

# Specialist Service Solutions for Glandless Motor Pumps



# Glandless Motor Pumps

*Sulzer has the in-house capability to provide specialist service support for large glandless wet wound pumps ranging from 100–1500 kW, manufactured by Sulzer as well as all other leading OEMs, for use in the power generation industry. In a purpose-built repair facility in Leeds, Sulzer coordinates all inspection, maintenance, repair and test activities associated with the following types of equipment:*

- boiler circulation pumps
- boiler re-circulation pumps
- attemperator spray pumps
- heater extraction pumps

## Comprehensive inspection services

- Full strip down, inspection and non-destructive testing of key components
- Insulation resistance and flash testing of stator windings
- Computerised core loss testing of stator pack
- Continuity testing of rotor pack
- Fully detailed 'as found' inspection reports
- Root Cause Analysis (RCA)

## Specialist maintenance and repair services

- Re-laminating of stator and rotor packs
- Re-brazing of rotor bars
- Re-winding of stator cores
- Manufacture of high integrity internal joints and connections
- Upgrading of journal and thrust bearing materials as required
- Phase rotation testing prior to final motor assembly
- Dynamic balancing of rotors up to 2000 kgs
- Rebuild of glandless motor pumps accompanied with a full 'as-built' report
- Hydro-testing of re-assembled units
- Full electrical inspection and function testing of units under pressure

All major service work is conducted within our specialist Leeds Service Centre which is fully equipped for wet stator repair work and contains:

- Wet test tank for submerged stator testing
- Dedicated dynamic balancing machine
- Vertical build pits
- 30 kV flash tester
- 25 kVa core loss tester

With electrical test facilities also available Sulzer offer direct-on-line starting of motors up to 11 kV and soft starting of units up to 3.3 kV. Each glandless motor pump unit is subject to both hydrostatic and functional tests, with a maximum pressure test capability of 400 bar.

Field service engineers are available to conduct on-site services, including: fault finding, removal and re-installation, commissioning tasks, etc.

## Stock management

Component stock is managed for longer term wet stator maintenance contracts. Offering our customers peace of mind, ensuring availability of long lead items does not compromise short pump turnaround periods.

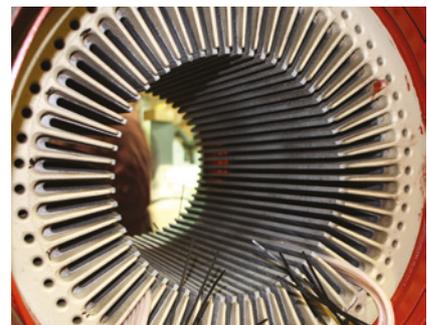
With a dedicated wet stator stores area inside the Leeds Service Centre, mostly used for the storage of free-issue components and materials. Sulzer enjoys a close working relationship with key suppliers of winding cable, laminations and bearing materials, this means that we are well-positioned to leverage the best possible deliveries in order to meet our customer's needs.



Specialist rewind cell



Upgraded thrust bearing



Relamination of stator cores

# Circulator Upgrade Options

*In line with the high reliability standards demanded by the power industry, Sulzer is able to incorporate modern winding designs and the latest materials technology into your boiler circulator assets in order to maximise pumpset operating life.*

*Many power stations have adopted new plant operating regimes, and have moved from base load to shift operations, which involve frequent start/stop cycles which places additional stresses on rotating equipment. By incorporating a number of upgraded designs into existing circulator assets, our customers can achieve improved reliability and extended maintenance intervals.*

## Improved winding designs

To benefit from improved water circulation and increased service life you can trust in Sulzer's expertise and commitment to improving your equipment. With developments to your motor's winding layout and support system, Sulzer have designed the half-lap winding arrangement, integral support cages which are part of this design, act to inhibit excessive movement of the stator windings during the start-up. By limiting the movement the risk of insulation faults through abrasion between the coils and on the end plates is significantly reduced.

## Redesigned bearings

Our specialist polymer-composite bearings have a proven track record of reliability in both journal and thrust bearing applications. Traditional wet stator bearings containing asbestos were prohibited in 2004; our modern bearings are non-asbestos equivalents which are designed to be directly interchangeable while offering enhanced wear resistance. The thrust bearing wear faces can be independently replaced without the need to replace the entire thrust disc. All Sulzer bearings are positively locked and do not rely upon adhesives or interference fits for retention.

## Redesigned terminal gland mouldings

Sulzer is offers an enhanced terminal gland moulding design which provides increased safety compared to traditional ceramic-insulated glands. This design is explosion proof and also offers greater sealing security through the inclusion of a double seal ring.

Sulzer also offer specialist Retrofit engineering support in cases where our customers wish to increase the performance or reliability of their pump assets. Using the skills and analysis tools available in our engineering teams, we are able to provide performance upgrades to existing pumps, preventing the need for costly capital expenditure on new assets.

## Field Services

You can rely on a team of Sulzer engineers despatched on-site to support your rotating equipment in times of need. We'll conduct site based fault finding using a dedicated wet stator technical support team. Over the years, Sulzer has developed a pro-active response to wet stator unit activities, which has been achieved by working in close partnership with you, our customer.



Improved winding design



High-integrity terminal gland arrangement



Overhauled circulator unit back in service

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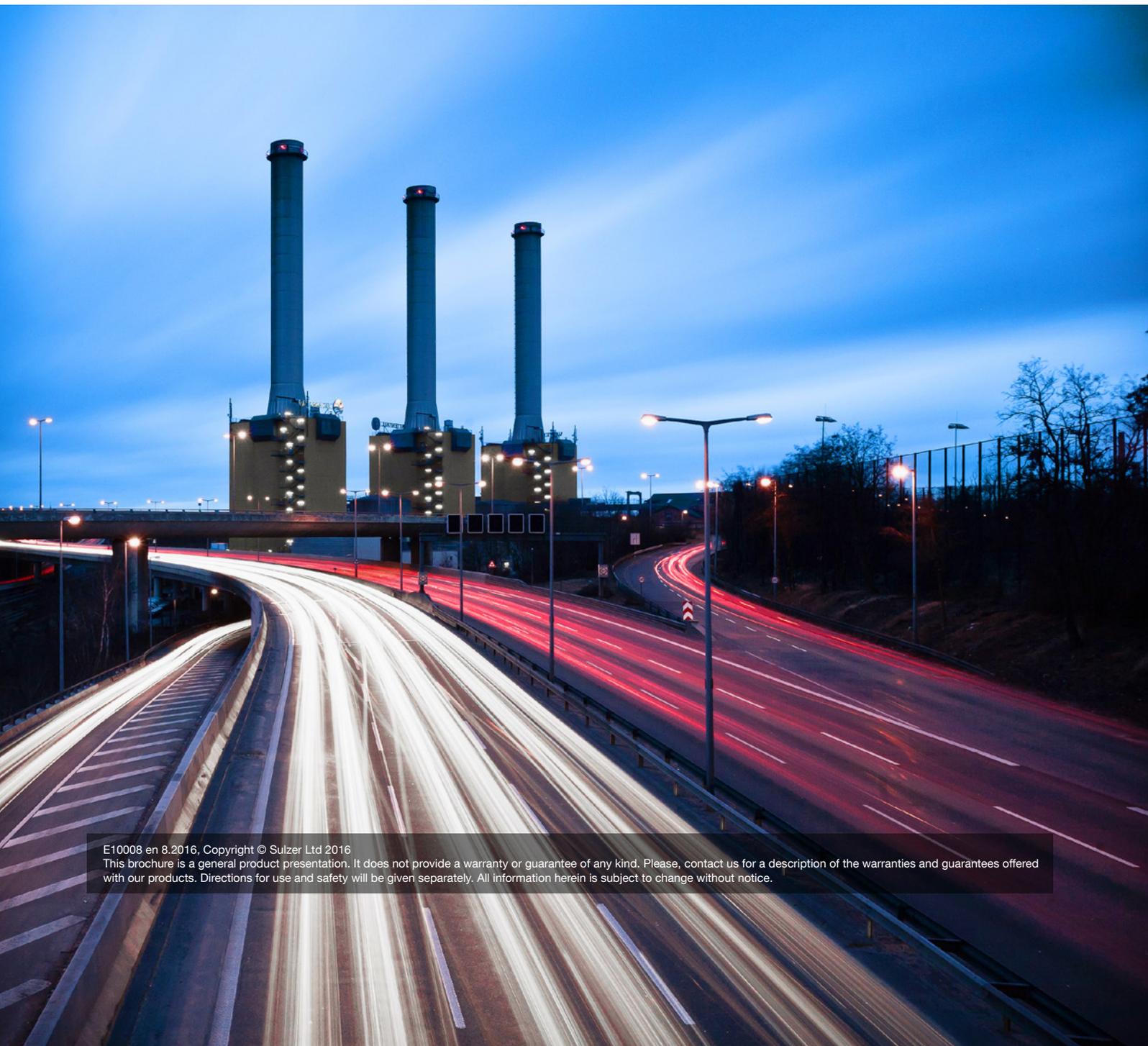
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