

# Hydrodynamic Seals for Aerospace Applications



**Meccanotecnica  
Umbra**

a Story of Excellence

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- **Hydrodynamic Face Seals have been improved to bring customer value.**
- **Compact and integral design to minimize space requirements and to reduce weight.**
- **Versatile design to allow for custom modifications.**

Hydrodynamic Face Seals feature a lubricating gas film between the sliding rings to reduce mechanical and thermal damage. The gas is forced into the converging grooves between the mating rings. The result develops hydrodynamic lift which helps to create and maintain the lubricating film that acts as a high-pressure barrier of air to reduce leakage to virtually zero.



### **HFS SERIES**

#### **UP TO 12.000 rpm**

Because of its small design configuration this o-ring style seal is largely used in jet engine accessory gearboxes. Optimal lubricating performances can be obtained using oil spray configuration at medium speed and pressure conditions.

### **HFS SERIES**

#### **UP TO 24.000 rpm**

Performed to dissipate temperature in high speed application, this seal type is mainly in use in helicopter gearboxes.

Proven materials, special carbon graphite compound and hardened steel, improved with interchangeable liftoff sliding rings, guarantee extended life.



### **HFS SERIES**

#### **UP TO 32.000 rpm**

Lightened by special material components, this seal is largely used on main shaft of helicopter engines. Customizable aluminum case shape and rotary ring grooves design, this seal performs its best in system that use oil jet cooling toward mating ring.

