

# Manual

## BMI – AutoMagic

### Automatic crossline- plus 5 dot - laser

(pulsed laser lines for the use of receiver)



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## 1. Introduction

The **BMI – AutoMagic** is a fully automatic, self leveling Crosslines- and 5 - points – laser.

The **BMI – AutoMagic** can be used for **Indoor- and outdoor area**.  
The device has to be kept dry.  
( Protection class IP 54).



**CAUTION: Never insert the device into water!**



Note that the usage of the **BMI – AutoMagic** under humid and wet weather conditions may affect the measurements due to the water drops on the laser.  
The device has to be under dry conditions when returned back to its transport case.

## 2. Laser safety

The **BMI – AutoMagic** has the Laser category class 2 M / EN 60825-1:2007 with a wavelength of 630 to 670 nm and max. output von  $\leq 1$  mW.

### Safety instructions



- *DO NOT REMOVE THE WARNING SIGN OF LASER DEVICE SIE*
- *DO NOT STARE DIRECTLY INTO THE LASER BEAM*
- *DO NOT AIM AT ANY OTHER PERSON WITH THE LASER EVEN OUT OF A LONG DISATNCE*
- *DO NOT INSTALL THE LASER WITHIN THE EYE LEVEL!*
- *DO NOT OPEN THE DIVCE*

**If the device is opened by any unauthorized person, the liability of the manufacturer or dealer will expire immediately for any accruing damages.**

### 3. Power supply

The **BMI – AutoMagic** runs on customary batteries.  
(4 pcs, 1,5 V LR6 / AA).



Red LED above the activation button starts to blink when the batteries are on low capacity and should be replaced.

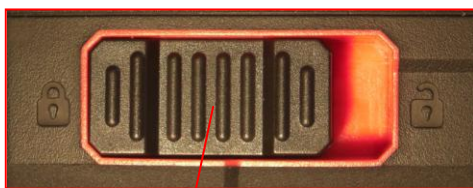


To change the batteries, open the battery cover, take off the used batteries and replace them.

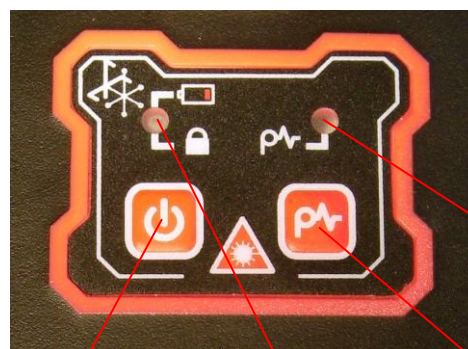
Mind the polarity



### 4. Start up operation and function display



**Slide**  
Pendulum-transport  
safety lock  
ON / OFF



**Button 1**  
ON / OFF  
Selection button

Control-LED  
Pendulum  
transport-safety  
Battery-Capacity

Control-LED  
pulsed Lines  
ON

**Button 2**  
pulsed Lines  
On / Off

## 4.1 Activate the BMI – AutoMagic

**Button 1 ON / OFF - Press shortly**

**Shift the slide of the Pendulum –Transport lock to the right**

The device levels out automatically. The Cross lines of the laser will be illustrated.



Red LED above the On / Off – button is on, when the pendulum-transport lock is not disengaged. The laser lines blink slowly.

**The self-leveling mode is not activated!**



Red LED above the ON / OFF– button blinks, when the batteries are running on low capacity and need to be replaced



If the automatic leveling function is not possible, e.g. because the surface on which the measuring tool stands deviates by more than 4° from the horizontal plane, the laser beams flash slowly



If the laser is used for inclinations, the slide of the pendulum- transport lock has to be shifted to the left in order to lock the pendulum. **The self-leveling is deactivated!** The laser lines will blink slowly and the LED above the ON / OFF – button is on.



The pulsed laser lines allow the use and work with the receiver – ex. Outdoor In order to work with the receiver, press button 2 shortly. The pulse mode is now activated and verified by the blue LED above the **button 2**. To terminate the pulse mode repress the **button 2**.

## 4.2 Selection of the requested laser lines / laser-dots

**Button 1 - Press 1 x**

Horizontal line is on.

**Button 1 - Press 2 x**

Vertical line is on.

**Button 1 - Press 3 x**

All 5 – laser dots are on.

**Button 1 - Press 4 x**

Laser cross lines and the 5 laser dots will be on.

## 4.3 Deactivate the BMI – AutoMagic

**Button 1 ON/OFF press long, the laser light will go off.**

**Shift the slide of the pendulum transport lock safety to the left.**

## 5. Accuracy Check

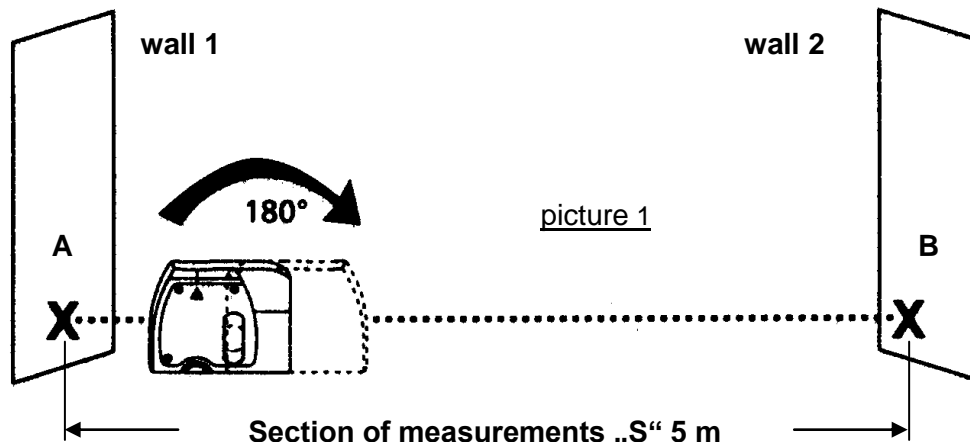


*Before the activation, a drop or a hit we recommend to run a check up of the device; otherwise the manufacturer's liability is expired.*

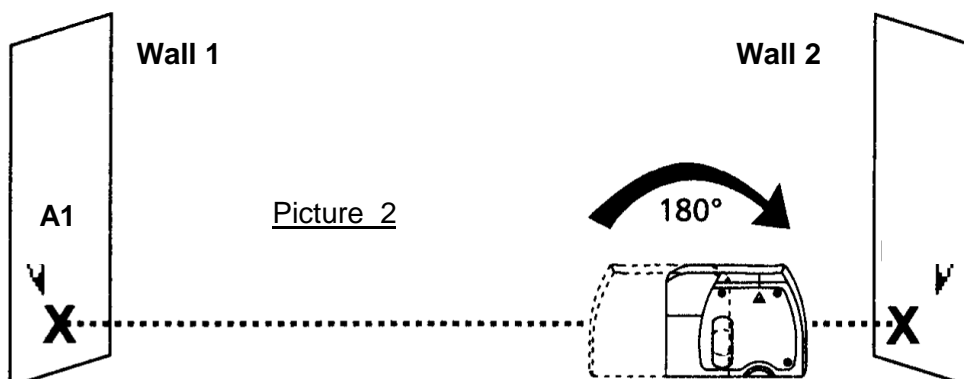
### 5.1 Checking accuracy of the horizontal laser line and laser dots pointing right, left and forward

Mount the device on the multi-functional adapter.

Select 2 walls in a distance of a minimum of 5m from each other.



- (1) Place the device with a distance of ca. 10 cm in front of Wall 2.
- (2) Disengage the transport lock, press **button 1**. The device levels out automatically.
- (3) Mark the intersection of horizontal and vertical lines of the cross line (Marking point A)
- (4) Turn the device around 180° without changing the height. (picture 1)  
Mark the intersection of the cross line (Marking point B).
- (5) Put the device with a distance of ca. 10 cm in front of Wall 2. Mark intersection of horizontal and vertical lines of the cross line (Marking point B)
- (6) Turn the device around 180° without changing the height.  
Mark the intersection of the cross line (Marking point A1) ( picture 2)

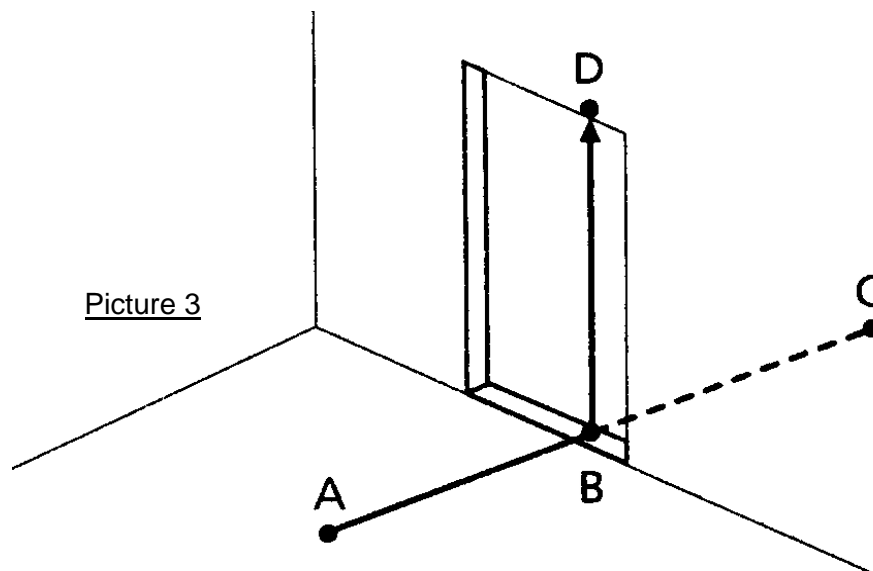


**If the marking points A and A1 are identical, the device is conform:**

Section of measurement „S“	Max. tolerable Distance A – A1
5 m	2 mm
10 m	4 mm
15 m	6 mm
20 m	8 mm

## 5.2 Checking the accuracy of the vertical laser line

- (1) Select a door frame of at least a 2.5 m open space on side of the door (picture 3).



- (2) Place the device with a 2.5 m distance from the middle of door frame on point A.  
 (3) Disengage the transport safety lock, press **button 1**. The device levels out automatically.  
 (4) Mark the point „B“ centered underneath the door frame.  
 (5) Mark a point „C“ within a 5 m distance from point „A“.  
 (6) Mark a point „D“ within the door lintel.  
 (7) Place the device on the point „C“ and set up the Laser line exact on the point „B“ .  
 (8) Measure now the gap the laser line from the marked point „D“ within the door lintel.

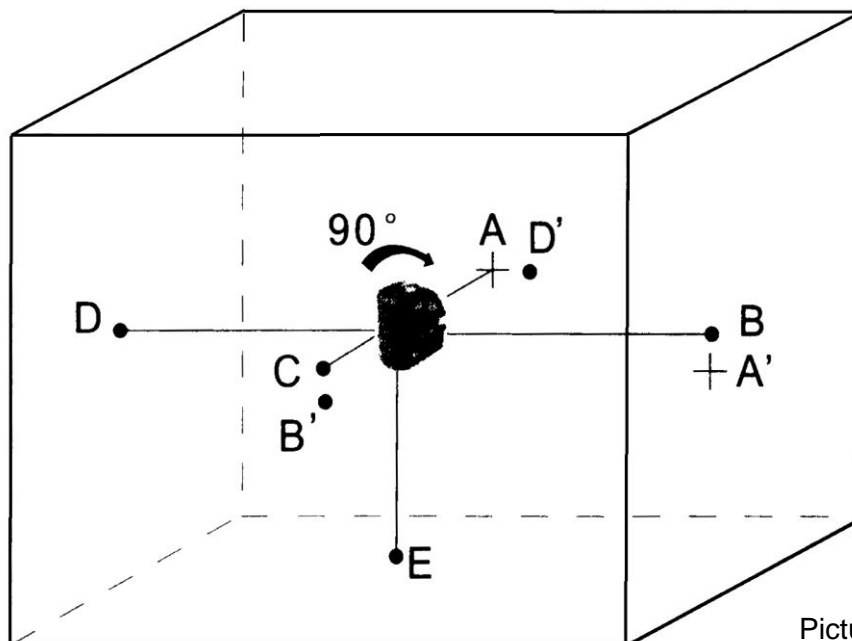
**If the gap is less than 1 mm, the device is conform and respects the tolerances.**

## 5.3 Checking 90° angles between laser beams

Mount the device on the multi-functional adapter.

- (1) Set up the device in the middle of an approx. 6x6 m room (picture 4). Switch all laser lines  
(Button 1 press 4x)
- (2) Let the laser level itself, then mark the intersection of laser lines A and all dots  
( B, C, D and E)
- (3) Turn device about 90° around plumb axis of dot E, until the laser dot C is on the mark  
D. Mark the points A', B' und D'.
- (4) Measure the distance between A – D', B – A' und C – B'

**If all deviations are less than 2 mm, the device is conform and respects the tolerances**

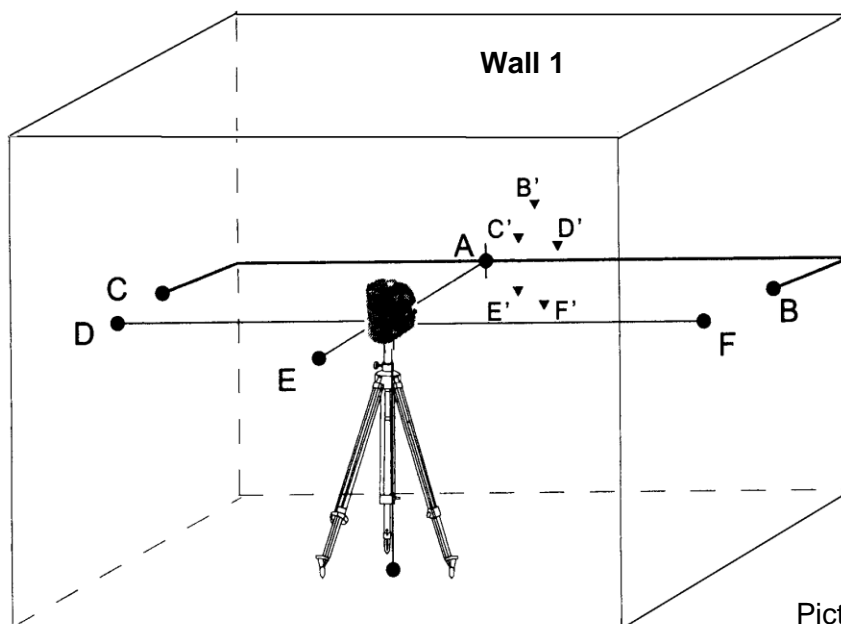


## 5.4 Checking the accuracy of horizontal laser line

Mount the device on the multi-functional adapter and on a tripod

- (1) Set up the device in the middle of an approx. 6x6 m room (picture 4). Switch all laser lines (Button 1 press 4x)
- (2) Mark directly the laser line front intersection point with A on wall 1
- (3) Turn the device around in 90°steps, mark each of horizontal laser dots (D,E,F) and both ends of horizontal laser line ( B,C) near point A. Name them B, C, D, E,F.
- (4) Measure distance between the highest and lowest marking point

**If the gap is less than 3 mm, the device is conform and respects the tolerances**



Picture 5

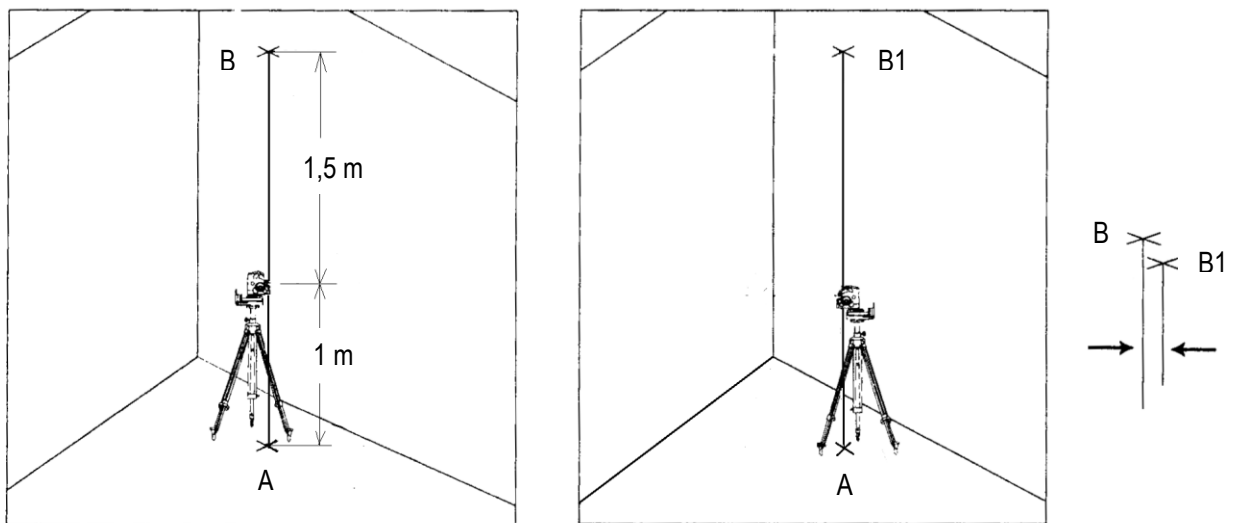


## 5.5 Checking accuracies of plumb beams (up and down)

Mount the device on the multi-functional adapter and on a tripod

- (1) Set up the device on a tripod 1m above ground in a room of 2,5m height (picture 6).  
Turn on the plumb line (button 1, press 3x)
- (2) Mark the laser point on the ground with A, the point on the ceiling with B
- (3) Turn the device on the tripod by 180°, move tripod until plumb down points directly on point A again. Now name the new point position at ceiling B1
- (4) Now name the new point position at ceiling B1
- (5) Measure the distance between point B und B1

**If the gap is less them 1 mm, the device is conform and respects the tolerances**



Picture 6

## 6. Technical Data of the BMI – autoMAGIC

Laser type:	red diode laser, wavelength 630 bis 670 nm
Output:	≤ 1 mW; Laser class 2 M (EN 60825-1)
Levelling range:	± 4°
Accuracy horizontal/vertical:	± 3 mm / 10 m
Plumb beam, up:	± 2 mm auf 10 m
Plumb beam, down:	± 2 mm auf 10 m
Laser range:	up to 30 m depending on brightness
Range with receiver:	up to 55 m
Operating range:	-10° to +50° C
Storage temperature:	-25° to +70° C
Power supply:	4 x 1,5 V LR6 / type AA
Service time:	ca. 16 hrs.
Protective system:	IP54
Tripod connection size device:	1/4 "and 5/8 "
Tripod connection size adapter:	1/4" and 5/8"

