

Tecnical Specification DecaFood DF66-362S

with HILLER-Hydraulic and centripetal pump mechanism

■ **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**

Contiunous food-fair separation of two-phase mixtures. The high rotational speeds accelerate the separation of a solid-liquid suspension where the specific density of the liquid is less than the specific density of the solid.

■ **Operating principle**

The feed suspension is pumped into the rotating feed chamber in the scroll via a feed pipe. The suspension is accelerated in that chamber in the direction of rotation and enters the rotating bowl via feed parts in the scroll hub.

The solid particles move towards the bowl wall of the cylindrical section and settle there under the effect of the centrifugal force. The settled solids are moved towards the outlet parts of the bowl via the conical section by means of the internal scroll.

The liquid phase is extracted with a centripetal pump with adjustable draw-off level. As the centripetal pump works like a pump, the liquid flows off under pressure. The adjustment of the centripetal pump's extraction level can take place during operation of the centrifuge.

■ **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	660 mm	Length	4100 mm
Bowl length	2376 mm	Width	1945 mm
Max. bowl speed	2860 rpm	Height	1520 mm
Acceleration	3000 x g	Weight of the machine	78.0 kN
Ratio of bowl length to diameter	3.6	Weight of the machine without quartz sand filling	65.5 kN

Standard Materials

Parts in contact with process-product	Stainless steel version (with alternatives)
Bowl material	1.4462 / 1.4408
Scroll material	1.4408 / 1.4301
Centripetal pump mechanism	1.4571
Housing material	1.4301
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).	

Wear protection

Part		Standard	Special (examples only)
Scroll	Feed chamber	Tungsten carbide flame-sprayed	–
	Flight face		Replaceable tiles with sintered tungsten carbide, ceramic or silicon carbide
	Feed ports	Tungsten carbide flame-sprayed	Replaceable ceramic or silicon carbide bushings.
Bowl	Solids discharge ports		

Seals

Scroll bearing	Radial shaft seal
Main bearings	Labyrinth seal
Housing	Labyrinth seal

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, food-fair	RAL 1013 perl-white	60-80 µm

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■ Bowl drive

The bowl is driven by means of an electric motor via V-belts, in combination with a frequency converter (by others) for start-up and bowl speed adjustment.

Bowl drive motor	
Output	75 (90) kW
Rotation speed	3000 rpm
Voltage	400/690 V (50 Hz)
Type	280S (280M)
Design	B3
Type of protection	IP55

■ Scroll drive

The hydraulic drive creates a differential speed between the bowl and the scroll. The hydraulic motor is mounted inside the bowl and the drive shaft of the hydraulic motor is connected to the scroll. The hydraulic motor is powered by a hydraulic pump unit. The hydraulic pump unit is typically located close to the centrifuge.

Continuous control of the hydraulic pump pressure enables instantaneous, step-less torque adjustments to maintain the differential speed, independent of the bowl speed. The variations in the feed properties can be compensated and optimal centrifuge performance is maintained.

Hydraulic pump unit			
Type	PAR 30067	Pump unit electric motor	
Control system	HMR 5000	Output	30 kW
Feed Pump	Variable axial piston pump	Rotation speed	1500 rpm
Flow rate	67 ltr/min	Voltage	400/690 V (50 Hz)
Hydraulic pressure	300 bars	Type	200L
Max. permanent pressure	250 bars	Design	B5
Tank volume	140 ltr	Type of Protection	IP55
Cooling water throughput	100-500 ltr/h (at max. 20°C)		
Weight (without oil)	460 kg		
Dimensions (H x L x W)	1450x900x630 mm		

■ Control system HMR 5000

- Real control system with set point-actual value comparison.
- Individually programmable pressure-dependent control characteristic in two parameter sets.
- Permanent display in a graphics-touch panel of all important process values such as bowl speed, differential speed, hydraulic pressure, oil temperature.
- 2 programmable limit values for hydraulic pressure.
- Trend analyses over differential speed hydraulic pressure and oil temperature are retrievable.