make up speed should not exceed 6 RPM. Make-up speed should not vary excessively during make-up and should be continuous with no gear changing.

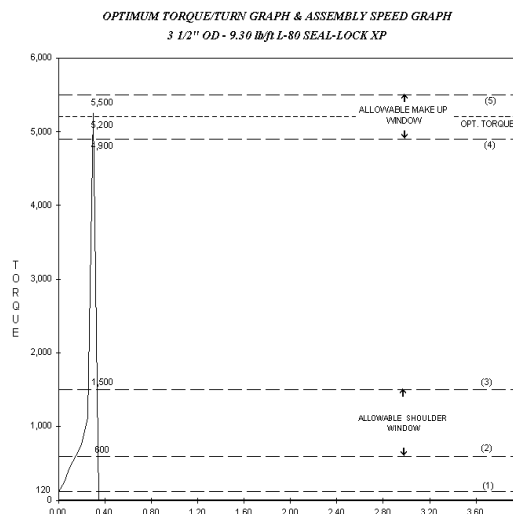
NOTE: If an appreciable amount of thread lubricant is being pushed to the tube ID and/or the tube OD during make-up, too much thread lubricant is being applied to the connection.

NOTE: If shoulder torques are high or low, adjust the thread compound application to give good make up torque curves. For high torque, apply more compound and if necessary, apply a light to moderate, even coating of molybdenum disulfide spray to the pin and box connectors to further reduce shoulder torque.

NOTE: Hunting running specifications state that the connection must shoulder prior to reaching maximum assembly torque.

NOTE: The normal shoulder window is based on dimensional tolerances only. Other factors affecting shoulder torque are texture of phosphate coating, type of thread lubricant used, make-up speeds, temperature, etc.

4.5.5 If the optional torque/turn monitoring equipment is used a make-up torque/turn graph should be generated for every connection. See attached drawing of optimum torque/turn graph for 3 1/2" 9.30# L-80 SEAL LOCK XP.





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- 4.5.6 Lower the elevators over the pipe after make-up is complete, not during make-up.
- 4.5.7 In the event torque/turn or torque turn/time equipment is used at the rig site, the following procedure should be used to set acceptance criteria:
 - a) Prior to the job, the operating company representative should review the Hunting sales data sheet for this connection. Shoulder torque acceptance limits should be in the range shown on Hunting's optimum torque/turn graph.
 - b) Those connections falling outside the acceptable shoulder torque values should be broken out and checked for damage. If no damage is found, the connection may be made-up again. Adjust doping procedures as suggested in Section 4.5.4 **NOTES** to achieve higher or lower shouldering torque as necessary.
 - c) A torque curve showing a small wave shall be acceptable. However, the connection with a wave in the torque curve exceeding the shouldering torque shall be broken out and visually inspected. If no damage is found, the connection may be made-up again.
 - d) Final torque in excess of the maximum acceptable final torque or less than the minimum acceptable final torque should be broken out and visually inspected. If no damage is found, the connection may be made-up again.

4.6 Pulling

4.6.1 Preparation

- a) Slip type elevators are required.
- b) Use an alignment yoke and weight compensator when pulling tubing.
- c) Use power tongs with acceptable torque read-out and back-up tongs.
- d) A wooden platform must be used for standing back tubulars. (Refer to API 5C1)
- e) Clean thread protectors should be available prior to laying down or standing back. As each connection is broken out, protectors shall be installed on each pin.

NOTE: Hunting does not recommend standing back CRA material.

4.6.2 Breaking Out

- a) Use power tongs with torque adjustment adequate for break out without damaging pipe. When coming out of hole, the back-up tong should be placed on the pipe body below the connection. Pipe wrenches or chain tongs shall not be used as back-ups.
- b) Break out the connection at low RPM's.
- c) After breaking loose, rotate by hand with the aid of a strap wrench. The connection will be disengaged and ready for separation in 4 1/2 turns from the power tight position.

NOTE: Do not spin after the connection has "popped." This can and will cause thread damage and/or galling.

NOTE: For CRA material break out initial torque and back out with a strap wrench.

- d) If excessive torque is noted, rotation should be stopped until cause is determined.



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- e) Great care should be exercised to disengage all of the threads before lifting the tubing out of the box connector. Do not jump out of the box connector.
- 4.6.3 Standing Back
 - a) Tubulars should be set on a firm wooden platform when stood back in the derrick.
 - b) Protect threads from dirt or damage when the tubulars are out of the hole. Thread protectors should be installed on the pin members when standing back and may be required in the box connector when conditions warrant.
- 4.6.4 Re-Running
 - a) Clean connection members fully and inspect for damage.
 - b) Field repair any small protrusion on threads.
 - c) Re-run as per 4.4 and 4.5.
- 4.6.5 Laying Down
 - a) Clean protectors shall be placed on the tubulars before they are laid down.
 - b) If tubulars are stored or re-used, remove the protectors after laying down, clean and inspect connections. Coat all exposed threads with water displacing oil (WD-40) followed by Kendex or alternately with other approved thread compound and install clean thread protectors.

5.0 RUNNING PROCEDURE FOR ACCESSORIES MADE UP USING THREAD LOCKING COMPOUND / LUBRICANT

- 5.1 Using steam, soap and hot water, or safety solvent, remove all thread storage or running compound from both pin and box connectors.
- 5.2 Ensure that the thread and sealing surfaces are clean, dry, and free of oil, grease, or residues.
- 5.3 On metal-to-metal seal connections, apply the Hunting recommended thread compound to the seal area on both elements (pin and box connectors).
- 5.4 Just prior to make up, the thread locking lubricant shall only be applied on the pin threads (not on the box), on the area that has not been covered by the approved thread compound.
- 5.5 When making up accessories like float equipment, hangers, thick wall accessories, and others, shoulder torques might be higher than normal due to relationship of the friction factors of the thread locking lubricant in comparison with the API Modified thread compounds and the wall thickness.
- 5.6 The make up torque of the accessories should be aimed to the maximum recommended torque. Therefore, if necessary, the published torque may be exceeded but in any case shall not exceed 80% of the published minimum yield torque.