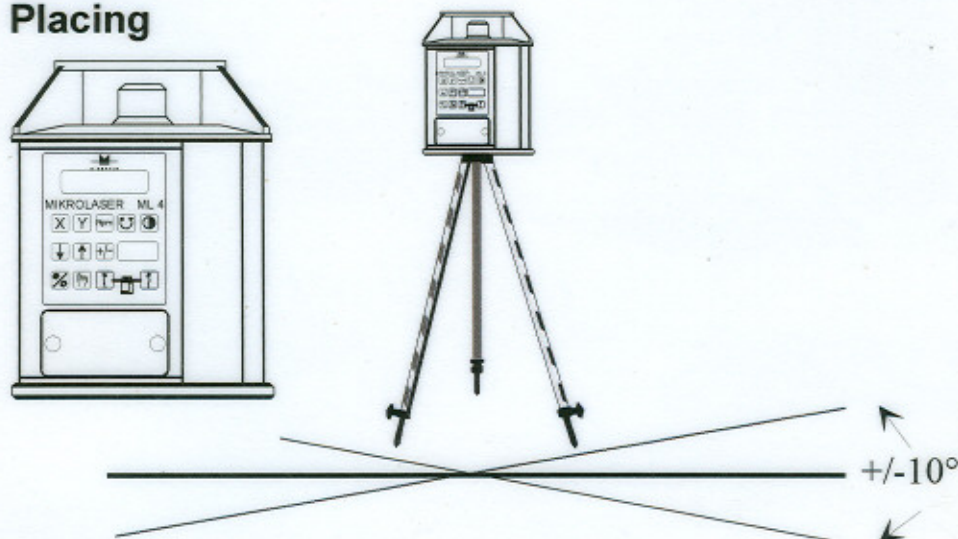













Laser ML 4

Placing



Operation

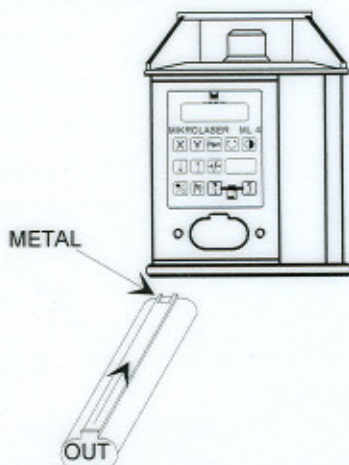
-  Selection of grade setting in the X-axis
-  Selection of grade setting in the Y-axis
-  Selection of the speed of rotation
-  Selection of optical axis rotation
-  Selection of the LCD contrast
-  Decrease the value in the display
-  Increase the value in the display
-  Reverse the sign in the display
-  Power **ON/OFF**
-  Manual/Automatic operation
-  Adjustment in vertical mode



Battery

The ML 4 is battery operated. The Ni-Cd battery is of the widely known rechargeable 7.2V "Makita" type. A fully recharged battery has a capacity of more than 15 hours of operation.

To insert the battery



To place the battery in the laser, first unscrew the two finger screws on the battery lid, then insert the battery with the negative pole upwards, and the poles towards the instrument.

The battery should slide in easily, except for the last 1 cm (1/2"). It is important that no violence is used when inserting the battery.

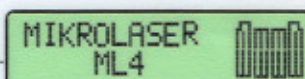
Note: To ensure that the battery is kept dry, inspect that the battery compartment cover and gasket are OK. If the battery compartment is wet, dry the laser without the battery and lid at max. 50°C (122°F).



Operating instructions

Horizontal Mode

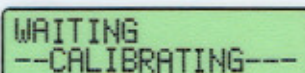
1. Push the button.

The display shows the condition of the battery.

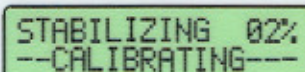


 = flat battery,  = full battery.

The ML 4 goes through a self calibrating process. The process is divided in phases.



The last phase is a stabilizing phase, in which the laser counts from 0% to 100%.



After the calibrating process, the rotor head starts rotating and the laser beam is turned on. If the laser worked without any grade the last time it was used, it will not go through the self-calibrating process.

Avoid exposing the laser to vibrations during the self-calibrating procedure, as it will make the ML 4 restart the procedure.

If the laser is placed beyond its self-calibrating range $\pm 10^\circ$, the display will give the message: OUT OF RANGE. Please reposition the laser.

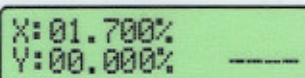


Grade setting, one plane only, e.g. X-axis

1. Push the button.

The cursor is moved by pushing repeatedly.

2. Push the or the button until the display has reached the value you want to enter to the laser.



Operating instructions, continued

Grade setting, two planes

As in one plane only, just select the Y-grade in exactly the same manner as the X-grade.



Vertical Mode

1. Lay down the laser on its back.

2. Push the  button.

The display shows that the laser is operating in Vertical mode.

ML 4
VERTIKAL

3. Push the  button or the  button for fine adjustment of alignment.

Manual Mode

1. Push the  button.

2. Push the  button.

The display shows that the laser is operating in Manual mode.

ML 4
MANUEL

In Manual mode, grades beyond the self-calibrating range can be set. However in this mode there is **no** automatic levelling.

Adjustment of speed of rotation

1. Push the  button.

2. Push the  button or the  button.

until the display shows the value you want to use. The ML 4 has rotation speeds from 0 to 900 rpm. To save battery power use the lowest possible rpm.

MOTOR 400 RPM
ROTATION 00.0 CM

Technical Specifications

Working range:	400m
Accuracy:	5mm/100m
Automatic levelling range:	$\pm 18\%$ ($\pm 10^\circ$)
Grade adjustment range X-Axis:	From -10% to +12%
Grade adjustment range Y-Axis:	From -10% to +10%
Rotational speed:	From 0 to 900 o/m
Laser/optics:	
Diode:	670 nm
Maximum output:	1 mW
Beam diameter:	12 mm
Laser class:	Class 1
Optics and windows are AR coated.	
Battery:	
7,2 V "Makita" type 1.4 Ah.	
Full recharge in less than one hour.	
Operating time approximately 30 hours.	
Dimensions:	17 x 17 x 24 cm
Weight:	5 kg.