

THE CASTROL HYDRAULIC OILS RANGE

RANGE	DESCRIPTION	HYDRAULIC PERFORMANCE	ISO CLASS (DIN CLASS)	VISCOSITIES AVAILABLE	BASE FLUID	ADDITIVE TYPE	VISCOSITY INDEX
Hyspin VG	Highly refined mineral oil-enhanced with rust and oxidation inhibitors	✓	HL (HL)	32, 46, 68 100, 150, 220	Mineral	Rust and oxidation	> 95
Hyspin AWS	Highly refined mineral oil-based anti-wear hydraulic and circulating lubricant containing a stabilized zinc additive system	~	HM (HLP)	22, 32, 46, 68, 100, 150	Mineral	Anti-wear (zinc)	> 95
Hyspin AWH-M	High viscosity index, highly refined mineral oil-based anti-wear hydraulic lubricant containing a stabilized zinc additive system	*	HV (HVLP)	15, 32, 46, 68, 100, 150	Mineral	Anti-wear (zinc) + viscosity index improver	> 130
Hyspin ZZ	Highly refined mineral oil-based anti-wear hydraulic lubricant containing an ashless (zinc free) additive system	*	HM (HLP)	32, 46, 68	Mineral	Anti-wear (zinc free)	> 95
Hyspin HVI	High viscosity index, highly refined mineral oil-based anti-wear hydraulic lubricant containing an ashless (zinc free) additive system	*	HV (HVLP)	15, 32, 46	Mineral	Anti-wear (zinc free) + viscosity index improver	> 140
Carelube HES	Synthetic ester-based fluid with biodegradable properties, for use in environmentally sensitive areas	**	HEES	15, 32, 46	Ester	Anti-wear (zinc free)	> 180
Tribol 943 AW	Premium high-performance multi-functional hydraulic oil containing an ashless (zinc free) additive system	///	HM (HLP)	22, 32, 46, 68, 100	Mineral	Anti-wear (zinc free)	> 100



Indicates increasing performance

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CASTROL'S RANGE OF WORLD-CLASS HYDRAULIC OILS AND SUPPORT SERVICES WILL HELP YOU TO:

- Prolong the life of hydraulic systems
- Attain optimum hydraulic system performance
- Extend maintenance intervals
- Boost productivity
- Lower maintenance costs
- Reduce overall consumption and waste

We can bring you these powerful benefits by utilizing our global process and applications expertise through our network of engineering and research professionals. It's then all delivered directly to you by our knowledgeable local sales and support teams. Our ultimate goal is to help you achieve optimum performance in your manufacturing environment.

Castrol hydraulic oils have been formulated using the latest thinking in raw materials and rigorous testing in both laboratory and manufacturing conditions, in close collaboration with leading hydraulic system and machinery manufacturers.

You can trust Castrol to provide the right lubricant for the job–across all your operations.

A CHOICE TO SUIT YOUR NEEDS

Choosing Your Castrol Hydraulic Oil					
VISCOSITY REQUIREMENTS	What are the maximum and minimum viscosity requirements of the system?				
OPERATING TEMPERATURE	Does the temperature vary greatly? Is the system very hot?				
FIRE-RESISTANT	Is a fire-resistant fluid needed? (Please refer to separate fire-resistant information)				
MANUFACTURERS' RECOMMENDATIONS	Are there any OEM specific recommendations?				
MATERIALS COMPATIBILITY	Do any component materials restrict the choice of fluids?				
ENVIRONMENT	Are there any special considerations because of the location of the system?				
ADDITIVE SYSTEM	Does the system require an ashless (zinc free) additive system?				

THE COMPLETE RANGE OF HYDRAULIC OIL SOLUTIONS

Castrol Hyspin VG range

This range of hydraulic oils is based on highly refined mineral oil enhanced with rust and oxidation inhibitors, also referred to as R&O hydraulic oils. The Castrol Hyspin VG range is designed for use in hydraulic systems that do not require anti-wear performance, but where rust and oxidation resistance is desirable. This range is also suitable for pumps with silver-plated components.

- Excellent protection of yellow metal and ferrous components prolongs equipment life
- High resistance to oxidation extends service life
- Good water separation reduces downtime and increases lubricant life

Castrol Hyspin AWS range

This range of hydraulic oils is based on highly refined mineral oil-enhanced with a stabilized zinc additive system. Castrol Hyspin AWS is designed for use in most industrial hydraulic systems that require anti-wear protection. It has excellent hydrolytic and oxidative stability while exhibiting a minimal tendency to produce sludge and deposits. In addition, Castrol Hyspin AWS provides corrosion protection to ferrous and yellow metal components found within a hydraulic system. It is also suitable for other duties that require oils of high oxidation stability and lubrication performance, such as lightly loaded gears, variable speed units and bearings.

- Excellent anti-wear performance prevents wear of internal components and reduces downtime
- High resistance to oxidation extends service life
- Good water separation decreases downtime and prolongs lubricant life

Castrol Hyspin AWH-M range

This range of high viscosity index (VI) hydraulic oils is based on the latest stabilized zinc additive technology. Castrol Hyspin AWH-M contains a shear stable additive system that helps maintain the viscosity characteristics over a wide temperature range, even during prolonged use. It also imparts a very low pour point, enabling the lubricant to be used in very cold environments.

Applications include outdoor equipment subjected to high and low temperatures such as off-highway, marine, and wind turbine applications. This range is also suitable for indoor manufacturing equipment that incorporates control systems requiring minimal viscosity change with temperature, such as — precision machine tools.

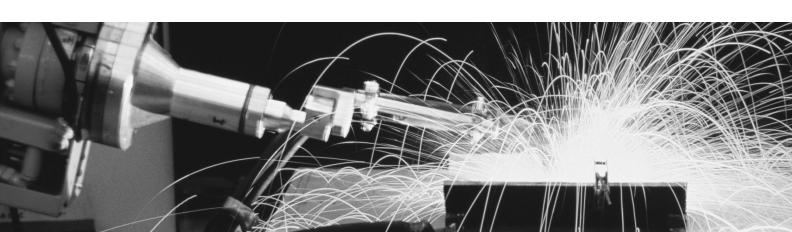
- Excellent anti-wear performance prevents wear of internal components and reduces downtime
- High viscosity index allows improved system operation over a wide temperature range
- Good water separation reduces downtime and prolongs lubricant life

Castrol Hyspin ZZ range

This range of hydraulic oils is based on a carefully selected ashless (zinc free) additive system designed to meet and exceed the most exacting performance standards.

Castrol Hyspin ZZ is particularly suitable for hydraulic systems using vane and piston pumps where elevated operating temperatures are encountered. These lubricants are formulated for use in severely stressed systems in which high levels of anti-wear performance and/or ultra fine filtration are required. They have been proven to be resistant to the effects of 'dieseling' in highly stressed systems such as plastic injection molding and fatigue testing equipment where the application leads to rapid breakdown of more conventional lubricants. Castrol Hyspin ZZ is suitable for a wide range of other applications demanding high levels of anti-wear and superior oxidation performance.

- Excellent anti-wear performance prevents wear of internal components and reduces downtime
- Excellent hydrolytic stability prolongs lubricant life and can reduce filter use
- Good water separation decreases downtime and extends lubricant life



Castrol Hyspin HVI range

This range of high viscosity index (VI) hydraulic oils is based on a carefully selected ashless (zinc free) additive system designed to meet and exceed the toughest performance standards. Castrol Hyspin HVI oils are intended for severely stressed hydraulic systems requiring a high level of anti-wear performance and/or fine filtration. In addition, these lubricants exhibit excellent corrosion protection as well as outstanding thermal and oxidative stability. Castrol Hyspin HVI has excellent hydrolytic stability and separates rapidly from water contamination.

Castrol Hyspin HVI contains a shear stable additive system that helps maintain the viscosity characteristics over a wide temperature range, even during prolonged use. It also imparts a very low pour point that enables the lubricant to be used in very cold environments.

Applications include outdoor equipment subjected to high and low temperatures such as off-highway, marine, and wind turbine applications. It is also suitable for indoor manufacturing equipment that incorporates control systems requiring minimal viscosity change with temperature, such as precision machine tools.

- Excellent anti-wear performance prevents wear of internal components and reduces downtime
- High viscosity index allows improved system operation over a wide temperature range
- Excellent hydrolytic stability prolongs lubricant life and can reduce filter use

Castrol Carelube HES range

This range of biodegradable hydraulic oils is based on synthetic esters containing anti-wear, anti-oxidant and corrosion inhibiting additives. Castrol Carelube HES is used as a hydraulic oil for applications in environmentally sensitive areas, for example near or on waterways, and in the agriculture, forestry, mining and construction industries. This range may also be used for machine tool hydraulic systems where ester based soluble metalworking fluids are being utilized and the lowest possible level of contamination is sought.

- Excellent anti-wear performance prevents wear of internal components and so reduces downtime
- Very good hydraulic performance allows switching from mineral-based lubricants without major system modifications

Castrol Tribol 943 AW range

This range of premium hydraulic and circulating oils is based on a carefully selected ashless additive system designed to meet and exceed the most demanding performance standards. The unsurpassed oxidation stability of Castrol Tribol 943 AW is a result of extensive research into stabilizing petroleum oils at high operating temperatures. The balanced, total additive system also inhibits foaming and provides an unusually high degree of corrosion protection.

These lubricants were specifically developed for service in advanced numerically controlled (NC) hydraulic systems, including robotics. The high-performance, multi-service oils in this range can extend service life to deliver uninterrupted machine availability and production. They are also suitable for circulating systems including anti-friction and journal bearings and all types of gears except where manufacturers specify AGMA 'extreme pressure' or 'compounded' gear oils. The ISO 32 and 46 viscosities can also be used in centrifugal and flooded screw compressors, significantly extending oil service life compared with conventional petroleum compressor oils and Automatic Transmission Fluids (ATF).

- Excellent anti-wear performance maintains critical dimensions in robots and other NC machines, extends the service life of valves and pumps in hydraulics, and protects gears and bearings in circulation systems
- Multi-purpose allows consolidation of lubricant inventory via the use of Castrol Tribol 943 AW multiservice lubricants in hydraulics, circulating systems and air compressors
- Excellent thermal and oxidation stability 18,000+ hours
 of oxidation stability reduces downtime and prolongs
 lubricant life, with minimal formation of varnish deposits
 and wear debris in any system
- Excellent hydrolytic stability prolongs lubricant life and can reduce filter use

