

IKA

designed for scientists

EUROSTAR 20 digital

EUROSTAR 40 digital

EUROSTAR 60 digital

EUROSTAR 100 digital

EUROSTAR 20 high speed digital

EUROSTAR 400 high torque digital

ENGLISH

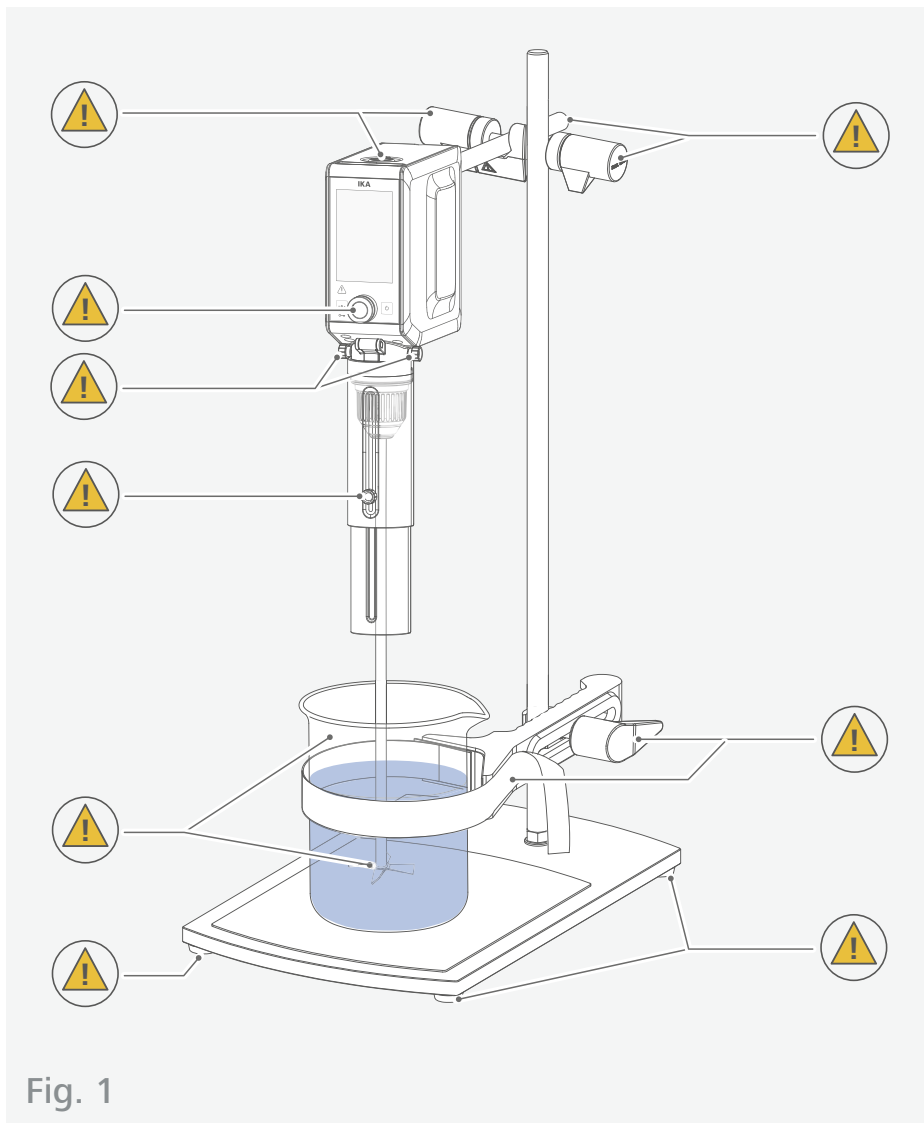











Fig. 1

	EU Declaration of conformity	6
	Explication of warning symbols	6
	Safety instructions.....	7
	Intended use.....	10
	Useful information	10
	Speed	10
	Output shaft	11
	Unpacking	12
	Installation.....	13
	Operator panel and display	18
	Operation	20
	Menu navigation and structure	24
	Interfaces and outputs	28
	Maintenance and cleaning.....	32
	Troubleshooting.....	33
	Error codes	34
	Accessories	35
	Permitted IKA stirrer tools	36
	Technical data.....	38
	Warranty	40
	Torque graph	41



EU Declaration of conformity

We declare under our sole responsibility that this product corresponds to the directives 2014/35/EU and 2006/42/EC, 2014/30/EU and 2011/65/EU and conforms with the following standards or normative documents: EN 61010-1, EN 61010-2-051, EN 61326-1, EN 60529 and EN ISO 12100.

A copy of the complete declaration of conformity or further declarations of conformity can be requested at sales@ika.com.



Explication of warning symbols

/// Warning symbols



Danger! Indicates an (extremely) hazardous situation, which, if not avoided, will result in death, serious injury.



Warning! Indicates a hazardous situation, which, if not avoided, can result in death, serious injury.



Caution! Indicates a potentially hazardous situation, which, if not avoided, can result in injury.



Notice! Indicates practices which, if not avoided, can result in equipment damage.

/// General Symbols

A — Position number



Correct/Result
Shows the correct execution or the result of an action step.



Wrong
Shows the incorrect execution of an action step.



Note
Displays action steps that require particular attention to detail.



Beep
Shows action steps where audible beeps can be heard.



Closed lock!
Indicates the status of "locked".



Open lock!
Indicates the status of "Unlocked".

Safety instructions



/// General information

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

Danger!

- > Pay attention to the marked sites in Fig. 1.
Beware of the risk of:
 - flammable materials
 - glass breakage as a result of mechanical stirring power.

Caution!

- > Wear your personal protective equipment in accordance with the hazard category of the medium to be processed, there is a risk of:
 - splashing of liquids
 - projectile parts
 - body parts, hair, clothing and jewellery getting caught.

- > The device must only be used in a technically perfect condition.

/// Device setup

Danger!

- > The power switch of the IKA device must be accessed immediately, directly and without risk at any time. If installation or positioning cannot ensure this access at all times, an additional **EMERGENCY STOP** switch that can be easily accessed must be installed in the work area.

Warning!

- > Ensure stable assembly. The vessel used for stirring must be secured.
- > Use stirring shaft protective equipment.

Notice!

- > Set up the stand in a spacious area on an even, stable, clean, non-slip, dry and fireproof surface.
- > Avoid knocking and impacting on the lower end of the shaft and the chuck. Even minor, invisible damage can lead to imbalance and uneven shaft action.
- > You must ensure that the stirring element is securely clamped in the chuck.
- > All screw connections must be properly tightened.
- > The high torque developed by the device requires particular care in the choice of stand, cross sleeve and anti-rotation element for the agitating vessel.

/// Working with the device

⊗ **Danger!**

- › Do not use the device in explosive atmospheres, it is not EX-protected.
- › With substances capable of forming an explosive mixture, appropriate safety measures must be applied, e.g. working under a fume hood.
- › To avoid body injury and property damage, observe the relevant safety and accident prevention measures when processing hazardous materials.
- › The device is not suitable for hand-held operation.
- › Do not touch rotating parts during operation.

⚠ **Warning!**

- › Pathogenic materials must only be processed in closed vessels under a suitable fume hood. If you have any questions, please contact IKA application support.
- › The operation of a free rotating shaft end is prohibited. Therefore, for safety reason, only insert through the stirring tool over the upper edge of housing at standstill.

⊗ **Caution!**

- › Make certain that the device is set at the lowest speed before commissioning; otherwise, the device will begin running at the speed set in last operation. Gradually increase the speed. Please observe the max. permitted speed for the stirring element. Never set higher speed.

⚠ **Notice!**

- › Covers or parts that can be removed from the device without tools must later be refitted to ensure safe operation. This will prevent the infiltration of foreign objects, liquids and other contaminants.
- › Imbalance of the output shaft, the chuck and in particular the stirring tools can lead to uncontrolled resonant vibrational behavior of the device and the whole assembly. Glass apparatus and stirrer containers can be damaged or shattered by this. It can cause injury to the operator, also can damage the rotating stirring tool. In this case exchange the stirring tool for one without imbalance or remedy the cause of the imbalance. If there is still imbalance, return it to the dealer or the manufacturer along with a description of the fault.
- › There may be electrostatic activity between the medium and the output shaft which could cause a direct danger.
- › Never operate the device with the stirrer tools rotating freely. Ensure that parts of the body, hair, jewelry or items of clothing cannot be trapped by the rotating parts.
- › Pay attention when setting the speed to any imbalance of the stirrer tools and possible spraying of the medium to be stirred.
- › Ensure that the stand does not start to move.
- › 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.
- › Reduce the speed if:
 - the medium splashes out of the vessel because the speed is too high,
 - the device is not running smoothly,
 - the device begins to move around because of dynamic forces,
 - an error occurs.

/// Accessories

- › Protect the device and accessories from bumping and impacting.
- › Check the device and accessories beforehand for damage each time when you use them. Do not use damaged components.
- › Safe operation is only guaranteed with the accessories described in the "Accessories" section.
- › Must disconnect the power before changing stirring element and fitting allowed accessories.

/// Power supply / switching off the device

⚠ **Notice!**

- › If the device is operated too long in overload or if the ambient temperature is too high, the device switches off permanently.
- › The voltage stated on the type plate must correspond to the power voltage.
- › The socket for the power cord must be easily accessible.
- › Socket must be earthed (protective ground contact).
- › After an interruption in the power supply during a stirring process, the device does not restart automatically.
- › Disconnect the power plug before attaching or changing any accessories.
- › Disconnect the power plug before cleaning, maintenance and transportation of the unit.

/// Maintenance

- › The device must only be opened by trained specialists, even during repair. The device must be unplugged from the power supply before opening. Live parts inside the device may still be live for some time after unplugging from the power supply.

/// Disposal instructions

- › The device, accessories and packaging must be disposed of in accordance with local and national regulations.



Intended use

/// Use

For mixing/stirring liquids from low to high viscosities with various stirring tools.

Intended use: Stand device (chuck points down)

/// Range of use

Indoor environments similar to that a laboratory of research, teaching, trade or industry.

The safety of the user cannot be guaranteed:

- › if the device is operated with accessories that are not supplied or recommended by the manufacturer.
- › if the device is operated improperly or contrary to the manufacturer's specifications.
- › if the device or the printed circuit board are modified by third parties.

Useful information

The stirring device is suitable for continuous operation. The motor current is limited electronically. The device has an anti-stall and anti-overload system.

If a fault occurs, a safety circuit immediately switches off the motor permanently. A fault occurs if the safe functioning of the device is not guaranteed.

Speed

/// Speed – normal operation

Speed - regulated (no variation in speed):

The speed is monitored and regulated by processor controlled. The target speed is constantly compared with the actual rotation speed value of the output shaft and variations corrected. This guarantees a constant speed even if the viscosity of the substance being stirred changes. Fluctuations in mains voltage within the permitted tolerance range have no effect on the quality of regulation and constancy of speed.

The speed is set using the front knob. During normal operations the speed value on the display corresponds to the speed of the output shaft in revolutions per minute (rpm).

/// Speed – overload operation

When solid or semi-viscous substances are added, the device can run for a brief period at overload status. When running in the overload range (for instance if the viscosity has increased at a particular stage of the process) the speed will reduce to a degree sufficient to keep the torque on the stirrer shaft within the rated torque of the device.

Overload status 1:

The device is already running in the overload range, the target speed does not yet correspond to the actual speed. This condition is maintained as long as neither the motor current nor the temperature exceeds the permitted limit values.

Message on the display: blinking of the torque display.

Overload status 2:

When the device meet a fluctuating load which is over double of the nominal torque, the actual speed of the stirrer shaft will go down quickly to stop.

Message on the display: **E 15240702** (see "Error codes" section).

Output shaft

/// EUROSTAR 20 digital / 40 digital / 60 digital / 100 digital / 400 high torque digital

The clamping chuck and output shaft permit clamping IKA recommend stirrer tools (see section "Permitted IKA Stirrer tools"). The output shaft is designed as a hollow shaft and the opening on the top side of the housing is closed with a plastic cover. When the stirrer cover is opened, it is possible for stirring shaft to be pushed out over the top edge of the housing at standstill, e.g. during changing container.

For safety reason, the stirrer cover must be pushed back into the opening of the housing so that it is properly closed. This is the only way to ensure that working with the unit is safe and that media cannot enter the device.



Notice!

Please see section "Safety instructions"!

/// EUROSTAR 20 high speed digital

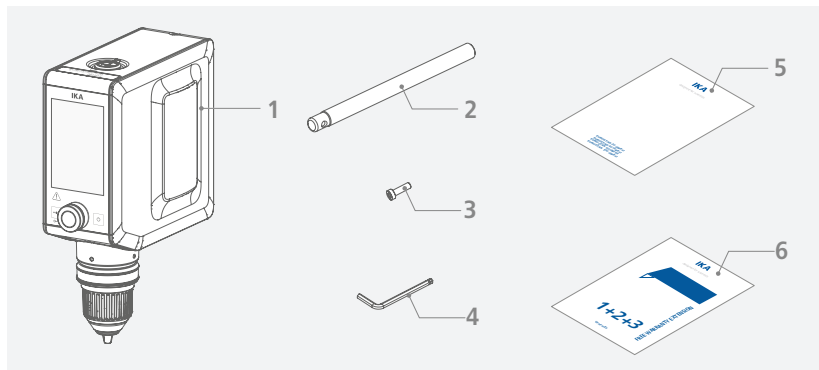
The output shaft has cone seat specially for precision shaft. Stirring elements can be screw-connected on the precision shaft.



Unpacking

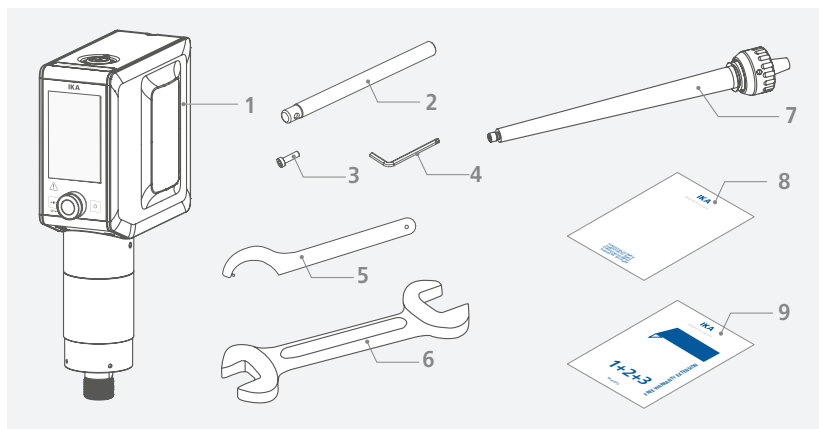
- > Please unpack the device carefully.
- > Any damage should be notified immediately to the shipping agent (post office, railway network or logistics company).

/// EUROSTAR 20 digital / 40 digital / 60 digital / 100 digital / 400 high torque digital



1	EUROSTAR digital	4	Hexagon socket offset screw key
2	Extension arm	5	User guide
3	Hexagonal socket screw	6	Warranty card

/// EUROSTAR 20 high speed digital

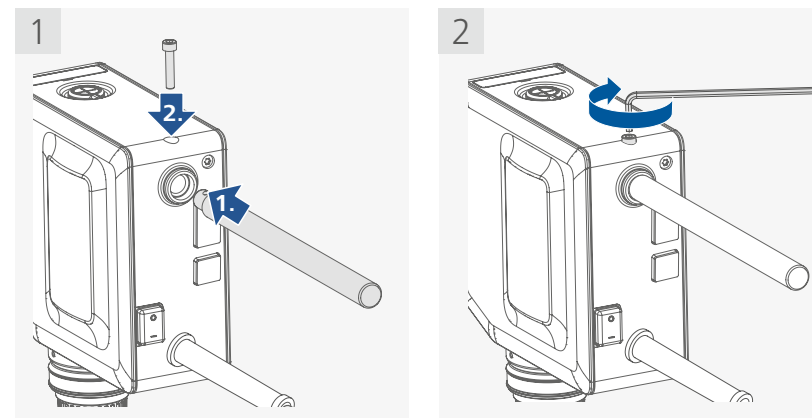


1	EUROSTAR 20 high speed digital	6	Open-end wrench
2	Extension arm	7	R 6000 precision shaft
3	Hexagonal socket screw	8	User guide
4	Hexagon socket offset screw key	9	Warranty card
5	Hook spanner		

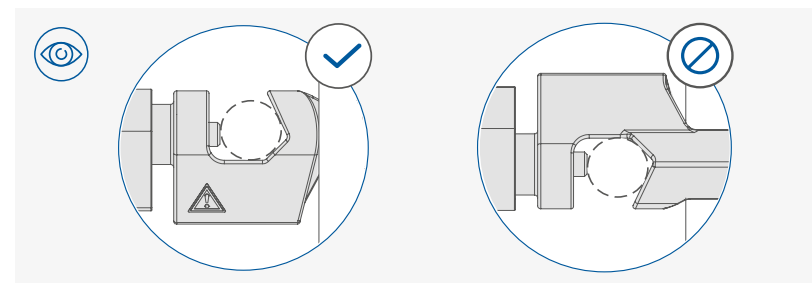
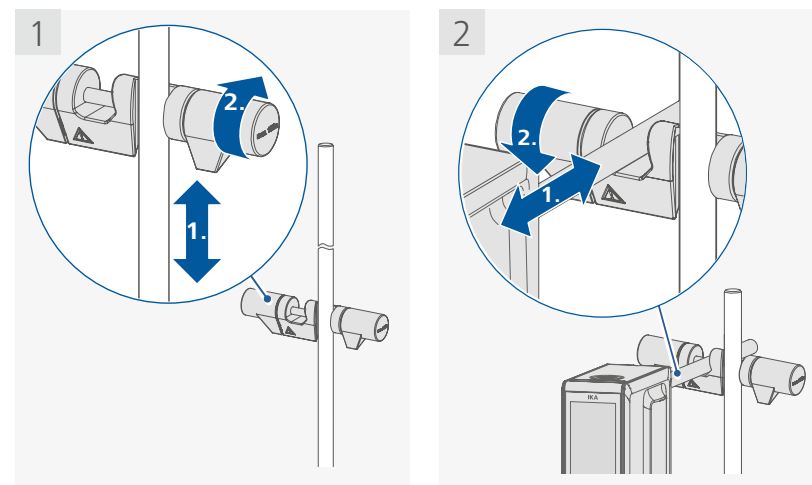
Installation



/// Assembling the extension arm to the overhead stirrer

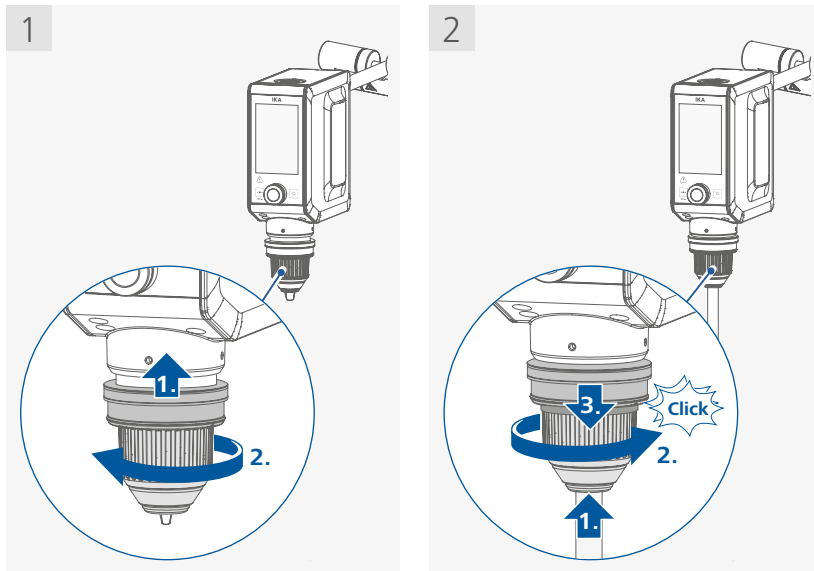


/// Assembling the overhead stirrer to the stand

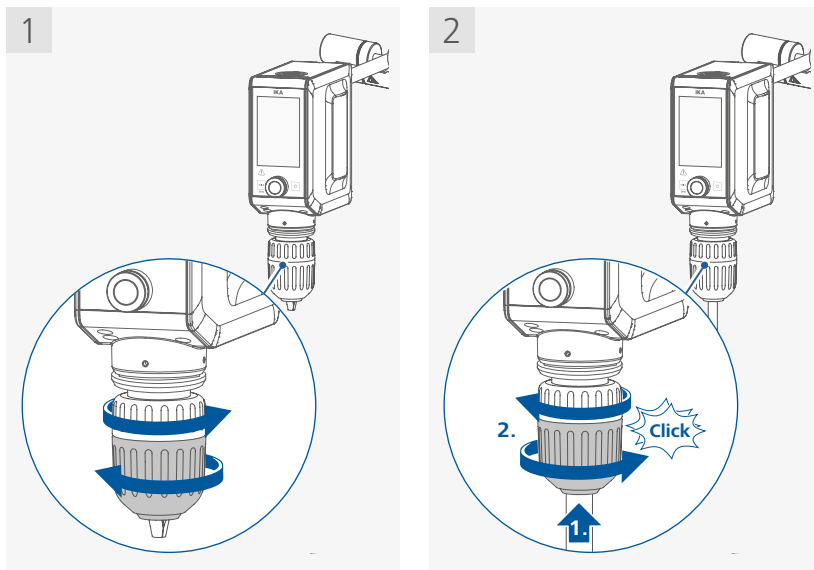


/// Assembling the stirring element using the chuck

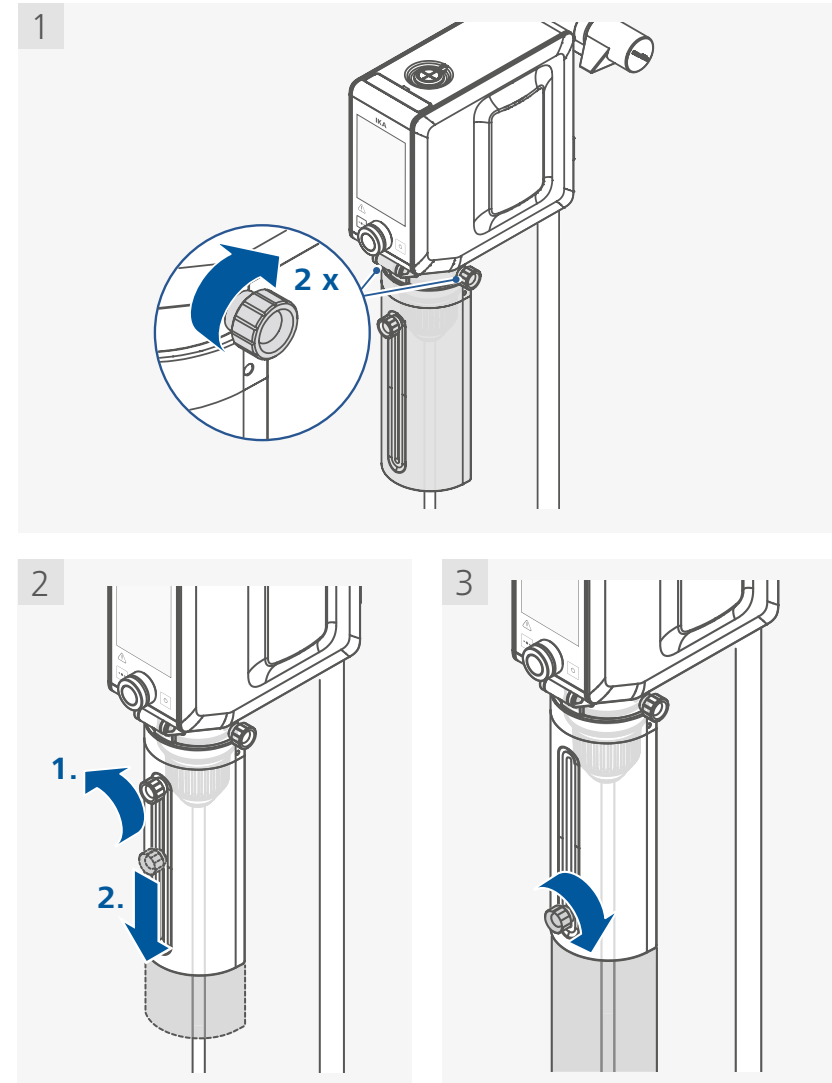
> EUROSTAR 20 digital / 40 digital / 60 digital / 100 digital



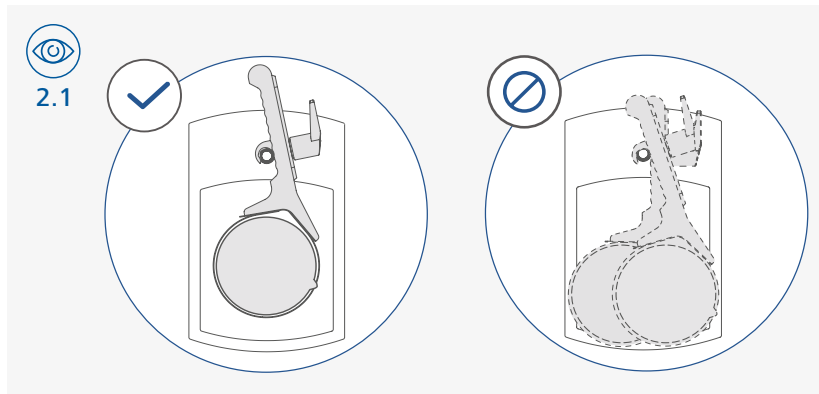
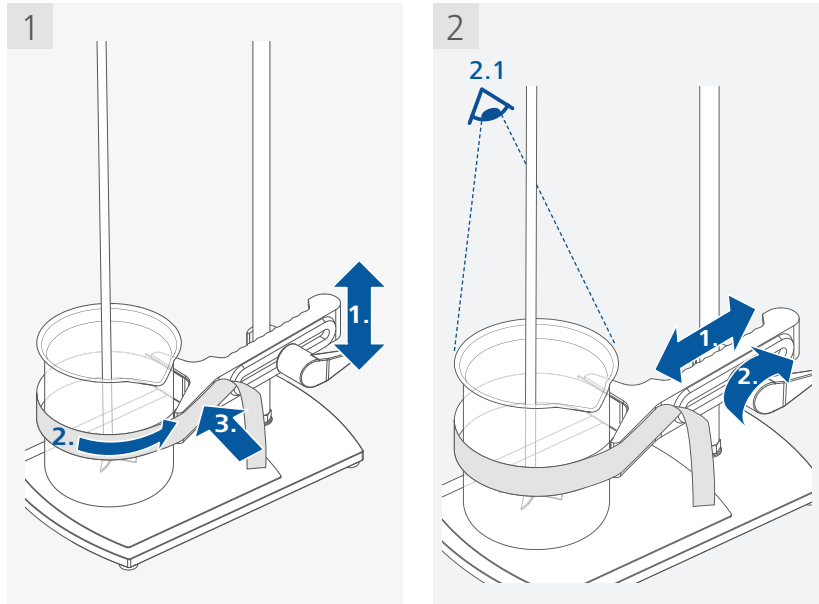
> EUROSTAR 400 high torque digital



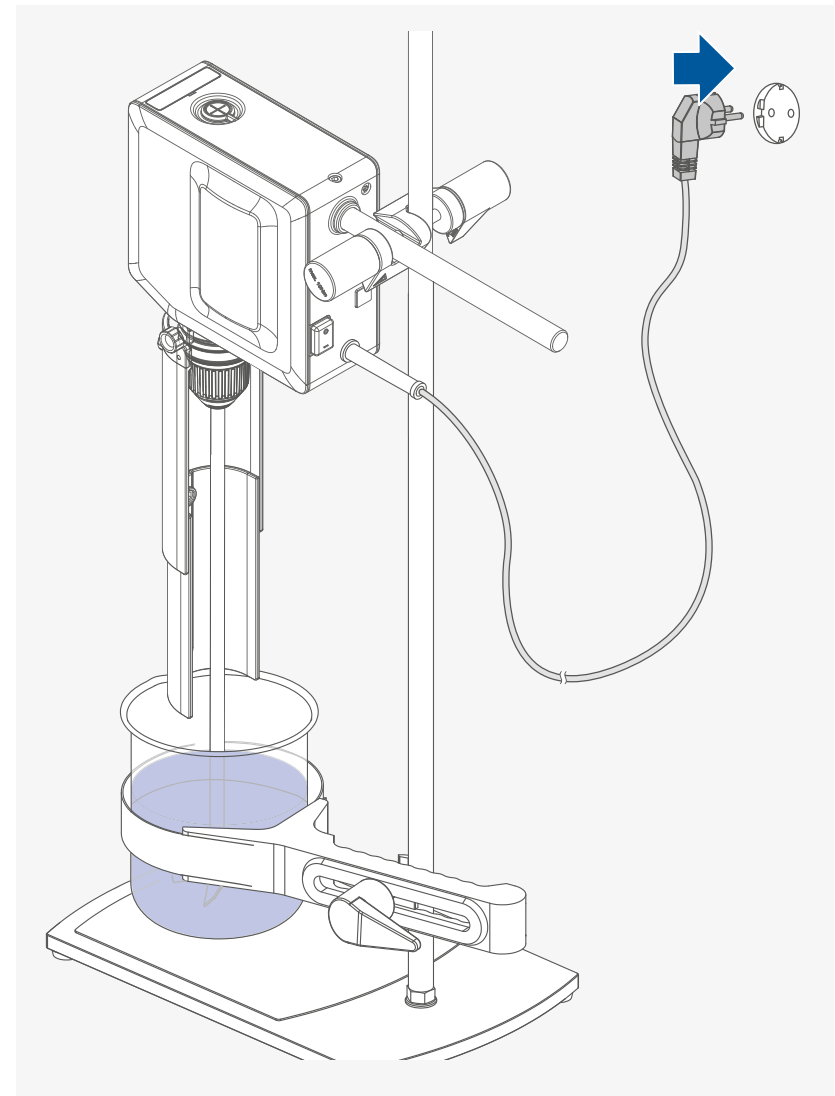
/// Securing and adjusting the stirring shaft protector



/// Securing the mixing vessel to the stand

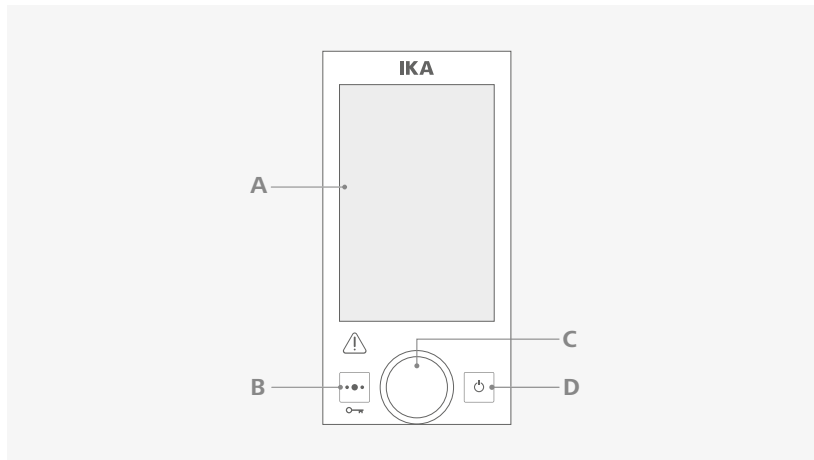


/// Connecting to the power



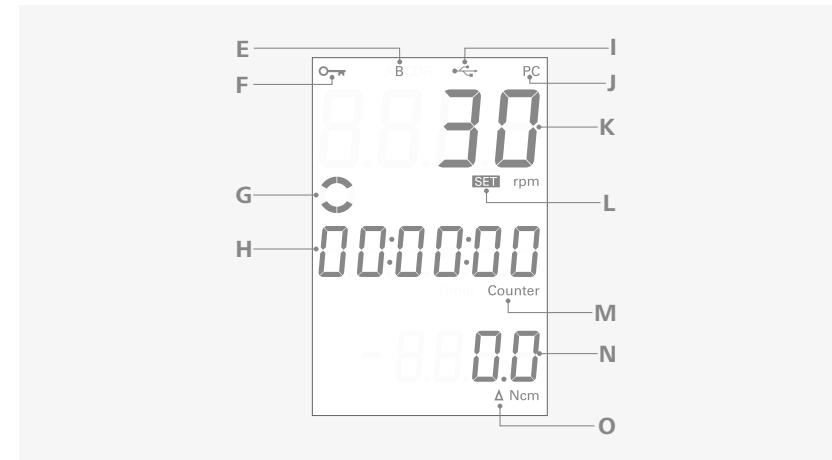
Operator panel and display

/// Explanation of the control elements



A	Display	Display of the set parameters of the device.
B	Multifunction button	Switch between different device functions: - Timer/counter - Torque reset - Operating mode - Torque range - Speed range - Torque calibration - Factory reset.
C	Control knob (Rotating / Pressing)	Set the speed. Change and confirm the settings in the menu. Start/stop the device function by pressing it.
D	Standby button	Switches the device to standby mode (no disconnection from the power supply).

/// Explanation of symbols on the working screen



E	Operating mode symbol	Indicate the currently selected operating mode (A, B or C).
F	Lock button symbol	Indicate the settings of the device are locked.
G	Working symbol	Indicate that the device function is activate.
H	"Timer/Counter" display	Indicate the "Timer/Counter" value.
I	USB connection symbol	Indicate a USB cable is connected.
J	PC control symbol	Indicate the device is controlled by a PC.
K	Speed display	Display the speed value.
L	"SET" symbol	Indicate that the set value is displayed.
M	"Timer/Counter" symbol	Indicate the "Timer" or "Counter" is activated.
N	Torque display	Display the torque value.
O	Torque reset symbol	Indicate that the torque is reset.

i The symbols displayed change depending on the status and settings of the device.



Operation

⚠ Notice!

Secure the device to a stable stand with a cross sleeve.

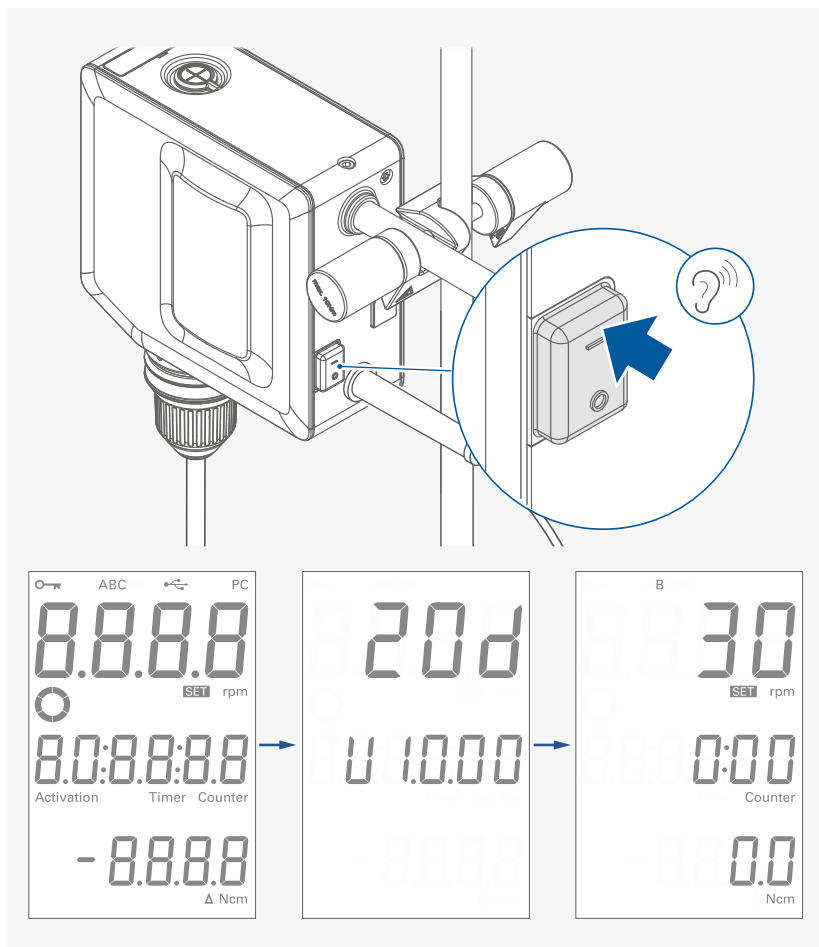
The stirring vessel must always be securely fixed for safety reasons. You must also ensure that the mounting device (stand) is set up in such a way that it is not liable to topple and does not start to move during the stirring procedure.

If these conditions have been met, the machine is ready for operation when the mains plug is plugged in.

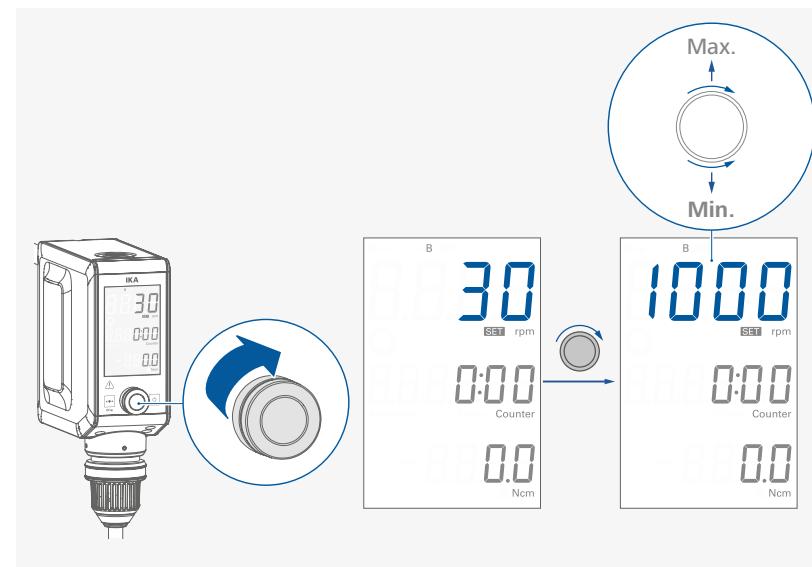
If these conditions are not met, safe operation is not guaranteed and the machine could be damaged.

Observe the ambient conditions (temperature, humidity, etc.) listed under "Technical Data".

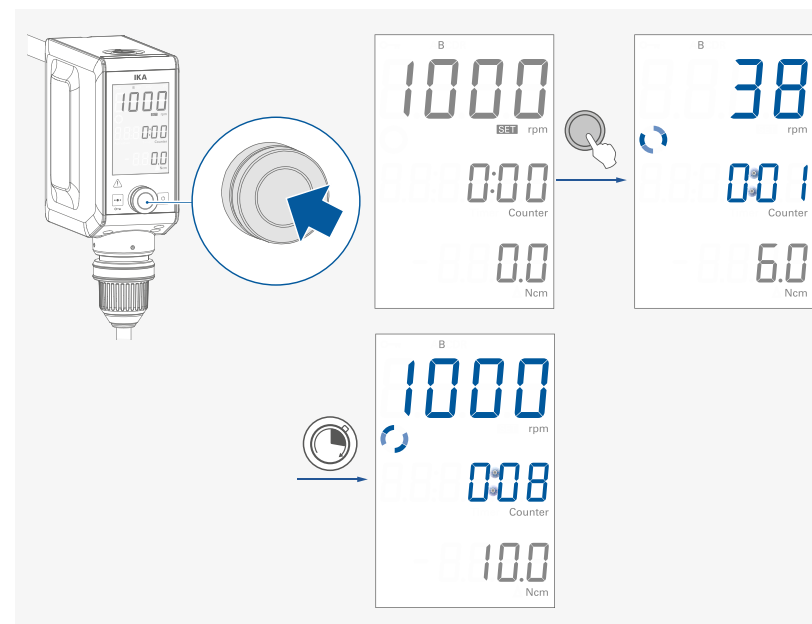
/// Switching on



/// Setting the speed

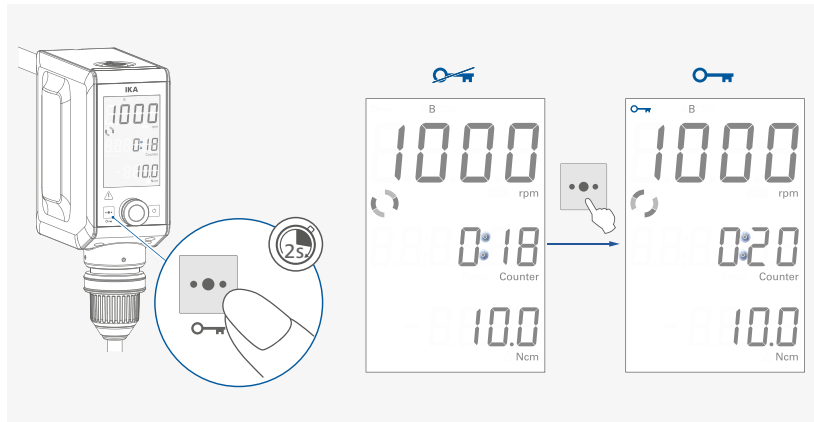



/// Starting the device function



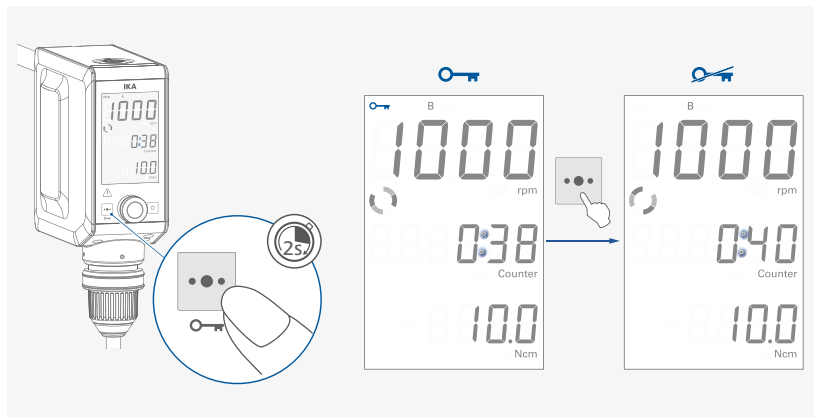
/// Locking/unlocking the settings

> Locking the settings

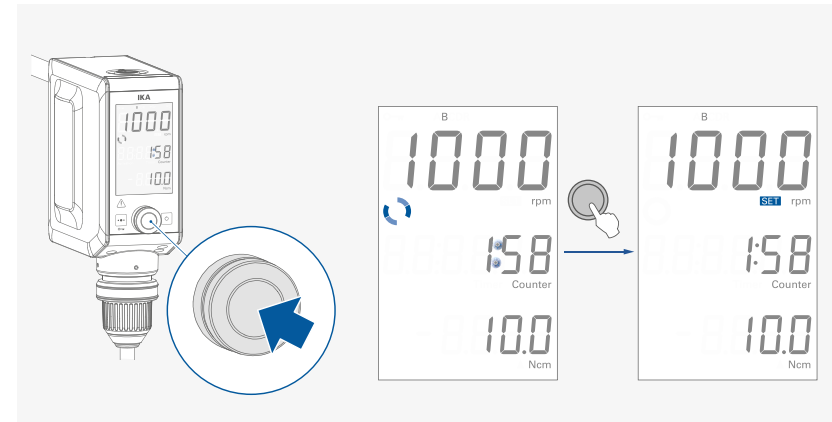


i While the settings are locked, the lock button symbol () flashes when you touch any button or press / turn the control knob.

> Unlocking the settings

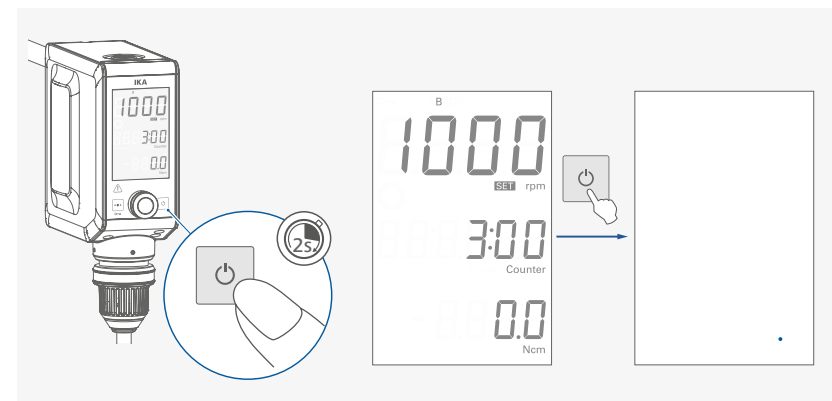


/// Stopping the device function



i > After stopping the device function, the last speed settings are shown on the display.
> After stopping the device function, the last set timer value or the elapsed running time (counter value) is displayed.

/// Activate standby mode



i An LCD dot in the bottom right-hand corner indicates the standby status.



Menu navigation and structure

/// Menu navigation

- › Select the menu option by touching multifunction button (B) shortly.
- › Select the next menu option by touching multifunction button (B) shortly again.
- › Current selected menu option blinks.
- › Select/edit and confirm the desired setting by turning and pressing the control knob.

/// Menu structure

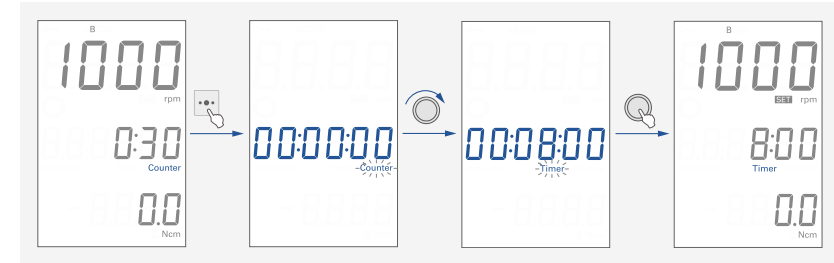
		Default settings	
Menu	Counter	Activated	
	Timer	-	
	Torque reset	-	
	Operating mode	A	-
		B	Activated
		C	-
	Torque (Ncm) range	20 Ncm	[EUROSTAR 20 digital]
		40 Ncm	[EUROSTAR 40 digital]
		60 Ncm	[EUROSTAR 60 digital]
		60 Ncm	[EUROSTAR 100 digital]
		20 Ncm	[EUROSTAR 20 high speed digital]
350 Ncm		[EUROSTAR 400 high torque digital]	
Speed (rpm) range	2000 rpm	[EUROSTAR 20 digital]	
	2000 rpm	[EUROSTAR 40 digital]	
	2000 rpm	[EUROSTAR 60 digital]	
	2000 rpm	[EUROSTAR 100 digital]	
	6000 rpm	[EUROSTAR 20 high speed digital]	
	300 rpm	[EUROSTAR 400 high torque digital]	
Torque calibration	-		
Factory reset	-		

/// Menu details

Counter/Timer:

Setting and confirming the timer value or counter in stopped status or when the device function is activated:

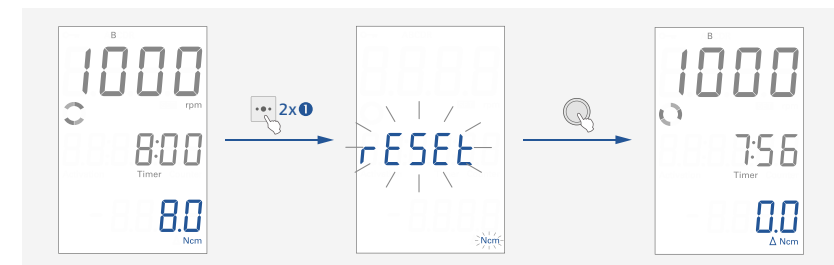
- › Select the timer/counter setting.
- › Set the desired timer value.
- › Confirm the setting.



- i**
- › If the value of the timer/counter setting is set to 00:00:00 [hour : minute : second], the counter function is activated and the corresponding symbol (Counter) lights up. When the device function is started, this value automatically starts to run from 00:00:00 to maximum value 99:59:59.
 - › If the value of the timer/counter is set to a value larger than 00:00:00, the timer function is activated and the corresponding symbol (Timer) lights up. Once the set timer value has elapsed, the device function stops automatically and the last set timer value is displayed. The maximum timer value is 99:59:59.
 - › While the device function is active, the timer setting can be checked by pressing the multifunction button (B) and reset if necessary.
 - › The device function can be stopped by pressing the control button (C). This stops the timer and resets it to the last set value.

Torque reset:

Resetting the torque when the device function is activated:

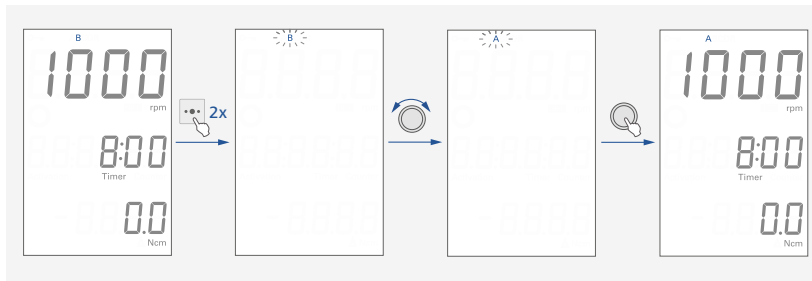


- i**
- › By resetting the torque, the torque value can be reset to 0 Ncm and the Δ symbol appears below the torque value.
 - › **1** Torque resetting can only be performed when the device function is activated.

Operating mode:

Setting the operating mode in stopped status:

- › Select the operating mode menu.
- › Select the desired operating mode.
- › Confirm the setting.

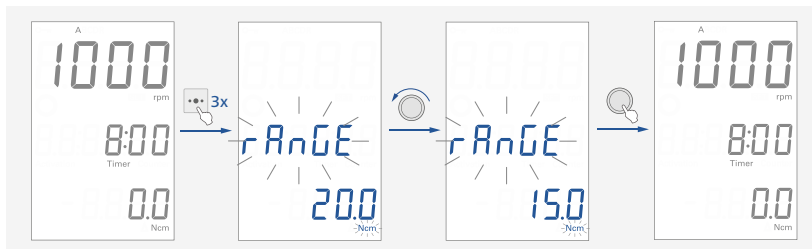


- i** › **Operating mode A:**
After power failure the set values are not saved. The device doesn't restart by itself.
- › **Operating mode B:**
After power failure the set values are saved. The device doesn't restart by itself.
- › **Operating mode C:**
After power failure the set values are saved and cannot be changed. The device doesn't restart by itself.

Torque (Ncm) range:

Setting the torque range in the stopped status:

- › Select the torque range menu.
- › Set the value for the torque range.
- › Confirm the setting.

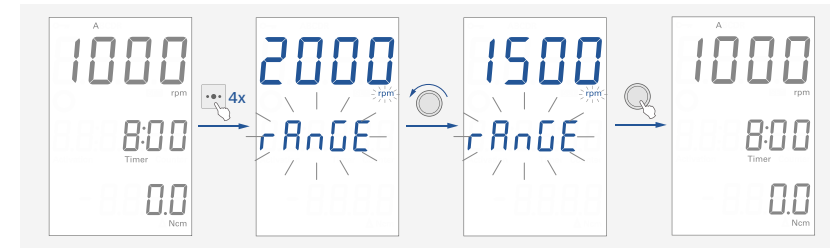


- i** › Once the torque range is set, it limits the output torque on the stirring shaft.
- › The initial setting is the maximum permissible torque of the device.

Speed (rpm) range:

Set the speed range in stopped status:

- › Select the speed range menu.
- › Set the value for the speed range.
- › Confirm the setting.

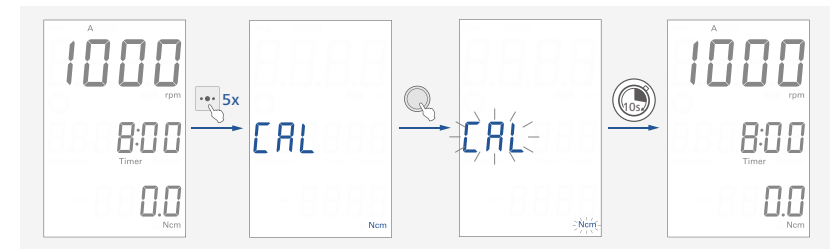


- i** › Once the speed range is set, the speed can be adjusted only within this range.
- › The initial setting is the maximum permissible speed of the device.

Torque calibration:

Perform torque calibration in stopped status:

- › Select the torque calibration menu.
- › Press the control knob to start the torque calibration.

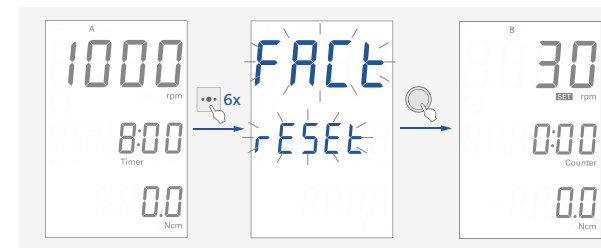


- i** › All torque resulting from bearing friction is excluded from the torque calculation.
- › The torque calibration is performed without a mounted stirring tool. The calibration takes 10 seconds.

Factory reset:

Restore the factory settings in stopped status:

- › Select the factory reset menu.
- › Confirm the setting.



Interfaces and outputs

The device can be operated in "Remote" mode via the RS 232 port or the USB port connected to a PC and with the laboratory software Labworldsoft®. The device firmware can also be updated with a PC via the RS 232 or USB port.

Notice!

Please comply with the system requirements together with the operating instructions and help section included with the software. Also note the requirements for the ability to put the device into a safe status in an emergency if it is controlled externally.

/// USB interface

The Universal Serial Bus (USB) is a serial bus for connecting the device to the PC. Equipped with USB devices can be connected to a PC during operation (hot plugging). Connected devices and their properties are automatically recognized.

/// USB device drivers

Connect the IKA device through the USB data cable to the PC. The data communication is via a virtual COM port. The data communication is via a virtual COM port. From Windows 10 and onwards the standard Windows USB driver is automatically loaded and a COM port number is assigned (find details in Windows Device Manager: "USB Serial Port (COMxx)"). If you have problems with USB communication, first ask your IT system administrator whether access to the USB interface is restricted for data security reasons.

/// RS 232 interface

Configuration:

- › The functions of the interface connections between the device and the automation system are chosen from the signals specified in EIA standard RS 232 in accordance with DIN 66 020 Part 1.
- › For the electrical characteristics of the interface and the allocation of signal status, standard RS 232 applies in accordance with DIN 66 259 Part 1.
- › Transmission procedure: asynchronous character transmission in start-stop mode.
- › Type of transmission: full duplex.
- › Character format: character representation in accordance with data format in DIN 66 022 for start-stop mode. 1 start bit; 7 character bits; 1 parity bit (even); 1 stop bit.
- › Transmission speed: 9600 bit/s.
- › Data flow control: none
- › Access procedure: data transfer from the device to the computer takes place only at the computer's request.

/// Command syntax and format

The following applies to the command set:

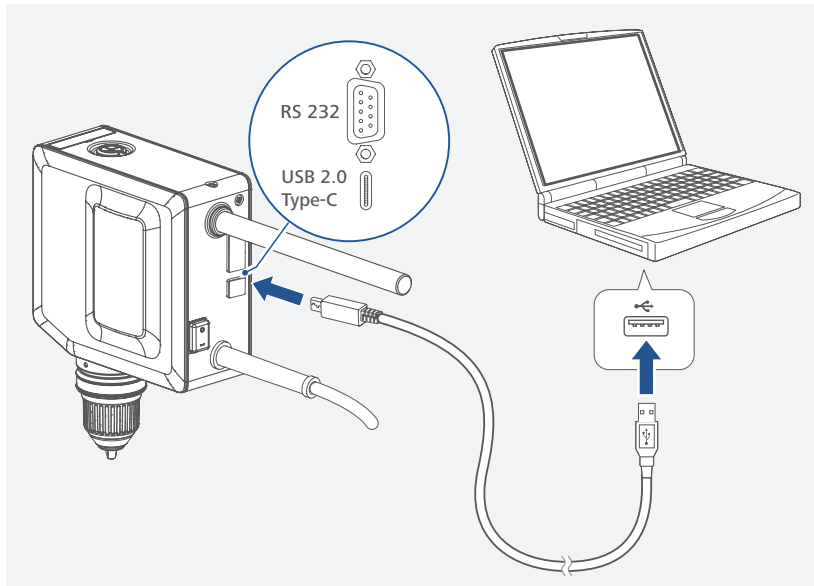
- › Commands are generally sent from the computer to the lab device.
- › The lab device only sends at the computer's request. Even fault indications cannot be sent spontaneously from the lab device to the computer (automation system).
- › Commands are transmitted in capital letters.
- › Commands and parameters including successive parameters are separated by at least one space (Code: hex 0x20).
- › Each individual command (incl. parameters and data) and each response are terminated with CR LF (Code: hex 0x0d hex 0x0A) and have a maximum length of 80 characters.
- › The decimal separator in a number is a dot (Code: hex 0x2E).

The above details correspond as far as possible to the recommendations of the NAMUR working party (NAMUR recommendations for the design of electrical plug connections for analogue and digital signal transmission on individual items of laboratory control equipment, rev. 1.1). The NAMUR commands and the additional specific IKA commands serve only as low level commands for communication between the device and the PC. With a suitable terminal or communications program these commands can be transmitted directly to the device. The IKA software Labworldsoft®, provides a convenient tool for controlling the device and collecting data under MS Windows, and includes graphical entry features, e.g. the motor speed ramps.

Commands	Function
IN_NAME	Read device name.
IN_PV_4	Read current speed value.
IN_PV_5	Read current torque value.
IN_SP_4	Read rated speed value.
IN_SP_5	Read the torque limit value.
IN_SP_6	Read the speed limit value.
IN_SP_8	Read the safety speed value.
OUT_SP_4 X	Adjust the rated speed value to X.
OUT_SP_5 X	Adjust the torque limit value to X.
OUT_SP_6 X	Adjust the speed limit value to X.
OUT_SP_8 X	Adjust the safety speed value to X.
START_4	Start the motor.
STOP_4	Stop the motor.
RESET	Switch to normal operating mode.

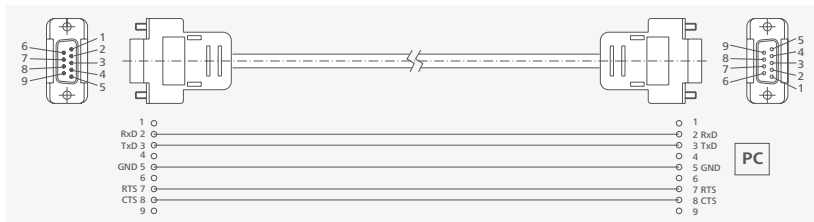
/// Connections between device and external devices

> Connecting device to a PC:



PC 1.1 Cable:

This cable is required to connect RS 232 interface to a PC.



USB 2.0 cable (A - C):

This cable is required to connect USB interface to a PC.



/// Device software update

Keep your device up-to-date with the IKA Firmware update tool.

The firmware update can be done with a computer connected through USB-Interface.

For this, you need register on our website MyIKA first.

After registering your device IKA will inform you about available updates for your devices.

Please download the software "FWUToolSetup.zip" from our IKA service website www.ika.com.

Maintenance and cleaning

The device is maintenance-free. It is only subject to the natural wear and tear of components and their statistical failure rate.

/// Cleaning

For cleaning disconnect the mains plug!

Use only cleaning agents which have been approved by IKA to clean the device: water containing surfactant / isopropyl alcohol.

- › Wear protective gloves during cleaning the devices.
- › Electrical devices may not be placed in the cleansing agent for the purpose of cleaning.
- › Do not allow moisture to get into the device when cleaning.
- › Before using another than the recommended method for cleaning or decontamination, the user must ascertain with IKA that this method does not destroy the device.

/// Spare parts order

When ordering spare parts, please give:

- › Machine type
- › Serial number, see type plate
- › Item and designation of the spare part, see: www.ika.com, spare parts diagram and spare parts list.
- › Software version (Briefly visible in the display when the device is switched on).

/// Repair

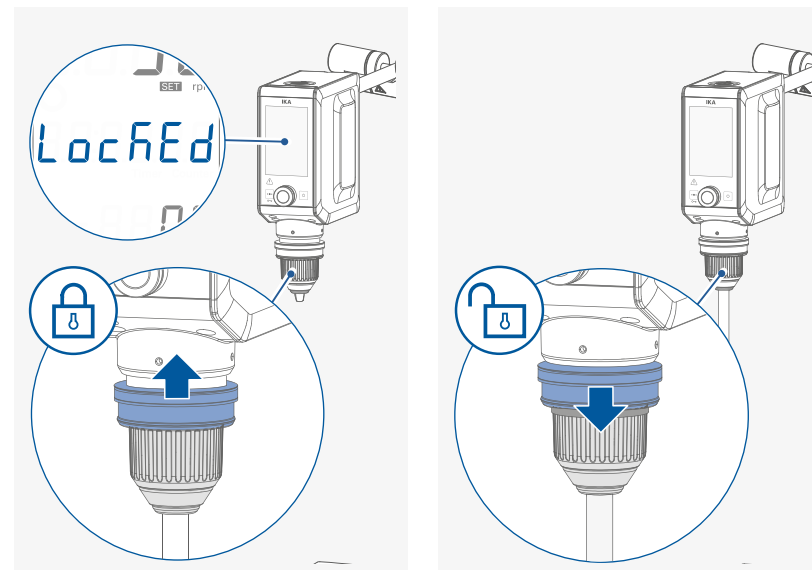
Please send in device for repair only after it has been cleaned and is free from any materials which may constitute a health hazard.

For repair, please request the “Decontamination Certificate” form IKA or use the download printout of it from IKA website: www.ika.com.

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

Troubleshooting

If the locking ring is in the upper position, the device is locked. “Locked” appears on the device display. The device function cannot be started when the quick sense keyless chuck is locked. When the locking ring is in the lower position, the device is unlocked. The device is ready for operation in this state and can be restarted by pressing the control button (C).



In some cases it can happen that:

- › The device display does not show the message “Locked”, e.g. under the influence of a magnetic field, although the locking ring is in the locked position or
- › After replacing the quick sense keyless chuck, the device display still shows “Locked” even though the locking ring is in the unlocked position.

Proceed as follows in these cases:

Remove the fitted stirring tools. Make sure that the locking ring is in the unlocked position. Press and hold the multifunction button (B) and briefly press the control knob (C) to start the device function for a few seconds.

Error codes

Any malfunctions during operation will be identified by an error message on the display. Proceed as follows in such cases:

- › Switch off the device with the power switch or disconnect the device from the power supply.
- › Carry out corrective measures.
- › Restart the device.

i In case of a failure, press the control knob or start/stop button for 1 seconds to show the full error code.

Error code | Causes | Effect | Solutions

E24: Motor

15240702 - Motor current upper limit exceeded

Cause	› Motor blockage or overload.
Effect	› Motor off
Solution	› Switch off the device. › Decrease the load on the motor and restart device again.

15243802 - Motor temperature upper limit exceeded

Cause	› Temperature inside of the device is too high.
Effect	› Motor off
Solution	› Switch off the device and let it cool down.

E29: Power supply

15294202 - Power supply voltage upper limit exceeded

Cause	› AC input voltage is too high
Effect	› Motor off
Solution	› Switch off the device and check the power source.

15294203 - Power supply voltage lower limit exceeded

Cause	› AC input voltage is too low
Effect	› Motor off
Solution	› Switch off the device and check the power source.

If the actions described fails to resolve the fault or another error code is displayed then take one of the following steps:

- › Contact the service department
- › Send the device for repair, including a short description of the fault.

Accessories

	EUROSTAR 20 digital	EUROSTAR 40 digital	EUROSTAR 60 digital	EUROSTAR 100 digital	EUROSTAR 20 high speed digital	EUROSTAR 400 high torque digital
R 1825 Plate stand	√	√				
R 1826 Plate stand	√	√				
R 1827 Plate stand	√	√				
R 2722 H-stand	√	√	√	√	√	√
R 2723 Telescopic stand	√	√	√	√	√	√
R 182 Cross sleeve	√	√				
R 270 Cross sleeve	√	√	√	√	√	√
R 271 Cross sleeve	√	√	√	√	√	√
RH 3 Strap clamp	√	√				
RH 5 Strap clamp	√	√	√	√	√	√
FK 1 Flexible coupling	√	√	√	√		√
R 401 Stirrer shaft protector	√	√	√	√	√	√
PC 1.1 Cable	√	√	√	√	√	√
USB 2.0 cable (A – C)	√	√	√	√	√	√

See more accessories on www.ika.com.

Permitted IKA stirrer tools

	max. speed (rpm)	EUROSTAR 20 digital	EUROSTAR 40 digital	EUROSTAR 60 digital	EUROSTAR 100 digital	EUROSTAR 20 high speed digital	EUROSTAR 400 high torque digital
R 1342 Propeller stirrer	≤ 2000	√	√	√	√		√
R 1345 Propeller stirrer	≤ 800			√	√		√
R 2302 Propeller stirrer	≤ 600						√
R 1381 Propeller stirrer	≤ 2000	√	√	√	√		√
R 1382 Propeller stirrer	≤ 2000	√	√	√	√		√
R 1385 Propeller stirrer	≤ 800						√
R 1388 Propeller stirrer	≤ 800						√
R 1389 Propeller stirrer, PTFE	≤ 800	√	√	√	√		√
R 1311 Turbine stirrer	≤ 2000	√	√	√	√		√
R 1312 Turbine stirrer	≤ 2000	√	√	√	√		√
R 1313 Turbine stirrer	≤ 800			√	√		√
R 1300 Dissolver stirrer	≤ 2000	√	√	√	√		√
R 1302 Dissolver stirrer	≤ 1000			√	√		√
R 1303 Dissolver stirrer	≤ 2000	√	√	√	√		√
R 1352 Centrifugal stirrer	≤ 2000	√	√	√	√		√
R 1355 Centrifugal stirrer	≤ 800			√	√		√
R 1375 Paddle stirrer	≤ 800			√	√		√
R 1376 Paddle stirrer	≤ 800						√
R 2311 Paddle stirrer	≤ 600						√
R 1330 Anchor stirrer	≤ 1000	√	√	√	√		√
R 1331 Anchor stirrer	≤ 1000			√	√		√
R 1333 Anchor stirrer	≤ 1000						√
R 3000.1 Moebius stirrer	≤ 800	√	√	√	√		√
R 3001.1 Moebius stirrer	≤ 800	√	√	√	√		√
R 3003 Spiral stirrer	≤ 800	√	√	√	√		√
R 3003.1 Spiral stirrer	≤ 800	√	√	√	√		√
R 3004 Blade stirrer	≤ 1000	√	√	√	√		√
R 3004.1 Blade stirrer	≤ 1000	√	√	√	√		√
R 3004.2 Blade stirrer	≤ 1000	√	√	√	√		√
R 1001 Paddle stirrer	≤ 2000	√	√				
R 1002 Paddle stirrer	≤ 2000	√	√				

	max. speed (rpm)	EUROSTAR 20 digital	EUROSTAR 40 digital	EUROSTAR 60 digital	EUROSTAR 100 digital	EUROSTAR 20 high speed digital	EUROSTAR 400 high torque digital
R 6000 Precision shaft	≤ 6000					√	
R 1401 Propeller	≤ 6000					√ ⓘ	
R 1402 Dissolver	≤ 6000					√ ⓘ	
R 1405 Propeller	≤ 6000					√ ⓘ	

See more permitted stirrer tools on www.ika.com.

i ⓘ Only be used in conjunction with R 6000 precision shaft.



Technical data

		EUROSTAR 20 digital	EUROSTAR 40 digital	EUROSTAR 60 digital
Speed range under nominal load	rpm	0/30 ... 2000		
Speed adjustment		Stepless		
Speed display		LCD		
Speed setting accuracy	rpm	± 1		
Speed measurement deviation		Speed < 300 rpm: ± 3 rpm / Speed > 300 rpm: ± 1 %		
Max. torque at stirrer shaft (see section "Torque graph")	Ncm	40 (at 30 ... 600 rpm)	60 (at 30 ... 200 rpm)	100 (at 30 ... 400 rpm)
		40 ... 20 (at 600 ... 2000 rpm)	60 ... 40 (at 200 ... 2000 rpm)	100 ... 60 (at 400 ... 2000 rpm)
Torque trend measurement		Yes		
Torque trend display		Yes		
Torque measurement deviation	Ncm	± 6		
Max. stirring quantity (water)	l	25	40	60
Max. viscosity	mPa·s	10000	30000	50000
Timer/Counter function		Yes		
Timer/Counter display		LCD		
Max. Timer/Counter		100 hours (99:59:59 [hour:minute:second])		
Permitted on time	%	100		
Nominal voltage	VAC	100 ... 230		
Frequency	Hz	50/60		
Max. input power	W	70	118	168
Max. output power at stirring shaft	W	42	84	131
Noise level without stirring tool	dB (A)	52		
Interface		USB, RS 232		
IP code according to EN 60529		IP 54		
Protection class		I		
Overvoltage category		II		
Contamination level		2		
Protection at overload		Yes / motor current limitation		
Permissible ambient temperature	°C	5 ... 40		
Permissible relative humidity	%	80		
Drive		Brushless motor		
Clamping chuck-clamping range	mm	0.5 ... 10		
Hollow shaft internal diameter	mm	11		
Extension arm (Ø × L)	mm	16 × 220		
Dimensions (W × D × H) (without extension arm)	mm	89 × 191 × 237		
Weight (with extension arm and clamping chuck)	kg	3.8		
Operation at a terrestrial altitude	m	max. 2000		

		EUROSTAR 100 digital	EUROSTAR 20 high-speed digital	EUROSTAR 400 high torque digital
Speed range under nominal load	rpm	0/30 ... 2000	0/150 ... 6000	0/10 ... 300
Speed adjustment		Stepless		
Speed display		LCD		
Speed setting accuracy	rpm	± 1		
Speed measurement deviation		Speed < 300 rpm: ± 3 rpm / Speed > 300 rpm: ± 1 %		
Max. torque at stirrer shaft (see section "Torque graph")	Ncm	200 (up to 20 minutes ¹) (at 30 ... 600 rpm)	40 (at 150 ... 600 rpm)	400 (at 10 ... 260 rpm)
		120 (at 30 ... 600 rpm)		
		120 ... 100 (at 600 ... 1300 rpm)	40 ... 20 (at 600 ... 6000 rpm)	400 ... 350 (at 260 ... 300 rpm)
		100 ... 60 (at 1300 ... 2000 rpm)		
Torque trend measurement		Yes		
Torque trend display		Yes		
Torque measurement deviation	Ncm	± 6	± 6	± 30
Max. stirring quantity (water)	l	100	20	150
Max. viscosity	mPa·s	70000	10000	100000
Timer/Counter function		Yes		
Timer/Counter display		LCD		
Max. Timer/Counter		100 hours (99:59:59 [hour:minute:second])		
Permitted on time	%	100		
Nominal voltage	VAC	100 ... 230		
Frequency	Hz	50/60		
Max. input power	W	186	176	174
Max. output power at stirring shaft	W	136	125	142
Noise level without stirring tool	dB (A)	52		
Interface		USB, RS 232		
IP code according to EN 60529		IP 54		
Protection class		I		
Overvoltage category		II		
Contamination level		2		
Protection at overload		Yes / motor current limitation		
Permissible ambient temperature	°C	5 ... 40		
Permissible relative humidity	%	80		
Drive		Brushless motor		
Clamping chuck-clamping range	mm	0.5 ... 10	^e	0.5 ... 10
Hollow shaft internal diameter	mm	11	-	11
Extension arm (Ø × L)	mm	16 × 220		
Dimensions (W × D × H) (without extension arm)	mm	89 × 191 × 237	89 × 191 × 306	89 × 191 × 240
Weight (with extension arm and clamping chuck)	kg	3.8	5.2	3.8
Operation at a terrestrial altitude	m	max. 2000		

Subject to technical changes!

- i** ¹ Up to 20 minutes, depending on room temperature and voltage etc..
^e Conical attachment for precision shaft **R 6000**, screw on stirring tool (e.g. **R 1401**).

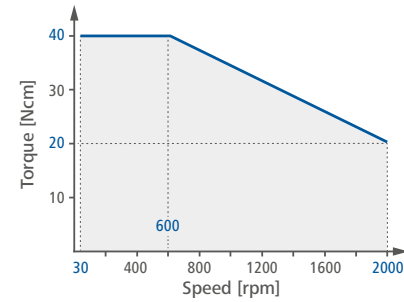
Warranty

In accordance with IKA Terms and Condition of sale, 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 factory, enclosing the delivery invoice and giving reasons for the claim. You will be liable for freight costs.

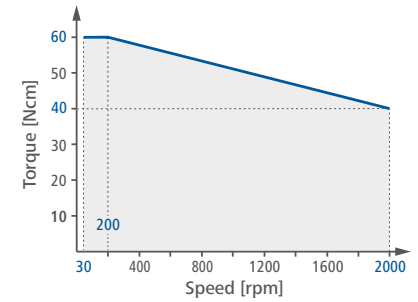
The warranty does not cover worn out parts, nor does it apply to faults resulting from improper use, insufficient care or maintenance not carried out in accordance with the instructions in this operating manual.

Torque graph

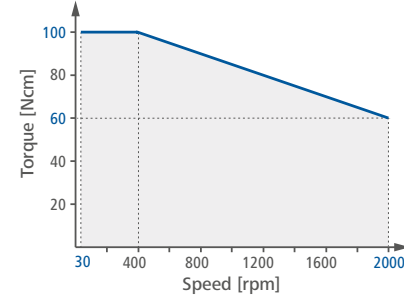
EUROSTAR 20 digital



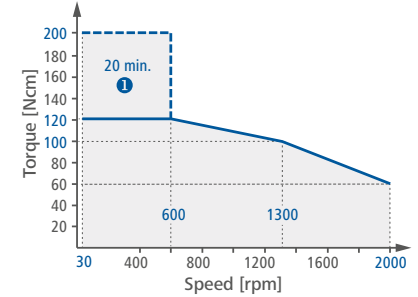
EUROSTAR 40 digital



EUROSTAR 60 digital

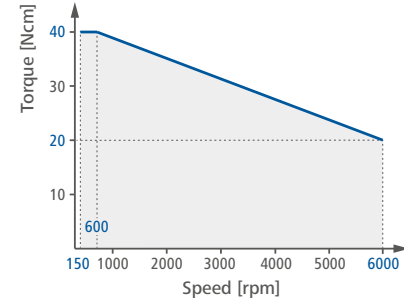


EUROSTAR 100 digital

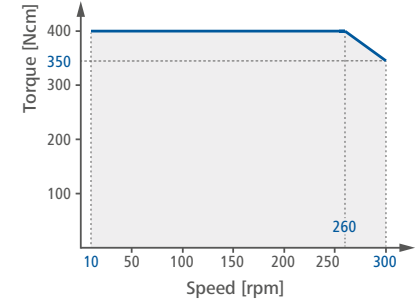


Note: Up to 20 minutes, depending on room temperature and voltage etc..

EUROSTAR 20 high speed digital



EUROSTAR 400 high torque digital





designed for scientists

IKA-Werke GmbH & Co. KG

Janke & Kunkel-Straße 10, 79219 Staufen, Germany
Phone: +49 7633 831-0, Fax: +49 7633 831-98
eMail: sales@ika.de

USA

IKA Works, Inc.
Phone: +1 910 452-7059
sales@ika.net

KOREA

IKA Korea Ltd.
Phone: +82 2 2136 6800
sales-lab@ika.kr

BRASIL

IKA Brasil
Phone: +55 19 3772-9600
sales@ika.net.br

MALAYSIA

IKA Works (Asia) Sdn Bhd
Phone: +60 3 6099-5666
sales.lab@ika.my

CHINA

IKA Works Guangzhou
Phone: +86 20 8222 6771
info@ika.cn

POLAND

IKA Poland Sp. z o.o.
Phone: +48 22 201 99 79
sales.poland@ika.com

JAPAN

IKA Japan K.K.
Phone: +81 6 6730 6781
info_japan@ika.ne.jp

INDIA

IKA India Private Limited
Phone: +91 80 26253 900
info@ika.in

UNITED KINGDOM

IKA England LTD.
Phone: +44 1865 986 162
sales.england@ika.com

VIETNAM

IKA Vietnam Company Limited
Phone: +84 28 38202142
sales.lab-vietnam@ika.com

THAILAND

IKA Works (Thailand) Co. Ltd.
Phone: +66 2059 4690
sales.lab-thailand@ika.com

TURKEY

IKA Turkey A.S
Phone: +90 216 394 43 43
sales.turkey@ika.com

KENYA

IKA Works Kenya Ltd.
Phone: +254 112 323 745
sales.kenya@ika.com

UGANDA

IKA Works Kampala Limited
Phone: +254 112 323 745
sales.uganda@ika.com

SPAIN

IKA Works Spain, S. L.
Barcelona
sales.spain@ika.com

Discover and order the fascinating products of IKA online:
www.ika.com



www.ika.com



IKAworlwide // #lookattheblue

Technical specifications may be changed without prior notice.