



DDE 8242 Decanter

HAUS
CENTRIFUGE TECHNOLOGIES

Beyond Expectations

High performance DDE decanters are designed for municipal and industrial waste water treatment plants as well as potable water treatment plants. DDE design is developed to minimize polymer consumption and ensure maximum dryness even with high inlet flow rates. This outstanding result is ensured by optimum torque control at high centrifuge forces. The key advantages of DDE decanters are:

- Excellent separation**
- Maximum dewatering**
- Dual Drive**
- High performance/price ratio**
- Continuous and problem free operation**
- Compact design**
- Mobile solutions**
- Continuous service and spare parts service**
- Up to 200 m³/h capacity**

DDE decanters are robust and durable thanks to its material features. The bowl, conveyor, casing, inlet tube, outlets and other parts in contact with the process media are all made of AISI 304, AISI 316 and duplex stainless steel.

Complete range of DDE decanters features a user friendly, compact design with all wet parts made of wear-resistant materials. DDE decanters provide continuous and trouble-free operation and flexible process control.



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Design

A centrifuge decanter is a separation machine which consists of a cylindrical bowl, a screw conveyor located inside the bowl, a drive group providing the rotation of both the bowl and the conveyor and finally a solid frame which is designed to carry all these components in a compact and robust arrangement.

As the feed enters the bowl through a feed pipe, it is accelerated due to the rotation of the bowl. Centrifugal forces then cause the sedimentation of the solids on the wall of the bowl. These sediments accumulated on the bowl's wall need to be moved towards the conical end of the bowl for further compaction and dewatering. The screw conveyor located at the center of the bowl provides this movement as it rotates in the same direction as the bowl but at a slightly different speed. Thanks to the differential speed, the screw conveyor scrapes off the accumulated solid towards the conical end. This results in formation of a sludge with a high dry solids content and is generally known as the "sludge cake". The water separated from the dry solids is collected via adjustable outlets located at the cylindrical end of the bowl.

Flexibility

Thanks to the Dual Drive design and user friendly PLC interface, DDE decanter allows its users to have a full control over the process and gives many options to adjust the decanter settings.

The DDE decanter centrifuge can be adjusted for maximum performance by:

Varying the bowl speed and providing the necessary G force

Varying the conveyor speed and

Varying the pond depth in the bowl for the best liquid clarity and best dry solid content in the cake

DDE 8242 Decanter *Standard Configuration*

| Property | Description |
|--|---|
| Drive type | Dual drive, squirrel cage induction type motors, WAT, IE1 (Eff2), IP55, B class temp increase, F class insulation, 400V/50Hz/3ph, PTC type thermistor in each winding |
| Frequency inverters | Dual frequency inverters, ABB or equivalent |
| MCC and DCC Panels | Designed for indoor installations. All parts facing outside of the enclosure are made of electrostatic painted carbon steel. Protection class IP54. |
| PLC | SIEMENS SIMATIC ET-200S |
| Touchscreen | SIEMENS 6" KTP600 Color DP |
| Bowl material | Duplex stainless steel 1.4470 |
| Scroll body material | Stainless steel AISI 316 |
| Flights material | Stainless steel AISI 304 |
| Top lid material | Stainless steel AISI 304 |
| Paint system | Epoxy paint (primer 25-35 µm, 2 nd coat 40-60 µm, final coat 40-60 µm) |
| Frame material | Carbon steel St37 |
| Gearbox | SUMITOMO - Cycloidal |
| Scroll type | Ribbon eye (polyvalent) |
| Pond depth adjustment | Sliding weir plates |
| Wear protection – flights | Flame sprayed Tungsten Carbide |
| Wear protection - scroll feed outlets | Flame sprayed Tungsten Carbide |
| Wear protection - bowl discharge outlets | Replaceable hardened cast iron nozzles |
| Bearing temperature sensor | 2 sensors installed on main bearings, EMKO Bayonet type thermocouples |
| Vibration control | Vibration dampeners delivered as a standard 1 sensor installed on the bowl bearing, IFM Efactor800-VKV021 type |
| Lubrication - bearings | Automatic lube oil lubrication device as a standard. |
| Lubrication - gearbox | Manual lubrication (lube oil) |
| Tools / spare parts delivered with the machine | 1 scroll lifting beam 2 bearing roller extractors 1 scroll thrust bearing extractor 2 extractors for motor casing and rotor 1 greasing set, 5 kg 1 set of wrenches 1 grease pump 1 tool box 1 set of belts |



Basic Properties

| | |
|---|-----------------|
| Bowl Diameter (mm) | 820 |
| Nominal Bowl Speed (rpm) | 2500 |
| Maximum Bowl Speed (rpm) | 2600 |
| Max G | 3080 |
| L/D Ratio | 4,06 |
| Scroll Design | Counter Current |
| Max. Diff. Speed (rpm) | 22 |
| Wash water (m ³ /h @ 4 barg) | 60 |
| Wash Duration (min) | 10 |
| Max. Vibr. (mm/s r.m.s.)* | 3 |
| Max. Noise Level (dBA)** | 80 |

DDE 8242 Decanter***

Capacities in Municipal and Industrial Sludge Treatment

Dewatering of Biological Sludge

| | |
|----------------------------------|------------|
| Capacity (m ³ /h)**** | 50 - 200 |
| Nominal DS Load (kg/h) | 900 - 4000 |
| Maximum DS Load (kg/h)**** | 4200 |

Thickening of Surplus Activated Sludge

| | |
|----------------------------------|----------|
| Capacity (m ³ /h)**** | 70 - 250 |
|----------------------------------|----------|

| | Main Drive | Scroll Drive | Gearbox Nominal Torque (kNm) |
|-----------------|-----------------|----------------|------------------------------|
| Configuration 1 | 110 kW - 4 Pole | 55 kW - 4 Pole | 32, 48 |
| Configuration 2 | 132 kW - 4 Pole | 55 kW - 4 Pole | 32, 48 |
| Configuration 3 | 160 kW - 4 Pole | 55 kW - 4 Pole | 32, 48 |

* Measured at the main bearings, under dry factory test.

** The average measurements of 8 diversified points from 1 m distance under dry factory test.

*** DDE 8242 has a conical angle of 10°.

**** Under best possible conditions. Please consult to HAUS before referring to these values.

Optional Items

| Property | Description |
|--|---|
| Scroll Body Material | Duplex stainless steel 1,4470 |
| Flights Material | Duplex stainless steel 1,4470 |
| Wear Protection - Flights | Welded tungsten carbide or ceramic tiles for the complete length of the scroll |
| Wear Protection - Scroll Feed Outlets | Replaceable hardened cast iron nozzles - Ceramic nozzles Sintered tungsten carbide nozzles |
| Wear Protection - Bowl Discharge Outlets | Ceramic nozzles Sintered tungsten carbide nozzles |
| Automatic Lubrication of Bearings | Available upon request |
| Quartz Filling in the Frame | Available upon request |
| ATEX Compliance – Decanter | Available upon request (3 rd party certification possible) |
| ATEX Compliance – MCC & DCC | Available upon request (3 rd party certification possible) |
| Hydraulic Drive | Available upon request |
| IE2 Electric Motors | Available upon request |
| Other Voltage and Frequency | Available upon request |
| Spray System for Cleaning | Available upon request |
| CIP Package | Available upon request |
| Hot Applications Design (>80°C) | Available upon request |

Weights Weight of the Machine: 155 kN Heaviest Components: Base Frame (72 kN), Rotor and Gear (70kN)

