# Instructions for Seagull Potentiometer and Wiring Kit

*Rev A1, Jan 2025*

Thank you for buying the Seagull Potentiometer and Wiring Kit. This kit will save you trips to the hardware store and parts/shipping costs from specialized suppliers. These notes supplement the PCB instructions with notes and installation tips for the pieces contained in the kit, and a complete wiring diagram is shown in Figure 10. You can download these instructions and the PCB instructions at https://seagullelectronickits.com/.


On/Off/Volume and tone potentiometers


Potentiometer mounting plates (2 ea) (for mounting pots to the inside of cabinet)


Type 47 Bulbs  Type 47 LEDs, and sockets.


Aux audio jack (3.5 mm stereo)


Toggle switch for Aux select or pair


Zip ties and shrink tubing


33 ft. of #20 and #18 hookup wire


PCB mounting spacers, nylon

*Figure 1 - Kit contents*

Wiring to the Terminal Blocks J1 and J3 – When connecting stranded wire to terminal blocks, do NOT tin the wire with solder – tinned connections can loosen over time. Tighten the screws to 3.1 – 3.5 in-lb.

On/Off/Volume Potentiometer – Use this component if the one in your radio is not usable. An existing potentiometer may not be usable if it has accumulated dust which will make it act intermittent or noisy, or if its wiper is internally grounded. Figure 2a shows how to connect it to the PCB. If you use the new potentiometer, make sure to install Jumper C1 as shown in the PCB instructions. Also, zip tie the old potentiometer securely in the underside of the chassis because someone may wish to restore it someday.

Tone Potentiometer – Older radios may not have a tone potentiometer, so you may want to use this one. You can remove the original band switch and replace it with the tone potentiometer. Figure 2b shows how the potentiometer connects to the PCB. If you use the new potentiometer, make sure you do NOT install Jumper C2. Also, make sure to save the old band switch by securing it securely in the underside of the chassis.
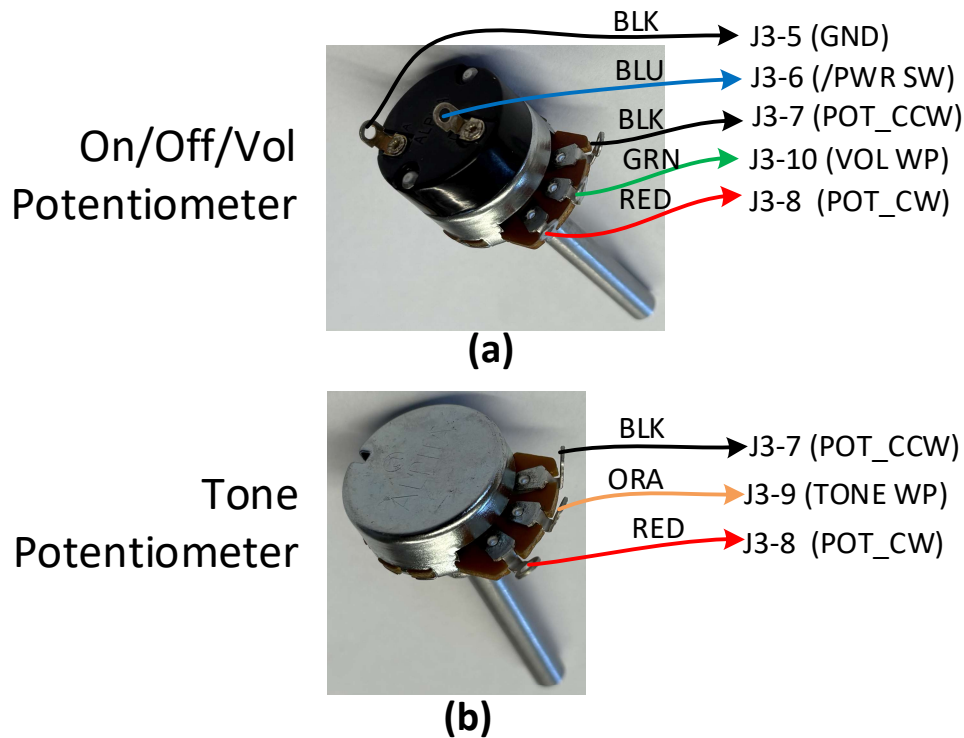


On/Off/Vol Potentiometer

BLK → J3-5 (GND)
BLU → J3-6 (/PWR SW)
BLK → J3-7 (POT_CCW)
GRN → J3-10 (VOL WP)
RED → J3-8 (POT_CW)

(a)

Tone Potentiometer

BLK → J3-7 (POT_CCW)
ORA → J3-9 (TONE WP)
RED → J3-8 (POT_CW)

(b)

*Figure 2 - Volume and tone potentiometers and connections*

Potentiometer Mounting Plates – Use as shown in Figure 3 when it is not possible to mount your potentiometers to the original radio chassis.
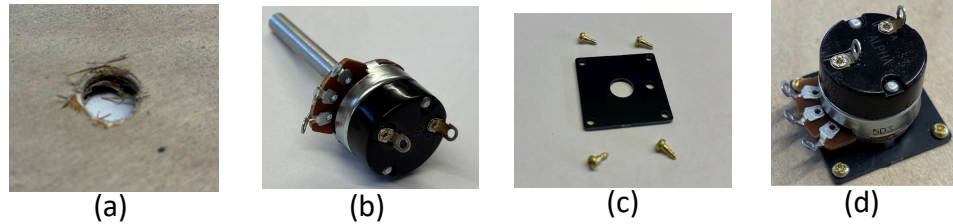
(a)    (b)    (c)    (d)

*Figure 3 - Installation of potentiometer mounting plates. (a) shows the shaft  hole in the radio cabinet for potentiometer (b). (c) shows the mounting plate and screws. (d) shows the potentiometer secured to the back of the cabinet using the mounting plate.*

Note about cutting the potentiometers – The long shafts on these potentiometers will work for most radios, but they will need to be shortened, and you may need to use a file to create a flat side to match your radio's knobs. (if you need a longer shaft you'll need a shaft extender) See Figure 4 to avoid errors.
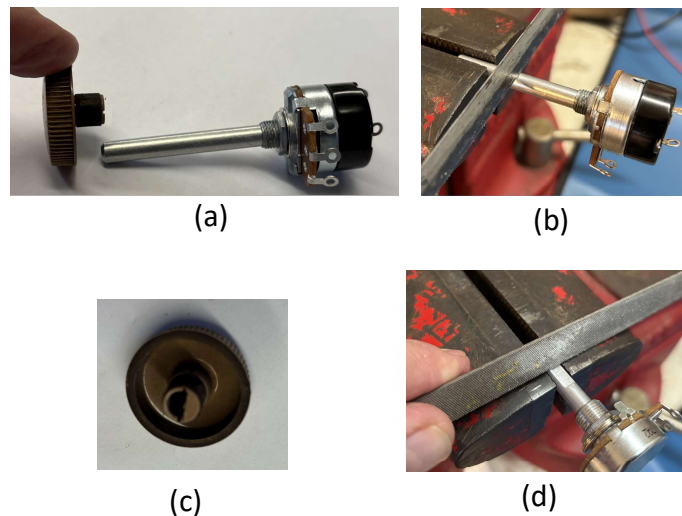


(a)    (b)

(c)    (d)

*Figure 4 - Cutting potentiometer shafts. (a) Make sure to measure how far the shaft extends into the knob. (b) When cutting the shaft, clinch the discarded end in the vise. (c) Example of a knob with a flat side. (d) Make sure to file only what is necessary – otherwise press-fit knobs can slip off.*

Dial Lights and Sockets – The kit contains two BA9S sockets, two incandescent Type 47 bulbs, and two 6.3V LEDs. You'll only need these if your radio chassis is missing. (If the chassis/dial is missing, a piece of grille cloth over the dial opening will diffuse the light and create a good visual effect) Wire the sockets as shown in Figure 5, and note that one of the terminals is connected to the housing of the socket.

LED or incandescent? Many customers prefer the glow of the incandescent bulbs, but they only last for about 1000 hrs. The LEDs will not need replacement. If you use more than one LED, you will have to connect PCB jumpers as shown in the PCB instructions.
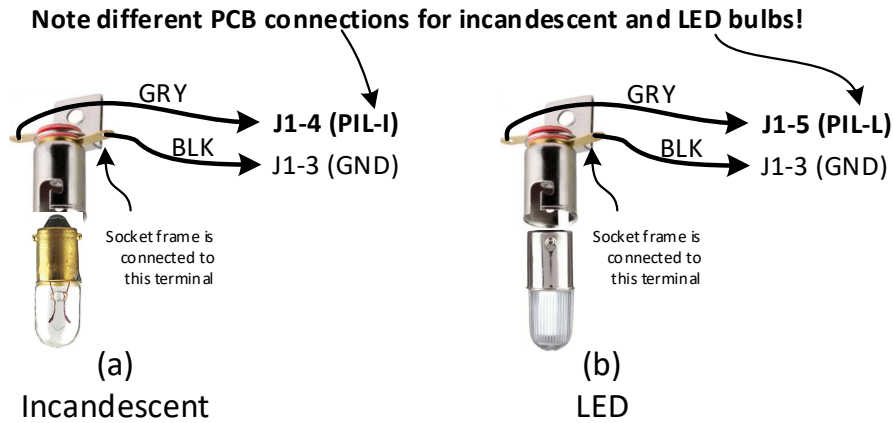
**Note different PCB connections for incandescent and LED bulbs!**



GRY → **J1-4 (PIL-I)**

BLK → J1-3 (GND)

Socket frame is connected to this terminal

**(a)**
**Incandescent**

GRY → **J1-5 (PIL-L)**

BLK → J1-3 (GND)

Socket frame is connected to this terminal

**(b)**
**LED**

*Figure 5 – Connections for incandescent and LED bulbs.*

<u>PCB Mounting Spacers</u> – The kit contains 4 nylon spacers used for mounting the PCB. If you find that your radio cabinet is too thin for securing the PCB, the PCB instructions show how to cut a piece of plywood to make a mounting base.

You will need 4 ea. #6 or # 8 screws
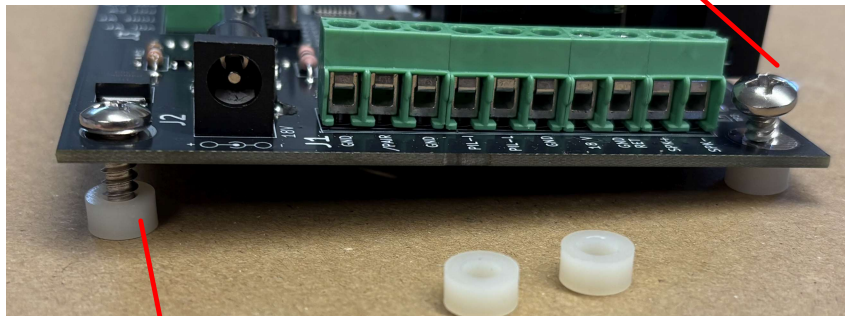


Place the spacers between the PCB and the cabinet

*Figure 6 - Showing spacer installation*

<u>Toggle Switch</u> – The toggle switch can be used to enable the Aux input from the 3.5 mm jack or as a pairing switch. The switch is typically hidden in the rear of the radio. Connect the switch as shown in Figure 7.
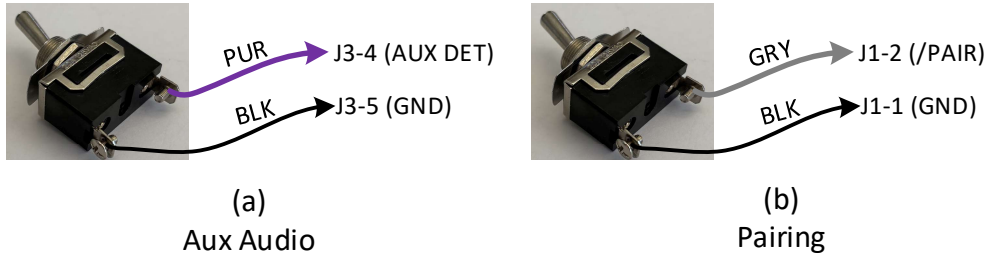
PUR → J3-4 (AUX DET)

BLK → J3-5 (GND)

GRY → J1-2 (/PAIR)

BLK → J1-1 (GND)

(a)
Aux Audio

(b)
Pairing

*Figure 7 - The toggle switch can be used to enable Aux audio (a) or used for a pairing switch (b).*

Aux Audio Jack – This jack accepts stereo analog signals from a PC, phone, or computer. The jack is typically hidden in the rear of the radio. Connect the jack as shown in Figure 8.
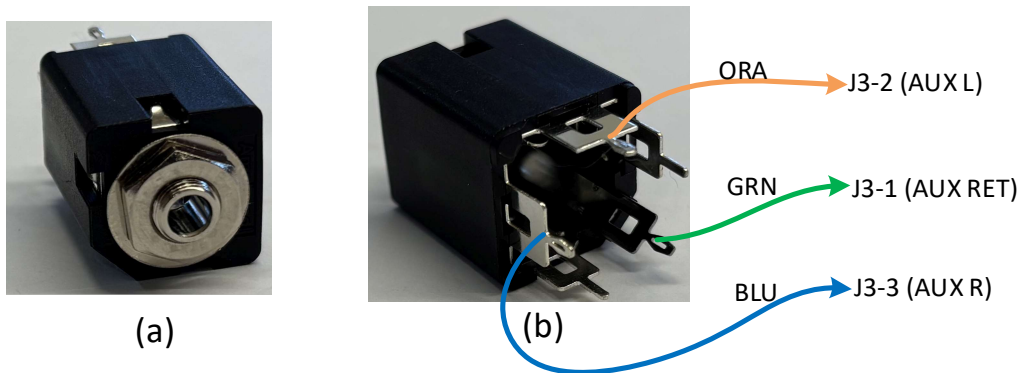


ORA → J3-2 (AUX L)

GRN → J3-1 (AUX RET)

BLU → J3-3 (AUX R)

(a)

(b)

*Figure 8 - Aux audio jack – (a) front view. (b) connection details*

Hookup wire – The kit contains high quality, PVC insulated hookup wire. If you use the colors shown in the wiring diagram (Figure 10) there will be at least two feet of wire for each connection. The brown wire is AWG 18 and should be used for the speaker. The rest of the wire is AWG 20.

Shrink Tubing and Zip ties – Use the shrink tubing which you can use when splicing wires from the existing dial light sockets to the PCB. If you are not familiar with using shrink tubing, watch a YouTube video.



*Figure 9 - Shrink tubing and zip ties will help you splice wires and then bundle them neatly*

Wiring Diagram – Figure 10 shows the full wiring diagram. The diagram shows separate ground (black) wires for each component. If you use the radio chassis, you can reduce the

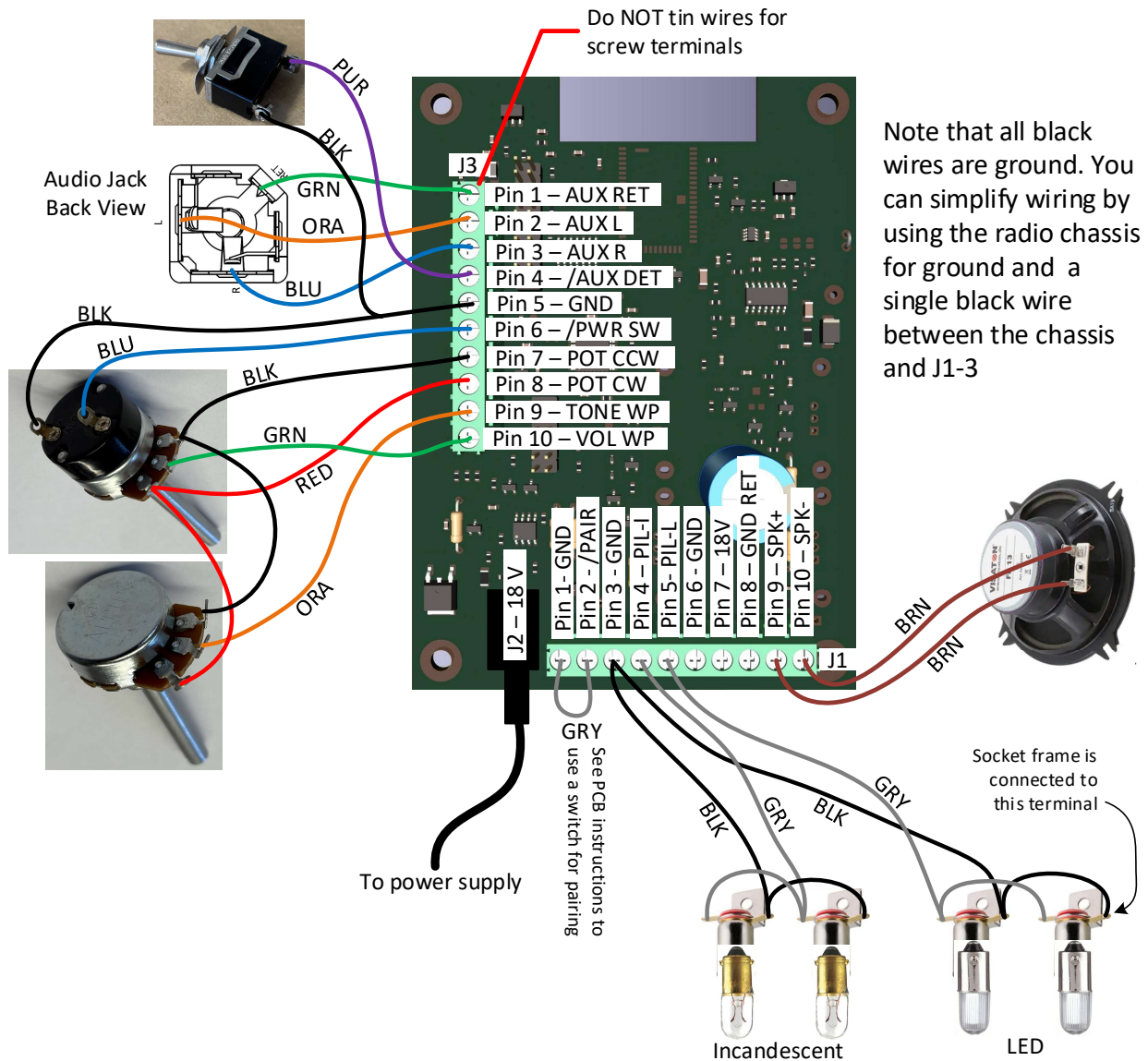number of connections between the PCB and the chassis by connecting the black wires from the components to the radio chassis. Then connect a single black wire from the chassis to J1-3.



*Figure 10 - Wiring Diagram*