

IKA®

magic LAB®



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Inspired by experience – designed for practical applications





Batch or inline – Whatever process you require

Module DISPAX- REACTOR® DR

multiple stage dispersing/
emulsifying extension of
the renowned
ULTRA-TURRAX®



Module MK/MKO

Colloid Mill / Cone Mill
Wet grinding
Finest milling



Module MHD

Powder / granule incorporation
into liquids, continuous
operation for high solids
content



1 basic module – 7 possible tools

We offer what you are looking for!

- IKA® magic LAB® is offering all techniques for mixing and disintegrating
- IKA® magic LAB® has kits to handle batch or inline operation
- IKA® magic LAB® offers the possibility to work with the same method from formulation development to mass production.
- Safe scale-up due to many constant working parameters

Double jacket for heating/cooling:

Max. admissible temperature	90°C
Max. admissible working pressure	2.5 bar
Sealing materials	PTFE or similar
Housing material	stainless steel AISI 316L

Smooth change-over from laboratory to production plant

Module CMS

Powder / granule incorporation into liquids, batch operation for enrichment process



Micro-Plant:

with exchangeable modules (UTL/DR/MK/MKO)



Basic module: ULTRA-TURRAX®: UTL

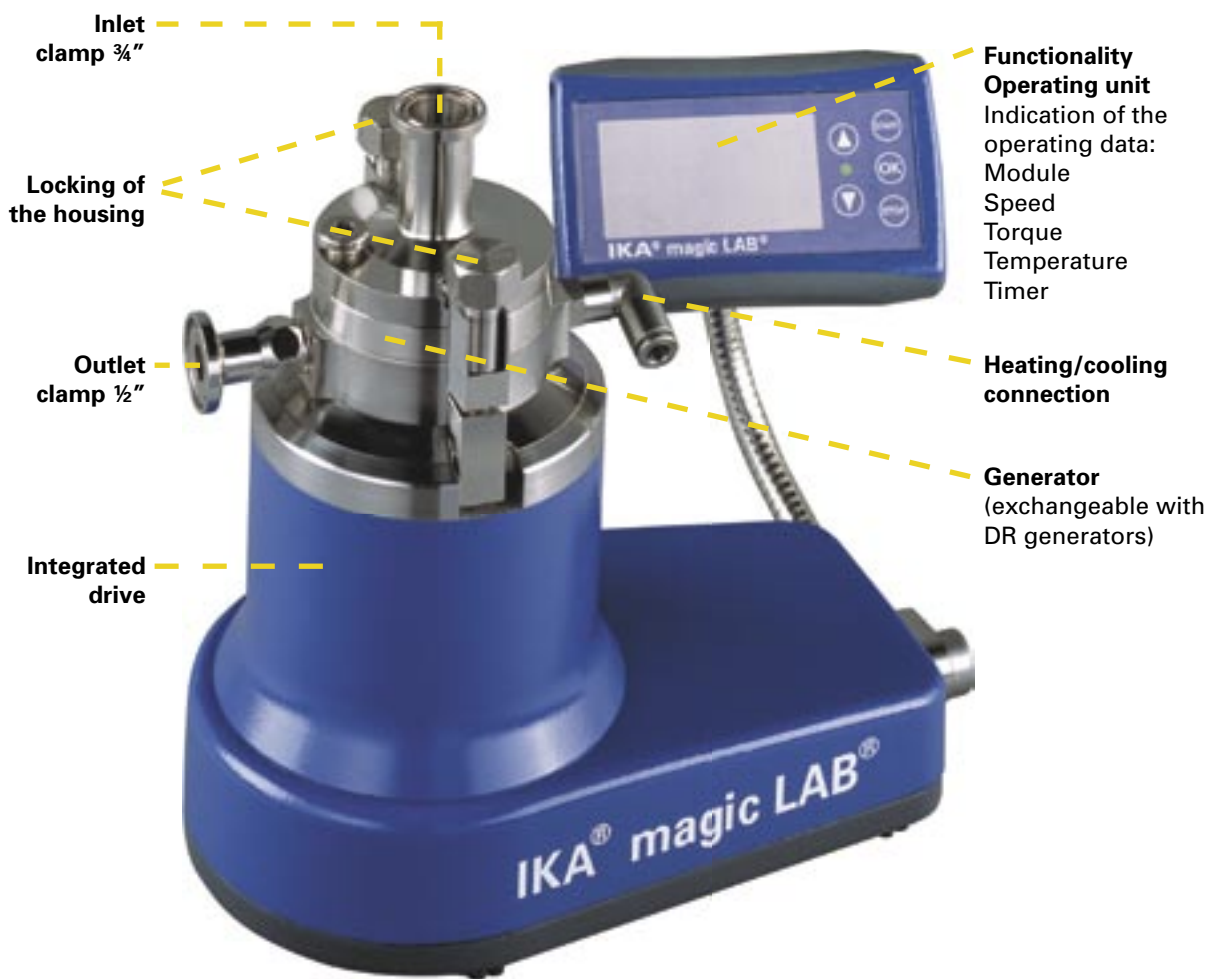
single stage dispersing/mixing inline



Module ULTRA-TURRAX® UTC

dispersing/mixing in batch operation





When is the ULTRA-TURRAX® module used?

- Any time when normal stirring or mixing is not sufficient (unsufficient stability of the mixing product)
- When time has to be saved (up to 50% compared to normal mixing)
- If the liquids to be mixed have very different viscosities
- For acceleration of solution

Tool kit UTL



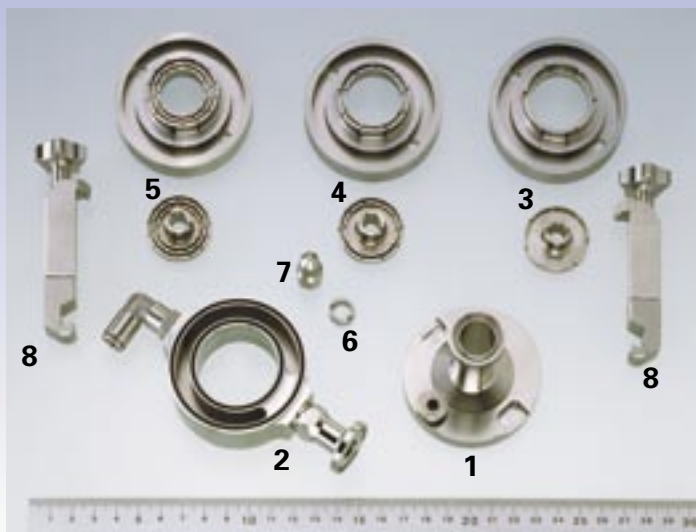
- 1 inlet socket
- 2 mixing chamber
- 3 generator 4M
- 4 rotor 0
- 5 distance sleeve
- 6 locking nut
- 7 clamp



When do you use the DISPAX-REACTOR®?

- Due to its flexibility and its adaptability to the products to be mixed the DR-module is the one normally used
- Whe the ULTRA-TURRAX® does not produce the fineness of particle distribution requested
- For narrow distribution ranges after only one pass
- For optimum homogeneity and stability of emulsions and suspensions (maybe 3 x 6F-generators to be used)

Tool kit DR



- 1 inlet socket
- 2 mixing chamber
- 3 generator 2G
- 4 generator 4M
- 5 generator 6F
- 6 distance sleeve
- 7 locking nut
- 8 clamp



Ketchup



Polymers



Technical greases



Tooth paste



Silicone



Medicines



Medical sprays



Lipstick



When is a mill used?

For wet or fine milling of hard and granular raw materials, and for the production of finest emulsions and pastes.

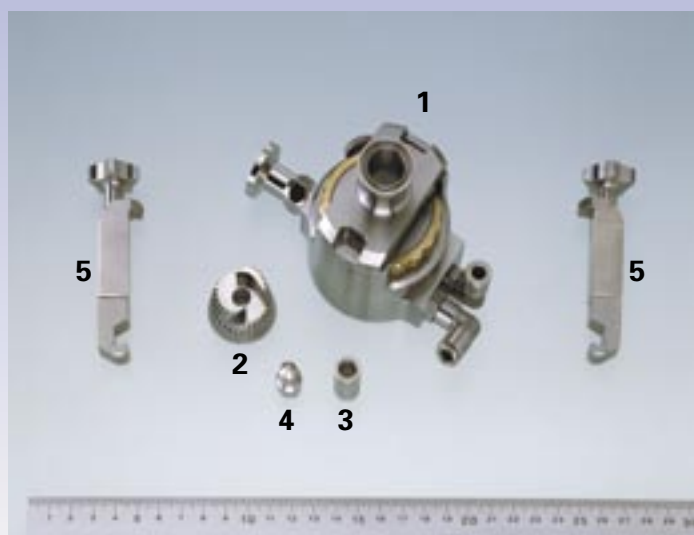
The MK-module (Colloid Mill)

consists of two cones with different flow channels on their surfaces. The cones can be shifted one against the other to a minimum distance, thus changing flow and friction. By adjusting the milling gap you can then determine the particle size.

The MKO-module (Cone Mill)

is working according to the same principle as the MK-module. Nevertheless, the outlet area of its cones has a non-abrasive, rough and fine pored surface. This results in an enlarged friction surface that enables to produce even finer suspensions at reduced flow. Further technical details are the same as for module MK.

Tool kit MK / MKO



- 1 mixing chamber, complete
- 2 rotor
- 3 distance sleeve
- 4 locking nut
- 5 clamp



Functionality
Operating unit
 Indication of the operating data:
 Module
 Speed
 Torque
 Temperature
 Timer



Alumina



Carbopol



Spice sauces



Calcium carbonate



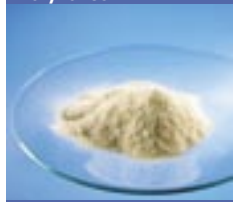
Polymeres



Colour paste



Acrylic resin



Pectine

Batch-wise "solid/liquid" mixing

- For dust- and agglomeration free incorporation and fast mixing of powders into liquids
- Especially suited for enrichment of liquids by powders in a recirculation process
- Solids content up to 65%
- The machines produces a vacuum at the solids inlet, thus enabling the suction of powders directly from a funnel

Tool kit CMS



- 1 inlet housing
- 2 generator
- 3 mixing chamber
- 4 locking nut
- 5 distance sleeve
- 6 sealing flange
- 7 clamp



Continuous "solid/liquid" mixing

This module serves for continuous production of dispersions. Besides fast wetting of the solids and the avoidance of agglomerations it also homogenizes and disperses, resulting in a ready mixed product in only one pass. The mixing relation is controlled by volumetric or gravimetric dosing devices. Solids contents up to approx. 80% and viscosities up to approx. 50 Pas will be possible.

Tool kit MHD



- 1 inlet socket
- 2 mixing chamber
- 3 pump housing
- 4 generator 2P
- 5 injection unit
- 6 feeding screw
- 7 mixing tool
- 8 distance sleeve
- 9 clamp



A small plant with enormous flexibility for the determination of process parameters for a large scale-up.

It serves for:

- Development of formulations and determination of the process
- Determination of many process parameters like speed, shear frequency, temperature, pressure, time, necessary energy, and many more
- Determination of the optimum mixing and dispersing module

Working volume (funnel):	up to 1500 ml
Product temperature:	up to 90°C
Process pressure:	2.5 bar
Possible modules:	UTL/DR/MK/MKO



Medicines



Polymeres



Medical sprays



Cough mixture



Sauces



WC-gel



Cosmetic creams



Ketchup



Cleanser



Detergent



Liquid soap



Spice paste



Shower gel



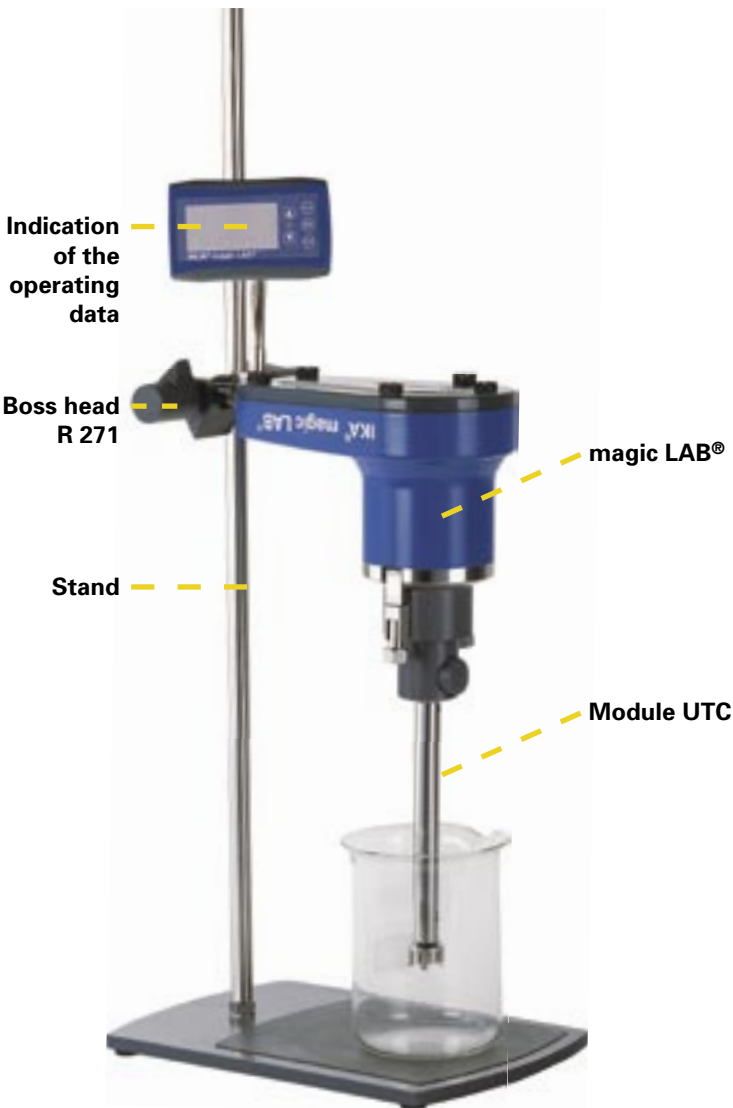
Dressings



Washing agents



Softener



Do the change from inline to batch device

Turn the magic LAB® upside down, give it an UTC tool kit and you can start making the preparation in a beaker glass.

Beaker glass sizes up to 1.5 l, special generators on request



The lashing strap RH5 with boss head R270 saves the beaker glass from turning or moving aside.

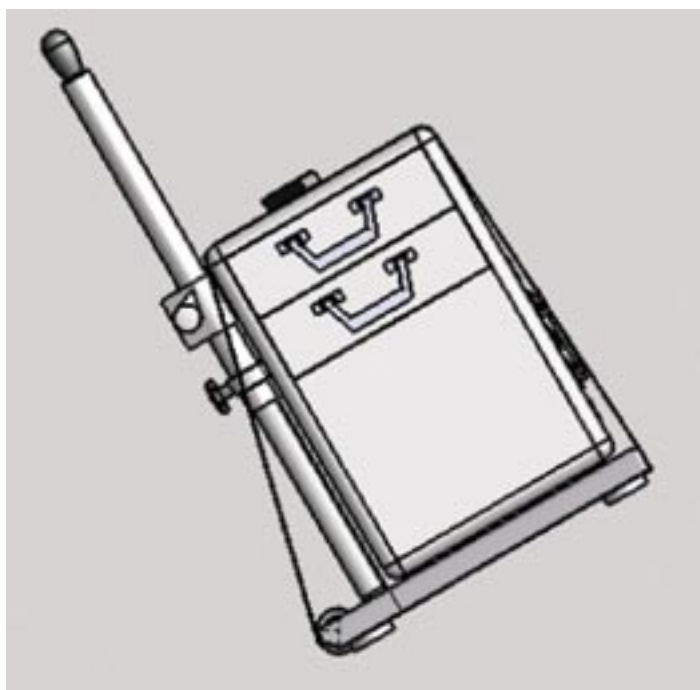
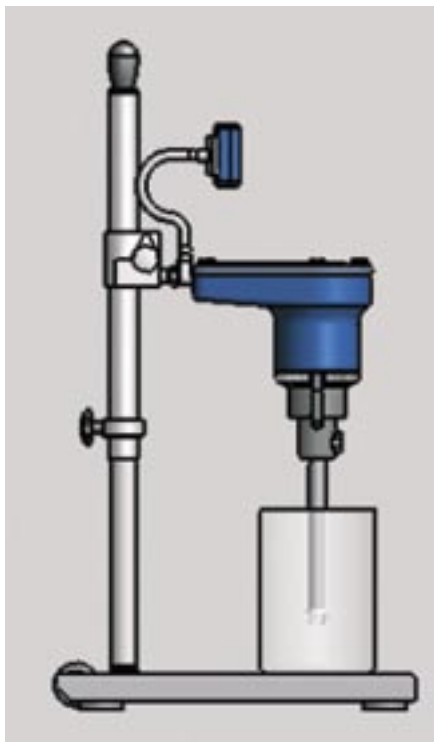
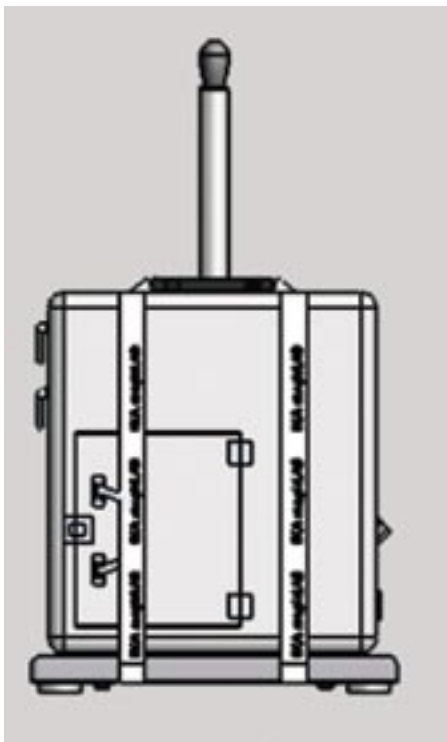
Tool kit UTC



Dispersing in batch operation

- Especially for smallest quantities before switching over to an inline system
- For estimation of the necessary shear force
- For quick determination of rheological changes such as structure, viscosity, etc.

- 1 flange
- 2 tool UTC - S25N
- 3 distance sleeve
- 4 coupling
- 5 clamp



Transport box

The IKA® magic LAB® is stored in a practical transport box. The different modules are placed in clear drawers with premoulded inserts. The drive unit itself can be taken out from the side. The electric plug-in connections to the magic LAB® as well as to the power supply are mounted on the back side of the box.

For transport purposes the box is fixed onto a roller carrier with telescopic lever. This lever can be adjusted in height and serves at the same time as stand for fixing of the magic LAB® with module UTC (see opposite page).

Dimensions of the box:
(L x H x W) approx. 300 x 460 x 400 mm.



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Lipstick



Operation and information centre

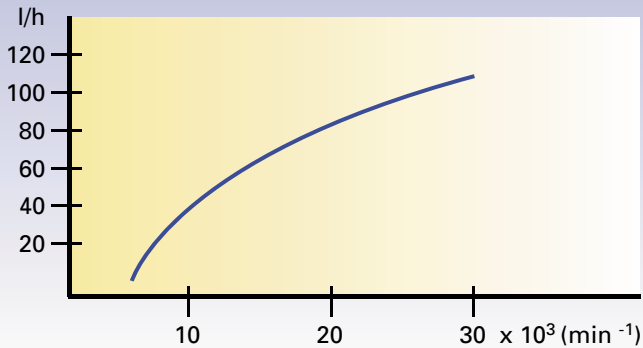
The info centre of the magic LAB® offers a lot of functions, but is nevertheless designed in a very clear and operator friendly way. It only needs a few manipulations and adjustments and the magic LAB® is ready for operation.

First the operation and information centre is connected to the magic LAB® by means of a connection cable. The mains unit can either remain in the transport box or be placed separately. As soon as it is connected to the power supply, a green lamp is lighted in the info centre and the starting screen appears. Via the push-buttons with arrow you can then choose the module of the magic LAB® and the respective speed range.

It is as easy setting the nominal and actual values. Moreover the requested language can be chosen (German, English, French, Spanish and Italian). The possibility of data transfer to a PC is planned for the future.



magic LAB®



Drive:

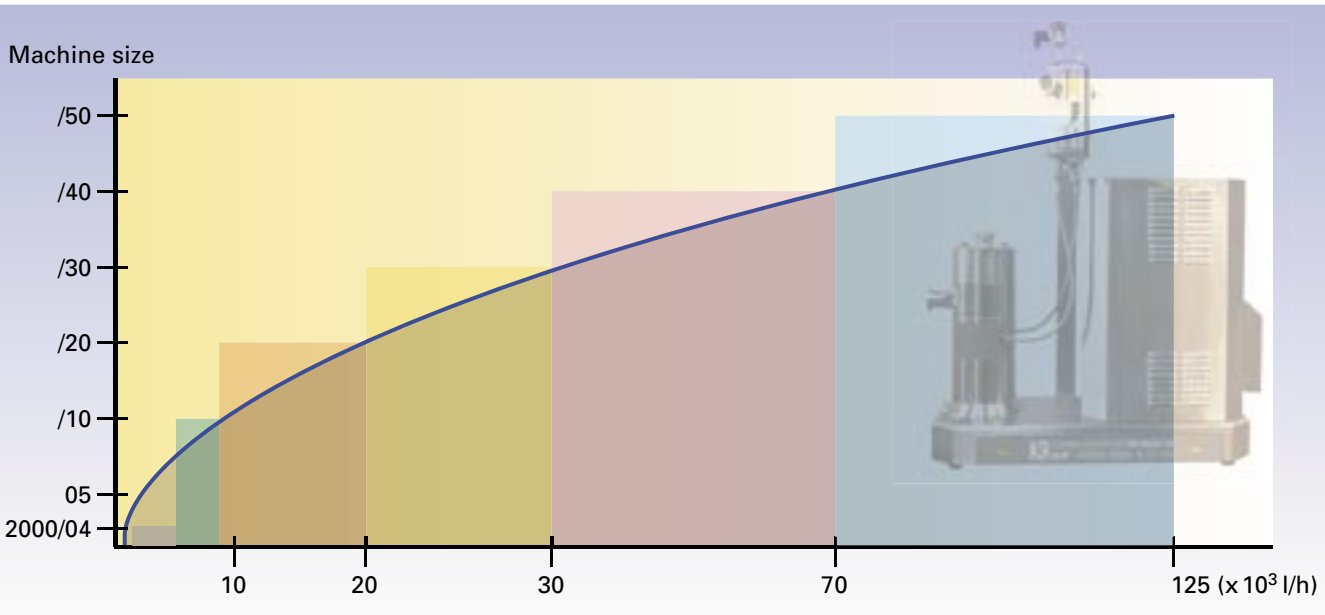
Motor power: 900 W
 Speed range: up to 30.000 rpm

Process data:

Product temperature: up to 90°C (continuous duty)
 up to 120°C (30% duty cycle)
 Process pressure: up to 2.5 bar
 Batch size (UTC): up to 1.5 l
 Flow capacity (DR): up to 120 l/h
 Materials: all parts in contact with the product made of stainless steel AISI 316L

Here you may choose the suitable size of your later production machine.

Please ask for our catalogue "IKA® Process Technology"





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