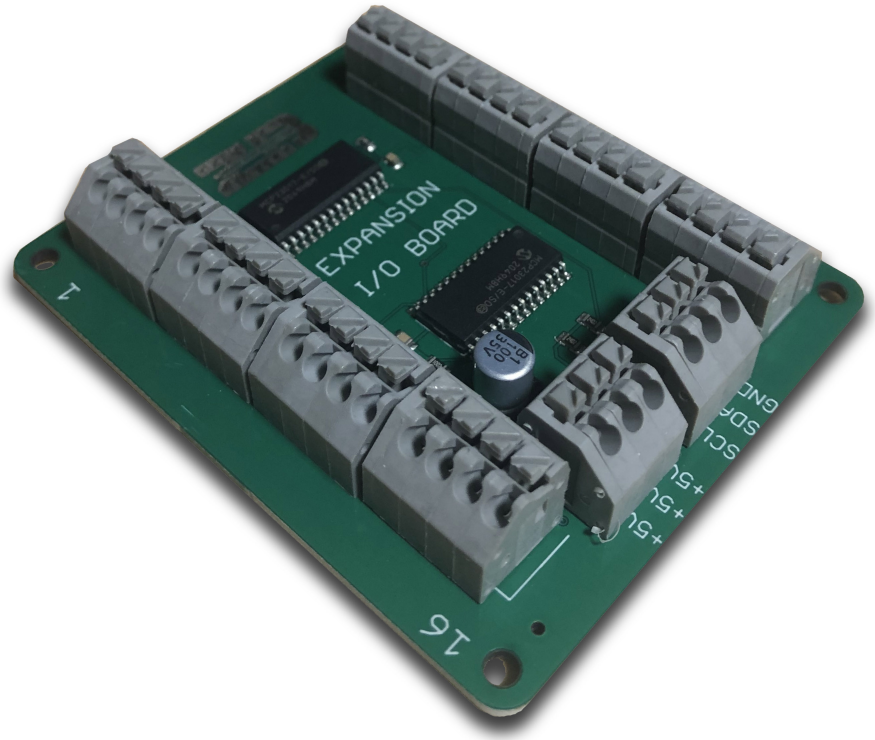
I/O EXPANSION BOARD
INSTALLATION & USE

Firmware V4R51 and Higher



BEFORE YOU BEGIN

Working with electricity comes with huge risks that should never be taken lightly, safety should always come first.

To avoid personal injury, possible damage to equipment or danger of fire, all work on electronic equipment should be conducted following these safety procedures.

General Safety

Before working on any electronics, consider following these basic safety precautions to help reduce any hazards.

- Remove any electronic equipment you're testing or working on from the power source.
- Never assume the power circuit is off. Test and test again with a voltmeter to confirm.
- Remove fuses and replace them only after the power to the circuit is disconnected.
- Don't connect power to a circuit until you're done working on it and rechecked the work.
- Always ensure that all electronics equipment is properly grounded
- If it's damaged, replace it. For instance, replace cables instead of repairing with insulating tape.
- Always use the right electronics repair and maintenance tools.
- Always return covers after removing them to reduce the risk of electric shock.
- Make sure your circuit is not overloaded.
- Always have safety equipment like a fire extinguisher, a basic first aid kit and a mobile phone nearby.

Personal Safety

Here are some personal safety precautions to keep in mind:

- Always keep your work area dry.
- Always work in a well-ventilated area.
- Don't wear flapping or loose clothing when working.
- Don't work with metallic jewelry on your hands like watches, rings and bracelets.
- Always wear non-conductive shoes.
- Always remove power to a circuit before connecting alligator clips.
- Always wear safety goggles.
- Be careful when handling large capacitors as they can still hold high voltage even after you've disconnected the circuit from power.

Static Damage Prevention

Static electricity can damage electronic devices and your system. To avoid damage, keep static-sensitive devices in their static-protective bags until you are ready to install them.

To reduce the possibility of electrostatic discharge, observe the following precautions:

- Limit your movement. Movement can cause static electricity to build up around you.
- Handle the device carefully, holding it by its edges or frame.
- Do not touch solder joints, pins, or exposed printed circuitry.
- Do not leave the device where others can handle and possibly damage the device.
- While the device is still in its antistatic bag, touch it to an unpainted metal part of the system unit for at least 2 seconds. (This action removes static electricity from the package and from your body).
- Remove the device from its package and install it directly into your system, without putting it down. If it is necessary to put the device down, place it onto its static-protective bag. (If your device is an adapter, place it component-side up.) Do not place the device onto the cover of the system or onto a metal table.
- Take additional care when you handle devices during cold weather. Indoor humidity tends to decrease in cold weather, causing an increase in static electricity.

Disposal

Observe the approved methods and ordinances of your locality with regard to proper disposal of used electronic appliances.

Table of Contents

INCLUDED IN KIT

1pc I/O Expansion Board
1pc 27” 6pin Harness

THEORY OF OPERATION

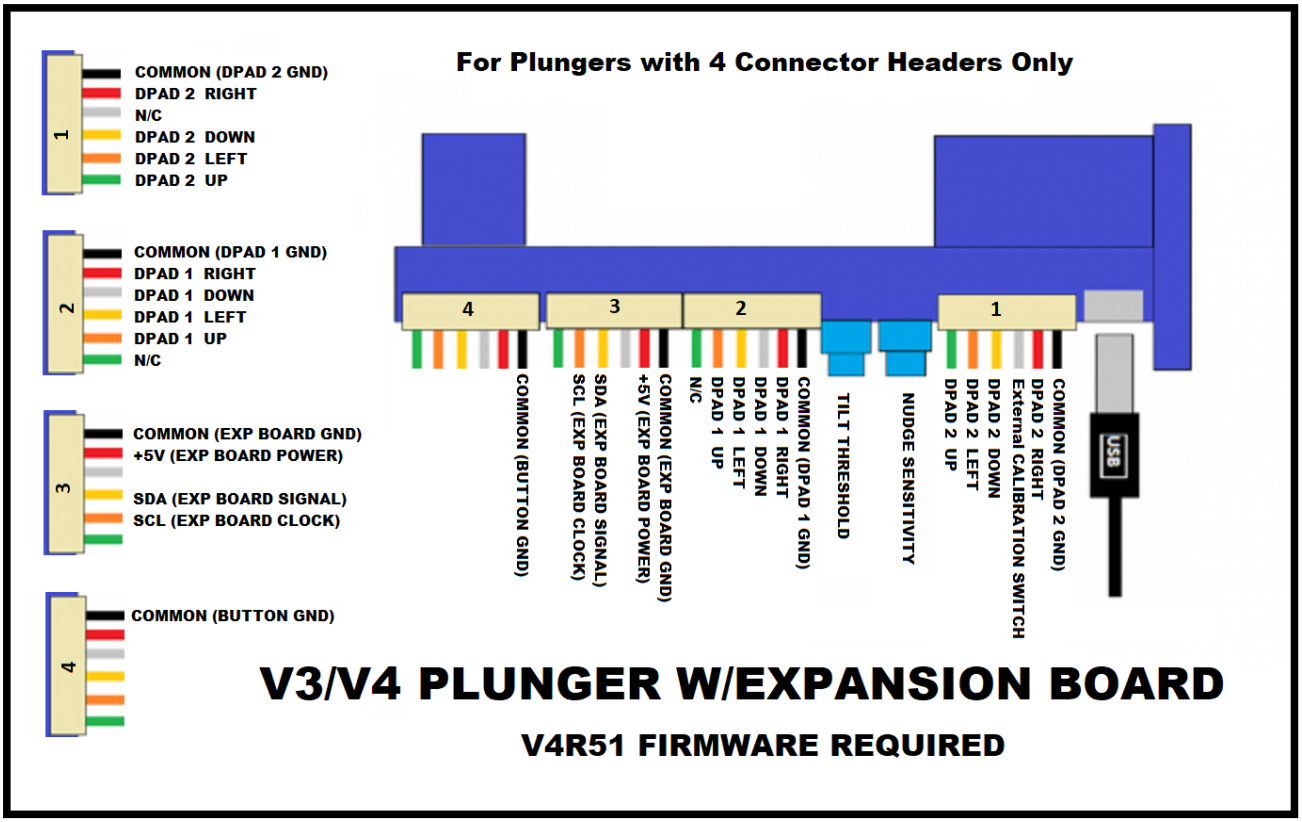
The Zebsboards I/O Expansion Board expands the button input functionality of the Zebsboards V3 (and higher) Digital/Analog Plunger by moving the button inputs off the existing control board location and on to the Expansion Board using the I2C protocol.

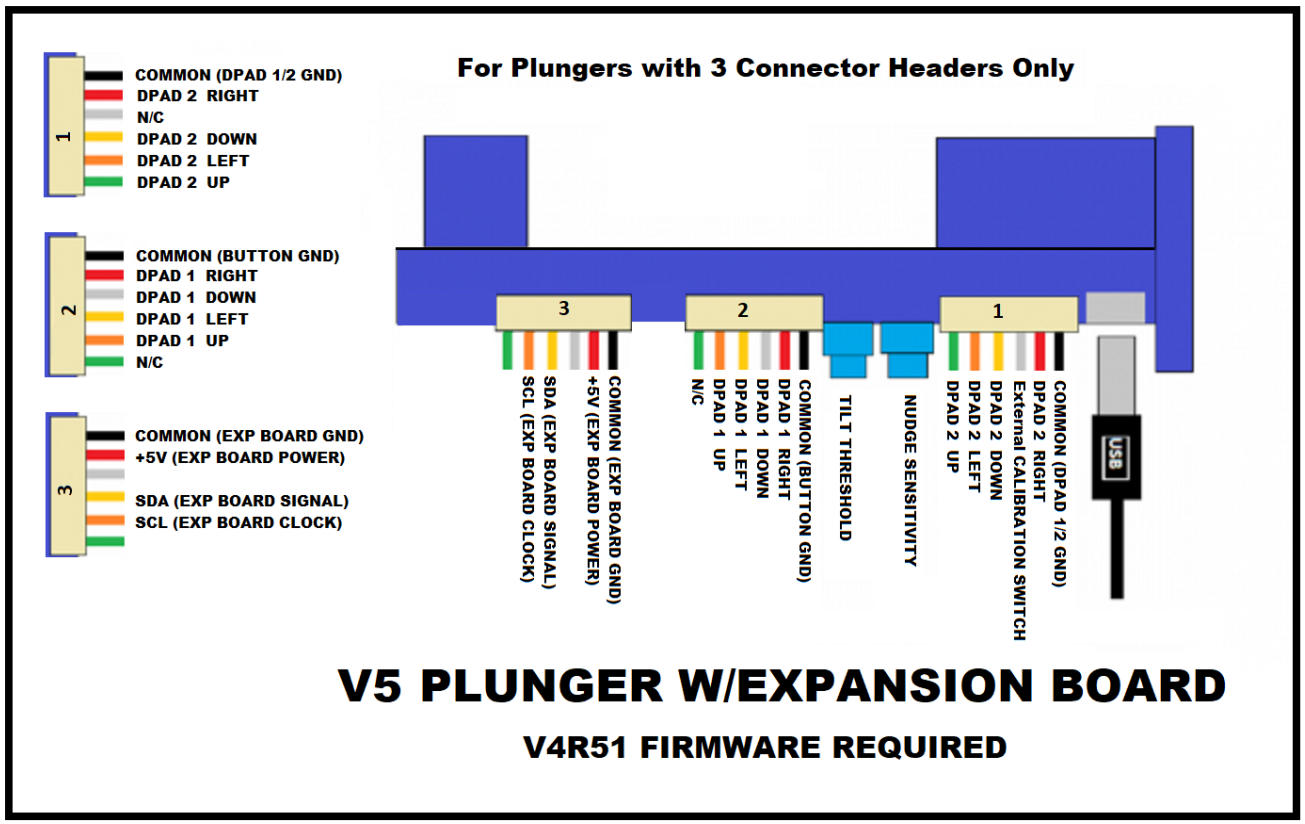
By moving the button inputs off the plunger and on to a separate board this frees up pins on the plunger control board allowing for the addition of 2x 4-way Dpad inputs that use the Hat Switch function in the control panel. These Dpad controls can then be used for adding joysticks or 8 specialty buttons in software that supports it.

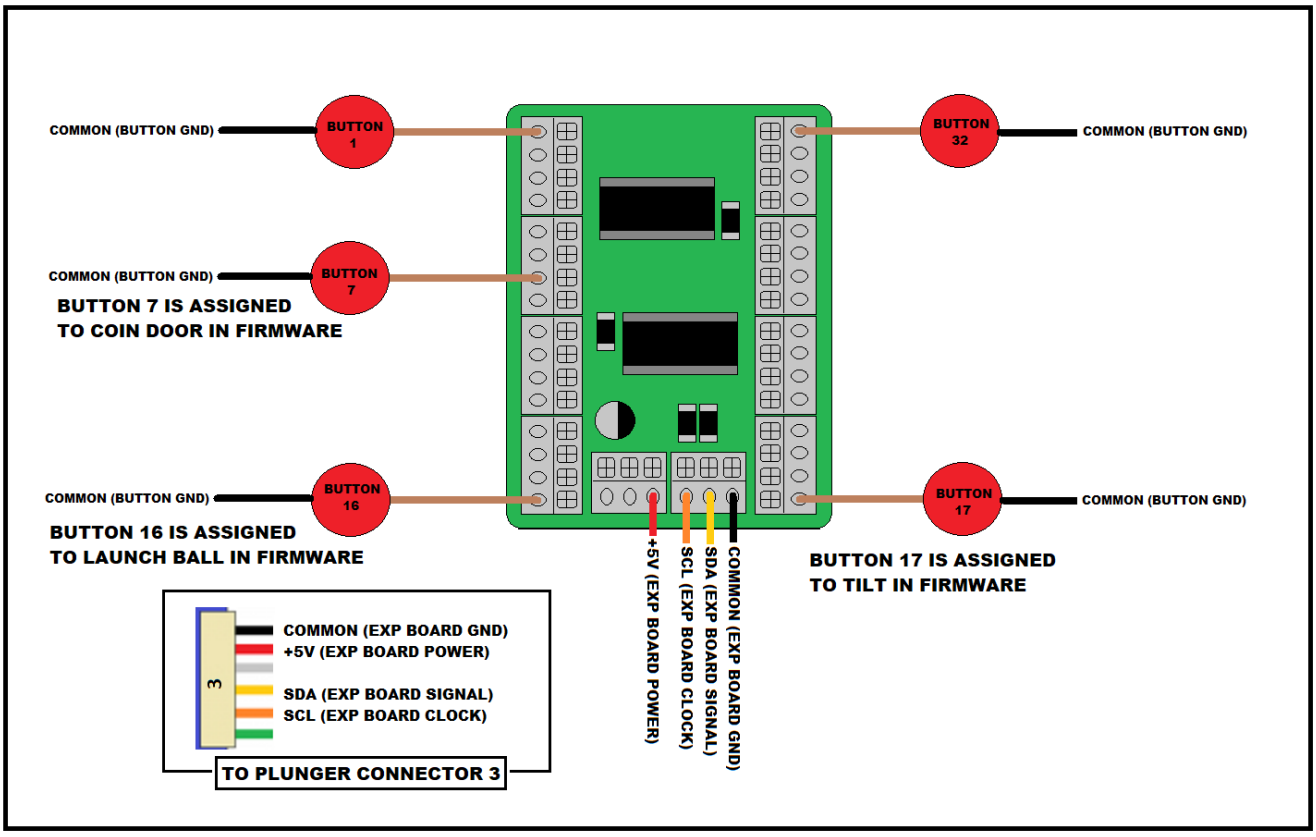
Installation of the plunger requires the Zebsboards V3 (or higher) plunger to be updated to the V4R51 (or higher) firmware for proper operation.

Existing keyboard codes from the previous firmware are retained within the button 1 – 16 range and the tilt button is moved to button 17.

INSTALLATION AND CONNECTION



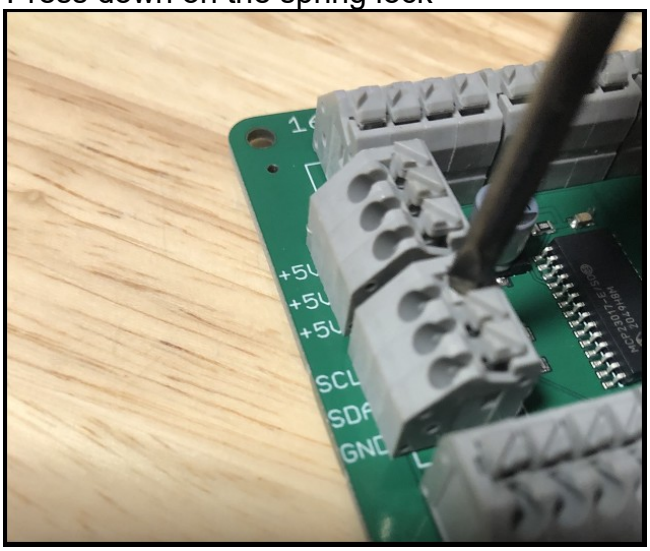




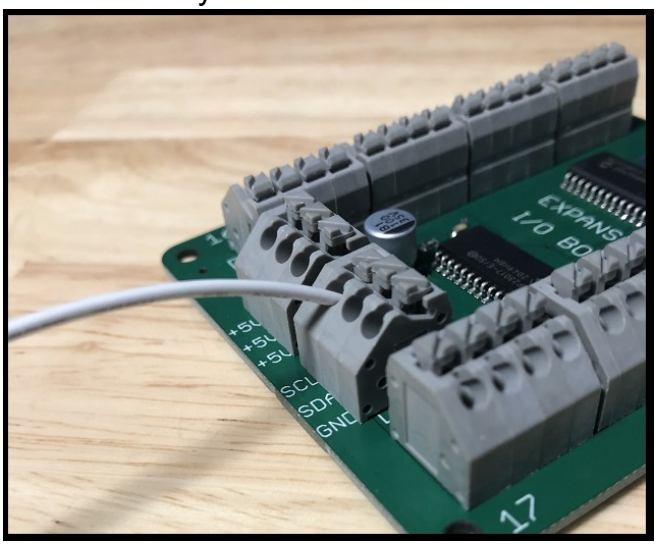
Prepare the connectorby removing the 2 excess wires (optional):

Connect the harness to the Expansion Board:

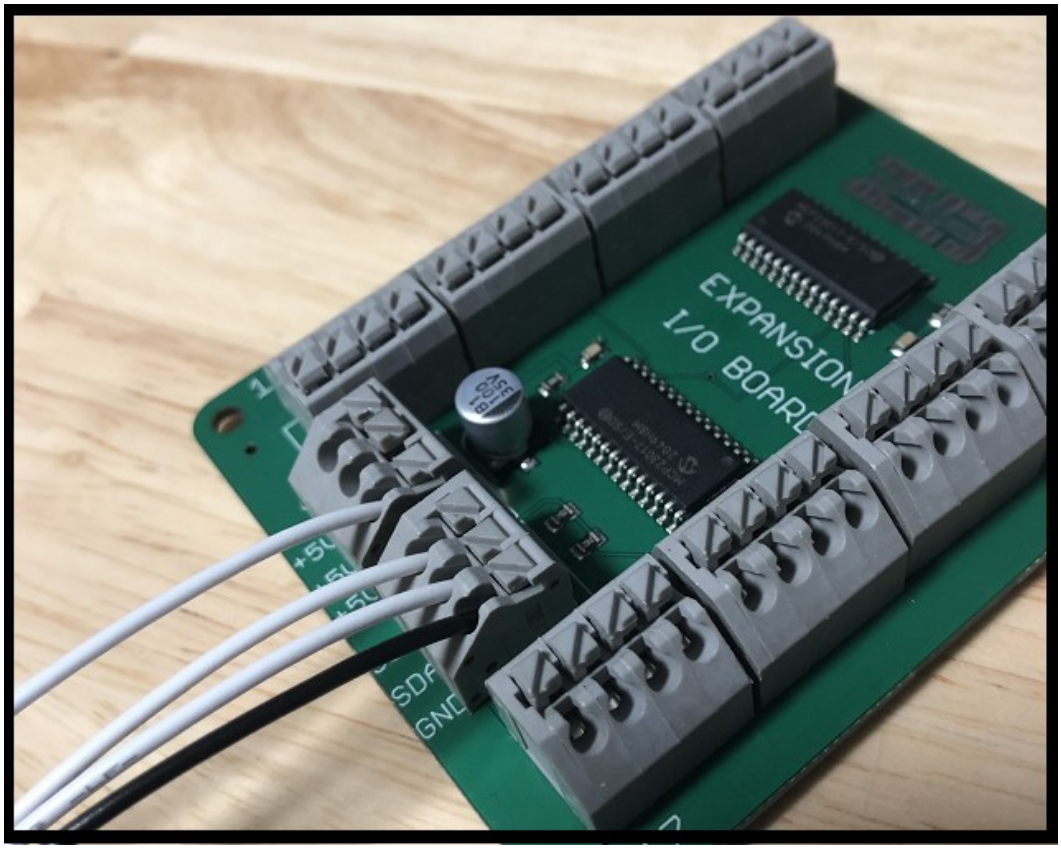
Press down on the spring lock



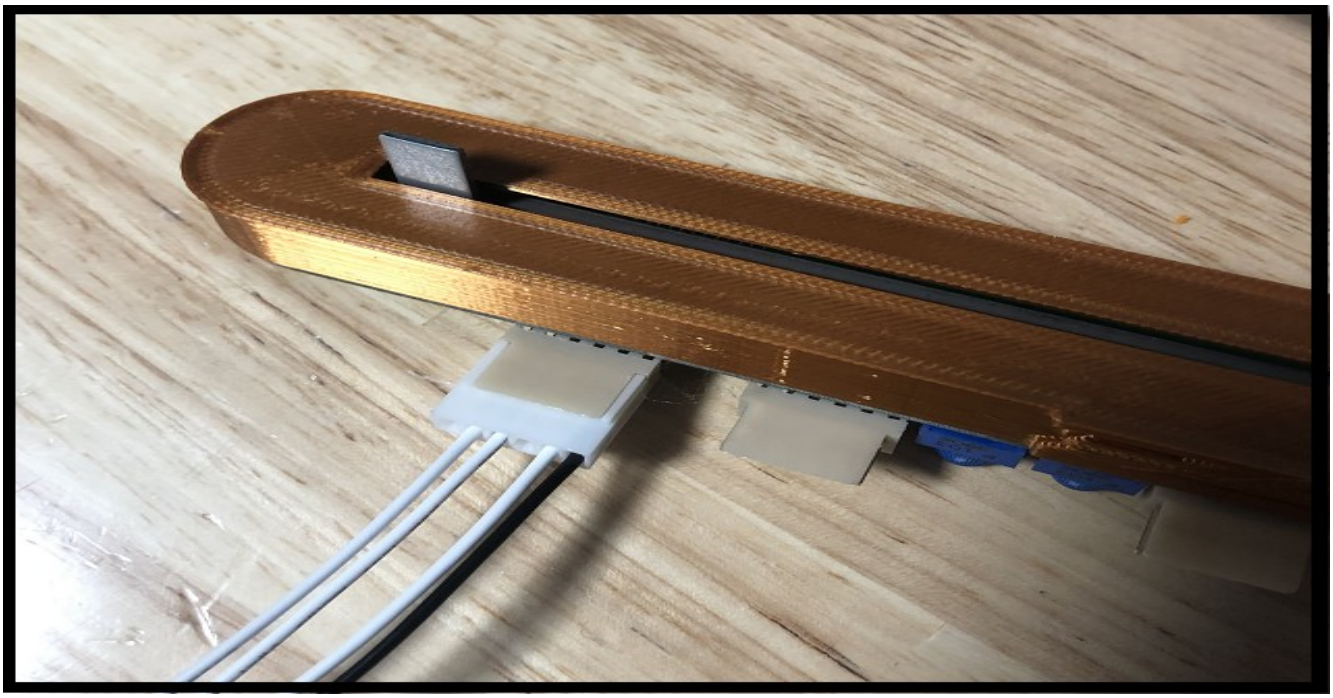
Insert wire fully and release



Connect remaining wires



Connect the Expansion Board to the plunger



Connect to button switches