

# RETROFITS: INTRODUCING OUR SMART APPROACH

New demands may require new seal solutions. Being a truly independent player, AEGIR-Marine helps you find the right solution for your specific retrofit requirements.

Whether you want a standard stern seal retrofit or a water-lubricated or an air-regulated system, we can provide the complete package. Engineering tailor-made for your installation.

#### **NO STANDARD SOLUTIONS**

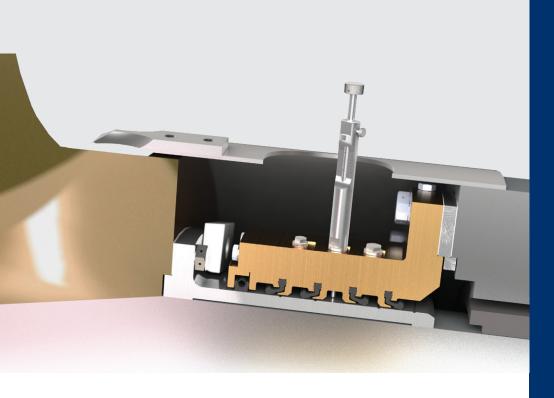
We don't push for single solutions. We first check if a new installation is necessary or if we can combine new parts with existing components. We consider your demands, budget and installation and we will provide you with the best options for your ship. We will give you the independent advice you need to make the right decision for your vessel.

#### **SHORT TIME DELIVERY**

We know that downtime costs you money. That's why we can supply all parts from stock for the shortest possible delivery times. This makes a short delivery time possible. We can also engineer a 'plug & play' seal, which will reduce installation work to an absolute minimum. Standard consumables combined with specific housing parts ensure perfect installation and maximum service ability. And of course, we only use the best quality class-approved materials.

## AEGIR-MARINE RETROFIT OFFERS:

- → Standard seal assembly
- → Secure seal assembly
- → PRIME® Blue seal assembly
- → PRIMAIR® seal assembly (also available as a split execution)



### **AEGIR'S PRIME SEALS**

Over the years AEGIR-Marine has developed many different types of seal assemblies. Careful engineering by our R&D department has led to spare parts as well as complete seal assemblies suitable for all major manufacturers. By applying modern technology and consistently choosing the best materials, our seal assemblies meet the highest degree of quality and reliability.

#### **AEGIR-MARINE PRIME STANDARD**

The PRIME AFT seal consists of three sliding connections between PRIME seal rings and a revolving liner (see illustration.).

#### **AEGIR-MARINE PRIME STANDARD SECURE**

In addition to the three AFT seals of the PRIME Standard, an extra seal is installed: Seal #3S. This seal points towards the stern tube and works as a backup for seal 3. If seal ring 3 is leaking, seal#3S will take over its job.

#### **OFFERING MORE OPTIONS**

- 1. On the AFT split type seal all housings and the liner are devisible. This means that there is no need to withdraw the shaft when seals and/or housing parts have to be replaced.
- 2. If grooves appear on the surface of the liner, we can install an extra distance ring to extend the liner's lifetime.
- 3. To improve the lifetime of stern tube liners, we offer tungsten coatings. These can be applied to new and used liners within the recommended tolerances. Since tungsten is more resistant to wear, this option is very cost efficient.

#### **SEAL FUNCTION**

**SEAL 1** points towards the seawater and keeps out dirt, particles and other waste.

**SEAL 2** points towards the seawater and prevents the water from leaking into the stern tube.

**SEAL 3** points inwards and prevents oil from passing into the seawater.

**SEAL 3S** works as a back-up ring.

PRIME SEALS ARE COMPATIBLE WITH A WIDE RANGE OF EAL'S



#### **PRIME BLUE OFFERS:**

- → Complete water-lubricated
- → Seal assembly
- → Stern tube seals
- → Straight type bearings
- → Flanged type bearings





AEGIR's PRIME Blue assembly is a reliable, durable seal system that is proven to be pollution free. It offers many benefits for vessels with water-lubricated bearings.

This type of seal is the easiest seal on the market for installation and operation. Maintenance, including changing the seal, can be completed by your own engineers while the vessel is in the water. Seals come standard in a partial split version, but are also available as fully split on request.

#### A STRAIGHTFORWARD DESIGN

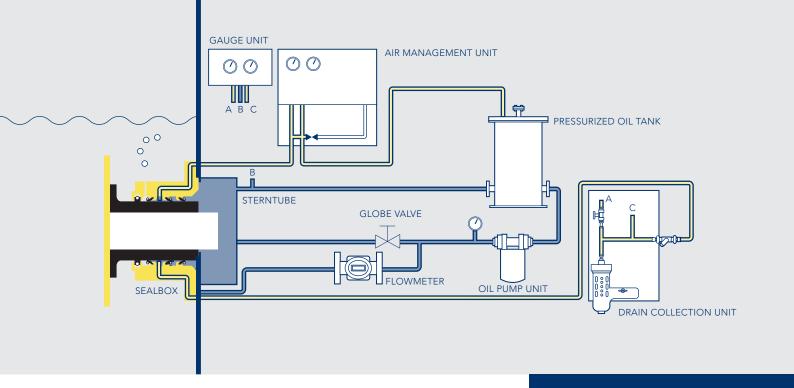
The design of the PRIME Blue type seal is very straightforward. It consists of a rubber lip seal rotating with the shaft. The lip seal rotates against a stationary mating ring made of chrome steel. The seal casing is made of cast bronze. An inflatable seal for emergency and maintenance purposes is installed in the housing. Seal assemblies are supplied with one spare seal, which is installed around the shaft ready for installation. This can be installed by your own engineers.

#### **COMPETITIVELY PRICED AND CERTIFIED**

Spare parts are price competitive compared to other water-lubricated seals. All PRIME Blue spares are available on short notice. Class approval by most major classification societies is available.

#### NOTE

PRIME blue seals can be serviced without docking. For retrofit purposes, the PRIME Blue can be supplied with adaptor flanges or in non-standard versions.



# THE MOST RELIABLE SEALING SYSTEM: PRIMAIR

#### PRIMAIR IS A VERY ADVANCED SEALING SYSTEM.

'Air Seal' technology physically separates the stern tube oil from the sea via an air space. The system has a drain line back to the engine room to drain leaked fluids and prevent cross contamination in event of a seal ring failure.

#### **VARIABLE AIR PRESSURE**

The PRIMAIR system is based on 'Constant Air Flow/Variable Pressure' technology. This system is engineered to discharge air through the seal box. The air pressure varies while the air flow is stable. The air pressure will vary to keep in sync with the outside seawater pressure (this varies not only with vessel draft but also wave conditions like swells).

#### **REDUCING WEAR ON SEAL RING AND LINER**

The variable pressure method maintains a perfect pressure balance inside the seal box. This prevents flexing of the seal ring thereby reducing stress on the seal ring material. It also reduces wear on the seal ring and chrome steel liner because the pressure on the seal rings is lower than in a conventional system. This combination greatly improves seal reliability. PRIMAIR meets VGP requirements even when using conventional lubricants.

#### NOTE

AEGIR-Marine can supply spares suitable for existing systems or retrofit your existing system using PRIMAIR in the most cost-effective way.

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