



**February, 2012**

**G450 / G460  
Using the firmware and  
configuration update  
programs**

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**G450 / G460 Advanced  
Service Procedures**

**WARNING:  
Advanced  
service  
procedures  
should only  
be undertaken  
by authorized  
personnel**



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## Updating G450 / G460 Firmware

- **You will need:**
  - **Latest firmware version to be installed**
    - **Latest version can be downloaded from**  
[www.goodforgas.com](http://www.goodforgas.com)
  - **Charger cradle and data download interface cable**
    - **Make sure the GfG drivers for the interface cable have been installed on your computer**



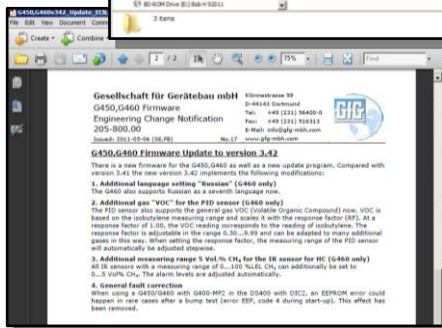
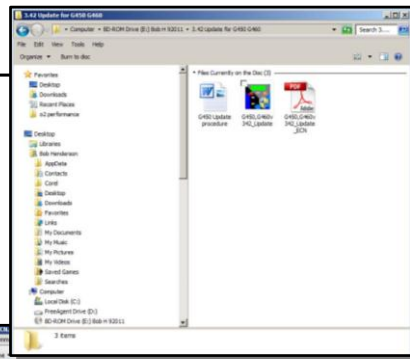
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## Update firmware: Step 1

- **Load the new “Update firmware” application onto your computer**
  - **The latest version can be downloaded at**  
[www.goodforgas.com](http://www.goodforgas.com)
- **Read the description of changes from the previous version**
- **Decide whether to proceed with update**



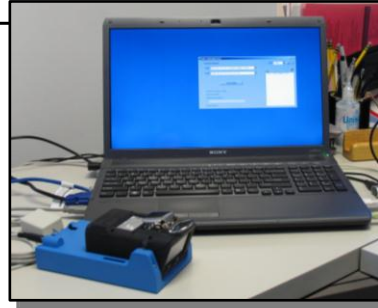
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## Update firmware: Step 2

- Connect download interface cable to cradle and connect cable to USB port in computer
- Turn instrument on then place in cradle

- Make sure neither the instrument or computer run out of power during update procedure
- Make sure battery gauge in LCD shows at least two segments
- Do not disconnect or disturb interface cable and instrument during update process



Battery power gauge

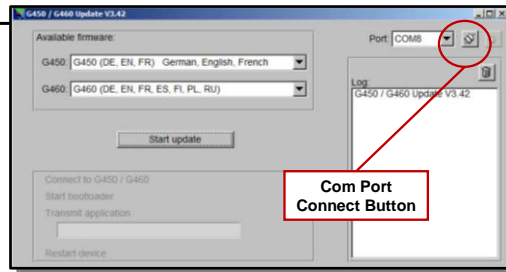
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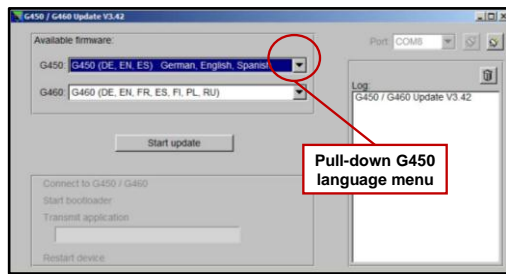


## Update firmware: Step 3

- Open G450 / G460 Update program
- Select com port from pull down menu then click on "connect" button
  - Note: Correct com port is usually the one with the highest number
- Choose desired set of languages from pull-down menu
  - G450 supports sets of three languages at a time as choices in on-board memory
  - G460 supports all available languages at same time in on-board memory



Com Port Connect Button



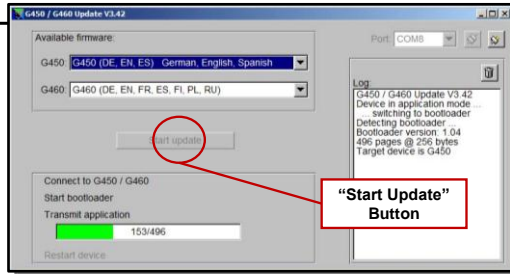
Pull-down G450 language menu

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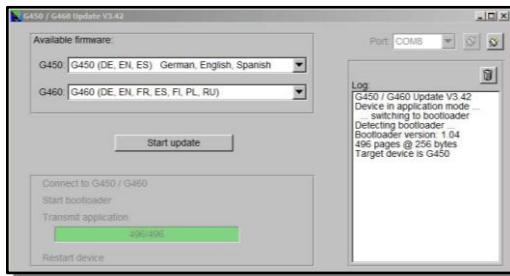


## Update firmware: Step 4

- Click on “Start Update” button
  - A green status bar will indicate progress
- The instrument will turn itself back on in normal operation when the update is complete



- The instrument must be calibrated before it is put back into service!

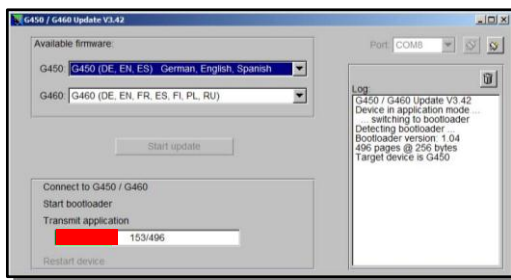


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## Update firmware: If a problem is encountered

- A red status bar indicates a problem has been encountered
- Remove the instrument from the cradle, then replace in cradle and click on the start button to repeat the update process



- If the update application fails to restart the procedure, try momentarily disconnecting the interface cable from the computer, and / or closing and restarting the update application

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## Configuration Update Software

- **Warning:**
  - GfG “Config update” software is primarily designed for use during factory production procedures
  - Use of GfG “Config update” software is restricted to factory trained and authorized service technicians
  - Use **ONLY** those “Config update” choices which are absolutely necessary to complete the required service procedure



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## Using Configuration Update Software

- **You will need:**
  - **Charger cradle and data download interface cable**
    - Make sure the GfG drivers for the interface cable have been installed on your computer
  - **GfG “Config update” software**
    - Latest version can only be obtained from GfG factory headquarters in Ann Arbor, Michigan
    - Contact factory to obtain latest version



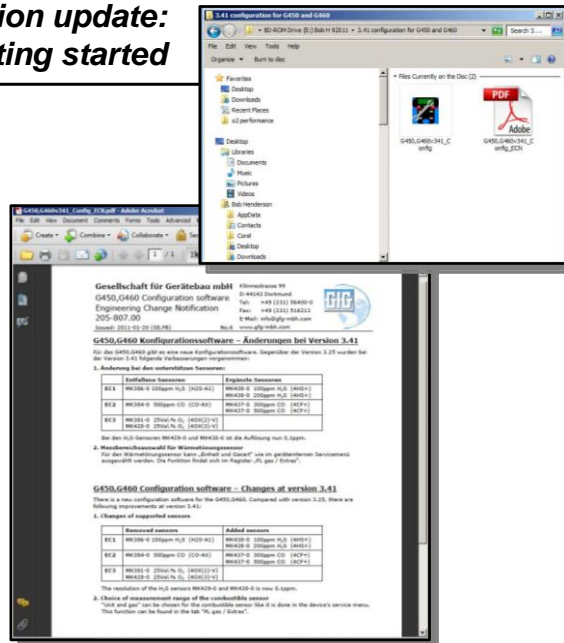
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## Configuration update: Getting started

- Load the “Config update” software onto your computer
- Read the ECN (“Engineering Change Notice”) that explains the changes from the previous version
- Decide whether to proceed with update

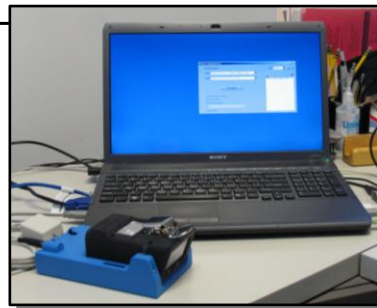


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## Configuration update: Connecting with computer

- Connect download interface cable to cradle and connect cable to USB port in computer
- Turn instrument on then place in cradle



- Make sure neither the instrument nor computer run out of power during update procedure
- Make sure battery gauge in LCD shows at least two segments
- Do not disconnect or disturb interface cable and instrument during update process



Battery power gauge

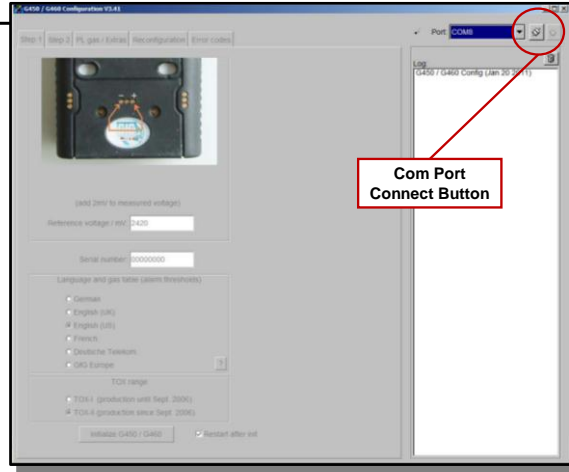
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## Configuration update: Open com port

- Open G450 / G460 “Config update” program
- Select com port from pull down menu then click on “connect” button
- Correct com port is usually the one with the highest number



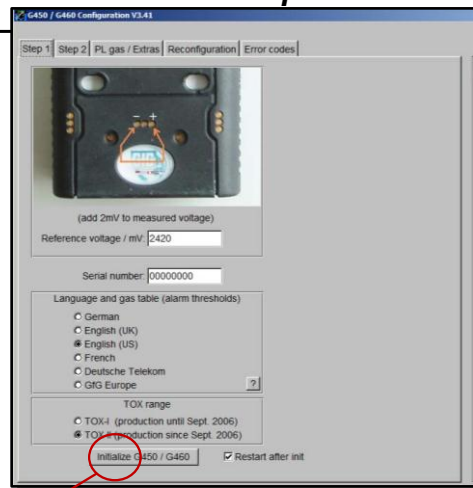
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## Configuration update: “Step 1” screen

- After successfully opening com port “Config update” software opens on the “Step 1” screen
- The choices in the “Step 1” screen are used during in-factory production procedures
- Do not make any changes in the “Step 1” screen
- Do not initialize instrument!



DO NOT INITIALIZE  
INSTRUMENT!

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## Configuration update: "Step 2" screen

- "Step 2" screen used to reset sensor warranty expiration dates or pick different type of sensor for installation in the identified sensor location
- Click "Read config from G450" button to verify the current sensor settings and warranty expiration dates
- Click "single sensor config" to reset the warranty clock with today's date (the new warranty exp date will be three years from today)

• Do not "write config to all sensors" unless you have replaced all of the sensors with brand new sensors!

DO NOT CLICK  
"WRITE CONFIG  
TO ALL SENSORS"

## Configuration update: PL gas / extras screen

- The choices in the "PL gas / extras" screen are exclusively used during in-factory production procedures
- Do not make any changes in the "PL gas / extras" screen





## Configuration update: Reconfiguration screen

- The “Reconfiguration” screen is used to assign a new serial number to the instrument

- Make sure the assigned serial number matches the serial number on the external label
- NEVER turn-off (deselect) “Data logger”
- NEVER turn-off (deselect) “Vibrator”

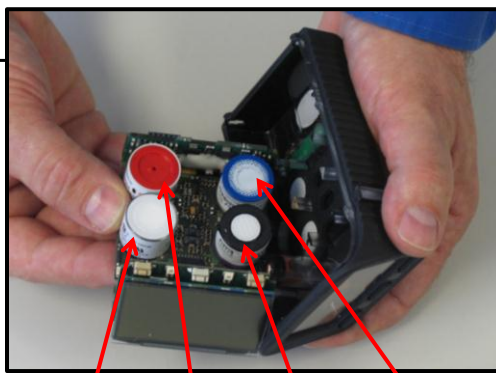
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## G450 Sensor replacement

- In the G450 the sensor positions are defined
- Identify the sensor you intend to replace
- Remove and replace the required sensors
- IN THE G450 THE SENSOR YOU REMOVE MUST BE REPLACED WITH THE EXACT SAME TYPE OF SENSOR IN THE EXACT SAME POSITION,
- SWITCHING SENSOR POSITIONS WILL RESULT IN CALIBRATION OR SENSOR TEST FAILURE WHEN THE INSTRUMENT IS RESTARTED



LEL (stainless steel housing)

CO (red top)

H<sub>2</sub>S (blue ring top)

Oxygen (purple housing)

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## Resetting the warranty expiration date for a new G450 sensor

- In the G450 replacing an old sensor with a new one does not automatically update the warranty exp date
- When a sensor is replaced with a newly purchased sensor the warranty exp date should be updated
- “Config update” software is used to update the warranty expiration to 3-years from today’s date
- Use the “Step 2” screen and “single sensor config” choice to update ONLY the warranty expiration dates of the newly installed sensor(s)

• Normally, when a sensor is replaced under warranty the original warranty date should NOT be updated

DO NOT CLICK  
“WRITE CONFIG  
TO ALL SENSORS”



## G460 sensor replacement

- G460 sensors are equipped with “smart” PCBs that identify the type of sensor and other settings to the instrument
- As long as the type of sensor is supported when installed in a particular position on the PCB, the instrument will automatically update the sensor configuration when it is restarted



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## Returning the instrument to service

- **Calibrate ALL sensors in the instrument (whether or not they have been changed) before returning the instrument to service**
- **It is best to let new sensors stabilize in the instrument for 30 minutes prior to calibration**



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## Questions?

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