

Equipment Technical Bulletin

New Pump Motors for ILS, ILS Max and ILS MaxT



OVERVIEW/ISSUE

As part of our program of continuous improvement, Beta Technology is introducing a new, higher-quality, longer-lasting pump motor/gearbox for ILS, ILS Max and ILS MaxT pumps.



Figure 1. Old Pump Motor



Figure 2. New Pump Motor

Along with improved pump motor/gearboxes, we will also be upgrading the firmware for all ILS, ILS Max and ILS MaxT dispensers (see Table 1). From July onward, all units from Beta Technology will ship with the new motor/gearboxes and firmware.

However, some users will find that when these new motors are fitted to ILS, ILS Max and ILS MaxT units with existing firmware the pumps will run at speeds up to 20% more slowly than with the older pumps. This will be particularly noticeable if old and new pumps are used together in a "Tandem" situation.

This slowing will not affect the dosing accuracy of the system because the Autocalibration system will compensate for the speed change and ensure that the correct dose of product is delivered. However, in rare cases where large amounts of product have to be added to the washer in a short length of time, this speed reduction may cause problems.

Who Will Be Affected by this Issue?

This problem only occurs when these new pump motors are fitted as spares on existing ILS, ILS Max and ILS Max T units with "current" firmware (see Table 1). All new ILS, ILS Max and ILS MaxT units ship with the new motor gearboxes and new firmware.

Dispenser	Current Firmware Version	New Firmware Version	Interim Firmware Version
ILS	3.12	3.20	N/A
ILS Max	2.1	3.0	2.2
ILS MaxT	2.11	2.2	N/A

Table 1. Listing of dispensers with their current, new and interim firmware versions.

This problem is associated with dispensers containing the "current" (or lower) firmware versions as defined in Table 1.

CAUSE

The electrical characteristics of the new pump motor are different from those of the old. This causes it to move more slowly when driven by firmware designed to run the old pump motors.

SOLUTION/RECOMMENDATION

- The existing motor/gearboxes will continue to be available as spares for a short time and should only be used on dispensers with current (or lower) firmware versions as defined in Table 1.
- Only the new motor/gearboxes should be fitted to dispensers with new firmware as defined in Table 1. The older pump motors should not be used on ILS, ILS Max and ILS MaxT units with the new firmware because it will cause them to run faster than expected. While the Autocalibration system will ensure dosing accuracy, the added speed may shorten the life of the motor.
- After we run out of stock of the old motor/gearboxes, you will have to use the new motor/gearboxes as spares for all ILS, ILS Max, and ILS MaxT units. If dosing speeds are an issue, there are three possible solutions:
 1. If you have enough functioning, old pump motors in your dispenser, you can switch the old motors to the pumps that will be dosing the

chemicals that require the maximum speed, and place the new motor with a pump that is dosing a chemical where the speed is less of an issue, such as softener.

2. **For ILS Max only:** We are offering an interim firmware upgrade kit (see Table 1) that resolves the speed issue. If you have v2.1 firmware, the features will be exactly the same. If you have a lower version, you will have access to all of the features available in v.2.1 (see **SUMMARY OF ILS Max v2.1 FEATURES** toward the end of this document). This kit will also include an extraction tool.

The interim chip will allow you to upgrade your firmware without having to reprogram your dispenser.

3. You can order an upgrade kit that contains the new firmware chip and extraction tool. The new firmware for ILS Max offers a range of new features, but will require you to purge existing data and reprogram your system. The ILS and ILS MaxT firmware upgrades will resolve the speed issue and will allow you to upgrade without reprogramming your dispenser, but do not offer any new features,



The older pump motors will run faster with the new firmware. The pump will automatically calibrate to the increased speed. So unless you are using manual calibration, you will not need to make any adjustments.

To order one of these kits, please contact your Sales Representative or Customer Service. Be sure to tell them which dispenser(s) it is for because the firmware will be different for ILS, ILS Max and ILS Max T.

PART NUMBERS

ILS Max Firmware Upgrade Kit (v3.00)	1206832
ILS Firmware Upgrade Kit (v3.2)	1209770
ILS MaxT Firmware Upgrade Kit (v2.2)	094319
ILS Max Interim Chip Kit (v2.2)	1209769
New Pump Motor-Accessory Kit	1209766
New Pump Motor/Gearbox	1209767

HOW TO REPLACE FIRMWARE CHIP

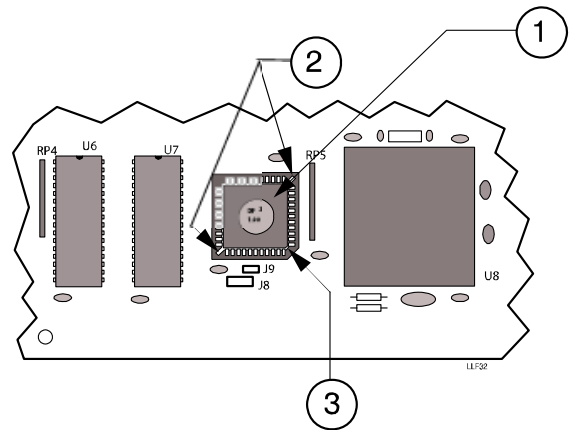


Figure 3. Model 100 PCB with Firmware Chip Callouts

Number	Description
1	Firmware chip
2	Insertion point corners for extraction tool
3	Beveled corner

1. Turn off power to the system.



DO NOT LEAVE THE PRINTER PLUGGED IN TO THE SYSTEM WHILE CHANGING THE FIRMWARE CHIP. The printer provides an alternate power source to the board, even though the system power is turned off.

2. For ILS Max and ILS Max T only: Open the dispenser's top cover. The Model 100 is the PCB farthest to the right when you are facing the front of the dispenser.
3. For ILS only: Open the front cover and remove the board cover to access the Model 100 PCB.
4. Locate the firmware chip socket (U3) on the PCB.
5. Insert each end of the extractor tool (included in the kit) into the upper right and lower left corners of the socket (see Figure 3) and remove the chip as shown in Figure 4. Be careful not to bend the socket's pins while removing the chip.

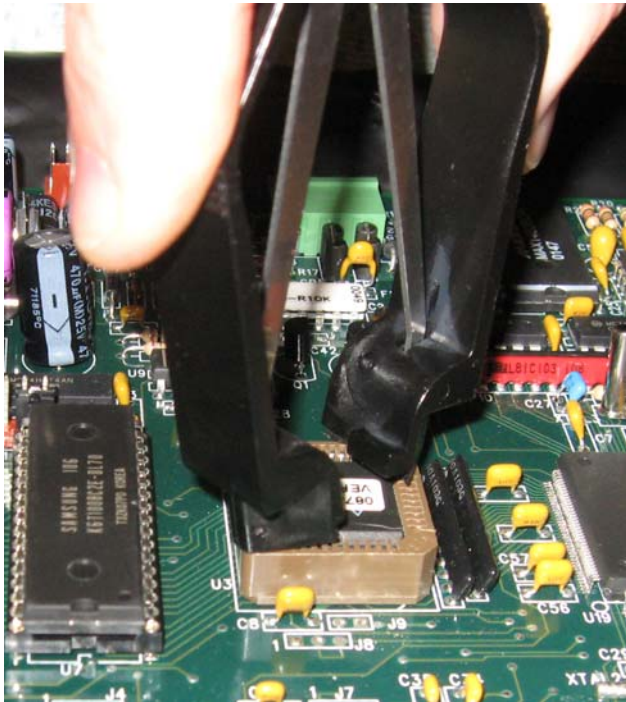


Figure 4. Removing Firmware Chip from Socket

6. Place the new firmware chip into the socket with the bevel in the lower right corner. Check that the pins are properly aligned and press firmly into socket (see Figure 3).

SUMMARY OF ILS MAX V2.1 FEATURES (FOR ACCOUNTS UPGRADING FROM PREVIOUS VERSIONS)

1. **Automatic Formula Selection (AFS).** AFS, when enabled, applies a timed-signal pulse to the formula selection input to set the current formula. Previously, chemical volume and load type were determined based on a single, short trigger signal, which can vary in length. Now, with AFS, we use a longer trigger signal that is calculated based on formula number. With each formula having a unique trigger signal length, you can be certain that your dispenser will select the correct formula each time. AFS can be used with all triggering modes.
2. **Correction of Flow Rate Unit Display.** Older versions of ILS Max firmware had a glitch that caused the dispenser to display “Liters” in the Transport Time Setup screen, even if you had selected “Gallons.”



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