

THE LIQUID TUNING OF A GEARBOX BY USING THE PROTOPLASMA[®] FLUID GIVES A WINDTURBINE AN FAR MORE BETTER PERFORMANCE / OUTPUT

**AXXON[®]s PROTOPLASMA[®] GEARBOX LIQUID,
MEANS LESS FRICTION IN A WINDTURBINE**

ULTRA SCIENTIFIC GEARBOXOIL TECHNOLOGY, THE DEVELOPMENT OF THE PROTOPLASMA[®] FLUID (PF) HAS TAKEN A LONG TIME TO PERFECT. PF IS MANUFACTURED USING A TECHNIQUE THAT PRODUCES AIR BUBBLES WHICH CARVE A PATH THROUGH A FLUID AND RIPPING ELECTRONS FROM MOLECULES THAT ENCAPSULATED WITHIN A STABLE FLUID MATRIX. THE PROTOPLASMA[®] WHEN ENERGIZED BY ROTATING MACHINERY ACTS AS SHIELD BETWEEN METAL AND PLASTIC SURFACES, REDUCING SHOCK WAVE PHENOMENA EXPERIENCED WHEN CONTRA-ROTATING GEARS, SLIDE OR GUIDE, METAL OR PLASTIC WORKING SURFACES ARE IN CONTACT. THIS IS ACCOMPLISHED BY HARNESSING THE ENERGY GENERATED WHEN CONTACT SURFACE PRESSURE IS BEING DEVELOPED

PROTOPLASMA[®] TECHNOLOGY

A conventional lubricating oil is formulated from a base oil into which various chemical additives are introduced to enhance its performance, such as antiwear (A/W) agents to combat wear on sliding surfaces, extreme pressure (E/P) additives to deal with situations where pressure on the bearing is so great that metal-to-metal contact can occur and antifoaming agents. In order to achieve the correct viscosity characteristics for the mechanical application, polyisobutylenes are added as viscosity index (VI) improvers. In theory, the oil does exactly what it is designed to do but it is a hit and miss affair and it allows wear to take place on gear-sets and on any contact rotating mechanism. The polyisobutene VI improvers usually break down after about a year and the oil reverts to its thinner base oil viscosity and wear takes place; from this point on metallic wear particles and other extraneous materials from an abrasive part of the oil, condensation builds up in the sump and emulsifies this cocktail of disaster accelerates the demise of any mechanical asset. Nevertheless, these conventional lubricants were the only available until the invention of the ProtoPlasma[®] technology.

The ProtoPlasma[®]s do not require A/W or E/P additives or VI improvers. They are scientifically formulated, using synthetic base fluids, to meet three viscosity grades that replace the 15 or so conventional ISO grades used in today's lubrication technology

WEAR INDEX COLOUR CODE SYSTEM FOR GEARBOXES USING PROTOPLASMA[®]

The aim is to establish the mechanical condition of gearboxes using a HT meter to store the data. Once the general condition of the gearbox has been benchmarked, the data collected by the HT meter is uploaded into the dedicated computer. The A/E analyser software analyses the data and displays in quality controlled worst first order, the assets

requiring attention. There are different types of ProtoPlasma[®] fluids for use by colour selection dictated by the distress readings that are displayed on the screen:

**Green indicates good working conditions when
HT meter distress readings are 0 to 7**

This indication means that the asset is in good operable state and with the application of the ProtoPlasma[®] No: 1, this will upgrade any mechanical asset that has been running on conventional mineral oils. A high confidence level of asset live extension of 25% is expected.

**Amber indicates attention required when
HT meter distress readings are 8 to 20**

This indication means that the asset is not as healthy as it should be, and with the application of the ProtoPlasma[®] No: 2, the asset can be returned back to service quickly. This will bring back assets showing a reasonable level of wear to an acceptable working level and enhancement into the Green band is expected.

**Red indicates urgent attention when the
HT meter distress readings are 21 to 30**

This indication means that a predictable failure is possible and if a stand-by asset is available, the asset should be shut down and ProtoPlasma[®] No: 3, applied. This product is for the repair of heavily worn mechanical assets. The objective is then regularly monitored for further improvements, and return the asset to the Amber or Green band. The option to do nothing, The asset will deteriorate in the Black band.

**Black indicates terminal decline when the
HT meter distress readings are 31 to 50**

This indication means urgent attention is required and failure of the asset is imminent. Recommended action is to shut down the asset and control any possible secondary damage and investigate further. From the investigation report the correct ProtoPlasma[®] range can be applied to extend the live of equipment that is in decline (if possible)

**The Axxon[®] ProtoPlasma[®] Fluid range incorporates
the following characteristics and benefits.**

- ▶ No or less friction
- ▶ Reduces wear on machinery
- ▶ More electrical output
- ▶ Machinery life extended by a minimum of 25%
- ▶ ProtoPlasma[®] fluids last a minimum of 5 years
- ▶ ProtoPlasma[®] fluids are hydrophobic and will not hydrolyse in water, any migration into potable water should cause no ill-effect to the consumer and can be screened out of the water.
- ▶ ProtoPlasma[®] fluids are totally inert and remain stable when under attack

from hydrogen sulphide gas and saline solutions

- ▶ **ProtoPlasma[®] fluids are unaffected when water is contaminated with chemicals or bacteria**
- ▶ **ProtoPlasma[®] fluids are not red flagged (Environmentally acceptable)**
- ▶ **ProtoPlasma[®] fluids are manufactured from food grade materials suitable for human consumption.**