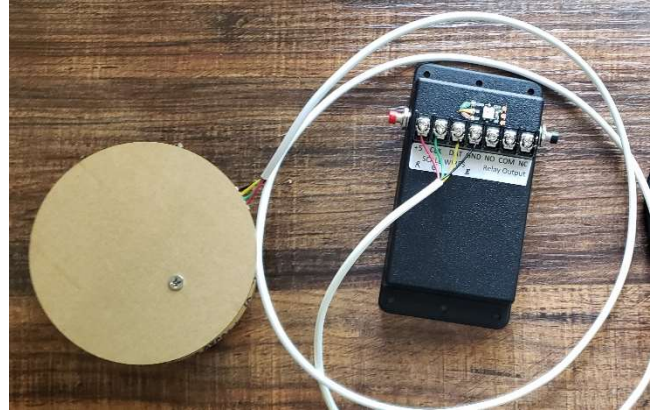


Weight Puzzle Owner's Manual

You can use the weight puzzle to build your own puzzle that requires players to match a preset weight.

The puzzle has two parts – the scale (circle) and the controller (black box)

The scale can handle up to 5KG (11 lbs). Do not let more weight than that be applied the scale may be damaged and stop working. In this case, a new scale can be purchased from Amazon: <https://amzn.to/2KPYcID>



The control box should be hidden from players but accessible to you in case of maintenance. It does not need to be accessed during normal operation.

1. General Operation

The control box takes a scale measurement about once a second. If it takes enough readings in a row that are the target weight, the main output relay is activated. The output stays active for a specified time – see the section 9. Values.

As soon as the weight is changed from the correct weight, the game starts again.

2. Controller LED

The LED on the controller is used to monitor the operation of the prop. It flashes each time the weight is checked.

Red – Scale is above the target weight

Purple – Scale is below target weight

Green – Scale is at target weight.

Yellow – Indicates enough target samples were detected and the output will be activated. No more flashes will happen until the weight changes from the target weight.

3. Set Target Weight

The red button is activated to store the target weight.

1. Put the prop(s) on the scale that are the right answer,
2. Wait a few seconds
3. Press the red button
4. The LED on the controller should begin flashing green.

4. Manual Trigger

Pressing the black button will manually trigger the output relay.

5. Scale – Control Connections

A 4 conductor cable connect the scale to the control box. This cable should be kept as short as possible. If you extend the cable, test the scale several times to ensure you still have reliable repeatable results.

On the scale end of the wire is a 4 pin connector. The connector should align like this:

Color	Label
Red	+5
Green	CLK
Yellow	DAT
Black	GND

The other end of the wire connects to the four screw terminals on the controller with the same labels as shown above.

6. Main Output Connections

To control another device such as mag-lock, use the COM, NO and NC screw terminals on the top of the control box. These are dry contacts – there is no voltage on them, they are just switches.

7. Advanced Setup – Serial Terminal

You can access advanced configuration options by connecting a serial terminal to the USB port on the control box. If you need a terminal program, try TeraTerm:

<https://osdn.net/projects/ttssh2/downloads/71232/teraterm-4.103.exe/>

Any terminal program will work, examples here will use TeraTerm screen shots.

The settings for the connection are:

Setting	Value
Speed	115200
Parity	None
Data Bits	8
Stop Bits	1

You may find it helpful to turn on local echo, otherwise you can't see what you type.

8. Main Menu

When the puzzle starts, and after any command, you will see the following main menu:

1. Target Weight	3061
2. Tolerance	100
3. Settle Time (mS)	1500
4. Output Time (mS)	250
5. Trigger Output	
6. Monitor Scale	
Enter a number:	

The numbers on the right are the current value for that setting - your numbers may be different from the numbers shown. Values are kept even when the puzzle has no power.

9. Values

Target Weight – The center of the target weight range that will solve the puzzle. Pressing the red button updates this value. The maximum value is 4,294,967,295.

Tolerance – The + and – that is applied to the target weight to generate an acceptable range for solving the problem. If you are using multiple objects, this value should be LESS than the weight of the lightest object you will use. The maximum value is 65,535.

Settle Time – The amount of time a winning measurement must be present before the output is triggered. The time is in milliseconds. A value of 1000 is 1 second. The maximum value is 65,535.

Output Time – The amount of time the output is triggered when the players solve the puzzle. The time is in milliseconds. A value of 1000 is 1 second. The maximum value is 65,535.

10. Changing a Value

You can change any of the settings by entering the corresponding menu number. For example, after 2 is entered the following prompt is given:

Enter a new Tolerance (0 - 65,000) and hit enter
--

Enter the new value followed by enter. You will be prompted to confirm.

Value: 150
Correct? Press Y to confirm

Press Y to confirm the change, or any other key to abort the change.

11. Trigger Output

Enter 5 on the main menu to manually trigger the output. This is the same as pressing the black button.

12. Monitor Scale

Pressing 6 turns on the scale monitor. This will show the value of every scale reading in the terminal window. This is useful for testing and troubleshooting. The display will look like this:

```
Staring monitor - send any key to stop

Reading = 3042   Low Limit = 3185   High Limit = 2985   ->IN RANGE
Reading = 1961   Low Limit = 3185   High Limit = 2985   ->OUT OF RANGE
Reading = 346    Low Limit = 3185   High Limit = 2985   ->OUT OF RANGE
Reading = 348    Low Limit = 3185   High Limit = 2985   ->OUT OF RANGE
Reading = 1722   Low Limit = 3185   High Limit = 2985   ->OUT OF RANGE
Reading = 2349   Low Limit = 3185   High Limit = 2985   ->OUT OF RANGE
```

The current reading is on the left, followed by the lower and upper limits and finally the in/out range determination.

Press any key to stop the monitoring and re-display the main menu.