

Cooperation Agreement—Herold Pumps / Sulzer Pumps

Sulzer Pumps and Herold Pumps Begin Sales Cooperation

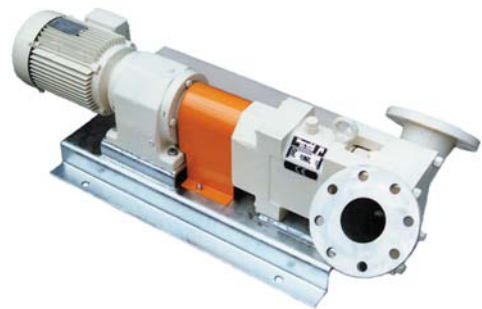
Sulzer Pumps and Herold Pumps have entered into a partnership to supply helical twisted Roots pumps for the Food Industry in the global markets.

Herold and Sulzer Together

Customers today require companies with global representation. This includes geographic and technical support, broad product range, competitive pricing, ontime delivery and globally high standard of quality. The combination of Sulzer and Herold—marked by the 4th June 2002 signing of a Cooperation Agreement—meets all of these goals.

Herold & Co. GmbH is a privately owned, international machine factory and foundry. Herold has developed and patented a successful line of helical twisted Roots pumps called Wendelkolben® pumps. During the past several years, these pulsation-free pumps have proven to be highly successful in a variety of industries, such as sugar, food and chemical industries for pumping media of ultra high viscosity, shear sensitive media and liquids containing solids.

The advantages of helical twisted Wendelkolben®-rotors are continuous flow with constant volume, pulsation free pumping, smooth and gentle treatment of the medium to be pumped, exceptionally low noise level and very significant reduction in power consumption.



Helical twisted Roots pump - developed and patented by Herold&Co. GmbH, Gefrees

Other products of Herold & Co. GmbH are the Biogas digesters for Anaerobic Wastewater Treatment. Due to its unique design the anaerobic high performance digester obtained a Euro-patent. To achieve trouble free operation of the high performance digester, the Herold Multi-Cut-Wolf was designed and patented. As a shredder, it sets new standards in the effective cutting and mincing of both stringy, and short / long fibrous media.

Herold also manufactures stone crushers and has its own foundry to cast grey iron, ductile iron and Ni-Resist castings for their own products and as a subcontractor for SKF, Siemens and other well-known global companies.

Sulzer Pumps has a long history of providing innovative pumping solutions, and is today a leading supplier of pumps with a worldwide service network second to none. Sulzer's Pump Division is a provider of technical support for all types of pumps and other rotating equipment. The Division's product line extends from highly complex customized pumps for special applications to an extensive selection of pre-engineered and standard pumps. Sulzer Pumps provides pumping solutions to selected industries, including oil and gas, hydrocarbon processing, pulp and paper, power generation, water treatment and distribution facilities, and companies specialized in food, metals and fertilizers.

Responsibilities between SULZER and HEROLD:

HEROLD will be responsible for:

- Design and Engineering of the complete pumps including mechanical seals
- Selection of hydraulics
- Manufacturing and testing of complete pumps
- On time delivery of their Scope of Supply
- Manufacturing of spare parts for their pumps

SULZER will be responsible for:

- Tendering and Sales for the global sugar, starch, sweetener and ethanol industry
- Leadership of the projects and contracts and order processing
- Local commissioning, spare parts and service on site

Typical applications for Herold's Pumps

Sugar- and starch industry

White sugar, raw sugar, after product, crystal suspensions, sucrose solutions, massecuites, molasses, thick juices, dextrose anhydride, dextrose monohydrate.

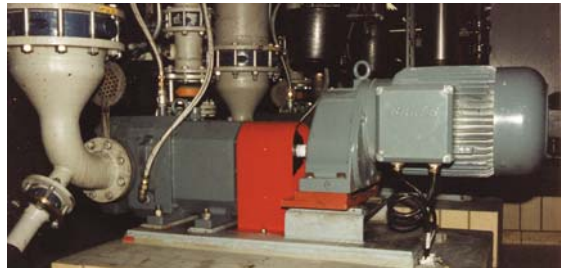
Liquor- and beverage industry

Mash, yeast, condiments, fruit purees, fruit juice concentrates.

Other food industries

Doughs, edible fats and oils, fillings, honey, syrup and cream, ketchup, tomato paste, mustard, emulsified cream and gravy, marinade, salad dressing, jelly, jam, marmalades, desserts, stewed fruit, pulp, soup, pap, stew, baby food, mash, pudding, mushrooms, berries, sauerkraut, cabbage, meat salad, sausages, paste, pate.

Example of Herold's helical twisted Roots pump in a sugar factory:



Medium:	Masseccuite
Temperature:	55 °C / 131 °F
Density:	1,45 t/m ³ / 91 lbs/ft ³
Dry matter:	91%
Viscosity:	10.000 mPas
Type:	01.035
Rpm Pump:	145 1/min
Vol. delivery:	27 m ³ /h / 954 ft ³ /h
Pressure:	6,0 bar / 85 psi
Drive:	Gear motor 18.5 hp / 13,5 kW

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