

# Key lubrication points of a wind turbine



## 1. Main Bearing

Castrol® Tribol® GR SW 460-1  
Castrol® Tribol® GR SW 680-1

## 2. Pitch Adjustment

Castrol® Tribol® GR SW 460-1

## 3. Yaw Bearing

Castrol® Tribol® 1350 PD  
Castrol® Tribol® GR SW 460-1  
Castrol® Tribol® GR SW 680-1

## 4. Hydraulic Systems

Castrol® Hyspin® AWH-M 32  
Castrol® Hyspin® HVI  
Castrol® Brayco® 717

## 5. Main Gear and Auxiliary Gear Drives

Castrol® Optigear® Synthetic X 320  
Castrol® Optigear® Synthetic CT 320  
Castrol® Optigear® Synthetic A 320

## 6. Generator Bearing

Castrol® Tribol® GR 4541 HT

## 7. Yaw Open Gear

Castrol® Tribol® 1350 PD  
Castrol® Molub-Alloy® 936 SF

# OEM gear oil approval matrix

This chart shows the Castrol® products with OEM approvals for use in specific gearboxes used by wind turbine manufacturers.

Gearbox Manufacturer

Wind Turbine Manufacturer	Siemens Winergy	ZF Wind Power	Bosch Rexroth	Eickhoff	Moventas	GE Transportation	NGC	Echesa	Zollern Dorstener
<b>GE Energy</b>	Optigear Synthetic A Optigear Synthetic X Optigear Synthetic CT	Optigear Synthetic CT	Optigear Synthetic A Optigear Synthetic X Optigear Synthetic CT	Optigear Synthetic A Optigear Synthetic X Optigear Synthetic CT	Optigear Synthetic A Optigear Synthetic X Optigear Synthetic CT	Optigear Synthetic A Optigear Synthetic X Optigear Synthetic CT	Optigear Synthetic A Optigear Synthetic X Optigear Synthetic CT		
<b>Siemens</b>	Optigear Synthetic X Optigear Synthetic CT	Optigear Synthetic X Optigear Synthetic CT							
<b>Vestas</b>	Optigear Synthetic CT	Optigear Synthetic CT	Optigear Synthetic CT		Optigear Synthetic CT		Optigear Synthetic CT		
<b>Gamesa</b>	Optigear Synthetic A Optigear Synthetic X Optigear Synthetic CT							Optigear Synthetic X	
<b>Suzlon</b>	Optigear Synthetic A Optigear Synthetic X		Optigear Synthetic A Optigear Synthetic X		Optigear Synthetic A Optigear Synthetic X		Optigear Synthetic A Optigear Synthetic X		
<b>Senvion (repower)</b>				Optigear Synthetic A Optigear Synthetic X Optigear Synthetic CT					
<b>Nordex</b>	Optigear Synthetic A Optigear Synthetic X Optigear Synthetic CT		Optigear Synthetic A Optigear Synthetic X Optigear Synthetic CT	Optigear Synthetic A Optigear Synthetic X Optigear Synthetic CT					
<b>Fuhrlander</b>				Optigear Synthetic A					
<b>Eno</b>				Optigear Synthetic X					
<b>Kynersys/ Nupower/ WZE</b>	Optigear Synthetic X			Optigear Synthetic X			Optigear Synthetic X		Optigear Synthetic X

KEY: Optigear Synthetic A = Optigear Synthetic A 320 / Optigear Synthetic X = Optigear Synthetic X 320 / Optigear Synthetic CT = Optigear Synthetic CT 320

# Castrol® hydraulic oils and greases

OEM approvals for Castrol® hydraulic oils and greases

Manufacturer

	Siemens	GE	Sharpower	Suzlon	Gamesa	Nordex
<b>Hydraulic Oils</b>	Hyspin AWH-M32 Brayco 717*	Brayco 717	Brayco 717			
<b>Greases</b>	Tribol GR SW 460-1* Tribol GR 1350-2.5 PD	Tribol GR SW 680-1**			Tribol GR SW 460-1	Tribol GR SW 460-1
<b>For Pitch and Yaw Open Gear Drives</b>	Tribol GR 1350-2.5 PD			Molub-Alloy 936 SF		

\* Field trial tested and/or waiting approval

\*\* Conditional approval