

Sample Change Contents

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Note: These instructions reflect current procedures in our lab on our Cameca SX50 only.

Sample Change Instructions

If you are removing a shuttle already in the microprobe: Start with PART I, page 3.

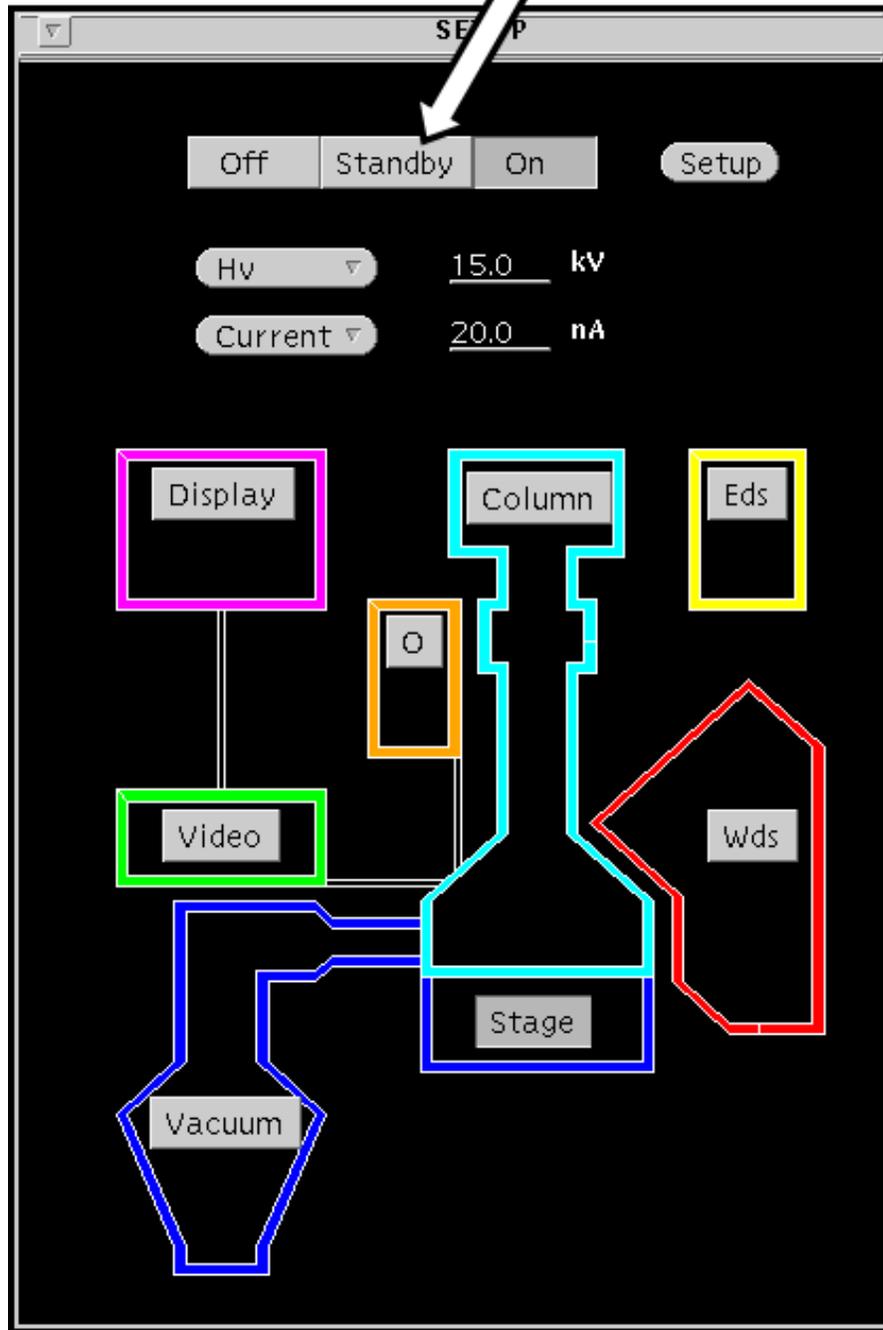
If you are inserting a new shuttle and the microprobe is currently empty: Start with PART II, page 15.

If you are exchanging shuttles (taking a shuttle out and then inserting another shuttle): Start with PART I, page 3 and follow the instructions for both Parts I and II.

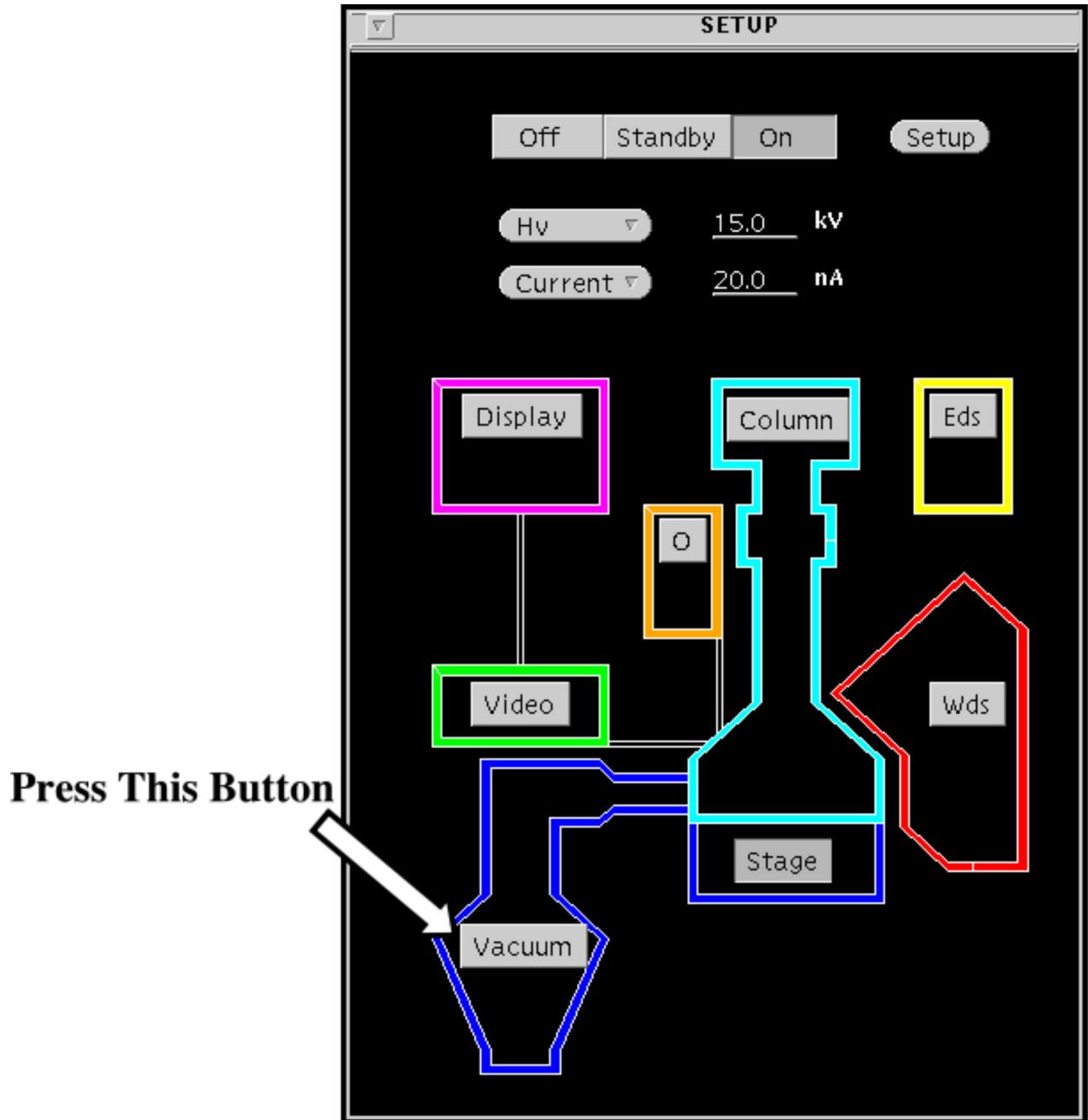
PART I: Sample Extraction

Step 1

Press This Button

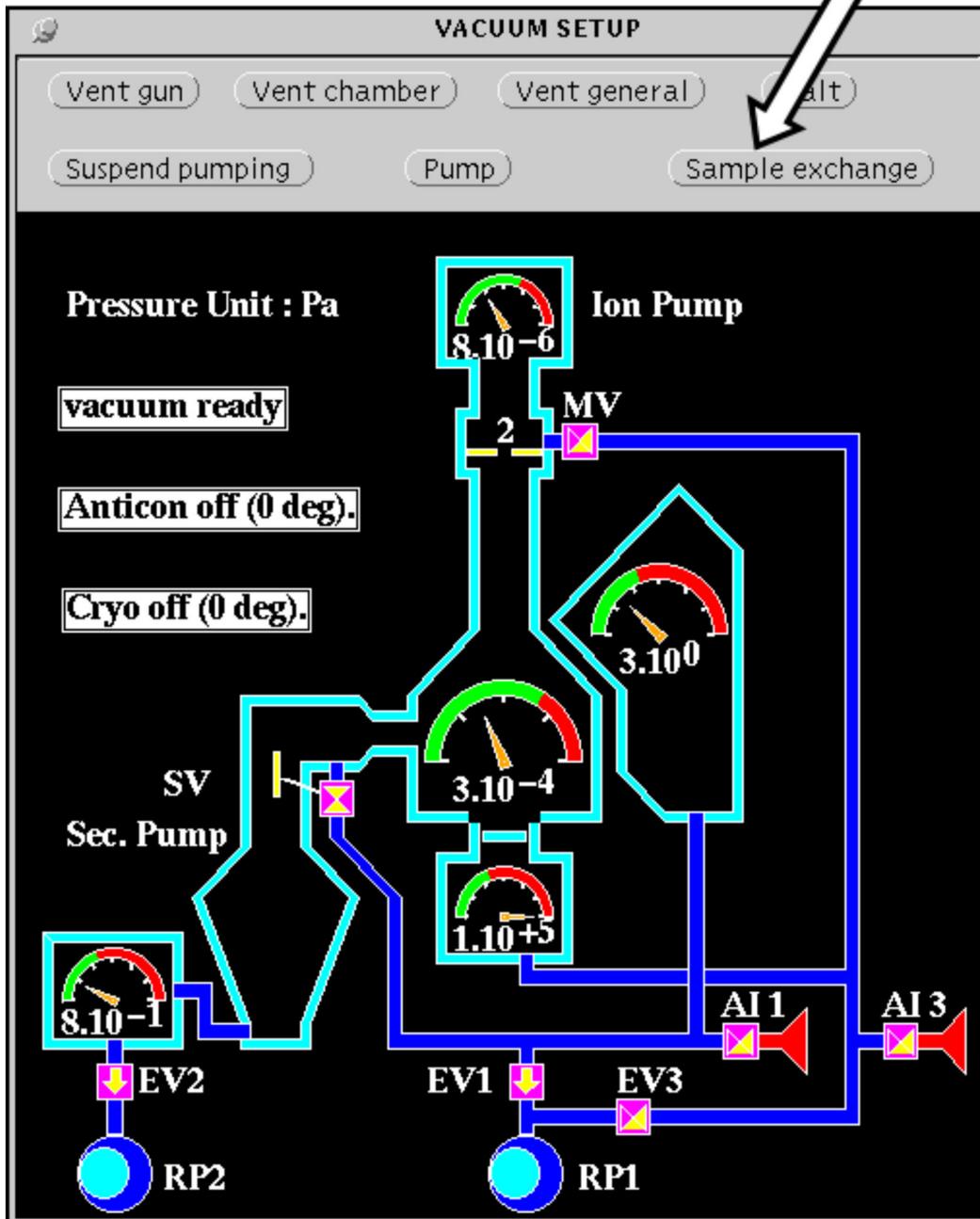


Step 2



Step 3

Press This Button



Step 4



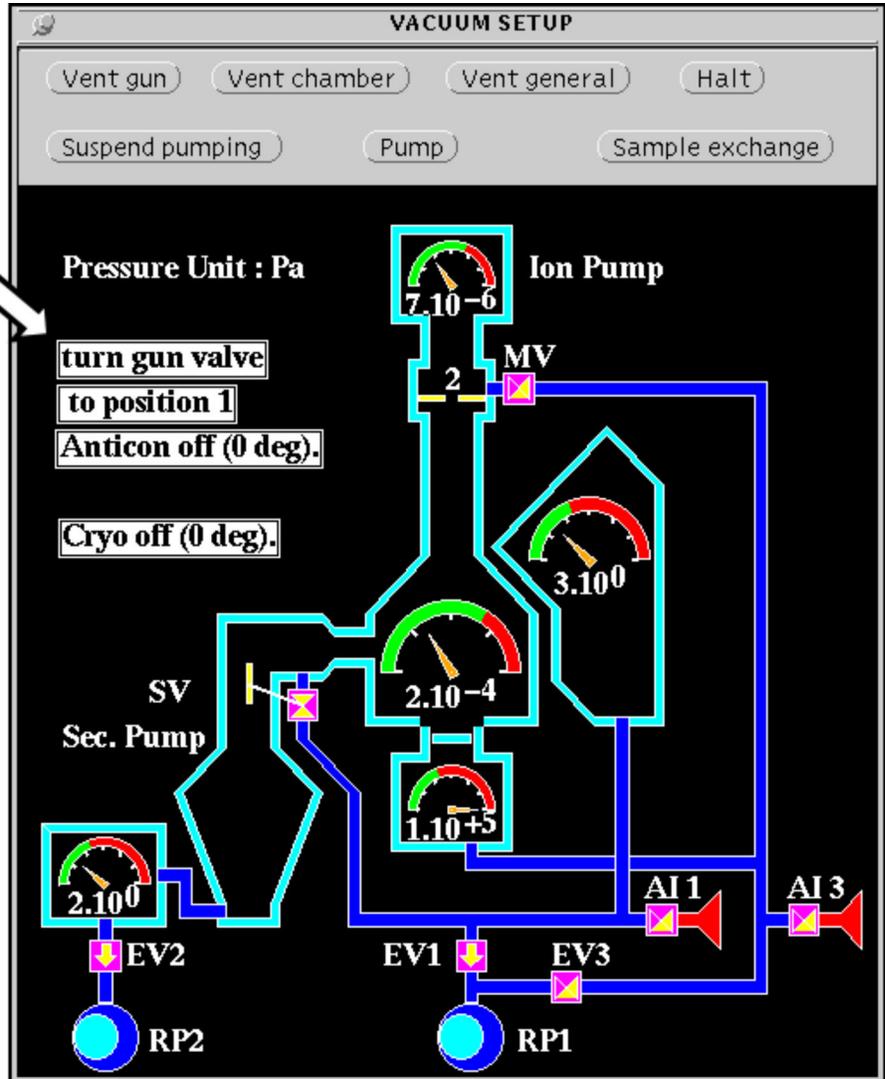
Press This Button

Step 5

Wait for the message: “Turn Gun Valve to Position 1”.

Then:

Turn the big black knob all the way clockwise (i.e. the number 1 is facing towards the computer)

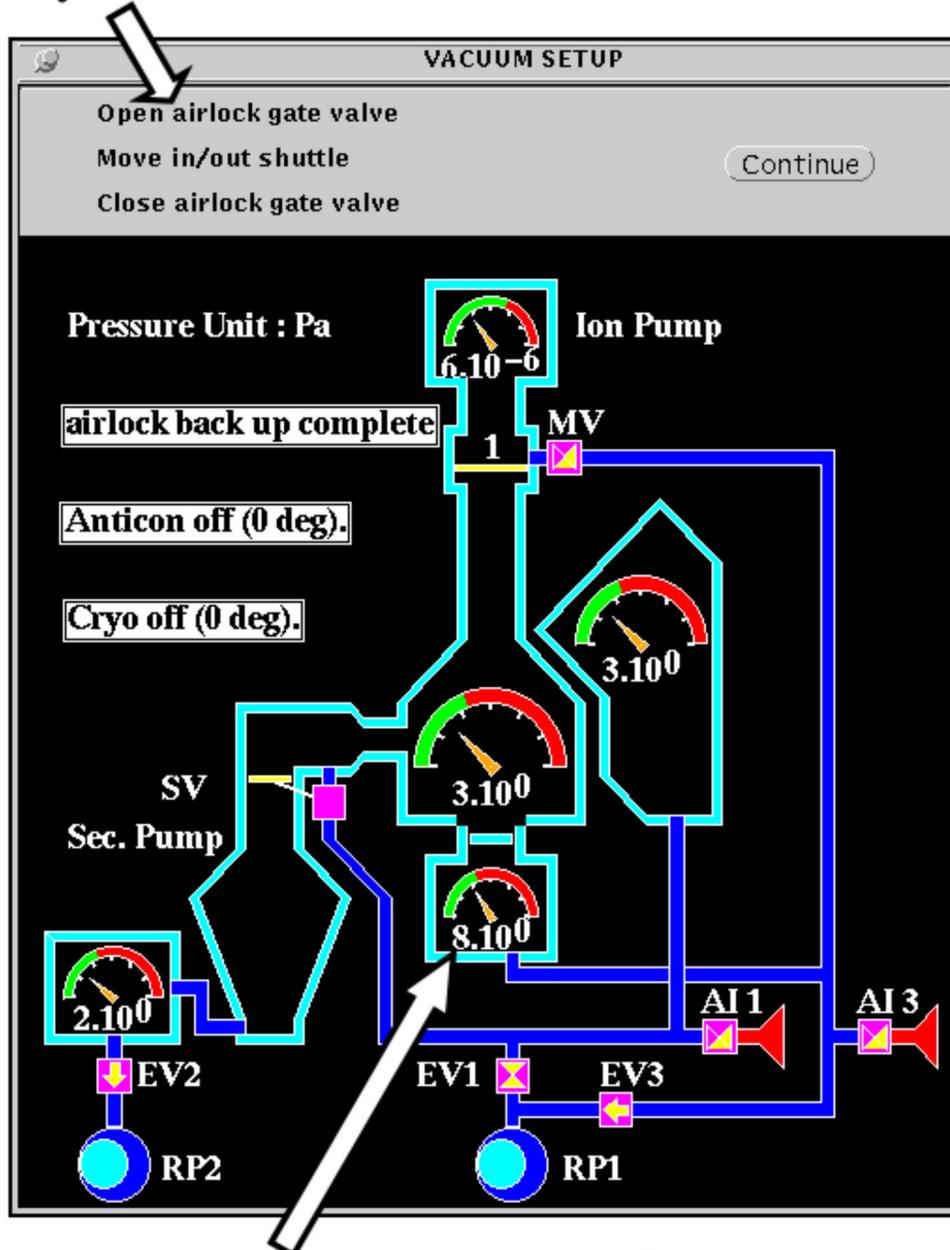


Step 6

VERY IMPORTANT!

WAIT!

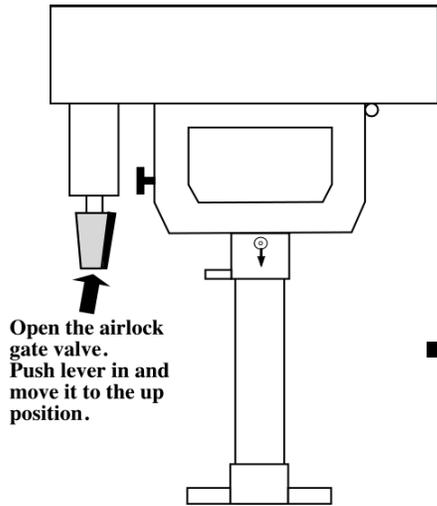
until you see these words on the screen.



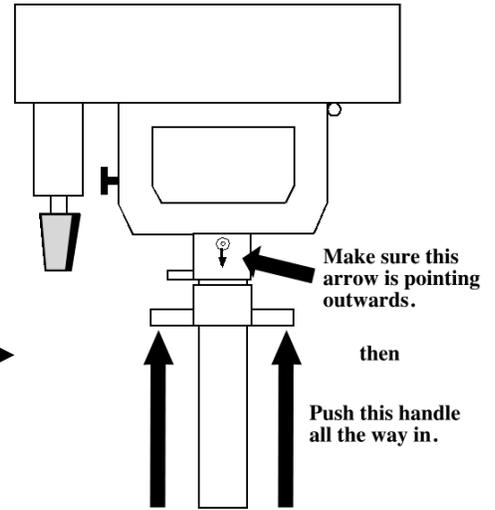
Then wait until this number is $< 1.10^1$

Step 7

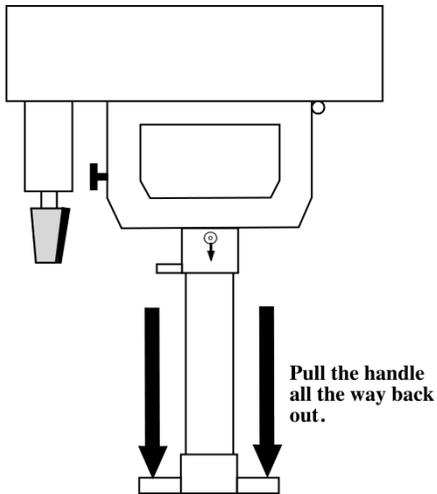
A: Open Airlock



B: Insert Rod



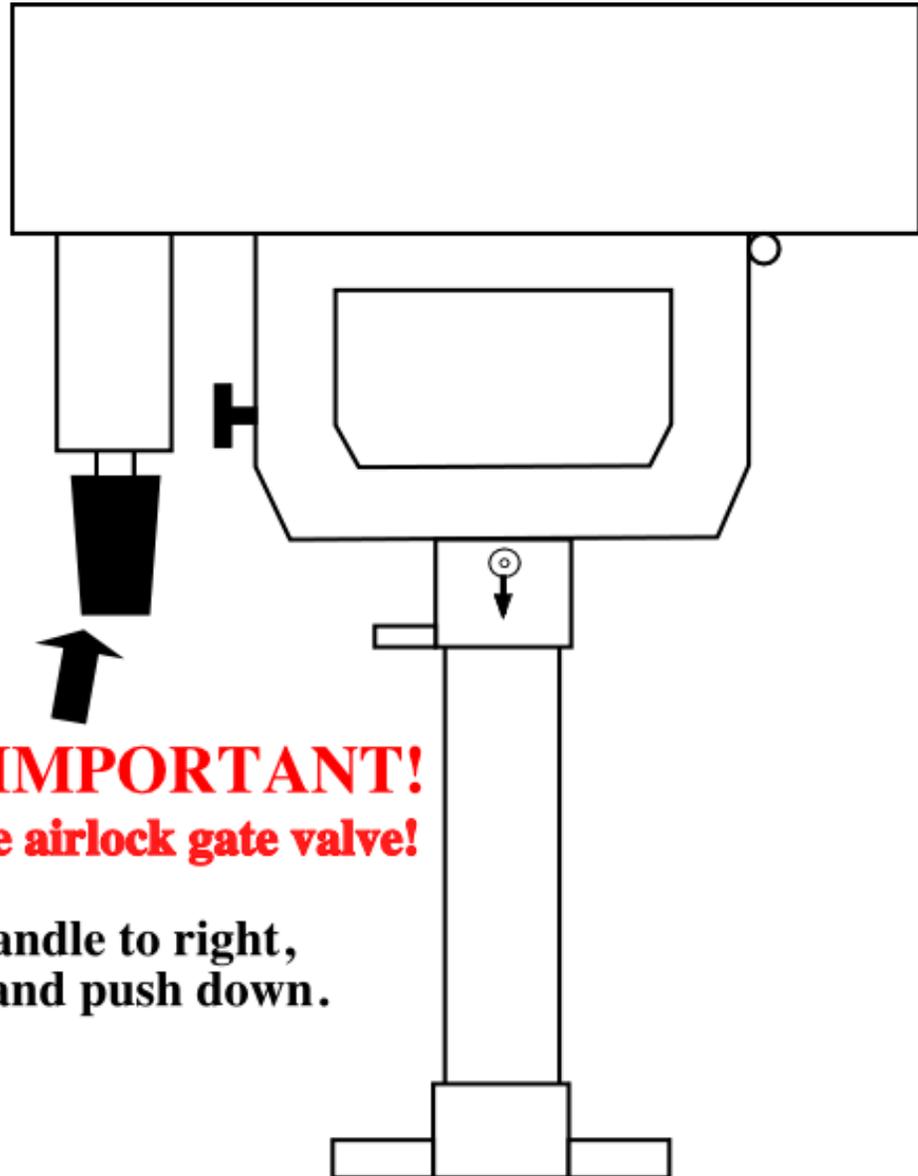
C: Extract Shuttle



D: GO TO STEP 8

Step 8

E: Close Airlock!!!



VERY IMPORTANT!
Close the airlock gate valve!

**Twist handle to right,
push in and push down.**

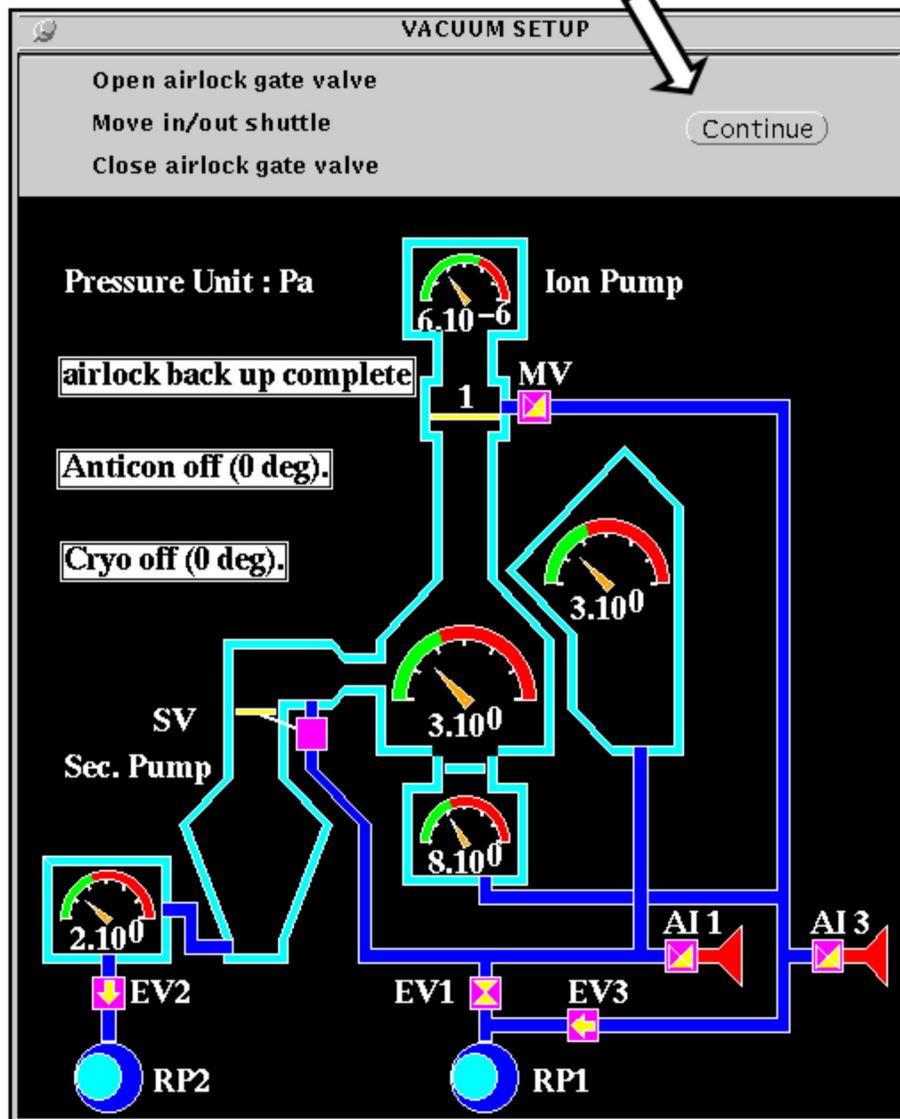
Step 9

VERY IMPORTANT!

Double check that the airlock gate valve is closed.

then

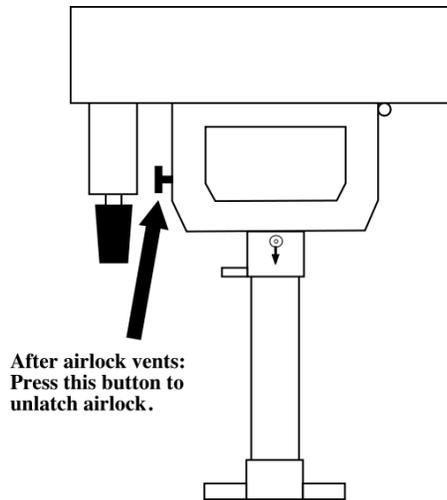
Press This Button



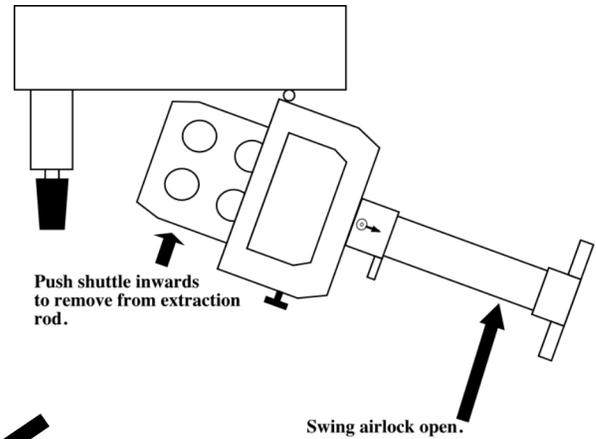
Step 10

Wait for Airlock to Vent (hissing sound stops, airlock reads 1.10^{+5} pascals. Then:

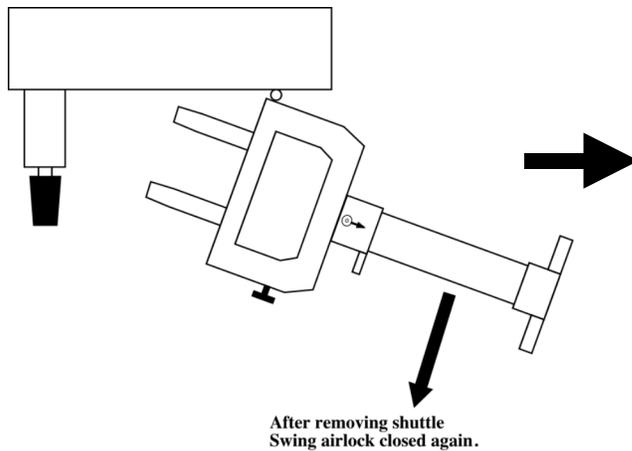
A: Open Outer Chamber



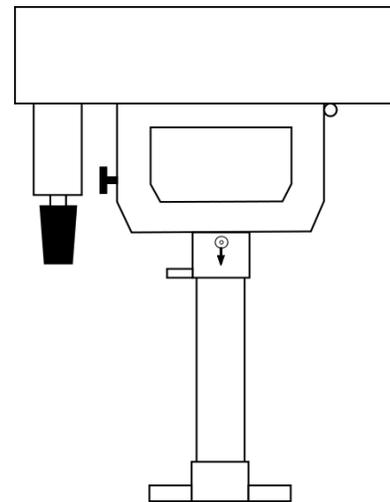
B: Remove Shuttle



C: Close Outer Chamber



D: Chamber Closed



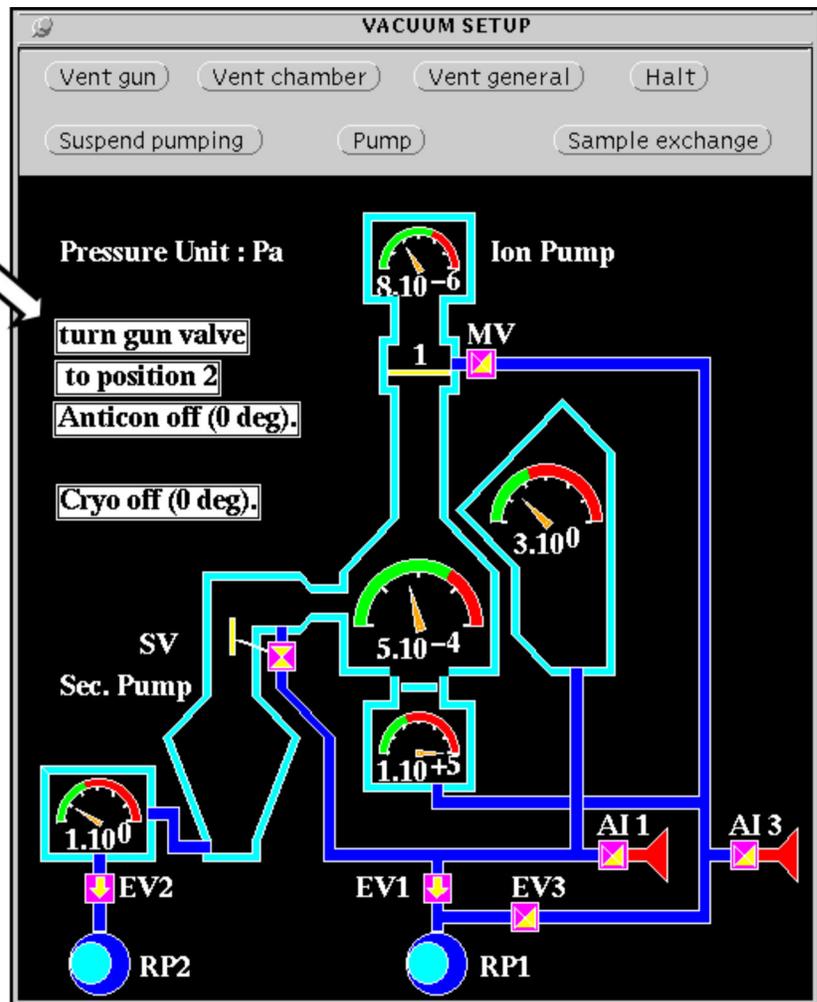
Final position of airlock

Step 11

Wait a few minutes for the message: “Turn Gun Valve to Position 2”. Then:

Wait until this message appears on the screen.

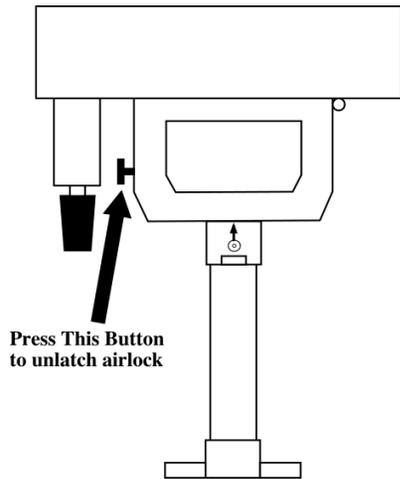
Then turn the big black knob all the way counter-clockwise (i.e. the number 2 is facing towards the computer)



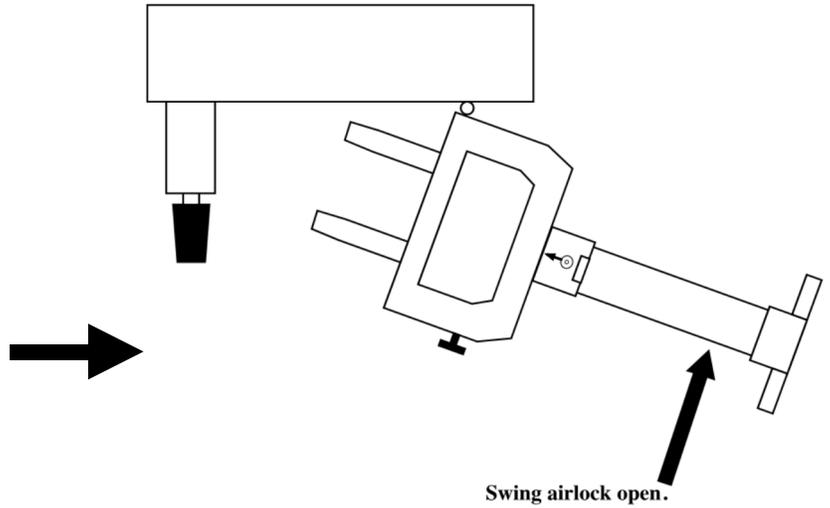
PART II: Sample Insertion

Step 1. Put shuttle in outer airlock:

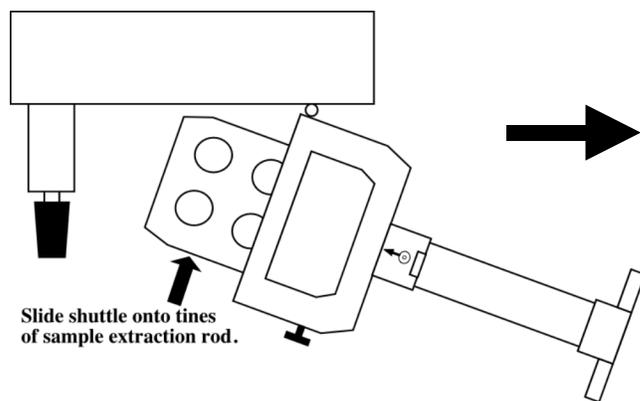
A:



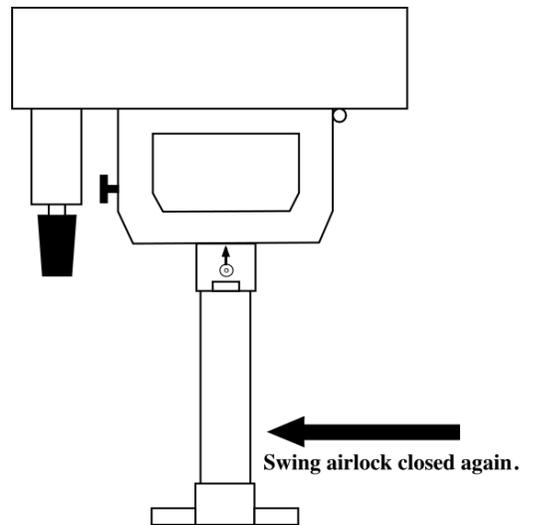
B:



C:

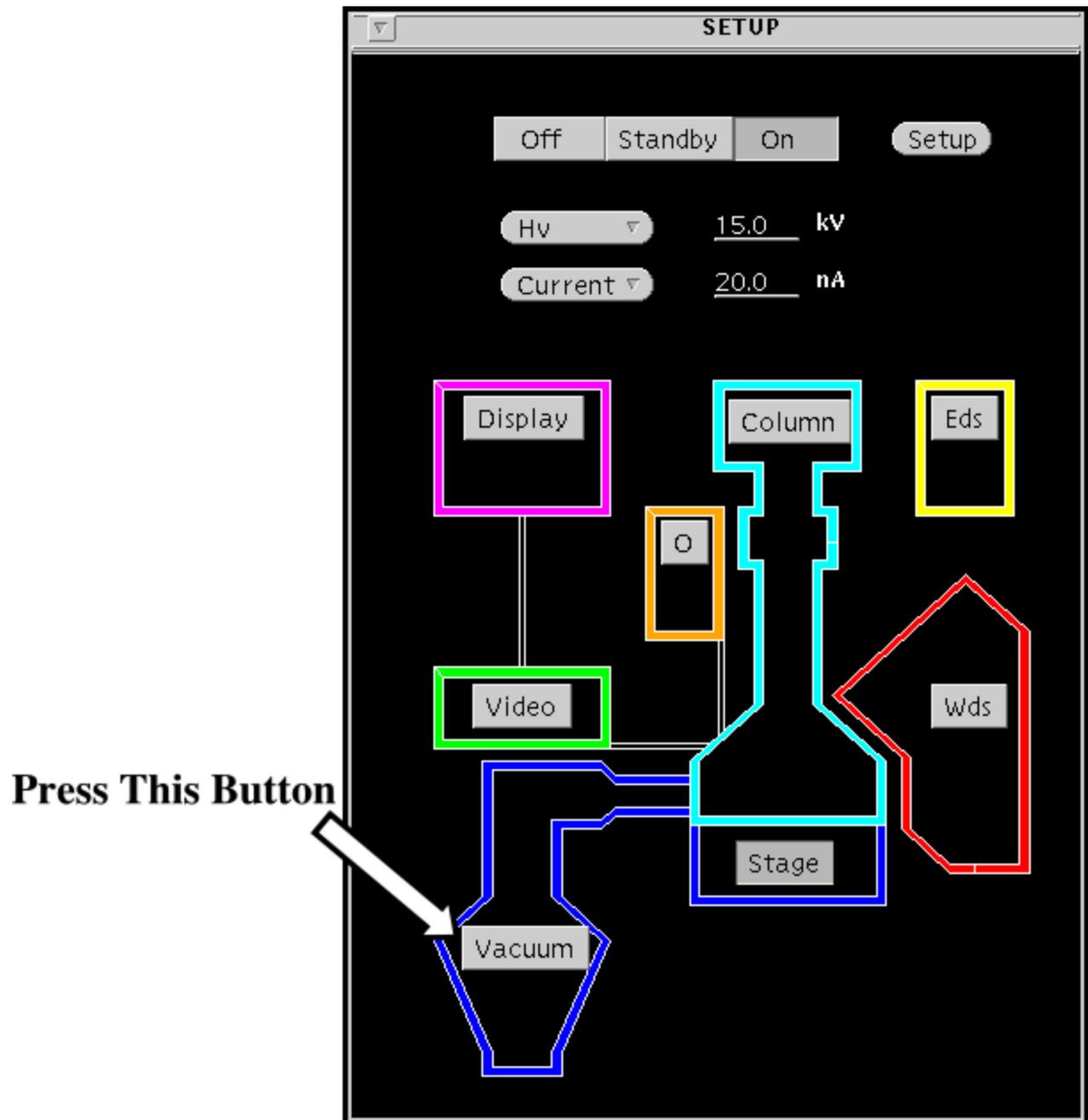


D:



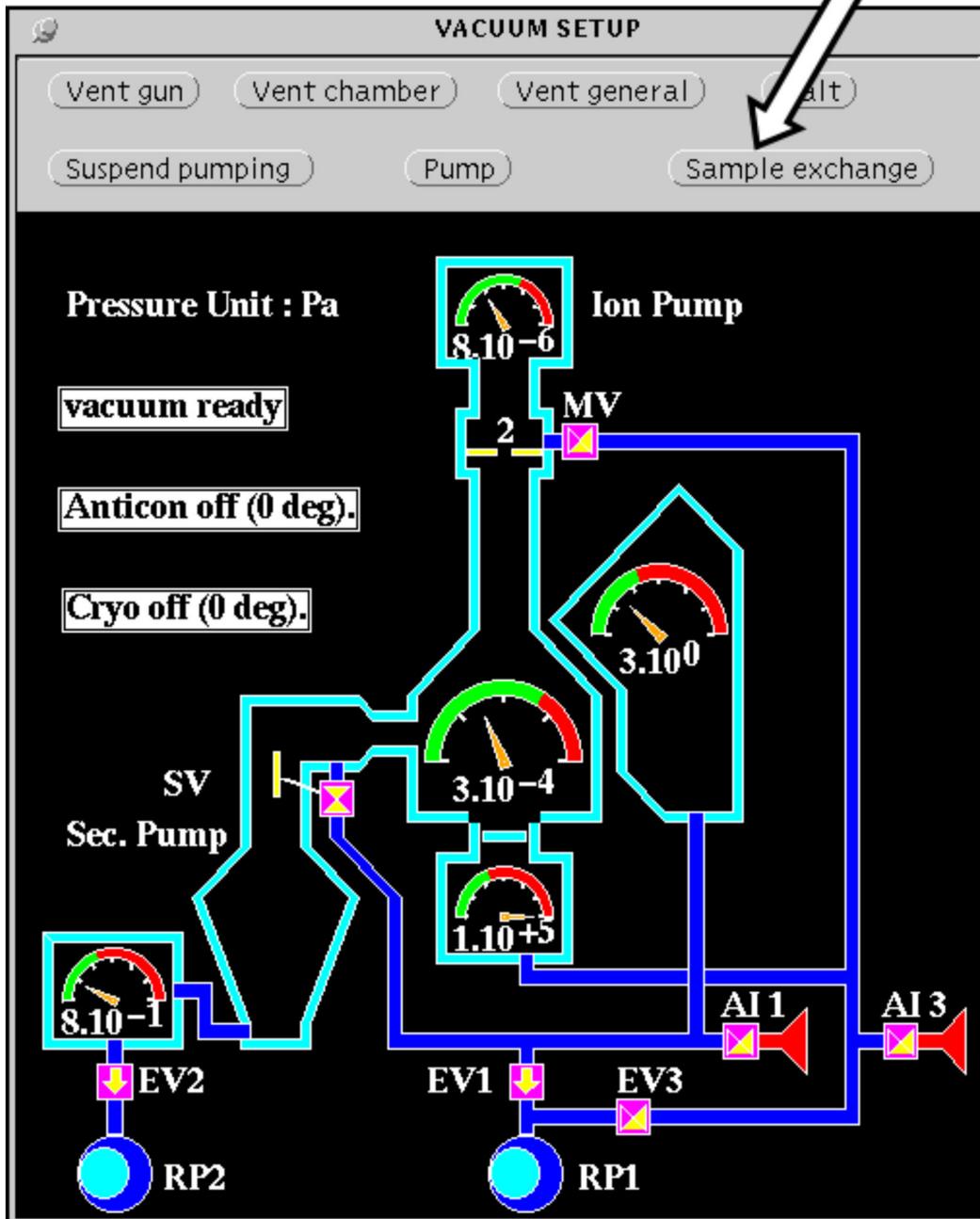
Step 2

If the Vacuum window is not already open. Then:



Step 3

Press This Button



Step 4



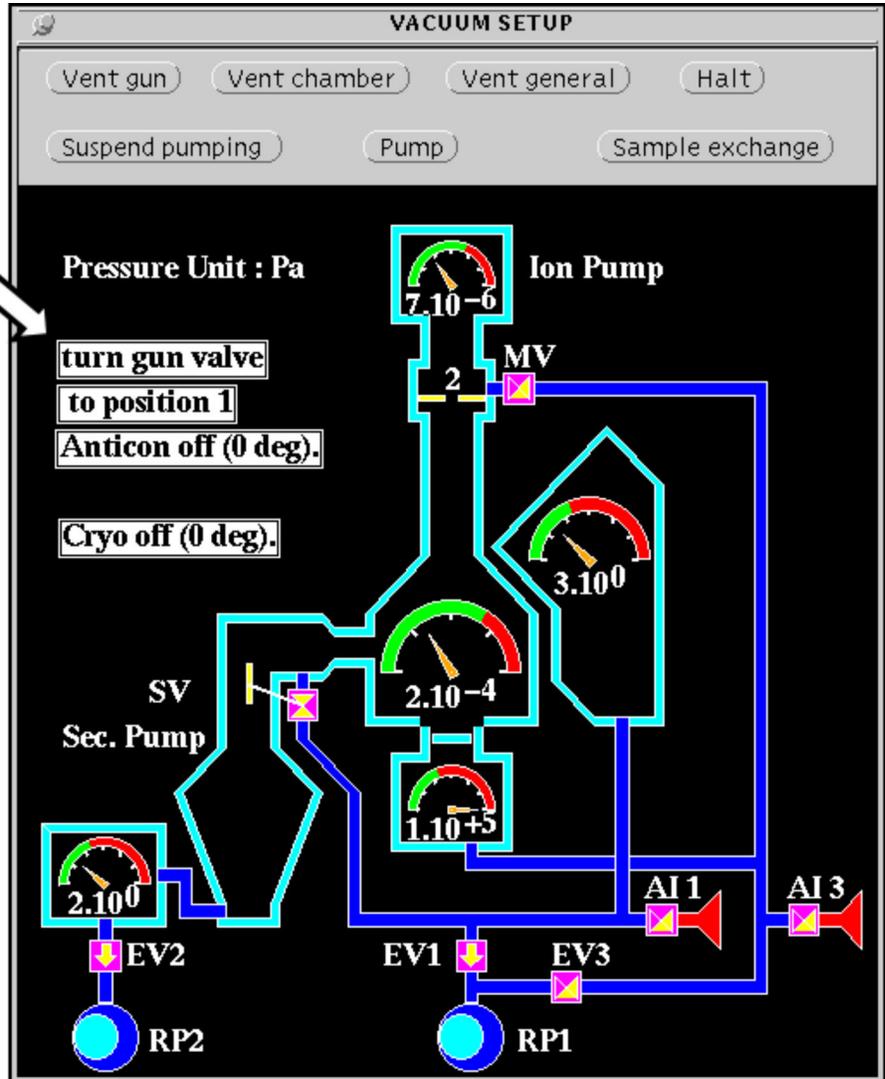
Press This Button

Step 5

Wait for the message: “Turn Gun Valve to Position 1”.

Then:

Turn the big black knob all the way clockwise (i.e. the number 1 is facing towards the computer)

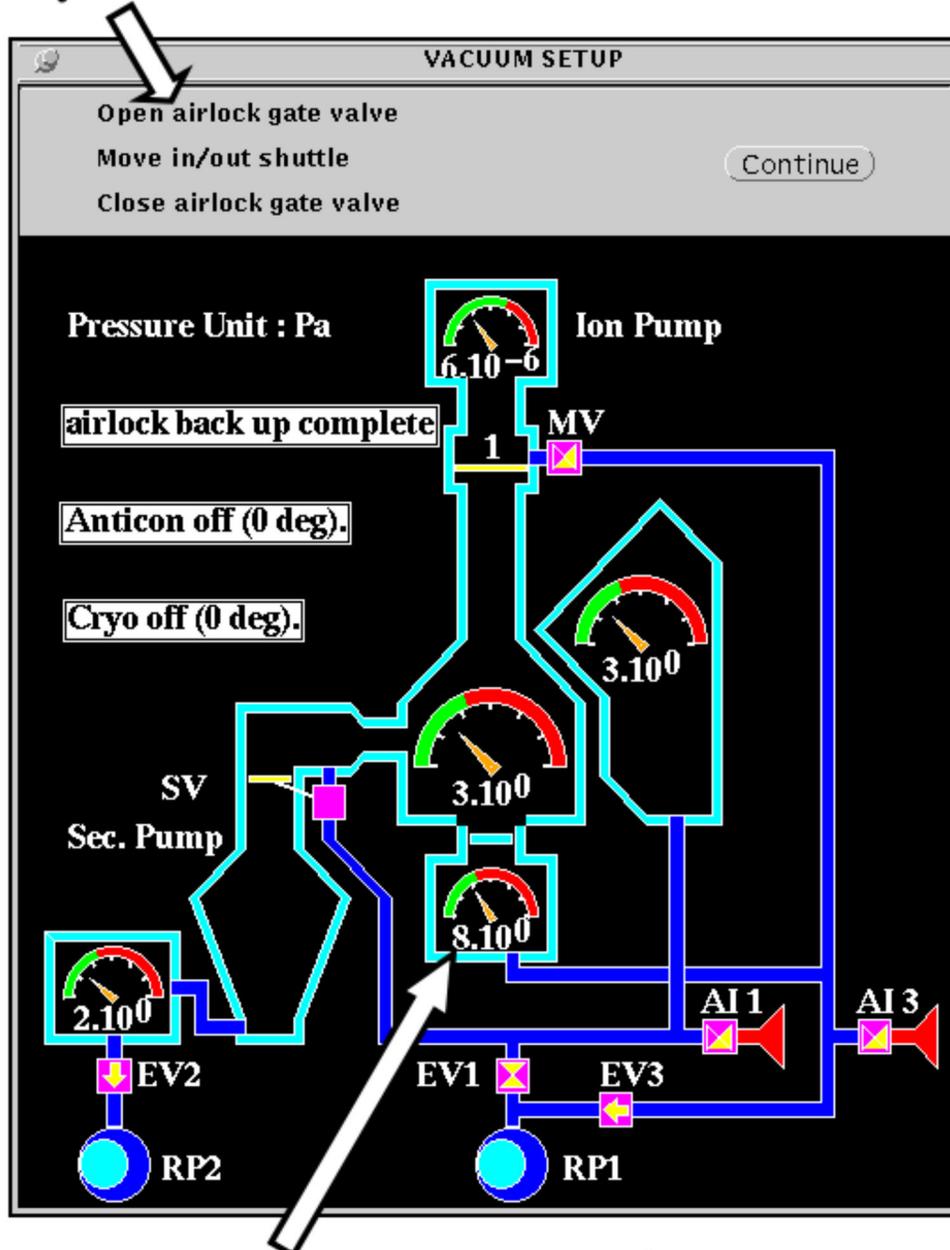


Step 6

VERY IMPORTANT!

WAIT!

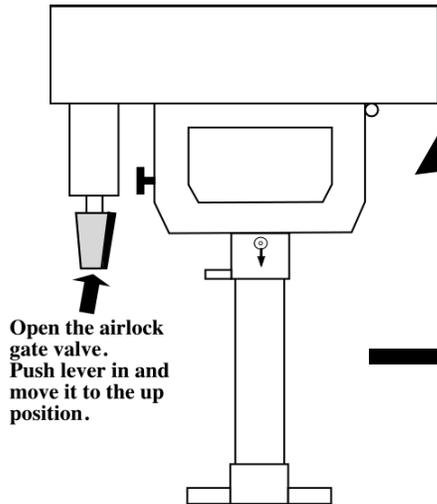
until you see these words on the screen.



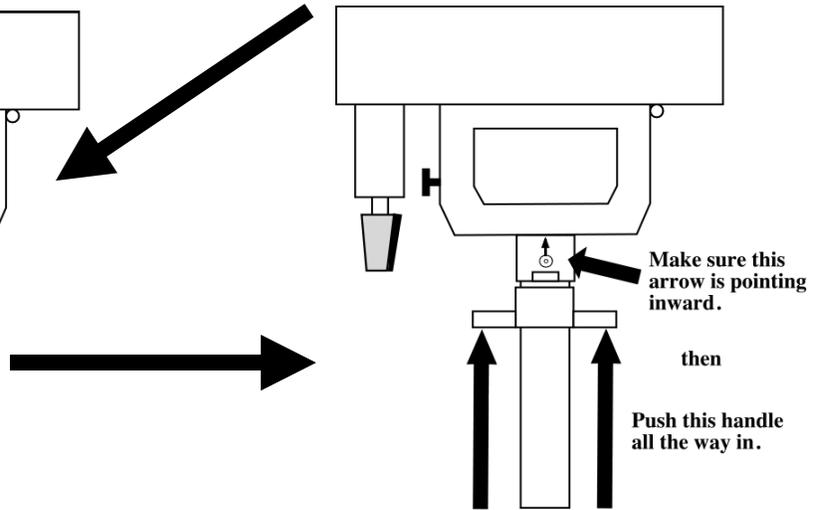
Then wait until this number is $< 1.10^1$

Step 7

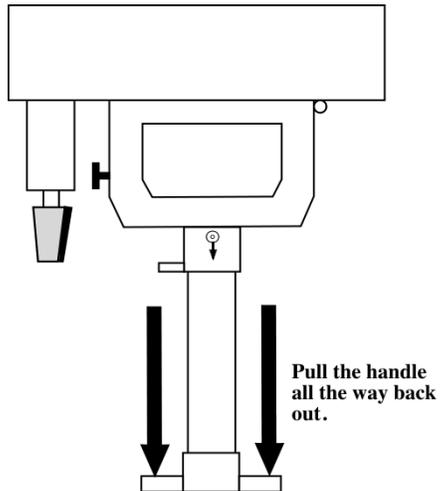
A: Open Airlock



B: Insert Shuttle



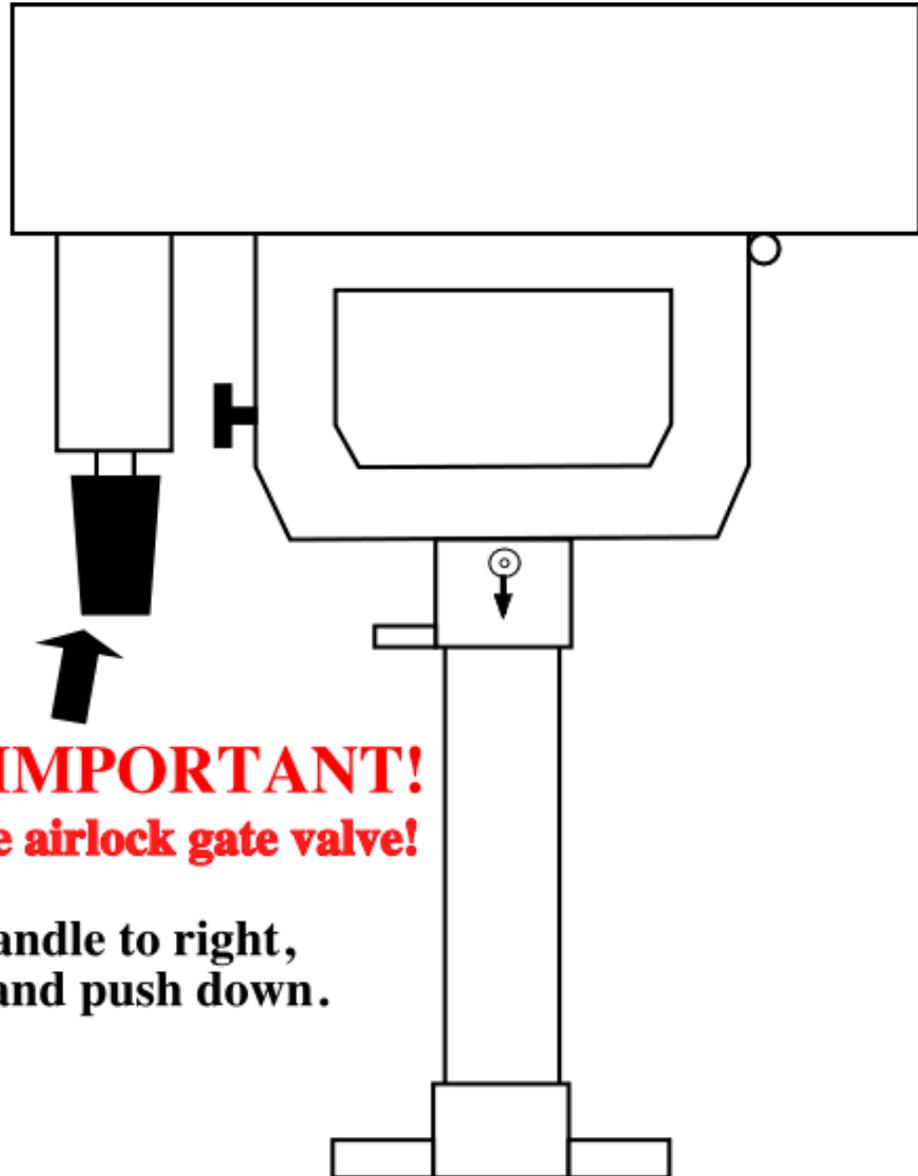
C: Extract Rod



D: GO TO STEP 8

Step 8

E: Close Airlock!!!



VERY IMPORTANT!
Close the airlock gate valve!

**Twist handle to right,
push in and push down.**

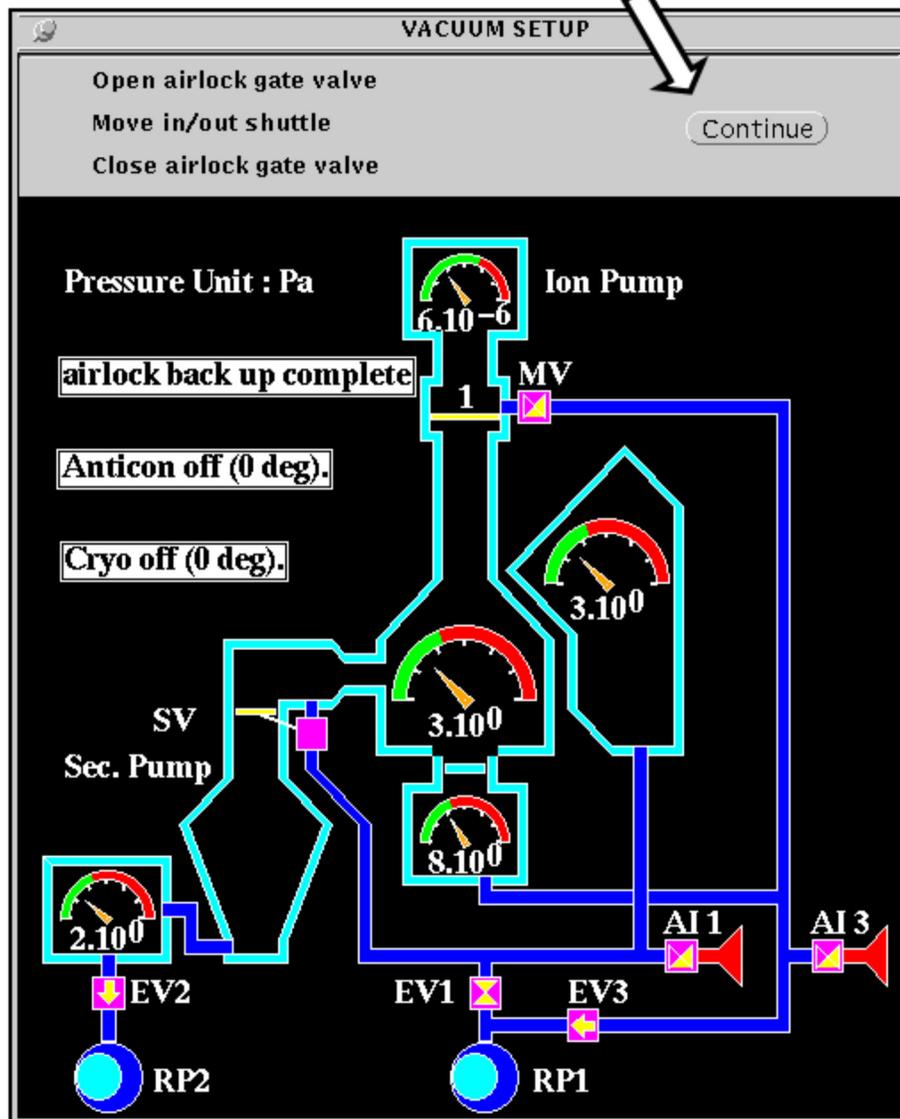
Step 9

VERY IMPORTANT!

Double check that the airlock gate valve is closed.

then

Press This Button

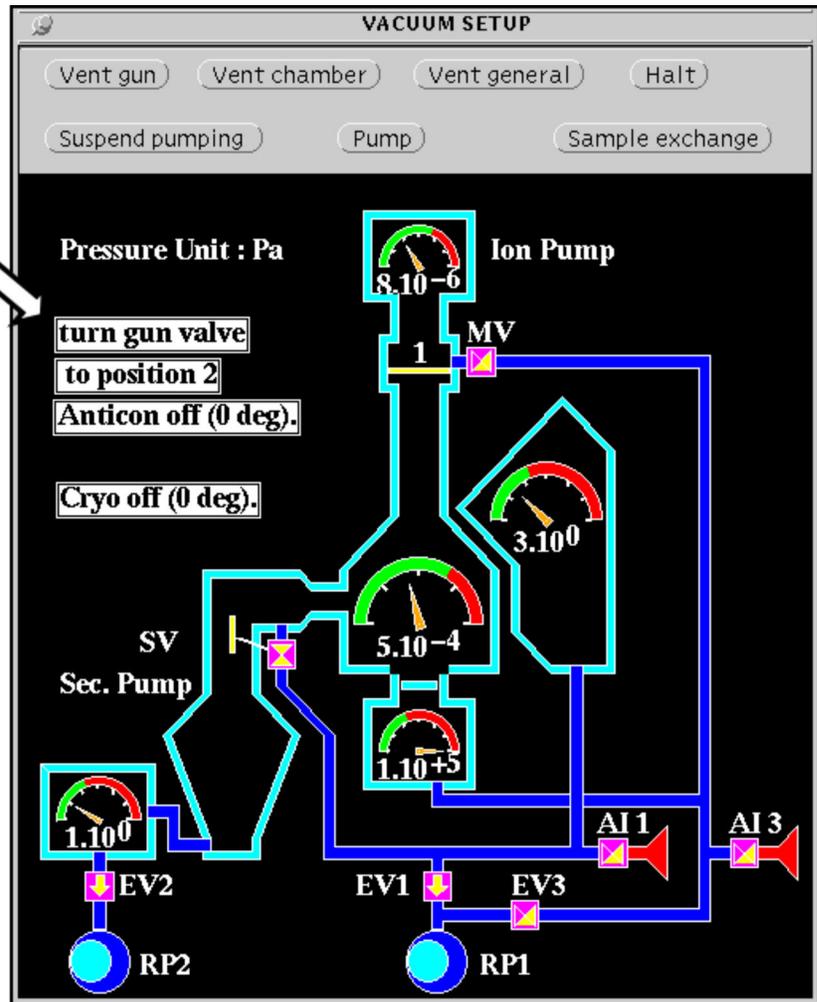


Step 10

Wait a few minutes for the message: “Turn Gun Valve to Position 2”. Then:

Wait until this message appears on the screen.

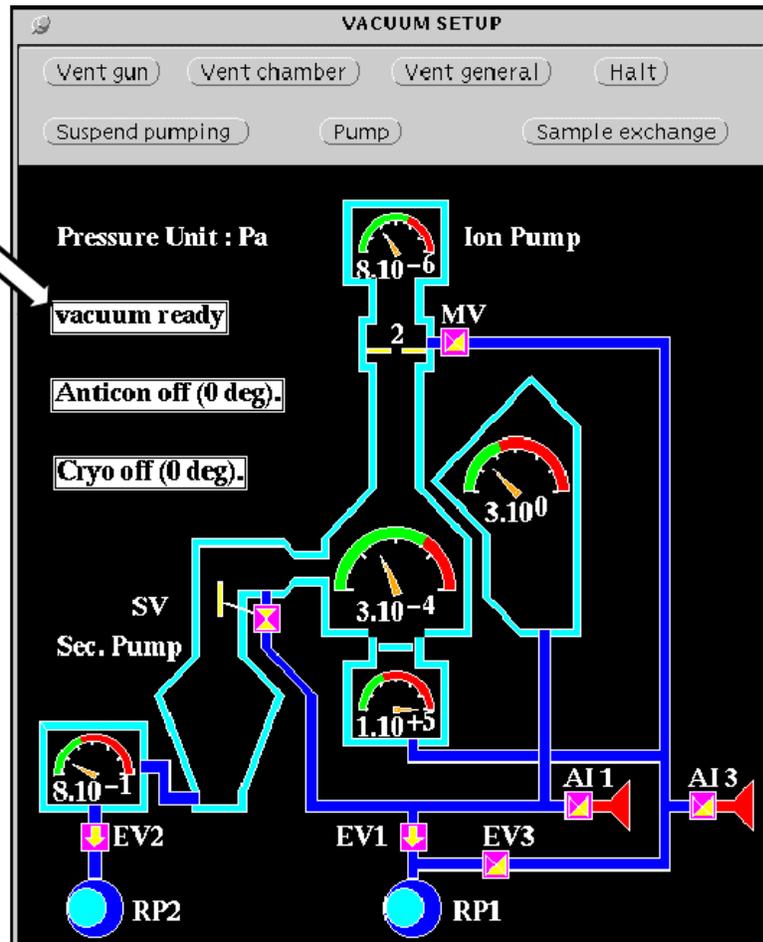
Then turn the big black knob all the way counter-clockwise (i.e. the number 2 is facing towards the computer)



Step 11

Wait for the message: "Vacuum Ready"

Wait until this message appears on the screen.



Next Step

**Go to Calibration
Instruction Set**

Or

Analysis Instruction Set