

# From Chrome to ExoPro™ |

## Longer mud motor rotor life at an economical price

Switch from hard chrome plating to ExoPro™ for longer mud motor life



### Situation

A mud motor rotor with hard chrome plating averages 1 to 2 runs before needing to be re-plated due to damage, corrosion and wear. The goal is to increase the mud motor rotor's life so it does not have to be re-plated as frequently.

### PST Solution

Praxair Surface Technologies' (PST) new ExoPro™ coating provides the necessary protection to resist corrosion and wear resulting in a longer service life. ExoPro LW-304 was applied at 0.004" (100 microns) thickness – less than half the industry standard thickness for tungsten carbide. The surface finish requirement was  $\leq 10 \mu\text{in}$  ( $\leq 0.25 \mu\text{m}$ ) Ra roughness.

### Customer Advantages

Since ExoPro coatings can be applied thin and smooth, the company's cost targets were met with an expected life improvement from 1-2 runs to 3-4 runs.

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*Power section rotor with ExoPro coating*



*Hard chrome (top) vs. ExoPro (bottom) salt fog test results after 1000 hours*



*ExoPro LW-304 after 1st run and ready for 2nd run*

## Case Summary

- Hard chrome replaced with ExoPro LW-304
- 3 to 4 runs instead of 1 to 2 runs
- Less downtime
- Economical solution

Learn more about how PST can work with you to develop a custom solution for your toughest challenges. Visit [praxairsurfacetechologies.com](http://praxairsurfacetechologies.com) or call 1-317-240-2500.

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