Troubleshooting Tips

#1 – Gilbarco Pump Error Codes

It should be noted to avoid any confusion this bulletin is a summary of all the various codes that we at ERI are aware of. Therefore, this document is our interpretation of these codes, and should only be used as a reference.

There are three basic generations of logic development in Gilbarco pumps, which we will deal with in succession.

Error codes on Gilbarco pumps show on the PPU (Price per Unit) Display and not on the Console with the exception of the Transac 12G. The PPU Display will show in alternating order the Price and then the Error Code

All Error Codes will stop the pump from operating and certain Errors will result in loss of communication with older consoles

IMPORTANT! - DISCONNECT ALL POWER FROM THE PUMP BEFORE CHANGING OR SERVICING ANY COMPONENTS

For best results, follow this troubleshooting guide in the order it is presented. This will eliminate the simplest possible causes first

Phone: This is a troubleshooting step that you can have the Station Attendant try. This is not possible for all errors in this guide

Fix: This step __MUST__ be carried out by a service technician, failure to do so could result in damage and loss of warranty

A Master Reset and/or replacement of the Main Controller Board should only be carried out as a last possible option. If a Controller Board must be replaced, a Factory Reset should be performed upon installation to ensure no Data has been retained from previous use or testing

Error Fixes should be carried out one at a time, this helps to better isolate the actual cause of the problem

First Generation: 8080 Logic

Highline: Start - Fall 1985

Multi Product: Start – Fall 1987 (Does not appear in Salesmaker4)

This generation only had 2 Error Codes

#1

Error Code: Blank Display

Description: A Pulsing System failure. It can happen on only one hose or on all hoses on a pump. It is important to find out "over the phone" if it is occurring on one hose only, or on all hoses.

Causes (Single Hose):

- Power Spike
- Bad Connection (No Contact or Moisture)
- Faulty Pulser
- Faulty I.S. Barrier
- Broken Pulser Wiring

Causes (All Hoses): (Multi Product Pumps it may be only all the hoses on one side, all the time)

- Faulty Power
- Faulty Regulator/Interface Board (These are separate boards on a Multi Product)

Phone:

1. Have the operator turn off "Control" power to the pump (after isolating it at a self serve).
Check with operator to make sure the displays on the pump have gone out, then have them turn
power back on. (put back on console at Self Serve)

2. Have them try operating the pump again. (You may have to do this a number of times on a Multi
Product with each hose to determine if any hose on the side ever functions)

If the Error occurs again, a service call is necessary

Fix (Single Hose):

1. Check all exposed wires to pulsers and check all plug connections for security and moisture.

2. Swap the Pulser with a known good Pulser (The one on the next hose for example). Try unit again.
If it works replace pulser.

3. Swap the Barrier with a known good Barrier. Try unit again. If it works change Barrier.

4. Check wiring in pump column, conduit and all plug connections in the head of the pump.

5. Swap Regulator/Interface with know good boards.

#2

Error Code: 888.8

Description: This problem is referred to as "Logic Lock Up", or in newer books as
"Non Existent Memory" which is actually what it is. Technically what happens is that a voltage spike
is induced on the Logic Board causing a Non Existent memory location to be received by the
Microprocessor. It then refuses to do anything else until it finds that location. If left alone it will
eventually blow its own memory. **This means the flashing eights may no longer be happening
when you get the service call, the pump may just appear to have lost memory.** Memory loss on
its own is extremely rare!

Causes:

- Power Spike or Static
- Faulty Flourescent Tubes or Ballast
- Bad Neutral or Ground
- Faulty Logic Board (Extremely Unlikely)

Phone:

1. Have the operator turn off "Control" power to the pump (after isolating it at a self serve). Check with the operator to make sure the displays on the pump have gone out, then have them turn power back on. (put back on Console at Self Serves) The pump should now operate until whatever caused the Logic Lock up causes it again. **(Remember if the pump lost memory and has no price on it, it will not run until the operator sets the price again.)**
2. Have the operator check the fluorescent in the pump for flickering, darkened ends or totally out.
If any are noted you will have to go the site to change them. **Make sure you use proper Tubes with grounds strips on them.** If the problem was a Voltage Spike it may never occur again (however a Voltage Spike usually locks all of the pumps up at the site and you usually recognize it from this, they also lock up the Consoles easier).
Fix:
1. If after some time the "Lock Up" occurs again you must take some action. Change the Fluorescent Tubes in the pump first. Let them run the pumps again, if the "lockup" does not occur again in roughly the same time as from their first call to the second call you have probably fixed the error.
2. Check out all wiring to the pump. Pay particular attention to Neutral and Grounding
3. If wiring checks O.K., then change the Ballast and check other lighting near the pump. Repair wiring as necessary
4. Change Regulator Board if necessary
5. If problem still persists, change Logic Board

Second Generation: Z80 Logic
Highline 11B: From Fall 1985
Salesmaker4: Start – Fall 1987 (No Multi-Product)

#1
Error Code: 002.0
See First Generation Problem #1

#2
Error Code: 002.1
See First Generation Problem #2

#3
Error Code: 002.2
Description: This is a Volume/Money buffer failure. In other words the Microprocessor checks that the Volume amount times the Price should equal the Money amount but finds it does not, so it shuts the Pump down
Causes:
- Power Spike/Static
- Faulty Logic Board
Phone:
1. Have the operator power the pump down and back up as in previous cures. Have them run the pump again. If the problem does not occur again assume the problem was a power spike or static and there is nothing wrong with the unit.
Fix:
1. Check all wiring in the pump for proper Neutral and Grounding. Check the door to the operator panel on the pump to make sure no part of the door or its lock is touching the command module plug, allowing static to the Logic Board.
2. Change the Logic Board.

#4
Error Code: 002.3
Description: A Grade assignment has changed after the Pump was powered up last. The operator when calling in will probably complain the Pump has lost memory as their totals will have reset to zero. In fact the totals are still there it is just that the pump is now running on the totalizers for another Grade.
Causes: Jumper failure on logic board
Fix: Check Jumpers for setting the Grades on the Logic Board and repair as necessary. Make sure Grades are set correctly before powering on the pump.

#5
Error Code: 002.4
Description: The Conversion Factor has changed after Power up. This means the
pump is no longer calculating in Litres but may be U.S. or Imperial Gallons
Causes: Jumper failure on logic board
Fix: Check Jumpers for setting the Conversion Factor on the Logic Board and repair as necessary. Make sure the correct conversion factors have been set correctly before powering on the pump.

#6
Error Code: 002.5
Description: The 2-Wire switch has changed after Power up of the Pump
Causes:
- The operator panel door of the pump has been opened and the pump has been switched "Off Console" (Self Serve Only)
- Faulty 2-Wire Switch
Phone: Have the Operator open the Operator Panel Door on the Pump and check to make sure switch is in the correct position ("On Console at a Self Serve). If the switch was in the correct position, cycle the switch back and forth a couple times to work out any dirt that may have been in it. Then power the pump down and back up again and see if it now functions correctly. If it will not operate in self serve but operates on it own, a service call is necessary
Fix: Check the switch on the Display Board or Display Interface Board, replace if not functioning

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#7
Error Code: 002.6
Description: The Single/Dual Option setting has changed on the pump after powerup of the Pump. This will usually only occur on a Dual, as you must set Jumper "on" to make a single pump a dual.
Causes:
- Jumper failure on Logic Board
- Faulty Logic Board
Fix: Check Single/Dual option jumper for faults, replace the Logic Board if necessary

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#8
Error Code: 002.7
Description: The "A" side pump ID # has changed
Causes:
- Pump # Jumpers have failed
- Faulty Logic Board
Fix: Check "A" side jumper for faults, replace the Logic Board if necessary

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#9
Error Code: 002.8
Description: The "A" side pump ID # has changed
Causes: See #8 Above
Solution: See #8 Above

#10
Error Code: 002.9
Description: Invalid Grade assignment or Configuration Change (Salesmaker4 Only)
Causes:
- Jumper failure on Logic Board
- Faulty Logic Board
Fix: Check Jumpers for faults, replace Logic Board if Necessary

#11
Error Code: 003.0
Description: Invalid Grade assignment or Configuration Change (Highline 11B Only)
Cause: Same as #10 Above
Solution: Same as #10 Above

Third Generation: Modular Electronics
All Units: Fall 1987 – On | Spring 1988 – On

Codes "002.0" through "002.8" are identical to previous errors. See Above

#1
Error Code: 002.9
Description: Pump Time-Out Error
Causes: The unit has been inactive beyond the specified time limit. The transaction is stopped and it will be necessary to turn the pump handle off to clear the error (no power down is needed). Note! This only occurs with software version 50.2 or higher.
Phone: Turn the pump handle off and back on (Leave off if the hose isn't being used)
Fix: It may be that the site is not supposed to have a "no flow time-out". In this case the pump configuration has changed and you will have to re configure the pump to "No pump Time-out" as per Function Code 12 of Command Code 10.

#2
Error Code: 003.0
Description: Vapor Sense - unit is programmed for Vapor Sense and switch is not hooked up. (This should only occur with version V53.3 software).
Cause: Incorrect Programming
Fix: Re-Program command code 10 function code 7 to "0"

#3
Error Code: 003.1
Description: Totals Data Error. Pump totals memory may be corrupted
Causes:
- Surge/Static
- Faulty Controller Board
- Dead/Disconnected Battery
- Disconnected/Broken plugs to board
Phone:
1. Record Pump Totals
2. Perform memory reset (Command code 6 on page 19 of MDE 2022 User Manual)
3. The Totals could be put back in by the Operator on a Multi Product or a Salesmaker 4 by performing Command Code 7 on page 21 of MDE 2022, however as this will not work on a Highline 11B unless both sides are Grade 1 or the unit is temporarily re configured to an MPD or Salesmaker 4 under Command Code 10 we do

not recommend you even attempt to have the Operator do. Just have them do a shift end and tell them their pump totals for that pump are reset to zero.

4. Have the Operator set the prices on the pump in their normal fashion.

Fix: Change controller board if code persists

#4

Error Code: 003.2

Description: Pulser Count Failure. The Microprocessor has detected an error between the two pulses coming from the Pulser.

Causes:
- Surge/Static
- Defective Pulser
- Defective Interface Board
- Defective Controller Board

Phone: Power cycle pump

Soultion (Site):

1. Replace pulser with known good unit

2. Change Hydraulic Interface Board with known good unit

3. Change Controller Board

#5

Error Code: 003.3

Description: Display heaters are on at Power Up

Causes:
- The displays in the pump were too cold at power up
- Defective Heater
- Bad Connection between Power Supply and Display
- Defective Power Supply
- Defective Controller Board

Phone: Wait until displays warm up. If displays aren't warm within 1 hour after power being applied, a service call is necessary

Fix:

1. Check for Heater power (24 VAC)on display board. Replace power supply if power not present

2. If there is Heater Power (24 VAC) to the Main Display, replace each Main Display with a known good one. Close Bezels to allow to warm up. Be aware that Displays that are cold make take up to an hour to get warm enough to light (at -30 Degrees Celcius this is about a 1/2 hour).

3. Replace Controller Board

#6

Error Code: 003.4

Description: Low Battery condition was detected during automatic battery test (See Also TST#8)

Causes:
- Battery Fuse
- Battery
- Connection between Battery and Regulator Board
- Defective Regulator Board
- Controller Board software older than v53.4
- Defective Controller Board

Phone: Perform Command Code 9, Function 1 as detailed on page 24 of MDE2022 User Manual. This will override the Error until the next Power Up. If code persists, a service call is necessary

Fix:
1. Check battery fuse and replace if necessary
2. Replace battery with known good unit
3. Check wiring between Battery and Regulator Board
4. Replace Regulator Board with known good unit
5. Replace Controller Board with known good unit

#7
Error Code: 003.5
Description: Configuration Data Error. Pump configuration has changed
Causes:
- Surge/Static
- Incorrect Programming
- Faulty Controller Board
Fix:
1. Record Pump Totals
2. Perform Command Code 6 as per page 19 of MDE 2022 User Manual
3. Re-configure the Pump as per Command Codes 10 through 12 pages 2-1 to 2-17 of MDE2021 Service Manual
4. You may now put the pump totals back in a Multi Product or a Salesmaker 4 by performing Command Code 7 on page 21 of MDE2022 User Manual, however on a Highline 111B that is not Grade 1 on both sides you must first temporarily re configure the pump as Salesmaker 4 or Multi Product as per Command Code 10, Function Code 1 on page 2-7 of MDE2021 Service Manual, then enter the totals as per Command Code 7 on page 21 MDE2022 User Manual, then re configure the pump back to be a Highline 111B as per Command Code 10, Function 1 page 2-7 MDE2021 Service Manual (as this can be difficult to accomplish properly we recommend having the operator do a shift cut and start the pump totals at zero for this pump).
5. Reset prices as normal

#8
Error Code: 003.6
Description: Unity "Type Code" has changed
Cause: Unknown
Fix:
1. Re-Configure "Unit Type" as per Function 1 of Command Code 10
2. If problem persists, replace Controller Board

#9
Error Code: 003.7
Description: PIN code 1 has changed
Cause: Unknown
Fix:
1. Record Pump Totalizers
2. Perform Master Reset (See also TST#6)
3. Re-Configure pump and enter totals
4. If problem persists, change Controller Board

#10
Error Code: 003.8
Description: PIN code 2 has changed
Cause: Unknown
Fix: See #9 Above

#11
Error Code: 003.9
Description: Cash/Credit option has changed
Cause: Unknown
Fix:
1. Re-Configure option as per Function Code 2 of Command Code 12
2. If problem persists, replace Controller Board

#12
Error Code: 004.0
Description: Keylock option has changed (v53.0 or higher only)
Cause: Unknown
Fix: Reprogram Keylock Option Command Code 4, Function Code 2 (0 - No keylock, 1 – Keylock), then power down, turn off battery and power up again.

#13
Error Code: 004.1
Description: Side Exists option has changed
Cause: Unknown
Fix:
1. Re-Configure "Side Exists" option as per Function Code 3 of Command Code 12
2. If problem persists, Replace Controller Board

#14
Error Code: 004.2
Description: Manual Mode option has changed (Transac 11 Consoles only)
Cause: Unknown
Fix:
1. Re-Configure pump as per Function Code 4 of Command Code 12
2. If problem persists, replace Controller Board

#15
Error Code: 004.4
Description: The operating handle for the hose flashing is in the ON position upon power-up of the pump
Cause: The operating handle is up. Or the handle wiring is shorted
Phone: Check to see if the handle is down. Lift and Reset handle. If problem persists, a service call is necessary
Fix:
1. Check adjustment on handle switch
2. Bypass switch. If error disappears, replace switch
3. Replace Operating Switch Barrier with known good unit
4. Inspect wiring and Fix/Replace as necessary
5. Replace Hydraulic Interface with known good unit
6. Replace Controller Board