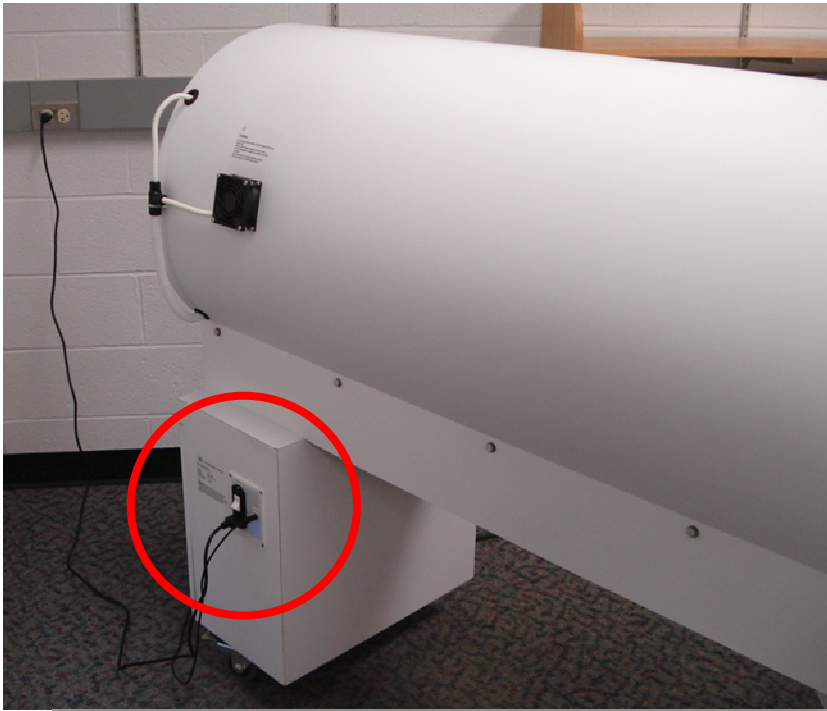THE UNIVERSITY OF
IOWA MRI RESEARCH
CENTER

SIMULATOR INSTRUCTION MANUAL

155 MRF | MRI Research Simulator | User Guide

TURNING ON THE MRI RESEARCH SIMULATOR:

1. To turn on the MRI Research Simulator, locate the power switch near the back of the bore on the same side as the control panel.

2. Move the power switch to the ON position (up).

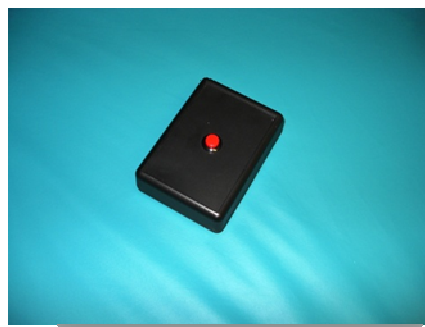## CONTROL PANEL INSTRUCTIONS:

There are 3 buttons on the MRI Simulator control panel:

1. An on/off switch to control the lights in the bore.
2. An on/off switch to control the fans in the bore.
3. A momentary button to move the participant table in and out of the MRI Simulator bore.
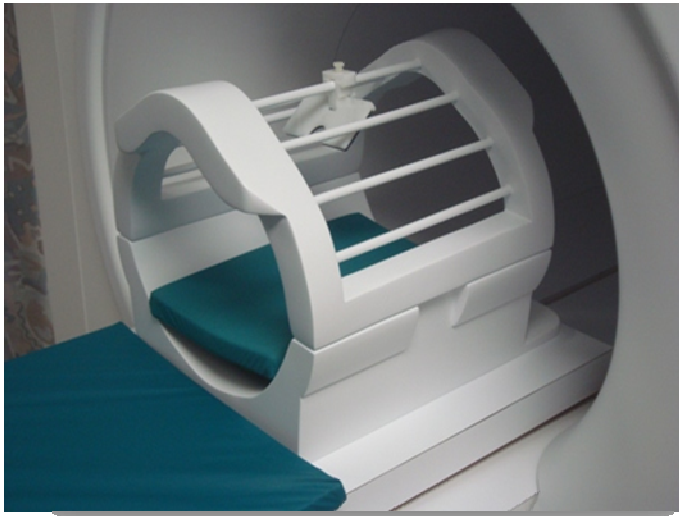

TABLE REMOTE CONTROL

The remote control for the MRI Simulator table is located on the right side of the table, opposite of the control panel. The remote control is useful for researchers doing self-testing or when piloting experiments. It can also be used by participants who are anxious about the MRI environment to move them in and out of the simulator.
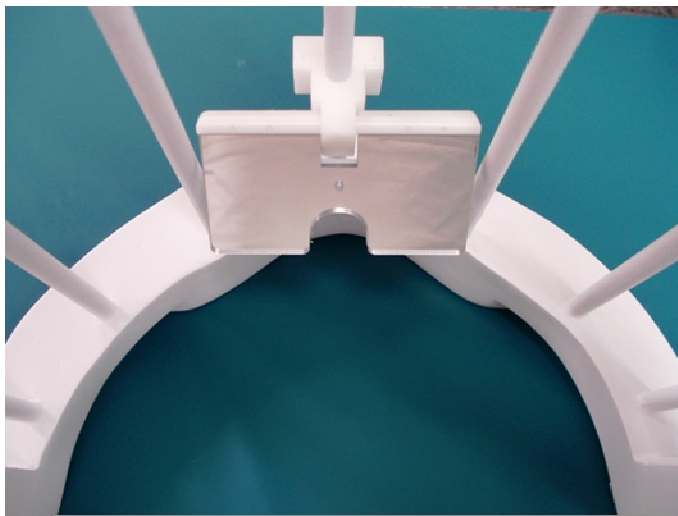
MOCK HEAD COIL

The MRI Simulator head coil is a two-piece unit modeled after a 12-channel Siemens head coil. Its design allows for easy subject placement and simulation of the actual head coil used in MRI scanners.

The head coil is also equipped with an fMRI mirror which can slide from front to back of the head coil and be adjusted vertically to allow for maximum subject comfort when watching movies or responding to stimuli.

WATCHING MOVIES IN THE SIMULATOR

The desktop stimulus computer is used for watching DVDs and performing fMRI test experiments in the MRI Research Simulator.

1. Insert a DVD into the DVD drive of the stimulus computer (labeled on the PC tower).

2. If the movie does not start automatically, open the Windows Media Player program on the desktop. Choose "File" and then "Open DVD…"

DVD Player

3. The LCD screen in the simulator will automatically turn on and replicate whatever is currently being displayed on the stimulus screen. (If no image is displayed, see the troubleshooting section at the end of this manual.)
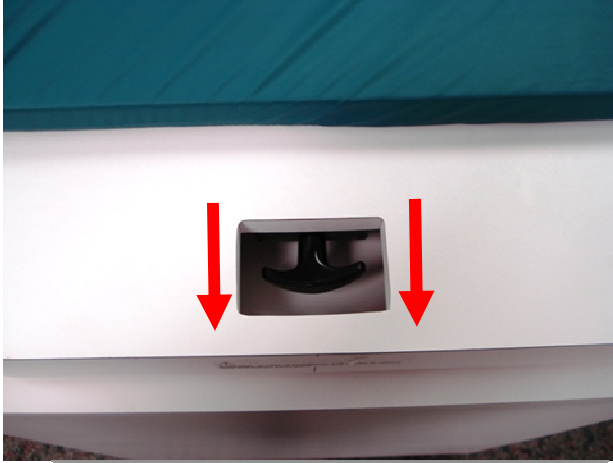

4. Audio for the DVD player is output through headphones, much like the actual MRI environment. The headphones are located on the front of the simulator.

TABLE EMERGENCY RELEASE

At the foot of the participant table there is an emergency safety release knob. In the event that the automatic table feature malfunctions, disengage and release the table from the bore buy pulling the emergency release knob towards the foot of the bed as shown below.

Troubleshooting Topics

Problem	Possible Solution(s)
The participant table is not functioning properly	1. Check that the mock scanner is plugged in and turned on. (page 1) 2. Ensure the table is pulled the entire way out of the scanner bore and clicked into place. You should not be able to move the table easily if it is properly engaged. 3. If the table does move on its own, but is not working properly, remove the subject from the table, push the "Table" button on the control panel and let the table slide completely into the scanner. Push the "Table" button again to slide the table out of the bore.
The DVD is not displayed in the simulator	1. Check that the LCD screen at the back of the simulator bore is plugged in and turned on. 2. Check the video connection at the back of the stimulus PC. There should be 2 connections –one for the desktop display, and one for the simulator display. Tighten the connection if it has become loose.

Troubleshooting Topics Cont..

Problem	Possible Solution(s)
Subject cannot see the movie using the rear-facing mirror attached to the head coil.	The mirror on the head coil is adjustable. It can be moved from front to back and vertically to accommodate the subject's needs. To move the mirror along horizontal axis of the head-coil loosen the screw (top of coil) holding the mirror and slide the mirror into position. Tighten the screw once the correct postion has been obtained. To adjust the mirror vertically, simply tilt the mirror until the subject can see the screen. (see page 3 for an image of the head coil and mirror system)