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CE-Declaration of conformity

We declare under our sole responsibility that this product corresponds to the regulations 73/23/EEC, 89/336/EEC and 98/37/EEC and conforms with the standards or standardized documents DIN EN IEC 61010-1; DIN EN IEC 61326-1; DIN EN ISO 12100-1, -2 and EN 60204-1.

Safety instructions

For your protection

- **Read the operating instructions in full before starting up and follow the safety instructions.**
- Follow the safety instructions, guidelines, occupational health and safety and accident prevention regulations.
- Keep the operating instructions in a place where they can be accessed by everyone.
- Ensure that only trained staff work with the appliance.

- The device must be supervised at all times when in operation.
- The device must only be operated with a tube attached; with no tube there is a risk of injury from the rotating locating pin.
- Hearing protection must be worn when working with BMT-20 tubes.
- Wear your personal protective equipment in accordance with the hazard category of the medium to be processed. Otherwise there is a risk of:
 - splashing liquids
 - projectile parts
 - body parts, hair, clothing and jewellery getting caught.
- Set up the appliance in a spacious area on an even, stable, clean, non-slip, dry and fireproof surface.
- The feet of the appliance must be clean and undamaged.
- The appliance is not suitable for manual operation.
- The appliance may heat up when in use.
- Check the appliance and accessories beforehand for damage each time you use them. Do not use damaged components.
- Ensure that the cover is screwed on tightly.
- Ensure that the tube is firmly attached to the bayonet lock connector on the drive unit prior to operating the device.
- The tube must only be attached and removed whilst the motor is stationary.
- The **IKA** tubes must always be closed when the device is in operation. Switch off the device immediately if any material leaks from the tube. Clean the equipment.
- Always open the tube carefully after use as the media in the tube may heat up due to transfer of energy during operation, leading to pressurization of the container: risk of material spraying, protective equipment must be worn.
- The temperature of the material must not exceed 40 °C.
- Only use tubes approved by **IKA**.
- Only process media that will not react dangerously to the extra energy produced through processing. This also applies to any extra energy produced in other ways, e.g. through light irradiation.
- Beware of the risk of flammable materials
- **Do not** operate the appliance in explosive atmospheres, with hazardous substances or under water.
- The appliance starts not up again automatically following a cut in



the power supply.

- Safe operation is only guaranteed with the accessories described in the "Accessories" chapter.

For protection of the equipment

- The voltage stated on the name plate must correspond to the mains voltage.
- The device must only be operated with the original plug-in power supply unit.
- Protect the appliance and accessories from bumps and impacts.
- The appliance may only be opened by experts.

Unpack

• Unpack

- Please unpack the device carefully
- In the case of any damage a fact report must be set immediately (for post, rail or forwarder)

• Delivery scope

- **Tube Drive**
- Power supply unit
- Removal hook
- Operating instructions

Correct use

• Use

	Application	Volume	Mode
▶With Tube ST-20... ▶With Tube ST-50...	Mixing Stirring	Minimum quantity 2 - 15 ml max. 15 - 50 ml max.	Seconds and minutes mode
▶With Tube DT-20... ▶With Tube DT-50...	Dispersing Stirring	Minimum quantity 2 - 15 ml max. 15 - 50 ml max.	Seconds and minutes mode
▶With Tube BMT-20... ▶With Tube BMT-50...	Crushing Mixing wet/dry	Minimum quantity 2 - 15 ml max. 15 - 50 ml max.	Seconds and minutes mode

• Range of use

- Laboratories
- Pharmacies
- Schools
- Universities

This device is suitable for use in all areas except:

- Residential areas
- Areas that are connected directly to a low-voltage supply network that also supplies residential areas.

The protection for the user is not ensured no more, if the equipment with accessories is operated, which are supplied or are not recommended not by the manufacturer or if the equipment in not correct use is operated against the manufacturer default.

Useful facts

Changes in viscosity and volume caused by processing of dispersion media may cause small fluctuations in the speed of the device.

Commissioning

Pay attention to the ambient conditions listed in the "Technical Data".

Position the rotating knob (B) at the left stop before starting up.



If these conditions are met, the unit is ready for service when the mains plug has been plugged in.



Switching on

Press "Power" button (A)

Previous mode and time settings will be displayed e.g.



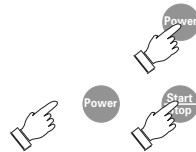
(Factory setting: -2)

Setting Timer (Changing of mode)

Switch of the device

Minutes-mode

Press and hold "Start/STOP" button (C), and also press the "Power" button (A)



Minutes-mode display



The time that was previously set will be stored, e.g.



Note: max. 29 min., speed range upto 4000 min¹.

Seconds-mode

Press and hold button "Start/Stop" (C) and also press the "Power" button (A).



Seconds-mode display



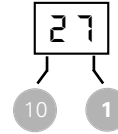
The time that was previously set will be stored, e.g.



Note: max. 59 sec, speed range upto 6000 min¹.

Setting the time

The value that was previously set will be stored, e.g. (Factory setting: 00)



Set the tens digit using button (E)

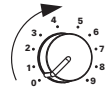
Set the ones digit using button (D)

Attaching the tube

Fit the tube carefully and ensure it is properly attached.

Setting the speed

Set the desired speed in the range of 300 - 6000 min¹ using the infinitely adjustable rotary knob (B)



Starting

Press "Start/Stop" button (C),

While the preset countdown is running, timer display will blink



An audible signal will be given when the countdown is complete



Canceling the countdown

- Button "Start/Stop" (C)



Switching off

- Button "Power" (A)



Error message

It is possible for the media to become jammed between the cutters. The unit will automatically change the direction of rotation of the cutting device up to three times in an attempt to free the cutters. The unit will switch off automatically if this is not possible.

If the device becomes blocked on three occasions within a certain period of time the following error message will occur:

Display

An audible signal will be given



Corrective action: Switch off the device, check contents, switch on the device.

Accessories

- ST-20 Tube with stirring device 20 ml
- ST-20-gamma Tube with stirring device 20 ml, γ -sterilized
- ST-20-M Tube with stirring device 20 ml, with pierceable membrane
- ST-20-M-gamma Tube with stirring device 20 ml, γ -sterilized, with pierceable membrane
- ST-50 Tube with stirring device 50 ml
- ST-50-gamma Tube with stirring device 50 ml, γ -sterilized
- ST-50-M Tube with stirring device 50 ml, with pierceable membrane
- ST-50-M-gamma Tube with stirring device 50 ml, γ -sterilized, with pierceable membrane
- DT-20 Tube with dispersing device 20 ml
- DT-20-gamma Tube with dispersing device 20 ml, γ -sterilized
- DT-20-M Tube with dispersing device 20 ml, with pierceable membran
- DT-20-M-gamma Tube with dispersing device 20 ml, γ -sterilized, with pierceable membran
- DT-50 Tube with dispersing device 50 ml
- DT-50-gamma Tube with dispersing device 50 ml, γ -sterilized,
- DT-50-M Tube with dispersing device 50 ml, with pierceable membran
- DT-50-M-gamma Tube with dispersing device 50 ml, γ -sterilized, with pierceable membran
- BMT-20-S Tube for grinding with stainless balls 20 ml,
- BMT-20-S-gamma Tube for grinding with stainless balls, 20 ml, γ -sterilized

- BMT-20-S-M Tube for grinding with stainless balls, 20 ml, with pierceable membran
- BMT-20-S-M-gamma Tube for grinding with stainless balls, 20 ml, γ -sterilized, with pierceable membran

- BMT-50-S Tube for grinding with stainless balls 50 ml,
- BMT-50-S-gamma Tube for grinding with stainless balls, 50 ml, γ -sterilized
- BMT-50-S-M Tube for grinding with stainless balls 50 ml, with pierceable membran
- BMT-50-S-M-gamma Tube for grinding with stainless balls 50 ml, γ -sterilized, with pierceable membran

- BMT-20-G Tube for grinding with glass balls 20 ml
- BMT-20-G-M Tube for grinding with glass balls 20 ml, with pierceable membran

- BMT-50-G Tube for grinding with glass balls 50 ml
- BMT-50-G-M Tube for grinding with glass balls 50 ml, with pierceable membran

- TC-20 Tube cover 20 ml
- TC-20-M Tube cover 20 ml with pierceable membran

- TC-50 Tube cover 50 ml
- TC-50-M Tube cover 50 ml with pierceable membran

Maintenance

The appliance is maintenance-free.



For cleaning disconnect the main plug.

Only use cleansing agents which have been recommended by **IKA**

Use to remove:

Dyes	isopropyl alcohol
Construction materials	water containing tenside/ isopropyl alcohol
Cosmetics	water containing tenside/ isopropyl alcohol
Foodstuffs	water containing tenside
Fuels	water containing tenside

- Do not allow moisture to get into the appliance when cleaning
- Wear protective gloves during cleaning the devices.
- Before using another than the recommended method for cleaning or decontamination, the user must ascertain with **IKA** that this method does not destroy the instrument.

Spare parts order

When ordering spare parts, please give:

- Machine type
- Manufacturing number, see type plate
- Item and designation of the spare part, see **www.ika.net**.

Repair

In case of repair the device has to be cleaned and free from any materials which may constitute a health hazard.

If you require servicing, return the appliance in its original packaging. Storage packaging is not sufficient. Please also use suitable transport packaging.

Warranty

In accordance with **IKA** warranty conditions, the warranty period is 24 months. For claims under the warranty please contact your local dealer. You may also send the machine direct to our works, enclosing the delivery invoice and giving reasons for the claim. You will be liable for freight costs.

The warranty does not cover wearing parts, nor does it apply to faults resulting from improper use or insufficient care and maintenance contrary to the instructions in this operating manual.

Technical data

Power supply unit

Input	V	100 - 240
	A	0.8
	Hz	50-60
Output	Vdc	24
		24W.LPS (limited power source)
	Hz	50-60
Protection class		2 (double insulated) <input type="checkbox"/>

Tube Drive

Operating voltage	Vdc	24
	mA	800
Power consumption, normal operation	W	20
Power consumption, standby operation	W	2
Power output	W	17
Drive		EC flat motor
Speed range	min ⁻¹	300 - 6000
		infinitely adjustable
mode 1		upto 4000
mode 2		upto 4000
Speed setting		rotating knob
Speed display		scale 0 – 9
Timer mode 1		1 - 29 min
mode 2		1 - 59 sec
Display timer		digital
Perm. ambient temperature	°C	+5 bis +40
Perm. rel. humidity	%	80
Protection to DIN EN 60529		IP 20
Contamination level		2
Overvoltage category		II
Operation at a terrestrial altitude	m	max. 2000 above sea level
Dimensions (W x D x H) without tube	mm	100 x 160 x 40
Weight	kg	0,75

Subject to technical changes!