

A Key Element for **Sugar** Processing at every step of the way

Clarifier – Vertical Crystallizer - Thickener

The principal task of a clarifier, also known as a juicer, is the separation of solids from the sugar cane liquid in order to minimize impurities and thereby obtain the purest juice possible. Juice is heated to help kill natural enzymes; flocculants are added as well as lime which brings the juice to a neutral pH value, a vital factor in sugar processing. While the impurities precipitate to the bottom of the clarifier, the clear juice flows off the top part of the vessel towards the next crystallization phase. Crystallization is achieved inside the crystallizer, where by means of an artificial process, sugar is transformed from its liquid form into a solid crystallized structure. This takes place immediately after evaporation of the clarified juice, which turns into syrup which is boiled at low temperatures under a partial vacuum. Crystals begin to grow and the resulting mixture of raw sugar

crystals and molasses is called massecuite. The most efficient solution is a vertical crystallizer where the massecuite flows vertically from top to bottom. Vertical crystallizers are found in both the beet and cane sugar industries. Separation of the molasses from the sugar crystals takes place in a centrifuge. On both applications, the gearboxes allow for slow turning of the rake. This is also true for similar applications within heavy industry such as thickeners, that follow the same working principle.

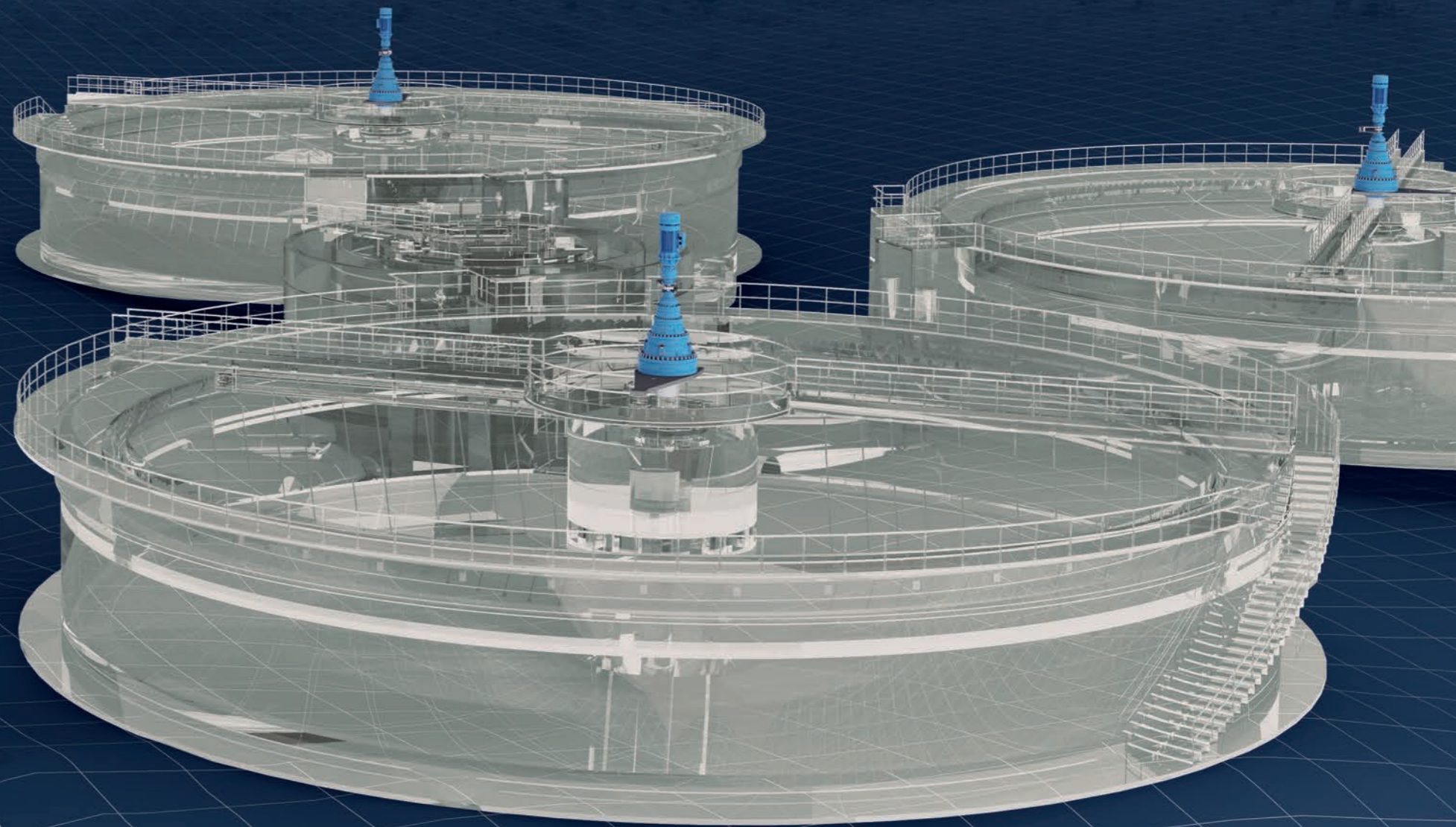
Thickeners are predominantly found in mining or the cement industry, where they are used to separate solids from the fluid. Once the solids reach around 50% density, they are discharged from the thickener by a pump. The clear liquid overflows at the top of the thickener and is pumped away.



Brevini® Industrial Planetary Gearboxes – S Series

- Double torque arm with load cell included as option for the electric driven
- Modular concept
- Extensive ratio range
- Supports torque range up to 2200 kNm
- Increased thermal capacity due to large bevel set
- Spheroidal graphite cast iron housing
- High efficiency
- Diverse low-speed shaft options
- Premium sealing
- Low noise
- IEC flanges up to 355 size

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Dana offers customized solutions to meet a range of customer needs, including modular designs and add-on accessories.