

# RF Hose Module Installation

## OVERVIEW

The E. J. Ward Hose Module provides wireless transfer of vehicle information, gathered by either the VIT or Canceiver mounted in the vehicle, to the Fuel Control Terminal (FCT). The RF Hose modules are automatically activated from fuel nozzle movement and orientation, thus making fuel authorization transparent to the user.

In a typical transaction, the user drives up to the fuel pump, removes the nozzle from its holster and inserts it into the vehicle's filler neck. This motion causes the hose module to poll for a VIT. When VIT/Canceiver data is received, the hose module transmits the data to the FCT for validation. Once VIT/Canceiver data is authorized, the dispenser is enabled and the user is allowed to fuel. The hose module continues to check for VIT/Canceiver presence during fueling. When the VIT/Canceiver is no longer present the pump is shut off.

**Compliance Statement:** This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

## INSTALLATION

1. Install the hose module on top of the hose nozzle using large UV-resistant nylon tie wraps (Figure 1.) Ideally, the module should be placed top of the nozzle, as far forward as possible, with the Ward logo on the spout-end of the nozzle. The module must not be placed too far forward on the handle so that

it restricts normal insertion into a filler neck (Figure 2.) Alternately, the module may be side mounted on the nozzle (Figure 3.)



Figure 1



Figure 3 - Top Side Mount



Figure 3 - Left Side Mount



Figure 3 - Right Side Mount

**CAUTION:** Installation of the module cannot modify or disturb the vinyl jacket on the hose nozzle.

**NOTICE:** Healy 400 and 900 series nozzles are NOT permitted to have the hose modules mounted on the left side as it may interfere with the operation. Side mounting is only allowed on the right side as shown above.

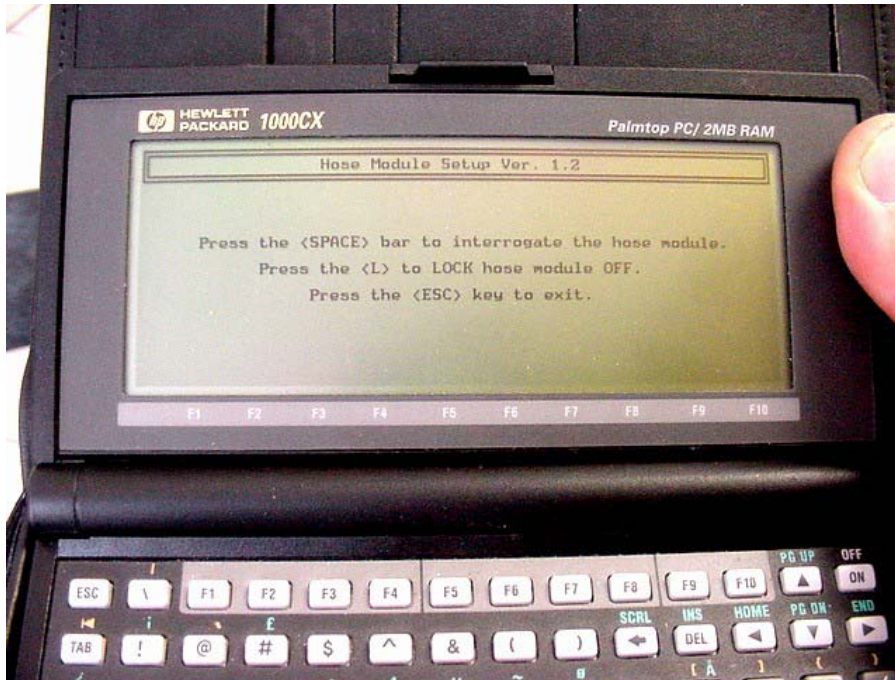
2. The installer must also verify that the hose module does not interfere with dispenser or nozzle operation. After mounting the hose module place the nozzle back on the dispenser holster and verify the following conditions.
  - a. The pump is not started simultaneously with lifting of the nozzle.
  - b. Replacing the nozzle in the holster stops the pump. Additionally, the nozzle cannot be placed in the holster in a manner that leaves the pump energized.
  - c. The nozzle can be locked with the use of an ordinary ¼ in. padlock.
3. To preserve battery life hose modules are “locked” before shipping from the E.J. Ward factory. To unlock the module, rub a strong magnet on the side marked by the “MAGNETIC UNLOCK” indication on the U.L label (Figure 4.)



Figure 4 – Unlocking Module

## PROGRAMMING

1. The installer must obtain unique identification numbers for the hose modules so its FCT will know which hose the VIT/Canceiver data came from. Hose module identification consists of three numbers: **System Number**, **Terminal Number**, and **Hose Number**.
2. Hose modules are programmed with the same Palmtop Programmer used to program VIT/Canceiver units. On the palmtop, exit the VIT/Canceiver Setup program using Menu 8.
3. At the DOS prompt, type HOSE and press <Enter>.
4. The Hose Module Setup Main Menu should appear (Figure 5.)
5. Press the <Space> bar and point the front edge (edge closest to the logo) of the hose module at the palmtop's interface card (Figure 6.) After a short delay, the palmtop should beep and display the module's current configuration.
6. If the module seems to not respond in Step 5, gently shake the module and retry Step 5.
7. Enter the correct System Number, Terminal Number, and Hose Number for the hose module. The 'Prompt Type' setting determines what type of data is requested from the VIT/Canceiver. If unsure of the correct setting, set 'Prompt Type' to 'EEPROM'.
8. After entering all data, the bottom line of the screen should display 'Update Hose Module or Exit'. If this line is not present, press <Enter> repeatedly until it is displayed. The left and right arrow keys will highlight the two different options. With 'Update Hose Module' highlighted, press <Enter> to send the new configuration data to the hose module. Again, point the front edge of the module at the palmtop's interface card. After a short delay, the palmtop should beep, indicating a new configuration has been accepted.
9. Test the hose module with a good VIT/Canceiver or the VIT/Canceiver simulator function of the VIT/Canceiver palmtop program.
10. Exit the hose module program by pressing the escape key repeatedly. The hose module program will respond with "bye!" when it exits to DOS. Type VIT and press <Enter> to get back into the VIT/Canceiver program.
11. If problems are still experienced, review the back of the **VIT Installation Guide V2.11 – Section 5.3 - Troubleshooting Hose Module Equipped Fuel Island**, or call Ward Inc. at 210-824-7383



**Figure 5 - Hose Module Setup Program**



**Figure 6 - Programming Hose Module**



## OPERATION

The hose module is activated from nozzle movement and change in orientation. As the nozzle is inserted into the vehicle's filler neck, the hose module will 'prompt' the VIT/Canceiver for its fueling data via electromagnetic link. Upon receiving the 'prompt', the VIT/Canceiver will respond with requested fueling data. Fueling data is analyzed by the module and relayed to the FCT via radio link. After analyzing and approving data from the module, the FCT will enable the appropriate dispenser.

As long as the hose module is in the fueling orientation, any movement perceived by the module will cause the module to check if the VIT/Canceiver is still within range of the electromagnetic link. When the module can no longer detect the VIT/Canceiver, a 'Loss Of Signal' (LOS) message is sent to the FCT, and fuel is automatically shut off. If the nozzle is reinserted back in the filler neck and the hose module detects the same VIT/Canceiver, fueling can continue. If a different VIT/Canceiver is detected or the nozzle is returned to its holster, the original transaction closes out and another transaction will be initiated.

To maximize life of hose module operation, always return the nozzle to the dispenser holster after use. The module senses when it is not in a fueling position and places itself in a low-power mode to conserve battery life. Therefore, if proper installation techniques were used, hose modules should always orient in the normal upright position after fueling. In order to conserve power while transporting hose modules, use the Hose Module Setup program on the Palmtop Programmer to lock the module into its 'sleep' state by selecting <L> (lock hose module off) from the main menu.