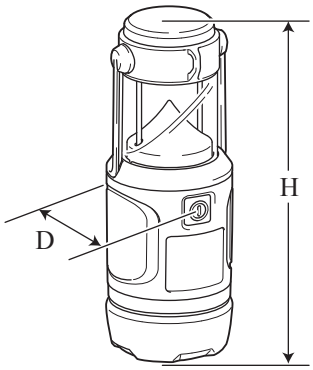
TECHNICAL INFORMATION

PRODUCT

Model No. ► ML102

Description ► Rechargeable LED Lantern



Dimensions : mm (")	
Diameter (D)	ø65 (ø2-9/16)
Height (H)	180 (7-1/8)

CONCEPT AND MAIN APPLICATIONS

Model ML102 is a rechargeable LED lantern powered by either Makita 7.2V-1.0Ah Li-ion battery BL7010 or 10.8V-1.3Ah Li-ion battery BL1013 (12Vmax.-1.3Ah Li-ion battery BL1014*1).
By turning the knob to change the internal LED direction, this light can be used 2 way as Lantern and Flashlight.

Its other features are as follows:
- equipped with warm color 1.25W single LED for long continuous illumination.
- IP54 rated waterproof design for use in outdoor applications or harsh environments
- Hooks on the top and the bottom enable to hang the light from either end
- Strap hole for using a commercial strap to protect the Lantern from accidental drop

► Specification

Specification / Model No.			ML102	
Battery	Voltage: V		7.2	10.8 (12Vmax.*1)
	Capacity: Ah		1.0	1.3
	Energy capacity: Wh		7.2	14
	Cell type		Li-ion	Li-ion
	Charging time (approx.): min.		30 with DC07SA	50 with DC10WA (DC10WB*1)
Continuous rating input: W			1.5	1.6
Light source	Type		Single LED (1.25W)	
	Illuminance: lx	Lantern*2	80	
		Flashlight*3	120	
	Luminous flux: lm		100	
Continuous illumination (approx.): hour			4.5	8.0
Dustproof and dripproof			IP54	
Overdischarge protective circuit			Yes	
Weight according to EPTA-Procedure 01/2003: kg (lbs)			0.32 (0.7)*4	

*1 For North, Central and South American countries except Argentina
*2 Illuminance: measured at 0.4m in front of the radial lightsource
*3 Illuminance: measured at 0.5m in front of the radial lightsource
*4 With battery BL7010

► Standard equipment

No

► Optional accessories

Battery BL7010
Battery BL1013 (BL1014 for North, Central and South American countries except Argentina)
Charger DC07SA (for BL7010)
Charger DC10WA (DC10WB for North, Central and South American countries except Argentina)

Repair

CAUTION: Repair the machine in accordance with "Instruction manual" or "Safety instructions".

[1] NECESSARY REPAIRING TOOLS

Code No.	Description	Use for
1R291	Retaining ring S & R pliers	removing Knob
---	Hex socket bit 5.5	removing Nut (M3)

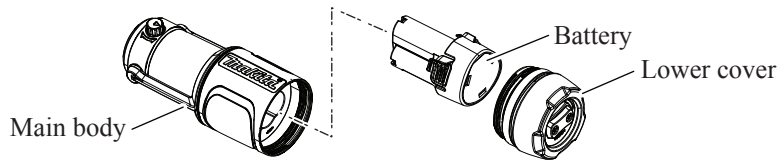
[2] LUBRICATION

It is not required to lubricate the machine because of no section to be lubricated.

[3] DISASSEMBLY/ASSEMBLY

Remove Lower cover from Main body by turning the cover counterclockwise and pull off the battery. (See **Fig. A**)

Fig. A

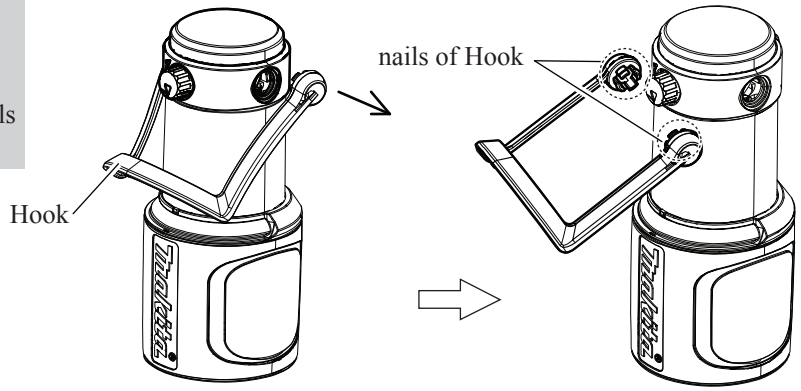


[3] -1. Handle

DISASSEMBLING

Fig. 1

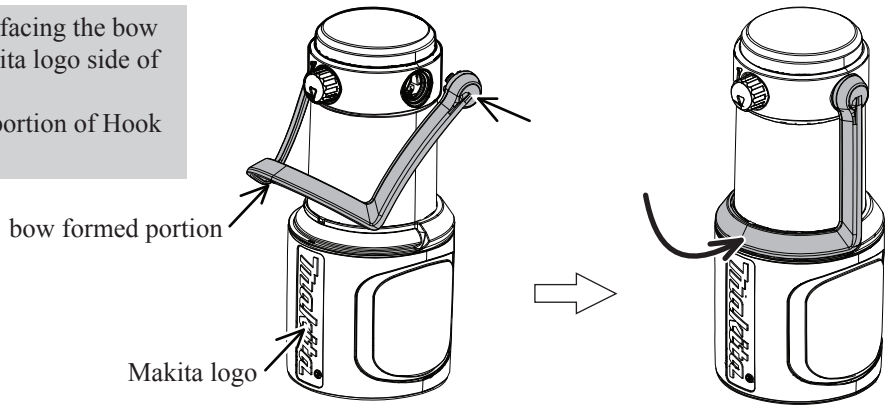
Expand Hook by pulling one side of Hook toward out side.
Now Hook is removed.
Note: Be careful not to break the nails of Hook when disassembling.



ASSEMBLING

Fig. 2

Assemble Hook while facing the bow formed portion to Makita logo side of Main body.
Now the bow formed portion of Hook fits to the body.



Repair

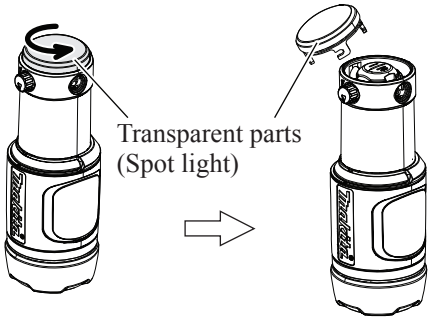
[3] DISASSEMBLY/ASSEMBLY
[3] -2. LED component

DISASSEMBLING

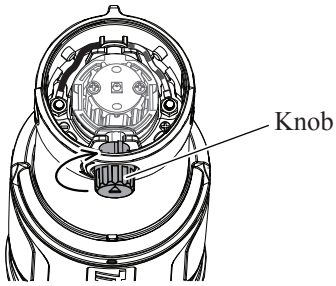
(1) Remove Hook as drawn in **Fig. 1**.
(2) Remove Upper cover and Knob. Then, remove LED component as drawn in **Fig. 3**.

Fig. 3

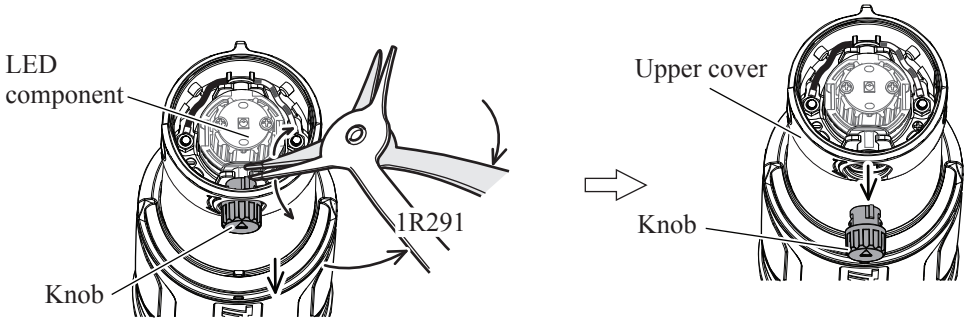
1. Remove Transparent parts (Spot light) by turning it counterclockwise.



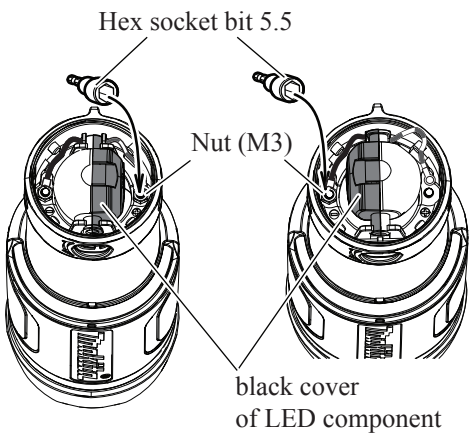
2. Turn Knob to face the triangle mark of Knob to the top.



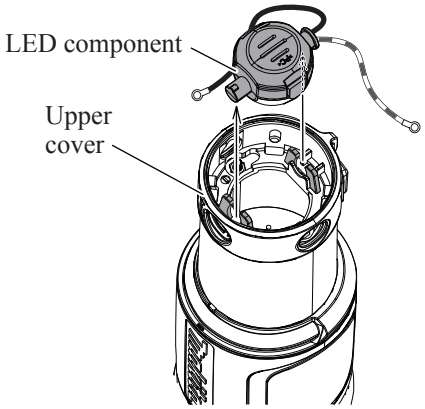
3. Apply the nails of 1R291 to the space between LED component and Knob as drawn below. Then, grip 1R291 to push Knob out from Upper cover.



4. Turning LED component, remove Nut (M3) from the black cover side by using Hex socket bit 5.5. Then, turn LED component to the reverse side and remove Nut (M3) in the same way.



5. Disassemble LED component from Upper cover.
Note: Be careful to remove LED component because the tolerance at the hinge portions are a little bit tight.



Repair

[3] DISASSEMBLY/ASSEMBLY
[3] -2. LED component (cont.)

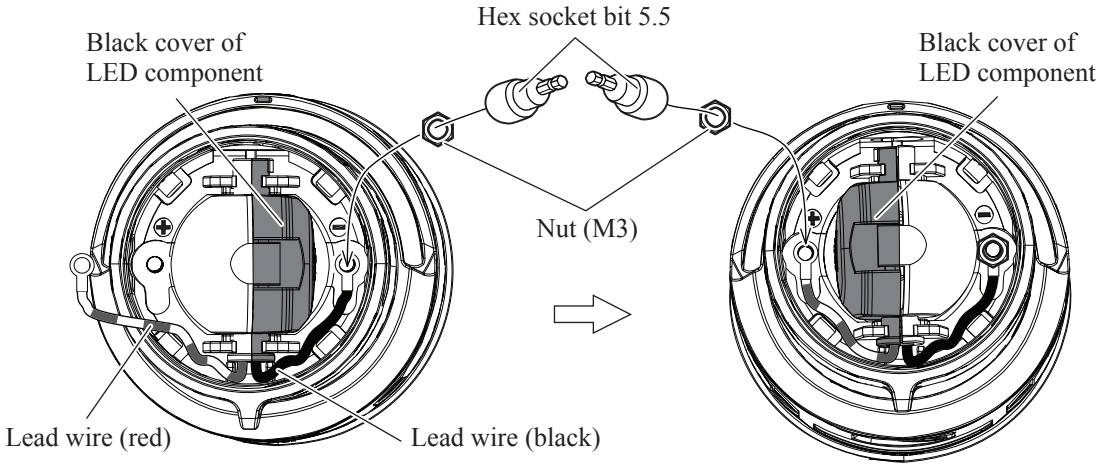
ASSEMBLING

Assemble LED component to Upper cover as drawn in **Fig. 4**.

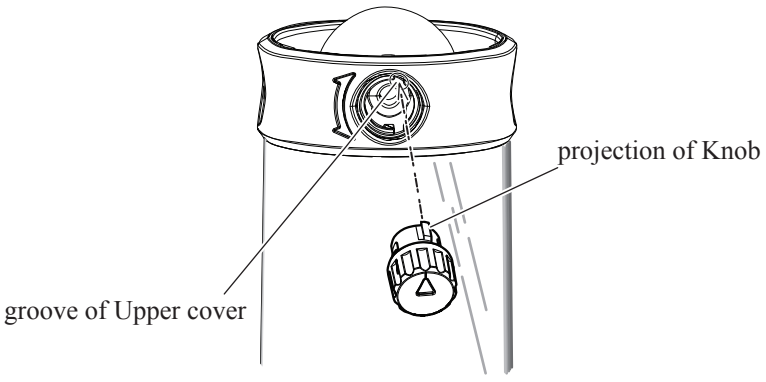
Fig. 4

1. Assemble LED component to Upper cover. And turn LED component while holding Lead wires with your fingers. Then, tighten Nut (M3) with Lead wire from the black cover side by using Hex socket bit 5.5. And then, turn LED component to the reverse side while holding Lead wire with your finger and tighten Nut (M3) with Lead wire in the same way.

Note: • Fastening torque for Nut (M3) is 3.5 N·m.
• Connect Lead wire (red) to Plus terminal, Lead wire (black) to Minus terminal.



2. Set the lantern in flash light mode, and assemble Knob to Upper cover while facing the triangle mark of knob to the top in order to fit the projection of Knob to the groove of Upper cover easily.



Repair

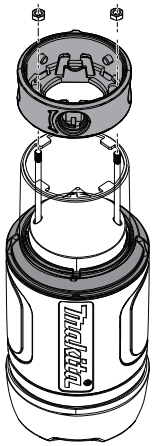
[3] DISASSEMBLY/ASSEMBLY
[3] -3. Switch circuit board assembly

DISASSEMBLING

(1) Disassemble Hook as drawn in **Fig. 1**.
(2) Disassemble LED component as drawn in **Fig. 2**.
(3) Disassemble Switch circuit board assembly as drawn in **Fig. 5**.

Fig. 5

1. Remove upper cover.
(It is removed in the process of disassembling of LED component.)



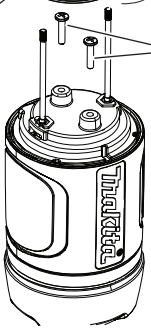
Transparent parts on body

Mid ring

Reflector

2. Remove Transparent parts on body, Mid ring and Reflector.

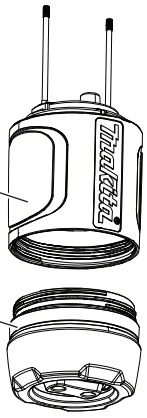
3. Unscrew two 3x14 B-type Pan head screws from Main body.



4. Remove Lower cover from Main body by turning it counterclockwise.

Main body

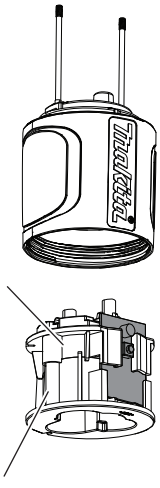
Lower cover



5. Pull off Upper/ Lower of main internals from Main body.

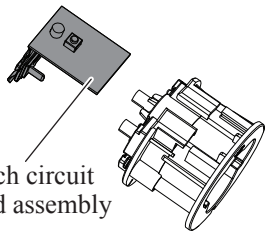
Upper of main internals

Lower of main internals



6. Pull off Switch circuit board assembly from Upper/ Lower of main internals.

Switch circuit board assembly



Repair

[3] DISASSEMBLY/ASSEMBLY
[3] -3. Switch circuit board assembly (cont.)

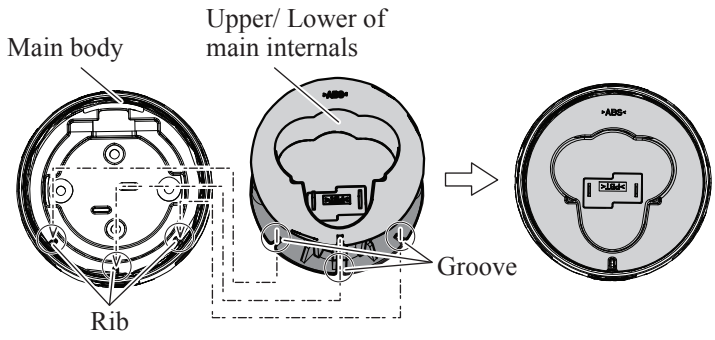
ASSEMBLING

(1) Assemble the components parts by reversing the disassembly procedure. (Refer to **Fig. 5**)
(2) Assemble Upper/ Lower of main internals into Main body. (See **Fig. 6**)

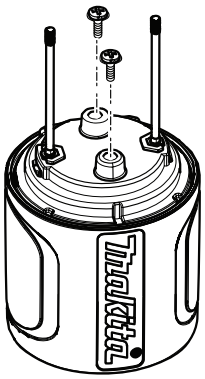
Fig. 6

1. While fitting three grooves of Upper/ Lower of main internals to three Ribs of Main body, push Upper/ Lower of main internals into Main body until they stop.

2. Secure Switch circuit board assembly with two 3x14 B-type Pan head screws.
Note: Fastening torque for 3x14 B-type Pan head screw is 3.5 N·m.



[View from bottom side]



(3) Assemble Mid ring to Main body as drawn in **Fig. 7**.

Fig. 7

Assemble Mid ring to Main body while fitting the projection of Mid ring to the notch of Main body.