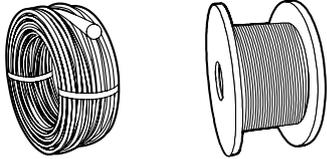


STAINLESS WIRE SLICKLINE-SW USERS GUIDE AND DUCTILITY TESTING



ZAPP IS CERTIFIED TO ISO 9001



SLICKLINES-SW

User's guide for slicklines

Correct handling will prolong the life of the slickline and reduce the overall cost.

Recommendations for slickline usage:

- _ Avoid abrasion between the line and the ground or other equipment
- _ Ensure that sheave grooves are of the correct diameter
- _ Check sheaves for wear
- _ Check that sheaves are able to rotate freely
- _ Check the rubber seal in the stuffing box for wear
- _ Check the seal or gland in stuffing box for wear
- _ Use caution during jarring operations
- _ Inspect lines for diameter reduction after heavy jarring
- _ Brake carefully when lowering tools into the well
- _ When re-spooling, always spool from top to top
- _ Avoid kinking the line
- _ Avoid damage to shipping spools
- _ Store wireline spools vertically
- _ Clean lines after use

RECOMMENDED SAFE LOAD

Zapp recommend a safe working load of 60 % of the breaking load.

WRAPTOR DUCTILITY TESTING UNIT

With Zapp's Wraaptor ductility testing unit it is possible to more accurately predict the retirement point of a slickline. This leads to considerable cost savings through the reduced risk of unplanned production stops and the loss of valuable production equipment.

TECHNICAL DATA FOR WRAPTOR DUCTILITY TESTING UNIT

Zapp's Wraaptor ductility testing unit will enable a more accurate prediction of the retirement point of a slickline. This can lead to considerable cost savings through the reduced risk of unplanned production stops and the loss of valuable production equipment.

CONSTRUCTION

The ductility testing unit, Wraaptor, is a sturdy construction manufactured in aluminium and stainless steel, with a 3 mm thick, high-impact resistance polymer hinged cover.

DIMENSIONS (APPROX.)

Length: 18 in. (460 mm)
Width: 6 in. (150 mm)
Height: 4 in. (117 mm)
Weight: 15 lbs (7 kgs)

GEARS

Two gear ratios are included: 1:1 and 1:2.5

DIMENSIONAL RANGE

The dimensional range in which Wraaptor will function properly is 0.072-0.160 in. (1.82-4.06 mm).

RECOMMENDED CONDITIONS FOR USE

Recommended temperature limits are -4 °F to +122 °F (-20 °C to +50 °C). The Wraaptor unit will withstand the detrimental effect of offshore sea-water environments. The gearbox is maintenance-free and will keep sand and water out.

ITEMS INCLUDED

1. Wrap test chuck
2. Wrap test bushing
3. Wire guide (plus spares)
4. Flat-nose pliers
5. Torsion test accessories
6. Allen (hex) key
7. Table fixtures
8. Handle
9. Magnifying glass (not shown in picture)
10. Wrap-test evaluation guide (not shown in picture)
11. Instruction manual (not shown in picture)

DUCTILITY TESTING OF SLICKLINES IN THEORY

Wrap testing is the recommended method for testing ductility in stainless and nickel alloy wirelines. Torsion testing is recommended for testing ductility in carbon steel wirelines. The reason for differentiating the two steel types is that carbon steel and stainless steel differ greatly in structure.

The isotropic (meaning ductile in all directions) structure of carbon steel makes torsion testing the ideal method for that product. Anisotropic (meaning ductile in only one direction) stainless steels are best served by wrap testing, which exerts surface pressure only in the more suitable longitudinal direction.

Please contact your local sales office for more details about ductility testing of wirelines.

CONSISTENT TESTING

Wrapping a line around its own diameter exerts extreme pressure on the outer fiber of the slickline. Reduced ductility is immediately apparent. With Wraptor ductility testing units, tests can be performed in a consistent way over and over again, resulting in more accurate predictions.

Up to 1 meter (3 feet) 0.125 in. line and even longer sections of 0.108 in. line can be tested. The surface area which can then be examined will be up to 100 times greater than the alternative method of simply knotting the line or manually wrapping. Knowledge of the true condition of the wire will therefore be greatly increased and the risk of lowering a brittle line into a well will be drastically reduced.

PERFORMS BOTH WRAP TESTING AND TORSION TESTING

The ductility testing unit will perform both wrap tests and torsion tests on slicklines in the field. Wrap testing is the recommended method for testing ductility in stainless and nickel alloy wirelines. Torsion testing is recommended for testing ductility in carbon steel wirelines.

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