

Authority22 Conditioning System Upgrade Program Replacement Instructions

14-860229-115/230 / 14-860226-000 / 14-100395-401 / 14-100095-402

Tools Required

- *Ratchet - 1/4" or 3/8" drive*
- *Sockets - 5/16" and 3/8"*
- *Standard SAE - Allen Wrench Set*
- *Wire Cutters*
- *Drill*
- *Combination Wrenches - 3/8" to 3/4"*
- *Clean Dry Container*
- *Clean Dry Cloths*

Warning !

Do not attempt to do this procedure on the approach area. If replacement is going to be done on the lane surface run a clean only program with the Authority22.

After the lane has been cleaned, push the Authority22 out at least 2 feet onto the lane from the foul line before beginning the procedure.



Description of Upgrade Package

- There have been many reports of the Flojet cleaner and conditioner pumps leaking, primarily from the internal diaphragm of the pump.
- We are pleased to announce product improvements to the cleaning and conditioning system for the Authority22 lane machine. Brunswick will provide all current Authority22 customers with an upgrade package. This package will include a new pump with better quality fittings and tubing, along with updated software and firmware. This package will also contain a denser black squeegee blade for improved cleaning performance.
- Brunswick has thoroughly tested the new cleaner pump and it has proven to be more reliable and resistant to leaking than the Flojet pump. In addition to the replacement of the pump, the design team has also identified performance improvements by using polyurethane tubing with an increased 3/8" diameter for the pump inlet. The clear polyurethane tubing is more flexible and resists scuffing when inserted into the fitting for a better seal. New Prestolok Plus style fittings will be provided with an improved tube retention design and pre-applied thread sealant. **View next slide for upgrade packaging.**

Note:

This Upgrade Package will not need to be installed on machines SN# 820 and above. Authority22 machines #820 and above will have all upgrades already installed from the manufacturer.

Package Parts Breakdown

14-860229-115 /230

Conditioner Pump

14-860226-000 Service Upgrade Kit for Conditioning System

1 ea	11-655015-000	Fitting – 1/4” Tube, 1/8” NPT, Straight
1 ea	11-655026-000	Fitting – 1/4” Tube, 1/4” NPT, 90 Swivel
1 ea	11-655028-000	Fitting – 1/4” Tube, 3/8” NPT, 90 Swivel
3 ea	11-655041-000	Fitting - 3/8” Tube, 1/4” NPT, Straight
1 ea	11-655048-000	Fitting - 3/8” Tube, 1/4” NPT, Straight
1 ea	11-655054-000	Fitting – 1/4” Tube, 3/8” NPT, Straight
1 ea	11-655055-000	Fitting - 3/8” Tube, 1/8” NPT, 90 Swivel
1 ea	11-655043-005	Tube - 3/8” OD Polyurethane, 2.25 LG
1 ea	11-655043-008	Tube - 3/8” OD Polyurethane, 11.0 LG
1 ea	11-655043-011	Tube - 3/8” OD Polyurethane, 6.5 LG
2 ea	11-655013-012	Tube – 1/4” OD Polyurethane, 10.5
1 ea	11-655013-015	Tube – 1/4” OD Polyurethane, 28.0 LG

Packaging - continued

Note:

The software for the Graphical User Interface and the Machine Controller Board must be installed at the same time to allow for correct operation of the new conditioner pump provided in this package.

14-100395-401 Software 1.03

Assembly 64MB Thumb Drive

14-100095-402 Firmware Version 0.33

Assembly Programmed Device (EPROM)

11-655044-004

Screen Filter, 50 x 250

11-700055-000

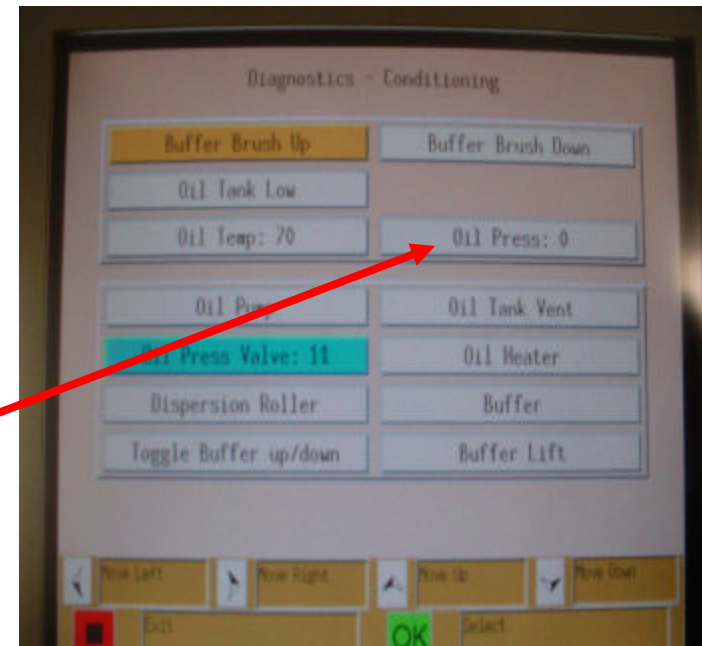
Pilot Drill Bit 13/64"

11-603113-000

Cable Ties

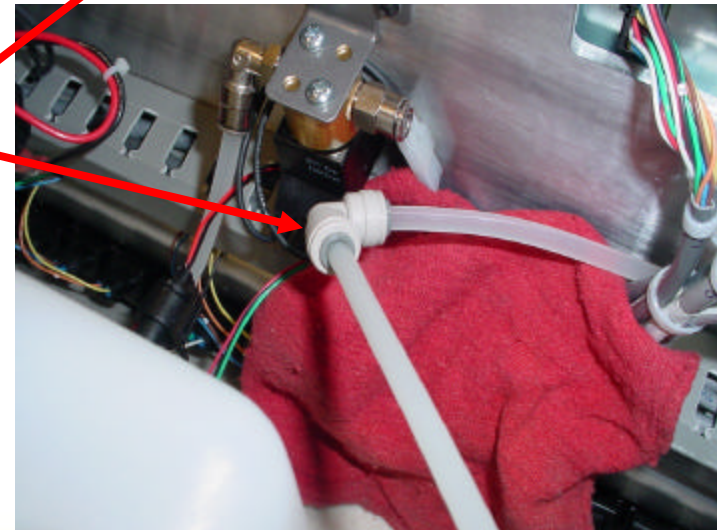
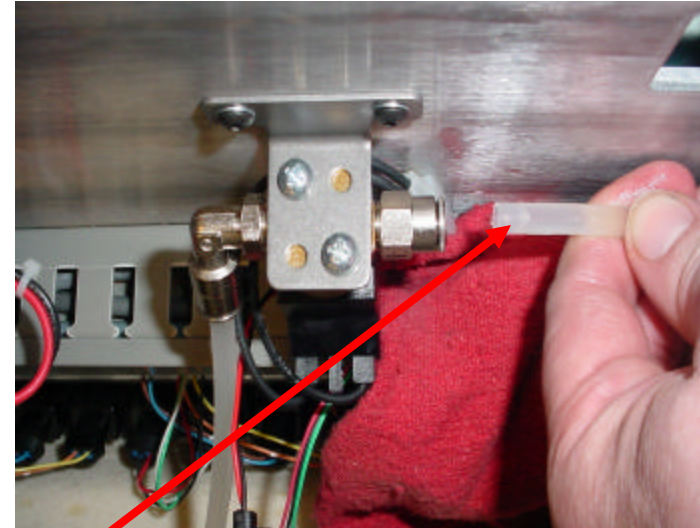
Draining the Conditioning System

1. Power up the Authority22 and **remove the cap** from the conditioning tank.
2. Using the Graphical User Interface (GUI), Navigate to “Maintenance” / “Diagnostics” / “Conditioning”, select “Oil Pressure Valve” and press “OK”
3. Before the conditioner can be drained, you must depressurize the system. To verify, check the oil pressure. When it shows zero pressure you can disconnect the hose at Pressure Control Valve. Verify this by viewing the oil pressure status box. It should read 0.



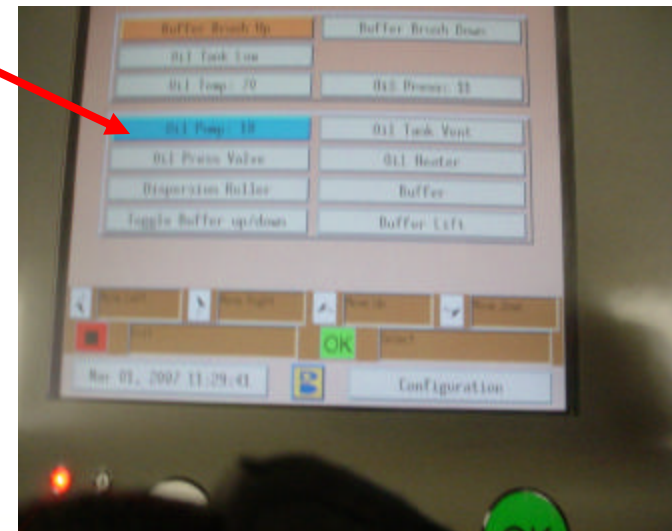
Draining the Conditioning System - continued

- 4. Disconnect power to the Authority22, toggle the red power switch on the Electrical Enclosure to the off position, and disconnect power cord from the machine.**
5. Place a dry cloth under the Pressure Control Valve to catch any conditioner that may leak from the tubing when removed from the fitting at the valve.
6. Push in on the tube retainer on the fitting at the Pressure Control Valve, remove the 1/4" tubing, and attach the drain tubing and 90 degree fitting that was supplied in your Authority22 spare parts kit to the tubing removed from the Pressure Control Valve. Route the drain tube into a clean dry container.



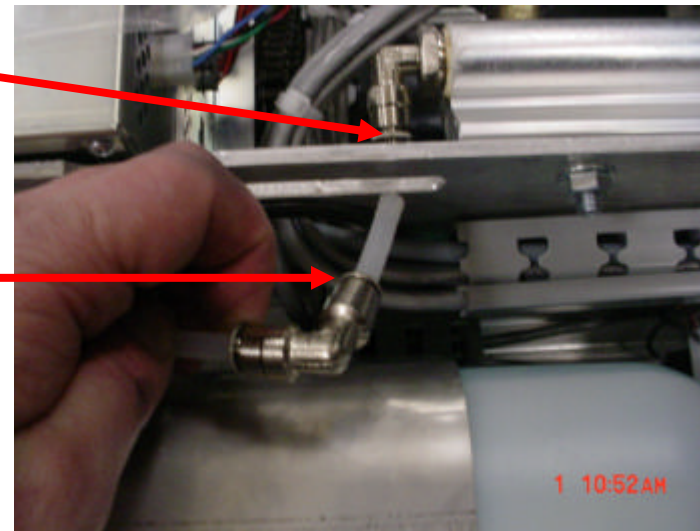
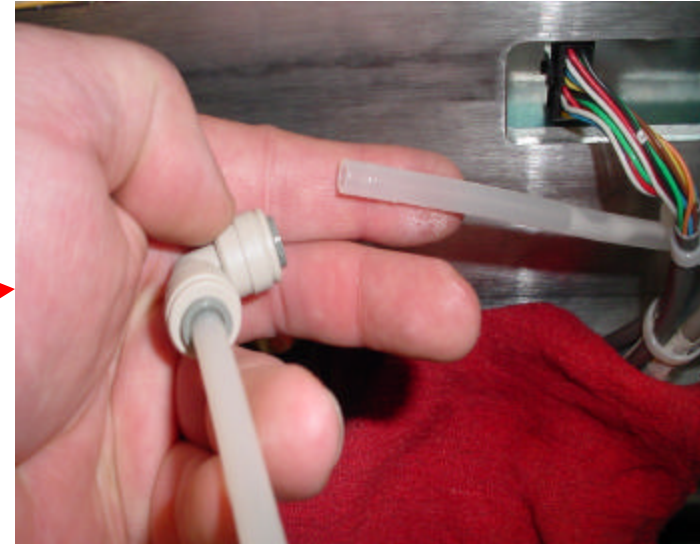
Draining the Conditioning System - continued

7. Reapply power to the Authority22 by plugging in the power cord and toggling the red switch at the Electrical Control Enclosure to the “On” position.
8. Using the Graphical User Interface, navigate to “Maintenance” / “Diagnostics” “Conditioning”, select “Oil Pump” and press “OK”. Continue to run the pump until all conditioner is removed from the Conditioner Supply Tank into the container.



Replacement of Tubing and Fittings from Accumulator Rail to Pressure Control Valve

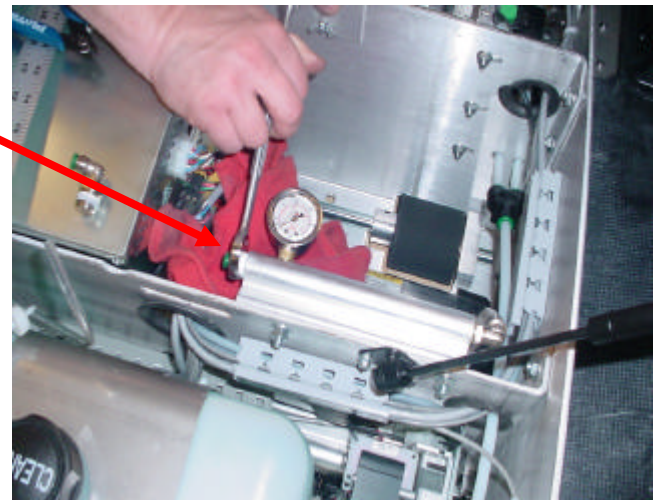
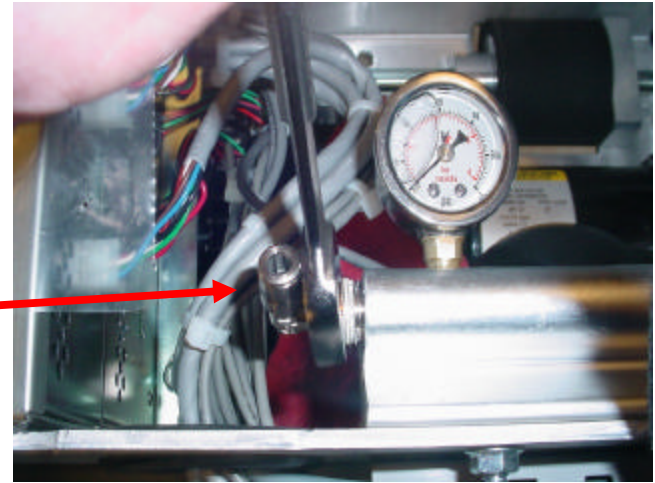
9. Disconnect power to the Authority22. Toggle the red power switch on the Electrical Control Enclosure to the Off position, and disconnect power cord from the machine.
10. Disconnect the drain tube from the 1/4" tubing that was removed from the Pressure Control Valve. Do not reconnect the tubing to the valve.
11. Locate the Accumulator Rail and disconnect the 1/4" tubing from the 90 degree fitting on the rail.
12. Remove the tubing that is routed from the Accumulator Rail to the Pressure Control Valve. Use a cloth at the end to capture the oil. Discard tubing and the fitting.



Replacement of Tubing and Fittings from Accumulator Rail to Pressure Control Valve - continued

13. Place a dry cloth under the Accumulator Rail. Using a 3/4" open end wrench, remove the 90 degree fitting at the Accumulator Rail.

Replace it with part # 11-655054-000 fitting provided in the package. Tighten the fitting hand tight and then rotate 2 full turns with an 11/16" wrench to fully seat the fitting into the rail.



Replacement of Tubing and Fittings from Accumulator Rail to Pressure Control Valve - continued

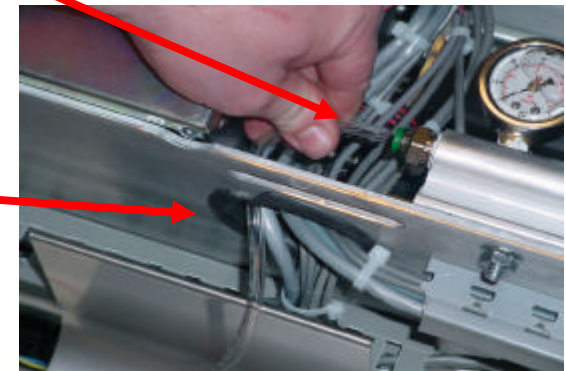
14. Using a 1/2" open end wrench, remove the straight fitting from the Pressure Control Valve.

Replace it with part #11-655015-000 fitting provided in the kit and tighten the fitting hand tight. Rotate 2 full turns with wrench to fully seat the fitting into valve.

15. Using the new piece of 1/4" X 28" long tubing, part # 11-655013-015, that is provided in the package, insert the tubing into the new fitting, part # 11-655015-000, on the Pressure Control Valve and route the tubing behind the Graphical User Interface to the new fitting that was installed into the Accumulator Rail.

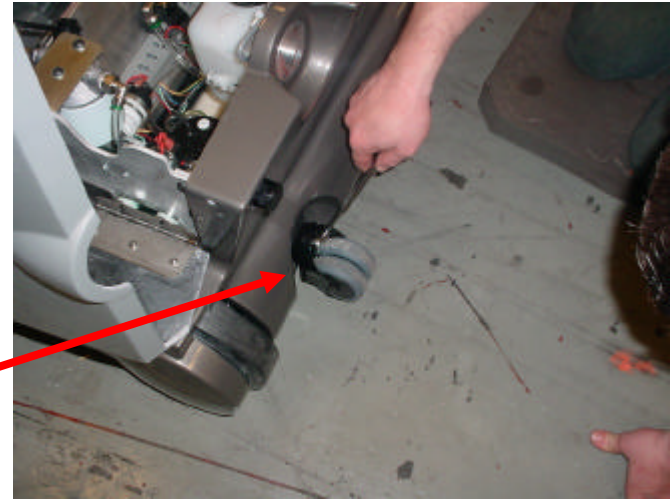
Note:

Make sure you route the new tubing through the rubber grommet under the opening that the original tubing was routed through.

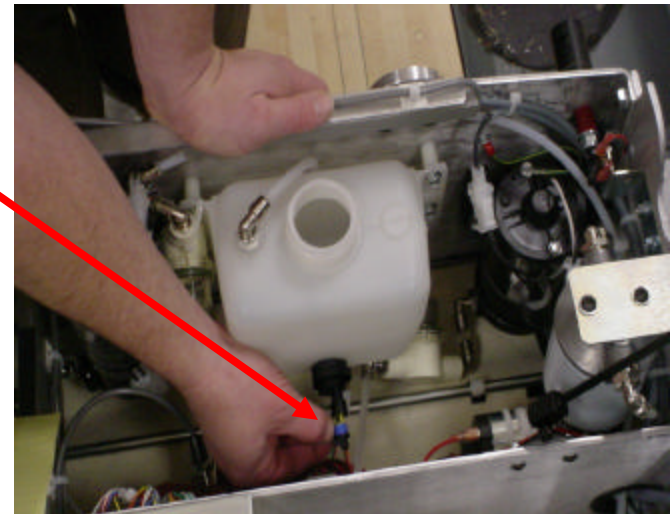


Removing the Conditioner Tank

16. Using a 3/4" open end wrench, remove the 4 transport casters at the rear of the machine and remove the rear cover from the machine.

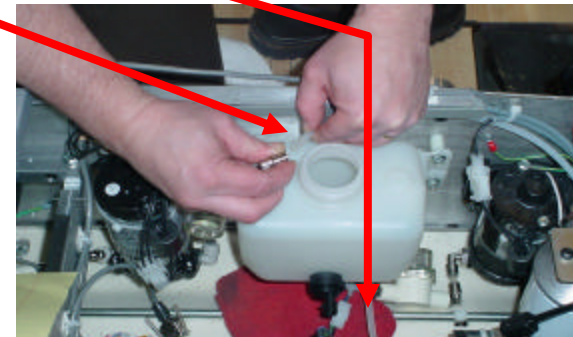


17. Disconnect the connector from the Float Level Sensor at the conditioner tank.



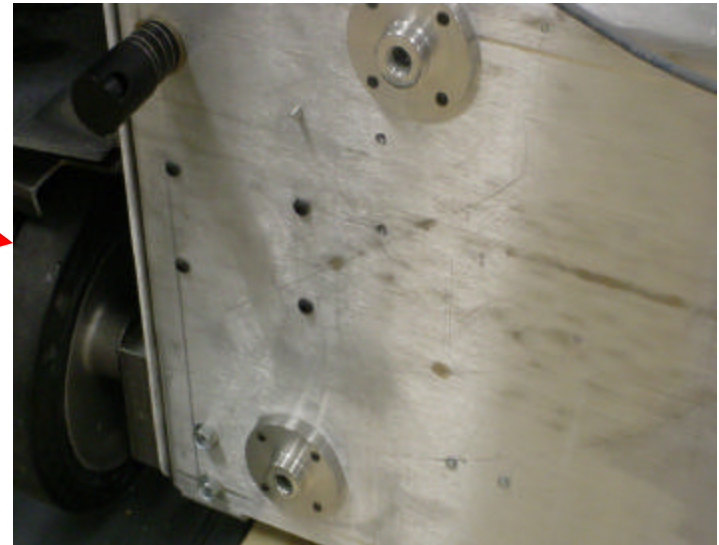
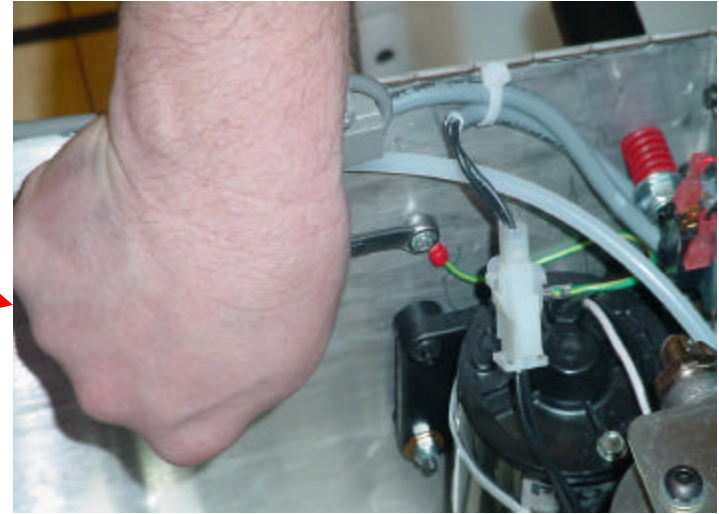
Removing the Conditioner Tank - continued

18. Using wire cutters, cut the nylon ties that hold the Overflow Bowl in place so tank can be removed.
19. Place a clean dry cloth under the conditioner tank and Pressure Control Valve. Remove the tubing from the Conditioner Bowl Strainer Filter to the Conditioner Pump.
20. Remove the tubing that runs from the tank to the fitting on the Pressure Control Valve.
21. Remove tubing at the top fitting on the tank.
22. After disconnecting the tubing, remove the 4 screws and spacers that hold the tank in place. Remove the tank.



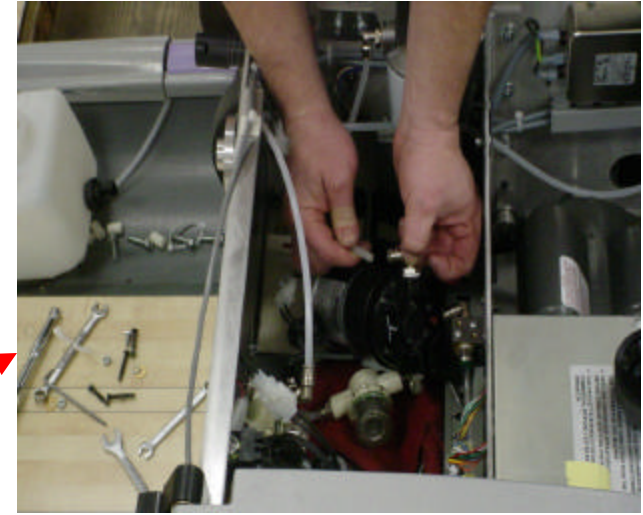
Removing the Conditioner Pump

23. Remove the ground wire screw and disconnect the power connector at the conditioner pump.
24. Locate the 4 mounting screws and locknuts that hold the pump to the rear frame. Using a 3/8" open end wrench, hold the locknuts in place and from the rear of the machine, loosen the mounting screws with a 1/8" Allen Wrench. Remove all 4 screws from the machine.

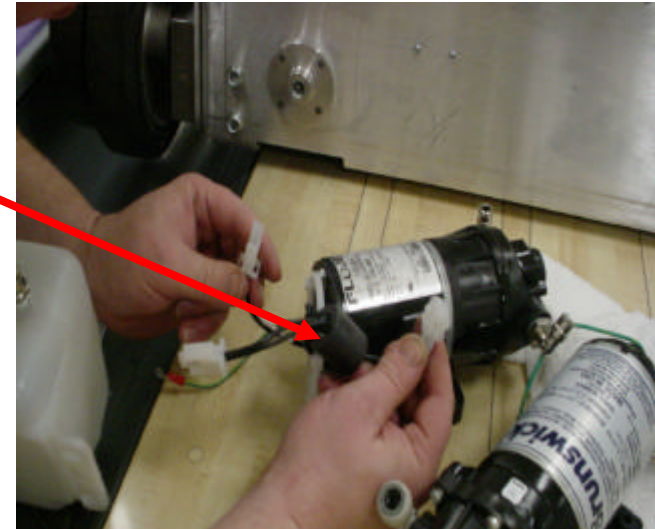


Removing the Conditioner Pump - continued

25. After the pump is removed, disconnect the tubing from the outlet of the pump and disconnect the tube from the inlet of the conditioner filter housing. Remove the pump.

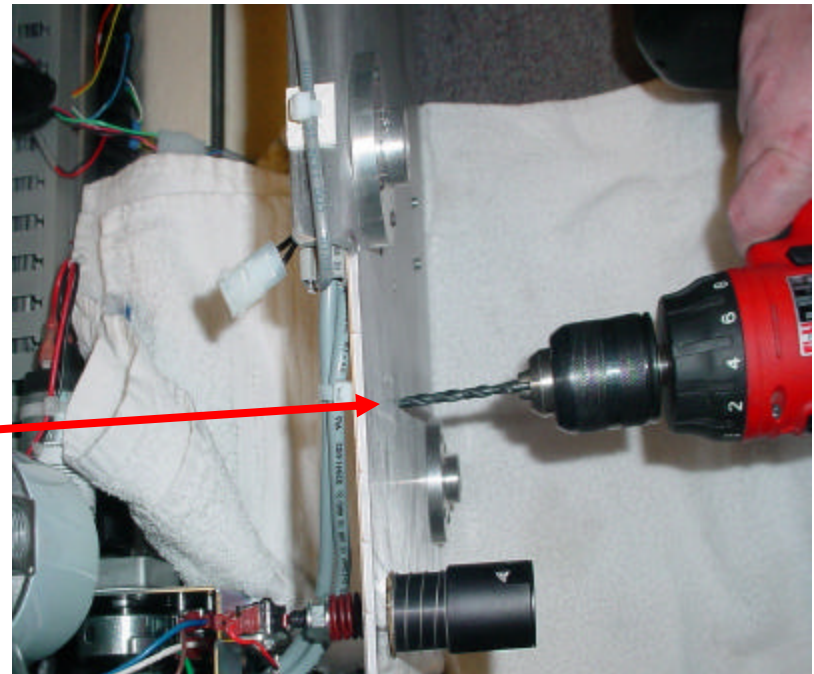


26. If so equipped, remove the Ferrite Core from the Flojet pump along with the wire tie. Reconnect the Ferrite Core to the new pump with tie wrap provided in the kit.



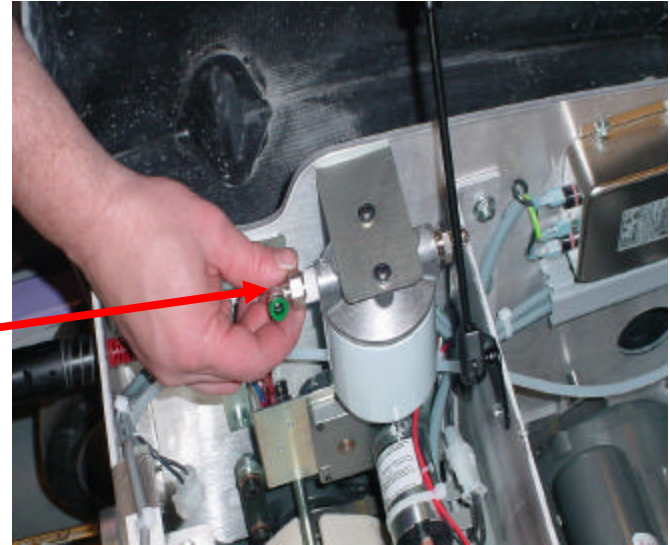
Drilling Out the Pump Screw Mounting Holes

27. Place 2 dry cloths on the inside and the outside of the lane machine to catch shavings. Wearing safety glasses, use a $\frac{13}{64}$ " Drill Bit, part # 11-700055-000, provided in the kit, to enlarge the 4 mounting screw holes. This will allow the screws to be installed more easily through the rear frame.

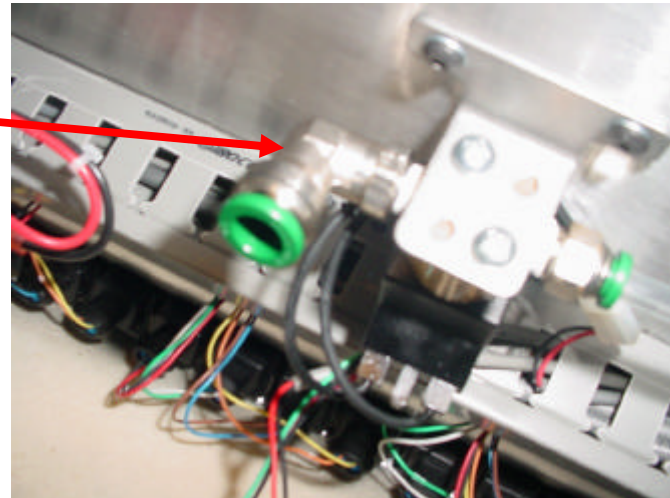


Replacement of Fittings at the Conditioner Filter Housing and the Pressure Valve

28. Using a 3/4" open end wrench, remove the fitting at the inlet on the filter housing and using a 11/16" open end wrench, replace it with fitting part # 11-655028-000.

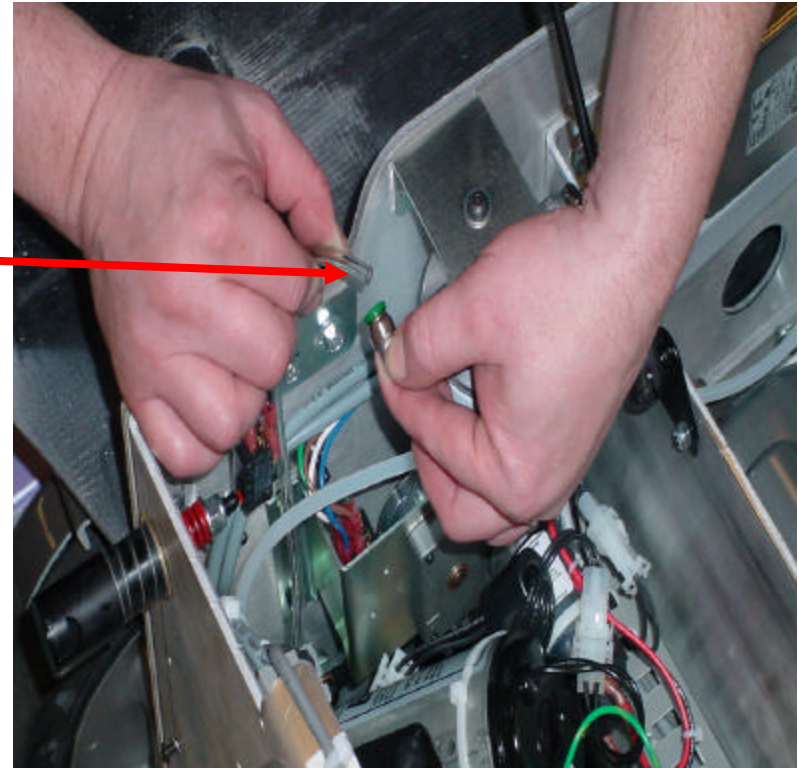


29. Using a 1/2" open end wrench, remove the fitting at the Pressure Control Valve and replace it with new fitting, part #11-655055-000, provided in the kit. Screw both fittings in until hand tight and with the proper wrench turn the fitting two full turns to seat.



Installing Conditioner Pump

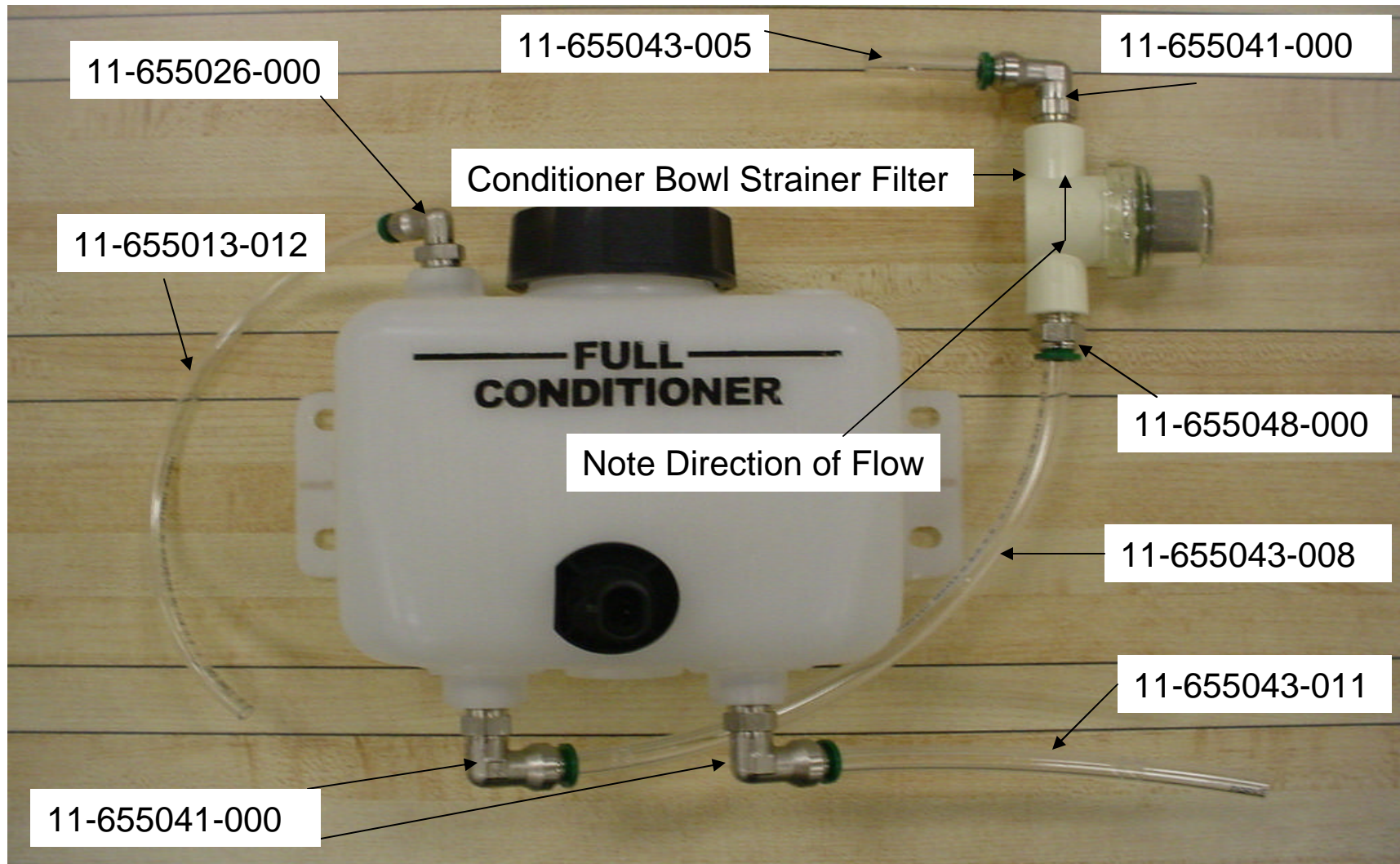
30. Lay the new conditioner pump inside the machine. Insert the 1/4" tube, part #11-655013-012 (10 1/2" LG), supplied in the package, and connect it from the 90 degree outlet from the pump to the new inlet fitting on the Conditioner Spin On Filter housing.
31. Reinstall the conditioner pump and install the washers, nuts, mounting screws. Tighten until the rubber grommet on the pump frame just starts to depress. Make sure there are at least 2 to 3 threads showing out of the locknut. Install lower left screw first for easier access. Remove cord kill switch and cord kill assembly if you need more room. Reconnect the ground wire to the frame and the power connector from the pump.



Replacement of Tubing, Fittings on Conditioning Tank, and Cleaner Bowl Strainer

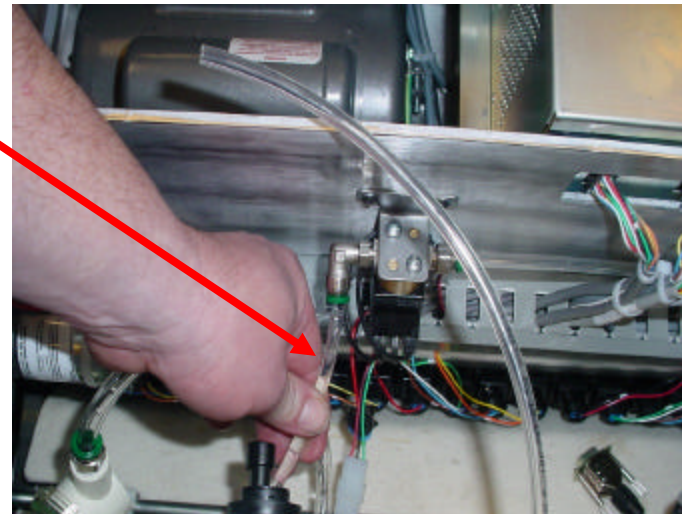
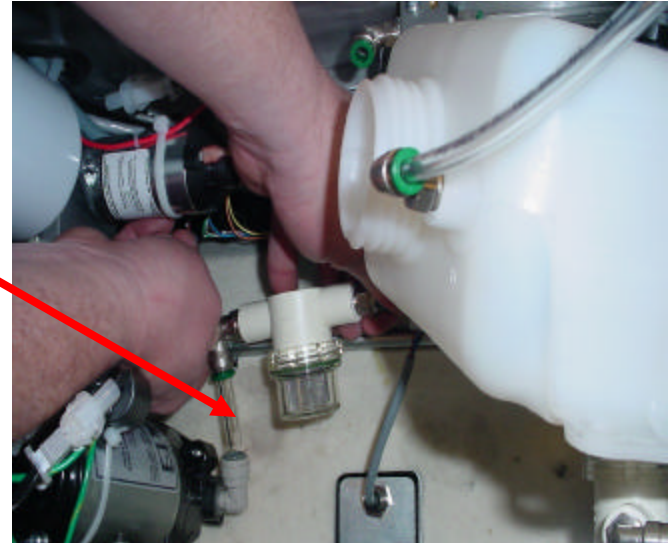
32. Remove all original fittings from the Conditioner Supply Tank and Cleaner Bowl Strainer. Using a cloth soaked with Alcohol, clean all threads on the tank and get threads as dry as possible. Do not use Alcohol on the threads of the Bowl Strainer. Use a clean dry cloth to wipe those threads.
33. Replace all fittings and tubing as shown on the next page. Initially, tighten the fitting hand tight. Then with the proper wrench, turn the fittings two full turns to seat.

Replacement of Tubing, Fittings on Conditioning Tank and Cleaner Bowl Strainer - continued



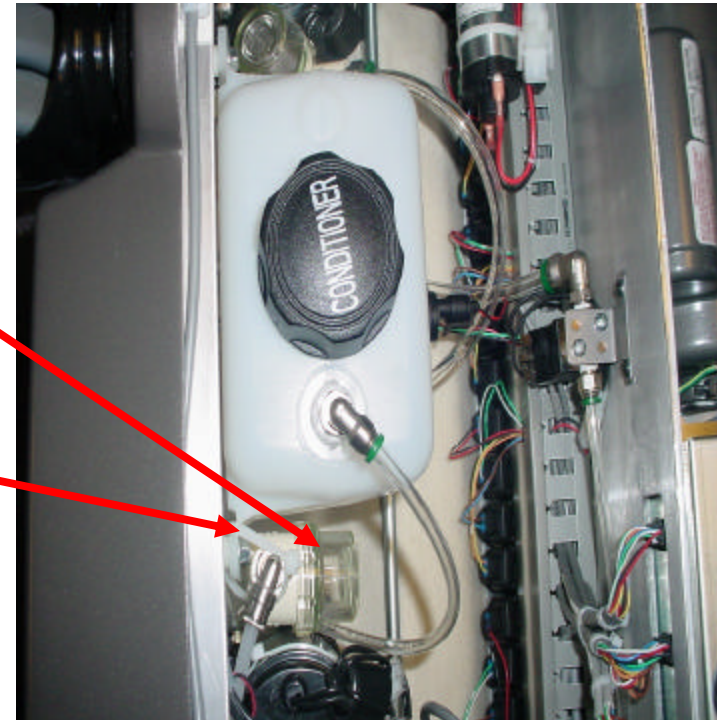
Reinstalling the Conditioner Tank

34. Lay the tank in the machine and connect the 3/8" tube, part #11-655043-005, from the conditioner bowl strainer to the 90 degree 3/8" fitting on the inlet side of the new conditioner pump.
35. Reconnect the 6-1/2" length of 3/8" tube, part #11-655043-011, from the bottom of the tank to the new fitting on the Pressure Control Valve. Also replace the 10-1/2" length of 1/4" tube, part #11-655013-012, from the top of the tank to the bowl strainer overflow. See next page for photo.
36. Remount the tank with the spacers and screws that were removed. This will hold the tank to the frame.
37. Plug the Float Sensor Connector back into the Conditioning Supply Tank.



Tubing Routing From Tank To Pump, Valve and Bowl Strainer

36. Unscrew the Bowl Strainer Overflow cap and insert part # 11-655044-004 200 Mesh Screen provided in the kit. Reinstall the cap.
37. Using Cable Ties provided, part # 11- 603113-000, secure the upper and lower part of the Bowl Strainer Overflow to the tank.



Authority22 Firmware Installation Instructions

14-100095-402 Version 0.33 Programmed Firmware Chip

Tools Required:

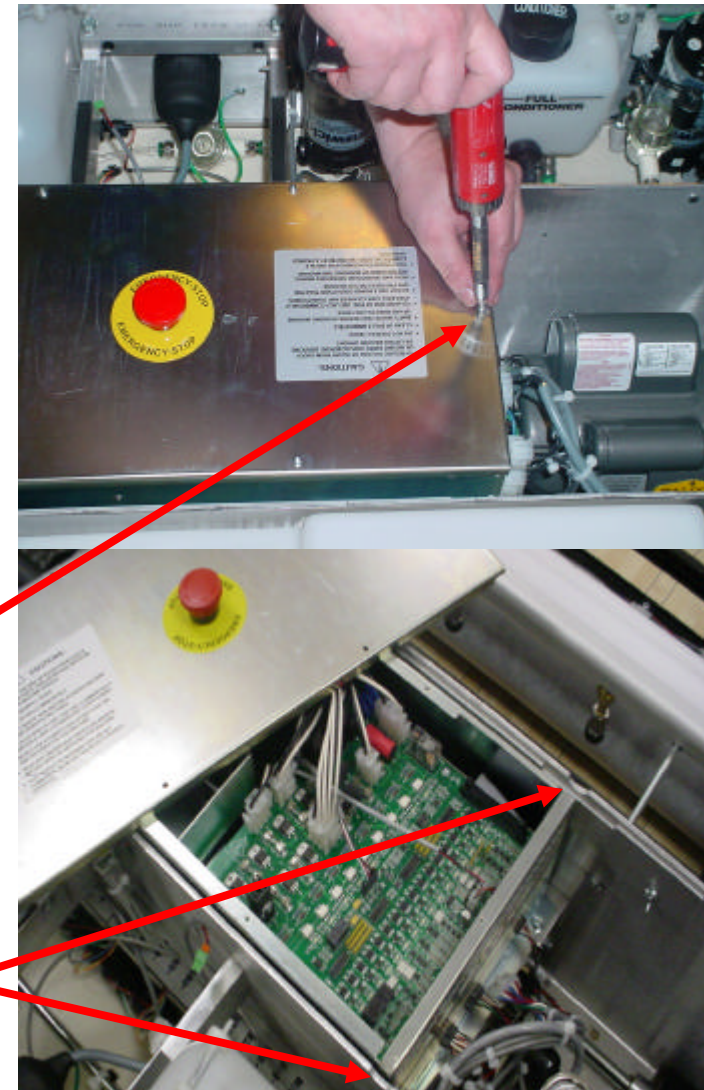
#2 Phillips Screwdriver, Chip Puller, or small pocket flathead screwdriver

Note:

The software and firmware must be installed to allow for correct operation of the new conditioner pump provided in this package.

Authority22 Firmware Installation Instructions 14-100095-402 Version 0.33 Programmed Firmware Chip - continued

1. Place the machine in the operator position and disconnect the power to the Lane Machine by turning off the switch at the Electrical Control Enclosure and by unplugging the power cord.
2. Remove the Graphical User Interface (GUI) by removing the holding pin at the left side of the GUI. Disconnect the power, communication, and keypad cables from under its display. Remove the GUI from the machine.
3. Remove the 6 screws that hold on the top cover of the Electrical Control Enclosure. Disconnect the emergency stop switch connector and set it aside. Remove the 2 screws holding the top pivot in place. Then pivot the Motor Control Board (top board) up to gain access to the Machine Control Board (bottom board).

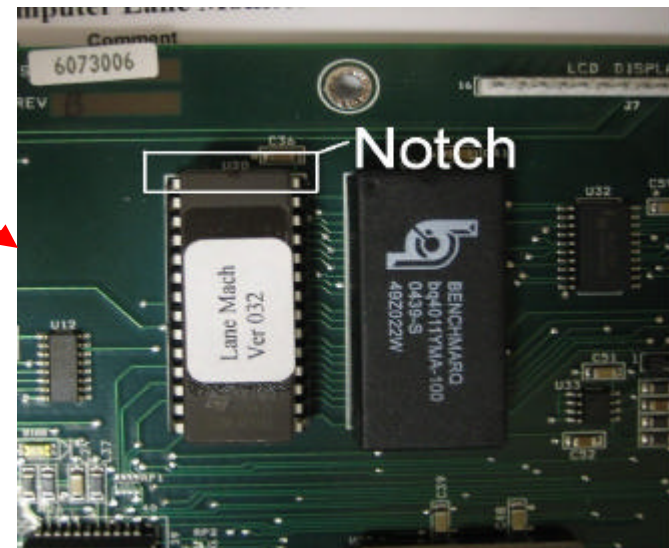


Removing and Replacing Firmware

Note:

Before removing or installing the firmware chip, always grab the metal housing of the electrical enclosure to ground yourself before handling the firmware chip.

5. If using a chip puller, remove the existing EPROM chip by following the chip pullers removal instructions.. If using a small pocket screwdriver, insert the flat tip of the screwdriver in between the chip and the base while carefully prying underneath the chip to slowly move the chip upwards. The chip will work its way up and out of the base.
6. To install the new chip, carefully align the prongs on the new EPROM chip into the socket, taking care not to bend the prongs. Make sure the notch of the chip is aligned with the notch on the socket on the machine control board. Make sure the chip gets fully seated into the socket.
7. If the firmware chip does not fit in the seat on the circuit board, then the prongs on the chip may need to be adjusted.
8. If needed, set the chip on its side on a flat surface and gently bend one side of prongs at a time until they are perpendicular to the chip.
9. Replace all screws after reattaching the Emergency Stop Switch. **To note functionality changes in firmware, refer to page 31 at the end of these instructions.**



Authority22 Graphical User Interface - Software Upgrade Instructions 14 -100395-401 USB Thumb Drive Version 1.03

Note:

The software upgrade can be done with the Graphical User Interface inside or outside of the Authority22 lane machine. If you determine you want to perform the upgrade outside of the lane machine, an external power supply will be needed.

1. Place the lane machine in the operator position and open both covers to allow access to the left side of the Graphical User Interface (GUI). Power up the Lane machine and make sure that the GUI boots up to the operator screen.
2. Using the USB thumb drive provided in this package, insert it into the USB port on the left side of the GUI. If the GUI has 2 USB ports, you can use either one. Refer to **Figure 1 on the next page**. A warning screen will appear, stating “The GUI SOFTWARE IS ABOUT TO BE UPDATED. THE CURRENT DATA MAY NOT BE COMPATIBLE WITH THE NEW SOFTWARE.” Refer to **Figure 2 on the next page**. Press “OK.” The next screen that will appear will say “UPDATING SOFTWARE.”

Warning!

Leave the Thumb Drive in the GUI until it reboots back to the operator screen. If the Thumb Drive is taken out before the update is complete, you may corrupt the program which could cause the GUI to malfunction.

Software Upgrade



Figure 1

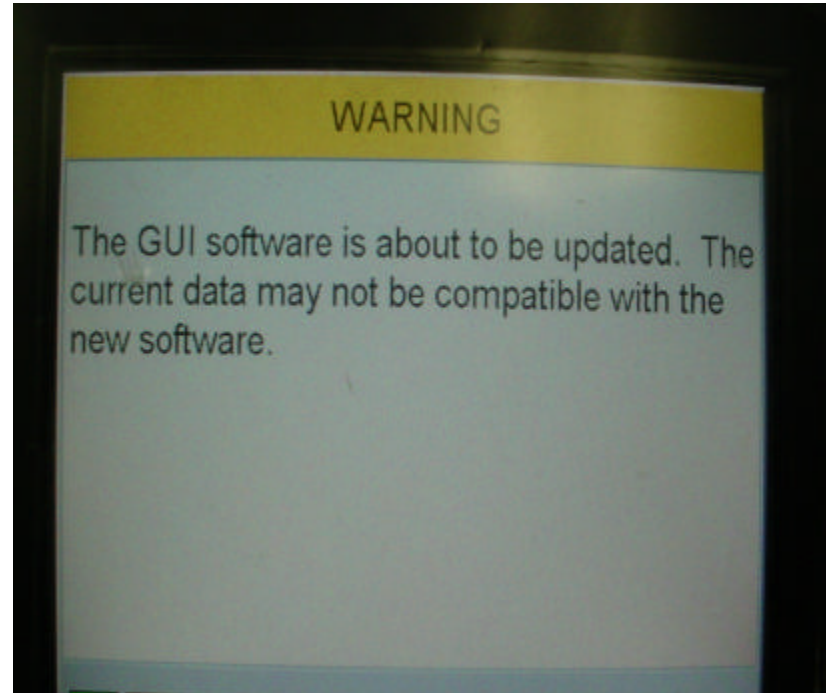


Figure 2

NOTE:

The new software release includes 10 new conditioning patterns. It is suggested that you first save your existing patterns, then restore default patterns to view the new patterns.

To note functionality changes in software, refer to the **Software Release Notes** on pages 28 to 30 of these instructions.

Finish

1. Refill the conditioner tank with conditioner and **leave the conditioner cap off.**
2. Using the Graphical User Interface (GUI), navigate to “System” / “Settings” and select the heating cycle to circulate the conditioner for a few minutes to purge any air from the system. Turn off the heater cycle if desired.
3. Using the GUI, navigate to “Maintenance” / “Diagnostics” / “Conditioning” and select “Conditioner Pump.”
4. Make sure the pressure builds up in the system.
5. Replace the conditioner cap and run the machine with a condition only pattern and check for leaks.
6. If you have not already done so, perform replacement for the cleaning side of the machine by using the Authority22 Cleaning Upgrade System Instructions.

Lane Machine Graphical User Interface

Release Notes Version 0.20 to 1.03

Note:

The following changes to the software and firmware are a combination of bug fixes and new or improved features for operating the Authority22.

Lane Machine GUI Release Notes, Version 0.20 (12/02/2005)

- Added count reset to maintenance log
- Added conditioners to pull down menu

Lane Machine GUI Release Notes, Version 0.21 (01/24/2006)

Note: *This version will only work with Firmware version 0.31 or higher.*

- Added injector test under diagnostics
- Added cleaner spray test under diagnostics
- Added Thai, Chinese, and Dutch translations
- Added an end of lane override on a per lane basis. A warning message is displayed if the end of lane sensor did not activate in time
- Power down timeout was changed from 45 min. to 15 min., so the UPS will only blink for 15 min
- Decreased pattern download time by about 1.5 min
- Changed conditioner data for Control and Absolute Control

Lane Machine Graphical User Interface

Release Notes Version 0.20 to 1.03 - continued

Lane Machine GUI Release Notes, Version 0.22 (03/06/2006)

- Added progress bar for pattern downloads
- Changed conditioner data for Authority22 W22, Control LV, and Absolute
- Added Command conditioner values.

Lane Machine GUI Release Notes, Version 0.23 (04/24/2006)

- Added watchdog timer to reset the GUI if the software crashes.
- Added French and Swedish languages.
- Calibration option moved so only Install PIN can access.

Lane Machine GUI Release Notes, Version 1.00 (06/05/2006)

- Updated German language

Lane Machine Graphical User Interface Release Notes Version 0.20 to 1.03 - continued

Lane Machine GUI Release Notes, Version 1.01 (06/19/2006)

- Corrected a typo in the Japanese language

Lane Machine GUI Release Notes, Version 1.02 (02/23/2007)

Note: This version will only work with Firmware version 0.33

- Added latest Korean translations
- Support added to accommodate 50psi pressure cutoff and error message from the firmware.
- Added function to have the machine depressurize after the last lane is run.
- New 10 pack of conditioner patterns added.

Lane Machine GUI Release Notes, Version 1.03 (04/03/2007)

- Modified pattern #1 to be consistent with software versions before version 1.02

Lane Machine Firmware Release Notes Version 0.30 to 0.33

Lane Machine Firmware Release Notes, Version 0.30

- Drive motor diagnostics added
- Vacuum turned on when squeegee is lowered on approach when starting a lane

Lane Machine Firmware Release Notes, Version 0.32

- Both duster cloth switches are checked before moving the cloth down.
- Both buffer brush switches are checked before moving the brush down.
- Nine error codes added.
- Support for the end of lane override if the end of lane sensor does not activate.
- The oil will pre-charge once the machine returns to the foul line.

Lane Machine Firmware Release Notes, Version 0.33

- Turn off the Conditioner Pump when the oil pressure exceeds 50 psi.