## Timer 0

Timer 0 will only function if the mode is running.

If functionsRunning is equal to 0, it means the magnetron, turntable and timer are not running, therefore the timers, magnetron variables and turntable variables are reset. The magnetron is turned on. functionsRunning is set to 1.

In normal operation, when functionsRunning is equal to 1, the timer will start to count intervals of 250ms, 500ms, 1 second and 5 seconds using counter250, counter500, counter1000 and counter5000. When 250ms has passed, counter250 will increment by 1. When 500ms has passed, counter500 will increment by 1. When 1 second has passed, counter1000 will increment by 1 and similarly for counter5000.

A function, updateMagnetron, is called every 250ms, updateTime is called every 1 second, and updateIndex is called every 5 seconds.

The updateIndex function will, when called, either increment or decrement the index variable between the bounds of 0 and 3 inclusive according to whether the CCWrotation variable is set or not. The turntable will turn counter-clockwise if the CCWrotation variable is set to 1.

Firstly, updateIndex checks to see whether the CCWrotation variable is set or not. If it is, then it decrements the index, otherwise it increments it. Then it checks whether the index is equal to 4 or -1, and if it is, then it correspondingly sets it back into the bound of 0 and 3, inclusive.

The updateTime function will decrement 1 second from the time represented by the mins and secs registers and print this on the display.

Firstly, it checks to see whether secs is equal to 0, and if so, then it checks to see whether mins is equal to 0. If both are 0, then operation stops and the program jumps to finished mode. If secs is equal to 0 and mins is not 0, it will put 59 in the secs register and decrement 1 from the mins register. Otherwise, it will decrement 1 from the secs register.

The updateMagnetron function, when called, will check which segment of the second has been reached, and then therefore will decide whether to turn the magnetron on or off. It will then set the magnetron to be on or off.

If the power is 100, the function returns. If the power is 50, and the magnetronCounter is 2 or 4, this is indicating that it is time to toggle the magnetron running mode, from off to on or on to off. However, for a power level of 25, the function will toggle the running mode only if the magnetronCounter is 1 or 4, at 250ms or a full second.