



INSTRUCTIONS

**KEEP FOR REFERENCE.**

Read manual 308-607 for important warnings and instructions.

*First choice when  
quality counts.™*

# Horizon™ Software Upgrade Kit

FOR VERSION 1.01 OR 1.02 TO VERSION 1.05

Part No. 240-455

## New Features and Capabilities in Software Version 1.05

- Unused keypad returns to HOME screen automatically, after an adjustable time period
- Adjustable timeout for beginning and ending dispense jobs
- Full inventory functionality, including keypad screen warning of low fluid levels
- Data output can be formatted for either printer or computer output
- Past dispense jobs can be retrieved and output to a printer or computer
- Automatic conversion of Horizon configuration data to the new software version; no need to re-enter the setup information
- Increased system stability and reliability

## Upgrading to Version 1.05

**NOTE:**

- Once the upgrade is started, you can not go back to earlier software versions without re-entering all the system information.
- 3 integrated circuit chips must be changed in each control module in the system.

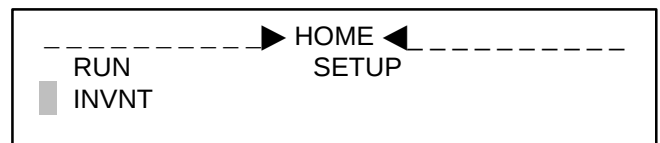
- The inventory levels must be re-entered manually, due to the number of changes to inventory functionality.

### Record Existing Inventory Levels

**NOTE:** If the inventory function in version 1.02 was not used and you do not wish to use it, you can skip the steps for recording existing inventory levels and start with the steps for installing the software, on page 3.

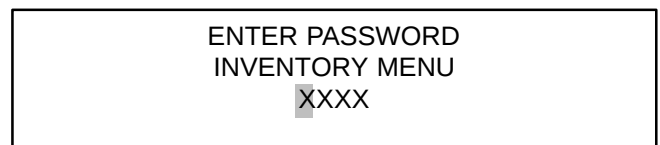
1. Using the Administrative Keypad, connected to the Master Control Module, select INVNT (inventory) from the HOME screen.

#### HOME Screen



2. Type in a Password that has inventory access and press the ENTER key.

#### PASSWORD Screen



Record Existing Inventory Levels  
(continued)

- 3. Select TANK LEVELS. Write down the current tank level for Fluid #1.

**NOTE:** If the tank level number is zero or a negative number, inventory functions were never set up on the system. Check all the fluid levels to verify.

- 4. In ADD? question field, use the ↓ or ↑ to scroll to NO and press the ENTER key.
- 5. Use the MORE selection at the bottom of the keypad screen or the NEXT key on the keypad to check the other system fluids and record the values.

- 6. When all the values have been checked and recorded, EXIT without saving.

- 7. While still in the INVNT function, select HISTORY TOTALS. Record the value for each fluid if they are positive numbers.

**NOTE:** The history total values are the total amount of each fluid that has been dispensed to date. **You will not** be able to re-enter these values in the new software version. If you are keeping track of these totals, save the recorded values for future reference.

- 8. In RESET? question field, use the ↓ or ↑ to scroll to NO and press the ENTER key.
- 9. Use the MORE selection at the bottom of the keypad screen or the NEXT key on the keypad to check the other system fluids and record the values.
- 10. When all the values have been checked and recorded, EXIT without saving.

INVENTORY Screen

-----▶ INVENTORY ◀-----

TANK LEVELS

HISTORY TOTALS

REPORT INVENTORY

TANK LEVELS Screen

FL# 015W30

XXXXX.X GLTANK LVL

ADD? NO

MOREEXIT

FL# 015W30

XXXXX.X GLTANK LVL

ADD?

MOREEXIT

FL# 015W30

XXXXX.X GLTANK LVL

ADD?

MOREEXIT

INVENTORY Screen

-----▶ INVENTORY ◀-----

TANK LEVELS

HISTORY TOTALS

REPORT INVENTORY

HISTORY TOTALS Screen

XXXXXXXX.X GL FL# 01

XXXXXXXX.X GL SINCE

RESET? NO MORE EXIT

XXXXXXXX.X GL FL# 01

XXXXXXXX.X GL SINCE

HH:MM:SS MM-DD-YYYY

RESET? MORE EXIT

XXXXXXXX.X GL FL# 01

XXXXXXXX.X GL SINCE

HH:MM:SS MM-DD-YYYY

RESET? MORE EXIT

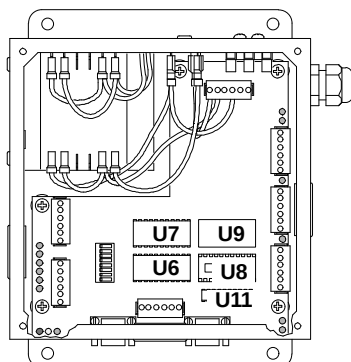
## Install the New Software

1. Make sure that no one is dispensing or using the system. The VIEW CURRENT JOBS screen under the RUN function can be used to see if there are any ACTIVE or WAITING jobs in the system.
2. Use the ENABLE/DISABLE CAN screen under SETUP to make sure that all control modules have the CAN enabled before turning off the electrical power.
3. Turn off the electrical power to all Horizon control modules.
4. Remove the cover from each of the control modules.
5. Note the location of the three chips, U6; U7; and U11, on the circuit board. See Fig. 1. These are the chips that need to be changed.

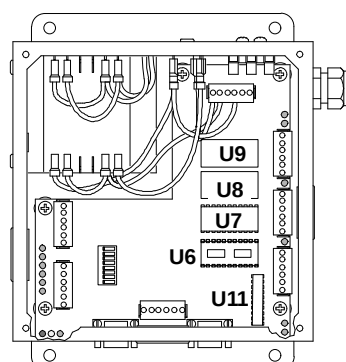
Note chip location and orientation; there is a slight notch in one end of the chips to orientate them. See Fig. 2, page 4.

### CAUTION

Be careful not to damage the circuit board or the surrounding parts when removing the chips.



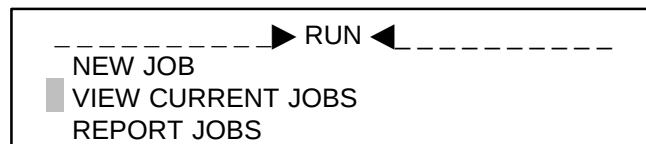
Old Style Control Module



New Style Control Module

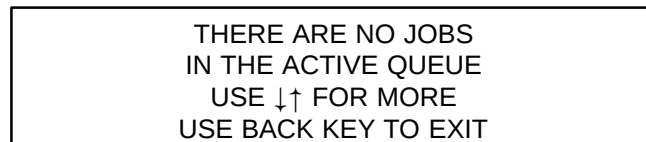
Fig. 1

## RUN Screen

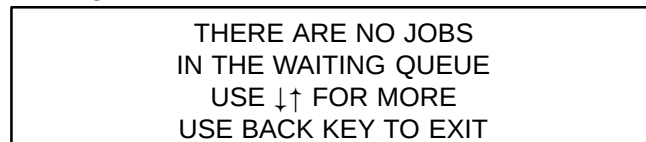


## NO JOBS IN QUEUE Screens

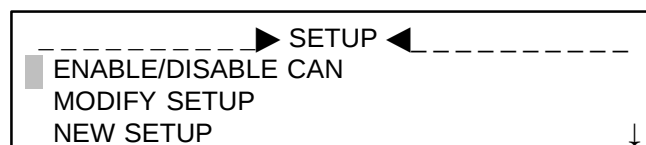
### Active Job



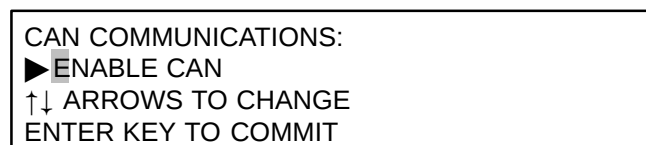
### Waiting Job



## SETUP Screen



## CAN Screen



06800A

*Continued on the next page.*

## Install the New Software (continued)

6. Use a chip extraction tool to carefully remove the three software chips from their sockets. Pull the chips directly up. See Fig 3.

To remove the software chips without an extraction tool, carefully pry the chips out evenly on both sides with a small screw driver. See Fig 4.

7. Install the new chips.
  - a. Make sure that the leads on the chip are straight and parallel and that the chip is located and oriented properly. See Fig. 1, page 3.

### CAUTION

Be careful not to accidentally bend any leads on the chips; a lead that does not make contact with the socket properly can prevent the control module from functioning. It may be necessary to bend the two lead rows together slightly to directly align the pins with the socket holes.

- b. Press the chip gently into the socket; pause to verify that no leads are being pushed out and away from the socket or doubling over under the chip.
  - c. If all the leads are properly aligned, press firmly to ensure that the chip is fully seated in the socket. If the chip is not fully seated, the control module will not function.
  - d. Repeat this process to install the remaining two chips. If possible, leave the control module cover off.
8. Repeat steps 6 and 7 for each control module in the system.

**NOTE:** System Map Information is automatically updated and the transaction table is automatically cleared the next time the system power is turned on. Make sure the CAN cable is connected between the control modules before turning the power on.

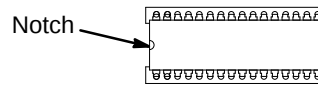


Fig. 2

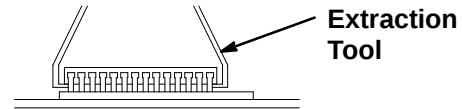


Fig. 3

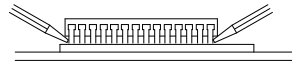


Fig. 4

## Configure the System

1. Turn on the power to all the control modules.
2. After about 15–20 seconds, each keypad should display the message:

THE CODE WAS  
UPGRADED OR WAS  
CORRUPTED.  
USE ANY KEY TO CONT.

This message is normal and indicates that the new chips are functioning properly and the system has verified that a new version of software has been installed. Press any key to change to the HOME screen.

If any control module/keypad pairs do not display this message, the chips have not been installed properly. Turn off the power to the non-functioning control module and check the chip installation.

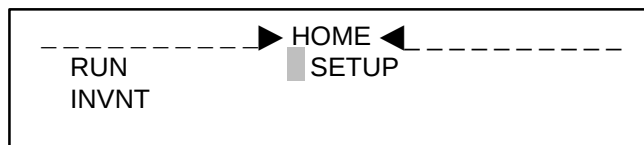
*Continued on the next page.*

## Configure the System

At this point, the Master Control Module is the only module that has completely converted to software version 1.05. The slave control modules have the upgraded program, but not the system configuration data. After all the control modules have powered up properly and are displaying the HOME screen, use the Master Control Module – Administrative Keypad to complete the upgrade.

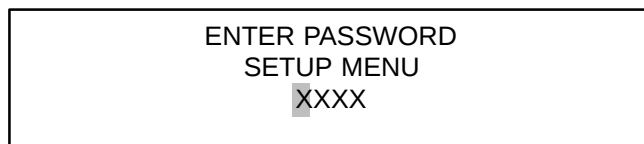
1. Choose SETUP on the HOME screen.
2. Type in a Password that had setup access prior to upgrading and press the ENTER key.
3. Use MODIFY SETUP to scan through the various tables, such as FLUIDS and DISPENSE AREAS to verify that the conversion was successful.
4. Under SETUP OPTIONS, select INVENTORY and press the ENTER key.
5. The inventory screen requests that you select whether to ENABLE or DISABLE inventory tracking (DISABLE is the default). If inventory tracking was being used before or you want to use it now, press the ↓ or ↑ key to scroll to ENABLE.
6. Press the ENTER key to confirm the setting and go to the next screen.

### HOME Screen



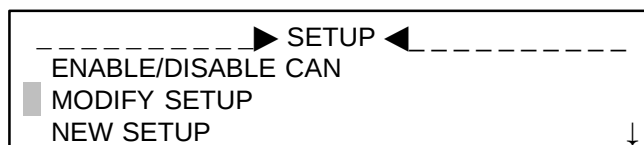
The HOME screen shows a horizontal menu with three options: RUN, INVNT, and SETUP. The SETUP option is highlighted with a grey bar and a cursor. Navigation arrows are shown above the menu items.

### PASSWORD Screen



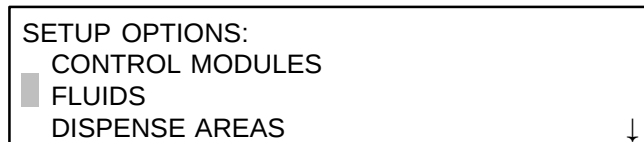
The PASSWORD screen displays the text "ENTER PASSWORD" and "SETUP MENU" at the top. Below this, a password field is shown with four "X" characters (XXXX) and a cursor positioned at the end of the field.

### SETUP Screen



The SETUP screen shows a list of options: ENABLE/DISABLE CAN, MODIFY SETUP, and NEW SETUP. The MODIFY SETUP option is highlighted with a grey bar and a cursor. Navigation arrows are shown above the list, and a downward arrow is at the bottom right.

### SETUP OPTIONS Screen

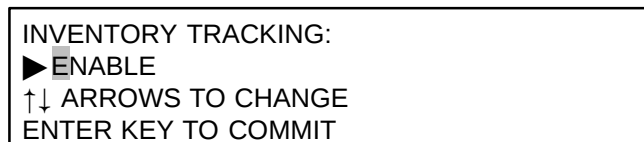


The SETUP OPTIONS screen displays the text "SETUP OPTIONS:" followed by a list of options: CONTROL MODULES, FLUIDS, and DISPENSE AREAS. The FLUIDS option is highlighted with a grey bar and a cursor. A downward arrow is at the bottom right.



The SETUP OPTIONS screen displays the text "SETUP OPTIONS:" followed by a list of options: ASSIGN CONNECTIONS, METER CALIBRATION, and INVENTORY. The INVENTORY option is highlighted with a grey bar and a cursor. A downward arrow is at the bottom right.

### INVENTORY Screen



The INVENTORY screen displays the text "INVENTORY TRACKING:" followed by the option "ENABLE", which is highlighted with a grey bar and a cursor. Below this, instructions are shown: "↑↓ ARROWS TO CHANGE" and "ENTER KEY TO COMMIT".

*Continued on the next page.*

Configure the System (continued)

- 7. With the cursor in the FL #01 (fluid #1) field, press the ENTER key to move to the REORDER PT. (reorder point) field. Type in the minimum fluid level the tank should be allowed to reach before receiving a warning to refill it and press the ENTER key.
- 8. With the cursor in the TANK LVL (tank level) field, type in the current tank level and press the ENTER key.  
**NOTE:** This is the value that was recorded before the conversion began. If this is the first time the inventory function is being used, “dip” the tank to get a reading.
- 9. When the cursor is at MORE, press the ENTER key to repeat the screen for the next fluid. Repeat steps 7 and 8 for each fluid.
- 10. After the last fluid values have been entered, EXIT the inventory levels setup.
- 11. At the SAVE SETUP screen, scroll to YES. Press the ENTER key to save setup.

- 12. Under SETUP OPTIONS, select COMM. ON CM #1 (communication on control module #1) and press the ENTER key to select the output format.
- 13. Select either PRINTER or COMPUTER output and press the ENTER key.

- PRINTER output is formatted in a column that can be sent to either a printer or a computer.
- COMPUTER output is a text file that can be used to create reports with a computer and additional software (such as Excel®).

- 14. At the SAVE SETUP screen, scroll to YES and press the ENTER key.

INVENTORY Screen

FL#01      10W30  
00010 GL REORDER PT.  
00100.0 GL TANK LVL  
         MORE      EXIT

FL#01      10W30  
00010 GL REORDER PT.  
00100.0 GL TANK LVL  
         MORE      EXIT

FL#01      10W30  
00010 GL REORDER PT.  
00100.0 GL TANK LVL  
         MORE      EXIT

SAVE SETUP Screen

SAVE SETUP: ► YES      ↑ ↓  
WARNING:  
SAVE WILL CANCEL  
ACTIVE/WAITING JOBS

SETUP OPTIONS Screen

SETUP OPTIONS:  
METER CALIBRATION  
INVENTORY  
COMM. ON CM #1      ↓

MASTER OUTPUT Screen

► PRINTER      MASTER OUTPUT ◀  
↑ ↓ ARROWS TO CHANGE  
ENTER KEY TO COMMIT

► COMPUTER (HOST)      MASTER OUTPUT ◀  
↑ ↓ ARROWS TO CHANGE  
ENTER KEY TO COMMIT

SAVE SETUP Screen

SAVE SETUP: ► YES      ↑ ↓  
WARNING:  
SAVE WILL CANCEL  
ACTIVE/WAITING JOBS

## Configure the System (continued)

15. Under SETUP OPTIONS, select SYSTEM TIME OUTS and press the ENTER key.
16. Type in the number of minutes you want to elapse before the UNUSED KEYPAD time-out will occur and press the ENTER key. The number can be from 0 to 99 minutes; 5 minutes is the default. If 0 is selected, the time-out function will be disabled.  
**NOTE:** The keypad time-out helps avoid having an unauthorized person use an unattended keypad. A valid password must be entered before re-accessing the run or inventory screens. The time-out set for the keypad applies to all keypads connected to the system.
17. Type in the number of minutes you want to elapse before the DISPENSE time-out will occur and press the ENTER key. The number can be from 1 to 99 minutes.  
**NOTE:** The time set for dispense time-out represents the amount of time the operator has to start dispensing the job after it has been entered into the system. If there are no meter pulses within the set amount of time, the system will close the job.

Dispense time-out cannot be set to zero; it is always enabled. The time-out that is set will apply to the entire system.

18. At the SAVE SETUP screen, scroll to YES and press the ENTER key.
19. The keypad should return to the SETUP OPTIONS screen. Press the BACK key to go to the main SETUP screen.

### SETUP OPTIONS Screen

SETUP OPTIONS:  
COMM. ON CM #1  
RUN OPTIONS  
SYSTEM TIME OUTS

### UNUSED KEYPAD TIMEOUT Screen

UNUSED KEYPAD WILL  
RETURN TO HOME  
AFTER 05 MINUTES.  
USE ENTER TO CONT.

### DISPENSE TIMEOUT Screen

01 MINUTES TO START  
DISPENSE AFTER ENTRY  
OR CLOSE JOB AFTER  
LAST METER PULSE

### SAVE SETUP Screen

SAVE SETUP: ► YES  
WARNING:  
SAVE WILL CANCEL  
ACTIVE/WAITING JOBS

### SETUP OPTIONS Screen

SETUP OPTIONS:  
COMM. ON CM #1  
RUN OPTIONS  
SYSTEM TIME OUTS

-----► SETUP ◀-----  
ENABLE/DISABLE CAN  
MODIFY SETUP  
NEW SETUP

## Configure the System (continued)

20. Press the ↓ key to scroll to UPDATE TABLES and press the ENTER key.

21. With the cursor at ALL TABLES, press the ENTER key.

22. Press the ↓ or ↑ key to scroll to YES on the UPDATE TABLE verification screen and press the ENTER key.

This step will transfer all of the data, that was originally entered into the system, from the Master Control Module to the slave control modules on the network. Without this step, the slave control modules do not have any of the updated system configuration data that they require to operate properly.

The UPDATING screen will appear with messages on which tables are being updated. When the process is finished, the TABLE UPDATE COMPLETED screen will appear.

23. Reboot the entire network by turning off all the power to all control modules and then turning all the power back on.

24. Verify with each keypad in the system that the passwords are accepted, the fluid names and dispense area names are present, and that dispense points are functioning properly.

If a control module does not have a keypad attached to it, if possible, obtain a spare keypad to help test the control module. Otherwise, you must actually test that dispenses occur the way they should to verify the software was installed properly.

### SETUP Screen

|                     |  |   |
|---------------------|--|---|
| -----▶ SETUP ◀----- |  |   |
| CLEAR SETUP         |  | ↑ |
| PRINT SETUP         |  |   |
| █ UPDATE TABLES     |  | ↓ |

### UPDATE TABLES Screen

|                    |   |
|--------------------|---|
| UPDATE TABLES:     |   |
| █ ALL TABLES       |   |
| OPERATOR PASSWORDS |   |
| CONTROL MODULES    | ↓ |

### UPDATE TABLES VERIFICATION Screen

|                     |       |     |
|---------------------|-------|-----|
| UPDATE TABLE:▶      | █ YES | ↑ ↓ |
| WARNING:            |       |     |
| UPDATE WILL CANCEL  |       |     |
| ACTIVE/WAITING JOBS |       |     |

### UPDATING Screen

|             |
|-------------|
| UPDATING:   |
| PLEASE WAIT |

### TABLE UPDATE COMPLETED Screen

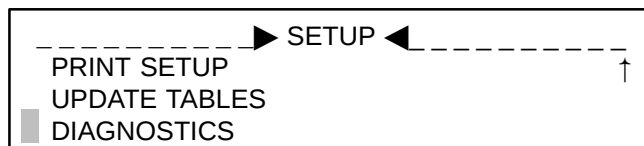
|                      |
|----------------------|
| TABLE(S) UPDATE      |
| COMPLETED            |
| SUCCESSFULLY!!!      |
| USE ANY KEY TO CONT. |

## Configure the System (continued)

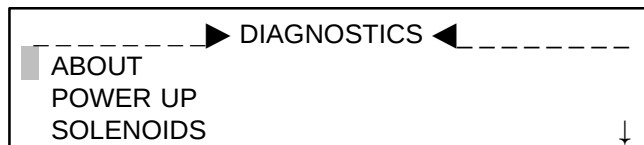
25. Verify that the software was installed and configured properly by using the DIAGNOSTICS ► checksum screens on each control module.
26. Move the cursor to DIAGNOSTICS using the ↓ key and press the ENTER key.
27. The DIAGNOSTICS screen will appear. Scroll to ABOUT by pressing the ↓ or ↑ key and press the ENTER key.
28. If the software was installed correctly, the ABOUT screen will display the software information, shown at right, after a few minutes. The VERSION should be 1.05 and the FIRMWARE CKSUM should be A478.

If these values do not appear, there is a problem with the installation of the new chips, such as a bent pin. Verify that chips were installed correctly.

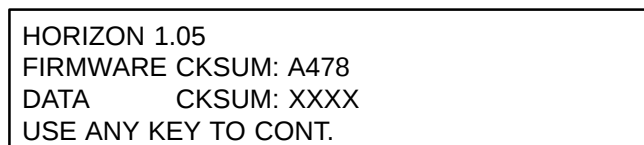
**NOTE:** Pressing any key will return the cursor to the DIAGNOSTICS screen.



### DIAGNOSTICS Screens



### ABOUT Screen



[illegible]

[illegible]

# Graco Standard Warranty

Graco warrants all equipment manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale by an authorized Graco distributor to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

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