Nitrotec®
The Alternative to Cr Plating

- Improved corrosion resistance
- High wear resistance
- Reduction of the friction coefficient
- Improved fatigue strength
- High surface hardness
- Aesthetic attractive anthracite / black appearance
- Good dimensional and shape accuracy
- Cost reduction on material possible
Nitrotec®

The Alternative to Cr Plating

**Nitrotec®**

- Environmentally benign
- Superior corrosion resistance
- Wear resistance
- Increased fatigue strength
- Excellent dimensional control
- Uniform Coverage
- Good penetration down bores
- No adhesion problems

**Chrome Plating**

- Microcracking - leading to poor corrosion resistance and blisters
- Poor adhesion
- Non uniform coverage – resulting in high and low spots and poor penetration in tube bores and holes
- Environmentally unfriendly

**Nitrotec 'S'**

Material: Typically 0.15-0.4% carbon steels.
Nitrotec 'S' is a treatment followed by a mechanical polish to regain the surface finish following a post oxidising treatment. This polished finish produces an improvement in both frictional characteristics and corrosion resistance. This is demonstrated by the 2 struts shown after neutral salt spray test where 15 microns of hard chrome plating lasted 24 hours yet the Nitrotec 'S' strut exhibited no corrosion after 240 hours neutral salt spray test.

**PISTON RODS**

Material: 0.1-0.4% Low Carbon Steel
A traditional technique for the manufacture of Gas Piston Rods is to machine the Rod from hard chrome plated low or medium carbon steel bar. Nitrotec® processing is capable of producing all of the design requirements for the application:

**Beneficial Properties:** Wear resistance, Bearing characteristics, Surface topography, Corrosion resistance, Aesthetic finish

The Nitrotec 'S' surface treatment provides a minimum of 25 µm compound layer with a surface finish of 0.15 µm maximum, which is competitive with chrome plating.

**SWIVEL HUB**

Material: - Typically 0.15-0.4% carbon steels.
Nitrotec 'S' is a treatment followed by a mechanical polish to regain the surface finish followed by a post oxidising treatment. This polished finish produces an improvement in both frictional characteristics and corrosion resistance. This is demonstrated by the 2 struts shown after neutral salt spray test where 15 microns of hard chrome plating lasted 24 hours yet the Nitrotec 'S' strut exhibited no corrosion after 240 hours neutral salt spray test.

Material: - 0.32-0.40% carbon steel, 1.3-1.7% manganese steel (forged), hardened and tempered to 201-255 Hb.
Many service complaints were being received about oil leaks around the seal which wiped over the bowl. The leaks were caused by the corrosion of the chrome plating, which was lifting up in flakes and cutting into the seal. The result being that the oil leak from the bowl depleting the oil reservoir inside the hub. One engineering solution experimented with was to fit the unit with a leather gaiter, packed with grease. Unfortunately, corrosion occurred again giving rise to quality issues. A Nitrotec® treatment on the component with the correct surface finish produced greatly improved corrosion resistance, with an added bonus of improving fatigue strength to uplift available axle load.