

Inverting Filter Centrifuge *HT/GMP model*



High Recovery Solid/Liquid Separation in a Single Environment
Fine chemicals – Active Pharmaceutical Ingredients (API)



Advantages of the Inverting Filter Centrifuge

1. **GENTLE** – Solids discharge is performed by inverting the filter cloth and spinning the product off centrifugally. No discharge blade means that delicate crystals and macromolecules can be recovered without breakage.
2. **HIGH YIELD – LOW RESIDUAL** – High yield is achieved because the solids are discharged immediately by the inversion of the spinning filter and high centrifugal force. Because solids are discharged without the use of a blade or blowback, ultra-thin cake can be processed efficiently.
3. **IMPROVED CIP & VALIDATION** – There are three (3) moving parts (filter, basket insert and basket) inside the Inverting Filter Centrifuge. Crevices, seals and the additional surface area associated with the discharge blade, feed pipe, wash pipe and cake measure are eliminated.
4. **DRYING CAPABILITY** – Removal of bound moisture is achieved by dry or heated gas at up to 6 barg differential pressure across the cake. (**HYPERBARIC CENTRIFUGATION SYSTEM – HCS**)

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Centrifuge technology since 1920

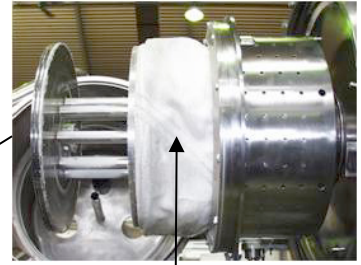
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Inverting Filter Centrifuge Design & Specifications



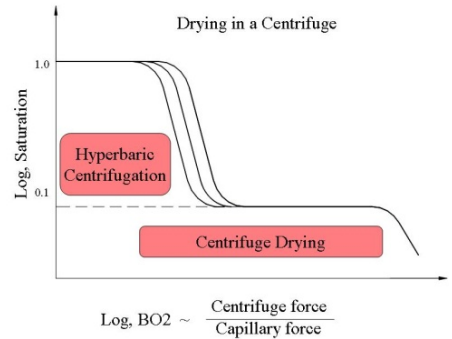
Electro/mechanical filter cloth inversion system



Inverted filter cloth



Fully inspectable process chamber



DESIGN FEATURES

- batch capacity from 7 l to 210 l
- high filtering capability with force of 1018 to 1663 gravities
- horizontal basket design ensures uniform load
- polypropylene or PTFE filter cloth
- outer housing is gas tight to 400 mm H₂O
- inertia pad with dampers allows installation directly on floor
- through-the wall installation
- shafts and bearings serviceable from the back side leaves the process area free from contamination
- electro/mechanical filter cloth inversion; bearings grease lubricated (oil free execution)
- all process surfaces can be visually inspected
- clean in place design
- available in 316L stainless steel, Hastelloy & other exotic alloys
- all grades of surface finish available

CONTROL OPTIONS

- complete PLC controls with touch screen interface
- switch between automatic and manual operation
- variable frequency drive (VFD) speed control
- ATEX electrical enclosures
- optional instrumentation integrated into the control system including oxygen monitoring, temperature, pressure, liquid feed flow, N₂ purge flow and effluent particle clarity



AFTER-MARKET SUPPORT

- field service & technical support available 24/7
- mechanical and electrical parts
- process control and maintenance manuals
- certifications and construction documentation
- mechanical and electrical upgrades



| Centrifuge Model HT/GMP | Units | 300/110 | 470/180 | 600/225 | 700/225 | 800/350 | 900/350 | 1000/430 |
|-------------------------|--------------------|---------|---------|---------|---------|---------|---------|----------|
| Basket diameter | mm | 300 | 470 | 600 | 700 | 800 | 900 | 1000 |
| Basket length | mm | 110 | 180 | 225 | 225 | 350 | 350 | 430 |
| Filtering surface | m ² | 0.1 | 0.27 | 0.45 | 0.52 | 0.90 | 1 | 1.35 |
| Cake volume | dm ³ | 7 | 27 | 52 | 65 | 122 | 145 | 210 |
| Slurry density | kg/dm ³ | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 |
| Maximum basket load | kg | 9 | 34 | 65 | 81 | 152 | 181 | 262 |
| Maximum basket speed | RPM | 3150 | 2300 | 2000 | 1850 | 1600 | 1500 | 1350 |
| G-factor xg | G | 1663 | 1390 | 1340 | 1338 | 1144 | 1131 | 1018 |
| Centrifuge weight | kg | 1400 | 3000 | 4000 | 4600 | 7500 | 7900 | 9400 |