HAUS DDI 4042

Decanter centrifuge for industrial applications

HAUS DDI 4042 decanter centrifuge, supplied and supported in North America by Archer Separation Inc.



400 mm
Bowl diameter

4,000 rpm
Maximum bowl speed

30 + 11 kW
Main + back-drive motor, standard

3,555 g
G-force

2,700 kg
Total weight

OVERVIEW

The DDI 4042 is a decanter centrifuge for industrial use: a horizontal bowl turning at high speed, a scroll that discharges the separated solids continuously, and a dual drive that sets the differential speed. Two-phase or three-phase version.

HAUS designed it for general industry (chemicals, pharmaceuticals, fat, oil and protein extraction) and for heavy duties such as mining and oil and gas: to separate a liquid mixture from its solids, giving one or two clarified liquids and solids as dry as possible.

HOW IT WORKS

The feed enters the centre of the bowl through the feed tube and is brought up to speed. The solids settle against the bowl wall and the scroll carries them to the conical end and out through the solids ports; the liquid leaves at the cylindrical end. The differential speed sets the solids conveying capacity and the cake dryness; the pond depth sets the clarity of the liquid.

In three-phase operation the two liquids leave separately; an adjustable outlet tube takes the lighter liquid. The back-drive motor, on its own drive, sets the scroll speed while the machine runs.

STANDARD SUPPLY FROM HAUS

- Decanter, stand-alone, two-phase, dual drive
- Motors for variable frequency drive operation
- Set of tools
- Operator manuals

APPLICATIONS

- Animal fats and oils
- Vegetable oil extraction
- Protein extraction
- Oil and gas; oil recovery
- Chemical industry
- Pharmaceuticals
- Starch and yeast
- Technical products
- Process water treatment

KEY FEATURES

- Flexible configuration: two or three phases; choice of materials, wear protection, motor power and gearbox torque.
- High G-force and high capacity from a long bowl turning at high speed.
- Adjustable liquid level and pond depth for positive, neutral or negative hydraulic operation.
- Variable solids conveying speed, to suit the solids load and the dryness wanted.
- Dual drive: a main motor on the bowl and a back-drive motor on the scroll, each on a variable frequency drive, joined by a gearbox without a friction clutch.
- PLC with operator panel (HMI): automatic modes, dryness and process settings, alarms.
- Stainless steel rotating parts; flight tips, feed zone, solids ports and bowl wall protected by harder materials to suit the abrasiveness of the product.
- Double-wall stainless steel casing on hinges, separate drive guards, epoxy-painted base frame on dampers.

TECHNICAL DATA

Configuration	Two-phase, dual drive, variable differential speed; three-phase version DDI 4043
Bowl diameter	400 mm
L/D ratio	4.00
Maximum bowl speed	4,000 rpm
G-force	3,555 g
Main drive motor	30 kW
Back-drive motor	11 kW standard; 15 kW optional
Gearbox	Cycloidal or planetary, 3.15 kN·m nominal torque; 5 kN·m optional
Electrical supply	480 V or 600 V, 3-phase, 60 Hz, to suit the site
Noise level	LAeq ≤ 85 dB(A)
Total weight	2,700 kg; rotating assembly 750 kg
Dimensions L × W × H	3,848 × 1,000 × 1,114 mm (standard motors)
Clearance to lift the bowl	2,200 mm minimum
Feed inlet	Ø51 mm tube (DIN 11850) or DN 40 union (DIN 11851)
Polymer inlet; wash water	G 3/4 (ISO 228); 3/4 coupling (ISO 228)

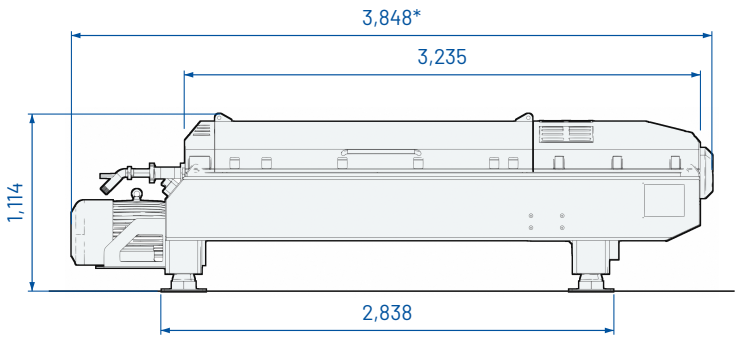
MATERIALS OF CONSTRUCTION

Bowl	Duplex stainless steel; super duplex optional; lean duplex for specific processes
Bowl wear liners	AISI 316Ti strips; super duplex optional
Scroll body and flights	AISI 304; AISI 316L, duplex or super duplex optional
Flight and feed zone protection	Selected to suit the process
Solids discharge ports	Replaceable ceramic bushings; sintered tungsten carbide optional
Casing	Double-wall stainless steel
Frame	ST 37 carbon steel, epoxy painted

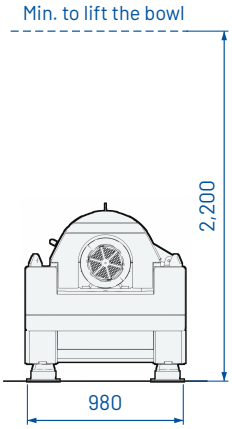
NORTH AMERICAN PACKAGE

- Main and back-drive motors supplied for the site voltage, 480 V or 600 V, 3-phase, 60 Hz.
- Control panel offered with a CSA or cUL label.
- Panel and field enclosures rated to NEMA / EEMAC types to suit the installation.
- Installation supervision, start-up, operator training, parts and service from Archer, Port Coquitlam, BC.

MAIN DIMENSIONS (MM)



SIDE VIEW



END VIEW

* Varies with the motor option.

2,838 × 980: outer edges of the mounting plates for floor anchorage.

2,200: minimum clear height above the floor to lift out the bowl.

Main dimensions from the HAUS dimension drawing; use that drawing for installation. All connections to the machine must be flexible.

OPTIONS SUPPLIED BY ARCHER

- Control panel with PLC, operator panel (HMI) and variable frequency drives for both motors.
- Feed pump, valves, flowmeters and process instruments.
- Clean-in-place (CIP) system.
- Solids discharge chute or conveyor and liquid outlet tank.
- Flexible connections for the feed, liquid and solids.
- Automatic bearing lubrication.
- Remote monitoring of the machine and its process data.

HAUS gives no general capacity figure for this machine: throughput depends on the product. Archer confirms it for each project from tests on the product.