

# CONDROL



## Rotary laser

## Roto HVR/HVG

### User manual



## Rotary laser Roto HVR/HVG

### User manual

Congratulations on your purchase of rotary laser CONDROL Roto HVR / Roto HVG. Safety instructions can be found in the end of this user manual and should be carefully read before you use the device for the first time.

#### SAFETY INSTRUCTIONS

**Attention!** This user manual is an essential part of this product.

The user manual should be read carefully before you use the product for the first time. If the product is given to someone for temporary use, be sure to enclose user manual to it.

- Do not misuse the product;
- Do not remove warning signs and protect them from abrasion, because they contain information about safe operation of the product.

	Roto HVR	Roto HVG
	Laser radiation!	Laser radiation!
	Do not stare into beam	Do not stare into beam
	Class 2 laser	Class 2 laser
	<1 mW 635 nm	<1 mW 520 nm
	EN60825-1: 2007-03	EN60825-1: 2007-03

- Do not look into the laser beam or its reflection, with unprotected eye or through an optical instrument. Do not point the laser beam at people or animals without the need. You can dazzle them.
- To protect your eyes close them or look aside.
- Always install the product in such a way, so that laser line is below or above eye level.
- Do not let unauthorized people enter the zone of product operation.
- Store the product beyond reach of children and unauthorized people.
- It is prohibited to disassemble or repair the product yourself. Entrust product repair to qualified personnel and use original spare parts only.
- Do not use the product in explosive environment, close to flammable materials.

- Laser intensive glasses are used for better recognition of the laser beam, do not use them for other purposes. Laser glasses do not protect from laser radiation as well as ultraviolet radiation and reduce color perception.

#### INTENDED USE

CONDROL Roto HVR / Roto HVG – self-leveling rotary laser level, designed for construction workers, plasterers, and contractors intended to build vertical and horizontal planes, laser dots (zenith, nadir). The product has scan function that allows building only a part of laser plane defined by user, as well as build inclined planes tilted up to ±10% for the axes X and Y.

The product is suitable for use at both indoor and outdoor building areas.

#### TECHNICAL SPECIFICATIONS

	Roto HVR	Roto HVG
Working range with receiver	600m (in diameter)	
Accuracy	18" (±0,09 mm/1 m)	
Self-leveling range	±5°	
Tilt angle for axes X и Y	±10%	
Laser type	Class II 635 nm < 1 mW	Class II 520 nm < 1 mW
Rotation speed	0, 60, 120, 300, 600 rpm	
Scanning mode	Scanning sector 0°, 10°; 45°; 90°; 180°	
Remote control operating distance	20 m	
Operating temperature	-20°C ~ +50°C	
Power supply of rotary laser	Rechargeable battery 4 x 4000 mAh SC Ni-MH 1.2 V and alkaline battery 4 x AM-2 (LR14) type C, 1.5 V	
Power supply of remote control	2 x AAA LR03 1.5 V	
Power supply of laser receiver	1 x 6F22 9V	
Battery life	20 h	15 h
IP rate	IP67	
Type of tripod thread	5/8"	
Dimensions	206 X 206 X 211 mm	
Weight	2.5 kg	

#### DELIVERY PACKAGE

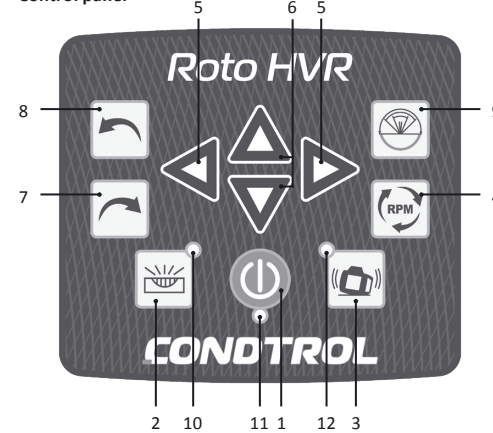
- Rotary laser – 1 pc.
- Battery (4000 mAh SC Ni-MH 1.2V) – 4 pcs.
- Battery (AM-2 LR14 type C, 1.5V) – 4 pcs.
- Charger – 1 pc.
- Laser receiver – 1 pc.
- Holder for laser receiver – 1 pc.
- Remote control – 1 pc.
- Laser intensive glasses – 1 pc.
- Magnetic target board – 1 pc.
- User manual – 1 pc.
- Plastic case – 1 pc.

#### PRODUCT DESCRIPTION

- 1 - Laser exit window
- 2 - Rotating head
- 3 - Laser dots exit windows (zenith and nadir)
- 4 - Control panel
- 5 - Charging jack
- 6 - Battery unit
- 7 - Tripod thread 5/8"
- 8 - Handles



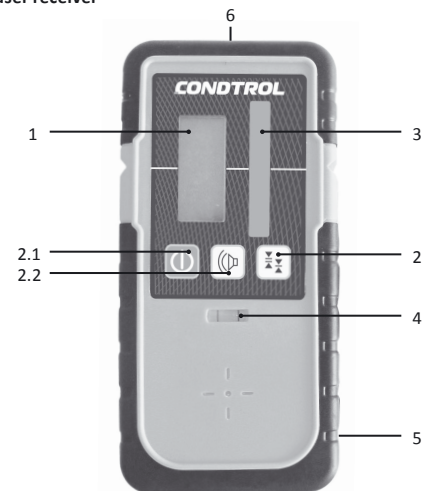
#### Control panel



- 1 - Switch on/off the rotary laser
- 2 - Switch on/switch off manual mode
- 3 - Stop self-leveling after misalignment of the rotary laser
- 4 - Select rotation speed
- 5 - Adjust the slope along the axis X
- 6 - Adjust the slope along the axis Y
- 7 - Move the laser dot/scan sector clockwise
- 8 - Move the laser dot/scan sector counterclockwise
- 9 - Scanning mode/select scan sector

- LED indicators
- 10 - manual mode
- 11 - power
- 12 - stop self-leveling after misalignment of the rotary laser

#### Laser receiver



- 1 - LCD
- 2 - Keyboard:
  - 2.1 - Switch on/off
  - 2.2 - Switch on/off the sound signal
  - 2.3 - Select high/average accuracy
- 3 - Receiver sensor
- 4 - Bubble level
- 5 - Battery compartment
- 6 - Magnets

#### OPERATION

##### Battery charging

The rotary laser is powered by nickel metal hydride (Ni-MH) rechargeable batteries included in the delivery package. They are placed in the battery unit in the bottom of the rotary laser. An extra battery pack with alkaline batteries is also included in the delivery package. It allows

to continue operation of the rotary laser even if the main battery unit is discharged. If the power indicator starts flashing during operation, the battery must be charged.

The device has 2 charging jacks on its body: under the control panel and on the Ni-MH battery unit.

Use the charger, included in the delivery package, for charging of Ni-MH batteries.

It takes about 7 hours to fully charge the battery. Power indicator will be red while charging.

When the power indicator turns green the battery is full disconnect the charger.

Remove the batteries from the rotary laser if it is not used for a long time. Do not use different types of batteries with different charge level. Do not leave discharged batteries in the rotary laser.

**Attention!** Do not connect the charger to the rotary laser if there are alkaline batteries in the battery unit! It may cause damage of the rotary laser.

##### Replace batteries in the laser receiver

Laser receiver is powered by 6F22 9V included in the delivery package. Battery compartment is located on the back side of laser receiver. Remove battery cover, take out discharged batteries and install new ones, observing correct polarity. Put the battery cover back.

Roto HVR: replace the battery as soon as the indicator appears on the LCD.

Roto HVG: replace the battery as soon as the symbol of battery charge level becomes empty on the LCD .

Use batteries 9V 6LR61/6F22 only. Remove the battery from laser receiver if it is not used for a long time to avoid corrosion and battery discharging.

##### Replace batteries in the remote control

Remote control is powered by 1.5V AAA batteries included in the delivery package. Battery compartment is located on the back side of the remote control.

Remove battery cover, take out discharged battery and install new one, observing correct polarity. Put the battery cover back.

Use alkaline AAA 1.5V batteries only. Remove the batteries from remote control if it is not used for a long period of time to avoid corrosion and battery discharging. All batteries should be replaced simultaneously. All batteries should be of the same type and brand with the same charge level.

##### Switch on/off the rotary laser

Short press the button , to switch on/off the laser.

When the laser is switched on, the power indicator will turn green and switch off when the laser is off.

#### OPERATION MODES

##### Self-leveling mode

Place the product on a flat surface, tripod 5/8" or universal mount in horizontal or vertical position.

Switch on the laser. As soon as self-leveling is finished the head starts rotating clockwise at 600 rpm.

If the slope of the rotary laser exceeds (5°), laser beam will be flashing fast, the head won't rotate. Switch off the laser and switch it on again.

Short press the button to switch off self-leveling after the laser is misaligned.

If the product is unbalanced by some external influence, and it will not align. Switch off the laser, then switch it on again and repeat operation or short press to switch on self-leveling after the laser is misaligned.

#### Manual mode

This mode allows to project inclined planes at any slope.

Place the product on a solid and flat surface. Switch on the laser. Power indicator will turn green. The laser beam will be flashing while self-leveling. As soon as self-leveling is finished, the head will start rotating clockwise at 600rpm.

Short press the button to activate manual mode. The laser will switch to manual mode, indicator of manual mode will switch on. Set the device at the desired angle and fix its position.

Short press to exit manual mode. Manual mode indicator will switch off.

##### Projection of inclined planes (axis X and Y)

This mode allows to project inclined planes tilted up to ±10% for the axes X and Y.

Place the product on a solid and flat surface. Switch on the laser. Power indicator will turn green. The laser beam will be flashing while self-leveling.

As soon as self-leveling is finished, the head will start rotating clockwise at 600rpm.

Short press the button to activate manual mode. The laser will switch to manual mode, indicator of manual mode will switch on.

Short press the buttons to set required tilt on the axis Y.

Short press the buttons to set required tilt

on the axis X. As soon as the rotating head assumes desired position, it will start rotating at 600 rpm.

Automatic leveling after misalignment is switched off in this mode by default.

Short press the button to exit the manual mode. The manual mode indicator will switch off.

##### Up and down laser dots

This laser allows to work with up and down laser dots (zenith, nadir). They are always on as long as the laser is on too.

##### Rotation speed

Rotation speed 600 rpm is set by default. Short press , to change the rotation speed. Rotation speed will change in the following way: 600-0-60-120-300-600rpm.

**Attention!** The slower rotation speed, the more visible the laser beam.

##### Scan mode

Short press to activate the scan mode.

Press repeatedly to select the scan sector – 0°, 10°; 45°; 90°; 180°.

Short press to move the scan sector counterclockwise,

short press to move the scan sector clockwise.

##### Work with laser receiver

Use universal mount included, in the delivery package, to fix laser receiver on telescopic leveling staff. Magnets on top side of laser receiver allow fixing it on metal surfaces.

##### Roto HVR

1) Short press , to switch on the laser receiver.

2) Short press , to switch on/off the sound signal. The sound signal is switched on by default – symbol will appear on the LCD.

3) Short press to select the mode: - high accuracy ±1.5 mm/50 m. Indicator will appear on the LCD. - average accuracy ±2.5 mm/50 m. Indicator will appear on the LCD.

Place the laser receiver in such a way, so that the sensor of receiver is in front of the laser beam. Move the detector up / down following the arrows on the LCD. For convenience, you can refer to the screen on the back side of the receiver. A down arrow on the display indicates that the receiver should be moved down. An up arrow on the display indicates that the receiver should be moved up. When the marks on the sides of the receiver coincide with the laser beam, and the received emits sound signal (if the sound signal is switched on), the receiver is at the same level with the level beam. In the Roto HVG, not only will the display show the direction of movement, but the exact distance to the laser line (in millimeters or inches).

##### Magnetic target board

A magnetic laser target will help to mark up ceiling systems or frame structures, such as drywall. The built-in magnet allows to fix the target on the ceiling rails or on the frame profile. The target has a linear marking on its surface, which helps to determine deviation from the nominal level and transfer control points when marking with a laser level.



##### Work with remote control

The buttons on the remote control duplicate the buttons on the control panel of the laser. In this way you can operate the laser without approaching it.

#### ACCURACY CHECK

##### Axis X

- 1) Place the product at 0.5 m distance from one wall and 10 m distance from another wall, so that axis X is aimed at the wall.
- 2) Turn on the product. As soon as self-leveling is finished, mark location of laser beam on both walls by points X1 and X2.
- 3) Turn off the product. Move it to the opposite wall, position of the product should remain unchanged.
- 4) Turn on the product. Align laser line with the previously made point X2. Mark point X3 on the opposite wall.
- 5) If distance between points X1 и X3 is more than 1,8 mm – turn off the product and contact service center.

##### Axis Y

- 1) Place the product at 0.5 m distance from one wall and 10 m distance from another wall, so that axis Y is aimed at the wall.
- 2) Turn on the product. As soon as self-leveling is finished, mark location of laser beam on both walls by points Y1 and Y2.
- 3) Turn off the product. Move it to the opposite wall, position of the product should remain unchanged.
- 4) Turn on the product. Align laser line with the previously made point Y2. Mark point Y3 on the opposite wall.
- 5) If distance between points Y1 и Y3 is more than 1,8 mm – turn off the product and contact service center.

## CARE AND MAINTENANCE

Rotary laser is a high-precision instrument and requires careful handling. Before using as well as after physical impact (falling, hitting) carry out accuracy check.

Observation of the following recommendations will extend the life of the device:

- 1) Store the product, spare parts and its accessories beyond reach of children and unauthorized people.
- 2) The instrument should be transported in the off state inside the case only.
- 3) Do not store the product in dusty or dirty locations. The product is dust and dirt resistant, but long-time exposure to these elements may damage internal moving parts of the product.
- 4) Store the product in dry locations. The product is water resistant, but precipitate, humidity and liquids containing minerals may damage the electrical circuits of the product. Do not try to dry the product by fire or a hairdryer.
- 5) Do not store the product in locations where temperature is more than +50°C. High temperatures reduce the life of electronic devices, damage batteries, deform or melt some plastic parts.
- 6) Do not store the product in locations where temperature is less than -10°C.  
After storage in low temperature conditions and subsequent transfer to a warm room, the device is heated, causing moisture condense inside the instrument and damage the chip.
- 7) Protect the instrument from bumps, drops, strong vibrations. This can lead to loss of accuracy.
- 8) Carry out accuracy check regularly (see paragraph «Accuracy check»).
- 9) To clean the product use a soft wet cloth. Do not use harsh chemicals, cleaning solvents or detergents.
- 10) Clean laser aperture regularly with a soft lint-free cloth with isopropyl alcohol.
- 11) Remove batteries from the product if it not used for a long time.
- 12) Do not leave discharged batteries in the product.

## UTILIZATION

Expired tools, accessories and package should be passed for waste recycle. Please send the product to the following address for proper recycle:

CONDTRÖL GmbH  
Wasserburger Strasse 9  
84427 Sankt Wolfgang  
Germany



Do not throw the product in municipal waste!  
According to European directive 2002/96/EC expired measuring tools and their components must be collected separately and submitted to environmentally friendly recycle of wastes.

## WARRANTY

All CONDTRÖL GmbH products go through post-production control and are governed by the following warranty terms. The buyer's right to claim about defects and general provisions of the current legislation do not expire.

- 1) CONDTRÖL GmbH agrees to eliminate all defects in the product, discovered during the warranty period, that represent the defect in material or workmanship in full volume and at its own expense.
- 2) The warranty period is 24 months and starts from the date of purchase by the end consumer (see the original supporting document).
- 3) The Warranty doesn't cover defects resulting from wear and tear or improper use, malfunction of the product caused by failure to observe the instructions of this user manual, untimely maintenance and service and insufficient care, the use of non-original accessories and spare parts. Modifications in design of the product relieve the seller from responsibility for warranty works. The warranty does not cover cosmetic damage, that doesn't hinder normal operation of the product.
- 4) CONDTRÖL GmbH reserves the right to decide on replacement or repair of the device.
- 5) Other claims not mentioned above, are not covered by the warranty.
- 6) After holding warranty works by CONDTRÖL GmbH warranty period is not renewed or extended.
- 7) CONDTRÖL GmbH is not liable for loss of profit or inconvenience associated with a defect of the device, the rental cost of alternative equipment for the period of repair.

This warranty applies to German law except provision of the United Nations Convention on contracts for the international sale of goods (CISG).

In warranty case please return the product to retail seller or send it with defect description to the following address:

CONDTRÖL GmbH  
Wasserburger Strasse 9  
84427 Sankt Wolfgang  
Germany