original

Instructions

Schick GmbH

Version 2024/03

We are pleased that you have decided in favor of a technically high-quality device from SCHICK and wish you every success with your new IQ3 control device and that you enjoy working with it. We have compiled these operating instructions to familiarize you with your new device and to provide you with the necessary information for operation and maintenance.

Project data:

Trade name: **Schick IQ3**

Serial number: Axxx xxx
Item number: **10700**

Type: Industrial control unit for handpieces and spindles

Manufacturer: **Schick GmbH**

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Revision date: 2022/06

contents

1 About these operating instructions

Before using the IQ3 for the first time, you must read this manual.

Pay special attention to the chapter 2 "General safety regulations".

1.1 General

This manual is intended to make it easier for you to get to know the IQ3 and to use it for its intended purposes.

The operating instructions contain important information on how to operate the IQ3 safely and properly. Your attention helps:

- to avoid dangers
- Reduce repair costs and downtime
- increase the reliability and lifespan of the product

This manual must be read and used by anyone who is assigned to work with the IQ3.

In addition to these operating instructions, the accident prevention and environmental protection regulations applicable at the place of use must also be observed.

1.2 Further documentation

Under *www.schick-Industrie.de* you will always find the current version of these operating instructions as well as current information about the product.

1.3 Signs and symbols used

The following signs and symbols are used in these instructions:

➢ Activity symbol: The text after this symbol describes instructions that are to be carried out in the specified order from top to bottom.

✓ Result symbol: The text following this symbol describes the result of an action.

Info icon: Additional information

1.4 Structure of the warnings

warning levels

signal word	Use at…	Possible consequences if the safety information is not observed:
DANGER	personal injury (imminent danger)	death or most severe injuries!
WARNING	personal injury (Possibly dangerous situation)	death or most severe injuries!
ATTENTION	personal injury	Light or minor injuries!

Tab.1.1warning levels

The warnings are structured as follows:

- Pictogram with signal word according to warning level
- Description of the hazard (hazard type)
- Description of the consequences of the hazard (hazard consequences)
- Measures (activities) to prevent the hazard

DANGER!

Type of hazard (text)

Consequences of danger (text)

➢ Security (text)

warning sign Special safety instructions are given at the relevant places. They are marked with the following symbols.

General danger spot
This sign is placed in front of activities where there is a risk of personal injury and extensive property damage.

If there is a clear source of danger, one of the following symbols is placed in front of it.

heavy current
This sign indicates activities where there is a risk of electric shock, possibly with fatal consequences.

hand injuries
This symbol stands in front of activities where there is a risk of hand injuries.

2 General safety regulations

2.1 principles

Use only at the maximum speeds specified by the tool manufacturer. Use only tools specified by the manufacturer/dealer for the application and performance specifications of the IQ3.

Area of application: industry, trade

Personnel qualification: Apprentices and interns only after instruction by an experienced operator

It is operated manually: either with a rotary knob or a foot pedal.

2.2 Intended Use

The IQ3 systems are intended exclusively for universal use in commercial operations for processing solid materials. Only tools intended for processing such materials may be used.

2.3 Foreseeable Misuse

System must not be used:

- in an explosive environment

- for medical applications on patients

- Processing wet materials

- no flammable and combustible materials

- Any use other than that intended by the manufacturer is misuse

2.4 Selection and qualification of personnel

Personnel qualification: Apprentices and interns only after instruction by an experienced operator

2.5 safety devices

The table and knee control units have a display that shows the preset maximum speed. After switching on, the foot control unit is limited to a maximum of 30,000 rpm and must be activated by the user for higher speeds.

Fire protection

No special requirements

2.6 safety signs

Note on the type plate on the control unit 

meaning

Read the operating instructions in detail before starting up.

2.7 protective measures

Do not wear long hair loose.

Always use suction.

Personal protective equipment

safety goggles

extraction at the workplace.

2.8 safety regulations

General information

Caution!

Risk of injury from pointed and/or rotating tools!

Wear safety glasses.

The handpiece can become very hot under high and prolonged loads. Reduce the contact pressure or interrupt work until the handpiece has cooled down.

While transporting

Transport or dispatch only in the original packaging or suitable shipping carton.

During installation

Access to the power supply must not be made more difficult by the installation.

during operation

Operation and operation only with a sufficiently designed extraction system and protective clothing provided.

In anti-clockwise rotation mode, the collet chuck may come loose when using a standard handpiece!

maintenance and control work

- according to the operating instructions

- Apprentices and interns only after instruction by an experienced operator

maintenance and repair work

- Only by the manufacturer
- Setting, teach-in only by trained personnel with specialist knowledge of the respective device class.

Structural changes

Structural changes to the product are not permitted.

2.9 Extension and remodeling

An optional dynamic foot pedal and foot pedal on/off switch are available for the IQ3.

3 scope of delivery

	Item No.
IQ3	10700
power cord	9415

4 technical description

4.1 overview

The IQ3 control unit is a state-of-the-art control system for operating hand-held spindles (also referred to below as handpieces) which are used to machine hard materials.

Functional description

The handpiece is used as a hand-held grinding or cutting tool. The maximum handpiece speed is limited via the rotary knob on the control unit.

Up to three handpieces can be connected, which can be used alternately. Spindles for use in the machine tool can also be connected and operated on the IQ3 control unit.

4.2 interfaces

The IQ3 controllers have the following interfaces to other machines:

Connection for controlling suction systems. If the IQ3 is used in combination with an extraction unit with a connection for automatic activation, the optionally available signal transmitter item no. 9060 can be used to generate a clear switching signal.

4.3 Features of the tools

Only tools with perfect concentricity are to be used. Shank diameter 2.35 mm or 3 mm depending on the collet variant.

4.4 type label

(1)
(2)
(3)
(4)
(5)
(6)
(7)
(9)

(8th)

1. Manufacturer
2. Type
3. serial number
4. power supply
5. power
6. mains frequency
7. order/item. No.
8. Pictogram: Disposal information
9. Pictogram: Observe the operating instructions
10. CE marking

5 Transport and Storage

5.1 transport

If damage to the packaging is visible when the goods are handed over, this must be reported to the transport company immediately and confirmed in writing. The damage must then be reported to Schick GmbH immediately.

Requirements for the installation site

Devices that have cooled down considerably must be brought to room temperature before being used. Risk of condensation forming.

5.2 Storage

Storage location requirements

In the original packaging, indoors only, protected from moisture.

6 Installation and commissioning

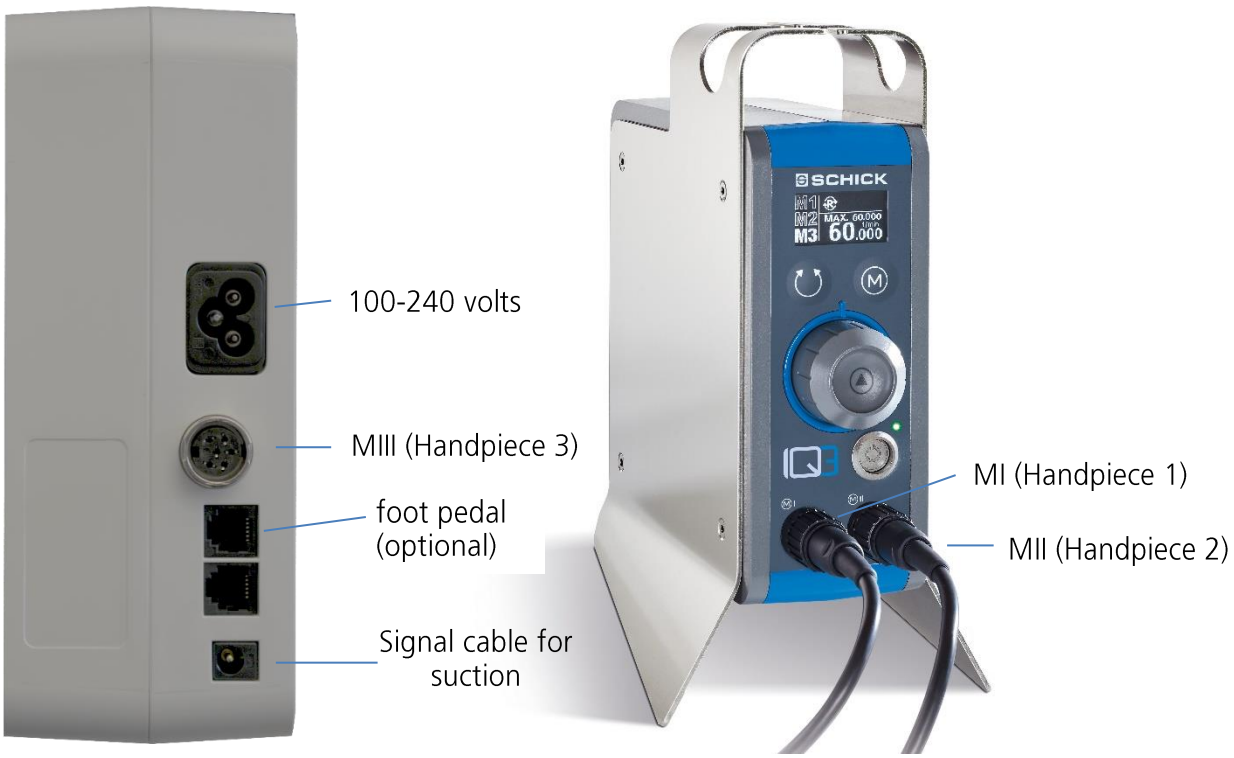
6.1 Installation

Safety precautions before installation

When working on the electrical installation, pull out the mains plug.

6.2 Installation

Establish supply



- Connect existing handpieces/spindles to sockets M1, M2 or M3.
- Optional: Connect a foot pedal to the foot pedal jack
- Plug the mains adapter plug into the power supply socket on the control unit.

7 Functions and operation

7.1 IQ3 Controller On/Off

Switching on/off takes place via the main switch on the front of the control unit. Readiness indication via display or LED on the main switch.

The IQ3 control unit may only be switched off using the main switch when the handpiece is stationary.

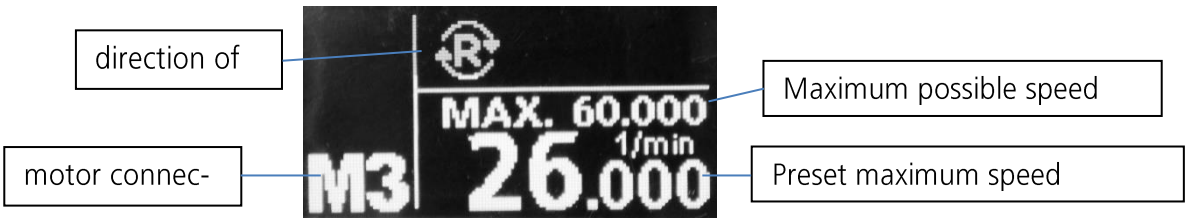
7.2 Operating concept and OLED display

After switching on, the OLED display of the IQ3 control unit provides information about all operating states of the device.

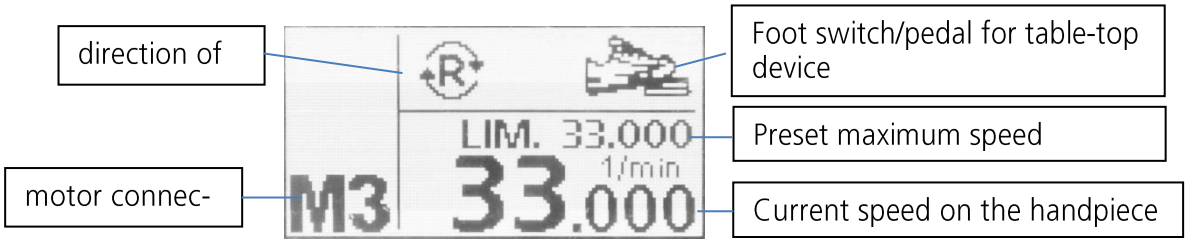
The following parameters are displayed in detail:

- *operational readiness*: Display shows the selected/connected handpiece, the preselected maximum speed, the maximum possible speed for the handpiece and the direction of rotation
- *Operating condition:*While the engine is running, the display is inverted compared to the basic display.
- *Rotational speed:*Shows the preset maximum speed
- *Motor connection:*Shows the occupied connections and the active handpiece
- *Direction of rotation:*Shows the current direction of rotation of the motor

Display basic display:



Display with the handpiece running:



The inverted display shows the handpiece is running!

With dynamic control with dyn. After starting the handpiece, the previously set maximum speed is displayed in the display line "LIM." (abbreviation LIMIT).

When using the optional pedal switch item no. 6370/2 the symbol is displayed  only when the pedal is pressed.

7.3 Operate handpiece and controller

Starting the handpiece

Variable speed control via optional dynamic foot pedal item no. 9440 up to the maximum speed set via the rotary knob.

Static handpiece start by pressing the rotary knob ▶ to the speed set via the rotary knob.

Static handpiece start via the optional foot switch item no. 6370/2 to the speed set via the rotary knob.

Static handpiece start via the button on the handpiece 9630 or 9630/1.

It is essential to observe the maximum permissible speed of the clamped tool before starting the handpiece!

If more than one handpiece is connected to the spindle, the "active" handpiece is started (see point 7.4)

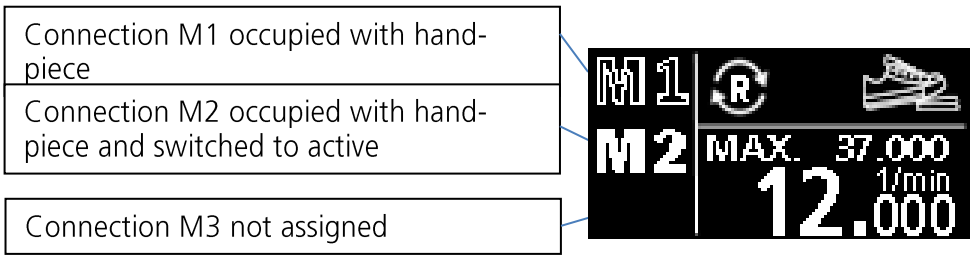
The 6 mm spindles and handpieces may be operated up to a maximum of 40,000 rpm, otherwise the error message "Error 8" may occur when the motor stops at 60,000 rpm. To reset the error, the IQ 3 control unit must be switched off and on again.

The handpiece can become very hot under high and prolonged loads. Reduce the contact pressure or interrupt work until the handpiece has cooled down.

7.4 Use of multiple handpieces/spindles

The IQ3 controller has three handpiece/spindle connections. The display provides information on the assignment of the connections and on the handpiece that is currently selected and ready for operation. It is not possible to use several handpieces at the same time.

Sample display with two handpieces/spindles connected:



- ➢ To switch between the connected handpieces, press the "M" button.
- ✓ The actively switched handpiece can be used as described under point 7.3.

An unoccupied connection is skipped during the selection.

7.5 Changing the direction of rotation of the handpiece

The IQ3 handpiece can be switched from right to left rotation. The default direction of rotation is clockwise.

Changing the direction of rotation:

- ➢ Button press once briefly. The symbol on the display shows the selected direction of rotation.
- ✓ Changing the direction of rotation is acknowledged by a vibration signal on the handpiece.

If a handpiece on the IQ3 control is subject to greater stress in anticlockwise rotation, the collet can theoretically come loose. If the IQ3 is used by left-handed people with left-hand tools, the special left-handed handpiece item no. 9002/08 can be used. It should be noted that the direction of rotation must then be set to clockwise rotation, since the direction of rotation is reversed by the handpiece cable.

8 Troubleshooting

8.1 Procedure in the event of malfunctions or errors

Error messages immediately disappear from the display as soon as the foot pedal, if connected, is released or the fault is rectified. Waiting times for a restart are therefore eliminated.

If a fault cannot be rectified using the above description, please contact an authorized service partner or Schick directly.

8.2 Malfunction and error messages

The IQ3 control unit has intelligent control electronics that recognize possible faults and can show them as error codes on the display. If a fault occurs, this is indicated by "ERROR plus number sequence".

Example of an error message: ERROR 01

The faults/error messages are divided into categories, with the category being indicated by a flashing code on the ready LED.

If several errors occur at the same time, the error with the higher priority is displayed. As soon as this is no longer present, the lower-priority error is displayed.

category	component	blink code	prioritization
1	Handpiece/Cable	Once short	3
2	handpiece motor	Twice short	2
3	control unit	Three short	1

Detailed error code list:

error code	Error Description	category	cause	remedy
01	No handpiece connected.	1	2 or 3 motor phases not contacted. Always checked when control is on.	Check whether the handpiece is correctly connected.
02	Error in the handpiece cable.	1	One motor phase not contacted. Is always checked when the controller is on.	Replace motor cable.
03	Motor stalls at start.	2	Collet open or handpiece blocked due to bearing damage.	Check whether the tool can be rotated freely.
04	Motor stalls while running	2	Motor stalled for more than 2 seconds while running.	Reduce contact pressure.
05	Motherboard defective	3	Electrical failure on motherboard.	Contact Schick service.
08	Supply voltage error	3	DC link voltage (48V), 18V or 3V3 outside border area.	Contact Schick service.
10	Control unit overloaded	3	Temperatures on motherboard too high.	Allow control unit to cool down.

9 Maintenance and control work for operators

9.1 General information

Dirt on the plastic surfaces can be removed with a dry cloth.

Do not use harsh cleaning agents!

10 Technical specifications

Dimensions	
speed range	200 – 60,000 rpm or 200 – 100,000 rpm
drive system	Brushless DC motor
Broad	135mm
Height	250mm
depth	215mm
Weight	2800g
operating voltage	100-240 volts
power	300 watts

11 Appendix

11.1 service address

Schick GmbH

Lehenkreuzweg 12

88433 Schemmerhofen

Phone: +49 7356 9500-0

Fax: +49 7356 950095

Email: info@schick-industrie.de

Internet:www.schick-industrie.de

If service is required, please send your device directly to Schick GmbH at the above address with a precise description of the error.

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info@schick-industrie.de
www.schick-industrie.de

11.2 Declaration of Conformity

We, Schick GmbH
Lehenkreuzweg 12
D-88433 Schemmerhofen

hereby declare that the product

IQ3 Item no. 10700 with

Foot pedal switch (on/off) 6370/2
Dynamic foot control 9440

CE

complies with the following relevant provisions:

2006/42/EC (Machinery Directive)
2014/30/EU(EMC Directiven)
2011/65/EU (RoHS)

Name/address of document officer In the community:

Wolfgang Schick
Lehenkreuzweg 12
88433 Schemmerhofen

Schemmerhofen, October 2021

W. Schick
Chief Executive Officer

Technical changes without prior notice

The unit complies with the device safety and the Radio protection in accordance with the applicable regulations according to VDE. These instructions for use are always available, ideally in to be kept close to the device!

At this point we would also like to point out that a corresponding one for such technically high-quality devices Repair service and specially trained specialists is required. SCHICK guarantees you perfect repairs with original spare parts.

With us each In-house repairs will be yours again granted a guarantee period of 6 months.