Learn MRI an Illustrated Workbook - *Appendix A Troubleshooting*

There are many things that can go wrong with the MRI machine. Fortunately, most are easy to fix and do not require any panic. It is important to always leave the scanner as you found it. So if the machine doesn't work properly after you scanned, then you must return it back to its proper working condition. Here are some ways to fix most problems, and also ways to contact those who can help if there are larger problems.

One good precautionary step to take is to scan a three-plane localizer of a phantom whenever you are done scanning, just before you leave. This will leave a record that you left the machine in good working order so you don't get blamed for any mishaps with the scanner.

The scanner will not scan.
The most common reason for this is that the coil is not plugged in. Go into the scanner and check the plug. While in the scanner, make sure that the patient is not pressing too hard against the inner wall, as this can upset the RF transmit coil.

Auto Pre-scan Failed.
This happens when the scanner is way out of calibration, the signal is weak, or the scanner is in a bad mood. Try auto pre-scan again to see if it works. If you have a weak signal, you can throw a liter bag of saline into the center of the coil to boost the signal. Alternatively, you can try manual pre-scanning (see exercise ?).

Too much artifact appears in my images.
See exercise 6 on artifacts to see how to reduce various artifacts.

I am able to acquire images, but the images do not appear as I expect them to (poor image quality or non-uniform image quality).
Check to see if the coil is properly plugged into the system and that the correct coil is selected on the workstation. If the coil is properly plugged in, your coil may be malfunctioning and you will have to inform the head technician that runs your facility.

Fig. A

The computer console is acting strange. I cannot select certain standard options, or I cannot acquire images.
You should do a TPS Reset. This is an easy way to reset the main processor of the scanner if the computer is not working properly. It is simple and takes less time than cycling the main power to the system. To do a TPS reset, click on the utilities button on the scanner desktop on the workstation. Then just choose TPS reset. Note: The TPS reset will take about 5-10 minutes.
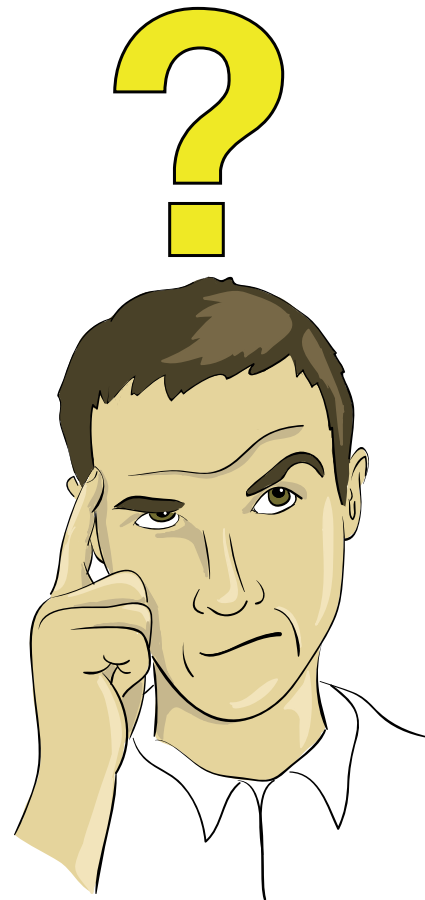
TPS reset did not fix my problem, or I pressed the emergency stop button.

You need to do a Main Power Cycle. This is good for when you need to cycle power to the magnet system on and off (RF power and gradient power), either to restart the entire system because it is not working properly, or to restore power after pressing the emergency stop button. This is done by resetting the main cpu cabinet. This is located in the server room for your magnet system. You will have to ask someone who is familiar with your MRI system setup where this room is. Figure B shows the power/reset features on a GE cabinet.

To cycle the power, you will have to shut-down the computer console. You can do this by right clicking on the desktop and choosing shut-down. Then go to the CPU cabinet and press the red power-off button. Then, wait 30 seconds and turn the lever to the three o'clock position and then back to the six-o clock position. This will take some force. Finally, press the green reset button. Now, go back and restart the host computer.

I tried all of the above, and still cannot get the scanner to work.

Sometimes the above resets will not fix your problem. If this is the case, you should call the person that is in-charge of your facility. Usually a good person to call would be the head technician. You should have this person's phone number around when scanning. If something goes wrong, they may have you call the scanner manufacturer's hotline to request a field engineer to come to the site. Phone numbers for different manufacturers are below. Be sure to have your system ID ready when calling. Most scanners are on a service contract, so having a field engineer come to fix the scanner should not cost anything if he comes during the service contract hours. You probably should not authorize overtime as this can be very expensive.

GE Cares hotline: 1-800-437-1171
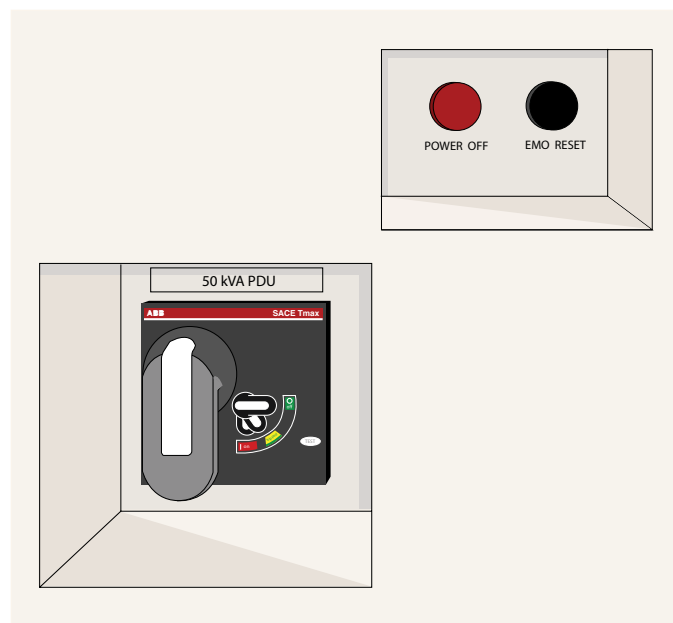Siemens: 1-800-888-7436
Phillips: 1-800-229-6417

POWER OFF   EMO RESET

50 kVA PDU

SACE Tmax

Fig. B