

PRESS RELEASE

For direct publication

GVSO chemical submersible pump: The safe pumping solution for high-pressure and high-temperature applications

Wiesbaden, June 2015. The **GVSO** chemical submersible pump from **FRIATEC AG - Division Rheinhütte Pumpen** is used for pumping aggressive, hot and contaminated media. The vertical pump enables the safe pumping of acids and lyes in all concentration and temperature ranges. Further development has created an enhanced multi-stage hydraulic GVSO series design, with the submersible pump assuming a pioneering position in high-pressure and high-temperature applications. The GVSO pumps molten sulphur in chemical and petrochemical applications and molten salt at temperatures of up to 600 degrees in solar thermal power towers up to a delivery head of 320 m.

Manufactured from stainless and heat-resistant steel with medium-lubricated sleeve bearings, the GVSO impresses through its reliable, leak-free and uniformly compact and maintenance-friendly design with a variety of sealing variants. The GVSO pump series meets international requirements according to ISO 5199 and ISO 13709 (API 610 11th Edition, Type VS4).

Further development of the GVSO increases the delivery head of demanding media to up to 320 m.

Pumping of molten salts used as a heat transfer and storage medium represents a challenging task in solar power stations. The refined GVSO with its enhanced multi-stage hydraulic design provides a reliable concept to meet the future demands of solar power station technology in the power tower plant sector. It addresses the rise in delivery heads in this respect. Flexible submersion depth adaptations are facilitated by the multi-stage vertical high-pressure pump concept for delivery volumes of over 1000 m³/h, a pressure requirement of 64 bar and

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temperatures up to 600 degrees. It proved possible to increase the delivery head by 150 m, with the GVSO now achieving a delivery head of 320 m.

The submersible pump is used as a main supply pump for salt-based heat storage systems and system components in the salt system melting and filling process and peripheral areas to protect the plant.

The vertical GVSO is used in all processes involving molten sulphur in the chemical and petrochemical industry because its multi-stage volute casing enables the achievement of high medium discharge heads. The GVSO is used around the world in the molten sulphur sector in refineries, by shipping agents and also by manufacturers of sulphuric acid.

Proven and flexible concept for sophisticated pumping tasks

The pump type GVSO has been used with molten sulphur for over 60 years and employed for molten salt for over 40 years. The enhanced multi-stage hydraulic design represents the union of the reliable advantages enjoyed in the GVSO to date with future market requirements.

Rheinhütte Pumpen supplies the GVSO in 28 sizes and single or multi-stage designs for maximum flexibility. Individual realization to meet specific submersion requirements enables the use of one or more intermediate bearings which assist the pump in reaching immersion depths of 0.5 to 18 m. Over 10 different stainless steel alloys are available for the most varied applications involving media pumping temperatures of up to 600°C.

The proven submersible pump concept with separation of the discharge and shaft column enables the optimum lubrication of sleeve bearings and guarantees uniform temperature expansion. This ensures a long bearing service life with low maintenance requirements for all assemblies in contact with the medium. A further advantage of the GVSO design is the availability of dry shaft sealing variants which are not in contact with the medium. This ensures a high degree of fail-safe reliability and pump availability with low maintenance requirements.

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Dry gland packing systems (including gas barrier designs), mechanical seal concepts with an additional gaseous or liquid barrier and magnetic couplings are available for specific pumping tasks. The design of the dry magnetic coupling which lies outside the pumping system also enables use of the GVSO for toxic and odorous liquids at liquid temperatures of up to 250°C.

In addition, connection dimensions and the shape of the sole plate on the tank and pressure flange can be individually adapted. The GVSO can be employed as a heated design with a heating jacket for all media pumping areas in pumping tasks with constant temperatures and viscosities (e.g. molten sulphur).

The Company

As a specialist in corrosion- and wear-resistant materials, **FRIATEC AG - Division Rheinhütte Pumpen** has leading expertise in many specific areas. The company develops innovative pump technologies for the most demanding applications. The comprehensive pump range includes horizontal and vertical pumps for nearly all industries and made from metallic, plastic and ceramic materials, according to its claim “The right solution. For any fluid.”

FRIATEC AG – Division Rheinhütte Pumpen is part of FRIATEC AG in Mannheim, Germany. FRIATEC AG is a leading international specialist for corrosion and wear-resistant products and materials. FRIATEC provides innovative solutions on a global level, being active in the three areas of specialisation: connection technology for pipe systems, state-of-the-art high-performance ceramics as well as pumps for sophisticated applications.

Comprehensive know-how, intensive R&D activities and customer-oriented product implementation have been forming the very basis for the company’s successful performance on both national as well as international markets.

FRIATEC AG has been part of the ALIAXIS Group since 2003. The Group has its headquarters in Brussels, Belgium. ALIAXIS is the global leader in the manufacture and distribution of plastic pipeline systems used in construction industrial sectors and utilities.

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The Group is represented by around 100 companies in 40 countries around the world.

FRIATEC AG today employs about 1,100 personnel, with approx. 850 of these located at our headquarters in Mannheim, Germany. The company generated a turnover of 169.3 million euro in the 2014 business year.

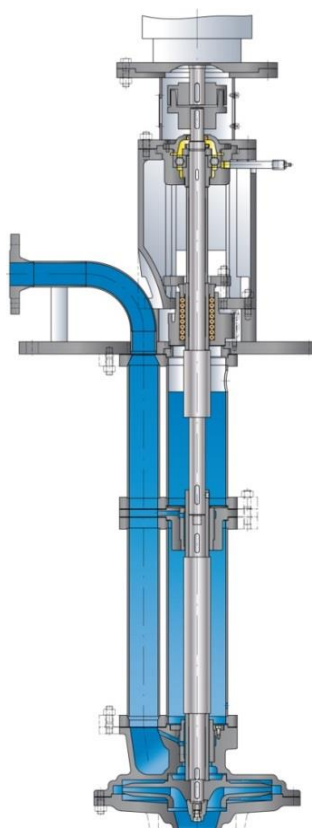
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Images:

GVSO vertical chemical pump, metal



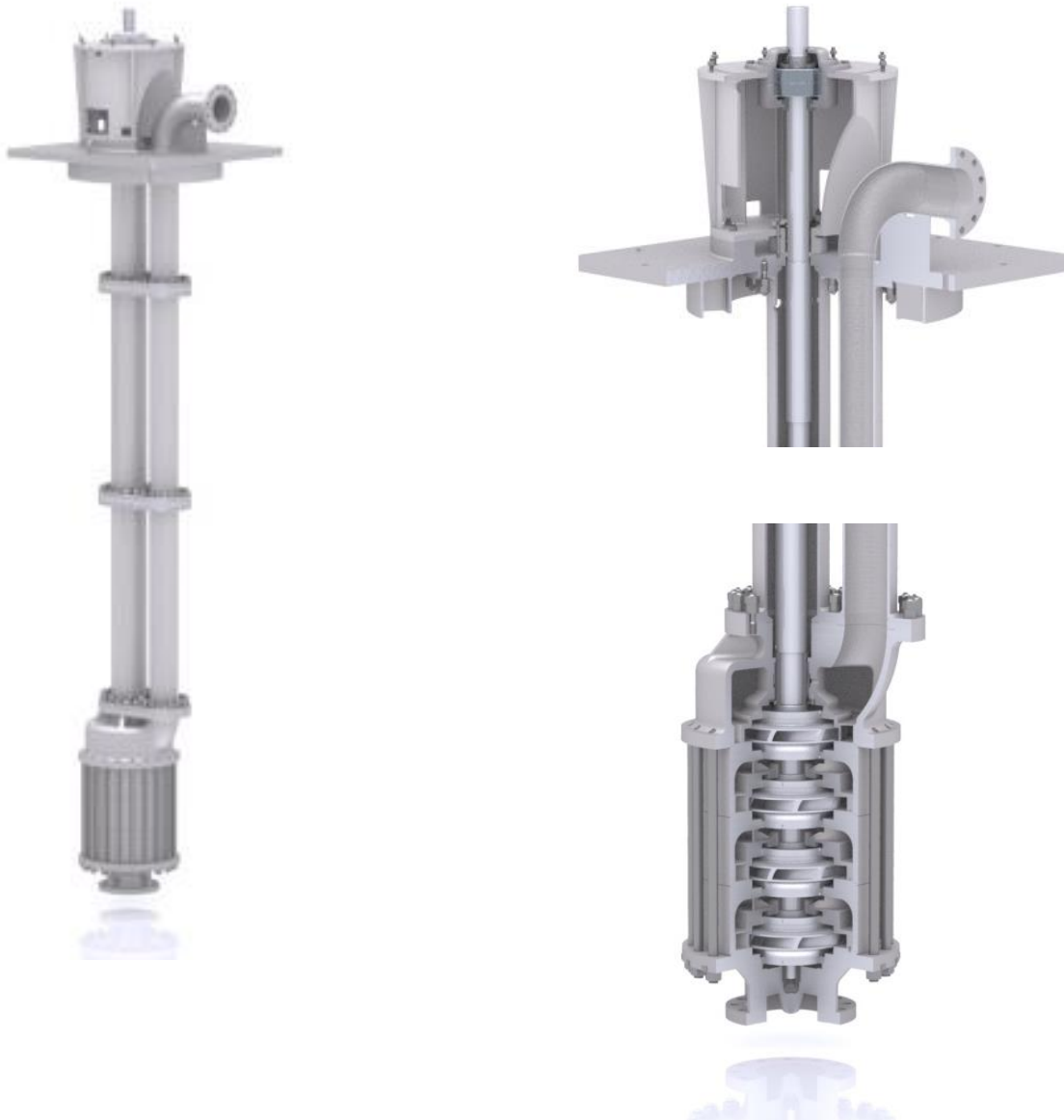
Sectional view of the GVSO



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Vertical GVSO 200/400 IV for high-pressure applications up to temperatures of 600°C – sectional view of the sole plate (top) and hydraulic mechanism (bottom)



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