

Quick Start FRE-207

INSTRUCTIONS



from P.R.Engineering Ltd www.laser-level.co.uk Tel: 01246 269777

Thank you for purchasing the **FRE-207** TRUE GRADE, Rotary laser level kit. These Instructions are intended to explain the **quick basics** to operating this equipment. Please read them in conjunction with the Manufacturer's User Manual included in the kit. If you need any more help/advice or the instrument requires calibration or repair, then please contact our Service Dept on tel 01246 269 777 or fax 01246 260 007. We would be pleased to help.

Power source:

This is a special battery pack located in the base of the laser. Remove & refit via a central screw - finger tight (no tools required).

It contains 4pc x "sealed for life" Ni-MH type C, 4000mAh, 1.2V cells. Please note that this battery pack can be charged either in or outside of the laser. The Mains Charger (supplied) will charge most batteries in around 7 hours to give around 20hrs of continuous use. It takes 4 to 5 charge/discharge cycles for these battery packs to reach their maximum capacity.

Mains Charger:

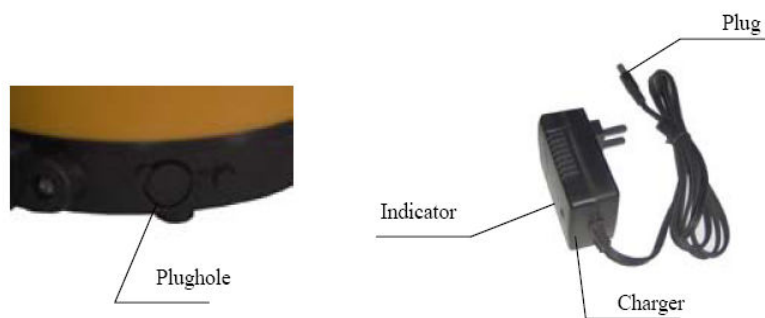
The general procedure to adopt is use the laser during the day & charge-up overnight. You cannot damage the system by "over-charging" the batteries. When plugged into a 230V mains supply, the red LED flashes every 1 sec. Connect to the laser socket (or direct to the battery pack) & this LED should be ON continuously:

ie. Red LED = charging; Green LED = sufficient charge to operate.

Even though the Green light is ON, we recommend a full 8 hour charge.

The FRE-207 can be operated with the charger connected to the mains supply, if required. On receipt of your *new* laser, we suggest charging the batteries fully overnight.

A Spare Battery holder is also included - to be used as a back-up power source. Four type C, 1.5V Alkaline batteries can be used instead or in an emergency; but do NOT attempt to recharge them, otherwise serious damage will occur.



Positioning the Laser:

Mount the FRE-207 on a generally level, firm surface or 5/8" threaded Tripod. To operate correctly this surface must be within +/-5 deg of true horizontal. The laser can be used Indoors or Outdoors, where it is waterproof to IP54.

Controls:

Power ON/OFF is via the green button. The LCD screen illuminates; laser takes 15 to 30 seconds to auto level & then the head rotates & projects a visible red laser beam. The rotational speed is shown on the display together with the battery charge level.

The yellow speed control button (just above the green button), when pressed stops the red dot then increases the head's rotational speed in 4 steps up to a maximum speed of 600rpm.

For Interior work we suggest using slower speeds, where the laser beam is easier to see by eye; but for Exterior Groundworks – run the FRE-207 @ its max. speed of 600rpm, which gives the best working range when used with the supplied Laser Detector.

SCAN function - for Interior work:

The second button up on the right of the keypad is the Scan function. The User can set a Dot, or 10, 45, 90, 180 degree lines as required & use the two buttons above to move the "line" position around the room.

AS THIS LASER AUTO LEVELS BOTH HORIZONTALLY & VERTICALLY, all the control settings above operate in either mode.

Grading:

This is a **TRUE DUAL GRADE** laser level. This means that the FRE-207 can be switched to "manual" (to over-ride the level sensors) and then it is very easily for the User to set a grade (incline/slope) in the X axis only, Y axis only or both together. The max. settable slope range is +/- 10.00% ie. 1:10

For X & Y alignment, please see the white markings on the TOP of the laser body where an arrow points in the direction of the axis being set.

Setting a single axis slope -

This sets a grade in the X axis.

Procedure – switch ON; the FRE-207 then auto levels. Press the red "G" button on the Remote Control or laser's keypad & the X illuminates on the screen. Using the top two right hand buttons, set the % value required.

The same buttons can be found on the Remote Control. Press the X/Y button TWICE and the laser will adjust to this angle of slope, then rotate.

To return to Auto level, switch the laser OFF & ON again via the green button, to reset the % values to zero. The Laser will wait to find true level, then automatically restart, self levelled.

Setting Y axis slope -

This sets a grade in the Y axis.

Procedure – switch ON; the FRE-207 then auto levels. Press the red "G" button on the Remote Control or laser's keypad & the X illuminates on the screen.

Press the X/Y button ONCE only to scroll down to a flashing "Y". Using the top two right hand buttons, set the % value required.

The same buttons can be found on the Remote Control. Press X/Y button ONCE again and the laser will adjust to this angle of slope, then rotate.

To return to Auto level, switch the laser OFF & ON again via the green button, to reset the % values to zero. The Laser will wait to find true level, then automatically restart, self levelled.

Setting both X & Y axis slope (dual grade) -

Proceed as above, but enter values for both X% & Y%

Automatic Drift System (ADS):

Operated via bottom, right-hand yellow button, showing a "picture of a tilted instrument" and repeated on the Remote Control.

Once the FRE-207 is ON and rotating in the auto (self) levelled mode, the automatic drift system can be activated. Press the button & **TILT** will be displayed on the screen. **ADS is now ON.**

If the Laser is knocked or caught by a gust of wind for example, the laser head will stop rotating and an audible alarm sound to warn the User of the problem. Check all is OK, press the ADS button again & the laser will reset back to AUTO level.

IMPORTANT: The ADS function cannot be set when Grading.

Remote Control & Laser Detector:



Remote Control...

Fit the supplied 2pc x AA alkaline batteries, taking care with correct polarity.

The Remote's keypad can set the following functions:

1. Rotating speed in increments; slow for Indoors, fast (max) for Outdoors
2. Scan angles & position around the room.
3. ADS (see above)
4. Auto / Manual (grade) setting via the red "G" button.
5. X/Y button to set required grade axis, then +/- button to adjust the % value.

In fact, it is often better to use the Remote Control rather than the instrument's keypad, because then you do not disturb the laser's sensitive mechanism.

Detector...

Fit the supplied 9V battery, polarity marked. Power up via red ON/OFF button.

The middle button switches the sounder ON or OFF, & volume - if required

The right hand button sets coarse (+/-2mm) or fine (+/-1mm) red pick-up window resolution.

A rear LCD repeats the main front display.

Note case markings & setting notches.

You can use the detector with or without its staff mounting bracket.

Detector Procedure – face towards rotating laser & "find" rotating laser beam via the pick-up window.

If the sun is low in the sky & shining into the red window, shield it with a cupped hand to prevent false readings. Positioning the FRE-207 itself in full sun is no problem, but the detector window can in some instances be affected by direct bright sunlight or reflections. So please take extra care!

SAFETY PRECAUTIONS:

Comply with class 2M/2R laser operating safety procedures. See main Manual. Display a **Laser Safety Notice** in the work area.

General Advice:

This is an accurate measuring device - so to give good service, look after it!

Prevent the FRE-207 from receiving severe knocks, bangs or vibration.

Store the laser & its accessories in the supplied carry case.

If wet, dry before storing & keep in storage temperatures between 5-30 deg C.

Remove all batteries before long term storage, to prevent internal damage.

Key Specifications:

Laser accuracy +/-3mm @ 30m

Operating range 500m diameter with detector

IR Remote control range 20m

...for full details see main Manufacturer's User Manual

**There are NO User Serviceable Parts.
(This would void the warranty)**



We offer a full Back-up service including repairs, calibration & usage advice.
Accessories for the various Trades are also available - on request.
Eg. Tripods, staffs, wall brackets & screeding poles etc.

Please contact us:

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