

# Extend the Life of Your Mandrels with **CARBIDE<sup>X</sup>** Technology Superior to Traditional Carbide Coatings

- **Industry:** Oil & Gas
- **Application:** Bearing Mandrels, Shock Mandrels, Spline Mandrels, Wash Pipes
- **Environments:** All Directional and Conventional Drilling Applications

## The Problem

As drilling environments become more aggressive, standard carbide coated mandrels have shown signs of performance inefficiency with **cracking and coating delamination resulting in a short service life.**

## Solution

### Extreme Coatings' Carbide<sup>X</sup> Coated Mandrels

Carbide<sup>X</sup>® C9000Cr is a high tungsten carbide containing coating. This formula is designed to resist

- Severe abrasion
- Corrosion
- Adhesive wear
- Erosion
- High temperatures up to 800° F

The deposits contain high levels of tungsten carbide in a cobalt-chrome-matrix designed for toughness and superior wear resistance.

Our Carbide<sup>X</sup> coating process differs from others on the market due to our attention to detail in coating preparation and finishing.

## Results

### Increased Service Life and Improved Performance Output

- Lower cost per hour
- Reduce motor failure rate
- Longer run potential
- Higher component utilization rate



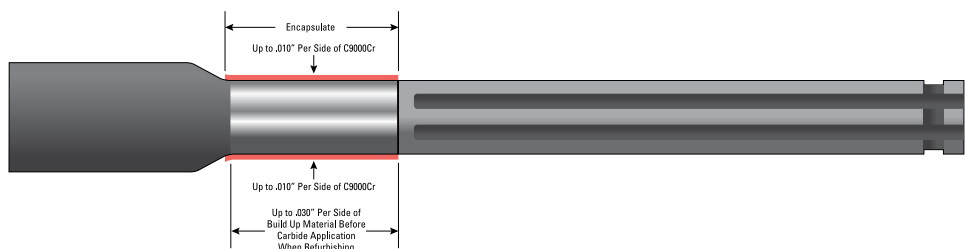
Refurbished mandrel with our Carbide<sup>X</sup> C9000Cr – a dense, crack-free coating designed to restore carbide coated or chrome-plated mandrels



Standard coated spline mandrel. Typical Issue: failure due to chloride attack, causing cracking and chipping



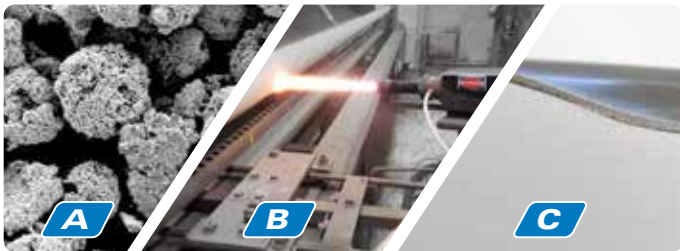
Standard bearing mandrel. Typical Issue: wearing at lower seal



# Improving the Performance and Service Life of Downhole Tools, Mud Rotors, Fracture Pump Plungers, Drive Shafts and Bearings

## About Extreme Coatings

Since 1997 Extreme Coatings has carbide coated more than 42,000 components with our high velocity thermal spray process. The high volume percentage of hard, fine carbides ensures exceptional wear resistance unmatched by common alloys, tool steels or bimetals. You can expect Extreme Coatings coated mud rotors to last two to five times longer than any standard mud rotor. Extreme Coatings is a recognized world leader in this technology.

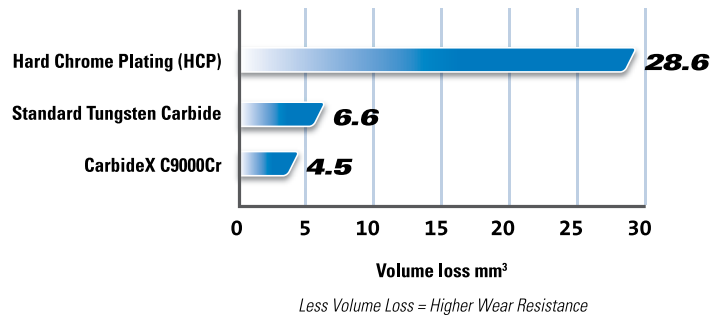
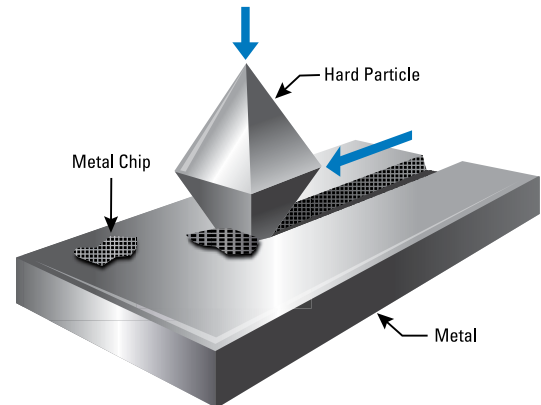


- A: Our high performance formulas
- B: HVOF thermal spray
- C: Extreme layer of protection

We manufacture most of our coating formulations in the USA to ensure maximum quality control and the highest quality standards.

Extensive process knowledge and years of coating experience gives us the confidence to offer a **Performance Guarantee**. We are certain you will be completely satisfied with the results.

## Comparison of Alloy Materials Designed to Protect from Abrasive Wear



**Authorized Distributor:**



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