

Sealing competence for Concentrated Solar Power (CSP)



Innovative, versatile, efficient: Sealing solutions for solar thermal energy production.



Sealing technology as key component

Compared to conventional power stations, parabolic trough and solar tower power plants are relatively new technologies. The reliability of such plants is dependent on every single component being precisely designed and working in perfect harmony with the others. As a key component in such plants, seals have a critical role to play, having a direct influence on the process reliability, availability and cost efficiency of solar power plants.

The sealing specialist for solar thermal energy production

EagleBurgmann is one of the leading international system suppliers of sealing technology. Our products have a proven track record throughout the world in both conventional and nuclear power stations. We understand the specific requirements of power station operators and have comprehensive expertise in the diversity of processes involved. What is more, we have also been developing seal solutions for the special requirements of solar thermal energy production for years on the basis of intensive research. The results are high-performance products specifically designed to be used in solar power plants.

Exceptional industry-specific expertise

Technical expertise grows from knowledge. Not just knowledge about sealing technology but also about the machines, components and media to be sealed, the materials being produced and the industrial processes and process conditions involved. With applications engineering know-how and technical consulting expertise, our experienced engineers and designers offer reliable and economical solutions for the solar energy industry.

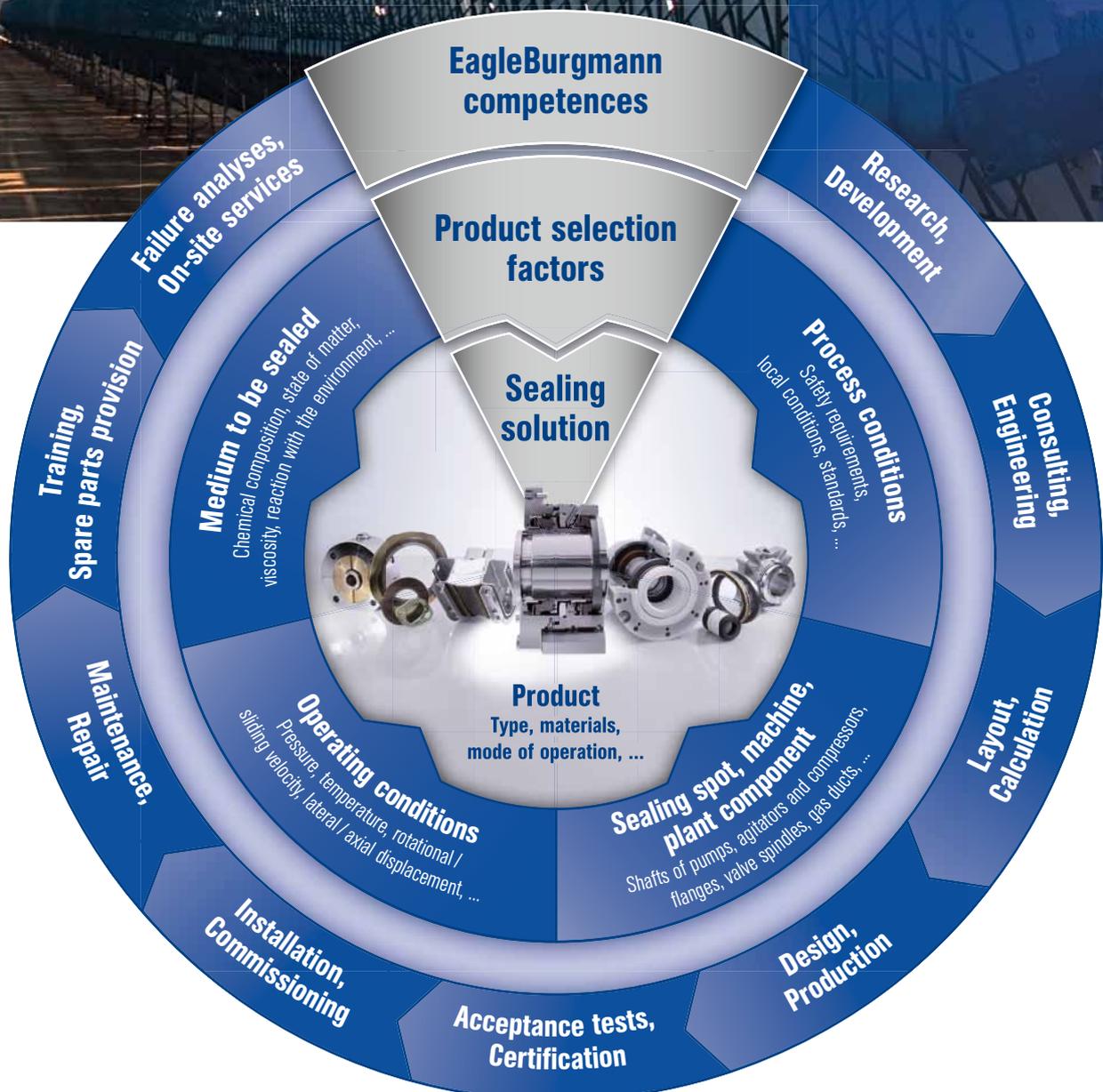
Full service partner with a global presence

Research and development, consulting, engineering, design, production and a wide range of modular services represent expertise from which our customers benefit. With our extensive network of production facilities and sales and service centers, we are in close proximity to you wherever you are in the world.

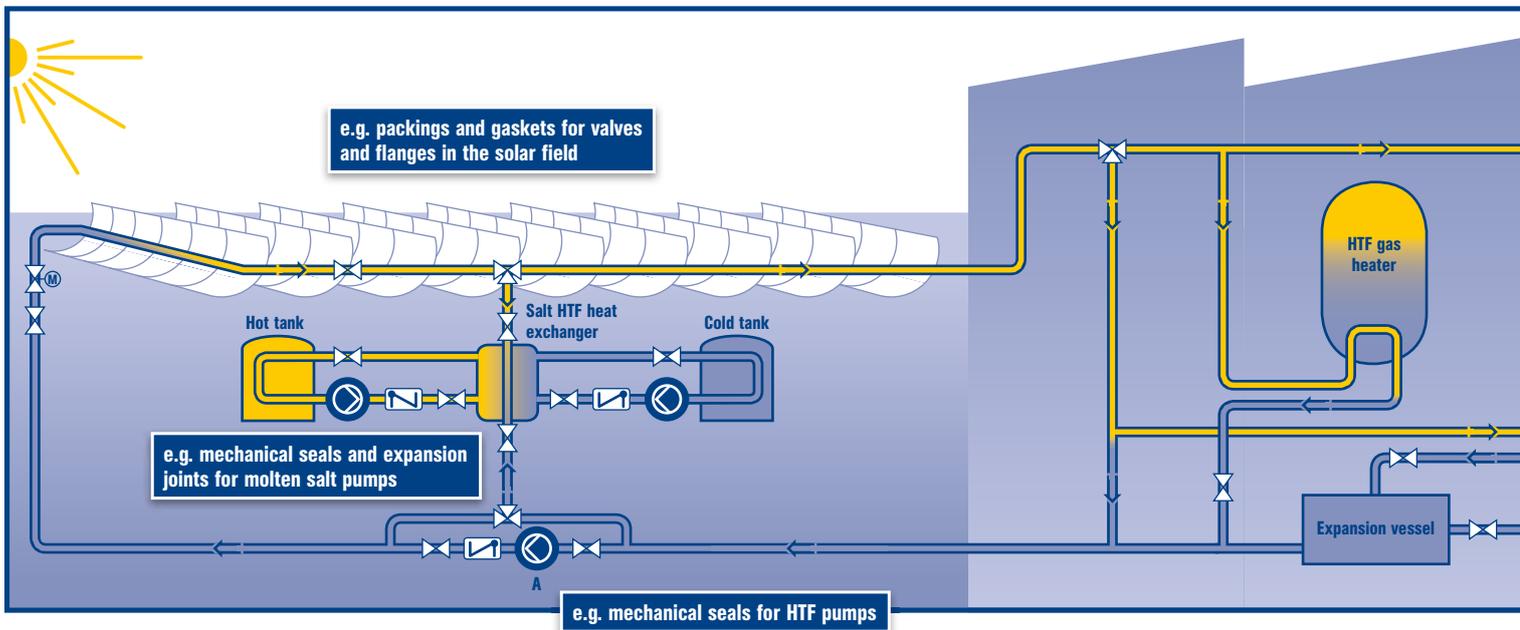
Sealing solutions to meet any requirement

When it comes to the selection of the product, its design, the materials used and the way in which it is operated, a range of different factors have to be taken into account: process conditions, sealing point, operating conditions and the medium needing to be sealed.

No matter what requirements our customers have: we know how these factors affect functionality and economic viability, so we convert this know-how into long-term, reliable sealing solutions. EagleBurgmann has all the expertise needed to accompany and support the entire development, life and service cycle of its sealing solutions.



Top quality for solar power plants: Sealing technology from EagleBurgmann.



A comprehensive range of products

Our products cover every requirement in terms of sealing solutions for parabolic trough and solar tower power plants. From mechanical seals, magnetic couplings, carbon floating ring seals, seal supply systems, stuffing box packings and gaskets to single- or multi-layer expansion joints made of fabric, steel or rubber. Whether it be high-volume or engineered single solutions, EagleBurgmann products are robust, reliable and offer exemplary value for money.

Mechanical seals for pumps



The entire range of liquid and gas-lubricated seals. Available as standard seals or special versions, as single or multiple seals and for all categories and arrangements in accordance with API 682.

Mechanical seals for compressors



The entire range of seals for process gas compressors. Robust, non-wearing and contact-free operation. Available as single and double seals, tandem seals and tandem seals with intermediate labyrinth versions.

Parabolic trough power plant applications

Parabolic trough technology makes use of parabolic mirrors to focus solar energy onto an absorber tube containing synthetic Heat Transfer Fluid (HTF) which acts as a circulating heat transfer medium. The oil is used to generate steam in a heat exchanger, which drives a power station turbine.

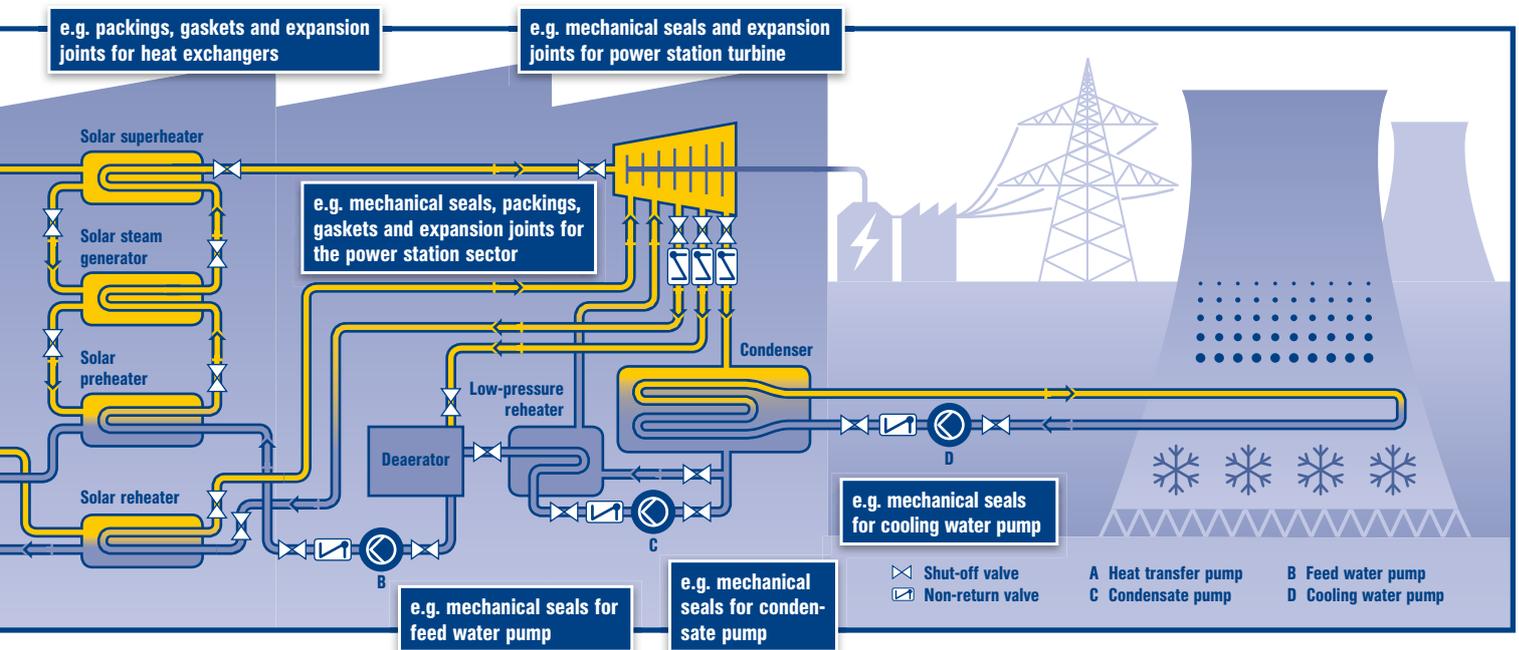
The requirements for a reliable sealing solution here are manifold. High media temperatures of up to 400 °C (752 °F) have to be handled with reliability.

Varying intensities of sunlight and night-time operation also mean that the temperature and pressure in the pipeline system for the transfer oil fluctuate, which can reduce the lubrication properties of the oil to the extent of partial dry running.

EagleBurgmann has the right sealing solution for every requirement in parabolic trough power plants, including Heat Transfer Fluid, overheated boiler feed water, condensate and cooling water.

Molten salt energy storage system applications

To ensure that the available solar energy and energy production meets actual consumption requirements, molten salt storage systems are used for storing the energy in solar parabolic trough and solar tower power plants. Here low-temperature molten salt is pumped through a heat exchanger where it is heated to become a heat transfer medium before being transferred to a second tank for storage, from which it can be taken out again whenever required.



Magnetic couplings



For areas of application with very high requirements. Hermetically sealed, leak-free and maintenance-free pumping and mixing. Media are reliably kept in closed system circuits.

Carbon floating ring seals



Carbon floating ring seals are supplied as maintenance free compact labyrinth cartridge seals with low leakage.

Seal supply systems



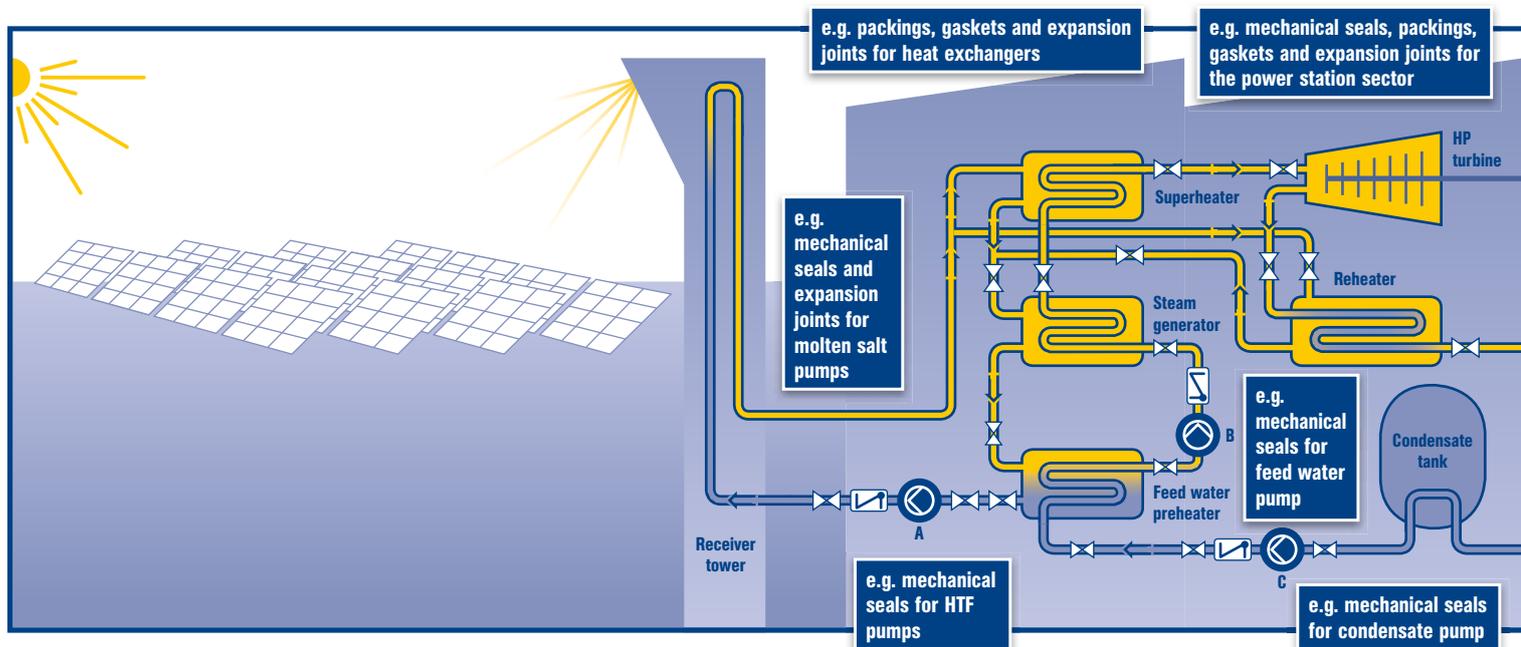
Depending on the design, application and mode of operation, mechanical seals and magnetic couplings need supply units for flushing, cooling, pressurization and leakage compensation. EagleBurgmann supplies the entire range from a single source.

Solar tower power plant applications

The tough operating environment of the molten salt solution and the high temperature in particular represent major challenges for the sealing technology. Mechanical seals, packings, gaskets and expansion joints developed specifically for these operating conditions provide the guarantee for lasting reliable operation.

With multiple automatically positioning mirrors, solar tower power plants focus solar energy onto a single collector in a tower. There it is used to heat a heat transfer medium for powering a steam or gas turbine.

Extremely tough operating conditions, high-temperature and high-pressure applications, especially in the solar tower, require special solutions. EagleBurgmann offers sealing technology of superior quality for the specific requirements of solar tower power plants.



Compression packings



The economical and reliable method of sealing pump shafts and valve spindles. A broad product range, innovative materials, material combinations and special impregnating agents and lubricants allow us to provide solutions for even the most demanding requirements.

Gaskets



Ready to install seals or sheet materials. State-of-the-art materials, material combinations and production methods allow us to supply a multitude of versions, variations and shapes.

Expansion joints



For ducts and pipe systems carrying gas – to reliably compensate for pressure and temperature fluctuations, vibrations and misaligned joints.



DiamondFace® technology: Groundbreaking coating technology for sliding faces

EagleBurgmann created a landmark in mechanical seal technology with the introduction of DiamondFaces in 2007

Innovative technology:

A microcrystalline layer with all the attributes of natural diamond is applied to the sliding faces by chemical vapor deposition (CVD) at 2,000 °C (3,632 °F) in a vacuum furnace. Thick layers coupled with extremely flat and uniform sealing surfaces characterize this procedure, which was developed together with the Fraunhofer Institute for Surface Engineering and Thin Films in Braunschweig, Germany.

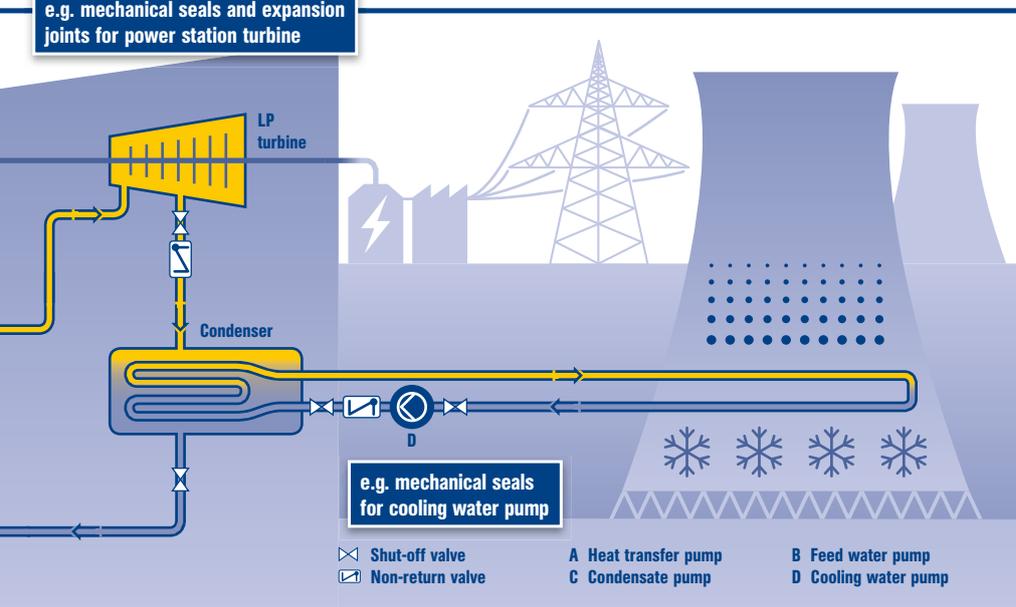
Outstanding properties:

Seal faces with DiamondFaces are extremely hard and resistant to wear, offer excellent thermal conductivity and exhibit the highest chemical resistance. The layer adhesion exceeds all known practical requirements.

Convincing benefits:

For mechanical seals this means a considerably longer service life, with maintenance intervals extended accordingly and greatly reduced life cycle costs.

e.g. mechanical seals and expansion joints for power station turbine



The modular service concept: TotalSealCare



Our modular service concept TotalSealCare offers a solution for every requirement. The individual service modules can be combined in any desired form, thereby guaranteeing maximum flexibility. The modules at a glance:

- Consulting and engineering
- Maintenance & repair
- On-site service
- Inventory management
- Seminars & training
- Technical analysis and support
- Service agreements

Argentina · Australia · Austria · Belarus · Belgium · Bulgaria · Brazil · Canada · Chile · China · Colombia · Cyprus · Czech Republic · Denmark · Ecuador · Egypt · Estonia
Finland · France · Germany · Great Britain · Greece · Hungary · India · Indonesia · Iraq · Israel · Italy · Japan · Jordan · Kazakhstan · Korea · Kuwait · Latvia · Libya · Lithuania
Malaysia · Mauritius · Mexico · Morocco · Myanmar · Netherlands · New Zealand · Nigeria · Norway · Oman · Pakistan · Paraguay · Peru · Philippines · Poland · Qatar
Romania · Russia · Saudi Arabia · Singapore · Slovenia · Slovak Republic · South Africa · Spain · Sweden · Switzerland · Syria · Taiwan · Thailand · Trinidad and Tobago · Tunisia
Turkey · Turkmenistan · Ukraine · United Arab Emirates · Uruguay · USA · Uzbekistan · Venezuela · Vietnam · www.eagleburgmann.com/world



CSP/E/1000/1111/4.1 © EagleBurgmann Group Marketing, Germany

EagleBurgmann is one of the internationally leading companies for industrial sealing technology. Our products are used everywhere where safety and reliability are important: in the oil and gas industry, refining technology, the petrochemical, chemical and pharmaceutical industries, food processing, energy, water, mining, pulp & paper, aerospace and many other spheres. Every day, more than 5,500 employees contribute their ideas, solutions and commitment towards ensuring that customers all over the world can rely on our seals. Our modular TotalSealCare service underlines our strong customer orientation and offers tailor-made services for every application.

EagleBurgmann Germany GmbH & Co. KG

Aeussere Sauerlacher Strasse 6–10
82515 Wolfratshausen, Germany
Tel.: +49 (0)8171 23 0
Fax: +49 (0)8171 23 12 14
renewable@de.eagleburgmann.com
www.eagleburgmann.com

EagleBurgmann®
Rely on excellence