



MAGNOS KEH plus

**Modular control units as the
basis for the MAGNOS
modular system**

Modular system for controlling up to eight magnetic chucks with just one control unit

The modular KEH plus control units are suitable for all magnetic chucks for milling applications from SCHUNK. Different basic versions for controlling one, two, four or eight magnetic chucks (for milling applications), and a wide range of different cable and hand remote controls are sufficient to cover all requirements. Concerning the selection of a suitable connecting cable, both small magnetic clamping plates with 4-PIN connectors as well as large magnetic chucks with 7-PIN connectors can be actuated. Equipped with connectors, all cables can be quickly and easily exchanged if necessary.



Advantages – Your benefits

- + Expandable modular system**
Depending on the control unit, up to eight magnetic chucks can be controlled
- + Various standard versions depending on the case of application**
One each control unit for magnetic chucks for milling applications with and without status display from SCHUNK
- + 16-stage holding force adjustment**
Allows clamping of thin workpieces and simplifies the alignment of heavier workpieces
- + Modularly constructed handheld remote control**
Allows each magnetic chuck as well as its holding force regulation to be individually controlled
- + Display of the clamping status via LED**
Increasing the safety by knowing whether the workpiece is clamped or released
- + Display of error codes via LCD display**
In the case of malfunctions, the error cause can be found more quickly
- + Large selection of accessories**
The control unit or the magnetic chucks can be quickly and easily adapted to new clamping tasks

Function KEH plus

KEH plus control units are used for magnetizing or demagnetizing the individual magnetic chucks. The control unit provides information about the current clamping status of the magnetic chucks. A holding force regulation can be used to set 16 different forces that allow for easier alignment of workpieces. Different magnetic chucks can be selected via a hand-held remote control. The control unit can be connected to the machine control system via a PLC connection. In addition, various statuses can be emitted such as clamped/released, as well as error codes and the status of the holding force of each magnetic chuck.



- 1 Main switch**
For switching on and off the entire KEH plus control unit
- 2 Power supply display**
Display whether the control unit is connected to the power supply.
- 3 Alarm display**
Display whether there are any alarms on the control unit
- 4 MAG OFF button**
In order to deactivate the entire system. LED to the "not clamped" display
- 5 MAG ON button**
In order to activate the entire system. LED to the "clamped" display
- 6 9-PIN connection**
To connect the hand remote control HABA KEH plus
- 7 78-PIN PLC connection for high-end automation**
For the transfer of the signals "clamped", "released" and "machine release" of each individual magnetic chuck to the machine control
- 8 3-PIN PLC Easy connection**
For the general transfer of the signals "clamped", "released" and "machine release" of all magnetic chucks together to the machine control

KEH plus passes test

The control unit KEH plus has been checked and approved to the highest standards. The control unit meets the test specifications of the standards EN 60204-1:2006+A1, EN 61000-6-2:2005 and EN 61000-6-4:2007.



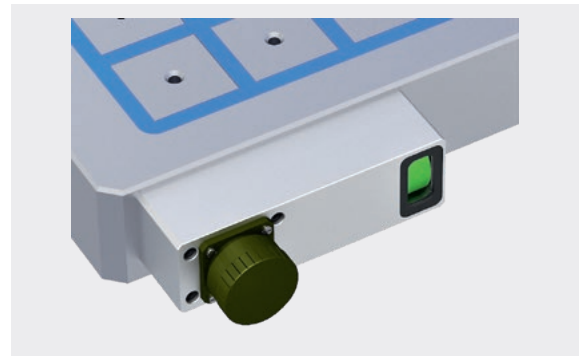
Hand remote control HABE KEH plus

All hand-held remote controls are available in four different variants – with and without holding force regulation – depending on the number of magnetic chucks. Via LCD display and LED, they provide information on the clamping status of the connected magnetic chucks. In the event of a fault, error codes are provided on the display that help facilitate the search for the cause. They consist of a high-quality housing with magnetic foil on the back.



Control of the status display

With the new KEH plus control unit, control of eight magnetic chucks is possible with or without status display. The status display is an optical display of the clamping status (green = clamped, red = not clamped). The status display works independently of the power supply after activating.



Fast connection on the back

Via fast connections on the back, the control unit can be quickly and easily connected to the magnetic chucks or the junction boxes via "plug and play". Depending on the type, 1x 4-PIN, 1x ILME or 2x ILME connections are fitted to the control unit.

1 2x ILME connection



Connection cable

The connection cables are available in different variants with the appropriate connectors. A "plug and play" system serves the simple and fast installation between KEH plus and magnetic chuck or junction box. There are two different cable lengths available in the standard. The connection cables are also protected from hot chips by a metal and plastic sheath.



Junction box

The junction boxes are – depending on the number of magnetic chucks – available in different variants. A "plug and play" system serves the simple and fast installation between KEH plus and magnetic chuck. One cable length is available in the standard. The junction box cables are also protected from hot chips by a metal and plastic sheath.



PLC box

The PLC box acts as a PLC interface to the machine control. On this box, the connection cables of the machine control can quickly and easily be connected using spring-force terminal strips. Via a 78-PIN connection cable, the junction box can then be connected in a matter of seconds to the KEH plus.



Remote control with power regulation



The hand remote control HABE KEH plus with holding force regulation (16 steps) allows the magnetic chucks to be individually controlled.

- ① **LCD display**
Display of the clamping status and the holding force
- ② **Memory function**
Possibility of saving pre-defined holding force levels
- ③ **Set-up mode**
Possibility of manually controlling the magnetic chucks if the KEH plus is connected to the machine control
- ④ **Holding force button**
Adjustment of the holding force in 16 steps
- ⑤ **Selection keys of each individual magnetic chuck**
To control and select each individual magnetic chuck.
Left LED: magnetic chuck selected/not selected
Right LED: magnetic chuck activated/deactivated
- ⑥ **Activation button**
Activation and deactivation of the magnetic chucks by pressing simultaneously.
Green + Gray = Clamp
Red + Gray = Unclamp
- ⑦ **Clamping status display**
Mag ON = clamped
Mag OFF = not clamped
- ⑧ **Holding force display**
Activation of the magnetic clamping force in 16 different stages (here step 8)

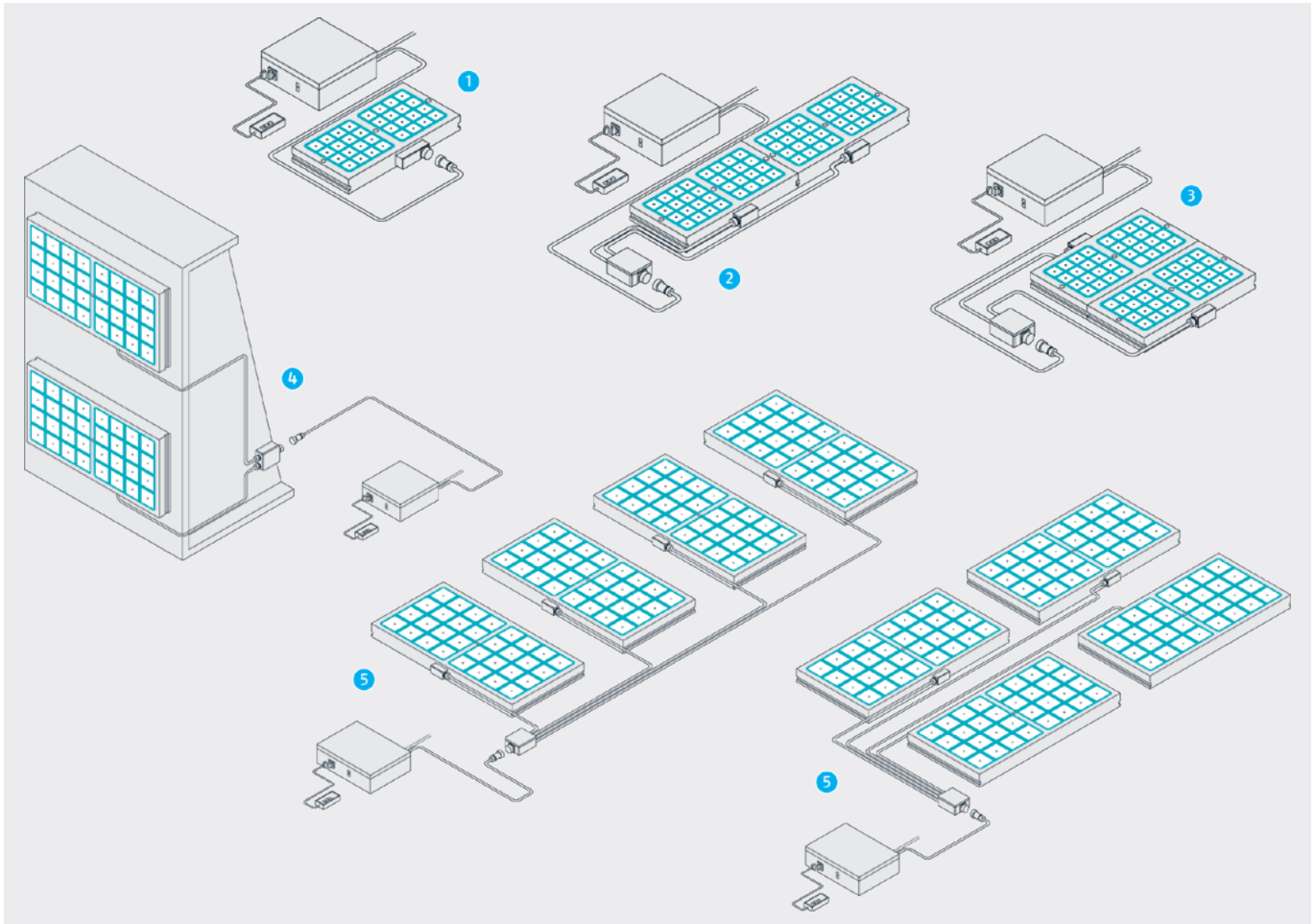
Remote control without power regulation



The hand remote control HABE KEH plus without holding force regulation allows each magnetic chuck to be controlled individually.

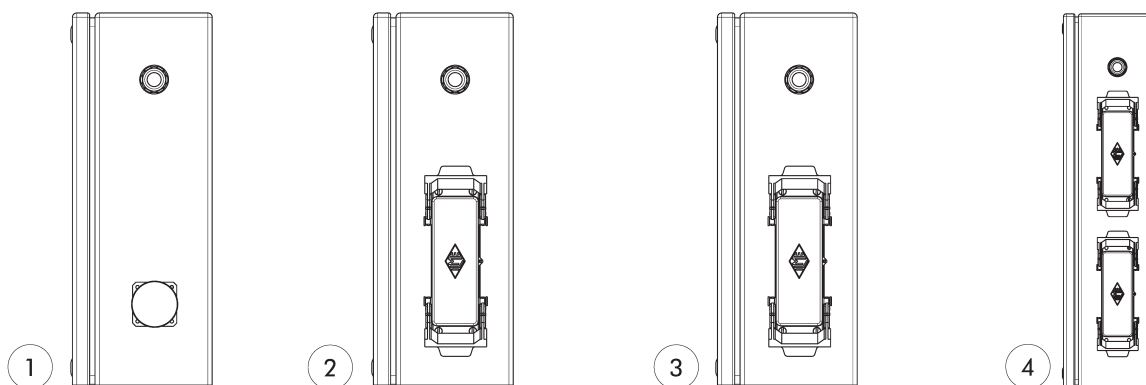
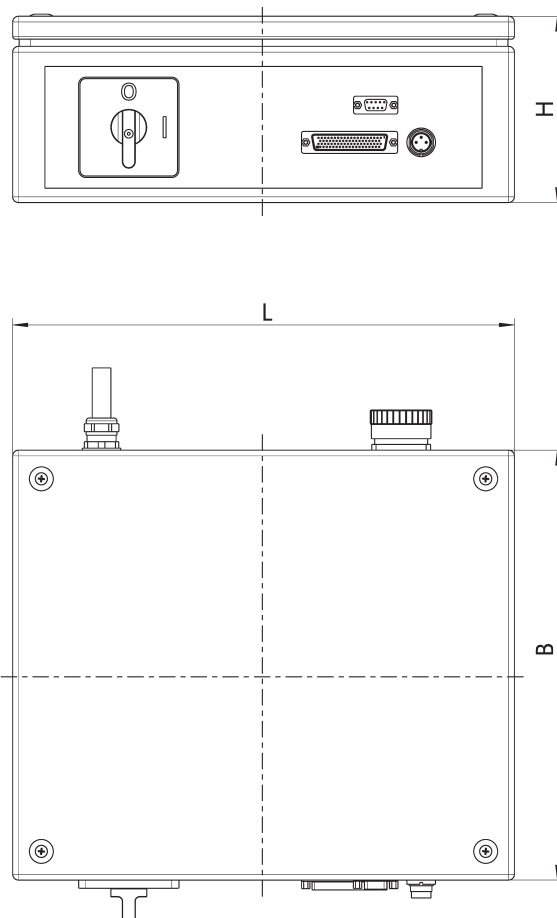
- ① **LCD display**
Display of the clamping status and the holding force
- ② **Selection keys of each individual magnetic chuck**
To control and select each individual magnetic chuck.
Left LED: magnetic chuck selected/not selected
Right LED: magnetic chuck activated/deactivated
- ③ **Activation button**
Activation and deactivation of the magnetic chucks by pressing simultaneously.
Green + Gray = Clamp
Red + Gray = Unclamp
- ④ **Clamping status display**
Mag ON = clamped
Mag OFF = not clamped
- ⑤ **Holding force display**
Activation of the magnetic clamping force to full holding force (step 16), as no holding force regulation

Control of up to eight magnetic chucks possible



With the new KEH plus control unit, control of up to eight magnetic chucks is possible in the standard. Based on a modular principle, the magnetic chucks can either be connected directly or via junction boxes with the control unit. Furthermore, the magnetic chucks can also be actuated directly by the machine control via 78 PIN PLC connection to the KEH plus.

- 1 One magnetic chuck**
Controlled via a 1-channel control unit KEH plus 01 with hand-held remote control
- 2 Two magnetic chucks**
Controlled via a 2-channel control unit KEH plus 02 with hand-held remote control. Arranged one after another
- 3 Two magnetic chucks**
Controlled via a 2-channel control unit KEH plus 02 with hand-held remote control. Arranged side by side
- 4 Two magnetic chucks**
Controlled via a 2-channel control unit KEH plus 02 with hand-held remote control. Vertical arrangement on angle plate
- 5 Four magnetic chucks**
Controlled via a 4-channel control unit KEH plus 04 with hand-held remote control



Subject to technical changes.

- ① KEH plus 01 with 1x 4-PIN connection
- ② KEH plus 02 with 1x ILME connection

- ③ KEH plus 04 with 1x ILME connection
- ④ KEH plus 08 with 2x ILME connection

Technical data

Description	ID	Length L	Width B	Height H	Connection	Number of channels	Magnetic chuck control	Weight
		[mm]	[mm]	[mm]				[kg]
KEH plus 01 400V/50Hz	0420650	350	300	130	1x 4-PIN	1	Up to 1	9.5
KEH plus 01 460V/60Hz	0420660	350	300	130	1x 4-PIN	1	Up to 1	9.5
KEH plus 02 400V/50Hz	0420651	350	300	130	1x ILME	2	Up to 2	10
KEH plus 02 460V/60Hz	0420661	350	300	130	1x ILME	2	Up to 2	10
KEH plus 04 400V/50Hz	0420652	350	300	130	1x ILME	4	Up to 4	10
KEH plus 04 460V/60Hz	0420662	350	300	130	1x ILME	4	Up to 4	10
KEH plus 08 400V/50Hz	0420653	530	300	130	2x ILME	8	Up to 8	13.5
KEH plus 08 460V/60Hz	0420663	530	300	130	2x ILME	8	Up to 8	13.5

Scope of delivery

Control unit with magnetic foil on the rear, connection cable 32A with connection plug (5 meters), connection cable for PLC easy (5 meters), operating manual and CE declaration of conformity; without connection cable, without hand-held remote control and without PLC box and cable

Notes

General note

The control unit is equipped with a high-quality and robust metal housing.

The control unit can be quickly and easily attached to the machine using a magnetic foil on the back.

Status display

The status of the magnetic chuck is indicated by an LED display on the control unit.

MAG/DEMAG process

The system can be activated or deactivated via the control unit or the hand-held remote control.

Holding force regulation

The holding force of the magnet can be preset from 16 possible levels.

The appropriate hand-held remote control is required to preset the holding force.

3-PIN PLC Easy connection

Query the status of each individual magnetic chuck activated or deactivated.

78-PIN PLC connection (high-end automation)

For magnetizing or demagnetizing every single magnetic chuck.

Query the status of each individual magnetic chuck activated or deactivated.

Preselection of the connected magnetic chucks.

Presetting of the holding force of each individual magnetic chuck in 16 possible levels.

Release of the actuation status to the machine control.

Control unit 220 V/60 Hz

KEH plus control units with 220 V/60 Hz are available on request.

Hand remote control

Standard hand remote control
Without holding force regulation.



Suitable for	Description	Length m	HKR	ID
KEH plus	HABE KEH plus 01	5		0420180

Hand remote control for max. one magnetic chuck
With holding force regulation (HKR).



Suitable for	Description	Length m	HKR	ID
KEH plus	HABE KEH plus 01-HKR	5	●	0420665

Hand remote control for max. two magnetic chucks
Without and with holding force regulation (HKR).



Suitable for	Description	Length m	HKR	ID
KEH plus	HABE KEH plus 02	5		0420666
KEH plus	HABE KEH plus 02-HKR	5	●	0420667

Hand remote control for max. four magnetic chucks
Without and with holding force regulation (HKR).



Suitable for	Description	Length m	HKR	ID
KEH plus	HABE KEH plus 04	5		0420668
KEH plus	HABE KEH plus 04-HKR	5	●	0420669

Hand remote control for max. eight magnetic chucks
Without and with holding force regulation (HKR).



Suitable for	Description	Length m	HKR	ID
KEH plus	HABE KEH plus 08	5		0420672
KEH plus	HABE KEH plus 08-HKR	5	●	0420673

Connection cable

Connection cable 1x 4-PIN for max. one magnetic chuck

Connections:

Control unit = 1 x 4-PIN.

Magnetic chuck = 1 x 4-PIN/1CH.



Suitable for	Description	Length m	ID
KEH plus	VBK2-5 1xIL-1x4P 1CH	5	1610941
KEH plus	VBK2-10 1xIL-1x4P 1CH	10	1610942
KEH plus	VBK2-5 1x4P-1x4P 1CH	5	1610919
KEH plus	VBK2-10 1x4P-1x4P 1CH	10	1610940

Connection cable 1x 7-PIN for max. one magnetic chuck

Connections:

Control unit = 1 x ILME.

Magnetic chuck = 1 x 7-PIN/2CH.



Suitable for	Description	Length m	ID
KEH plus	VBK2-5 1xIL-1x7P 2CH	5	1611043
KEH plus	VBK2-10 1xIL-1x7P 2CH	10	1611044

Connection cable 2 x 4-PIN for max. two magnetic chucks

Connections:

Control unit = 1 x ILME.

Magnetic chuck = 2 x 4-PIN/1CH.



Suitable for	Description	Length m	ID
KEH plus	VBK2-5 1xIL-2x4P 1CH	5	1610970
KEH plus	VBK2-10 1xIL-2x4P 1CH	10	1610971

Connection cable 2 x 7-PIN for max. two magnetic chucks

Connections:

Control unit = 1 x ILME.

Magnetic chuck = 2 x 7-PIN/2CH.



Suitable for	Description	Length m	ID
KEH plus	VBK2-5 1xIL-2x7P 2CH	5	1611053
KEH plus	VBK2-10 1xIL-2x7P 2CH	10	1611054

Connection cable 3 x 4-PIN for max. three magnetic chucks

Connections:

Control unit = 1 x ILME.

Magnetic chuck = 3 x 4-PIN/1CH.



Suitable for	Description	Length m	ID
KEH plus	VBK2-5 1xIL-3x4P 1CH	5	1610972
KEH plus	VBK2-10 1xIL-3x4P 1CH	10	1610973

Connection cable 4 x 4-PIN for max. four magnetic chucks

Connections:

Control unit = 1 x ILME.

Magnetic chuck = 4 x 4-PIN/1CH.



Suitable for	Description	Length m	ID
KEH plus	VBK2-5 1xIL-4x4P 1CH	5	1610976
KEH plus	VBK2-10 1xIL-4x4P 1CH	10	1610977

Connection cable to the connection box or magnetic chuck

Connections:

Control unit = 1 x ILME.

Magnetic chuck = 1 x ILME



Suitable for	Description	Length m	ID
KEH plus	VBK2-5 1xIL-1xIL	5	1612397
KEH plus	VBK2-10 1xIL-1xIL	10	1612398

Connection boxes

Connection box 2 x 4-PIN for max. two magnetic chucks

Connections:
Control unit = 1 x ILME.
Magnetic chuck = 2 x 4-PIN/1CH.



Suitable for	Description	Length m	ID
KEH plus	VBB2-5 1xIL-2x4P 1CH	5	1601411

Connection box 3 x 4-PIN for max. three magnetic chucks

Connections:
Control unit = 1 x ILME.
Magnetic chuck = 3 x 4-PIN/1CH.



Suitable for	Description	Length m	ID
KEH plus	VBB2-5 1xIL-3x4P 1CH	5	1601412

Connection box 4 x 4-PIN for max. four magnetic chucks

Connections:
Control unit = 1 x ILME.
Magnetic chuck = 4 x 4-PIN/1CH.



Suitable for	Description	Length m	ID
KEH plus	VBB2-5 1xIL-4x4P 1CH	5	1601413

Connection box 2 x 7-PIN for max. two magnetic chucks

Connections:
Control unit = 1 x ILME.
Magnetic chuck = 2 x 7-PIN/2CH.



Suitable for	Description	Length m	ID
KEH plus	VBB2-5 1xIL-2x7P 2CH	5	1601414

Automation components

PLC box 78-PIN for automation

For installation between KEH plus control unit and PLC machine.



Suitable for	Description	ID
KEH plus	PLC-B 78PIN	0420704

PLC Easy cable

For connection between control unit KEH plus and PLC box via a 3-PIN connector.



Suitable for	Description	Length m	ID
KEH plus	PLC-EK-5 1x3P	5	0420708

PLC cable

For connection between control unit KEH plus and PLC box via a 78-PIN connector.



Suitable for	Description	Length m	ID
KEH plus	PLC-K-1 1x78P	1	0420705
KEH plus	PLC-K-3 1x78P	3	0420706
KEH plus	PLC-K-5 1x78P	5	0420707

Docking stations

Docking station

Bracket for connection cable with a check whether the cable has been removed from the magnetic chuck.



Suitable for	Description	ID
KEH plus	DKS.C3 CIR22 4-PIN	1469397



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