OPERATION MANUAL FOR
VP 741ECE-3Z-KIT

Figure 1. Components included with VP 741ECE-3Z-KIT

SET-UP

Installing and Sealing Vials within 3-Zone Reaction Block

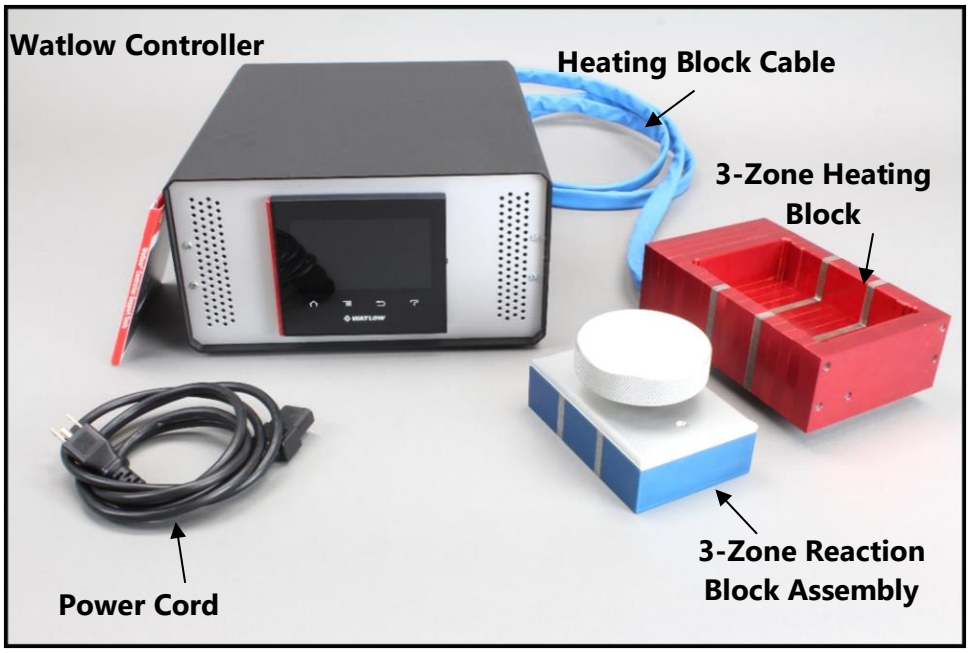


Figure 2. Named view of components shipped with VP 741ECE-3Z-KIT

1. Pre-assembled, blue anodized 3-zone reaction block base can be filled with vials (4mL) (**Figure 3**). Reactants, solvent and stir elements can then be added to each vial.

2. Once vials are charged with required components, it is ready to be sealed.

STEP1: Place one **VP 416-96-FILM** (clear PFA sheet – sold separately) over the vials taking care to align the center hole of the film and the center hole of the reaction block.

STEP2: Place a single **VP 416-96-MAT** (sold separately) over the PFA film. A good technique is to use fingertips of one hand to hold the PFA film in place while your other hand places the white mat directly over the film ensuring that **both center holes align**.

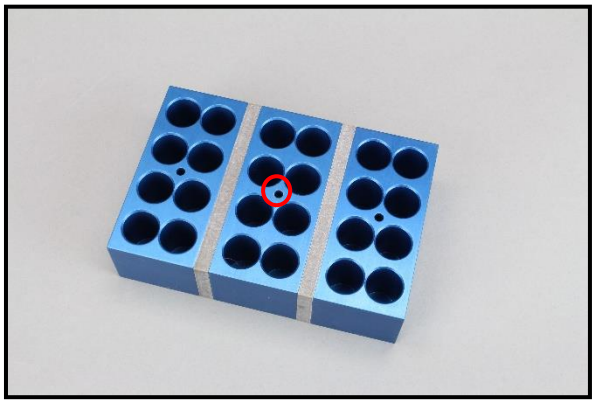


Figure 3. 3-Zone reaction block base

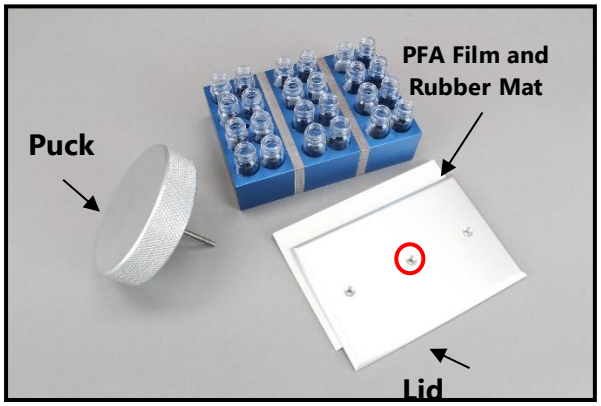
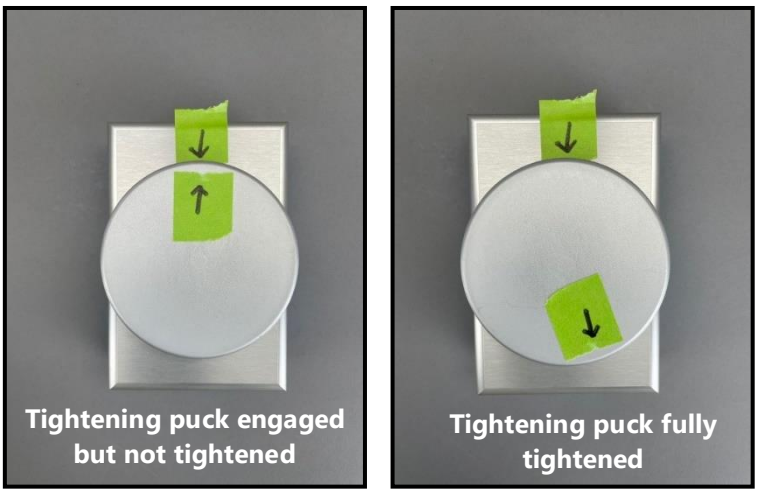


Figure 4. 3-Zone reaction block base, vials,

(glass vials sold separately) **PFA film, mat, lid and tightening puck**

STEP 3: The aluminum lid can then be placed over VP 416-96-MAT taking care to **align center hole with the others**.

STEP 4: Threaded rod of tightening puck can them be passed through center holes and screwed down. Please note that V&P recommends tightening **NO MORE THAN 1/3 turn PAST HAND TIGHT**. To tighten further is unnecessary and may strip the threads.



As an illustration, note starting position of tightening puck (at **"12 o'clock"** position) followed by fully tightened position (at **"5 o'clock"** position).

3. Following the preceding steps, you will arrive at the fully sealed reaction block, shown in **Figure 5**, ready for heating.

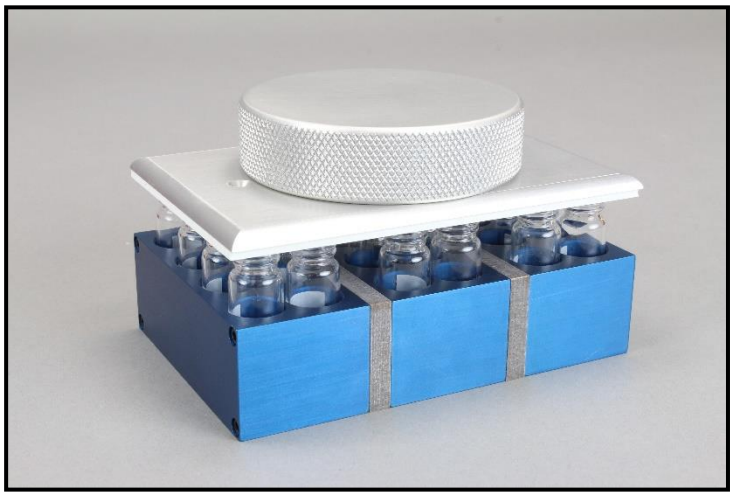


Figure 5. Assembled 3-Zone Reaction Block

OPERATION

Operation of Watlow Touchscreen 3-Zone Heating Block

1. Looking at the back of the Watlow controller, connect the individual socket head connectors to their respective ports. Note that each are labelled, "**ZONE 1, ZONE 2, ZONE 3**" (see **Figure 6**)

2. Plug power cable into the port at the back of the control box as well as into the wall to supply power to the unit. Flip the power switch on and allow the Watlow touchscreen (see **Figure 7**) to boot up (**may take up to 2 minutes to appear**).

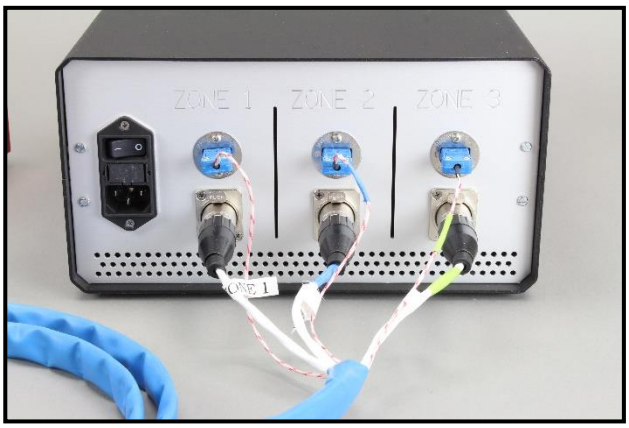


Figure 6. Back panel of Controller Box

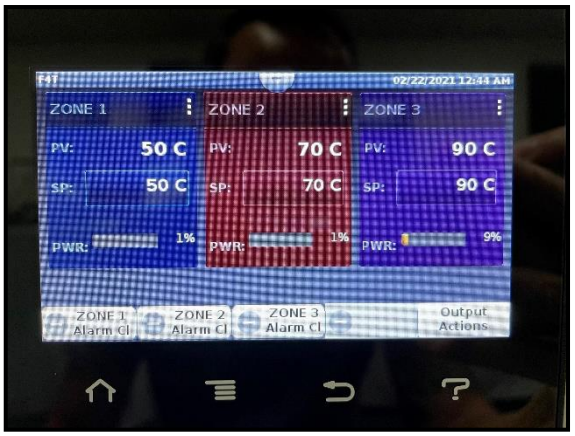


Figure 7. Touchscreen interface

3. Note that location of each temperature zone is indicated on the side of the red anodized heating block as shown in **Figure 8**.

Figure 8. Side view of heating block showing 3 temperature zones

4. **NOTE: V&P Recommends a maximum 20 degC difference in temperature between each zone. A good starting set of temperatures is 60/80/100 degC.**
    a. **Lowest temperature that can accurately be maintained is, 50 degC.**

5. From the touchscreen interface, tap the "**SP**" button to bring up the "**Set Point**" temperature screen as seen in **Figure 9**. Confirm desired temperature by hitting "**Enter**" button.

Figure 9. Setting desired temperature

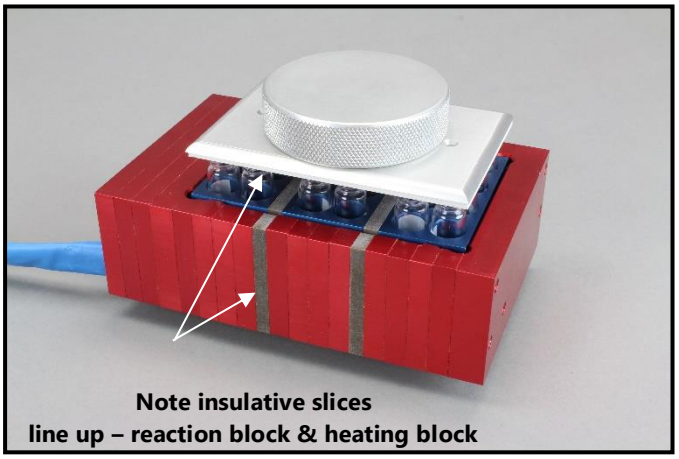


Figure 10. Sealed 3-Zone reaction block seated within 3-Zone heating block

6. Repeat this temperature input process for all 3 zones. **Note that heating begins as soon as you hit "Enter".**

7. Place the sealed 3-Zone reaction block into the deep well pocket of the 3-Zone heating block. **Avoid attempting to move the 3-Zone heating block after heating has begun, it can become quite hot and cause burns if touched.**

8. Once reaction time is complete, set the temperatures of each zone to "**0 degC**" to turn the heating off. Unit does not need to be powered down, but you may do so if desired.

Modification of Watlow Calibration Offsets (if Required)

1. The Watlow controller settings and internal calibration offsets are set at the time of manufacture and should give accurate set temperature/internal reaction temperature correlation (i.e., desired set temperature = 50degC, then internal reaction temperature is also = 50degC).
2. Should you wish to access calibration offsets menu to adjust the settings, follow these steps:

a. Touch the menu button on the front of the Watlow interface.

Figure 11. Watlow interface, Main Menu button pointed out

b. At "**Main Menu**" screen, select "Operations".

c. At "**Operations Page**" screen, select "Inputs".

d. At "**Inputs**" screen, select Zone to be modified.

e. Modify Calibration Offset as desired.

f. Once Calibration Offset is changed, select "**Done**" then "**Home Screen**" buttons.

3. You may need to repeat this process of adjusting Calibration Offset and testing internal temperature of reaction vials to check for accurate correlation between "Set Temp" and internal vial temperature.

Product Maintenance

GENERAL PRODUCT CARE

If cleaning is desired, wipe down exterior of block with wet paper towel and allowed to dry

WARRANTY

V&P Scientific, Inc. warrants this product to be free from defects in material and workmanship when used under normal laboratory conditions for one year. This warranty begins on the date of delivery from V&P Scientific.

In the event this product fails under normal laboratory conditions within the specified period of time because of a defect in material or workmanship, V&P Scientific will, at its option, repair or replace the product. Damage to the product caused by user negligence is not covered.

Please keep the special shipping carton in case the unit needs to be shipped back to V&P Scientific. Please contact V&P Scientific at the above address for return authorization and shipping instructions.

This warranty is made in lieu of other warranties expressed or implied including the warranties of merchantability and fitness for a particular purpose. V&P Scientific shall not be liable for loss or damages arising from the use of these products nor for consequential damages of any kind.