



VAC 150 to 2000

Mixing, Granulating and Vacuum drying.



Quality, Experience and Innovation

The flexibility of the Gas-stripping Vacuum Dryer.

The DIOSNA VAC Series is designed for efficient mixing, granulating and vacuum drying of pharmaceutical products in a closed system.

The flexible building block principle of VAC 150 to VAC 2000 offers for very gentle processing, short drying times and simple operation.

Our VAC equipment is designed down to the very last detail to fulfill any practical requirement. Special designs and components for individual applications can be provided on request.



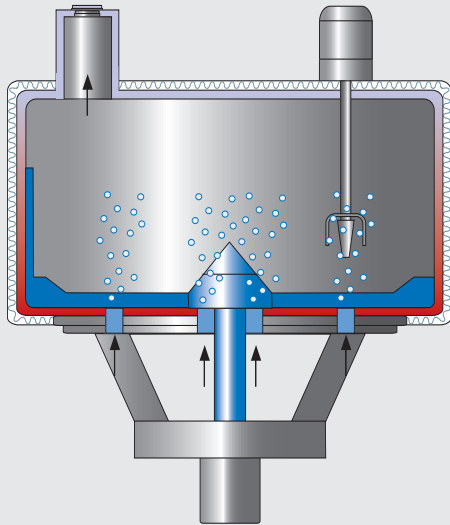
GMP-compliant through-wall construction:
Space saving installation of a VAC 600.

Maximum efficiency: Mixing tool with stripper

- Tangentially attached arms with enlarged blades at the end
- Efficient removal of wall deposits by the scraper (without touching the wall)
- Drying of sticky recipes without problems, even with high jacket temperatures
- Very short drying times due to high heat transfer rates



Maximum efficiency



The principle.

- Insulated cylindrical bowl with two heating zones
- Mixing tool with wall scraper
- Auto-lift lid (heated to avoid condensation)
- Gas-stripping bottom nozzles
- Vertical chopper
- Industrial PC control
- Process observation through inspection glass or integrated video camera
- Various cleaning options (CIP/WIP)
- Highly accessible, user-friendly machine frame

High-performance vacuum unit.



High-performance components.

As well as the optimal design of the bowl and the mixing and chopper tools, the vacuum system and the heating/cooling units play a decisive roll for product quality and process times.

The vacuum unit is a heavy duty two stage unit. The majority of the granulating liquid vaporized in the VAC, is condensed and recovered.

The heating/cooling system works with two separate closed circuits, each one with it's own control and regulation.

The water is heated electrically or - on request - using steam.



The two-circuit heating/cooling system ensures quick and precise regulation of the water temperature.



The material can be calibrated during discharge by using a sieving mill below the outlet.



Sieved material.

The Ranges of Application.

The DIOSNA Vacuum Dryers stand for simple cleaning and high flexibility. Even with frequent recipe change, short changeover times give high daily outputs. The system is especially suited for valuable materials, as process losses are minimal due to effective wall scraping and minimal product contacting surfaces.

The closed system of the equipment where all process steps are made in single bowl guarantees dust-free operation - ideal for containment applications. The process is independent of the air humidity and is therefore preferably used for effervescent granules. Due to the low space requirements all on one floor, the dryers can be installed in nearly every production location.

Made by Diosna



The gas-stripping bottom nozzles: large-surface, automatically cleaned and easy to inspect.



The screen of the mill can be removed easily.

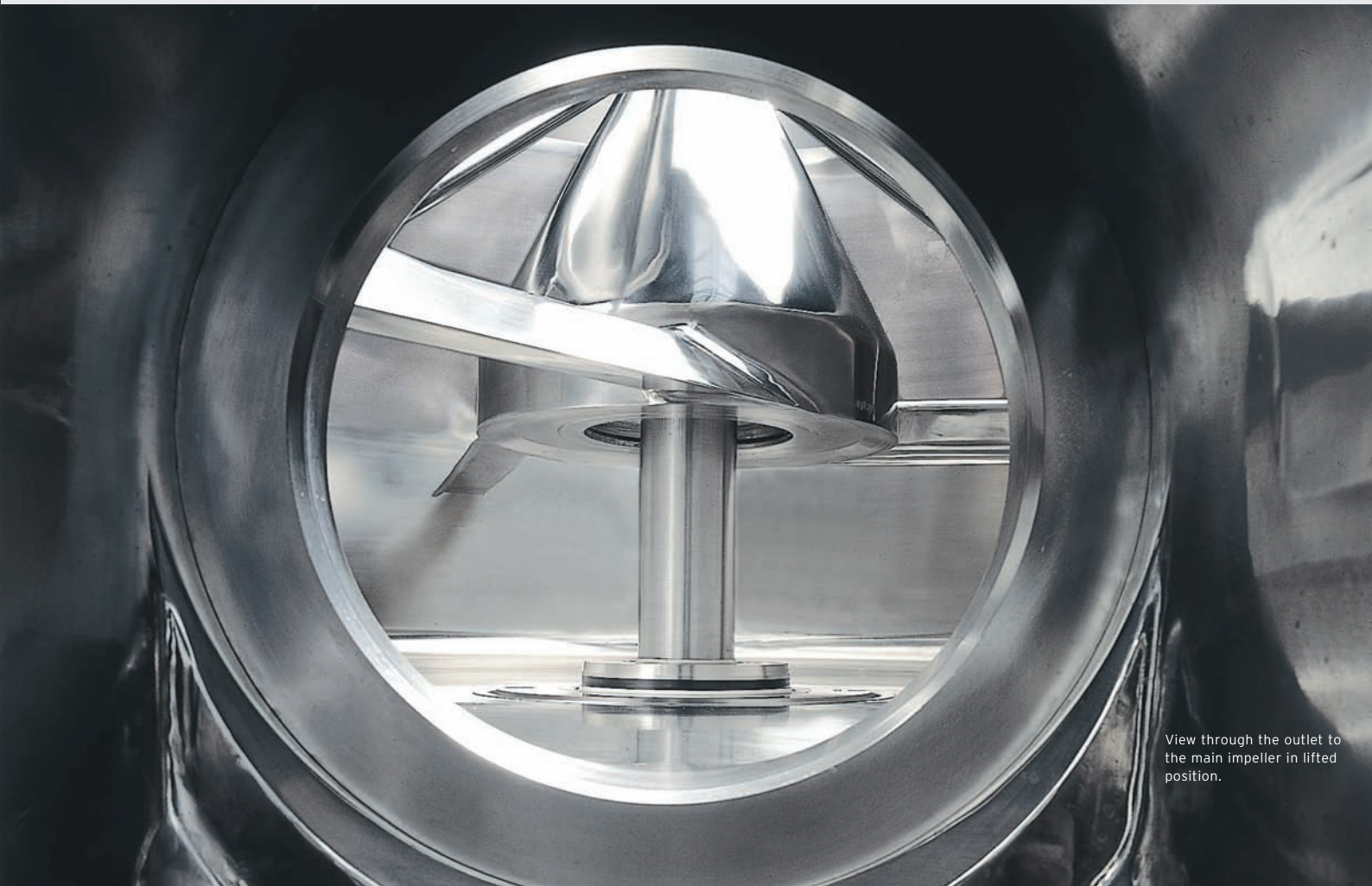
Inspection.

For simple inspection the front part of the outlet and the sieving mill (optional) can be swung aside.

The nozzles are integrated into the base of the bowl and can be lifted pneumatically. They provide for gentle and extensive gas-stripping. Cleaning (during CIP or WIP) with water.

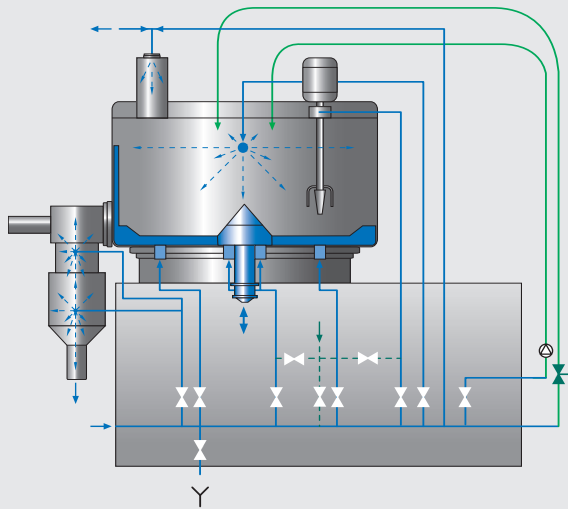
The DIOSNA Toollift System offers an optimal solution for inspection.

The mixing tool is lifted pneumatically which allows the sealing area to be easily inspected.



View through the outlet to the main impeller in lifted position.

Clean solutions, reliable data management



The optional sieving mill and the feed pipes for powder and liquid (green) can be cleaned automatically.

Cleaning.

The machines are equipped with pneumatically operated valves to rinse the shaft seals and the gas-stripping nozzles.

The cleaning system is designed for automatic seal rinsing and is programmed for repeated partial filling of the bowl (with the mixing tools running) followed by discharge. It is also possible to provide the bowl (and the lid), the outlet and the sieving mill with cleaning nozzles. Complete automatic cleaning of the internal product contacting parts is guaranteed.

After finishing the cleaning process the pipe lines are blown with compressed air and dried under vacuum.

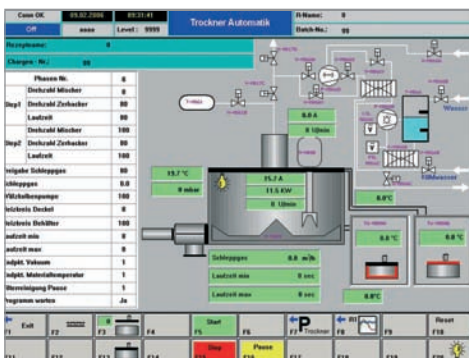


Fitted with an easy to operate industrial PC.

Control.

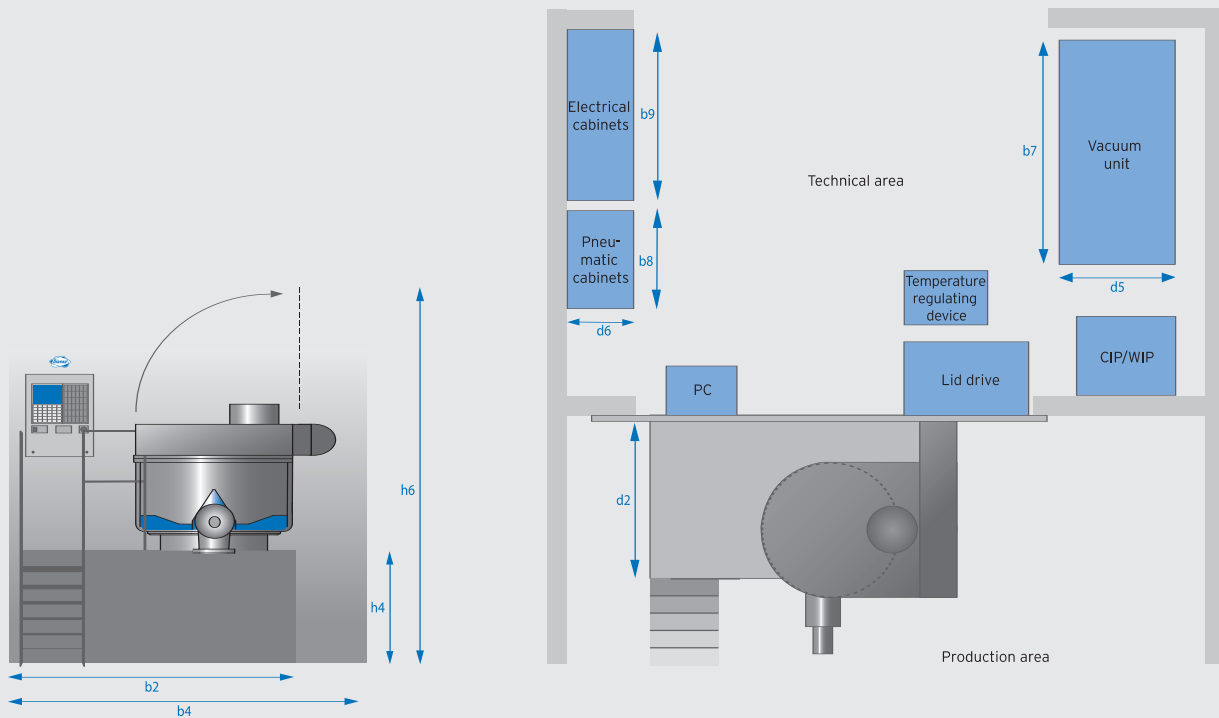
The programmes for mixing, granulating, drying, discharge and cleaning are based on time, temperature and pressure. Individual equipment parts are displayed graphically on the screen. Not only the mixer motor power, the chopper motor current, the vacuum and the tool speeds, but also the material temperature, the water temperature and the volume of stripping gas are measured, displayed and recorded.

The operator can configure the process course easily step by step.



All important information available at a glance: Set and actual values, trending, flow chart.

Technical data and dimensions



Type/Unit *	b2	b4	b7	b8	b9	h4	h6	d2	d5	d6	
VAC 150	1800	2820	2600	1000	2000	1100	3000	1280	1350	500	
VAC 400	2200	3550	2600	1000	2400	1100	3700	1525	1400	500	
VAC 600	2200	3600	2600	1000	2400	1150	4050	1565	1400	500	
VAC 800	2500	3850	2800	1000	2400	1300	4350	1850	1500	600	
VAC 1200	2500	4150	2800	1200	2600	1300	4700	1850	1500	600	
VAC 2000	2800	4650	3000	1600	2800	1500	5200	2000	1800	600	
Technical data						150	400	600	800	1200	2000
Total contents (l)						150	400	600	800	1200	2000
Max. useful contents (with bulk density 0.5-0.6 kg/l)						100	280	420	550	850	1400
Tool speed (-r.p.m)						6 - 165	4 - 120	3 - 105	3 - 95	2 - 85	2 - 80
Number of gas-stripping nozzles						3	6	6	6	6	8
Mixer motor (kW)						11	30	37	45	75	110
Chopper motor (kW)						3	5 / 6	7,5 / 9	10 / 12	17 / 20	25 / 30

* Units in mm
 Data applies to the basic design.
 We reserve the right to change the design and technical data.



www.diosna.com

DIOSNA Dierks & Söhne GmbH · Am Tie 23 · D-49086 Osnabrück

Phone: +49 (0) 541 33 104-0 · Fax: +49 (0) 541 33 104-805

info@diosna.com · www.diosna.com