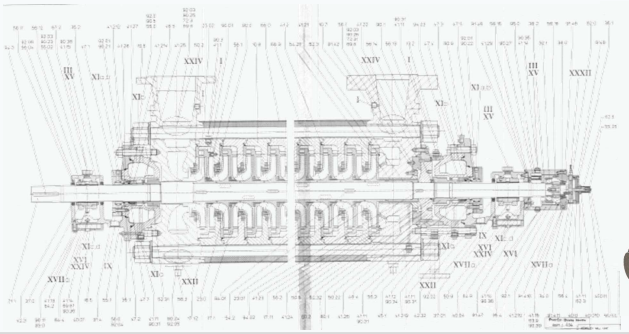
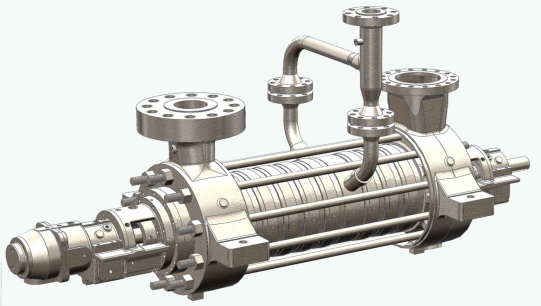
TORISEAL
Because Every Drop Counts

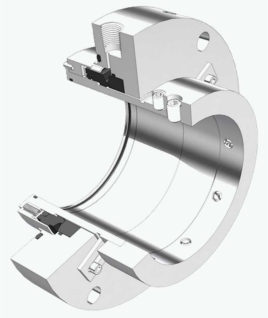
TORISEAL Mechanical Seal Case History

Boiler Feed Pump

Region:	Europe
Plant Type:	Combined Heat & Power Plant (CHP)
Pump Model:	Halberg HSGA Multi-Stage Ring Section Pump
No. of Pumps:	4
Delivery Date:	December 2016
Service:	Boiler Feed
Liquid:	Feed Water
Pumping Temperature:	85°C
Flow Rate:	Unknown
Discharge Pressure:	180 bar







Seal Type:	***MB2704 Rotating Balanced Cartridge Seal***
Seal Code:	MB2704CN53DL068-DE (Drive End) / MB2704CN53DL060-DE (Non-Drive End)
Shaft Size:	68mm/60mm
Metallurgy:	316 Stainless Steel
Face Materials:	Antimony Carbon/Silicon Carbide
Elastomers:	Viton B
Seal Pressure:	2 barG
Pump Speed:	2,982 rpm
Face Velocity:	13.3 m/s
API Plan:	02 with Seal Cover Cooling

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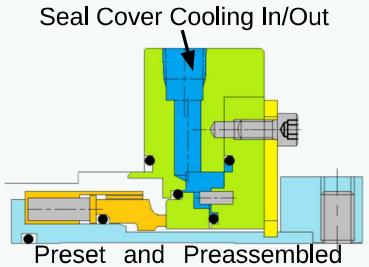
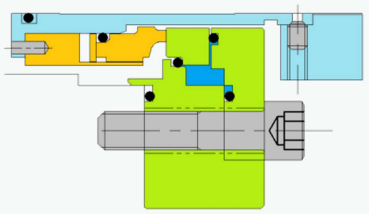


Preset and Preassembled therefore no more manual setting required. Quick and easy installation.



TORISEAL MB2704

The previous seal installed was a non-cartridge component type seal. Component seals require manual setting and measuring during installation. Often, boiler feed pumps use adjusting rings to set the seals in the correct position. This can cause problems if not done correctly.

It was noted that there had been problems and premature failures with the previous seals. These failures were said to be the result of seal installation and setting errors by a previous maintenance service provider.

The local Torishima Service Solutions branch received these boiler feed pumps for repair and overhaul. During this phase it was decided to convert the seal type from non-cartridge to cartridge type. This gave the added benefit of quick and easy installation due to the cartridge being factory preset and preassembled. There were no irreversible modifications required to the pump and the seal cover cooling system of previous seal was implemented on the new TORISEAL cartridge design to ensure the cooling efficiency was equal or better.

In addition, TORISEAL was able to offer a more cost effective alternative to the seal repair cost quoted by the previous seal manufacturer. The new cost of the previous seal would have further exceeded even this cost.