UROVOID™ ACQUISITION

SOF-580

USER'S MANUAL

DOC-293
Rev. 1.6

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Notes

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CHAPTER 1 INTRODUCTION

The UroVoid™ Acquisition software is designed to record voiding data from conscious, unrestrained rats or mice. The animals are housed in a metabolic cage, which separates the urine and feces, only allowing the urine to be contained and measured on a scale below. The software timestamps and records the amount of voided urine in real time.

Figure 1.1 - UroVoid™ System for Rats – Single Station Illustrated
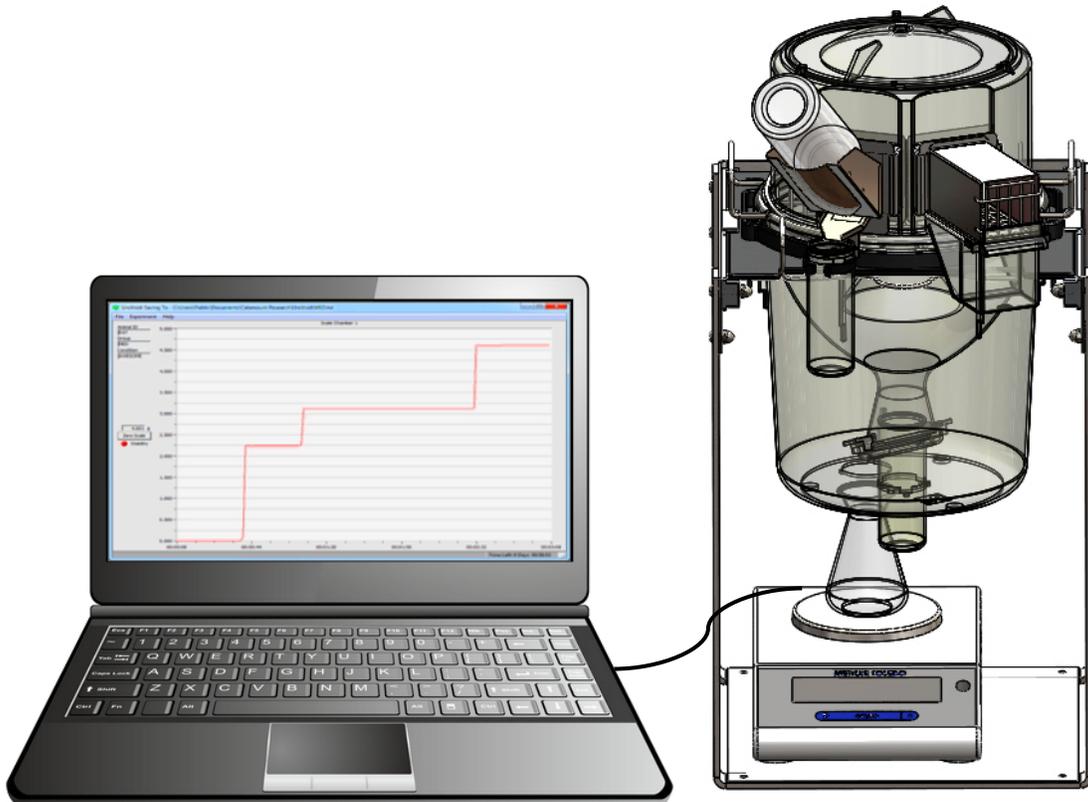
Figure 1.2 - UroVoid™ System for Mice – Single Station Illustrated
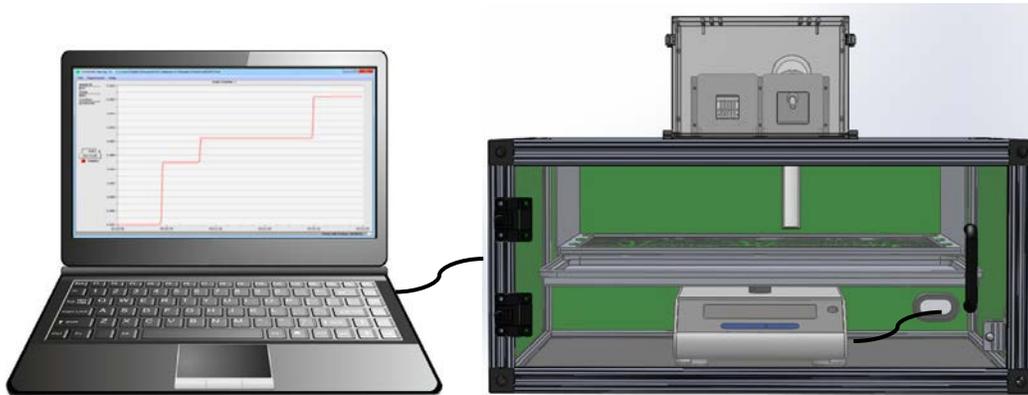
CHAPTER 2 HARDWARE

Assembling the Rat Metabolic Chamber

Subassembly 1:

1. Snap the urine ring ears to the lugs on the collection funnel slanted nose.

2. Place the collection funnel inside the lower chamber, fitting the tab on the lower chamber rim in the slot on the collection funnel rim.

3. Place the separating cone on the collection funnel.

Figure 2.1 - Subassembly 1
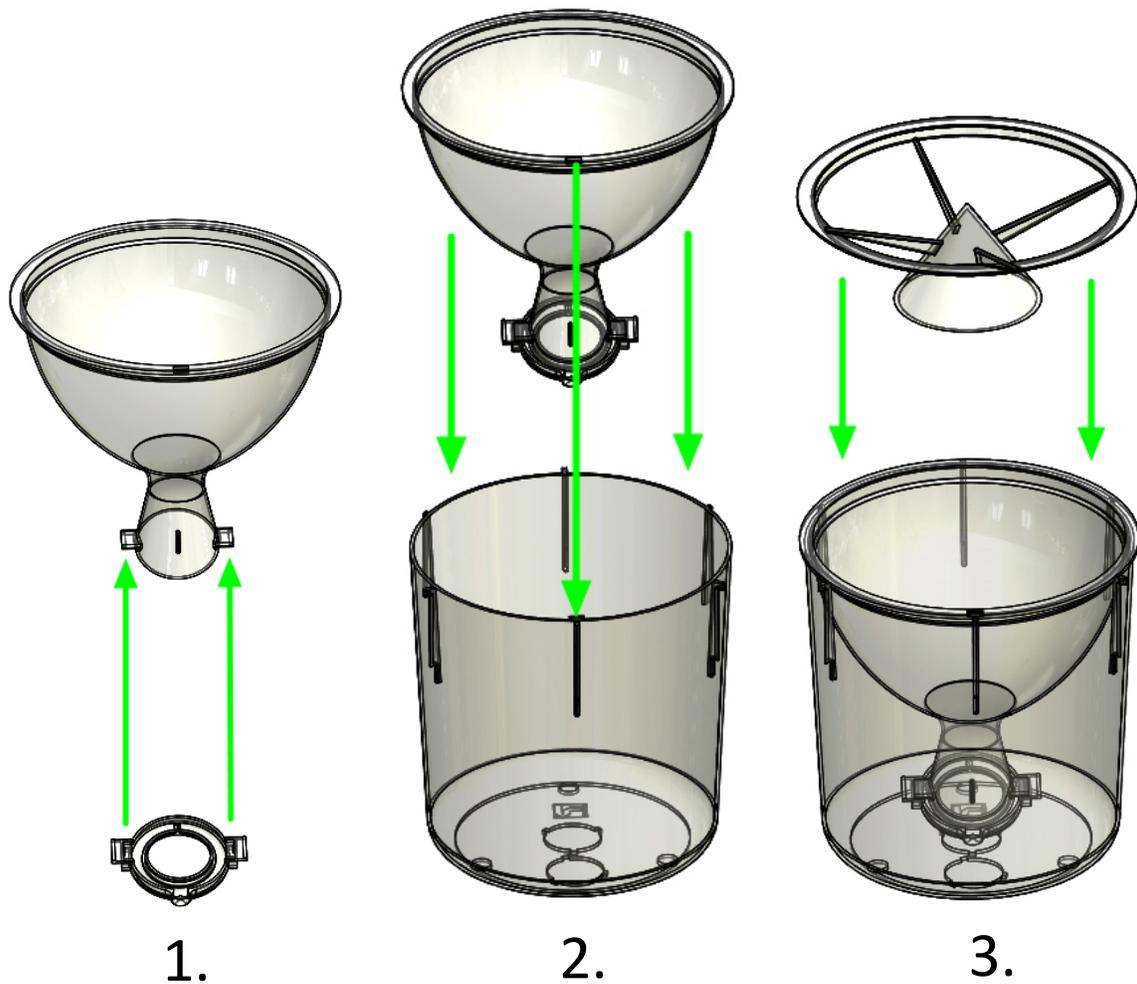
Subassembly 2:

1. Place the upper chamber on top of the support grid so that the grid handles rest in the notches of the upper chamber.

2. Place the upper chamber and support grid on the support plate, ensuring the support plate tabs rest in the upper chamber notches.

3. Lock the upper chamber to the support plate by placing the safety retainer wire over the chamber and locking the wire under the support plate.

Figure 2.2 - Subassembly 2

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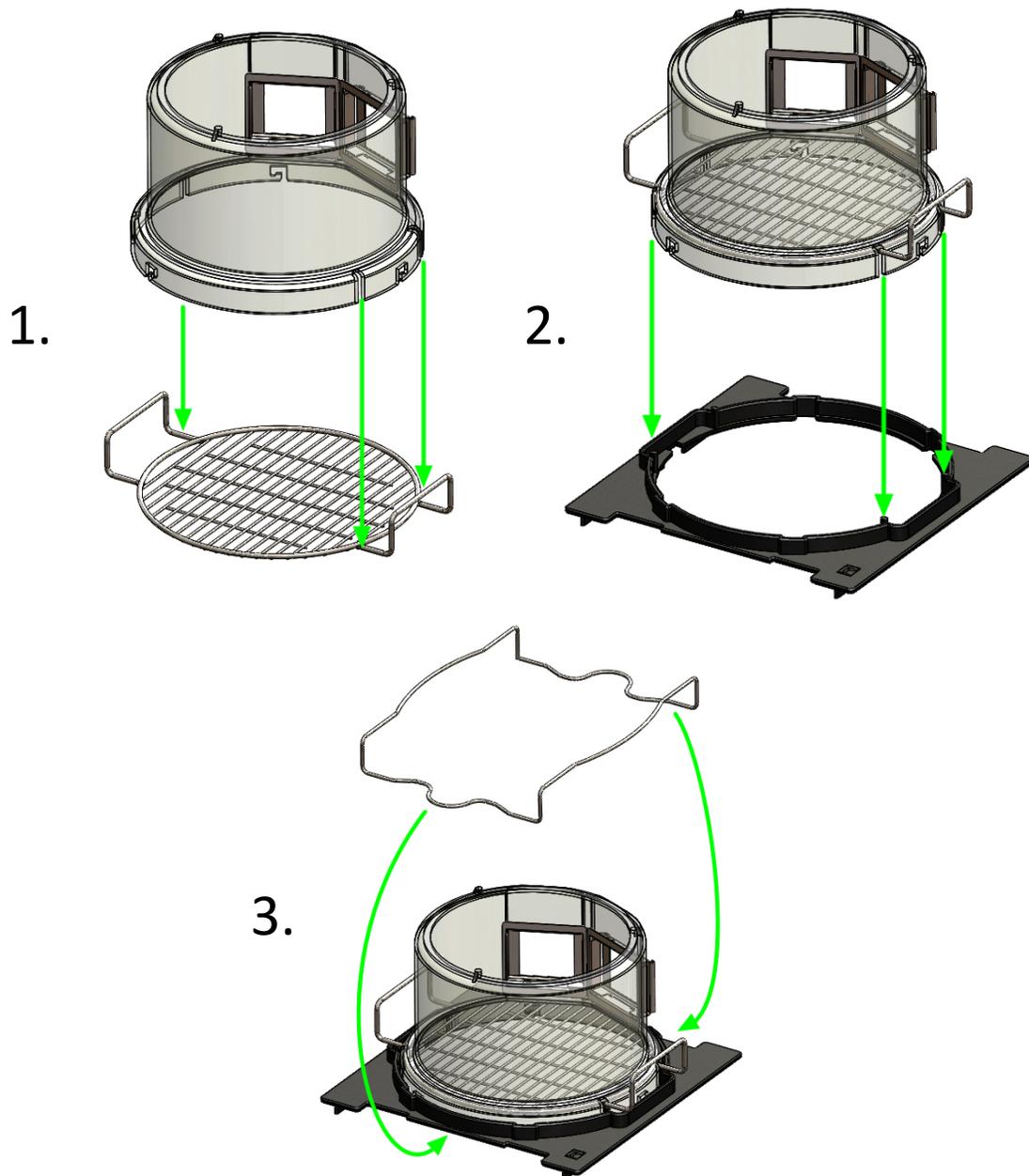
Subassembly 3:

1. Place the upper chamber assembly on the lower chamber assembly, aligning the 3 ribs on the lower chamber so they rest in the 3 L-shaped notches of the upper chamber.

2. Rotate the top or bottom assembly to lock in position.

NOTE: The urine collection hole and funnel should be orientated towards the back with the feeder ports towards the front.

NOTE: Ensure assembly is locked and secure before lifting. Do not rotate while lifting.

3. Slide the whole chamber assembly into the stand using the stand guides.

Figure 2.3 - Subassembly 3
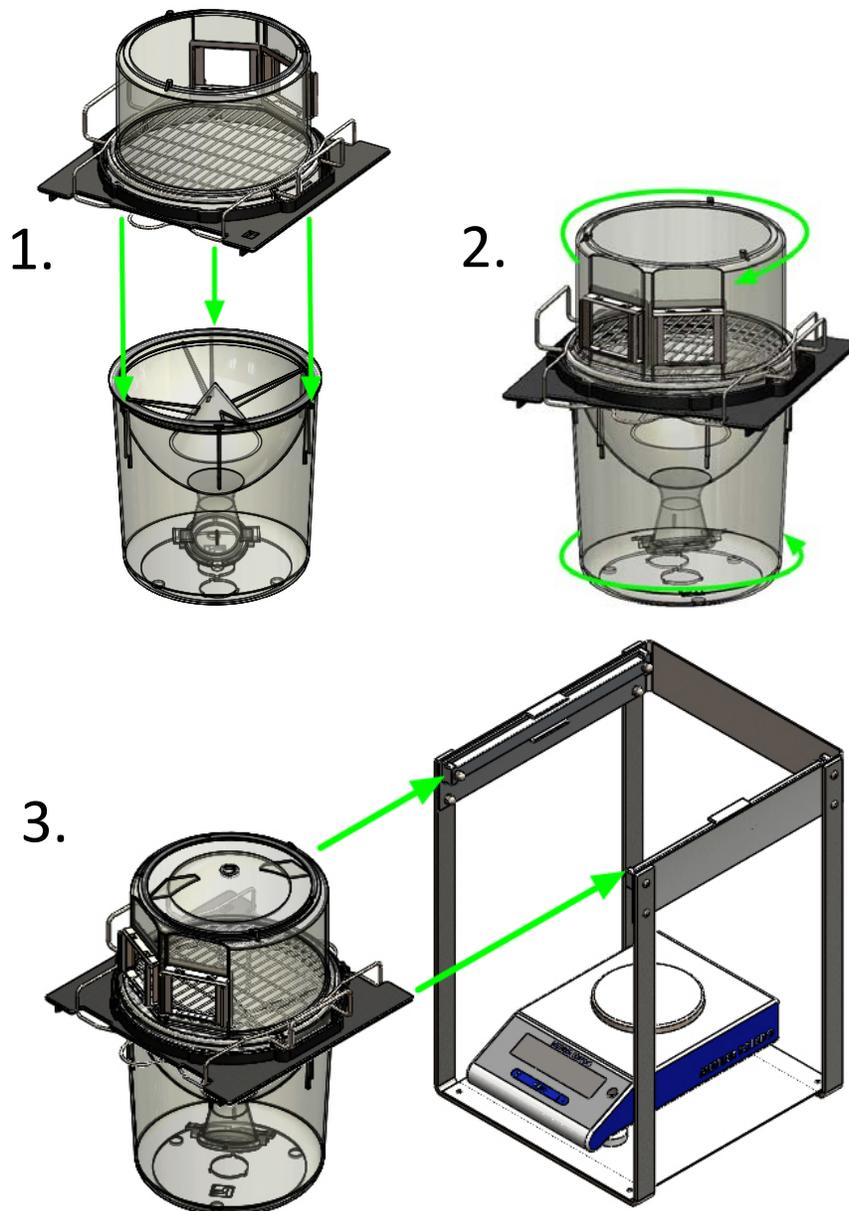
Subassembly 4:

1. Place the water bottle and collection tube on the drinking assembly and slide into one of the openings in the upper chamber.

2. Insert the food trough into the feeder assembly and slide into the second opening of the upper chamber.

Figure 2.4 - Subassembly 4
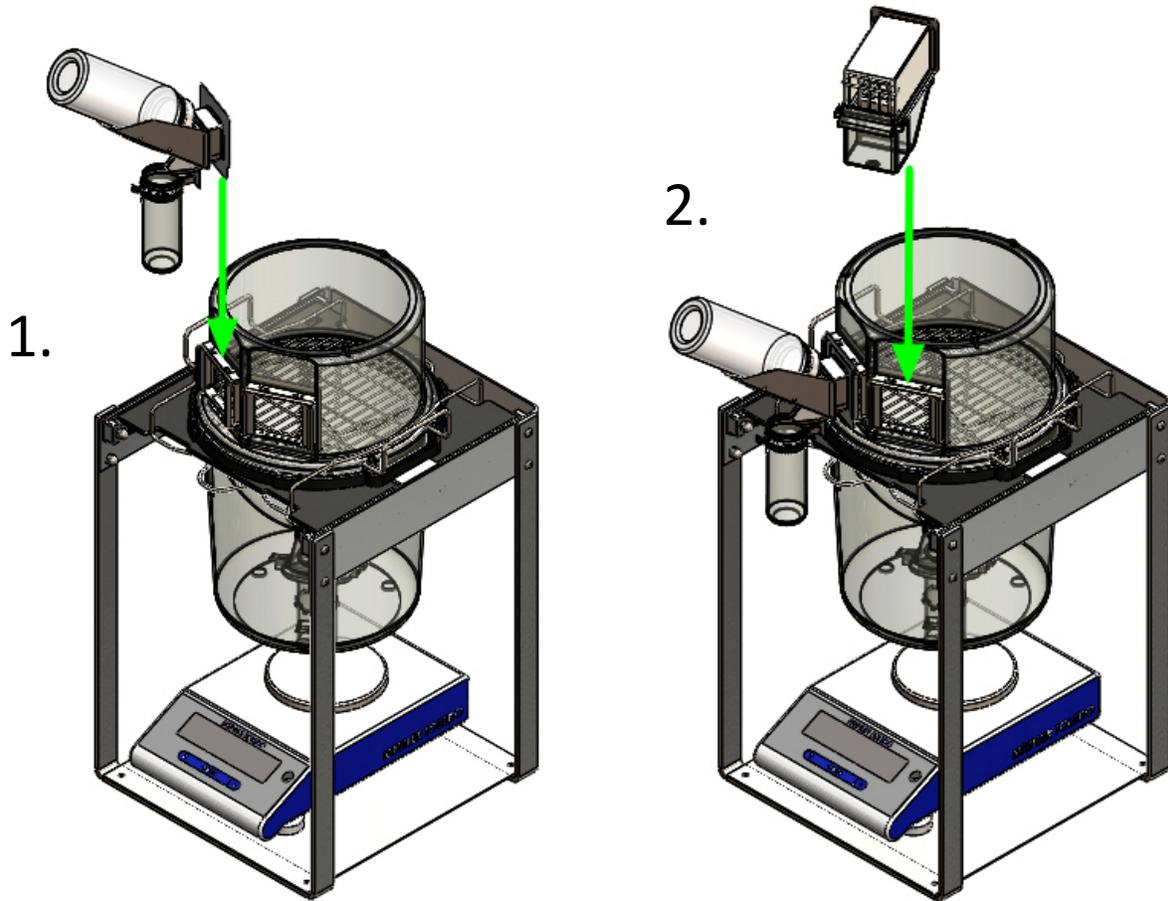
Subassembly 5:

1. Insert the feces collection tube into the central hole in the lower chamber and rotate to secure.

2. Place the urine collection flask on the scale under the urine collection hole (offset hole) in the lower chamber. The flask must not make contact with the collection tube or chamber.

3. Align the 3 grooves in the cover with the lugs of the upper chamber, rotate clockwise to secure.

Figure 2.5 - Subassembly 5
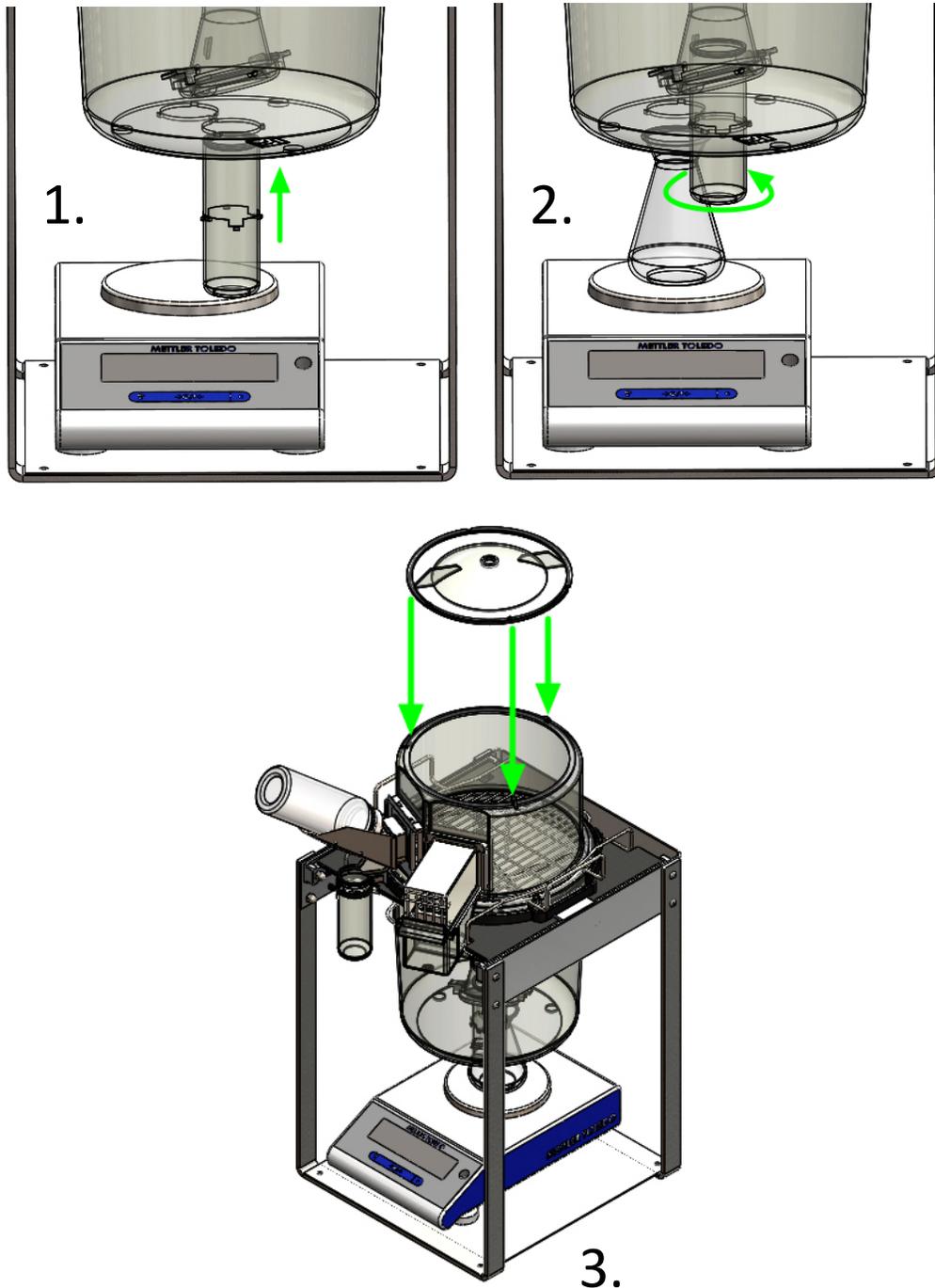
Cleaning the Rat Metabolic Chamber

It is very important to clean the UroVoid rat metabolic chamber, grid floor, and urine/feces separator after each use. If you do not clean the metabolic chamber and floor, the smells from one animal can interfere with the behavior of animals subsequently placed into the cage.

The UroVoid metabolic chamber for rats is made of polycarbonate plastic (PC), polymethylpentene plastic (PMP), and stainless steel components.

> Polycarbonate parts: Cage cover, upper chamber, lower chamber, closure for lower chamber, feed assembly, water bottle, feed drawer, cage support plate.

> Polymethylpentene parts: collection funnel, separating cone, urine ring, feces collection tube.

> Stainless steel parts: sipper cap, drinking bottle support, support grid, feed chamber, vertical stand.

The stand is made of stainless steel and aluminum.

The entire unit and stand may be disassembled and cleaned in a cage washer at temperatures below 82°C (180°F) or by hand using ethanol or germicidal wipes. Do not use abrasive cleaners as they may scratch the surface and provide recesses for bacteria to collect.

Under normal conditions, the metabolic chamber may be cleaned with warm soapy water.

On parts made of polymethylpentene (PMP), organic solvents such as alcohols or methylene chloride may be used to remove greasy residues that can't be removed with aqueous solutions. A concentrated solution of sodium carbonate or bicarbonate may be needed for acidic substances.

> **Note: To prevent warping, do not stack PMP parts in hot water.**

To remove stubborn organic deposits from plastic parts, soak in a dichromate solution prepared as follows: Dissolve 120 grams of sodium dichromate (Na2CR$_2$O$_7$2H$_2$O) in 100ml tap water. Carefully add 1600ml concentrated sulfuric acid. Note: Because this solution generates considerable heat, we recommend external cooling. Do not mix in a plastic container. Prepare this mixture only in a borosilicate glass or lead lined container. Handle it with extreme care.

> **Note: PMP will gradually deteriorate when exposed to dichromate. Soak PMP parts only until clean, and never soak them longer than 8 hours. Rinse them thoroughly with distilled deionized water.**

Commercial detergents are available for decontaminating radioactive cage parts. Soak them for eight hours in a 2% solution at room temperature. A 5% to 20% solution may be used on PMP or stainless steel parts for difficult decontamination problems. Flush with distilled or deionized water until clean. Always dispose of radioactive wastes properly.

Note: Do not use abrasive cleaners, scouring pads, or strong oxidizing agents on parts. Do not use alkaline detergents on polycarbonate (PC) parts.

For optimum performance, it is important to prevent water spots or remove them from the separating cone and collection funnel after washing. Rinse repeatedly with distilled or deionized water until clean.

All cage parts and accessories may be autoclaved. Before autoclaving, clean all parts completely and rinse thoroughly in distilled water. Do not stack PMP parts in the autoclave. They may warp.

> **Note: Although polycarbonate (PC) parts are considered autoclavable, repeated autoclaving will gradually weaken them. We recommend that you autoclave PC parts only when necessary.**

The urine collection flask is made of borosilicate glass and may be cage washed or autoclaved.

Clean the scale exterior with a damp cloth. Do not use harsh cleaners or abrasives. Do not submerge scales.

Assembling the Mouse Chamber

Step-by-step instructions:

1. Carefully unpack all components, taking special care with the screen filter as the screen is quite fragile.

Figure 2.6 – Handle Mouse Chamber Screen Carefully
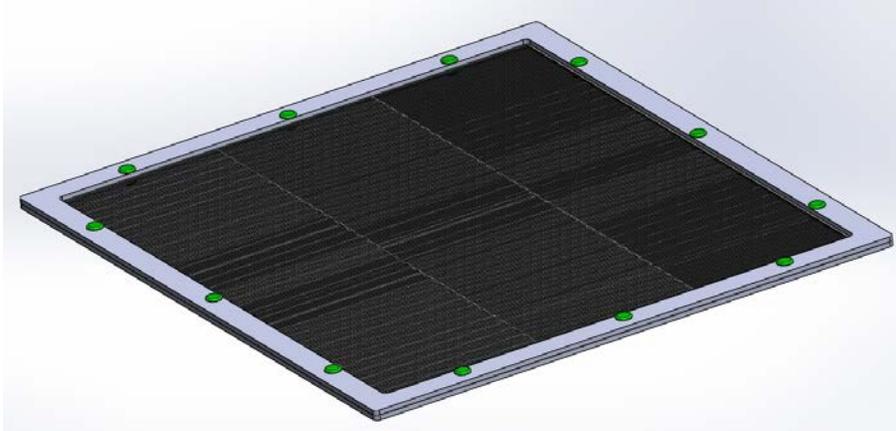
2. Route the power and USB data cables for the scale through the enclosure's right rear grommet.

Figure 2.7 - Mouse Chamber Viewed from Rear, Showing Grommet
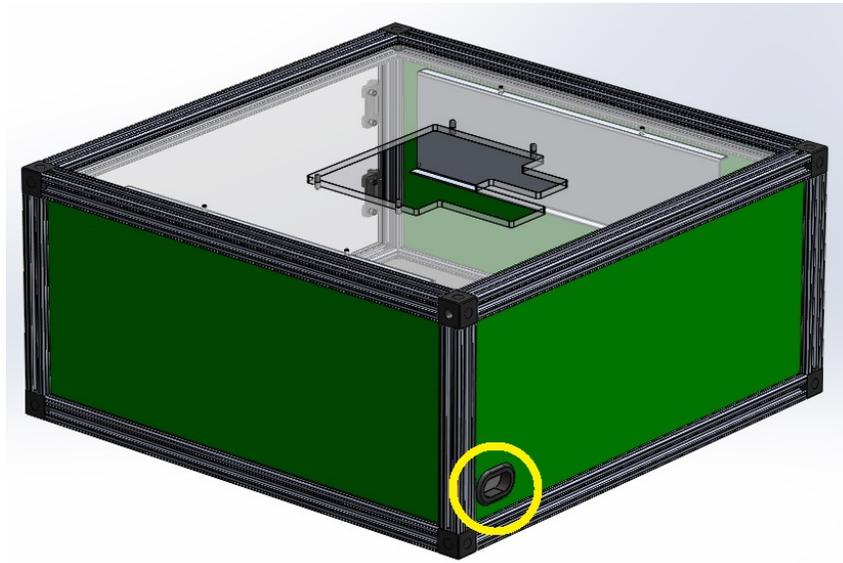
3. Pull the cables through the enclosure and out the front door, plug them into the scale.

4. Look for the two recessed holes in the base of the enclosure. Carefully slide scale feet into the recessed holes.

Figure 2.8 - Slide Scale Feet into Locator Holes
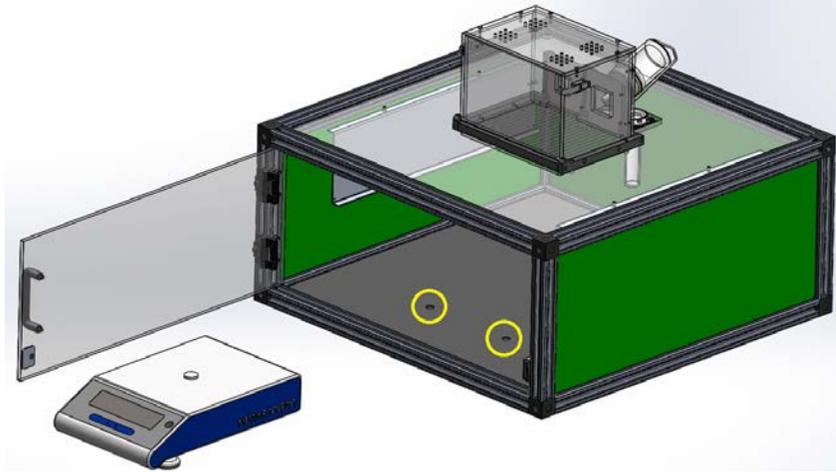
5. Position the chamber in its final location before adjusting the scale level. Looking down from above, locate the spirit bubble level on the scale. Adjust scale's level by turning the leveling feet until the air bubble comes to rest in the middle of the glass.

Figure 2.9 - Level the Scale
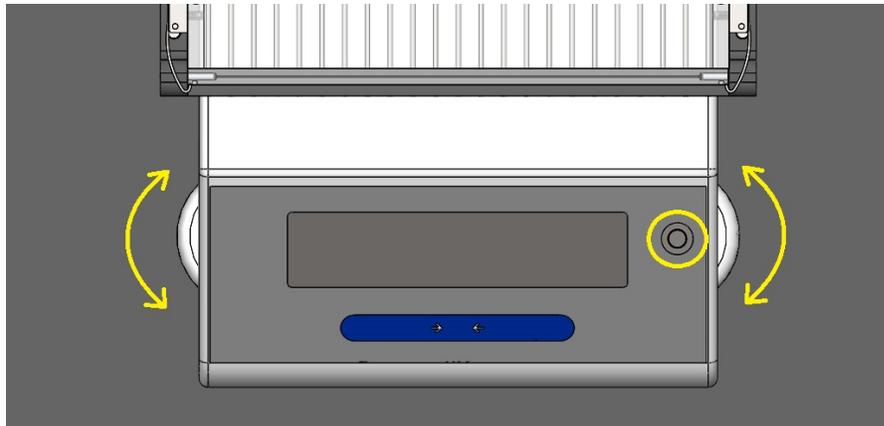
6.   Install the catch pan support on the scale. The plastic disk in the middle of the support should fit into the coupling on the scale.

Figure 2.10 - Place Pan Support on Scale
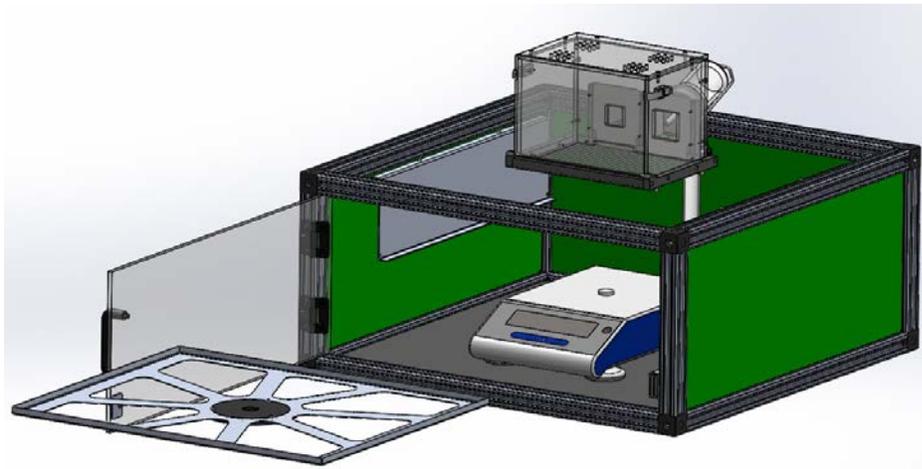
7.   Place the catch pan on top of the catch pan support.

Figure 2.11 - Place Pan on Pan Support
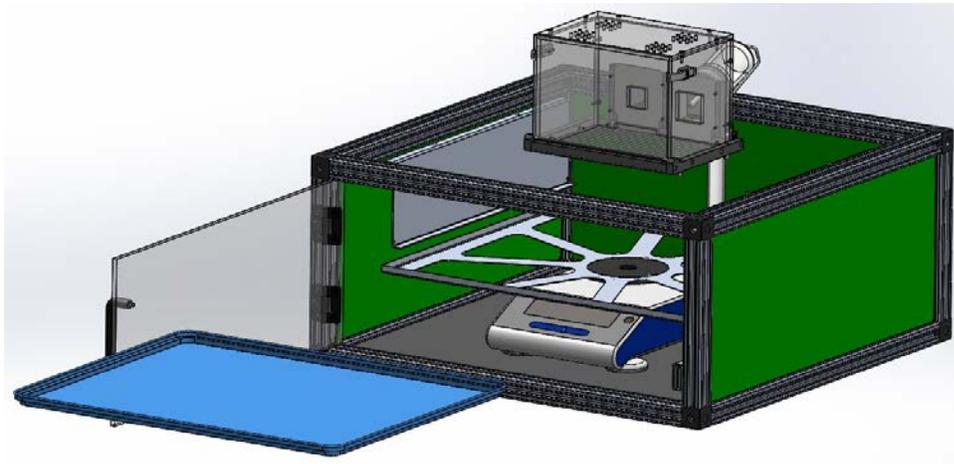
8. Slide the screen into the two support brackets suspended from the ceiling of the enclosure until it hits the back stop.
    Note: The screen only fits one way and top/bottom orientation does not matter.

Figure 2.12 - Slide Screen onto Support Brackets
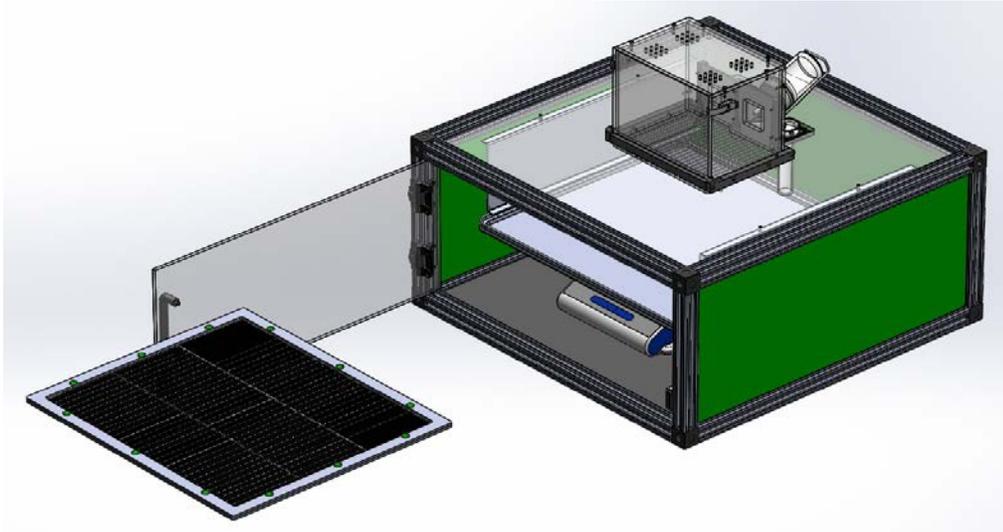
9. Install mouse cage onto the top of the enclosure. It will slide onto four pins sticking out of the top, with the door facing the same direction as the enclosure door.

Figure 2.13 - Install Mouse Cage
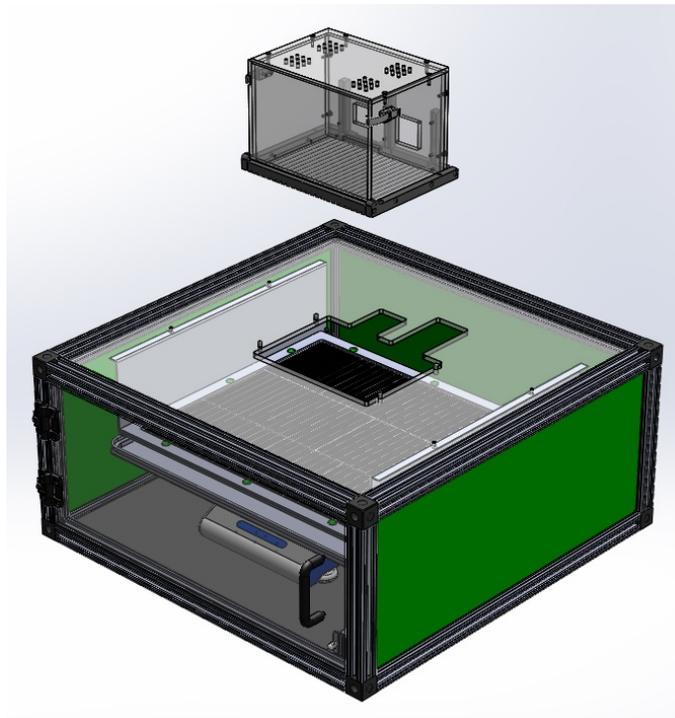
10. While facing the back of the unit, slide the food receptacle into the slots on the right side of the mouse cage.

Figure 2.14 - Install Food Receptacle
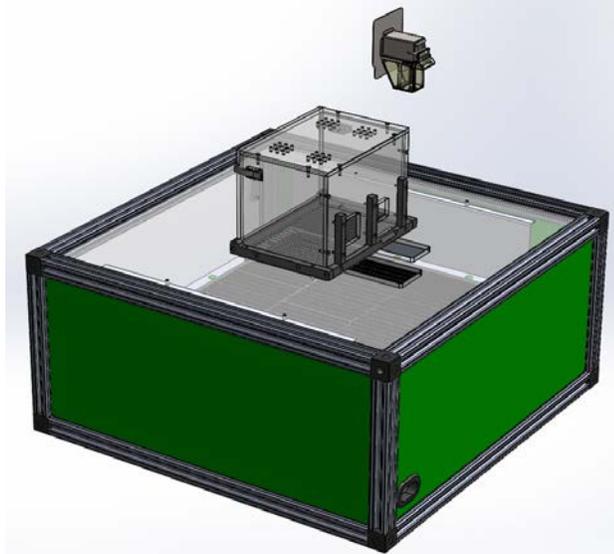
11. Now slide the drink receptacle into the slots on the left side of the cage.

Figure 2.15 - Install Drinking Receptacle
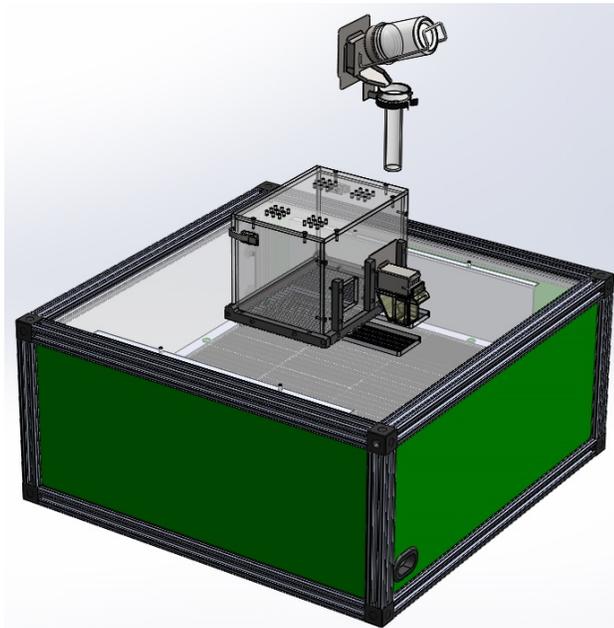
Cleaning the Mouse UroVoid Chamber

It is very important to clean the UroVoid cage, urine collection pan, and urine/feces separator after each use. If you do not clean the cage, the smells from one animal can interfere with the behavior of animals subsequently placed into the cage. Likewise, the floor of the animal holding cage and the urine/feces separator screen should be clean to ensure optimal performance.

The UroVoid mouse holding cage is made of polycarbonate plastic and stainless steel components. The food and water receptacles are of similar construction. The food and water receptacles may be removed from the holding cage cleaned in a cage washer at temperatures below 82°C (180°F) or by hand using ethanol or germicidal wipes. Do not use abrasive cleaners as they may scratch the surface and provide recesses for bacteria to collect.

The separator screen is made of delicate stainless steel mesh. Use extreme caution when handling the separator screen, as it can be damaged, rendering it unable to separate feces/urine. It should be cleaned by hand with a mild detergent and a soft cloth or brush with light pressure.

The collection pan and scale support may be cage washed or autoclaved.

The plastic surfaces of the scale isolation enclosure may be cleaned by hand with a mild detergent and soft cloth. Do not use abrasive cleaners.

Clean the scale exterior with a damp cloth. Do not use harsh cleaners or abrasives. Do not submerge scales.

Scale Configuration Procedures

Torbal AD520 Scales

Configuration Changes from Default:

To change the Torbal AD520 scale configuration, press the **M** button to enter the main menu. The menu options will automatically cycle. Press the **T** button to enter a sub-menu or choose the current option; press the **C** button to go back "up" a menu level. Press the **→0←** button to cycle through menu items quicker, but the menu auto-cycling feature may not be disabled.

- When **Ports** is displayed, press the **T** button. The Ports menu options will automatically cycle.
  - When **USB** is displayed, press the **T** button. The USB menu options will automatically cycle.
    - When **Baud** is displayed, press **T**. The Frequency options will automatically cycle.
      - When **19,200** is displayed, press **T**. This will select 19,200 bits per second and then return control up one menu level to the USB menu.
    - When **Bits** is displayed, press **T**.
      - At **8**, press **T**.
    - When **Parity** is displayed, press **T**.
      - At **odd**, press **T**.
    - When **Send** is displayed, press **T**.
      - At **no stab**, press **T**.
    - Press the **C** button **three times** to exit the menu system and return to weighing mode.
- Zero the scale by pressing the **→0←** button.

NOTE: WHEN SCALE IS FIRST STARTED ALL WEIGHT INCLUDING TRAYS NEED TO BE REMOVED. IF SCALE READS unLOAD OR SErVICE, REMOVE ALL WEIGHT UNTIL SCALE READS GRAMS. YOU MAY THEN ADD WEIGHT, TARE, ETC.

Mettler Toledo ML303E Scales

Turn ON the scale. Press and hold the ↵⊡ button to enter the menu system. The scale should now display the text BASIC indicating that it is in the Basic menu level. At this point main menu levels Basic, Advanced, Interface, and Protect are available.

To change between main menu levels, press the ✚F button.

To move to a submenu level, press the ↵⊡ button.
To move back up a level, press the **C** button.

Once in a submenu level, press the ✚F button to select which submenu is active.

Use the following table to configure the ML303E scale for use with UroVoid.

	Parameter		Value	Description
Basic	STB.BEEP		**OFF**	Disables stability beep
Advanced	ENVIRONMENT		**Stable**	Minimize any filtering
	SRV.ICON		**OFF**	Disables the service reminder
	SHUTOFF		**A.OFF --**	Disables time-based shutoff
	A.ZERO		**OFF**	Disables the automatic zero correction
Interface	RS232	HOST	**SND.ALL**	Sends weight value regardless of stability
	BAUD		**19200**	Serial interface transfer speed
	BIT.PAR		**7/ODD**	Character format
	HD.SHK		**RTS.CTS**	Serial transfer protocol

Once you have selected the desired setting briefly press the ↵⊡ button. This will return you to the previous level

After selecting all of the appropriate settings press and hold the ↵⊡ button. The scale will prompt with the text "SAVE:YES." Briefly press the ↵⊡ button to save the changes.

Mettler Toledo ML303T Scales

Turn ON the scale. Press the ⚙ button to enter the Settings menu.

Press the ⚙ button to access "Quick settings."

Press the ⚙ button to access the "General configuration."

Press the ✔ button to save changes, press the ✖ button to discard changes.

Use the following table to configure the ML303T scale for use with UroVoid.

Quick Settings or General Config.	Category	Parameter	Value
Quick	Date and Time	Date	**Current Date**
		Time	**Current Time**
Quick	Sound	Stability beep	**OFF**
		Workflow feedback beep	**LOW**
		Touch beep	**OFF**
General	Weighing Options	Environment	**Stable**
		Autozero	**OFF**
General	Publishing	Send value (Serial)	***Manual, all values**
General	Devices and Connectivity RS 232 (Serial)	Device type	**Host**
		Baud rate	**19200**
		Bit/Parity	**7/Odd**
		Stop bits	**1 bit**
		Handshake	**RTS/CTS**
General	System Settings	Sleep mode	****OFF**
		Service due notification	****OFF**
		Out of level notification	**OFF**

* To change the "Send value (Serial)" parameter, press the ⬜ button (top right) to activate the "Send value (Serial)" field, the icon should change to ▮⬜ indicating the scale will now send data over the Serial port. Select "Manual, all values", and finally, press the Check ✔ button to accept the changes. The "Send value" heading will state "Device not setup (Serial)" until the Devices and Connectivity settings are configured as described in the table above.

** Press the ▮⬜ icon to change to ⬜ and turn OFF.

Mettler Toledo ML303T Scales Cont.

Turn Fully Automatic Calibration Technology (FACT) Off:

- Press the ⬛ button.
- Press the ⬛ button to access the "Activities - Adjustments and tests."
- Press the button that says FACT.
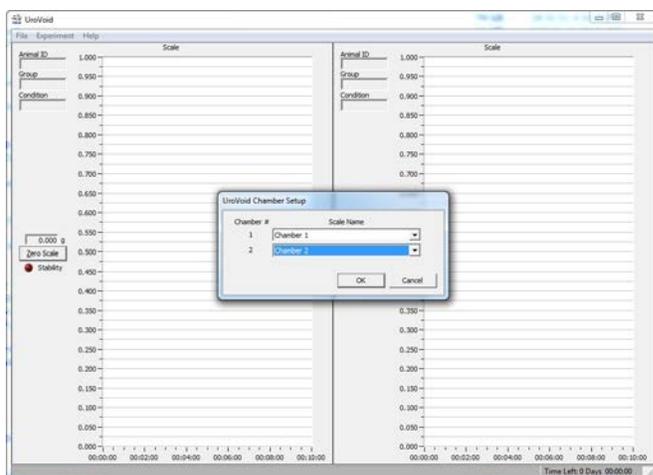- Turn FACT off by changing ⬛ to ⬛.

Manual Calibration: Should be performed ~1x week.

- Press the ⬛ button.
- Press the ⬛ button to access the "Activities - Adjustments and tests."
- Press the button that says Adjust Internal. The screen shows Adjustment ongoing...
- Press ✔ to confirm the results.

CHAPTER 3 SOFTWARE

Scale/Chamber Setup

The first time launching UroVoid™ Acquisition, be sure to run as an administrator. The software will ask you if you would like to configure your scales, see Figure 3.1. Connect all scales to the computer via USB and click **YES.** Make sure you are using the software as an administrator or you will **NOT** be able to add your scales. Once this operation is completed, the scales are saved into the registry and you will not be prompted again. This operation can also be done from the **UroVoid** main screen by clicking **File | Configure Devices > | Configure Scale Device…** This method will be necessary for any additional scales that may be added to the system going forward. Both methods will bring you to the **Scale Properties** screen, see Figure 3.2.

Figure 3.1 - Configure Scales Prompt

First time users who clicked **Yes** will immediately see the **Scale Detection Progress** bar. If you have chosen **Configure Scale Device…** from the file menu, click **Detect Devices** to start the scale detection process.

NOTE: Scale Detection Progress may take up to a few minutes.

Figure 3.2 - Scale Detection Progress

Once the scale detection process is complete all scales connected will populate the **Scale Properties** screen in no particular order, with its associated COM Port and Name, which will default to the COM Port number as seen in Figure 3.3.

Figure 3.3 - Scale Properties

It will be necessary to determine which scale is associated with which chamber. To do this click the **Test** button, you will see the associated scale's display reset. Repeat if needed to identify which scale is being reset. It is recommended to name the scale with the appropriate chamber number. If you have multiple scales, repeat this for each scale until all scales are named as seen in Figure 3.4. Click **Apply** and **OK.**

*Figure 3.4 - Scale Properties Test*

The **UroVoid** main screen will now appear along with the **UroVoid Chamber Setup** window. Choose the scale name from the drop-down that matches the Chamber # and click **OK**. See Figure 3.5.

Figure 3.5 - UroVoid Chamber Setup

The scales will now be updated with names and are being read in real time. Tapping the scales will result in activity in the graph, refer to Figure 3.6. This may be a good idea just to double check if the scales and chambers are matched up properly. If changes are needed, click **File | Chamber Setup…** to launch the **UroVoid Chamber Setup** window again as seen in Figure 3.5 above.
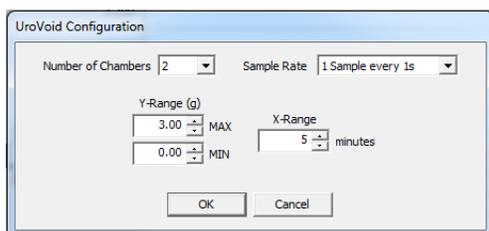
Figure 3.6 - UroVoid Main Screen
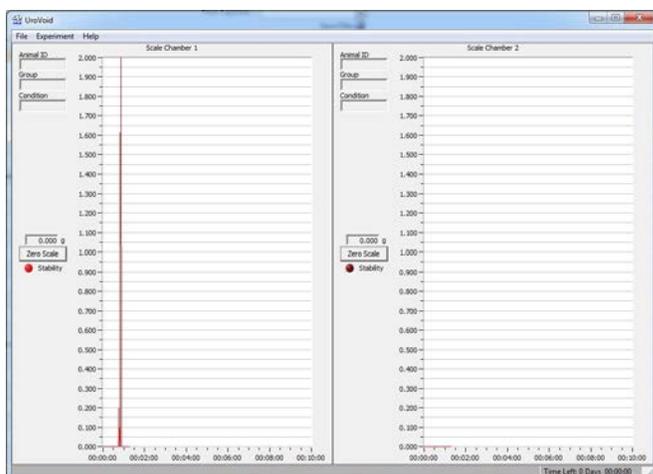
UroVoid Setup

Click **File | UroVoid Setup…** to launch the **UroVoid Configuration** window seen in Figure 3.7. This window can also be accessed by double-clicking any value along the X (minutes) or Y (grams) axis.

Figure 3.7 - UroVoid Configuration

Before the start of an experiment the **UroVoid Configuration** will allow you to set the Number of Chambers from 1 up to 12 chambers and the Sample Rate of the data collected from the scales. Available sample rates are 1 sample every 0.25, 0.5, 1, 1.25, 1.5, 2, 2.5, 3, 4, or 5 seconds. Changing the number of chambers will update the **UroVoid** main screen to reflect the change, see Figure 3.8. This may be useful if you have 12 chambers in your setup but are only using chamber 1 for example.

Figure 3.8 - Number of Chambers 1 (left) and 12 (right)
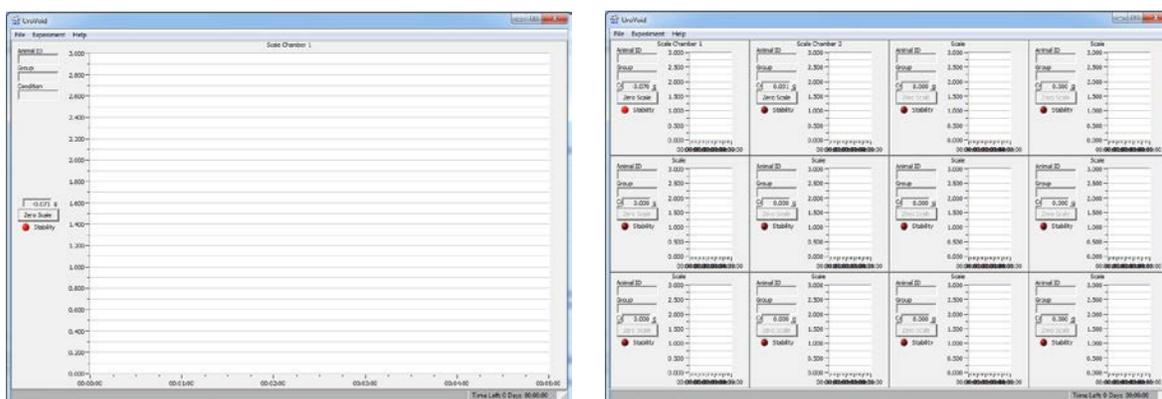
Before the start and anytime during the experiment the Y-Range (grams) and the X-Range (minutes) can be modified to zoom in or out of the graph if you are trying to view a specific range of data. This will reflect all chamber views.

> **NOTE: The Number of Chambers and the Sample Rate cannot be changed after an experiment has been started and will be grayed out, see Figure 3.9.**

Figure 3.9 - UroVoid Configuration during Experiment
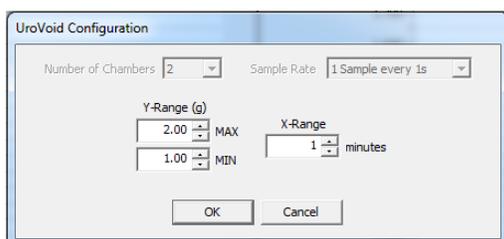
Starting an Experiment

Click **Experiment | Start Experiment...** to open the **UroVoid – Start Experiment** window shown in Figure 3.10.

[···] button allows you to change the default Data Directory if desired.

**File Name** is a required field; UroVoid will not allow you to start an experiment without it.

Start Date and **Start Time** will allow you to start an experiment in the future if you so choose. Any date or time in the past will start the experiment immediately.

Experiment Length will set the duration of the experiment.

**Start Chamber** allows you to select specific or all chambers for the experiment.

Animal ID, **Group**, and **Condition,** allows you to enter details for each chamber. These details will appear on the **UroVoid** main screen and the associated data file.

Figure 3.10 - UroVoid - Start Experiment
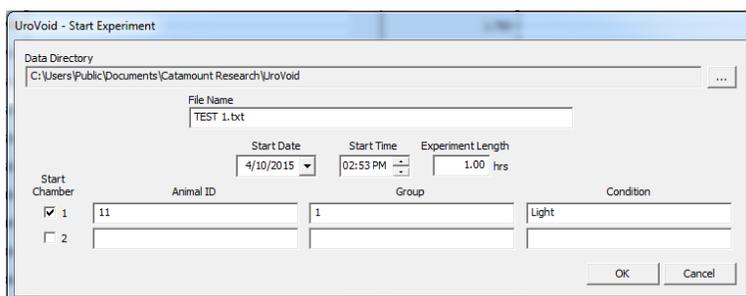
Clicking **OK** will start the experiment for the selected chambers. If any chambers are not selected the **Zero Scale** will be grayed out, see Figure 3.11. Clicking **Cancel** will cancel the start of an experiment.

Figure 3.11 - Started Experiment for Chamber 1 of 2
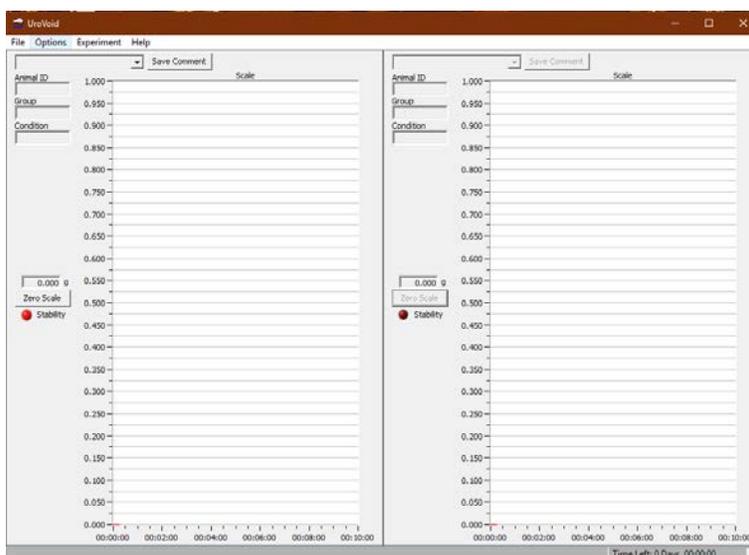
Starting another Experiment

UroVoid will allow you to start a second experiment while another is already started. This may be useful if you are recording one group during a light cycle but want to start another in a dark cycle at a later time. You will need to launch another instance of the program from your desktop shortcut or program list. Notice Chamber 1 that was previously started has its **Zero Scale** grayed out and will be unavailable for the next experiment, see Figure 3.12.

Figure 3.12 - Another Instance of UroVoid
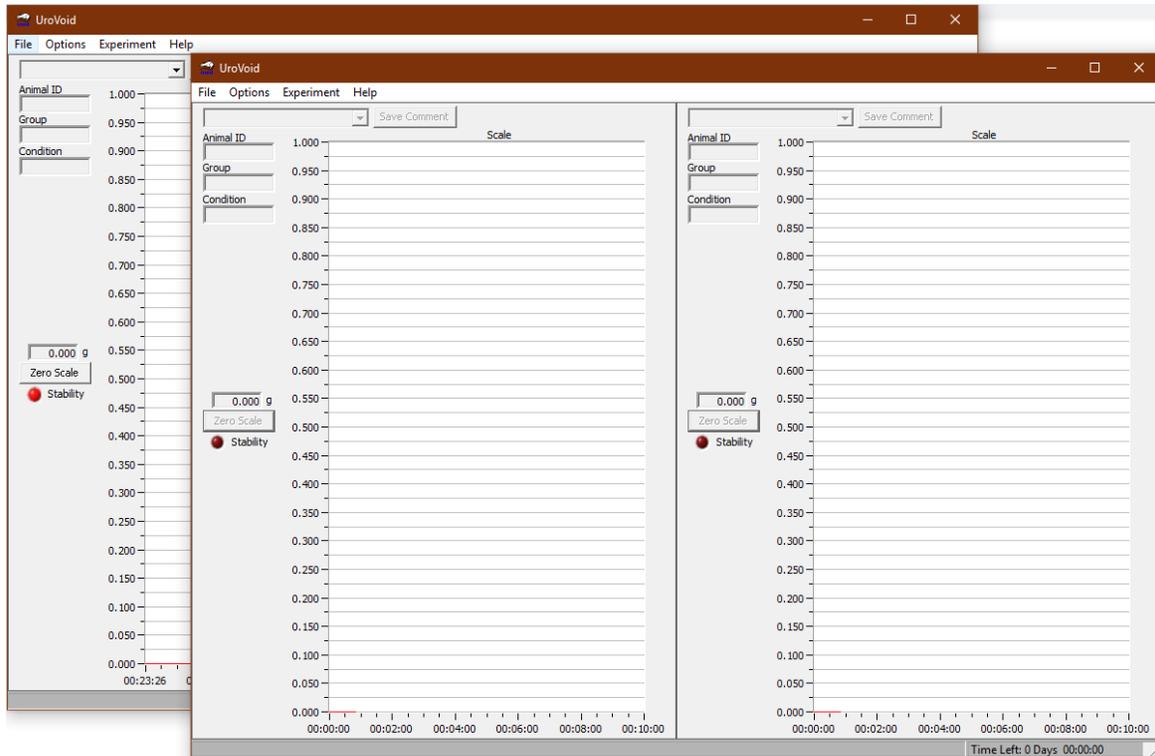
Click **Experiment | Start Experiment…** to open the **UroVoid – Start Experiment** window. You will notice the **Start Chamber** selector and detail fields for already running chambers will be unavailable as seen in Figure 3.13. Following the Starting an Experiment instruction previously provided, add your experiment parameters and click **OK** to start the second experiment**.**

Figure 3.13 - Starting another Experiment
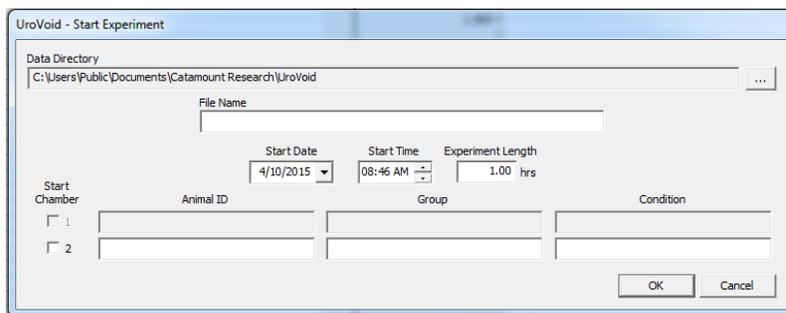
Running an Experiment

Data collected during an experiment will show as a cumulative frequency or step graph, see Figure 3.14. As previously mentioned, during the experiment the graph can be manipulated via the **UroVoid Configuration** window by clicking **File | UroVoid Setup…** or double-clicking any value along the X-Range or Y-Range axis, refer to Figure 3.9. The X-Range, represented in Hours:Minutes:Seconds is a rolling range which means that if the X-Range is set to 3 minutes, at 3 minutes and 8 seconds the range shown is 00:00:08 – 00:03:08 as seen below, the range automatically adjusts as time continues. The X-Range can be set from 1 minute up to 960 minutes or 16 hours. The Y-Range is a static range which means it does not change until the user does so. The user defines the minimum and maximum number of grams to show the chosen range in the graph. The Y-Range can be set from -99.99 grams up to 999.99 grams.

Figure 3.14 - UroVoid Experiment
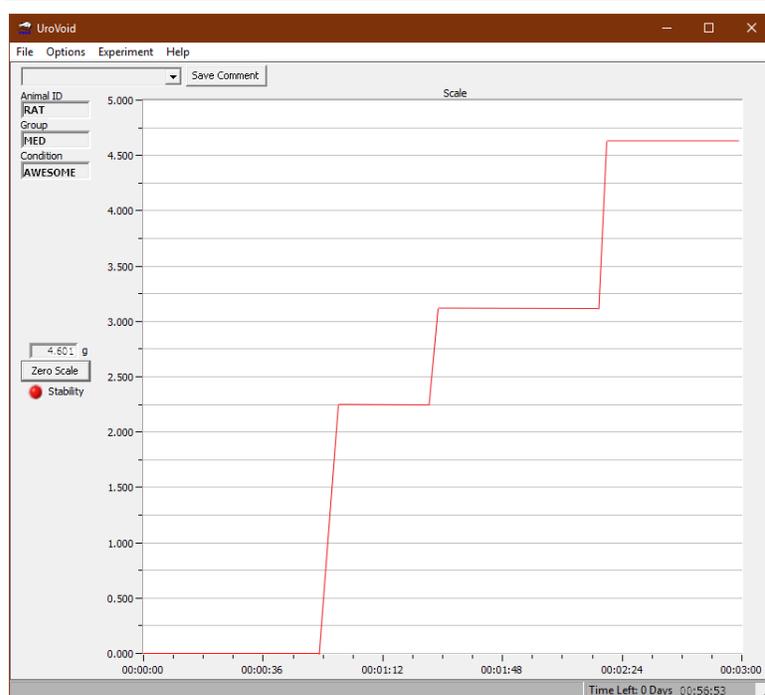
Along with the experiment details entered when starting the experiment, during the experiment the **UroVoid** main screen shows the current scale weight in grams, allows you to zero or tare the scale, and shows the scale's stability.

> **NOTE: Zero Scale is live and active for all scales/chambers started in the experiment, clicking Zero Scale will tare the associated scale and cannot be undone.**

> **NOTE: The Stability illuminates red when any change in weight occurs until the scale stabilizes the reading. If you see unpredictable Stability illumination, check your environment for causes. The scales used in UroVoid are very sensitive. For example, wind from a fan can affect the scale's stability.**

Entering Text Comments

Text comments can be appended to a data file during an experiment to indicate important events. This feature is useful for documenting when making a note regarding incidents that have happened during the experiment. To enter text comments, select a comment from the pulldown menu or place the cursor in the comment box and type the desired comment, then click the Save Comment button (Figure 3.15). This will put the text comment in the last column of the data file at the time the Save Comment button is clicked. When using multiple chambers, each comment will still be in one column but will be labeled with the name that was used for the scale in the chamber.

Figure 3.15 – UroVoid with Comment Menu Highlighted
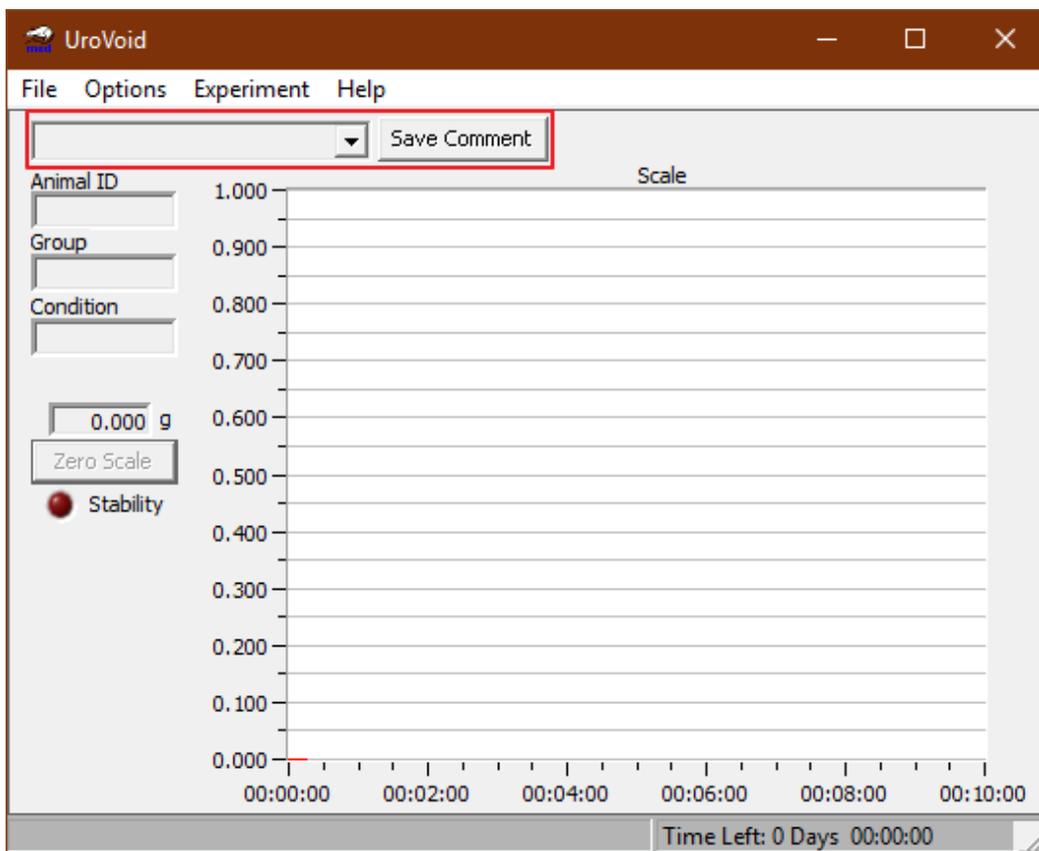
Adding / Removing Text from the Comment Pulldown Menu

Comments can be added or removed from the Comments pulldown menu by clicking Options | Add/Remove Comments. The screen shown in Figure 3.16 will appear. Add a new comment to the list by entering the text in the field and clicking Add. Remove a comment from the list by highlighting it and clicking Delete. Click OK to save changes to the Comments list and close this screen, and click Cancel to close this screen without saving changes.
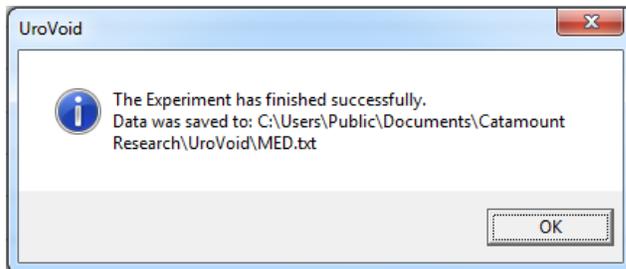
Figure 3.16 – Add/Remove Comments Window
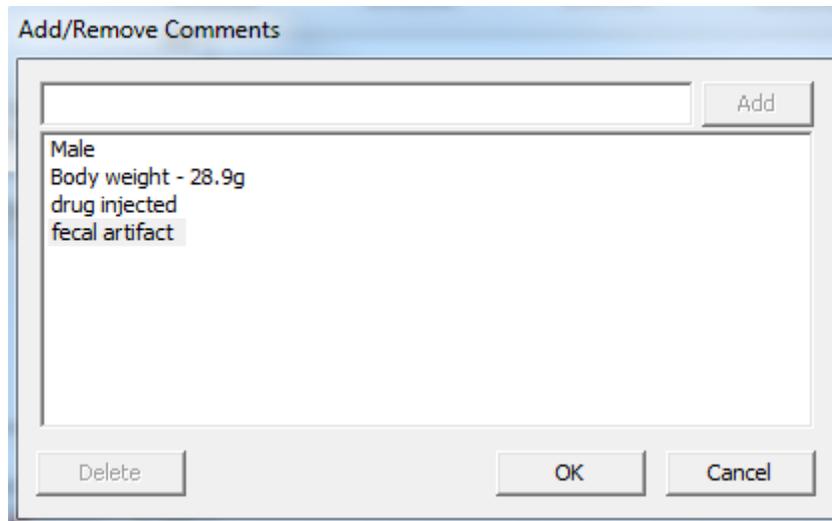
Ending an Experiment

Once the Experiment Length time has expired **UroVoid** will prompt you that the experiment has finished successfully and show you the path the data was saved to as seen in Figure 3.17.

Figure 3.17 - Experiment Finished Notification

You can also end the experiment manually by clicking **Experiment | End Experiment… UroVoid** will prompt you that an experiment is running and ask you if you are sure you want to end the experiment, refer to Figure 3.18. All data that was collected will be saved up to this point in the user defined data file. Click **Yes** to end the experiment or **No** to continue.

Figure 3.18 - Ending an Experiment Manually
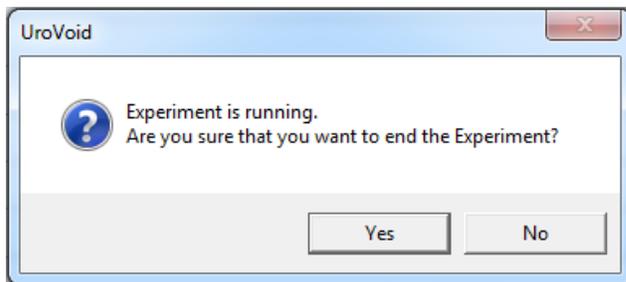
CHAPTER 4 BEST PRACTICES

As with any experimentation system, individual results will vary depending on the consistency of environmental conditions. The following recommendations should help eliminate variable conditions that may affect the UroVoid system data collection.

Testing Environment Considerations

The testing location should have minimal air currents or drafts, and be free from mechanical vibrations. The analytical balances are extremely sensitive, and air currents from heating and cooling systems, humidifiers and dehumidifiers, air filtration systems, and the like can present obstacles to acquiring accurate voiding data.

Keep the testing environment as quiet as possible, with no automated equipment, such as humidity controls or air circulators, lighting systems, public address speakers, or telephones nearby. Loud noises such as a fan motor starting will startle the test subjects, inducing aberrant voids.

If the test computer is located in the same room as the UroVoid chambers, be cognizant of the light emanating from the monitor. Turn off the monitor via the power switch when not in use, as an inadvertent bump of the computer mouse may awaken the monitor from sleep and illuminate the room.

Computer Configuration

Turn OFF power-saving features of the acquisition computer to ensure consistent, uninterrupted data acquisition. Do not allow the computer to sleep. Do not allow the USB ports to be disabled. The power-saving features of the Windows operating system are accessed through the Control Panel, in the Hardware and Sound group, under the Power Options settings. Be sure to **disable** the **USB Selective Suspend** settings in the Advanced Settings area.

To further bolster the acquisition system, use of an Uninterruptable Power Supply (UPS) is recommended. A UPS is (usually) a battery backup system that provides continuous current to attached devices in the event of a mains power failure. Models are available to supply several minutes to several hours of power, depending on the quantity of power used. Most UPS systems designed for personal computers also feature signal conditioning to eliminate voltage spikes and surges, further protecting the system from damage. We highly recommend the use of a UPS to maintain a robust data collection system.

CHAPTER 5 DATA

The data collected and recorded by UroVoid™ Acquisition are saved in a user-defined tab delimited .txt file in the user-defined directory. This data can be imported into SOF-581 UroVoid™ Analysis or other analysis software such as Microsoft® Excel® or LabVIEW™.

Data File Breakdown   Yellow = Header for Data Columns

File Revision Number					
Software Version Number					
Computer Name					
File Path and Name					
Sample Rate					
Experiment Start Date and Time					
Number of Chambers					
Animal ID	ID	ID	ID	ID	
Group	Group	Group	Group	Group	
Condition	Condition	Condition	Condition	Condition	
Elapsed Time	Scale Name	Scale Name	Scale Name	Scale Name	Comments
Sample Rate Time	Weight	Weight	Weight	Weight	Comment
Sample Rate Time	Weight	Weight	Weight	Weight	Comment
Sample Rate Time	Weight	Weight	Weight	Weight	Comment

Sample Data File

```
2 = File Revision
UroVoid Ver = 1.1.0.0
USER-0816649823
C:\Documents and Settings\All Users\Documents\Med Associates\UroVoid\2017-03-25_test4Wistarrat.txt
Sample Rate = 1 Sample every 1s
2017-03-25 10:39:12
Number of Chambers = 4
Animal ID     A1          A2          C5          C6
Group         Wistar      Wistar      Wistar      Wistar
Condition     Control     Drug        Control     Drug
Elapsed Time  Scale 1     Scale 2     Scale 3     Scale 4     Comments
1.00          0.000       -0.004      -0.004      -0.001
2.00          0.001       -0.003      -0.001      -0.001
3.00          0.000       -0.003      0.000       -0.001
4.00          -0.001      0.000       0.000       -0.001
5.00          -0.001      -0.001      0.000       0.001
6.00          -0.001      -0.001      0.001       0.000
7.00          -0.003      -0.001      0.001       -0.001
8.00          -0.002      -0.001      0.001       0.001
9.00          -0.002      -0.001      0.001       0.001
10.00         -0.002      -0.002      0.000       0.001
        ******** 86380 Records Truncated for Manual ********
86391.00      23.905      26.472      34.146      34.267      Scale 1: Entered Room
86392.00      23.903      26.472      34.140      34.265
86393.00      23.903      26.473      34.142      34.264      Scale 2: Entered Room
86394.00      23.897      26.468      34.143      34.263      Scale 3: Entered Room
86395.00      23.890      26.461      34.145      34.263
86396.00      23.896      26.469      34.135      34.255
86397.00      23.898      26.467      34.141      34.255      Scale 4: Entered Room
86398.00      23.892      26.467      34.142      34.253
86399.00      23.894      26.464      34.142      34.271
86400.00      23.903      26.467      34.145      34.266
```

CHAPTER 6 CONTACT INFORMATION

Please contact Med Associates, Inc. for information regarding any of our products.

Visit our website at www.med-associates.com for contact information.

For technical questions, email support@med-associates.com.