



IC45-AV Vertical Clean Centrifuge



Solid/Liquid High G Force Centrifuge
Separating Difficult Solids

IC45-AV Vertical Clean High Performance Solid/Liquid Centrifuge Model



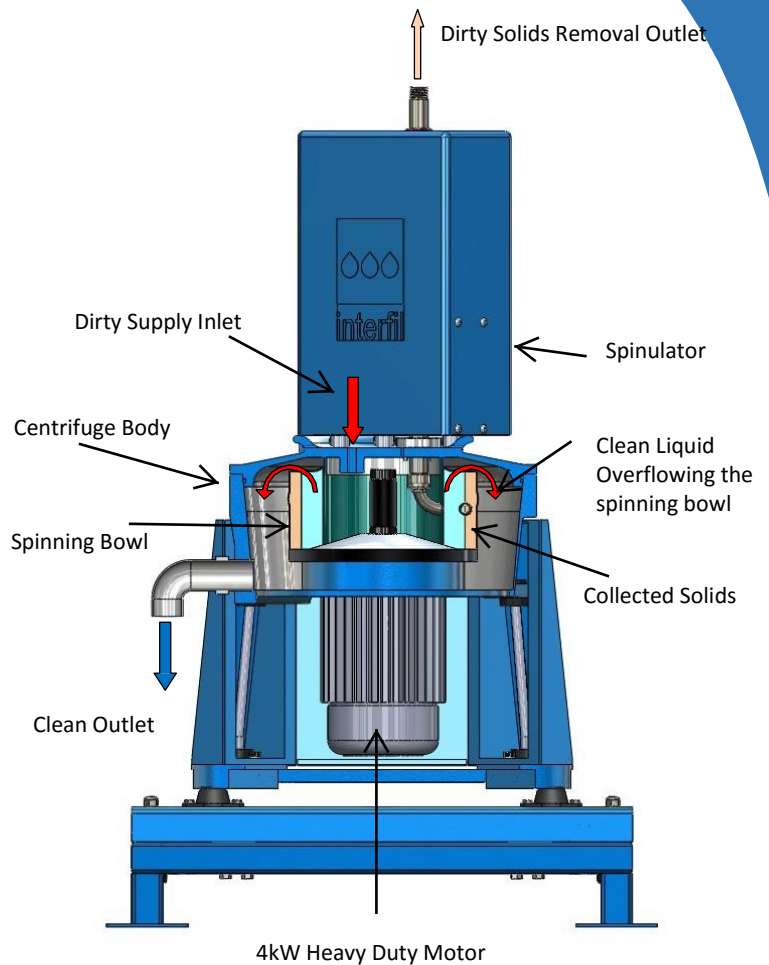
The Interfil IC45-AV is high speed Centrifuge suitable for any type of solid and liquid separation. This system has the ability to remove any type of solid from the bowl for auto extraction and continuous feed operation. Ideal for Waste Water Streams WWTP such as Food Processing applications, Horizontal Directional Drilling HDD for removal of Clay, Sand and Quartz and other unwanted contaminants, Non-Destruction Digging, Ceramics, Potato Starch, Wash Down Bays, Metal Processing and many other industrial processes. The IC45-AV is ideal as a stand-alone system or can be included to compliment an existing system. It is also suitable as a mobile unit due to its light weight and low power consumption.

The system is offered as a turn-key system, requiring only electrical connection and plumbing to and from the Centrifuge. The capability to Remote Start or utilising the system Stand-by Function of high/ low tank level detection makes the system operator free. System Fault Monitoring via PLC and B2B Alert System allows for minimal maintenance along with quick release componentry for replacement parts.

IC45-AV Vertical Clean High-performance Solid/ Liquid Centrifuge Model

BENEFITS OF THE INTERFIL IC45-AV

- Choice of Manual and Fully Automated Self Cleaning
- Compact Design
- One Pass Separation with Flow Rate 0-4800Lph
- High Speed Precision Balanced For Greater Separation
- Super Quiet Operation
- No Wearable Parts
- Automatic Solid Removal
- 304 Stainless Steel Heavy Duty Bowl (6Ltr Liquid Holding Capacity and 3Ltr Solid Holding Capacity)
- 4 Point Vibration Isolation Points
- Quick and Easy Removal of the Bowl
- High G Force 3000G at 3900rpm
- Removable Tungsten Carbide Cleaning Tip and Tube
- Single Phase and 3 Phase Power options suitable to specific Country requirements.
- Vibration Detection
- PLC and Touch Screen Control



ABOUT THE IC45-AV CENTRIFUGE

High G force of 3000 Gravities and a processing rate of 4800 Litres per hour allows for optimum separation. The rotating stainless steel bowl is dynamically balanced at 4000rpm for extra smooth operation and direct driven by a heavy duty three phase induction motor with extra duty bearings and heavy sectioned locating flange and housing. The precision spinning bowl is encased by a heavy machined cast aluminium lid and bucket, with powder coating for standard applications and optional chemical resistant and FDA approved coatings for specific applications.

The IC45-AV is supplied on its own support stand with four anchoring points for secure location to the ground or a pallet/trolley for mobility around the plant. The system design incorporates four point dampeners for vibration isolation with vibration detection control in the event of an out of balance state.

The automatic removal of solids is activated by means of the four load cells for weight detection for automatic solid extraction. For lighter weighted solids where there is not enough differentiation between the liquid and solid a backup timer is included for activating the auto clean function.

An in-line flow meter detects and records the total volume processed per day and total volume from commencement for measuring overall performance.

Optional Extras include the addition of VSD Control for the Supply Pump, Flow Metering Control, PLC plus HMI Touch Screen Control, B2B Monitoring for Fault Alert, Vibration Sensor and pH Dosing and

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OPERATION

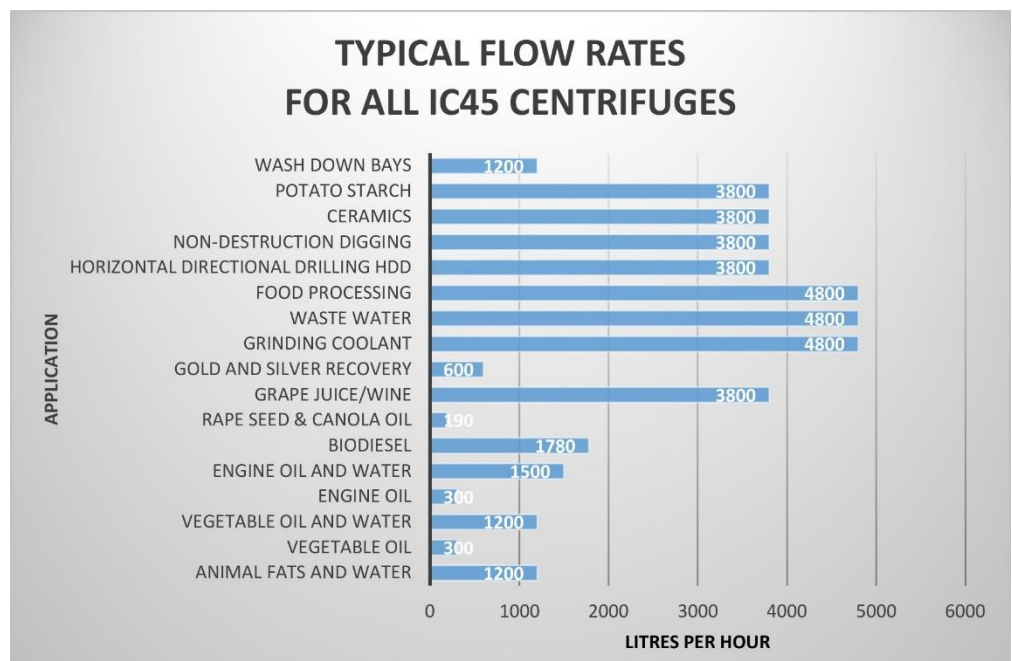
The Interfil IC45-AV Centrifuge works with the use of centrifugal force, allowing separation of any solid particles from liquid. The centrifugal force has a maximum 3,000 gravities. The separation of solids is greatly improved when the liquid is exposed longer to the centrifugal force. This can be achieved by simply slowing the supply rate to the centrifuge. Extended retention time enables improved clarity and cleanliness in the end product.

The liquid is fed through a 1/2" bsp inlet connection in the lid of the centrifuge, entering directly into the high speed rotating bowl where the centrifugal force then throws the solids out of the liquid and to the inner peripheral wall of the bowl. The solid content then becomes compacted as a sludge mixture, and the clean liquid then flows up the centre of the bowl and discharges by gravity through a 2" bsp outlet at the bottom of the centrifuge. The solids left in the bowl accumulate and weigh down the load cell sensors and activates the automatic cleaning device. The cleaning device takes a partial skim of the retained solids and then on its return pass removes the final layer of solids and returns to its starting position. The flow to the centrifuge does not stop during the self-cleaning operation assisting with the removal of the solids through the 3/4" bsp tube and into the solids collection bin. Eliminating the need for additional pumps.

INDICATIVE FLOW RATES

There are several factors that are considered when determining the flow rate through the centrifuge, these include:

- Viscosity of the liquid (can be changed by increasing or decreasing the temperature)
- The percentage of solids present in the liquid- ppm- (Recommend less than 5% solids to liquid)
Particle size um
- Difference in specific gravity with the solid and liquids sg.
- If the liquid Sinks or Floats - Bowl and Centrifuge Selection



IC45-AV Centrifuge Data Sheet

IC45-AV High-performance

Solid / Liquid Centrifuge model – **Vertical Clean**



General Information

Typical application	Solids and Water (Non-Gelatinous Solids)
Max. Design temp.	80 Degrees Celsius
Centrifugal G-Force	3000G @ 3900 rpm
Dry Weight	200kg
Casing - Material of Construction	Heavy Duty Cast Alloy
Inlet Size – Pumped or Gravity Feed	½” BSP Female Thread
Outlet Size – Gravity Flow Only	2” BSP Female Thread
Solid Discharge Port Size – Under Pressure	¾” BSP Male Thread

Typical Properties

Hydraulic Capacity	4800 Litres per Hour
Recommended Flow Rate	3600 Litres per Hour
Solid Removal Capacity (1200kg/m3)	180 Litres per Hour
Removal Efficiency @ 5um	99%

Bowl Assembly

Effective Bowl Diameter	300mm
Effective Bowl Length	150mm
Bowl Material	Heavy Duty 304 Stainless Steel
Dynamic Precision Balance	4000rpm

Automatic Self Discharge- Solids

Solid Discharge Tube Material	316 Stainless Steel
Solid Discharge Tube Wear Protection	Full Tungsten Carbide
Cleaning Device Actuation	Vertical and Horizontal
Pneumatic Air Pressure Requirements	80 PSI (550Kpa)
Solid Discharge Port Size	¾" BSP Male Thread

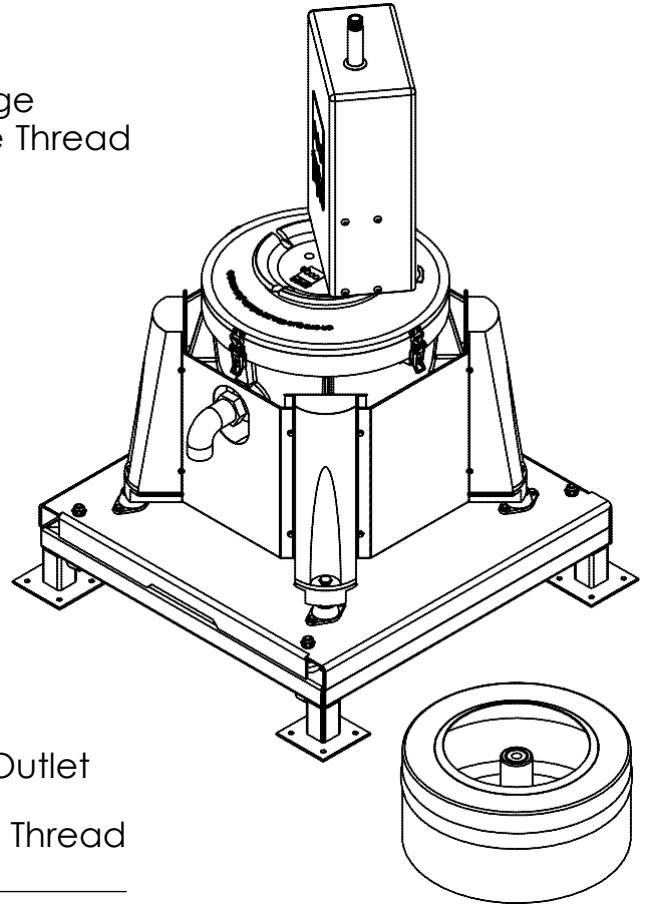
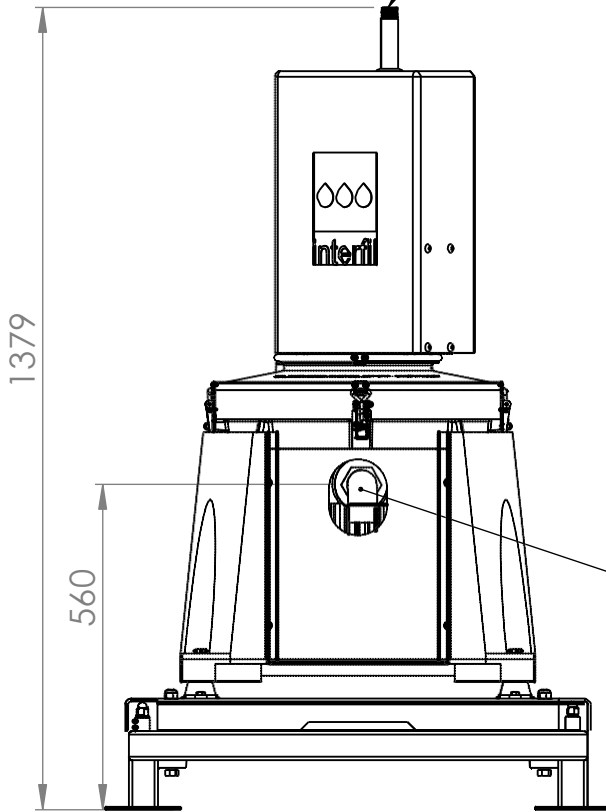
Control Equipment

Electrical Cabinet	IP65 Enclosure
Electrical Requirements	3 phase 480V / 60Hz - 415V / 50Hz 30amps
Control Wiring	24Vdc
Load Detection	4 x 250Kg Load Cells Shear Beam
HMI Touch Screen	5.6" Touch Screen - Omron
Speed Control	Allen Bradley VSD - 4Kw
Feed Pump Control	Contact/Overload for 1.5Kw Supply Pump
Feed Pump Float Control	Heavy Duty Industrial Float
Vibration Detection	VBS Vibration Switch 0 – 50mm/s
PLC Control	Omron PLC with Ethernet
Modem – Back to Base Monitoring	Sierra Modem with 3G/ 4G Data Card
Safety – E-Stop & Lid Tampering Protection	Allen Bradley Cat 2 Safety Relay and E-Stop

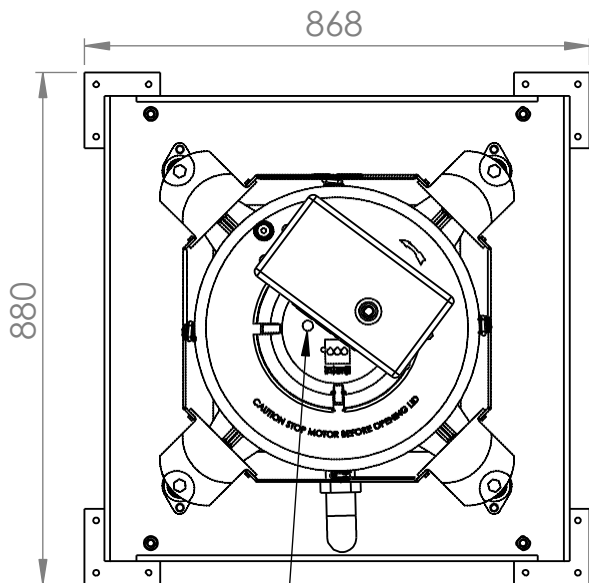
Drives

Main Motor Size	4Kw 2 Pole Induction Motor
Main Motor Data	3 phase 415V - 480V 50Hz / 60Hz
Drive Shaft	#4 Morse Taper 304 Stainless Steel
Motor Bearings	Drive - 6308ZZC3 / Non Drive – 6306ZZC3

Solid Discharge
3/4" BSP Male Thread



Clean Outlet
2" BSP
Female Thread



1/2" BSP
Female Thread
Dirty Feed Inlet

TITLE:

INTERFIL IC45-AV VERTICAL CLEAN

Patent Pending 2011221342

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