

DIOSNA Mixers for Laboratory, Pilot Plant and Production



Universal Mixers V 10 to V 1600

Mixing, Moistening, Agglomerating and Wet Granulating.



Gentle and fast

We design the machine especially for you!




DIOSNA V 250 in pharma design.

The proven mixing action of the V 10 to V 1600 series machines ensures effective mixing in many applications. Optimal performance is assured by dedicated designs for feeding, discharging and installation.

DIOSNA Universal Mixers are used for a variety of mixing applications in different sectors of industry. Each mixer can be adapted to the individual application:

- Construction Materials (various kinds of stainless steel)
- Surface finishes
- Drive capacity & mixing tool speed (via a frequency converter)
- Design of the shaft seals, outlet, lid, etc.
- Control (conventional / memory programmable / PC)
- Explosion protection according to European- or US standards
- Additional equipment



DIOSNA Universal Mixers are designed for effective mixing, moistening, agglomeration and wet granulation of materials with differing consistencies.

The universal application range.



Food industry

- Flavours
- Spice & herb mixtures
- Doughs for pastries
- Sugar based confectionery tablets
- Instant meals
- Batters
- Instant teas



Chemical industry

- Powder mixing (also with liquid addition)
- Powder paints
- Master batches
- Colouring of plastics



Pharmaceutical industry

- Wet granulations
- Powder mixtures
- Granulate mixtures



Cosmetics industry

- Ceramic dental mixtures
- Eye shadows
- Face powders



Stainless steel bowls and mixing tools guarantee quality

The principle.



Because of its ideal design and location the chopper tool works effectively even when the mixer is only 30 % filled.

- The main tool creates a vortex-like circulation of the product.
- The upper part of the bowl is conical, so that the material is diverted to the centre of the bowl thus creating a material circulation.
- The centres of the mixing tools are designed to be large to ensure that no mixing material can be in an area of low centrifugal forces.
- The mixing blades are large and located close to the container base to achieve optimum mixing and quick discharge.
- The chopper is positioned in the part of the mixing zone where the circumferential speed is highest to give excellent liquid distribution, reduction of oversized particles and densification of wet granules.
- High centrifugal forces are transferred to the material.
- Thus during mixing, a circulation of material is set up which takes the material through the intensive mixing zone of the chopper to the top of the vortex and thence back into the middle to repeat the cycle.
- The special profile of the bowls and mixing tools allows a filling volume of 30 to 90%.



Installed high-capacity pump.

Liquid addition

Liquids often need to be mixed into the dry recipe components. For even distribution the liquids are sprayed onto the circulating material near the chopper using hollow cone nozzles. A liquid pressure of 2-3 barg is required which can be provided by a peristaltic pump or a pressure vessel. When handling very small amounts of liquid or materials with high viscosity and/or highly absorbent dry materials, we recommend trials be carried out in our laboratory. These trials will confirm whether a more sophisticated liquid handling system is required e.g. two phase spray system, high pressure spraying solution heating etc.

DIOSNA offers manually or automatically controlled addition and preparation systems for the liquids including mixing containers, pumps, flow meters and nozzles.



Mobile liquid preparation vessel with stirrer, explosion-protected and with integrated control.

Short mixing times - efficient mixing results

Universal Mixers V 10 to V 1600.

We recommend DIOSNA Universal Mixers for the production of powders, agglomerates, wet granules and highly viscous mixes (e.g. Madeira cake mix etc.).

The vertical, thick-walled bowl has a cylindrical design with a conical upper part to form a vortex-like circulation of the mixing material.

All corners and transitions within the bowl are radiused to ensure optimal mixing performance.

DIOSNA Universal Mixers are equipped with air-purged shaft seals. Unlike standard mechanical seals these are virtually wear-free.



DIOSNA Universal Mixer V 400.

- Different designs, specifically designed to suit the industry or application.
- All sizes available in painted or unpainted finish.
- Product-contacting parts manufactured from stainless steel.
- Different seal options.
- Simple cleaning.
- Mixing times of 2 to 4 minutes for powdery materials.
- Incorporation of liquids in 2 to 6 minutes.
- Ideal for the intensive mixing of thick, highly-viscous materials, or sensitive/delicate products.

Highlights at a glance

Series V 10 to V 200.



DIOSNA Universal Mixer V 10 in moveable design.

- Driven by electric motor through a right angled gearbox.
- Manual lid safety system.
- Manual discharge outlet operation using hand-wheel. (Outlet not hinged)
- Open frame made of tubular legs. A moveable design is optionally available.
- Tool design: flat section.

Series V 250 to V 1600.



DIOSNA Universal Mixer V 1600.

- Drive three-phase electric motor via a belt drive an right angled gearbox.
- Pneumatic lid safety system.
- Counter weight for easy opening and closing of the mixer lid. (Due to its large weight the V 1600 is equipped with a lifting-/swivelling lid.)
- Pneumatic outlet actuation.
- Outlet hinged for cleaning / inspection.
- Fully enclosed frame.
- Toollift-System optionally available (see photo at the right).
- Tool design: specially angled box section with enlarged blade tips.

Operator-friendly



The counterbalanced full size mixer is easily raised to help cleaning and inspection.



Easy control using an industrial PC.

Cleaning, inspection and control.

Cleaning

The mixers are highly regarded for their cleanability and the ease of inspection.

All other product-contacting parts can be cleaned with water and if necessary with detergents, by repeated filling and discharging of the bowl. Additional cleaning nozzles can be added to optimise the cleaning if required. The air purged shaft seals can also be equipped with water back flushing rinsing as an optional extra.

Control

The controls for the machine can be as simple or complex as you wish.

From simple relay logic controls with independent timers and push buttons to PLC controls with HMIs, printers, or industrial PCs and network connections are all available as are installed modems for remote maintenance.

DIOSNA Toollift-System

For inspecting the underside of the mixing tool and the shaft seal area the mixing tool can be lifted pneumatically (option).

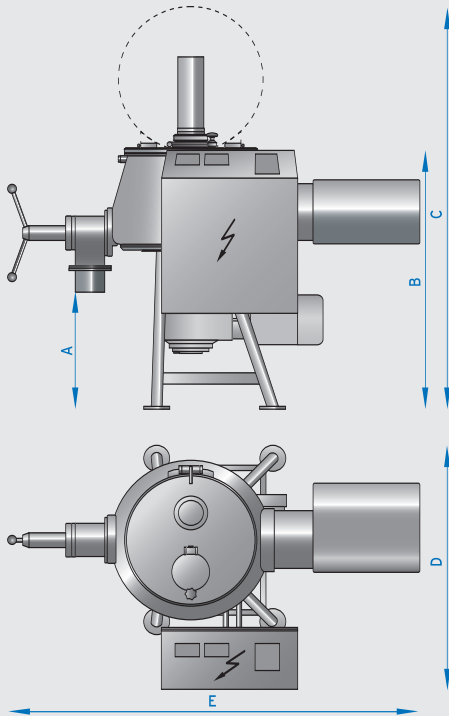


Toollift-System:

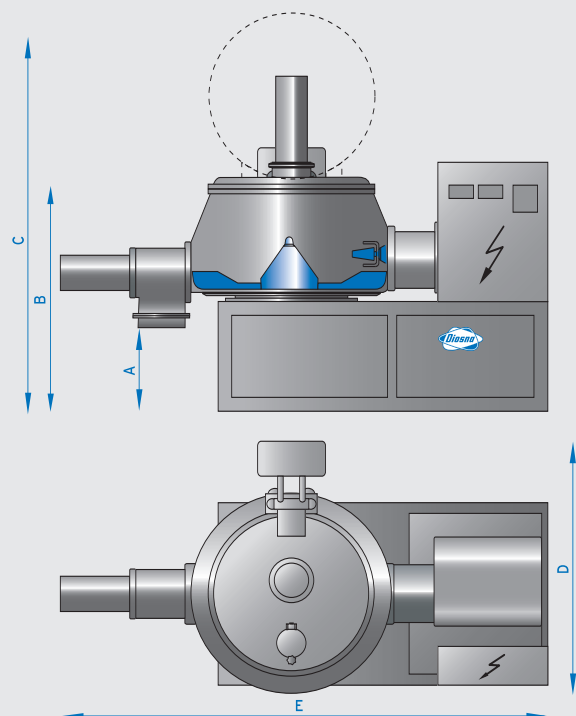
Mixing tool in elevated position.

Technical data and dimensions

V 10 - V 200



V 250 - V 1600



Type/Dimen. *	V 10	V 25	V 50	V 100	V 200	V 250	V 400	V 600	V 1000	V 1600
A	550	595	515	515	565	355	455	525	630	830
B	850	925	995	1125	1200	1020	1210	1260	1590	1880
C	1230	1365	1550	1770	2050	1800	2100	2400	2800	-
D	900	930	950	1075	1200	1200	1400	1600	1800	1750
E	1270	1510	1610	1800	2150	2200	2700	2800	3300	3650

Technical Data	V 10	V 25	V 50	V 100	V 200	V 250	V 400	V 600	V 1000	V 1600
Total volume (l)	13,0	27	52	122	205	235	430	615	1050	1700
Effective volume (l)	11,5	24	46	110	185	210	385	550	940	1400
Mixer motor (kW)	0,55/0,75	1,1/1,5	1,5/2,2	3,7/4,4	5,5/7,5	6,5/9	13/16	18,5/25	32/38	50/72
Tool speed at 50 Hz. (rpm)	205/ 410	162/ 325	133/ 265	98/ 196	95/ 190	85/ 170	70/ 140	60/ 120	50/ 100	45/ 90
Chopper motor (kW)	0,75	1,5	2,2	2/2,8	3/4	3/4	4,9/6	6,5/9	13/16	18,5/25
Chopper speed at 50 Hz. (rpm)	3000	3000	3000	1500/ 3000	1500/ 3000	1500/ 3000	1500/ 3000	1500/ 3000	1500/ 3000	1500/ 3000

* Units in mm
Data valid for basic design.
We reserve the right to change technical data, design and specifications.



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