

R★EVOLVE™
TILTING PFD



1 | **R★EVOLVE™** TILTING Pressure Filter Dryer





All the demanding requirements of sterile processes have been met by the innovative and revolutionary OMCA'S R-EVOLVE™ TILTING PFD machine, which stands at the cutting edge of pressure filter drying technology.

This pressure filter dryer system represents a combination of technologies that allow the same machine to fulfill the following process steps:

- Feeding / Filtration
- Drying
- Cleaning CIP
- Inerting
- Plug valve product discharge
- Sanitation / Sterilization SIP

This revolving machine has been specially developed by OMCA to achieve outstanding performances and to solve successfully, most of the intrinsic problems of traditional pressure filter dryers.

Thanks to its revolutionary design, the machine has the possibility of virtually discharging the totality of the product, a rather important feature when using expensive product, and benefits from a 100% heating surface of the shell that allows for faster and uniform drying.

The clever configuration of the rotating blades allows for an efficient, but rather smooth, handling of the product avoiding all the mechanical stresses that in a standard configuration can, sometimes, damage the product crystals.

The machine can operate in full vacuum and pressure conditions. The mixer is designed for clockwise and anti-clockwise adjustable speed rotation as well as axial movement.

It features a special mechanical seal and shaft passage protected by PTFE bellows and a filter septum complete with a sintered filtering grid supported by a jacket heated flat plate, which is designed to favor easy draining and cleaning. The filter plate has FDA elastomer sealing gaskets. A wide selection of multi layers sintered filter discs and filter plates are available to suit all process requirements.

Thanks to the R-EVOLVE™ TILTING PFD unique machine's configuration, perfect cleaning and sanitation can be performed. There is no need for a dust filter thus simplifying the machine itself and reducing downtime and maintenance costs.

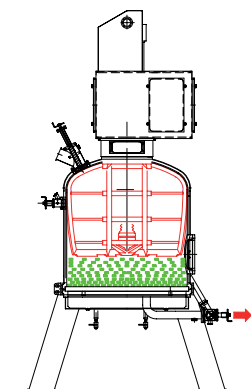
A clever bottom flat head opening system allows for efficient and fast cleaning at every production campaign change.

The machine is fully electrically driven. There are no hydraulics, which means reduction of downtime and maintenance costs and elimination of any risk of contamination by oil leakages.

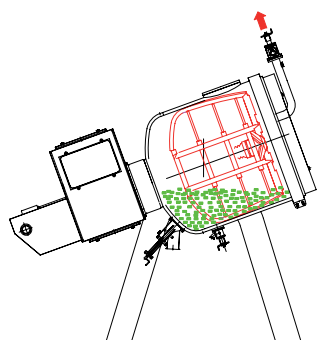
The R-EVOLVE™ TILTING PFD represents the ultimate solution for any kind of process, and it excels when working in the most demanding Sterile conditions.

Like all OMCA's machines, the R-EVOLVE™ TILTING PFD is manufactured and certified in conformity to the most stringent safety and quality assurance regulations. It certainly represents the state of the art and a huge leap forward in filter drying technology.

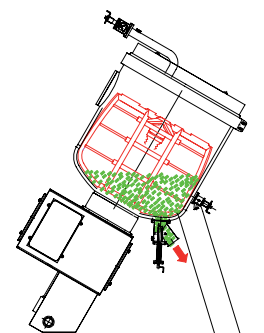
R★EVOLVE™ TILTING PFD working positions



Filtration / Cake Washing

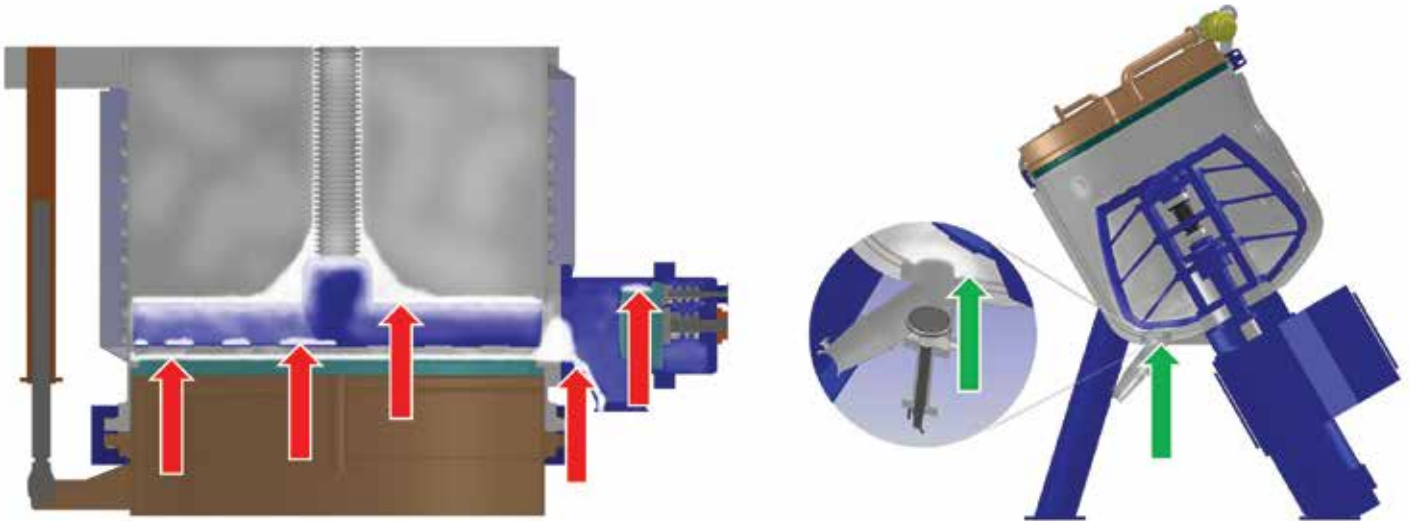


Pre Drying / Cake breaking / Drying



Dried Product Discharge

Total product discharge

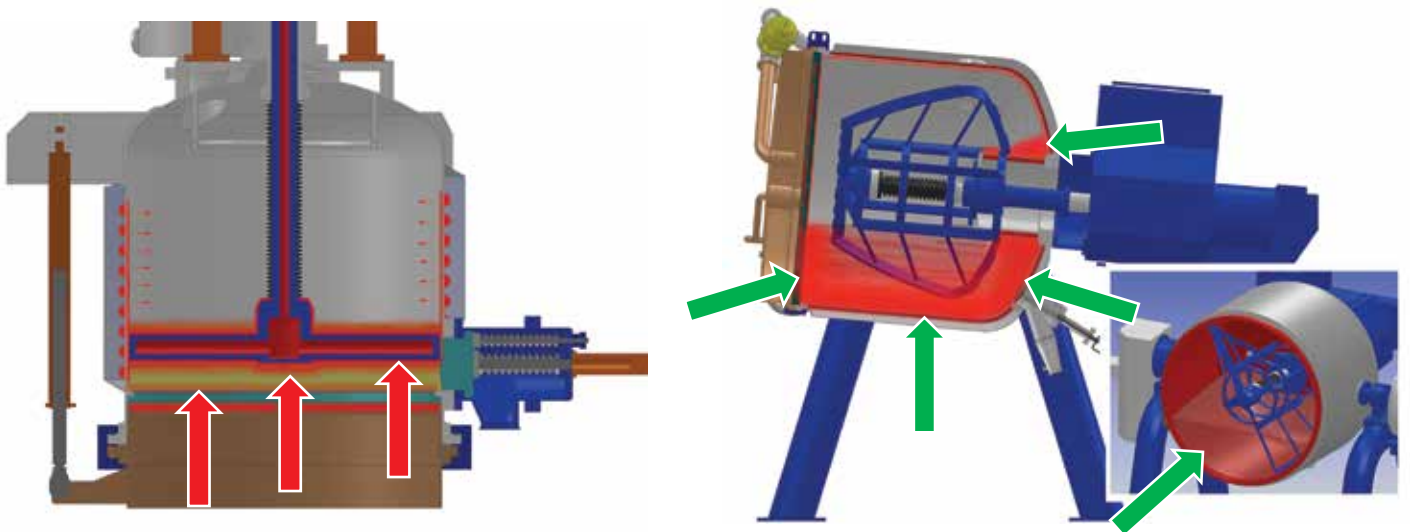


- Accumulated product which is not discharged

- Negligible amount of product which is not discharged

Much increased productivity

Improved product drying

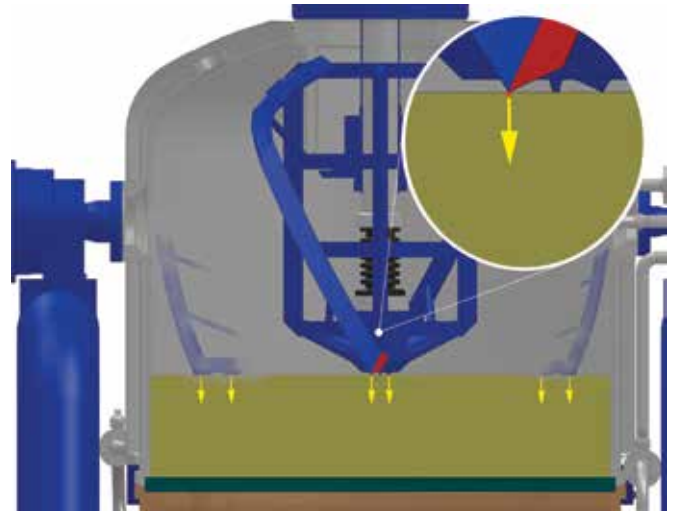
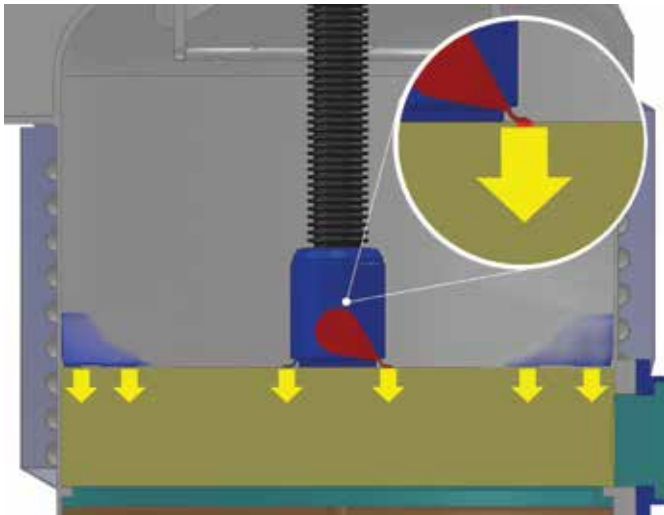


- Uneven surface heating = uneven product drying

- Even surface = even and faster product drying

Faster and uniform drying of the product

Improved product quality

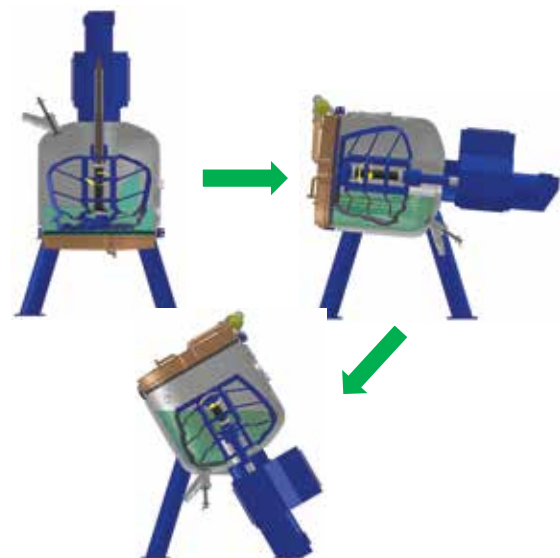
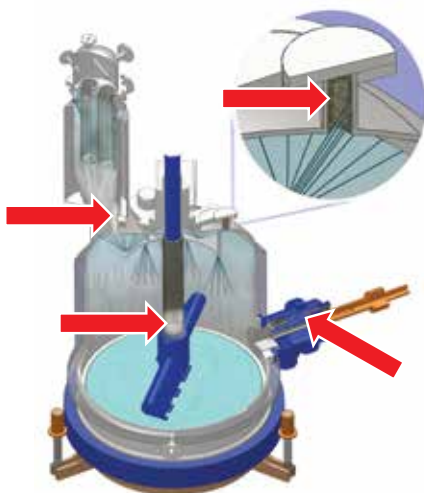


- High mechanical stress can damage the crystal

- Limited mechanical stress does not damage the crystal

Improved quality of the crystal

Perfect washing solution

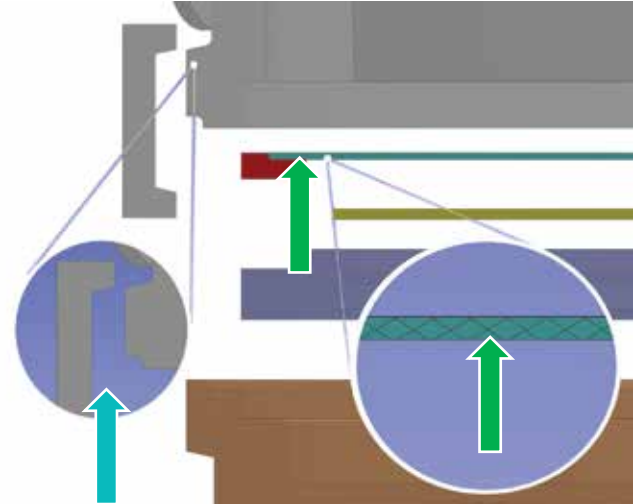
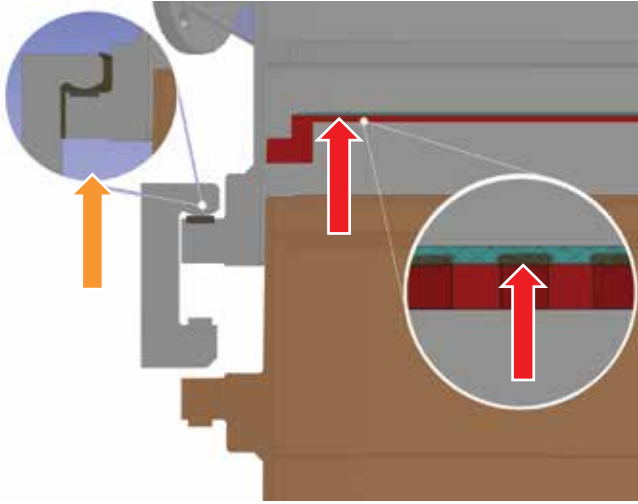


- Sprayball washing can not reach all surfaces

- "Immersion" type washing guarantees to reach 100% of all surfaces

No risk of batch cross contamination

Improved cleanliness

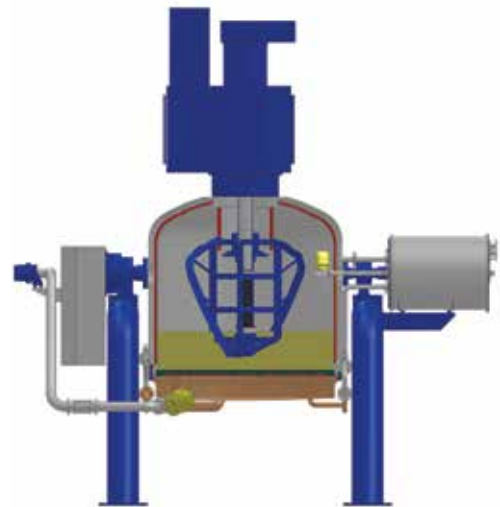
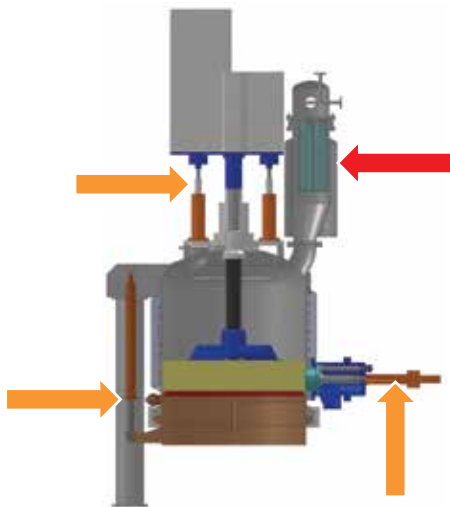


- Standard filter plates can't be inspected and cleaned
- Complex dismantling hiding dirty areas

- Thicker filter plate can easily be removed for inspection and cleaning
- Easy dismantling with no dirty areas

Faster and uniform drying of the product

Reduced maintenance costs

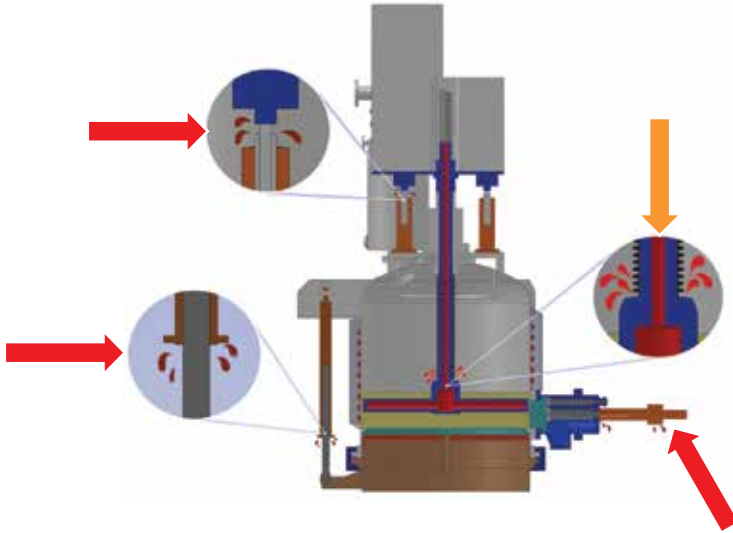


- Maintenance of dust filter (spares and time)
- Maintenance of hydraulic system and hydraulic plants

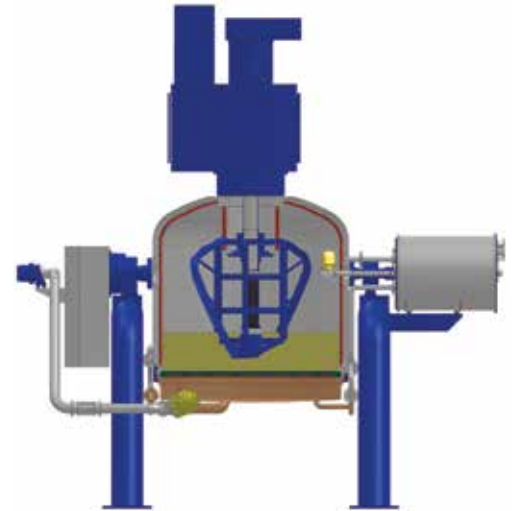
- No dust filter
- Maintenance free 100% electric drive

Increased productivity and low running costs

Elimination of contamination risks



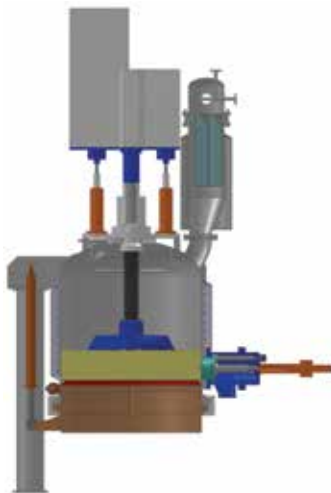
- Risk of oil leakages - environment contamination
- Risk of heating fluid leakage - product contamination



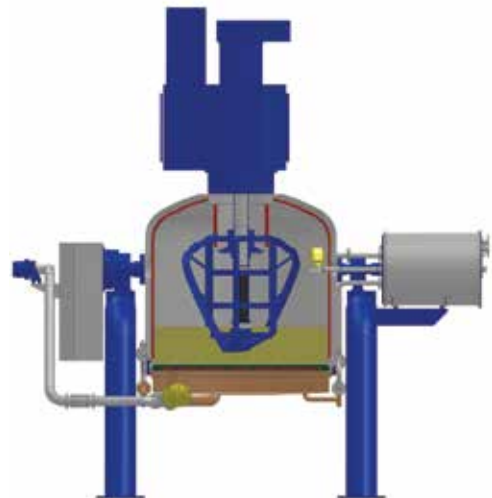
- Fully electric - no hydraulics
- No fluids present in the machine

No contamination in environment or machine

Sterile performance



- Machine full of nooks, crannies and dead spaces inside
- Inadequate washing and sterilizing performance
- At the limit of current sterile regulations



- streamlined machine inside and outside
- Perfect washing and sterilizing performance
- Exceeding current sterile regulations - future ready

R★EVOLVE™ Tilting PFD the perfect machine for sterile

STERILINE

Sterile process equipment must be manufactured to the highest standards and must be totally cleanable to remain free of any bacterial spores.

Thanks to their ability to resist external destructive agents, bacterial spores are the most resistant of all living organisms.

Omca Plants has been working, since 1960, on sterile equipment constantly improving the design and the manufacturing process in accordance to the latest and most important design codes, quality assurance procedures and cutting edge technology.

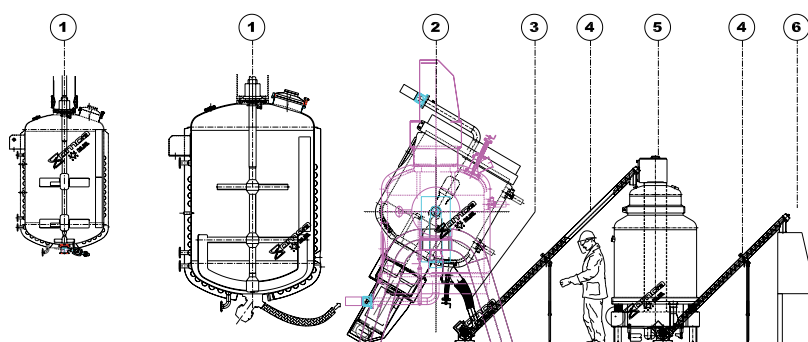
Our equipment has been designed and is manufactured specifically for Sterile processes that require the highest levels of cleanliness and sterilization targets and are specially developed to eliminate as much as possible product handling by the operators allowing for crystal sterile production in a closed environment thus reducing contamination risks.

Omca's machines can satisfy the most stringent production requirements to guarantee the highest levels of product purity.

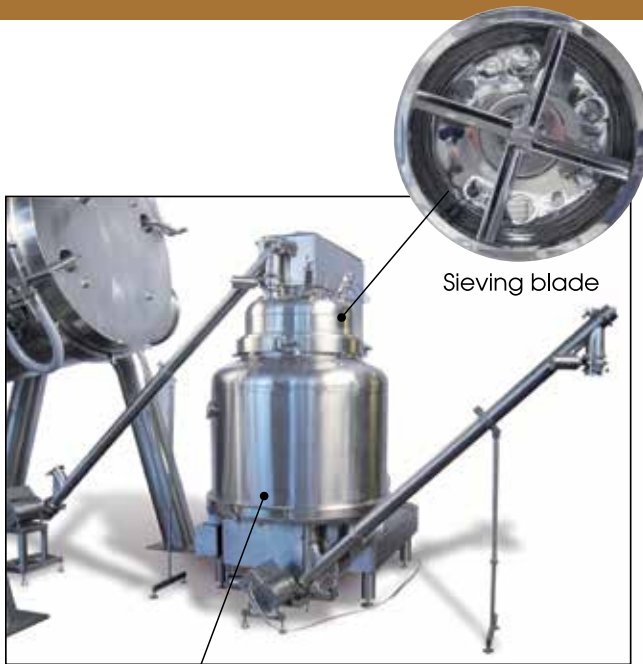


Sterile unit layout

- 1) Dissolver/ Crystallizer
- 2) Filter dryer
- 3) Lump breaker
- 4) Screw conveyor or PTS system
- 5) Siever/homogenizer
- 6) Isolator



“COMBI” Siever-Homogenizer



Sieving blade



Homogenizer blade

The new COMBI system machine combines different technologies to allow for the same machine to fulfill the following process steps:

- Sanitation / Sterilization SIP
- Cleaning CIP
- Inerting
- Feeding / Sieving
- Homogenizing / Unloading

The advantages of the Combi system machine are:

- continuous loading/homogenization and packing of the product within a closed environment with no downtime and no manual handling of the product.

- Adjustable Variable speed of the sifter and homogenizer to suit the product characteristics allowing for the correct handling of the product guaranteeing good quality crystals and avoiding any overheating risks.

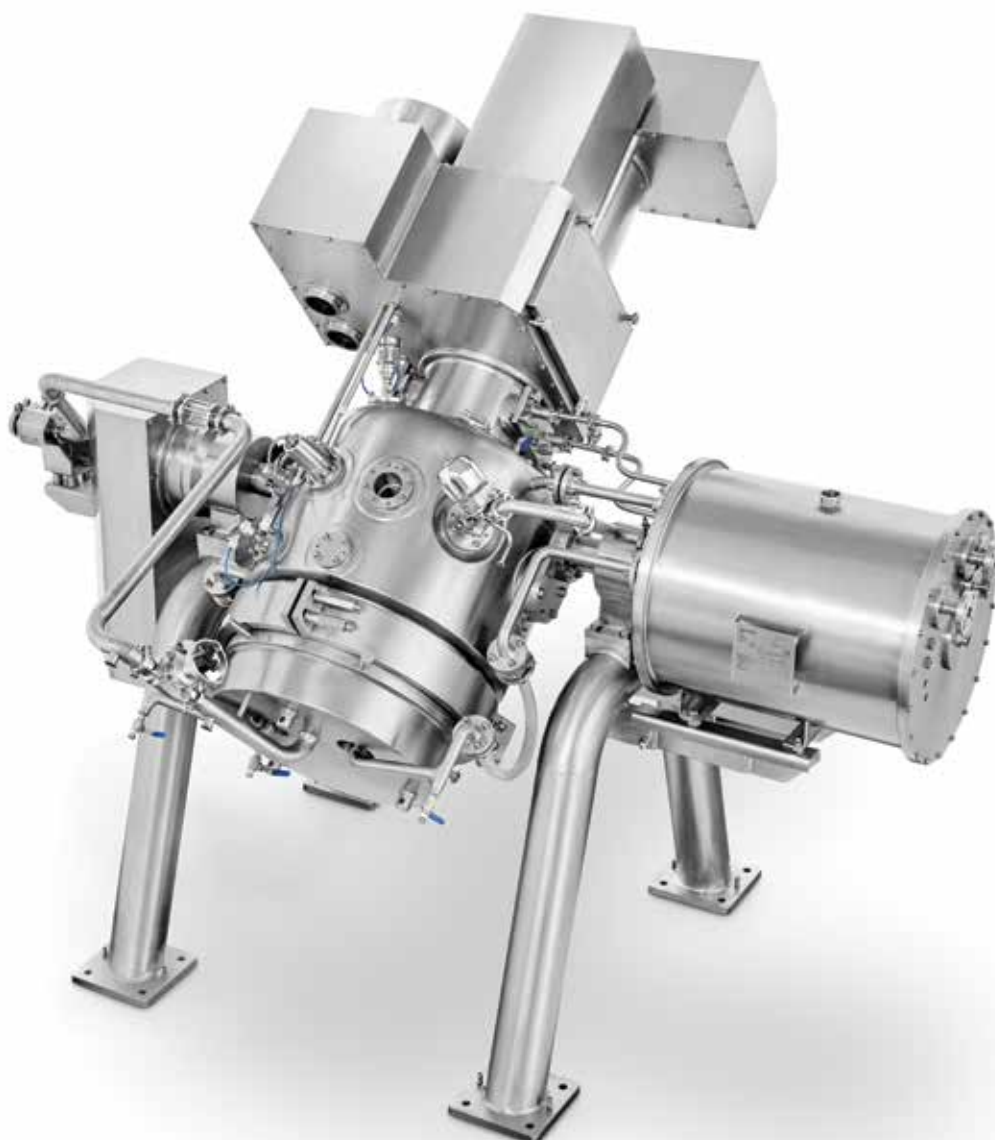
- Direct sampling connection

The Combi system machine is manufactured and certified in conformity to the most stringent safety and quality assurance regulations.



MMI detail

R★EVOLVE™ TILTING Pilot Unit for trials



A 650 R-EVOLVE™ TILTING PFD Pilot Unit is available for you to rent and try in your own factory. It is a trouble free “plug-in” type Unit that will be conveniently fitted on a SKID, which includes a Power Unit and a basic Control System to operate the machine.

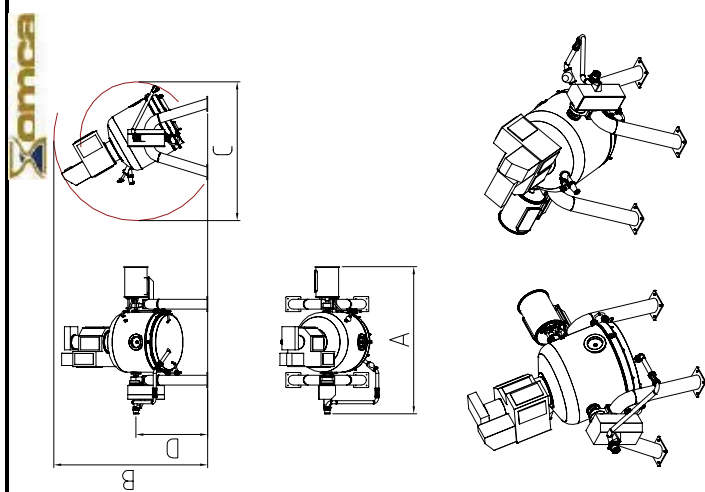
- Material	316 L
- Gaskets	FDA approved FEP with silicon inside
- Configuration	Suitable for Sterile and non-Sterile work
- ATEX classification	Internal and External zone II 2GD T4 135°CX
- Cake volume	Ideally suited for trials from 10 to 66 litres of product
- Filter Septums available	5 – 10 – 20 – 30 µ sintered mesh filters available
- Main dimensions of Skid	H : 3.325 mm L : 3.400 mm W : 2.720 (including space for rotation)

Please contact OMCA PLANTS for availability and further information

R★EVOLVE™ TILTING Pressure Filter Dryer data sheet

OMCA PLANTS R-EVOLVE™ TILTING PRESSURE FILTER DRYER Data Sheet

Materiale di costruzione lato processo <i>Process side manufacturing material</i>	<input type="checkbox"/> SS 304L <input type="checkbox"/> SS 316L <input type="checkbox"/> SS 904L <input type="checkbox"/> Hastelloy - C22 <input type="checkbox"/> Other _____	Tenuta meccanica <i>Mechanical seal</i>	<input type="checkbox"/> Fluxed by liquid fluid <input type="checkbox"/> Fluxed by nitrogen <input type="checkbox"/> Other _____
Materiali guarnizioni <i>Gasket materials</i>	<input type="checkbox"/> PTFE / O-Ring FEP (Internals Silicone) <input type="checkbox"/> PTFE / O-Ring FEP (Internals Viton) <input type="checkbox"/> PTFE / O-Ring Karlez <input type="checkbox"/> Other _____	Finitura superficiale interna <i>Internal surface finish</i>	<input type="checkbox"/> Mirror finish Ra < 0.3µm <input type="checkbox"/> Mirror electropolished Ra < 0.3µm <input type="checkbox"/> Mirror finish Ra < 0.6µm <input type="checkbox"/> Mirror electropolished Ra < 0.6µm <input type="checkbox"/> Other _____
Protezione componenti elettrici <i>Electric details protection</i>	<input type="checkbox"/> IP 55 <input type="checkbox"/> IP 65 <input type="checkbox"/> Ex proof <input type="checkbox"/> AT-EX in-side <input type="checkbox"/> G <input type="checkbox"/> Zone 0 <input type="checkbox"/> Zone 1 <input type="checkbox"/> Zone 2 <input type="checkbox"/> AT-EX out-side <input type="checkbox"/> G <input type="checkbox"/> Zone 0 <input type="checkbox"/> Zone 1 <input type="checkbox"/> Zone 2	Finitura superficiale esterna <i>External surface finish</i>	<input type="checkbox"/> Mirror finish Ra < 0.4µm <input type="checkbox"/> Mirror finish Ra < 0.8µm <input type="checkbox"/> Satinized Ra < 0.4µm <input type="checkbox"/> Satinized Ra < 0.8µm <input type="checkbox"/> Other _____
Pressione operativa <i>Operating pressure</i>	Specificare : <i>Please specify :</i>	Setto filtrante sinterizzato <i>Sintered Filter plate</i>	<input type="checkbox"/> 5 µm multilayer <input type="checkbox"/> 10 µm multilayer <input type="checkbox"/> 20 µm multilayer <input type="checkbox"/> 30 µm multilayer <input type="checkbox"/> 40 µm multilayer <input type="checkbox"/> Other _____
Pressione operativa <i>Operating pressure</i>	Specificare : <i>Please specify :</i>	Temperatura operativa <i>Operating temperature</i>	Specificare : <i>Please specify :</i>



R-EVOLVE™ TILTING Pressure Filter Dryer				Ingombri / Overall dimensions		Peso	
Tipo	Capacità utile Corpo verticale	Volume Massimo torta umida	Diametro	Sup. Filtrante	Spessore torta	Aggiatore / Stirrer	Weight
Type	Useful Capacity Vertical body	Wet Cake max. volume	Diametre	Filter surface	Cake Thickness	RPM	
	Litri/Liters	Litri/Liters	mm	m ²	mm	Traslazione pala Blade translation	Kg
PFD 450	80	15	450	0.12	100	2.5 / 25	3.100
PFD 650	160	66	650	0.28	200	1.5 / 14.6	2.780
PFD 950	500	250	950	0.65	350	1.5 / 14.6	3.150
PFD 1.250	1.100	500	1.250	1.15	400	1.5 / 14.6	3.000
PFD 1.500	2.200	700	1.500	1.65	400	1.5 / 14.6	3.600
PFD 1.600	2.500	800	1.600	1.88	400	1.5 / 14.6	4.200
PFD 1.800	3.150	1.140	1.800	2.40	450	1.5 / 14.6	4.700
PFD 2.100	4.300	1.550	2.100	3.29	450	1.5 / 14.6	5.080
							5.550
							5.320
							2.400
							2.400
							11.500

Tutte le misure indicate sono corrette al momento della stampa. Potrebbero subire variazioni senza preavviso

*** Nota bene:

I valori indicati in tabella relativi al quantitativo di prodotto finito sono basati sull'esperienza degli utilizzatori della macchina. Assumono pertanto un valore indicativo e potrebbero essere soggetti a variazioni anche significative in relazione al processo e al prodotto utilizzato.

All measurements indicated are correct at the time of printing. They could be modified without further notice

*** Note

The finished product values outlined in the above table are based on the experience of users of this machine. The values are therefore purely indicative and might be subject to significant variations depending on the product and its process. DISCLAIMER: The information provided in this publication is correct to the best of Omca Plants Srl's present knowledge. No liability for any errors, facts or opinions is accepted. Because of the many possible factors, which can affect the use of our products, customers must satisfy themselves as to the suitability and performance of this product for their application. No responsibility for any loss as a result of any person placing reliance on any material contained herein will be accepted.



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