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Find the *Argonaut Technologies Quest 210* at our website: ***Click HERE***

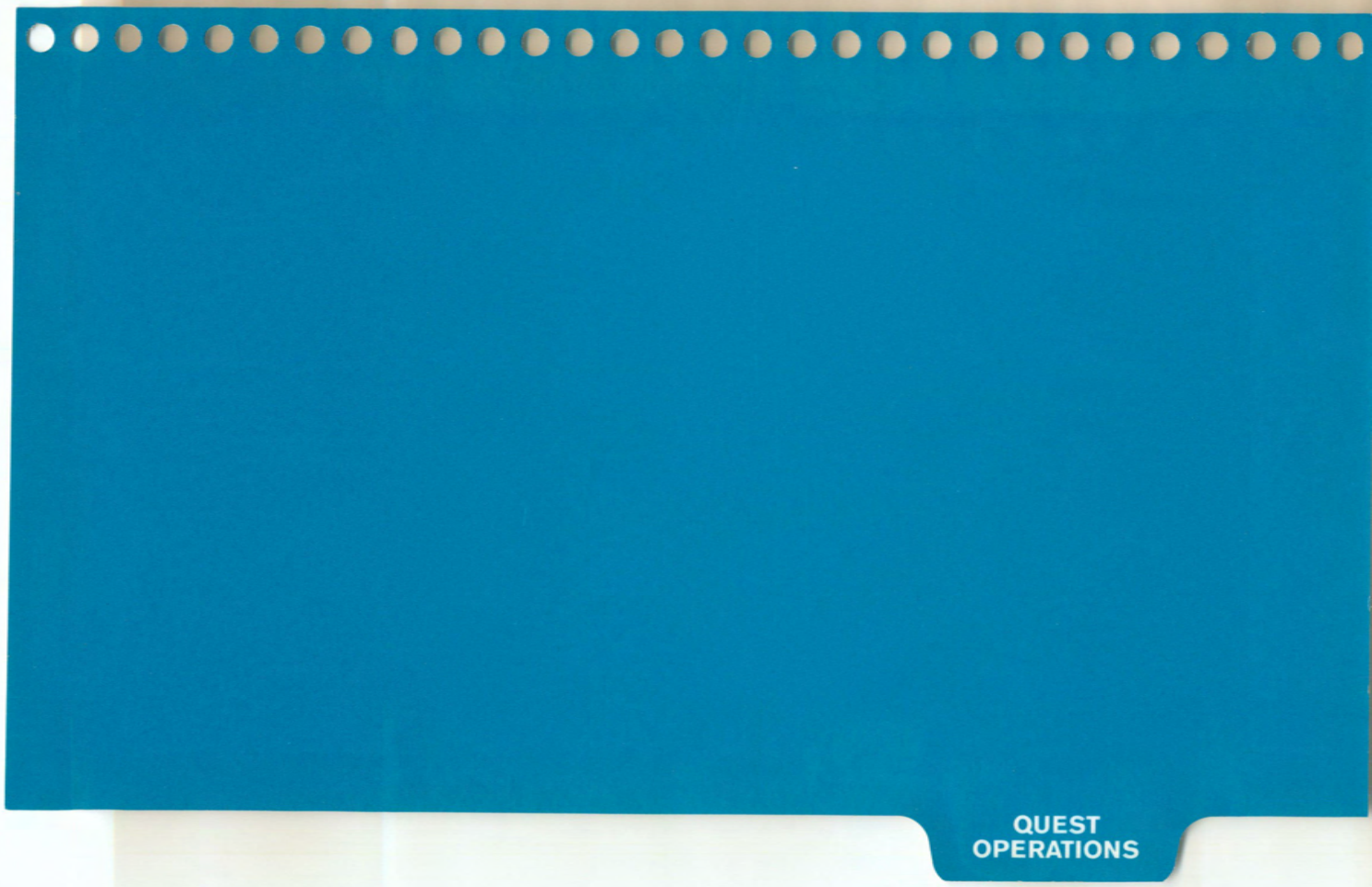
Quick Cards

ARGONAUT TECHNOLOGIES

For more detailed instructions,
please refer to the Quest User Manual

Quest 205 & Quest 210

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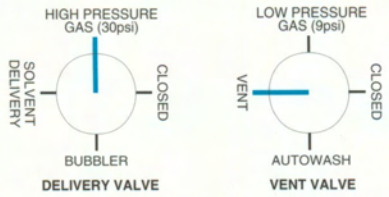


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Quest Operations

Purging Manifold Delivery Lines

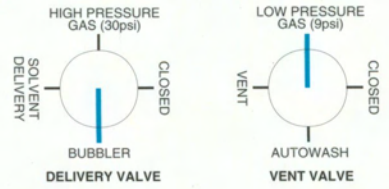
Upper Manifold Membrane Valve: OPEN RVs



Open lower manifold drain valves to empty Reaction vessels (RVs).

Purging RVs with Inert Gas

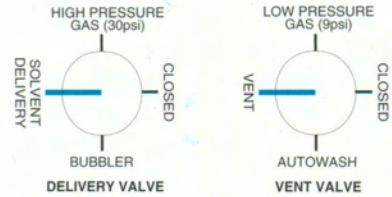
Upper Manifold Membrane Valve: OPEN RVs



1. Attach Bubbler to Bubbler Port to monitor gas flow.
2. Adjust inert gas flow rate with the ADJ. LOW PRESSURE GAS FLOW valve.

Manual Solvent Addition

Upper Manifold Membrane Valve: OPEN RVs



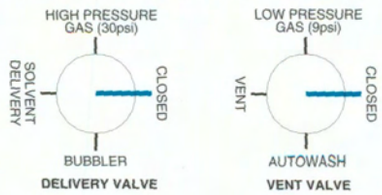
Set both valves to 'closed' to stop solvent flow.

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Quest Operations

"Reflux"

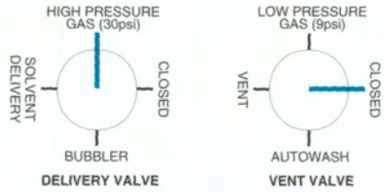
Upper Manifold Membrane Valve: SEAL RVs



1. For "reflux", program reaction temperature to the solvent's boiling point. (see controller programming)
2. After heating period is complete, vent RVs. (see below)
3. Cool RVs to room temperature.

Drain Reaction Vessles (RVs)

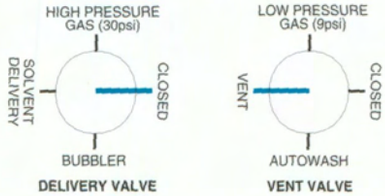
Upper Manifold Membrane Valve: OPEN RVs



Open lower manifold drain valves to drain RVs.

Vent Reaction Vessles (RVs):

Upper Manifold Membrane Valve: OPEN RVs

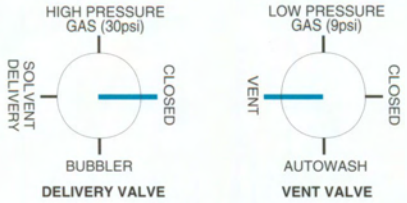


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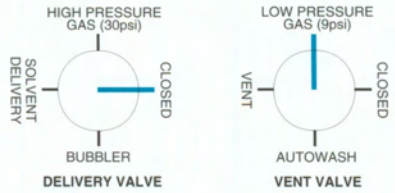
Filling Frit Dead Volume

Upper Manifold Membrane Valve: OPEN RVs

1. Fill RVs with 2 mL of solvent (see Manual Solvent Addition).
2. Vent RVs:



3. Close the ADJ. LOW PRESSURE GAS FLOW Valve (turn completely clockwise).
4. Select LOW PRESSURE GAS (9psi) delivery:



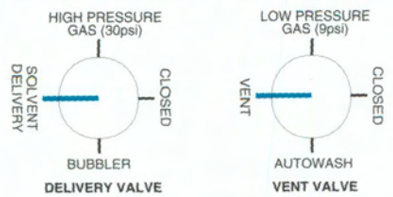
5. Open one lower manifold drain valve.
6. Slowly open the ADJ. LOW PRESSURE GAS FLOW Valve (turn counter-clockwise) and drain solvent to the top of the reaction vessel frit.
7. Lift the lower manifold drain valve (SEAL RVs). Proceed to the next reaction vessel.

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Quest Operations

Manual Solvent Delivery using Automated Solvent Wash Module

Upper Manifold Membrane Valve: OPEN RVs



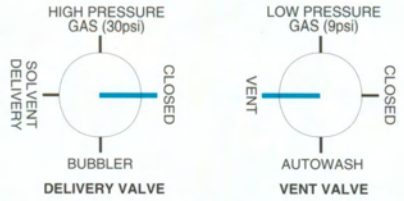
1. Select solvent on Automated Solvent Wash Module (lift A,B,C, or D toggle switch up).
2. Stop solvent delivery (push A,B,C, or D toggle switch down).
3. Lift PURGE Valve up for 30 sec. and then push down.

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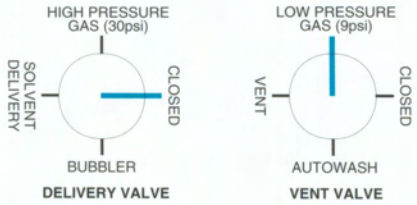
Individual Product Collection or Draining of Lower Extraction Layer from an RV

Upper Manifold Membrane Valve: OPEN RVs

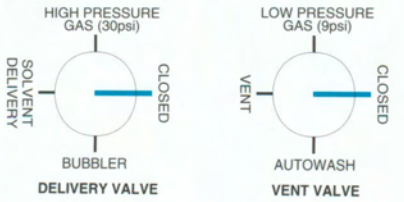
1. Vent RVs.



2. Close the the ADJ. LOW PRESSURE GAS FLOW Valve (turn completely clockwise).
3. Select LOW PRESSURE GAS (9psi) delivery.



4. Open lower manifold drain valve (OPEN RVs).
5. Slowly open the ADJ. LOW PRESSURE GAS FLOW Valve (counterclockwise) for appropriate draining.
6. Close lower manifold valve (SEAL RVs).



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Quest Operations

Liquid Extraction: Upper Layer Removal

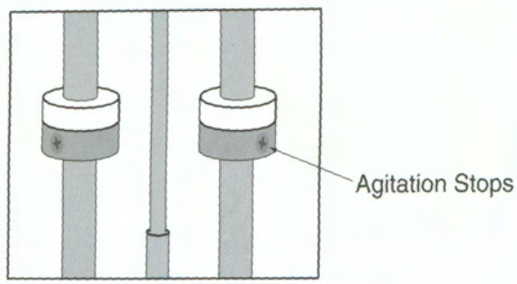
Assemble the illustrated filtration device:



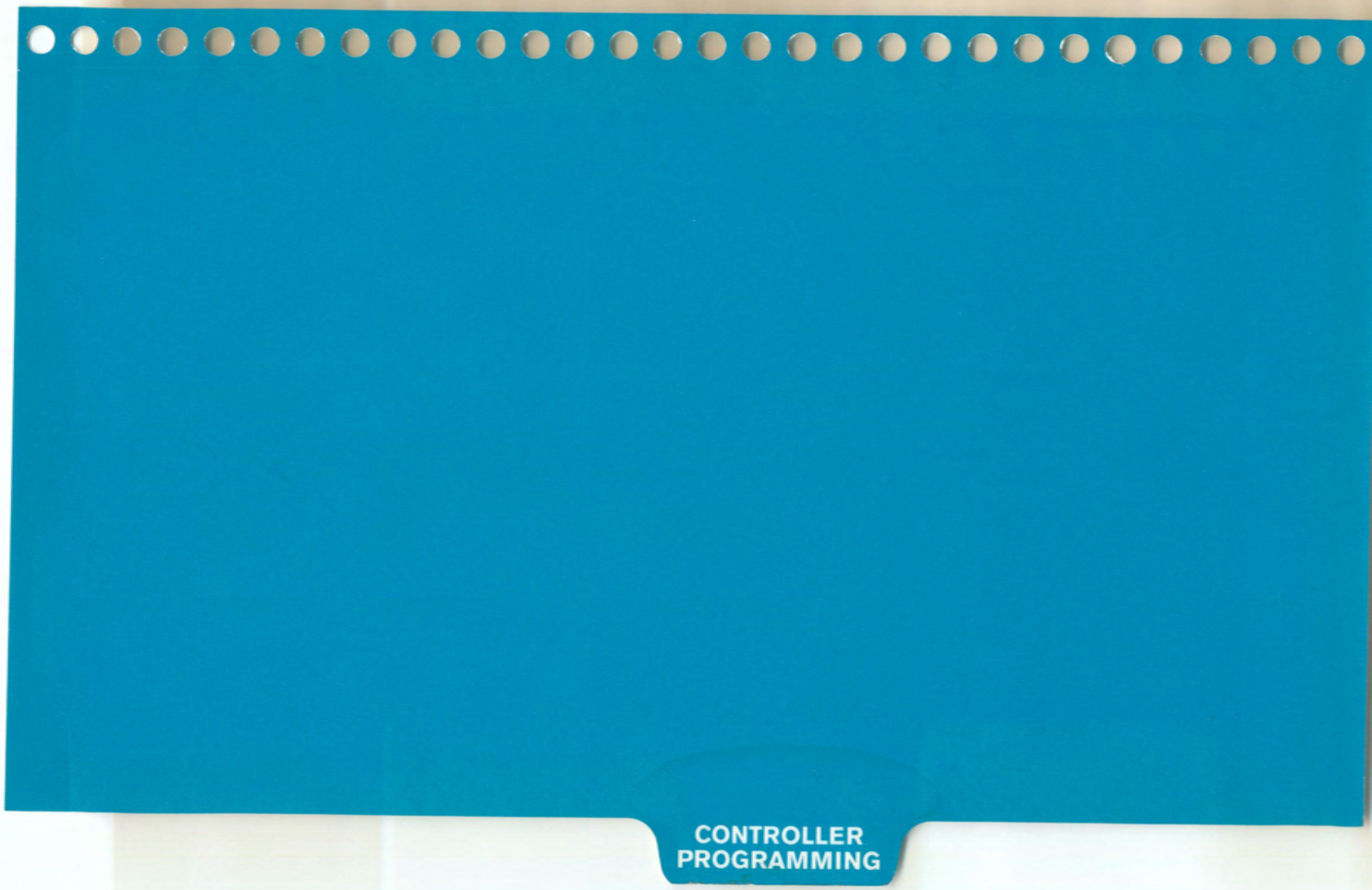
1. Press Agitator down ▼ key.
2. Remove upper manifold luer fitting to access RV.
3. Insert narrow bore tubing through opening on the upper manifold and into the RV.
4. Turn on house vacuum to remove upper layer from the reaction vessel.

Adjusting Magnet Height

1. Push the Agitator up ▲ key
2. Loosen the Agitation Stops on the agitator bar with the provided hex wrench.
3. Adjust the Agitation Stops so the magnet height is ~1 cm below the solvent level in the RVs.
4. Tighten the Agitation Stops.



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Controller Programming

Agitation Programming

1. Press Controller Mode key to display agitation menu.
2. Move cursor to adjust MIX EVERY and % UPWARDS.
3. Increase or decrease agitation parameters (⊞ or ⊟ keys).
4. To start or stop agitation press the ON/OFF key.



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Controller Programming

Agitation Settings for Resins

ArgoGel

The recommended agitation parameters for gel-type resins (polyethylene glycol-polystyrene graft copolymer or lightly-crosslinked polystyrene-codivinyl benzene) are:

MixEvery:	3.0-4.0 sec
UpStroke:	1.8-2.6 sec
%Upwards	60%

Adjust the agitation parameters accordingly to achieve the desired mixing.

ArgoPore (Macroporous) Resins

Use the following procedure to achieve effective mixing of ArgoPore and macroporous resins.

1. Press the Mode key on the Controller Unit until the LCD displays the agitation menu. Using the left and right and VALUE SETTING (⊞ and ⊟) keys, adjust the agitation values to:

MixEvery:	5.0 sec
UpStroke:	4.8 sec
%Upwards	96%

2. Turn on the agitator and mix the solution for 5 agitation strokes. Decrease the % Upwards by 1% per 5 agitation strokes until the % Upwards equals 90%.
3. Decrease the % Upwards to 60% and agitate the resin for the desired time period.

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Controller Programming

Temperature Programming

1. Press Controller Unit Mode key to display Set Temperature menu.

```
        Set Temperature
A:    60C   03:00ON
B:    20C   00.00OFF
RV Size     5mL   5mL
```

2. Use the ◀ ▶ keys to move cursor to line A or B.
3. Use the ◀ ▶ keys to move cursor to the temperature parameter.
4. Use + − keys to program the temperature.
5. Move cursor ▶ to the time parameter.
6. Set time with + − (hours:minutes).
7. Move cursor ▶ to RV volume and adjust to nearest mL with + − keys.
8. Move cursor (◀ ▶) to either line A or B, whichever is being heated.
9. Switch the Upper Manifold Membrane Valve to SEAL RVs.
10. Press the HEAT ON/OFF key to turn heaters on.
11. Press the Mode key to view the Monitor Temperature display.

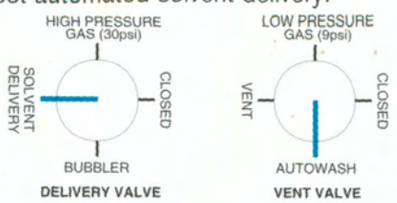
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Controller Programming

Automated Solvent Delivery using the Automated Solvent Wash Module

Upper Manifold Membrane Valve: OPEN RVs

1. Select reactor side for solvent wash.
2. Select automated solvent delivery:



3. Open all lower manifold drain valves.
4. Press Controller Mode key to access Automated Solvent Wash menu.

Pgm:	0	5ml	✳	Side:A&B
#	R S	Add	Mix	Pul
1	3xA	60	5:00	25
2	3XC	72	6:40	25

5. Use the ▶ key to move the cursor to the wash parameters. Program the the following:
   - R: Number of washes with a solvent
   - S: Solvent A, B, C, or D
   - Add: Solvent delivery time in sec.
   - Mix: Agitation time (min:sec)
   - Pul/Drn: Pul (RV drain cycles) Drn (RV drain time in sec.) Use the Value Settings keys (+ or -) to toggle between Pulse and Drain.

Pul = Pulse. Gas pressure is used to drain solvent for a given number of seconds. Default is 25.

Drn = Drain. The amount of time (in sec.) to drain solvent from RVs without using gas pressure. Default is 50.

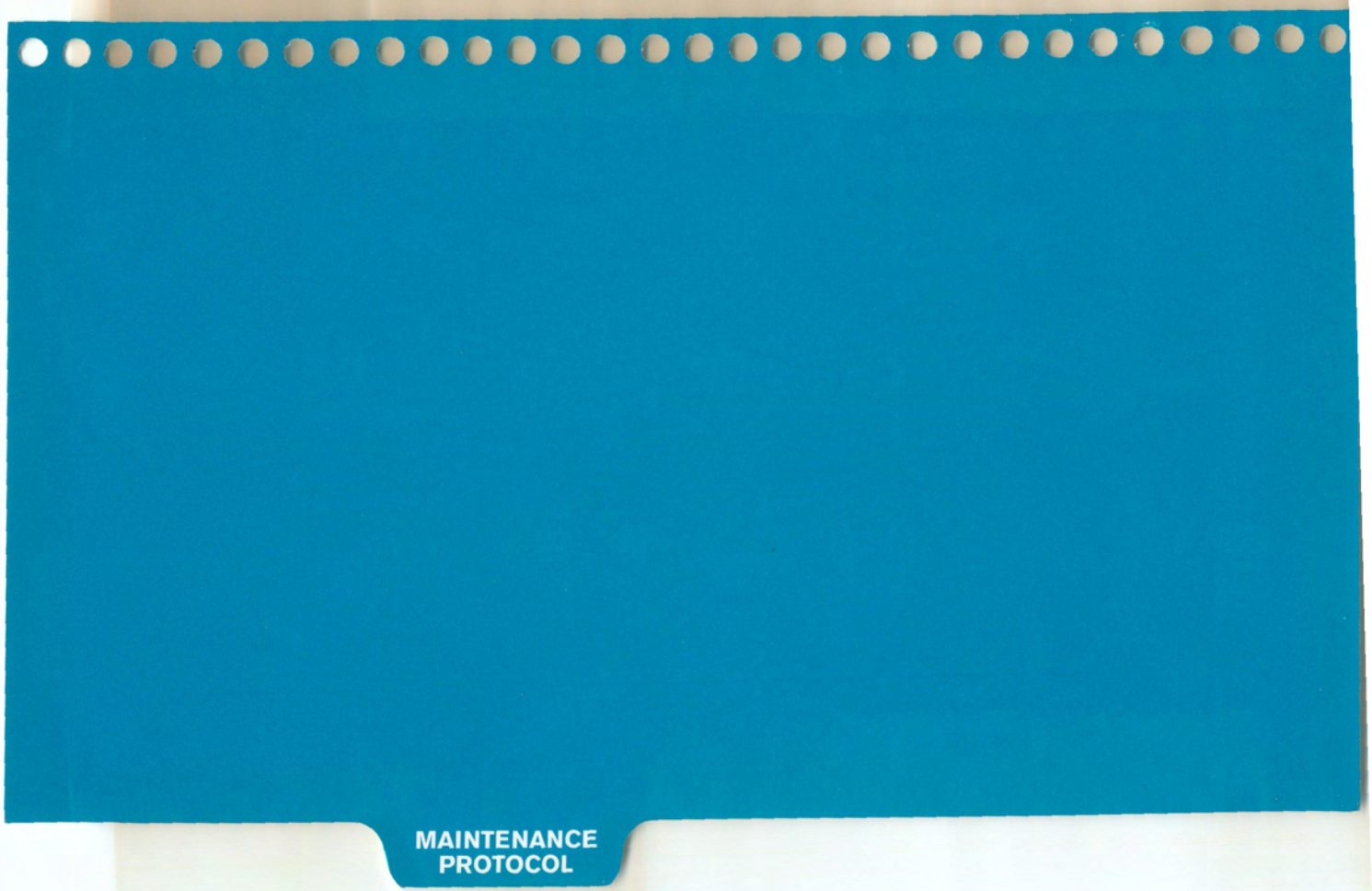
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Controller Programming

Once programming is complete press the Agitation ON/OFF key to start the solvent wash:

- If wash cycle uses more than 3 L of solvent, then attach a drain line from the Waste Reservoir Drain Valve to an external waste container.
- To pause, press either the Mode or agitator ON/OFF key.

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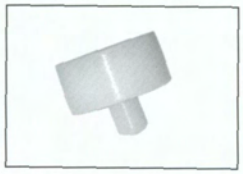
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Maintenance Protocols

Reaction Vessel (RVs) Removal and Installation

INSTALLATION:

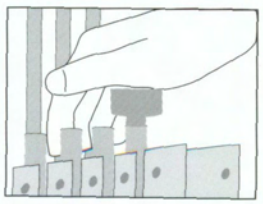
1. Inspect both upper and lower manifold for cleanliness.
2. Put RV in place.
3. Place the RV installation tool into the RV. Note that a separate tool exists for the Quest 210 10-mL & 5-mL RVs. Use your hand to firmly press down on the installation tool to seat the RV such that the frit seats onto the fitting of the lower manifold.



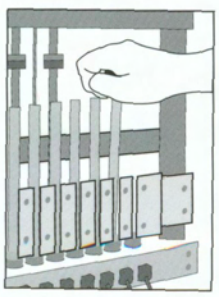
5-mL Installation Tool



10-mL Installation Tool



Inserting Quest 210 5-mL RV



Inserting Quest 210 10-mL RV

4. Carefully align and lock upper manifold into position. (on the Quest 210 this completes the RV installation)
5. On Quest 205, use an allen wrench to tighten the clamps on the top and bottom of the RV.

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Maintenance Protocols

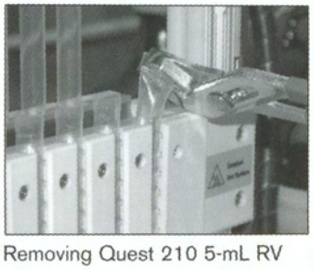
REMOVAL:

QUEST 205

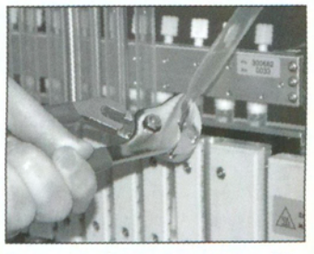
1. Use an allen wrench to loosen the clamps on top of RVs.
2. Raise upper manifold and lock in highest position.
3. Use allen wrench to loosen clamp on bottom of RV.
4. Grasp the middle of the RV with either your hand or the red RV extraction tool (pliers) and pull up with a twisting motion.
5. Remove RV after separation from lower manifold.

QUEST 210

1. Raise upper manifold and lock in highest position.
2. Grasp the middle of the RV with either your hand or the red RV extraction tool (pliers) and pull up with a twisting motion. Heater block or safety shield can act as leverage point for the 5-mL RV.
3. Remove RV after separation from lower manifold.



Removing Quest 210 5-mL RV



Removing Quest 210 10-mL RV

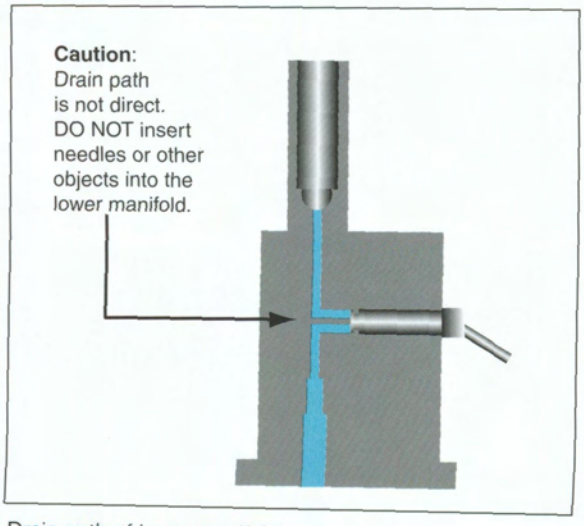
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Maintenance Protocols

CLEANING PROCEDURES
UPPER MANIFOLD

Upper Manifold Membrane Valve: OPEN RVs

1. Fill RVs to 75% full with cleaning solvent.
2. Agitate for 5 minutes then drain.
3. Repeat steps 1and 2 three times.
4. After the last drain, leave drain valves open for 10 minutes to purge solvent from the system.
5. Turn Delivery and Vent Valves to Closed.
6. Remove and clean luer plugs with acetone.
7. Clean luer ports with cotton swab wetted with acetone.
8. Reinstall cleaned luer plugs. Inspect delivery tubes and replace if needed. (See next section)
9. Leave the used RVs in reactor unit for storage. If using the Quest immediately, remove and replace with new RVs.



Drain path of lower manifold

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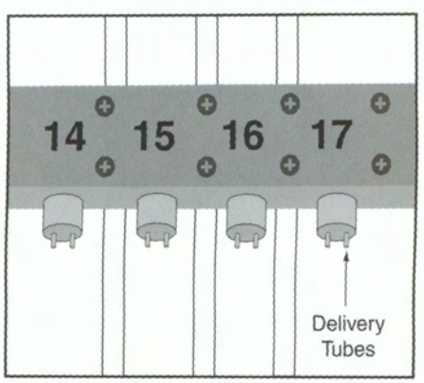
Maintenance Protocols

LOWER MANIFOLD

1. Clean lower manifold with a wash bottle containing either acetone or MeOH. If necessary use DCM (dichloromethane).
2. CAUTION: The lower manifold drain path is not direct. DO NOT INSERT needles or other objects into the lower manifold.
3. Obstructions may be removed by connecting a syringe and backflushing with solvent.

Changing Upper Manifold Delivery Tubes

1. Inspect delivery tubes for particulates or damage.
2. Remove delivery tube using RV extraction tool (pliers).
3. Clean ports with acetone.
4. Install new delivery tubes by either gently pressing in by hand or by using the Restrictor Tube Insertion Tool.



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Visit our website www. argotech.com for more information about the Quest, including:

- Scientific Resources page which lists scientific and technical information in the form of:
  - Application Notes
  - Scientific Literature References
  - Synthesis and Purification letters
- Quest Tips which are designed to assist users with common instrument operations and synthesis procedures
- Photographs and ordering information for Quest parts and accessories on Argostore

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