

## 2mag bioMIXdrive Serie

Cell culture stirrers for incubators



**bioMIXdrive 1**  
**bioMIXdrive 2**  
**bioMIXdrive 3**  
**bioMIXdrive 4**

with

**bioMIXcontrol**  
**bioMIXcontrol S**  
**bioMIXcontrol 4MS**

**Order no.: 80001**  
**Order no.: 80002**  
**Order no.: 80003**  
**Order no.: 80004**

**Order no.: 98400**  
**Order no.: 98500**  
**Order no.: 98604**

**Thank you for your confidence shown in us!**

Congratulations to the purchase of your new product.

For any enquiries, questions or suggestions please do not hesitate to contact us at [info@2mag.de](mailto:info@2mag.de).

**2mag**

Main competence of **2mag** is based upon mixing, tempering and measuring/controlling. In these fields we are offering support with our products to the modern laboratory within the standardized daily business as well as for the implementation of highly complex processes in the state-of-the-art research. Due to the fact that **2mag** is developing according to customer's needs, is manufacturing self-contained and under permanent quality control and is also selling on-site together with competent contact persons, we can guaranty our customer an outstanding quality and product performance.

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**Includes:**

Quick start  
Operation Manual  
Technical Documentation  
Specifications

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## A Quick start

### 1. Overview of your product

#### Magnetic stirrer bioMIXdrive with control unit bioMIXcontrol



Image 1: 1-position magnetic stirrer bioMIXdrive 1 with control unit bioMIXcontrol

Your product contains at despatch:

- 🌀 A modern inductive magnetic stirring system (**bioMIXdrive**) consisting of a stainless-steel stirring plate with 1, 2, 3 or 4 stirring points with fixed stirrer control cable (8-pin plug, with screw nut)
- 🌀 An external control unit with one connector socket (**bioMIXcontrol** / **bioMIXcontrol S**) for connection of 1 bioMIXdrive or with 4 connector sockets (**bioMIXcontrol 4MS**) for using up to 4 bioMIXdrive 1.
- 🌀 With pluggable power cable (country-specific).

## 2. Application fields

### 2.1 Operator

The maintenance- and wear-free magnetic stirrers **bioMIXdrive** are used in the fields of chemistry, medicine, pharmacy and mainly microbiology and biotechnology.

The operators are generally working in research and development, production and quality assurance.

### 2.2 Basic functions

Basic function is stirring of liquids in suitable and chemically resistible and biological applicable vessels.

The stirrer housing is hermetically close and therefore immersible.

The maximum ambient temperature is +50°C in air and +50°C in water immersed.

### 2.3 Product combinations

In addition to the use at the conventional laboratory desk our products have also been tested for the application in

- 🌀 Laminar flow devices
- 🌀 Safety cabinets
- 🌀 Safety cabins
- 🌀 Water baths
- 🌀 Incubators

Please note: For using the stirrer in incubators please set the adjustable stirring power to the minimum usable power to reduce the additional heating effect caused by the magnetic stirring drive. Please see chapter "5 External heating operations in incubators and water baths" at page 13.

### 2.4 Application not for the intended use

The magnetic stirrer **bioMIXdrive** is **explicitly not intended** for the application:



- 🌀 Stirring and warming of flammable liquids
- 🌀 Warming of pressure-tight closed and NOT pressure-resistant vessels or glasses (e.g. Erlenmeyer flasks, lab flasks)
- 🌀 At general atmosphere or danger of explosion

The **2mag** is offering special products for the just mentioned application combinations. More information for this can be found at [www.2mag.de](http://www.2mag.de) or at [info@2mag.de](mailto:info@2mag.de)

## 2.5 Combinations of vessels

Please use round, chemical resistant and biological applicable and where required heat-resistant vessels made of glass or non-magnetic metal. You can use vessels up to the maximum size stated in the spreadsheet 1.

The vessels should have a thin, even wall thickness. Flat glass bottoms (without any curve to the inside) and smooth surfaces will improve the operating characteristic of the magnetic stirring bar. Uneven surfaces would reduce the stirring power and would cause reaming up of the stirring bar's gliding surface.

In case you intend to stir large amount of liquids, please chose such stirring flasks that have a comparatively small diameter and thin bottom.

The magnetic stirring bar can then be centred better.

We recommend using of commercial cell culture- and tissue culture flasks with integrated hanging stirring bar or propeller systems as well as cell culture flasks with hanging pendulum systems (single or double spinner systems).

The magnetic stirring systems **bioMIXdrive** are optimized for both cell culture vessel types.

| Stirring System | Stirring Vessels                   | Nominal Volume | Max. Quantity |
|-----------------|------------------------------------|----------------|---------------|
| bioMIXdrive 1   | Culture- and Tissue Culture flasks | max. 5.000 ml  | 1             |
| bioMIXdrive 2   | Culture- and Tissue Culture flasks | max. 5.000 ml  | 2             |
| bioMIXdrive 3   | Culture- and Tissue Culture flasks | max. 5.000 ml  | 3             |
| bioMIXdrive 4   | Culture- and Tissue Culture flasks | max. 5.000 ml  | 4             |

*Spreadsheet 1: Volumes and vessels*



**Please always place the flasks in the magnetic centre of the magnetic stirrer. This will ensure the optimum stirring effect!**



**Do never use any pressure-tight closed flasks.**



**RISK OF BURSTING!**

**Do only use temperature-resistant vessels.  
Be careful with plastic flasks!**

## 2.6 Stirring bars

In general, all stirring bars matching the length and diameter can be used. But we recommend using the commercial stirring bars with Samarium Cobalt magnetic core (SmCo). By using this highly energetic magnetic material the maximum stirring power of the magnetic stirrer can be achieved, especially when mixing viscose media.

We recommend using of commercial cell culture- and tissue culture flasks with integrated hanging stirring bar or propeller systems as well as cell culture flasks with hanging pendulum systems (single or double spinner systems).

The magnetic stirring systems **bioMIXdrive** are optimized for using both cell culture vessel types.

## 2.7 Tips and hints to the topic stirring

The culture flasks should be filled max. up to the middle or up to the marked filling level.

Place one magnetic stirring bar in each stirring flask or use the stirring system of the cell- resp. tissue culture system.

Place the stirring flasks right in the centre of the stirring point.

### 3. Installation

#### 3.1 Safety advice

Please ensure the following basic conditions prior to installation:



The magnetic stirrer works with permanent magnets. **Cardiac pacemakers, data storage mediums, magnetic cards and other devices**, which can be affected by magnetic fields, have to be kept away from the fields of the stirring unit as well as from the stirring bars.



The device must not be used in explosive rooms.  
The control unit bioMIXcontrol must not be dipped in water or any cleaning solutions.



Your supply voltage has to comply with the label of the control unit. The **control unit** has to be **switched off** before any power connection or power disconnection.



To increase the operation safety, the control unit should be placed apart from chemical materials and reactions as well as away from thermal influences.  
For special requirements please contact [info@2mag.de](mailto:info@2mag.de).



**ATTENTION!**  
**The control unit has to be switched off, BEFORE you connect or disconnect the plugs.**



**Always turn off the power switch first before handling the connection cables.**

## 3.2 Installation, connection to control unit bioMIXcontrol (S)

### Step by step instruction (please also see image 2)

- 🌀 **Switch off the control unit bioMIXcontrol BEFORE you handle the connection cables with the power switch (5) and disconnect the power cable (4)!**
- 🌀 The stirrer control cable (1) of the magnetic stirrer bioMIXdrive has now to be connected to the 8-pin socket of the control unit (2).
- 🌀 **Please secure this plug connection by turning the screw nut situated at the plug.** Only by this a trouble-free operation can be guaranteed.
- 🌀 Connect the power cable (4) to the power input (3) rear-side and afterwards to the power socket.
- 🌀 The control unit is now connected to the magnetic stirrer and ready for operation.

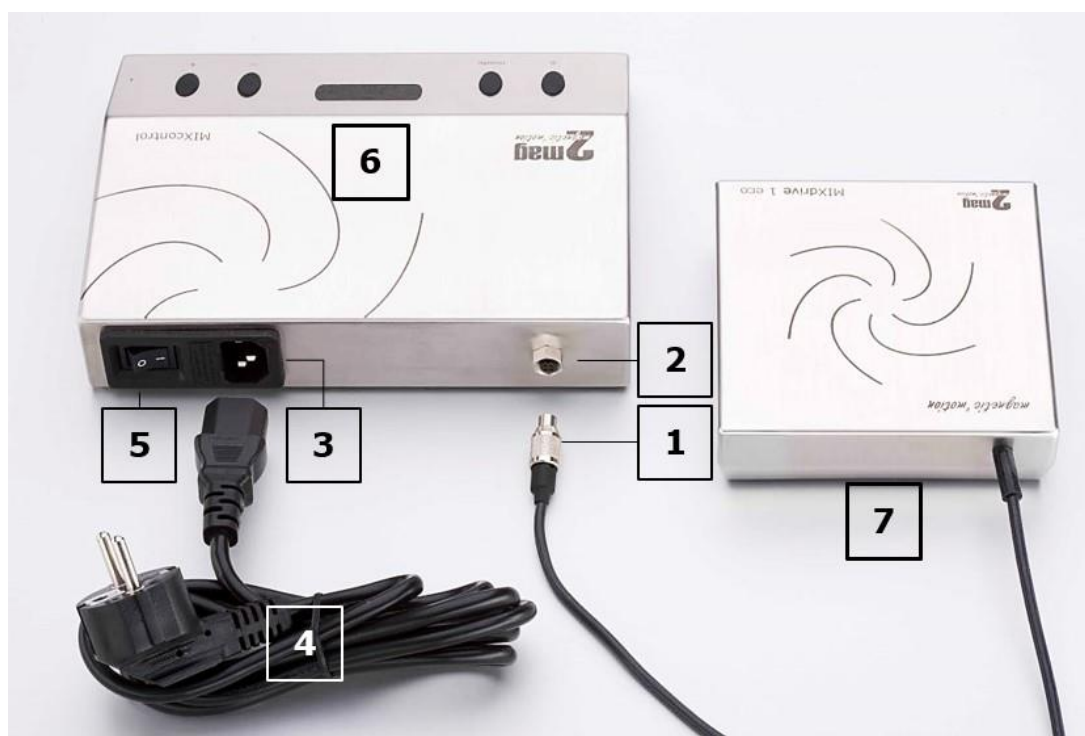


Image 2: Installation, rear side of the control unit bioMIXcontrol

#### Description functional elements of control unit - backside

- |   |                                                                 |
|---|-----------------------------------------------------------------|
| 1 | Connector of the stirrer control cable                          |
| 2 | Socket for the stirrer control cable                            |
| 3 | Power socket                                                    |
| 4 | Power cable                                                     |
| 5 | Power switch                                                    |
| 6 | Control unit 2mag – bioMIXcontrol                               |
| X | Stirring drive unit 2mag – bioMIXdrive 1 (or bioMIXdrive 2/3/4) |

### 3.3 Installation, connection to control unit bioMIXcontrol 4MS Step by step instruction (please also see image 3)

#### Control unit with Master-Slave function, up to 4x bioMIXdrive 1

- ⚡ **Switch off the control unit bioMIXcontrol 4MS BEFORE you handle the connection cables with the power switch (5) and disconnect the power cable (4)!**
- ⚡ The stirrer control cable (1a-d) of the magnetic stirrer bioMIXdrive 1 has now to be connected to the 8-pin socket of the control unit (2a-d). **Please secure this plug connection by turning the screw nut situated at the plug.** Only by this a trouble-free operation can be guaranteed.
- ⚡ Connect the power cable (4) to the power input (3) rear-side and afterwards to the power socket.
- ⚡ The control unit is now connected to the magnetic stirrer and ready for operation.



Image 3: Installation, rear side of the control unit bioMIXcontrol 4MS

### **Description functional elements of control unit - backside**

|      |                                                              |
|------|--------------------------------------------------------------|
| 1a-d | Connectors of the stirrer control cable, stirrer no. 1-2-3-4 |
| 2a-d | Sockets for the stirrer control cable, stirrer no. 1-2-3-4   |
| 3    | Power socket                                                 |
| 4    | Power cable                                                  |
| 5    | Power switch                                                 |
| 6    | Control unit 2mag – bioMIXcontrol                            |

### **Please note:**

Up to 4x stirring drive bioMIXdrive 1 can be connected.



**Please note: The control unit bioMIXcontrol 4MS is made for using bioMIXdrive 1 ONLY!**

**DO NOT use the stirring drives bioMIXdrive 2/3/4 with the control unit bioMIXcontrol 4MS!**

**Risk of damage of the controller!**

## **4 Operating of the control units**

### **4.1 Operating of the control unit bioMIXcontrol (S)**

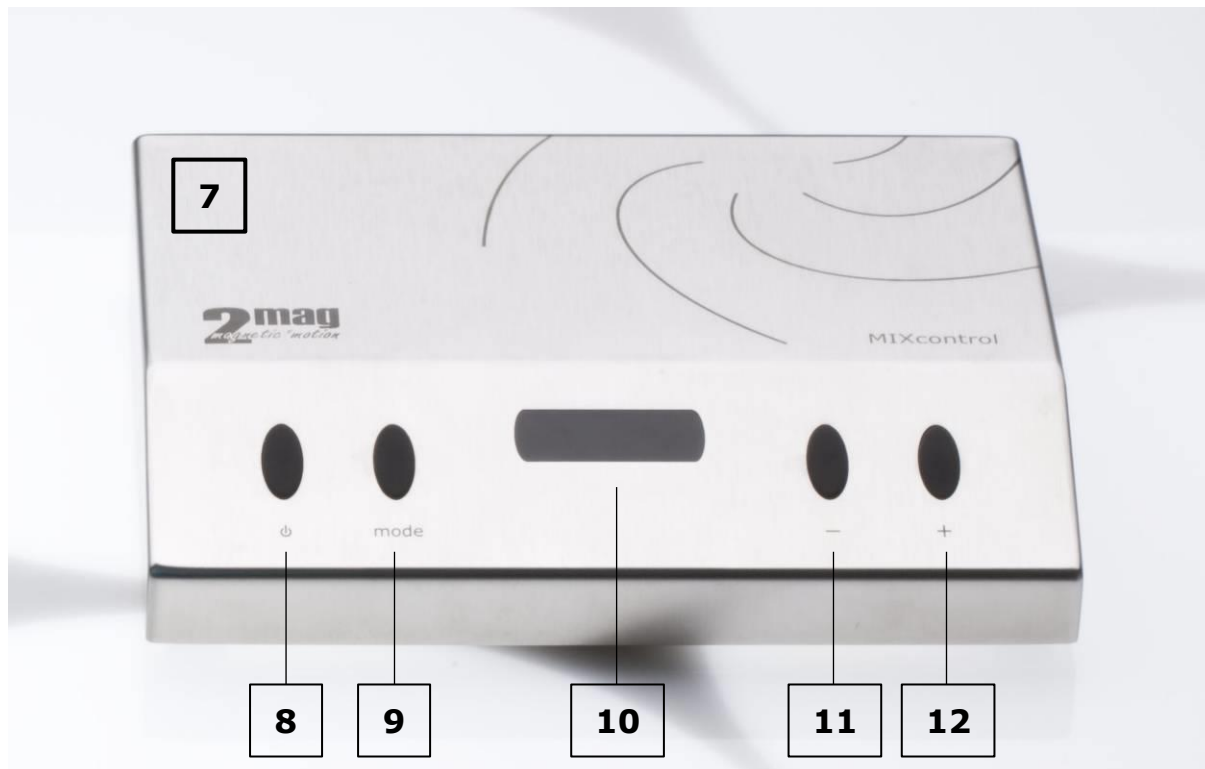


Image 4: Operating elements control unit bioMIXcontrol

#### **4.1.1 Description operating elements bioMIXcontrol (S)**

7 Control unit 2mag - bioMIXcontrol

##### **Stirrer control**

- 8 ON/OFF key for magnetic stirrer
- 9 MODE-key (M) for power adjustment of the magnetic stirrer
- 10 Display for speed indicator and power indicator
- 11 MINUS-key (-) for reduction of stirrer speed
- 12 PLUS-key (+) for increase of the stirrer speed

## Operating of the control unit

After the cables have been installed correctly according to "**Installation, connection to the control unit bioMIXcontrol**", the magnetic stirrer system MIXdrive will be ready for operation.

### 4.1.2 Stirring operation and stirrer control bioMIXcontrol (S)

#### Turning On and Off

Please turn on the main power switch (5) at the rear side of the control unit bioMIXcontrol.

Please press the ON/OFF-key (8) once. The magnetic stirrer will be switched on by that. The current stirring speed will be shown in the display (10). By pressing the ON/OFF-key (8) once more, the magnetic stirrer will be switched off again. The display indicator (10) expires.

#### AutoSave

Automatic saving of the last functional status after disconnection from the mains power supply or after a power failure. All parameters for speed and power are restored.

#### SoftStart

After the magnetic stirrer was switched on, the stirring bars in the flasks will be smoothly accelerated to the set speed accurately. The accelerating phase will be shown by the illumination of a dot at the right segment of the LED-display (10).

#### Stirrer speed adjustment

The speed of the magnetic stirrer can be adjusted by pressing the MINUS- (11) resp. the PLUS-key (12).

The adjusted speed will be shown in the display (10) when the magnetic stirrer is switched on. The speed range can be adjusted between 5 and 250 rpm in steps by 1.

By constantly pressing the MINUS- resp. the PLUS-keys, an accelerated adjustment of the speed can be achieved.

#### QuickSet

To enter the start- respectively maximum speed directly and quickly there is the Quickset-function available.

The use of the following described keys will be made with the stirrer turned on.

#### Setting the Start Speed

Press the MINUS-key (11) permanently and press shortly the ON/OFF-key (8) afterwards. The start speed "5" will be set.

#### Setting the Maximum Speed

Press the PLUS-key (12) permanently and press shortly the ON/OFF-key (8) afterwards. The maximum speed "250" will be set.

### **Power adjustment**

A newly developed and extremely efficient magnetic stirrer will come into operation.

The modern stepper-motor drive concept causes a minimized operational heat output by the magnetic stirrer. Nevertheless, the magnetic stirrer emits a low lost energy to the ambience caused by physics. To reduce the heat output the power of the magnetic stirrer can be adjusted.

A **high power** setting is necessary to move viscose media and large volumes. A **low power** setting guaranties a warming-free long-term use for example operation in incubators.

The stirring power can be adjusted in four steps by using the MODE-key (9). By pressing the MINUS-key (11) respectively the PLUS-key (12) just after pressing the MODE-key, the power can be adjusted between 10-100%.

The current value is now shown on the display (10). The display (10) will turn back to the current speed indicator after approx. 5 seconds.

The power adjustment is finished again at the time the speed range is shown. The power adjustment can also be finished immediately by pressing the MODE-key (9) again.

### **Display, Magnetic Stirrer**

The display (10) provides as described above a description of:

- Current stirring speed (always with switched on magnetic stirrer)
- Set power (after pressing the MODE-key (9))
- To check, whether the magnetic stirrer is switched on. The display will not be illuminated in case the stirrer is switched off.



The magnetic stirrer works with permanent magnets. **Cardiac pacemakers, data storage mediums, magnetic cards and other devices**, which can be affected by magnetic fields, have to be kept away from the fields of the stirring unit as well as from the stirring bars.

## 4.2 Operating of the control unit bioMIXcontrol 4MS

### Control unit with Master-Slave function, up to 4x bioMIXdrive 1

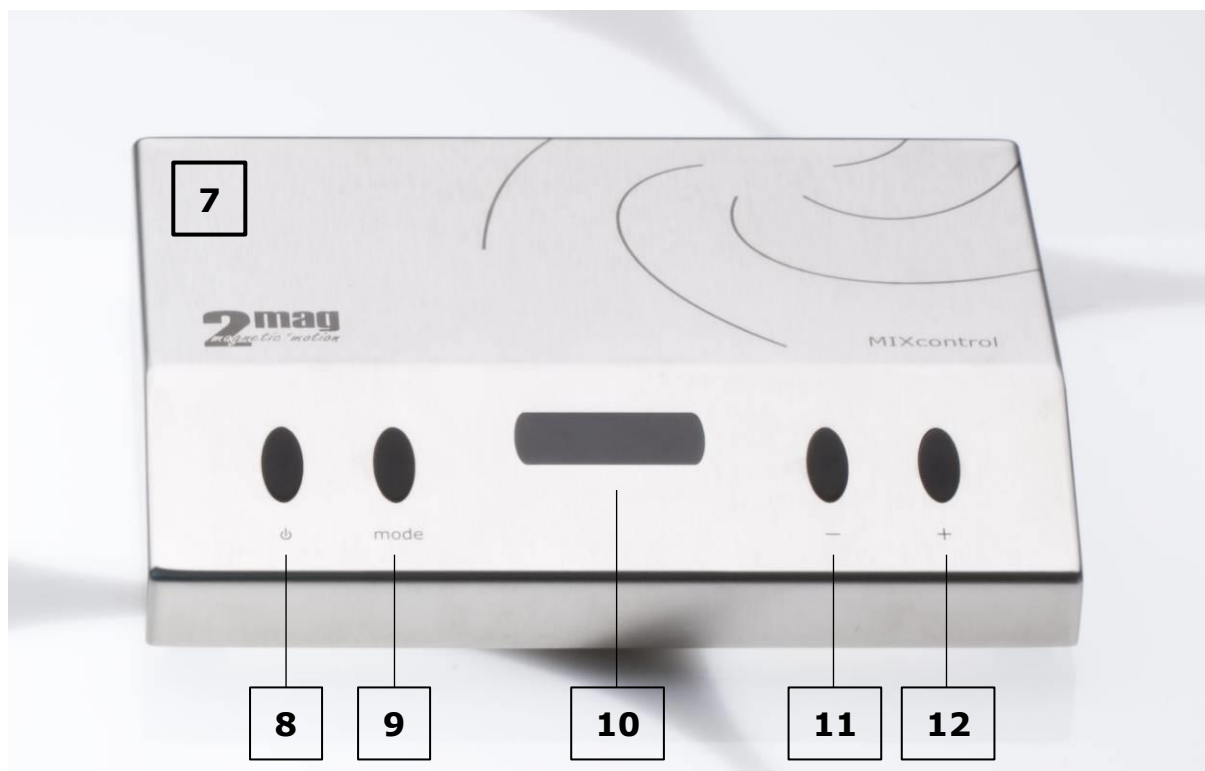


Image 5: Operating elements control unit bioMIXcontrol 4MS

#### 4.2.1 Description operating elements bioMIXcontrol 4MS

7 Control unit 2mag – bioMIXcontrol 4MS

##### **Stirrer control**

- 8 ON/OFF key for magnetic stirrer
- 9 MODE-Taste (M) for switching between the stirrer no. 1-2-3-4
- 10 Display for speed indicator
- 11 MINUS-key (-) for reduction of stirrer speed
- 12 PLUS-key (+) for increase of the stirrer speed

## Operating of the control unit

After the cables have been installed correctly according to "**Installation, connection to the control unit bioMIXcontrol 4MS**", the magnetic stirrer system MIXdrive will be ready for operation.

### 4.2.2 Stirring operation and stirrer control bioMIXcontrol 4MS

#### Turning On and Off

Please turn on the main power switch (5) at the rear side of the control unit bioMIXcontrol 4MS.

Please press the ON/OFF-key (8) once. The magnetic stirrer will be switched on by that. The current stirring speed will be shown in the display (10) as well as the number of the actual stirrer which is in the set mode.

#### Example:

Display shows: "**1.150**" → stirrer no. **1** set speed is **150** rpm

By pressing the ON/OFF-key (8) once more, the magnetic stirrer will be switched off again. The display indicator (10) expires.

#### SoftStart

After the magnetic stirrer was switched on, the stirring bars in the flasks will be smoothly accelerated to the set speed accurately.

The accelerating phase will be shown by the illumination of a dot at the right segment of the LED-display (10).

#### Stirrer speed adjustment

The speed of the magnetic stirrer can be adjusted by pressing the MINUS- (11) resp. the PLUS-key (12).

The adjusted speed will be shown in the display (10) when the magnetic stirrer is switched on. The speed range can be adjusted between 5 and 250 rpm in steps by 1.

By constantly pressing the MINUS- (11) resp. the PLUS-keys (12), an accelerated adjustment of the speed can be achieved.

#### Switching between the stirrer no. 1-2-3-4 (Master-Slave function)

The stirrer no. 1-2-3-4 can be addressed by using the MODE-key (9).

The display shows as follows:

"**1.150**" → stirrer no. **1** set speed is **150** rpm

"**2.150**" → stirrer no. **2** set speed is **150** rpm

"**3.150**" → stirrer no. **3** set speed is **150** rpm

"**4.150**" → stirrer no. **4** set speed is **150** rpm

"**A.150**" → **ALL** stirrers (synchronous mode) set speed is **150** rpm

**"A.--- "** → ALL stirrers are active, but the stirrers are running with independent speeds until the MINUS-key (11) or PLUS-key (12) is pressed. In this case ALL stirrers will be synchronized.

The speed and ON/OFF of each stirrer (no. 1-2-3-4) can be set separately and independent in a range from 5 to 250 rpm. The active unit is indicated with the number 1-2-3-4 of the first digit of the LED display.

In the case that **"A. "** is displayed all stirrers can be set to the same speed → synchronous mode of all stirrers.

In this case all stirrers can be stopped and turned on again with ON/OFF key (8) at the same time.

### Stirring power adjustment

To reduce the operating complexity of the bioMIXcontrol 4MS the stirring power is fixed. The stirring power is optimized regarding minimized heat lost of the stirring drive and solid rotation of the motor to get reliable mixing movement of the cell cultures.

The stirring power is variable and depending on the speed. It can not be adjusted from outside and is in the controller software fixed.

### Display, Magnetic Stirrer

The display (10) provides as described above a description of:

- Current stirring speed (always with switched on magnetic stirrer)
- Current active stirrer (switching after pressing the MODE-key (9))
- To check, whether the magnetic stirrer is switched on. The display will not be illuminated in case the stirrer is switched off.
- Displays:
  - "1.150"** → stirrer no. **1** set speed is **150** rpm
  - "2.150"** → stirrer no. **2** set speed is **150** rpm
  - "3.150"** → stirrer no. **3** set speed is **150** rpm
  - "4.150"** → stirrer no. **4** set speed is **150** rpm
  - "A.150"** → **ALL** stirrers (synchronous mode) set speed is **150** rpm
  - "A.--- "** → **ALL** stirrers are active, but the stirrers are running with different speeds.



The magnetic stirrer works with permanent magnets. **Cardiac pacemakers, data storage mediums, magnetic cards and other devices**, which can be affected by magnetic fields, have to be kept away from the fields of the stirring unit as well as from the stirring bars.

## **5. External heating operation in incubators and water baths**

### **5.1 External heating**

The magnetic stirring drives of the bioMIXdrive series have been developed for operation in incubators and water baths.

Please always observe the following warnings for safe operation!



**Do not heat up liquids whose flashpoint is lower than the set temperature.  
Explosion hazard! Fire hazard!**



**Do never use any pressure-tight closed vessels  
RISK OF BURSTING!**



**Please use only temperature-resistant vessels  
Beware of plastic vessels!**

### **5.2 Bath fluids**

If you use water as the bath fluid, we recommended a water mixture of 70 % soft/decalcified water and 30 % tap water.

Please note the information given on the water quality:

-  Hard water is not suitable for temperature control tasks due to its high lime content and will produce lime deposits.
-  Ferrous water can cause corrosion, even on stainless steel.
-  Chloric water can cause pitting corrosion.
-  Distilled and deionized water is not suitable. Its specific properties cause corrosion on the stainless-steel housing of the stirring drive.

The following must be observed when using other bath fluids: The bioMIXdrive stirring drives are sealed with polyurethane. Tempering agents used must not attack these sealing materials. Please always check the material resistance before immersing in a bath fluid.



**Always check the resistance of the sealing materials with regard to the temperature control agents / bath fluids used.**

## ***6. Maximum operation temperatures***



### **Incubator operation**

Please note the **maximum operation temperature +50 °C** in air for the standard versions



### **Water bath operation:**

Please note the **maximum operation temperature +50 °C** in water immersed for the standard versions

## **7. Accessories**

### **Extension Cord for bioMIXdrive**

With the accessory **Extension Cord for bioMIXdrive series** (order no. 46200) the control wire of the stirrer can be extended by 3m.



*Image 6: Extension cord for bioMIXdrive*

Other lengths on request.

## B Maintenance, Cleaning and Care



Do not use any cleaning agent or cleaning rag that is based on chlorine with metallic components or ammoniac. These agents may harm the surface.



The control unit must not be dipped in water or any cleaning solutions.

**2mag** devices are generally maintenance-free.

Due to their construction the **2mag** devices are very robust and designed for the professional daily use.

We recommend cleaning the devices' surfaces with e.g. cleaning agents containing tensides or isopropyl alcohol regularly.

**BEFORE** cleaning the surfaces, switch off the device with the power switch and pull out the power cable afterwards.

## C Protection against released gases and substances

The occupational exposure limit value (OEL) is the limit value for the time-weighted average concentration of a substance in the air at the workplace in relation to a given reference period.

It indicates the concentration of a substance up to which acute or chronic harmful effects on health are generally not to be expected.

Information on exposure limits and handling and storage regulations for substances can be found in OSHA publications. Local, national or regional regulations may also apply.

## D Service case and customer service



**During service, the device may only be opened by an authorized customer service.**

In case of any defect on the device, please make sure to contact us first. We will be ready to offer help quickly and straightforward.

### **2mag AG**

Schrägenhofstr. 35 J  
DE-80992 Muenchen  
GERMANY

Fon: +49 89 38153110

E-Mail: [info@2mag.de](mailto:info@2mag.de)

Web: [www.2mag.de](http://www.2mag.de)

### **Warranty:**

Due to their construction, the **2mag** devices are very robust and designed for the professional daily use.

Should in any case, despite our strict quality control, a system part not work without any fault, it can be repaired or exchanged by our customer service without any problems.

**We grant 3 years warranty on all material and manufacturing defects.**

## E Errors

**The magnetic stirring system is turning in an unbalanced way:**

Please check the position of the culture flask. The culture flask should always be in the centre of the magnetic stirring position.

**The control unit is not ready for operation despite the power connection has been made and the power switch had been turned on:**

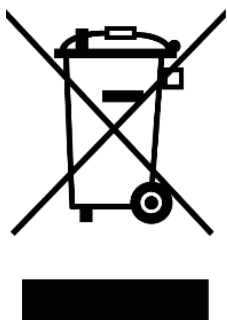
Please get into contact with us.

In general, we are ready to help you in case of problems.

For any enquiries, questions or suggestions please do not hesitate to contact us at [info@2mag.de](mailto:info@2mag.de)

## F Disposal

The WEEE Directive 2012/19/EU regulates the sale, take-back and proper disposal of waste electrical and electronic equipment within the European Union.



The symbol for the separate collection of electrical and electronic equipment is a crossed-out wheeled garbage can.

Disposal with household waste / municipal waste is not permitted!

Packaging materials must be disposed of in accordance with current local regulations.

## G Technical details

### Magnetic stirrer bioMIXdrive 1 and 2

|                                | bioMIXdrive 1                                                          | bioMIXdrive 2          |
|--------------------------------|------------------------------------------------------------------------|------------------------|
| Order no.                      | 80001                                                                  | 80002                  |
| Stirring points                | 1                                                                      | 2                      |
| Stirring point distance        | 140 mm                                                                 |                        |
| Stirring volume                | 5 – 5,000 ml                                                           |                        |
| Speed range                    | 5 – 250 rpm                                                            |                        |
| Stirring power (max.)          | bioMIXcontrol (S/4MS) only                                             | bioMIXcontrol (S) only |
| Material housing               | Stainless-steel                                                        |                        |
| Measurements (WxDxH)           | 180 x 180 x 38 mm                                                      | 130 x 270 x 38 mm      |
| Weight (gross)                 | approx. 2.5 kg                                                         | approx. 2.9 kg         |
| Permitted operation conditions | -10 up to +50 °C (at 100% humidity)<br>resp. +50 °C submersed in water |                        |
| Permitted storage conditions   | -40 °C up to +70 °C, 10-95 %, 500-1060 hPa                             |                        |
| Protection category            | IP68                                                                   |                        |

### Magnetic stirrer bioMIXdrive 3 and 4

|                                | bioMIXdrive 3                                                          | bioMIXdrive 4     |
|--------------------------------|------------------------------------------------------------------------|-------------------|
| Order no.                      | 80003                                                                  | 80004             |
| Stirring points                | 3                                                                      | 4                 |
| Stirring point distance        | 140 mm                                                                 |                   |
| Stirring volume                | 5 – 5,000 ml                                                           |                   |
| Speed range                    | 5 – 250 rpm                                                            |                   |
| Stirring power (max.)          | bioMIXcontrol (S) only                                                 |                   |
| Material housing               | Stainless-steel                                                        |                   |
| Measurements (WxDxH)           | 130 x 410 x 38 mm                                                      | 270 x 270 x 38 mm |
| Weight (gross)                 | approx. 4.1 kg                                                         | approx. 5.6 kg    |
| Permitted operation conditions | -10 up to +50 °C (at 100% humidity)<br>resp. +50 °C submersed in water |                   |
| Permitted storage conditions   | -40 °C up to +70 °C, 10-95 %, 500-1060 hPa                             |                   |
| Protection category            | IP68                                                                   |                   |

## Control unit bioMIXcontrol

|                                | <b>bioMIXcontrol</b>             |
|--------------------------------|----------------------------------|
| Order no.                      | 98400                            |
| Speed range                    | 5 – 250 rpm                      |
| Power setting                  | 10-100% (10 steps)               |
| Material housing               | stainless-steel                  |
| Measurements (BxTxH)           | 200 x 155 x 38 mm                |
| Weight (gross)                 | approx. 1.9 kg                   |
| Permitted operation conditions | 0 up to +40 °C (at 80% humidity) |
| Electrical data                | 100-240 V / 50-60 Hz / 1.5 A     |
| Protection category            | IP20                             |

## Control unit bioMIXcontrol S (stackable)



Image 7: Control unit bioMIXcontrol S

|                                | <b>bioMIXcontrol S</b>           |
|--------------------------------|----------------------------------|
| Order no.                      | 98500                            |
| Speed range                    | 5 – 250 rpm                      |
| Power setting                  | 10-100% (10 steps)               |
| Material housing               | stainless-steel                  |
| Measurements (BxTxH)           | 215 x 120 x 57 mm                |
| Weight (gross)                 | approx. 1.9 kg                   |
| Permitted operation conditions | 0 up to +40 °C (at 80% humidity) |
| Electrical data                | 100-240 V / 50-60 Hz / 1.5 A     |
| Protection category            | IP20                             |

## Control unit bioMIXcontrol 4MS

(only for using with stirring drive bioMIXdrive 1)



Image 8: Control unit bioMIXcontrol 4MS with 4x bioMIXdrive 1

|                                | <b>bioMIXcontrol 4MS</b>                                    |
|--------------------------------|-------------------------------------------------------------|
| Order no.                      | 98604                                                       |
| Speed range                    | 5 – 250 rpm, independent adjustable for each stirring drive |
| Max. number of drives          | 4x bioMIXdrive 1                                            |
| Stirring power (max.)          | automatically, software-controlled                          |
| Material housing               | stainless-steel                                             |
| Measurements (BxTxH)           | 200 x 155 x 38 mm                                           |
| Weight (gross)                 | approx. 2.0 kg                                              |
| Permitted operation conditions | 0 up to +40 °C (at 80% humidity)                            |
| Electrical data                | 100-240 V / 50-60 Hz / 1.5 A                                |
| Protection category            | IP20                                                        |

## Accessory Extension Cord for bioMIXdrive

|                | <b>Extension Cord bioMIXdrive</b>       |
|----------------|-----------------------------------------|
| Order no.      | 46200                                   |
| Material       | silicone cover, wires with PTFE covered |
| Length         | 3 m                                     |
| Weight (gross) | approx. 0.15 kg                         |

# H EU-Declaration of conformity for technical devices

(acc. to EU-guideline of the electromagnetic compatibility 2014/30/EU and the low voltage directive 2014/35/EU)

**2mag AG**  
Schragenhofstraße 35 J  
DE-80992 Muenchen  
GERMANY

Hereby declares that the product

**bioMIXdrive 1 / 2 / 3 / 4**

incl.

**bioMIXcontrol / bioMIXcontrol S / bioMIXcontrol 4MS**

is conform to the appropriate regulations of the EU-guideline of the electromagnetic compatibility (EU-guideline 2014/30/EU) as well as the low voltage directive (2014/35/EU) incl. their changes and the laws for the realization of the guideline into national law.

The declaration is valid under the following conditions:

The ambient conditions being stated in the operation manuals have to be adhered to. This mainly applies to the supply with electric energy.

The following norms/standards were chosen to evaluate the finished products with regard to electromagnetic compatibility:

- DIN EN 61000-3-2
- DIN EN 61000-3-3
- DIN EN 61326-1
- DIN EN 60529

The following norms/standards were chosen to evaluate the finished products with regard to low voltage directive:

- DIN EN 61010-1
- DIN EN 61010-2-51