

Module-Specific Instructions

Shock Absorber

The shock absorber is a composed assembly that occupies two base cells.

- The shock absorber requires special attention. Use the "Support Painting" tool in the slicer to block the generation of supports on the inside of the spring.
- All other parts of this assembly must be printed completely without supports.

Hidden Push Button

This module consists of a hinged cover and the push button. The assembly requires a pause-at-height printing technique.

- The spring and cover must be printed before the base.
- **Spring Configuration:** It is preferable to use **TPU**. Set a high number of wall layers (3 to 5) and very low infill (< 8%). Adjust this infill according to the hardness of the chosen TPU to ensure proper flexibility.
- **Base and Button Printing:** Print these two parts together with the button already positioned in its working location. Remember to disable supports. Add a pause in the slicer at the exact layer before the button itself starts printing. During this pause, insert the previously printed TPU spring into the cavity, as it will act as the physical support for continuous printing of the button.
- After all prints are finished, align the hinge holes of the cover and the base. Use a piece of rigid filament to join the two parts together.

Circuit Breaker

The circuit breaker simulates an industrial switch.

- The base and the switch must be printed separately using conventional settings.
- It is preferable to print the switch in **TPU** to facilitate insertion into the base and prevent breakage during operation.

Ball Valve and Friction Rings

The ball valve operates with a quarter-turn using a lever handle. The *friction rings* are snap-on rings that increase rotational friction on the valve.

- Use tree supports and configure the slicer to provide high structural strength in the walls and infill.
- When the print finishes, slowly turn the lever to break the generated internal supports. It is crucial to apply the turning force with your hand very close to the center axis to prevent the part from breaking.
- Print the ring set conventionally. Afterward, insert the desired ring below the hexagon present on the lever axis.

Other Parts

The other parts that make up the benchmark do not require complex techniques, they should be printed conventionally and separated.