

LUBRICANTS

# CIRCULATING OILS

YOUR ADVANTAGE IN AN INDUSTRIAL WORLD

IT'S MORE THAN JUST OIL. IT'S LIQUID ENGINEERING.



# THE EXPERTS IN CIRCULATING TECHNOLOGY

## CASTROL OFFERS YOU CIRCULATING OILS AND PRODUCT SUPPORT SERVICES THAT MEET THE DEMANDING REQUIREMENTS OF THE METALS INDUSTRY:

Castrol Magna™ CTX WT oils are engineered for use in MORGOIL™ backup roll bearing systems such as those manufactured by Morgan Construction Company, Danieli, SMS Demag and others. These high quality oils meet or exceed the Morgoil Lubricant Specification Rev. 1.1 (27 Jan 2005), Morgoil 'Super-Demulsibility' Lubricant Specification Rev. 2.4, Danieli Standard 0.000.001 Rev. 14.

Castrol Magna™ CTX WT oils are recommended for use in both ferrous and non-ferrous Morgoil back-up roll bearing systems. For optimum performance, appropriate viscosity oils should be selected according to the loading, speed and manufacturer recommendations.

Castrol Magna™ CTX WT can be applied via circulating as well as air/oil lubrication systems. Castrol Magna™ CTX WT circulating oils are also suitable for use on other primary mill and mini-mill bearing application systems.

MORGOIL is a trademark of Morgan Construction Company.

# CIRCULATING OIL SOLUTIONS

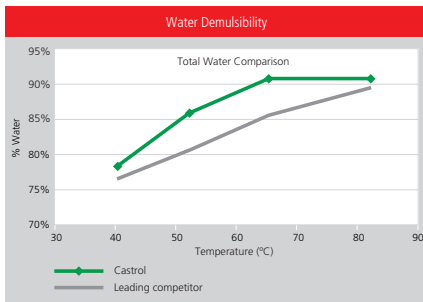
## CASTROL MAGNA™ CTX WT

These oils are manufactured from the highest quality base oils and are formulated with an advanced technology anti-wear additive system designed to extend service life in a broad range of systems operating under high impact and high shock loading.

Castrol Magna™ CTX WT oils are designed to provide maximum rust and oxidation resistance while allowing the oil to rapidly separate from water, providing exceptional demulsibility characteristics.

- **Advanced technology anti-wear package** – passes FZG stage 12+ and provides non-corrosive anti-wear protection in high impact and high shock load applications.
- **Excellent demulsibility** – rapid water separation and hydrolytic stability means increased corrosion protection and reduced downtime through prolonged lubricant life and increased equipment reliability
- **Superior thermal and oxidative stability** – provides reliable performance and extends oil life in severe applications
- **Minimal deposit formation** – cleaner system and reduced filter change frequency
- **Protection against rust and corrosion** – prevents corrosive activity on bearings and metal surfaces
- **Environmentally responsible** – does not contain zinc, phenol or heavy metals

# PERFORMANCE COMPARISONS

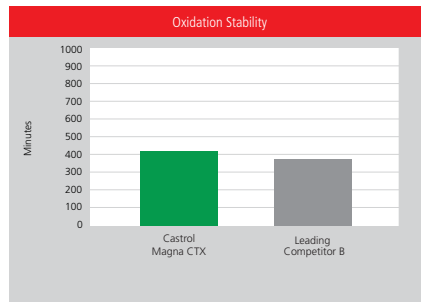


Shows the ability of oil and water to separate from each other at various temperatures after being rapidly mixed and allowed to separate for a specified time. The more total water the better the oil separates from the water. Result shown is for an ISO 100 grade.

Demulsibility is an oil's ability to readily separate from water. Water can present itself in various ways; in solution, free or emulsified in oil. All three forms of water are undesirable and must be controlled. Water contamination can come from various sources including cooling water seepage and condensation of humid air in reservoirs. Good demulsibility is critical to an oil's success.

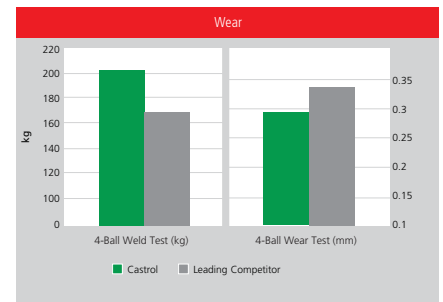
Water is one of the most pervasive and damaging contaminants that threatens lubricating systems. It can cause changes with a fluid's physical and chemical properties leading to corrosion of system components, premature bearing fatigue, and additive instability.

Castrol's range of circulating oils are designed to rapidly separate from water therefore allowing water to be easily drained from the reservoir tank. This prevents water from being carried around the circulating system and causing rust and premature wear on steel components.



Shows the ability of oil to resist oxidation at elevated temperatures.

Oxidation is the chemical breakdown of a lubricant caused by exposure to oxygen. Oxidation can be accelerated by high temperatures, water (moisture in air), catalysts such as metal (copper, etc.) and contaminants. Good oxidation performance is important as it extends the oil service life and reduces sludge and varnish tendencies. Castrol's range of circulating oils are designed to resist oxidation therefore reducing maintenance and changeout frequency.



A higher 4-Ball Weld results implies higher load carrying capacity while a lower 4-Ball

Wear result implies lower friction and reduced wear. 4-Ball Testing is a good measure of the existence and robustness of an oil's additive chemistry. It is used to determine an oil's ability to minimise friction and wear in case of metal-to-metal contact. Controlling friction and wear is important to extend equipment life, maintain tolerances, and reduce energy consumption.

\*All tests were conducted May 2007

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