## LIMITED 1 YEAR WARRANTY

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In accordance with government regulations, you are advised that: (i) some states do not allow limitations on how long an implied warranty lasts and/or the exclusion or limitation of incidental or consequential damages, so the above limitations and/or exclusions may not apply to you, and further (ii) this warranty gives you specific legal rights and you may also have other rights which vary from state to state.

Return product freight prepaid with proof of purchase date (dated sales receipt) and $5.00 to cover postage and handling, to:
Zircon Corporation
*Attn: Returns Department
2390 Boswell Road, Suite 300
Chula Vista, CA 91914-3510 USA

Be sure to include your name and return address. Out of warranty service and repair, where proof of purchase is not provided, shall be returned with repairs charged C.O.D. Allow 4 to 6 weeks for delivery.
Customer Service, 800/245-9265 or 408/866-8600
Monday – Friday, 8 a.m. to 5 p.m., PST
E-mail: customerservice@zircon.com
www.zircon.com



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PEAK POWER 1 mW / WAVELENGTH 650 nm
CLASS II LASER PRODUCT

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ZIRCON®

# Remote Controlled Rotator
# RCR
# Instructions

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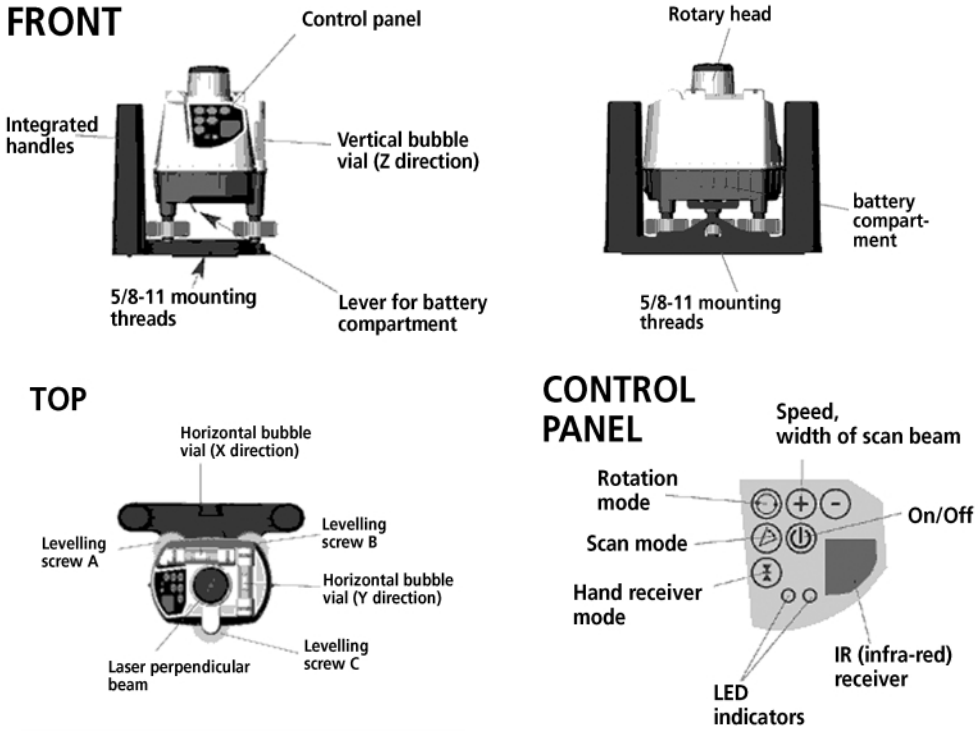
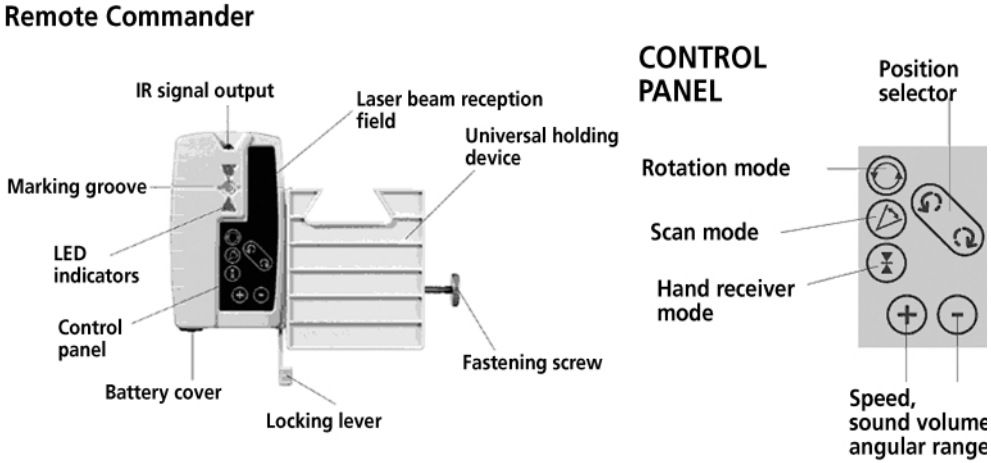
## RCR Components

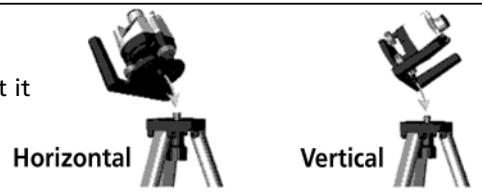



## Remote Commander Components




## Setting Up

Set the RCR up on a firm base or mount it onto a tripod with a 5/8-11 thread.




### Adjusting horizontal settings

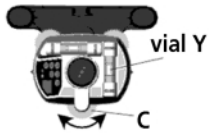
Start adjusting the level bubble vial X by turning the levelling screws (A) and (B).


### X-vial

Always look vertically at the vial in order to avoid reading errors. Now turn the levelling screw (C) to adjust the bubble vial Y.

### Y-vial

Repeat the whole action as necessary.

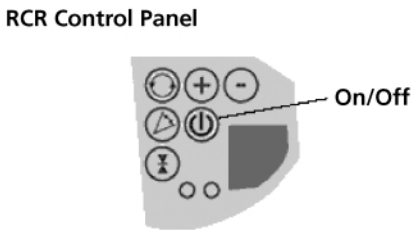



### Adjusting vertical settings

Set the RCR up vertically on its integrated handles or mount the RCR onto a tripod. Now adjust only the vertical bubble level vial (Z) with the levelling screw (C).

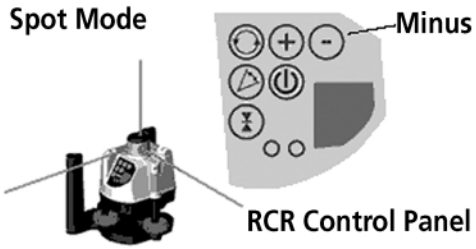
## Switch on RCR:

Press and hold the "On/Off" button for 1 second until the head of RCR starts rotating. The rotation mode is activated.



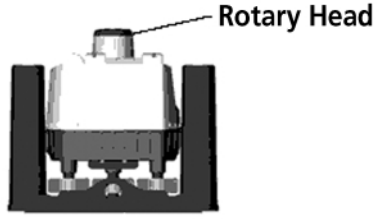

## Spot mode:

The rotating laser sends out a spot laser beam that can be focused on one point. In order to get into the spot mode, reduce the speed by pressing the minus button to zero.



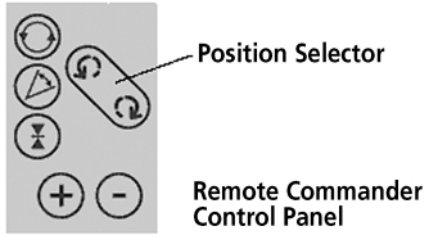

## To rotate laser

Change its position by manually turning the rotary head




## Rotate laser with Remote Commander

Change position by pressing the Position Selector buttons.




Operation

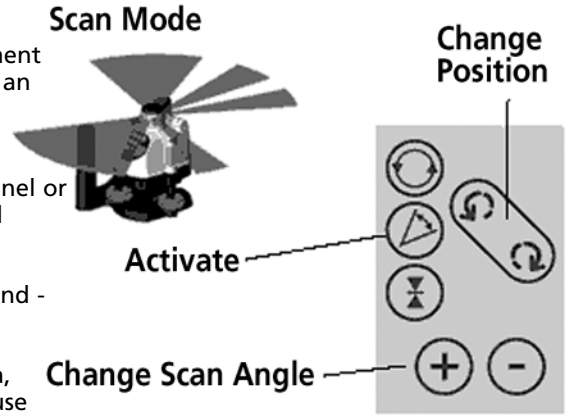
## Scan mode

Scan Mode is a light-intensive segment of line at user-selected width, with an adjustable position.

To activate Scan Mode, press the ACTIVATE button on the control panel or on the Remote Commander control panel.

To change scan angle, press the + and - buttons on either control panel.

To change position of the scan area, manually turn the rotary head, or use the Change Position buttons on the Remote Commander.

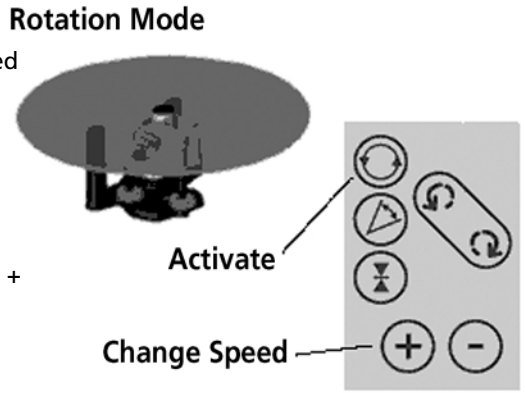



## Rotation mode

A laser beam rotating 360° with a speed of up to 120 rpm, or 550 rpm if using receiver.

Using either control panel, activate Rotation Mode by pressing the spin button.

Change rotation speed by pressing the + or - buttons.



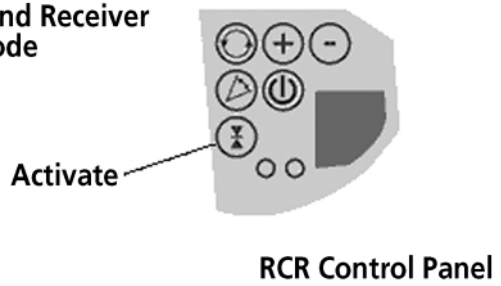
# Operation

## Hand receiver mode

Hand receiver mode gives you optimum reception quality with a constantly high speed of rotation (maximum speed = 550 rpm).

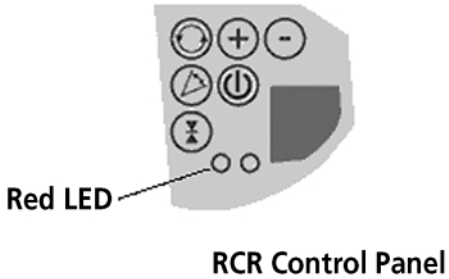
Activate this mode by pressing the Hand Receiver button on the RCR control panel.

Pressing the same button on the Remote Commander control panel activates the Remote Commander as a laser receiver.




## Note referring to all modes

The red LED lights up when you've reached the limit of range (e.g. maximum speed, biggest scan angle).



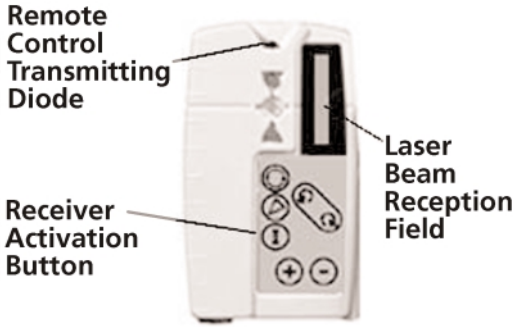

# Using the Remote Commander as a Laser Receiver

## Activating the laser receiver mode

Switch on the laser receiver mode.

In order to ensure that the mode is also activated on the RCR, point the IR transmitting diode of the RemoteCommander at the RCR unit.

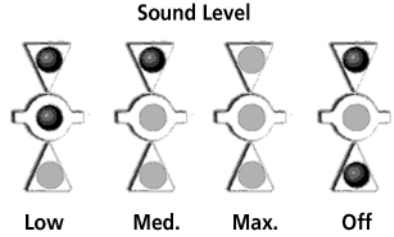
Activation is indicated by lighting of red/green LEDs and a signal sound on the Remote Commander.




# Using the Remote Commander as a Laser Receiver

## Sound volume control

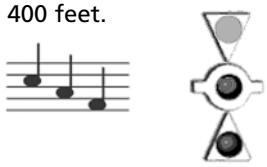
Use the + and - buttons to adjust volume after pressing the receiver activation button. The LEDs light up to indicate low, medium, and maximum sound, or sound off.




## Working with the laser receiver

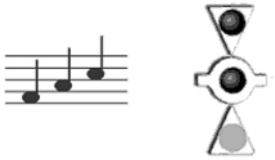
The receiver can detect the laser beam at distances of up to 400 feet.

Hold the laser receiver with the IR receiver at the height of the rotating laser beam and facing the laser beam. By means of LEDs and sound signals you can find the exact height of the laser level beam.

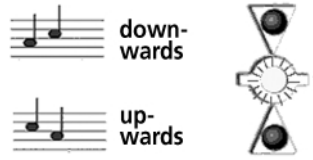


If the top LED lights, a descending series of tones sounds. Move the Remote Commander downwards.

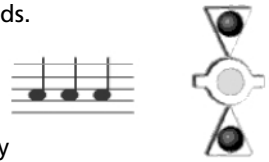
If the bottom LED lights, and an ascending series of tones sounds, move the Remote Commander upwards.



When the middle LED is yellow, you are very close, and the two-note tone tells you to move the Remote Commander slowly upwards or downwards, until the middle LED turns green.




When the middle LED is green, a series of equal tones sounds. The Remote Commander is exactly at laser level.

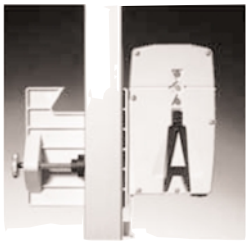


## Note:

When the middle LED gives off yellow light, you are already within a 3/16" range round the laser level (free-hand measuring). You will achieve a more accurate result (fine measuring), when the RemoteCommander is fixed (e.g. attached to a levelling staff). Then the green LED shows the exact center.

## Using the Remote Commander as a Laser Receiver

### Special features of Remote Commander



By using the universal holding device the RemoteCommander can be attached to a levelling staff. LEDs on the back show the same readings as the front so you can work from behind the receiver.

Through the integrated magnet the Remote Commander can also be used as an electronic target plate, e.g. in acoustic ceiling construction and when setting up and adapting metal and storage shelves.

## Changing Batteries

### RCR:

When the red LED is constantly flashing, the batteries must be changed. To do this, pull the lever under the unit slightly downward and forward. Remove the door and insert new batteries with polarities shown on case indicating which end of battery faces out. Replace door. Requires four AA batteries.

### RemoteCommander:

Turn the knob on the bottom side and remove it. Change batteries inserting with plus sign facing in and replace knob. Requires two AA batteries.

### Connection of an external AC adaptor to the rotation laser

When connecting an external AC adaptor, the batteries will be bypassed. It is not possible to charge rechargeable batteries with the power supply attached to the rotation unit. Please use only the AC adaptor supplied.

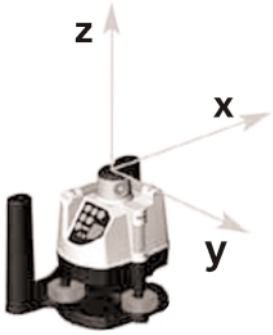
### Note:

Batteries should not be exposed to excessive heat, such as sunshine or fire. å

## Calibration

The RCR is a high-precision rotating laser and has been factory calibrated within the tolerance specified. Regularly check the calibration before use, after transporting and after long storage periods.

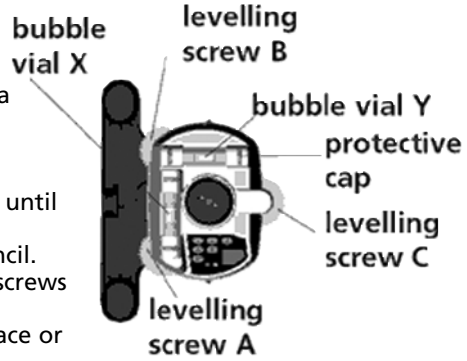
Be aware that a re-calibration performed by the user is only as an approximation and the accuracy of calibration depends on your care.




### X/Y-axis Preparation

Note: For the purpose of calibration or verifying level, the unit should be placed at a distance of approx. 40-60 ft. from a vertical target (e.g. wall).

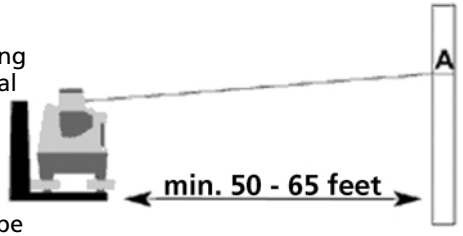
1.Turn the levelling screws all the way down until they stop.
2.Make a reference mark on each with a pencil. Using the mark as an aid, turn the levelling screws each up again by 3 turns.
3.Set the unit on a flat, somewhat level surface or screw it onto a tripod.
4.Align the surface or the tripod in such a way that the bubbles of the RCR are coarsely adjusted and move freely.




### Checking the calibration of the Y axis

1. Mark either levelling screw A or B as a reference screw. Align the unit only with the other levelling screws.

2. Level the unit with the other two levelling screws. Turn on and shine beam on a vertical target surface 50 to 65 feet away.




### Note:

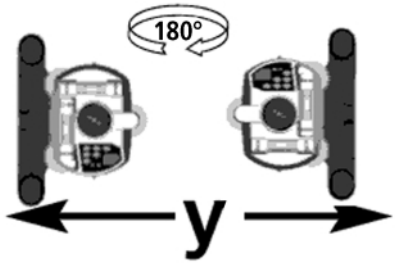
Any mode can be used but spot mode will be brighter and more visible at longer distances.

3. When levelled, mark the point A on the target.

# Calibration

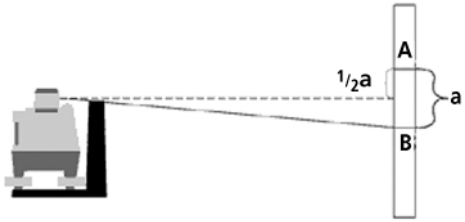
4. Turn the unit 180° without changing the tripod or surface height.

5. Using the same two levelling screws, relevel unit.




6. Mark point B on the target.

If point B is at the same height as point A, then the Y level is accurately calibrated. If this is not the case, the unit must be recalibrated.




## Re-calibration of the Y axis:

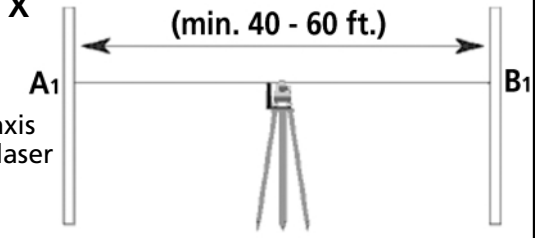
1. Adjust the levelling screws (do not use the reference screw) until the laser is exactly centered between points A and B. Take time to be as precise as possible.

2. Remove the caps on the ends of the bubble vial and reset the vial with the calibrating screws using the hex wrench supplied.

3. Gently raise or lower either end of the vial as needed to center the bubble. Replace caps.

## Checking and re-calibration - X axis

Proceed in the same way as for checking and calibration of the Y axis but turn the unit 90°, to align the laser beam over the X vial.




# Calibration

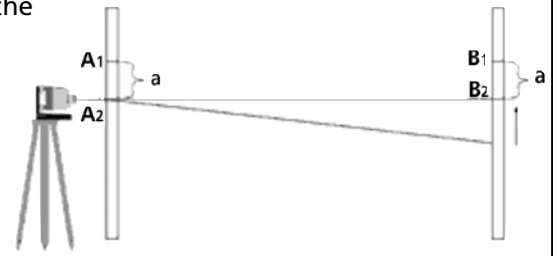
## Z axis: Calibrate vertical vial

Note: Prior to any Z axis calibration, make sure that the horizontal vials (X and Y vials) have been correctly calibrated.

1. Set the unit up horizontally between two targets. (Remove the protective cap at the side of the bubble vial before calibrating)

2. Mark points A1 and B1 on the targets.

3. Set the unit up vertically in the vicinity of target A.




4. The laser strikes the first target and marks point A2 at the same time.

5. Measure the distance between A1 and A2 (a).

6. Transfer the distance measured (a) to target B.

7. Adjust the laser beam with the levelling screw to the height of B2.

8. If the bubble does not indicate levelled, gently raise or lower either end of the vial as needed to center the bubble. Replace caps.

# Technical Data

| | |
|---|---|
| **Laser** | Class II |
| Output power | <= 1 mW horizontal; <0.33 mW vertical |
| Wavelength | 635 nm |
| **Accuracy** | ± 1/8" at 50 ft. (± 3.1mm at 15 m) |
| Vials | ground glass, 1.75 arc minutes |
| Beam splitter | ±20 arc seconds |
| **Functions** | |
| Operating modes | rotating, scan, spot and receiver |
| Settings | change of position, speed, sound, volume, angular range, position |
| Speed of rotation | 0 ... 120 rpm variable; 550 rpm for receiver |
| Remote control | Infra-red, up to 50 ft. range |
| **Power supply** | |
| Battery service life | 40 hrs (4AA, alkaline |
| Continuous operation | Jack for AC power adaptor |
| **Other technical data** | |
| Working temperature | 32°F to 122°F (0°C to 50°C) |
| Storage temperature | 14°F to 158°F (-10°C to 70°C) |