

ARL516 - Auto levelling Rotating Laser  
Builders & Plasterers Laser



**ARL516**

# Instruction Manual



[www.redbacklasers.com.au](http://www.redbacklasers.com.au)

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## User Safety

- Laser output sign lies near the output aperture.
- Do not stare directly into laser beam.
- Do not disassemble the instrument or attempt to perform any internal servicing. Repairs and service should be performed only authorised service centres of Redback Lasers.
- This instrument complies with the safety Classification standards of laser radiation.



CAUTION: Class II laser <1mW at 635nm.  
Do NOT stare into laser beam or aim at another person.

Follow relevant Australian Standards

# ARL516™ INTRODUCTION

Congratulations on purchasing the ARL516™ a heavy duty self levelling builders, plasterers and concreters rotating lasers level built for the toughest of work sites.

The ARL516™ is ideal for general site levelling, plasterers and concreters, simply set it up on a tripod, unlock the pendulum, it self levels and the laser starts rotating. Then using the supplied LR715 receiver you can set up your levels.

The ARL516™ is manual levelling when set up on its side for vertical alignment and site layout.

The ARL516™ is also a handy indoor laser with scan line modes and an included remote control.

Other features of the ARL516™ include rechargeable Ni-Mh and Std "C" Size battery operation and Two Year Redback Warranty. (See page 12)

## ARL516™ Included Accessories

- ARL516™ Laser Unit
- Protective Carry Case
- Rechargeable Ni-Mh Battery Pack
- Standard "C" Cell Battery Pack
- Charger
- Laser Receiver LR715
- Receiver Staff Clamp
- Remote Control
- Magnetised Target
- Glasses to Assist Viewing of Laser
- Instruction Manual



# ARL516™ DIAGRAMS

## ARL516™ Laser Unit

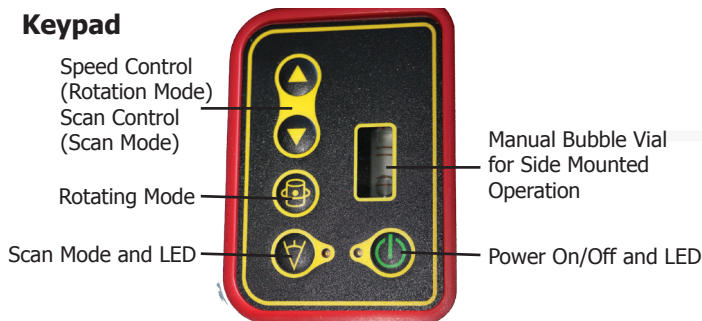
**RedBack™**  
**Lasers**

**ARL516**

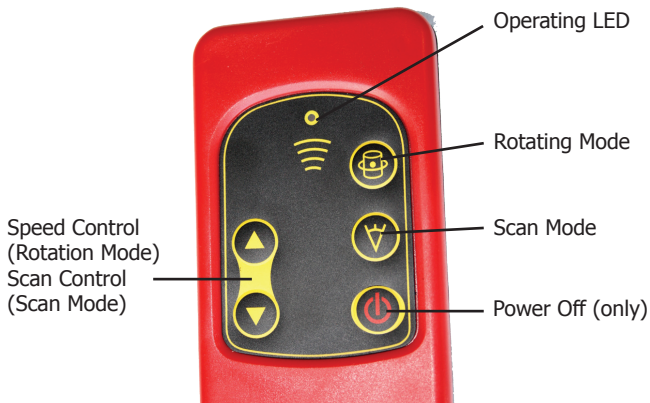


1. Laser Output Window
2. Heavy Duty Rubberised Casing
3. Battery Pack (rechargeable)
4. Keypad
5. Recharging Socket
6. Levelling Knob Side Mounted
7. Side/Wall Mount
8. Datum Marker
9. Pendulum Locking Knob
10. 5/8" – 11tpi Screw

## Keypad



## Remote Control



## Receiver - LR715



# ARL516™ OPERATING INSTRUCTIONS

## Battery Instructions

The ARL516 has two battery options; either 4 x standard "C" size Alkaline or the Ni-Mh rechargeable pack. For standard 4 x "C" alkaline operation simply insert into standard battery holder in the direction indicated and tighten the locking screw.

To use the rechargeable battery pack first remove standard battery pack if inserted and replace with the rechargeable battery pack and tighten the locking screw.



To charge the battery pack simply insert the charger plug into the charging socket. The LED on the charger is illuminated red during the charging process and will turn green once the battery is fully charged. Only the special rechargeable pack can be charged and it can be charged either when inserted or when not inserted into the laser.


When the power LED on the keypad flashes, the rechargeable battery packs need recharging or standard batteries need replacing. Note the charger will only charge the supplied rechargeable battery pack.

### **Handy Hints**

- *Prior to initial use, charge the rechargeable batteries for at least 8 hours.*
- *Running rechargeable batteries completely flat will increase battery life.*
- *The ARL516™ can operate off mains by plugging the charger (for indoor use only) into the unit.*
- *Remember the ARL516™ can operate using standard batteries when rechargeable pack is out of charge.*

## Turning Laser On (Horizontal Operation)


Before the ARL516™ can be powered up for normal horizontal rotation the pendulum locking knob first needs to be rotated to the "ON" position, this disengages the protective pendulum lock.

Now when the power button  is pressed the laser will be powered up and the head of laser begins to rotate and after a couple of seconds the magnetically dampened pendulum will be self levelled.






If the laser emits a loud beeping sound then the laser housing is setup outside self levelling range, re-setup and try again.

## Turning Laser On (Vertical Operation)

The ARL516™ can be used on its side for vertical rotation and alignments. In this orientation, the Pendulum lock must remain in the "OFF" locked position, levelling of the laser is manual and is achieved by levelling off the bubble vial built into the keypad using the "Levelling Knob" see page 4. Power up with power button . Note the power button on the remote is to turn off ONLY.







## Rotation Speed Settings

- The ARL516™ by default starts in rotation mode and so the rotation button  only needs to be pressed when switching from scan mode back to rotation. Whilst rotating the speed of rotation can be changed by pressing the up and down arrow buttons on the keypad or remote  . Rotation speed will effect receiver performance at different distances and also help visibility of the laser beam when used indoors.

# ARL516™ OPERATING INSTRUCTIONS

## Rotation Scan Modes - For Indoor Visibility

The Scan Mode stops the laser from rotating and toggles the beam left to right, intensifying the beam making the laser more usable indoors as a visible laser. You can set the scan angle to 0°, 20° and 40° and shift the beam both left and right. The Scan Mode can be operated by both the Control key pad on the laser and also the Remote Control.

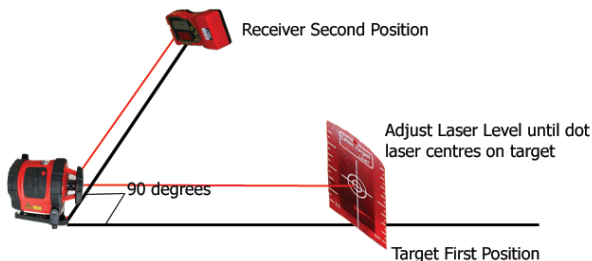
- Press the Scan button  to enter scan mode, LED will flash.
- The first press, area scan 20°, second press 40°, third press 0°, fourth press 20° etc....
- Move the scan line by pressing Scan Control   buttons.
- Press and hold Scan Control button to rotate the scan line quickly.
- To return to rotation mode press the Rotate button .

## Vertical Rotation Operation for Site Layout

The ARL516™ can be used on its side for vertical alignment or together with the dot laser out of the front to produce a 90 degree square for site layout. The ARL516™ can be placed on its side with the datum marker over the correct point and the laser levelled with the bubble vial and manual levelling knob.

For site layout squaring;







- Place datum marker over the datum point marking the conjunction of the 90 degree lines.
- Align laser housing so dot is striking target point along the one line of the 90 degrees, adjust the housing of the laser left and right to achieve this.
- Once the dot is on the target use the receiver to pick up the rotating line on the second line of the 90 degree. Your square is now set.



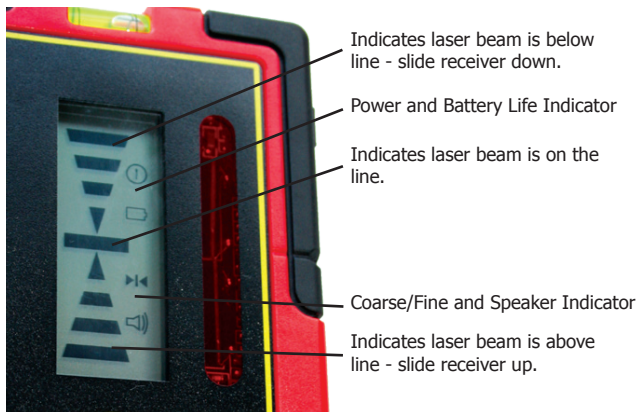
# LR715™ RECEIVER INSTRUCTIONS

## Laser Receiver LR715 (refer to diagram page 5)

The LR715 is a heavy duty dual sided display rotating laser receiver, it can be either hand held or with the staff bracket clamped onto a staff. The bubble vials can be used to keep the receiver level.

- A press of the power button  toggles the receiver on and off.
- The Speaker button  toggles through 3 speaker volumes.
- Pressing the Coarse/Fine Mode button  toggles through 3 levels the first being fine mode indicated by  on the LCD the accuracy of level is at its highest with 1mm tolerance movement by the receiver before showing it off level. The next coarser mode  allows 2mm before showing off level the third press shows no symbol on the LCD and allows 3mm before showing off level, these two coarser modes are more suitable for general site levelling.
- The Back Light button  toggles the LCD display back light.

The LR715 has two large LCD displays with progressive bars indicating when the laser gets closer to the level mark. Move the receiver up and down (side to side vertical rotation) slowly and watch the display change when the solid tone is heard and the centre line is shown then the receiver is at the height of the laser beam plane. The receiver will auto power down after 10 minutes when not receiving laser pulses.



## Technical Specifications

Laser Wavelength	635nm <1mW
Laser Class	II
Range with Receiver	400m Diam Rotating
Horizontal Accuracy	±3mm/20m
Rotation Speeds	High, Medium, Low
Scan Angles	0° - 20° - 40°
Self Levelling Range	±3.5°
Temperature Range	-10°C - +45°C
IP Dust Water Resistance	IP66
Power	4 x "C" Alkaline or Ni-Mh pack
Low Power	Power LED Flash
Size	162x180x202mm
Weight	2.55Kg

## Calibration & Self Check

All Redback Lasers have been checked for calibration and certified by one of our technicians here in Australia prior to despatch and should under normal conditions not go out of calibration. A calibration certified sticker with the date and name of technician is located on the laser itself. It is worth checking calibration from time to time particularly after any known knocks or drops. An easy way to continually check calibration is to always double check you work with the laser located in a different position or use an alternate vertical line. Various other methods for checking calibration can be found at [www.redbacklasers.com.au/downloads](http://www.redbacklasers.com.au/downloads) or the laser can be returned to our service department for checking and re-calibration. We at Redback Lasers provide a once off free calibration and check within the duration of the warranty period see page 12 for details.

## Care & Maintenance

- Keep laser and accessories stored in protective case.
- Make sure laser is stored dry, dry out before storage to prevent damage.
- Remove batteries when not used for an extended period of time to prevent leakage.
- The ARL516™ is a precision instrument and should not be subjected to excessive knocks, drops or vibrations.
- Self check calibration from time to time. See page 9
- For service contact Redback Lasers. [www.redbacklasers.com.au](http://www.redbacklasers.com.au)

## Trouble Shooting - FAQ

- Q. *I hear a continuous beeping in side (Vertical rotation) mode!***
- A.** *Check the pendulum lock is in the "OFF" Locked position when used in vertical rotation mode on its side mount.*
- Q. *The Laser does not power up in normal Horizontal mode!***
- A.** *Check the pendulum lock has been unlocked "ON" position for horizontal rotation operation.*
- Q. *The Laser does not power up!***
- A.** *Check the rechargeable batteries are charged and connected correctly and or replace standard "C size Alkaline batteries and check they are inserted correctly.*
- Q. *Using the receiver I get multiple heights showing as level!***
- A.** *This is a common problem with all laser levels and is usually due to the laser being reflected off a window or other reflective surface. So the original laser beam plus the reflection are both hitting the receiver at slightly different heights. To prevent this, set the laser unit up so that you cannot see a reflective surface from where you are holding the receiver i.e. Any glass behind receiver not the laser.*

# REDBACK LASERS WARRANTY

Duration of warranty is fixed and automatic, when we advertise 2 years on a particular model, its two years. No drop down to a lesser time if you forget to register, registration is NOT required just proof of purchase showing date.

Although the duration of our warranties are for a particular period it does not mean we will charge you for a genuine warranty failure a month or two outside that warranty period, we believe in a fair go.

Even though a product shows signs of accidental damage, scratches and the like, we will not automatically fail the warranty claim, if the fault is NOT caused by a drop or misuse and is a genuine warranty failure then we will cover it.

Calibration is not covered by warranty much the same as the wheel balance on your car is not covered by warranty, we do however offer a one off free re-calibration service during the period of warranty, conditions and details below.

CMI Industries Pty Ltd provides consumers with a warranty to our products, this is in addition to requirements of any relevant legislation such as the Competition and Consumer Act 2010. Definitions:

"CMI", "We" or "Our" refers to CMI Industries Pty Ltd (ABN 29 102 713 922) of 8 Autumn St, Geelong West, Victoria 3218 ph (03) 5228 0777

"You" or "Consumer" refers to the initial purchaser of the product.

"Product" refers to goods manufactured by or for CMI Industries Pty Ltd under the brands of RedBack Lasers, Level1Laser and CMI Lasers.

"Material" refers to material or component used in the construction and manufacture of the product.

"Workmanship" refers to handling, assembly and manufacturing processes done by or for CMI Industries Pty Ltd in order to manufacture the products.

"Warranty Period" For the ARL516 Two Years. Warranty period is from original purchase date, no extension is made in the event of warranty replacement products supplied or time spent being repaired.

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage.

You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure. Ni-Mh Battery & Charger have 1 Year Warranty.

CMI warrants that our products will be free from defects in material and workmanship for the warranty period.

CMI promises to repair or replace, free of charge, the product or part of product if found to be faulty due to defective workmanship or materials within the duration of the warranty as long as the following terms and conditions are met;

- Product must not have been misused or abused, must not have incurred accidental damage or had un-authorized repair or tampering that has caused or contributed to its fault or failure.
- You must contact CMI by phone, mail or email immediately when a fault or defect has become apparent and within the warranty period.
- Product must be returned to store of purchase or directly to CMI, we will cover cost of postage only when sent by our reply paid Australia Post service (Australian Main land and Tasmania only) details will be provided upon phone, post or email communications with us.
- CMI will cover cost of freight back of repaired or replaced product to original purchase store or you directly (depending on how it was sent Australian Main Land and Tasmania only).
- CMI will determine whether to repair or replace the product or part of product on a case by case basis.
- Further exclusions in this warranty include damage or defect caused by use of non-original accessories or parts, damage in transportation, normal wear and tear, damage through moisture, damage due to electric surge, failure due to neglect or damaged caused by adjustments not outlined in CMI's instructions.

Subject to the requirements of all applicable Australian Acts or legislation and to the extent permitted by law, CMI accepts no liability (whether expressed or implied) of any nature whatsoever for any loss of earnings, hiring of replacement equipment, inaccurate work carried out by the consumer or agent, damage or injury arising as a result of any fault in the product. It is the consumers responsibility to maintain good working practices and regularly test their tools for accuracy and serviceability.

Calibration of the product is not covered by warranty subject to the requirement of all applicable Australian Acts or legislation and to the extent permitted by law, CMI does however offer a free re-calibration service (once within the period of the warranty) you are liable for the cost to send the product to us then we will recalibrate and return the product to you free of charge. Note this offer is invalid if the product shows signs of misuse or accidental damage that has caused it to go out of calibration.

A CMI product returned that fails to fall within the terms and conditions of this warranty will be quoted for repair.

RedBack Lasers™ distributed by CMI Industries Pty Ltd  
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