

Technical Specification DecaPress DP573 with SEE-Drive

■ Description

The Decanting centrifuge with scroll comprises of the rotating bowl, consisting of a feed pipe, a cylindrical section where the separation of the suspension takes place and a conical section where the scroll removes the dewatered sludge, the housing enclosing the rotor, the base frame bearing rotor and housing, and the bowl and scroll drive systems.

■ Application

High dewatering of sludge. The continuous separation of a solid-liquid suspension in which the specific gravity of the liquid is less than the specific gravity of the solid is accomplished using high bowl speeds and low scroll differential speeds at high scroll torques.

■ Operating principle

The feed suspension enters the rotating feed compartment through the feed pipe. There it is accelerated in the direction of rotation and enters the rotating bowl via the feed ports in the scroll hub. The solid particles move towards the bowl wall of the cylindrical section under the effect of the centrifugal forces.

The settled solids are moved by the scroll to and through the conical section, at the end of which they are discharged through the discharge ports of the bowl as dewatered solids („cake“). The liquid effluent is discharged from the bowl over adjustable weir plates at the feed end.

The difference between bowl speed and scroll speed is defined as differential speed.

■ Bearing

The rotating bowl is supported by the main bearings, mounted in pillow blocks. Both pillow blocks are bolted and pinned to the base frame. The base frame is flexibly mounted on hollow rubber buffers.

■ Lubrication

Lubrication of the main bearings and the scroll bearing is by grease lubrication.

Subject to technical modifications without prior notice!

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Machine data

Inside bowl diameter	570 mm
Bowl length	2145 mm
Max. bowl speed	3250 rpm
Acceleration	3345 x g
Ratio of bowl length to diameter	3,7
Equivalent clarification area	9050 m ²
G-volume (cyl.)	837 m ³

Length	4072 mm
Width	1510 mm
Height	1065 mm
Weight of the machine without quartz sand filling	52,5 kN

Standard Materials

Parts in contact with process-product	Stainless steel version
Bowl material	Duplex steel
Scroll material	1.4404 / 1.4408 / Duplex steel
Housing material	1.4404
Parts not in contact with process-product	Carbon steel, cast steel
Bolts in contact with process-product (if mechanically possible from the static) are in stainless steel (A4-80); special materials in consultation.	

Wear protection

Part	Standard
Scroll	Feed chamber
	Flight face
	Feed ports
Bowl	Solids discharge ports

Seals

Scroll bearing	Radial shaft seal
Main bearings	Labyrinth- and lamellar rings
Housing	Vapour-proof

Paint finish

Application	Type	Tint	Min.dry-coat thickness
Priming	Two-component metal-prime on the basis of epoxy resin with active protection against corrosion	dull grey	40 µm
Top coat	Two-component polyurethan-structure varnish half-shiny, structure medium	RAL 7015	60-80 µm

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■ Bowl drive

The centrifuge bowl is driven by an electric motor with a system-installed frequency converter (variable bowl speed).

Electric motor data	
Output	45kW
Rotation speed	1500rpm
Voltage	400/690 V (50Hz)
Type	225 S
Design	B5
Type of protection	IP55

■ Scroll drive

The differential speed between bowl and scroll is generated by the HILLER SEE-Drive. The SEE-HILLER Drive bases on bowl speed independent generation of the differential speed. It consists of two electric motors and a gearbox.

Gearbox data	
Type	VVE2 1500/4
Gear ratio	179
Differential speed	1-15 rpm
Torque	15.000 Nm

Electric motor data	
Output	15 kW
Rotation speed	1500 rpm
Voltage	400/690 V (50Hz)
Type	160 MLAMLA
Design	B5
Type of protection	IP55

HILLER SEE-Control system

- Switchable local operating mode for operation on the device and remote operation mode
Operation via the terminal strip (master PLC)
- Simple operation with plain text display: multiple languages selectable
- Complete process visualization of the centrifuge (bowl speed, drive load, differential speed)
- Ability to enter the bowl speed, differential speed, control parameters, etc.
- Torque dependent regulation of the differential speed
- Generation of a clearing speed below a preselectable bowl speed
- Manual operation mode with manually preselectable differential speed
- Generation of 4 parameter sets for different products
- Trend analysis of the drum speed, differential speed, bearing temperature, vibration, drive power
- Online fault diagnosis with plain-text error log
- Password protection of the operating data
- Digital and analog in- and outputs for the comprehensive operation of the device by a master PLC via the terminal strip

