

Product Overview



Dryer • Mixer • Filter Dryer • System Components



Filterdryer Agitated Nutsche Filter Comber Pressofiltro[®]

PF 100 – PF 6000

0.2–6.0 m² filter area
100–6000 l usable slurry volume

Customer benefits:

- cGMP and FDA compliant design
- versatile for multipurpose production facilities
- openable filter base
- interchangeable filter plates, with fully level surface
- free of dead areas, transitions with large radii
- optimized product discharge, heel removal systems
- automatic CIP cleaning with easy validation
- all product wetted surfaces heated



Filterdryer with Containment Comber Pressofiltro[®]

PF 50 – PF 2000

0.1–2.0 m² filter area
50–2000 l usable slurry volume

Customer benefits:

- cGMP and FDA compliant design
- active or passive isolators
- isolators with one, two or more chambers
- containment to 50 ng/m³ TWA
- sampling, product discharge, heel removal and filter cloth disposal in one system
- discharge using docking devices (split butterfly valves), RTP's (Rapid Transfer Ports), continuous liner systems, etc.



Sterilizable Units Comber Pressofiltro[®]

PF 50 – PF 6000

0.1–6.0 m² filter area
50–6000 l usable slurry volume

Customer benefits:

- cGMP and FDA compliant design
- steam sterilization with easy validation
- integrated CIP / SIP systems
- all surfaces and piping free of dead areas and self draining, all installed components and flanges in aseptic design
- additional sensors and controls for sterilization endpoint determination



Pilot Units Comber Pressofiltro[®]

PF 5 – PF 500

0.03–0.7 m² filter area
8–640 l usable slurry volume

Customer benefits:

- cGMP and FDA compliant design
- small units installed on mobile skid
- larger units in single column design with swiveling filter base for excellent accessibility
- fully electric version without hydraulics available
- design and construction identical to production units



Laboratory Units Comber Labo

PF/TD 5 – PF/TD 100

0.03–0.2 m² filter area
6–80 l usable slurry volume

Customer benefits:

- economic test units
- suitable for use as agitated Nutsche filter, filter dryer or vacuum dryer
- interchangeable filter plates
- product wetted surfaces heated
- tiltable vessel for emptying and cleaning
- units installed on wheeled trolley
- compact design



Vacuum Pan Dryer Comber Turbodry[®]

TD 0.8/1.1 – TD 40/60

1.4–22.5 m² heated surface
100–6000 l usable volume

Customer benefits:

- cGMP and FDA compliant design
- extremely versatile vacuum pan dryer
- machined vessel, to minimize crust formation on walls
- lowerable dryer bottom
- slowly rotating agitator to prevent the formation of lumps
- heated agitator with large surface, vertically displaceable
- free of dead areas, transitions with large radii
- automatic CIP cleaning with easy validation
- all product wetted surfaces heated



Vertical Vacuum Dryer Comber Condry[®]

TDC 100 – TDC 7000

1.4 – 25 m² heated surface
100 – 7000 l usable volume

Customer benefits:

- cGMP and FDA compliant design
- versatile multipurpose dryer
- conical bottom for full discharge
- slowly rotating agitator to prevent the formation of lumps
- optional heated agitator, lowerable dryer bottom, machined vessel
- free of dead areas, transitions with large radii
- automatic CIP cleaning with easy validation
- product wetted vessel surfaces heated



Vertical Vacuum Dryer Bolz-Summix[®] Cone-Screw-Dryer

MF010 – MF600

100 – 6000 l working capacity
Cantilevered mixing screw

Customer benefits:

- Multi-Purpose-Processes
- Process flexibility
- drying, mixing, homogenising
- 10–100% working volume
- low electrical power consumption
- gentle product handling
- complete discharge, easy cleaning
- seals in compliance with ATEX
- no lump breaker or mill required
- clean room installation (discharge)



Horizontal Vacuum Dryer Comber Pharmadry[®]

PH 50 – PH 4000

1.1 – 16.1 m² heated surface
50 – 3200 l usable volume

Customer benefits:

- cGMP and FDA compliant design
- versatile multipurpose dryer
- machined vessel, to minimize crust formation on walls
- front door opening over full diameter
- slowly rotating agitator to prevent the formation of lumps
- heated agitator with large surface, supported at rear only
- free of dead areas, transitions with large radii
- automatic CIP cleaning with easy validation
- all product wetted surfaces heated



Pilot Dryer and Mixer Bolz-Summix[®] BS-pilotDRY[®]

ML 001 – ML005

10 – 50 l working capacity

Customer benefits:

- flexible working volume from 10% to 100% of nominal volume
- mobile and compact design
- easy "plug and use" installation
- ideal for Scale-Up
- easy to operate
- CIP cleaning



Lab Dryer and Mixer Bolz-Summix[®] BS-miniDRY[®]

DKL015

0.15 – 1.5 l working capacity

Customer benefits:

- flexible working volume from 10% to 100% of nominal volume
- mobile and compact design
- easy "plug and use" installation
- excellent for Scale-Up
- easy to operate
- CIP Cleaning
- installation in ventilation booth



Filter Dryers/ Agitated Nutsche Filters Comber Pressofiltro[®]

PF 2000 – PF 14000

2.0 – 14.0 m² filter area
2000 – 14000 l usable slurry volume

Customer benefits:

- chemical version
- versatile production unit
- versions with heating, openable filter base



Horizontal Vacuum Dryer/Reactor Comber Termomix[®]

TM 1500 – TM 15000

9.0 – 54.7 m² heated surface
1100 – 14300 l usable volume

Customer benefits:

- chemical version
- versatile multipurpose dryer and reactor
- slowly rotating agitator to prevent the formation of lumps
- heated agitator with large surface
- all product wetted surfaces heated



Conical Mixer/ Dryer Bolz-Summix[®]

MF010 – MB3000

100 – 30000 l working capacity

Customer benefits:

- Multi-Purpose-Processes
- Process flexibility
- drying, mixing, homogenising
- 10 – 100% working volume
- low electrical power consumption
- gentle product handling
- complete discharge, easy cleaning
- seals in compliance with ATEX
- no lump breaker or mill required
- clean room installation (discharge)



Heating and Cooling Skids

for heating or cooling the jackets of agitated vacuum dryers, agitated Nutsche filters and filter dryers with heat transfer fluid

15 – 300 kW heat transfer capacity
4 – 150 m³/h flow rate

Customer benefits:

- supplied skid mounted as fully functional unit
- units with several independent heating-/cooling circuits



Condenser with Condensate Vessel

For vapor condensation and to collect the condensate
2.5 – 50 m² cooling area
50 – 2500 l condensate vessel volume

Customer benefits:

- supplied skid mounted as fully functional unit



Vacuum Systems

Dry running vacuum pump with booster pump or liquid ring pump with ejector

68 – 1750 m³/h suction capacity
40 – 0.6 mbar final vacuum

Customer benefits:

- supplied skid mounted as fully functional unit
- optional post condensation



Ball Segment Valve Heinkel

BSV 150 –
BSV 400
150 – 400 mm (6 – 16") nominal sizes

Customer benefits:

- cGMP and FDA compliant design
- inflatable seal with large sealing area, seal available in different materials
- full, unrestricted bore
- free of dead areas, aseptic design
- automatic CIP cleaning with easy validation



Used equipment

Customer benefits:

- procurement on the international market
- equipment of all manufacturers > "Customer first"
- regularly updated offers
- short term availability
- with new machine warranty



Rebuilds/ Retrofits

Customer benefits:

- complete mechanical reconditioning
- upgrades to system electronics
- observing the latest explosion prevention regulations
- updating of documentation

Drive systems



We quickly supply interchangeable modules such as gear reducers and orbit arms in conformity with current regulations such as ATEX, UL, CE, SIL and cGMP as replacements or retrofits for your equipment (including other manufacturers equipment)

Filter materials/ Multilayer



These are supplied in materials and porosities as per the customers requirements

- fabrics (cotton, polyester etc.)
- single layer metallic filters
- sintered plates
- multilayer filter plates, sintered
- sterile versions, fixation of filter elements from below

After sales services:

- technical support
- online support
- installation and commissioning
- preventive maintenance
- maintenance contracts
- spare parts logistics
- rebuilds and upgrades
- consulting
- training
- rental equipment
- product testing

The HEINKEL Drying and Separation Group equipment range is used in the manufacture of the products listed below:

- agrochemicals
- API's
- flavorings
- biocides
- cellulose derivatives
- fragrances
- precious metals
- pigments
- electrochemicals
- dyes
- fine chemicals
- herbicides
- catalysts
- corrosion inhibitors
- cosmetics
- food additives and food ingredients
- metal powder
- nitrocellulose
- optical brighteners
- pesticides
- plant extracts
- active pharmaceutical ingredients
- pharmaceutical base chemicals
- pharmaceutical intermediates
- photochemicals
- polymers
- vitamins

www.heinkel.com



**BOLZ
Process Technology GmbH**

Sigmanner Weg 2
88239 Wangen
GERMANY
Phone +49 7522 9162-0
Telefax +49 7522 9162-105
E-Mail info@bolz-pt.de
Internet www.heinkel.de



**COMBER
Process Technology S.r.l.**

Via Garibaldi, 67
20061 Carugate (MI)
ITALY
Phone +39 02 99990146
Telefax +39 02 99990148
E-Mail info@comber.it
Internet www.heinkel.com



**HEINKEL
Process Technology GmbH**

Ferdinand-Porsche-Str. 8
74354 Besigheim
GERMANY
Phone +49 7143 9692-0
Telefax +49 7143 9692-269
E-Mail info@heinkel.de
Internet www.heinkel.de



**HEINKEL
Filtering Systems, Inc.**

520 Sharptown Road
Swedesboro, NJ 08085-1731
USA
Phone +1 856 467-3399
Telefax +1 856 467-1010
E-Mail info@heinkelusa.com
Internet www.heinkelusa.com

**HEINKEL
Process Technology Pte Ltd.**

25 International Business Park
4-59A German Centre, Singapore 609916
Phone +65 6562-8048
Telefax +65 6562-8049
E-Mail info@heinkel.com.sg
Internet www.heinkel.com

HEINKEL s.r.o.

Machkova 587
500 11 Hradec Králové
CZECH REPUBLIC
Phone +420 495 406250
Telefax +420 495 406251
E-Mail info@heinkel.cz
Internet www.heinkel.com