

## DDI 4743

### Decanter Centrifuge for Industrial Applications



#### THE PRODUCT

DDI4743 is a decanter centrifuge: horizontal rotating bowl, 2 and 3-phase configuration, continuous discharging of sludge through scrolling conveyor, dual-drive type, variable differential speed.

#### THE APPLICATION

DDI4743 has been designed by HAUS for the general industry demand – chemical, pharma, fats and oil extraction, protein extraction - and for heavy duty application like mining and oil&gas.

DDI4743 main duty is the separation of a liquid mixture from its solid content, to obtain one or two cleaned liquid and/or a sludge as dryer as possible.

DDI4743 is useful in the production of valuable substances, in the byproduct and produced water treatment, and in the recycling process.

#### SPECIAL FEATURES

DDI4743 is able to separate and clean liquid mixture of different composition and solid content, less or more abrasive, in first extraction or following other treatment, during cold or hot process.

This is possible thanks to design solutions, like:

- Flexible configuration: available both 2 and 3 phase separation, and multiple choice of material of construction, wear protection, motor power, gearbox torque
- High G-force, High Capacity Bowl: a cylinder bowl of longer length rotating at high speed
- Liquid Level and Pond Depth Regulation: to optimize the oil recovery according different product mixture, and to work with positive, neutral, or negative hydraulic pressure
- Variable Solid Conveying Speed: to handle different solid quantity with desired dryness
- Dual Drive: a main motor moving the bowl, and a secondary motor moving the conveyor, 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.
- 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 casing made by double layer of stainless steel, with friction assisted hinges for easy opening and bowl inspection and cleaning; two separate smaller casings protecting the driving parts, allowing a dedicated access for maintenance and inspection
- High Stability Basement, a robust steel structure painted epoxy, with dumpers and anchor plates for easy ground installation

#### 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

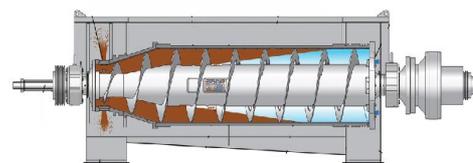
## OPERATING PRINCIPLES

The product mixture is introduced from the center in to the bowl, where it is put on rotation. The centrifugal force let the solid and liquids being separated according to the density differences. The heaviest solid accumulates to the bowl periphery, and it is driven by the conveyor towards the conical end. The conveyor pushes the solid to exit at a smaller radius, obtaining a draining effect. The liquid fill the bowl below the solid, and exit at the cylindrical end, where outlet ports of proper radius (liquid level) are mounted. The relative speed of the conveyor defines the solid scrolling capacity and the solid dryness, while the radius of the liquid outlets defines the liquid purification degree.

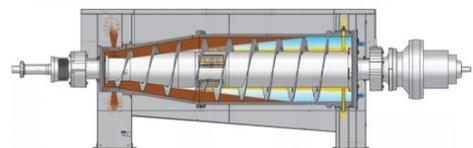
In the 3-phase configuration, 2 liquids can be further separated, by differentiating the outlets in the cylindrical end.

An outlet pipe of adjustable length takes the liquid at the inner diameter, where is the lighter liquid, which therefore exits purified

In the Dual Drive system, the speed of the conveyor is determined by the speed of the secondary motor, that supply also the additional power. When the secondary motor is driven by frequency converter, setting of such a speed and its variation is possible and easy even during running



Example of 2-phases bowl configuration



Example of 3-phases bowl configuration



Example of Dual Drive system

## STANDART 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

## OPTIONALS

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

## TECHNICAL DATA

Bowl Diameter - L/D ratio	470 - 4,25
Installed Power kW (main+sec.)	37 + 15
Optional (main)	45
Gearbox Nominal Torque kNm	5.0
Optional	7.96
Weight Total (kg)	4.200
Main Dimensions (mm)	4.700 x 1.120 x 1.370

## MAIN MATERIALS

Bowl Body	Duplex EN1.4470
Optional	Super duplex EN1.4410
Bowl Internal Protection	AISI 316 Ti Liners
optional	Super duplex EN 1.4410
Frame	Steel structure, epoxy painted
Scroll Body	AISI 304
Optional	AISI316L, Duplex EN 1.4470 Super duplex EN1.4410
Scroll Flights	AISI 304
Optional	AISI316, Duplex EN 1.4470 Super duplex EN1.4410
Scroll Flight Protection	Flame Sprayed TC*
Optional 1	Sintered TC Tiles
Optional 2	Sintered TC Tiles Until Solid Outlet
Scroll Feed Zone Protection	TC Coated Plate
Optional 1	Replaceable Sintered TC
Optional 2	Complete Replaceable Polyurethane
Optional 3	Sintered TC Tiles Coated Plate
Bowl Solids Outlet Protection	Replaceable Bushing in Hardened Cast Iron
Optional 1	Sintered TC Bush

\* TC = Tungsten Carbide

