# METSYS

# RL30 SERIES
# MANUAL

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Metsys RL30 Series lasers.

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## ON THE COVER

Metsys RL30 Series lasers.

# INTRODUCTION

Thank you for purchasing the Metsys RL30series Automatic Electronic Self- Levelling Rotary Laser Level. Please read this manual thoroughly before operation.

Use your RL30 Series Self-Levelling Laser for these and many other projects:
Outdoor General Construction Applications & Site Preparation, Grading & Excavating, Batter boards and Foundations, Masonry Work, Setting Concrete Forms, Machinery Installation, Marking Elevation, Septic Work, Paving Roads, Driveways, Checking Depth of Trenches.

RL30HV, RL30HVG & RL30-GRADE Applications
Drop Ceiling Installation, Floors, Cabinets & Shelves, Carpentry, Pools, Decks &Patios, Flagpoles, Aligning 90° Joints &Edges, Landscaping, Tile Work, Septic Work, Plumbing, Batter boards, Fencing, Walls & Partitions, Remodeling, Siding Installation, Doors & Windows.

## DESCRIPTION

## MODEL

| DESCRIPTION | MODEL |
|---|---|
| Auto Laser RL30H Visible Horizontal Beam Electronic Self-Levelling Rotary Laser. | **RL30H** |
| Auto Laser RL30HV Horizontal/Vertical Visible Split-Beam Electronic Self- Levelling Rotary Laser. | **RL30HV** |
| Auto Laser RL30HV-G Horizontal/Vertical Visible Split-Green Beam Electronic Self-Levelling Rotary Laser. | **RL30HV-G** |
| Auto Laser RL30-GRADE Horizontal/Vertical Visible Split-Beam Electronic Self-Levelling Rotary Laser. Dual Dial-in Grade. | **RL30-GRADE** |

# FEATURES & ICONS

## FEATURES – FIGURES 1,2 &3

1. Self-Levelling (+/-5°)Rotating Laser Head. (With vertical visible split-beam RL30HV, RL30HVG, RL30-GRADE only)
2. Battery Level LED Indicator Lights When ALL lights illuminate, instrument has full power. When indicator lights reach Yellow it is time to change/recharge batteries. (RL30H, RL30HV, RL30HVG only)
3. Anti-Drift System LED Indicator (RL30H, RL30HV, RL30HVG only)
4. Power ON/OFF button
5. Manual Mode LED Indicator (RL30H, RL30HV, RL30HVG only)
6. Manual Grade Adjustment Buttons (RL30H only)
7. 5/8" x11 Tripod Mounting Threads (for level work)
8. Heavy-Duty Handle-(Built in Trivet for Laydown and Vertical Applications with 5/8" x 11 Thread RL30HV, RL30HVG, RL30-GRADE only)
9. Select/Adjustment Buttons (RL30-GRADE only)
10. LCD Display Panel(RL30-GRADE)
11. Mode Selection Button(RL30-GRADE

## ICONS

**A** Power Button (Allow 60 seconds for unit to self-level)

**B** ADSButton– Anti-Drift System ON | OFF (All models)

**C** Manual Mode/Automatic Level Button (RL30H, RL30HV, RL30HV-G)

**D** Scanning Feature – 4 Pre-set Angles (RL30HV, RL30HV-G, RL30-Grade)

**E** Variable Speed Rotation Button – 4 Speed Selection (RL30HV, RL30HV-G, RL30-GRADE)

**F** CW and CCW Button Clockwise and Counter- Clock- wise Head Positioning (Press and Hold Button Moves the Rotation More Quickly) (RL30HV, RL30HV-G, RL30-GRADE)

**G**

**H** Manual Grade Adjustment Buttons (RL30H, RL30HV, RL30HV-G)

**I**

**J** Enter (Only on the RL30-Grade unit)

**K** X and Y axis select (only on the RL30-Grade unit)

# REFRENCED FIGURES
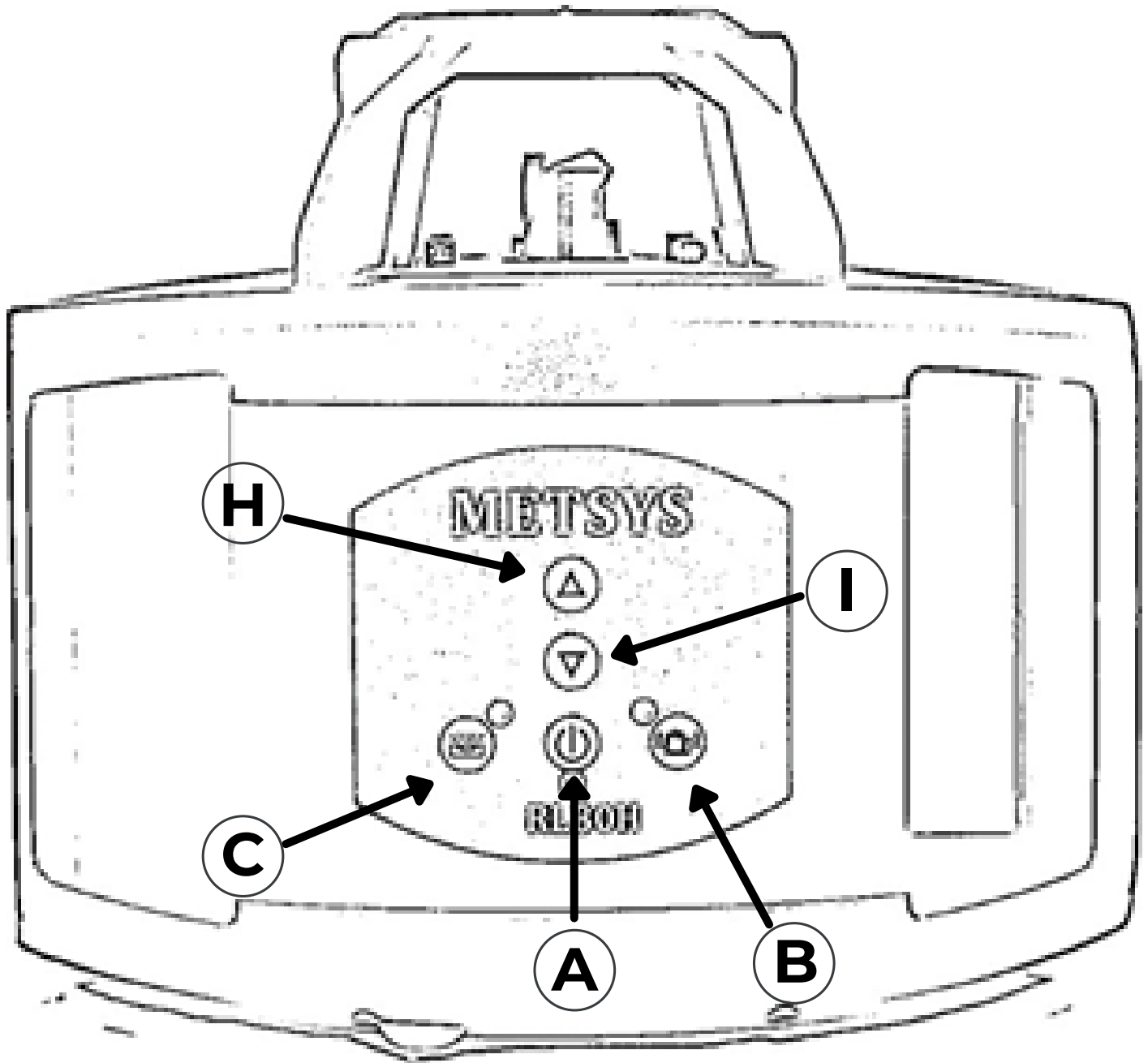


# FIGURE 1
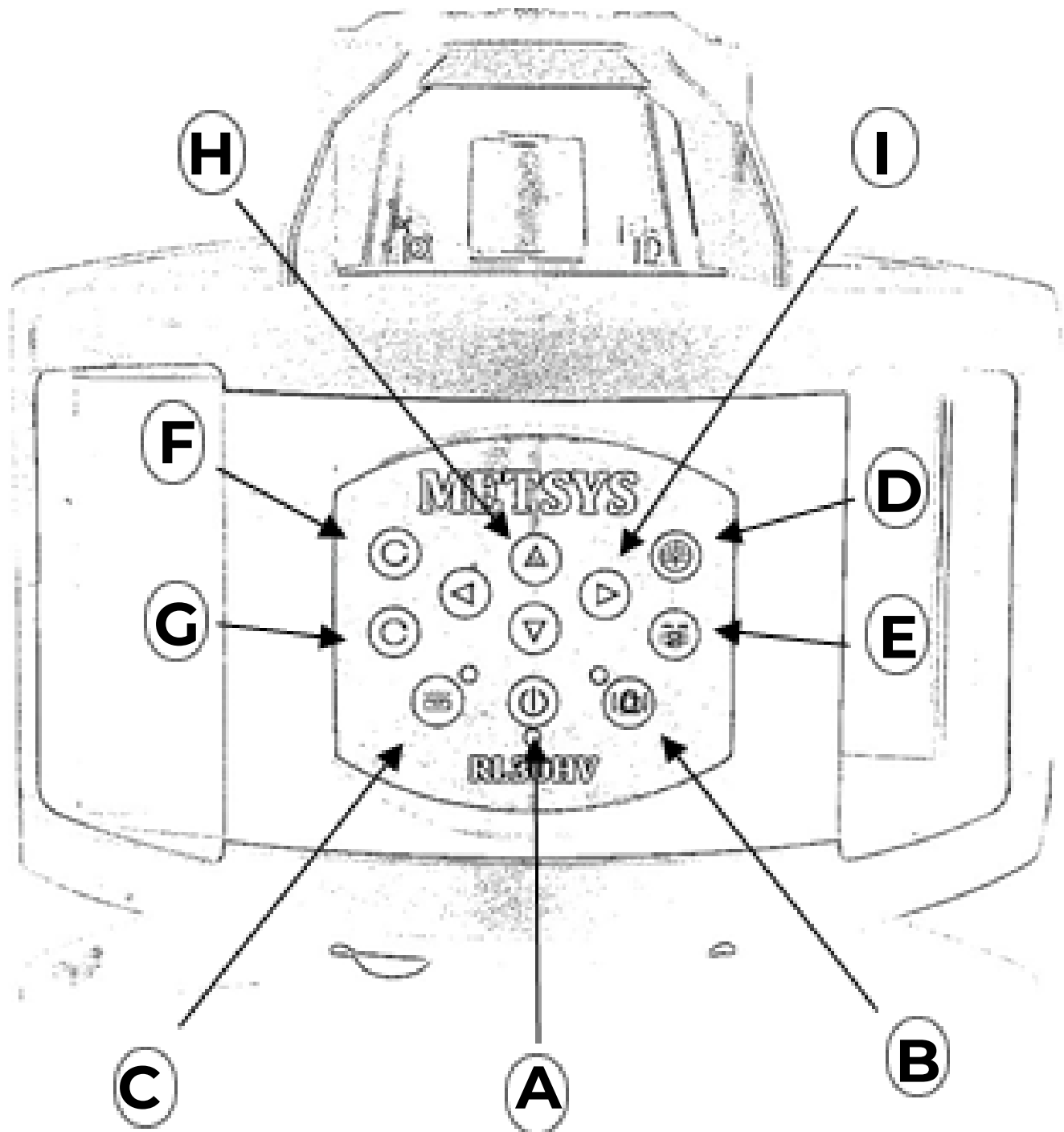
# FIGURE 2

**FIGURE 3**

Fig. 4

Fig. 16

Fig. 5

Fig. 6

Figure 18

Fig. 7

Fig. 8

RL30H, RL30HV Errors

X—AXIS ERROR

Y—AXIS ERROR

SPINDLE ERROR

Fig. 9

Figure 19

Fig. 10

Figure 11

Figure 13

Figure 14

Figure 20

Figure 12

X= -10.00% Y= -10.00%

X= +10.00% Y= +10.00%

X= -10.00% Y= +10.00%

Figure 15

Fig. 21
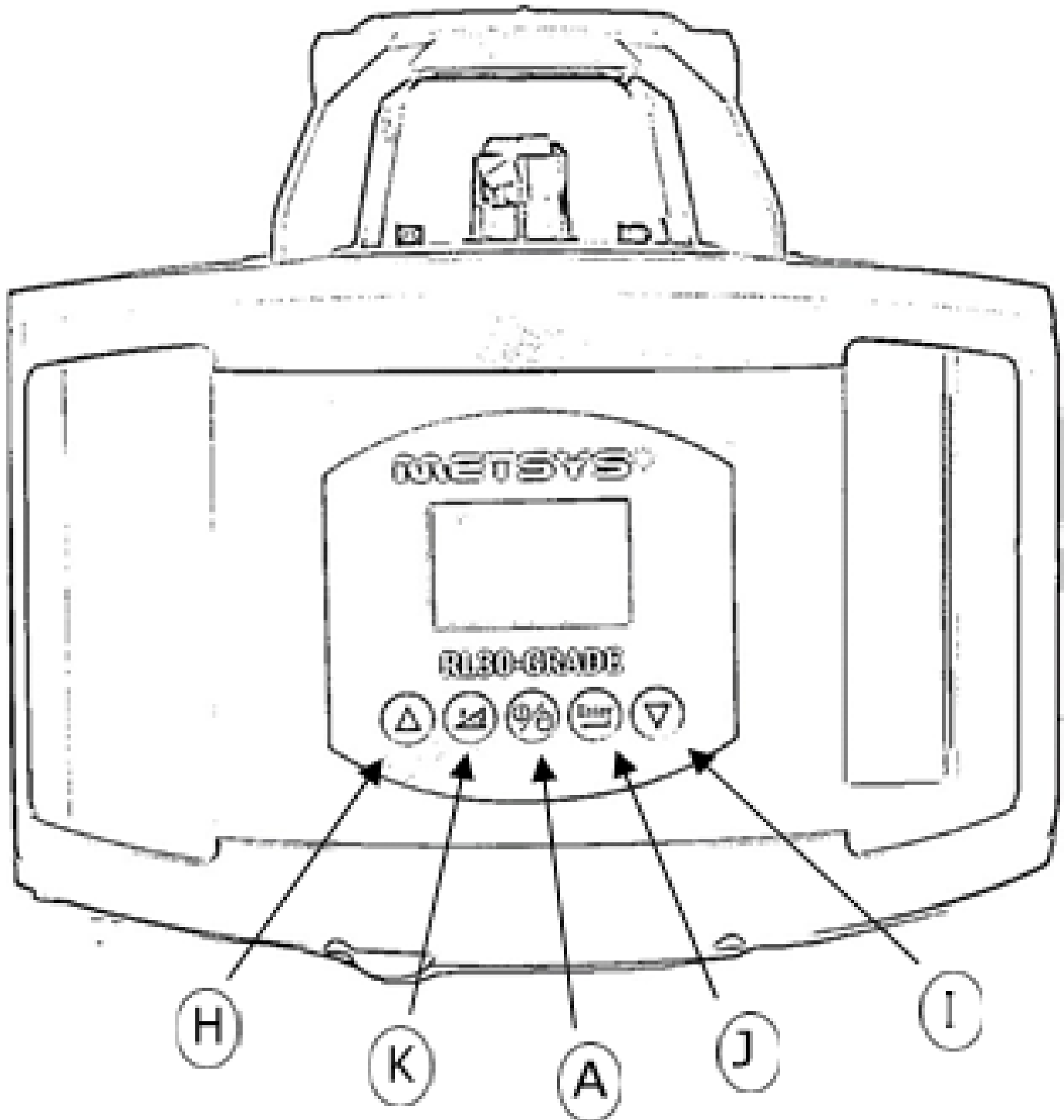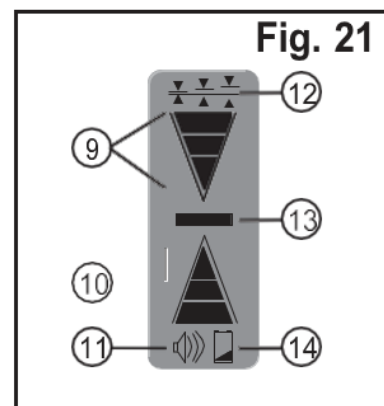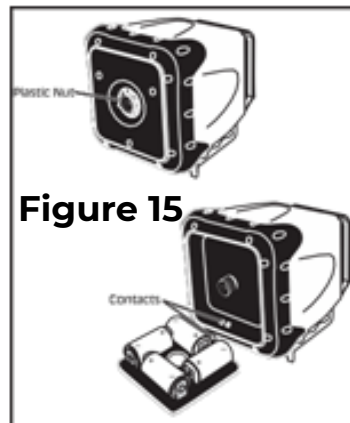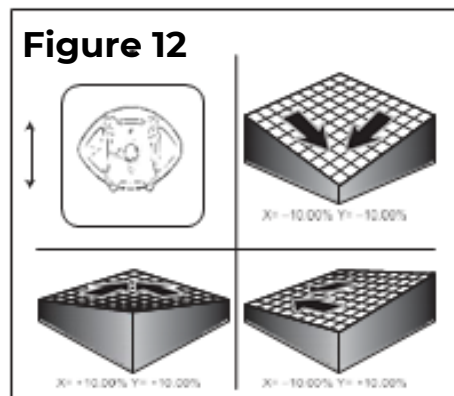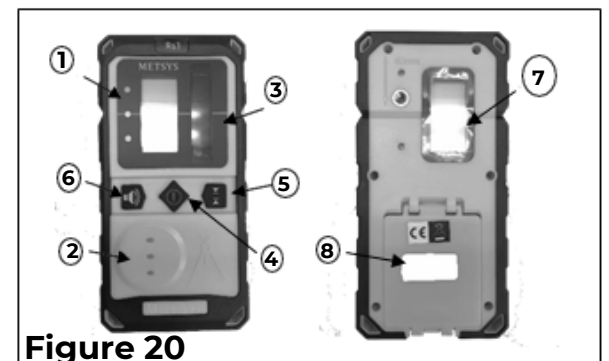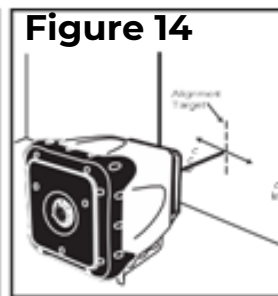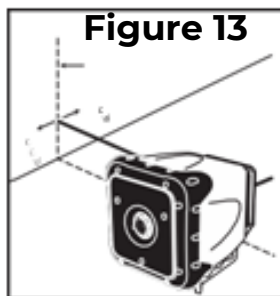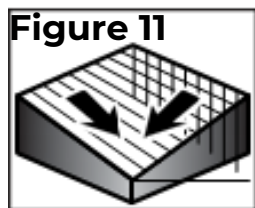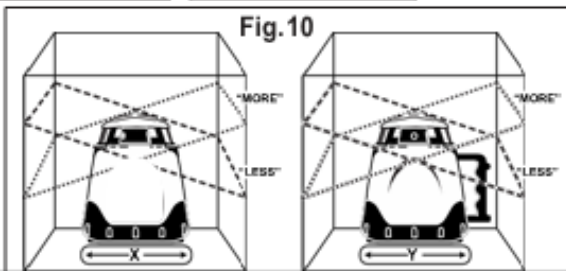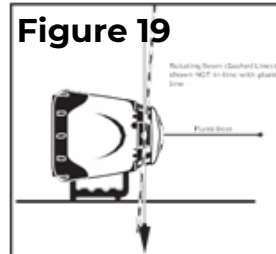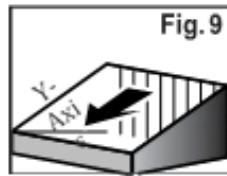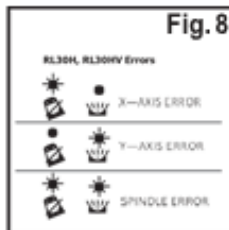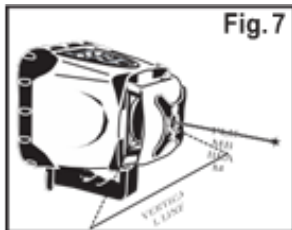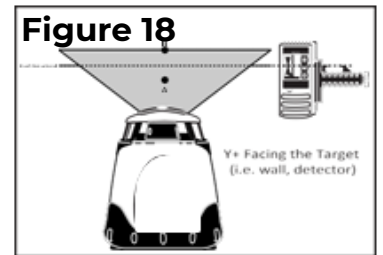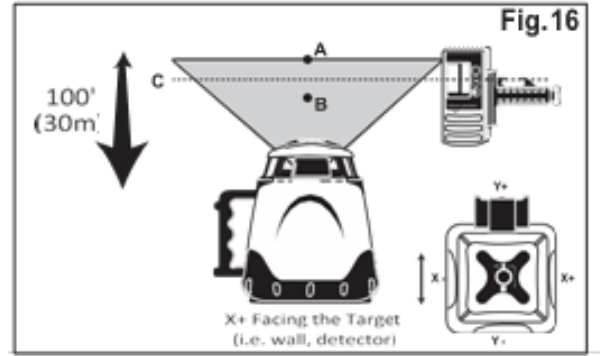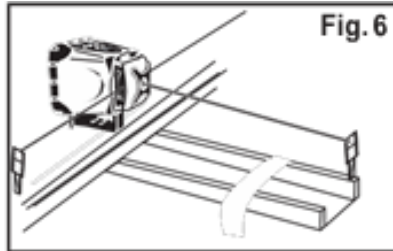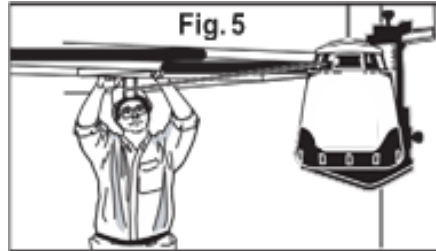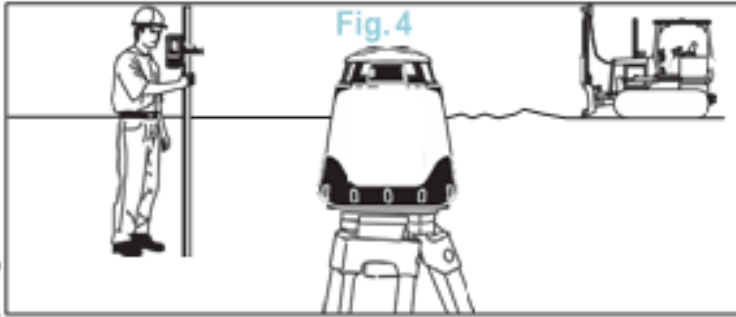
# REFRENCED FIGURES



Figure 24

Figure 23
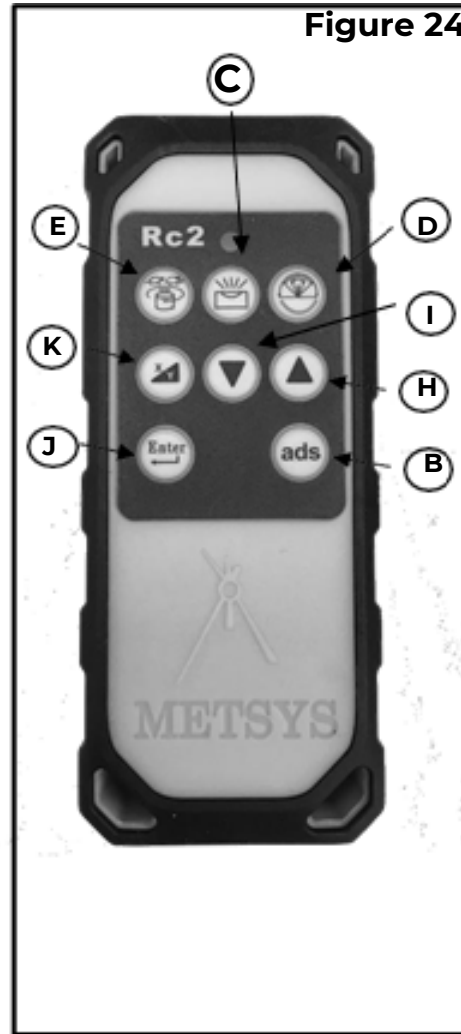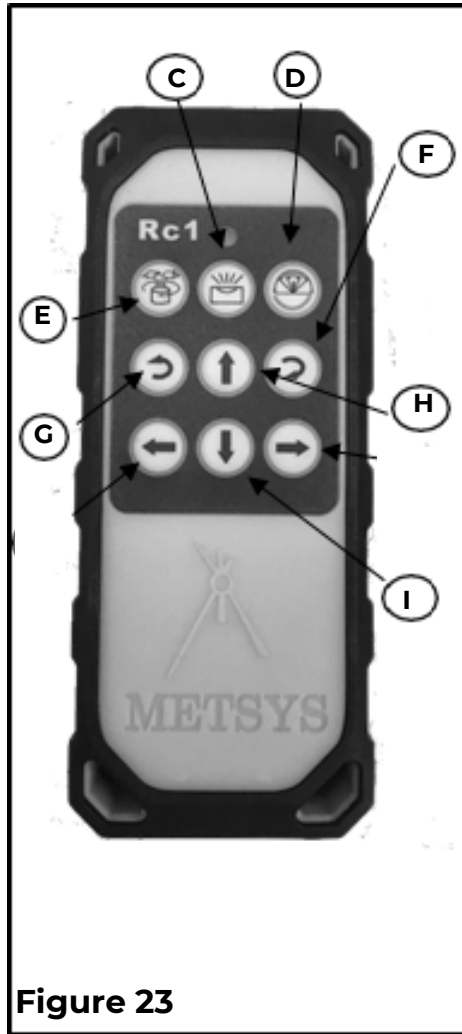
## FEATURE 20 & 21

1. LCD Read out window
2. Speaker
3. Beam Capture window
4. Power ON/OFF
5. Beam Resolution
6. Volume ON/OFF
7. LCD Readout window
8. Battery Door

## LCD DISPLAY

9. High Beam
10. Low beam
11. Speaker Volume
12. Beam Volume
13. Level Beam
14. Battery Strength

# SAFTEY AND CERTIFICATION

Working safely with this instrument is possible only when the operating and safety information is read completely, and the instructions contained therein are strictly followed.

The use of controls, adjustments, or the performance of procedures other than those specified herein may result in hazardous radiation exposure.

Do not stare into the laser beams. Do not direct the laser beam at other persons. Do not disassemble the instrument or attempt to perform any internal servicing. Laser classis indicated on the instrument.

Repair and servicing of this laser are to be performed only by Metsys or authorized service centers.

This laser complies with all applicable portions of title 21 of the Code of Federal Regulations set by: The Dept. Of Health, Education, and Welfare; the Food and Drug Administration; the Centre for Devices; and the Bureau of Radiological Health.

The laser has also been tested and complies with the CE certification requirements set forth in the EC regulations 89/336/EEC and EN 61000-6-1 (EN50082-1), EN 61000-6-3 (EN50081-1) and IEC 60-825-1.

# OPERATING INSTRUCTIONS
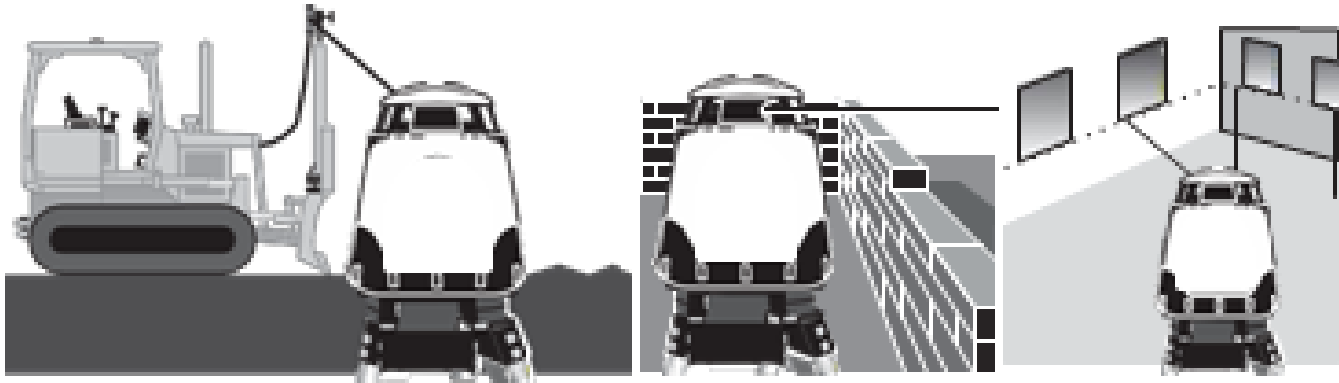


NOTE: Setup a Benchmark

During the workday, periodically check your initial set-up to ensure that the laser reference has not moved. Establish, at a suitable distance(furthest possible), a benchmark (reference) on a stable surface (i.e. tree, building). Periodically during the workday, check the benchmark to ensure that your setup has not moved.

***Operating Instructions for General Construction Applications.***

NOTE: A level plane of laser light is created by the rotating beam of the laser. The laser light can be used to reference elevations with the use of a laser detector. (Fig. 4)

1. **Place the instrument ton a flat, level surface such as a tripod. Setup the instrument in an area where it cannot be obstructed and is set at a convenient height.**
2. **Press the (A) button. Allow the instrument to self-level.**
3. **Setup a "Benchmark".**
4. **RL30HV, RL30HVG& RL30-GRADE Only– Set the Variable Speed Rotation (page 11) to the desired rotation speed of the laser head. Ideal speed for use with laser detector is 600 RPM.**
5. **Take elevation readings using the plane of laser light as a reference. Follow the Detector Operation Procedures in this manual.**

# CEILING GRID APPLICATION

1. *Attach the laser to the optional wall mount bracket. Be sure the control buttons are facing outward. Tightening the locking screw will secure the instrument to the bracket.*
2. *After installing the first piece of ceiling trim, attach the wall mount to it. Be sure the wall mount is secure to the trim.*
3. *Press the (A) button. Allow the instrument to self-level.*
4. *Adjust the distance of the instrument from the grid, typically 38 mm (1.5 - inches)below the grid. Loosen the adjustment screw and slide the instrument up/down on the wall mount. When the desired height has been reached, tighten the adjustment screw to secure the instrument.*
5. *Set up a "Benchmark" (page 9).*
6. *Install the ceiling grid. Attach the magnetic laser target to the ceiling trim being installed. Adjust the height of the trim until the laser beam strikes the target.(Fig. 5)*

# LAYDOWN APPLICATION

1. **Place the instrument in the laydown position on a flat, level surface.**
2. **Press the (A) button. Allow the instrument to self-level. (Fig.6)**
3. **Set up a "Benchmark" (page 9).**

## OPERATION

**Remove the laser from it carrying case. The instrument is shipped with a battery current protection insert, which must be removed before operation.**

**NOTE:** All RL30 Series instruments are shipped with ADS on as the default setting. This setting can be changed by the user(see Anti-Drift System - ADS, page 13).

**Note:** RL30-GRADE instruments will default to standard horizontal Mode when the instrument is turned on. The X and Y button is used for both selecting between the X-axis and Y-axis for setting grade and exiting the Grade Mode

## Levelling

**1: The instrument can stand alone on a level, sturdy surface or preferably secured to a 5/8" x 11 surveyor's tripods.**

**2: Press the (A) button once and allow time (up to 60 seconds)for the instrument to self-level.**

**NOTE:** The laser head may begin to rotate before levelling is complete.

The self-levelling speed is approximately 1° per 4 seconds.

**3: After self-levelling, the instrument will begin operating in Rotation Mode. The RL30HV,RL30HVG will return to Factory Default**

# PLUMBING / LAYDOWN APPLICATION

On a flat surface, place the instrument on its back using the built-in trivet (control panel facing upward). (Fig. 7)

1. **Press the (A) button once and allow time for the instrument to self- level.**

**Note:** For fine adjustment of the vertical laser plane or of the 90˚ beam, please refer to "Line Position"

# VARIABLE ROTATION MODE

The rotation mode will give you the option of increasing or decreasing the speed of the rotating laser. This feature can be used to create a room-wide, 360° height reference or vertical plumb line for general alignment, drop ceiling installation, and more.

## Model RL30HV, RL30HVG

Pressing the (E) button, will adjust the speed from 600, 300, 150, and 0 RPM.

## Model RL30-GRADE

Using the remote to adjust the rotation speed in increments of 50 RPM; lowest possible speed is 0 RPM and the highest is 600RPM.

# SWEEP OR SCANNING MODE

Instead of creating a room-wide reference line, the Sweep (Scanning) Mode creates a shorter, brighter laser "chalk line" that can be used for levelling or plumbing doors, windows, fixtures, and more. You may also use this feature to keep the instrument from interfering with other lasers and detectors on site.

### Model RL30HV, RL30HVG

Pressing the (D)button, will lengthen or shorten the sweep of the laser beam. Pre-set angles of 10°, 45°, 90°,180° and spot can be set. Position the sweep area by using the (F)or (G)buttons.

### Model RL30-GRADE

Using the MODE button to enter the "Position" option and use the SELECT buttons to position the sweep clockwise or ccw. Press the MODE button to return to SWEEP SETUP. Use the right SELECT button to enter the "LENGTH" option and use the corresponding SELECT buttons to lengthen or shorten the sweep of the laser beam to the appropriate length for your application. The sweep can be if 359° or as short as 3°. The last sweep setup entered remains in memory and will be recalled.

# SPOT MODE

Spot Mode creates a motionless laser dot for reference, allowing the instrument to be used as a straight-line laser.

### Model RL30HV, RL30HVG

Press the (E) button until the laser is in Spot Mode. Press the (F) or (G) to rotate the laser head clockwise or counter clockwise. Pressing and holding the (G) or (F) button moves the rotating beam more quickly.

### Model RL30-GRADE

Spot mode is preformed the same as the HV and HVG models, however the remote is used for the RL30-GRADE model.

# RE-LEVELING

If the instrument is bumped or moved, the instrument will automatically attempt to re-level itself. On a job site, it may be necessary to prevent re- levelling in order to prevent inaccurate measurements by the operator. The Anti-Drift System (ADS) is used for this purpose(see Anti-Drift System- ADS). The instrument can also be placed in Manual Mode to allow the instrument to continue operating when out of level.

# AUTO LEVEL MODE

The Auto Level Mode allows you to control how the instrument reacts when moved out of level.

## Model RL30-GRADE

Auto Level Mode can be ON, OFF, or ADS. If Auto Level Mode is set to ON, the instrument will re-level if the instrument is moved out of level.

If Manual button  is set to ON, the laser will NOT re-level if the instrument is moved out of level and will continue to operate; use this option when using an adapter or mount that allows you to tilt the instrument to create a diagonal laser line.

# ANTI-DRIFT SYSTEM (ADS)

The Anti-Drift System, when ON, will signal to the operator that the instrument has been moved out of level. The laser head will stop rotating, and the beam and ADS LED will blink in the models RL30H, RL30HV and RL30HVG; in the model RL30-GRADE the unit will stop rotating and will give a continuous beep.

## Models RL30HV, RL30HVG, and RL30H

The default setting for ADS is user selectable. The default setting is set to ADS ON.

To activate ADS, turn off the Manual Mode (if it is ON),by pressing "C" and then press the ADS("B") button. If after 1 minute, the instrument is disturbed, and the ADS light is flashing it is necessary to check any benchmarks that have been made and ensure the proper "HI" (Height of Instrument). After the flashing ADS has been reset, by pressing the button one time, you will have an additional minute to set and check your measurements. To turn ADS off press the "B" button once. This will put the instrument into normal Auto Self-Levelling mode.

## Model RL30-GRADE

ADS will only activate when the unit is in Grade mode.

# MANUAL GRADE MODE

**Manual mode disengages the levelling feature, allowing the instrument to be placed in any position to grade.**

**To activate   the Manual Mode, turn off the ADS (if it is on) and then press the "C" button. (Note: The instrument should be level and rotating before entering manual mode to eliminate the possibility of error.) Once the button has been pressed the Manual Mode Indicator Light will blink. Press the "C" button again to return to normal operation.**

**Note:** When returning to normal operation the instrument must be within its levelling range. Re-set the instrument to a level position before pressing the "C" button to the off position.

**NOTE:** (Model RL30HV, RL30HVG) Once the instrument is in manual mode, the remote can be used to set a slope in the Y-axis by pressing the UP or DOWN button or X-axis by pressing the remote LEFT or RIGHT Arrow Button.

# GRADE MODE DUAL OR SINGLE AXIS

The dual grade function allows more specialized site preparations such as road grading, airport jobs (grading & paving), tennis courts, irrigation, trenching, landfills, slopes and embankments, and pipelaying. (Fig.11)

```
+  >X    0.00% −
    Y    0.00%
```
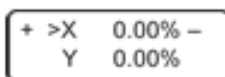
**The Dual Grade Mode screen is the default screen when the instrument is turned on. Use the X and Y button to choose either the X axis or Y axis. An > on the display will indicate the selected axis. Press the up button to increase slope, press the Down button to decrease slope. Ideally for single axis grade, use the Y axis in order to use the top mounted sight to orient the instrument to your target, as well as locate the high and low positions within the arc. While grade on both axes is set to zero, the instrument will continue to self-level. Percentage of grade can be selected at any time while in this mode. However, the instrument will not go to the desired grade until the instrument has levelled.**

Allow the instrument ample time to react to the input provided. Refer to examples in (Fig. 12) to predict your results.

**To exit Grade Mode, press and hold the X and Y button for 4 to 5 seconds. When the button is released, the display will revert to the horizontal display.**

**NOTE:** The total percent grade possible is from a perfectly level base position. If the instrument is mounted on a tripod head which is not perfectly level, then the grade percentage range capability would be reduced by the slope of the base, as this affects the tilt range of the laser head. For maximum grade range, ensure a level tripod head using a spirit level before mounting your instrument.

FOR ALL GRADE LASERS: For greater accuracy in grade applications, precisely level the laser level before entering X and Y Grade window.

FOR RL30-GRADE: If the instrument can't achieve desired grade, it will give an error message "GRADE TOOSTEEP".

# ANTI-DRIFT IN GRADE MODE

The Auto Level Mode can be set to ADS while instrument is in Grade Mode. ADS will protect against accidental bumps or settling of the instrument that could cause errors. If the instrument has been setup to default to Auto Level ADS at start up, the Grade Mode ADS is already on. If the instrument has not been setup to default to Auto Level ADS at start up, enter the Auto Level Mode and selecting ADS. Return to Grade Mode after selecting ADS. ADS will only be active if one axis is set to zero percent grade (Single Axis Grade). ADS will not be active while in Dual Axis Grade. ADS is automatically disabled for 30 seconds whenever a new set point is entered for the grade axis.

In Grade Mode, when the instrument is moved out of grade level, the laser head will stop rotation and the beam will blink to indicate to the operator that the HI of the instrument may have changed. To continue, the operator must acknowledge by pressing the X and Y button to select the Continue.

**NOTE:** If movement occurs in only the grade axis, ADS may not indicate movement since the movement is being detected by the non-grade (level) axis. However, in a real-world application, both the grade and level axis will likely move.

# LINE POSITION MODE

In this mode, the instrument allows you to fine-tune the location of your vertical (plumb) laser line. For example, if you've established a plumb line and find that the line is slightly off to the left or right of your target, use Line Position to jog the line into place without moving the entire instrument (useful for floor and wall tile installation, walls or partitions, etc.).The laser will now remain aligned to your target even if you enter other modes (Rotation & Spot)

**model RL30HV, RL30HV-G**

Line Position mode is available when the instrument is placed in the plumbing position (control panel facing upward). While the instrument is in the plumbing position, it can be used in Rotation, Sweep or Spot mode. To enter the Line Position mode and position the laser reference point the instrument must be rotating. Use the "F" or "G" buttons to position the laser reference point while the instrument is rotating (Fig.13). If the instrument is in Spot or Sweeping mode the "F" and "G" buttons are used to move the spot or sweep clockwise and counter clockwise, as they do when the laser is in the upright position.

**NOTE:** The LEFT and RIGHT buttons of the RC1 Remote can be used to position the reference line regardless of the instrument being in Rotation, Spot, or Sweep Mode.

If in manual mode, the LEFT and RIGHT buttons will position the reference line and the UP and

**DOWN buttons will move the vertical line up and down.**

## Model RL30-GRADE

**Line Position mode is available when your instrument is placed in the plumbing position (control panel facing upward).While the instrument is in the pluming position, it can be used in Rotation, Spot, or Point-to-Point mode. To enter Line Position mode, use the Mode button to go to the Line Position option and press select. The instrument will rotate at the last rotation speed selected. Press the SELECT buttons to move the position of the laser reference point clockwise (right) or counter clockwise (left) into perfect alignment with your target. (Fig.14)**

# REPLACING BATTERIES

**For models RL30H, RL30HV,and RL30HVG if the battery is low, the red light(only) is illuminating on the front of the instrument.**

**For model RL30-GRADE, if the battery is low, the LCD will display "ERROR BATTERY LOW". If the instrument operates erratically, try replacing the batteries. (Fig.15)**

1. **Remove the battery tray by unscrewing the plastic nut around the mounting thread**
2. **on the bottom of the instrument.**
3. **Remove the old batteries and replace with 4 new "D" cell Alkaline batteries.**
4. **Replace the battery tray. Make sure the battery contacts between the battery pack and the instrument compartment are aligned.**

**NOTE:** Do not mix old and new batteries. Replace all batteries at the same time with new batteries. Remove batteries before storage of the instrument.

Rechargeable Battery Pack

**If you are using a rechargeable battery pack (Cat #RL30B), your instrument will provide approximately 40 hours of intermittent use with each full charge. The batteries will begin to perform optimally after five full charges and discharges. You may charge the battery pack within the instrument.**

**Ensure the power is off and connect the charging plug to the appropriate charging jack on the bottom of the battery pack. Then plug the charger into the appropriate 120/230V AC outlet. Charge time is typically around8 hours. The instrument can be charged and used at the same time, but only a minimal charge will be applied to the battery pack.**

# CALIBRATION

Your RL30 Series Self-Levelling Laser is a sealed instrument and is calibrated to precise accuracies at the factory. However, a calibration check is recommended before the initial use of your laser, and then periodically from that point forward. Be sure to allow time(up to 60 seconds) for the instrument to completely self-level before each check.

## Upright Position Peg Test – X axis (RL30H, RL30HV, RL30HVG, RL30-GRADE)

1. To test the X axis, mount the laser on a tripod or a level, sturdy surface and place 100 feet(30m) away from a wall. Face the "X+" side of the instrument to the wall(Fig. 16).
2. Press the "A" button and allow the instrument to self-level. Using the laser detector, locate and mark the position of the laser line on the wall Position "A").
3. Loosen the instrument from the tripod and rotate the instrument 180°. Ensure that the height of the tripod does not change, as this will affect your results. Secure and re-level the instrument.
4. Again, using the laser detector, locate and mark the position of the laser on the wall (Position "B").
5. Mark the center line between Position A and Position B (Position C).Calibration is necessary if the vertical difference between Position A and Position C or Position B and Position C is greater than the specified accuracy.

Repeat the above steps to ensure a correct reading. If the distance is greater than specified accuracy, return to your authorized service center.
**NOTE:** For RL30HV, RL30HV-G, RL30-GRADE Spot Mode can be used without detector if designed

## Laydown Position Peg Test – Z axis (RL30H, RL30HV, RL30HVG, RL30-GRADE)

To test the Z axis, place the instrument on its back using the built-in trivet (control panel facing upward), 100 feet (30m) from a wall on a flat, level surface.
Hang a plumb line down the wall at least 8 feet long (2,5 m).
Press the "A" button ("POWER" in the RL30-GRADE) and allow the instrument to self-level. If necessary, adjust the rotation speed to easily view the laser beam on the wall. Orient the instrument parallel to the wall and attempt to align with your plumb line.(Fig.19)

If the laser line does not align with the plumb line, then calibration is necessary please contact Metsys or an authorized service center for assistance.

# MAINTANCE & CARE

Always clean the instrument after use. Use a soft, dry cloth to remove any dirt or moisture from the instrument. Do not use benzene, paint thinner, or other solvents to clean the instrument. Store the instrument in its case when not in use. Batteries should be removed before long-term storage.

# ENVIRONMENTAL PROTECTION

Recycle raw materials instead of disposing as waste. The machine, accessories and packaging should be sorted for environmental-friendly recycling. Do not throw used batteries into waste, fire or water but dispose of in an environmentally friendly manner according to the applicable legal regulations.

# TROUBLE SHOOTING

The following information lists basic tests that can be performed to check the 3100 Series in the event of poor performance. Check Your Batteries: One of the most common causes of performance failures is due to defective or incorrectly installed batteries. Check to see if any batteries are installed backwards and correct if necessary.

- Never selectively replace batteries; always replace all the batteries at the same time with new batteries. Batteries should be checked with a voltmeter or battery tester to confirm proper voltage.
- Leaky batteries may have damaged the battery contacts in the battery box.
- Check to see that the battery door is screwed tightly onto the base of the instrument. Also, the fit between the battery prongs and the batteries may need adjustment, as this fit may vary over different brands of battery (especially Energizer™ brand, as they are larger in diameter, preventing a proper connection).
- Alkaline batteries are recommended for the best performance and storage life. Rechargeable batteries such as Nickel-Cadmium will provide performance but are not as desirable due to their lower terminal voltage. Low cost standard Carbon-Zinc batteries may be used in emergencies, but they should be replaced with alkaline batteries when available.

Rechargeable Battery Pack:

For maximum battery life, the battery pack must contain a full charge. Properly charged, the battery pack will provide approximately 40 hours of service. The batteries will begin to perform optimally after five full charges and discharges.

Instrument does not rotate or self-level or if it produces "Error" messages:

Ensure that the instrument is within its self-levelling range. Reset the internal processor by turning power off, wait 15 seconds and power the instrument on again. If the instrument rotates but does not self-level, be sure that Auto Level Mode is NOT set to OFF on Model RL30-GRADE, or that Manual Mode is not selected for ModelsRL30H, RL30HV, and RL30HVG.

If troubleshooting is not effective, please contact Metsys® or an authorized service Centre for assistance.

# RS1 RECEIVER INTRODUCTION

The Metsys® Universal Laser Detector / Receiver aids in locating and targeting a visible or invisible beam emitted by a rotary laser; perfect for use in outdoor conditions, where sunlight and distance may make locating the beam more difficult. The laser detector RS1 includes a rod clamp which allows to mount the detector onto square, round or oval sighting rods.

# POWER AND OPERATION

A 9-volt battery will provide up to 3 months of typical usage. When the instrument is turned on and the low battery symbol remains lit, the battery should be replaced.

1. Mount the instrument onto a sighting rod if you are using one. Turn on the instrument by pressing the ON/OFF pad. The LCD symbols will momentarily flash, and the "coarse" beam indicator symbol will remain lit and the audio signal will be on.(Fig. 21)
2. Expose the beam capture window of the laser detector towards the direction of the rotating laser.
3. Slowly move the laser detector in an upward and downward direction until the LCD beam indicator arrows appear and/or a pulsing audio signal is heard. Use the Beam Resolution feature to choose between the course/low setting, used for approximating level or for initial locating of the center level point, the medium setting, used for greater accuracy, and the fine/high setting, used for the most accurate pinpointing of level.
4. Move the detector upward when the low beam indicator light is lit (with volume on, a slow pulsing audio tone is heard).Move the detector downward when the high beam indicator arrow is lit (with volume on, a rapid pulsing audio tone is heard). When the beam is level, the level beam indicator line will be lit, and a solid audio tone will be heard.

If the detector is not struck by a laser beam after5-8 minutes, the detector will automatically shut itself off to preserve battery life. Turn the instrument back on using the power button.

# SPECIAL FEATURES

The laser detectors have a unique memory feature, which preserves the last position of the laser beam if the detector is moved out of the plane of laser light, as well as built in electronic filtering for bright sunlight and electromagnetic interference. Three distinct audio tones (high on-grade, and low) assist targeting from a distance.
 The detector RS1 has two speaker selections Off and Loud (125+ dBA).
As you move the detector closer to the center, the arrows fill in to indicate the laser position (Fig. 21).

# CARE AND SPECIFICATIONS

**This instrument is gasket sealed for water and dust protection. Use a soft, dry cloth to remove any dirt or moisture from the instrument before storage. Do not use benzene, paint thinner, or other solvents to clean the instrument. Remove batteries before long-term storage of the instrument.**

## METSYS RS1                    ## SPEC'S

| | |
|---|---|
| Range | up to 600m |
| Beam Detection | 635 Nm |
| Sensitivity | Fine ± 0,75 mm |
| | Medium ±1,5 mm |
| Readout | LCD , Front / Rear windows |
| Power | 4 x AAA Batteries |
| Running Time | 120 Hrs. continuous |
| Warranty | 1 year |
| Dimensions (mm) | 145 x 74 x 21 mm |
| Weight | 275g |
| Figure Reference | Figure 21. |

**Note:** (Sensitivity based on standard conditions with most lasers; may vary slightly due to make, manufacturer, beam size, or working conditions)

# RC1 OPERATIONS

This section covers the use of the remote control (Cat. RS1).The remote controls all the functions except power, ADS, and calibration features, with a range of up to 100 feet (30m). Requires 2 'AA' Alkaline batteries.

**Note:** When using the remote in Line Position Mode, the Left and RIGHT button scan be used to position the reference line regardless of the instrument being in Rotation, Spot, or Sweep Mode.

(1) **Variable Rotation – places instrument in Rotation Mode and adjusts to present rotational speeds.**

(2) **Left Arrow and** (3) **Right Arrow– Line positioning in laydown position and Grade Adjustment X-Axis – Only in manual mode.**

(4) **Up Arrow and** (5) **Down Arrow- Grade Adjustment Y-Axis-Only in manual mode / When in laydown position, grade adjustment of the levelling axis (Only in Manual Mode).**

(6) **CCW and** (7) **CW – positions the laser in Spot and Sweep modes.**

(8)**Scan/Sweep Mode – places instrument in Scan/Sweep Mode and adjusts to present angles.**

(9) **Manual – Places the instrument in manual grade if ADS is not selected. In laydown position, allows manual adjustment of the laser.**

# RC2 OPERATIONS

This section covers the use of the optional remote control RC2). The remote controls all function except power, ADS, and calibration features, with a range of up to 100 feet (30m). Requires 2 AA Alkaline batteries.

(1) **The "enter / select grade" button will allow you to select the grade entered.**

**The** (2) **"the anti-drift systems button"**

**The** (3) **"Manual" Places the instrument in manual grade if ADS is not selected. In laydown position, allows manual adjustment of the laser.**

**Pressing the** (4) **"Up" or** (5) **"Down" button after pressing the X and Y button. The "Up" and "Down" buttons will now incrementally increase or decrease the rotary head speed.**

**Once in Grade Mode, the "Down" and "Up" buttons will decrement/increment the Y-axis grade respectively.**

**The**(6) **"variable rotation" buttons – places instrument in Rotation Mode and adjusts to pre-set rotational speeds.**

**Pressing the** (7) **Scan/Sweep Mode – places instrument in Scan/Sweep Mode and adjusts to pre-set angles.**

(8) **x and y axis select – allows you to move from the x or y axis modes**

Please refer to Operation Section of the manual for complete operating instructions

# RL30 SERIES SPECIFICATIONS

| FEATURE | RL30H | RL30HV | RL30HV-G | RL30-GRADE |
|---|---|---|---|---|
| Beam Type | 635 NM | 635 NM | 635 NM | 635 NM |
| Operating Range | 600m ( With Rs1 ) | 600m ( With Rs1 ) | 600m ( With Rs1 ) | 600m ( With Rs1 ) |
| Levelling Accuracy | ± 1.5mm @ 30m | ± 1.5mm @ 30m | ± 1.5mm @ 30m | ± 1.5mm @ 30m |
| Levelling Type | Electronic Self level | Electronic Self level | Electronic Self level | Electronic Self level |
| - Horizontal | YES | YES | YES | YES |
| - Vertical | NO | YES | YES | YES |
| Vertical Accuracy | - | ±3mm at 30m | ±3mm at 30m | ±3mm at 30m |
| Self Levelling range | ± 5° | ± 5° | ± 5° | ± 5° |
| Grade Capability | Single up to ± 10% | Dual up to ± 10% | Dual up to ± 10% | Dual up to ± 10% |
| Grade Accuracy | - | - | - | ±0.01% Grade |
| Battery Power | | | | |
| - Alkaline | 80 ± Hrs. | 80 ± Hrs. | 80 ± Hrs. | 80 ± Hrs. |
| - Ni-MH | 40 ± Hrs. | 40 ± Hrs. | 40 ± Hrs. | 40 ± Hrs. |
| Rotation Speed | Fixed | Variable | Variable | Variable |
| - RPM | 600 RPM | 0,150,300,600 RPM | 0,150,300,600 RPM | 0,150,300,600 RPM |
| Weight | 2.5 KG (with Battery) | 2.5 KG (with Battery) | 2.5 KG (with Battery) | 2.5 KG (with Battery) |
| Dimensions (mm) | 203 x 159 x 162 mm | 203 x 159 x 162 mm | 203 x 159 x 162 mm | 203 x 159 x 162 mm |
| Visible split beam | NO | YES (Red) | YES (GREEN) | YES |
| Scanning Feature | NO | YES | YES | YES |
| Operating Temp | -20°C to 49°C | -20°C to 49°C | -20°C to 49°C | -20°C to 49°C |
| Environment | IP67 | IP67 | IP67 | IP67 |

# PRODUCT INCLUSIONS

**RL30H**



**RL30HV**



**RL30HV-G**



**RL30-GRADE**



# WARRANTY

Two Years Warranty. Metsys, warrants this electronic measuring tool against deficiencies in material and workmanship for a period of two years from the date of purchase. Deficient products will be repaired or replaced at Metsys's option. Proof of purchase is required.

For warranty and repair information, contact: Your Local Distributor, or Metsys.

This Warranty does not cover deficiencies caused by accidental damage, wear and tear, use other than in accordance with the manufacturer's instructions or repair or alteration of this product not authorized by Metsys. Repair or replacement under this Warranty does not affect the expiry date of the Warranty. To the extent permitted by law, Metsys shall not be liable under this Warranty for indirect or consequential loss resulting from deficiencies in this product.  Agents of Metsys cannot change this warranty. This Warranty may not be varied without the authorization of Metsys.

**IMPORTANT NOTE:** The customer is responsible for the correct use and care of the instrument. Moreover, he/she is completely responsible for checking the job along its prosecution, and therefore for the calibration of the instrument. Calibration and care are not covered by warranty.

# CONTACT US

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**PHONE:** 03 9720 6222

**EMAIL:** support@metsys.com.au

**PRODUCT DESIGNER**

Justin Davis

**PURCHASE ONLINE**

www.lightwavetechnology.com.au

**EXTENDED WARRANTY SUBMISSIONS**

http://www.metsys.com.au/warranty/4594309423

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