



## PRODUCT OVERVIEW CENTRIFUGES



**PHARMA**



**CHEMICAL**



**FOOD**



**COSMETICS**



**ENERGY**

## Welcome to the HEINKEL Drying and Separation Group

The **HEINKEL Drying and Separation Group** is one of the few suppliers of complete system solutions for processes in solid-liquid separation. More than 2.000 customers all over the world benefit from our solutions for over 5.000 applications in the chemical, fine chemical, pharmaceutical and food industries.

The history of the **HEINKEL Drying and Separation Group** started back in 1884 with the foundation of the Grotz Maschinenfabrik in Bietigheim near Stuttgart, Germany. Since then we have continuously extended our knowledge and expertise, and considerably influenced innovations in the process industry.

### The Brands of the **HEINKEL Drying and Separation Group**



**COMBER**  
Drying and Filtration Technology

**BOLZ**  
**summix**

**HEINKEL**

**jongia**  
mixing technology

The brands **COMBER, BOLZ-SUMMIX, HEINKEL** and **JONGIA** provide expertise in filtration, centrifugation, mixing, agitating and drying. The knowledge transfer between the members of the corporate group enables us to develop well-thought-out and turn-key solutions for our customers. The solutions are the basis of your innovative power – the basis for the development of significant future technologies. Our philosophy means we do not just deliver machines but also offer our customers a reliable 360° service.

We accompany and support you from the test phase in our lab centers through commissioning and launching the system to production. With comprehensive after sales service, we ensure the constant, sustained high availability and reliability of your production facility. For a continuously optimal product quality. For your success.

## Top Discharge Centrifuges

The HEINKEL top discharge centrifuges are a cost-effective solution for various separation processes. They are therefore suitable for companies that manufacture a variety of products in small to large batches.



Type V 800 TC

- > Design matches with requirements in the chemical and pharmaceutical industry
- > Solids discharge with no losses
- > Automatic CIP process
- > Easy to inspect
- > User-friendly operation and maintenance
- > Basket available with detachable rim

## Vertical Peeler Centrifuges

The HEINKEL vertical peeler centrifuges in chemical design are used for uninterrupted operation with high throughput rates in the chemical and fine chemical industries. The vertical peeler centrifuges in pharma design meet high safety requirements enabling for example the complete inspection of all components in the process area as well as cleaning by fully automated CIP system.

- > Design matches with requirements in the chemical and pharmaceutical industry
- > Machines can be used for many different products
- > High throughput capacity
- > Versatile options available regarding basket design, cover design, feed pipes and suspension feeding, discharger and residual heel removal concepts
- > Optimal adaptation to customer and product requirements



Type V 1250 BP



## Horizontal Peeler Centrifuges

Designed for 24/7 operation, the HEINKEL horizontal peeler centrifuges are used for separating medium to large product quantities. The horizontal peeler centrifuges in pharma design are characterized by easy cleaning and inspection avoiding product contamination.

### Chemical Design > **NEW GENERATION!**

#### Special properties for the customer's benefit:

- > Proven, robust design
- > Successful realisation of customer specific requirements
- > Optimal adaptation to changing products and product characteristics
- > High throughput capacities because of short cycle times
- > Low residual moistures because of high g-forces
- > High product purities because of effective washing process



Type H 1250 C



**The newly developed BLUETECTOR designed on the H1250C platform proves that highest efficiency and maximum flexibility do not require any compromise!**

- > Highest energy and process efficiency from filling via centrifugation to solids discharge
- > Shortest possible cycle times
- > Maximum flexibility via parameter variation of the solely electrically driven discharge process
- > Innovative electric drive concept replaces hydraulics – for Ex-areas up to ATEX-Zone 1
- > Patented housing design for optimised guiding of process media
- > Reduced noise emission
- > Slidable machine housing
- > Excellent user-friendliness and easy maintenance
- > Intelligent energy management reduces operational costs
- > Integrated CIP and flooding for optimum cleaning results

## Pharma Design

- > Swinging open housing for easy inspection
- > Clean room installation possible
- > Hydraulically operated housing locking mechanism by single clamping elements, therefore minimal area for product deposit
- > Fully automatic, validated CIP-process possible
- > Design virtually free of dead spaces, minimized number of screwed connections in the process housing
- > Filtrate outlet at the rear part of the process housing, low dismantling expenses to prepare for the opening of the housing
- > High flexibility at frequent product changes
- > Quick change of the filter element
- > Bearing designed as exchangeable unit



Type H 1300 P

## Inverting Filter Centrifuges Series HF

Based on its gentle product discharge leaving no residual heel and therefore the possibility of thin cake filtration, the HEINKEL inverting filter centrifuges of the Series HF are ideally suited for use with difficult to filter products. They are characterized by hermetically closed design and the fully automated, continuous operation.



Type HF 1000.1

- > Proven, robust design
- > Design matches with requirements in the chemical and pharmaceutical industry
- > Best choice for demanding products
- > Residual heel free product discharge and minimum installations in housing and basket, thus optimal for high potent API products with highest possible product yield
- > Considerable residual moisture reduction in respect to conventional filtration by pressure added centrifugation (PAC) possible



## Special Applications



### Top Discharge Sedimentation Centrifuges

The sterilisable HEINKEL top discharge sedimentation centrifuge offers cleaning in place (CIP) and subsequent sterilisation (SIP).

### Classifying Centrifuges

The classifying centrifuge TIOCENT from HEINKEL is designed for the industrial classifying of fine and ultra-fine particles up to nano-particles. Suitable both for wet classifying and for decanting, it delivers precise separation cuts.



### Coating Centrifuges

The HEINKEL coating centrifuges deliver excellent results when lacquering and coating smaller parts. They are also available in Ex design when using solvent-based coating agents. The coating or lacquering process runs automatically.

### Ball Segment Valve

HEINKEL offers its reliable vacuum and pressure tight high performance ball segment valve which is compliant with cGMP and FDA. It is used for both product inlet and discharge. It is suitable even for bulk goods with an abrasive effect or moist, adhesive characteristics.



## Pilot Plant and Laboratory Equipment

The laboratory and pilot plant equipment is very flexible in use. Thanks to the maintenance-friendly bearing units as exchangeable cartridge, the bearing units can be used for various bowl sizes. This simplifies disassembly and storage. The centrifuges are mobile and with an inerting system as well as an EX-rated control system suitable for ATEX zone 1, Class I Division 1, Class 1 Division 2 or other hazardous location ratings.



- > Vertical top discharge centrifuges, horizontal peeler centrifuges as well as inverting filter centrifuges are available as pilot and laboratory machine types
- > All machine designs match with requirements in the chemical and pharmaceutical industry
- > cGMP compliant design
- > Compact and mobile execution of machine and controls
- > Easy to move, to connect and to operate
- > Various materials of construction available
- > Machine available with explosion-proof and nitrogen purge unit
- > Ideal for trials and for scale-up to production processes

## Used Machines / Rebuilds / Retrofits

The HEINKEL Group offers economic solutions for its customers providing a large and constantly changing range of used machines which are available quickly at an attractive price, including warranty. The machines are being completely disassembled, comprehensively checked and reassembled according to customer requirements. Damaged parts are replaced by original spare parts of the latest design. Documentation is updated to match the as-rebuilt status.

Additional equipment for used machines, upgrades and retrofits can be fitted and integrated into the control system. Subsequent optimizations, also for third-party manufacturers, make it possible to adjust the customer's systems to changed process requirements as well as safety and validation standards.





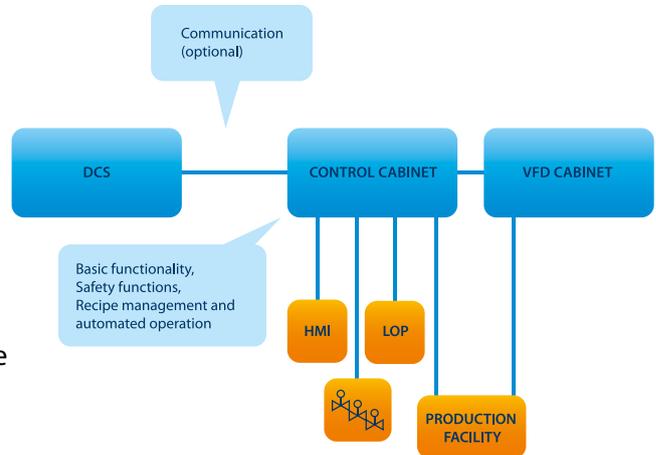
## Automation

### Tailor-made software for each application

With decades of experience and expertise, the HEINKEL Group offers tailor-made system components and software upgrades – individually set-up and optimized for the customer's application.

### Upgrade from Siemens S5 to S7/ TIA

The migration of the control system Siemens SIMATIC S5 to Version S7/ TIA makes it possible to use the latest functions of process control technology and increases the productivity of the system.



The upgrade ensures the continuity of control investments made to date, increases the efficiency of the machines and provides a cost efficient extension of the life cycle of the machine.

The modern technology reduces the risk of machine downtime and reveals optimization potential. The HEINKEL Groups carries out the upgrades and thus increases the reliability of the production process of their customers.

## Service

### The HEINKEL Group does everything to ensure success – anytime, anywhere.

For decades now, the HEINKEL Drying and Separation Group has been committed to precision and reliability in filtration, centrifugation, mixing and drying technology. With know-how and innovative power, the group develops components and complete system solutions for specific applications of solid-liquid separation in the pharmaceutical, fine chemical, chemical, cosmetic and food industries.

The HEINKEL Group offers integral service - from the development of the perfect solution through commissioning and training to maintenance, spare part service and 24/7 support.

Tailor-made pilot units for new developments ensure the competitive capacity of the customers. The basis of common success is cooperative collaboration. It results in top performance that finds acclaim all over the world.

The constant striving for quality and perfection is part of the corporate culture. Something the HEINKEL Group works for in all areas at full strength day in, day out. Regular training sessions and further education measures ensure the achievement of the high procedural and legal requirements of the pharmaceutical, chemical and food industries.

## Technical Data

### Vertical Top Discharge

		Chemical (TC)				
Type		V 630 TC	V 800 TC	V 1000 TC	V 1250 TC	V 1600 TC
Basket diameter	[mm]	630	800	1,000	1,250	1,600
Filter area	[m <sup>2</sup> ]	0.79	1.26	1.98	3.14	4.02
Max. load	[kg]	76	160	315	626	1,025
Max. Centrifugal force	[x g]	1,271	1,006	805	631	503

### Vertical Top Discharge

		Pharma (TP)				
Type		V 630 TP	V 800 TP	V 1000 TP	V 1250 TP	V 1600 TP
Basket diameter	[mm]	630	800	1,000	1,250	1,600
Filter area	[m <sup>2</sup> ]	0.62	1.01	1.57	2.47	4.02
Max. load	[kg]	60	128	250	492	1,025
Max. Centrifugal force	[x g]	1,271	1,006	805	631	503

### Vertical Peeler

		Chemical, Gypsum (BC, BG)				Pharma (BP)	
Type		V 800 BC, BG	V 1000 BC, BG	V 1250 BC, BG	V 1600 BC, BG	V 1000 BP	V 1250 BP
Basket diameter	[mm]	800	1,000	1,250	1,600	1,000	1,250
Filter area	[m <sup>2</sup> ]	1.58	1.98	3.14	5.03	1.57	2.47
Max. load	[kg]	200	315	625	1,280	250	492
Max. Centrifugal force	[x g]	797	805	631	503	805	1,006

### Horizontal Peeler

		Chemical (C)						
Type		H 630 C	H 800 C	H 1000 C	H 1250 C	H 1600 C	H 1800 C	H 2100 C
Basket diameter	[mm]	630	800	1,000	1,250	1,600	1,800	2,100
Filter area	[m <sup>2</sup> ]	0.79	1.26	1.98	3.14	5.03	6.03	7.4
Max. load	[kg]	62	125	260	518	1,075	1,500	2,100
Max. Centrifugal force	[x g]	2,028	1,614	1,258	1,006	807	1,000	850

### Horizontal Peeler

		Pharma (P)				
Type		H 630 P	H 800 P	H 1000 P	H 1300 P	H 1600 P
Basket diameter	[mm]	630	800	1,000	1,300	1,600
Filter area	[m <sup>2</sup> ]	0.62	1.0	1.57	3.27	4.02
Max. load	[kg]	51	105	214	540	880
Max. Centrifugal force	[x g]	2,078	1,449	1,258	1,046	894

### Inverting Filter HF

Type		HF 300.1	HF 450.1	HF 600.1	HF 800.1	HF 1000.1	HF 1300.1
Basket diameter	[mm]	300	450	600	800	1,000	1,300
Filter area	[m <sup>2</sup> ]	0.1	0.3	0.4	0.85	1.25	2.0
Max. load	[kg]	8	33	65	150	250	440
Max. Centrifugal force	[x g]	1,500	1,320	1,260	1,140	900	720

### Top Discharge Sedimentation Pharma

Type		V 630 TS	V 800 TS
Basket diameter	[mm]	630	800
Sedimentation area	[m <sup>2</sup> ]	0.79	1.0
Max. load	[kg]	63	125
Max. Centrifugal force	[x g]	3,000	3,000

### Classifying

Type		V 630 BK
Basket diameter	[mm]	630
Sedimentation area	[m <sup>2</sup> ]	1.0
Max. load	[kg]	77
Max. Centrifugal force	[xg]	3,169

### Coating

Type		V 425 TT	V 425 TT Ex
Basket diameter	[mm]	425	450
Max. load	[kg]	20	20
Batches per hour	[x g]	12 – 15	12 – 15

### Pilot Plant

		Vertical Chemical / Pharma (TC/TP)			Horizontal / Pharma (P)		
Type		V 300 TC, TP	V 400 TC, TP	V 500 TC, TP	H 300 / 65 P	H 300 / 150 P	H 500 P
Basket diameter	[mm]	300	400	500	320	300	500
Filter area	[m <sup>2</sup> ]	0.14	0.31	0.47	0.07	0.14	0.39
Max. load	[kg]	6	20	38	4	4	25
Max. Centrifugal force	[x g]	2,054	1,397	1,118	2,007	1,996	1,504

### Ball Segment Valve

Sizes		DN 100 bis 400
Admissible pressure	[bar]	-1 to +6
Admissible temperature	[°C]	-10 to +150
Available seal materials		FFKM (Perlast), EPDM, FKM FVQM, FEPM+TFE/P

**SALES & SERVICES WORLDWIDE**



**FILTRATION CENTRIFUGATION MIXING DRYING**

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