

DDI 3542

Decanter Centrifuge for Industrial Applications



THE PRODUCT The DDI 3542 is a decenter centrifuge: horizontal rotating bowl, 2 and 3-phase configuration, continuous discharging of sludge through scrolling conveyor, dual-drive type, variable differential speed.

THE APPLICATION The DDI 3542 has been designed by HAUS for the general industry demand – chemical, pharma, fats and oil extraction, protein extraction - and for heavy duty applications like mining and oil&gas. The DDI 3542 removes the suspended solids from a liquid mixture to obtain one or two cleaned liquid and/or a sludge as dryer as possible. The DDI 3542 is useful for the extraction and recovery of valuable substances, for the treatment of byproducts and produced water, and for recycling processes.

SPECIAL FEATURES The DDI 3542 is able to separate liquids and solid from mixtures of different composition. It can be used in the primary extraction steps or in the post-treatments, during cold or hot processes.

This is possible thanks to design solutions, like:

- Flexible configuration: available both 2 and 3 phase separation, and multiple material choice of construction, wear protection, motor power, gearbox torque
- High G-force, for maximum separation efficiency
- Liquid Level and Adjustable Pond Depth: to optimize the oil recovery according different product mixture, and to ensure the best possible balance between liquid clarity and solids dryness
- Adjustable Scroll Differential Speed: to handle different solid throughput capacities with required dryness
- Dual Drive: a main motor moving the bowl, and a secondary motor the scroll drive, both driven by Frequency Converter (VFD) and linked by a high torque gearbox without friction clutch
- PLC with Human-Machine Interface (HMI): to set different automatic mode, to adjust the sludge dryness and other operational parameters, to monitor alarms
- High Quality Materials: the rotating parts are made in high grade stainless steel, while the conveyor tips, the feed zone, the solid outlets, the bowl internal surface, are protected with harder material, which can be selected between various options according the product abrasiveness
- Functional Covers: main cover made by double hull stainless steel, with friction assisted hinges for easy opening and bowl inspection and cleaning; two separate smaller casings protecting the driving parts, allowing a separate access for maintenance and inspection purposes
- High Stability Frame, a robust steel structure painted epoxy, with dampers and anchor plates for easy ground fixation

APPLICATIONS

- Animal fats and oil
- Vegetable oil extraction
- Protein extraction
- Oil and gas
- Oil recycling
- Chemical industry
- Pharma
- Starch
- Yeast
- Technical products
- Process water treatment

HIGHLIGHTS

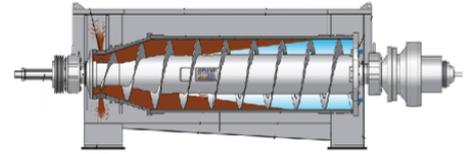
- 2 or 3 phases process
- Hydraulic capacity
- Separation efficiency
- Solid handling
- High Torque
- Abrasive products
- Solid capture
- Oil recovery
- Auto-regulation
- Alarm monitoring
- Waste reduction
- Energy saving
- Easy service

OPERATING PRINCIPLE

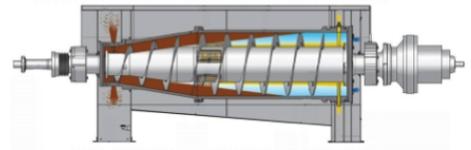
The product mixture is gently fed from the center in to the bowl where it is accelerated. The solids and liquid phases are separated due to the differences in density. The solids (heavier phase) precipitate against the bowl wall and are transported within the bowl towards the conical side via the differential speed of the scroll. The scroll pushes the solids along the cone, obtaining a draining effect. The liquid phase exits the bowl from the cylindrical side. The solids phase exits at the conical side via solids discharge outlets. The differential speed of the scroll defines the solid throughput capacity and the solids dryness while the pond depth (liquid level) defines the liquid clarification level.

In the 3-phase configuration, 2 liquids can be separated, by differentiating the outlets in the cylindrical end. An adjustable outlet pipe length takes the lighter liquid at the inner diameter for clarification.

In the Dual Drive system, the speed of the scroll is determined by the speed of the secondary motor, that supplies also the required power. When the secondary motor is driven by frequency converter, adjusting the differential speed is possible even during operation.



Example of 2-phases bowl configuration



Example of 3-phases bowl configuration



Example of Dual Drive system

STANDARD CONFIGURATION

- Decanter Standalone, 2 phase, Dual Drive
- Main and Secondary Motors for Frequency Converter
- Set of Special Tools and Spare Kit for commissioning
- Operator Manuals

TECHNICAL DATA

Hydraulic Capacity	26.000 L/h
Bowl Diameter - L/D ratio	353 - 4,14
Installed Power kW (main+sec.)	18,5 + 5,5
Optional (main)	22 - 30
Optional (sec.)	7,5
Gearbox Nominal Torque kNm	2,05
Optional	3,15
Weight Total	1.850 kg
Main Dimensions	3.549 x 885, H:1.081

ON REQUEST

- Control Panel Standalone with PLC and HMI, and VFD for main and secondary motors
- Flow Control Accessories (pumps, valves, probes)
- CIP system

MAIN MATERIALS

Bowl Body:	Duplex EN1.4470
Bowl internal protection	AISI 316 Ti Liners
Frame	Steel structure, epoxy painted
Conveyor	AISI 304
optional	AISI316, AISI316L, duplex EN1.4470
Conveyor tip protection	Flame Sprayed TC*
optional	Replaceable Sintered TC Tiles
Conveyor Feed Zone	Flame Sprayed TC
optional	Replaceable Sintered TC plate Replaceable Polyurethane plate
Sludge Outlet Ports	Replaceable Bushings in Hardened Cast Iron
optional	Replaceable Sintered TC bushings

* TC = Tungsten Carbide

