

SHELL TURBO OIL CC

PREMIUM QUALITY INDUSTRIAL GAS, STEAM AND COMBINED CYCLE TURBINE OIL

DESIGNED TO MEET CHALLENGES

Shell Turbo Oil CC has been developed to meet the severe demands imposed by modern, heavy-duty turbine applications, exceeding a number of major gas and steam manufacturers lubricant specifications.

A patented, metal free additive technology, ensures that this product offers substantially improved performance over conventional turbine oils. Its unique combination of excellent oxidative stability, sludge control and surface properties make Turbo CC the first choice lubricant for emerging combined cycle turbine technology, as well as existing gas and steam turbine plants.

PERFORMANCE FEATURES

SUPERIOR OXIDATION RESISTANCE

- High temperatures and extended oil drain intervals demand superior oxidation properties of the oil. Shell Turbo Oil CC's excellent oxidative stability helps reduce the formation of sludge and other harmful oxidation products, contributing to extended oil life, less maintenance and less downtime.

OUTSTANDING THERMAL RESISTANCE

- Modern turbines impose high thermal stress on the oil, increasing the risk of failures. Shell Turbo Oil CC is specially designed to cope with these conditions. Its outstanding thermal stability, coupled with resistance to formation of lacquer, helps reduce the possibility of unplanned outages.

RAPID AIR RELEASE AND HIGH RESISTANCE TO FOAMING

- High oil flows contribute to the possibility of entrapped air, which can lead to pump cavitation, premature oil oxidation and excessive wear. Shell Turbo Oil CC exhibits excellent surface properties with minimal foam formation and rapid air-release, which minimises air entrapment, reducing these effects of high oil flows to a minimum.

EXCELLENT WATER-SHEDDING PROPERTIES

- Water contamination is common place in steam turbines, causing corrosion and affecting bearing lubrication. Because of Shell Turbo Oil CC's outstanding demulsibility, water can be drained easily from the lubrication system, protecting the installation against corrosion and premature wear.

GOOD LOAD CARRYING CAPACITY

- Help to reduce excessive gear tooth and turbine component wear making it suitable for use in turbines with highly loaded gears. Helps minimise downtime and maintenance costs.

APPLICATIONS

- Power generation combined cycle turbines
- Industrial steam turbines
- Industrial gas turbines.

SPECIFICATIONS, APPROVALS AND RECOMMENDATIONS

EXCEEDS SPECIFICATIONS OF:

- General Electric: GEK 28143 A, GEK 32568F, GEK 46506E, GEK101941A, GEK 107395A.

- Siemens-Westinghouse: 21 T0591 and 55125Z3

- Solar: ES 9-224, class II

- DIN: 51515 Part 1 L-TD and Part 2 L-TG

- ISO: 8068 L-TGD and L-TGS

- GEC: Alstom NBA P50001A

- JIS: K-2213 Type 2

- BS: 489-1999

- Siemens/Mannesmann Demag: 800 037 98 TD/32/TD46

- ASTM: D 4304-06A, Type I, II, III.

APPROVED BY OEM AGAINST:

- Siemens TLV 9013 04

- Alstom HTGD 90 117.

TYPICAL PHYSICAL CHARACTERISTICS

CHARACTERISTICS	32	46
Kinematic Viscosity @ 40°C mm ² /s	32	46
@ 100°C mm ² /s	5.4	6.9
Viscosity Index	–	105
Flash Point °C (COC)	218	238
Pour Point °C	–12	–12
Total Acid Number mg KOH/g	0.16	0.16
Foaming ml/ml		
Sequence I	10/Nil	10/Nil
Sequence II	20/Nil	20/Nil
Sequence III	10/Nil	10/Nil
Air Release	4 min.	4 min.
Water Demulsibility	15 min.	15 min.
Rust Control after water washing	Pass	Pass
Load Carrying Capacity (FZG) load stage fail	9 min.	9 min.
Oxidation Control Tests		
a) TOST life	>10,000	>10,000
b) RPVOT	>1,300	>1,300
c) FTM-791b-5308:		
TAN increase mg KOH/g	+0.6	+0.6
Viscosity Increase @ 40°C %	+8.0	+8.0
Sludge formation mg	98	98