AUTOFLEX R837 SERVICE MANUAL
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SAFETY INSTRUCTIONS

The Rudolph Research Analytical Autoflex R837 Service Manual will inform you about the repair and maintenance procedures on the Autoflex R837 Sampler. Please ensure that this manual is easily accessible to all personnel involved with servicing the instrument and is read completely before servicing has begun.

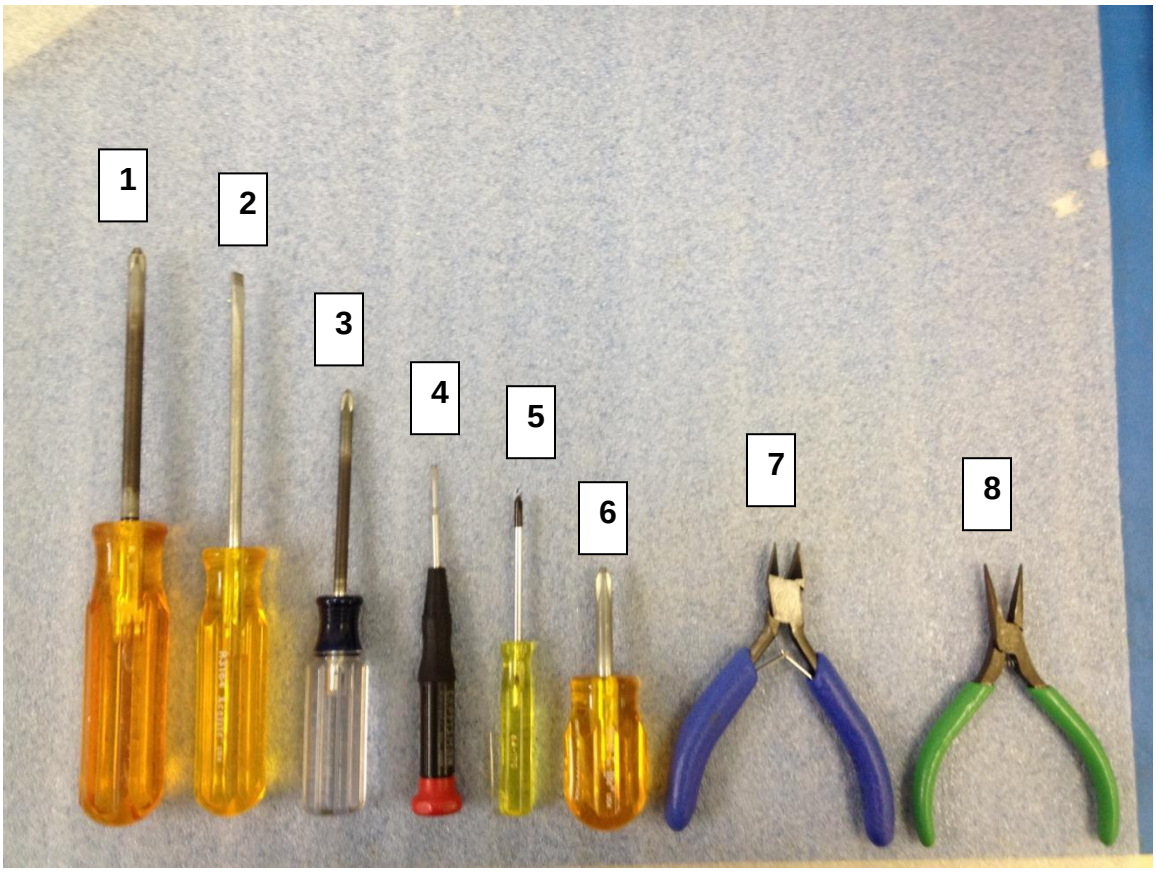
Please follow all warnings, notes and instructions contained in this manual to ensure the proper and safe functions for the Autoflex R837 and its connected instruments.

The repair and service procedures contained in this manual may only be completed by trained and authorized Rudolph Research Analytical personnel only!

Before performing any repairs on the inside of the Autoflex R837, please make sure that the power is off on the instrument and the power cord is unplugged!

If you are unsure about any part of this manual while servicing the Autoflex R837 Sampler, please stop what you are doing and contact a Service Representative at Rudolph Research Analytical.

COMMONLY USED SERVICE TOOLS



1. **#2 PHILLIPS HEAD SCREWDRIVER**
   - **REMOVES THE COVER, PC, CAMERA ASSEMBLY, AND DISPLAY.**

2. **STANDARD FLAT HEAD SCREWDRIVER**
   - **REMOVES THE VGA CONNECTOR FROM THE PC OR DISPLAY.**

3. **#1 PHILLIPS HEAD SCREWDRIVER**
   - **REMOVES THE CONTROLLER BOARD, MIB, FED BOARD, VIDEO CARD, NOZZLES, AND THE POWER DIST. BOARD.**

4. **FINE FLAT HEAD SCREWDRIVER**
   - **TUNES THE POTENTIOMETERS ON THE MIB.**

5. **FINE PHILLIPS HEAD SCREWDRIVER**
   - **REMOVES THE NOZZLES.**

6. **STUBBY #2 PHILLIPS HEAD SCREWDRIVER**
   - **REMOVES THE COVER, PC, CAMERA ASSEMBLY, DISPLAY.**

7. **WIRE CUTTERS**
   - **REMOVES THE WIRE TIES NEEDED TO BE CUT.**

8. **NEEDLE-NOSED PLIERS**
   - **NEEDED FOR ANYTHING DROPPED IN TIGH SPACES, AND TO REMOVE THE AIR PUMP HOSES.**

9. **STANDARD USB KEYBOARD**

10. **STANDARD USB MOUSE**

PREVENTIVE MAINTENANCE CHECKLIST

SERIAL NUMBER:_____
SOFTWARE/BUILD VERSION:_____
VALVE BOX FIRMWARE VERSION:_____
NEEDLE FIRMWARE VERSION:_____
DATE:_____

DESCRIPTION OF SERVICE	PASS / FAIL N/A
RACKS AND CAROUSEL PLATE CLEANED AND ALIGNED	
BOTH THE VALVE BOX AND NEEDLE ASSEMBLY ARE CLEAN	
FAN FILTER CLEANED	
INSIDE OF UNIT CLEANED	
VISUAL INSPECTION OF BOARDS AND MECHANICAL PARTS	
RACKS AND NEEDLE ARE ALIGNED FOR OPTIMAL USE	
NEEDLE IS STRAIGHT AND NEEDLE SHAFT IS LUBRICATED	
RINSE 1, 2 AND 3 TESTED	
PUMPS ARE OPERATIONAL	
ALL BELTS ARE FUNCTIONAL AND AT CORRECT TENSIONS	
ALL INTERNAL LIGHT GATES ARE FUNCTIONAL	
EXTERNAL LIGHT GATE IS FUNCTIONAL	
TUBING IS FUNCTIONAL (NO CUTS / LEAKS / KINKS / DIRT)	
NEEDLE GASKETS ARE FUNCTIONAL (NO LEAKAGE)	
VIAL/SPIN DETECTOR OPERATIONAL AND ALIGNED	
BARCODE SCANNER OPERATIONAL AND ALIGNED	
HEATED RACKS TESTED AND FUNCTIONAL	

PROPER COMMUNICATION BETWEEN ALL INSTRUMENTS	
CORRECT SOFTWARE VERSION	
CORRECT VALVE BOX FIRMWARE VERSION	
CORRECT NEEDLE FIRMWARE VERSION	
BACKUPS CREATED	
SERIAL NUMBER TAGS CORRECT AND INTACT	
WARNING LABELS PROPERLY ATTACHED	
COVERS SECURED AND ALL SCREWS TIGHTENED	
NEEDLE COVER IN PLACE AND SECURED	

NOTES:_____

_____

_____

_____

_____

REPLACING THE VALVE BOX CONTROL BOARD

PARTS NEEDED:

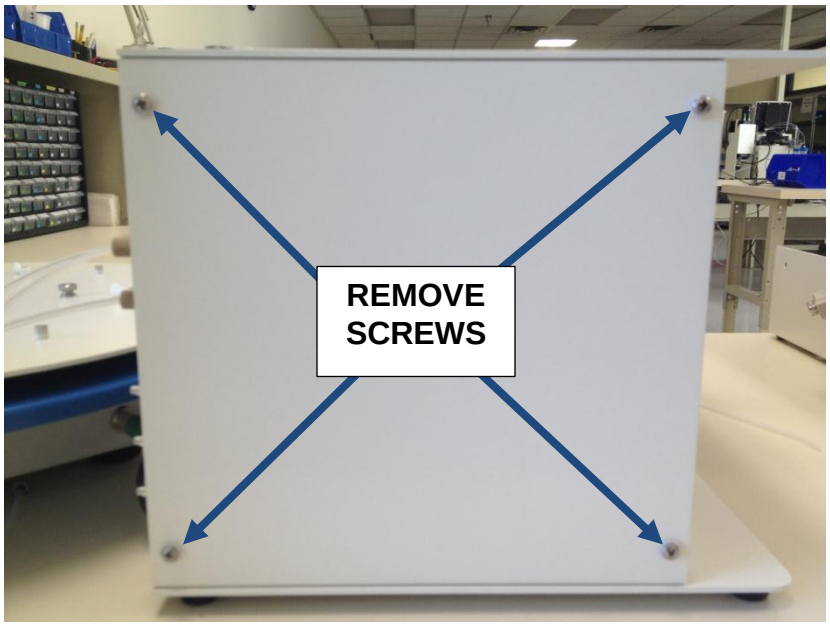
- **A25301 CONTROL BOARD**
- **1 ZIP-TIE**

TOOLS NEEDED:

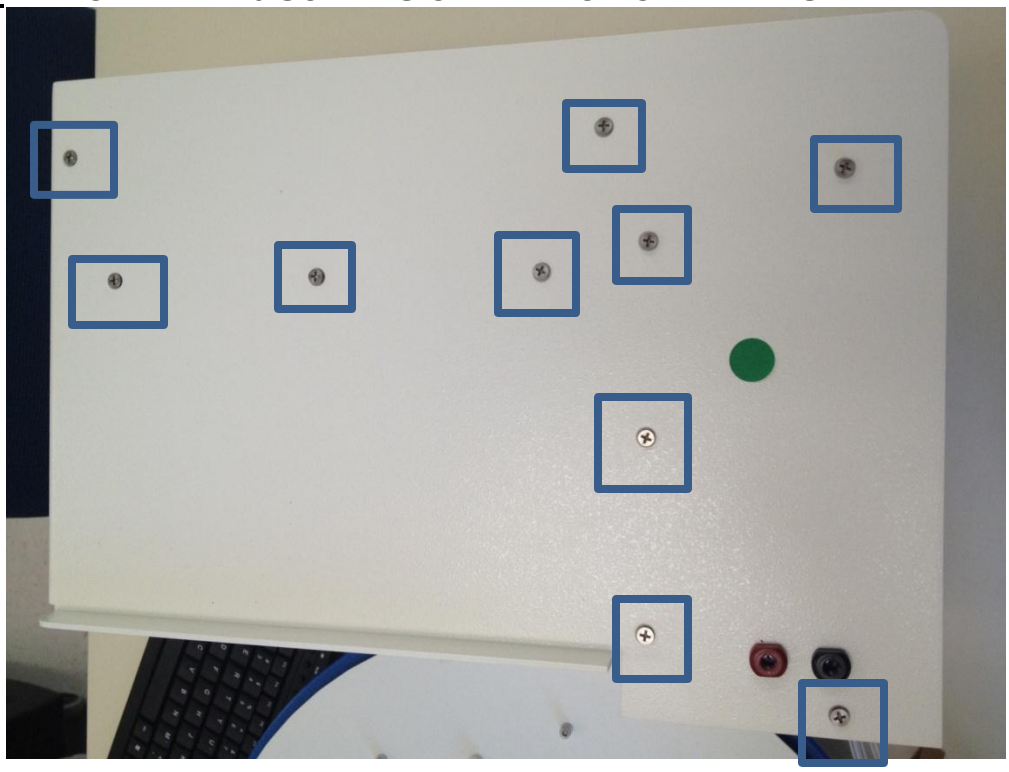
- **#2 PHILLIPS HEAD SCREWDRIVER**
- **# 1 PHILLIPSHEAD SCREWDRIVER**
- **SMALL TIPPED FLAT HEAD SCREWDRIVER**
- **RAZOR BLADE**
- **WIRE CUTTERS**
- **NEEDLENOSE PLIERS**

STEP 1: TURN OFF POWER TO THE AUTOMATION SYSTEM AND UNPLUG ALL CABLES AND HOSES.

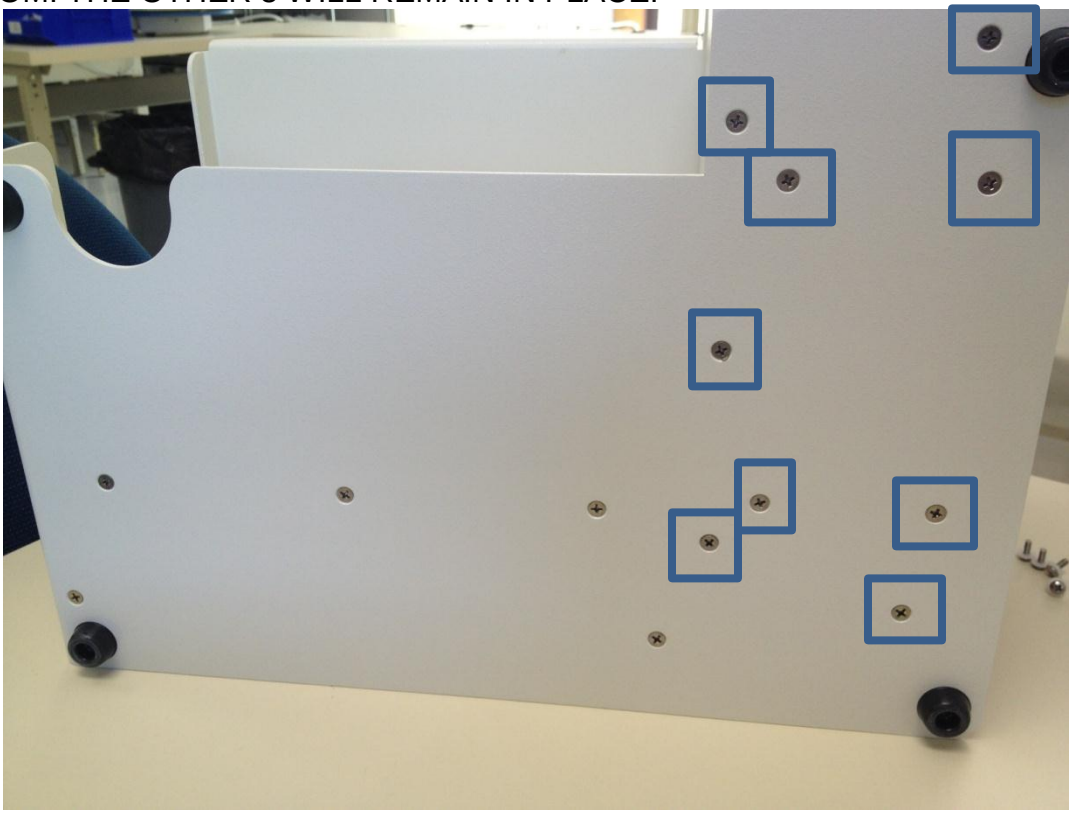
STEP 2: REMOVE THE 4 SCREWS ON THE REAR COVER OF THE VALVE BOX



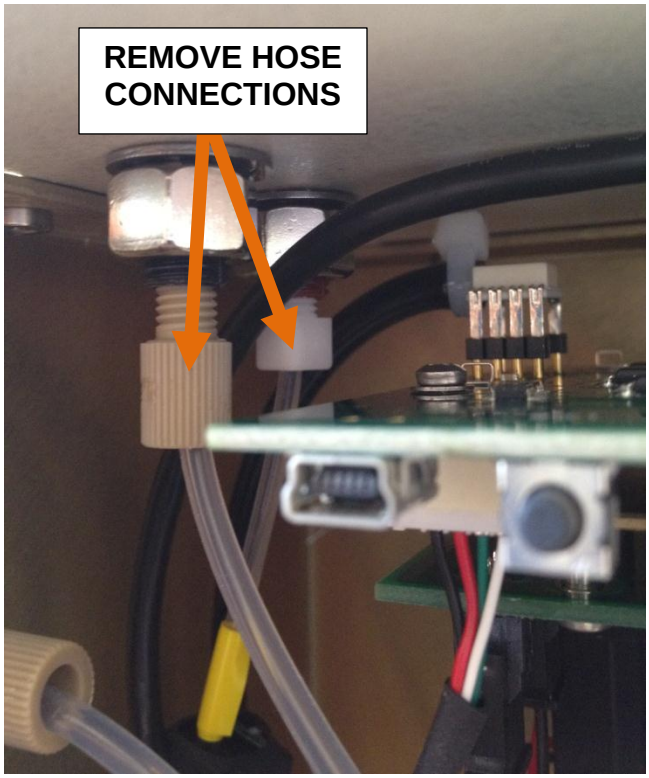
STEP 3: REMOVE THE 10 SCREWS ON THE TOP OF THE BASE.



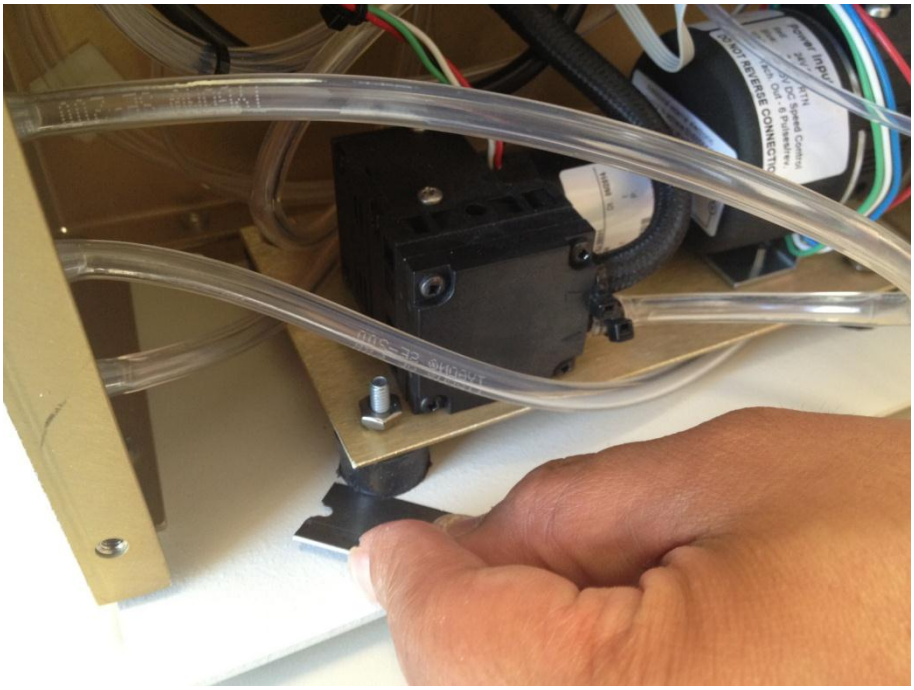
STEP 4: FLIP THE BASE OVER ON ITS SIDE AND REMOVE 9 SCREWS FROM THE BOTTOM. THE OTHER 5 WILL REMAIN IN PLACE.



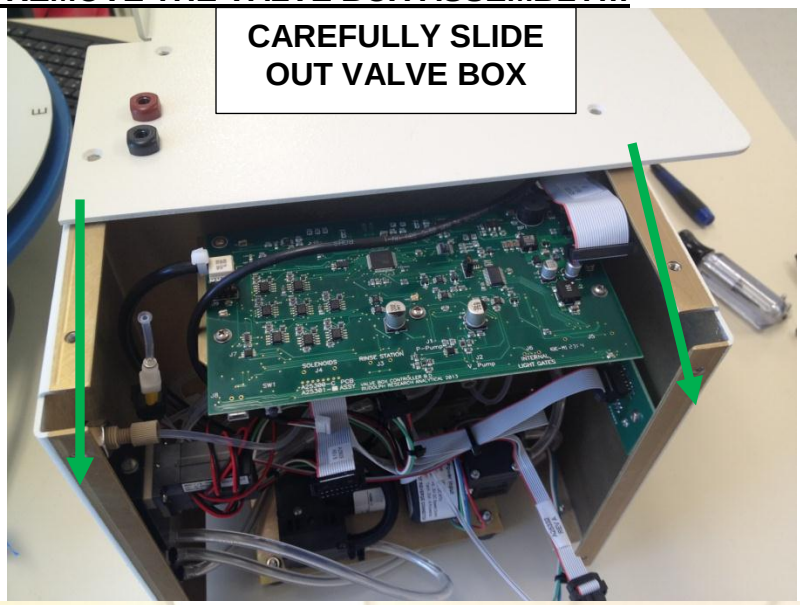
STEP 5: RETURN THE BASE BACK TO THE UPRIGHT POSITION AND REMOVE THE TWO HOSE CONNECTIONS GOIN TO THE TOP OF THE VALVE BOX.

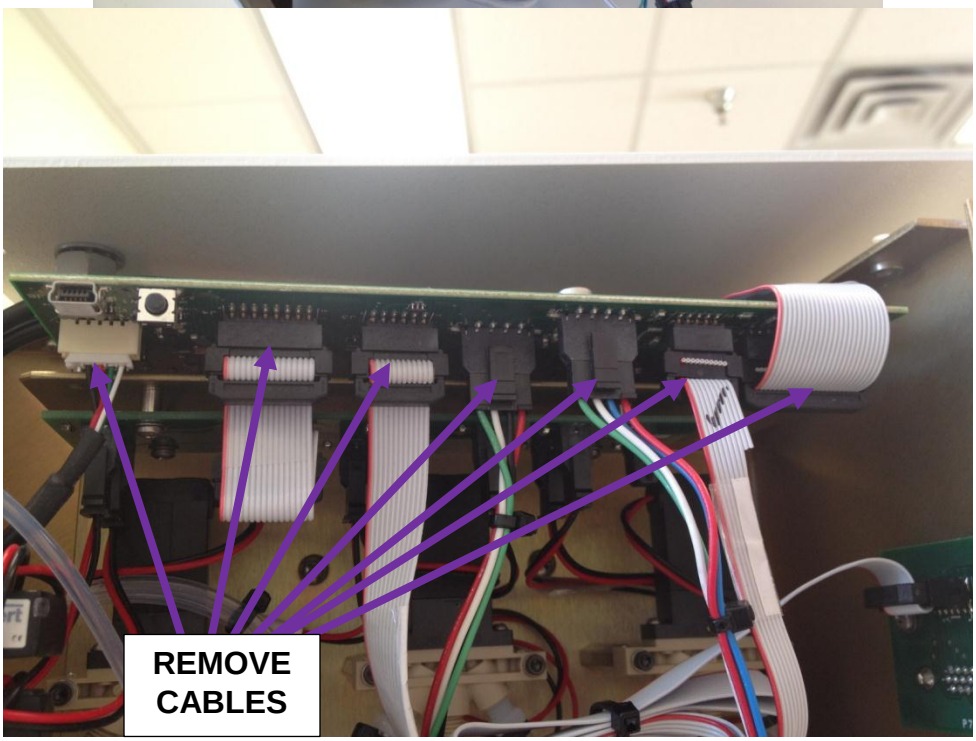


STEP 6: USE A RAZOR BLADE OR A SMALL FLAT HEAD SCREWDRIVER TO PRY AND LOOSEN THE FEET FOR THE PUMP ASSEMBLY. **NOTE: NOT DOING THIS MAY CUASE THE FEET TO BREAK OFF!!!**

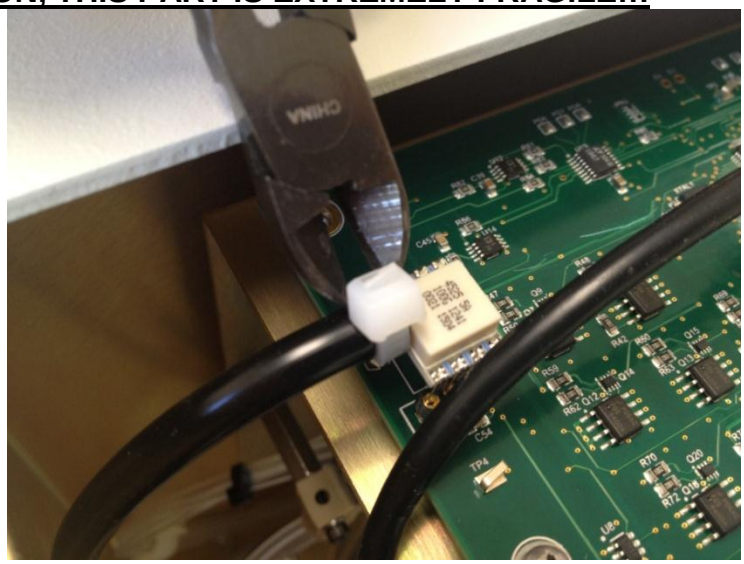


STEP 7: SLIDE THE VALVE BOX ASSEMBLY OUT SLIGHTLY AND REMOVE THE 7 CABLES THAT ARE CONNECTED TO THE CONTROL BOARD. **DO NOT COMPLETELY REMOVE THE VALVE BOX ASSEMBLY!!!**

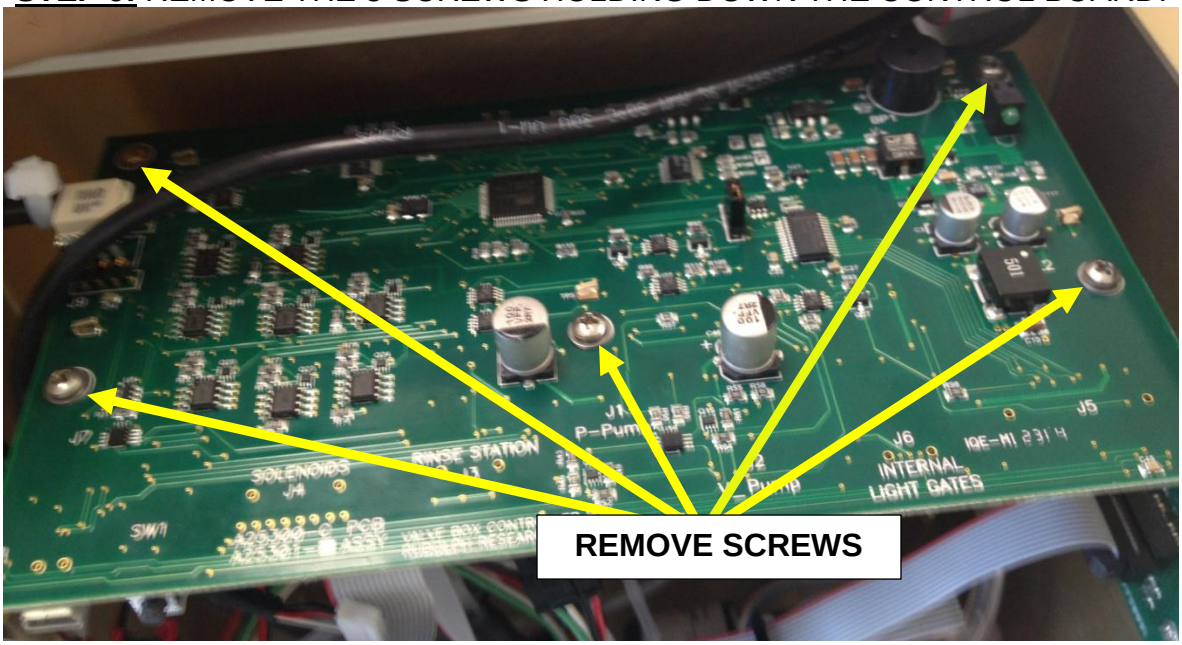




STEP 8: REMOVE THE HOSE FOR THE PRESSURE MONITOR WITH A PAIR OF WIRE CUTTERS. **USE AS LITTLE FORCE AS POSSIBLE SO YOU DO NOT BREAT THE CONNECTION, THIS PART IS EXTREMELY FRAGILE!!!**

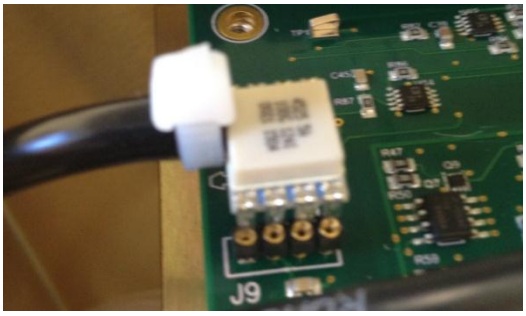


STEP 9: REMOVE THE 5 SCREWS HOLDING DOWN THE CONTROL BOARD.

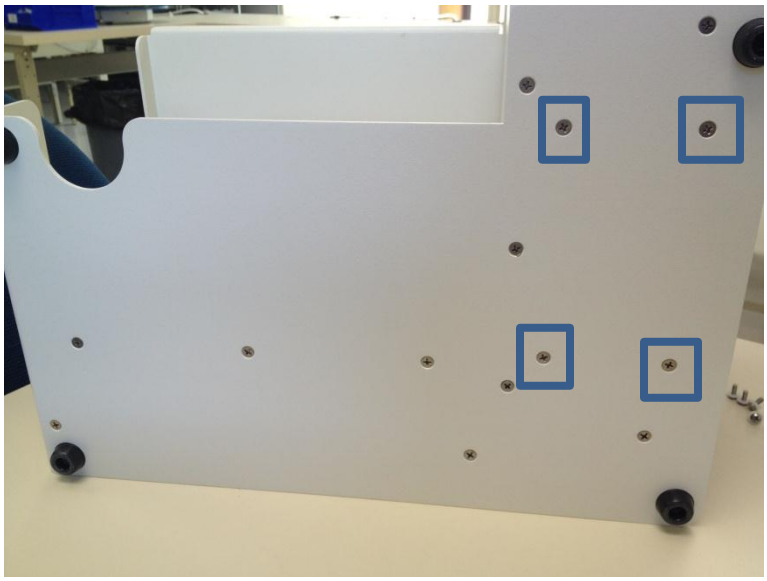


STEP 10: PUT IN THE NEW CONTROL BOARD AND RETURN THE 5 SCREWS.

STEP 11: CAREFULLY RETURN THE HOSE TO THE PRESSURE MONITOR AND CAREFULLY USE THE PROVIDED ZIP TIE TO HOLD IN PLACE.



STEP 12: PUSH THE VALVE BOX INTO PLACE AND RETURN THE 9 SCREWS ON THE BOTTOM OF THE BASE. **MAKE SURE THE 4 HOLDING THE PUMP ASSEMBLY ARE ONLY FINGER TIGHT!!!**



STEP 13: RETURN THE TWO HOSE CONNECTIONS TO THE TOP OF THE VALVE BOX AND MAKE SURE THE ARE VERY TIGHT!!

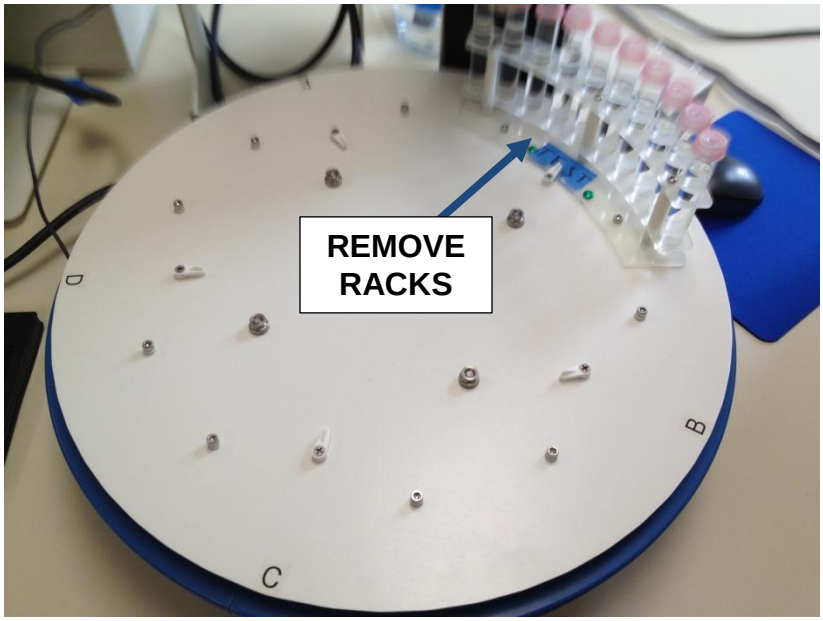
STEP 14: RETURN ALL THE SCREWS FOR THE TOP OF THE BASE AND THE 4 SCREWS HOLDING THE REAR COVER THEN RE-CONNECT ALL HOSES AND CABLES AND POWER THE INSTRUMENT ON.

REPLACING THE NEEDLE CONTROL BOARD

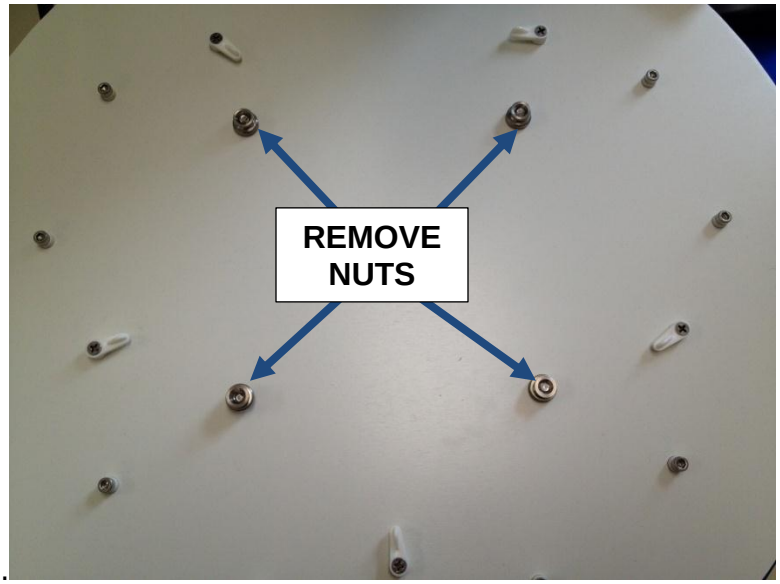
TOOLS AND PARTS NEEDED:

- **A25305 NEEDLE CONTROL BOARD**
- **#1 PHILLIPS HEAD SCREWDRIVER**
- **#2 PHILLIPS HEAD SCREWDRIVER**

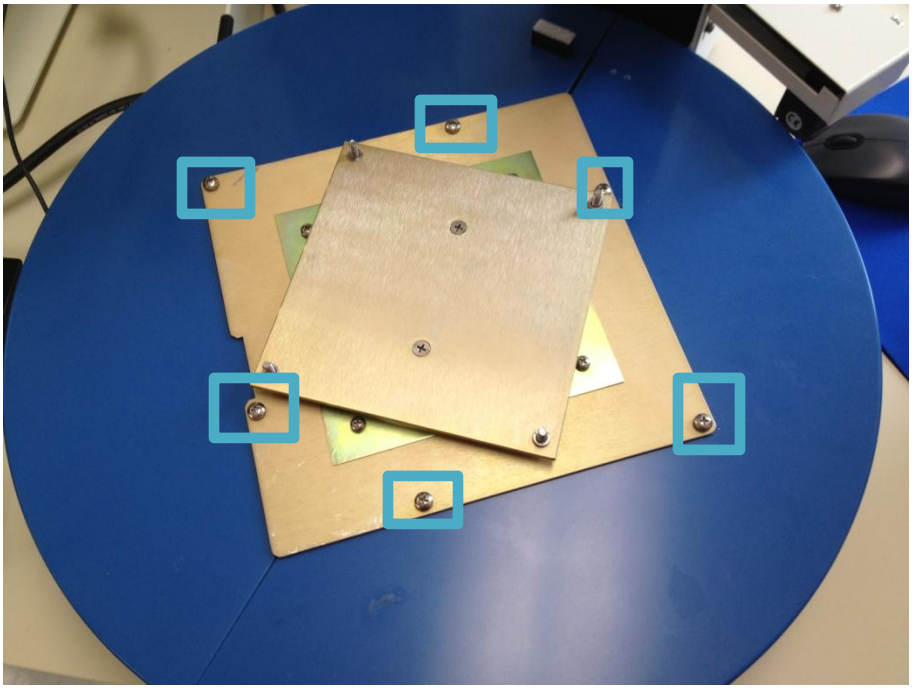
STEP 1: TURN OFF POWER TO THE AUTOMATION UNIT THEN REMOVE ALL OF THE SAMPLE RACKS FROM THE AUTOMATION CARROUSEL



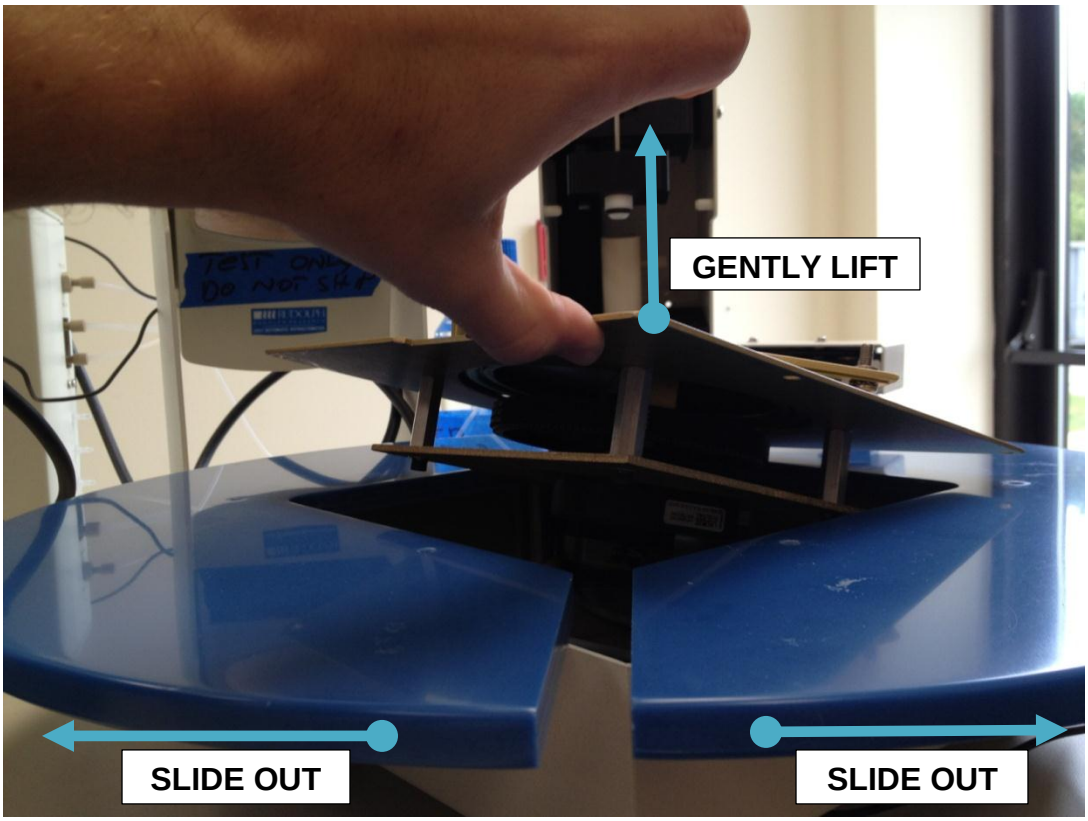
STEP 2: REMOVE THE 4 NUTS HOLDING DOWN THE CARROUSEL PLATE THEN REMOVE THE PLATE BY LIFTING IT UP



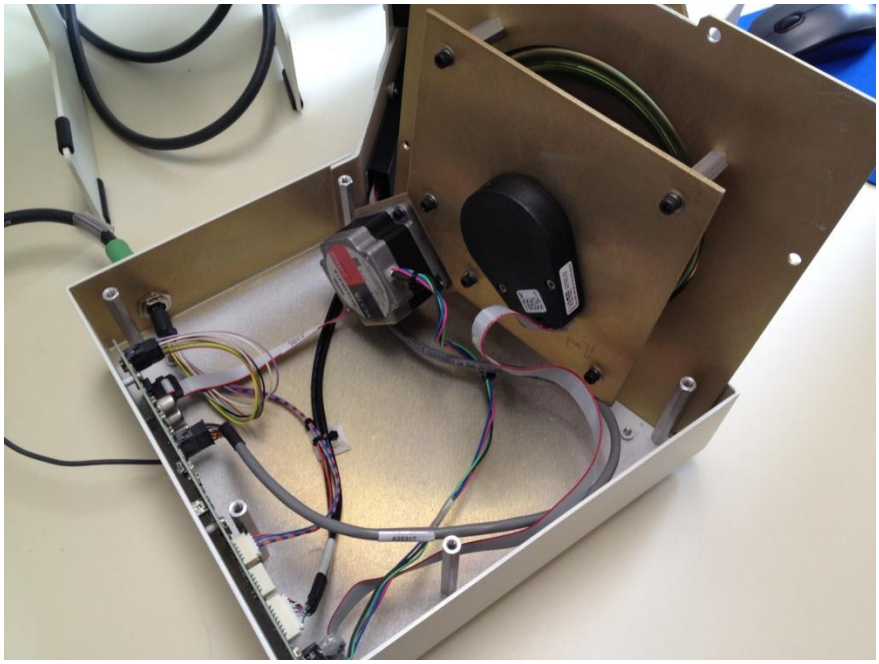
STEP 3: REMOVE THE 6 SCREWS HOLDING DOWN THE BASE AND THE ROTATING PLATE.



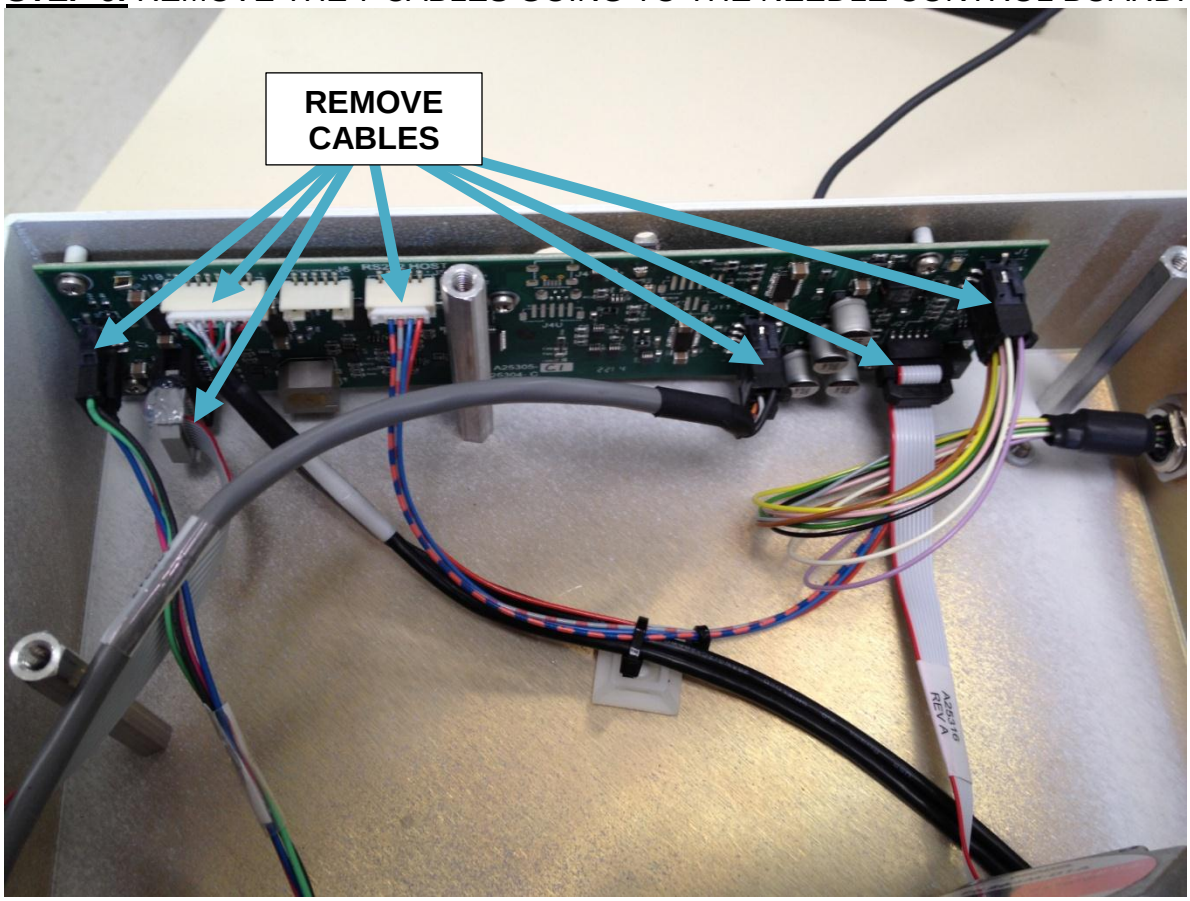
STEP 4: GENTLY LIFT UP BUT DO NOT REMOVE THE ROTATING PLATE ASSEMBLY THEN SLIDE OUT THE TWO BLUE BASE PLATFORMS.



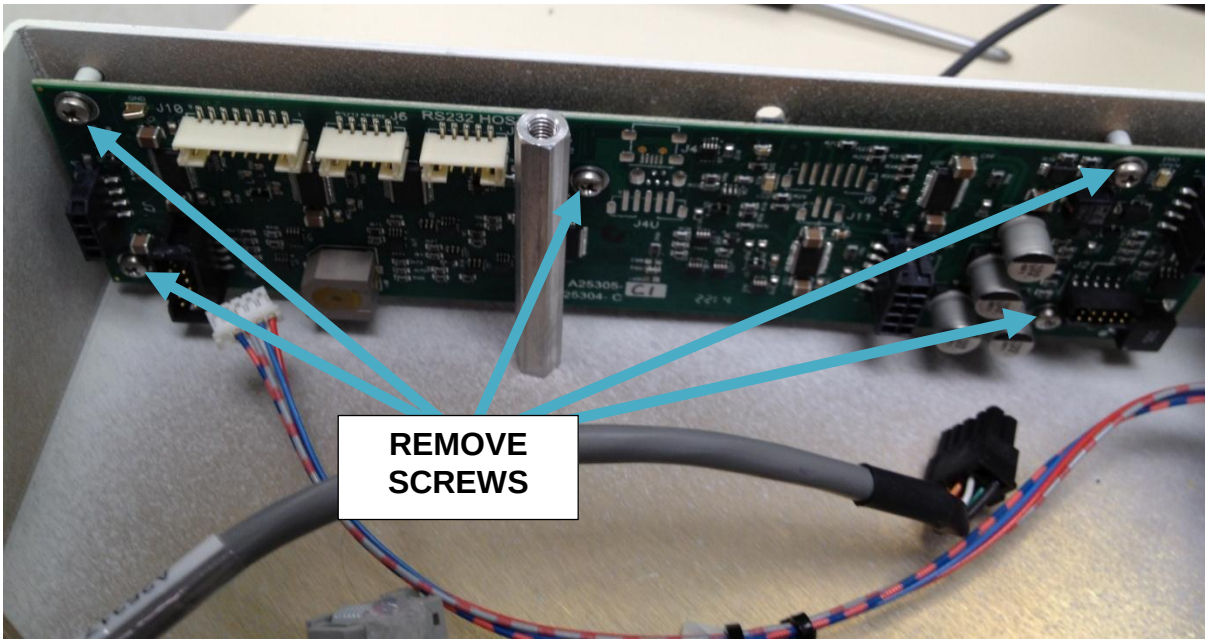
STEP 5: GENTLY PROP UP THE ROTATING PLATE ASSEMBLY ON THE INSIDE OF THE AUTOMATION BASE.



STEP 6: REMOVE THE 7 CABLES GOING TO THE NEEDLE CONTROL BOARD.



STEP 7: REMOVE THE 5 SCREWS HOLDING DOWN THE NEEDLE CONTROL BOARD.



STEP 8: REPLACE THE OLD BOARD WITH THE NEW ONE THEN RE-ASSEMBLE THE AUTOMATION UNIT.

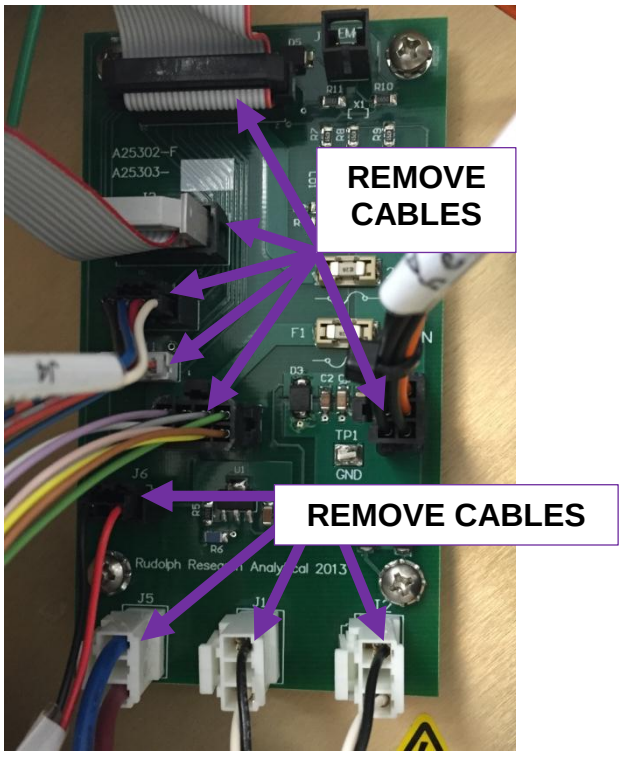
REPLACING THE INTERLOCK/EGRESS BOARD

TOOLS AND PARTS NEEDED:

- **A26636 (INTERLOCK/EGRESS BOARD)**
- **#2 PHILLIPS HEAD SCREWDRIVER**
- **#1 PHILLIPS HEAD SCREWDRIVER**

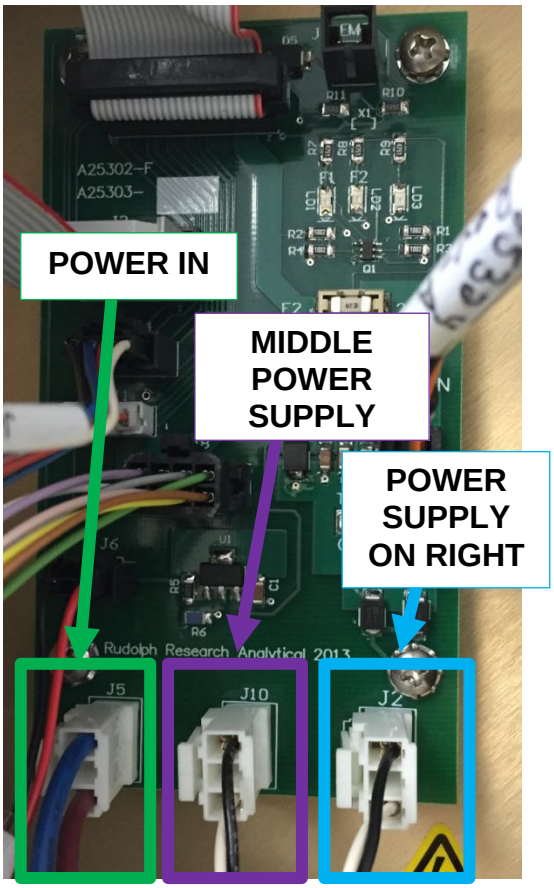
STEP 1: REMOVE THE COVER OF THE VALVE BOX POWER SUPPLY SECTION LOCATED ON THE LEFT SIDE OF THE INSTRUMENT BY REMOVING THE 4 SCREWS.

STEP 2: LOCATE THE INTERLOCK/EGRESS BOARD ON THE LEFT SIDE OF THE POWER SUPPLY SECTION AND REMOVE THE 9 CABLES THAT ARE CONNECTED



STEP 3: ONCE ALL OF THE CABLES HAVE BEEN REMOVED, REMOVE THE 4 SCREWS THAT ARE HOLDING DOWN THE INTERLOCK/EGRESS BOARD.

STEP 4: REPLACE THE OLD INTERLOCK/EGRESS BOARD WITH THE NEW ONE AND REPLACE THE FOUR SCREWS AND THE 9 CABLES, THEN PLACE THE COVER OF THE VALVE BOX BACK ON.



REPLACING THE POWER SUPPLIES

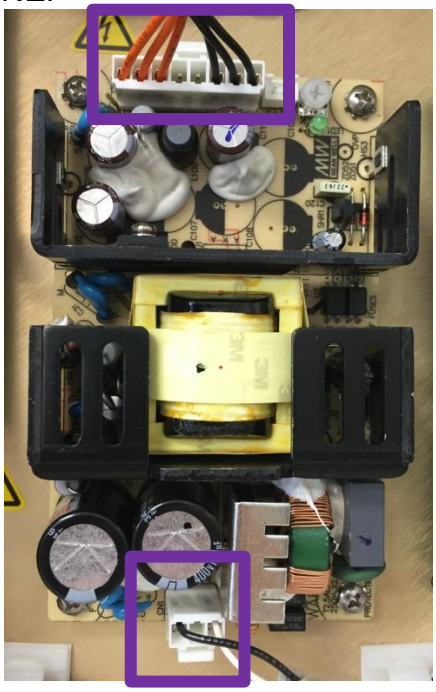
TOOLS AND PARTS NEEDED:

- **P25283 (MAIN POWER SUPPLY)**
- **A25342 (DENSITY POWER SUPPLY)**
- **#2 PHILLIPS HEAD SCREWDRIVER**

STEP 1: AS ALWAYS, BUT ESPECIALLY HERE TURN OFF POWER THEN REMOVE THE COVER OF THE VALVE BOX POWER SUPPLY SECTION LOCATED ON THE LEFT SIDE OF THE INSTRUMENT BY REMOVING THE 4 SCREWS.

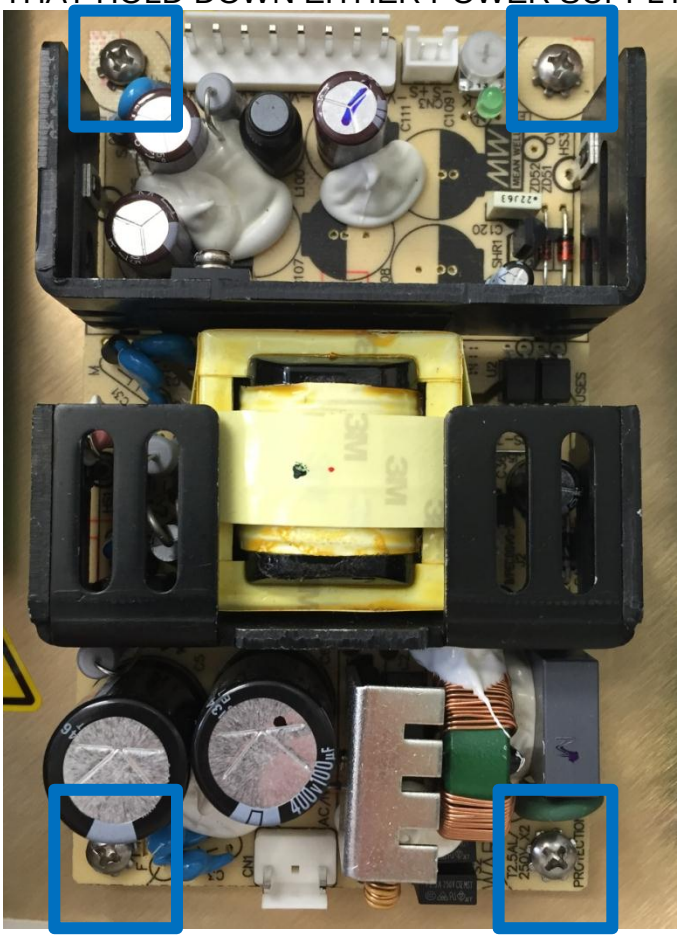
STEP 2: LOCATE THE POWER SUPPLIES, THE MAIN POWER SUPPLY WILL BE IN THE MIDDLE AND THE DENSITY POWER SUPPLY WILL BE ON THE RIGHT. TO CHANGE OUT EITH BOARD, REMOVE THE TWO CABLES THAT ARE CONNECTED TO EACH ONE.

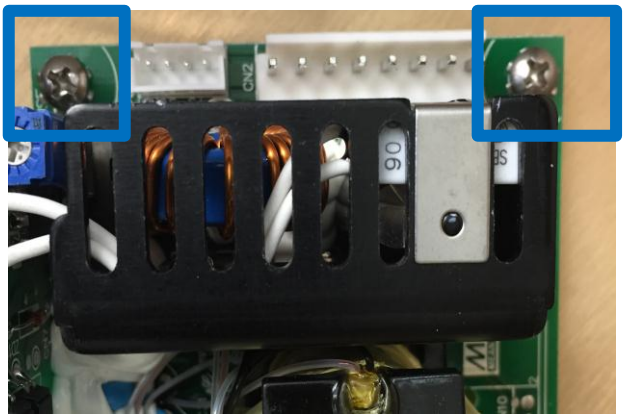
MAIN POWER SUPPLY

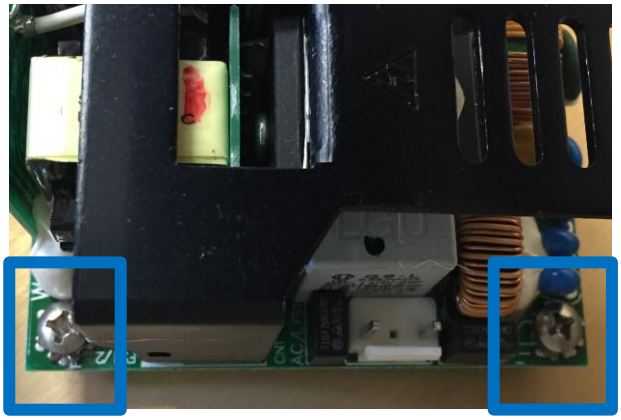


DENSITY POWER SUPPLY

STEP 3: ONCE THE CABLES HAVE BEEN REMOVED, REMOVE THE 4 SCREWS THAT HOLD DOWN EITHER POWER SUPPLY.







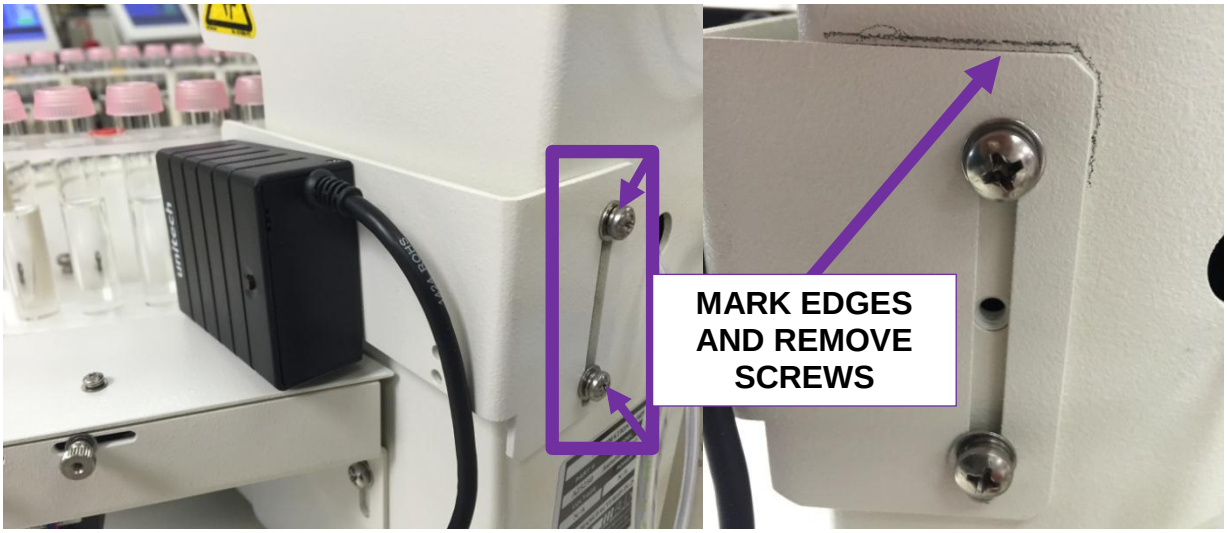
STEP 4: ONCE THE SCREWS HAVE BEEN REMOVED FROM THE POWER SUPPLIES, REMOVE THE DEFECTIVE BOARD AND CHANGE IT OUT WITH THE NEW ONE PROVIDED. RETURN ALL OF THE SCREWS AND CABLES AND CLOSE UP THE COVER.

REPLACING THE VIAL/TUBE SPINNER

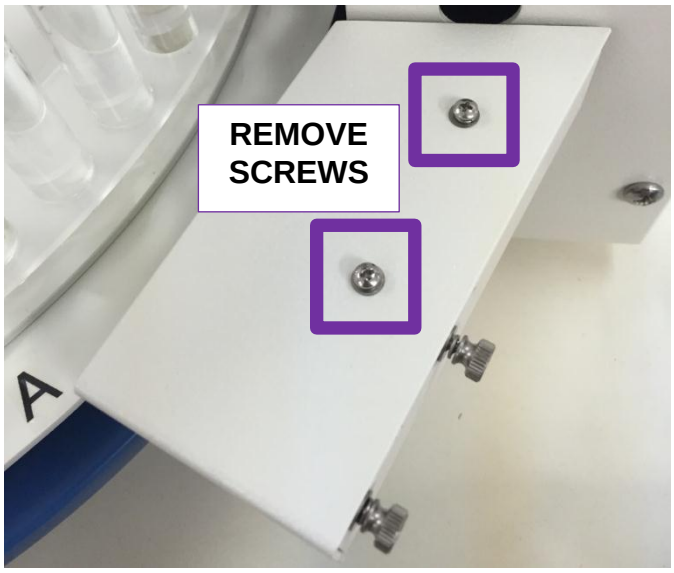
TOOLS AND PARTS NEEDED:

- **A25450 (VIAL/TUBE SPINNER ASSEMBLY)**
- **#2 PHILLIPS HEAD SCREWDRIVER**
- **#1 PHILLIPS HEAD SCREWDRIVER**
- **SMALL FLATHEAD SCREWDRIVER OR FLAT OBJECT**

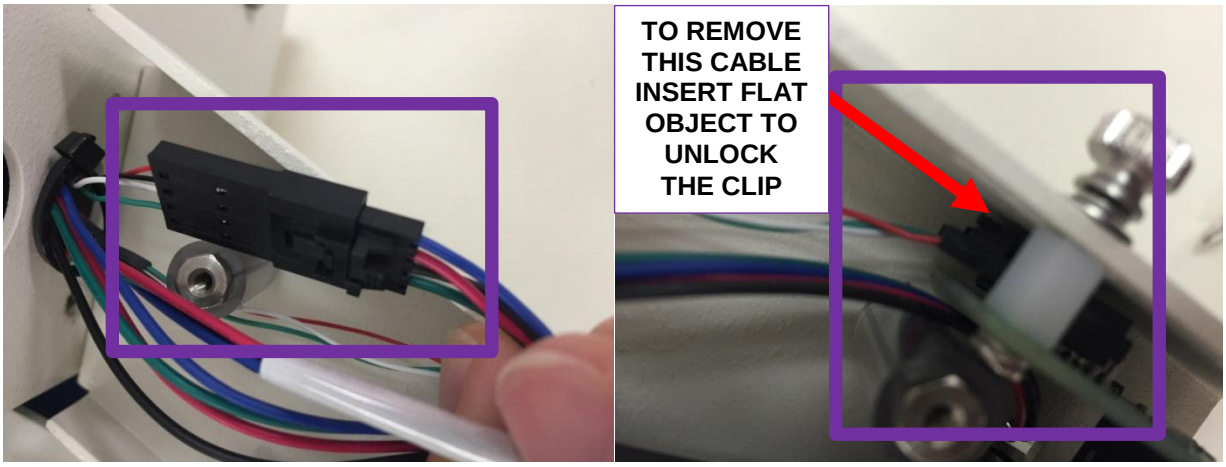
STEP 1: LOCATE THE BARCODE SCANNER AND THE VIAL/TUBE SPINNER ON THE RIGHT SIDE OF THE NEEDLE TOWER AND REMOVE THE BARCODE SCANNER BY REMOVING THE TWO SCREWS LOCATED ON THE BACK OF THE NEEDLE TOWER. **NOTE: MARK THE EDGES OF THE BRACKET FOR ALIGNMENT**



STEP 2: REMOVE THE TOP COVER OF THE VIAL/TUBE SPINNER ASSEMBLY BY REMOVING THE TWO SCREWS ON THE TOP OF THE ASSEMBLY.

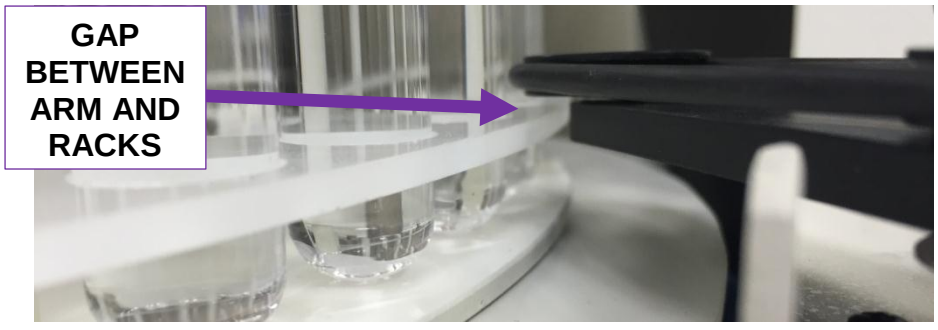


STEP 3: DISCONNECT THE TWO CABLES THAT ARE ATTACHED TO THE VIAL/TUBE SPINNER ASSEMBLY. YOU WILL MOST LIKELY NEED A SMALL FLATHEAD SCREWDRIVER OR FLAT OBJECT TO REMOVE THE ONE CABLE.



STEP 4: ONCE THE CABLES HAVE BEEN DISCONNECTED, REMOVE THE VIAL/TUBE SPINNER ASSEMBLY BYT REMOVING THE TWO SCREWS ON THE BOTTOM OF THE ASSEMBLY. **NOTE: BEFORE REMOVING THE ASSEMBLY, MARK THE EDGES OF THE BRACKET WITH PENCIL SO IT WILL BE EASIER TO PLACE AND ALIGN THE NEW VIAL/TUBE SPINNER!**

STEP 5: REMOVE THE OLD VIAL/TUBE SPINNER ASSEMBLY AND REPLACE IT WITH THE NEW ONE. MAKE SURE THE ALIGNMENT IS CORRECT AND THERE IS A GAP BETWEEN THE BOTTOM OF THE ARM AND THE SAMPLE RACK. RETURN THE 2 CABLES AND ALL OF THE SCREWS THAT HAVE BEEN REMOVED, AND THEN ALIGN THE BARCODE SCANNER TO ITS ORIGINAL POSITION.



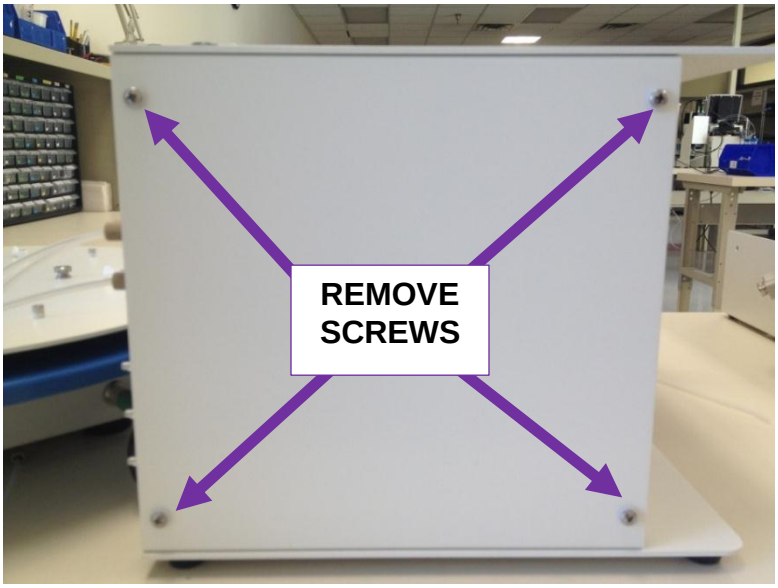
REPLACING THE LIGHT GATE ASSEMBLIES

TOOLS AND PARTS NEEDED:

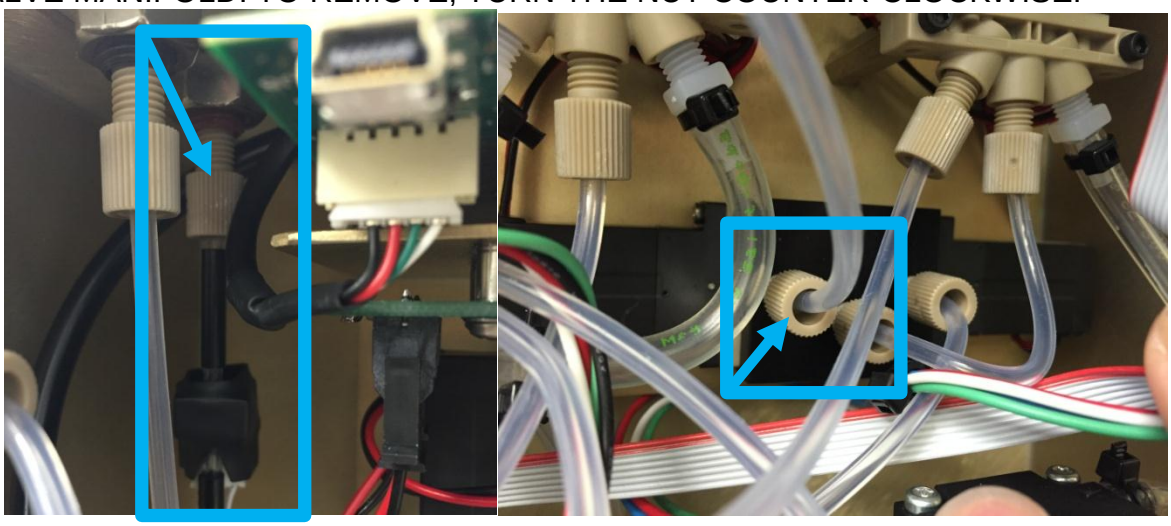
- **RINSE LIGHT GATE ASSEMBLY**
- **SAMPLE LIGHT GATE ASSEMBLY**
- **#2 PHILLIPS HEAD SCREWDRIVER**
- **NEEDLENOSE PLIERS**

STEP 1: TURN OFF POWER TO THE AUTOMATION SYSTEM AND UNPLUG ALL CABLES AND HOSES.

STEP 2: REMOVE THE 4 SCREWS ON THE REAR COVER OF THE VALVE BOX

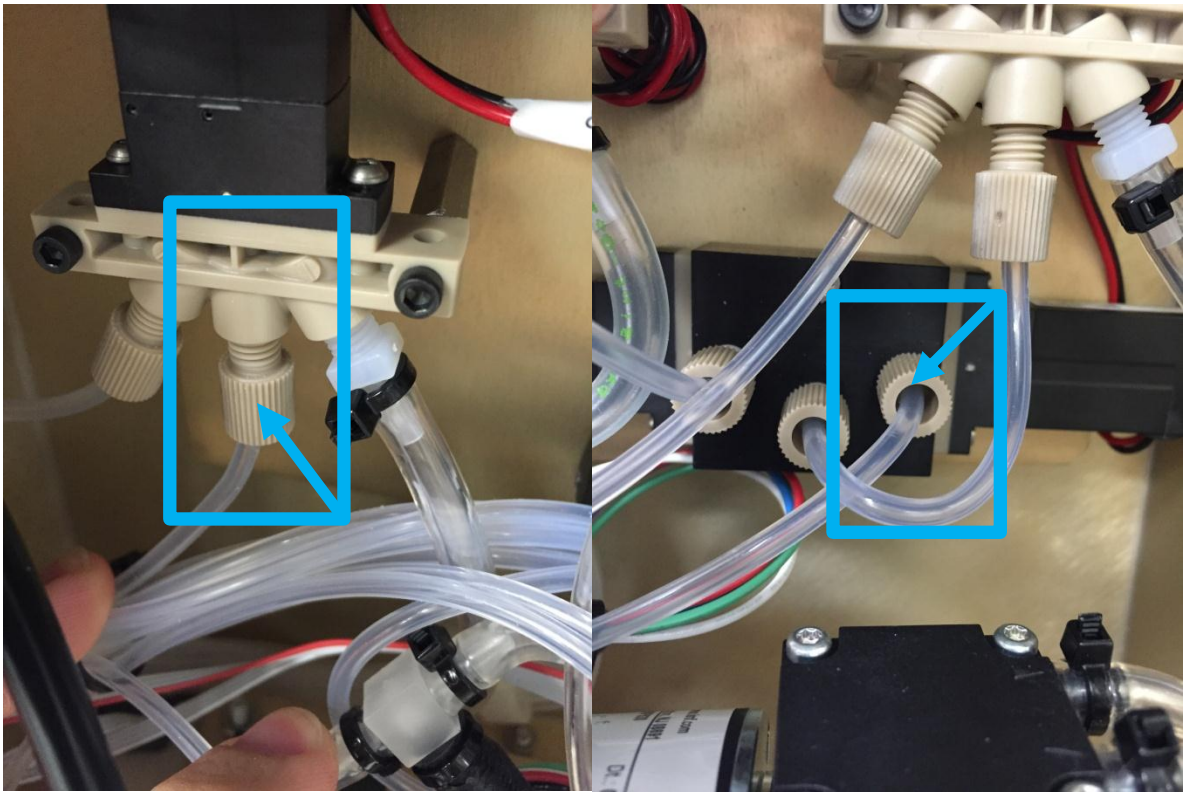


STEP 3: LOCATE AND REMOVE THE SAMPLE LIGHT GATE ASSEMBLY. ONE END IS LOCATED ON THE TOP COVER OF THE VALVE BOX WHERE THE SAMPLE IN GETS CONNECTED AND THE SECOND END IS CONNECTED TO THE MAIN VALVE MANIFOLD. TO REMOVE, TURN THE NUT COUNTER-CLOCKWISE.



STEP 4: ONCE THE OLD SAMPLE LIGHT GATE ASSEMBLY HAS BEEN REMOVED, REPLACE IT WITH THE NEW ASSEMBLY. **NOTE: MAKE SURE THESE CONNECTIONS ARE TIGHT AND SECURE WITHOUT ANY KINKS OR DENTS SO THERE ARE NO LEAKS OR STOPAGES IN THE LINE!!**

STEP 5: LOCATE THE RINSE LIGHT GATE ASSEMBLY. ONE END IS LOCATED ON THE LEFT GROUPING OF VALVES AND THE SECOND END IS CONNECTED TO THE MAIN VALVE MANIFOLD. TO REMOVE, TURN THE NUT COUNTER-CLOCKWISE.



STEP 6: ONCE THE OLD RINSE LIGHT GATE ASSEMBLY HAS BEEN REMOVED, REPLACE IT WITH THE NEW ASSEMBLY. **NOTE: MAKE SURE THESE CONNECTIONS ARE TIGHT AND SECURE WITHOUT ANY KINKS OR DENTS SO THERE ARE NO LEAKS OR STOPAGES IN THE LINE!!**

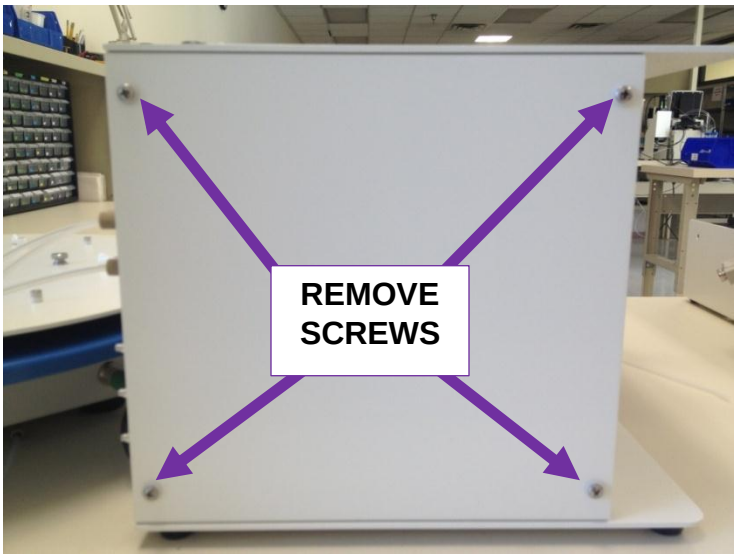
STEP 7: ONCE THE LIGHT GATE ASSEMBLIES HAVE BEEN REPLACED, RETURN THE 4 SCREWS HOLDING THE REAR COVER THEN RE-CONNECT ALL INSTRUMENT HOSES AND CABLES.

REPLACING THE VACUUM PUMP

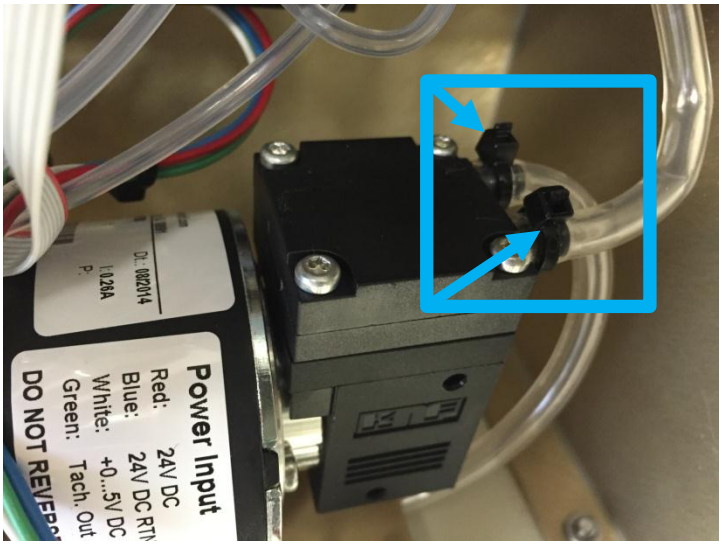
TOOLS AND PARTS NEEDED:

- **A25333 VACUUM PUMP**
- **#2 PHILLIPS HEAD SCREWDRIVER**
- **RAZOR BLADE**
- **WIRE CUTTERS**
- **SPARE ZIP/WIRE TIES**

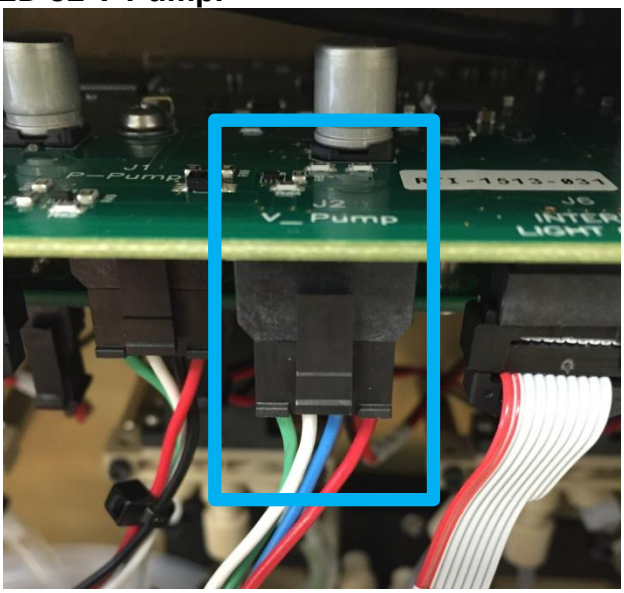
STEP 1: TURN OFF POWER TO THE AUTOMATION SYSTEM AND UNPLUG ALL CABLES AND HOSES AND REMOVE THE 4 SCREWS ON THE REAR COVER OF THE VALVE BOX



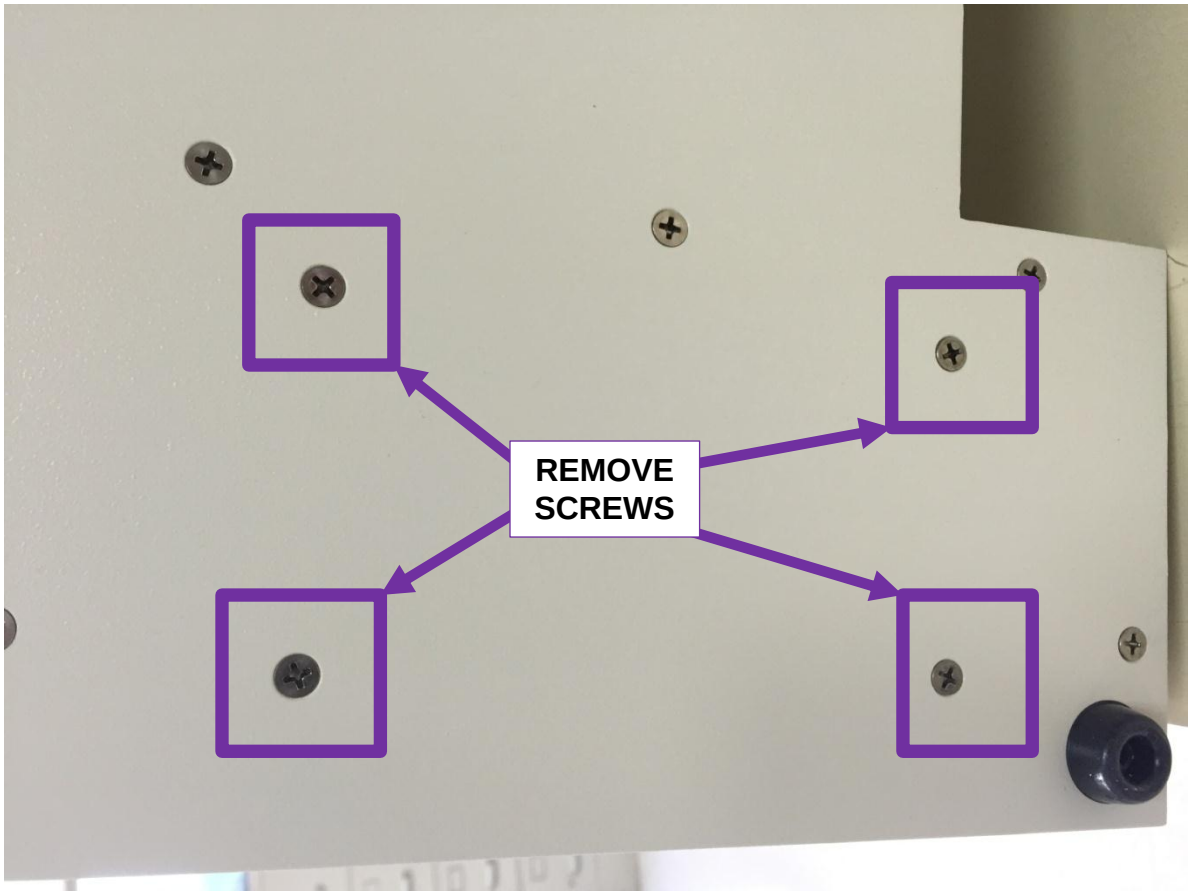
STEP 2: LOCATE THE VACUUM PUMP, THE PUMP ON THE RIGHT, AND GENTLY CUT THE ZIP/WIRE TIES TO THE HOSE CONNECTIONS ON THE TOP. **NOTE: THESE TUBES CAN NOT GET MIXED UP WHEN THEY GET REPLACED, SO PLACE A PIECE OF TAPE OR COLOR ONE TO SHOW WHICH ONE GOES WHERE**



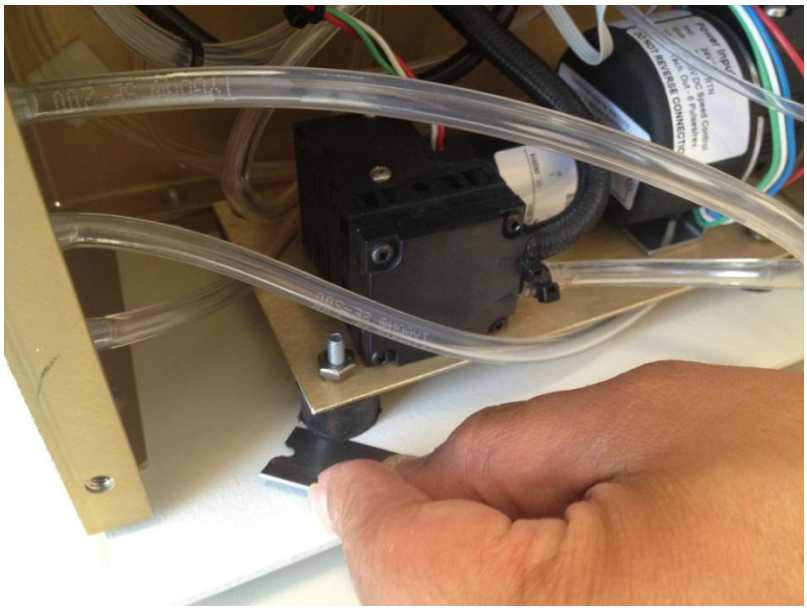
STEP 3: UNPLUG THE VACUUM PUMP CABLE FROM THE VALVE BOX CONTROL BOARD; IT IS LABELED **J2 V-Pump.**



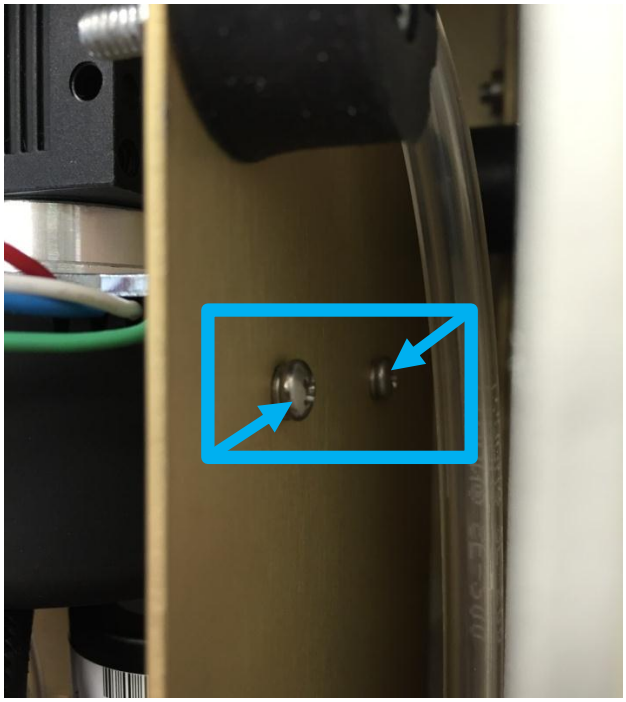
STEP 4: TURN THE VALVE BOX ONTO ITS SIDE AND REMOVE THE 4 SCREWS THAT HOLD THE PUMP MOUNTING PLATE.



STEP 5: USE A RAZOR BLADE OR A SMALL FLAT HEAD SCREWDRIVER TO PRY AND LOOSEN THE FEET FOR THE PUMP ASSEMBLY. **NOTE: DO NOT JUST PULL AT THE PUMP MOUNTING PLATE AS THIS MAY BREAK THE MOUNTING FEET!!!**

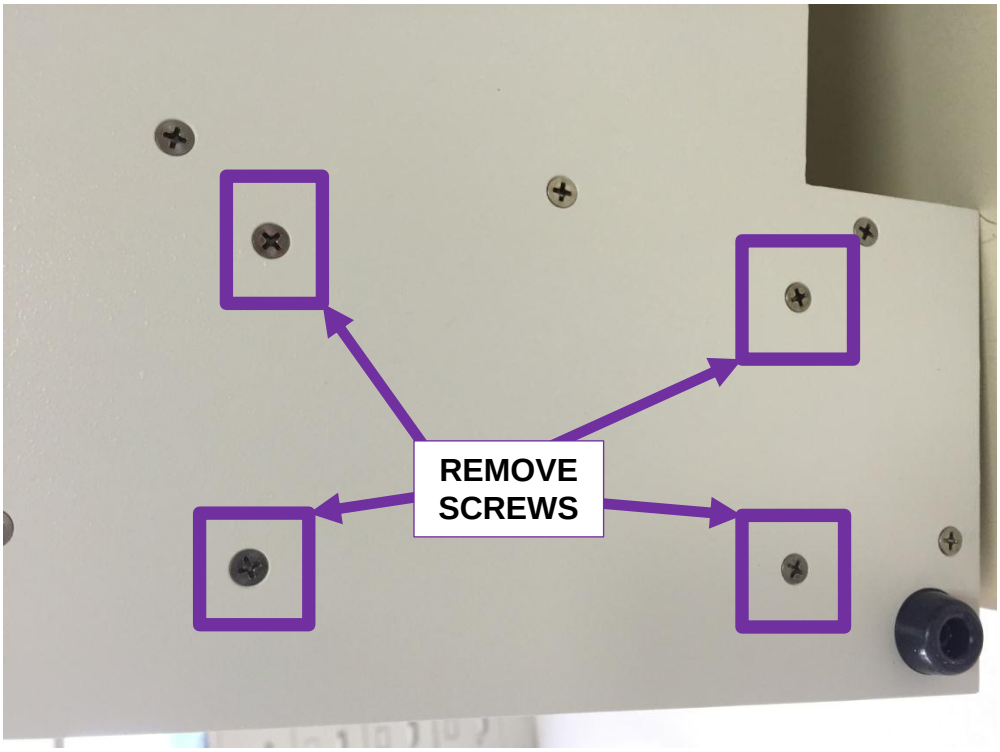


STEP 6: LOCATE THE 2 MOUNTING SCREWS FOR THE VACUUM PUMP AND REMOVE THEM.



STEP 7: REPLACE THE OLD VACUUM PUMP WITH THE NEW ASSEMBLY AND RETURN THE TWO SCREWS THAT ATTACH THE PUMP TO THE MOUNTING PLATE.

STEP 8: RETURN THE PUMP MOUNTING PLATE TO THE VALVE BOX CHASSIS AND RETURN THE FOUR SCREWS. **NOTE: ONLY FINGER TIGHTEN THESE SCREWS, IF YOU OVER TIGHTEN THEM, YOU MAY BREAK OFF THE MOUNTING FEET!!!**



STEP 9: RETURN THE POWER CABLE THAT COMES FROM THE PUMP TO THE VALVE BOX CONTROL BOARD, THEN RETURN THE TWO HOSES TO THE PUMP AND ZIP/WIRE TIE THEM IN PLACE SO THEY DO NOT COME OFF.

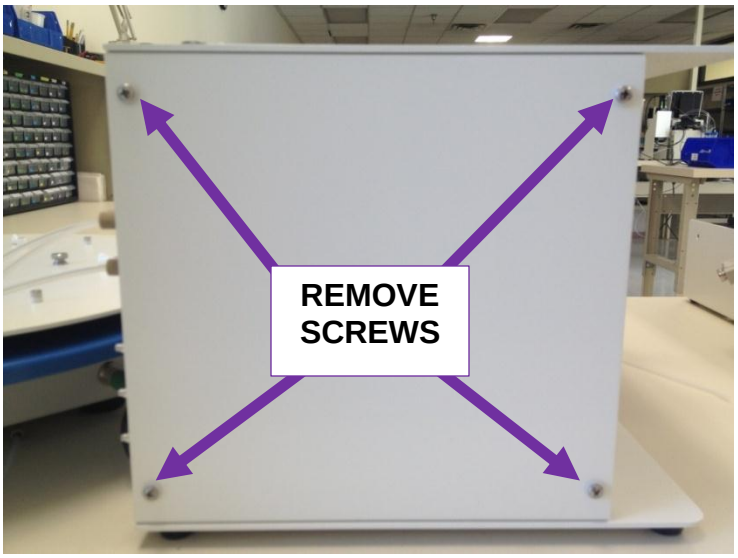
STEP 10: ONCE THE PUMP HAS BEEN REPLACED AND ALL OF THE TUBING CONNECTIONS AND CABLE HAS BEEN RETURNED, RETURN THE 4 SCREWS HOLDING THE REAR COVER THEN RE-CONNECT ALL INSTRUMENT HOSES AND CABLES.

REPLACING THE PRESSURE PUMP

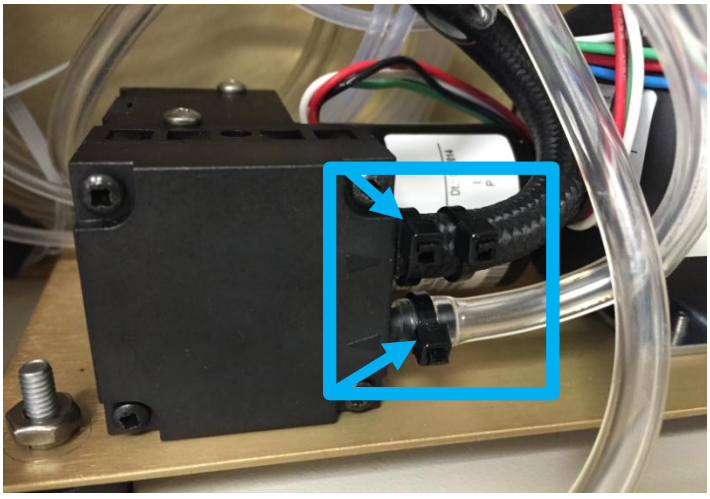
TOOLS AND PARTS NEEDED:

- **A25334 PRESSURE PUMP**
- **#2 PHILLIPS HEAD SCREWDRIVER**
- **RAZOR BLADE**
- **WIRE CUTTERS**
- **SPARE ZIP/WIRE TIES**
- **1/4" WRENCH**

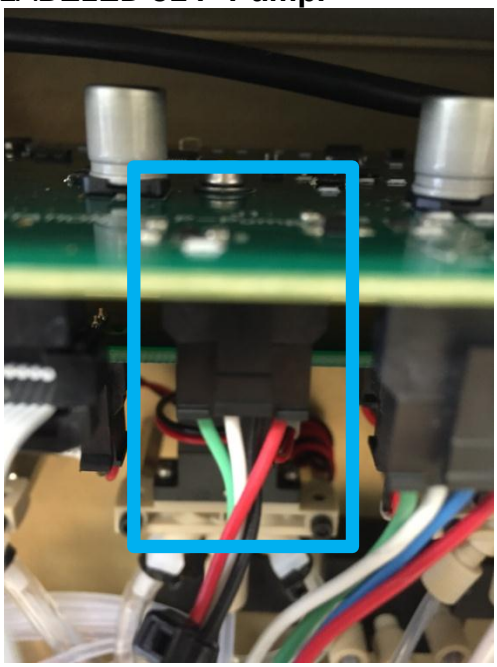
STEP 1: TURN OFF POWER TO THE AUTOMATION SYSTEM AND UNPLUG ALL CABLES AND HOSES AND REMOVE THE 4 SCREWS ON THE REAR COVER OF THE VALVE BOX.



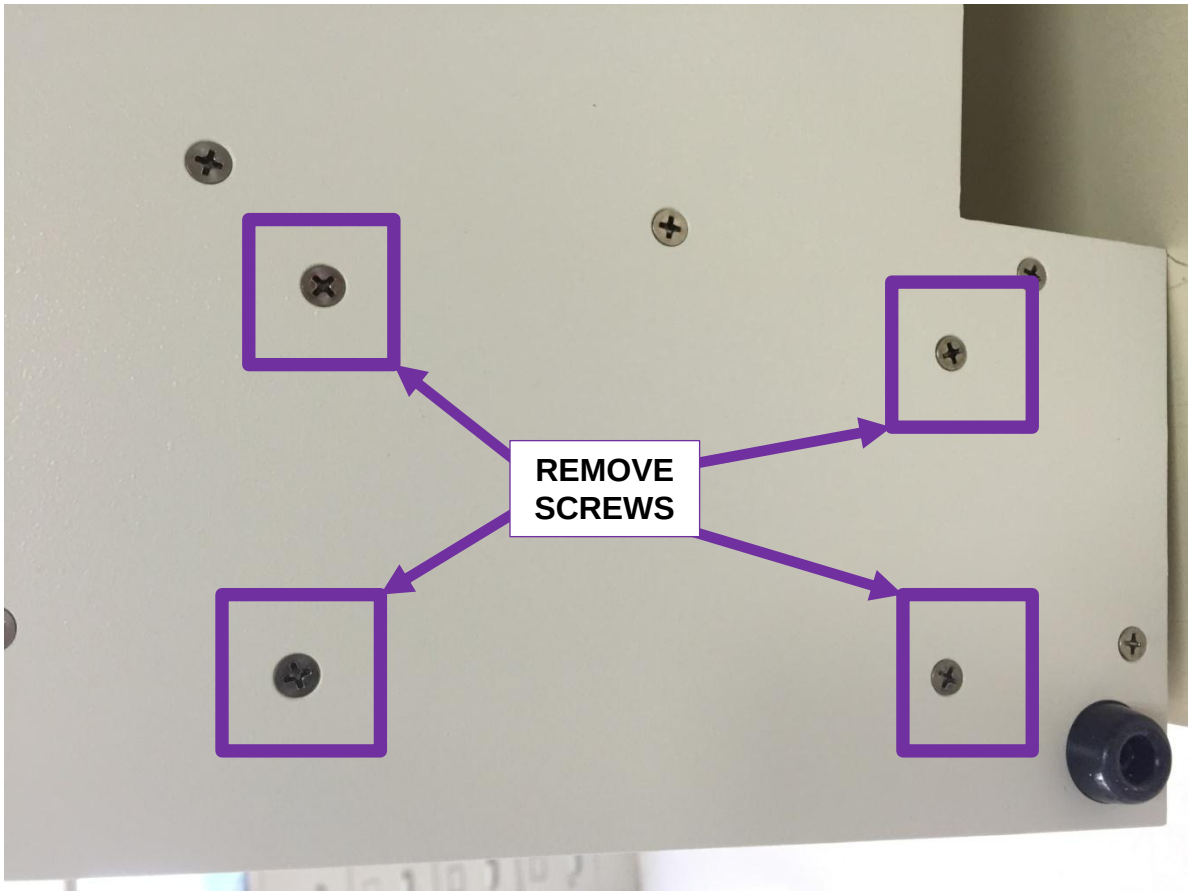
STEP 2: LOCATE THE PRESSURE PUMP, THE PUMP ON THE LEFT, AND GENTLY CUT THE ZIP/WIRE TIES TO THE HOSE CONNECTIONS ON THE TOP. **NOTE: THESE TUBES CAN NOT GET MIXED UP WHEN THEY GET REPLACED, SO PLACE A PIECE OF TAPE OR COLOR ONE TO SHOW WHICH ONE GOES WHERE**



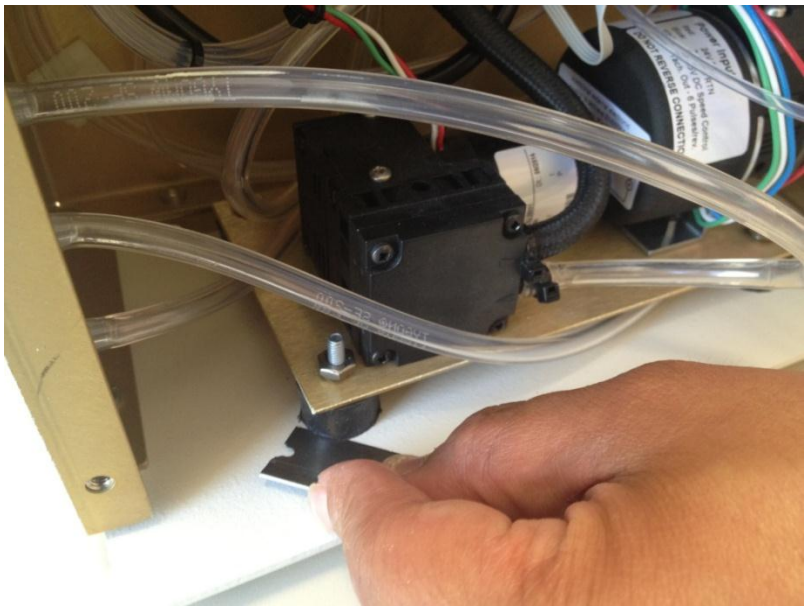
STEP 3: UNPLUG THE PRESSURE PUMP CABLE FROM THE VALVE BOX CONTROL BOARD; IT IS LABELED **J1 P-Pump.**



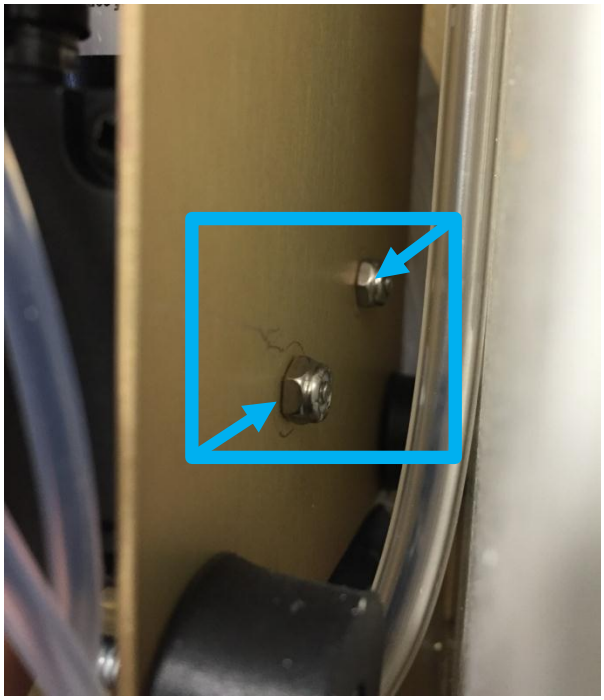
STEP 4: TURN THE VALVE BOX ONTO ITS SIDE AND REMOVE THE 4 SCREWS THAT HOLD THE PUMP MOUNTING PLATE.



STEP 5: USE A RAZOR BLADE OR A SMALL FLAT HEAD SCREWDRIVER TO PRY AND LOOSEN THE FEET FOR THE PUMP ASSEMBLY. **NOTE: DO NOT JUST PULL AT THE PUMP MOUNTING PLATE AS THIS MAY BREAK THE MOUNTING FEET!!!**

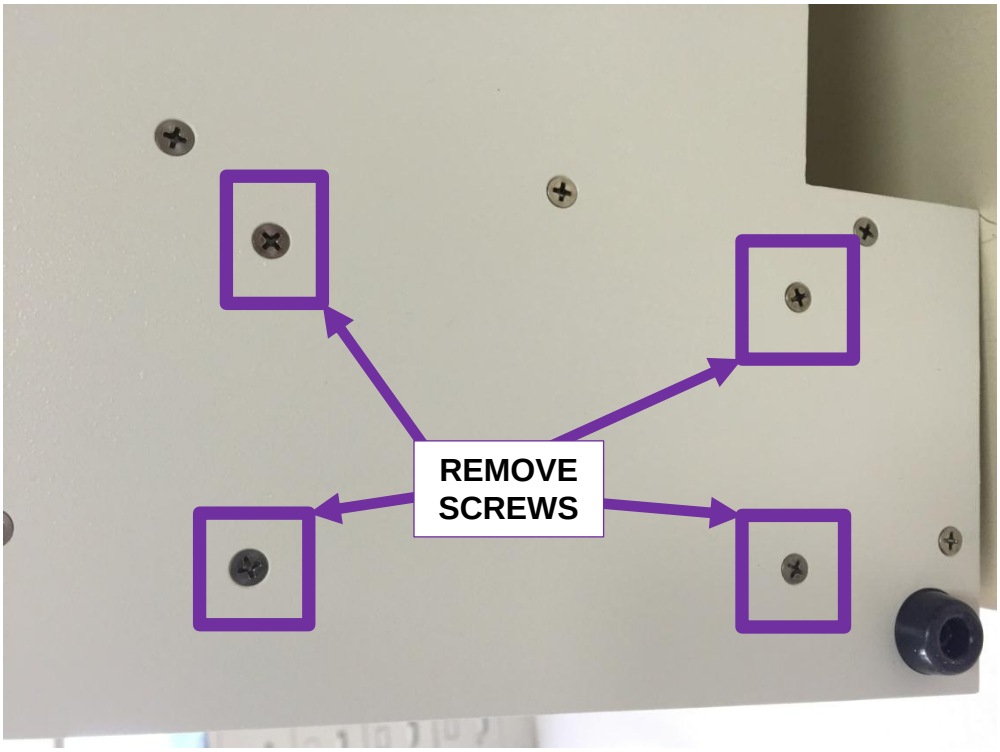


STEP 6: LOCATE THE 2 MOUNTING NUTS FOR THE PRESSURE PUMP AND REMOVE THEM USING THE 1/4" WRENCH.



STEP 7: REPLACE THE OLD PRESSURE PUMP WITH THE NEW ASSEMBLY AND RETURN THE TWO SCREWS THAT ATTACH THE PUMP TO THE MOUNTING PLATE.

STEP 8: RETURN THE PUMP MOUNTING PLATE TO THE VALVE BOX CHASSIS AND RETURN THE FOUR SCREWS. **NOTE: ONLY FINGER TIGHTEN THESE SCREWS, IF YOU OVER TIGHTEN THEM, YOU MAY BREAK OFF THE MOUNTING FEET!!!**



STEP 9: RETURN THE POWER CABLE THAT COMES FROM THE PUMP TO THE VALVE BOX CONTROL BOARD, THEN RETURN THE TWO HOSES TO THE PUMP AND ZIP/WIRE TIE THEM IN PLACE SO THEY DO NOT COME OFF.

STEP 10: ONCE THE PUMP HAS BEEN REPLACED AND ALL OF THE TUBING CONNECTIONS AND CABLE HAS BEEN RETURNED, RETURN THE 4 SCREWS HOLDING THE REAR COVER THEN RE-CONNECT ALL INSTRUMENT HOSES AND CABLES.

REPLACING THE NEEDLE

TOOLS AND PARTS NEEDED:

- **CUSTOM DRILLED NEEDLE**
- **P25998 HEX SCREWDRIVER, FOUND IN NO CHARGE KIT**

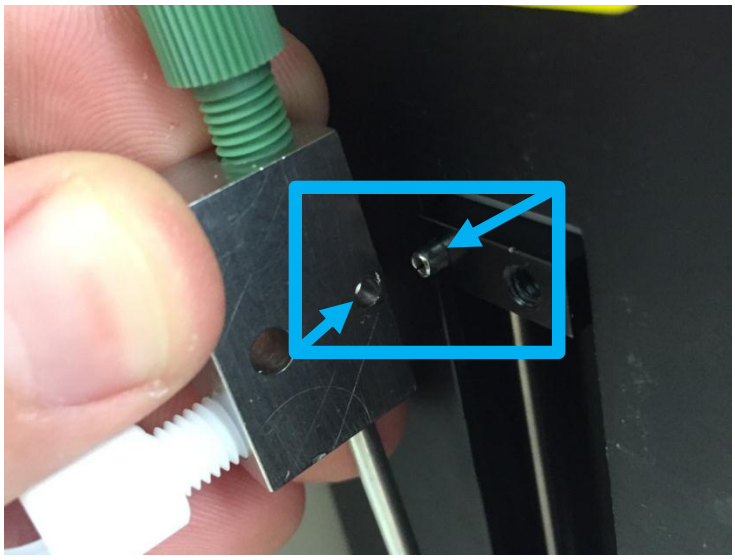
STEP 1: REMOVE THE BLUE NEEDLE COVER FROM THE TOWER.

STEP 2: REMOVE THE SAMPLE TUBING FROM THE TOP OF THE NEEDLE AND THE GAS DISPLACEMENT TUBING FROM THE RIGHT SIDE BY TURNING THEM COUNTER-CLOCKWISE.

STEP 3: USE THE P25998 HEX SCREWDRIVER TO REMOVE THE SCREW HOLDING DOWN THE NEEDLE. ONCE THE SCREW HAS BEEN REMOVED, GENTLY ROCK THE NEEDLE BACK AND FORTH UNTIL IT COMES FREE AND CAREFULLY PULL IT STRAIGH UP UNTIL IT IS FREE FROM THE TOWER.

STEP 4: TAKE THE NEW NEEDLE AND ATTACH THE SAMPLE TUBING TO THE TOP OF THE NEEDLE AND THE GAS DISPLACEMENT TUBING ON THE RIGHT SIDE. **NOTE: MAKE SURE THE CONNECTIONS ARE TIGHT TO ENSURE THERE WILL BE NO LEAKING!!**

STEP 5: CAREFULLY RETURN THE NEEDLE TO THE TOWER BY INSERTING THE TIP OF THE NEEDLE INTO THE MOUNT WITHOUT BENDING IT AND ALIGN THE NEEDLE BY PLACING THE CUTOUT ON THE TOP ALONG WITH THE ROLLPIN ON THE TOWER AND PUSH IN. RETURN THE SCREW THAT HOLDS THE NEEDLE IN PLACE.



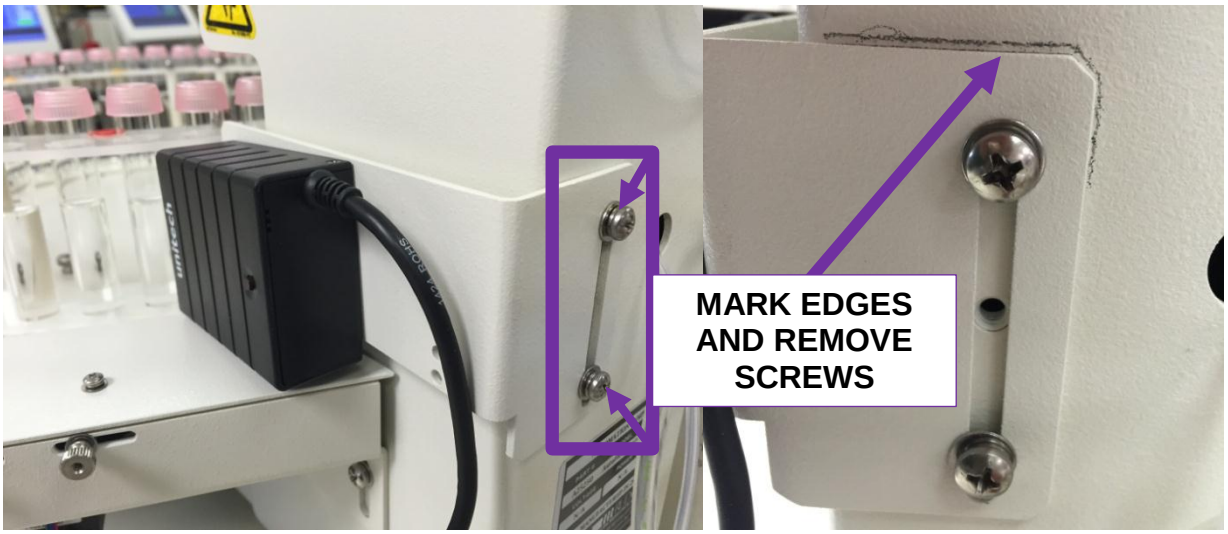
STEP 6: ONCE THE NEEDLE IS SECURED, RETURN THE BLUE NEEDLE COVER.

REPLACING THE VIAL/TUBE SPINNER BELT

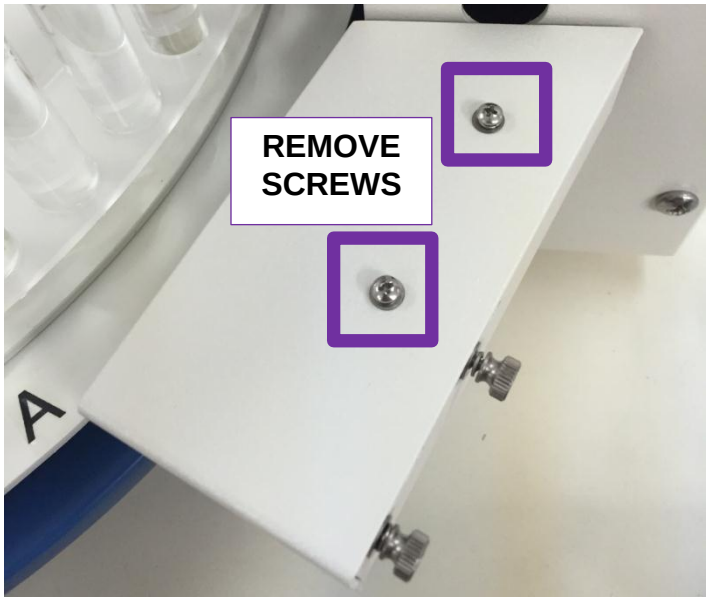
TOOLS AND PARTS NEEDED:

- **A25464 (O-RING/BELT)**
- **#2 PHILLIPS HEAD SCREDRIVER**
- **#1 PHILLIPS HEAD SCREWDRIVER**

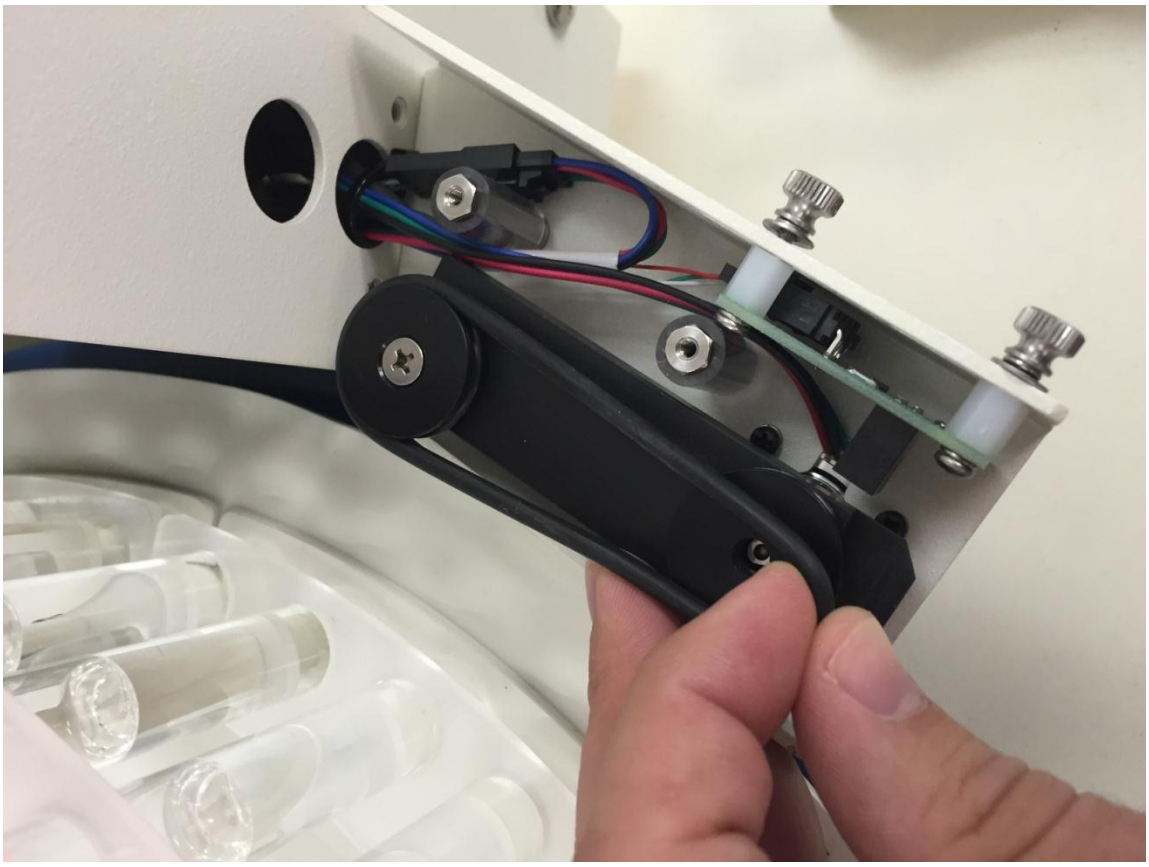
STEP 1: LOCATE THE BARCODE SCANNER AND THE VIAL/TUBE SPINNER ON THE RIGHT SIDE OF THE NEEDLE TOWER AND REMOVE THE BARCODE SCANNER BY REMOVING THE TWO SCREWS LOCATED ON THE BACK OF THE NEEDLE TOWER. **NOTE: MARK THE EDGES OF THE BRACKET FOR ALIGNMENT**



STEP 2: REMOVE THE TOP COVER OF THE VIAL/TUBE SPINNER ASSEMBLY BY REMOVING THE TWO SCREWS ON THE TOP OF THE ASSEMBLY.



STEP 4: REMOVE THE OLD BELT FROM THE VIAL/TUBE SPINNER ARM BY PULLING IT OUT AND OVER THE PULLEYS. THEN REPLACE THE OLD BELT WITH THE NEW ONE USING THE SAME METHOD.



STEP 5: RETURN THE 2 SCREWS FOR THE COVER OF THE VIAL/TUBE SPINNER AND THEN RETURN AND ALIGN THE BARCODE SCANNER AND SECURE IT WITH THE 2 SCREWS.

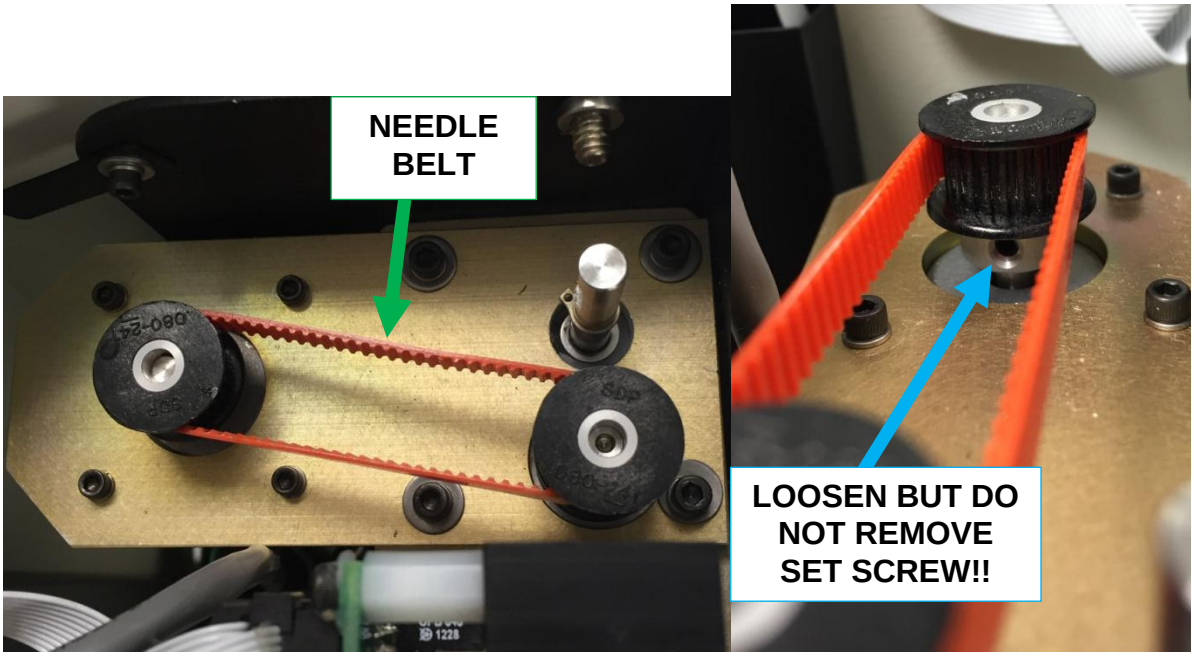
REPLACING THE NEEDLE CONTROL BELT

TOOLS AND PARTS NEEDED:

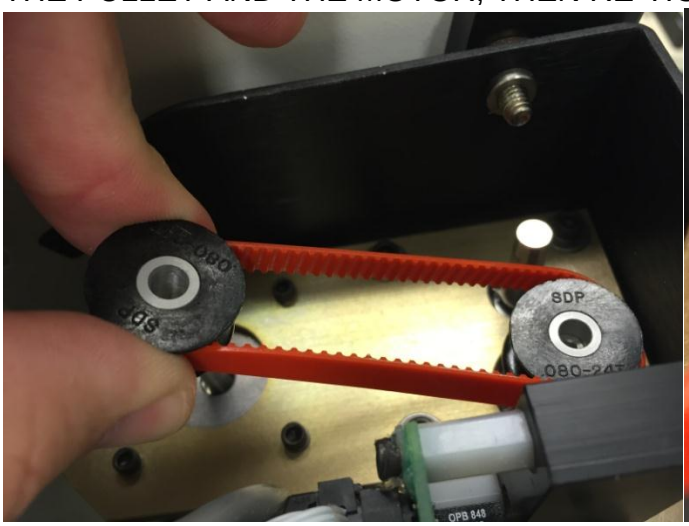
- **P25425 (NEEDLE BELT)**
- **#2 PHILLIPS HEAD SCREWDRIVER**
- **1.5MM ALLEN KEY**

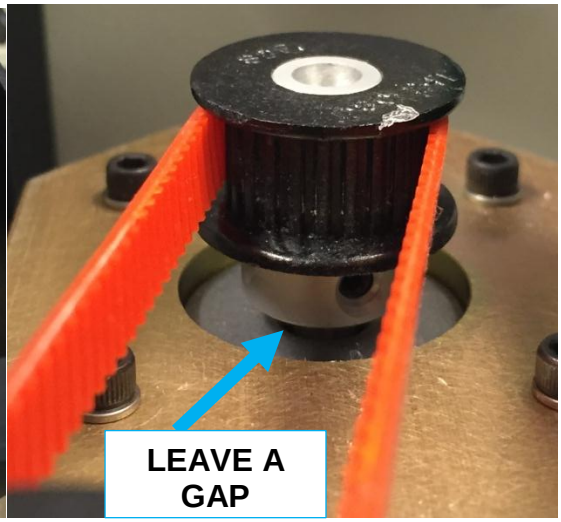
STEP 1: REMOVE THE 4 SCREWS THAT SECURE THE TOP COVER OF THE NEEDLE TOWER AND REMOVE THE COVER.

STEP 2: LOCATE THE NEEDLE BELT AND LOOSEN THE SET SCREW ON THE REAR PULLEY, BUT **DO NOT REMOVE** THE SET SCREW, THEN REMOVE THE PULLEY BY PULLING STRAIGHT UP.

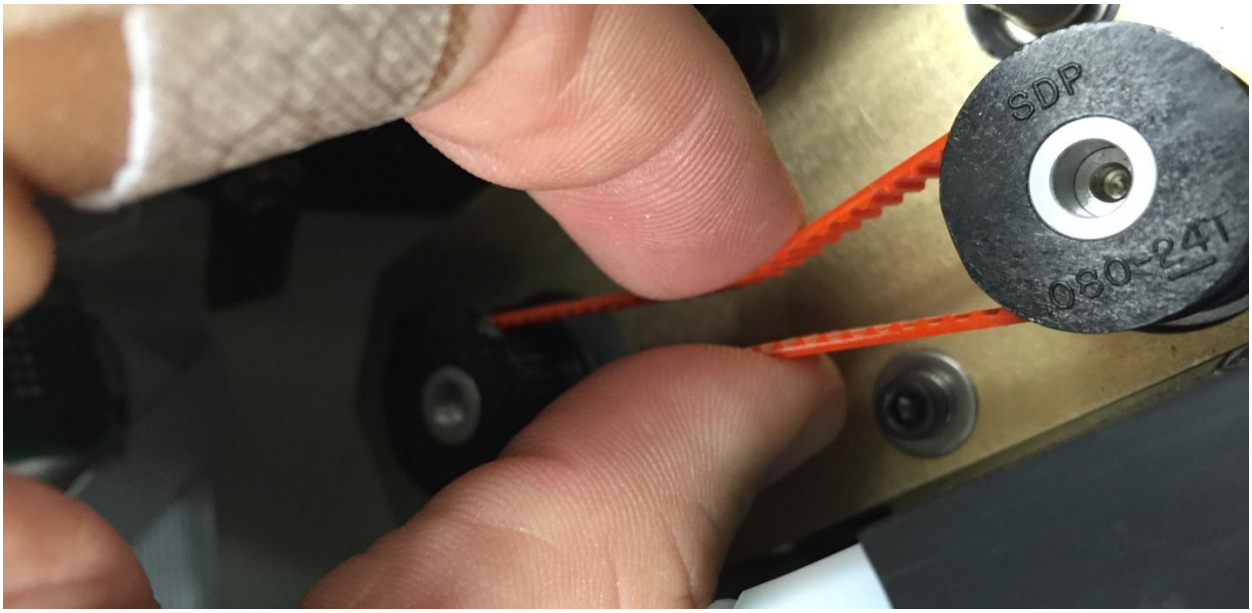


STEP 3: REPLACE THE OLD BELT WITH THE NEW ONE AND RETURN THE BELT AND PULLEY BY USING THE SAME METHOD AS YOU DID WHEN TAKING THE OLD BELT OFF. MAKE SURE THERE IS A GAP IN BETWEEN THE BOTTOM OF THE PULLEY AND THE MOTOR, THEN RE-TIGHTEN THE SET SCREW.





STEP 4: MAKE SURE THE BELT HAS A GOOD TENSION SO IT DOESN'T SLIP OR STOP THE MOTOR FROM TURNING. THE BELT SHOULD NEVER TOUCH OR NOT HAVE ANY GIVE. THERE SHOULD BE A NICE EVEN PRESSURE.



STEP 5: ONCE THE BELT HAS BEEN REPLACED AND TIGHTENED, RETURN THE TOP COVER AND THE 4 SCREWS THAT HOLD IT IN PLACE.

TUBE ASSEMBLING

If the Standard Sized Tubing that has been included in your No-Charge Kit is insufficient in length or has been damaged over time with heavy use, there may be a need to create new tubing to replace the old ones. This guide will show you the best and correct method to fabricate any size tubing for any need.

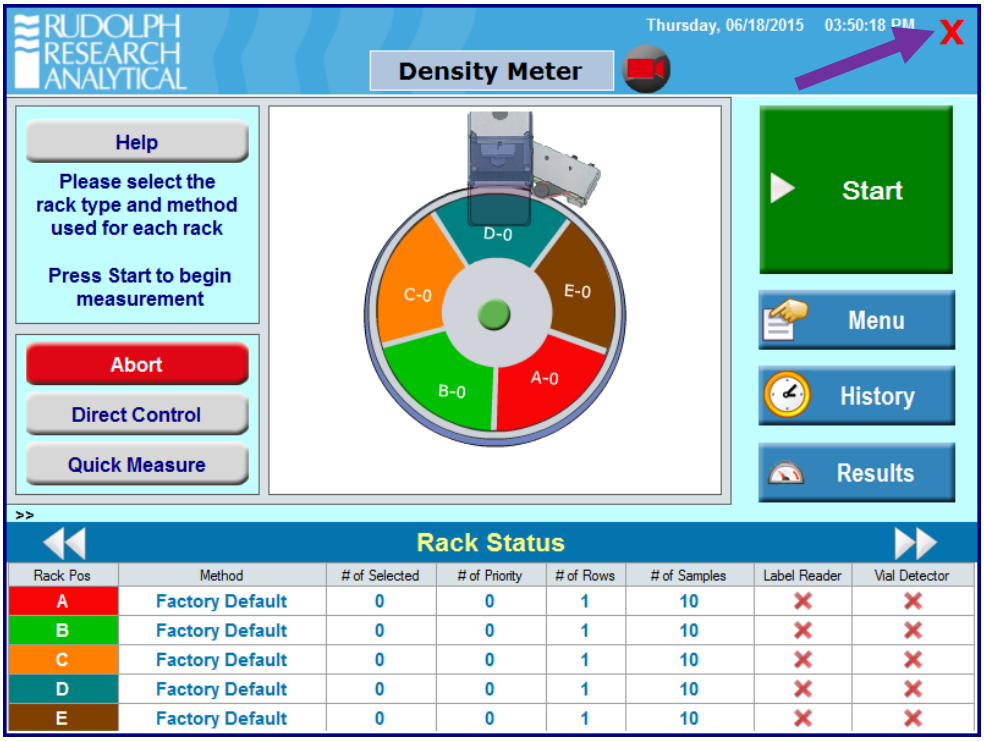
Step 1: Locate the large roll of tubing P20132 in the No Charge Kit provided along with P20134 (Yellow Ferrules), P23128 (Nuts) and P22152 (Tube Cutter). 0

Step 2: To properly cut the tubing so there will be no kinks, accidental gashes or miss cuts, use the P22152 Tube Cutter. First, measure the proper length of tubing you will need for your application then use the outside of the tube cutter to make a rough cut, See figure 2a. Second, insert about 3/16" or 1cm of the tubing into the first hole of the tube cutter to make a perfect 90 degree cut so there will not be any leaks from a miss cut.

Step 3: Once the correct length of tubing has been made and each end has been properly cut to a 90 degree angle, you can assemble the rest by placing (2) P20134 Yellow Ferrules and (2) P23128 Nuts on the tubing. First, you will run the tubing through the Nuts with the threads facing the ends of the tubing. Second, run the tubing into the angled / flanged part of the Yellow Ferrules and pull through.

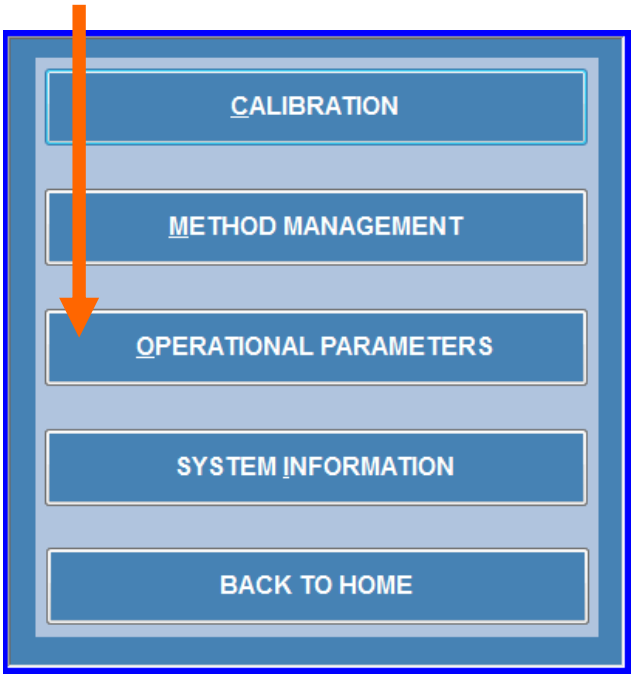
NAVIGATING TO AND ACCESSING TERMINAL

STEP 1: CLOSE OUT THE AUTOFLEX INTERFACE BY PRESSING THE RED X.

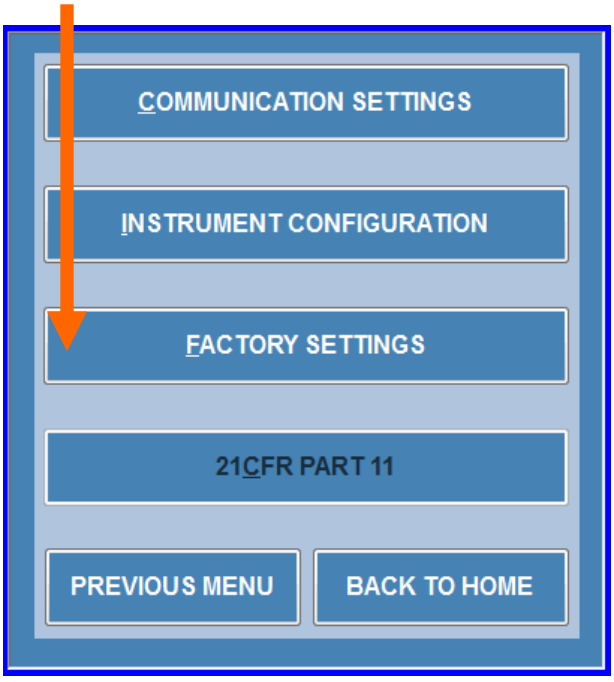


STEP 2: FROM THE MAIN DENSITY SCREEN PRESS **MENU**

STEP 3: PRESS **OPERATIONAL PARAMETERS**

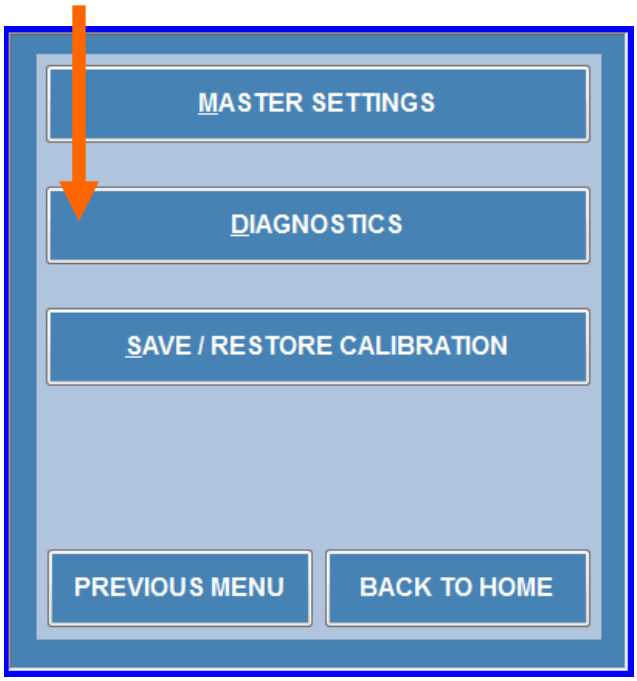


STEP 4: PRESS **FACTORY SETTINGS**

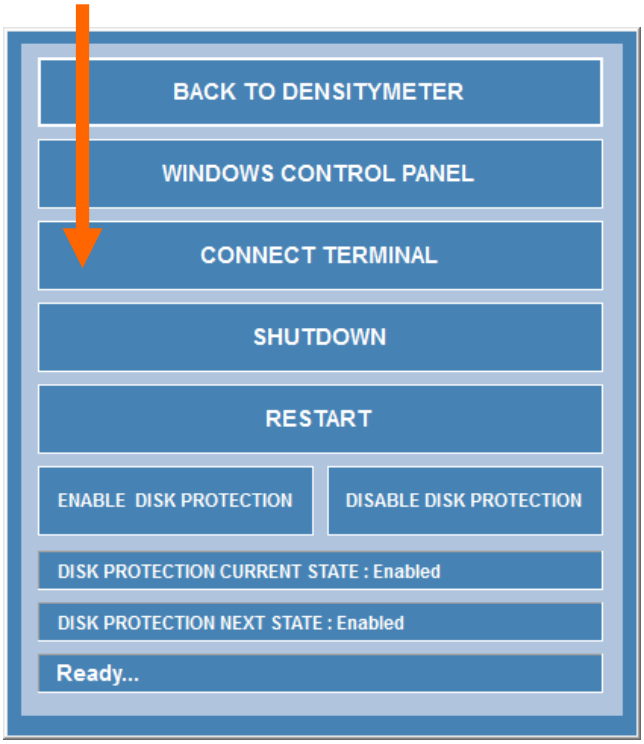


STEP 5: ENTER THE FACTORY PASSWORD **007** AND PRESS **OK**

STEP 6: PRESS **DIAGNOSTICS**

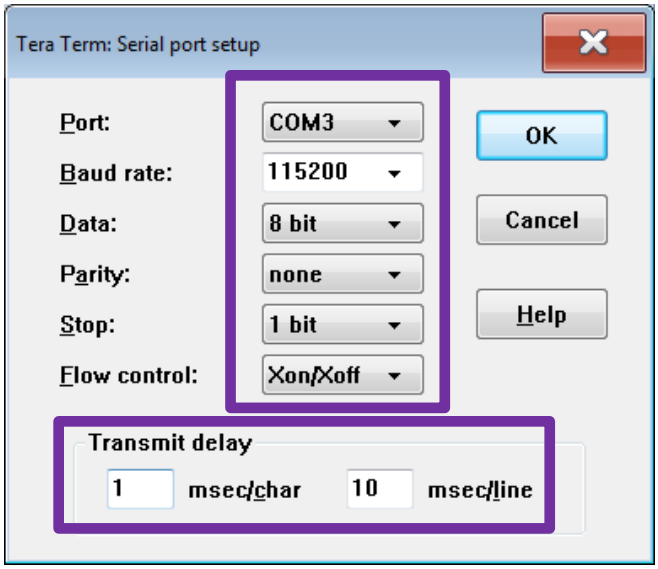


STEP 7: PRESS **CONNECT TERMINAL**



STEP 8: WHEN THE TERMINAL SCREEN OPENS, SET-UP THE SERIAL PORT CONNECTION.

- PRESS **SETUP** (LOCATED ON THE MENU BAR)
- PRESS **SERIAL PORT**
- CHANGE THE PARAMETERS TO MATCH THE PHOTO BELOW



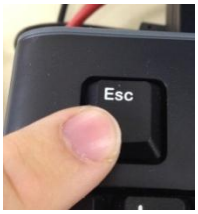
- PRESS **OK**

STEP 9: ENTER THE FOLLOWING KEYSTROKES TO GET A PROMPT:

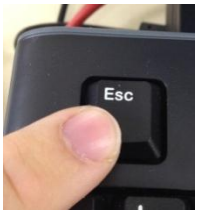
ESC, ESC, CTRL C, 1, 2, 3, G

NOTE: THE "CTRL" BUTTON AND "C" BUTTON MUST BE PRESSED AT THE SAME TIME!!! THIS HAS TO BE COMPLETED VERY FAST AND WITHOUT MISTAKES!! IF YOU DID IT TOO SLOW OR MADE MISTAKE, PRESS THE ENTER BUTTON 5 TIMES AND TRY AGAIN!!!

ESC

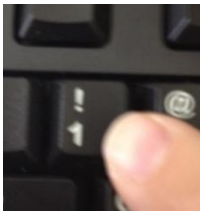


ESC

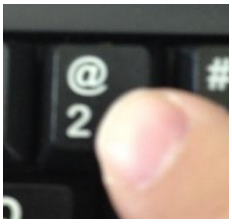


CTRL C

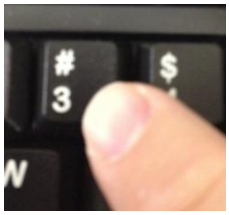
1



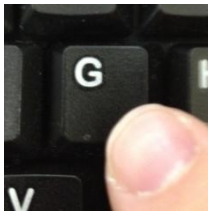
2



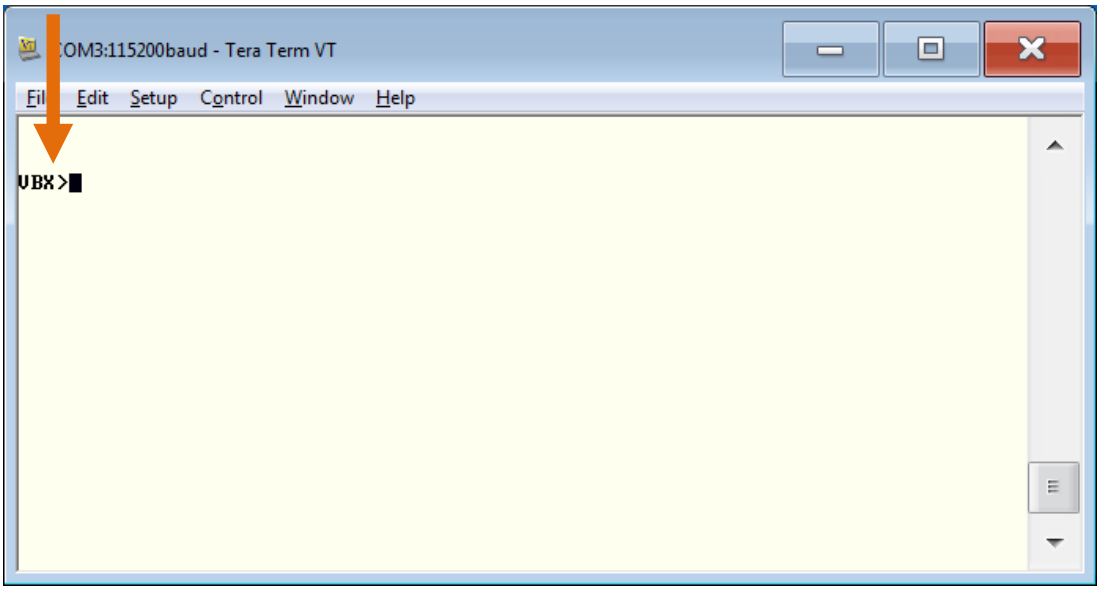
3



G

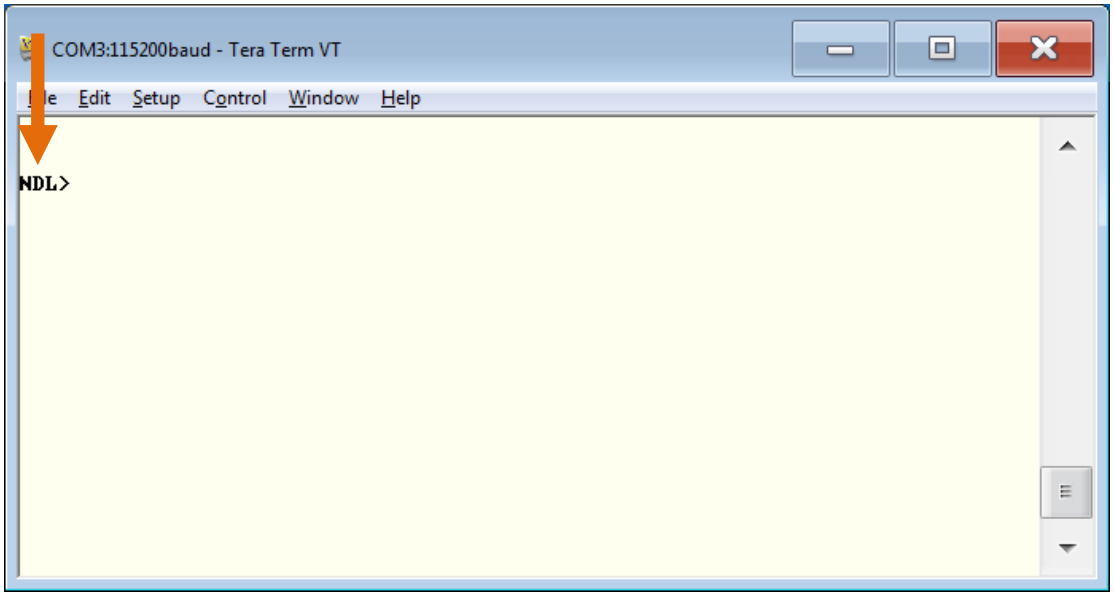


IF THE KEYSTROKES WERE DONE CORRECTLY, YOU WILL SEE A VBX COMMAND PROMPT ON THE TERMINAL WINDOW. THIS WILL GIVE YOU ACCESS TO THE VALVE BOX FIRMWARE ONLY TO CONTROL THE VALVES AND PUMPS.



STEP 10: TO ACCESS THE NEEDLE FIRMWARE TYPE THE LETTER **p** AND THEN THE ENTER KEY. THIS WILL CLOSE THE VALVE BOX COMMUNICATION. THEN, RE-DO, **ESC ESC CTRL C 1 2 3 G**, TO GET THE NDL COMMAND PROMPT.

- VBX> **p <ENTER>**
- **ESC ESC CTRL C 1 2 3 G**

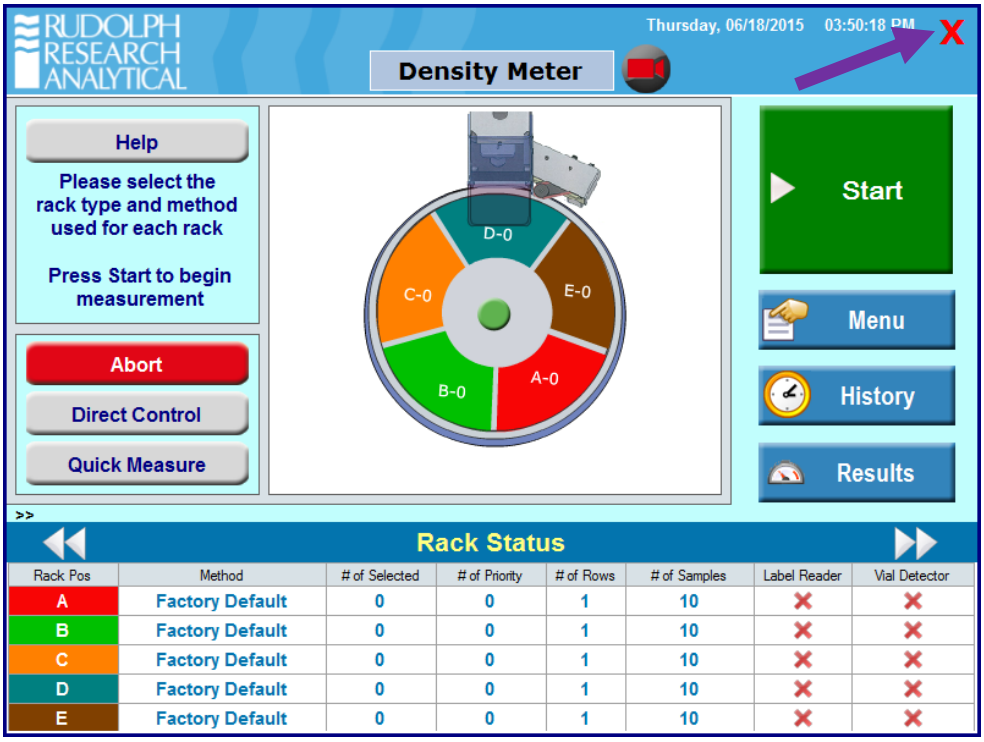


ONCE IN THE NEEDLE FIRMWARE, YOU CAN CONTROL THE SAMPLE CAROUSEL AND THE NEEDLE ASSEMBLY.

NOTE: FOR HELP ON COMMANDS FOR THE FIRMWARE, TYPE 123h AND PRESS ENTER TO ACCESS THE HELP MENU FOR THE COMMANDS AND ALL OF THEIR FUNCTIONS FOR THE NEEDLE AND VALVEBOX.

BACKING UP AND RESTORING FIRMWARE SETTINGS

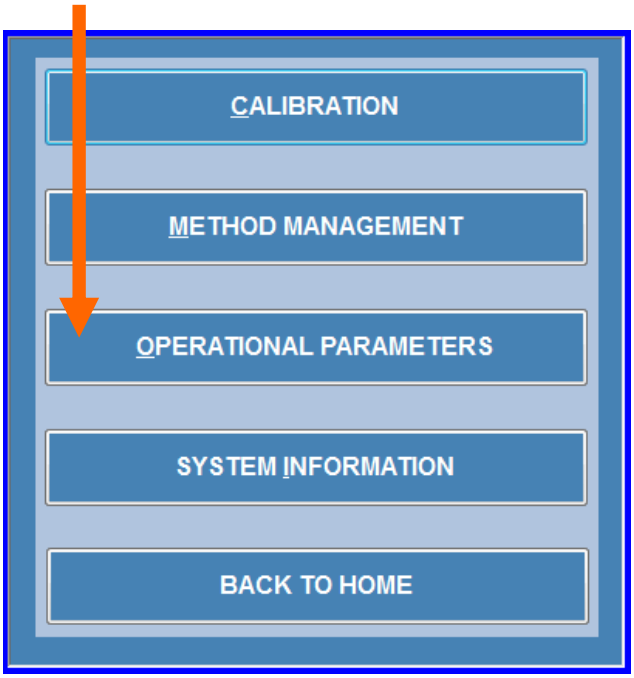
STEP 1: CLOSE OUT THE AUTOFLEX INTERFACE BY PRESSING THE RED X.



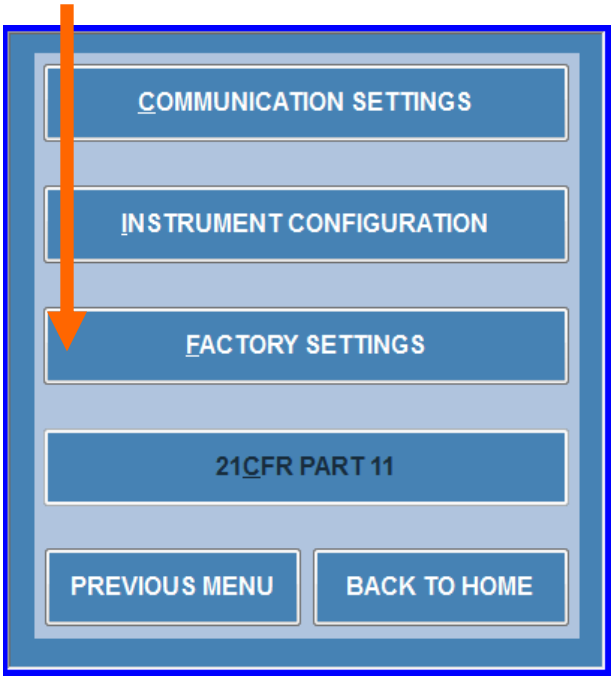
Rack Pos	Method	# of Selected	# of Priority	# of Rows	# of Samples	Label Reader	Vial Detector
A	Factory Default	0	0	1	10	✗	✗
B	Factory Default	0	0	1	10	✗	✗
C	Factory Default	0	0	1	10	✗	✗
D	Factory Default	0	0	1	10	✗	✗
E	Factory Default	0	0	1	10	✗	✗

STEP 2: FROM THE MAIN DENSITY SCREEN PRESS **MENU**

STEP 3: PRESS **OPERATIONAL PARAMETERS**

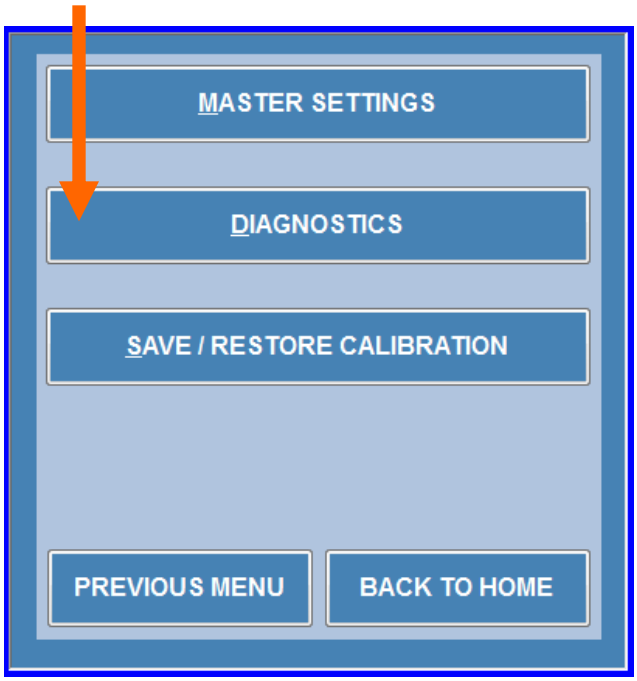


STEP 4: PRESS **FACTORY SETTINGS**

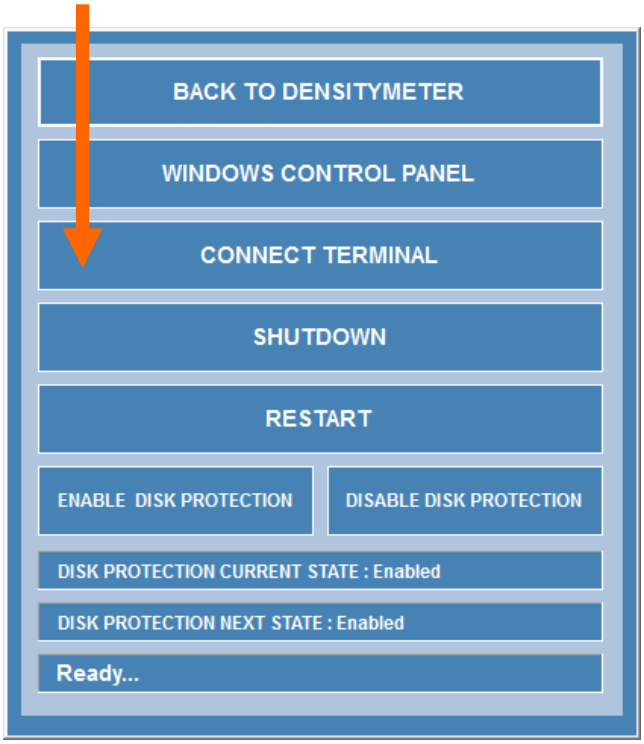


STEP 5: ENTER THE FACTORY PASSWORD **007** AND PRESS **OK**

STEP 6: PRESS **DIAGNOSTICS**

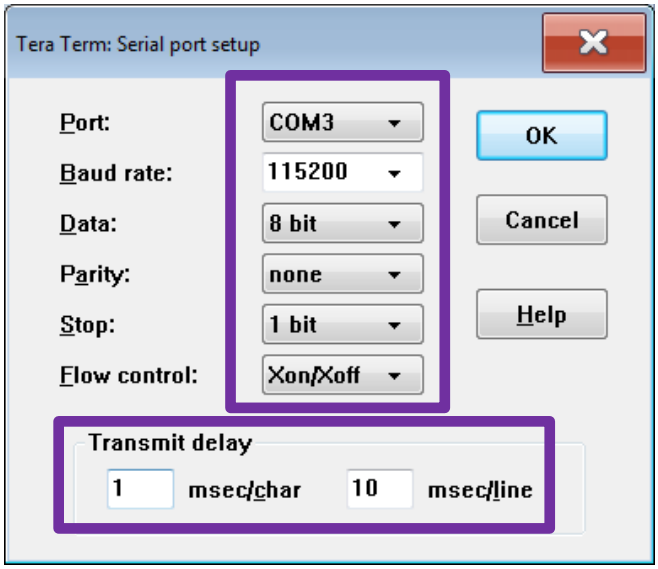


STEP 7: PRESS **CONNECT TERMINAL**



STEP 8: WHEN THE TERMINAL SCREEN OPENS, SET-UP THE SERIAL PORT CONNECTION.

- PRESS **SETUP** (LOCATED ON THE MENU BAR)
- PRESS **SERIAL PORT**
- CHANGE THE PARAMETERS TO MATCH THE PHOTO BELOW



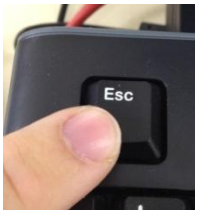
- PRESS **OK**

STEP 9: ENTER THE FOLLOWING KEYSTROKES TO GET A PROMPT:

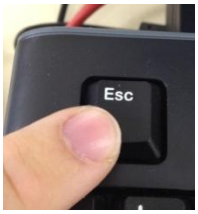
ESC, ESC, CTRL C, 1, 2, 3, G

NOTE: THE "CTRL" BUTTON AND "C" BUTTON MUST BE PRESSED AT THE SAME TIME!!! THIS HAS TO BE COMPLETED VERY FAST AND WITHOUT MISTAKES!! IF YOU DID IT TOO SLOW OR MADE MISTAKE, PRESS THE ENTER BUTTON 5 TIMES AND TRY AGAIN!!!

ESC

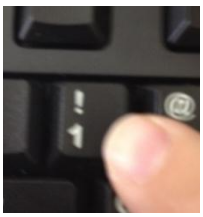


ESC

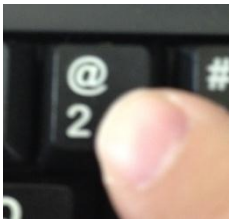


CTRL C

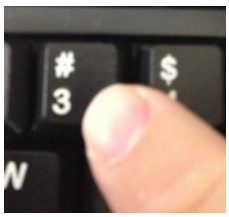
1



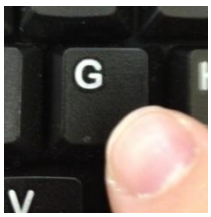
2



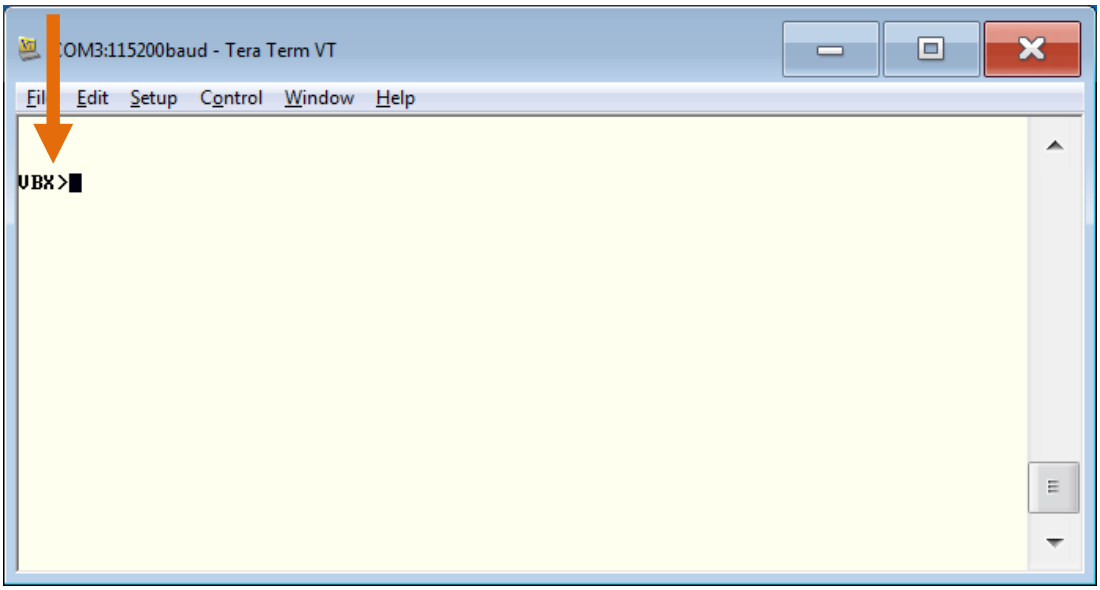
3



G

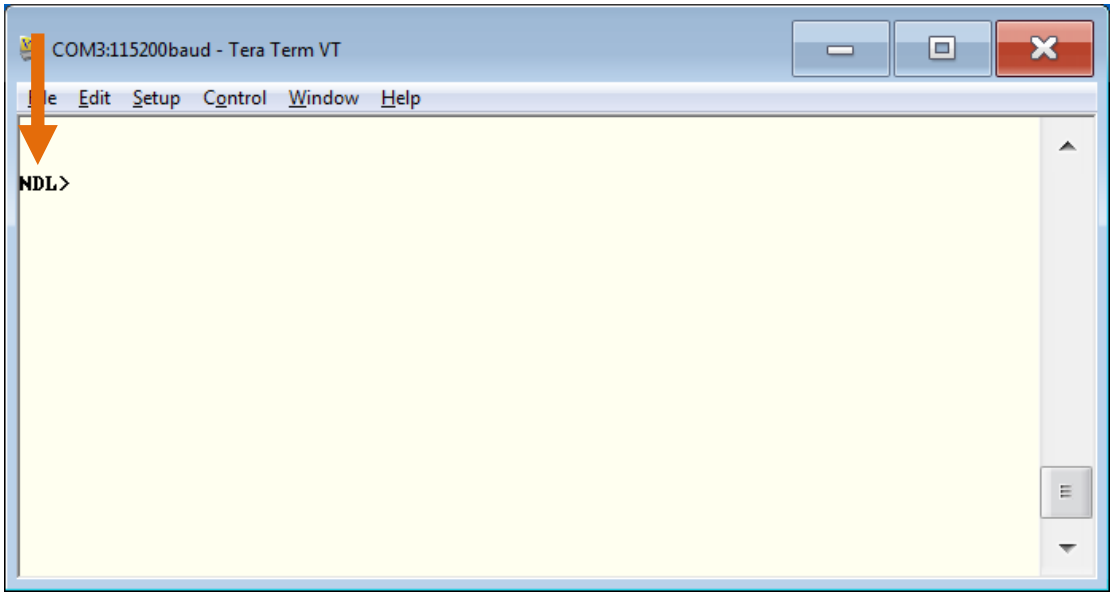


IF THE KEYSTROKES WERE DONE CORRECTLY, YOU WILL SEE A VBX COMMAND PROMPT ON THE TERMINAL WINDOW. THIS WILL GIVE YOU ACCESS TO THE VALVE BOX FIRMWARE ONLY TO CONTROL THE VALVES AND PUMPS.



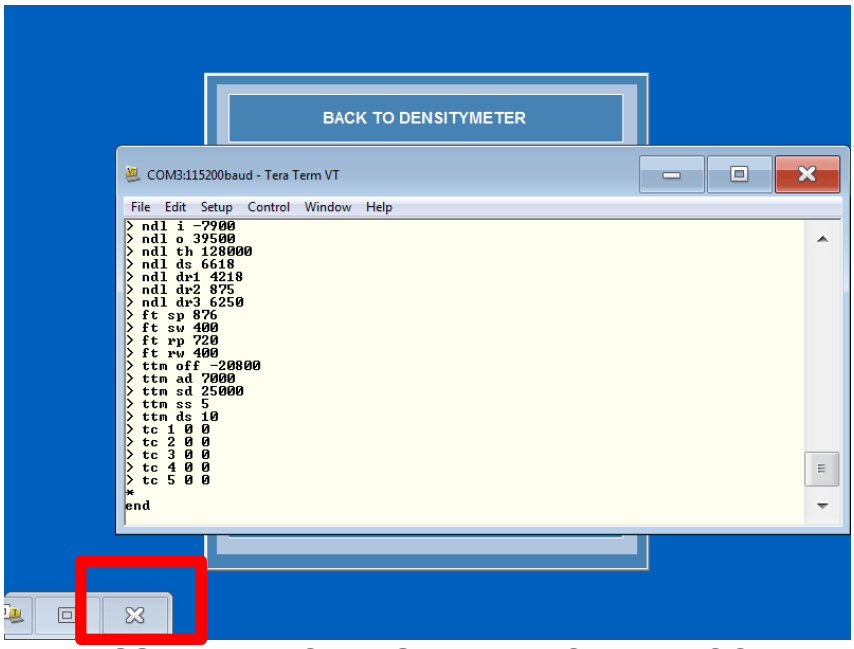
STEP 10: TO ACCESS THE NEEDLE FIRMWARE TYPE THE LETTER **p** AND THEN THE ENTER KEY. THIS WILL CLOSE THE VALVE BOX COMMUNICATION. THEN, RE-DO, **ESC ESC CTRL C 1 2 3 G**, TO GET THE NDL COMMAND PROMPT.

- VBX> **p <ENTER>**
- **ESC ESC CTRL C 1 2 3 G**



STEP 11: TO COMPLETE A BACKUP FOR THE NEEDLE FIRMWARE, COMPLETE THE FOLLOWING STEPS. **SKIP TO STEP 13 TO COMPLETE A NEEDLE FIRMWARE SETTING RESTORE.**

- NDL> **backup** **<ENTER KEY>**
- PRESS **FILE**
- PRESS **LOG**
- SAVE THE FILE TO THE BACKUP FOLDER IN THE AUTOFLEXR837 FOLDER. NAME THE FILE WITH THE DATE AND SERIAL NUMBER OF THE INSTRUMENT.
- PRESS **SAVE**
- PRESS **ENTER** TO START THE BACKUP
- EXIT OUT OF THE LOG MENU BY CLOSING OUT THE WINDOW ON THE BOTTOM LEFT OF THE SCREEN.



- PRESS ENTER TO FINISH THE BACKUP PROCEDURE.

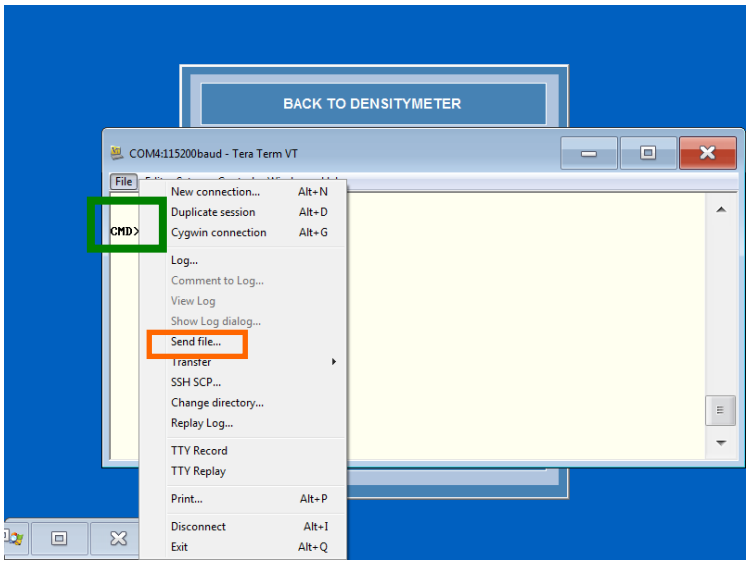
STEP 12: EXIT OUT OF TERMINAL AND GO BACK TO THE AUTOFLEX APPLICATION.

- NDL> **exit** **(THIS WILL CLOSE THE NEEDLE FIRMWARE)**
- PRESS THE **TAB** KEY
- VBX> **exit** **(THIS WILL CLOSE THE VALVE BOX FIRMWARE)**
- PRESS THE RED X TO CLOSE THE TERMINAL PROGRAM
- PRESS **BACK TO DENSITY METER**

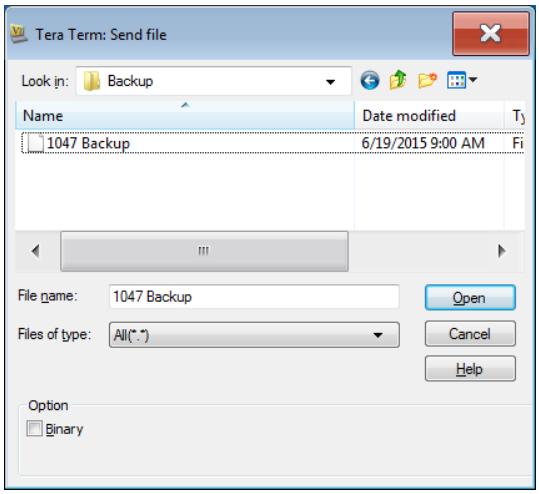
STEP 13: TO COMPLETE A NEEDLE FIRMWARE SETTING RESTORE, COMPLETE THE FOLLOWING STEPS:

- NDL> **restore**

- SELECT **FILE**
- SELECT **SEND FILE**



- LOCATE AND SELECT THE INSTRUMENT BACKUP FILE INSIDE – **C:/AUTOFLEXR837/BACKUP**



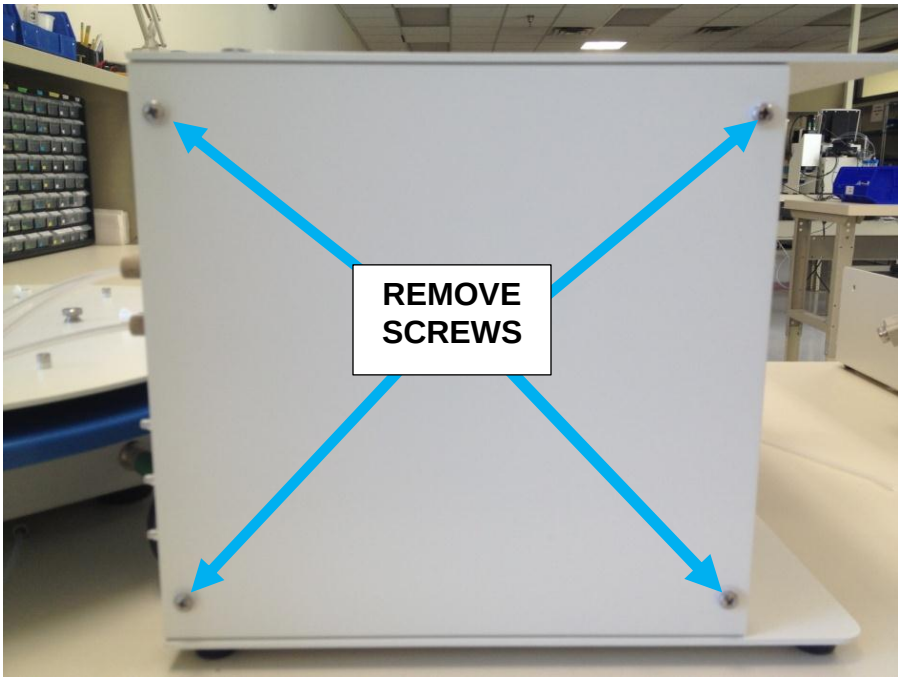
- AFTER THE FILE HAS BEEN SELECTED, THE BAKUP FILE WILL AUTOMATICALLY UPLOAD TO THE FIRMWARE AND PROMPT YOU WHEN IT HAS SUCCESSFULLY LOADED.

STEP 13: EXIT OUT OF TERMINAL AND GO BACK TO THE AUTOFLEX APPLICATION.

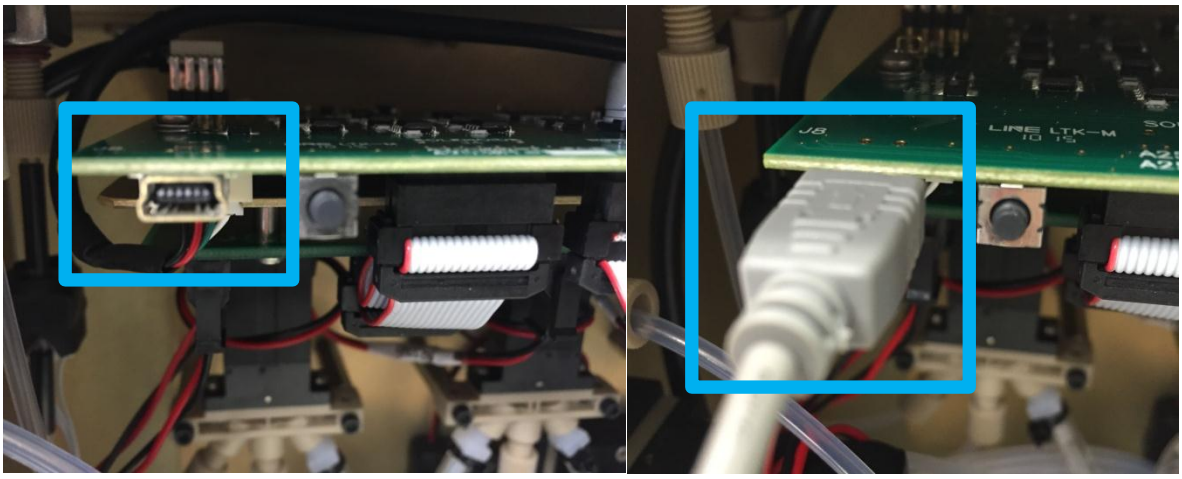
- NDL> **exit** **(THIS WILL CLOSE THE NEEDLE FIRMWARE)**
- PRESS THE **TAB** KEY
- VBX> **exit** **(THIS WILL CLOSE THE VALVE BOX FIRMWARE)**
- EXIT OUT OF TERMINAL AND PRESS **BACK TO DENSITY METER.**

VALVE BOX FIRMWARE UPGRADE

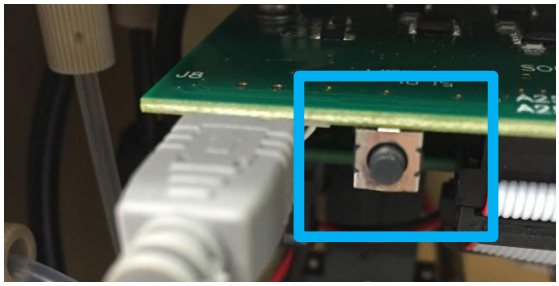
STEP 1: REMOVE THE 4 SCREWS ON THE REAR COVER OF THE VALVE BOX TO ACCESS THE VALVE BOX CONTROL BOARD.



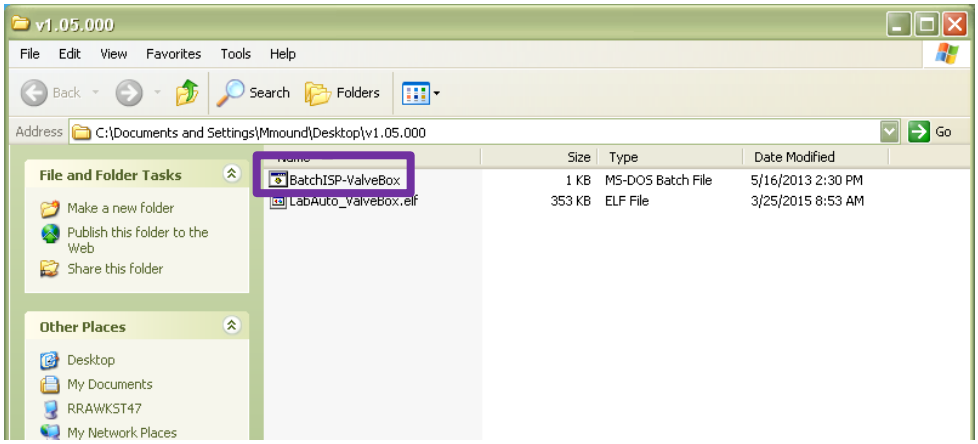
STEP 2: PLUG IN THE USB-B CONNECTOR INTO THE CONTROLLER BOARD AND THE REGULAR USB END INTO A PC RUNNING FLIP PROGRAMMING, WITH THE DENSITY METER ON. **NOTE: RRA WILL PROVIDE YOU WITH THE PROPER SOFTWARE AND INSTRUCTIONS TO INSTALL!!**



STEP 3: PRESS AND HOLD THE SWITCH UNTIL YOU HEAR A LONG BEEP THEN LET GOTO RE-SET THE CONTROLLER BOARD.



STEP 4: WHEN THE CONTROLLER BOARD STOPS ITS BEEP, OPEN THE CURRENT FIRMWARE **BATCHISP** FILE ON THE PC RUNNING THE FLIP PROGRAM. THE FILE SHOULD BE IN A FOLDER LABELED THE FIRMWARE VERSION NUMBER.



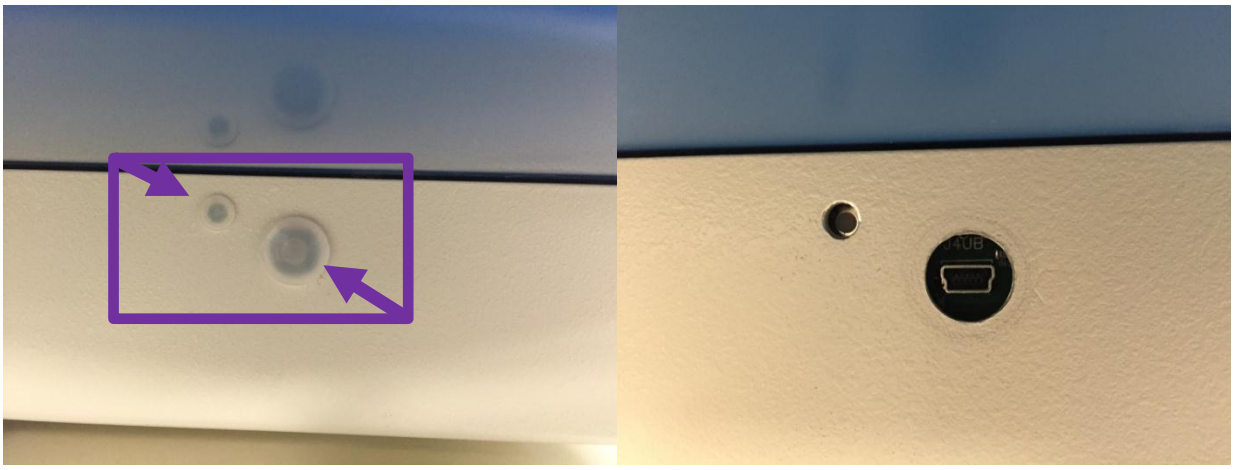
STEP 5: WHEN THE PROGRAMMING IS DONE AND HAS PASSED, THE CONTROLLER BOARD WILL BEEP ONCE.

STEP 6: RESTORE THE BACKUP FILE FOR THE VALVE BOX. GO TO PAGE 45 TO FOLLOW THE STEPS TO COMPLETE A RESTORE.

STEP 7: ONCE THE BACKUP FILE HAS BEEN RESTORED, RETURN THE COVER OF THE VALVE BOX WITH THE 4 SCREWS.

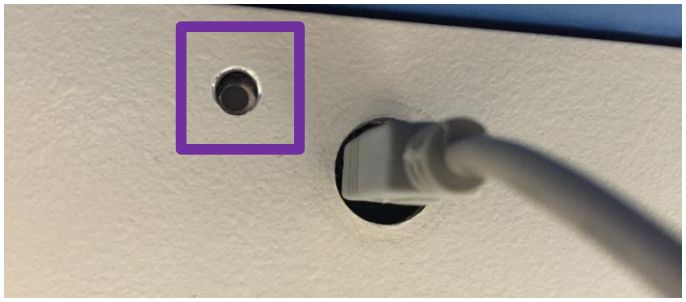
NEEDLE FIRMWARE UPGRADE

STEP 1: LOCATE THE TWO CAPS BELOW THE SAMPLE CAROUSEL PLATE AND USE A THIN FLATHEAD SCREWDRIVER OR FLAT OBJECT TO PRY BOTH OF THEM FREE AND EXPOSE THE USB PORT AND SWITCH.

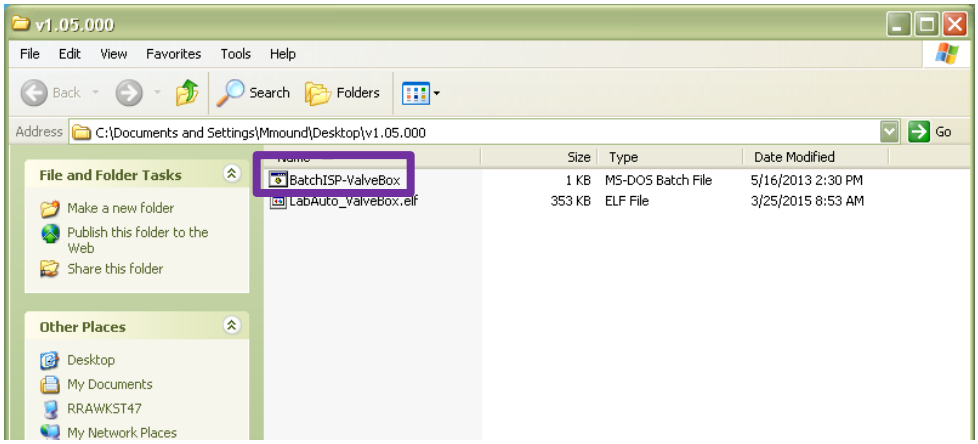


STEP 2: PLUG IN THE USB-B CONNECTOR INTO THE CONTROLLER BOARD AND THE REGULAR USB END INTO A PC RUNNING FLIP PROGRAMMING, WITH THE DENSITY METER ON. **NOTE: RRA WILL PROVIDE YOU WITH THE PROPER SOFTWARE AND INSTRUCTIONS TO INSTALL!!**

STEP 3: PRESS AND HOLD THE SWITCH UNTIL YOU HEAR A LONG BEEP THEN LET GOTO RE-SET THE CONTROLLER BOARD. YOU WILL NEED SOMETHING TO PRESS AND HOLD THE BUTTON WITH SINCE YOU WILL NOT BE ABLE TO PRESS THE BUTTON WITH YOUR FINGER.



STEP 4: WHEN THE CONTROLLER BOARD STOPS ITS BEEP, OPEN THE CURRENT FIRMWARE **BATCHISP** FILE ON THE PC RUNNING THE FLIP PROGRAM. THE FILE SHOULD BE IN A FOLDER LABELED THE FIRMWARE VERSION NUMBER.



STEP 5: WHEN THE PROGRAMMING IS DONE AND HAS PASSED, THE CONTROLLER BOARD WILL BEEP ONCE.

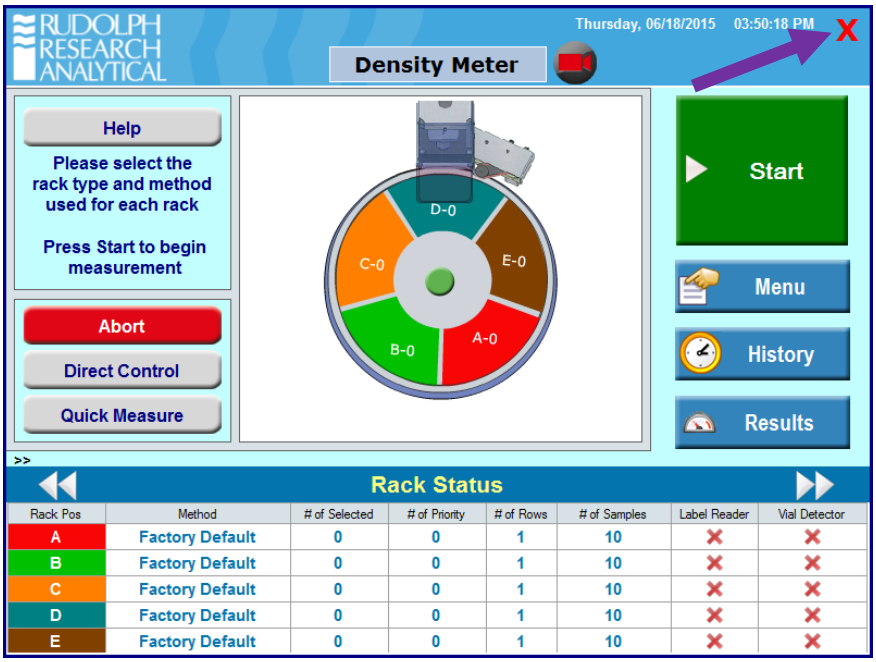
STEP 6: RESTORE THE BACKUP FILE FOR THE VALVE BOX. GO TO PAGE 45 TO FOLLOW THE STEPS TO COMPLETE A RESTORE.

STEP 7: ONCE THE BACKUP FILE HAS BEEN RESTORED, RETURN THE TWO CAPS OVER THE SWITCH AND THE USB PORT.

DISK PROTECTION AND CONTROL PANEL

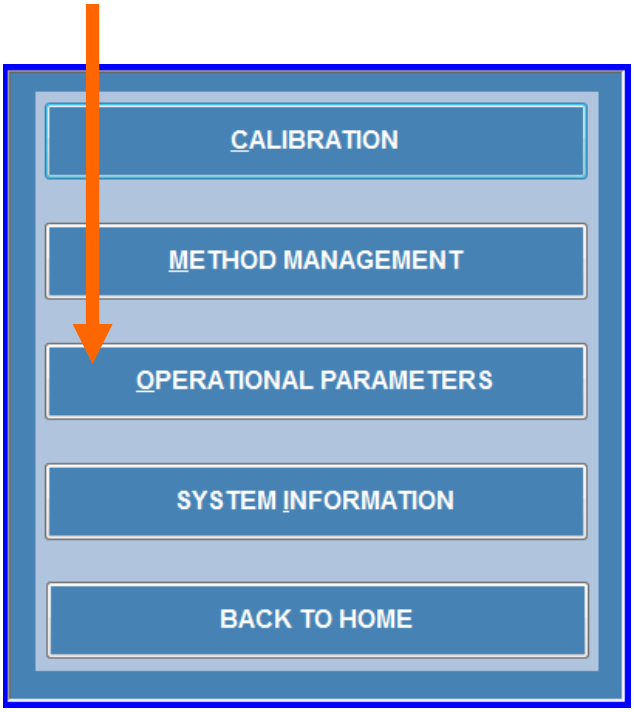
TURNING DISK PROTECTION ON AND OFF ENABLES YOU TO INSTALL ANY DRIVER OR PROGRAM INTO THE DENSITY METER'S SOFTWARE OR PROGRAM. WHEN DISK PROTECTION IS ENABLED, IF YOU INSTALL A DRIVER OR PROGRAM, OR RESET THE DATE AND TIME IT **WILL NOT** BE SAVED WHEN THE INSTRUMENT IS RESTARTED. YOU CAN SAVE ANY DOCUMENT, FOLDER, OR ANY RUDOLPH APPROVED DRIVERS INTO THE DENSITY FOLDER WITHOUT HAVING TO TURN OFF DISK PROTECTION.

STEP 1: CLOSE OUT THE AUTOFLEX INTERFACE BY PRESSING THE RED X.



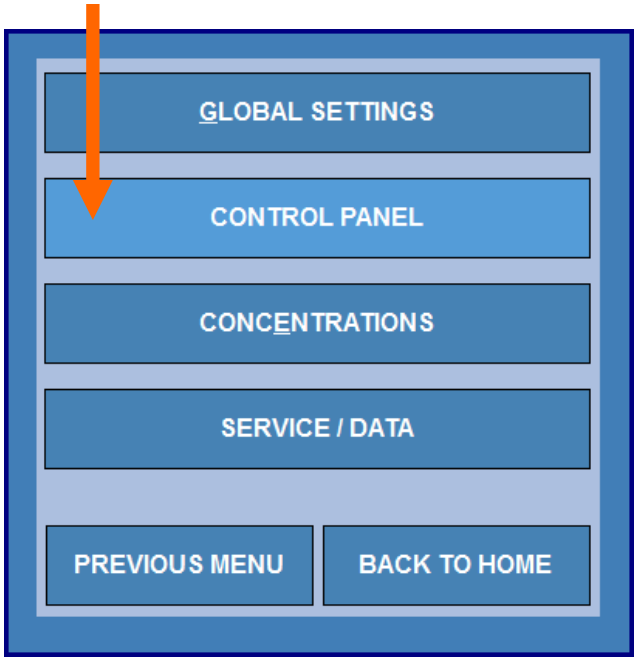
STEP 1: FROM THE MAIN DENSITY SCREEN PRESS **MENU**

STEP 2: PRESS **OPERATIONAL PARAMETERS**

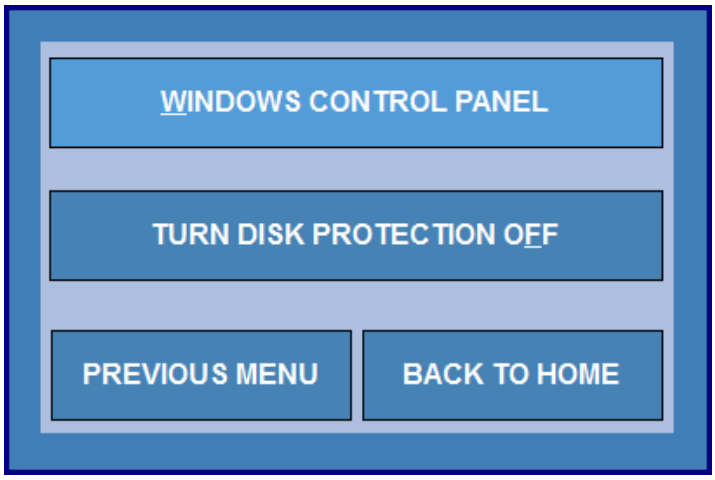


STEP 3: PRESS **INSTRUMENT CONFIGURATION**

STEP 4: PRESS **CONTROL PANEL**



STEP 5: FROM THIS MENU, YOU CAN CHOOSE WHETHER YOU WANT TO TURN DISK PROTECTION ON, TURN DISK PROTECTION OFF, AND ACCESS WINDOWS CONTROL PANEL.



DIRECT CONTROL MENU

THE DIRECT CONTROL MENU IS A VERY HELPFUL AND EASY TOOL TO USE TO PERFORM SERVICE ON THE AUTOFLEX. IT CAN MEASURE SINGLE SAMPLES FROM ANY POSITION ON THE SAMPLE RACKS, IT CAN RUN CLEANING AND DRYING CYCLES, RE-INITIALIZE THE ENTIRE AUTOFLEX SYSTEM, CHECK TO MAKE SURE THERE ARE NO ISSUES WITH THE CONNECTIVITY BETWEEN ANY UNTIT ATTACHED, AND IT CAN CHECK TO MAKE SURE THE BARCODE SCANNER IS WORKING. PRESS **DIRECT CONTROL** ON THE MAIN R837 SCREEN.

SINGLE SAMPLE WILL PULL A SAMPLE FROM ANY RACK LOCATION AND MEASURE IT

CLEAN AND DRY WILL RUN ANY CLEANING CYCLE OR YOU CAN JUST DRY THE SYSTEM WITHOUT RUNNING SAMPLES

INITIALIZE AUTOMATION WILL RESET THE AUTOFLEX FIRMWARE AND START IT UP AGAIN

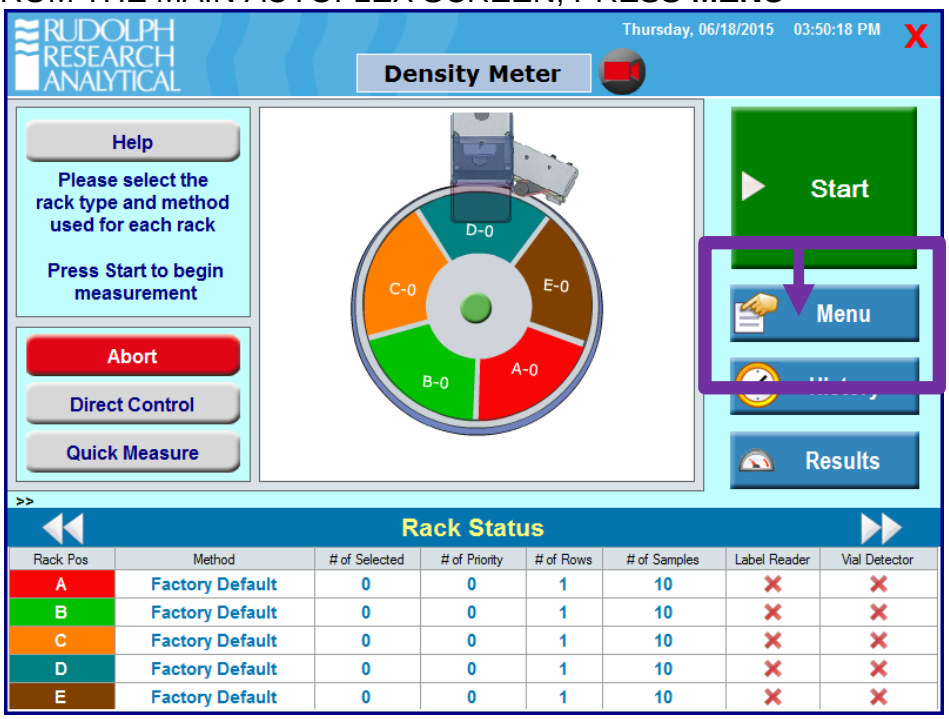
RELEASE INSTRUMENTS WILL DISCONNECT ANY INSTRUMENT THAT ISN'T NEEDED

COMMUNICATION WILL CHECK THE COMMUNICATION BETWEEN ALL INSTRUMENTS AND WILL LET YOU KNOW IF THE COM PORTS AND CONNECTIONS ARE WORKING

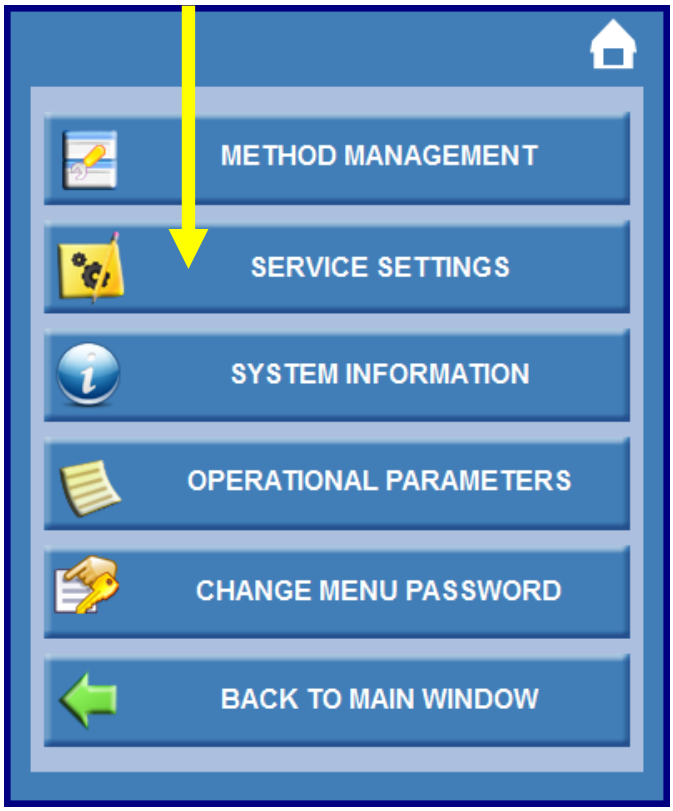
BARCODE WILL LET YOU USE THE BARCODE SCANNER AND LET YOU SCAN ANY BARCODE ON THE RACKS

INSTRUMENT MANAGEMENT AND CONNECTIVITY

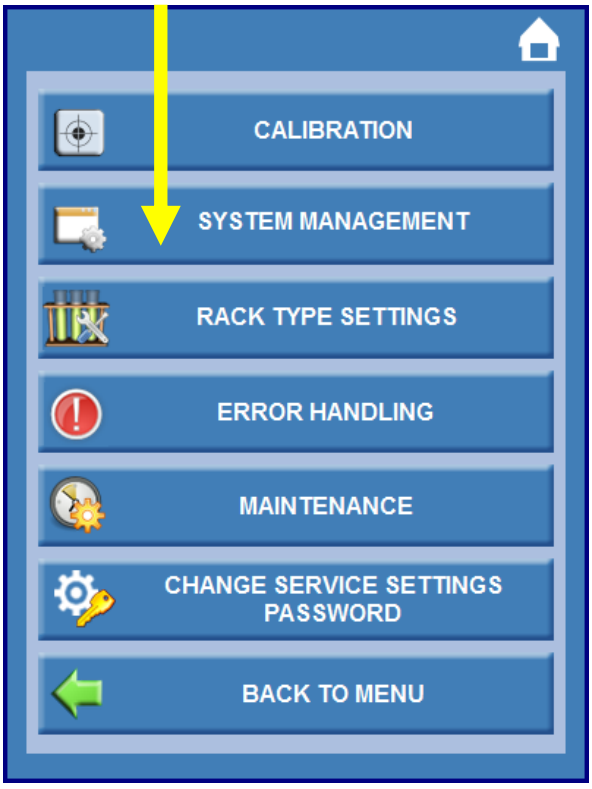
STEP 1: FROM THE MAIN AUTOFLEX SCREEN, PRESS **MENU**



STEP 2: PRESS **SERVICE SETTINGS**



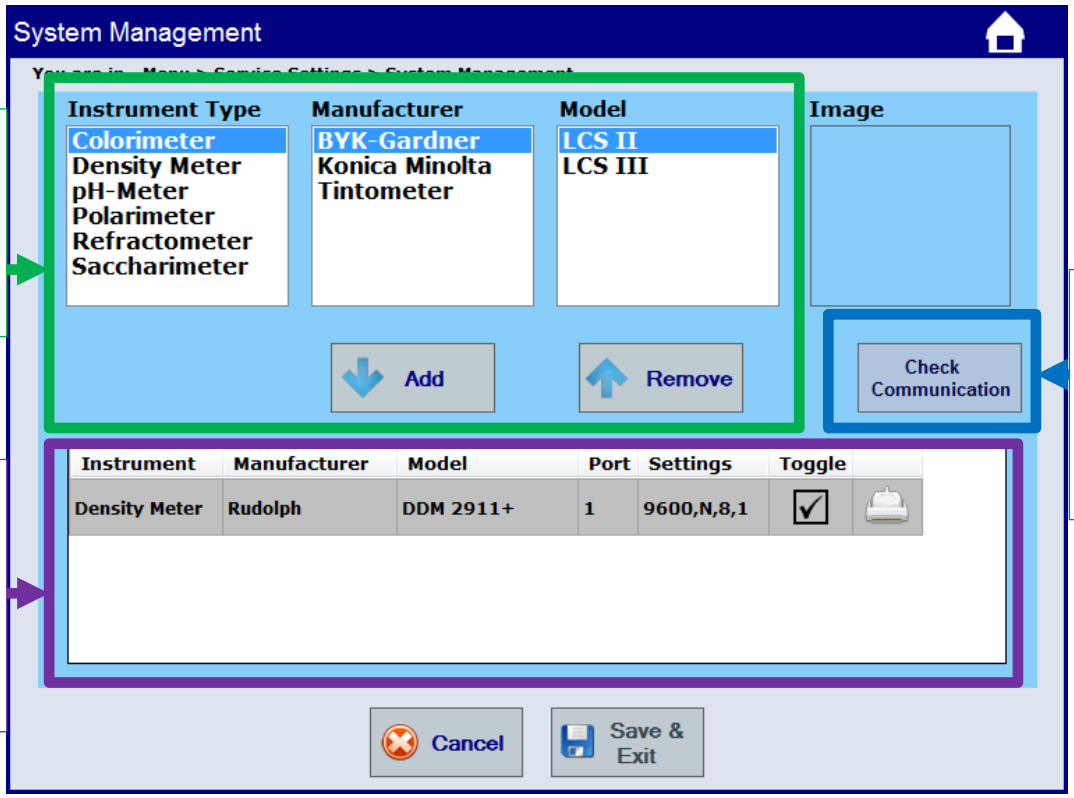
STEP 3: PRESS **SYSTEM MANAGEMENT**



STEP 4: FROM THIS MENU, YOU CAN SELECT, ADD OR REMOVE INSTRUMENTS, SET UP THEIR COM PORTS AND CHECK IF THEY HAVE GOOD CONNECTIONS.

SELECT AND ADD FROM A LIST OF INSTRUMENT TYPES AND MODELS

EDIT INSTRUMENT SERIAL NUMBERS AND COM PORTS AND TOGGLE SETTINGS

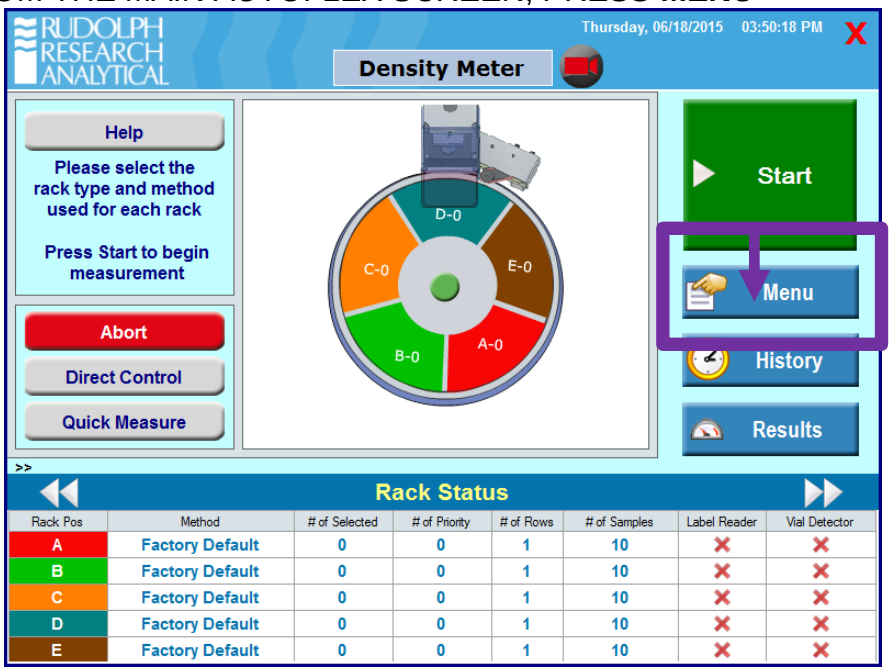


CHECK THE INSTRUMENT COM PORTS TO MAKE SURE THEY CONNECT PROPERLY

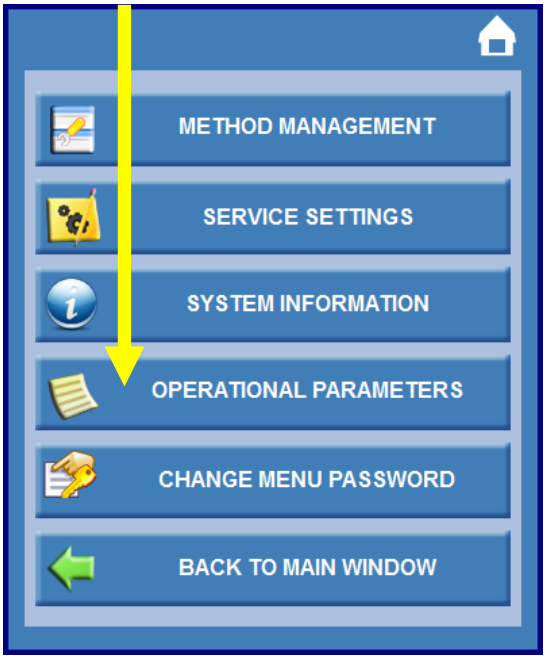
METHOD SETTINGS

THERE ARE THREE DIFFERENT PIECES TO THE AUTOFLEX MEASUREMENT CYCLE. THE FIRST IS THE SAMPLE LOAD SETTINGS, THE SECOND IS THE MEASUREMENT SETTINGS FOR ALL ATTACHED INSTRUMENTS AND THE THIRD IS THE CLEANING SETTINGS. ALL OF THESE NEED TO BE PROPERLY SET FOR OPTIMAL PERFORMANCE OF THE AUTOFLEX SYSTEM.

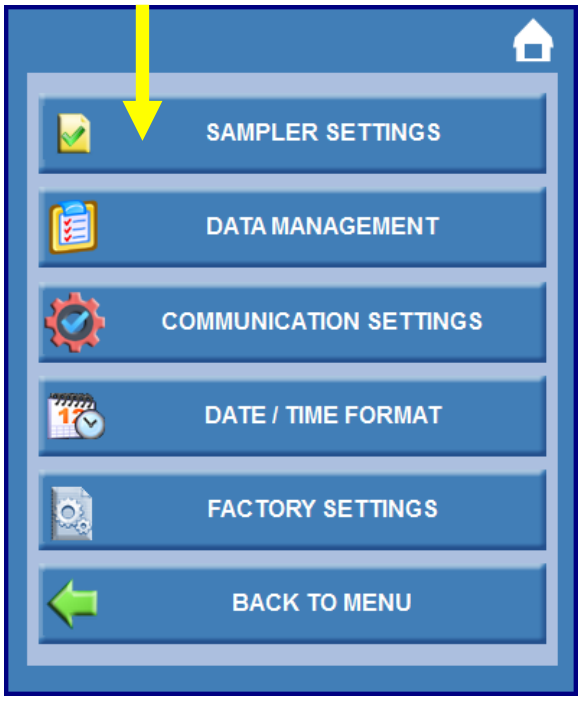
STEP 1: FROM THE MAIN AUTOFLEX SCREEN, PRESS **MENU**



STEP 2: PRESS **OPERATIONAL PARAMETERS**



STEP 3: PRESS **SAMPLER SETTINGS**



MEASUREMENT DETAILS IS WHERE EACH INSTRUMENT'S METHOD AND MEASUREMENT SETTINGS WILL BE SELECTED. ALL METHOD PARAMETERS MUST BE SET-UP IN THE INSTRUMENT BEING MEASURED.

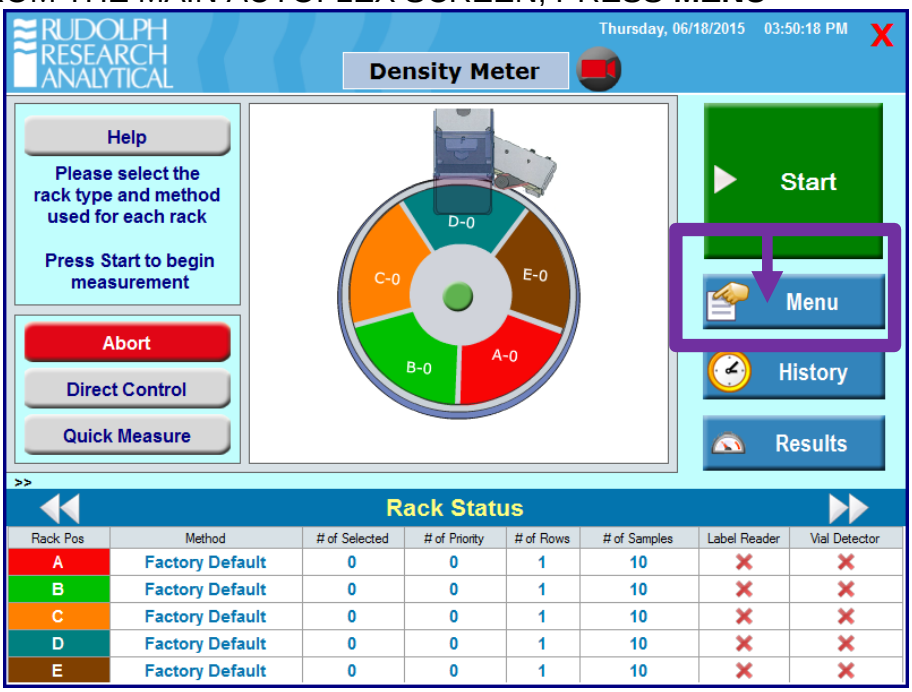
SAMPLE LOAD DETAILS WILL FINE TUNE HOW EACH SAMPLE IS LOADED. ADJUSTMENTS INCLUDE: LOAD SPEED, LOAD DELAYS FOR BUBBLES, LOADING MODE, AND AGITATION

SYSTEM CLEAN DETAILS WILL FINE TUNE HOW EACH SAMPLE WILL BE CLEANED AND DRIED. ADJUSTMENTS INCLUDE: RINSE CYCLES, SOLVENT TYPES, DRY TIMES, SAMPLE RETURN AND MORE.

FOR MORE DETAILED INFORMATION AND SCREENSHOTS ON EACH MENU AND SETTING DEFINITIONS, CONSULT THE AUTOFLEX R837 USER MANUAL!

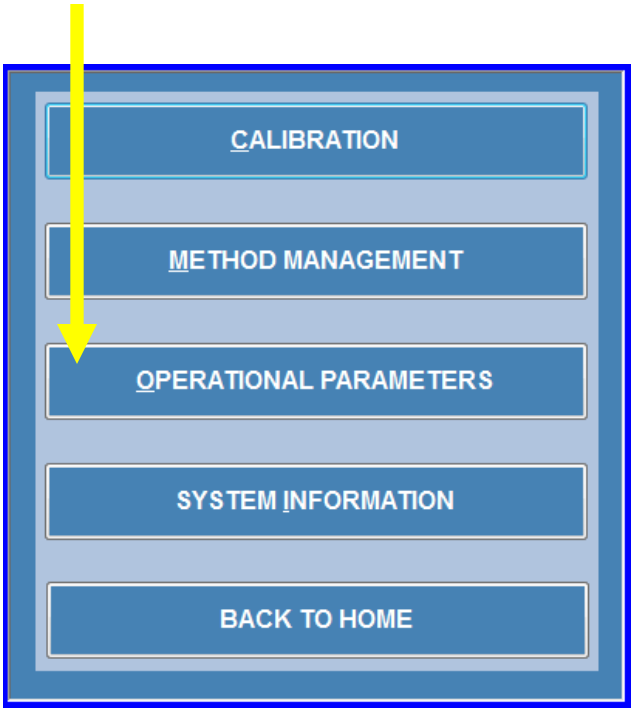
SOFTWARE UPGRADES

STEP 1: FROM THE MAIN AUTOFLEX SCREEN, PRESS **MENU**

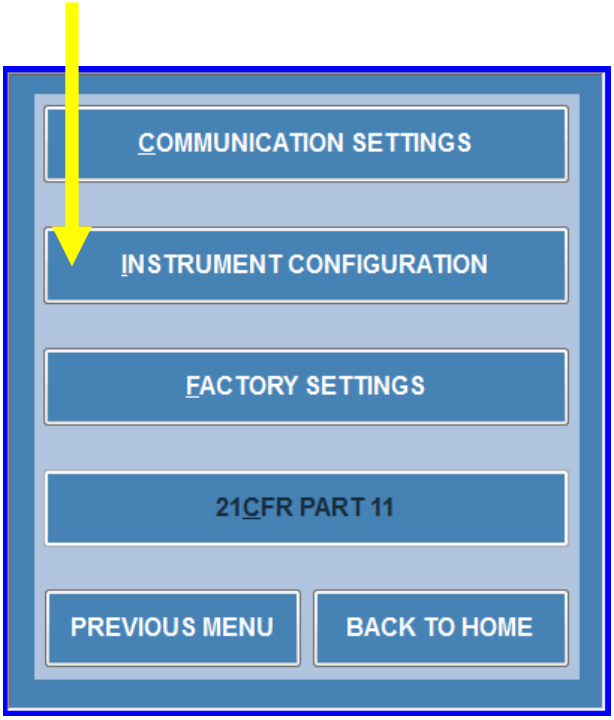


STEP 2: FROM THE MAIN DENSITY SCREEN PRESS **MENU**

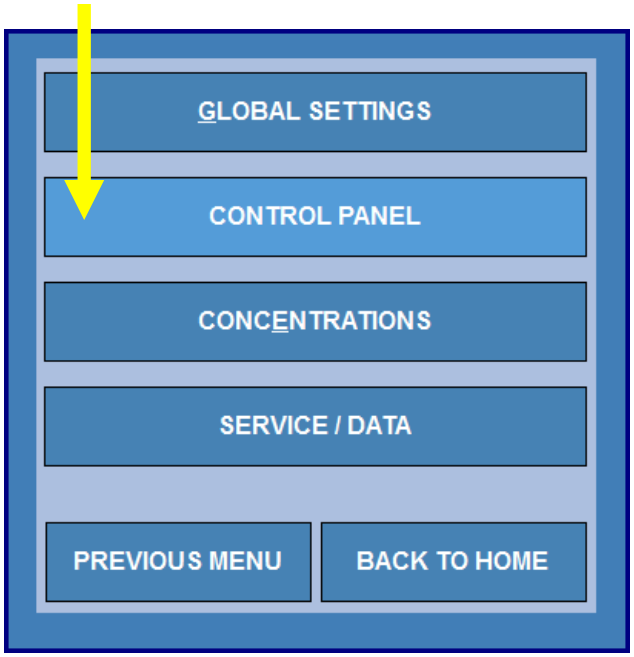
STEP 3: PRESS **OPERATIONAL PARAMETERS**



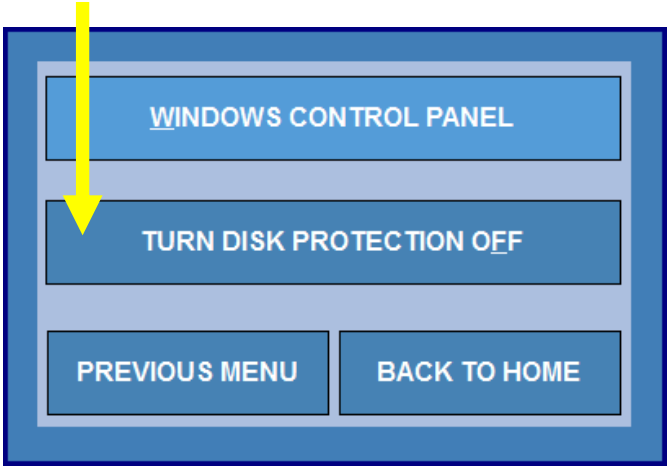
STEP 4: PRESS **INSTRUMENT CONFIGURATION**



STEP 5: PRESS **DDM CONTROL**

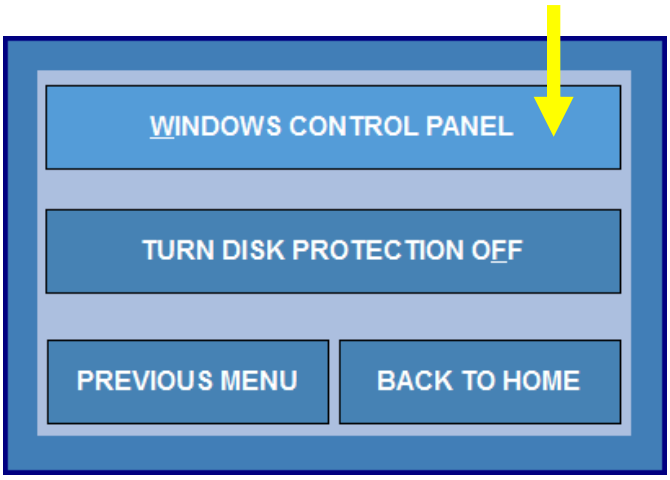


STEP 6: PRESS **TURN DISK PROTECTION OFF** THEN PRESS YES ON THE POP-UP WINDOW

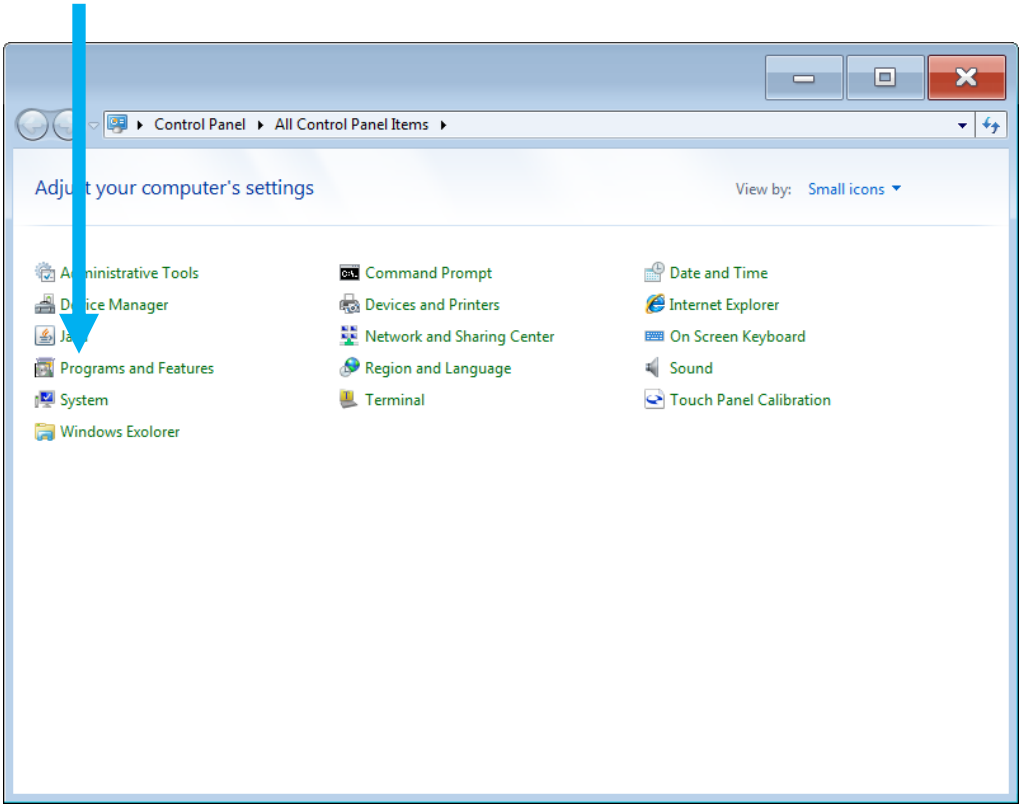


STEP 7: INSERT A USB THUMB DRIVE WITH THE CURRENT REVISION DENSITY METER SOFTWARE INTO THE DENSITY METER.

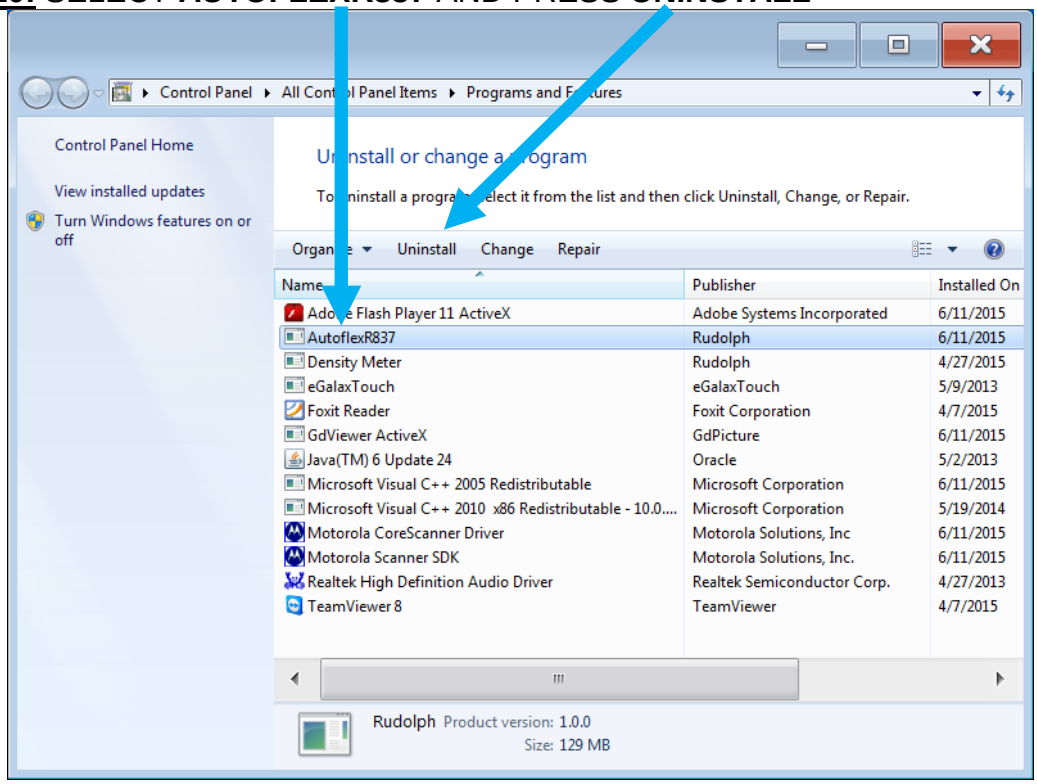
STEP 8: REPEAT STEPS 1-5, THEN PRESS **WINDOWS CONTROL PANEL**



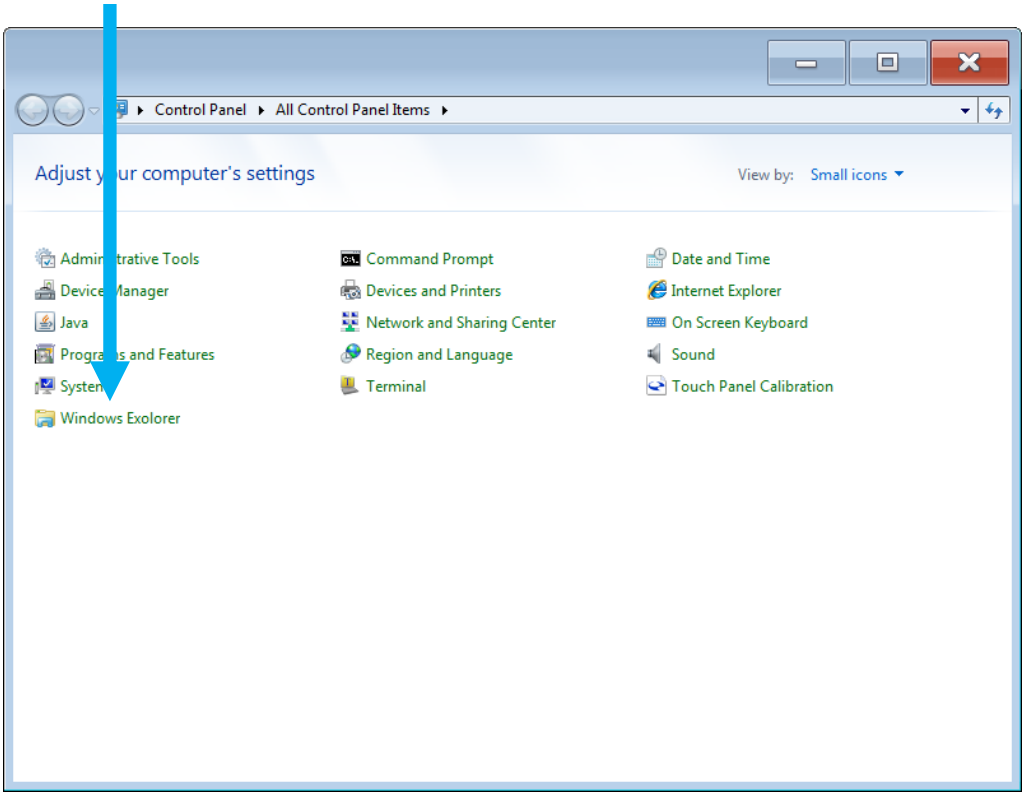
STEP 9: WHEN THE CONTROL PANEL SCREEN COMES UP, PRESS **PROGRAMS AND FEATURES**



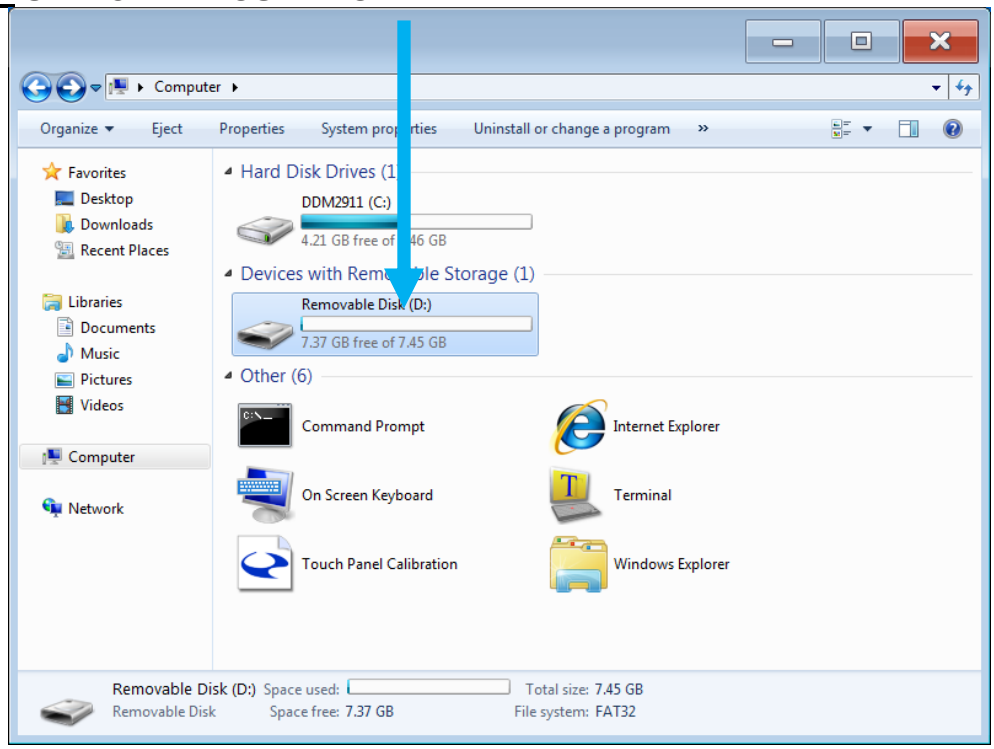
STEP 10: SELECT **AUTOFLEXR837** AND PRESS **UNINSTALL**



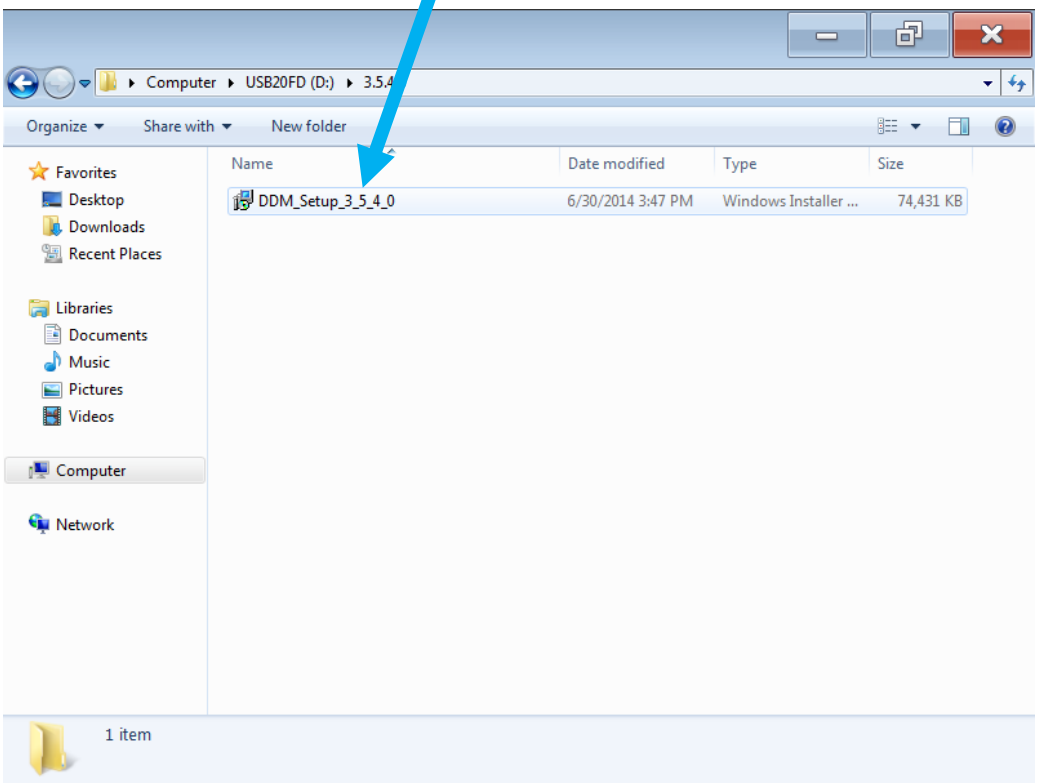
STEP 11: EXIT OUT OF THE PROGRAMS AND FEATURES MENU THEN PRESS **WINDOWS EXPLORER** IN CONTROL PANEL



STEP 12: SELECT THE **USB THUMB DRIVE**

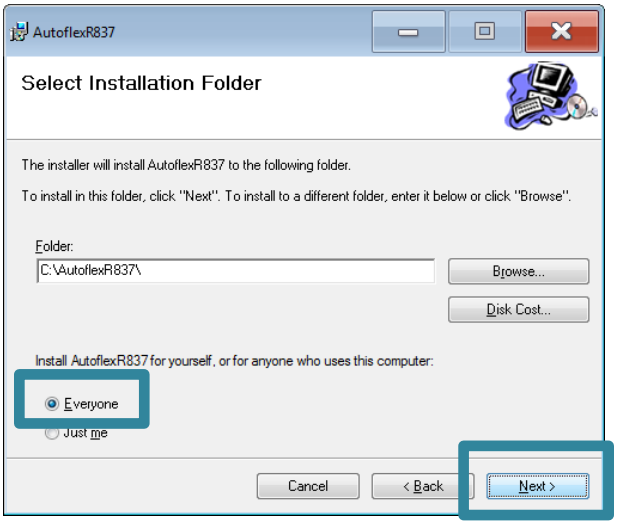


STEP 13: SELECT THE LATEST **SOFTWARE FILE** TO START THE INSTALL

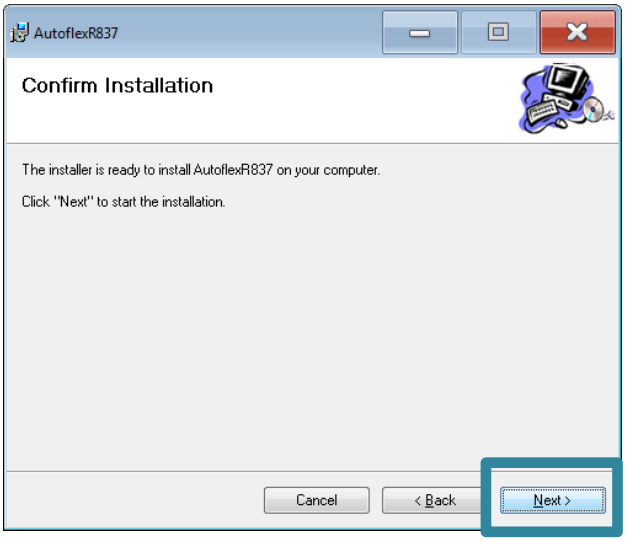


STEP 14: PRESS **NEXT**

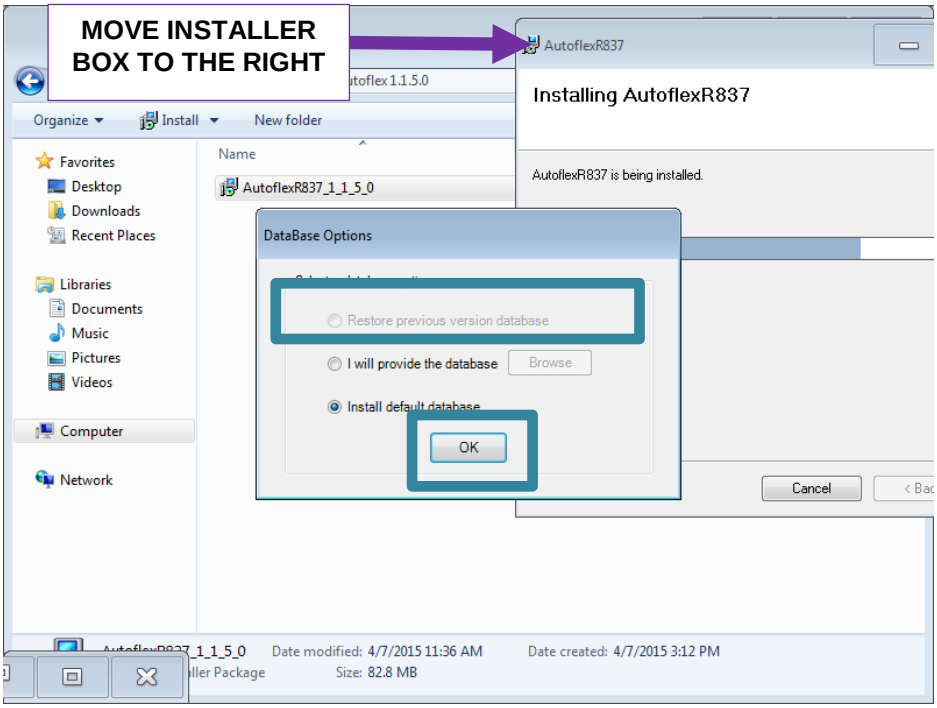
STEP 15: MAKE SURE **EVERYONE** IS SELECTED AND PRESS **NEXT**



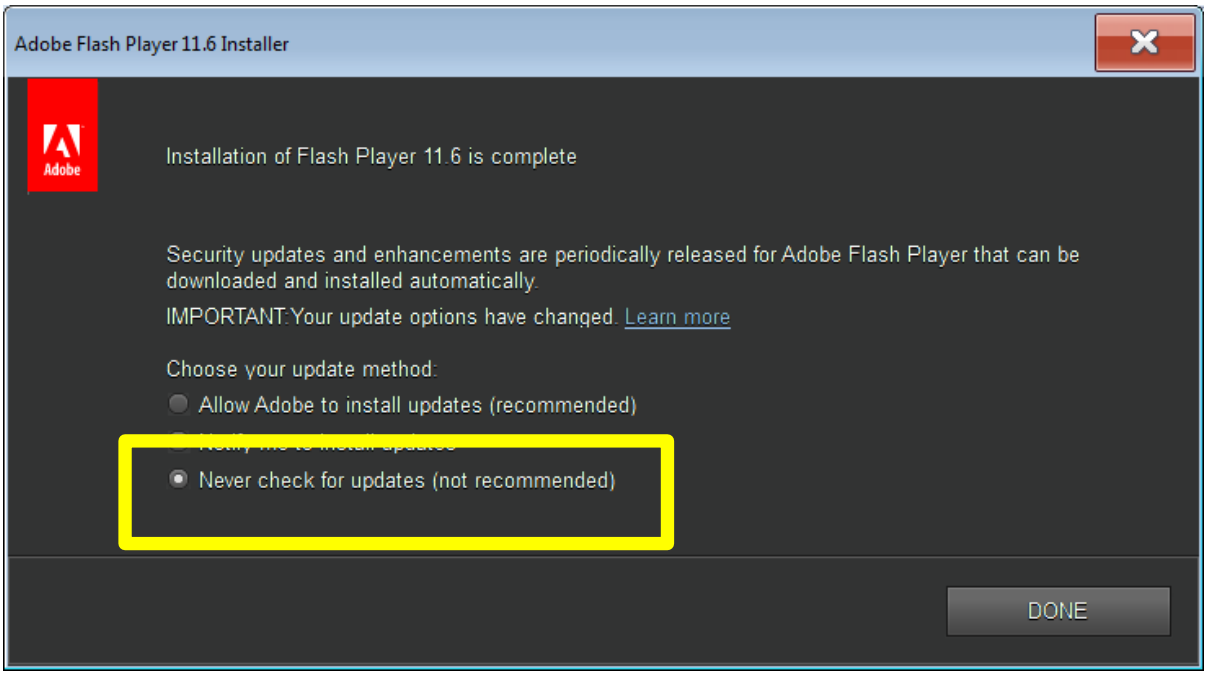
STEP 16: PRESS **NEXT**



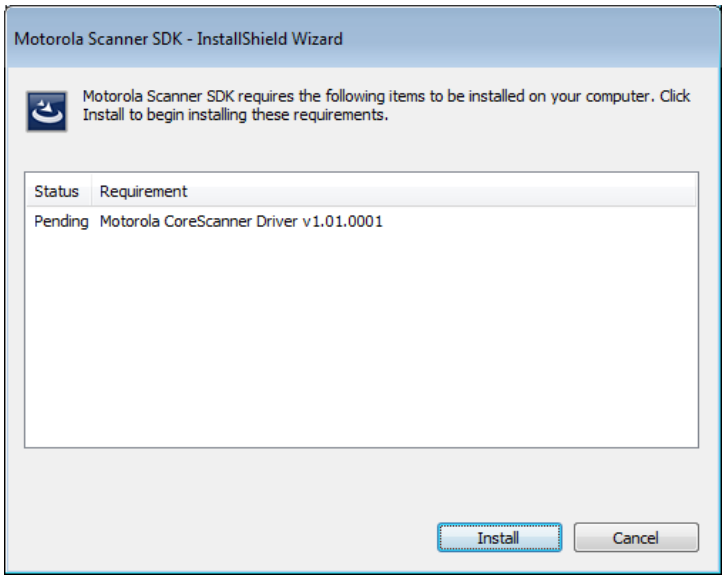
STEP 17: ONCE THE LOADING BAR STOPS MOVING, MOVER THE AUTOFLEX INSTALLER TO THE RIGHT TO EXPOSE THE DATABASE SELECTION. SELECT **RESTORE PREVIOUS VERSION DATABASE** PRESS **OK**



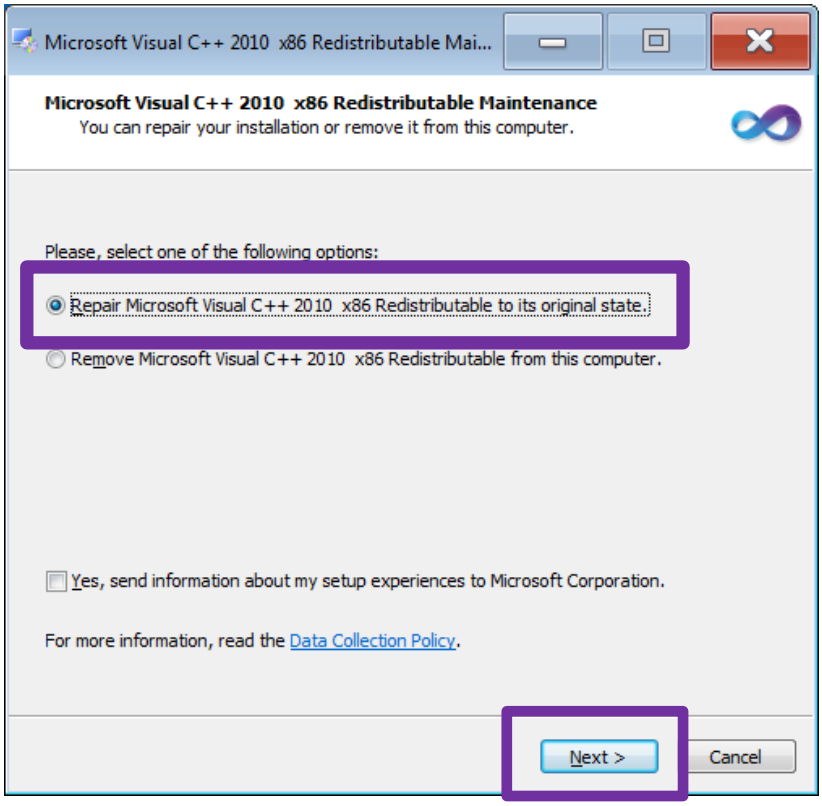
STEP 18: ACCEPT THE TERMS AND COMPLETE THE STEPS FOR ADOBE PDF VIEWER AND MAKE SURE YOU SELECT **NEVER CHECK FOR UPDATES** BEFORE COMPLETING THE PROCESS.



STEP 19: ACCEPT ANY TERMS AND INSTALL THE MOTOROLA SCANNER **NOTE: THE SCANNER SOFTWARE WILL TAKE A FEW MINUTES TO BE RECOGNIZED AND INSTALL, PLEASE BE PATIENT!!!**

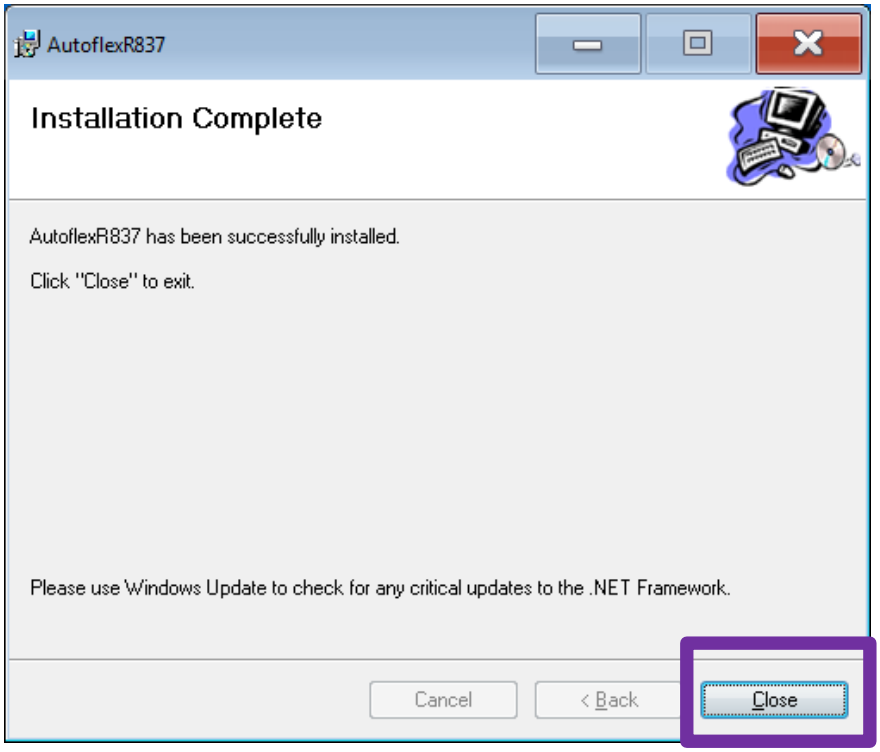


STEP 20: SELECT **REPAIR MICROSOFT VISUAL C++….** THEN PRESS **NEXT**



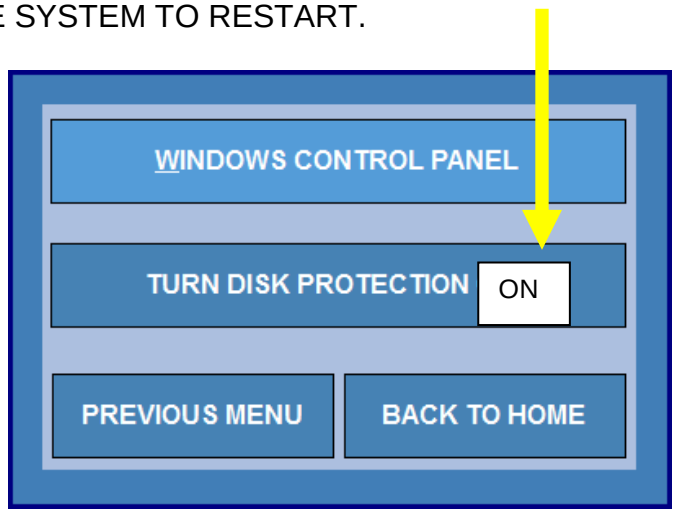
STEP 21: ACCEPT ANY TERMS AND INSTALL THE ACTIVE VIEWER SOFTWARE.

STEP 22: ONCE ALL SOFTWARE HAS BEEN ISTALLED, YOU WILL BE PROMPTED THAT EVRYTHING WAS SUCCESSFUL AND PRESS **CLOSE.**



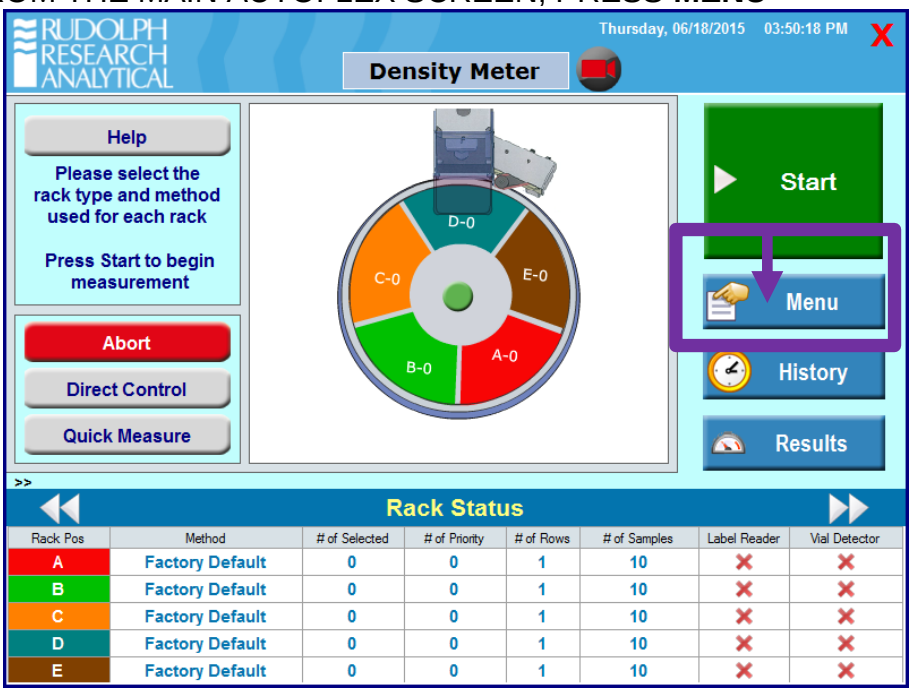
STEP 23: AFTER THE AUTOFLEX R837 SOFTWARE HAS BEEN INSTALLED, EXIT OUT OF ANY OPENED WINDOWS MENUS.

STEP 24: PRESS **TURN DISK PROTECTION ON** AND PRESS YES ON THE POP-UP WINDOW FOR THE SYSTEM TO RESTART.



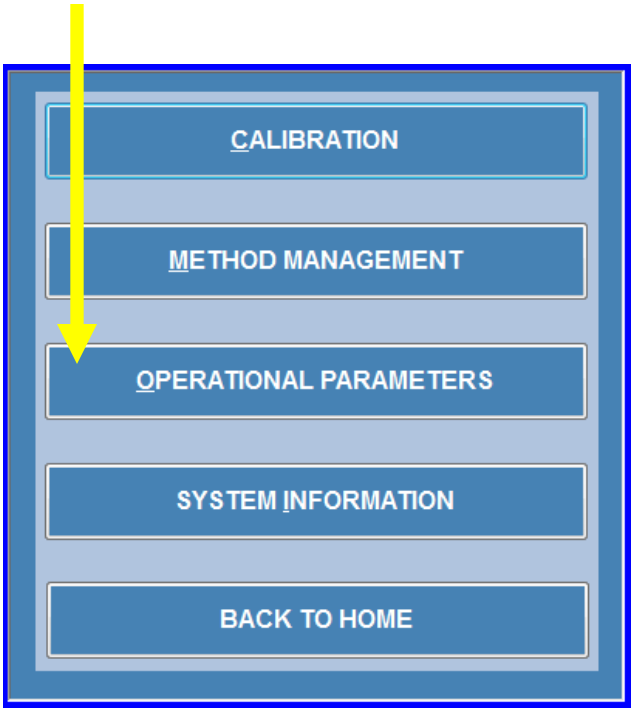
DOWNLOADING AND ACCESSING TEAMVIEWER

STEP 1: FROM THE MAIN AUTOFLEX SCREEN, PRESS **MENU**

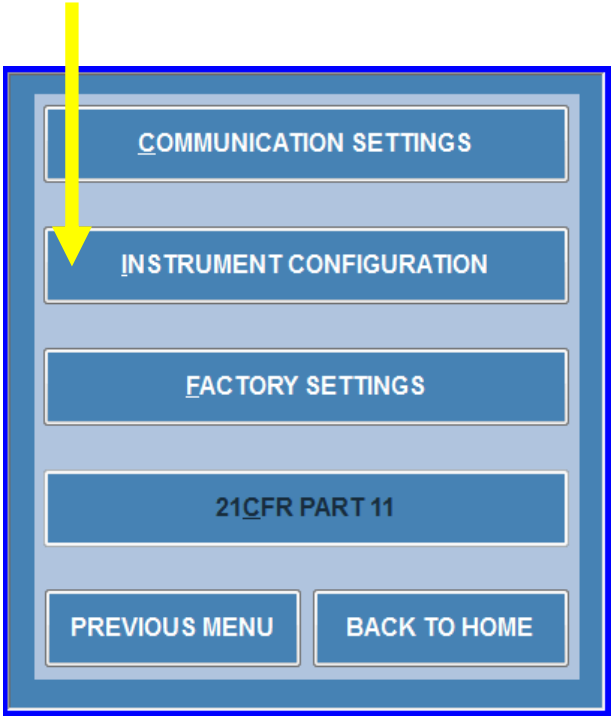


STEP 2: FROM THE MAIN DENSITY SCREEN PRESS **MENU**

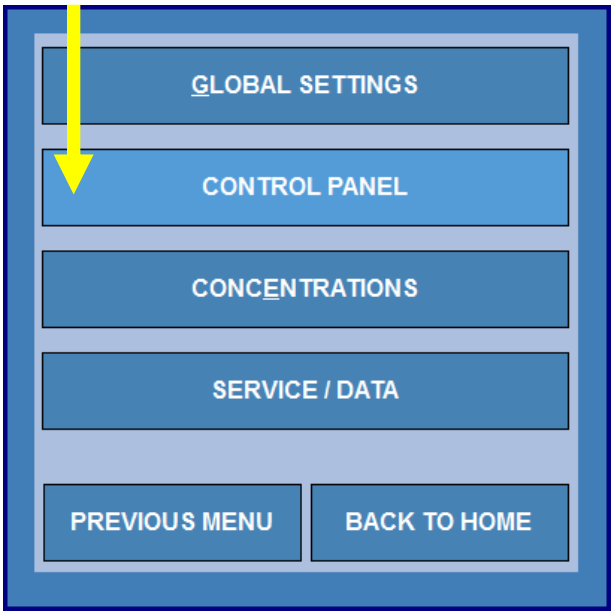
STEP 3: PRESS **OPERATIONAL PARAMETERS**



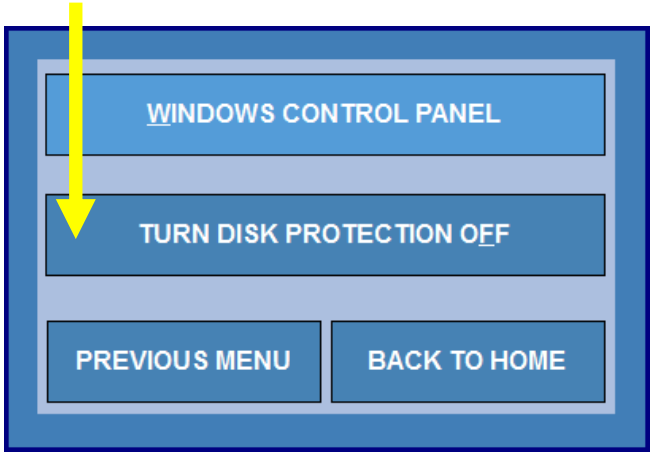
STEP 4: PRESS **INSTRUMENT CONFIGURATION**



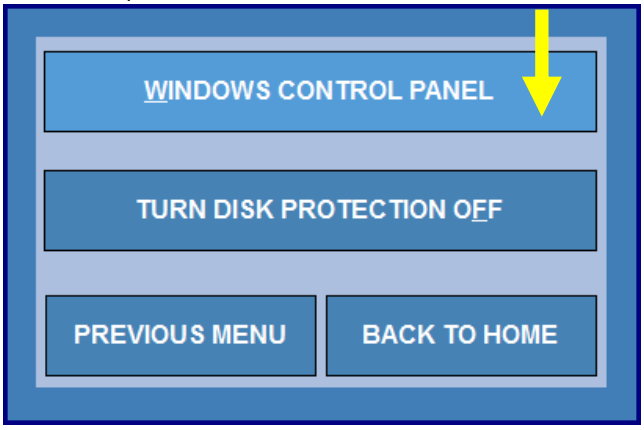
STEP 5: PRESS **DDM CONTROL**



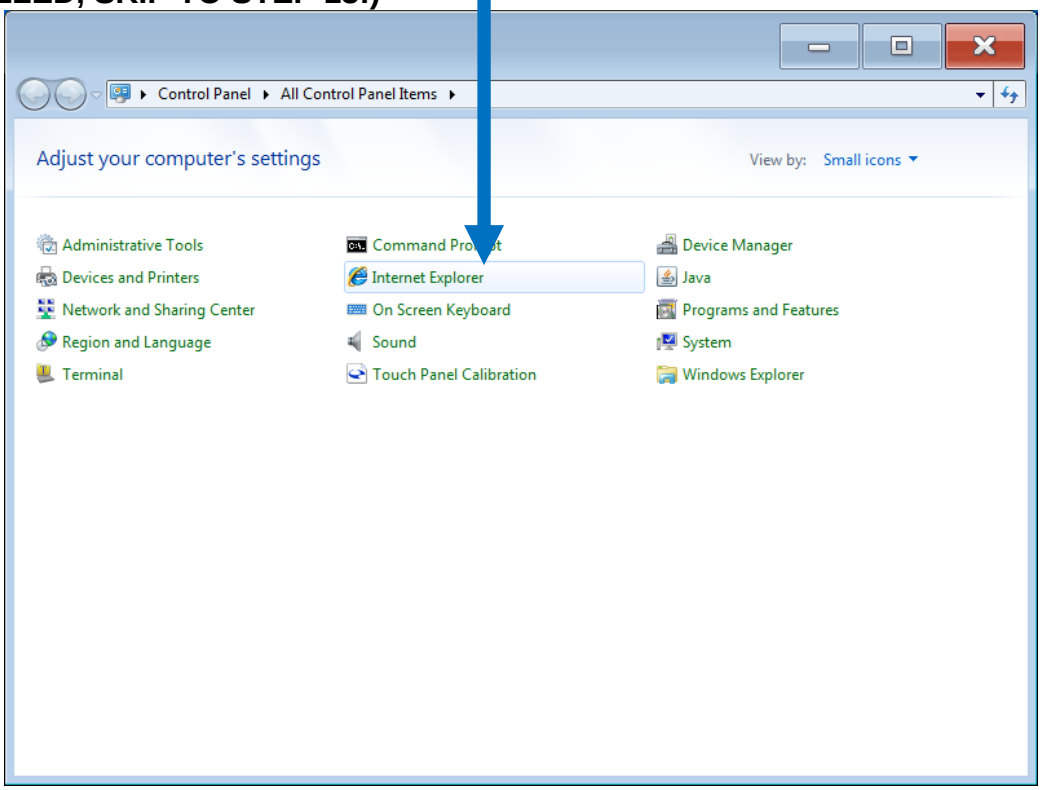
STEP 6: PRESS **TURN DISK PROTECTION OFF** THEN PRESS YES ON THE POP-UP WINDOW



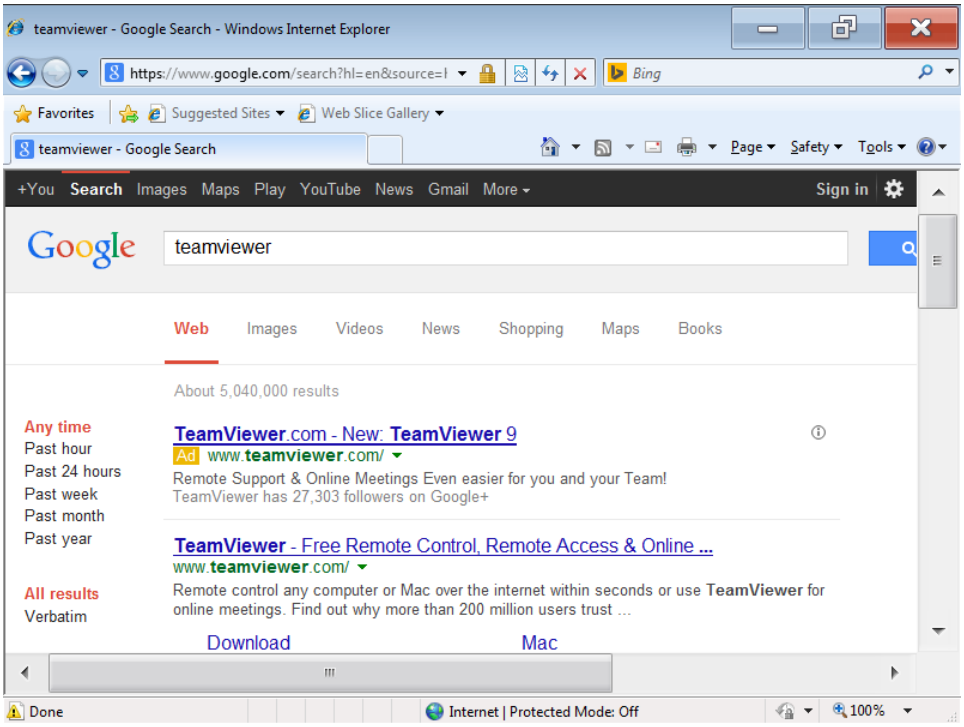
STEP 7: REPEAT STEPS 1-5, THEN PRESS **WINDOWS CONTROL PANEL**



<u>STEP 8:</u> SELECT **INTERNET EXPLORER (IF TEAMVIEWER HAS ALREADY BEEN INSTALLED, SKIP TO STEP 13!)**



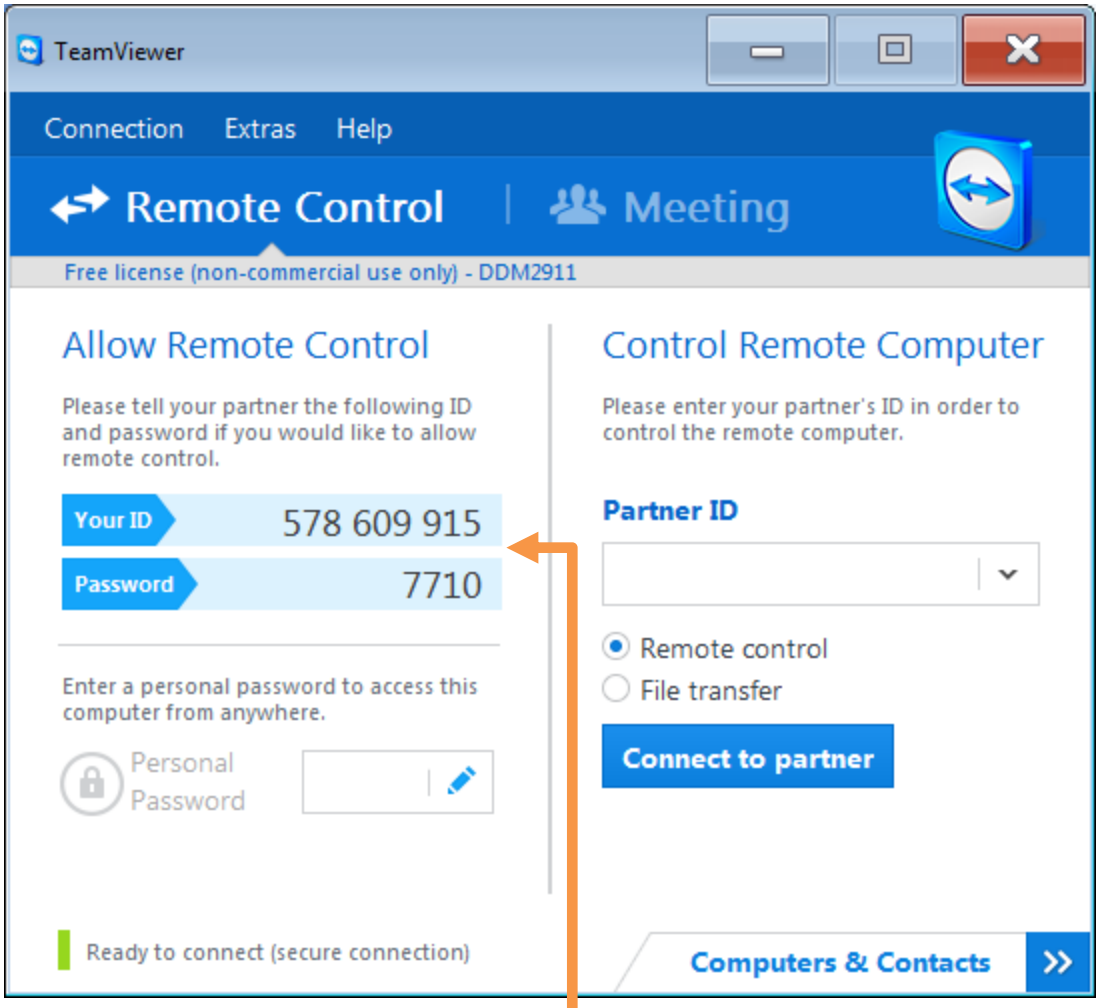
<u>STEP 9:</u> SEARCH FOR TEAMVIEWER AND OPEN THE MAIN SITE **WWW.TEAMVIEWER.COM**



STEP 10: START THE DOWNLOAD OF THE PROGRAM

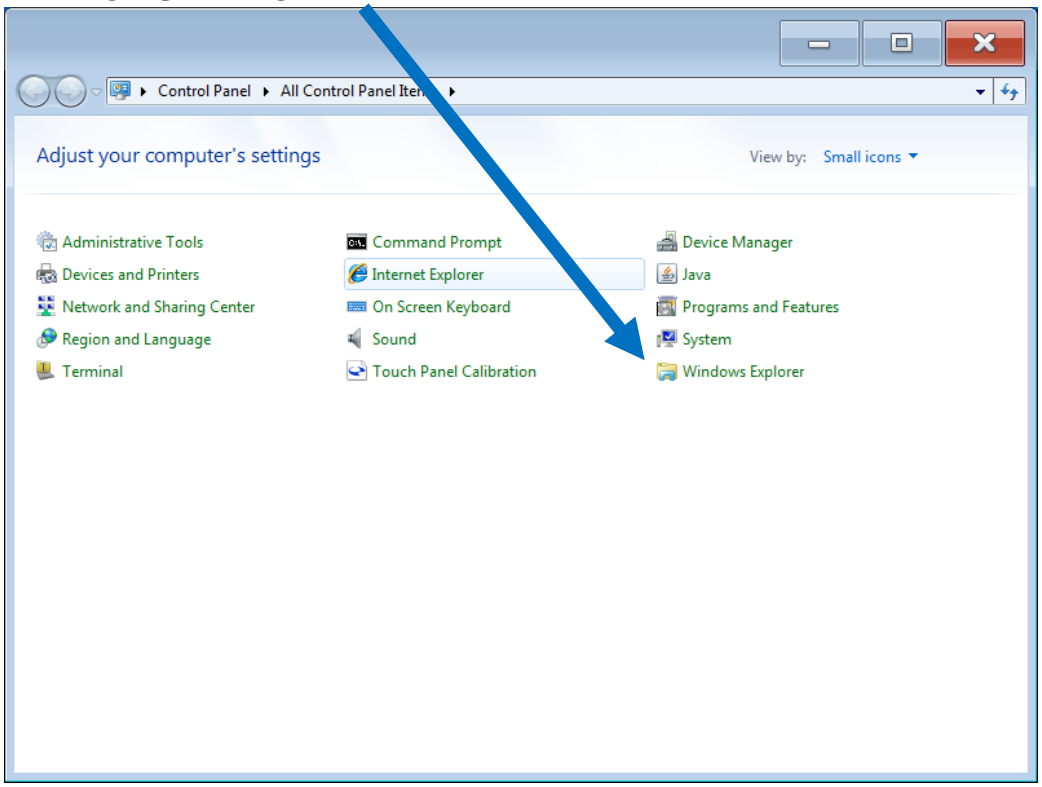
- PRESS THE DOWNLOAD FOR PRIVATE USE BUTTON
- PRESS RUN
- PRESS RUN
- SELECT BASIC AND COMPANY USE AND ACCEPT

STEP 11: TEAMVIEWER IS READY TO USE ONCE THIS SCREEN COMES UP

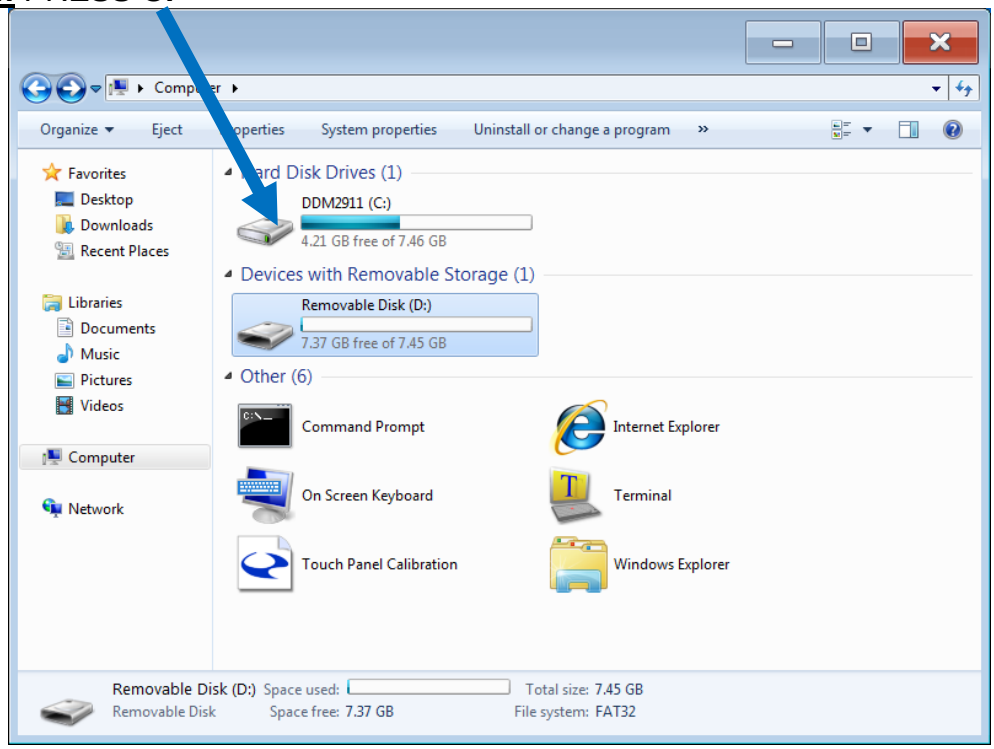


STEP 12: SEND A RUDOLPH SERVICE TECHNICIAN THE **9 DIGIT USER ID AND THE 4 DIGIT PASWORD** SO THE INSTRUMENT CAN BE ACCESSED REMOTELY.

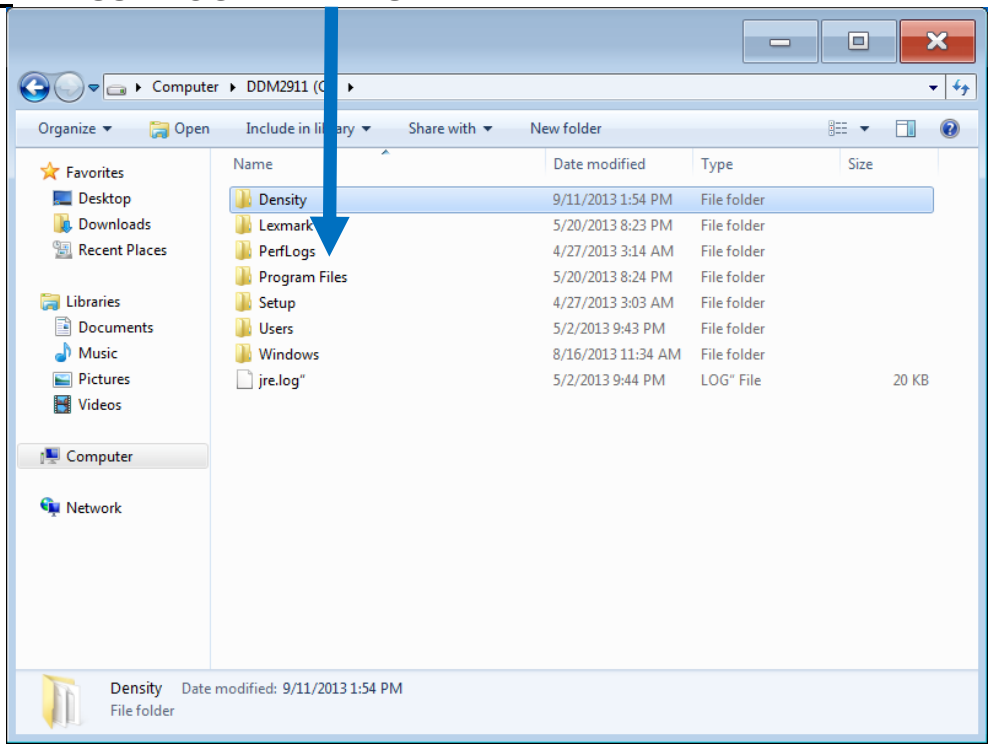
STEP 13: IF TEAMVIEWER HAS ALREADY BEEN PREVIOUSLY INSTALLED, PRESS **WINDOWS EXPLORER**



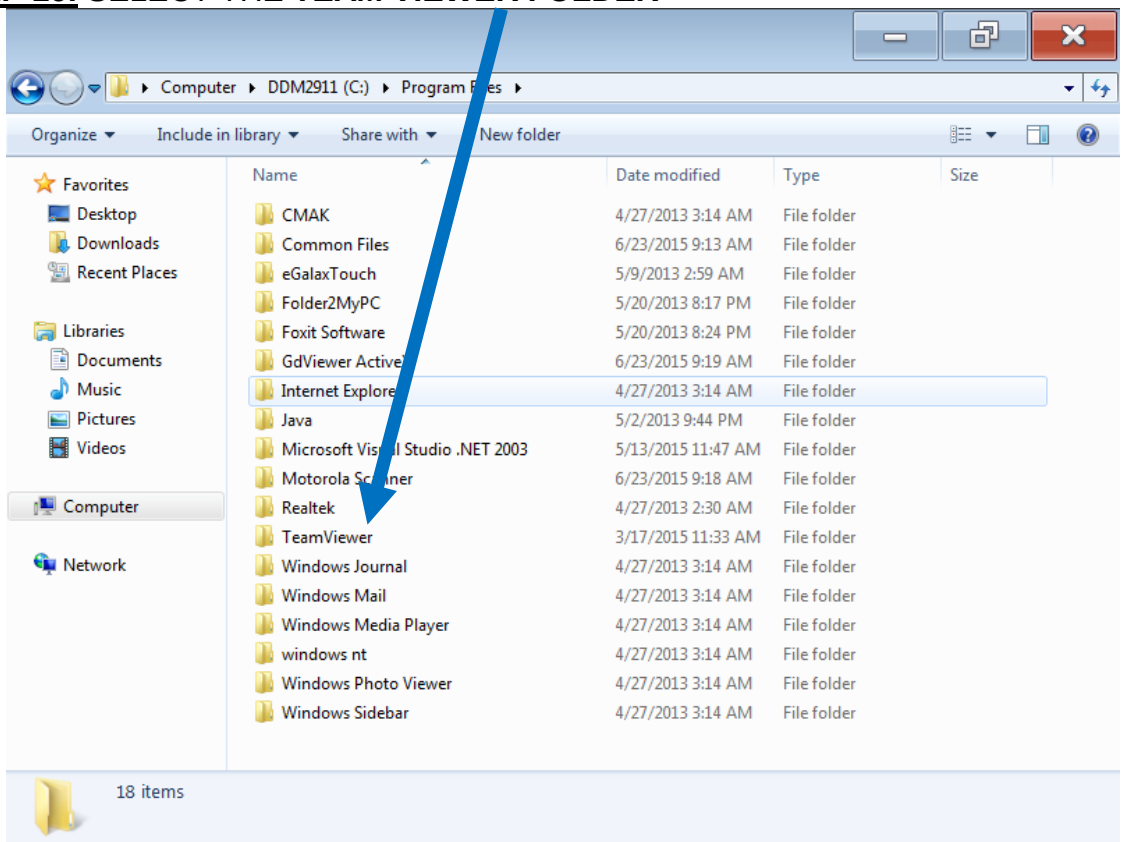
STEP 14: PRESS **C:**



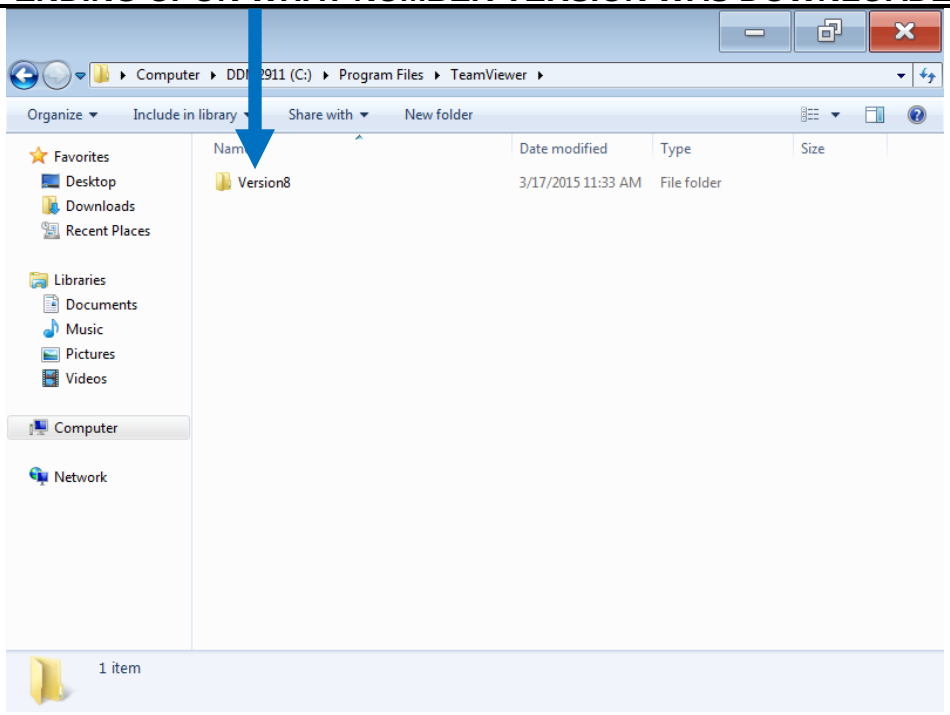
STEP 15: PRESS **PROGRAM FILES**



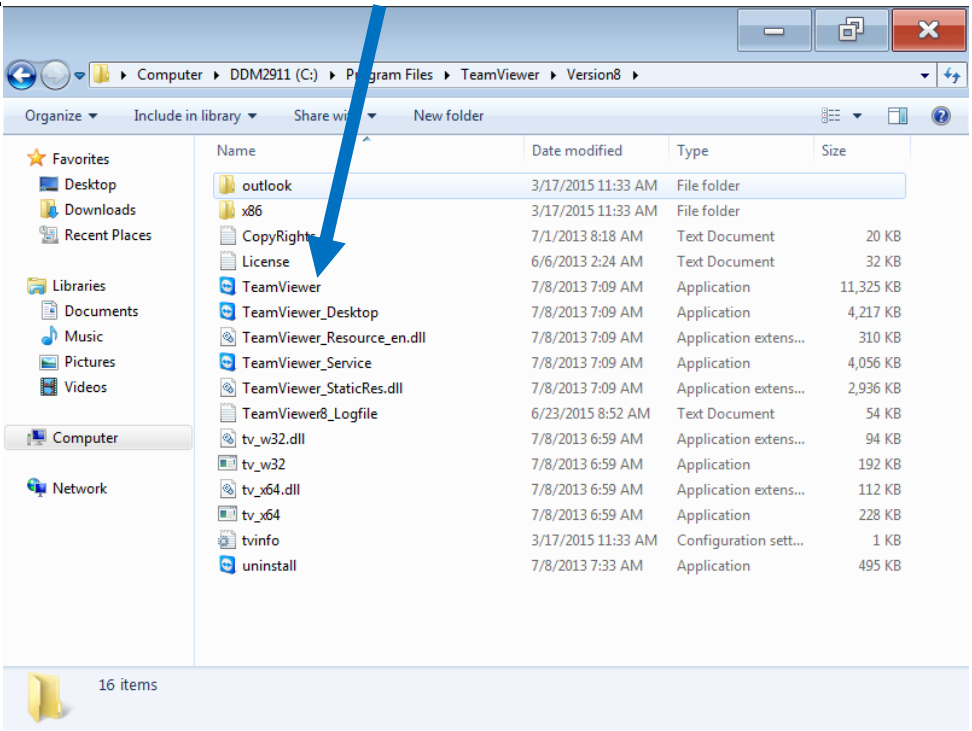
STEP 16: SELECT THE **TEAM VIEWER FOLDER**



STEP 17: SELECT THE **VERSION FOLDER. NOTE: THE VERSION NUMBER MAY VARY DEPENDING UPON WHAT NUMBER VERSION WAS DOWNLOADED!!**



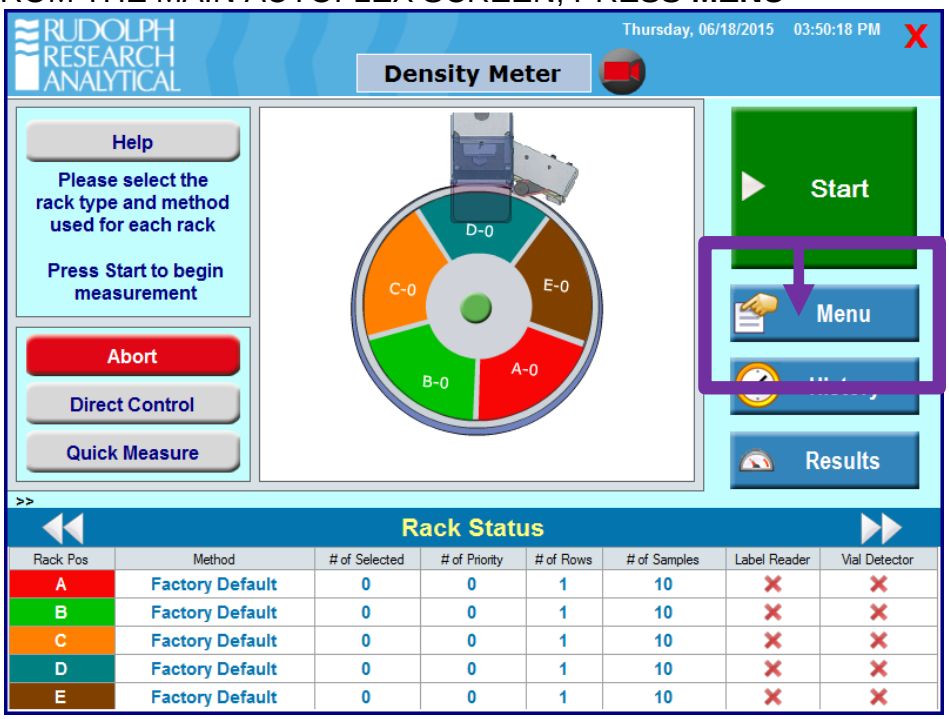
STEP 18: SELECT THE **TEAMVIEWER** TO RUN THE PROGRAM.



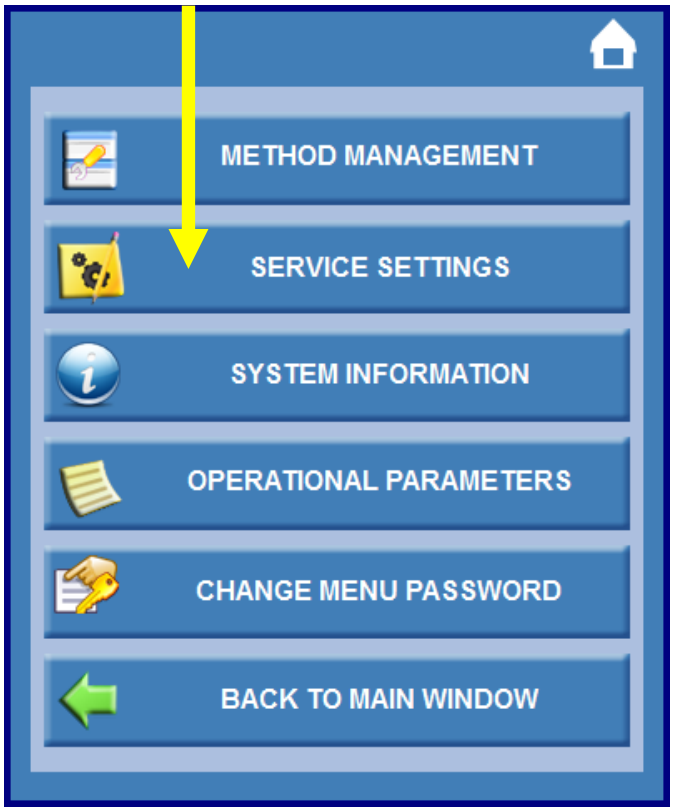
STEP 19: PROVIDE US WITH THE ID AND PASSWORD. (REFERENCE THE PHOTO IN STEP 11 FOR THE LOCATION OF BOTH)

NEEDLE AND CAROUSEL CALIBRATION AND ADJUSMENTS

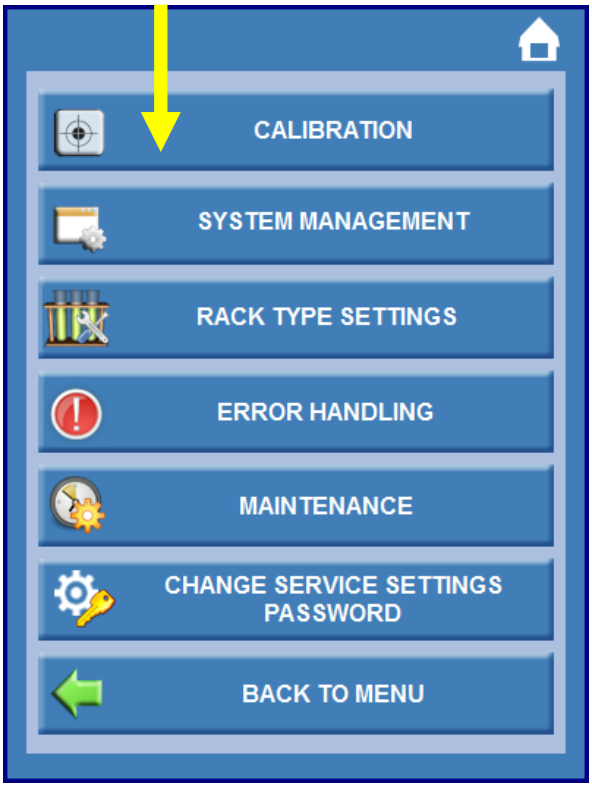
STEP 1: FROM THE MAIN AUTOFLEX SCREEN, PRESS **MENU**



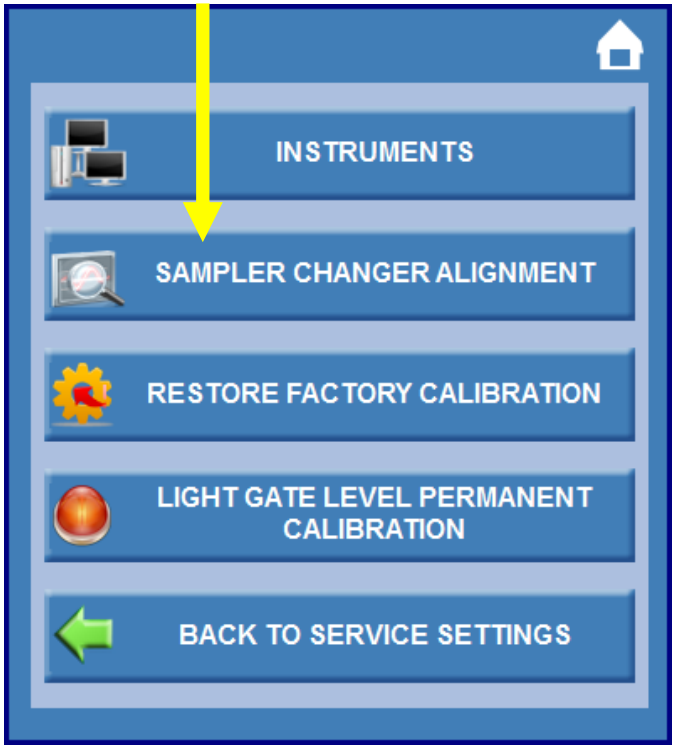
STEP 2: PRESS **SERVICE SETTINGS**



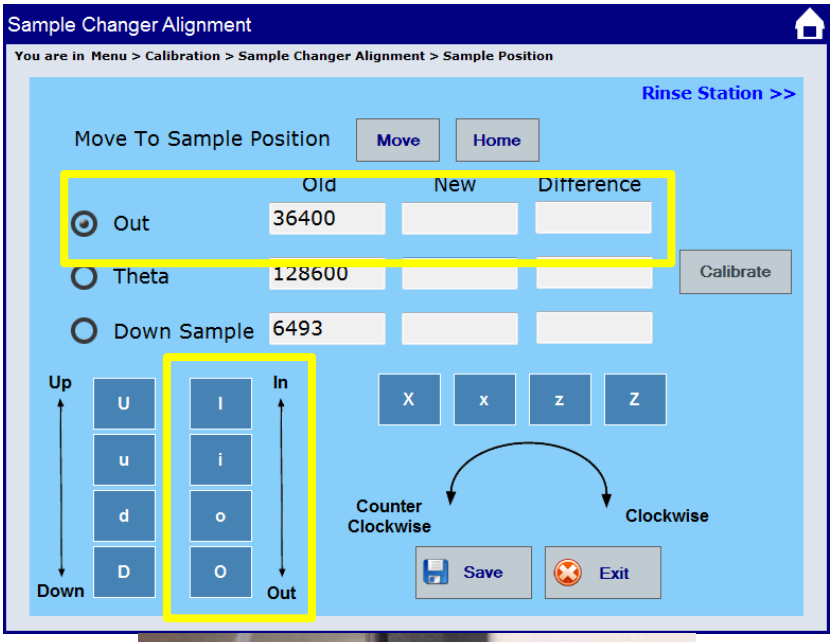
STEP 3: PRESS **CALIBRATION**

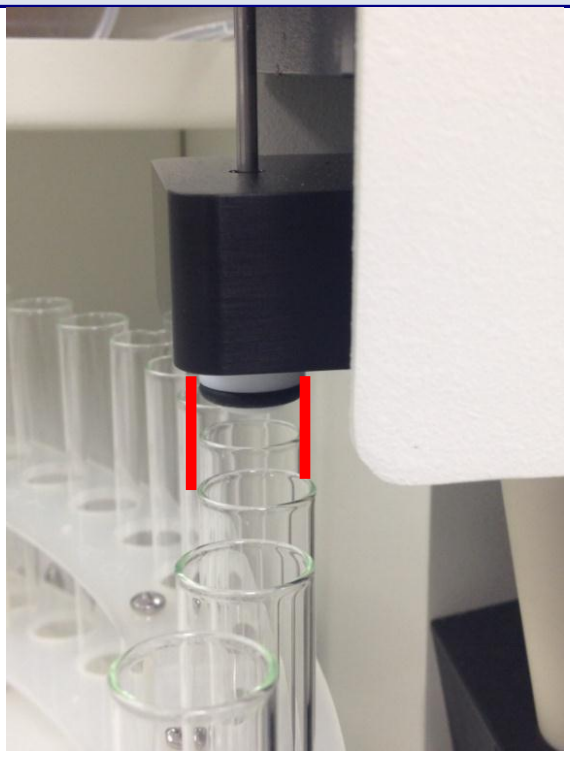


STEP 4: PRESS **SAMPLER CHANGER ALIGNMENT**

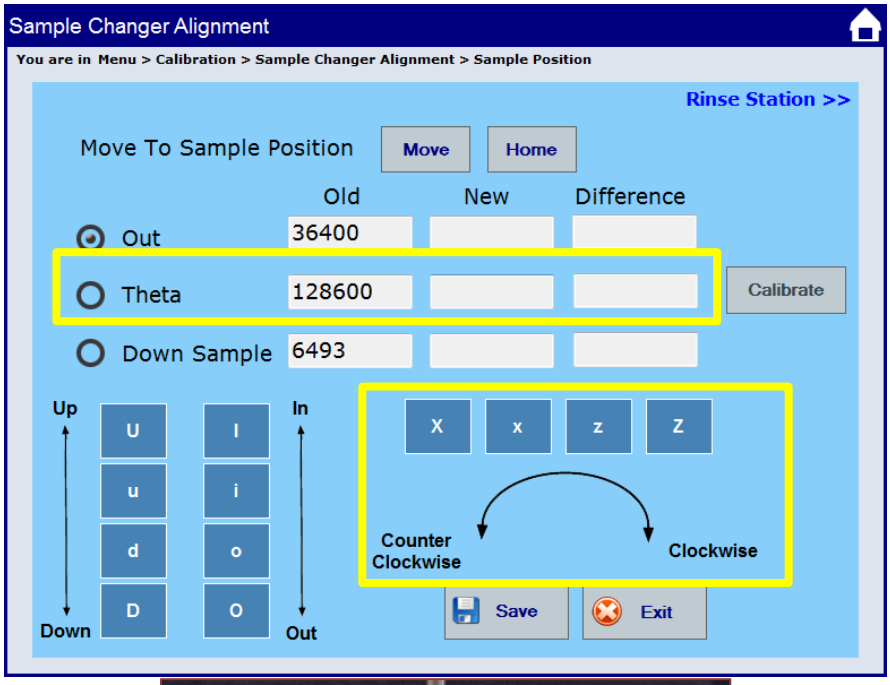


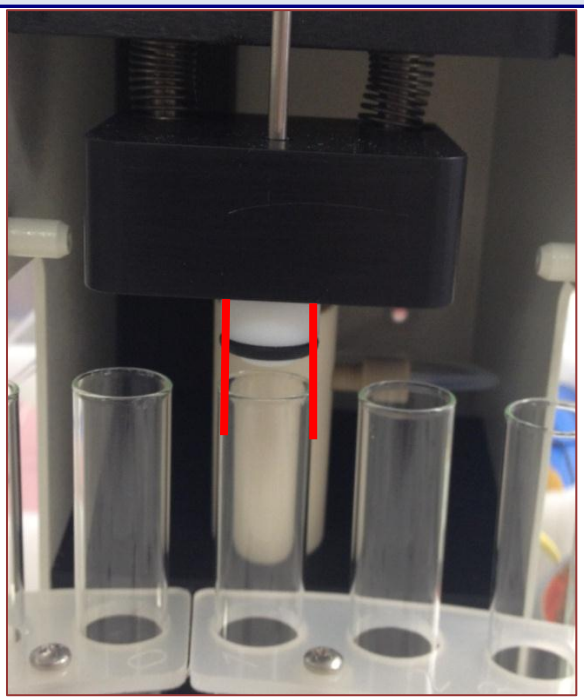
STEP 5: ALIGN THE **OUT** POSITION OF THE NEEDLE TO THE SAMPLE VIALS/TUBES. THIS WILL ALIGN THE NEEDLE FRONT TO BACK WITH THE VIALS/TUBES TO CREATE A PERFECT SEAL. TO MOVE THE NEEDLE IN OR OUT, USE THE **I i or O o BUTTONS** (THE **I i BUTTONS** WILL MOVE THE NEEDLE AWAY FROM THE VIAL/TUBE AND THE **O o BUTTONS** WILL MOVE THE NEEDLE TOWARDS YOU.)(THE UPPER CASE LETTERS ARE LARGE MOVEMENTS AND THE LOWER CASE LETTERS ARE SMALL MOVEMENTS) PRESS **MOVE** TO SEND THE NEEDLE ABOVE THE VIAL/TUBE, ALIGN THE NEEDLE AND VIAL/TUBE, THEN PRESS **CALIBRATE** WHEN THE ALIGNMENT IS FINISHED.



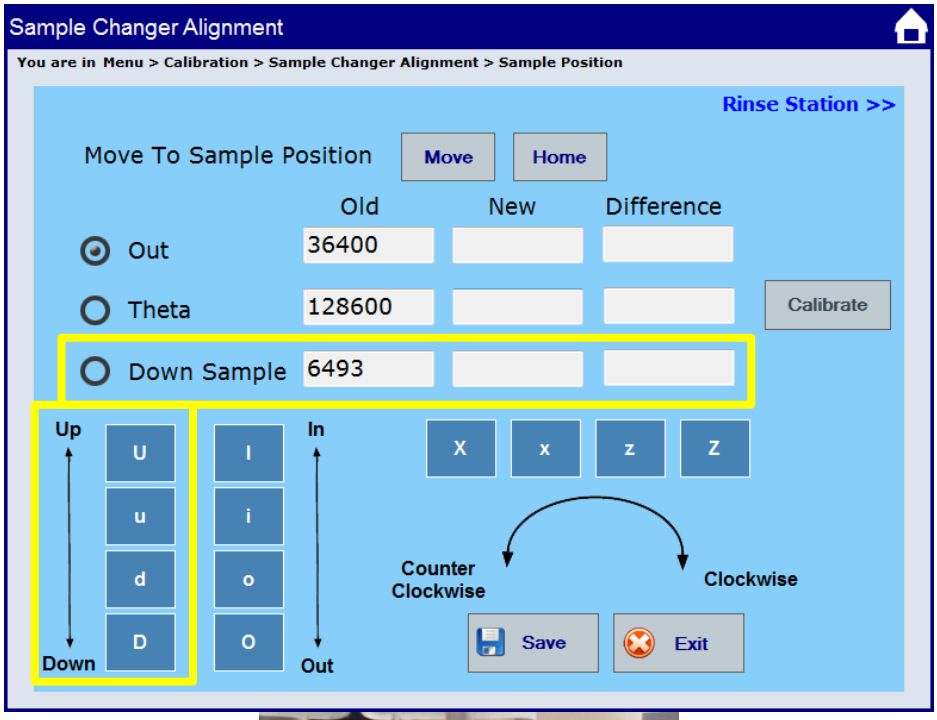


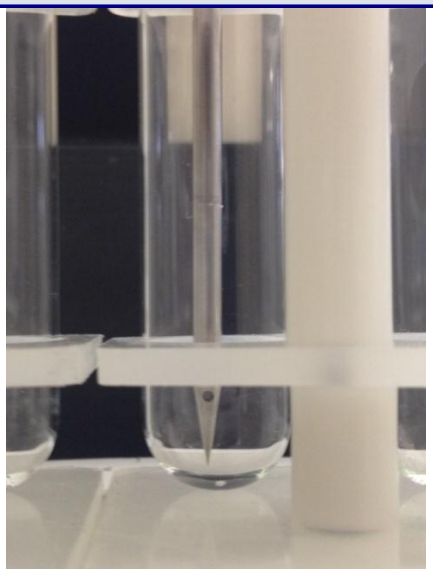
STEP 6: ALIGN THE **THETA** POSITION OF THE NEEDLE. THIS WILL ALIGN THE NEEDLE AND THE SAMPLE VIALS/TUBES FROM LEFT TO RIGHT TO CREATE A PERFECT SEAL WITH THE VIALS/TUBES. TO MOVE THE CAROUSEL LEFT OR RIGHT, USE THE **X x or Z z BUTTONS**. (THE **X x BUTTONS** WILL MOVE THE CAROUSEL COUNTER-CLOCKWISE (LEFT) AND THE **Z z BUTTONS** WILL MOVE IT CLOCKWISE (RIGHT) (THE UPPER CASE LETTERS ARE LARGE MOVEMENTS AND THE LOWER CASE LETTERS ARE SMALL MOVEMENTS). PRESS **MOVE** TO SEND THE NEEDLE ABOVE THE VIAL/TUBE, ALIGN THE NEEDLE AND VIAL/TUBE, THEN PRESS **CALIBRATE** WHEN THE ALIGNMENT IS FINISHED.



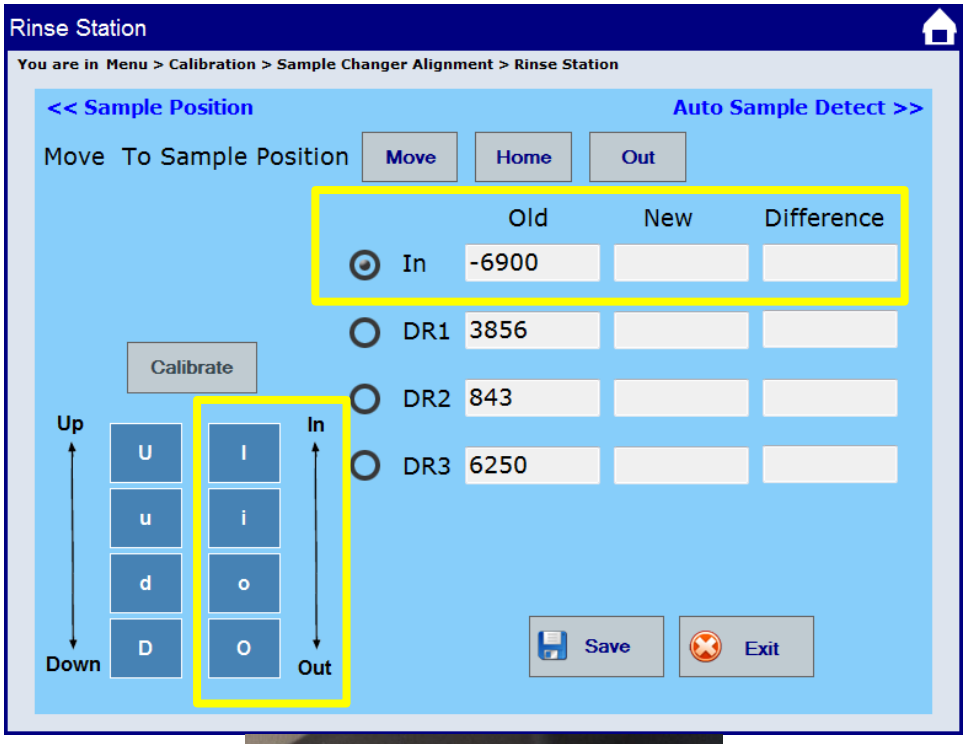


STEP 7: ALIGN THE **DOWN SAMPLE** POSITION OF THE NEEDLE. THIS WILL ALIGN THE HOW FAR THE NEEDLE GOES INTO THE SAMPLE VIALS/TUBES THE NEEDLE SHOULD BE AS CLOSE TO THE BOTTOM WITHOUT TOUCHING THE SAMPLE TUBE/VIAL, IF THE NEEDLE HITS THE BOTTOM OF THE VIAL/TUBE, YOU MAY DAMAGE THE NEEDLE OR BLEAK THE VIALS. THE VENT HOLE OF THE NEEDLE SHOULD BE BELOW THE CAP AS WELL. TO MOVE THE NEEDLE UP OR DOWN, USE THE **U u BUTTONS** OR THE **D d BUTTONS**. (THE **U u BUTTONS** WILL MOVE THE NEEDLE UP AND THE **D d BUTTONS** WILL MOVE IT DOWN.) (THE UPPER CASE LETTERS ARE LARGE MOVEMENTS AND THE LOWER CASE LETTERS ARE SMALL MOVEMENTS). PRESS **MOVE** TO SEND THE NEEDLE ABOVE THE VIAL/TUBE, ALIGN THE NEEDLE AND VIAL/TUBE, THEN PRESS **CALIBRATE** WHEN THE ALIGNMENT IS FINISHED. THEN PRESS **RINSE STATION**

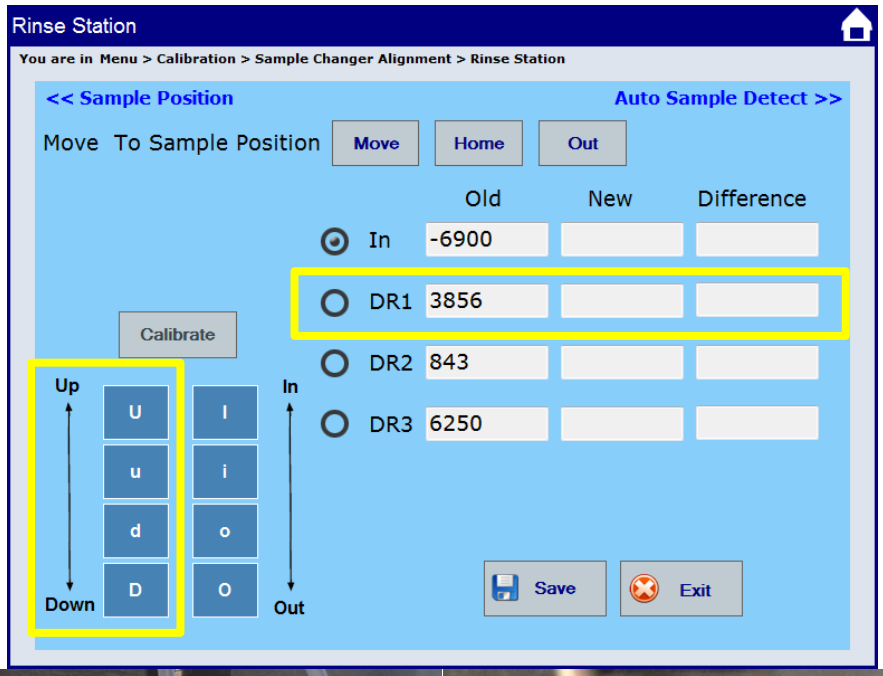


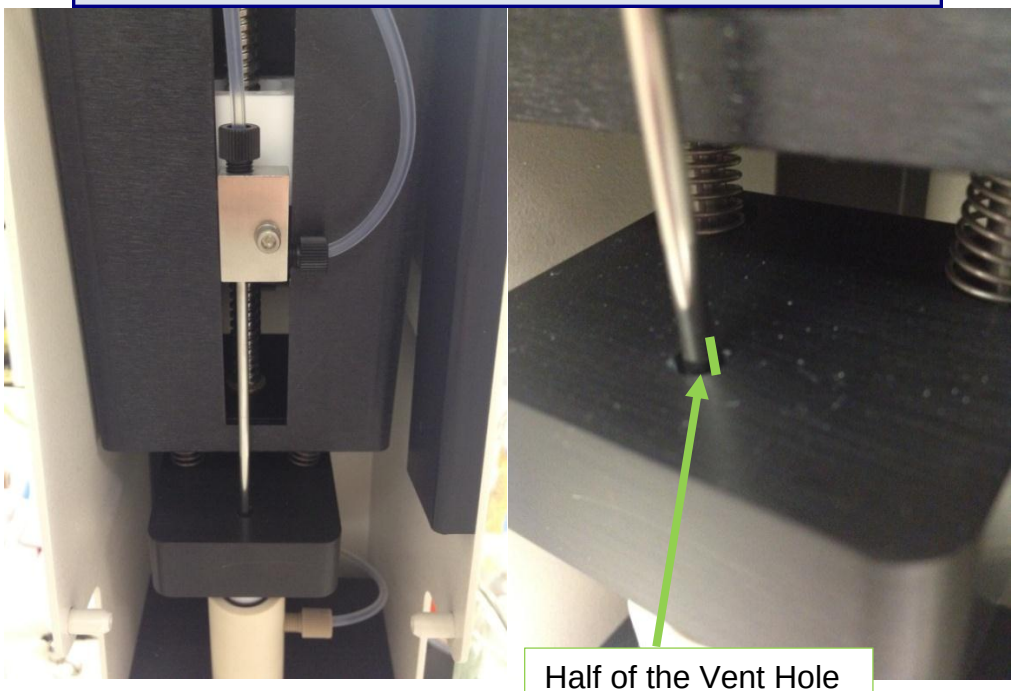


STEP 8: ALIGN THE **IN** POSITION OF THE RINSE STATION. THIS WILL ALIGN THE NEEDLE TO THE INPUT OF THE RINSE STATION TO CREATE A PERFECT SEAL. TO MOVE THE NEEDLE IN OR OUT, USE THE **I i or O o BUTTONS** (THE **I i BUTTONS** WILL MOVE THE NEEDLE AWAY FROM THE VIAL/TUBE AND THE **O o BUTTONS** WILL MOVE THE NEEDLE TOWARDS YOU.)(THE UPPER CASE LETTERS ARE LARGE MOVEMENTS AND THE LOWER CASE LETTERS ARE SMALL MOVEMENTS) PRESS **MOVE** TO SEND THE NEEDLE ABOVE THE VIAL/TUBE, ALIGN THE NEEDLE AND VIAL/TUBE, THEN PRESS **CALIBRATE** WHEN THE ALIGNMENT IS FINISHED.

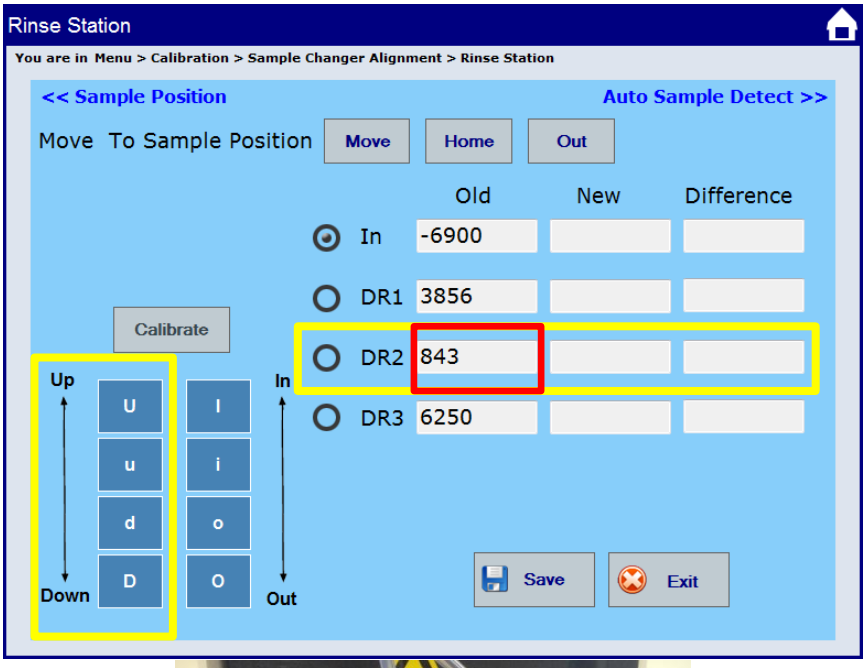


STEP 9: ALIGN THE **DR1** POSITION OF THE NEEDLE. THE DR1 POSITION IS USED FOR THE SAMPLE TO BE BLOWN OUT AFTER A MEASUREMENT AND CLEANING. FOR THIS POSITION, THE VENT HOLE MUST BE SHOWING HALFWAY ABOUVE THE GASKET HOUSING. TO MOVE THE NEEDLE UP OR DOWN, USE THE **U u BUTTONS** OR THE **D d BUTTONS**. (THE **U u BUTTONS** WILL MOVE THE NEEDLE UP AND THE **D d BUTTONS** WILL MOVE IT DOWN.) (THE UPPER CASE LETTERS ARE LARGE MOVEMENTS AND THE LOWER CASE LETTERS ARE SMALL MOVEMENTS). PRESS **MOVE** TO SEND THE NEEDLE ABOVE THE VIAL/TUBE, ALIGN THE NEEDLE AND VIAL/TUBE, THEN PRESS **CALIBRATE** WHEN THE ALIGNMENT IS FINISHED.





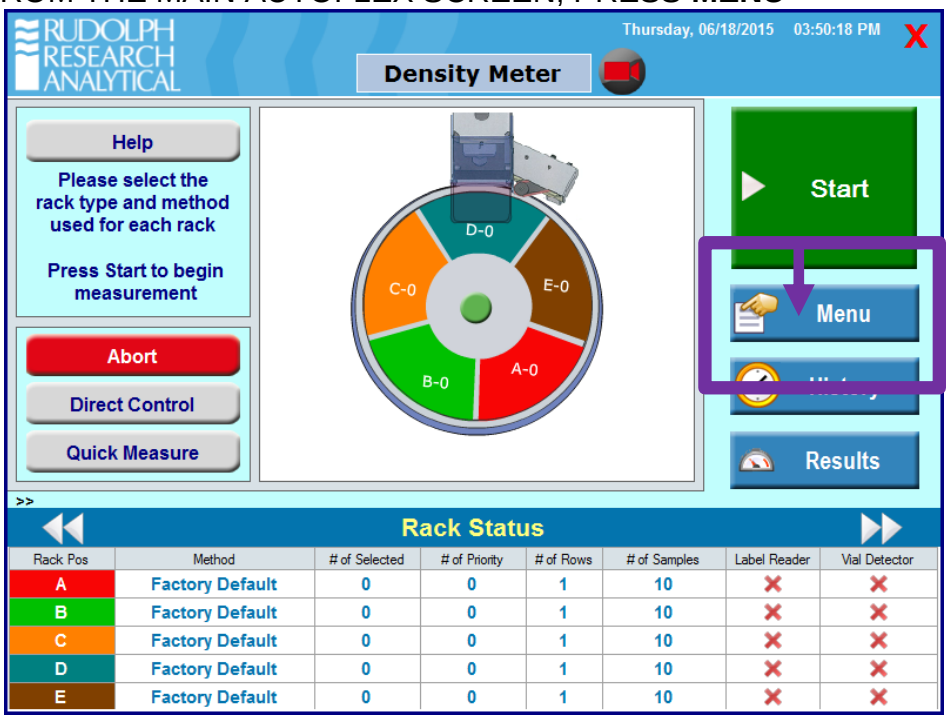
STEP 10: ALIGN THE **DR1** POSITION OF THE NEEDLE. THE DR1 POSITION IS USED FOR THE FINAL SYSTEM CLEANING. THE NEW VALUE SHOULD READ BETWEEN 700-900 COUNTS. TO MOVE THE NEEDLE UP OR DOWN, USE THE **U u BUTTONS** OR THE **D d BUTTONS**. (THE **U u BUTTONS** WILL MOVE THE NEEDLE UP AND THE **D d BUTTONS** WILL MOVE IT DOWN.) (THE UPPER CASE LETTERS ARE LARGE MOVEMENTS AND THE LOWER CASE LETTERS ARE SMALL MOVEMENTS). PRESS **MOVE** TO SEND THE NEEDLE ABOVE THE VIAL/TUBE, ALIGN THE NEEDLE AND VIAL/TUBE, THEN PRESS **CALIBRATE** WHEN THE ALIGNMENT IS FINISHED.



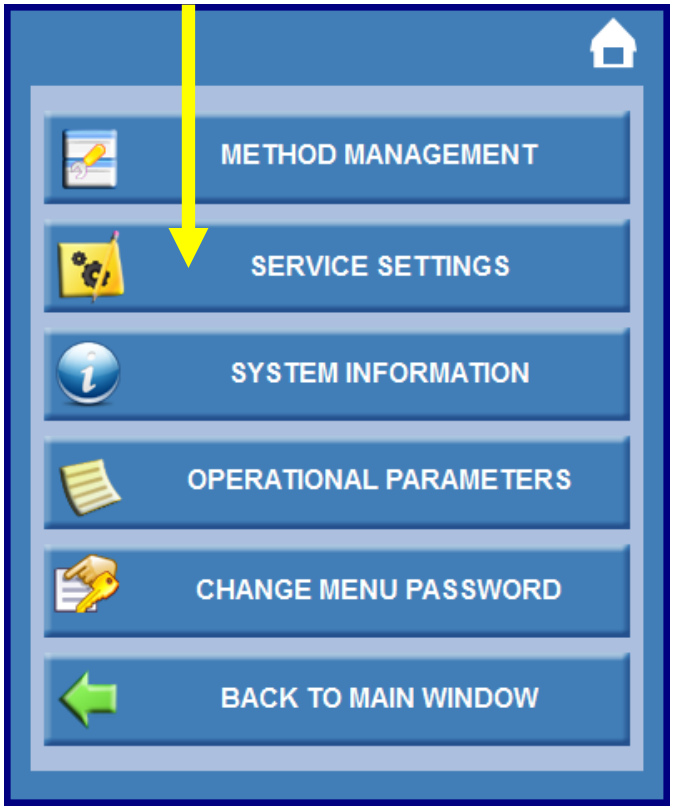
STEP 11: PRESS **SAVE** TO SAVE ALL OF THE NEW POSITION VALUES.

VIAL/TUBE SPINNER ALIGNMENT

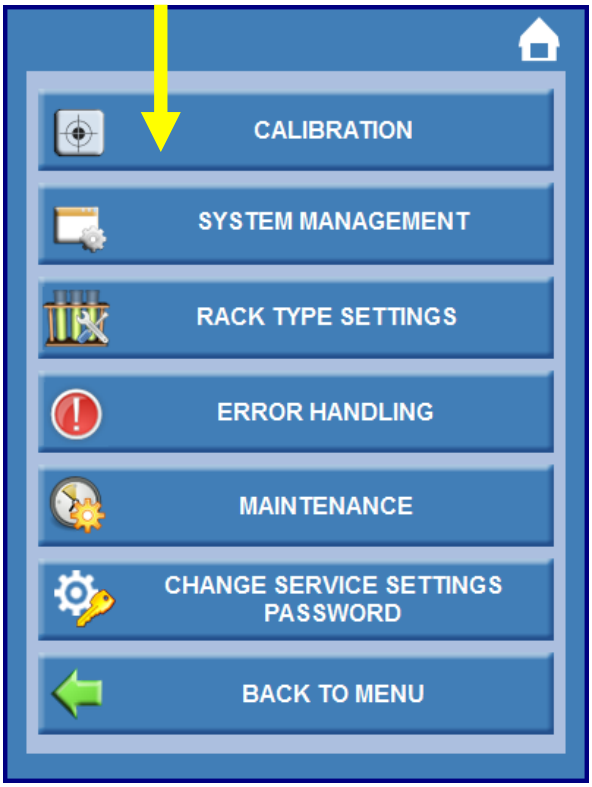
STEP 1: FROM THE MAIN AUTOFLEX SCREEN, PRESS **MENU**



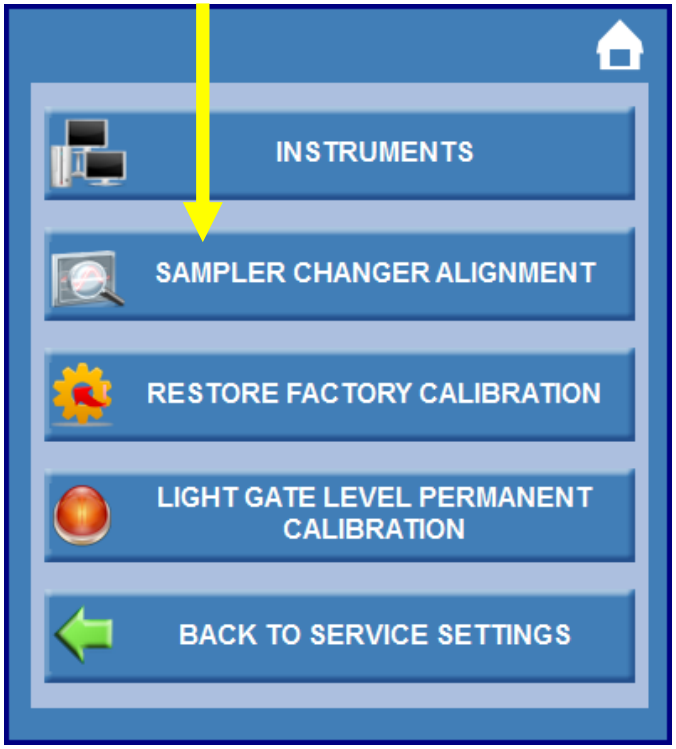
STEP 2: PRESS **SERVICE SETTINGS**



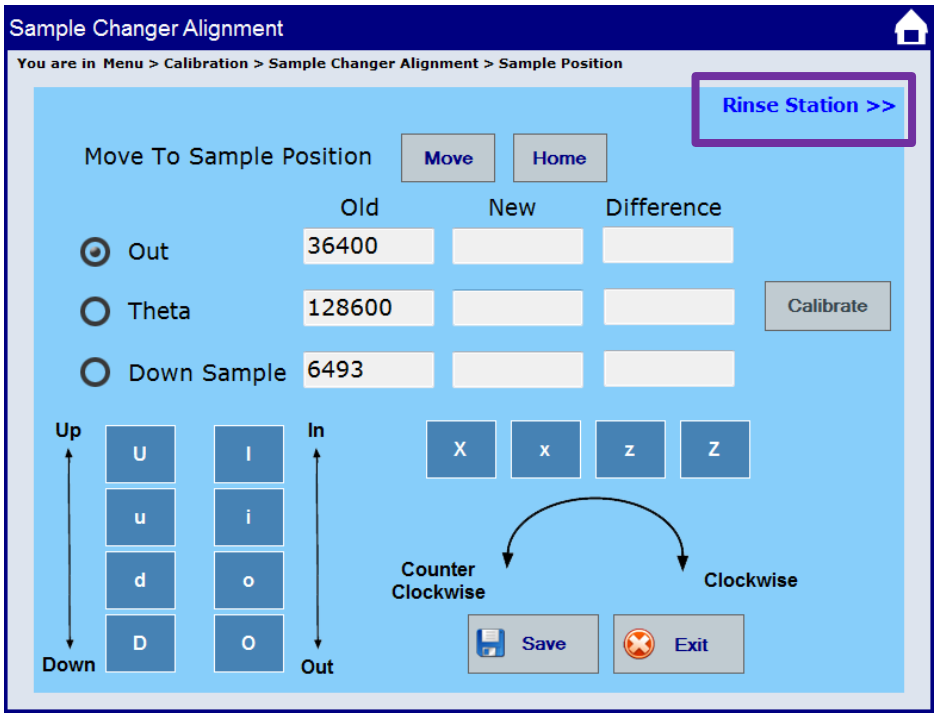
STEP 3: PRESS **CALIBRATION**



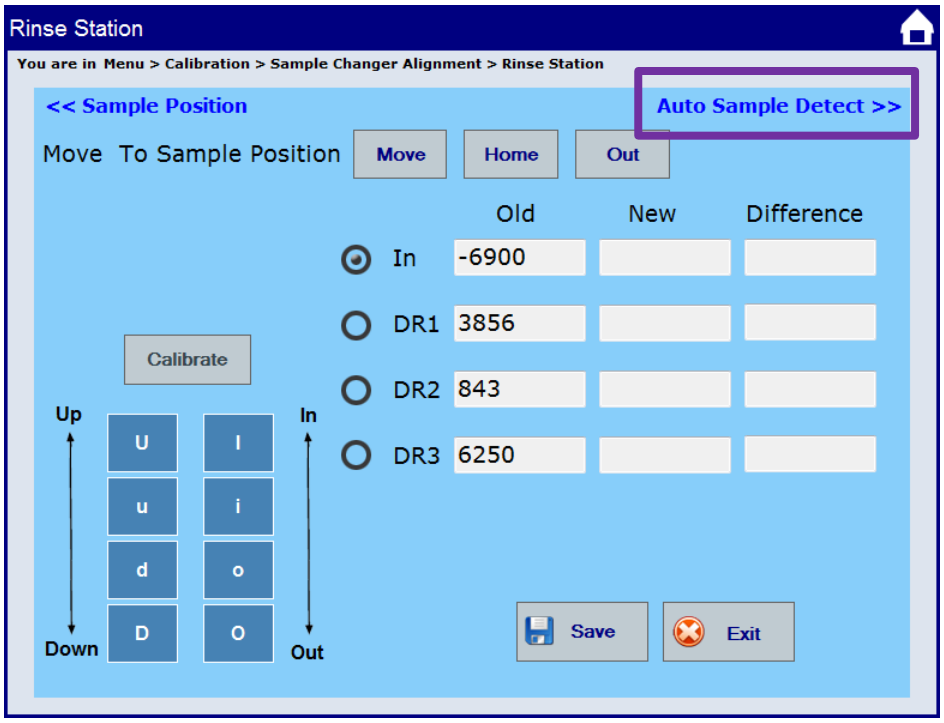
STEP 4: PRESS **SAMPLER CHANGER ALIGNMENT**



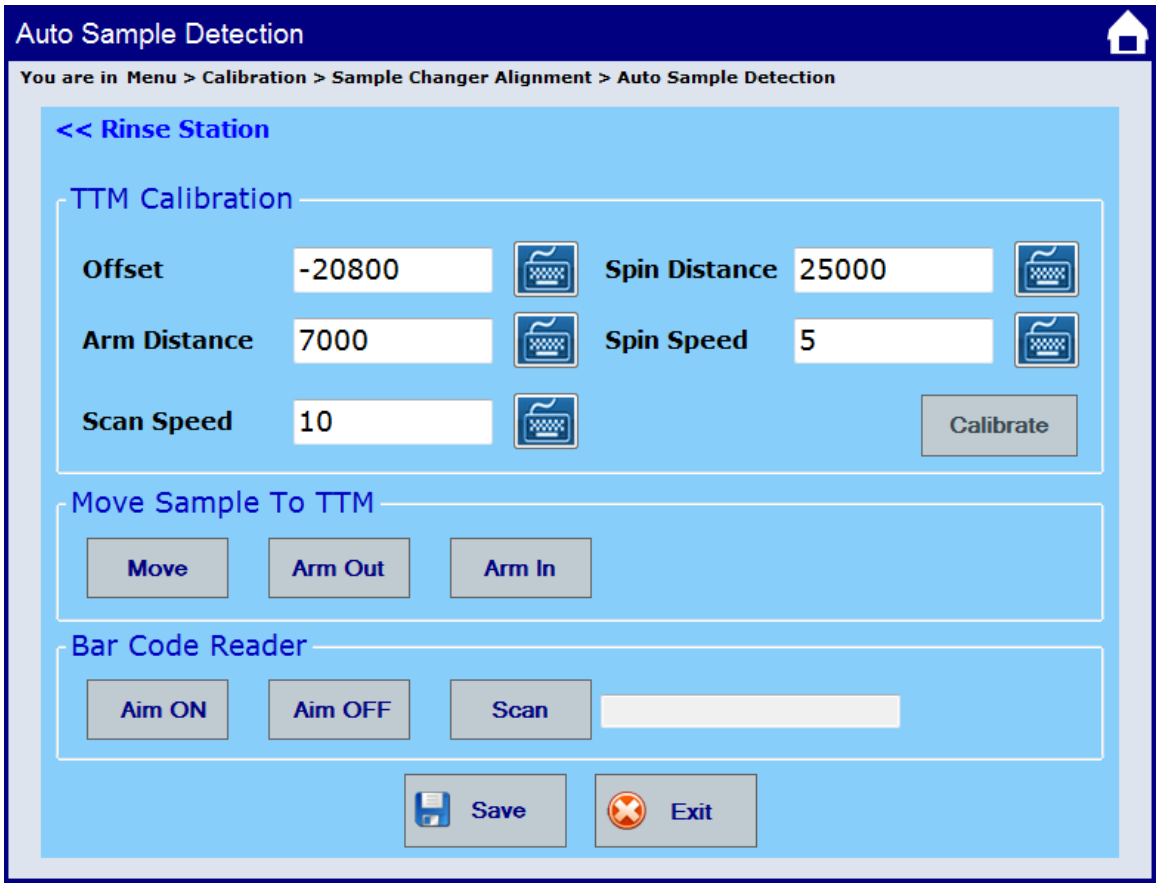
STEP 5: PRESS **RINSE STATION**



STEP 6: PRESS **AUTO SAMPLER DETECT**



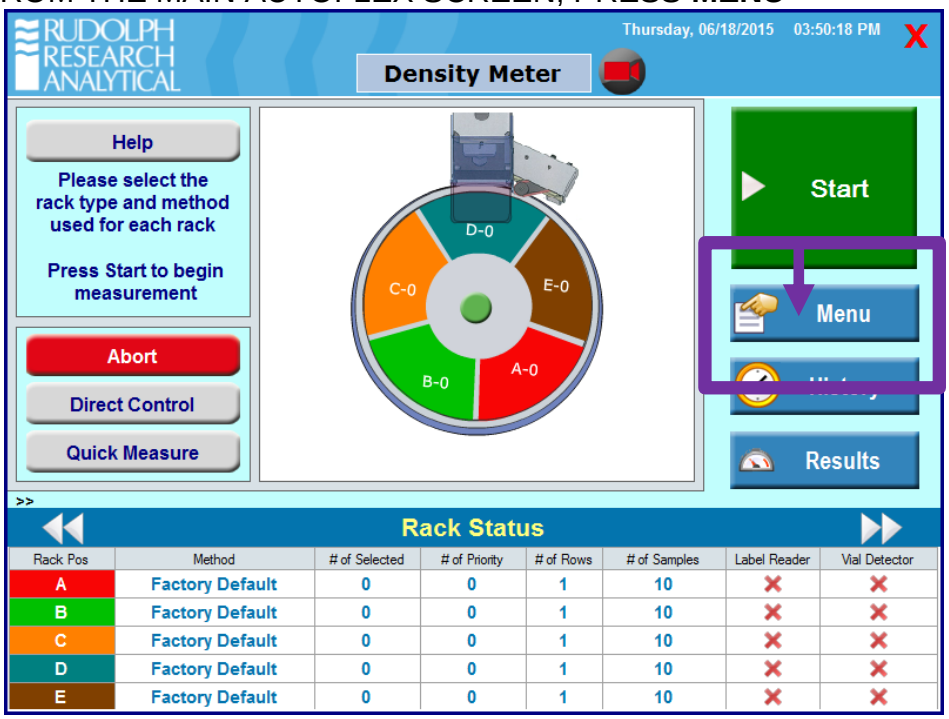
STEP 7: TO ALIGN THE DISTANCE VIAL/SPIN DETECTOR, USE THE **ARM OUT** AND **ARM IN** BUTTONS TO MOVE THE ARM AND ADJUST THE **ARM DISTANCE** COUNT NUMBER MANUALLY UP OR DOWN DEPENDING UPON WHERE THE ARM NEEDS TO BE TO TOUCH THE SAMPLE VIAL/TUBES. (IT IS BEST TO CHANGE IT NO MORE THAN 250 COUNTS AT A TIME) FROM HERE YOU CAN ALSO ADJUST HOW FAST THE SAMPLE TUBES/VIALS GET SPUN AND HOW LONG/FAR THEY GET SPUN FOR, BY ADJUSTING THE **SPIN DISTANCE** AND **SPIN SPEED** COUNTS.



STEP 8: ONCE THE VIAL/SPIN DETECTOR HAS BEEN ALIGNED, PRESS **SAVE** TO SAVE THE NEW POSITIONS.

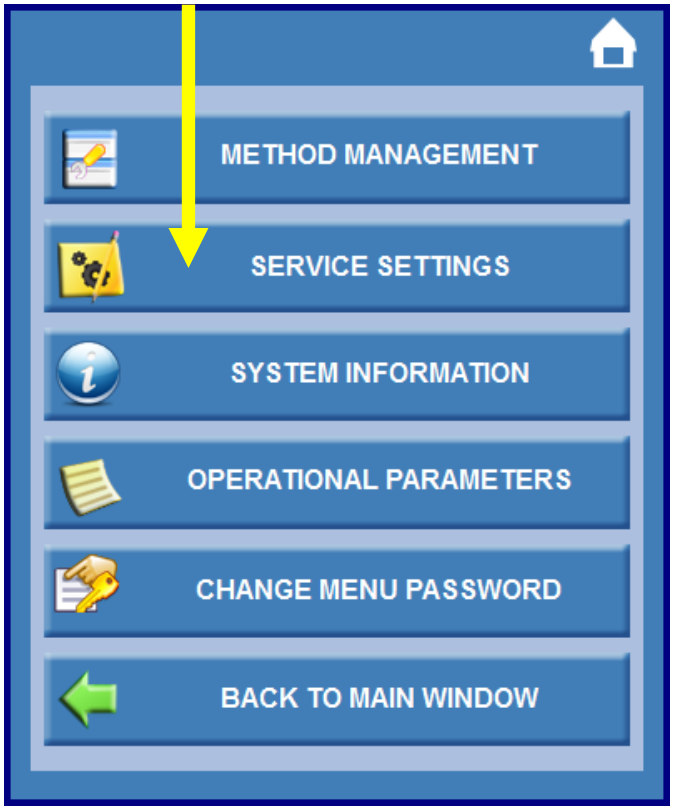
RACK SETTING ADJUSTMENTS

STEP 1: FROM THE MAIN AUTOFLEX SCREEN, PRESS **MENU**

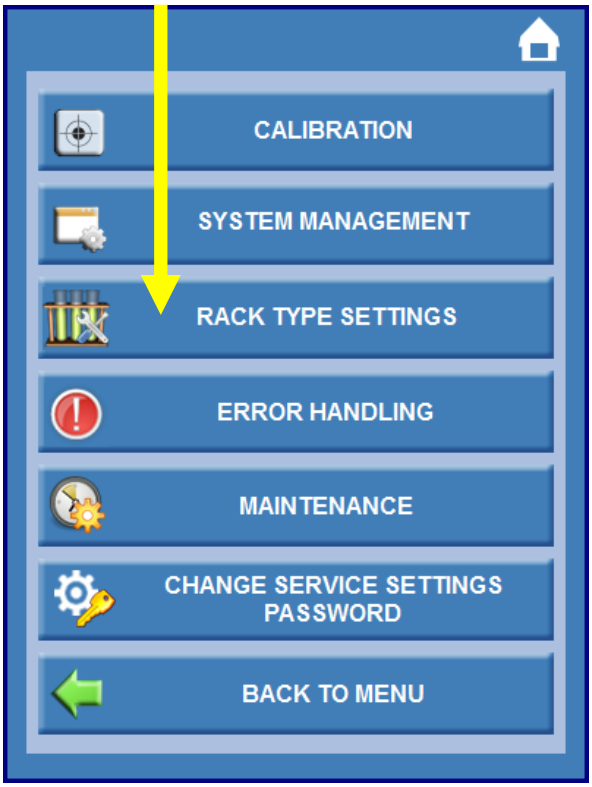


Rack Pos	Method	# of Selected	# of Priority	# of Rows	# of Samples	Label Reader	Vial Detector
A	Factory Default	0	0	1	10	✗	✗
B	Factory Default	0	0	1	10	✗	✗
C	Factory Default	0	0	1	10	✗	✗
D	Factory Default	0	0	1	10	✗	✗
E	Factory Default	0	0	1	10	✗	✗

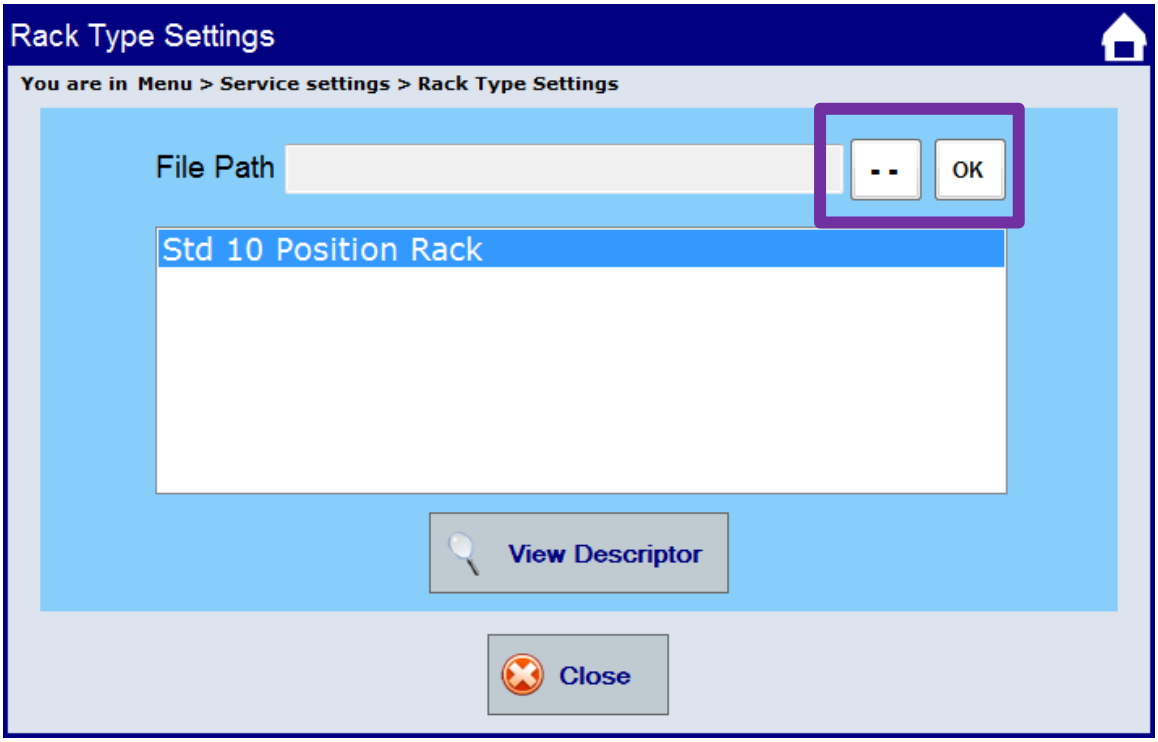
STEP 2: PRESS **SERVICE SETTINGS**



STEP 3: PRESS **RACK TYPE SETTINGS**

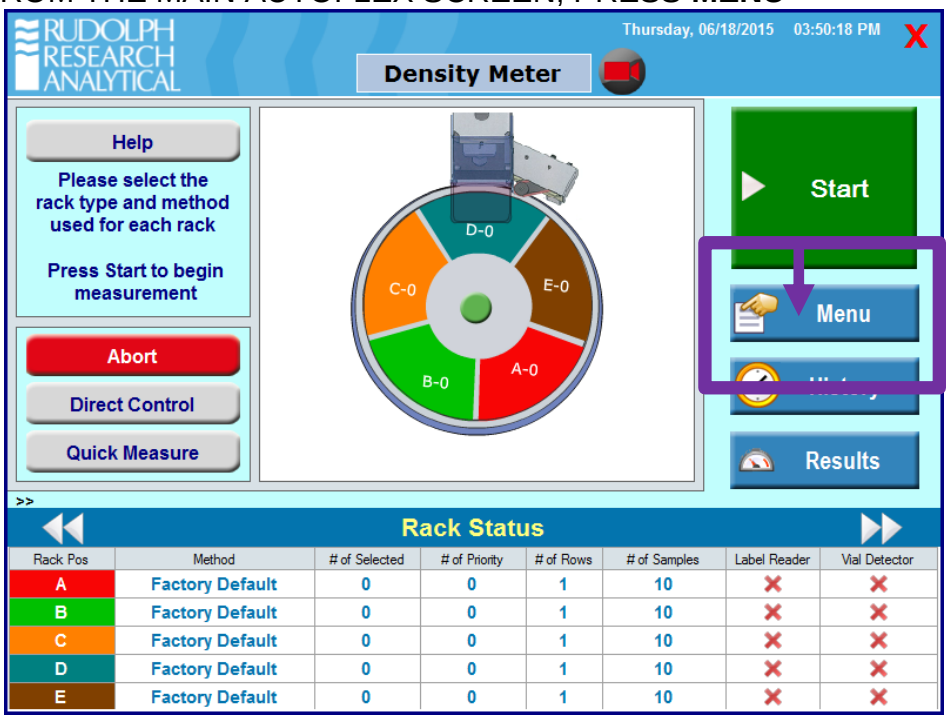


STEP 4: LOAD THE NEW RACK FILE THAT HAS BEEN PROVIDED BY RRA TO CHANGE THE RACK TYPES AND SETTINGS BY PRESSING THE **- - BUTTON** SELECTING THE FILE FROM A USB DRIVE THEN PRESS OK TO ACTIVATE IT.

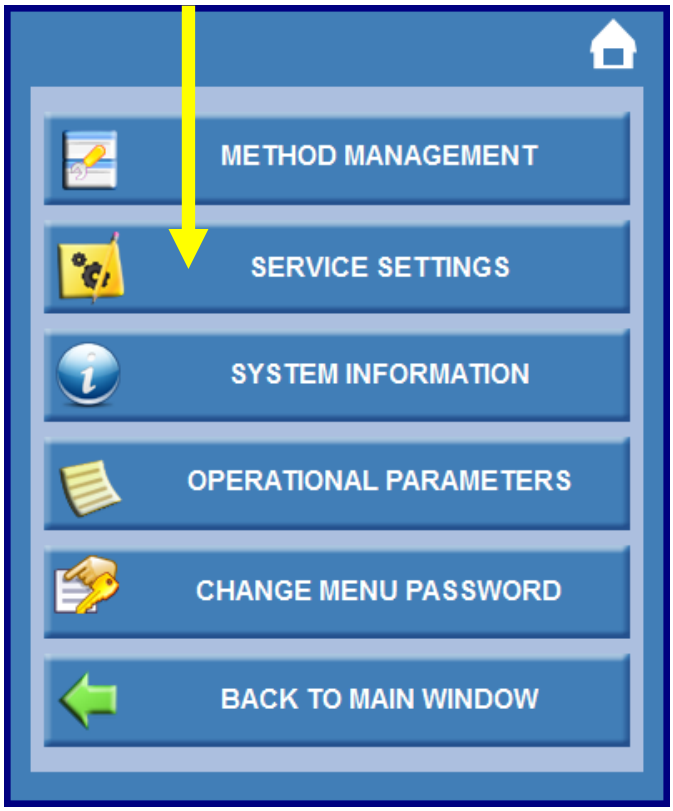


INSTRUMENT CALIBRATIONS

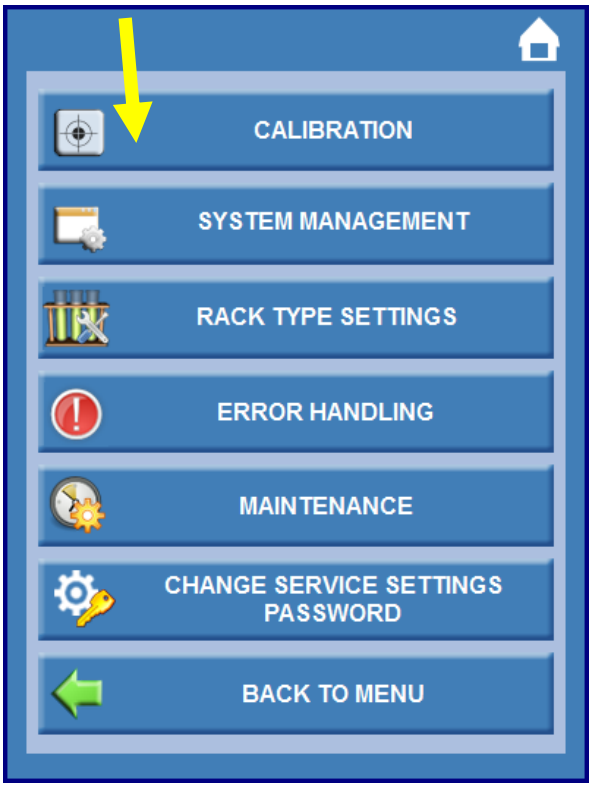
STEP 1: FROM THE MAIN AUTOFLEX SCREEN, PRESS **MENU**



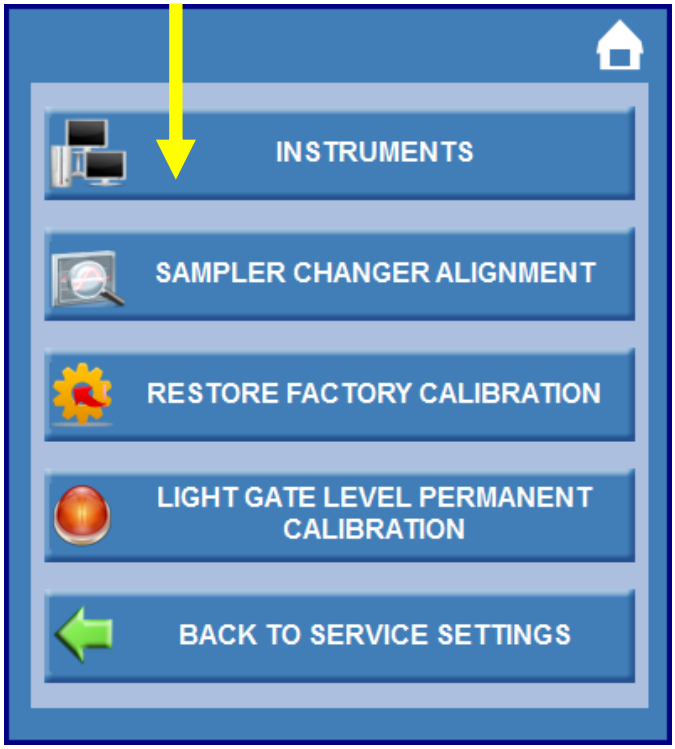
STEP 2: PRESS **SERVICE SETTINGS**



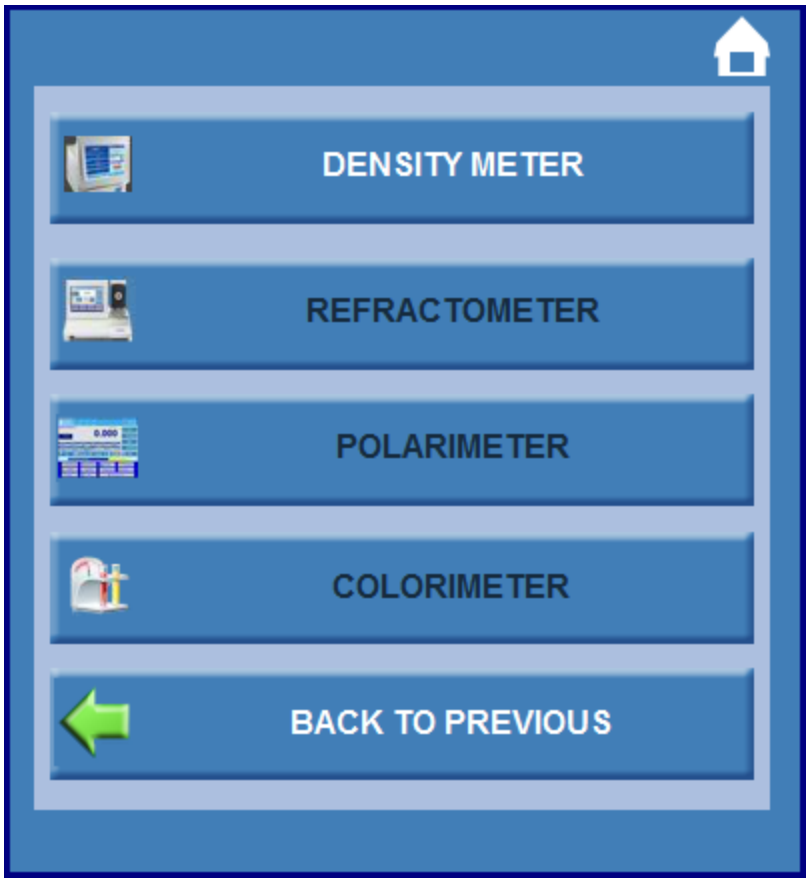
STEP 3: PRESS **CALIBRATION**



STEP 4: PRESS **INSTRUMENTS**

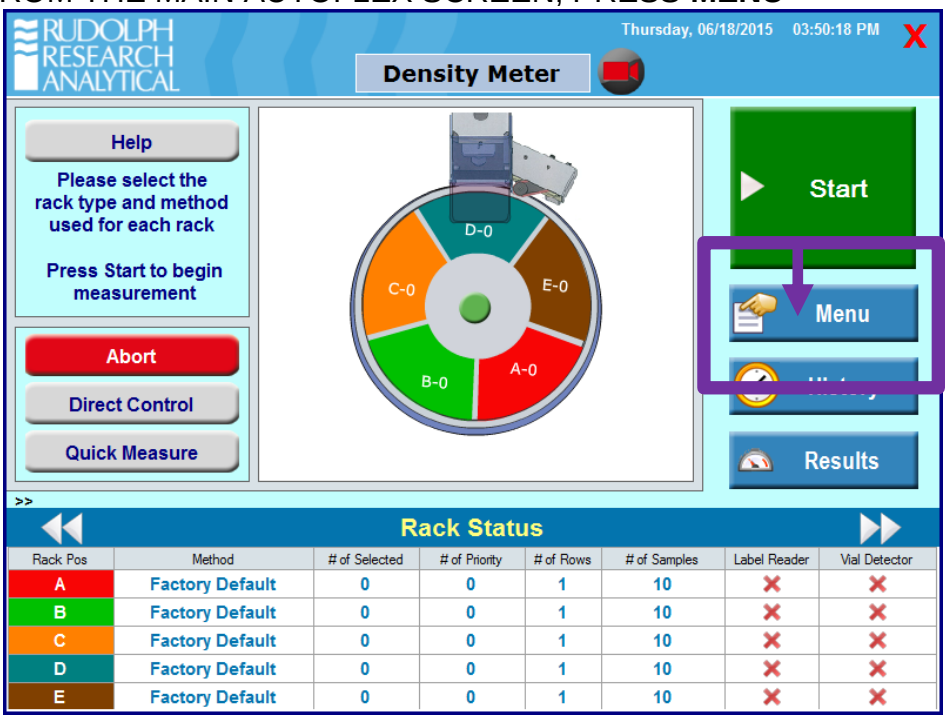


STEP 5: FROM HERE YOU CAN SELECT WHICH INSTRUMENT THAT YOU WOULD LIKE TO CALIBRATE. EACH INSTRUMENT'S CALIBRATION PROCEDURE WILL PROMPT YOU ON WHAT TO DO AND IT WILL ALSO PROMPT YOU WHEN TO LOAD WATER AND IN WHICH POSITION TO PLACE IT. THE INSTRUMENTS THAT ARE IN WHITE FONT ARE THE ACTIVE INSTRUMENTS THAT CAN BE CALIBRATED, THE INSTRUMENTS THAT HAVE THE BLACK FONT ARE INSTRUMENTS THAT ARE NOT CONNECTED. **IF YOU WOULD LIKE TO EDIT ANY OF THE CALIBRATION METHODS, YOU WILL HAVE TO COMPLETE THAT WITH EACH INSTRUMENT'S SPECIFIC SOFTWARE NOT THROUGH THE AUTOFLEX.**



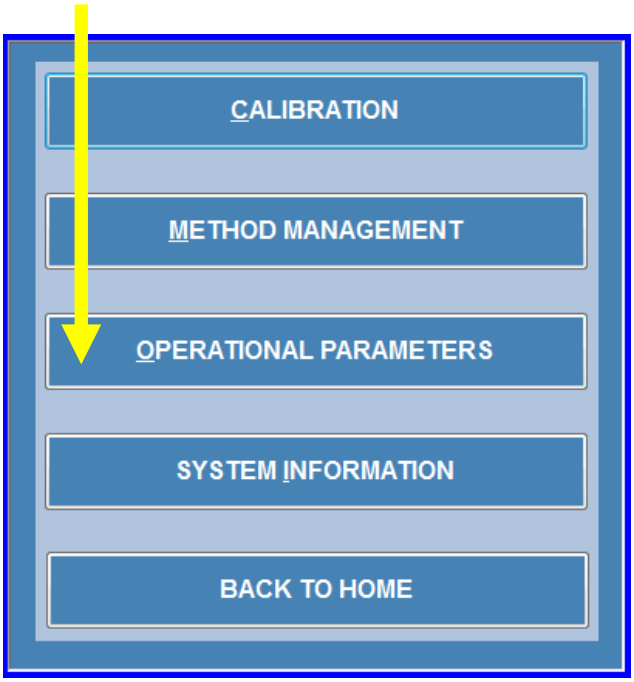
TOUCH PANEL CALIBRATION

STEP 1: FROM THE MAIN AUTOFLEX SCREEN, PRESS **MENU**

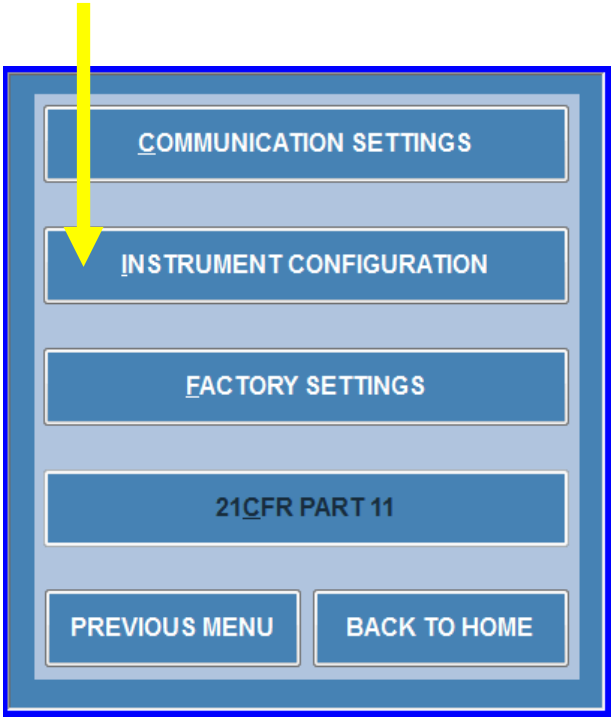


STEP 1: FROM THE MAIN DENSITY SCREEN PRESS **MENU**

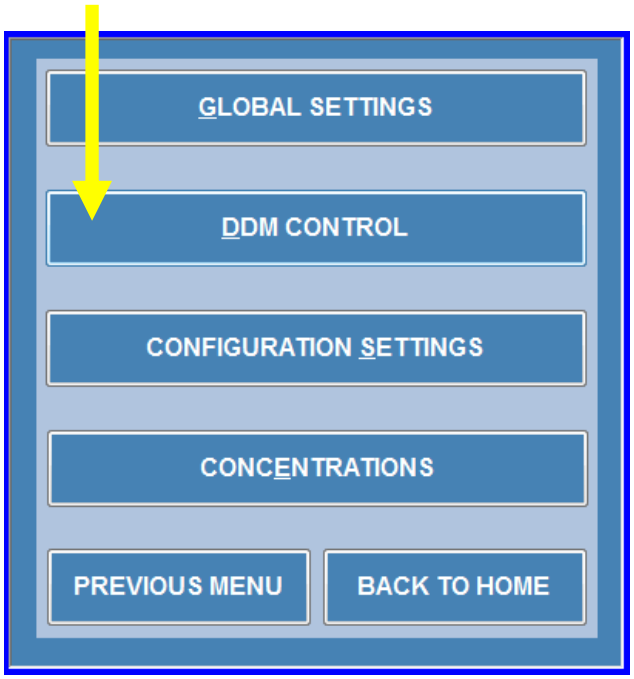
STEP 2: PRESS **OPERATIONAL PARAMETERS**



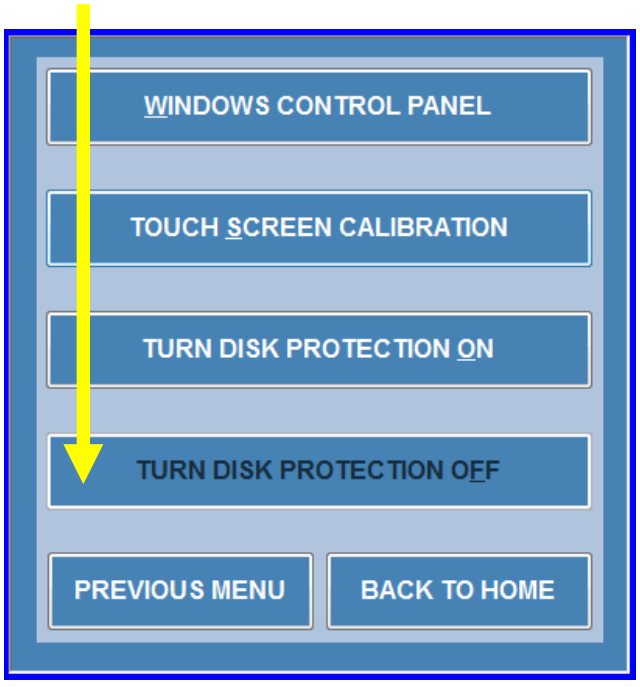
STEP 3: PRESS **INSTRUMENT CONFIGURATION**



STEP 4: PRESS **DDM CONTROL**



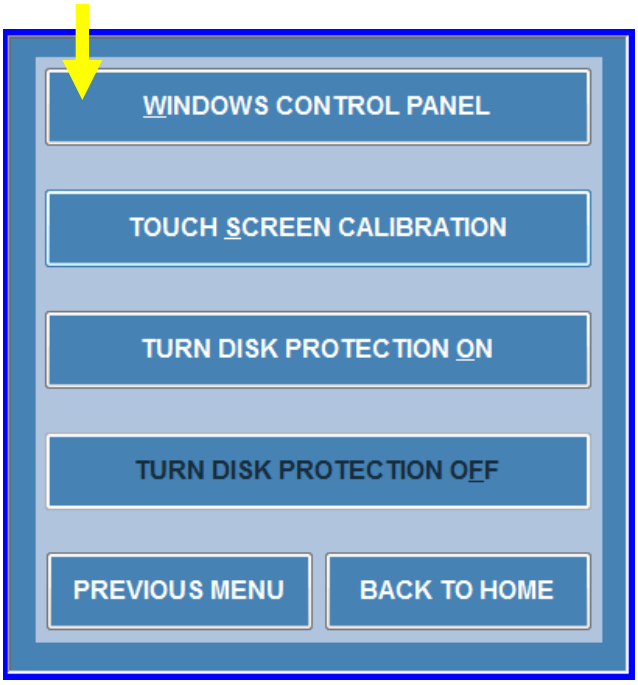
STEP 5: PRESS **TURN DISK PROTECTION OFF**



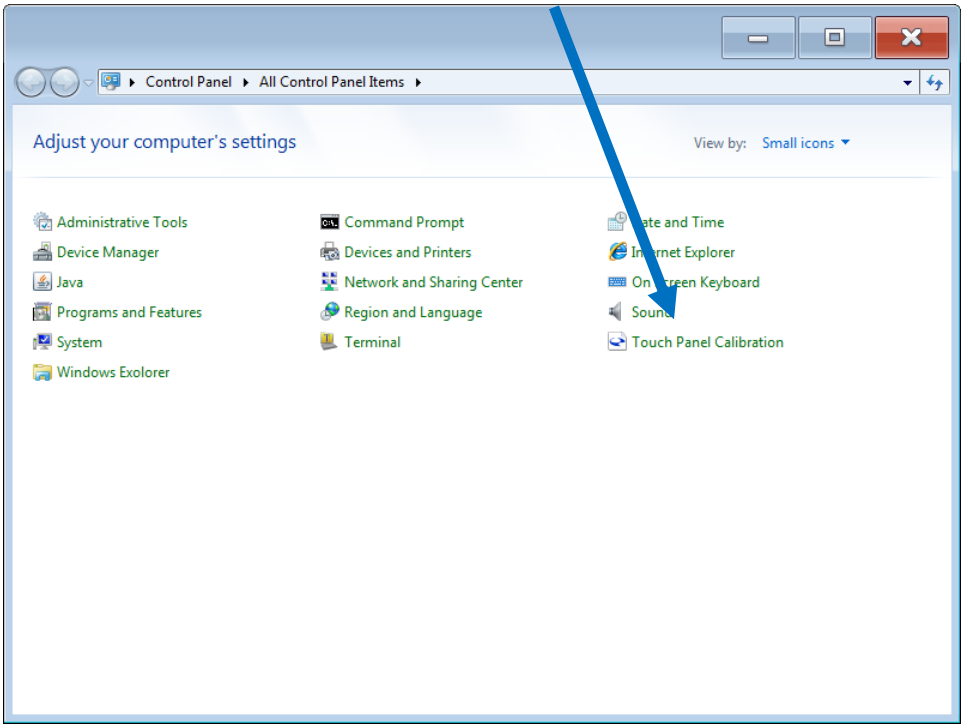
STEP 6: THE DENSITY METER WILL PROMPT YOU TO RESTART THE INSTRUMENT. PRESS **OK**

STEP 7: REPEAT STEPS 1 – 4

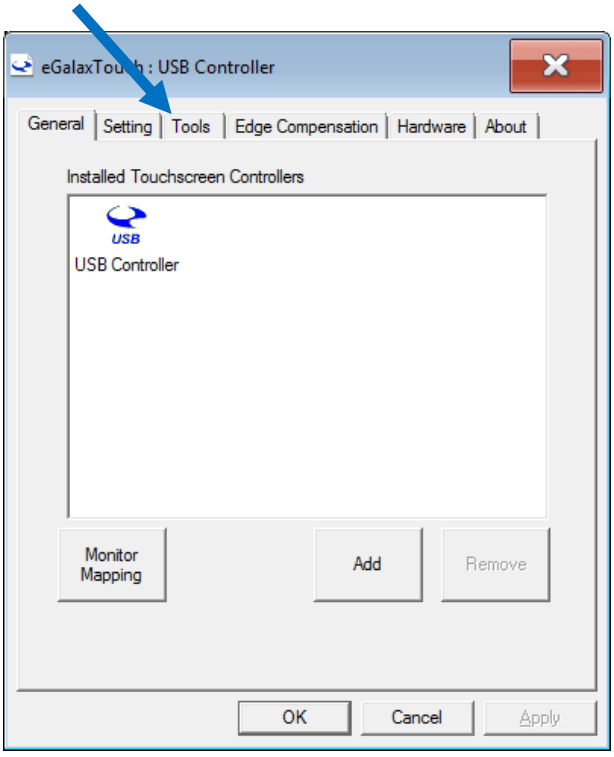
STEP 8: PRESS **WINDOWS CONTROL PANEL**



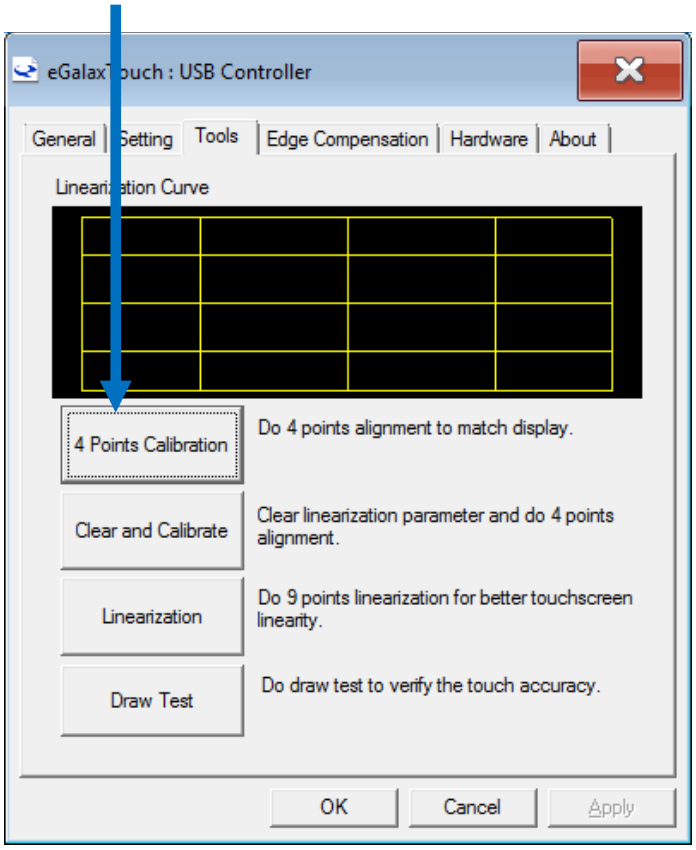
STEP 9: PRESS **TOUCH PANEL CALIBRATION**



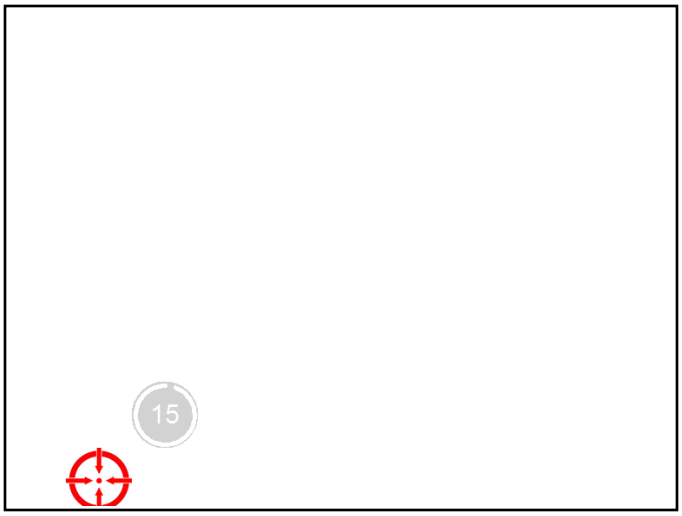
STEP 10: PRESS THE **TOOLS** TAB



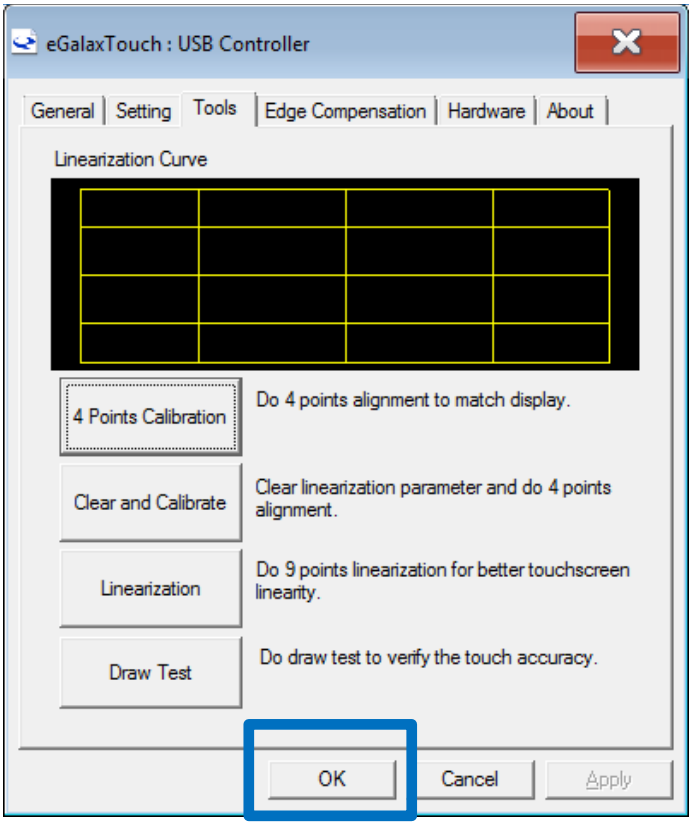
STEP 11: PRESS **4 POINTS CALIBRATION**



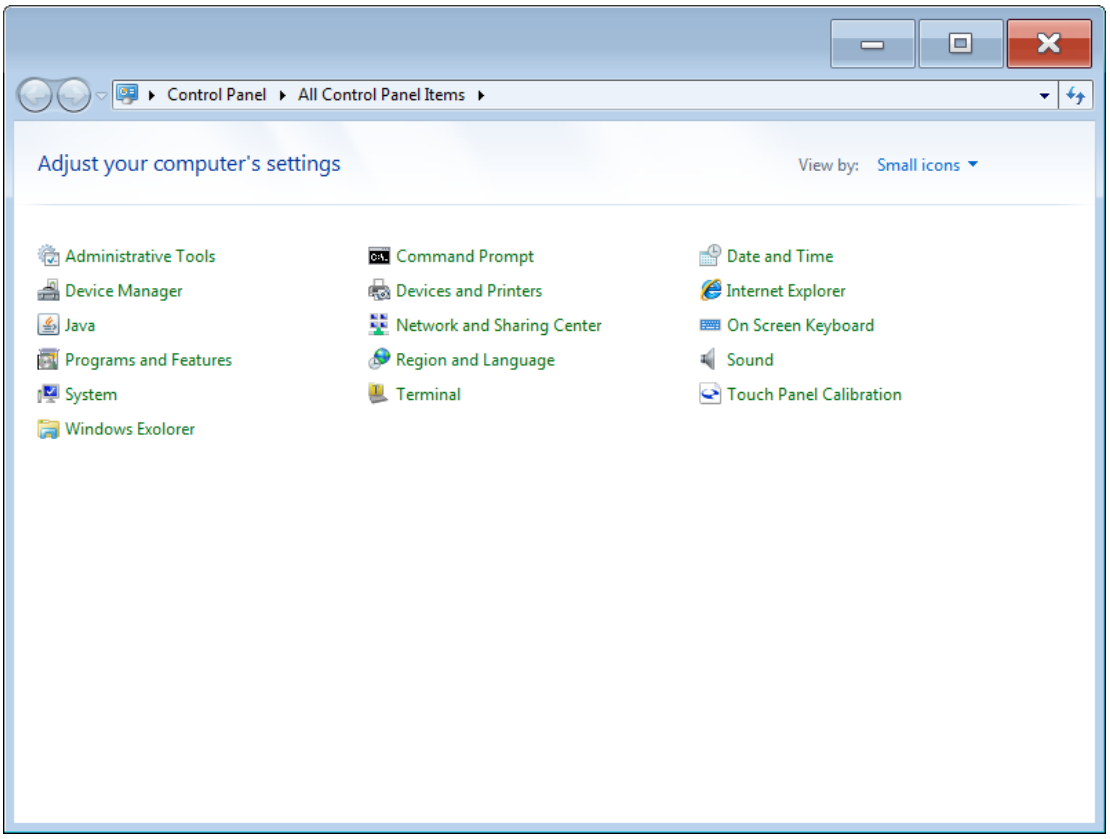
STEP 12: COMPLETE THE TOUCH PANEL CALIBRATION BY LIGHTLY PRESSING AND HOLDING A PENCIL POINT IN THE MIDDLE OF THE CALIBRATION CIRCLE UNTIL IT SAYS 100% AND THE NEXT CIRCLE SHOWS UP. YOU WILL HAVE 15 SECONDS TO COMPLETE EACH CALIBRATION POINT.



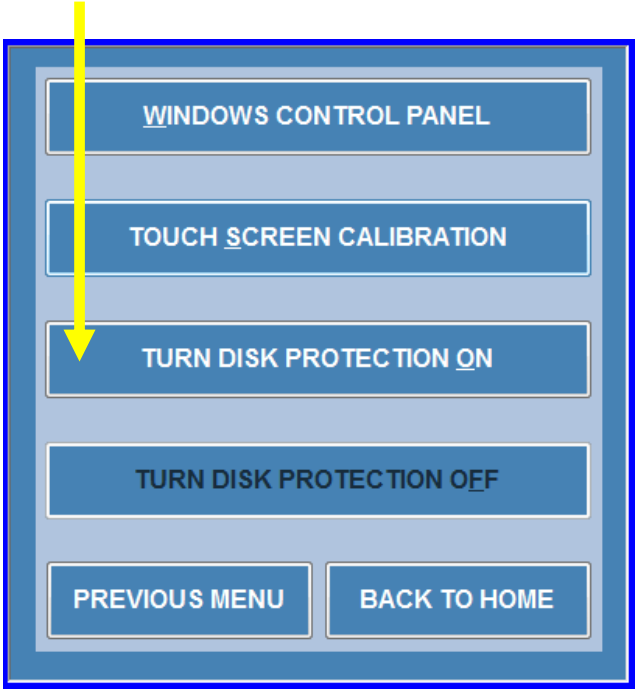
STEP 13: AFTER ALL FOUR OF THE CALIBRATION POINTS HAVE BEEN COMPLETED, PRESS **OK** ON THE TEXT BOX THAT SHOWS UP AND THEN PRESS **OK** ON THE CALIBRATION MAIN PAGE.



STEP 14: EXIT OUT OF THE CONTROL PANEL SCREEN BY HITTING THE RED **X** BUTTON ON THE TOP RIGHT.



STEP 15: PRESS **TURN DISK PROTECTION ON** AND THE INSTRUMENT WILL RESTART



QUICK TROUBLESHOOTING TECHNIQUES

Measurement Troubleshooting

PROBLEMS	CAUSES	CORRECTIONS
The Density Meter continues to measure but no results are given for longer than 10 minutes	An error occurred during an air water calibration and a bad result may have been saved	The Factory Backup calibration must be restored.
A Measurement Timeout Error has been given	The Sample in the U-Tube has not stabilized yet due to various reasons: 1) Bubbles in sample 2) Temperature inequality 3) Measurement Criteria is too strict 4) Measurement timeout is too strict	1) Re-load the sample and try again there may have been bubbles in the sample. 2) The sample is at a different temperature than the sample cell in the Density Meter and you must wait a little longer for stabilization. 3) Change the Measurement Criteria in the Method Management menu to a lesser Criteria
Measurements are taking too much time to complete	The Sample in the U-Tube has not stabilized yet due to various reasons: 1) Bubbles in sample 2) Temperature inequality 3) Measurement Criteria is too strict 4) The sample itself may need a lot of time to measure	1) Re-load the sample and try again there may have been bubbles in the sample. 2) The sample is at a different temperature than the sample cell in the Density Meter and you must wait a little longer for stabilization. 3) Change the Measurement Criteria in the Method Management menu to a lesser Criteria
Constant Initializing on the Density Meter	The Reference and Measure Oscillators are not running	1) Check to make sure the sample has no bubbles. 2) Measure pure dry air. 3) Check all cables inside the instrument are plugged in and tight. 4) Record voltage readings 5) Tune the reference and measure potentiometers. 6) Replace circuit boards.
A “waiting for oscillation to start” error has been given on the Density Meter	The Measure Oscillator is not running	1) Check to make sure the sample has no bubbles. 2) Measure pure dry air. 3) Check all cables inside the instrument are plugged in and tight. 4) Record voltage

		readings 5) Tune the reference and measure potentiometers. 6) Replace circuit boards.
Air/Water Calibrations are needed often (more than once a day)	**The Air/Water Calibrations may not have been done optimally**	**1) Make sure the U-Tube is 100% clean as any dirt or leftover samples can change the values for Air and Water 2) Make sure the Air/Water Calibration completes 3 measurements for both Air and Water. 3) Make sure there is pure dry Air inside the U-Tube when Air is being measured. 4) Make sure pure Distilled Water is being used for the water measurement**
Temperature Not Stabilizing or taking too long to reach a set temperature	**1) There could be a blockage of air flow from the fan. 2) The Peltier Assembly may be bad**	**1a) Remove the instrument against any wall that may be blocking the fan input. 1b) Remove the cover to the fan and clean the dust and dirt from the fan filter. 2) Take voltage readings from the Peltier Devices to determine if they are not working correctly.**
Constant bad readings with Air and Water	**The U-Tube may not be 100% clean or an Air/Water Calibration must be completed**	**Completely and thoroughly clean the U-tube so no stains or and sample is left in and then complete and Air/Water Calibration.**
Bubbles are forming quite often in regular samples	**The Nozzle Assemblies where the sample gets inserted into the U-Tube may have become loose**	**Reform the Nozzle Assemblies.**
Fogging of the Sample Cell on the Density Meter	**The Air and temperature in the lab may be too hot and humid causing the glass of the Density Meter to fog**	**Pump clean dry Air into the U-tube or the entire oscillator assembly using a desiccant tube and an air source. Ask a Rudolph Sales or Service Rep about our stock.**

Display, Video View, and Camera Troubleshooting

PROBLEMS	CAUSES	CORRECTIONS
"No Signal" message on display after the instrument is turned on	**The video feed is not sending from the PC to the Display**	**1) Check to make sure the VGA Cable is plugged in and tight. 2) Make sure you hear two beeps when the instrument is turned on. 3) If there aren't two beeps when the instrument is turned on, there is a problem with the PC. 4) If there is two beeps when the instrument is turned on there may be a problem with the VGA Cable. Plug in a computer monitor to confirm.**
The Video View shows an obstruction on the right side of the screen	**The Camera Bracket came out of calibration.**	**Re-Calibrate the camera according to page 160-164**
The Video View looks very blurry	**The Lens of the Camera may have become unfocused or the lens may have cracked**	**1) Check to make sure that the lens has not cracked. 2) To refocus the camera, inject a bubbly sample and rotate the camera lens clockwise or counterclockwise to re-focus the lens on the bubbles.**
The Scanning Camera keeps stalling as it is scanning	**The belt that the camera is on may have kinked or became tighter.**	**Loosen and move the belt 180 degrees from its starting point. *MAKE SURE THE INSTRUMENT IS TURNED OFF WHEN DOING THIS!!!***
The Instrument makes a loud stuttering noise at startup	**The camera is finding its home location**	**This is normal**
The Touch Panel is inaccurate when touched	**The Factory Calibration of the Touch Panel has faded**	**Re-Calibrate the Touch Panel**

Software Troubleshooting

PROBLEMS	CAUSES	CORRECTIONS
A printer will not install on the software	The disk protection for the Density Meter may be on while installing the printer	Follow the instructions under the help menu located on the upper right side of main Density screen.
The Autoflex Software isn't allowing a network map	The disk protection for the Instrument may be on while installing the printer	Follow the instructions under the help menu located on the upper right side of main Density screen.
The printer is not printing out the results from a measurement	The printer may not connected correctly or the software not installed	Check to make sure the Printer is plugged in and connected to the Density meter via USB and that the software is correctly installed.
I forgot the passwords for the Menu button and the Calibration Menus	N/A	The Factory passwords are 123 for the Menu and 519 for the Calibration Menus, If they have changed refer to the Lab Manager for the passwords. If the passwords are still not working, call a Rudolph Sales or Service Representative to assist.
The Autoflex software keeps telling me that new software is installed and needs to be restarted or Windows Update is trying to restart the instrument.	This is a Windows Operating System problem.	The Windows Update option will have to be turned off in Windows Control Panel.
The Density Meter Screen turned blue and has a lot of writing in white. (The Windows Operating System's Blue Screen of Death)	There was a fatal Window's Operating System error	Restart the Density Meter and try using it again. If the message re-occurs, write down what was happening at the time of the fatal error and contact a Rudolph Service Representative. The flash card hard drive may have to be replaced.