

Equipment Arrangement

Place the amplifier on the bottom, the capacitor cabinet next, and the frequency generator on the very top.

Operating Instructions

Warning: Do not allow children to have access to this device while it is in operation or otherwise. The voltage within the cabinet can reach high levels and should be considered dangerous.

1. Before plugging in the amplifier and the frequency generator into an electric outlet, make sure that:
 - A. The amplifier ON/OFF switch is OFF and the frequency generator ON/OFF switch is OFF.
 - B. **The amplitude, or "AMPL" knob on frequency generator is turned fully counterclockwise to "MIN" position. THIS IS CRITICAL!!!**
 - C. All 16 (A-P) toggle switches are OFF (down position).
2. Plug in the amplifier, and the frequency generator into a 120V outlet, using a power strip or surge protector. On the rear right of the amplifier, flip open the cover so the screws are accessible for the black and red wires from the capacitor cabinet. Secure either black wire under the top screw marked –(negative) and one of the red wires under the second screw marked + (positive). Secure the other black wire under the bottom screw marked – (negative) and the other red wire under the screw above it marked +(positive). On the left side of the rear of the amplifier, move number 4 & 5 Mode Switches, which are very small and inset somewhat into the machine, to the right, all others have to be moved to the left. Plug in the L shaped green European plug into the top CHANNEL 1 male plug denoted by a + sign and below that a – sign and below that a  ground sign. Make sure the end of green ground wire from the capacitor cabinet is bare then loosen the small screw and insert it into the bottom ground hole and tighten the small screw.

Move the coil **at least 6 feet (2 m) away from any sizable metal objects and all other electronic devices including the amplifier and frequency generator.** The magnetic field made by the coil can damage electronic equipment by inducing electric current to flow through circuits.
3. Use the **Switch Calculator program** on the supplied CD to determine the toggle switches to turn on (in the up position) for the frequency you want. Copy the Switch Calculator program from the CD and paste it in your Documents. Open the switch calculator folder. Right click on the icon with the three colorful blocks and create a shortcut. Place it on your desktop. Open the Switch Calculator program by clicking on the shortcut. In the "Desire Freq" box type in the frequency you want, and use your mouse arrow to click the "calculate" button, or hit Tab then Enter. The toggle switches you will need to flip up are displayed close to the bottom in the box "Switches to turn ON". The switches are given in two formats; arranged like the switches on the cabinet, and also in rows of letters. Set the correct toggle switches on the capacitor cabinet to the "on" or up position.
4. Do the following in this order:
 - A. **Instek SFG 1013 Frequency generator** – Turn on power to frequency generator. Enter the frequency you want to run. Use the "Wave button to choose the sine curve icon on the display. This icon looks like a sideways S (looks like~). Enter the desired frequency, push "SHIFT" button and "0" to keep the frequency in memory. Flip up the correct toggle switches. Push "OUTPUT ON" button. The frequency you set must match the switches you turn on or the coil machine will not operate.
 - B. On the left rear of the amplifier, turn up the two gain knobs which are located close to the side by the cord from the frequency generator (there are two small gain knobs, one at the top and one at the bottom of the back of the amplifier) to maximum.
 - C. **Always carefully and VERY SLOWLY turn the "AMPL" knob on the frequency generator clockwise until the panel meter shows 13 amperes** with a QSC ISA 750 amplifier. The amperage increases quickly so watch the meter. **DO NOT EXCEED 13 amps! Be sure to view the meter from a direction perpendicular to the face of the meter.** (Below frequencies of 150 Hz and above 2000 Hz, the meter may not be able to reach 13 amps so operate with the amperage you can get.

Turning up the “AMPL” knob quickly is equivalent to large voltages (push of the current) into the capacitors, so turn the knob in a gradual manner and not in an abrupt jump. TURNING THE AMPL KNOB UP RAPIDLY IS EQUIVALENT TO A LIGHTNING STRIKE FOR THE CAPACITORS – THEY WILL FAIL BY BURSTING AND SMOKING.

5. The capacitor cabinet is now operating. For lower frequencies the coil hums loudly. If your hearing is sensitive you may want to use earplugs when the capacitor cabinet is turned on.

6. The amplifier may turn on and off during operation if you are operating, since it needs to cool but if you operate the machine at 13 amps you will very likely never have the amp do this. This is a built-in overheating protection system but it was not intended that the amp stop frequently, just occasionally to avoid overheating. You will also hear the built-in cooling fan of the amplifier run faster after a few minutes of operation. You can reduce heating of the amplifier by not placing it in a confined area like a closet. To help prevent the coil from becoming unduly overheated, never cover the top of the coil and by not exceeding 13 amps on the amperes meter. Normally, the fan in the amplifier begins the higher speed (it is louder) at 2 to 4 minutes. It is normal for coils to get warm or hot but if you can't handle with your bare hands for more than a couple seconds then you should allow the coil to cool before proceeding. **Twenty nine minutes is the maximum recommended use time until the coil has cooled. You may desire to use a hot pad to handle the coil after about 15-18 minutes.**

7. BEFORE CHANGING FREQUENCIES

- A. Turn the "AMPL" knob (on function/frequency generator) all the way to the left (counterclockwise) to "Min" setting and the "OUTPUT ON" button off.
- B. Turn the two "Gain" knobs on the amplifier all the way counterclockwise.
- C. NEVER FLIP ANY CAPACITOR SWITCHES until you have completed A and B.
- D. Turn all toggle switches off.
- E. Enter the frequency into the Instek frequency generator.
- F. Then set the correct switches for the new frequency.

8. Startup procedure

Install black cord on right receptacle of the frequency generator (MAIN 50Ω) to rear of the amplifier using the adaptor for the male 3 prong plugin on top for CHANNEL 1.

- A. Turn on power to frequency generator
- B. Enter desired frequency, push "SHIFT" button and "0" to keep frequency in memory
- C. Flip up the correct toggle switches
- D. Push "OUTPUT ON" button
- E. Turn on power to the amplifier
- F. On the amplifier, **turn gain knobs to maximum slowly**
- G. The amperes gauge on the switch box will rise to 3-6 amps
- H. **Very slowly** turn the "AMPL" knob to the right until the amperes gauge reads 13 amperes (turn very slowly to prevent a power surge to the capacitors in the switch box).

9. Shut down procedure:

- A. On the Frequency Generator turn the "AMPL" knob fully counterclockwise
- B. Turn both amplifier gain knobs fully counterclockwise
- C. Push the "OUTPUT ON" so you see no green light
- D. Turn off Frequency Generator.
- E. Only turn off the Amplifier if the fan is blowing cool air.

10. In thunder and lightning storm season it is good practice to use a quality surge protector and unplug it from the wall outlet during storms.