

Systems and Plants



Systems and Plants

IKA® processing plants can be used for the production of solutions, emulsions and suspensions in many applications. Due to the advanced design, they can handle products that range from low viscosity up to pasty condition.

Flexible and easy to customize to the specific application, our plant systems can be used e. g. for cosmetic creams and lotions in the cosmetic and pharmaceutical industry, for mayonnaise or dressings in the food industry, for

suspensions and emulsions in the chemical industry as well as for production of paints and lacquers.

Based on our long experience with many applications IKA® is your competent partner for processing plants. In order to select the best configuration for your specific application, our test facility is staffed with experienced application engineers. It is equipped with a wide range of laboratory and pilot equipment to qualify the appropriate equipment to meet your application needs.

IKA® magic LAB®

The tiny, yet powerful 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 ideal small laboratory plant with a 2 liter vessel and an agitator for perfect mixing and homogenizing of liquids and pastes.

Standard Production Plant

The approved "Standard Production Plant" SPP in an economic design is the IKA® solution for many fields of application. It is available in 8 sizes with capacities ranging from 25 to 4,000 liters.

Master Plant

IKA® homogenizing and emulsifying system Master Plant allows for efficient mixing, dispersing, temperature control and additive feeding scaling from 10 to 4,000 liters. The innovative GMP-compliant mixing plant enables the processing of high viscosity products, especially in the food, cosmetic and pharmaceutical industries.



Scale-up

Simplified scale-up by identical dispersing parameters for all sizes

Develop – Optimize – Scale-up from laboratory to production scale

When new products are developed, the processes are initially tested in pilot plants. Small scale trials are also used to confirm changes in recipes or ingredients. Through the use of identical plant design and dispersion parameters, IKA® plant systems ensure a reliable scale-up with a constant product quality.

magic PLANT | Exceptional – Flexible – Unique

IKA® introduces the next generation of laboratory scale processing plants. The perfect simulation of our batch mixing systems with smallest sample amounts.

The magic PLANT is the ideal laboratory scale process plant. It is specifically designed to test process and product conditions in an accurate small-scale simulation. Once a satisfactory product is obtained in the pilot scale, the next step is to transfer the manufacturing process to full-scale production. The magic PLANT system can be adapted to a wide range of applications and specific requirements especially in the food, cosmetic, chemical and pharmaceutical industries.



magic PLANT | The most versatile laboratory reactor

This system is used for batch mixing, homogenizing, emulsifying, suspending and for powder mixing and drying. The magic PLANT delivers a seamless process transition from product development to production in capacities of up to 2 liters.

One machine | multiple applications

The IKA® magic PLANT is an extremely versatile and multi-functional process plant. Depending on the application, this unit can easily be modified into three different configurations.



magic PLANT basic

- > Adjustable speed drive for perfect agitating of pure liquids or suspensions
- > Tiltable, double jacketed and insulated vessel
- > Exchangeable stirring tools
- > Optional ULTRA-TURRAX® T 25 batch disperser
- > High pressure and full vacuum operation



magic PLANT inline

- > In combination with high shear inline disperser magic LAB® for high quality emulsions and suspensions
- > Pipe loop with manual 3-way valve for circulation or product discharge
- > Modular processing head for the simulation of various dispersing methods
- > Adjustable tip speed up to 40 m/s for smallest particle sizes



magic PLANT powder

- > Efficient and gentle mixing or drying of free flowing solids
- > Special powder agitator
- > Inclined working position for better mixing and drying results
- > Discharge by complete tilting of the vessel

magic PLANT	
Technical data	
Useful volume [l]	2
Working pressure [bar]	-1 up to 2.5 (optionally 5 bar)
Max. temperature in the vessel [°C]	150
Dimensions (L x W x H) [mm]	430 x 520 x 670
Voltage [V]	1 x 230
Viscosity [mPas]*	1 – 100,000

Agitator	
Technical data	
Speed [rpm]	0 – 2,000 rpm
Stirring tools	> anchor > propeller > spiral agitator for drying > flow breaker
Motor power [W]	400

Disperser T 25 (optional)	
Technical data	
Motor power [W]	500
Speed [rpm]	3,400 – 24,000

* Depending on execution and product properties.



Advantages

- > Modular design with exchangeable tools
- > Process simulation in smallest scale
- > Suitability for wet and dry products

SPP | Cost-efficient Batch Mixing System



The IKA® Standard Production Plant is a **state-of-the-art, yet cost-effective mixing system** for all basic mixing and dispersion technology operations.

The IKA® Standard Production Plant is available in **eight sizes** for volumes ranging from 25 up to 4,000 liters.

Mixing Vessel

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

Recirculation Loop

Large pipe with 2-way flap valves and clamp connections

Vessel Cover

The Standard Production Plant is equipped with a vessel cover tilting device. This enables the cover with agitator to open to a 90 degree angle.



Funnel

for adding solid and liquid additives



Technical data



- > Small minimum capacity
- > Low installation height
- > Flexible configuration



Speed adjustment



Food Execution



Cleaning in Place



Pharma Execution



Sterilization in Place



Ex-protected



SPP 100



SPP 500

Standard Production Plant	SPP 25	SPP 50	SPP 100	SPP 250	SPP 500	SPP 1000	SPP 2000	SPP 4000
Technical data								
Total connected load [kW]	5	6	9	10	23	25	50	55
Mixing vessel								
Min. useable volume [l]	8	15	30	75	150	300	600	1,200
Max. useable volume [l]	25	50	100	250	500	1,000	2,000	4,000
Dimensions (agitator)								
Height (closed cover) [mm]	1,350	1,480	1,720	2,000	2,670	3,050	3,635	4,260
Height (open cover) [mm]	1,520	1,695	1,990	2,460	3,085	3,760	4,500	—
Width (open cover) [mm]	1,070	1,220	1,370	1,705	2,080	2,935	3,500	2,600
Depth [mm]	800	860	1,080	1,250	1,350	1,765	2,200	2,600

Master Plant MP | Perfection in detail

IKA+

- > Counter-rotating agitator for highest viscosities, **inner agitator can be heated/cooled**
- > The complete plant can be **sterilized with steam (SIP)**
- > **CIP-cleaning**, for which the DBI 2000 serves as pump and feeds the rotating spray nozzles



Human-machine-interface (HMI)
with touch-screen monitor

Funnel
for incorporation of solids and liquids

Connections

For vacuum, compressed air or funnel (additives)

Alternative

Heatable or coolable spiral agitator

Opposing agitators with movable scrapers and a heatable or coolable inner agitator

System Design

completely encased in stainless steel

Dispersing Machine

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

Technical data



Speed adjustment



Food Execution



Cleaning in Place



Pharma Execution



Sterilization in Place



Ex-protected

MP 10



MP 4000



Master Plant	MP 10	MP 25	MP 50	MP 100	MP 200	MP 500	MP 1000	MP 2000	MP 4000
Technical data									
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
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]	1,065	1,637	1,817	2,305	2,421	3,315	3,749	4,951	5,425
Height (open cover) [mm]	1,515	2,086	2,417	2,950	3,376	4,615	5,499	7,051	7,865
Width [mm]	635	850	850	1,215	1,215	1,650	1,650	2,210	2,210
Depth [mm]	661	1,010	1,010	1,407	1,407	1,900	1,900	2,710	2,710