

Press Release

Cryogenics pumps for small scale industrial plants

Vanzetti Engineering's cryogenic pumps make it possible to meet all the application needs of the small scale industrial sector. The latest model of the ARTIKA series, ARTIKA 300 meets application needs to transfer liquefied natural gas in small and medium size terminals.

Cavallerleone, 20 July 2020 - In the Small Scale industrial sector, the cryogenic pump downstream applications that have seen a significant growth in the past few years are related to gas pipeline feeding, gas power generation stations, gas peak shaving plants and LNG transfer in small to medium size shore terminals. Vanzetti Engineering is able to supply all the cryogenic pumping equipment downstream of the liquefaction plants, on skids and complete with all the accessories, sensors and instruments.

In order to cover these needs of applications to transfer liquefied natural gas in small and medium size terminals, Vanzetti Engineering has developed a larger centrifugal submerged pump model, the **ARTIKA 300**. Available in 1 or 2 stage configuration, this pump can reach up to 270 m³/h of flow rate, thus completing the range of submerged pumps for LNG. The built-in features of these pumps include the seal-less concept, with motor bearings permanently lubricated by LNG, which allow a permanent cold condition for quick and efficient start and stop operations and extremely low need of service and maintenance.

Regasification

LNG in the liquid state has a density 600 times higher than in the gaseous state and since it is stored at low pressure, it represents the most convenient form for transporting large quantities of this fuel, indispensable especially where an extensive network of gas pipelines is not present. Liquefied natural gas is transported from the countries where it is produced, to then be regasified in so-called LNG terminals installed directly in the destination countries. Regasification is a process of converting liquefied natural gas back to the gaseous state using special heat exchangers to heat the fluid. Later on it can be distributed through pipelines in the form of natural gas. LNG can be stored locally inside cryogenic tanks and later used for other purposes, such as truck trailers and cargo reloading.

LNG satellite plants

LNG satellite plants are often used to supply natural gas for boilers, furnaces, power generators, and other industrial applications where pipelines are locally not available. In combination with transport via LNG iso containers and trailers, they are able to provide a constant supply of clean fuel from LNG terminals.

Power generation

Where on-site power generation is required, LNG represents an efficient alternative to fuel oil.

Power plants ensure clean, safe and cost effective electricity for towns, islands and remote areas by using LNG instead of heavy fuels. In the agricultural business and greenhouses, where pipelines or electrical grids are not available, LNG provides a valid alternative to have access to natural gas.



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Moreover, diesel generators can be replaced with gas generators or converted to dual fuel systems that are able to operate with both diesel and natural gas.

Peak Shaving Plants

LNG can be used to tackle energy peak demands when the normal distribution networks can only meet regular needs but not occasional extra energy requirements, for example due to seasonal variations. These plants are called LNG Peak Shaving Plants, because they are able to deal with these temporary peaks by using LNG as energy source.

Industrial and oil & gas plants and mining

LNG is largely used in various industrial processes such as power generation, dryers, boilers, heat treatments, rotary kilns and furnaces in the production of paper, metal, chemicals, petroleum, stone, clay, glass, clothing and food. LNG provides an ecological, less expensive and safe alternative to LPG, diesel and oil products, offering undeniable economic and environmental benefits.

In terms of the oil & gas sector, with a typical drilling site consuming 2,500 to 9,000 litres of diesel per day, a highly-efficient fuel like LNG can be a smart option.

LNG can be successfully used instead of large amounts of diesel in mining and heavy-duty vehicles. Quarry and mine trucks are often requested on particular sites for short and repetitive routes. Hence, an on site refuelling system based on LNG technology is a welcomed opportunity.

A solution for every requirement

For the types of applications mentioned above, Vanzetti Engineering offers different types of cryogenic pumps.

The **ARTIKA series** cryogenic submerged pumps are available in one-stage or multi-stage configurations (2, 3, 4 or 6). They are designed to work submerged in cryostats/sumps or in cryogenic tanks, and they are suitable for continuous and discontinuous operation. They feature helical inducers to minimize NPSH requirements, integrated motors to be used with inverter/VFD, and they offer long maintenance intervals due to the absence of elements subject to wear and continuous LNG lubrication. The pumps offer low noise (< 80dB) during operation.

The cryogenic centrifugal pumps for liquefied natural gas and industrial gas of the **DSM** and **SGM series** feature electric motor and direct transmission, mechanical seal and inducer to minimize NPSH requirements and have a low noise level (< 80 dB).

The **VT-1 series** cryogenic reciprocating pumps offer high efficiency and low operating noise, compatibility with Cold Converter and Thermosyphon storage tanks, and easy installation thanks to the adaptable inlet and outlet connections. Their maintenance is quick thanks to the integrated cartridge seal system.

Safety and maximum reliability are the outstanding features of Vanzetti Engineering products.



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