

CARTER WT 320



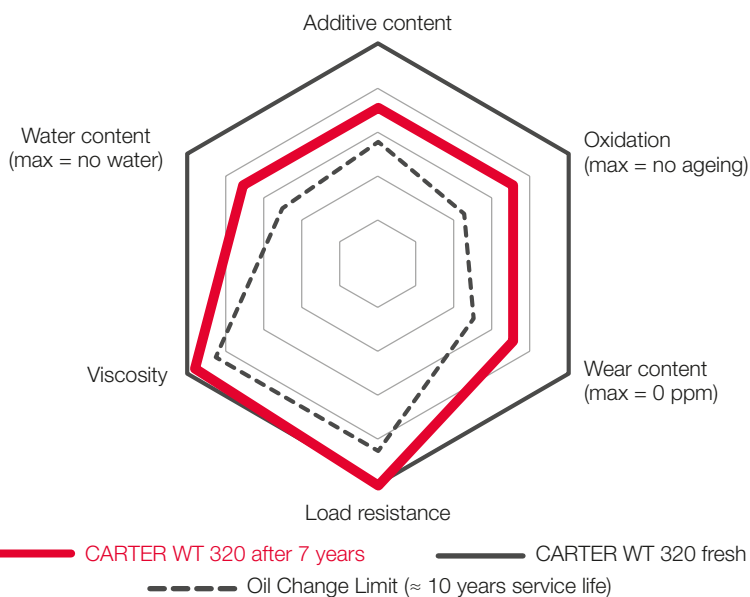
Full synthetic gear oil designed to deliver ultimate protection of wind turbine gearboxes and extended oil change interval up to 10 years



APPLICATIONS

Long-life lubricant suitable for all drive technologies used in offshore and onshore wind turbines regardless of their power ratings. The PAO synthetic formulation ensures continued lubrication at low temperature in the most difficult environments.

OIL CHANGE ONCE EVERY 10 YEARS

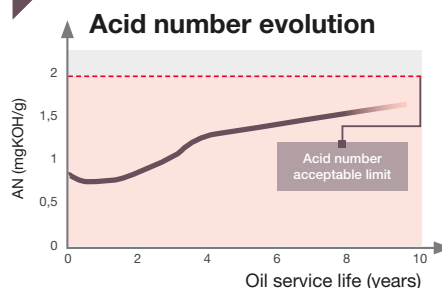


**In standard operating conditions with adequate maintenance program including regular oil monitoring, good filtration and flushing/rinsing of your gearbox during oil change.*

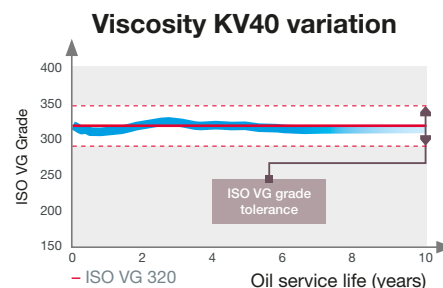
CUSTOMER BENEFITS

- ✓ Extended drain interval
- ✓ Enhanced gear longevity
- ✓ Improved equipment reliability
- ✓ Reduced operating costs

OUTSTANDING OIL LONGEVITY



CARTER WT 320 has demonstrated low-ageing capability in the field. It helps minimize sludge deposit through exceptional oxidation control over time.



The viscosity of **CARTER WT 320** has proven to be stable for more than 7 years under real operating conditions ensuring a proper oil film thickness and system efficiency over time.

**The results have been obtained from hundreds of oil samples collected from different wind turbines and gearboxes operating in different wind farms near the sea. The charts report average monthly values.*

TECHNICAL DATA - CARTER WT 320

CHARACTERISTICS	METHODS	UNITS	TYPICAL VALUES*
Density at 15°C	ISO 3675	kg/m ³	861
Viscosity at 40°C	ISO 3104	mm ² /s	320
Viscosity at 100°C	ISO 3104	mm ² /s	35
Viscosity index	ISO 2909	-	155
O.C. flash point	ISO 2592	°C	233
Foaming characteristics, Seq. I, II, III Tendency/Stability	ASTM D 892	mL/mL	0/0
Rust protection, Sea Water (24hrs)	ASTM D 665B	-	Pass
Copper Corrosion	ASTM D 130	-	Pass
FZG Micropitting	FVA 54 (I-IV)	Fail stage / GFT	>10 / high
FZG Scuffing	DIN 51 354/2		
Standard test, A /8.3/90		Fail stage	>14
Double speed, A/16.6/90		Fail stage	>14
Pour point	ISO 3016	°C	- 42

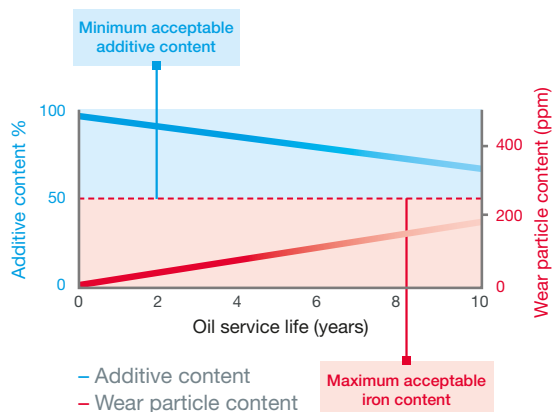
*Above characteristics are mean values given as an information.

SPECIFICATIONS AND APPROVALS

- ✓ DIN 51517-3 CLP
- ✓ ISO 12925-1 CKD
- ✓ Chinese specification GB /T 33540.3-2017 - Gear oils for wind turbine
- ✓ Approved by: WINERGY, ZF WIND, EICKHOFF
- ✓ Meets or exceeds the specification of MOVENTAS and other gear manufacturers

LONG-LASTING PROTECTION OF THE GEARBOX

Additive & wear particle content



The robust additivation system of **CARTER WT 320** is optimally balanced to last for long and reduce friction for increased power generation. It has been delivering continued protection against micropitting and corrosion for over 7 years. On average, less than half of extreme pressure and antiwear additives have been consumed after so many years.

In addition, fresh oil top-ups and advanced filtration can help improve the protection of your equipment by lowering significantly wear particles and contaminants.

FILTERABILITY

- ✓ Passed the CC Jensen 200 Hours Filtration Test for wind turbines
- ✓ Additives do not drop off in 3 microns filters preserving the oil performance over time

DEPOSIT CONTROL

- ✓ High stability in the presence of water
- ✓ Resistance to very high temperature without forming deposits

COMPATIBILITY

- ✓ Neutral behavior towards seals, internal coatings and yellow metals
- ✓ Good compatibility with PAO and mineral oils usually except with polyglycol-based gear oils. Please check with your local TOTAL representative

TOTAL LUBRIFIANTS
Industrie
20-02-2018
CARTER WT 320

This lubricant used as recommended and for the application for which it has been designed does not present any particular risk.
A material safety data sheet conforming to the regulations in use in the E.C. is obtainable via your commercial adviser quick-fds.com.



industrial.lubricants.total.com



TOTAL
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