AEROSHELL GREASE 33

AeroShell Grease 33 is a synthetic universal airframe grease composed of a lithium complex thickened synthetic base oil with corrosion and oxidation inhibitors and load carrying additives.

The useful operating temperature range is –73°C to +121°C.

APPLICATIONS

For many years aircraft operators have been seeking to rationalise the greases used on aircraft and to reduce the number of different greases in their inventories. Recently Boeing began research on a new, general purpose, corrosion-inhibiting grease. The aim was for a non-clay based grease that would provide longer life for components and mechanisms and possess improved wear and corrosion resistance. This led to the introduction of the new Boeing Specification BMS 3-33.

Owing to the wide range of operating temperatures, loads and other environmental conditions required for various aircraft components, several different types of grease with different desirable properties are used during routine lubrication of aircraft components. Boeing, in developing their BMS 3-33 specification, took account of the properties of the different grease types used on aircraft and wrote a specification for a grease which would provide improved performance and which could be used in the widest possible range of grease applications.

AeroShell Grease 33 is approved to BMS 3-33A and offers the improved performance properties required by this specification.

AeroShell Grease 33 can be used for routine lubrication on Boeing aircraft where MIL-PRF-23827C or BMS 3-24 is specified. AeroShell Grease 33 can also be used in some applications on Boeing aircraft which require use of MIL-G-21164. Other applications on Boeing aircraft which require use of MIL-G-21164 and other greases are being reviewed and in due course Boeing will issue details of the full range of applications. For the current status, refer to the latest issue of Boeing Service Letter "BMS 3-33 General Purpose Aircraft Grease".

AeroShell Grease 33 can be used for routine lubrication in applications where MIL-PRF-23827C is specified on aircraft manufactured by McDonnell Douglas, Airbus, BAe Regional Aircraft, Canadair, Lockheed, Embraer, Fokker and Gulfstream (except for wheel bearings, applications above 121°C and sliding applications requiring molybdenum disulphide).

Other aircraft manufacturers are evaluating AeroShell Grease 33 with the aim of approving it for use on their aircraft. Operators should regularly check with these manufacturers for the latest status.

Use of AeroShell Grease 33 can provide operators with the following benefits:

- Reduced inventories
- Easier maintainability (one major grease for most applications)
- Reduced maintenance labour costs
- Less chance of product mis-application

AeroShell Grease 33 contains a synthetic oil and must not be used with incompatible seal materials. Refer to the General Notes at the front of this section for further information.

SPECIFICATIONS

U.S.	Approved MIL-PRF-23827C (Type I)
British	–
French	–
Russian	–
NATO Code	G-354
Joint Service Designation	–
Boeing	Approved BMS 3-33A

PROPERTIES	BMS 3-33A	TYPICAL
Oil type	Synthetic hydrocarbon/Ester	Synthetic hydrocarbon/ Ester
Thickener type	Lithium Complex	Lithium Complex
Base oil viscosity mm^2/s		
@ –40°C	–	1840
@ 40°C	–	14.2
@ 100°C	–	3.4
Useful operating temperature range °C	–73 to +121	–73 to +121
Drop point °C	–	216
Worked penetration @ 25°C	265 to 315	297
Unworked penetration @ 25°C	–	290
Bomb oxidation pressure drop from 758 kPa (110 psi) @ 99°C		
@ 100 hr kPa (psi)	70 (10) max	3.5 (0.5)
@ 500 hr kPa (psi)	105 (15) max	34 (5)
Oil separation @ 100°C, 30 hr %m	–	2.0
Water resistance test loss (79°C) %m	7.5 max	< 6
Evaporation loss, 500 hr @ 121°C %m	10 max	< 10
Mean Hertz Load kg	–	60
Antifriction bearing performance @ 121°C hrs	–	1200 +
Copper corrosion 24 hrs @ 100°C	Must pass	Passes
Bearing protection 2 days @ 52°C	Must pass	Passes
Colour	Blue-green	Green

NOTES