



SG2 decanter centrifuge range

High-performance separation for the ethanol and biofuel industry



Applications

Alfa Laval SG2 decanters provide the most cost-effective, high-performance separation solution currently available for dewatering applications in the ethanol/biofuel process. These decanter centrifuges have a long track record of processing high throughputs of stillage from all kinds of grains. They provide high suspended solids recovery and high cake dryness, while reducing power consumption and lowering lifecycle costs.

Performance that produces results

The outstanding features of the SG2 design make it easy to reach a wide range of performance targets:

- Greater processing capacity for any given equipment footprint
- Better process control
- Better protection against erosion
- Low maintenance costs
- Low energy consumption
- Low lifecycle costs

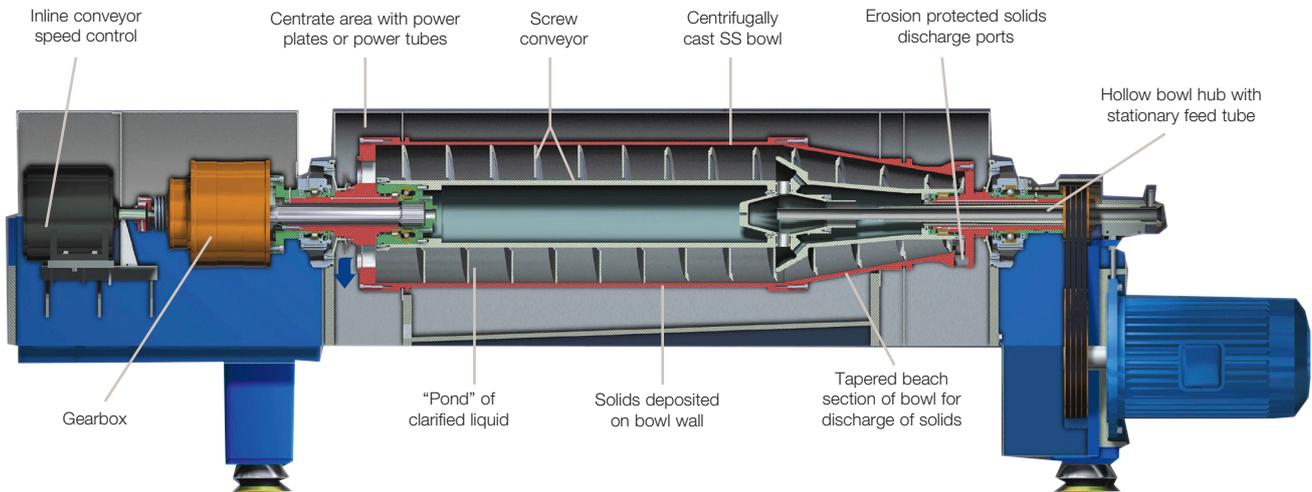
- Major dry-house energy savings
- Fast and easy mechanical and electrical installation and commissioning

Working principle

Separation takes place in a horizontal cylindrical bowl equipped with a screw conveyor. The feed enters the bowl through a stationary inlet tube and is then smoothly accelerated by an inlet rotor. Centrifugal force causes solids to build up on the wall of the bowl.

The conveyor rotates in the same direction as the bowl, but at a lower speed, thus moving the solids towards the conical end of the bowl. The solids leave the bowl through solids- discharge openings in the casing.

Separation takes place throughout the entire length of the cylindrical part of the bowl. The clarified liquid leaves the bowl by flowing over adjustable plate dams in the casing, either a conventional plate or our latest invention the power plates or power tubes.



SG2 decanter design and working principle

Design

Alfa Laval designed the SG2 range of decaners with a focus on performance, energy savings, easy access, reliability and low noise levels. Deep pond design provides high recovery of suspended solids and lower power consumption. Alfa Laval's BD3 feed zone, which gently and evenly distributes the feed inside the bowl, increases the true separation volume by reducing turbulence and thus increases the capacity. In addition, because the speed of the conveyor is less than the speed of the bowl, there is less turbulence in the pond. This is another reason that more suspended solids are recovered as compared to decaners with the opposite configuration.

The rotating assembly is supported on a compact welded box beam frame with main bearings at both ends. The bowl is driven at the conical end by an electric motor using a V-belt transmission.

Tailored for your needs

Alfa Laval SG2 decanter centrifuges can be tailored for specific applications and requirements through a range of unique design options. For example, you can choose:

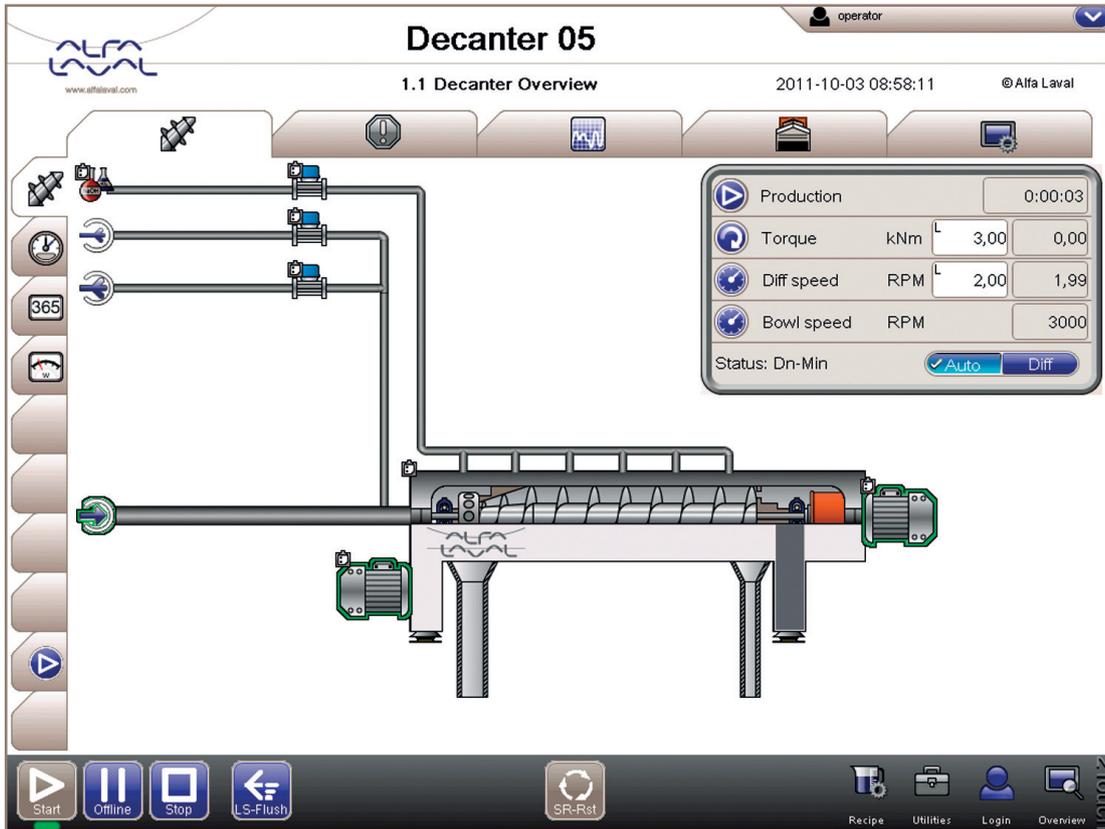
- Enhanced wear and corrosion-protection – options such as tungsten carbide tiles further reduce maintenance costs
- Enhanced control packages – add-on control systems provide additional functionality and varying degrees of automation
- Enhanced serviceability package – an array of features that save time by making both operation and maintenance easier
- 3-phase decanter versions for advanced separation duties
- Tailored feed zones that account for the character of the feed in order to maximize the performance.



Tungsten carbide tiles

Energy-saving direct-drive gearbox

The Alfa Laval Direct Drive (DD) Gear Box saves energy and enables the conveyor to scroll independent of the bowl speed which provides easier start-up and cleaning as well as operation during unforeseen power losses when the DD gearbox combined with our Power Loss Ride Through system allows the conveyor to scroll out the solids at full power and speed during a controlled run down, which leaves a clean bowl for restart.



2 touch panel

2Touch controls add value

Every SG2 decanter centrifuge is equipped with a pre-installed, factory-tested 2Touch control package. The system is designed for SCADA/DCS system integration.

The combination of 2Touch control system and SG2 separation technology ensures that you get the most out of any SG2 installation, while keeping installation, commissioning, operation and maintenance costs to a minimum.

The system monitors temperature and vibration and also features adaptive controls, which allow intelligent and smooth adjustment of the torque and speed of the conveyor.

Additional enhancement packages are available for the 2Touch control package. These include:

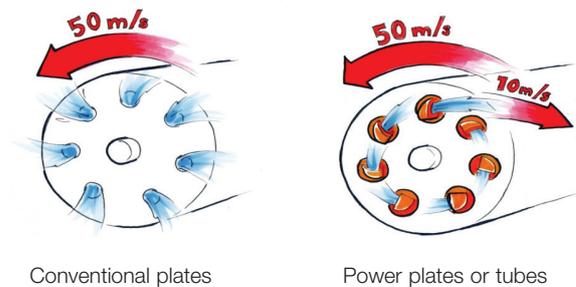
- Automatic cleanout in the event of a brown-out or complete power failure
- Maintenance and training aids, including manuals in PDF format and videos about routine maintenance procedures
- Process module for continual polymer regulation and dosing optimization
- Remote monitoring, response and reporting

Power consumption becomes power reduction

The bowl can be equipped with specially developed power plates or tubes that harness and exploit hydraulic energy to reduce power consumption still further.

Some of the discharge velocity from the centrate is captured and re-directed by these patented power plates in order to contribute to the bowl rotation. This results in a reduction in the velocity of the discharged liquid, which in turn reduces overall power requirements by 15-20%.

Reduced power consumption supports sustainable production and helps you live up to new environmental regulations – such as such as reductions in allowable CO₂ emissions.



Conventional plates

Power plates or tubes

Dimensions

Max. Max.

LIQUID SOLIDS FEED

SG2 100 2150 mm (85 inch)
SG2 200 3216 mm (127 inch)

580 mm (23 inch)
780 mm (31 inch)

Max. Max.

SG2 100 762 mm (30 inch)
SG2 200 1050 mm (41 inch)

Max. Max.

LIQUID SOLIDS FEED

SG2 305 4273 mm (168 inch)
SG2 405 5020 mm (198 inch)

990 mm (39 inch)
1060 mm (42 inch)

Max. Max.

SG2 305 1362 mm (53 inch)
SG2 405 1494 mm (59 inch)

Max. Max.

LIQUID SOLIDS FEED

SG2 500 4935 mm (194 inch)
SG2 600 5935 mm (234 inch)

1370 mm (54 inch)
1300 mm (51 inch)

Max. Max.

SG2 500 1445 mm (57 inch)
SG2 600 1695 mm (67 inch)

Max. Max.

LIQUID SOLIDS FEED

SG2 700 6452 mm (254 inch)
SG2 805 6901 mm (272 inch)

1450 mm (57 inch)
1510 mm (59 inch)

Max. Max.

SG2 700 1791 mm (71 inch)
SG2 805 1862 mm (73 inch)

Technical specifications

Design	Max. weight kg (lbs)	Bowl material	Other product and liquid wetted parts	Typical main drive size kW (HP)	Typical back drive size kW (HP)	Back drive control
SG2-100	375 (825)	AISI 316	AISI 316	7,5-11 (10-15)	3 (4)	CT or VFD
SG2-200	1500 (3300)	AISI 316	AISI 316	11-18,5 (15-25)	7,5 (10)	CT or VFD
SG2-305	2300 (5070)	AISI 316 or Duplex	AISI 316	15-27 (20-50)	5,5-11 (7,5-15)	VFD
SG2-405	3200 (7050)	Duplex	AISI 316	18,5-55 (25,73)	5,5-15 (7,5-20)	VFD
SG2-500	4800 (10580)	Duplex	AISI 316	37-75 (50-100)	7,5-15 (10-20)	VFD
SG2-600	7000 (15430)	Duplex	AISI 316	45-110 (60-148)	7,5-37 (10-50)	VFD
SG2-700	6500 (14330)	Duplex	AISI 316	75-160 (100-215)	15-37 (20-50)	VFD
SG2-805	8600 (18960)	Duplex	AISI 316	110-250 (150-300)	22-37 (30-50)	VFD

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Alfa Laval reserves the right to change specifications without prior notification.

How to contact Alfa Laval

Up-to-date Alfa Laval contact details for all countries are always available on our website at www.alfalaval.com