

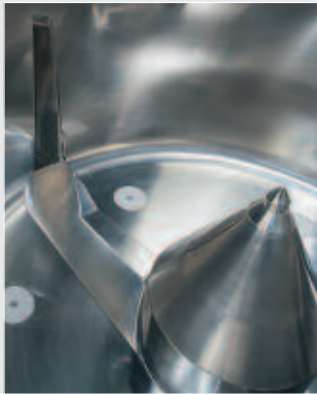


Pharmaceutical Mixer 0,25 to 150 l

Mixing, granulation and vacuum drying.



Quality, experience and innovation



Quality down to the last detail:
Tool blade with stripper.

Flexibility in Laboratories and Pilot Plants

DIOSNA offers a versatile range of machines for laboratories, pilot plants and small scale production. All systems are designed for a scale-up to larger machines and an ergonomic and easily cleanable design in line with GMP.

Depending on the product, the useful content for mixing is approx. 30 to 90 % of the nominal volume, and when vacuum drying approx. 30 to 70 %.

Thanks to our extensive range of accessories and numerous upgrade options, each machine can be flexibly adapted to your requirements or systematically extended at a later stage.

Would you like to test our machines in our laboratory? If so, please feel free to arrange a demonstration date with us. DIOSNA also provides the right equipment for special technologies such as pelletising, thermo-granulation or micro-granulation.

Different containment-designs are available for high potent materials.



Simple and comfortable:
Control by industrial PC.

DIOSNA machines with interchangeable bowls are prepared for use with different sized bowls. This gives our customers optimum flexibility for the future without having to invest in equipment which they do not require immediately.

The installation of an industrial PC is also beneficial for laboratory and pilot scale machines. The software used by DIOSNA conforms to 21 CFR Part 11 and offers a user-friendly visualisation as well as extensive batch data logging and documentation. Our programmers can give you rapid and easy support via the integrated modem. An efficient and comforting service which has proved very successful.

DIOSNA attaches great importance to detailed and comprehensive advice, allowing it to provide the highest quality service demanded by its customers.



P 1 - 6 Laboratory Mixer

- Practical, user-friendly bench top version, simply to clean
- Compact, comfortable and easy to operate
- Interchangeable bowls 0,25; 0,5; 1; 2; 4; 6 litres
- PTFE shaft seal, can be dismantled without tools
- Transparent vessel lid made from glass or plastic
- Variable speed drives - The speed is adjusted to the relevant bowl size
- PLC with touch screen panel
- Bowls are optionally available with jacket and temperature measurement
- Extensive range of accessories
- Bowl changing without tools
- Current and power measurement for granulation end point detection with three measuring ranges



P 1 - 6
Laboratory Mixer.



Mixing bowl with temperature probe
in the lid.

The P 1 - 6 is a laboratory machine for mixing and granulating. The compact bench top version can be set up with minimum space requirements. The bowls are fixed to the basic machine using a simple bayonet system. Allowing them to be easily removed. The machine is operated via a touch screen which also provides the ability to modify the settings for automated mixing processes.

Laboratory System P/VAC - 10

- Moveable compact machines with integrated control
- Mixing/Granulating bowls for 0,25; 0,5; 1; 2; 4; 6; 8 and 10 litres
- Vacuum drying bowls 2 and 6 litres (can be retrofitted)
- PTFE shaft seal, can be dismantled without a tool
- Transparent vessel lid cover made from glass
- Vacuum or heating/cooling system can be integrated in the machine
- PLC with touch screen panel
- Explosion protection version and integrated industrial PC available
- Easy bowl changing thanks to pneumatically operated chopper coupling
- Optional side discharge ports
- Split design available for installation in an isolator (glove box)
- Connections for Split Butterfly valves and soft isolator
- Current and power measurement for granulation end point detection with three measuring ranges



P/VAC - 10 in Isolator Operation.



Detail Isolator Installation.



P/VAC - 10 with operator panel ET 316. 6 l bowl with discharge valve.

The P/VAC - 10 is a powerful laboratory machine for a very wide range of applications. It covers the entire spectrum of type P 1 - 6. It is also possible to work with up to 10 l bowl sizes. The machine is especially suitable for users who work with organic solvents or highly active substances, who wish to dry in the mixer (one pot processing) or for those who attach considerable importance to a user-friendly control system.

Laboratory System P/VAC 10 - 60

- Moveable compact machine with integrated control
- Mixing/Granulating: Interchangeable bowls 10 l, 25 l, 60 l (also 12 bar shockproof)
- Gas-stripping vacuum drying: 20 l and 50 l
- Easy bowl changing using a movable lifting device
- The drives, outlet and shaft seals remain on the machine when changing the bowls
- Air gap shaft seals in WIP version (wash-in-place by automatic rinsing with water during cleaning)
- Outlet housing can be opened for cleaning and inspection
- PLC with operator terminal
- Current and power measurement for granulation end point with three different measuring ranges



P/VAC 10 - 60 in moveable design.



P/VAC in 50 l-Vacuum-drying design.



Control hardware arranged for easy maintenance.

The DIOSNA laboratory mixers P/VAC 10 - 60 are designed as flexible laboratory/pilot scale machines. Different bowls can be added at a later stage. Machines initially designed as pure mixers/granulators can also be extended later to incorporate vacuum drying. The vacuum drying bowls are of cylindrical design and equipped with gas-stripping nozzles, the cover is operated pneumatically. One of the main rotor tips is extended to form a scraper to prevent deposits on the bowl wall, as with the production machines. Thus easy scale-up is assured. The "through-the-wall" setup for a technical zone is included as standard for vacuum drying, as the vacuum pump and heating/cooling device are arranged for set up in a technical area.

Pharmaceutical Mixer P 100 and P 150*

- Permanently-installed mixing bowls (also 12 bar shockproof)
- Compact, user-friendly design, with integrated operating terminal
- Separate control cabinet with PLC
- Pneumatic safety locking for the bowl cover
- Stand alone or "through-the-wall" installation
- Air gap shaft seals in WIP version (wash-in-place by automatic rinsing with water during cleaning)
- Outlet housing can be opened for cleaning and inspection
- In combination with WIP/CIP and containment valves suitable for processing highly active substances
- Available for direct coupling with our CAP fluid-bed dryers



Mixer/Granulator P 150
in elevated design with
sieving mill.



Mixer/Granulator P 100.



Cleaning: automatic sealing and
bowl rinsing.

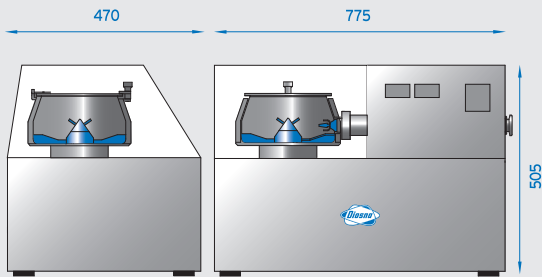
The powerful DIOSNA Pharma Mixers P 100 and P 150 have been designed for use in pilot plants and for smaller production batches. They offer various options for charging with powders and liquids and different versions for setting up, cleaning and control as well as for coupling to sieving mills and dryers.

The Pharmaceutical Mixers P 100 and P 150 are designed to satisfy the highest requirements down to the last detail. Special equipment and individual components for specific applications are available, depending on the requirement.

* Please find information on the gas-stripping vacuum dryer VAC 150 in our separate product brochure.

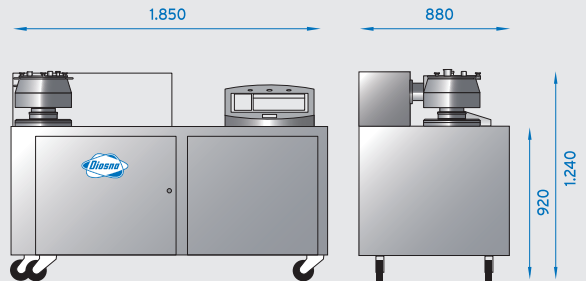
Technical Data and Dimensions

P 1 - 6



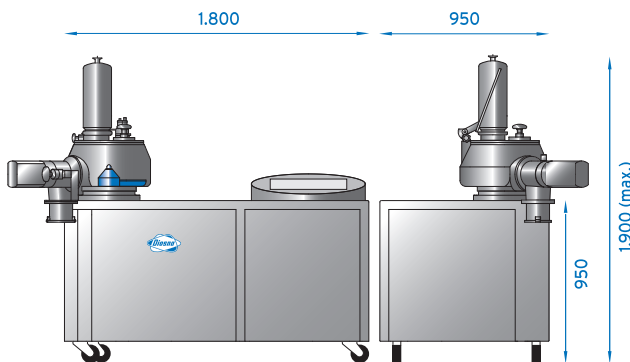
Technical Data	P 1 - 6
Bowl sizes (l)	0,25; 0,5; 1; 2; 4; 6
Mixer motor power (kW)	0,75
Impeller tip speed (m/s)	0,7-7
Chopper motor power (kW)	0,18
Chopper speed (min - 1)	220-2.200
Weight (kg)	95

P/VAC - 10



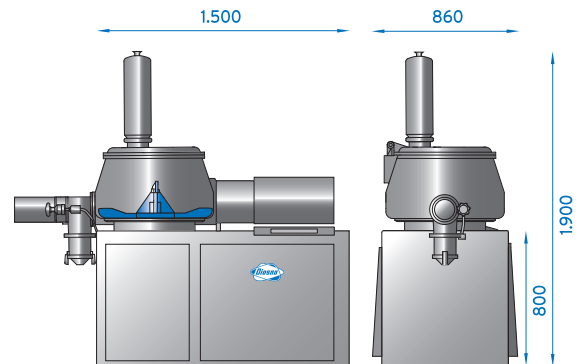
Technical Data	P/VAC - 10
P-bowl sizes (l)	0,25; 0,5; 1; 2; 4; 6; 8; 10
VAC-bowl sizes (l)	2; 6
Mixer motor power (kW)	1,5
Impeller tip speed (m/s)	0,7-7
Chopper motor power (kW)	0,75
Chopper speed (min - 1)	220-2.200
Weight (kg)	700

P/VAC 10 - 60



Technical Data	P/VAC 10 - 60
P-bowl sizes (l)	10; 25; 60
VAC-bowl sizes (l)	20; 50
Mixer motor power (kW)	4
Impeller tip speed (m/s)	0,7-7
Chopper motor power (kW)	1,5
Chopper speed (min - 1)	300-3.000
Weight (kg) (10 l - 60 l)	1.000-1.100

P 100 and 150



Technical Data	P 100/P 150
Bowl sizes (l)	100; 150
Mixer motor power (kW)	7,5
Impeller tip speed (m/s)	0,7-7
Chopper motor power (kW)	2,8/3,5
Chopper speed (min - 1)	1.500/3.000
Weight (kg)	1.000 (P 150 = 1.100 kg)
Control-Cabinet (b x t x h)	1.200 x 500 x 2.200 mm
Pneumatics-Cabinet (b x t x h)	800 x 500 x 2.200 mm

We reserve the right to alter the above specifications.

Individual Solutions and Combinations

DIOSNA has set new standards over the decades thanks to its quality and successful innovations. We continually adapt the design and range of accessories to the requirements of the pharmaceutical industry. If a DIOSNA standard solution is not sufficient to meet all requirements, we develop a customised solution together with the customer: Discuss it with us!



All in one:
Interchangeable 10 l, 25 l, 60 l and
150 l fixed bowl combined to one
machine.

DIOSNA P 150 combined with P/VAC 10 - 60 in one machine frame (self-supporting, "through-the-wall"), hermetically sealed. Internal and external explosion protection in accordance with ATEX for the use of organic solvents. Designed for processing high potency drugs. Pneumatic charging for both mixers and transfer of the wet granules to the downstream DIOSNA CAP fluid-bed processor. The integrated peristaltic pump, a mass flowmeter (behind the wall), swivelling sieving mill, industrial PC, WIP station and further peripheral equipment are used for both machines.



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