

# STS™

## Mechanical Seal for Steam Turbines



### Typical Benefits of Steam Turbine Mechanical Seal Technology

- Increased turbine reliability
- Reduced turbine maintenance costs
- Reduced bearing contamination
- Non-contacting technology extends life of seal
- Elimination of shaft wear – generated by the Carbon seal
- Greatly reduces steam loss and increases efficiency

## STS™ — Mechanical Seal for Steam Turbines

Reduce process steam loss, improve turbine efficiency

The STS™ mechanical seal has been developed in conjunction with a major oil refinery to replace existing carbon ring seals normally fitted to steam turbines.

STS™ adopts AESSEAL® dry running gas compressor seal technology to provide a solution that significantly reduces the steam leakage typically associated with standard carbon ring seals.

Steam loss is a major problem in many industries as it incurs considerable cost, reduces efficiency, can be the cause of bearing failure and potentially represent a health and safety issue when it affects visibility around the turbine.

The many variations of steam turbine can be easily accommodated through AESSEAL's modular approach to mechanical seal design. This modular approach enables different flange designs, bolt patterns, etc. to be easily accommodated and more complex changes are supported by our Engineering team and investment in modern manufacturing technologies.

The seal is suitable for a range of major steam turbines that can be found in a number of industries e.g. Oil and Gas, Chemical, Pulp and Paper, etc.



**Watch video showing  
the STS seal in action**



**View case history 'Improving  
reliability, increasing efficiency'**



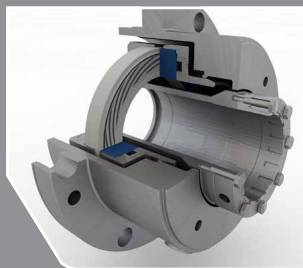
**Without Steam Turbine Seal**



**With Steam Turbine Seal**

“These Steam Turbine seals are so good you should be looking at rolling them out to refineries worldwide”

Refinery Workshop Manager

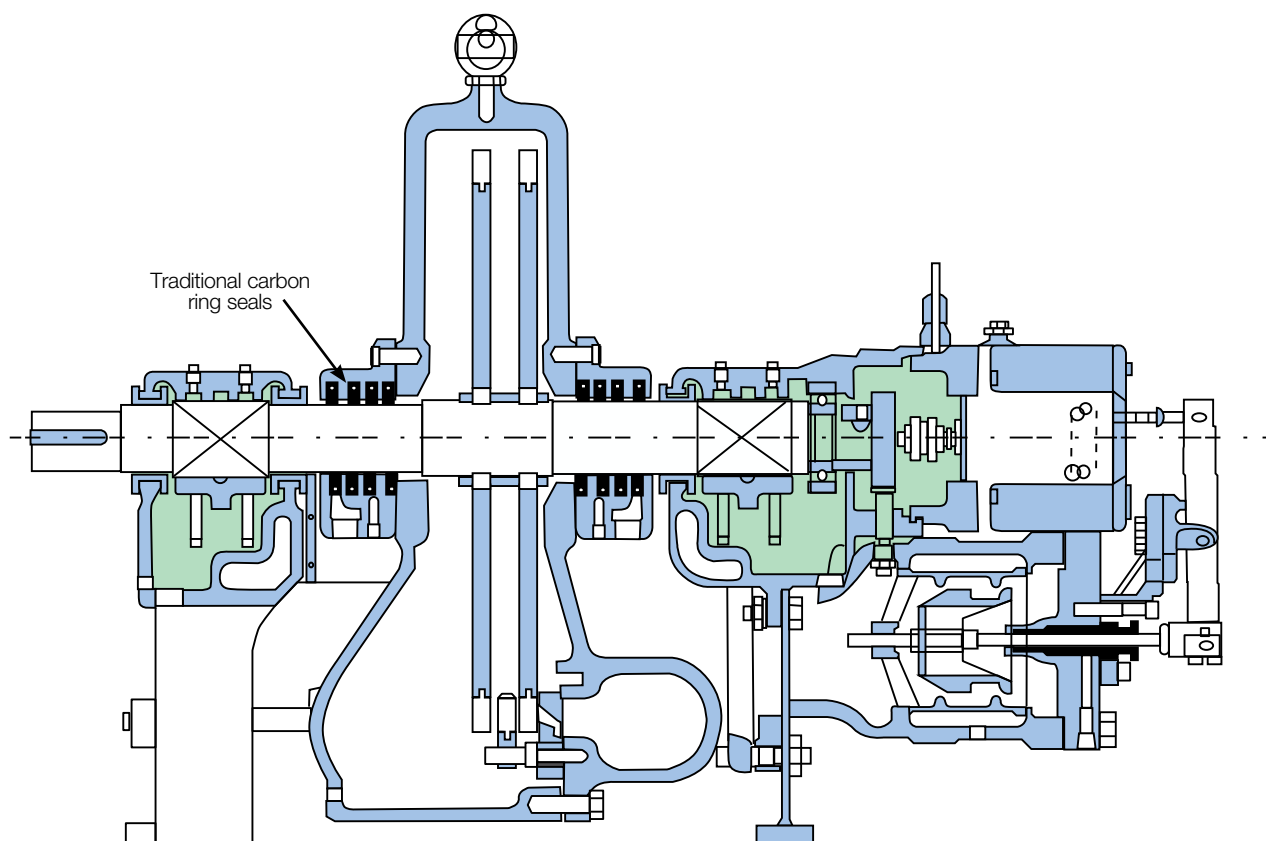


## Features and Benefits

- **Modern Dry Gas Seal Technology** — Virtually eliminates steam leakage
- **Modular Cartridge Design** — Simple to install and suitable for a wide range of steam turbines
- **Innovative Clamp Design (Pat. Pending)** — Suitable for Hardened Shafts

## General Specification

<b>Size Range</b>	<b>25mm to 100mm (1.000" to 4.000")</b>
Face Options:	Hard versus Hard GSIC/GSIC
Secondary Seal Options	Graphite filled wedge Polymer
Gasket	Graphite



Typical Steam Turbine Cross Section

# LabTecta®66ST — Bearing Protector for Steam Turbines

Process steam turbines present a unique challenge for bearing protection.

As the carbon rings containing the steam wear, high temperature / high velocity steam travels down the shaft directly at the bearing seal. Standard OEM labyrinth seals have proven to be ineffective preventing steam ingress.

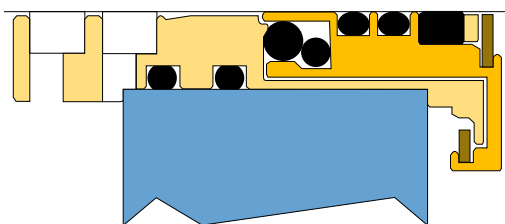
**AESSEAL® has developed LabTecta®66ST designs specifically designed for steam turbine applications.**

**This design features:**

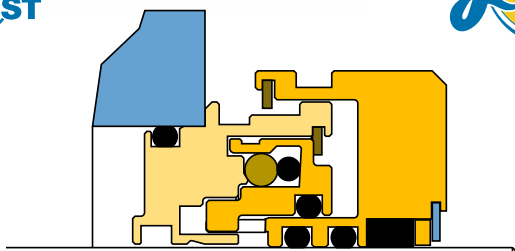
- Extra clearances for thermal expansion
- Steam deflector / Flinger
- Aflas® 'O' rings as standard
- Internal shut-off valve



**View case history  
'Preventing steam  
ingress into the  
bearing housing'**



**LabTecta-ST™**



**LabTecta-STAX™**

For smaller steam turbines, the LabTecta®66ST design provides excellent protection in a compact package. For larger steam turbines, the LabTecta®66STAX provides easy installation with the capability to accommodate large axial shaft movement.

**Standard designs are available for common steam turbines models.  
Specific designs can be manufactured at no additional charge.**

For further information and safe operating limits contact our technical specialists at the locations below.



Use double mechanical seals with hazardous products.

Always take safety precautions:

- Guard your equipment
- Wear protective clothing



#### UK Sales & Technical advice:

AESSEAL plc  
Mill Close  
Bradmarsh Business Park  
Rotherham, S60 1BZ, UK  
Tel: +44 (0) 1709 369966  
Fax: +44 (0) 1709 720788  
E-mail: [seals@aes seal.com](mailto:seals@aes seal.com)  
[www.aes seal.com](http://www.aes seal.com)

AESSEAL plc is certified to ISO 9001, ISO 14001,  
ISO 29001, ISO 50001 and OHSAS 18001.

'Our purpose is to give our customers such exceptional service that they need never consider alternative sources of supply.'



#### USA Sales & Technical advice:

AESSEAL Inc.  
355 Dunavant Drive  
Rockford,  
TN. 37853, USA  
Tel: +1 865 531 0192  
Fax: +1 865 531 0571  
E-mail: [usa@aes seal.com](mailto:usa@aes seal.com)  
[www.aes seal.com](http://www.aes seal.com)

**Important:** Since the conditions and methods of use of this product are beyond our control, AESSEAL plc expressly disclaims any and all liability resulting or arising from any use of this product or reliance on any information contained in this document - AESSEAL plc standard conditions of sale apply. All sizes are subject to manufacturing tolerances. We reserve the right to modify specifications at any time. AESSEAL® is a Registered Trademark of AES Engineering Ltd, AESSEAL plc recognizes all trademarks and trademark names as the property of their owners.

LN-UK/US-ST5-02b Copyright © 2017 AESSEAL plc 12/2017