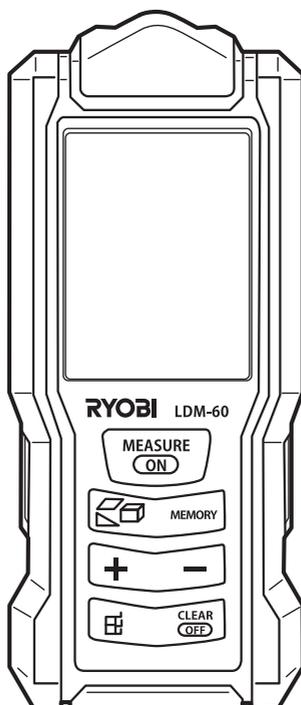


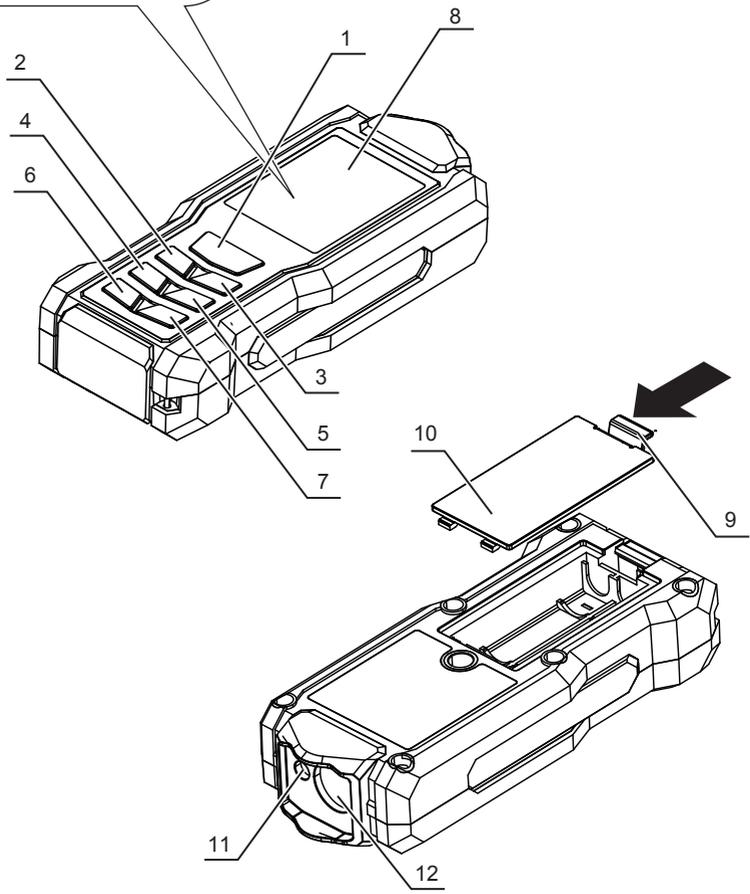
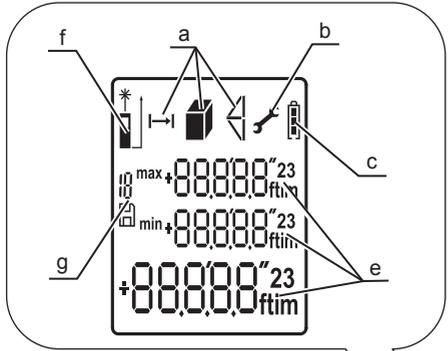
RYOBI®

LDM-60

GB OWNER'S OPERATING MANUAL



CE



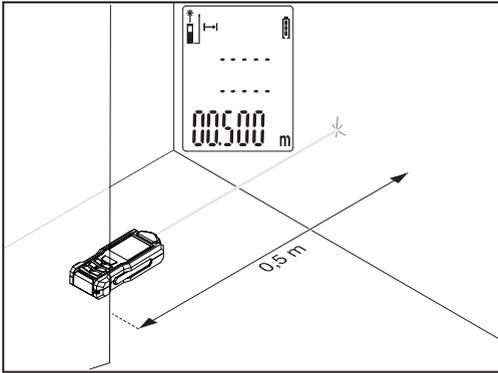


Fig. 1

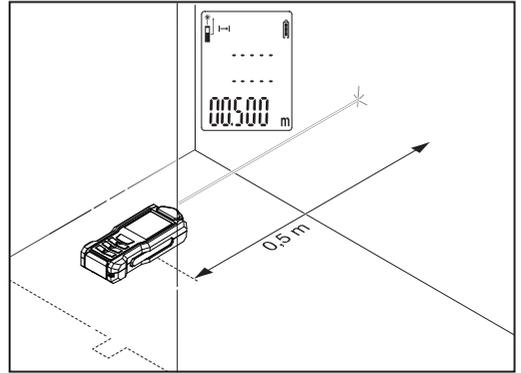


Fig. 2

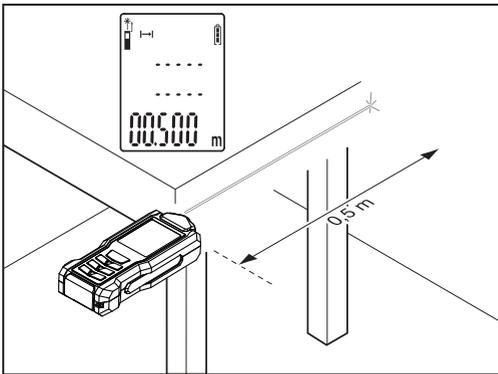


Fig. 3

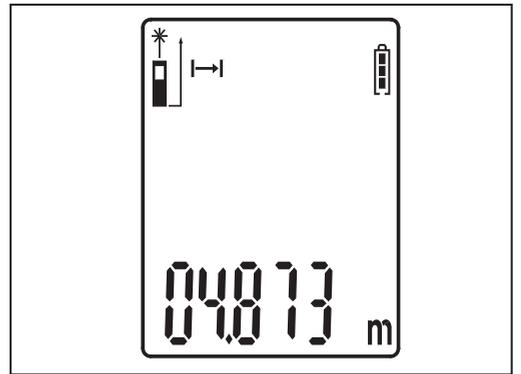


Fig. 4

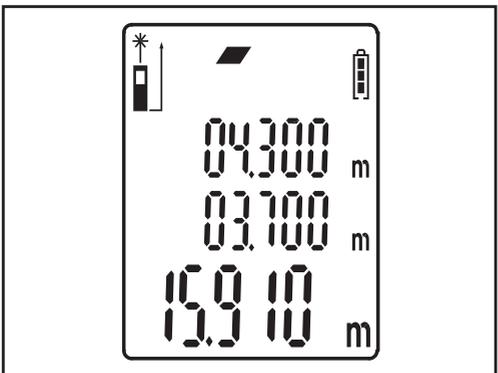


Fig. 5

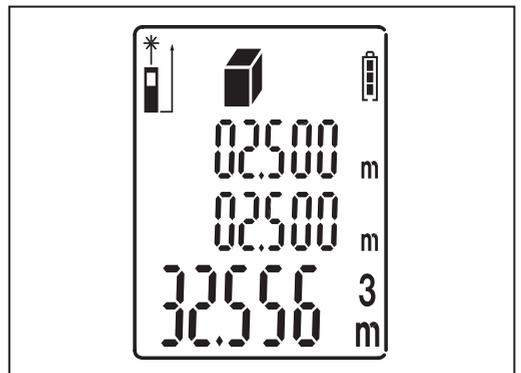


Fig. 6

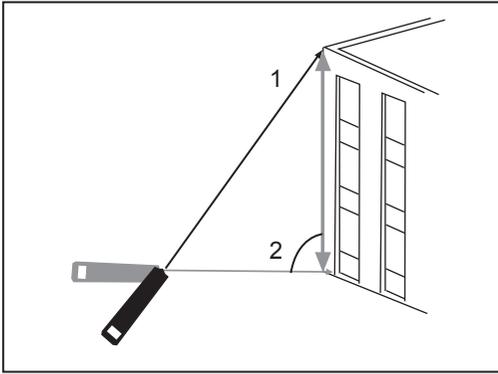


Fig. 7

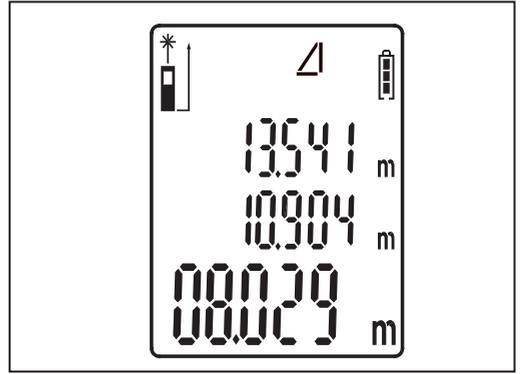


Fig. 8

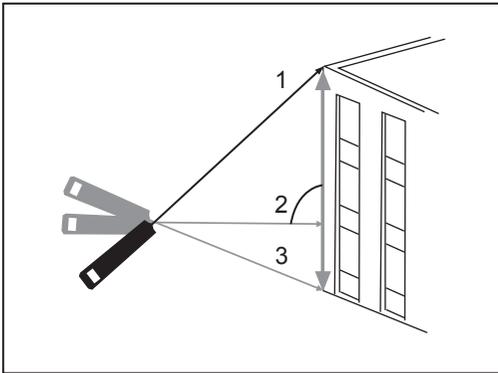


Fig. 9

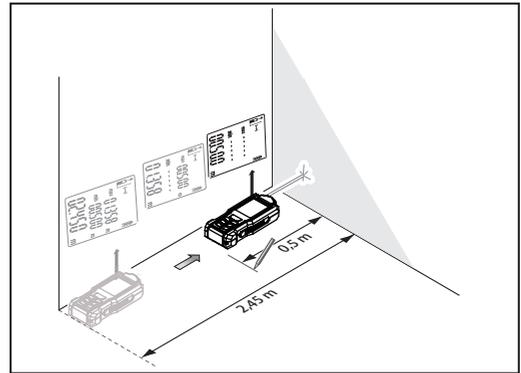


Fig. 10

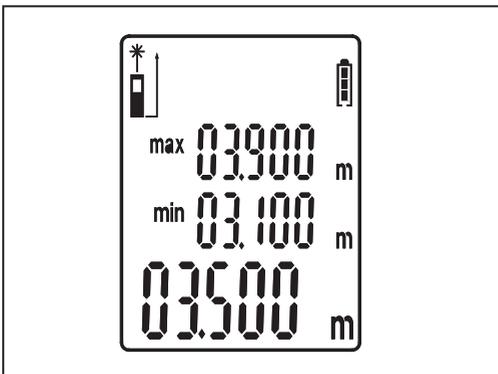


Fig. 11

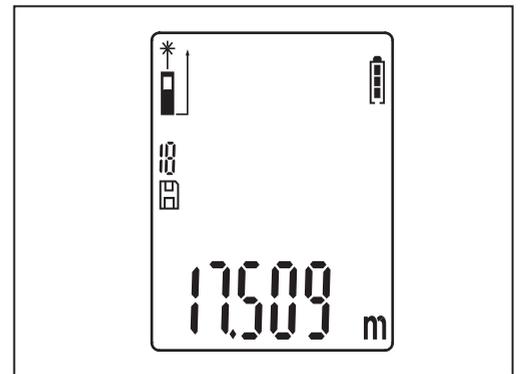


Fig. 12

THANK YOU FOR BUYING A RYOBI PRODUCT.

To ensure your safety and satisfaction, carefully read through this OWNER'S MANUAL before using the product.

General Safety Rules

All instructions must be read and observed in order to work safely with the measuring tool. Never make warning signs on the measuring tool unrecognizable.

SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE AND INCLUDE THEM WITH THE MEASURING TOOL WHEN GIVING IT TO A THIRD PARTY.

Caution! The use of other operating or adjusting equipment or the application of other processing methods than those mentioned here can lead to dangerous radiation exposure.

- The measuring tool is provided with a warning label.



- If the text of the warning label is not in your national language, stick the provided warning label in your national language over it before operating for the first time.



Do not direct the laser beam at persons or animals and do not stare into the direct or reflected laser beam yourself, not even from a distance. You could blind somebody, cause accidents or damage your eyes.

- If laser radiation strikes your eye, you must deliberately close your eyes and immediately turn your head away from the beam.
- **Do not use the laser viewing glasses as safety goggles or in traffic.** The laser viewing glasses are used for improved visualisation of the laser beam, but they do not protect against laser radiation.
- **Do not make any modifications to the laser equipment.**
- **Have the measuring tool repaired only through qualified specialists using original spare parts.** This ensures that the safety of the measuring tool is maintained.
- **Do not allow children to use the laser measuring tool without supervision.** They could unintentionally blind other persons or themselves.
- **Do not operate the measuring tool in explosive environments, such as in the presence of flammable liquids, gases or dusts.** Sparks can be created in the measuring tool which may ignite the dust or fumes.

APPLICATIONS

The measuring tool is intended for measuring distances, lengths, heights, clearances, and for the calculation of areas and volumes. The measuring tool is suitable for measuring indoors and outdoors.

DESCRIPTION

1. Measuring/On button
2. Function button
3. Memory storage read button
4. Add button "+"
5. Subtraction button "-"
6. Reference point selection button
7. Off and memory delete button
8. Display
9. Latch of battery lid
10. Battery lid
11. Laser beam outlet
12. Reception lens

LCD DISPLAY

- a. Variable measuring functions
 - ↔ Length measurement
 - max Continuous measurement
 - min Area measurement
 - 📦 Volume measurement
 - ↖ Indirect length measurement
- b. Need to repair
- c. Battery indicator
- d. Measured value/result
- e. Unit of measure
- f. Measurement reference level
- g. Measured values stored

SPECIFICATIONS

Measuring range (typically)	0.05 – 60m
Measuring accuracy (typically)	±2.0mm
Operating temperature	-10 °C +40 °C
Laser class	2
Laser type	635 nm, <1mW
Batteries	2 x 1.5 V LR03 (AAA)
Estimated battery life	approx. 50,000 single meas. (use alk. AAA)
Net weight	0.11kg

INSERTING/REPLACING BATTERIES

Using alkaline batteries is recommended for operation of the measuring tool.

Lesser measurements are possible if using 1.2V rechargeable batteries.

1. Press the latch (9) in the direction of the arrow and remove the battery lid (10).
 2. Insert 2pcs new battery according to the polarity indicators in the battery compartment. Be sure the polarity (+/-) is correct!
 3. Close the battery lid and lock it securely in place.
- When inserting, pay attention to the correct polarity according to the representation on the inside of the battery compartment.
 - When the battery symbol appears for the first time on the display, at least 100 measurements are still possible. When the battery symbol flashes, the batteries must be replaced; measurements are no longer possible.

- Always replace all batteries at the same time. Do not use different brands or types of batteries together.
- **Remove the batteries/rechargeable batteries from the measuring tool when not using it for longer periods.** When storing for longer periods, the batteries can corrode and self-discharge.

OPERATION

INITIAL OPERATION

- **Do not leave the switched-on measuring tool unattended and switch the measuring tool off after use.** Other persons could be blinded by the laser beam.
- **Protect the measuring tool against moisture and direct sun light.**
- **Do not subject the measuring tool to extreme temperatures or variations in temperature.** As an example, do not leave it in vehicles for longer periods. In case of large variations in temperature, allow the measuring tool to adjust to the ambient temperature before putting it into operation.
- **Avoid heavy impact to or falling down of the measuring tool.** After severe exterior effects to the measuring tool, it is recommended to carry out an accuracy check each time before continuing to work.

SWITCHING ON AND OFF

To **switch on** the measuring tool, press the measuring/on button (1) for a few seconds.

When switching on the measuring tool, the laser beam is not switched on yet.

To **switch off** the measuring tool, press the off and memory delete button (7) for a few seconds.

MEASURING PROCEDURE

After switching on, the measuring tool is in the length measurement mode. Other measuring modes can be switched to by pressing the function transfer button (2).

After switching on, the rear edge of the measuring tool is preset as the reference point for the measurement. To change the reference point, please press the reference point selection button (6).

If none of the measuring tool buttons are pressed for approx. 3 minutes, the measuring tool switches off automatically in order to extend the service life of the battery.

Upon selection of the measuring function and the reference point, all further steps are carried out by pushing the measuring button.

With the reference point selected, place the measuring tool against the desired measuring line (e.g. a wall), press the measuring/on button to switch on the laser beam.

WARNING! Do not point the laser beam at persons or animals and do not look into the laser beam yourself, not even from a large distance.

Aim the laser beam at the target surface. Press the measuring button again to initiate the measurement.

The measured value typically appears after 0.4 seconds and at the latest after 3 seconds. The duration of the measurement depends on the distance, the light conditions and the reflection properties of the target surface. The end of the measurement is indicated by a signal tone. The laser beam is switched off automatically upon completion of the measurement.

When no measurement has taken place approx. 30 seconds after sighting, the laser beam is switched off automatically to save the batteries.

MEASURING FUNCTIONS

SELECTING THE REFERENCE POINT

For measuring, you can select between three different reference levels:

- the rear measuring-tool edge (Fig. 1, e.g. when measuring onward from a wall)
- the middle part of body (Fig. 2, e.g. when measuring from the middle)
- the front measuring-tool edge (Fig. 3, e.g. when measuring onward from a table edge)

To change the reference point, press the reference point selection button until the requested reference point is indicated on the display. Each time after switching on the measuring tool, the rear end of the measuring tool is preset as the reference point.

SINGLE LENGTH MEASUREMENT (Fig. 4)

1. Press measuring/on button to activate the laser, and aim at the object which is to be measured.
2. Press measuring/on button again to take measurement, the measured value is indicated at the bottom in the display.

CALCULATION FUNCTION (+/-)

1. After switching on, when you want to measure the total distance after you measure the first distance, press add button "+" (4), then again press measuring/on button to measure the distance you want to add, it can calculate automatically and the result displayed.
2. After switching on, when you want to measure the short distance, after you measure the first distance, press subtraction button "-" (5), then again press measuring/on button to measure the distance you want to sub, it can calculate automatically the result displayed.

AREA MEASUREMENT (Fig. 5)

1. After switching on, press function button (2) until the icon for area measurement  appears on the display.
2. Press measuring/on button to measure the length and the width, one after another in the same manner as a length measurement. The laser beam remains switched on between both measurements.

After taking the second measurement, the area/surface is automatically calculated and displayed. The last individual measured value is indicated at the second line in the display, while the final result is shown at the bottom.

VOLUME MEASUREMENT (Fig. 6)

1. After switching on, press function button until the icon for volume measurement  appears on the display.
2. Press measuring/on button to measure the length, width and the height, one after another in the same manner as for a length measurement. The laser beam remains switched on between all three measurements.

After taking the third measurement, the volume is automatically calculated and displayed. The last individual measured value is indicated at the middle line in the display, while the final result is shown at the bottom.

INDIRECT LENGTH MEASUREMENT

The indirect length measurement is used to measure distances that cannot be measured directly because an obstacle would obstruct the laser beam or no target surface is available as a reflector. Correct results are achieved only when the laser beam and the sought distance from an exact right angle (Pythagorean Theorem)

INDIRECT MEASUREMENT: PYTHAGORAS 2 POINTS (Fig. 7-8)

1. After switching on, press the function button three times, the symbol \sphericalangle appears.
2. Press measuring/on button to activate laser and aim at the point which is to be measured.
3. Press measuring/on button again to take the first measurement, and again to take the second measurement.
4. The height of building (third side of triangle), first and second distance value will be seen on display.

Pay attention that the reference point of the measurement (e.g., the rear edge of the measuring tool) is at the exact same location for both measurements.

After completing the second measurement, the height of the building is calculated automatically. The last individual measured value is indicated at the middle line in the display, while the final result is indicated at the top.

INDIRECT MEASUREMENT: PYTHAGORAS 3 POINTS (Fig. 9)

1. After switching on, press function button four times, the \sphericalangle appears on display.
2. Press measuring/on button to activate laser and aim at the point which is to be measured
3. Press measuring/on button again to take the first measurement, and again to take the second and third measurement.
4. The height of building, second and third distance value will be seen on display.

CONTINUOUS/TRACKING MEASUREMENT (Fig. 10-11)

For continuous/tracking measurements, the measuring tool can be moved relative to the target, whereby the measuring value is updated approx. every 0.4 seconds. In this manner, as an example, you can move a certain distance away from a wall, while the actual distance can always be read.

To start continuous measurements, push measuring/on button for a few second.

Continuous measurement automatically switches off after 100 times measurements (about 30 seconds).

The last measured value remains indicated on the display.

To stop continuous measurement, press off and memory delete button (7). Pres it one more time to exit and return to the single length measurement mode.

MEMORY FUNCTION (Fig. 12)

STORING MEASURED VALUES

After the measurements, the date is stored automatically. It can store 19 measurements.

User can press the memory storage read button (3) to recall measurements.

Press add button "+" or subtraction button "-" to turn up and down.

DELETING MEMORY

To delete the memory contents, firstly indicate M by pressing the memory storage read button, and then press off and memory delete button.

Even if the measuring tool is switched off, the value in the memory is retained.

MEASUREMENT UNIT SELECTION

Long press the add button "+" to select the measurement unit among m, ft, in, ft+in.

DISPLAY BACKLIT

Long press the reference point selection button to switch on or off the display backlight.

User can trigger the function when it is in dark situation. The value is clearly visible on the display.

WORKING WITH TRIPOD (available separately)

The use of a tripod is particularly helpful for greater distances. The laser distance measure can be screwed onto a commercially available tripod using the 1/4" thread on the bottom side of the housing.

1. Mount the tool to the tripod.
2. Set the measuring reference to the thread.
3. Start to take measurements.

WORKING ADVICE

GENERAL INFORMATION

The reception lens 12 and the laser beam outlet 11 must not be covered when taking a measurement.

The measuring tool must not be moved while taking a measurement (with the exception of the continuous measurement function). Therefore, place the measuring tool, as far as this is possible, against or on the measuring points.

Measurement takes place at the centre of the laser beam, even when target surfaces are sighted at an incline.

INFLUENCE EFFECTS ON THE MEASURING RANGE

The measuring range depends upon the light conditions and the reflection properties of the target surface. For improved visibility of the laser beam when working outdoors and when the sunlight is intense, use the laser viewing glasses (accessory) and the laser target plate (accessory), or shade off the target surface.

INFLUENCE EFFECTS ON THE MEASURING RESULT

Due to physical effects, faulty measurements cannot be excluded when measuring on different surfaces. Included here are:

- transparent surfaces (e.g., glass, water),
- reflecting surfaces (e.g., polished metal, glass),
- porous surfaces (e.g. insulation materials),
- structured surfaces (e.g., roughcast, natural stone).

If required, use the laser target plate (accessory) on these surfaces.

Also, air layers with varying temperatures or indirectly received reflections can affect the measured value.

ERROR CODE

Message code	Possible Cause	Remedy
Err10	Battery too low	Change batteries
Err15	Out of range	Measure target within the range
Err16	Received signal too weak	Use light color target; Hold Quick Measure more steady
Err18	Background brightness too high	Use dark colored target
Err26	Out of display	

ACCURACY CHECK OF THE MEASURING TOOL

The accuracy of the measuring tool can be checked as follows:

- Select a permanently unchangeable measuring section with a length of approx. 3 to 10 metres; its length must be precisely known (e.g. the width of a room or a door opening). The measuring distance must be indoors; the target surface for the measurement must be smooth and reflect well.
- Measure the distance 10 times after another. The deviation of the individual measurements from the mean value must not exceed $\pm 2\text{mm}$ (max.). Log the measurements, so that you can compare their accuracy at a later point of time.

MAINTENANCE

This laser distance measure has been designed to be a low-maintenance tool. However, in order to maintain its performance, you must always follow these simple directions.

1. **Always** handle the tool with care. Treat it as an optical device, such as a camera or binoculars.
2. **Avoid** exposing the tool to shock, continuous vibration or extreme hot or cold temperature.
3. **Always** store the tool indoors. When not in use, **ALWAYS** store the tool in its protective case.
4. **Always** Keep the tool free of dust and liquids. Use only a clean, soft cloth for cleaning. If necessary, slightly moisten the cloths with pure alcohol or a little water.
5. **Do not** touch the lens with your fingers.
6. Check the batteries regularly to avoid deterioration. **ALWAYS** remove the batteries from the tool, if it is not going to be used for an extended period of time.
7. Replace the batteries when the battery icon is continuously empty displayed on the LCD.
8. **Do not** disassemble the laser measuring tool; this will expose the user to hazardous radiation exposure.
9. **Do not** attempt to change any part of the laser lens.

SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE.

– NOTE –

- NOTE -

– NOTE –

RYOBI POWER EQUIPMENT WARRANTY

Subject to the warranty conditions below, this RYOBI tool (hereinafter called "the Product"), is warranted by Ryobi (herein called "the Company") to be free from defects in material or workmanship for a period of 24 months from the date of original purchase covering both parts and labour. Under the terms of this warranty, the repair or replacement of any part shall be the opinion of the Company or its authorised agent. Should service become necessary during the warranty period, the owner should contact the authorised Ryobi retailer from whom the product was purchased, or the nearest Company branch office. In order to obtain warranty service, the owner must include the Sales Docket and Warranty Certificate to confirm date of purchase. This Product is sold by the dealer or agent as principal and the dealer has no authority from the Company to give any additional warranty or guarantee on the Company's behalf except as herein contained or herein referred to.

Warranty Conditions

This warranty only applies provided that the Product has been used in accordance with the manufacturer's recommendations under normal use and reasonable care (in the opinion of the Company) and such warranty does not cover consumable components, damage, malfunction or failure resulting from

misuse, neglect, abuse, or used for a purpose for which it was not designed, or is not suited and no repairs, alterations or modifications have been attempted by other than an Authorised Service Agent. This guarantee will not apply if the tool is damaged by accident or if repairs arise from normal wear and tear.

Accessories such as bits, blades, sanding discs, cutting lines, etc., are excluded from this guarantee. Normal consumable parts, such as carbon brushes, bearings, chucks, cord assembly's, spark plugs, recoil pulleys and bump head assembly's are specifically excluded from this guarantee.

The Company accepts no additional liability pursuant to this warranty for the costs of traveling or transportation of the Product or parts to and from the service dealer or agent - which costs are not included in the warranty.

Nothing herein shall have the effect of excluding, restricting or modifying any conditions, warranty, right or liability imposed, to the extent only that such exclusion, restriction or modification would render any term herein void.



STEVENS & CO (Pty) Ltd
604, 16th Street, Randjespark
Midrand, South Africa

P O Box 4059
HALFWAY HOUSE
1685, South Africa

Tel: +27 (11) 357-9600
Fax: +27 (11) 805-5541
email: stevens@ryobi.co.za

THIS WARRANTY FORM SHOULD BE RETAINED BY THE CUSTOMER AT ALL TIMES.

For your record and to assist in establishing date of purchase (necessary for in-warranty service), please keep your purchase docket and this form, completed with the following particulars.

PURCHASED FROM:.....

ADDRESS OF DEALER:.....

DATE:..... MODEL NO..... SERIAL NO.....

Present this form with your Purchase Docket when Warranty Service is required.