

PRODUCT BULLETIN



A WireCo® WorldGroup Brand

DRILL LINE SERVICE GUIDELINES

February 2014

Installation

1. Use a rope connector grip (snake) with a swivel to connect the new drill line to the old drill line. This will relieve twist that may be put in the rope during spooling and handling.
2. Never weld the new drill line to the old drill line.
3. Try to install the new drill line at a point in the drilling operation when there is a considerable amount of weight available to help seat (break in) the new drill line and assist spooling. Drill lines are made approximately 4% over the nominal size. The Lebus lagging is 2-1/2% over the nominal rope size. This can cause a spooling problem with the rope not fitting in the lagging. By having a high load on the rope, it normally pulls down and fits in the lagging.
4. Check the brass inserts on the dead line anchor for proper size and if worn, replace.
5. Torque the nuts on the dead line anchor clamp to the manufacturer's specifications. The torque should be rechecked after one to two hours of operation.
6. Special care should be taken during rig moves to prevent damage of the drill line such as kinks or doglegs.

Operation

1. The optimum service is received when the drill line operates with a design factor ranging from 5 to 7. A high design factor (over 7) wears the drill line out from bending fatigue because ton-miles do not accumulate as fast as at lower design factors.
2. The upper layer of the drill line can pull down into lower layers on the drum when setting heavy loads. This occurs because the block goes up empty with very little load. The drill line is not spooled tight on the drum. The load is then applied to the drill line on the top layer which forces the wraps on the next lower layer apart allowing the top wrap to pull down. Using a heavier block or making a cut based on the ton-miles accumulated prior to setting the load will lessen the problem.
3. Rope service increases with fewer number of lines. The fewer number of lines the less rope is spooled on the drum. Thus, less rope is subjected to the crossover points on the drum. It also allows more rope available to cut. As an example, on a 7,500' reel, if twelve (12) lines are strung there is approximately 2200' of rope in the string-up or 5300' of rope available to cut. For ten (10) lines strung there is 1900' of rope in the string-up or 5600' of rope available to cut. This would increase rope service by over 5%.
4. For the first few cuts, wrap the drill line at the point being cut with duct tape prior to making the cut. This will prevent the rope from unlaying.

5. When making a cut and slipping new rope into the string-up the rope should never be pulled through a loosened clamp. This could put twist in the rope. The clamp should be completely removed and inspected, and if worn or damaged replaced.
6. After making a cut the dead wraps should be spooled on the drum with sufficient tension to prevent excessive drum crushing or "milking" of the bottom layer.
7. Ton-miles for drag need to be taken into account. A table is available for ton-miles accumulated for drag.
8. Drill ships and semis using a crown motion compensator, because of additional sheaves and extra rope on the drum, may operate with a lower ton-mile goal.
9. Extended drilling between round trips may necessitate making a cut to prevent exceeding the maximum allowable ton-miles between cuts.
10. Top drives, because of the additional weight, result in more ton-miles being accumulated for each rig operation. It has not been determined if a rig's ton-mile goal should be changed when using a top drive.
11. Extensive jarring causes extreme wear at the critical wear points. Short frequent cuts will shift the critical wear points.

Setting Casing

1. Always make a cut based on the ton-miles accumulated prior to setting a heavy load of casing.
2. Always make a cut based on the ton-miles accumulated after setting a heavy load of casing.
3. If the design factor for setting the casing is approximately 3.0, cut a minimum of 200' from the string-up. Inspect the remaining rope in the string-up and make another cut if needed.
4. If the design factor is down to 2.0 (lowest recommendations by API), cut a minimum of 600' from the string-up. Inspect the remaining rope in the string-up and make another cut if needed.
5. For design factors between 2.0 and 3.0, cut between 200' and 600'. Inspect the remaining rope in the string-up and make another cut if needed.
6. Try not to install a new drill line (or slip all new rope into the system) just before setting a heavy load of casing. New or unused rope is more susceptible to crushing than a rope that has been in service.

Inspection

1. The traveling block and crown sheaves must be checked at regular intervals. If the depth or size of the groove shows excessive wear, the sheave must be repaired or replaced (especially the fast line sheave).
2. The lagging on the drum must be checked for size and smoothness. If excessively worn or corrugated, it must be repaired or replaced.
3. The kick back plates, kick back rollers, and line guide roller assembly should be inspected periodically.
4. Rope should be removed from service if it meets the retirement criteria specified by API RP54.