



AEROSHELL GREASE 33

- Smaller inventories
- Easier maintenance
- Lower labour costs
- Less misapplication risk



Shell Aviation

We understand your desire to reduce the total cost of aircraft ownership by protecting components from corrosion and wear, simplifying lubricant inventories and extending lubrication intervals. Whether you look after the latest airliners or a light sports aircraft, there are AeroShell greases designed to help protect your investment.

BENEFITS AT A GLANCE

- **Reduced costs** through superior protection,¹ longer grease life and simplified maintenance and inventories
- **Longer component life** from superior corrosion and wear protection¹
- **Longer grease life** through excellent mechanical stability and controlled oil separation¹
- **Peace of mind** from a grease with more in-service hours than any grease in its class

¹Compared with other currently approved greases

INDUSTRY-LEADING MULTIPURPOSE AIRFRAME GREASE

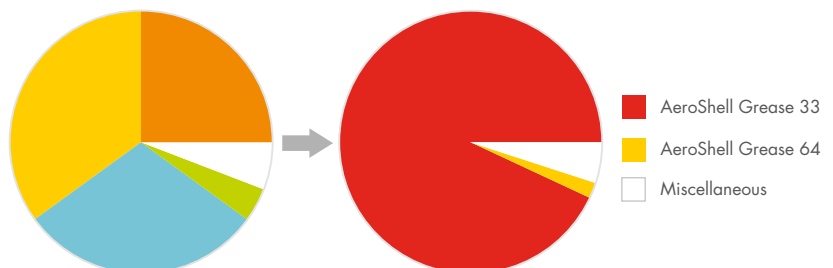
AeroShell Grease 33 was the first and, for many years, the only grease to meet the original BMS 3-33 specification. It remains the product to beat by offering superior corrosion and wear protection compared with other approved greases. By replacing multiple products, AeroShell Grease 33 can help to reduce costs by simplifying maintenance procedures and product inventories, and can improve safety by reducing the risk of product misapplication. It is trusted by leading airlines and has more in-service time than any other grease in its class.

SIMPLER AND SAFER MAINTENANCE

Boeing challenged 20 manufacturers to formulate a grease to meet its original BMS 3-33 specification. The new product would cover the properties previously provided by a range of greases and extend component life and lubrication intervals.

Following a testing period by Boeing, AeroShell Grease 33 was the only product to meet all the requirements. It can be used on all but 9 of the 359 grease application points on a Boeing 737, thereby greatly simplifying the maintenance of this and many other aircraft. Its multi-application performance can help to

- **reduce costs** by simplifying maintenance procedures and product inventories
- **enhance safety** by reducing the risk of product misapplications.



MULTIPURPOSE PERFORMANCE. Before AeroShell Grease 33 simplified maintenance, multiple greases were used on the Boeing 737 and other aircraft (left). Now AeroShell Grease 33 covers over 95% of application points. With its partner AeroShell Grease 64, an extreme-pressure grease, over 98% of application points are covered (right).

EXTENDED COMPONENT LIFE

AeroShell Grease 33 can help to extend component life and reduce maintenance costs by preventing wear and corrosion.

In industry tests, AeroShell Grease 33 showed

- a **smaller wear scar** in a wear test than a MIL-PRF-81322G-specification grease²
- **no corrosion** in saline solution, whereas a bearing with MIL-PRF-81322G-specification grease showed corrosion between the rollers and the race.³

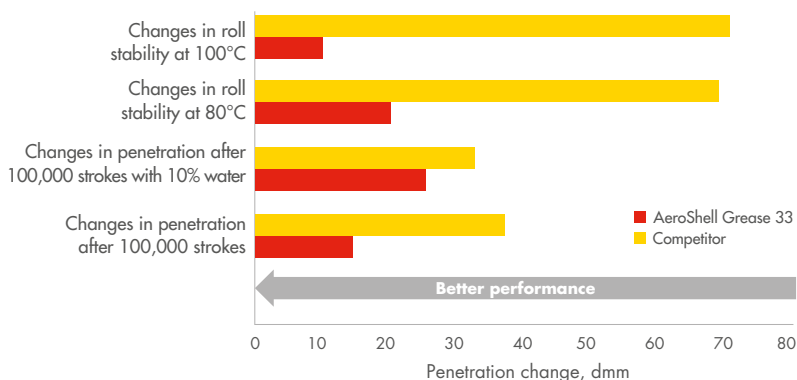
²ASTM D2509 test, in which a cup rotates at 800 rpm on a block under an 18-kg load for 10 min while being continuously fed with fresh grease

³Modified ASTM D1743 test, where lightly loaded greased bearings are rotated while submerged in a 3% saline solution and then stored at 52°C and 100% humidity for 12 h

LONGER LUBRICATING LIFE

To protect components, a grease needs to maintain its mechanical stability to stay where it is needed. AeroShell Grease 33 has

- **better mechanical stability** compared with other currently approved products.⁴



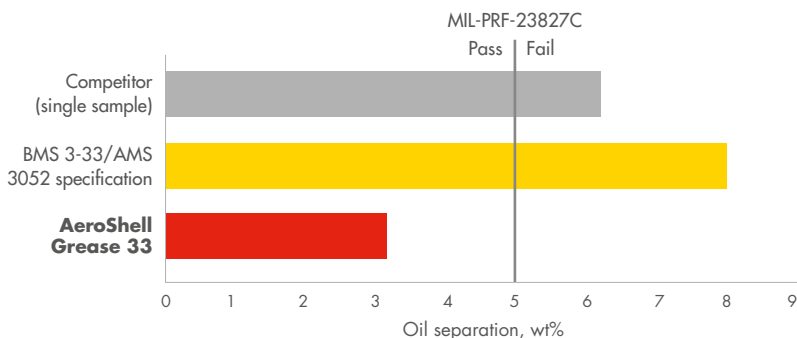
STAYING WHERE YOU NEED IT. AeroShell Grease 33 offers superior mechanical stability after being worked in two ways and when mixed with 10% water.⁴

⁴Mechanical stability is measured as the change in penetration by a cone dropped onto a grease sample before and after it has been repeatedly worked. The samples were squeezed through holes in a plate for more than 100,000 double strokes in the extended ASTM D217 test, and sheared for over 50 h at 80 and 100°C by turning a tube containing a heavy solid roller in the ASTM D1831 test. The first test was repeated with 10% water mixed into the grease.

To lubricate effectively, a grease's base oil needs to be released from the thickener in a slow, controlled manner. If the oil separation is too fast, the grease may become too hard to provide adequate protection. If the separation is too slow, the grease may fail to lubricate efficiently and allow excessive component wear.

The oil separation of AeroShell Grease 33 is

- about **1.6 wt% better** than the maximum allowed in the MIL-PRF-23827C specification⁵
- **better than another currently approved grease.**⁵



CONTROLLED RELEASE. AeroShell Grease 33 offers lower oil separation⁵ to help for efficient lubrication throughout its life.

⁵Industry-standard test ASTM D6184, which runs for 30 h at 100°C

SPECIFICATIONS AND APPROVALS

AeroShell Grease 33 is fully approved to

- Airbus AIMS 09-06-002
- Boeing BMS 3-33B
- MIL-PRF-23827C Type 1.

AeroShell Grease 33 was the first grease to meet Boeing's BMS 3-33 specification and is approved to its latest version BMS 3-33B specification. It can be used for nearly all grease points currently using greases with MIL-PRF-23827C, MIL-G-21164D, BMS 3-24, MIL-PRF-81322G, SAE AMS 3052 and AIMS 09-06-002 specifications.

TRUSTED BY AIRCRAFT MANUFACTURERS

AeroShell Grease 33 is approved by leading airframe manufacturers and is a factory-fill product for equipment manufacturers, including Boeing.

A COMPREHENSIVE RANGE

Whatever you fly, we can provide a full range of AeroShell oils, greases and fluids for your aircraft, including

- **AeroShell Turbine Oil 560** for proven performance
- **AeroShell Fluid 41** "super-clean", mineral hydraulic oil.



CONTACT US

For further information, please contact your AeroShell representative:

www.aeroshell.com