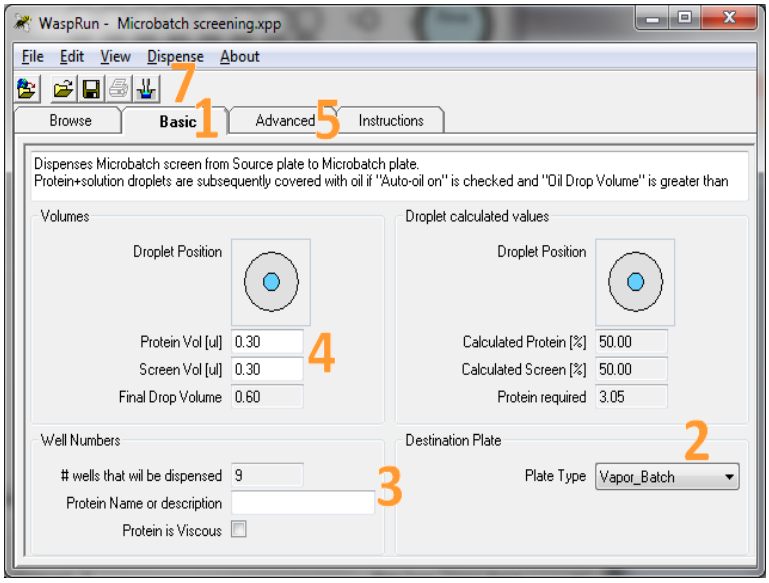
Microbatch Under Oil Screening

Dispenses Microbatch screen solutions from Source plate to Microbatch plate.
Protein & solution droplets are subsequently covered with oil if "Auto oil on" is checked.

Step-by-Step Instructions

- Start **WaspRun Screening** by double clicking on this icon:

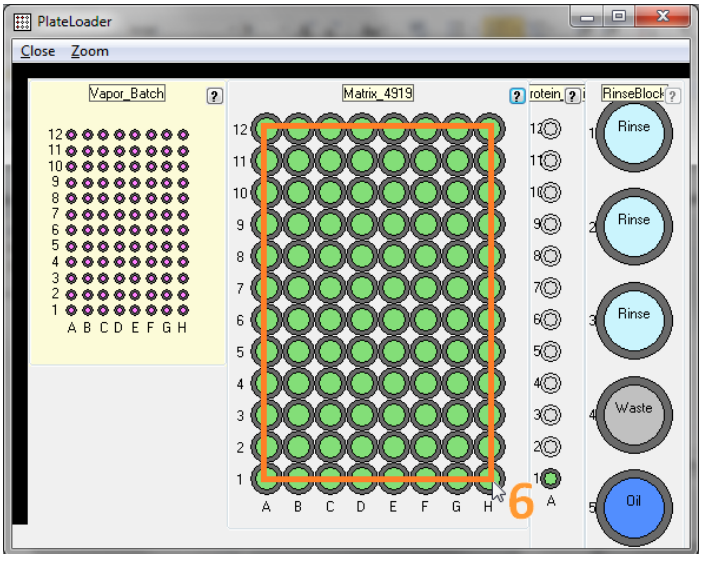
- Navigate to **Microbatch** and then click on "**Microbatch Screening.**"



Experiment design

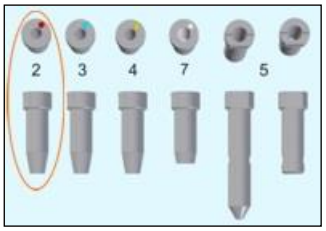
1. Switch to the "Basic" tab.
2. Choose a Destination Plate.
3. Enter a protein name or description for the experiment if desired. This can be printed and will be logged in the report file.
4. Specify protein volume and screen solution volume for each droplet.
5. Check items on the 'Advanced' tab if desired. Here it is possible to set flow rates and change number of rinse and dips.
6. Drag out a block on the Source Plate in the PlateLoader window (below). Dispense all or part of a plate. It is possible to select any combination of individual wells.
7. Click on the 'Dispense' menu item or button to execute experiment.

Front Panel will open upon execution of an experiment. The Front Panel wizard will guide you through experiment preparation and execute experiments automatically.



Hardware Preparation

1. Place the desired plate on the left side of the table of the Plate Loader, this will be requested by front panel.
2. Place the Protein load plate and rinse block or combined protein load strip and rinse block to the right of the VD plate.
3. Place a glass vial in each position of the rinse block. Fill the glass vials with water as follows: Vials 1, 2 and 3: 95% full. Vial 4: empty (for waste). Vial 5: 50% full of Pure Paraffin Oil
4. Connect a **2 or 3-channel Microtip** to the first two channels (green and red). Place the Microtip in the 2-channel "collet" (holder) (shown in image on right). Put collet and Microtip in the left (Z) arm of the Plate Loader. For Multi-Protein experiments use the 3- or 4-bore collet as directed by the software. See reverse side for instructions for setting height of Microtip.
5. Grease Microtip if necessary. Greasing a Microtip with silicone or paraffin grease improves accuracy of dispensing. We recommend greasing a Microtip every two weeks or as required. Do not grease inside of a Microtip.
6. Fill the ground glass syringes of the upper valves with degassed pure water and replace them if necessary.



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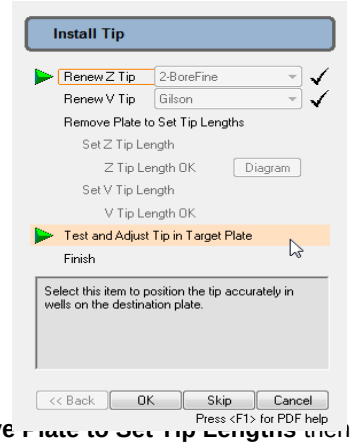
Software Preparation

1. The Front Panel wizard will ask you to confirm that the correct plates and protein load plate are in position on the plate loader. You will also be prompted to confirm that the glass vials are in position and filled with water, oil or empty.
2. Front Panel will ask you to confirm that the correct Microtip is attached for the experiment. If the incorrect Microtip is installed, you will be instructed to remove existing Microtip and install a new Microtip. You will be asked to align the Microtip to a well in the target plate.
3. The Front Panel wizard will then guide you through debubbling and flushing procedures (detailed below) before beginning the experiment.
4. You will then be prompted to provide the required volume of protein. Place protein in low profile PCR tube in protein load plate position A1.
5. After protein is loaded, click OK to begin experiment. Click pause during experiment to re-align Microtip, stop experiment or change variables in the experiment.
6. At the end of the experiment, we recommend to cover the entire plate with approx. 3ml of Al's Oil (1:1 mixture of silicon oil and paraffin oil.)

Navigating Front Panel Wizard

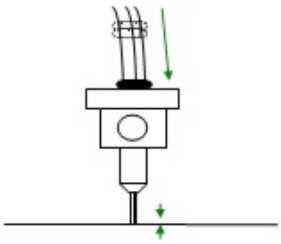


Wizards in Front Panel (shown right) can be navigated as follows:

a. Click on the items in the Wizard to perform the action or to indicate that you have done what was requested.
b. You may skip actions in the Wizard by clicking on items further down or on 'Skip'.
c. You may repeat items in a Wizard by clicking on earlier items that are enabled.
d. Clicking 'Cancel' will abort the experiment.

Setting the Height of the Microtip

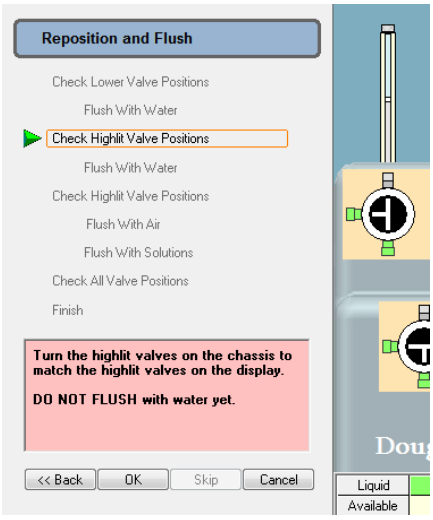
If you suspect that the 2-channel Microtip is not set to the correct height select **Remove Plate to Set Tip Lengths** then **Set Z Tip Height**. The arm(s) will move to its lowest position. Follow the instructions on the screen:



a. Move one O-ring towards the tip and the other two away from the tip
b. Adjust the height of the Microtip until it is just touching the table by pushing through the lower o-ring
c. Mark the height by moving the top two o-rings down to the top of the collet.

Debubbling and Flushing

1. At the beginning of each day the system will require debubbling. When presented with the "Reposition and Flush" Wizard the Microtip will be above the Rinse bottle. If air bubbles are present in the lines Debubbling will be required:



a. Turn Valves to the positions indicated by the wizard.
b. Click on expel fluid to empty syringes.
c. Remove the PTFE tubing from the needles of the debubbled motorized syringes.
d. Expel water and air bubbles from the tubing using the ground glass syringe.
e. Reconnect the tubing with care. Ensure no air bubbles re-enter.

2. The Reposition and Flush wizard flushes water through the Microtip. It is a good idea to flush more water through the tip after reconnecting the tubing to the motorized syringe to ensure that there is no air in the Microtip.
3. Check all valve positions match the software before continuing with the experiment.

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