CHANZON 3PCB-MBB-400

CHANZON 400 Tie-Point Solderless Breadboard Instruction Manual

Model: BB-801 (3PCB-MBB-400)
Brand: CHANZON

INTRODUCTION

This manual provides comprehensive instructions for the CHANZON 400 Tie-Point Solderless Breadboard Kit (BB-801). This kit includes three universal PCB breadboards designed for rapid prototyping of electronic circuits without soldering. It is ideal for small DIY projects, Arduino, Raspberry Pi, and other microcontroller-based experiments.

PRODUCT OVERVIEW AND KEY FEATURES

The CHANZON BB-801 breadboard offers a reliable platform for circuit development. Each board features 400 tie points, providing ample space for various components.

- **Solderless Design:** Allows for quick assembly and modification of circuits without the need for soldering, making it reusable and ideal for learning and experimentation.
- **Tight Spring Connections:** Equipped with high-quality metal springs under each tie point, ensuring secure and consistent electrical connections for all components.
- **Horizontal Power Paths:** Each horizontal power path includes 5 insert points, facilitating easy connection of DIP components, sensors, transistors, capacitors, resistors, and other devices.
- **Expandable Design:** Multiple breadboards can be connected together using the integrated bolts on the side, allowing for larger and more complex circuit designs.
- **Removable Power Rails:** Two removable power rails are located on both sides of the PCB, providing dedicated power and ground connections for convenience.
- **Self-Adhesive Backing:** Features a self-adhesive tape on the back for secure mounting to work surfaces or project enclosures.
- **Compatibility:** Fully compatible with common development platforms such as Raspberry Pi and Arduino, as well as various electronic components including LEDs, screw terminals, Dupont wires, and ICs.
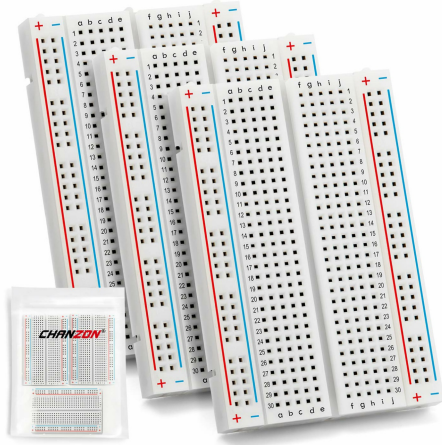
Product Visuals

Figure 1: Overview of the CHANZON 400 Tie-Point Solderless Breadboards. This image displays three individual breadboards, highlighting their standard layout with numbered rows and lettered columns, along with the red and blue power rails.

DEBUNKED

VS

❶ Aligning Perfectly

❶ Hard to Install

❷ Tight Spring

❷ Loose Spring

❸ Not Falling Apart

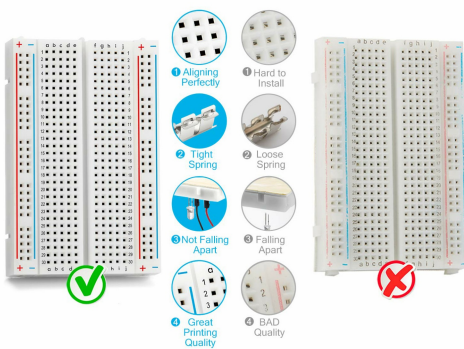❸ Falling Apart

❹ Great Printing Quality

❹ BAD Quality

Figure 2: Internal Quality Comparison. This image illustrates the superior internal construction of CHANZON breadboards, featuring perfectly aligned and tight spring connections compared to typical loose springs found in other brands, ensuring components do not fall out and print quality remains high.

10mm / 0.39inch
56.3mm / 2.2inch
84.5mm / 3.33inch
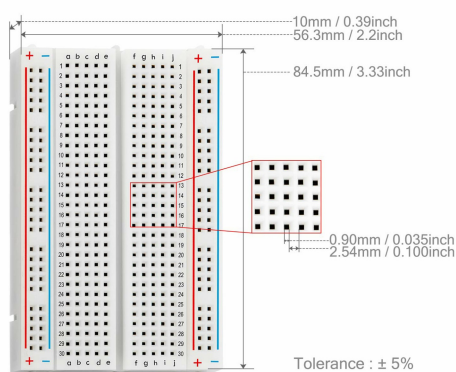0.90mm / 0.035inch
2.54mm / 0.100inch
Tolerance : ± 5%

Figure 3: Breadboard Dimensions. This diagram provides precise measurements of

the breadboard, including its length (84.5mm / 3.33 inches), width (56.3mm / 2.2 inches), thickness (10mm / 0.39 inches), and hole pitch (2.54mm / 0.1 inches), with a tolerance of ±5%.

Figure 4: Self-Adhesive Backing and Power Path. This image shows the protective film over the self-adhesive backing on the underside of the breadboard, along with an inset illustrating the internal horizontal power path connections.
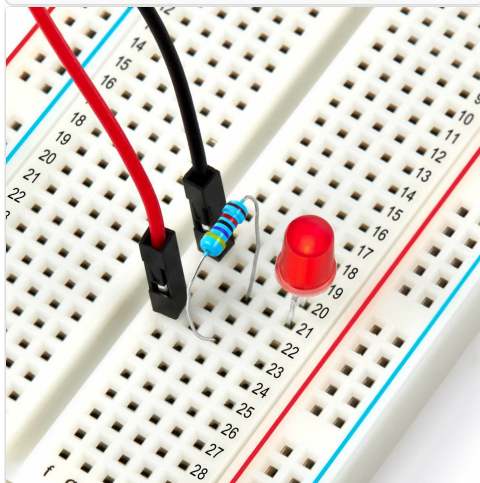

Figure 5: Components on Breadboard. A close-up view demonstrating how electronic components like a resistor and an LED are inserted into the breadboard's tie points, illustrating the ease of connection.
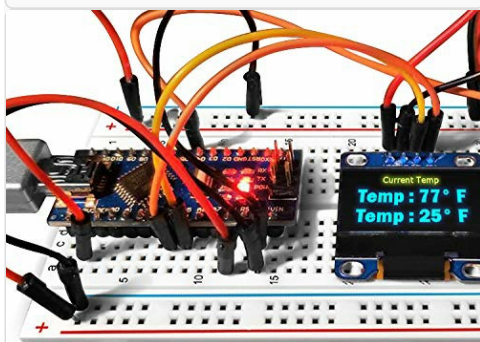

Figure 6: Breadboard in Application. This image shows a breadboard actively used in a project, featuring a microcontroller board connected to an OLED display,

demonstrating its utility in prototyping complex circuits.

Setup Guide

Setting up your CHANZON breadboard is straightforward. Follow these steps to prepare your prototyping environment:

1. **Unpack:** Carefully remove the breadboards from their packaging.
2. **Inspect:** Before use, visually inspect each breadboard for any physical damage or manufacturing defects.
3. **Power Rails:** The breadboards come with two removable power rails. These can be detached if not needed for your specific project or reattached as required. They provide convenient access to power (red line, typically +V) and ground (blue line, typically GND) connections.
4. **Adhesive Backing (Optional):** If you wish to secure the breadboard to a surface, peel off the protective film from the self-adhesive tape on the back and press the breadboard firmly onto your desired surface.
5. **Expanding Your Workspace (Optional):** For larger projects, multiple breadboards can be interconnected. Align the side edges of two breadboards and use the integrated male/female connectors (bolts) to snap them together securely.

Operating Instructions

Using the solderless breadboard for circuit prototyping involves understanding its internal connections and proper component placement.

Understanding Breadboard Connections:

- **Main Tie Points (Component Area):** The central area of the breadboard consists of rows of 5 interconnected holes (e.g., A1-E1, F1-J1). Components inserted into these 5 holes in the same row are electrically connected. Each row is isolated from adjacent rows.
- **Power Rails (Bus Strips):** The long vertical strips on the sides (marked with red for positive and blue for negative/ground) are typically used for power distribution. All holes along a single power rail are interconnected.

Building a Circuit:

1. **Component Insertion:** Gently push the leads of components (resistors, LEDs, ICs, etc.) into the desired holes. Ensure the leads are straight to avoid bending or damaging the internal springs. The tight spring connections of CHANZON breadboards ensure a secure fit.
2. **Connecting Components:** Use jumper wires to connect different sections of the breadboard. For example, to connect a component in row 1 to a component in row 5, use a jumper wire between any hole in A1-E1 and any hole in A5-E5.
3. **Powering Your Circuit:** Connect your power supply (e.g., Arduino 5V, external power supply) to the power rails. Typically, the positive voltage connects to the red rail and ground to the blue rail. Then, use jumper wires to bring power and ground from these rails to the components in your circuit.
4. **Testing:** After assembling your circuit, carefully review all connections before applying power. Use a multimeter to check continuity and voltage levels as needed.

Maintenance

Proper maintenance ensures the longevity and reliability of your CHANZON breadboards.

- **Cleanliness:** Keep the breadboard clean and free from dust, debris, and solder residue. Use a soft, dry brush

or compressed air to remove particles. Avoid using liquids or harsh chemicals.

- **Component Insertion/Removal:** Always insert and remove components gently and straight to prevent bending or damaging the internal spring clips. Avoid forcing oversized component leads into the holes.
- **Storage:** Store breadboards in a dry, cool environment, away from direct sunlight and extreme temperatures. If possible, keep them in their original packaging or a protective container to prevent dust accumulation and physical damage.
- **Avoid Overloading:** While the breadboard is designed for low current applications (<5A), avoid drawing excessive current through individual connections, as this can degrade the internal springs over time.

Troubleshooting

If you encounter issues while using your breadboard, consider the following common problems and solutions:

Problem	Possible Cause	Solution
Component feels loose or connection is intermittent.	Bent component lead, worn-out internal spring, or incorrect lead size.	Ensure component leads are straight. Try inserting the component into a different hole. If the issue persists, the internal spring might be damaged; consider using a different section of the breadboard or a new breadboard. Use 20-29 AWG (0.3-0.8mm) jumper wires for optimal fit.
Circuit not functioning as expected.	Incorrect wiring, faulty component, insufficient power, or short circuit.	Double-check all connections against your circuit diagram. Test individual components. Verify power supply voltage and current. Use a multimeter to check for continuity and shorts.
Difficulty inserting or removing components.	Component leads are too thick or bent, or the breadboard holes are new/tight.	Ensure leads are straight and within the recommended 20-29 AWG (0.3-0.8mm) range. For new, tight holes, gently insert and remove a standard jumper wire a few times to loosen the connection slightly. Avoid excessive force.

Product Specifications

Feature	Detail
Model Number	BB-801 (3PCB-MBB-400)
Tie Points	400
Hole Diameter	0.9 mm
Hole Pitch	2.54 mm / 0.1 inches
Thickness	10 mm
Dimensions (L x W x H)	84.5 mm x 56.3 mm x 10 mm (3.33 x 2.2 x 0.39 inches)
Material	ABS Plastic (single-sided)
Voltage Rating	Up to 300V
Current Rating	Less than 5A

Feature	Detail
Compatible Wire Gauge	20-29 AWG (0.3-0.8mm)
Kit Contents	3 pieces of 400 pin breadboards

WARRANTY AND CUSTOMER SUPPORT

CHANZON is committed to providing high-quality products and excellent customer service.

Warranty Information:

For specific warranty details regarding your CHANZON 400 Tie-Point Solderless Breadboard Kit, please refer to the product listing on the retailer's website or contact CHANZON customer service directly. Our products are designed for durability and performance in electronic prototyping applications.

Customer Service:

Our electronic customer service team is available 24/7 to assist with any inquiries, technical support, or issues you may encounter with your product. Please reach out to us through the retailer's messaging system or visit the official CHANZON website for contact information.

For more information and to explore other CHANZON products, please visit the Official CHANZON Store on Amazon.

Related Documents - 3PCB-MBB-400

[C&S Sales Catalog: Educational Electronics, Science Kits, and Tools](#)
Discover a comprehensive catalog from C&S Sales featuring educational electronics, science kits, robotics, solar energy projects, and tools from leading brands like Elenco, Engino, OWI, and Velleman. Ideal for students, hobbyists, and educators.

[Mircom FX-400 Fire Alarm Control Panel Installation and Operation Manual](#)
This Installation and Operation Manual provides comprehensive guidance for the Mircom FX-400 Addressable Fire Alarm Control Panel (FACP). It details system features, component compatibility, wiring diagrams, configuration options, operational procedures, and troubleshooting tips for ensuring effective fire safety system deployment.

[Using Weird Displays with Raspberry Pi: A Guide to Non-Standard Screen Integration](#)
A comprehensive guide for Raspberry Pi users on connecting and configuring unconventional displays, including troubleshooting, custom resolutions, and advanced settings for unique screen projects.

	[Hunter X-Core Residential Irrigation Controller Owner's Manual](#) Comprehensive guide to the Hunter X-Core Residential Irrigation Controller, covering installation, programming, advanced features, and troubleshooting.
	[Alpha UTV Shooting Rail System Installation Manual](#) Installation manual for the Alpha UTV Shooting Rail System by Alpha Innovations Inc., detailing safety precautions, parts list, tools required, and step-by-step assembly instructions for Can-Am Defender and Polaris Ranger vehicles.
	[Troubleshooting KMS HDMI Output on Raspberry Pi](#) A comprehensive guide to troubleshooting HDMI output issues with the KMS graphics driver on Raspberry Pi devices, covering common problems, symptoms, and mitigation strategies.