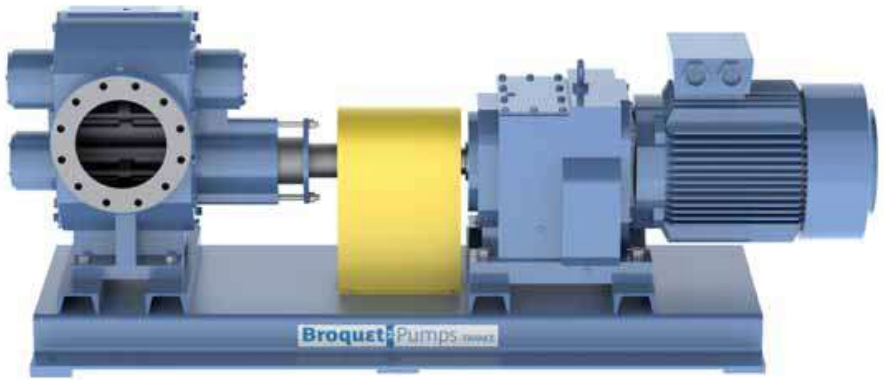
Broquet Pumps

Gear pumps - Applications in sugar processes



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History

GEORGES BRIERE S.A., started in 1927, is an independant company which designs and manufactures BROQUET pumps since 1972.

We are designing gears and specialized in the technology of gear pumps. This technology is one of the most suitable to handle liquids with high viscosity and liquids with some particles

Our established expertise is based on the 40 years background of our Engineering department in mechanical, rheology and fluids movement to design the most suitable solution to any application.

Expertise:

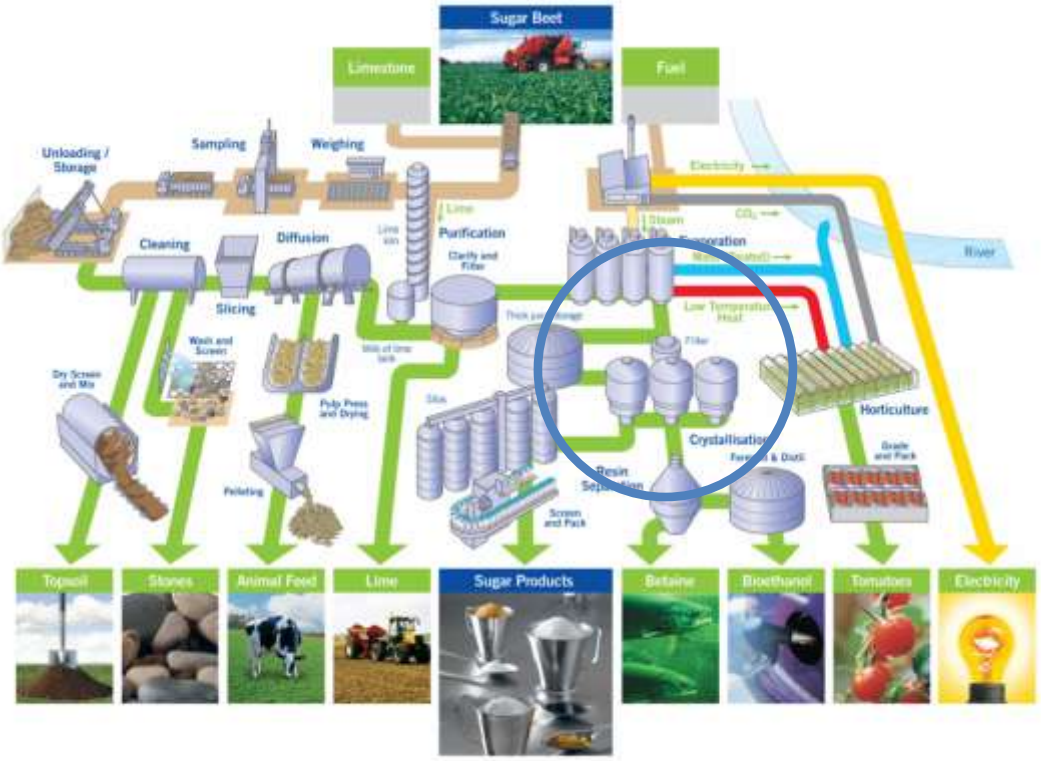
This backgroung in processed enables us to offer equipments and services required espacially in industries as sugars, chocolates and petrochemicals with flowrate capacities from 1 m^3/h to 350 m^3/h

Thanks to our international sales network, we have supplied several thousands of pumps by 500 plants in 60 countries over the world

Our main customers are worldwide leading companies in the sugar industry, main engineering companies of the sector and larger users of derivatives in the market.

Main applications:

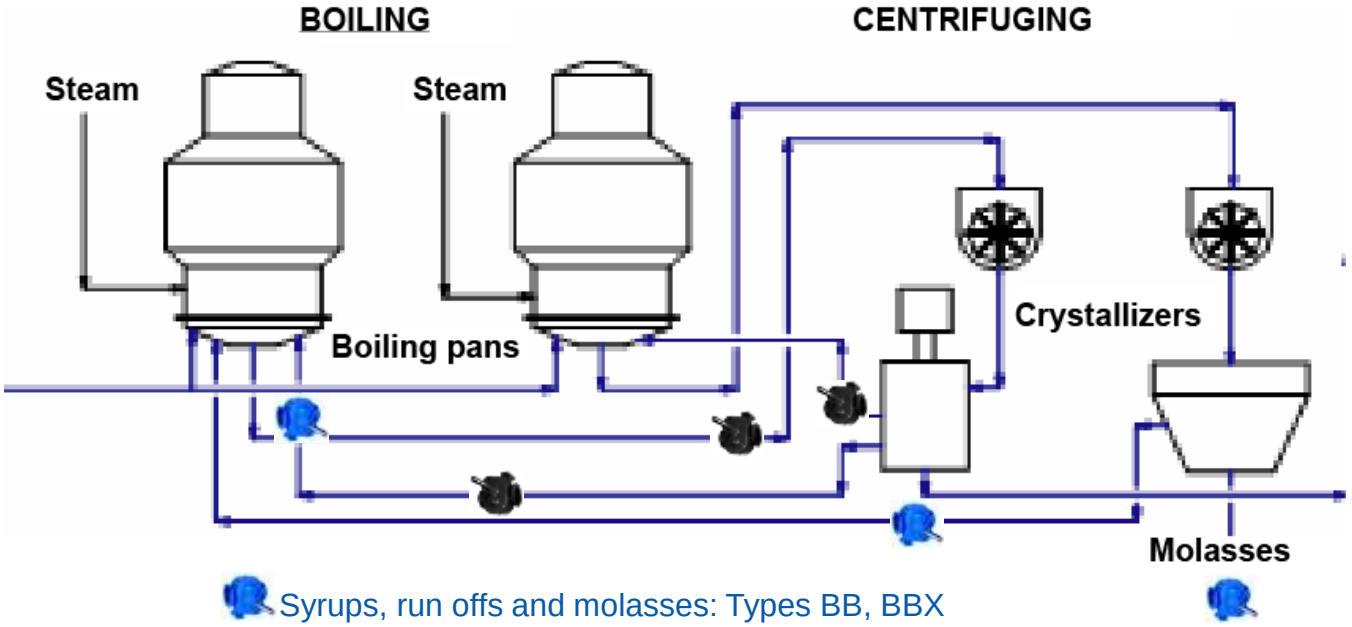
Broquɛt Pumps in sugar crystallization plants, and also upstream, for syrups installations and downstream to handle cold molasses and storage stations.



Applications in sugar plants

Applications:

BROQUET Pumps are used on all viscous liquids of the crystallization :



Syrups, run offs and molasses: Types BB, BBX

Massecuites and Magmas: types BBMC

Broquet Pumps

Main features of BROQUET gear pumps:

- High suction power to admit a low suction head
- High hydraulic yield for a better control of the electric consumption
- Low pulsation effect for a better protection of the installation
- Single sealing to facilitate and make the maintenance cheaper
- Increased lifetime due to our technology of immersed sleeves
- Easier maintenance

Main features of BROQUET gear pumps :

- High suction power and high hydraulic yield
  - This power is obtained thanks to the important depression generated between moving components and the body of the pump. By avoiding as much as possible these internal leagages, we obtain a sufficient vacuum to attract the liquid through the pump
  - The « In-line » sealing is **permanent** through the top of each tooth of gears
  - Suction depression enabling pumping even with limited suction head
  - No check valve at the suction side which could remained closed

Ensured operation

Controlled electric consumption

Main features of BROQUET gear pumps :

- Low pulsation effect
  - Regular pumping (6 by rotation) thanks to 6 teeth on gears
  - No hammer effect in the piping

Installations protected

Main features of BROQUET gear pumps :

- Single sealing on the shaft
  - Dynamic sealing guarranted
  - Only on the driving shaft
  - Easy and cheap maintenance
  - Several possibilities of assembly:
    - Gland-packing (the most often)
    - Mechanical sealing
    - Quench

Easier maintenance

Main features of BROQUET gear pumps :

- The lifetime of the pumps is considerably increased
  - Shafts are guided on both ends
  - Low rotation speed (less than 200 rpm)
  - Sleeves are in special material for a better resistance to wear

=> Lifetime of the pump up to 20 years

=> Lifetime of the sleeves up to 5 years

Better life cycle cost

Main features of BROQUET gear pumps :

- Limited maintenance
  - Few wearing components (8 sleeves per pump)
  - Simple sealing design with gland-packing of mechanical sealing
  - No gear box between the to shafts

Limited maintenance cost

Main applications:

- Massecuites and Magmas **BBMC / KMC**
- Molasses and syrups **BBX / KX**

BBMC / KMC

BBX / KX

Applications for Massecuites and Magmas: **BBMC / KMC**

- Sliding profile => Protection of sugar crystals
- Reversible

Applications for Massecuites and Magmas: **BBMC / KMC**

- Protection of sugar crystals

  Teeth profile in 2 parts

  • 1 gearing part (rolling profile)

  The shape of teeth enable the flow of the liquid with the pressure

  • 1 pumping part (scraping profile) with a significant clearance to respect the particle size of crystals up to 3 mm

  • Crystals are coated in a high viscosity liquid

Product quality preserved

Applications for Massecuites and Magmas: **BBMC / KMC**

- Possible change of the way of rotation of gears
  - Solve possible problems in refineries

    Intrusion of unexpected parts in the piping
  - No need to shut down the pump

Incidents can be more easily solved

Applications for hot molasses, syrups and run offs: **BBX / KX**

-Rolling profile

-Suitable for less viscous liquids (molasses, syrups, …)

-Rotation speed up to 200 rpm

Optimized flowrate

Applications for cold molasses, syrups and run offs : **BB / KB**

- Suitable for liquids with high viscosity (storage tanks)
- Low suction speed (< 80 rpm)
- Total reversibility

High suction power

BROQUETS PUMPS design: Features

- Only rotors are specific for each application
  - Economical management of waering parts (sleeves)
  - Possible transformation from one type to another

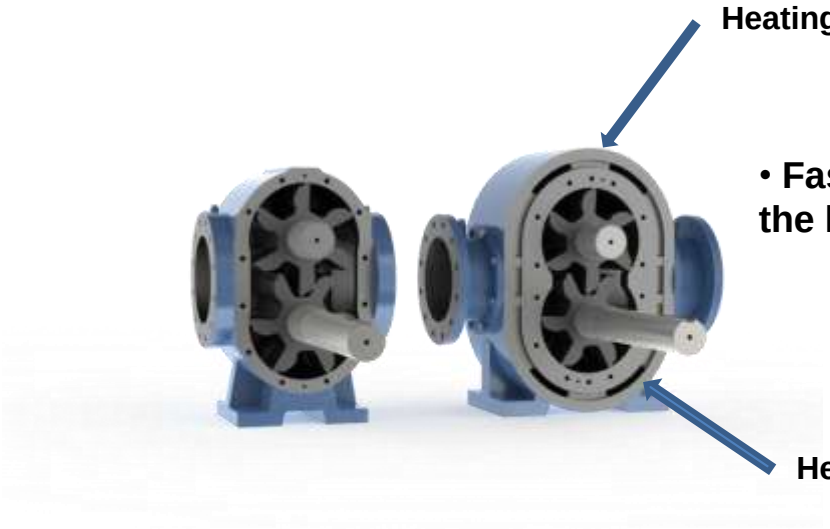
Easier stock management

Heating jacket (**B-Body**)

The heating jacket is integrated in standard in the body of the pump. Heating areas are not added as it is usual by other types of pumps.

This design ensures a high heating capacity and heating volume is large to keep the liquid at the requied temperature

(connection ½'' or ¾'' depending of the type of pump).



- **Fast and homogeneous circulation of the heat**

Possible additional equipments

- Safety valve
- Flow sensor
- Bar gauge
- Safety filter for viscous liquids

The Expertise of the BROQUET Engineering Dpt

- Permanent developments
- Quotation customized to each application
- Solidworks CAD stations
- Laboratory for fluids movements, sampling analyze,….
- Test in workshop and on customers site
- Test bench for Reseach and Development

Thank you for your attention !!

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