

MIDI Zeusaphone Safety Manual

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Team 11

Before Operation Safety

Only trained individuals should move, set up and operate the tesla coil.

In order to ensure that the tesla coil remains undamaged it should be handled by people who have been trained to move the tesla coil with care, as well as make sure that the tesla coil is operated in a way to keep the audience and operator safe, as described in the user manual.

Before attaching power to the tesla coil, look it over for signs of damage, and upon finding damage it should be reported immediately.

Damage to the tesla coil will make it hazardous to operate. Therefore it is imperative that the coil is checked before operation, and that any damage is reported to supervisors in order for the damage to be assessed, and repairs to take place.

Ensure that that the area is clear of other electrical equipment before operating the tesla coil.

As the tesla coil creates electrical arcs as well as RF interference, it is important that any electrical equipment be kept at a length longer than the fiber optic cable to ensure that it remains undamaged. Persons with pacemakers and hearing aids should exit the viewing room.

Ensure a dry operating environment.

A damp tesla coil, or standing pools of water may result in unexpected arcing patterns, which will damage the coil.

Ensure that all switches are off before plugging the power in.

Should parts of the tesla coil be energized prematurely it is possible that it would cause injury to the operator or to a bystander.

In Operation Safety

Once powered on observers should remain a distance longer than the fiber optic cord.

While a trained individual may get closer to the coil for demonstrations, such as holding a fluorescent light close to the coil, the safety of the audience must be maintained and distance is the simplest way to remain safe.

The coil should not remain in operation for longer than an hour at a time.

The tesla coil produces ozone, which can be hazardous to health in large enough quantities. Therefore, the tesla coil should be kept from running long enough to build up these quantities. It should be given enough time for the ozone to dissipate before operating the coil again. Ozone has a half life of about 30 minutes.

Should the tesla coil not work properly immediately follow the shutdown sequence.

If the tesla coil does not work, this means it is highly likely that there is damage to the coil in some area, and continuing to run energy through it may cause further damage. Report potential damage as swiftly as possible.

Ensure that nothing flammable is close to the coil while in operation.

The electrical arcs from the tesla coil can ignite flammable objects, meaning that they should be removed from the area.

Post Operation Safety

Once unpowered, wait for a minimum of 5 minutes before approaching the coil, to give time for the capacitors to lose their charge.

Capacitors can retain charge for some time after the power is disconnected, while there are circuits to bleed the charge from the capacitors it is important to wait to move the coil until it is certain that the charge is gone.