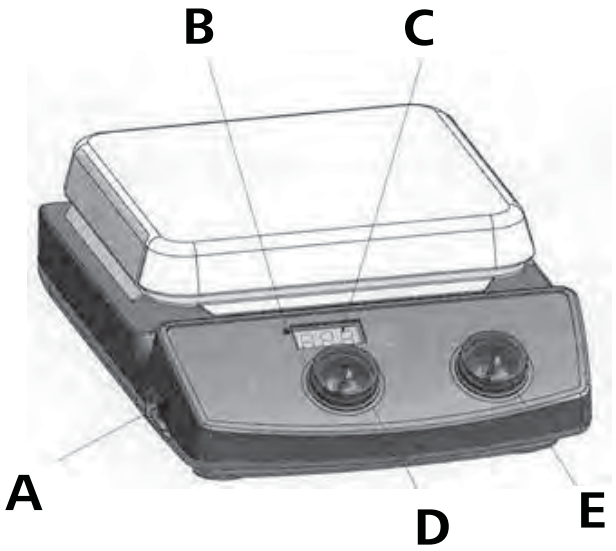
CMAG_072017

C-MAG HS4	**C-MAG HS7**	**C-MAG HS10**
C-MAG HP4	**C-MAG HP7**	**C-MAG HP10**
C-MAG MS4	**C-MAG MS7**	**C-MAG MS10**

C-MAG HS 7

C-MAG HS 4

C-MAG HS 10



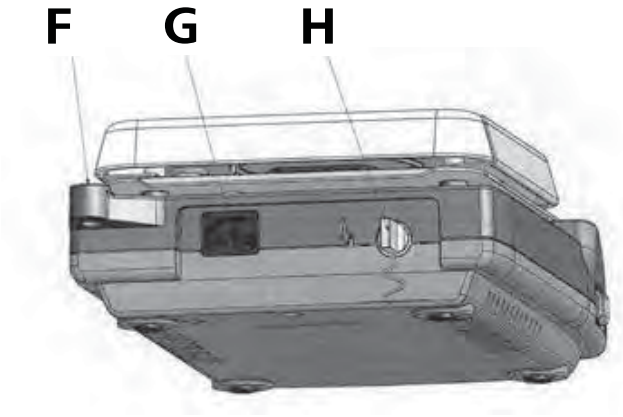


Fig. 1

Item	Designation	Pos.	Bezeichnung	Pos.	Désignation	Pos.	Descriçao	序号	名称
A	Switch	A	Geräteschalter	A	Commutateur	A	Switches Dispositivos	A	电源开关
B	LED heating	B	LED	B	DEL	B	LED	B	加热指示灯
C	Display	C	Display	C	Affichage	C	Display	C	显示屏
D	Rotary knob motor	D	Bedienknopf Motor	D	Bouton rotatif moteur	D	Botão de regulação motor	D	控温旋钮
E	Rotary knob heater	E	Bedienknopf Heizung	E	Bouton rotatif chauffage	E	Botão de regulação aquecimento	E	调速旋钮
F	Threaded support bore	F	Stativgewin-debohrung	F	Alésage fileté du statif	F	Buraco do tripé com rosca	F	支杆螺孔
G	Mains socket	G	Netzbuchse	G	Prise secteur	G	Power jack	G	电源接口
H	Contact-thermometer-jack	H	Kontakt-thermometer-Buchse	H	douille de thermomêtre de contact	H	Contato termômetro bucha	H	接触式温度计接口

KONFORMITÄTSERKLÄRUNG DE

Wir erklären in alleiniger Verantwortung, dass dieses Produkt den Bestimmungen der Richtlinien 2011/65/EU, 2014/30/EU und 2014/35/EU entspricht und mit den folgenden Normen und norminativen Dokumenten übereinstimmt:
EN 61010-1, EN 61010-2-010, EN 61010-2-051, EN 60529, EN 61326-1 und EN ISO 12100.

DECLARATION OF CONFORMITY EN

We declare under our sole responsibility that this product corrosponds to the regulations 2011/65/EU, 2014/30/EU and 2014/35/EU and conforms with the standards or standardized documents EN 61010-1, EN 61010-2-010, EN 61010-2-051, EN 60529, EN 61326-1 and EN ISO 12100.

DÉCLARATION DE CONFORMITÉ FR

Nous déclarons sous notre propre responsabilité que se produit est conforme aux réglementations 2011/65/UE, 2014/30/UE et 2014/35/UE et en conformité avec les normes ou documents normalisés suivant EN 61010-1, EN 61010-2-010, EN 61010-2-051, EN 60529, EN 61326-1 et EN ISO 12100.

DECLARAÇÃO DE CONFORMIDADE PT

Declaramos, sob responsabilidade exclusiva, que este produto cumpre as disposições das diretivas 2011/65/EU e 2014/30/EU e 2014/35/EU e está de acordo com as seguintes normas ou documentos normativos EN 61010-1 e EN 61010-2-010 e EN 61010-2-051 e EN 60529 e EN 61326-1 e EN ISO 12100.

Contents

Safety instructions

To your protection

Read the operating instructions in full before starting up and follow the safety instructions.

- Keep the operating instructions in a place where they can be accessed by everyone.
- Ensure that only trained staff work with the appliance.
- Follow the safety instructions, guidelines, occupational health and safety and accident prevention regulations.
- Socket must be earthed (protective ground contact).
- **Attention - Magnetism!** Effects of the magnetic field have to be taken into account (e.g. data cardiatic, carriers pacemakers...).
- **Risk of burns!** The heating plate can reach temperatures in excess of 500 °C. Pay attention the residual heat after switching off..
  Please make sure that the mains cable does not contact the heating plate
- 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
  - release any toxic or combustable gases.
- 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.
- Position the knob at the left stop before starting up. Gradually increase the speed.
- Reduce the speed if
  - the medium splashes out of the vessel because the speed is too high
  - the appliance is not running smoothly
  - the container moves on the set-up surface.
- **Caution!** Only process and heat up any media that has a flash point higher than the adjusted target temperature (0 to 550 °C) that has been set.
  The target temperature must always be set to at least 25 °C lower than the fire point of the media used.
- When using PTFE-coated magnetic bars, the following hase to be noted: Chemical reactions of PTFE occur in contact with molten or dissolved alkaline and alkaline - earth metals, as well as with fine-particled powders of metals of the 2. and 3. group of the periodical system at temperatures above 300-400°C. Only elementary fluorine, chlorine trifluoride und alkaline metals do attack PTFE, halogen hydrocarbons have a reversibly swelling effect.
  Source: Römpps Chemie-Lexikon and „Ullmann" Bd.19
- Check the appliance and accessories beforehand for damage each time you use them. Do not use damaged components.
- Only replace damaged parts with spare parts identical to the ori ginal in function and quality.
- Do not use the device if the ceramic set-up surface is damaged e.g. scratches, splinters or corrosion. A damaged set-up surface could break if used.
- Beware of the risk of

- flammable materials
- glass breakage as a result of mechanical shaking power
- incorrect container size
- too much medium
- unsafe condition of container

- 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.
- **Do not** operate the appliance in explosive atmospheres, with hazardous substances or under water.
- A seperation from the line is made with the equipment only by pulling net and/or device plug.
- Safe operation is only guaranteed with the accessories described in the "Accessories" chapter.
- Always disconnect the plug before fitting accessories.
- Accessories must be securely attached to the device and cannot come off by themselves. The centre of gravity of the assembly must lie within the the set-up surface.
- The appliance starts up again automatically following a cut in the power supply.
- The appliance may heat up when in use.
- Abrasion of the dispersion equipment or the rotating accessories can get into the medium you are working on.

To the protection of the equipment

- The voltage stated on the nameplate must correspond to the mains voltage.
- Do not cover the device, even partially e.g. with metallic plates or film. This results in overheating.
- Protect the appliance and accessories from bumps and impacts.
- Observe the minimum distances between devices, between the device and the wall as given in the Fig. 2 and above the assembly (min. 800mm)

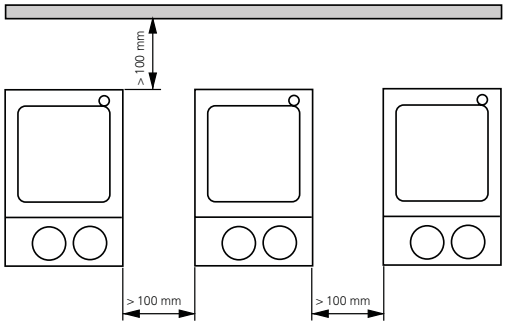


Fig. 2

Unpack

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

- **Delivery scope**
  - Heating magnetic stirrer or
    Magnetic stirrer or
    Heating device
  - Mains cable
  - Operating instructions

Correct use

- **Use**
  - For mixing and/or heating liquids

- **Range of use**
  - Laboratories
  - Chemical industry
  - Schools
  - Pharmacies

Commissioning

	MS 4	MS 7	MS 10	HS 4	HS 7	HS 10	HP 4	HP 7	HP 10
Commissioning	Put device switch (A) in the OFF position								
	Plug in (G) mains cable								
	Once connected to the power supply the device is in “stand-by” mode								
				The right decimal point on the display (C) is lit					
Stirring	Put device switch (A) in the ON position								
	Any set values are retained when device is switched off and even after the device is disconnected from the power!								
	Set the engine speed with the operating button (E) on the right								
Heating				Put device switch (A) in the ON position					
				Any set values are retained when device is switched off and even after the device is disconnected from the power!					
				Set the target temperature for the heating plate using operating button (D) [for VHP (E)]					
				The set value is indicated on the display (C). If energy is being supplied to the heating plate, the red LED (B) lights up					
				In the stir and stand-by modes, “hot” flashes on the display after the heat has been switched off for as long as the temperature of the set-up surface exceeds 50°C					
Contact-thermometer connection					Put device switch (A) in the OFF position, unplug contact plug				
					Safety contact thermometer acc. to DIN 12878 class 2 connected with jack (H)				
					Put device switch (A) in the ON position				
					Beware the instruction manual of the contact thermometer				
					Important: Display (C) also indicates the target temperature of the heating plate when the contact thermometer is connected				

Error codes

Footstep during the enterprise a disturbance up, is indicated these with the devices to **HS** and **HP** by an error message in the display (C). Whenever an error message appears switch the device off to cool down.

Error code	Cause	Solution
E1	Inner temperature too high	• switch off the unit and allow it cool down
E6	Motor seized	• Stirring bars inappropriate • Reduce the viscosity • Foreign bodies in the equipment remove
E9	Safety circuit ETC	• Plug the contact plug (G) • Plug the contact thermometer • Connecting cable, plug or contact tthermometer defect, exchange

Have the device repaired if the error is not corrected using the measures described or if another error code is displayed.

Accessories

Stirring organs

stirring bars:	Ø 6 mm, lengts to 15mm
	Ø 8 mm, lengts to 50mm
	Ø10mm, lengt to 80mm

Any other accessories

RSE	stirring bar remover
H36	holding rod
H16V	support rod
H44	cross sleeve
ETS-D5	electrical contact thermometer

Installing the support rod

The support rod is attached using the thraeded support bore (F).

- Screw nut M10 on to the support rod as far as the stop
- Screw on the support rod as far as the stop by hand
- Tighten the support rod and nut M10 using a flat wrench (SW17).
- Use bossheads to assemble accessory parts or acces-sory devices.

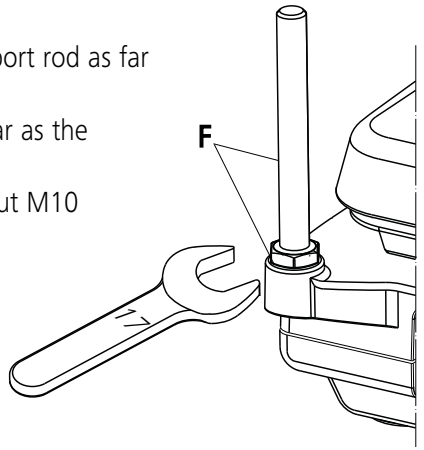
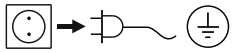


Fig. 3

Maintenance

The appliance is maintenance-free.

Cleaning



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 spare parts list and diagram

Repair

Please only send devices in for repair that have been cleaned and are free of materials which might present health hazards.

For this, use the "**certificate of compliance"** form which you can obtain from **IKA®** or can download a version for printing from the **IKA®** website at **www.ika.com**.

If your appliance requires repair, return it in its original packaging. Storage packaging is not sufficient when sending the device - also use appropriate 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

		MS 4	HS 4	HP 4	MS 7	HS 7	HP 7	MS 10	HS 10	HP10
Operating voltage	VAC	230 ±10%								
	VAC	120 ±10%								
	VAC	100 ±10%								
Nominal voltage	VAC	230 / 50Hz								
	VAC	120/ 60 Hz								
	VAC	100/ 60 Hz								
Design frequence	Hz	50/60								
Input power max. at 230 and 120 VAC	W	30	270	255	30	1020	1005	30	1520	1505
100 VAC		30	270	255	30	1020	1005	30	1070	1055
Power consumption in stand-by mode	W	2,5								
Perm. duration of operation	%	100								
Perm. ambient temperature	°C	+5 to +40								
Perm. relative humidity	%	80								
Protection type acc. to DIN EN 60529		IP 21								
Protection class		I								
Overvoltage categorie		II								
Contamination level		2								
Operation at a terrestrial altitude	m	max. 2000								
Dimensions (W x D x H)	mm	150 x 260 x 105			220 x 335 x 105			300 x 415 x 105		
Weight	kg	3			5			6		
Motor										
Speed range (infinitely)	rpm	100-1500	100-1500	-	100-1500	100-1500	-	100-1500	100-1500	-
Speed display		Scale	Scale	-	Scale	Scale	-	Scale	Scale	-
Power input	W	15	15	-	15	15	-	15	15	-
Power output	W	1,5	1,5	-	1,5	1,5	-	1,5	1,5	-
Max. stirring quantity (water)	ltr	5	5	-	10	10	-	15	15	-
Heating plate										
Heating plate dimension	mm	100x100	100x100	100x100	180x180	180x180	180x180	260x260	260x260	260x260
Heating power at 230 and 120 VAC	W	-	250	250	-	1000	1000	-	1500	1500
at 100 VAC		-	250	250	-	1000	1000	-	1050	1050
Surface temperature min.	C°	-	50	50	-	50	50	-	50	50
Surface temperature max.	C°	-	500	500	-	500	500	-	500	500
Temperature fluctuation*	C°	-	±5	±5	-	±5	±5	-	±5	±5
Limit of safety temperaure	C°	-	550	550	-	550	550	-	550	550

** On a certain point, without vessel, heating plate centre at 100 °C.*