Figure 35: Freightliner Extension-Tag installation

6. Place the Extension-Tag on the tank inlet.

   Push the Extension-Tag down and rotate to the right in order to close the tag on the inlet.

   Verify that the Extension-Tag is fully closed (reaching the limit).

Figure 36: Freightliner Extension - fully closed

7. Retest the installed Extension Tag with the Reader.

   The Reader is installed on the same nozzle that is used at the station.

8. Place the O-Ring on top of the tag.

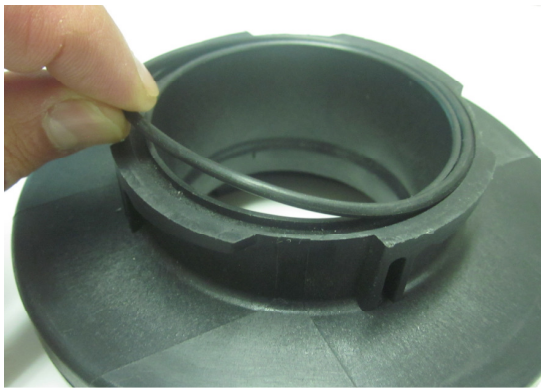


Figure 37: O-ring positioning

9. Insert the locking pin into its hole and hammer it all the way down.

Figure 38: Locking Pin Insertion

10. Close the cap.

Figure 39: Closing the Cup

11. Installation is completed.

Gasngo Meters

Overview

In some installations, there is an option to install a meter in addition to the burned tag.

The meter should be connected to the tag installed in the vehicle.

It transmits mileage data to the system, including details about the vehicle and the driver, each time the vehicle being refueled.

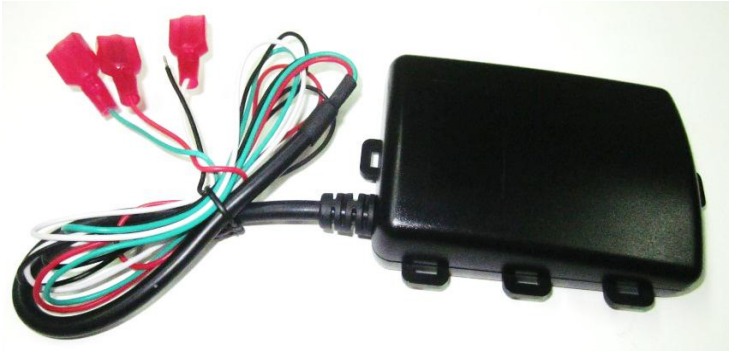


Figure 40: Gasngo Engine-Hour Meter – Front View

Figure 41: OBD meter – with 2 harnesses 0DB J1962 and FMS J1939

Gasngo OBD Meter

OBDII (J1962) and FMS (J1939) Meters

The **OBD II** (On Board Diagnostics II) uses a standard connector as defined by J1962. It is mainly used in private/economy vehicles. For private/economy vehicles, the SAE-J1962 defines the physical connection of the OBD-II.

The **J1939** uses a standard circular connector. It is mainly used in trucks and other heavy duty vehicles.

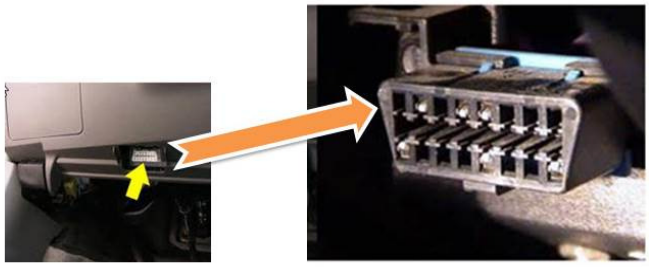


Figure 42: ODB Connector Detail

Standard and physical protocols - FMS

The Fleet Management System Interface (FMS), is the data interface for commercial vehicle reporting.

The standard protocol is SAE J1939 which is used for diagnostics in trucks, buses and other heavy duty vehicles

Data is transferred via the physical layer of the CAN bus.

Changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

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.

OBD/FMS Meter installation procedure

1. Detect the vehicle computer (ECU) protocol in the host vehicle and make sure it is supported by the OBD/FMS Meter.

   Only install the OBD/FMS Meter when the vehicle computer protocol is supported to prevent damage.

2. Open relevant panels for key switch ignition wiring and meter location.

3. Connect the wires as illustrated below:

   a. Connect the meter connector shown below to the meter main unit

Figure 43: Meter Connector - to the Meter Main Unit

   b. Connect the OBD or J1939 connector as shown below to the vehicle side:

   Please note that the J1939 connector can be installed only in a specific position.

   Turn the plastic part till it fits in the holes. The bulge direction is shown below.

Figure 44: Truck Side Connector Detail

c. Locate an ignition key switch (plus after switch) wire.

d. Choose the right terminal for the cable you plan to connect.

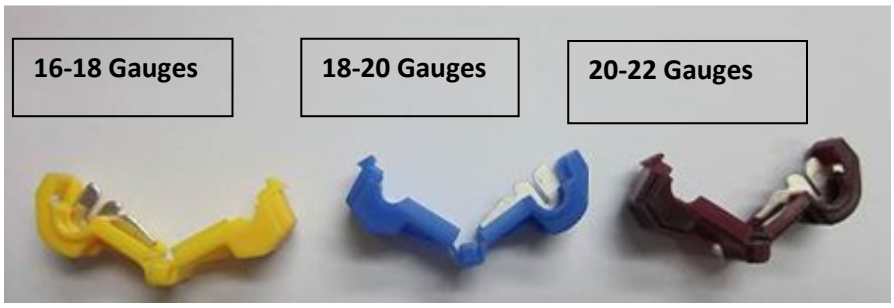


Figure 45: Splice Connector Terminals

4. The wrong terminal size can cause problems in meter operation.

   a. Attach a tap slice terminal connector to the ignition wire in the vehicle side.

   b. Connect the Engine Hour Meter (the white wire in the image below) to the vehicle's key switch cable via the right terminal.

Connecting the white wire is necessary for the correct Meter operation - THIS IS A MUST.

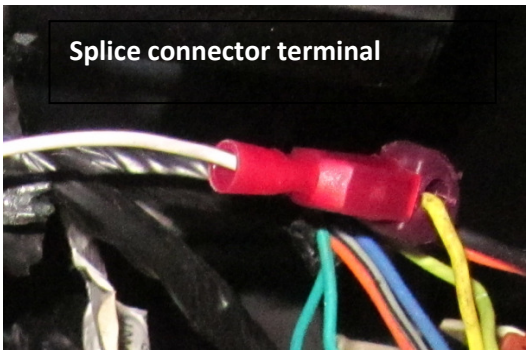


Figure 46: Tap Terminal Connector - to the Truck's Ignition Switch Wire

5. Install the meter and secure it in place.

   The exact installation site of the meter depends on the vehicle model.
   In case the exact location is unknown, follow these guidelines:

   a. Horizontal position: The Meter must be fixed in position so that its' flat side is parallel (+/- 5°) to the ground. The flat side can face either up or down.

   b. Distance from metal: The space above the meter must be at least 20 cm from metal surfaces.

c. The meter is secured in place with zip ties using the designated plastic loops on the meter enclosure.

d. More than one zip tie can be used on each loop. The ties can be stretched in different directions.

e. Loops can be removed using a cutter if one or more are preventing the meter from fitting in to the desired location.

f. Proceed to meter calibration

During the meter's first installation, switch on the ignition and wait 30 seconds.

J1939 connector harness for trucks updates the miles/km information automatically. There is no need for additional calibration.

The OBDII J1962 connector harness must be calibrated manually during the initial installation.

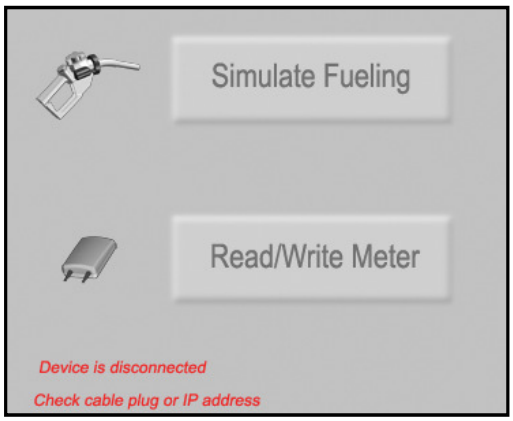
Launching the GPTC software application

For a detailed explanation of GPTC installation and setup, please refer to

Appendix 2 – The GPTC Application.

1. Start the software and connect the GPTC console to the power outlet.
2. Connect the console to the computer with a TCP/IP cable.
3. Change the computer Local Area Connection to manual and the IP to 192.168.0.XXX (the last 3 numbers can be anything except 100).

GPTC connected



GPTC not connected

Figure 47: GPTC Connection Screen

4. Click Read/Write Meter on the screen as shown below.
5. Enter the meter serial number located on the meter's casing) and click the icon to search for the meter.

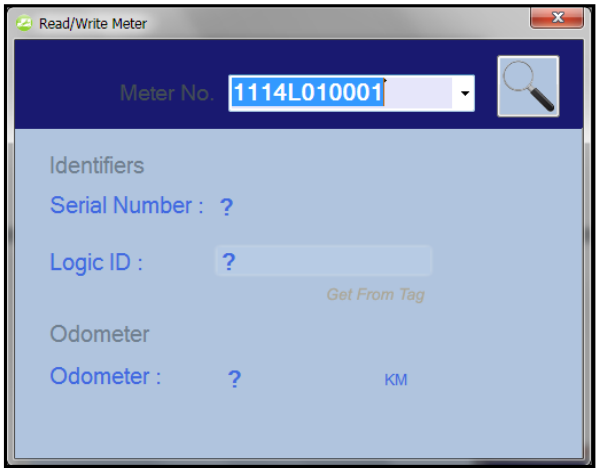


Figure 48: Read/Write Meter Screen

6. The meter displays current parameter values.

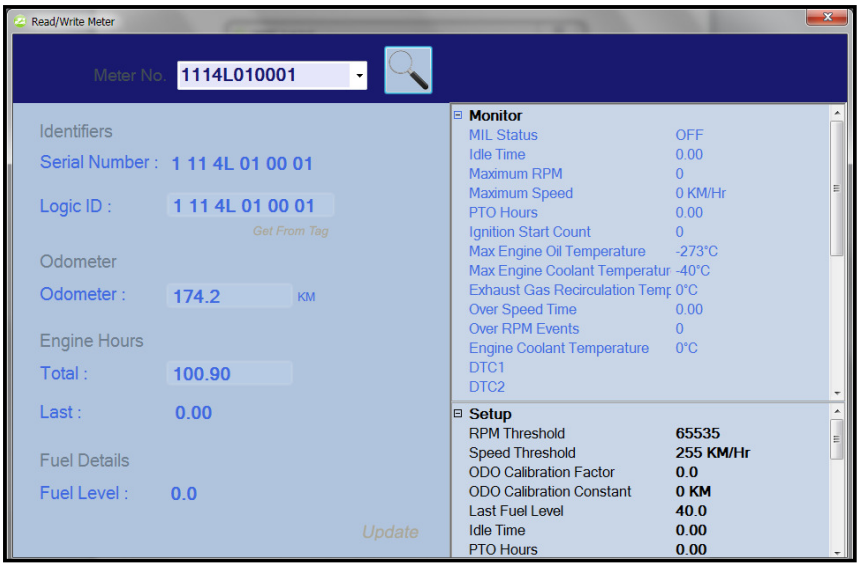


Figure 49: Display of the Meter Parameters

Please not that not all parameters are supported in all vehicles.

7. Enter the mile/KM readout taken from the vehicle dashboard in to the odometer file and click the Update button.

   The Engine Hour number can either start from zero on the meter installation date, or be updated manually if collected prior to the installation.

   In J1939 applications, if supported by the vehicle computer, the data will be obtained automatically.

8. To change the meter parameters from meters to miles:

   Go to GPTC-> setting -> odometer unit

Test the installation procedure

1. Drive between 1and 2 km.

2. Stop and read the meter with the GPTC.

   The reading information can only be accessed when the vehicle is not moving.

3. Read the meter and make sure all the parameters outlined above were updated.

   Note that when the key switch is off, the meter will provide the data from the last time the key switch was on.

4. Close and secure panels.

5. The installation is completed.

Engine Hours (EH) Meter

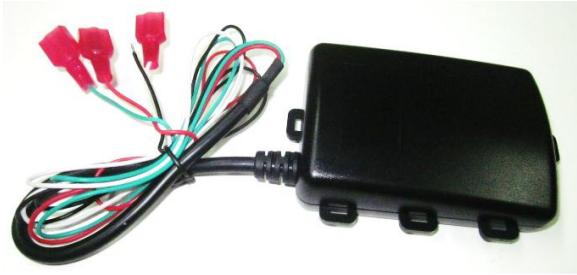
Overview

The meter allows an additional data: the vehicle trip (Km/Mile), motor hours during every refueling and other parameters depending on the meter type.

It also allows integration with the controller that collects the data during refueling.

Counting engine hours starts upon installation which includes:

- Engine hours accumulated since the installation.
  It is possible to define the initial value using the GPTC software, if available.
- Check if the vehicle was already documented in the past by searching on www.Gasngopro.com.



Engine Hours Meter Installation instructions:

- Search for VSS, power, ground and the ignition switch power and connect the meter wires to them using splice connector terminals.

How to find VSS green wire - connection notes:

There are 4 main areas to find VSS on the vehicle:

1. Gear speed sensor.
2. Main Wire Harness.
3. Behind the dashboard.
4. Under the hood.

1. **On the Gear Speed Sensor**

   a. Find the gear's speed sensor.
   Normally the speed sensor has two or three wires (VSS, Power and Ground) extending from it.

   b. A vehicle electrician can locate the speed sensor in the vehicle.

   c. Follow the cables into the driver compartment through the vehicle's firewall by tracing the cable color.

   d. Connect an LED tester to the cable, drive the vehicle and check for a pulse.

   e. Follow the meter installation procedure.

2. **On the Main Wire Harness**

   a. Find the main wire harness coming into the driver's compartment from the engine through the firewall.

   b. Connect a LED tester to the cable, drive the vehicle and check for a pulse on each of the wires in the main harness.

   Do not apply the LED Tester to more than one wire at a time.

3. **Behind the Dashboard**

   a. Remove the plastic covers and expose the speedometer wiring.

   b. Connect a LED tester to the cable, drive the vehicle and check for a pulse on each of the wires in the speedometer wiring.

4. **Under the Hood**

   a. If VSS is not available in the previous options, repeat searching under the hood in the engine compartment on the remaining wire harnesses.

Some vehicle models do not have a VSS signal; in which case the E.H Meter cannot be installed.

Meters have a protection fuse on the VSS wire. In the event of a short fuse, it must be replaced with the same data fuse: **Glass fuse 6x3 slow blow, 0.1A, 125V/250V**

Figure 50: Glass fuses 6x3 slow blow, 0.1A, and 125V/250V

Red wire to battery - connection notes:

1. Connect the plus (+) wire to the battery only.
2. Verify that the voltage is continuous after locating the (+) wire, even when the key is in the ignition.
3. If the voltage is not continuous when turning the key in the ignition, the wire is not a voltage cable (+) for battery connection.

The meter operates in the following range: 12V to 36 V

Black wire to GND – connection notes

Connect the Meter's black wire directly to the vehicle body only.

White wire to ignition power – connection notes:

1. Turn the key in the ignition and find 12 V using a wire tester.
2. Make sure that the reading stops when the ignition is switched off.
3. Connect the meter's white wire to the ignition's power.
   Make sure it is connected to the ignition's power to ensure that when there is no voltage from the ignition there will be no reading of hours.

Proceed to initial Meter calibration

1. Launch the GPTC software to read the meter and configure it.

   For instructions how to install the GPTC software, see Appendix 10 – Setting up a GPTC software.

2. Click on Read/Write Meter.

Figure 51: Read/write Meter Screen

3. Enter the meter number in screen.

To change the meter parameters from meters to miles:
Go to GPTC-> setting -> odometer unit

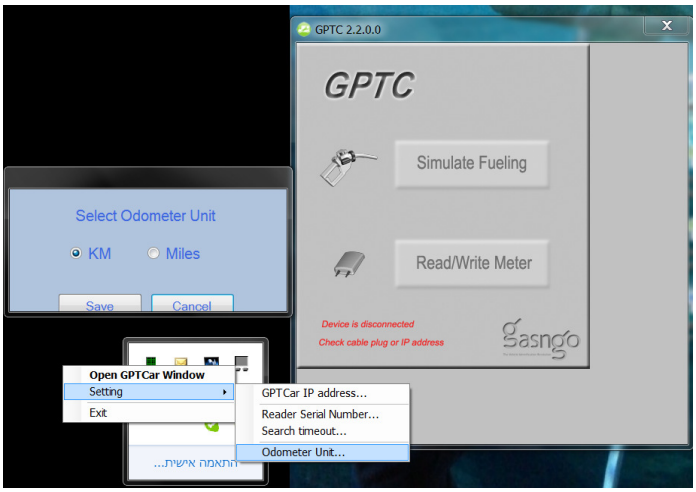


Figure 52: GPTC Settings Screen

4. The meter will display the conversion ratio as 10 and the odometer as 0.

   Press **Update** to confirm.

Figure 53: Odometer screen at the start stage

5. Verify that the odometer is zero (the default is set at 0.5) and that the conversion ratio is 10.

6. Set the trip value in the vehicle speedometer at zero and drive the vehicle for exactly 1 Km or Mile.

7. Read the meter again. The odometer should show an increased number.

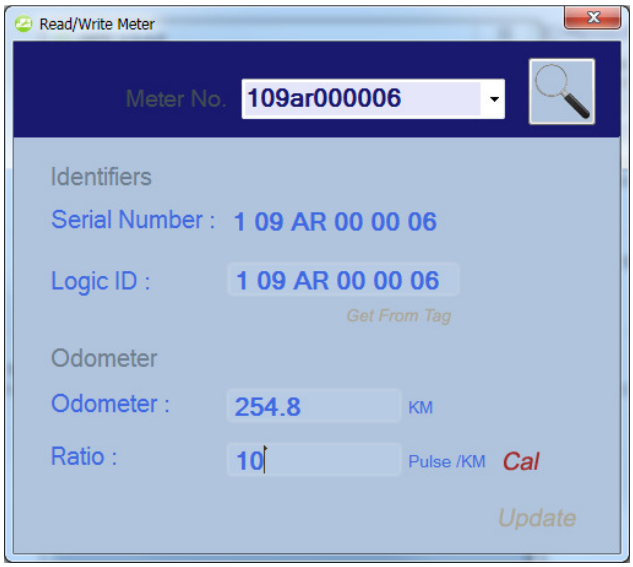


Figure 54: ODO Meter Screen after Test Drive

8. Write the number of the odometer in the ratio without the decimal point.

   Change the odometer to zero (the default is set at 0.5) and click **Update**.

9. Drive the vehicle again for exactly 1 Km or Mile and check the meter.

10. The odometer should show 1 (Km/Mile).

11. Enter the number of engine hours based on the customer's requirements or as zero (0) in case of a new vehicle.

12. Set the general odometer readout (from the speedometer) of the vehicle on the odometer of the meter and click **Update**.

Figure 55: General Odometer Readout Screen

13. Close and secure the vehicle's panels.

14. The meter is installed successfully.

Second calibration of the Meter Ratio

Calibration is only possible after the vehicle has been driven for at least 500 Km/Mile with an installed E.H. Meter.

1. Connect the GPTC and read the meter data.
2. Click on ***Cal*** next to the Ratio section on the screen.

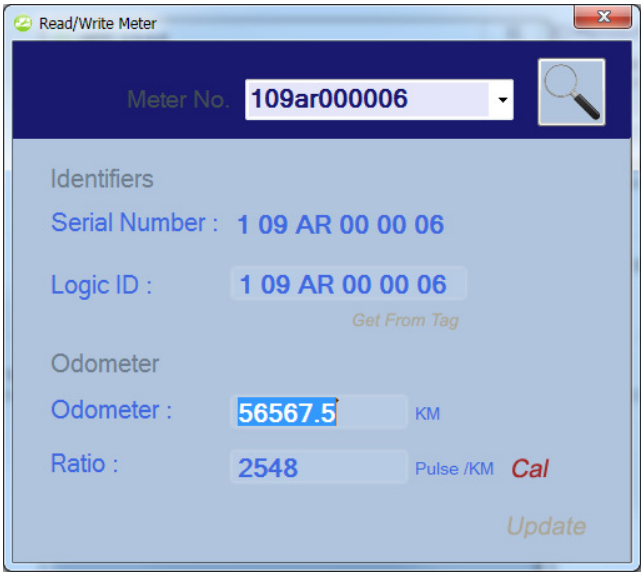


Figure 56: Meter Ratio Calibration

3. Enter the correct odometer (from the speedometer) of the vehicle on the Meter calibration window and press **OK**.
4. The new odometer readout is set.

Appendix 1 - Installing the Meter on a Tachograph

Overview

A Tachograph is a device installed on private or commercial vehicles whose overall allowed weight exceeds 6,000 kg.

For fleet control and management purposes, the Tachograph records travel speed, mileage and engine hours.

According to the law in Europe and some countries in Africa, drivers must record their name, details of the vehicle and trip on the Tachograph printout.

The Tachograph is powered directly from the battery, the ignition's power, and the speedometer signal (square wave pulse) from the gearbox.

In trucks and buses, the Meter is directly connected to the Tachograph.

1. All Tachographs are equipped with standard connectors:
    - Connector A – white
    - Connector B – yellow
    - Connector C- red
    - Connector D – brown (This connector is not used for installing the meter)
2. Every connector has 8 contacts. The contacts are numbered 1 through 8.
3. The relevant connectors for installing the meter are:
    - A1 - Battery voltage 24 V
    - A6 – Ground
    - B8 – VSS pulses; conversion ratio from pulse to mileage: 4,000.

    Tachographs have different pinouts. The details above are most common.
    Verify each requirement before the connection.

    B8 – usually free; outputs a VSS signal generated by the Tachograph.

Installation Procedure

1. Turn off the vehicle's ignition.
2. Connect the black ground wire of the meter in one of two ways:
   - Connect directly to the body of the vehicle, similar to the installation in a private vehicle.
   - Connect to the GND using a splice tap connector in the Tachograph.
3. Connect the RED voltage wire of the meter using a splice tap connector to the Tachograph voltage wire.
4. Connect the VSS wire of the meter using a splice tap connector to the Tachograph pulse cable.
5. Continue with the procedure for installation in a private vehicle.
   Configure the meter settings. The conversion ratio on the pinout is normally 4,000 for the Tachograph installation.
6. Verify the installation by driving between 1 and 2 Km.

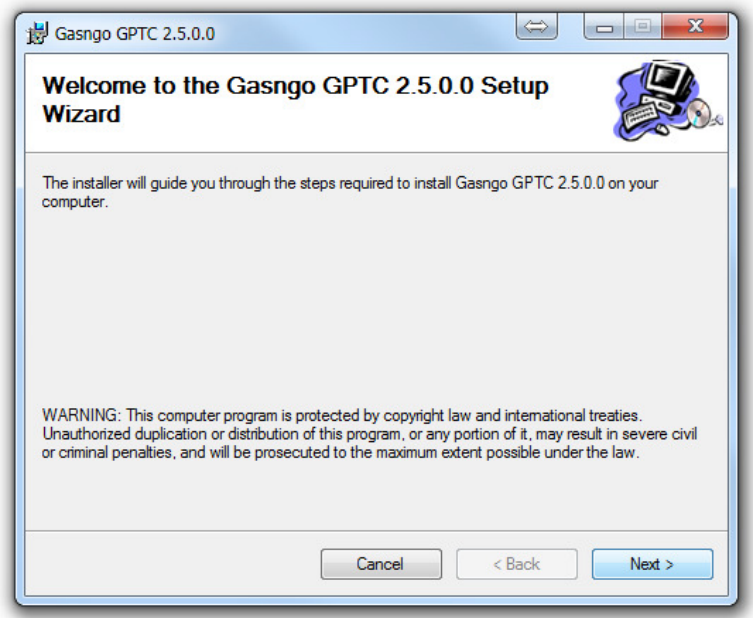
Appendix 2 – The GPTC Application

The GPTC application is used to read the meter (the vehicle device).

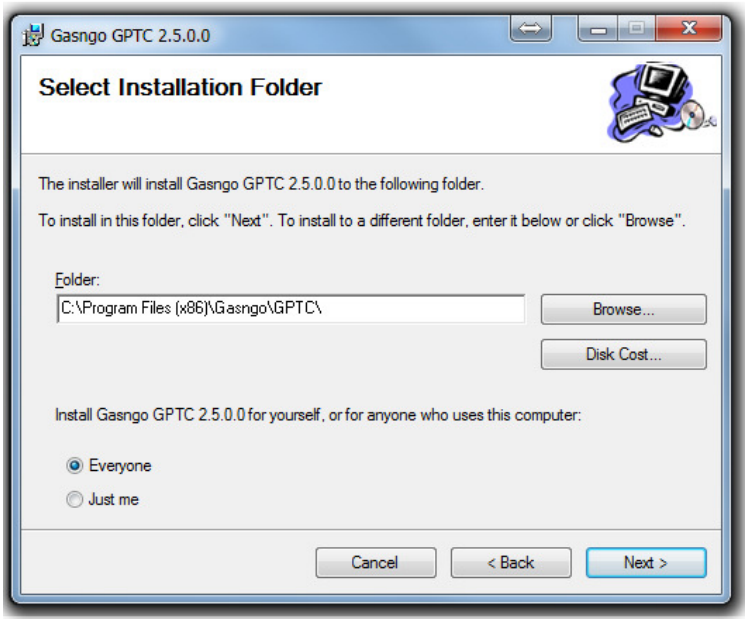
To set up the GPTC application, perform the following steps

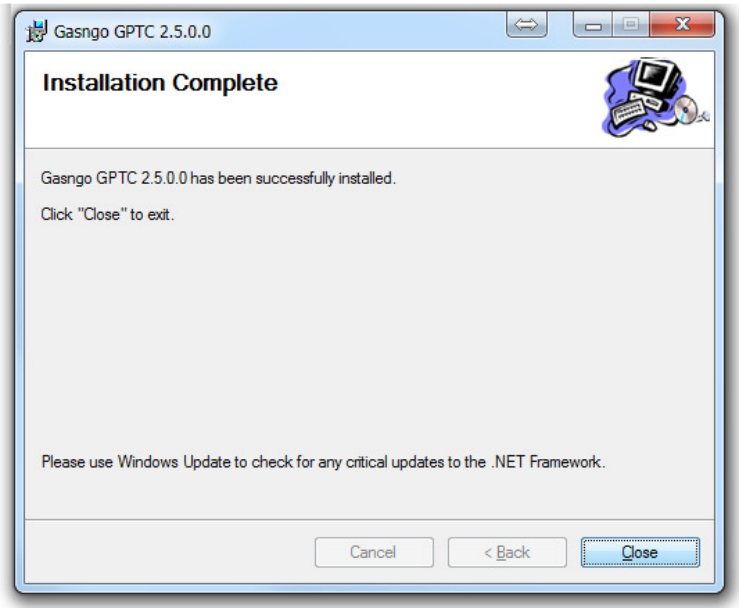
GPTC Installation and Setup

1. Install the software by running the Setup.exe
2. Click on **Next** to run the installation.



3. Select the allowed users for the GPTC (**Everyone** or **Just me**) and click **Next**.





4. Click **Close** to finish the installation.
5. Click on the GPT**C shortcut** to launch the software.

Note: the GPTC can be launched only as administrator (see information below).

Setting Permissions

1. Open the Gasngo program directory using the following path:

   C:\Program Files (x86)\Gasngo

   The Gasngo folder name may change in specific customer installations.
2. Right click on the GPTC directory and select **Properties**.
3. Click on the security button.
4. Click on **Edit**.
5. Click on **Add**.
6. Add **Everyone** and click **OK**.
7. Mark **Full control**.
8. Click **OK**.

Note: The GPTC cannot work when the AVI Service is running. When the GPTC application is launched, it checks whether or not the AVI Service is running and allows aborting it. In special cases where the GPTC fails to stop the AVI Service, please follow the steps below.

Stopping the AVI service

1. Click on **Start -> Run**.
2. Enter **services.msc.**
3. Right click on AVI Service and select **Stop**.

Note: once the GPTC tasks are done please start again the AVI service.

Connecting the GPTC Device

1. Using a standard Ethernet cable, connect the GPTC device to the PC.

   The connection can be direct or through any Ethernet network.
2. The default IP address of the GPTC device is **192.168.0.100.**

   When connecting the device for the first time, the IP address of the PC on which the GPTC application is installed must be in the same subnet as the device (e.g. 192.168.0.10).

   Once connected, the IP address of the GPTC device can be set to another address.

   (See instruction in the next section)

3. The technician console is now ready for use. The meter devices can now be read and configurated.

Configuring a static IP address on the PC Network Card

The following section shows how to set the PC's IP address when such a setting is required.

Select **My Network Places** and then select **Properties**.

4. In the Network Connections menu, right click on **Local Area Connection** and select **Properties**.
5. In the Local Area Connection Properties window, select Internet Protocol TCP/IP (see Figure below).

The computer and the GPTC device can be connected directly or via an Ethernet switch.

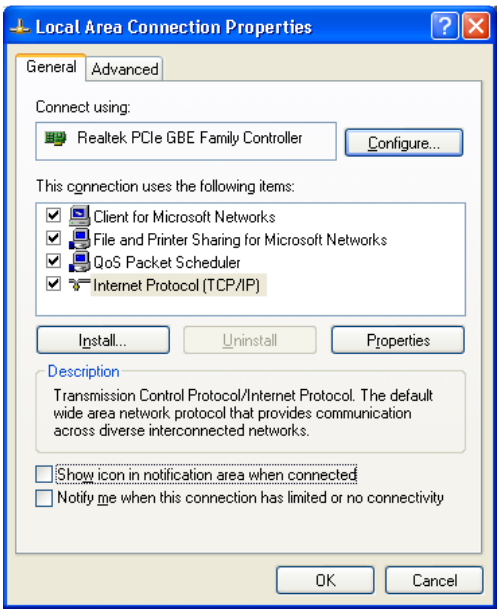


Figure 57: Local Area Connection Properties Screen

6. Select **Use the following IP Address** and enter: **192.168.000.101**.
7. In the Subnet mask field, leave the default mask **255.255.255.0.**

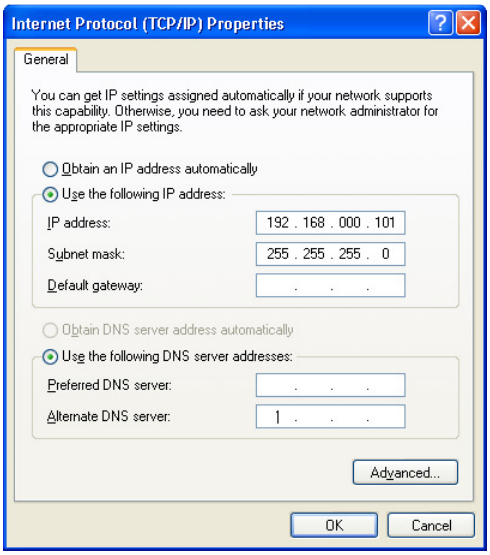


Figure 58: Defining a Static Address

8. Click **OK**.

Enhanced OBD Meter Parameters

The following section details the enhanced set of parameters supported by the GPTC application. This set is available with the newer software versions of the OBD meter.

The enhanced set includes the following parameters:

1. Check engine light/malfunction indicator lamp (CEL/MIL) status (on/off).
2. Vehicle diagnostic trouble codes (DTC).
3. Vehicle parameters are detailed in the following tables.
   - External parameters – These parameters can be read using the GPTC application and are displayed in the FS interface.

Table 16: Enhanced OBD External Parameters

	Name	Data	Definition
1	Idle time	0-12,884,901,882 Minutes	
2	Maximum RPM	0-65534 RPM	Maximum RPM since last fueling
3	Maximum speed	0-254 Km/Hr or 0-157 Mi/Hr	Maximum speed since last fueling
4	PTO hours	0-12,884,901,882 Minutes	Total time accumulated while the engine is in the PTO or remote PTO hold state
5	Ignition Start Count	0-65535	The number of times the engine was started since last fueling
6	Engine oil level	0.0-100.0 %	Engine oil level on last read, supported only by J1939
7	Maximum engine oil temperature	-273-+1735 °C or -459-+3155 °F	Maximum engine oil temperature since last fueling
8	Minimum engine oil pressure	0-1000 kPa	Minimum engine oil pressure since last fueling, supported only by J1939
9	Engine coolant level	0.0-100.0 %	Engine coolant liquid level on last read, supported only by J1939
10	Maximum engine coolant temperature	-40-+215 °C or -40-+419 °F	Max engine coolant temperature since last fueling
11	Transmission oil level	0.0-100.0 %	Transmission oil level on last read, supported only by J1939
12	Min transmission oil pressure	0-4000 kPa	Minimum transmission oil pressure since last fueling, supported only by J1939

	Name	Data	Definition
13	Maximum battery voltage	0.00-3212.75 Volt	Maximum battery voltage since last fueling, supported only by J1939
14	Minimum battery voltage	0.00-3212.75 Volt	Minimum battery voltage since last fueling, supported only by J1939
15	Washer fluid level	0.0-100.0 %	Washer fluid level on last read, supported only by J1939
16	Exhaust gas recirculation (EGR) temperature	-273-1735 °C or -459-+3155 °F	Exhaust gas recirculation (EGR) temperature on last read
17	Over speed time	0-12,884,901,882 Minutes	Accumulated time that the vehicle was driven over the speed threshold set for the vehicle, since last fueling
18	Over RPM events	0-65,534	Number of events in which the vehicle crossed the set RPM threshold, since last fueling
19	Last Fuel Level	0.0-100.0 %	The fuel level at the beginning of this trip (end of previous fueling)
20	Engine coolant temperature	-40-+215 °C or -40-+419 °F	Engine coolant temperature on last read

- Internal parameters – These parameters can be read and modified using the GPTC application. These parameters are not displayed in the FS interface.

Table 17: Enhanced OBD Internal Parameters

	Name	Data representation	Definition
21	RPM Threshold	0-65,534 RPM	Threshold for parameter 18 shown above (Over RPM events).
22	Speed Threshold	0-254 Km/Hr or 0-157 Mi/Hr	Threshold for parameter 17 above (over speed time)
24	ODO Calibration Factor	-100.0-+100.0 %	Factor to calibrate the ODO value - percent to add to the original value
25	ODO Calibration Constant	-2,147,483,647 - +2,147,483,647 Km or -1,334,384,469 - +1,334,384,469 Mi	Constant to calibrate the ODO value - constant value to add to the original value
26	ErrCode White List		A list of 16 DTCs to filter the actual DTCs reported by the vehicle Since the meter only reports 16 DTCs to the FS and the vehicle may report much more, the actual list can include a value from the white list this will always be reported (the list makes sure that a listed DTC will be reported by the meter if it was reported by the vehicle).

These parameters, as well as the Idle time, PTO Hours and Last Fuel Level can be recorded via the GPTC, both manually and by loading a parameters file.

Loading a parameters file is done by dragging it into the GPTC window. The parameters file should have .ini suffix in its name, and the format is: Parameter Name (as listed in the GPTC window) with '_' instead of spaces, followed by one space, followed by a numerical value.

e.g., "Speed_Threshold 170"

Appendix 3 - Examples of Incorrect Tag Installations

1. Direct installation on vehicle gas tank without physical fastening such as ties, metal strips or screws.

Figure 59: Direct Installation on Vehicle Gas Tank without Physical Fastening

2. Installation of an NTH adaptor without metal ties.

Figure 60: Installation of an NTH Adaptor without Metal Ties

3. Example of an installation of a tag with the wrong size on the NTH adaptor.

Figure 61: Installation of Incorrect Tags Size

Appendix 4 - Double NTH installation

In case of a specific need requiring the installation of a small-diameter tag on a large-diameter adapter, there is an option to use a double NTH adapter (one on top of the other).

1. Choose an adaptor with a size that fits the inlet.
2. Choose a larger adaptor that fits the tag (140mm or 160mm as required).
3. Place the adaptors one on top of the other with the locking screws at the same location.
4. Drill a 5 mm hole through both of the adapters.
5. Place rivets in the holes.
6. Pop the rivets in to the adapters.

Workflow

1. Drill 5 mm holes through both of the adapters.

2. Place rivets in the holes.

3. Drive the rivets through the holes in the adapters.

Figure 62: Double NTH installation Examples

4. There is an option to use only the lower adaptor screw to install the NTH on the inlet.

   In case of using two screws, tighten them together.

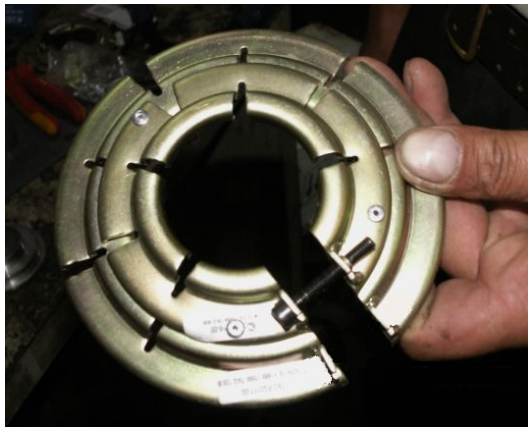


Figure 63: NTH installation with Lower Adaptor Screws

5. Install the NTH adaptor on the vehicle fuel inlet.

6. Follow the instructions for installing a heavy-duty tag on NTH.

   (See Heavy-Duty Tag installation on NTH).

7. Test fueling with the exact inlet/nozzle used in the station.

8. Test the installation with the nozzle used on the site to verify the tag's functionality.

Appendix 5 - Wiggins Inlet Adapter Installation:

Overview

The Wiggins inlet adaptor is part of the Tag Installation accessories.

It is a mechanical adaptor designed to enable heavy-duty tags installation at high pressure inlets.

Figure 64: Mechanical Adaptor

This part is fitted for Wiggins inlets and therefore enable an optimal reading range.

The Wiggins inlet adapter works with a 100mm heavy-duty tag (MHT) and is supported by metal zip ties.

This is a standard solution for Wiggins inlets requiring zero range communication .

Figure 65: Foiling Position

Wiggins adaptor installation instructions:

1. Clean the adaptor top surface with alcohol wipes.

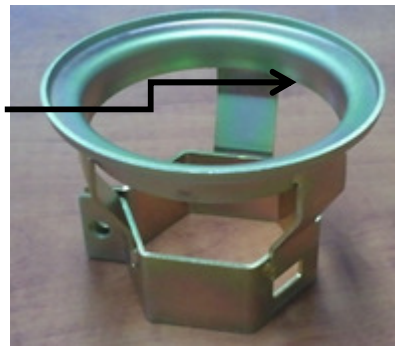


Figure 66: Cleaning Surface

2. Place the heavy-duty (MHT) tag with the tail inside the designated hole.

Figure 67: heavy-duty (MHT) Tag with the tail inside the designated hole

3. Install the Tag on the Wiggins adaptor and reinforce the Tag with 3 metal zip ties.

Figure 68: installing the Tag on the Wiggins

4. Install the metal zip ties on top of the tag legs in order to ensure a strong and stable installation.

5. Install the adaptor on the vehicle fuel inlet and tighten the screw until the adaptor is fastened securely to the inlet.

Figure 69: Tighten the Screw on Wiggins inlet

6. Add a metal zip tie to attach the tail wire to the adaptor.

Figure 70: Zip Tie to attach the Tail Wire to the Adaptor

7. Test the installation with the Wiggins Reader installed on a nozzle.

Appendix 6 - Installation with Metal Strips

Installation with metal strips requires training!

Figure 71: Installation with Metal Strips

1. Clean the installation surface of all dust and oil.
2. Surround the fuel tank with two metal strips (one on each side of the inlet).
3. Place the tag around the inlet and set the distance between the metal strips to the size of the tag.
4. Insert and prepare the ties under the strips.
5. Install the tag around the inlet and fasten it to the metal strips with 2-4 metal ties.

Figure 72: Tag installation around the Inlet

6. Place the chip tail on the tank in a hidden, protected location to avoid damage to the chip.
7. Test the installation with the Reader installed on the actual nozzle that in use at the site.

Appendix 7 - Setting up a Tag-Burning Devise

Overview

- All system communications are encoded and encrypted.
- In case of doubt of unauthorized access to the data, immediately restrict the vehicle in the approvals server

Tag fields structure

The fields are limited to the following maximum character lengths.

Recommended Use	Maximum Field Length
Odometer	8
Card number	44
Expiry date	4
Card type	2
Fleet ID	7
Fuel type	2
Vehicle number	8

Table 18: Tag Field Details

1. Burning the Tags:
   1) Install the Tag Burner application (see Chapter 4 Software).
   2) Connect the GPTC Tag Burner or Burning Bed to the computer using the USB cable (supplied).
   3) Place the tag on the burner with its flat surface facing upwards, as shown in Figure 72.

Figure 73: Tag location on the Device or on the Bed

From the moment it is burned, the tag contains all the information required for fueling.

Limit access to the tags to maintain information security!

Immediately delete tags that were burned but are not in use anymore.

4) Run the tag-burning software.
5) The Tag Burner makes connection.
6) The data input screen opens.

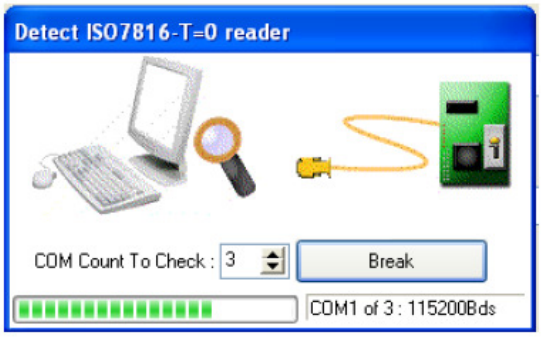


Figure 74: GPTC Connection

2. Tag burning procedure:

   1) If you want to use an Excel file which details the data, click *Tags List* to upload it.
   2) From the list, scroll to select a vehicle. Vehicle information appears in the fields on screen.
   3) You can edit the values in each field.
   4) You can also enter the values directly into every field without using the Excel file.

The tag burner application screen is illustrated below.

The callout numbers in the illustration refer to the sequence numbers in the following table.

Figure 75: Tag-Burner Application

#	Field/Action botton	Description
1	Clear Data	Clear all data in the screen field
2	Tags List	Load Excel file
3	Vehicle Device Type	Select option from the dropdown list Select the type of meter installed and enter its serial number
4	Vehicle Number	Enter vehicle registration number (max. 8 digits)
5	Fleet ID	Enter fleet ID (max. 7 digits)
6	Fuel Type	Enter fuel type (max. 2 digits)
7	CardType	Enter type number (max. 2 digits)
8	Cancel	Cancel operation
9	Delete	Delete tag/card
10	Write	Write to burn the tag
11	Read	Read tag
12	Card Number	Enter card number (max. 16 digits)
13	Expire Date	Enter the date the card expires (max. 2 digits) Format: MM/YY
14	Meter Number	Enter meter S/N number
15	Tag Type	Select option from the dropdown list

Table 19: Tag Burner Details

5) From the Vehicle Device Type list, select the types of the installed meter and enter its serial number.

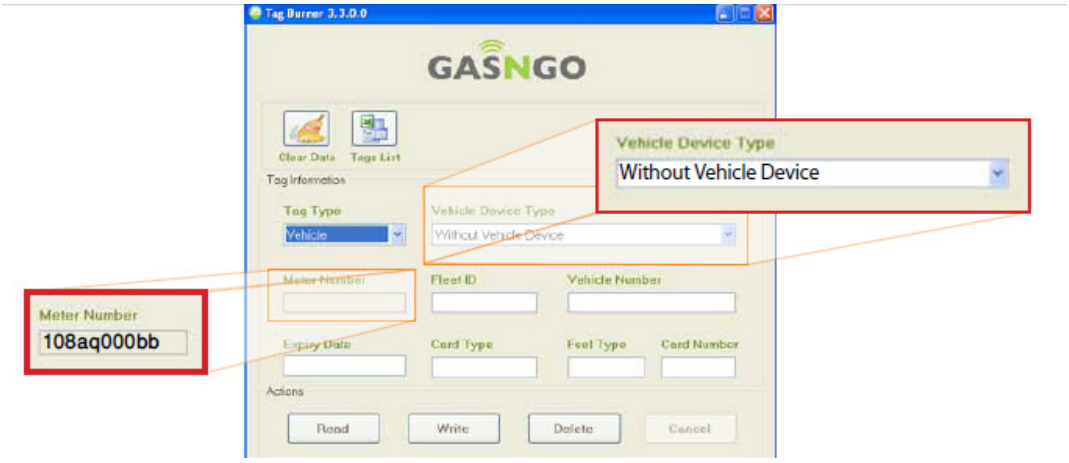


Figure 76: Connection to the Meter

6) Click **Write** (Burn Tag)

At the end of the procedure, a popup window will notify if the tag was burned successfully.

7) If necessary, continue burning other tags.

3. Deleting Tags

1) Place the tag on the GPTC burning pad.

2) Click **Delete**.

3) Click **Read** to verify that all fields are empty.

Figure 77: Reading the Tag

4) Empty fields will appear on the screen.

5) The tag was deleted successfully.

There is no limit to how many times information on a tag can be burned and/or changed.

Appendix 8 - Using an Attendant Tag

Overview

An Attendant Tag is a tag type that is not installed in the vehicle but is used to start fueling via the Gasngo system with another payment method, or when the vehicle does not have a tag installed.

The Attendant Tag is designed for gas station attendants to enable them to activate fueling by attaching the Attendant Tag to the Reader.

In contrast to a standard tag, the Attendant Tag does not have to be in constant communication with the Reader but only initially to start fueling.

Using the Attendant Tag

1. Place the Attendant Tag close to the Reader, one side of the tag touches the Insulator and the other side touches the metal nozzle as illustrated below.
2. The fueling transaction starts.

Using the Attendant Tag

The Attendant Tag

Figure 78: The Attendant Tag

Burning an Attendant Tag

1. Define the number of tags required for the gas station – one personal tag for each employee or several tags per shift.
2. Burn the tags using the tag burning station (See Appendix 5 - Setting up a Tag-Burning Devise).
3. Verify the Attendant Tag's code.
4. Burn the tags.
5. Verify that all tags function properly, that fueling is enabled and that fueling is not interrupted.
6. During the burning process, enter the details of the specific Attendant Tag based on the definitions of the specific FS in the relevant column defined in the burning window.

Appendix 9 - Tag Adapters

Overview

In case the shape of the fuel inlet prevents optimal installation of the Ring Tags directly on the area surrounding the inlet, it will be necessary to use adapters.

Those will move the tags above the area of the fueling inlet and create an optimal installation area. This enables appropriate functioning of the tag and its self-destruct mechanism in case of attempted theft or misuse.

Using a NTH Adapter

The NTH Adapter is used to move the tag above the fuel inlet providing an optimal installation area.

For dimensions of suitable adapters and tags, please refer to Table 17 on page 75.

Select the Adapter's diameter based on the diameter of the fuel inlet, and the diameter of the tag.

Figure 79: NTH Adapter

#	Description
1	NTH adopter
2	Tightening screw

Table 20: NTH Adapter Details

Table 21: List of Available NTH Sizes

Range	Description	Part No.
All	LTA Light Truck Adaptor	TAC-FG0101-00
42 - 50	Balcony 48/+2mm -6mm/Tag 100 A	TAC-FG0145-01
42 - 50	Balcony 48/+2mm -6mm/Tag 100 B	TAC-FG0146-01
46 - 53	NTH 53/-7MM/ TAG 80 A	TAC-FG0131-00
46 - 53	NTH 53/ -7MM/ TAG 80B	TAC-FG0116-00
48 - 54	Balcony 53/+1mm -5mm/Tag 120 A	TAC-FG0148-00
48 - 54	Balcony 53/+1mm -5mm/Tag 120 B	TAC-FG0149-00
54 - 54	NTH 57/+1MM -3MM/ TAG 100 A	TAC-FG0112-00
52 - 58	NTH 57/+1MM -5 MM/TAG 100 A	TAC-FG0112-01
54 - 58	NTH 57/+1MM -3MM/ TAG 100 B	TAC-FG0111-00
52 - 58	NTH 57/+1MM -5MM/ TAG 100 B	TAC-FG0111-01
57 - 63	Balcony 62/+1mm -5mm/Tag 120 A	TAC-FG0139-00
57 - 63	Balcony 62/+1mm -5mm/Tag 120 B	TAC-FG0140-00
59 - 65	Balcony 64/+1mm -5mm/Tag 120 A	TAC-FG0137-00
59 - 65	Balcony 64/+1mm -5mm/Tag 120 B	TAC-FG0138-00
62 - 68	NTH 66/+2MM-4MM/ TAG 100 A	TAC-FG0126-00
62 - 68	NTH 66/+2MM-4MM/ TAG 100 B	TAC-FG0127-00
71 - 79	NTH 78/+1MM -7MM/ TAG 120 A	TAC-FG0132-00
71 - 79	NTH 78/ +1MM -7MM/ TAG 120 B	TAC-FG0117-00
79 - 87	Balcony 85/+2mm -6mm/Tag 120 A	TAC-FG0150-00
79 - 87	Balcony 85/+2mm -6mm/Tag 120 B	TAC-FG0151-00
84-88	Tag adaptor NTH 88/140 A	TAC-FG0113-00
84-88	NTH 88/-4 MM/ TAG 140 B	TAC-FG0114-00
83 - 91	Balcony 90 **SCN**/+1mm -7mm/Tag 140 A	TAC-FG0135-01
83 - 91	Balcony 90 **SCN**/+1mm -7mm/Tag 140 B	TAC-FG0136-01
85 - 93	Balcony 91/+2mm -6mm/Tag 160 A	TAC-FG0141-00
55 - 93	Balcony 91/+2mm -6mm/Tag 160 B	TAC-FG0142-00
86 - 98	**KW** Balcony 92/+-6mm **KW** / TAG 160 B	TAC-FG0154
89 - 96	NTH 94/+2 MM-5MM/TAG 140 B	TAC-FG0124-00
91 - 96	NTH 96/-5MM/TAG 140 A	TAC-FG0104-00
91 - 96	NTH 96/-5MM/TAG 140 B	TAC-FG0106-00
96 - 104	NTH 104/-8MM/TAG 140 A	TAC-FG0133-00
96 - 104	NTH 104/ -8MM/ TAG 140 B	TAC-FG0118-00
110 - 119	NTH 116/ +3MM -6MM/ TAG 160 A	TAC-FG0130-00
110 - 119	NTH 116/ +3MM -6MM/ TAG 160 B	TAC-FG0115-00
109 - 117	NTH 117/ GA-8MM/TAG 140 A	TAC-FG0128-00
109 - 117	NTH 117/GA-8MM/ TAG 140 B	TAC-FG0129-00
116 - 119	NTH 119/-3MM/TAG 140 B	TAC-FG0107-00
116 - 119	NTH 119/-3MM/TAG 140 A	TAC-FG0108-00
119 - 127	NTH 125/+2MM -6MM/ TAG 160 B	TAC-FG0120-00
119 - 127	NTH 125 +2MM -6MM/ TAG 160 A	TAC-FG0121-00
127 -135	NTH 133/+2MM -6MM/ TAG 160 A	TAC-FG0122-00
127 -135	NTH 133/+2MM 6MM/TAG 160 B	TAC-FG0123-00

Installation Procedure

1. Open the fuel inlet.
2. Place the adapter on the fuel inlet.
3. Close the fuel inlet cap.
4. Lift the adapter to the highest point where it does not interfere with opening and closing the cap.
5. Affix the adapter partially by closing the screw but without tightening it.
6. Mark the lower point to which the fuel inlet cap reaches.
7. Open the fuel inlet cap.
8. Verify that the Adapter reaches the height of the marking without interfering with the cap.
   Take the height of the tag itself into account.
9. Place the screw in a hidden and inner location as much as possible, so that it will not be damaged by exposure.
10. Tighten the adapter's screw using an Allen screwdriver.
11. Place the tag on the adapter.
12. Verify that the tag is firmly in place, that there is a proper range and that it does not interfere with the cap.
13. Secure the Adapter's screw to prevent it from opening.
14. Place the tag tail gently onto the body of the vehicle in a hidden place.
15. Verify the tail passes through one of the slots in the adapter.
    Do not affix the tail to the adapter but only to the vehicles' body.

Using a SUN Adapter

Overview

The SUN Adapter is a plastic adapter that assists with the installation tags in the following case:

- In vehicles where it is not possible to install the tag directly on the vehicle's body with P-clips or Balcony (NTH).

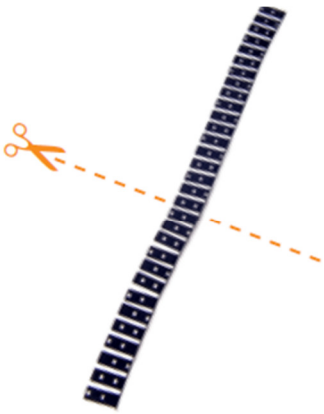
Installing the SUN adapter includes adapting the length of the adapter to the circumference of the neck of the fuel inlet and affixing it to the fuel inlet. The extended "arms" of the adapter provide a surface for affixing the Tag.

Sun adapter has the following limitations as listed below:

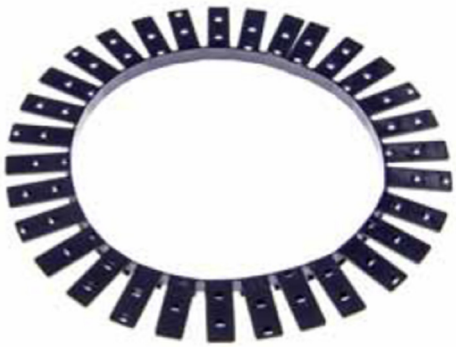
1. Limited resistance to extreme environmental conditions such as, cold, dry or hot weather.
2. Limited structural strength.

Installation Procedure

1. Plan your installation and mark the lower point where the fuel inlet cap will get to.
2. Place the adapter around the neck of the fuel inlet and measure the length required for its circumference.
3. Cut the adapter as necessary.



SUN Adapter - Spread out



SUN Adapter - Overview

Figure 80: SUN Adapter

4. Place the adapter in such a way that the tag is installed in the highest possible location under the fuel inlet cap, without interfering with closing of the cap.
5. Place the adapter using a zip tie.

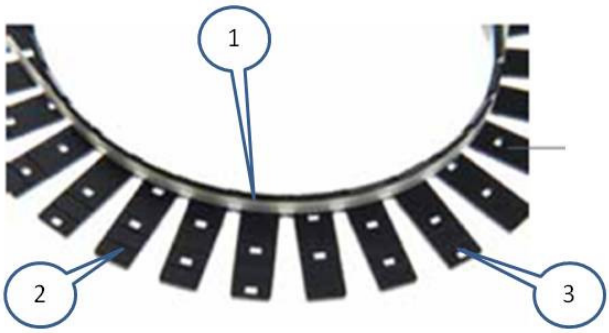


Figure 81: SUN Adapter – Rear View

#	Description
1	Metal/Plastic tie position to connect the Sun Adapter to the Vehicle inlet
2	Adapter arms
3	Holes for ties to tighten the tag to the adapter

Table 22: Sun Adapters Elements

6. Affix the tag to the adapter arms. They can be reinforced by slightly applying adhesive between the adapter and the inlet.

   If necessary, shorten the arms that protrude beyond the circumference of the tag.

7. Verify that the tag is functioning properly.

8. Force the tag onto the adapter with zip ties on top of the arms.

9. Carefully affix the tail to the body of the vehicle to a metal part that should be hidden as much as possible.

Figure 82: Affix the Tail to the Body of the Vehicle

Do not affix the tail to the adapter!

Appendix 10 - Reader Tester with LED indicators

Figure 83: Reader Tester – Physical Description

#	Description
1	Reader - Reading tags
2	Battery - Power supply
3	Electronic box - Checks the range and quality of communication between the Reader and the tag
4	On/Off switch - Keep outside the Insulator
5	On/Off LED - When the switch is turned on the LED will turn red
6	Tag found LED - When the tag found, the LED will turn yellow

Table 23: Reader Tester elements

Overview

The reader tester checks the range and quality of communication between the Reader and the tag during and after the tag's installation in the vehicle.

Test the various tags by temporarily attaching them to the fuel inlet and reading them with the Reader Tester.

Assembling the Test Reader on the Nozzle

Follow the steps illustrated below to install the test reader on the pump nozzle.

Installing the Test Reader – Step 2

Installing the Test Reader – Step 1

Installing the Test Reader – Step 4

Installing the Test Reader – Step 3

Figure 84: Installing the Reader Tester

Testing Range Procedure

1. Conduct the test when the LED Reader is assembled on the nozzle.
2. Place the front of the LED Reader into the Insulator (See Step 1).
3. Place the battery in the dedicated pocket (See Step 2).
4. Slide the Insulator with the LED Reader into the nozzle (See Step 3).
5. Leave the button and the LED Reader outside the Insulator (See Step 4).

The red LED indicates that the Reader is searching for a tag.

The second yellow LED indicates that the tag is readable.

Simulating Fueling

Place the nozzle into the fuel inlet without holding it, similar to real fueling in the gas station.

Apply constant pressure on the search button and wait until the second LED turns on.

Bring the nozzle nearer if necessary.

In some cases, it will be necessary to select a tag to determine the optimal tag type based on the speed in which the tag is found. In other words, how soon it turns on.

Appendix 11 - Vehicle Installation Survey

Before and after the installation please perform the survey as listed in the following tables.

Customer name:
Fleet name:
Station/site:
Site address:
Number of vehicles:
Installation date:
Please provide as a separate file pictures of each tank type to be installed. Please add dimensions in the pictures. Try to make several pictures of each inlet from different angles.

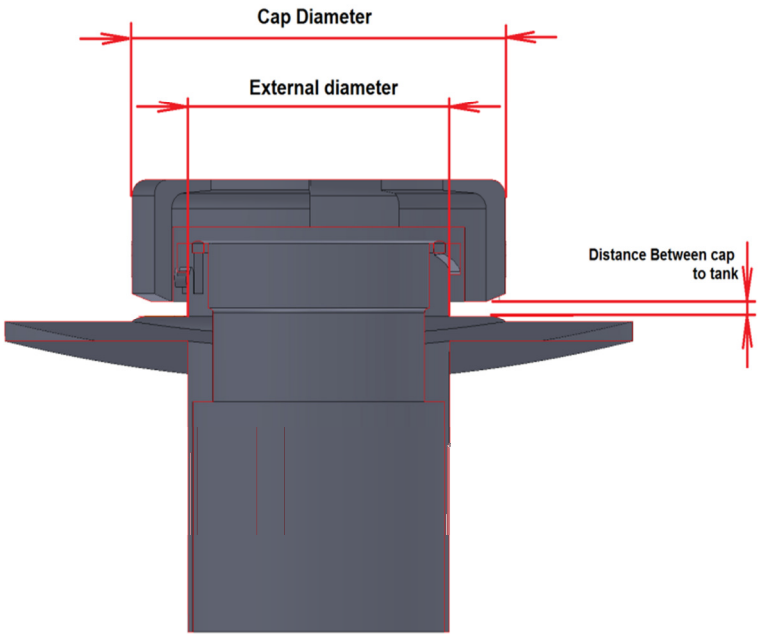


Figure 85: Dimensions of an Inlet

Table 24: Vehicle Survey-1

	Vehicle Maker	Vehicle Model	Production Year	License Plate Num'	Transmission
Example for filling	Mercedes	Axor	2009	LS1133	Manual
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					

Table 25: Vehicle Survey-2

	Fuel Type	Closing Type	Cap Diameter	Distance between Cap to Tank	Internal Diameter
Example for filling	Diesel	Bayonet	110mm	4mm	90mm
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					

Table 26: Vehicle Survey-3

	Neck External diameter	Number of Fuel Tanks	Tank inlet Photo	Adapter	Tag	Remarks
Example for filling	95mm	1	Number 007 from attached file	NTH FG-0118	140 MHT	
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						