



Instruction Manual

Grippy® Advanced


Tested by for General and Electrical Safety under

IEC 60601-1 and IEC 60601-1-2

Explanation of Symbols:



Manufacturer



Type B Applied part: provides basic degree of protection against electric shock



General Warning



Read the User manual before using the device

1 Technical Details

Generic Name: Bionic Upper Limb - Arm prosthesis

Model: Grippy™ Advanced

Power Source: 3-cell Lithium-ion Battery, 1000mAh

Battery Charger: Input: 100 - 240 V AC, 50/60 Hz, 0.3A | **Output:** 9 to 12.6 V DC, 0-0.5 A DC

Operating Temp: 20°C to 60°C | **Load Capacity:** 500g (lateral) & 2Kg (Downward)

Ingress protection class: IP30 | **Weight:** Gripper: 250g, Battery: 90g

Consumables: Gloves with finger tips.

Accessories:

Item	Manufacturer	Model	Serial no	Date of Mfg
Battery Charger	Shenzhen Binsheng Technology Co., Ltd. sales@binspower.com	BS-12W1260500W or BS-12W120500BIN	See Marking on Charger	See Marking on Charger

Note: The device is intended to be operated by the patient after undergoing necessary training at the clinic / hospital or any other medical facility. After that the patient is fitted with a prosthetic socket made specifically for the patient by a qualified professional.

Register Warranty Online at
www.robobionics.in/warranty-registration/

2 Caution

- Use only the charger provided with the device for charging. Using any other charger might result in a fire hazard.
- Use the device only in dry conditions. Avoid using the device in rain or under water. Protect it from water splashes. This device is not water-proof. Failure to follow this instruction might damage the device.
- Short-circuiting the charger input port provided at the battery interface, even when the device is powered off can potentially damage the device.
- In case of replacement or troubleshooting, the battery compartment should be opened by authorized personnel only. User should not try to attempt repair / open / tamper with the device, as this will damage the seals and may cause harm to the user while voiding the warranty.
- Contact the relevant authority from where the device was purchased / Fitted. Any unauthorized repair attempts will void the warranty and might damage the device.
- Dispose the device according to the local laws for disposing electronic devices. Don't throw in public dustbin.
- Never expose the device/battery to fire or environment where temperatures exceed 60°C.
- Do not Inhale or swallow small parts that are broken/detached from device.
- Keep the device away from children or pets.
- The device is to be used only by the intended person.

3 Introduction

3.1. Glossary

Gripper - This is the part that looks similar to a human palm along with fingers.

Socket - The custom-made part made for the residual limb to fit-in. This should usually contain the battery assembly, sensors and feedback actuators.

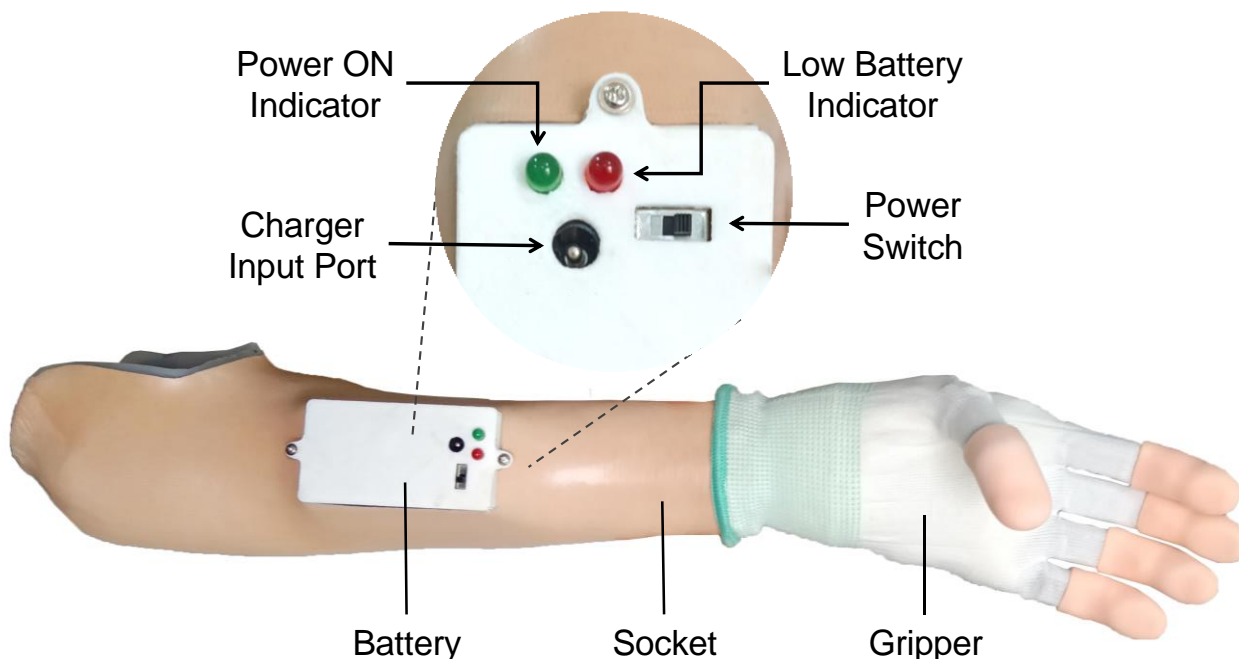
Sensors - The part which is placed at the users' residual limb to pick up muscle signal for the operation of the device. (Actual placement may vary) (Applied Part – Type B)

Feedback Motor- A set of vibration motors placed inside the socket which vibrates when the user holds something with the gripper. (Actual placement may vary)

Authorized Person - Your Doctor / Prosthetist or a technician from your limb fitting center / Hospital / clinic / Manufacturer.

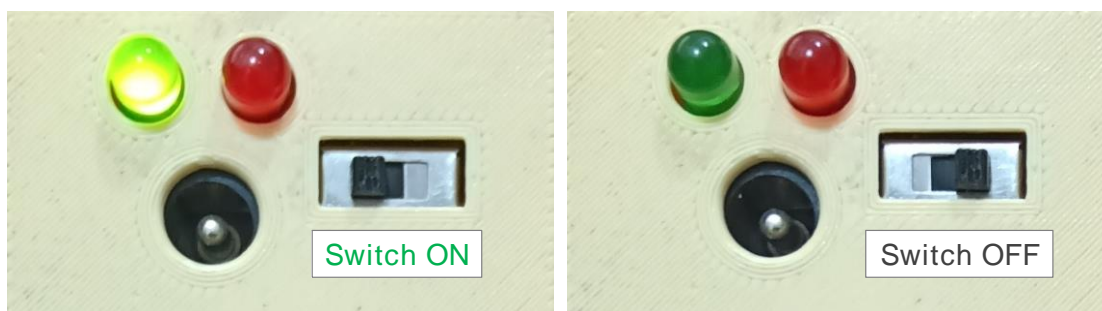
4 Functioning

The device is intended to be used by an upper limb below-elbow amputee for carrying out simple day-to-day tasks. The device works according to the signal received at the sensors. Kindly follow the training/ instructions provided by your clinician or P&O or an equally qualified professional.

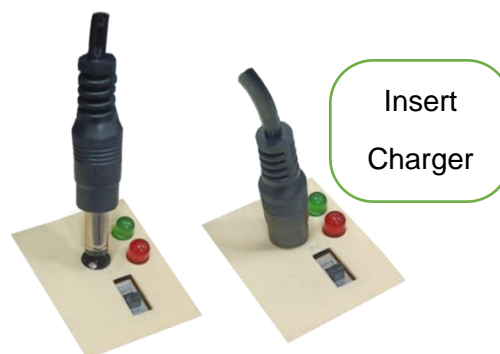
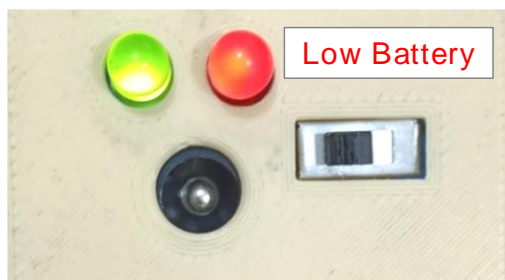


4.1. Battery Interface

To **Power On** the device, slide the switch inwards. To Power it OFF slide it in the opposite direction. When switched ON the **GREEN** indicator should light up as shown in the image below. Wait for a few seconds before using the device.



In case of low battery, the **RED** indicator should light up as shown in the image below (left).



This indicates that the device has only few more minutes left before it shuts down on its own. Charge the device as soon as possible to continue using the device.

4.2. Battery Charging

Insert the charger terminal into the input port provided on the battery interface as shown in above image (right).

Switch ON the charger to start the charging process. A **RED** light on the charging adapter indicates the battery is being charged. Once the charging process is complete the indicator should turn **GREEN**. This is shown in the image below. Remove the charger after it is green or after 5 hours, whichever is earlier.



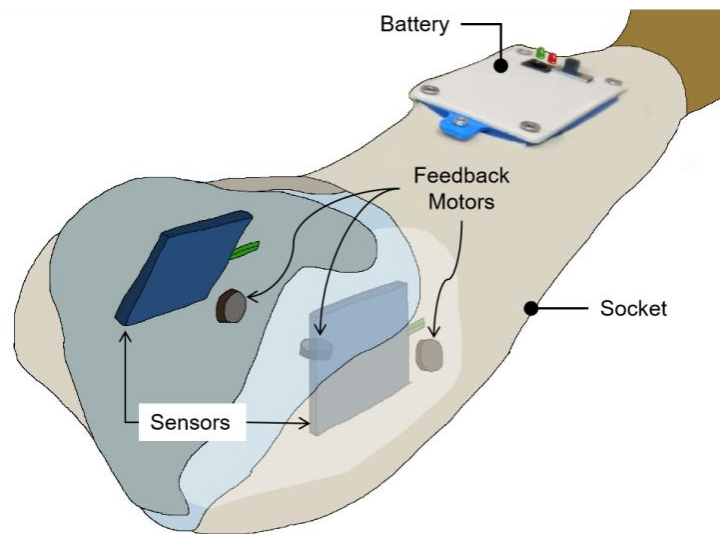
4.3. Gripper Operation

Operating the gripper is really easy. Make sure you are wearing the device. First switched ON the device. The gripper should come to open position when it starts.

To **close** the gripper, apply pressure on the sensors. Try moving your muscles as if you trying to flex your wrist. The training provided at the clinic/ hospital should be implemented here. The pressure should be applied simultaneously, in case of multiple sensors, and must be more than a specified threshold.

Once the gripper is closed, you can relax your muscles. The gripper will be able to constantly hold onto the object. Try moving around with the object in hand.

To **open** the gripper, repeat the same action as above. Ensure that the object has a place to land safely before opening the gripper.



Inner Socket View

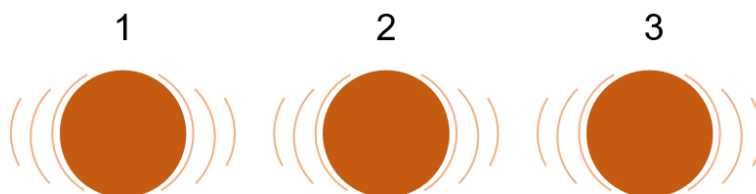
4.4. Holding Object

After closing the hand, the gripper automatically holds the object. The user can now relax his/her muscles for the entire duration of the hold. Repeating the same action releases the object.

4.5. Feedback

(applicable only to Grippy™ Advanced Devices)

Whenever you perform any of the actions such as opening, closing or holding an object, you will feel a vibration on your arm. This vibration is provided to give you a feedback on the operation of the device. A total of three (3) feedback motors are provided with the device. Ideally, it should be placed inside the socket touching the patient's skin.



When **closing** the gripper, a sequence of vibration should follow. It can be either “1-2-3” or “3-2-1” depending on the configuration of the placement.

While **opening** the gripper, the reverse of the above sequence should be observed.

If the gripper is holding an object, then the “Feedback motor 2” should vibrate according to hardness of the object. Rapid vibrations would be felt for a soft object. Prolonged vibrations should be felt for a hard object. In absence of any object the additional vibrations should not occur.

If the above sequence is not observed kindly contact your Doctor/Prosthetist who fitted the device, for rectification.

5 Hazardous Situation

- In case any of following hazardous situation occur, immediately turn off the device by using the switch, remove the device from your body and do not use the device until the device is repaired by an authorized person.
 - 1) Device catches fire.
 - 2) Device starts to malfunction.
 - 3) In case Red light turns on, it indicates that the device needs to be charged before use.
 - 4) Device breaks and internals are exposed.
- For removal of the prosthetic socket from your body follow the instructions provided during fitment of the device and socket by your Doctor/Prosthetist.
- Don't touch the internal parts when they are exposed due to damage or any other condition.

6 Cleaning & Maintenance

- Turn off the device when cleaning the gripper.
- The Battery compartment and the gripper can be cleaned with at least 75% Medical Alcohol. Don't use water or water-based cleaning reagents such as soap or detergent solution. This might result in a short-circuit.
- For cleaning the prosthetic socket follow the instructions provided during fitment of the device and socket by your Doctor/Prosthetist.

Changing the Gloves

- Remove the gloves when dirty. The Glove and finger tips can be cleaned with regular detergent or soap. Ensure the gloves are dry before use.
- Follow the steps as shown in below image to insert gloves.
 - Start with aligning four fingers, except the thumb, with the glove.
 - Then proceed to pull it down firmly starting from the index finger.
 - Finally bend the thumb to insert the glove's thumb.
 - Pull it down completely and finish by pressing any loose part downwards.



7 Travel Guidelines

- The Device contains a Li-Ion Battery and hence it is recommended to carry the device as a part of Cabin Baggage if its not being used during the travel.
- The weight of a Below Elbow device will be approximately 800 grams.
- For safe carriage we recommend the Grippy™ Carry Case designed specifically for Grippy™ devices.

8 Warranty Terms

- For the detailed warranty terms, please refer to the warranty card supplied with the Device
- Use
- Warranty is applicable only for the devices registered online on our website.



For More information visit: robobionics.in



Manufactured By:



Bionic Hope Private Limited.

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