



Superior protection for wind turbine main bearings

Castrol® Tribol® GR SW 680-1 is designed for the demanding performance and viscosity requirements of major OEMs and is OEM-approved. In addition, we also conduct extensive performance testing with competitor products in our own specialized facilities, as well as submitting to rigorous independent testing. Under the same strict, independent criteria, Castrol® Tribol® GR SW 680-1 demonstrated superior wear protection over the Mobil® SHC 681 WT.

Property	Method	Test Description	Parameter	Mobil® SHC 681 WT	Castrol® Tribol® GR SW 680-1
Bearing Wear	ASTM D2596	4-Ball EP	Weld Load (kg)	250	620
Bearing Wear	DIN 51819	FE8 B/60C, 80kN, 75 rpm, 500hrs	Wear MW50 (mg)/ Temperature (°C)	Fail at 455 hrs	8mg/10mg 60°C
Bearing Wear	DIN 51819	FE8 B/60C, 80kN, 75 rpm, 500hrs	Start Torque/ Running Torque (Nm)	Fail at 455 hrs	13 Nm/13 Nm
Bearing Wear	DIN 51819-2	FE8 C/75/50	Wear MW50 (mg)	82 mg/62 mg	10 mg/21mg
Bearing Wear	DIN 51819-2	FE8 C/75/50	Start Torque/ Running Torque (Nm)	19 Nm/Not Stable	19 Nm/12 Nm
Bearing Wear	ASTM D2266	4-Ball Wear 60C, 40kg, 1200 rpm, 60 min	Scar diameter (mm)	0.6	0.31
Fretting Wear	ASTM D4170	Fafnir 25 °C	Weight loss (mg)	52.2	10



Castrol® Tribol® GR SW 680-1 grease is formulated to meet the many challenges faced by wind turbines in tough environmental conditions. It is an extension of the Castrol® greases specific to wind turbines, which also includes Tribol® GR SW 460-1.

Adaptive protection for equipment reliability

Tribol® GR SW 680-1 incorporates innovative MicrofluxTrans Plastic Deformation technology (MFT PD) to smooth surfaces and help withstand high loads, while resisting shearing, wear and water ingress. Conventional lubricants use sacrificial additives that get used up and need to be replenished. Because MFT PD is non-sacrificial and needs replacing less frequently, re-lubrication intervals can be longer. The result is not only increased protection and lower maintenance, but lower energy and lubricant costs, too. With good mobility for easy start-up and protection against fretting, even below 0°C, Tribol® GR SW 680-1 grease offers truly outstanding protection – no matter where your turbines are located.



Convert with ease

Converting to our Tribol® GR SW 680-1 main bearing grease is easy, as it is successfully compatible with Mobil® SHC 681 WT and all major grease products on the market. Independent ASTM testing confirmed that the introduction of Castrol® Tribol® with existing manufacturer's grease will not cause a deterioration in performance. You can change to Tribol® GR SW 680-1 during the normal greasing in your next maintenance cycle – successful compatibility shown in +10,000 turbines and 18 months of top off greasing. We have tested the Tribol® GR SW series products with most of the current products on the market and would be glad to share those results with you.

If you currently maintain your wind turbines with Hove A/S manufactured grease cartridges and pumps, you can continue to do so with Castrol®. Hove is an authorized repackager of Castrol® greases and have inventory in-stock and ready to ship immediately, be it Tribol® GR SW 680-1 (Hove #F-270-5L) or Tribol® GR SW 460-1 (Hove #F-266-5L).

Over 15,000 turbines have now made the change to OEM-approved Tribol®

If you are concerned about your current grease product performance or having difficulty with supply chain delays, contact Castrol®. We have Tribol® GR SW in stock and ready to ship to you.

To discover how Tribol® GR SW 860-1 and 460-1 will help achieve operational excellence across your wind farms, speak with **David DiNunzio** at **440.915.3655** or email **david.dinunzio@castrol.com**.