Systems & plants

/// Always right for your process

IKA processing plants can be used to produce solutions, emulsions and suspensions in many applications. Owing to the advanced design, they can handle products that range from low to high viscosity.

Our plants are flexible and easily adaptable to any application. They are used, for example, to produce cosmetic creams and lotions in the cosmetics and pharmaceuticals industry, mayonnaise and dressings in the food industry, suspensions and emulsions in the chemical industry, and for paints and lacquers. Based on our long experience with many applications, IKA is your expert partner for process plants.

Scale-up

/// Develop – Optimize – Scale from lab to production

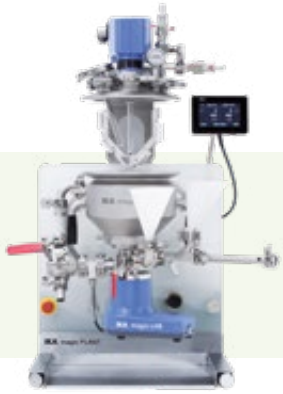
Simplified scale-up using identical dispersing parameters for all sizes makes for reliable scaling up. When new products are developed, the processes are initially tested in pilot plants. Lab-scale trials are also used to confirm changes in recipes or ingredients.
By using identical design and dispersion parameters, IKA systems guarantee reliable scale-up with constant product quality.

Systems & plants

/// Overview

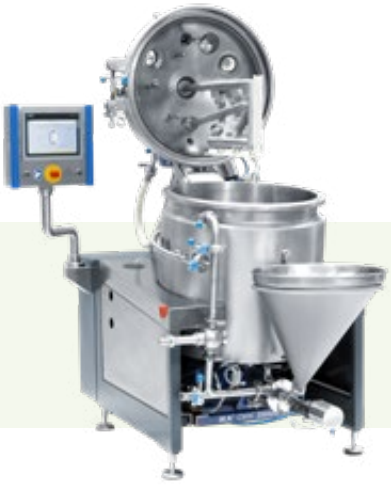
IKA magic LAB

The tiny, yet powerful inline laboratory dispersing machine, designed for mixing dispersing and wet milling. It can also be converted for batch operation with a 1 to 2 liter capacity.



IKA magic PLANT

The most versatile laboratory reactor with a 2-liter vessel and an agitator for mixing and homogenizing liquids and pastes.

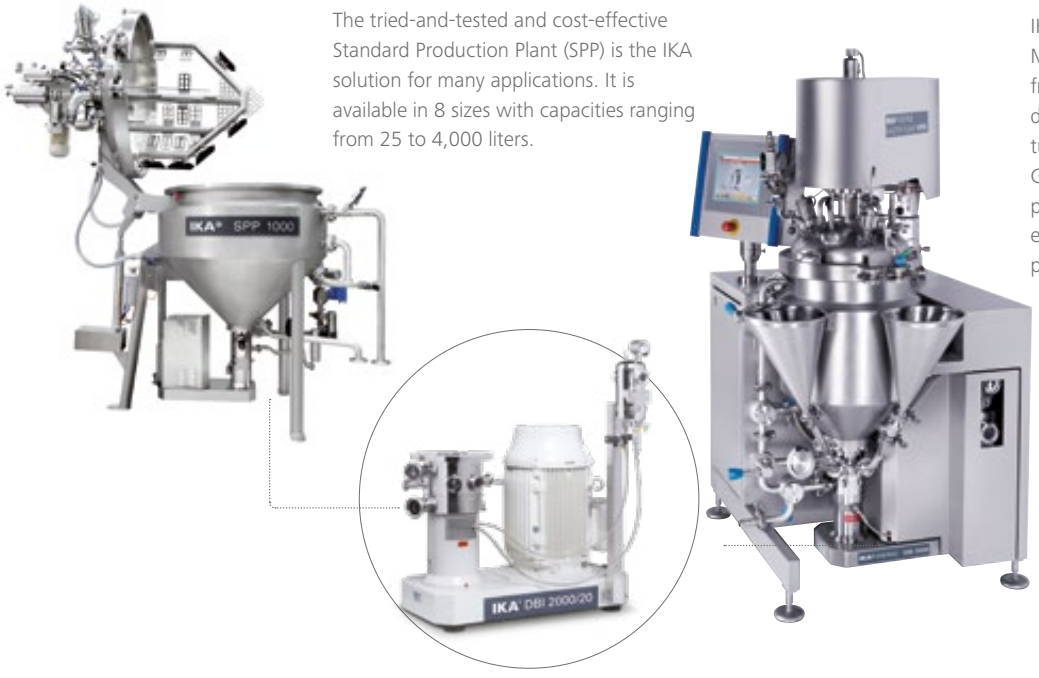


Compact Mixing Plant XPP

The compact mixing and dispersing plant XPP has that something extra for your process technology. It is ideally suited to homogeneously incorporating large quantities of powdered solids and liquid additives into a liquid, efficiently and cost-effectively.

Standard Production Plant

The tried-and-tested and cost-effective Standard Production Plant (SPP) is the IKA solution for many applications. It is available in 8 sizes with capacities ranging from 25 to 4,000 liters.



Master Plant

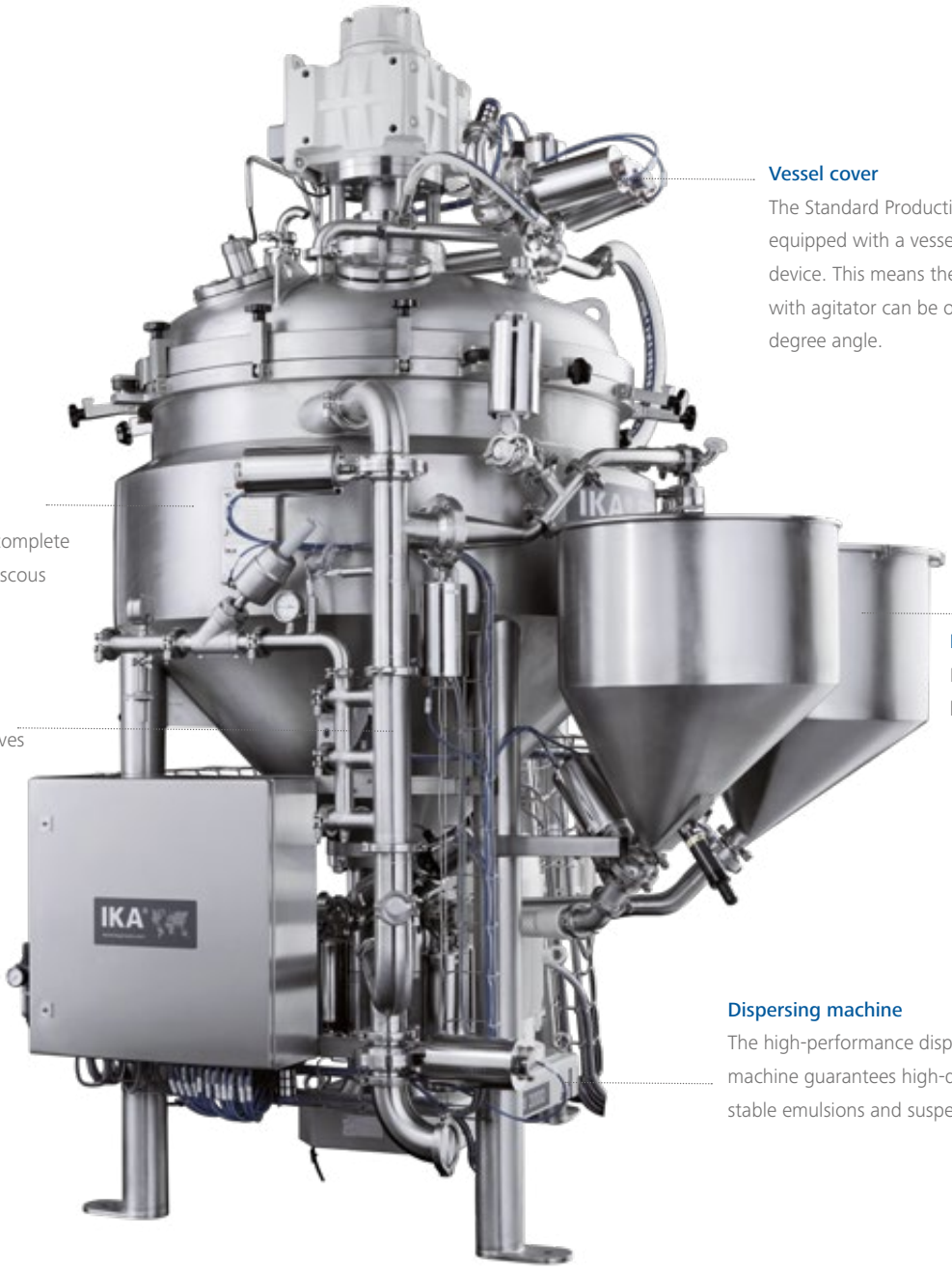
IKA's homogenizing and emulsifying Master Plant is available for useful volumes from 10 to 4,000 liters. It mixes and disperses efficiently, controls the temperature and feeds additives. The innovative GMP-compliant mixing plant is ideal for processing high viscosity products, especially in the food, cosmetic and pharmaceutical industries.

Standard Production Plant SPP

/// Cost-efficient mixing plant

With its tried-and-tested Standard Production Plant (SPP), IKA provides a solution for producing emulsions and suspensions in many different applications. It is available in 8 sizes with useful volumes from 25 to 4,000 liters.

The SPP is a cost-effective mixing plant for all standard processes such as mixing, stirring, homogenizing and dispersing. Owing to its unique geometry, the plant is easy to operate and requires little space, especially height.
Cutting-edge mixing tools ensure consistent product quality.



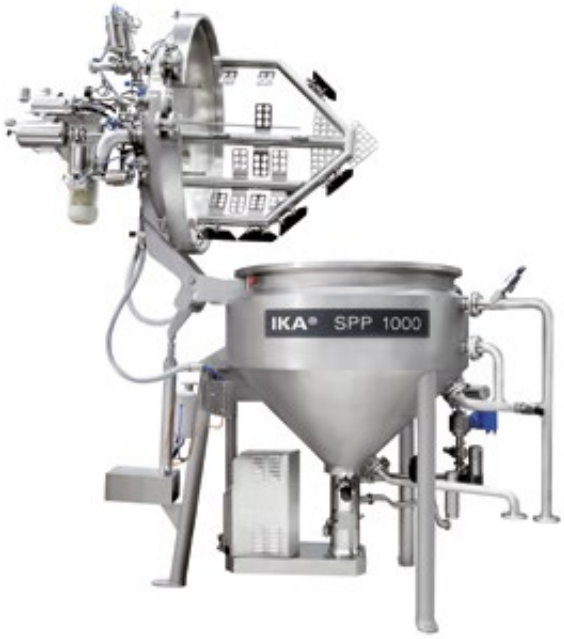
Vessel cover
The Standard Production Plant is equipped with a vessel cover tilting device. This means the entire cover with agitator can be opened to a 90 degree angle.

Mixing vessel
The unique conical shape of the vessel bottom enables complete discharge — even for highly viscous products.

Funnel
For adding solid and liquid additives

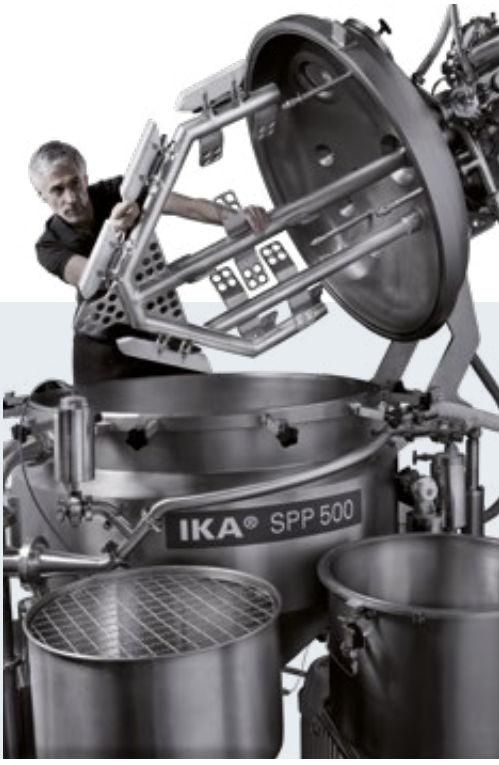
Recirculation loop
Large pipe with 2-way flap valves and clamp connections

Dispersing machine
The high-performance dispersing machine guarantees high-quality and stable emulsions and suspensions.



Example applications

> Cosmetic creams and lotions
> Mayonnaise, dressings
> Paints and lacquers
> Fruit juices
> Collagen suspensions
> Disinfectants
> Lipid emulsions
> Ceramic suspensions



Further advantages of the SPP:

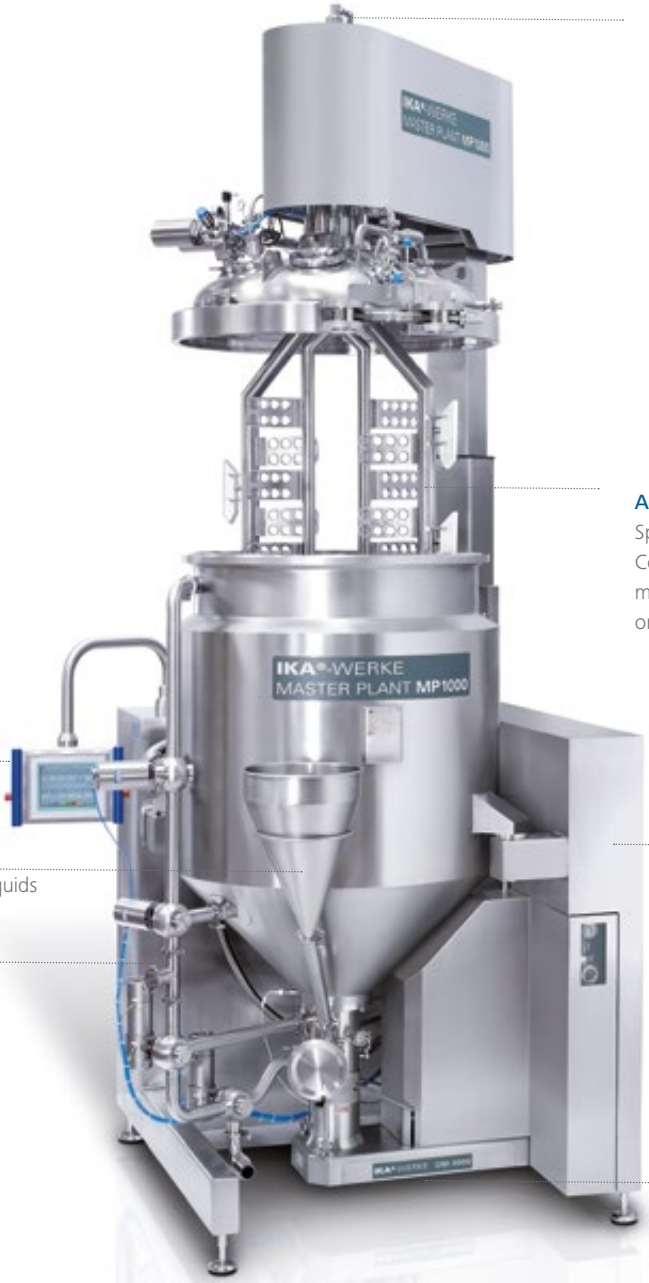
> Special versions available for the food and pharmaceutical industries
> Extremely short batch times with high product quality
> CIP and SIP capable
> Infinitely variable speed control possible
> Explosion-proof version available as an option
> Low minimum quantities of approx. 30% of the maximum capacity
> Low installation height
> Flexible configuration, e.g. with differently installed in-line dispersers, single- or multi-stage

SPP TECHNICAL DATA	SPP 25	SPP 50	SPP 100	SPP 250	SPP 500	SPP 1000	SPP 2000	SPP 4000
Total connected load [kW]	5	6	9	10	25	28	55	60
Mixing vessel								
Min. useful volume [l]	8	15	30	75	150	300	600	1,200
Max. useful volume [l]	25	50	100	250	500	1,000	2,000	4,000
Dimensions								
Height (closed cover) [mm]	1,350	1,497	1,720	2,031	2,789	3,156	3,725	4,449
Height (open cover) [mm]	1,539	1,695	2,004	2,486	3,279	3,819	4,610	5,690
Width [mm]	1,182	1,221	1,370	1,817	2,573	2,935	3,923	5,072
Depth [mm]	828	860	1,080	1,250	1,350	1,981	2,278	2,862

Master Plant MP

/// Universal mixing plant

The Master Plant homogenizing and emulsifying system is a universal mixing system. It is ideally suited to efficiently mixing, dispersing, tempering and optimally incorporating additives. The innovative GMP compliant mixing plant enables processing of high viscosity products, even under pressure and vacuum. It also guarantees the highest level of precision, reliability and reproducibility of results.



Connections
For vacuum, compressed air or funnel (additives)

Alternative
Spiral stirrer can be heated/cooled
Counter-rotating stirrer with movable scrapers and a heatable or coolable inner stirrer

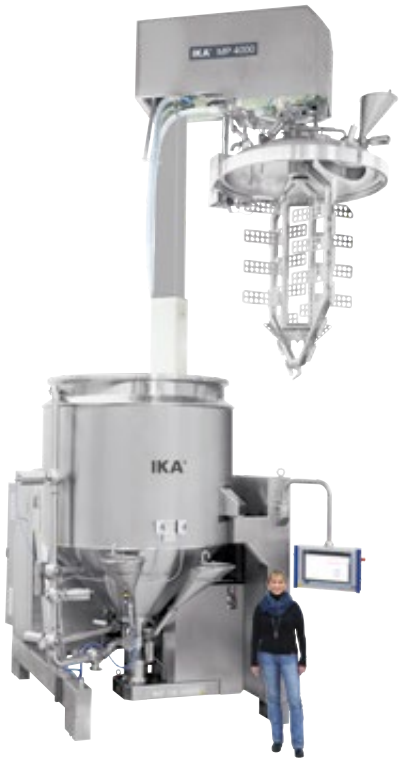
Human machine interaction
With touchscreen monitor

Funnel
For incorporation of solids and liquids

Recirculation line

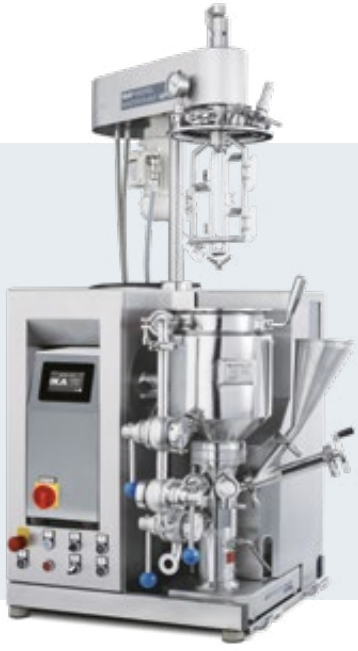
System Design
Completely encased in stainless steel

Dispersing machine
The high performance dispersing machine DBI ensures high quality, stable emulsions and suspensions.



Example applications

> Decorative cosmetics
> Ready meals, baby food
> Jams
> Ointments, gels
> Vaccines
> Cleaning & polishing agents
> Polymer emulsions
> Impregnating agents



Further advantages of the MP:

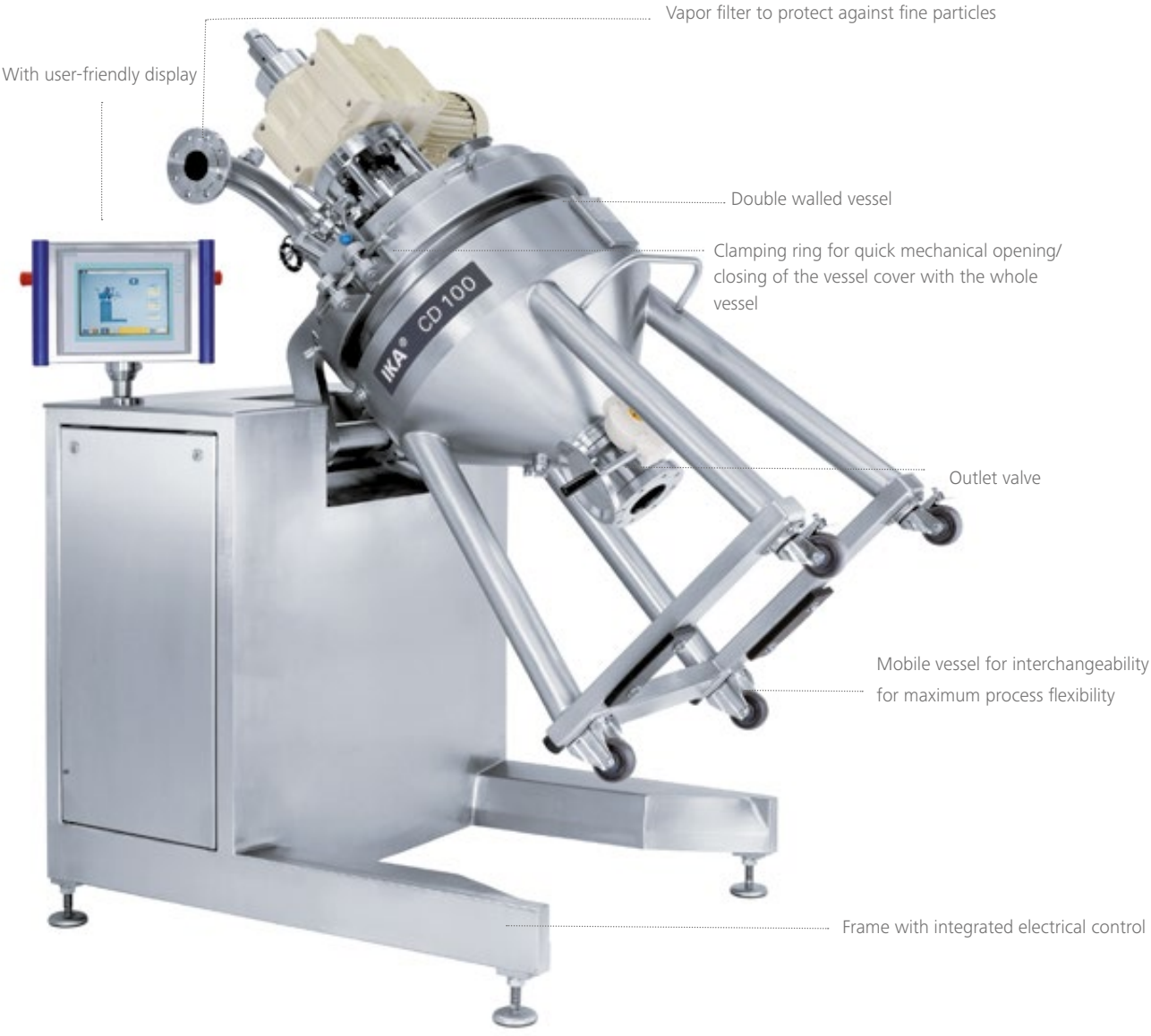
> Special versions available for the food and pharmaceutical industries
> Feed solid and liquid additives into the dispersing chamber
> CIP and SIP capable
> Infinitely variable speed control possible
> Explosion-proof version available as an option
> Separate recirculation loop (short/long) to minimize dead space and loss of material
> Interchangeable dispersing tools
> Low maintenance requirements
> Optional counter-rotating stirrer for highest viscosities; inner stirrer can be heated/cooled

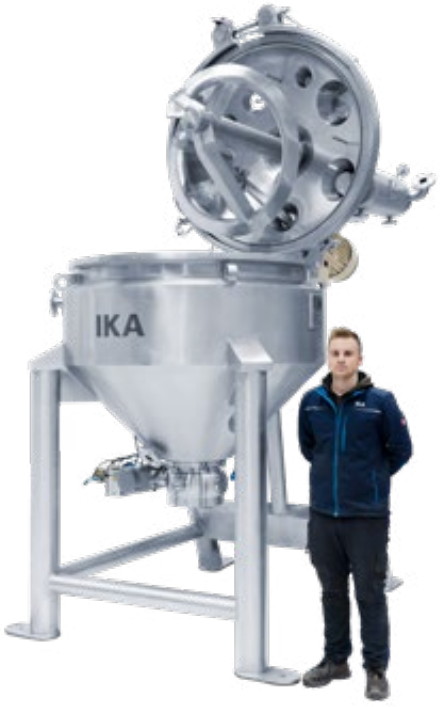
MP TECHNICAL DATA	MP 10	MP 25	MP 50	MP 100	MP 200	MP 500	MP 1000	MP 2000	MP 4000
Total connected load [kW]	5	7	8	12	13	31	35	70	80
Mixing vessel [l]	13	32	65	130	260	650	1,350	2,600	5,200
Min. useful volume [l]	1.5	3.8	7.5	15	30	75	150	300	600
Max. useful volume [l]	10	25	50	100	200	500	1,000	2,000	4,000
Working pressure in the vessel [bar]	-1 to 2.5	-1 to 2.5	-1 to 2.5	-1 to 2.5	-1 to 2.5	-1 to 2.5	-1 to 2.5	-1 to 2.5	-1 to 2.5
Max. temperature in the vessel [°C]	150	150	150	150	150	150	150	150	150
Dimensions									
Height (closed cover) [mm]	1,230	1,637	1,817	2,243	2,447	3,315	3,790	4,951	5,488
Height (open cover) [mm]	1,680	2,150	2,417	2,998	3,377	4,615	5,379	7,051	7,858
Width [mm]	630	850	850	1,215	1,215	1,650	1,650	2,210	2,210
Depth [mm]	656	1,010	1,130	1,405	1,405	1,900	1,900	2,710	3,060

Conical Dryer CD

/// Tilting for the perfect drying result

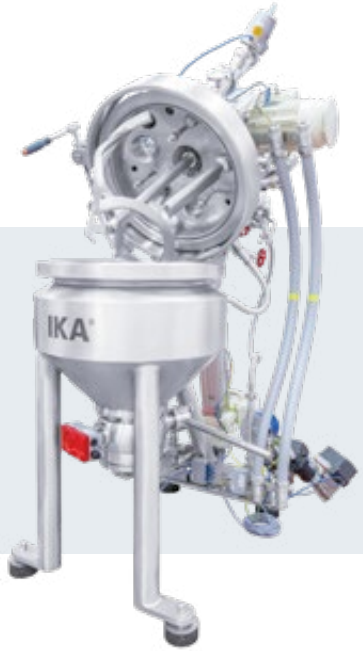
Efficient and at the same time gentle mixing of free flowing solids with different bulk densities and particle sizes is what you get with the Conical Dryer CD. It ensures uniform moisture and temperature distribution throughout the product chamber. The Conical Dryer CD uses gentle mixing for drying, combined with uniform heating of the moist raw materials via the vessel wall, the stirrer and the cover. Your bulk material is effectively dried at temperatures up to 200 °C and under vacuum.





Example applications

> Metal oxides
> Coffee powder products
> Soup powder
> Sauces
> Baby food
> Active pharmaceutical ingredients



Further advantages of the Conical Dryer CD

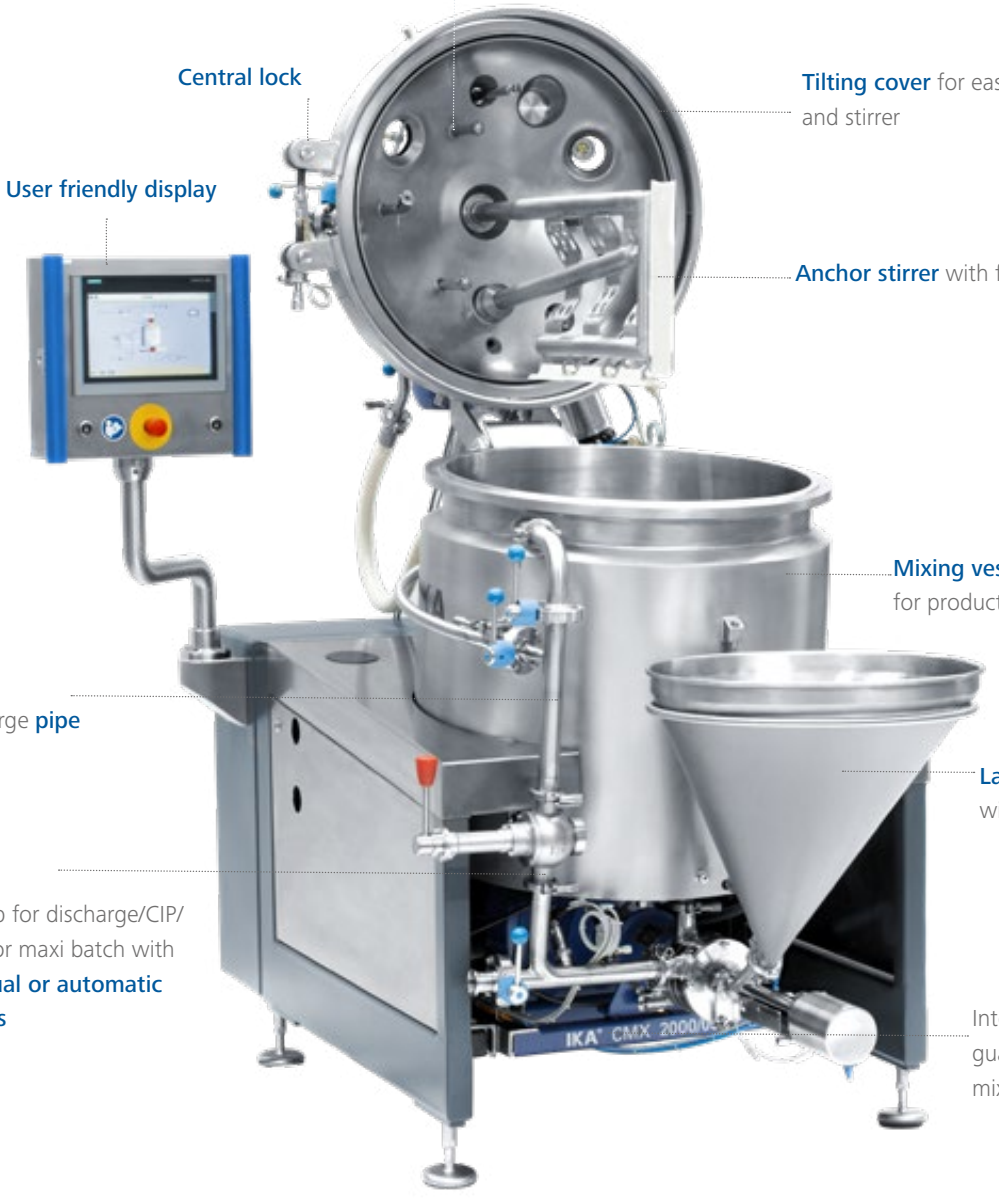
> Shorter drying times thanks to the directly heated spiral stirrer and the double walled, heatable vessel and vessel cover
> Flow breaker with integrated temperature sensor PT 100
> Floating lump breaker for breaking up any agglomerates
> Compact, low profile design
> Optional ATEX/GMP design

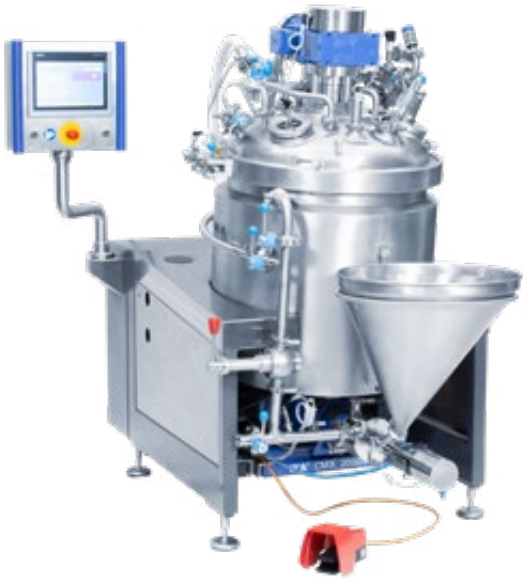
Technical data Conical Dryer	Min. useful volume [l]	Max. useful volume [l]	Feed nozzle [size]	Outlet valve	Motor power [kW]	Directly heater stirrer	Speed range [rpm]
magic PLANT powder	0.5	2	1''	DN 25	0.4	-	0 - 350
CD 10	3	10	2''	DN 65	0.37	+	30 - 112
CD 25	7.5	25	3''	DN 65	0.75	+	22 - 83
CD 50	15	50	3''	DN 100	1.5	+	18 - 68
CD 100	30	100	4''	DN 100	3	+	14 - 54
CD 250	75	250	4''	DN 150	5.5	+	11 - 41
CD 500	150	500	6''	DN 150	11	+	8 - 32
CD 1,000	300	1,000	6''	DN 150	18.5	+	7 - 26
CD 2,000	600	2,000	8''	DN 200	30	+	6 - 21
CD 4,000	1,200	4,000	8''	DN 200	37	+	5 - 18
CD 7,000	2,100	7,000	8''	DN 200	45	+	5 - 18
CD 10,000	3,000	10,000	8''	DN 250	90	+	4.4 - 16.5

Compact Mixing Plant XPP

/// Excellent end products, even for viscous products with a high proportion of solids

The compact mixing and dispersing plant XPP was designed to produce special products with a particularly high solid content, with short batch times too. Large quantities of powdered solids and liquid additives are efficiently and homogeneously incorporated into a liquid. This extreme mixing and dispersing performance is achieved by the CMX inline mixing machine integrated into the floor of the plant. Compact in design, the easy-to-use XPP is your ideal process plant.





Example applications

> Interior paint
> Hydrocolloids/thickeners
> Electrode coatings
> Sunscreen
> Adhesives
> Disinfectants
> Pigment dispersion
> Fruit fillings
> Sealants
> Lacquers

Further advantages of the XPP

> Excellent dispersing performance, even with highly viscous mixtures up to approx. 10,000 mPas
> Customized designs such as ATEX, automatic valves, dosing systems for product components and special stirrer designs
> Practical accessories such as different solids feed systems (sack chutes, suction lances, big bag stations) and optional extensions such as additional vessels
> CMX as an integrated CIP and discharge pump
> Double jacketed vessel for temperature control, as well as pressure/vacuum version e.g. for degassing integrated as standard

XPP TECHNICAL DATA	XPP 50	XPP 100	XPP 200	XPP 500	XPP 1 000	XPP 2 000	XPP 4 000
Min. useful volume [l]	15	25	40	100	200	400	800
Max. useful volume [l]	50	100	200	500	1,000	2,000	4,000
Temperature range [°C]	-10/+150	-10/+150	-10/+150	-10/+150	-10/+150	-10/+150	-10/+150
Vacuum/pressure [bar g]	-1/+2.5	-1/+2.5	-1/+2.5	-1/+2.5	-1/+2.5	-1/+2.5	-1/+2.5
Viscosity in Newtons [mPas]	1 – 5,000	1 – 10,000	1 – 10,000	1 – 10,000	1 – 10,000	1 – 10,000	1 – 10,000
Viscosity shear thinning [mPas]	max. 50,000	max. 100,000	max. 100,000	max. 100,000	max. 100,000	max. 100,000	max. 100,000
Stirrer [type]	Anchor	Anchor	Anchor	Anchor	Anchor	Anchor	Anchor
Motor power of stirrer [kW]	0.55	0.75	1.1	1.5	3	4	7.5
Dimensions [mm] Length x Width Height (closed cover)	1,200 x 850 1,350	1,450 x 950 1,650	1,580 x 1,100 1,810	1,900 x 1,400 2,450	2,300 x 1,810 2,900	3,100 x 2,600 3,600	3,500 x 3,000 4,200
Height (open cover) [mm]	1,600	2,000	2,206	2,900	3,500	4,500	5,500
Weight [kg]	500	980	1,200	2,150	3,800	5,400	9,600