

# GBE2 Interface Module

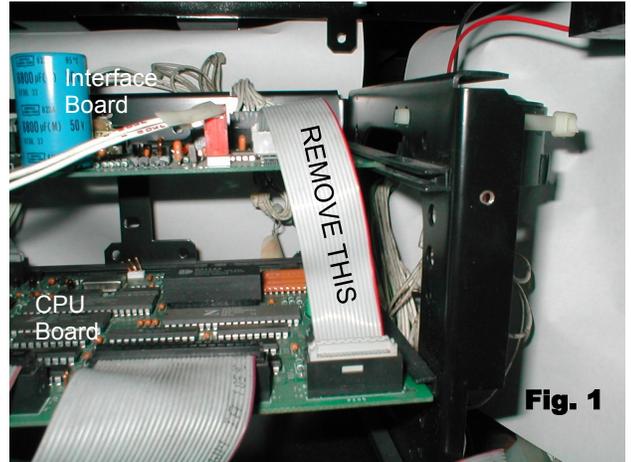
## FOR THE GILBARCO LEGACY SERIES PUMPS

**WARNING:** This product **MUST** be installed by qualified personnel only. It must be installed in compliance with local and national electrical codes and intrinsic safety standards. ICS is not responsible for misuse or incorrect installation of this product.

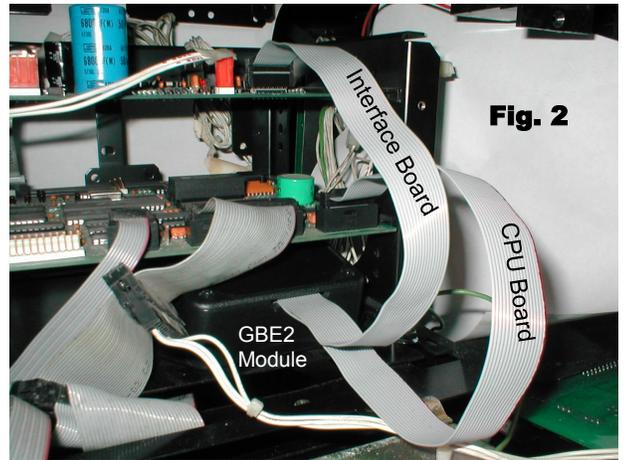
The GBE2 is an interface module for the Gilbarco Legacy series of pumps and dispensers which will allow them to be controlled by console or card system intended for mechanical pumps. Each GBE2 module will control 1 or 2 hoses. The pulse output generates gallons only and may be set for 10, or 100 pulses per gallon. When controlling the Legacy with the GBE2, the price per gallon must be set manually using the keypad.

**Installation:**

1. Disconnect power from the Legacy pump / dispenser.
2. Open the cabinet of the pump head to reveal the programming keypad. Swing the keypad panel down to allow access to the circuit board card cage.
3. Identify the 20 pin ribbon cable shown in Fig. 1. This ribbon cable connects the interface board (top) with the CPU board (bottom). Remove this cable.
4. Identify the ribbon cables on the GBE2 module. One is labeled "Interface Board" and the other is labeled "CPU Board". Plug the Interface Board cable into the interface board socket (top) and the CPU Board cable into the CPU board socket (bottom). These connectors are keyed so that they cannot be inserted backwards. Do not reverse the connection of these cables or damage to the GBE2 module will result. When finished, the ribbon cables should look like Fig. 2.
5. Identify the colored wires on the GBE2 module. Note that one set of wires is for pump side A, while the other set is for side B. Each side has the same connections.



**Fig. 1**



**Fig. 2**

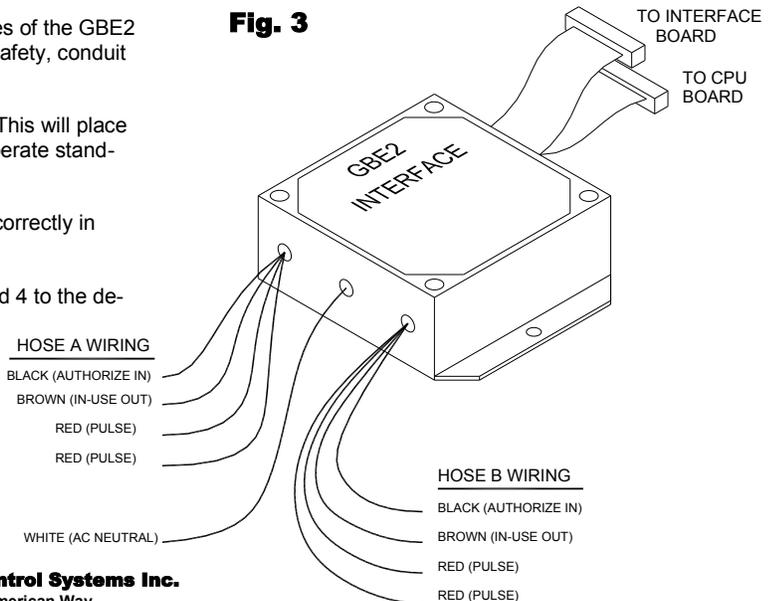
Wire Color	Wire Function	Description
<b>Black</b>	Authorize input from console	110 Volts AC Signal from console. When Authorize is ON, raising the handle switch will reset the hose display and begin fueling.
<b>Brown</b>	In-Use output to console	When Authorize is ON and the handle switch is ON, the In Use outputs 110VAC to the console. In Use drops if either the Authorize or the handle switch goes OFF.
<b>Red</b>	Pulse output	Pulse output is a switch contact between red wires. No voltage is output. Pulse output opens and closes once per pulse.
<b>Red</b>	Pulse output	
<b>White</b>	AC Neutral	AC Neutral reference for Authorize input

The white wire at the center of the module is AC Neutral. For single hose pumps, use side A only.

6. Connect the console or card system wiring to the appropriate wires of the GBE2 using the above signal description and Fig. 3. To maintain intrinsic safety, conduit installation may be required.
7. Remove the cover of the GBE2 and set switch 1 OFF and 2 ON. This will place the GBE2 in bypass mode for testing. In this mode, the pump will operate stand-alone.
8. Re-apply power to the pump and make sure both hoses operate correctly in stand alone mode.
9. Set GBE2 DIP Switch 1 and 2 to OFF. Set GBE2 DIP switch 3 and 4 to the desired pulses per gallon using the table on the back of this page.
10. Authorize hose A with the console or card system and run a test transaction. Repeat the process with hose B.
11. If both hoses are working correctly, proceed to the calibration instructions on the back of this page.



**Fig. 3**



Specifications:	
Operating Temperature Range:	-40 to 150 degrees F.
Authorize Input Voltage Range:	80 to 150 Volts AC
In-Use signal Max Current:	0.3 Amps
Pulsar Output Voltage Range:	5 to 350 Volts AC or DC
Maximum Speed:	60 GPM

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# GBE2 SWITCH SETTINGS AND CALIBRATION

## GBE2 CALIBRATION:

### Overview:

The Legacy pump has the ability to calibrate its meter electronically. It performs this calibration by recording the exact number of pulses received while filling a test can. Subsequent transactions then use this value to measure exactly one gallon. If the Legacy's meter were perfectly calibrated, the Legacy's internal pulser would generate exactly 1000 pulses per gallon. In reality, the Legacy's internal pulser will generate slightly more or fewer than the ideal 1000 pulses per gallon. In order for the GBE2 pulse output to agree exactly with the Legacy display, it needs to be calibrated along with the Legacy.

### Procedure:

1. Review the procedure for calibrating the Legacy pump in the factory documentation.
2. Make sure that the pump is powered on and that it has been functionally tested with the GBE2 in bypass mode.
3. Determine the size of prover can that you will be using. In calibration mode, GBE2 DIP switches 3 and 4 select the size of prover can used for calibration. Select the prover can size for each hose using the following table and set switches 3 and 4.

SWITCH 3 ON	HOSE A, 50 GALLON PROVER
SWITCH 3 OFF	HOSE A, 5 GALLON PROVER
SWITCH 4 ON	HOSE B, 50 GALLON PROVER
SWITCH 4 OFF	HOSE B, 5 GALLON PROVER

4. Set GBE2 DIP switch 1 ON and 2 OFF. This places the GBE2 in calibration mode.
5. Perform the procedure to begin calibration of the legacy pump for hose A.
6. Lift the handle switch for hose A and dispense fuel into the prover can. While dispensing, the GBE2 will record the exact number of pulses received by the pump for the prover size selected above. Try to top off the prover as close to 0 as possible.
7. When finished, Lower the handle switch for hose A.
8. Turn off the handle switch for hose A. This will stop calibration for hose A, and will save the exact number of pulses per gallon to permanent memory. The GBE2 automatically detects which hose is being calibrated. The calibrated number of pulses must be within 10% of the default value to be accepted and stored to permanent memory.
9. If you have a 2 hose pump, repeat the above steps to calibrate hose B.
10. Once both hoses are calibrated, set DIP switches 1 and 2 to OFF to set normal operation mode, and set DIP switches 3 and 4 to the desired number of pulses per gallon for each hose.
11. Authorize each hose using the console or card system. Dispense 20+ gallons from each hose and compare the console or card system record with the Legacy pump display.

GBE2 DIP SWITCH SETTINGS	
SWITCH SETTING	FUNCTION
1 ON 2 OFF	CALIBRATION MODE ON (See instructions)
1 OFF 2 ON	BYPASS MODE ON (Pump will operate stand-alone for testing)
1 ON 2 ON	RESET CALIBRATION VALUE (Sets the pulses per gallon to 1000, both hoses)
1 OFF 2 OFF	NORMAL OPERATION (Pump requires Authorize to function)
3 ON	HOSE A PULSE OUTPUT = 100 PULSES PER GALLON
3 OFF	HOSE A PULSE OUTPUT = 10 PULSES PER GALLON
4 ON	HOSE B PULSE OUTPUT = 100 PULSES PER GALLON
4 OFF	HOSE B PULSE OUTPUT = 10 PULSES PER GALLON