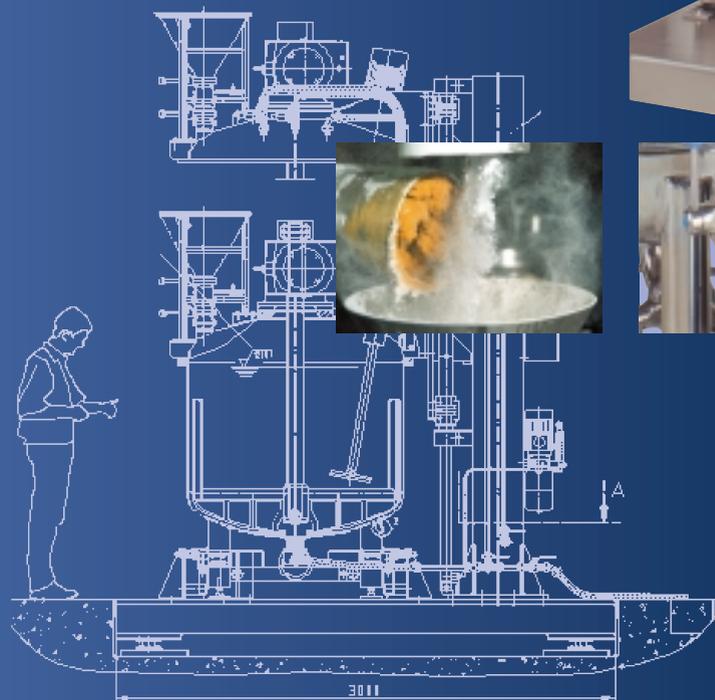


IKA®

Plants





Process control systems,
tailor-made
with every feature you may
request
page 13

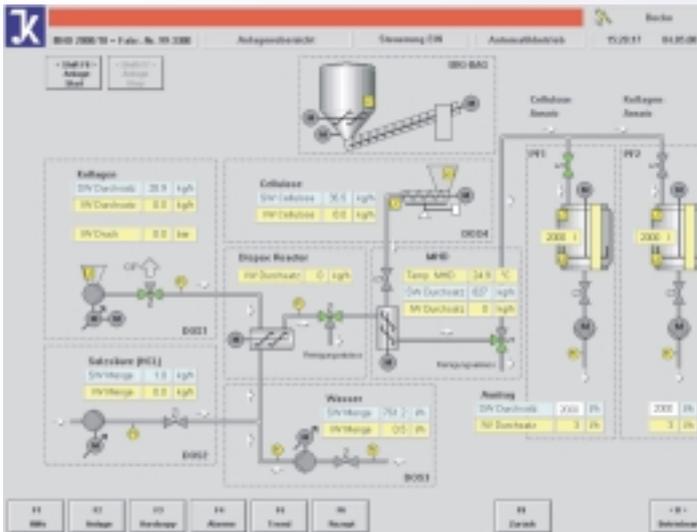
Emulsifying plants
from 5 to 5.000 litres
page 10



CMS-plants
page 8



Powder wetting plants
for continuous or batch
operation



Special plants, manufactured
acc. to specification and
installed at site
page 13

MHD-plants,
quantity proportional
page 6

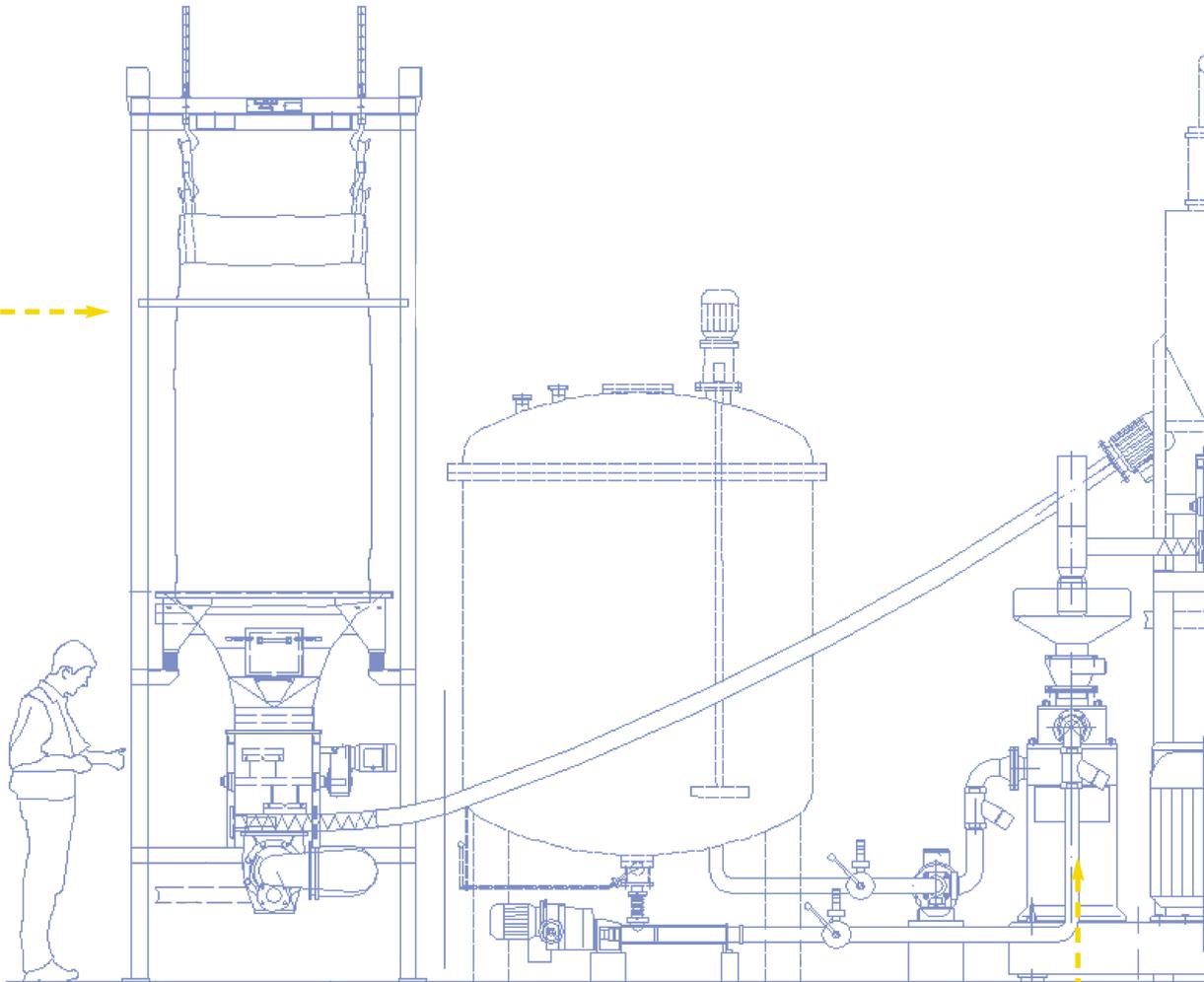


Mixing and dilution plants
for as much components as
requested
DPV
page 12





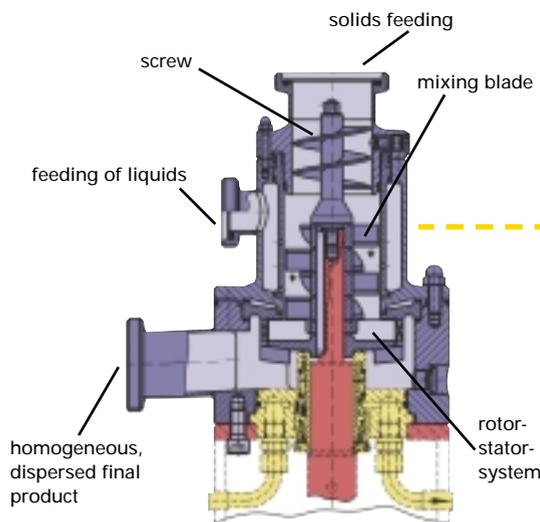
Continuous production requires continuous feeding. Big-bag systems with all necessary connection variants belong to IKA®'s scope of supply.

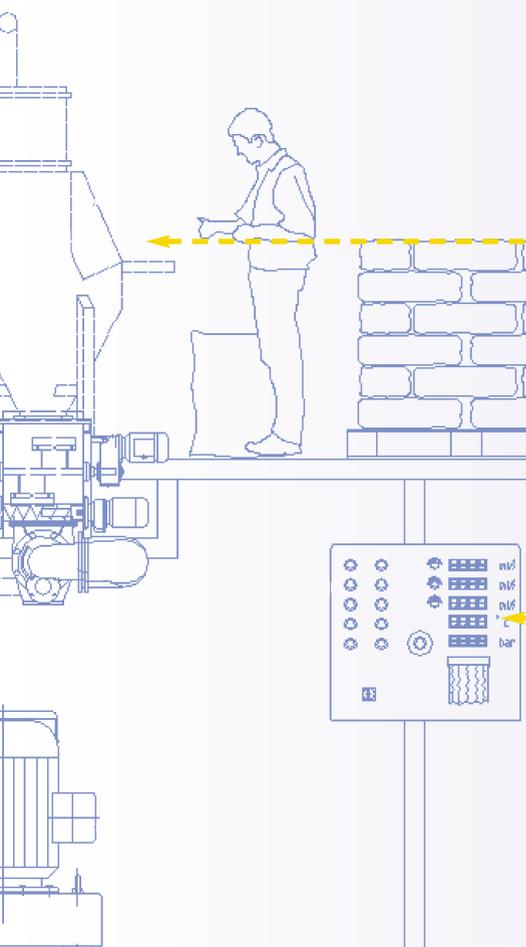


fertilizers - detergents - starch solutions - thickeners - CaCO₃-suspensions

The core of a continuous liquid-solid-mixing plant: the MHD (Mixing-Homogenizing-Dispersing).

An ample specification, numerous trials and innovative solutions have been leading to success. This patented machine allows to process solids concentrations of up to 90%.





Exact dosing is decisive for constant quality of the final product. We are since years co-operating with renowned manufacturers and only deliver proven and reliable systems.



An IKA® process control system allows easy adjustment and control of the recipes as well as of all important process parameters.

s - recycling of filter cakes - fillers - fertilizers - detergents - starch solutions

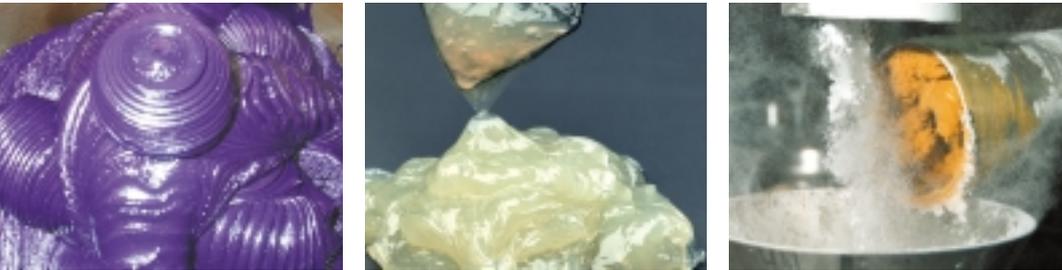
The feeding screw avoids sticking of the gravimetrically dosed solid and prevents humidity from rising and penetrating the feeding lines. The liquid is sprayed-in through many holes in the injection unit.

In this area four mixing blades care for a continuous mixing of the solid-liquid-phase and avoid agglomeration. The subsequent rotor-stator dispersing tool guarantees for finest particle sizes and conveys the final product to a filling device or storage tank using a pressure of up to 2 bar.

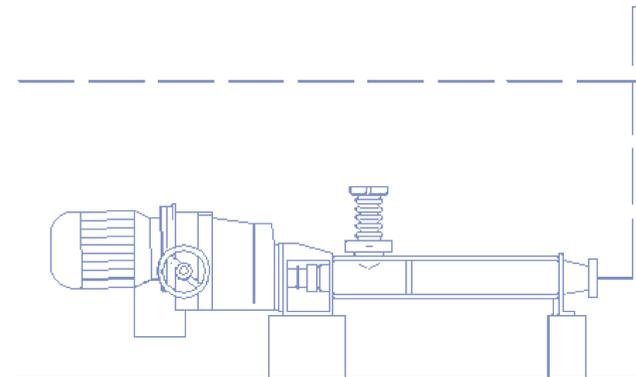


Example MHD 2000/50

Powder wetting, quantity proportional



It is really astonishing, which solids concentrations and final viscosities can be produced with an MHD-plant. In many production plants materials with solids concentrations of up to 90% and viscosities of up to 50.000 mPas are produced in 24-hour-operation.



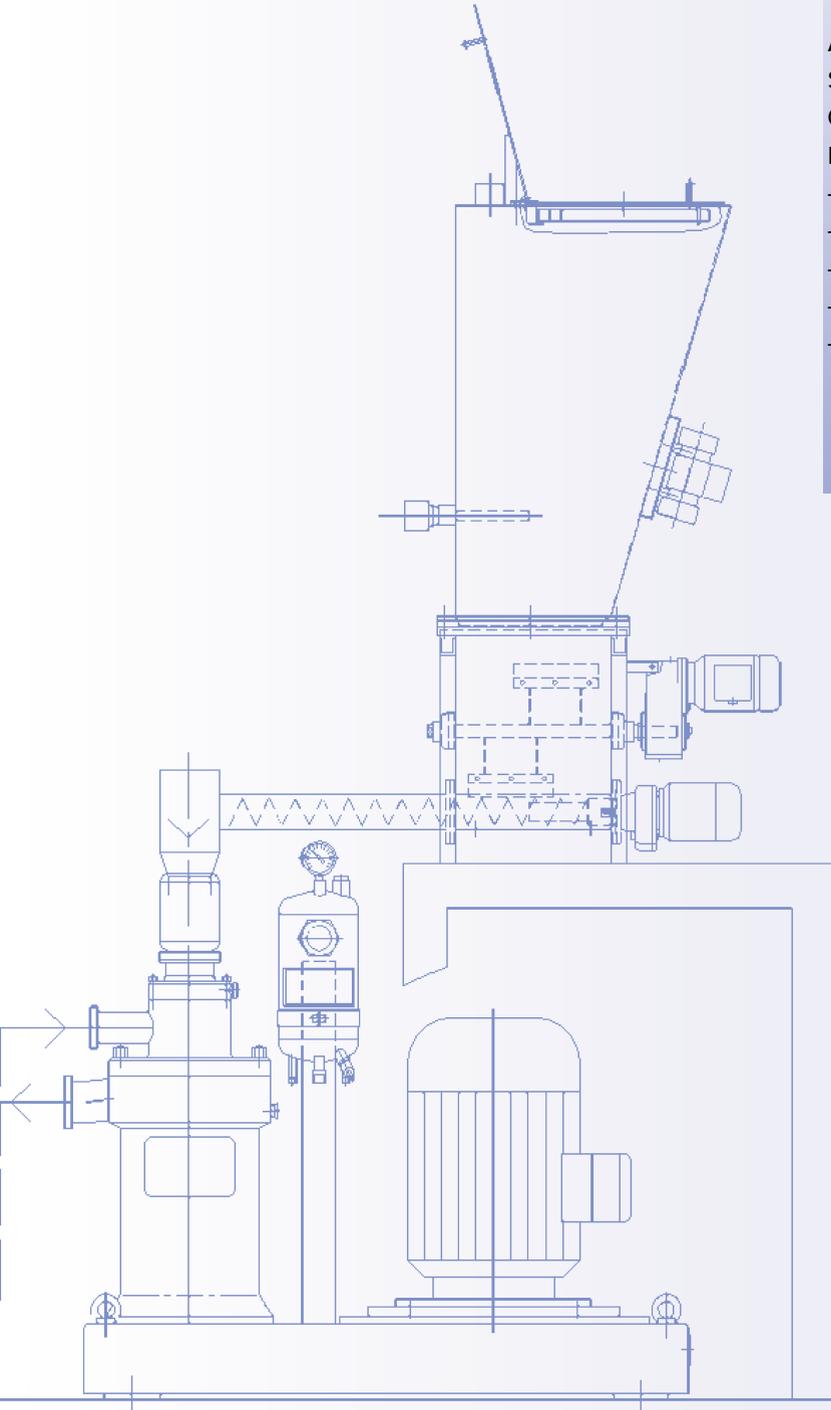
Our baby

A LABOR-PILOT 2000/4 with MHD-module and solids dosing. It offers the possibility to develop continuous production processes in a small scale of 5 – 50 l.

Solid-Liquid-Mixing with MHD

Applications

- Alumina suspensions
- Starch solutions
- Calcium carbonate suspensions
- Incorporation of thickeners:
 - Pectines
 - Guar gum
 - Starches
 - Xanthan
 - Flour
 - and others.



Besides quick wetting and thus avoiding of agglomerates and formation of dust, the MHD is additionally in the position to do homogenization work, so that a final product is resulting. It is possible to adjust any quantity relations between solid and liquid phases.

Type Size	Max. total capacity	Max. solids capacity	Motor power IP 55	Connections inlet solid/ inlet liquid/outlet
	l/h	l/h	kW	
MHD 2000/4 LABOR-PILOT	100	50	1,5	DN 50 / DN 15 / DN 15
MHD 2000/05	700	500	5,5	DN 50 / DN 25 / DN 32
MHD 2000/10	2.500	1.300	7,5	DN 65 / DN 32 / DN 50
MHD 2000/20	7.000	2.800	15	DN 80 / DN 50 / DN 65
MHD 2000/30	20.000	6.200	30	DN 150 / DN 80 / DN 125
MHD 2000/50	40.000	11.200	75	DN 200 / DN 100 / DN 150

IKA® solutions for powder wetting in batch operation



High suction capacity and perfect powder wetting in unproblematic operation: these are the main arguments for this machine series. Quiet running, reliable sealing as well as solid and high-quality constructional execution are for granted.



Type Size	Max. total capacity	Powder incorporation kg/h	Motor power IP 55	Connections inlet solid/ inlet liquid/outlet
	l/h		kW	
CMS 2000/4 LABOR-PILOT	3.000	5 - 500	1,5	DN 25 / DN 25 / DN 15
CMS 2000/05	15.000	60 - 2.500	7,5	DN 25 / DN 32 / DN 32
CMS 2000/10	35.000	150 - 5.500	18,5	DN 40 / DN 50 / DN 50
CMS 2000/20	60.000	200 - 8.500	37	DN 50 / DN 65 / DN 65
CMS 2000/30	100.000	400 - 14.000	90	DN 80 / DN 125 / DN 125
CMS 2000/50	200.000	700 - 28.000	160	DN 125 / DN 150 / DN 150

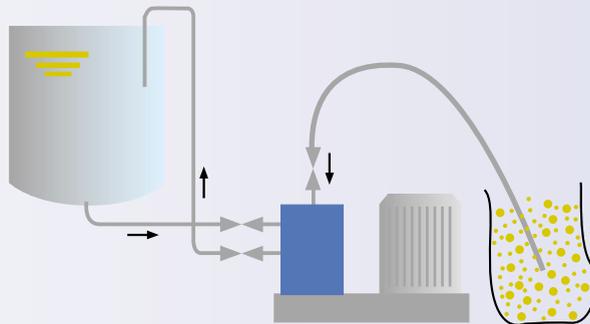
The CMS 2000/10 with vessel shown on the photograph is a good example for a mixing plant for solid/liquid phases. You can see the liquids inlet, the funnel for solids feeding as well as the return pipeline for the mixture. The mixture is enriched resp. circulated until the complete amount of solid has been incorporated.

Applications

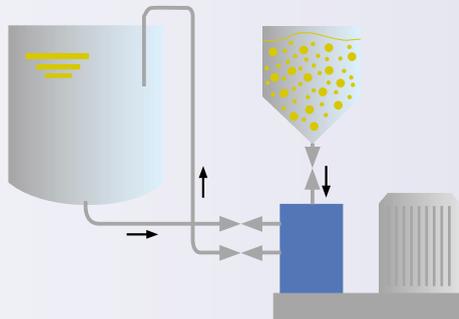
Alumina suspensions
Starch solutions
Calcium carbonate suspensions
Aerosils
All applications where big quantities of solids have to be incorporated.



Suction directly from a bag by means of a suction pipe reduces handling and the possible dust pollution of the operator to a minimum.



If feeding by means of a suction pipe is not possible, it is recommended to use a funnel for solids feeding. For big quantities it can be filled up automatically, e.g. from a big-bag packing.



Processing machines combined in an ideal way: the complete plant

The core of all EMA plants are the mixing and emulsifying machines, e.g. ULTRA-TURRAX® or DISPAX-REACTOR® of the series 2000 or the mixing machines of type TURBOTRON®. All necessary peripheral equipment like vacuum pumps, heating units, lifting devices and controls are arranged around this core.



EMA 300 with dispersing machine DR 2000/10 directly connected to the bottom outlet.



Vessels with volumes from 5 – 5000 l. They are equipped acc. to the requirements of R&D-departments up to those of mass production. The design of the IKA® emulsifying plants meets of course the high requirements of our customers in the pharmaceutical, cosmetics and food industry. Basically all plants are CIP/SIP-suitable, especially by using our series 2000 machines, that have been awarded with the 3A-Sanitary Certificate of the Food and Drug Administration.

Applications

- Cosmetic creams
- Tooth paste
- Pharmaceutical products
- Colour pastes
- Body care products
- Mayonnaise
- Ketch-up
- Household cleaners



An EMA 100 with most up-to-date process control system with touch screen.



EMA 15 pilot plant with all components necessary to develop creams and emulsions: anchor stirrer, ULTRA-TURRAX®, vessel that can be heated and evacuated as well as electric control.



EMA 500 production plant used in the pharmaceutical, cosmetics and food industry, with turbine stirrer, anchor stirrer, dispersing machine and CIP/SIP-cleaning.

Type of plant	Max. useful volume l
EMA 15	15
EMA 25	25
EMA 50	50
EMA 100	100
EMA 200	200
EMA 300	300
EMA 500	500
EMA 1000	1.000
EMA 2000	2.000

Further sizes on request

Mixing and dilution plants

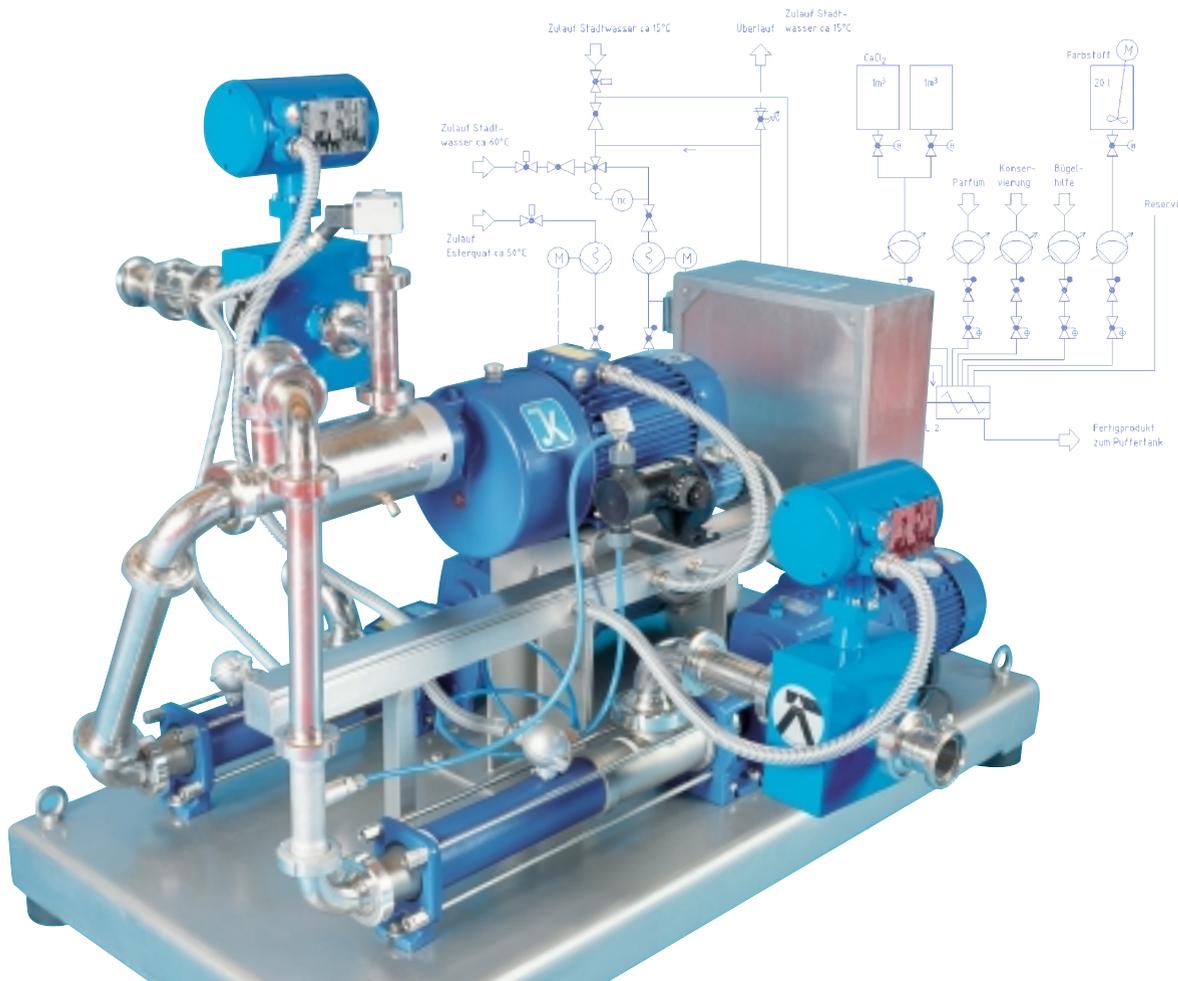
DPV

This picture shows a mixing and dilution plant. Originally it had been especially designed for dilution of a 70% lauryl ether sulphate to about 28% or even less. With the respective extensions it is also possible and economic to mix several components homogeneously in one passage. The core are again the dispersing machines of the series 2000.

Due to saving of transport costs on the one hand and achieving a higher flexibility regarding recipes, further dilution and mixing of several components on the other hand, this type of plant is of special importance for the liquid detergents industry.

Applications

Liquid detergents for household, industry and body care
 Multiple emulsions
 Catalysts
 Enzymatic treatment
 Mixing
 Solving
 Emulsifying
 Homogenizing



Dilution plant	Total capacity l/h	Flow rate concentrate l/h	Flow rate diluting liquid l/h
DPV 3000	3.000	500 - 1.200	500 - 2.500
DPV 5000	5.000	800 - 2.000	1.600 - 4.000
DPV 7500	7.500	1.000 - 2.500	2.000 - 5.000
DPV 10000	10.000	1.600 - 4.000	3.500 - 8.500
DPV 15000	15.000	2.500 - 6.000	4.000 - 10.000

Further mixing proportions possible

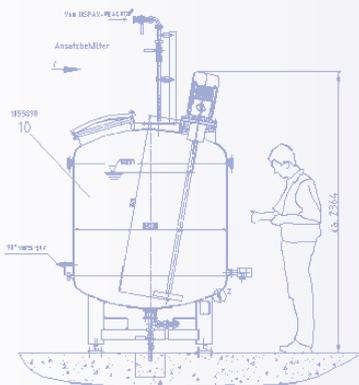
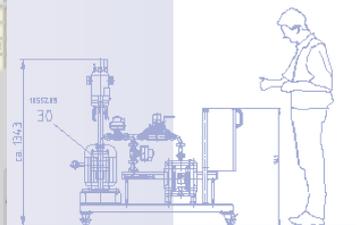
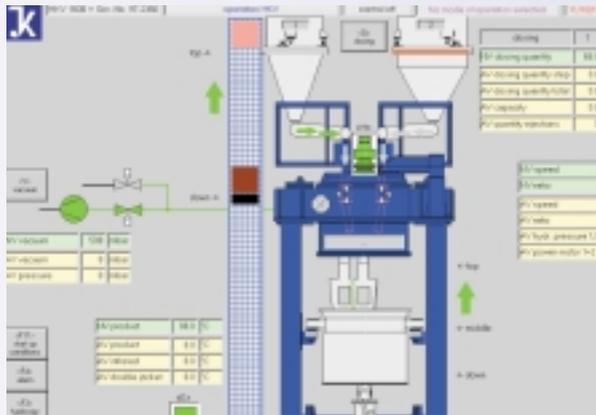
From the first contact...

The IKA® process equipment division is represented on all continents either by our own subsidiaries or by representatives. During all important trade fairs our sales managers get into first touch with customers – the basis for a future close and trustful co-operation.



The IKA® process equipment division has an up-to-date pilot plant, where process development as well as trials for customers are carried out. This helps us to solve the most different and complex application tasks.

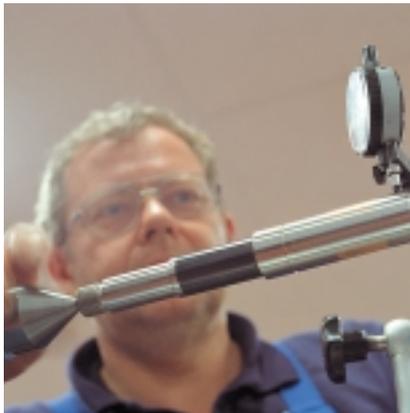
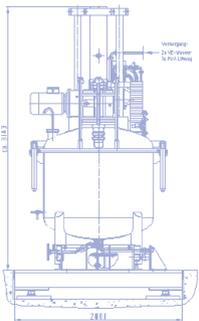
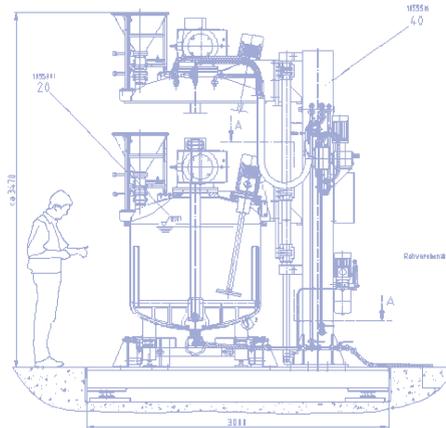
In co-operation with the customers our software specialists are elaborating tailor-made controls up to fully automatic process control systems. These high-quality control solutions do not only comprise the control of the respective machines, but also that of complete plants including their peripheral equipment.



Most up-to-date CAD-techniques and communication systems allow our design team to find high-quality solutions quickly. Our design engineers are in close contact with the global customers. They are thus in the position to communicate directly with them during all phases of a project.

... up to commissioning at site

In our well equipped production workshop machines and plants are manufactured, assembled and tested by experienced personnel. Short ways between manufacturing and assembly result in corresponding short delivery times.



Commissioning of the machines and plants with control system and peripheral equipment – as far as delivered by us – is carried out by the same team that already assembled them in our workshop. In close co-operation with the customer and if necessary with sub-suppliers the plants are best possible adjusted to the requirements. During that phase the customer's personnel is also instructed and trained.

IKA® manufactures and assembles machines and plants acc. to strict quality regulations set-up by ISO 9001, CE and other international standards. Before dispatch to their destination they are submitted to a quality control by our experts and often to an acceptance by our customers.

Spare parts and repairs

For securing a quick and smooth supply of spare parts, also in case of repairs, IKA®-WERKE is keeping a modern parts stockroom with continuous stock supervision.

Research and development

A well equipped pilot plant with all necessary trial machines as well as measuring and documentation possibilities is at our customers' disposal. Existing processes can be optimized by trials and new procedures can be developed.



This pilot plant is of course also intensively used by our own design department for optimization of existing and development of new machines and processes.

Quality assurance

Every single IKA® product is submitted to a final quality assurance control before it leaves our workshop, in order to test its complete functionality and to ensure a smooth integration into the customer's production line.

IKA® subsidiaries world-wide



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