

# Instalation Manual Universal reader GEN-5 NRD-2000-0X-Y

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Title:

# Installation Manual Universal reader Gen 5

Issued By: Date  
Yaniv Y. 07/2021

SIZE	DOCUMENT NO.	REV.
A	DOC-IG-UNV-002	A04

SOURCE:

SCALE: NONE



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## 1. Warning instructions

This device complies with FCC Rules Part 15: Operation is subject to two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference that may be received or that may cause undesired operation.

This device should be operated with a minimum separation distance of 20 cm (8 inches) between the equipment and a person's body”

### Notice:

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

- Prior of any use of the product read the manual and the precautions bellow.
- Pay attention to the remarks in this document in order to prevent injury of serious damage to the product or the users.
- It is the customer's responsibility to use the product according to the instructions detailed in this document.
- Installation and maintenance of the product requires a skilled and approved technician and only he has permission to handle and maintain the product.

Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## 2. Technical Detail

### 2.1 Reader info:

Parameter	Value
Physical Dimensions	
Width	107mm (4.17")
Height	84 mm (3.3")
Depth	53 mm (2.1")
Weight	186 gram (0.41 lb)
Electrical specification	
Battery	Battery pack AA
Voltage	3.6VDC
Current	4.8 Ah
Life span	Base on 50 fuels a day for 5 minutes – 2 years
Environmental Conditions	
Working Temperature	-40°C to 70°C
Humidity (25°C)	95%RH
Communication with secure USID tag	
Operating frequency	125 Khz
Working range	0-10 cm (0-3.93")
Communication with USG WAF unit	
Operating frequency	2.4 Ghz
Working range	25-60 meters (82'-197')
Outgoing power	1mW
Frequency type	FHSS

### 3. Precautions

#### 3.1 Below are safety rules for working at gas stations:

- 3.1.1 At gas stations and or around fuel equipment, you must work with manual tools or those operated with air pressure and not use electric tools, such as: drills .
- 3.1.2 If the work in the station area cannot be carried out with tools operated under air pressure, use only designated EX tools fit to an explosive atmosphere.
- 3.1.3 Do not work near pumps, tanks and fuel equipment with electric tools that may scatter sparks or cause ignition.
- 3.1.4 Do not perform any mechanical or electrical work on the fuel pumps and/or dispensing units before turning off the power in the main panel and make sure using warning sign against accidental activation and use physical lock to prevent access..
- 3.1.5 All wiring and connections in the electrical system will be performed exclusively by a qualified electrician.
- 3.1.6 The work area must be surrounded by a fence, to prevent injury to passers-by.

#### 3.2 Safety considerations:

- 3.2.1 Carefully read all warning instructions, which will help you install and maintain equipment safely in the highly flammable gas station.
- 3.2.2 Ignoring this warning and instructions may result in serious injury and property loss or damage.
- 3.2.3 It is the responsibility of the customer and the service technician to install, operate and maintain the equipment in accordance with the manufacturer's instructions as they appear in this manual.
- 3.2.4 If this is not done, all warranties related to this equipment may be voided.
- 3.2.5 Make sure that the installation is performed by an experienced team, licensed to work at gas stations and in flammable environments, according to the relevant local regulations.

#### 3.3 Requirements:

This equipment can radiate radio frequency energy and, if not installed and operated in accordance with the instructions, it may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off, the user is encouraged to try to correct the interference by one or more of the following measures:

- 3.3.1 Reorienting or repositioning the receiving antenna.
- 3.3.2 Increasing the distance between the equipment and the receiver.
- 3.3.3 Connect the equipment to a different circuit outlet line from the one inwhich the receiver is connected.
- 3.3.4 Consult with an experienced radio engineer or technician.

#### **3.4 General warning:**

- 3.4.1 This section presents the hazards and precautions associated with installing, testing, maintaining and servicing of this product. Before performing any task on this product, read this section of this manual. Fire, explosion, electric shock, or depressurization can occur and cause death or serious injury.  
All devices must installed in accordance with the National Electrical Code.
- 3.4.2 The equipment is installed and works in an environment of flammable fuels, vapors and high voltage or pressures, only persons trained by the manufacturer or the manufacturer's representative or authorized with knowledge of the related procedures can install, test or maintain service this equipment.

#### **3.5 Passing vehicle**

##### **Warning:**

**When working in an open area, block off the work area to protect yourself and other people. Use safety cones or other signaling devices.**

#### **3.6 Use of approved components:**

**Replacement of components in this equipment with unauthorized components will void all warranties associated with that equipment and products.**

#### **3.7 Repairing faulty units:**

**Do not perform any repair on the printed circuits installed in the equipment, such repair will result in the cancellation of all warranties related to this equipment.**

### **4. Installation instructions**

#### **4.1 Installing of universal nozzle reader – NRD-2000-0X-Y**

4.1.1 universal nozzle reader is an independent transmission device installed on the fuel nozzle.

4.1.2 Each nozzle reader is programmed with a unique iron number that cannot be changed, the device includes an internal battery that lasts for two years.

4.1.3 The nozzle reader is supplied with a hose clamp that fits most types of fuel nozzles.

4.1.4 List of fuel nozzle:  
 \*The fuel nozzles listed in the table bellow are approved and can be use with the universal reader, any fuel nozzle not listed below is on the responsibility of the installer..

No.	Manufacture	Model	Fuel Type	Nozzle diameter (at the edge)	
				mm	Inch
1	CATLOW	<a href="#">MAX1 NM1</a>	Diesel	31	1-3/16"
2	CATLOW	<a href="#">ELITE</a>	Gasoline	19	3/4"
3	CATLOW	<a href="#">ELITE</a>	Diesel	25	1"
4	HUSKY	8S-1	Diesel	35	1-3/8"
5	HUSKY	10S	Gasoline	21	"13/16
6	HUSKY	10S	Diesel	25	1"
7	OPW	<a href="#">7H / 7HB</a>	Diesel	31	1-3/16"
8	OPW	<a href="#">11AP / 11BP</a>	Gasoline	20.5	13/16"
9	OPW	<a href="#">11A / 11B</a>	Diesel	24	15/16"
10	ELAFLEX	ZVA SLIM LINE 2GR	Gasoline	21	"13/16
11	ELAFLEX	ZVA 25	Diesel	31	1-3/16"
12	ELAFLEX	ZVA SLIM LINE 2	Diesel	25	1"

## 4.2 Tools required for installation.

4.2.1 Mechanical / digital torque meter (N\*m) + 7 mm socket tool

4.2.2 Phillips screwdriver head number 1.

4.2.3 Flat No.1 screwdriver.



## 4.3 Emphasises pre installation

4.3.1 Do not work with an electric / pneumatic screwdriver at any stage or during the assembly of a component of the universal reader, **except with hand tools only**

4.3.2

#### 4.4 Activate Reader in CVS

4.4.1 Take the reader out of the box, pull out the "U" cover and unscrew the two screws on the sides (save screw for later).



4.4.2 The reader must be activated in CVS according to the instructions in Manual P/N: DOC-IG-UNV-003.

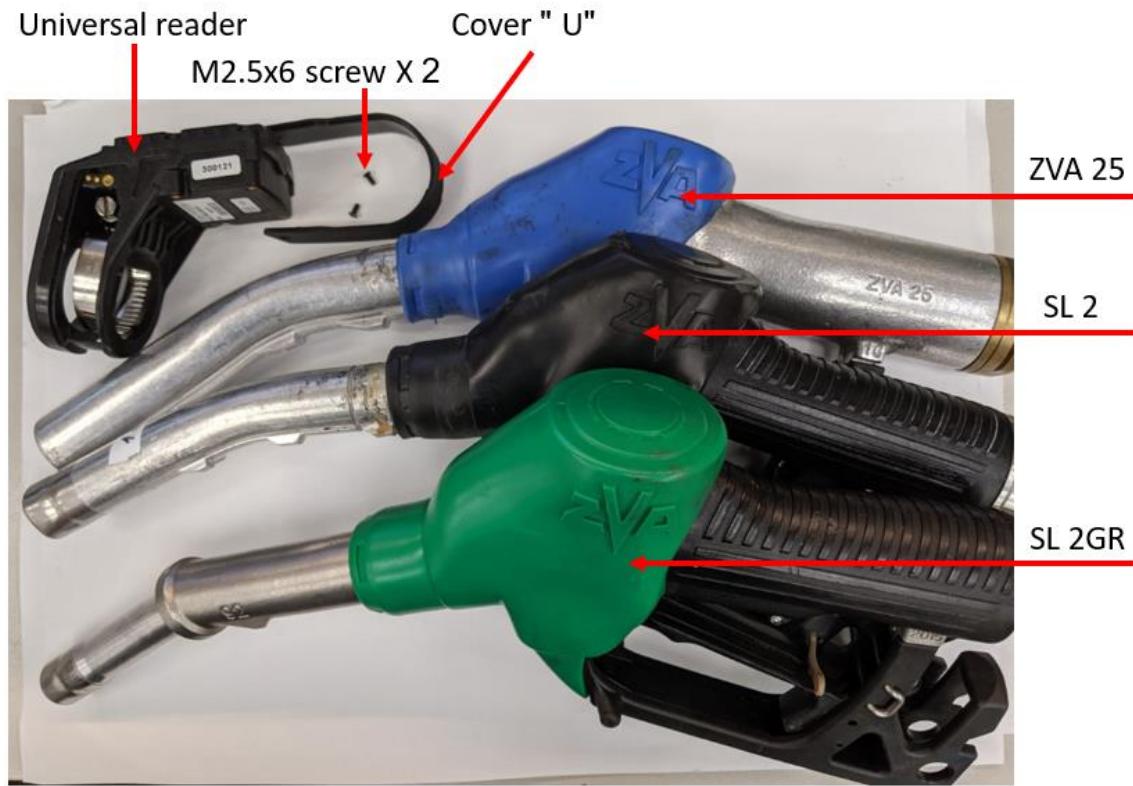
## 4.5 Connecting the unit to the fuel nozzle

4.5.1 Torques tightening table according to fuel nozzle

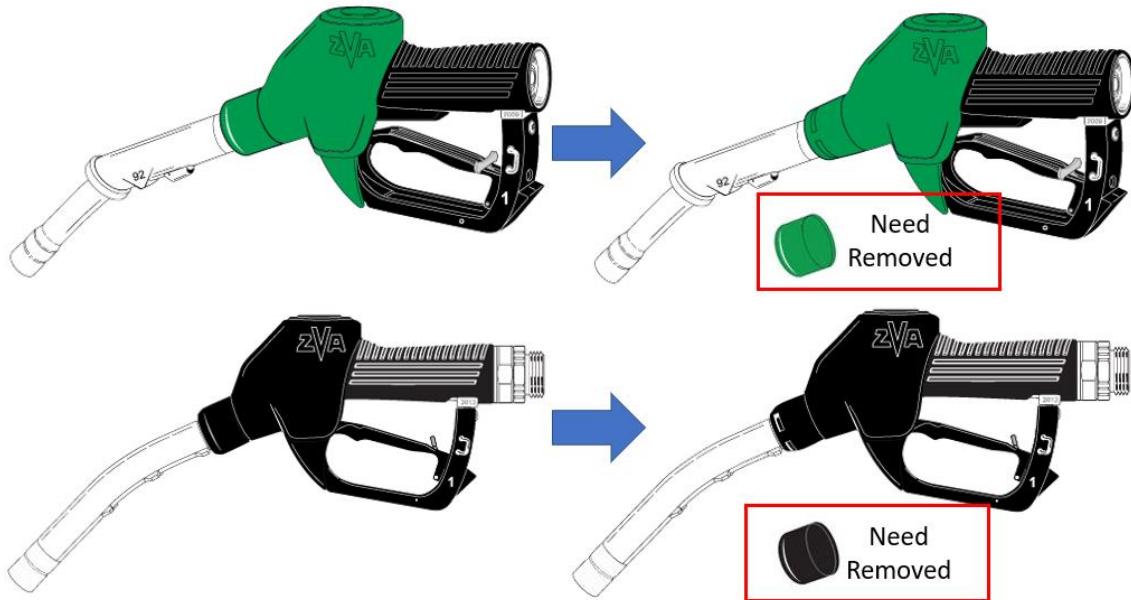
No.	Manufacture	Model	Gasket P/N PLS- NRD-02 (units)	Nozzle diameter (at the edge)		Tourqe	
				mm	Inch	N*m	ft*lb
1	CATLOW	<a href="#"><u>MAX1 NM1</u></a>	1	31	1- 3/16"	8.5 ± 0.5	6.3 ± 0.4
2	CATLOW	<a href="#"><u>ELITE</u></a>	TBD	19	3/4"	TBD	TBD
3	CATLOW	<a href="#"><u>ELITE</u></a>	TBD	25	1"	TBD	TBD
4	HUSKY	8S-1	1	35	1-3/8"	8.6 ± 0.5	6.3 ± 0.4
5	HUSKY	10S	2	21	13/16	10 ± 0.5	7.4 ± 0.4
6	HUSKY	10S	1	25	1"	9.0 ± 0.5	6.6 ± 0.4
7	OPW	<a href="#"><u>7H / 7HB</u></a>		31	1- 3/16"	7.8 ± 0.5	5.7 ± 0.4
8	OPW	<a href="#"><u>11AP / 11BP</u></a>	2	20.5	13/16"	8.0 ± 0.5	5.9 ± 0.4
9	OPW	<a href="#"><u>11A / 11B</u></a>	TBD	24	15/16"	TBD	TBD
10	ELAFLEX	ZVA SLIM LINE 2GR	1	21	13/16	9.2 ± 0.5	6.8 ± 0.4
11	ELAFLEX	ZVA 25	1	31	1- 3/16"	8.5 ± 0.5	6.3 ± 0.4
12	ELAFLEX	ZVA SLIM LINE 2	1	25	1"	9.5 ± 0.5	7.0 ± 0.4

4.5.2 Fuel nozzles ELAFLEX model ZVA25 ,ZVA SL 2 , ZVA SL GR2

#### 4.5.2.1 The system components



4.5.2.2 For fuel nozzles ZVA SL 2, ZVA SL GR2 ,make sure that the round plastic cover is not installed at the beginning of the nozzle, in case a plastic cover is installed, it must be removed.



4.5.2.3 Before assembly, make sure that the gun cover is intact and not cut. See picture bellow, in case the cover is cut, continue to the next section.

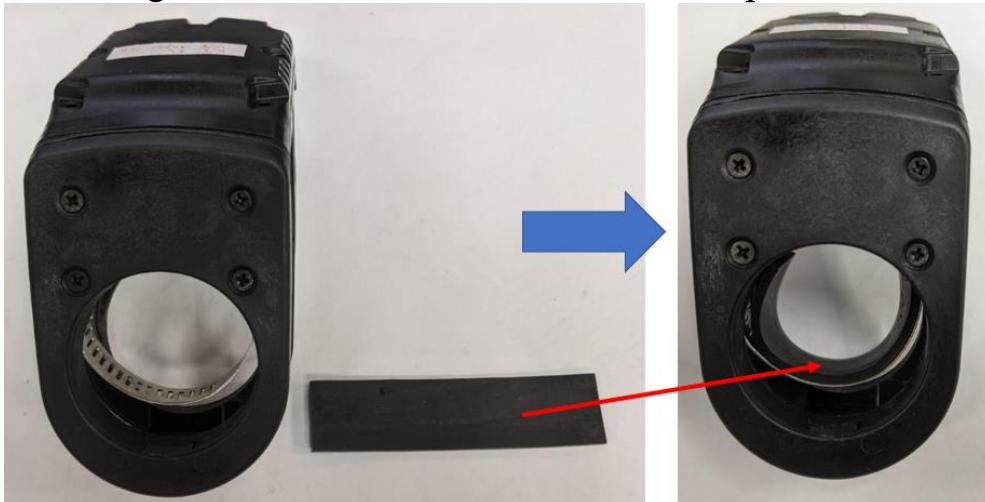


Cut cover



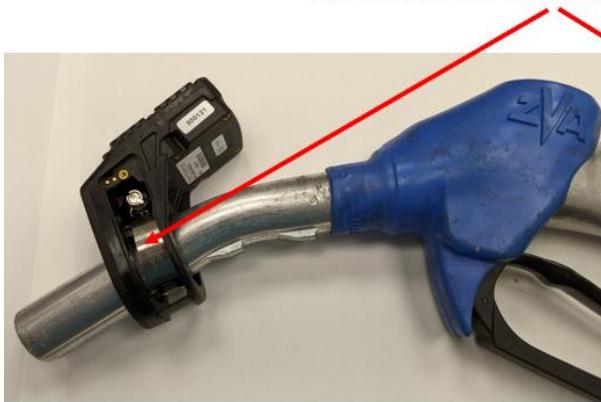
Intact cover

4.5.2.3.1 In the event that the cover is complete, continue to the next section if not use Roseman gasket P/N: PLS-NRD-02 2mm thick. Place the gasket on the inner side of the hose clamp.

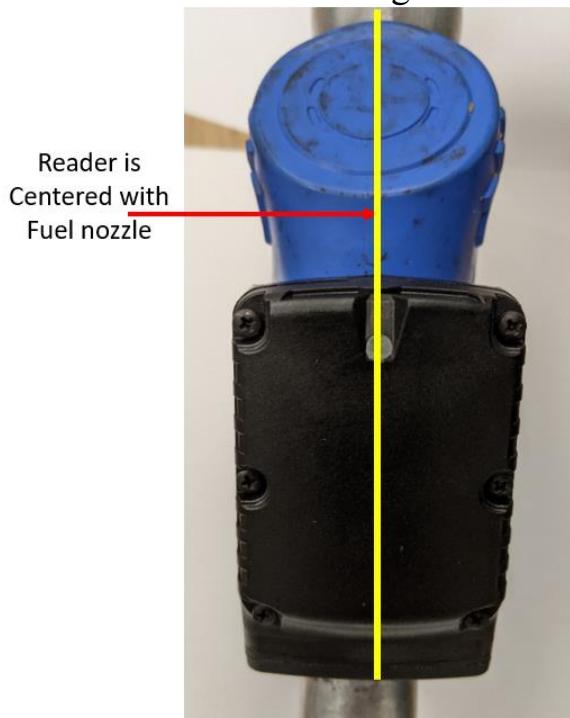


4.5.2.4 Insert the reader till the end of the nozzle.

Insert the reader till the end of the nozzle



4.5.2.5 Make sure the reader is aligned and center with the fuel nozzle.



4.5.2.6 Close the screw of the hose clamp using a 7 mm socket until the reader was fasten with the appropriate torque,(see table - **Do not work with electric tools**).

Fasten the Hose clamp with required torque



4.5.2.7 Mount the "U" shape cover onto the reader in the correct orientation  
Mount the "U" shape cover

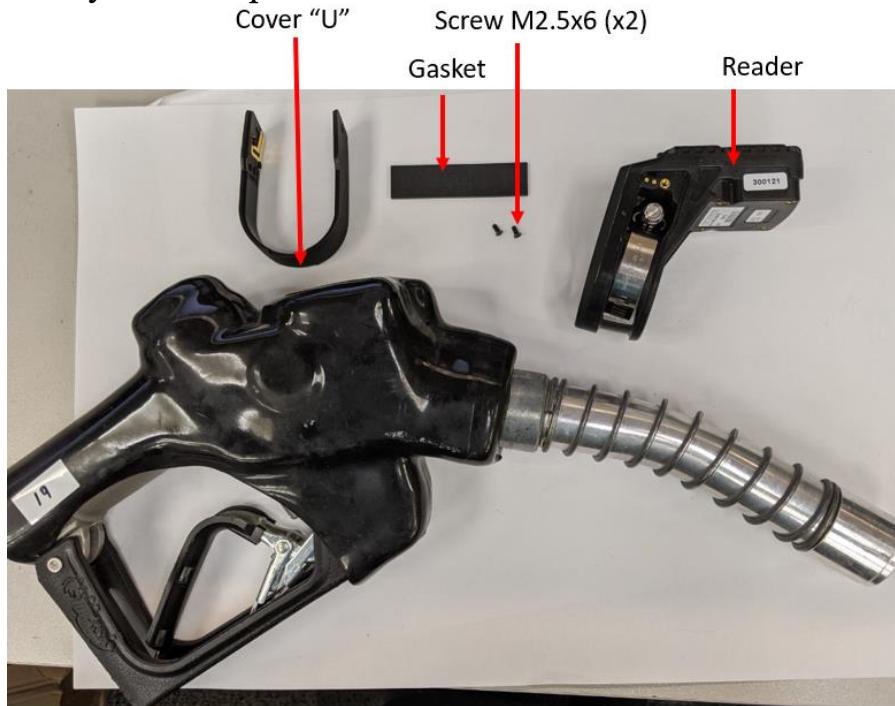


4.5.2.8 Close the cover using one M2.5x6 screw on each side according to a torque of 1.3 Nm (0.96 ft\*lb) with a tolerance of Nm  $\pm 0.2$  (0.15 ft\*lb) -  
Do not use an electric tool but a hand tool only.



4.5.3 Fuel Nozzle Husky Model 8S-1

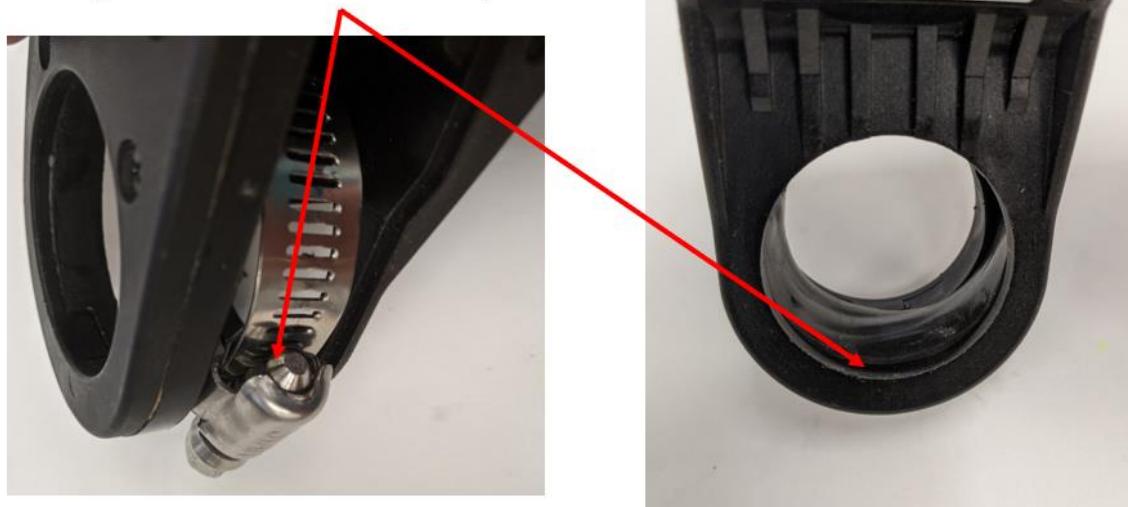
#### 4.5.3.1 The system components



Fuel Nozzle Fuel Nozzle Husky Model 8S-1

4.5.3.2 Open the hose clamp up to the last tooth and insert the gasket P/N: PLS-NRD-02 into the inner gap so that it is under the plastic line in order that it does not interfere and move when inserting the reader onto the nozzle.

Open the hose clamp up to the last tooth and inserts gasket so it will be under the plastic line



4.5.3.3 Insert the reader all the way to the end of the fuel nozzle and make sure the reader is aligned and center then close the screw of the hose clamp using an 7 mm socket until the reader is fasten with the appropriate torque according to the table - **Do not work with electric tools.**

Fasten the Hose clamp with required torque

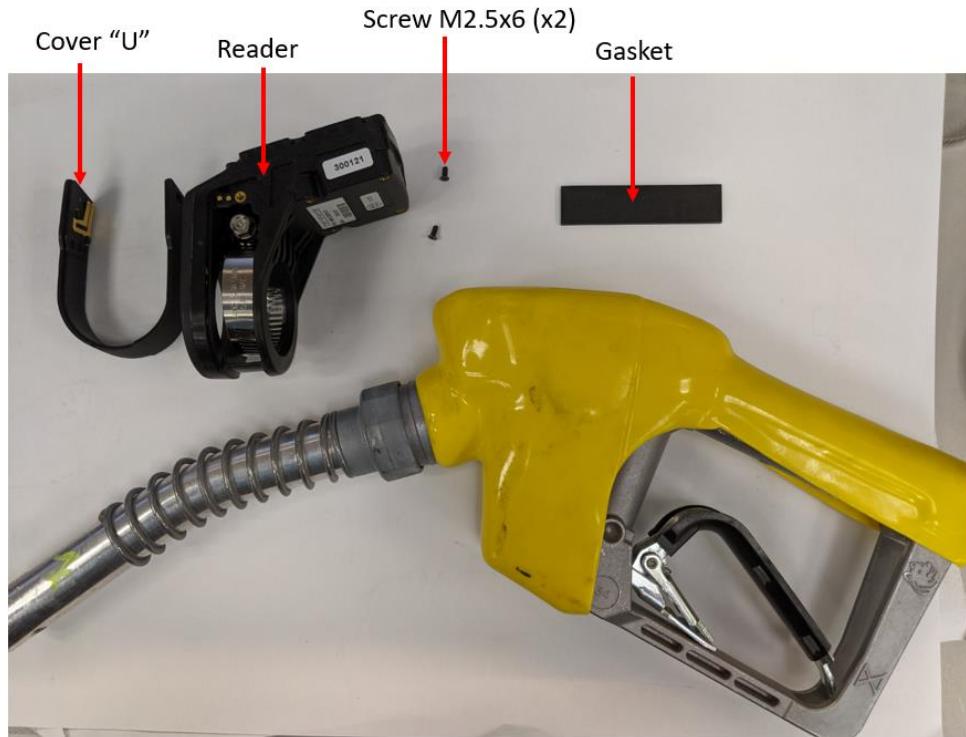
Reader is Centered with  
Fuel nozzle



4.5.3.4 Close the cover using one M2.5x6 screw on each side according to a torque of 1.3 Nm (0.96 ft\*lb) with a tolerance of Nm  $\pm 0.2$  (0.15 ft\*lb) - **Do not use an electric tool but a hand tool only.**

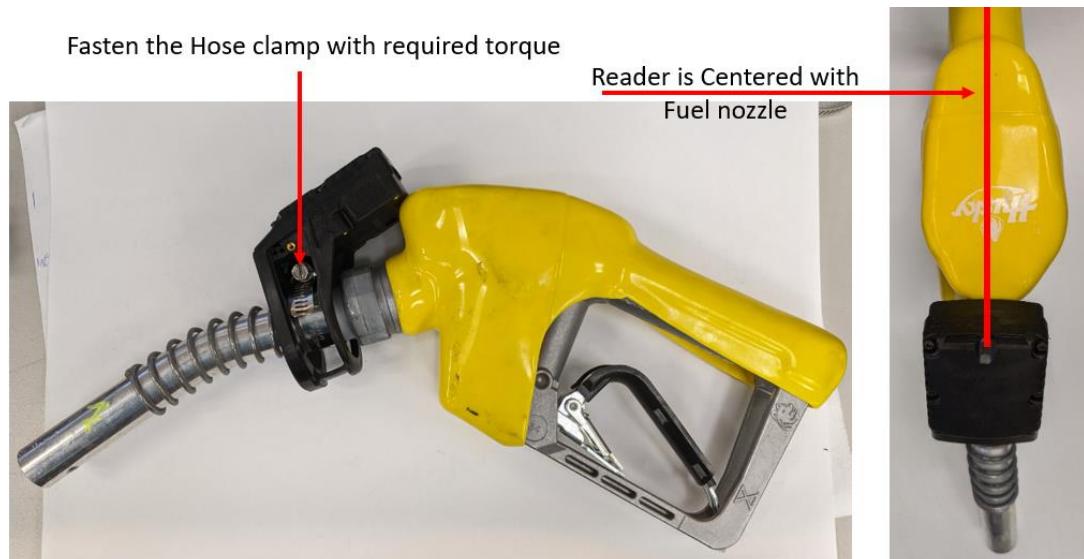
4.5.4 Nozzle reader Husky model 10S Diesel

#### 4.5.4.1 The system components.



Nozzle reader Husky model 10S Diesel

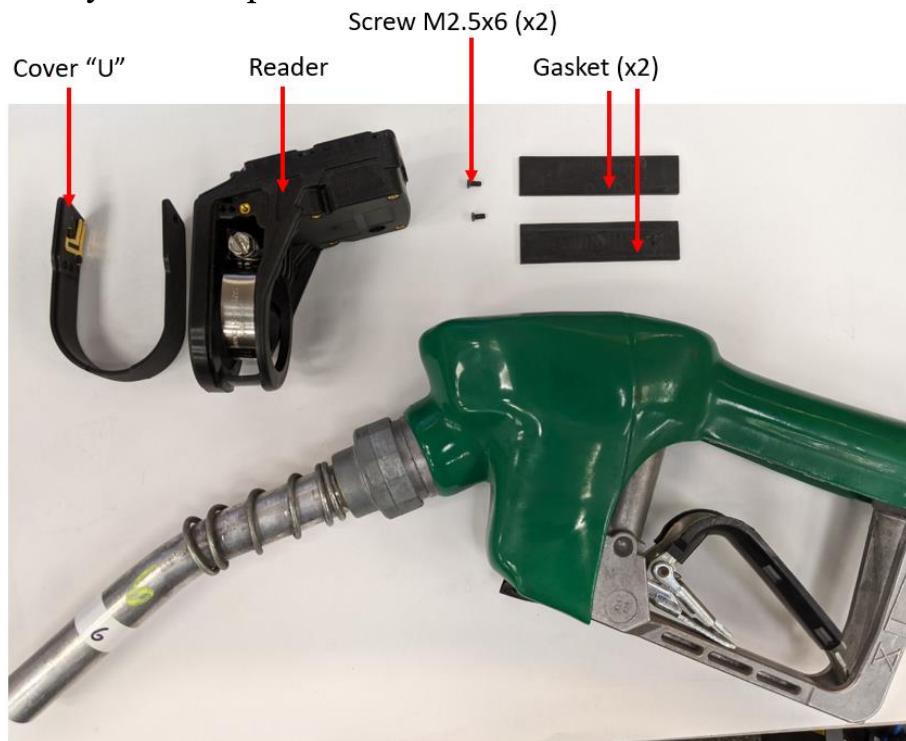
4.5.4.2 Insert the reader all the way to the end of the fuel nozzle and make sure the reader is aligned and center then close the screw of the hose clamp using an 7 mm socket until the reader is fasten with the appropriate torque according to the table - **Do not work with electric tools.**



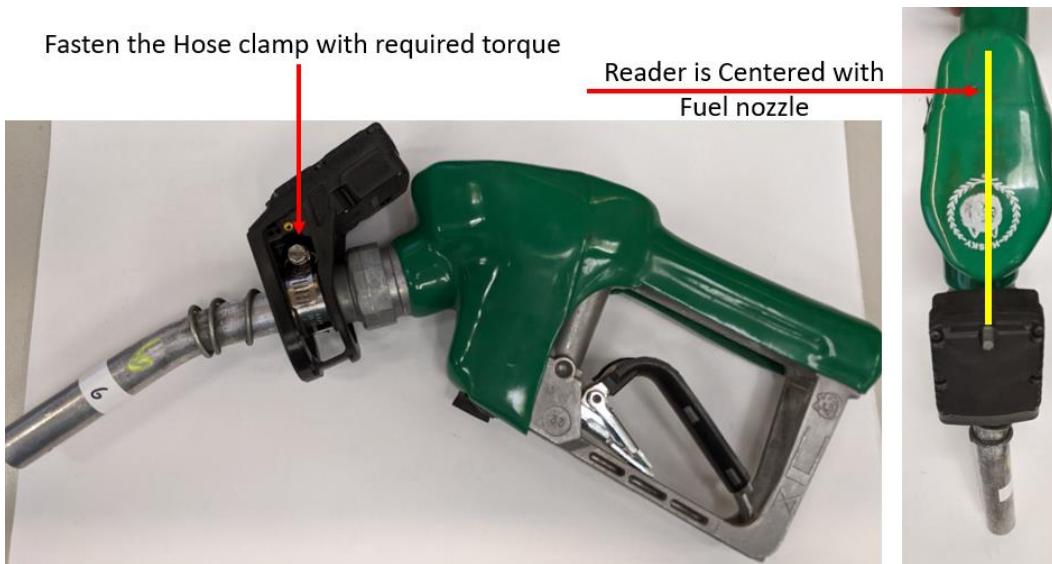
4.5.4.3 Close the cover using one M2.5x6 screw on each side according to a torque of 1.3 Nm (0.96 ft\*lb) with a tolerance of Nm  $\pm 0.2$  (0.15 ft\*lb) - **Do not use an electric tool but a hand tool only.**

## 4.5.5 Fuel Nozzle Husky type 10S Gasoline

## 4.5.5.1 The system components.

Fuel Nozzle Husky type 10S Gasoline

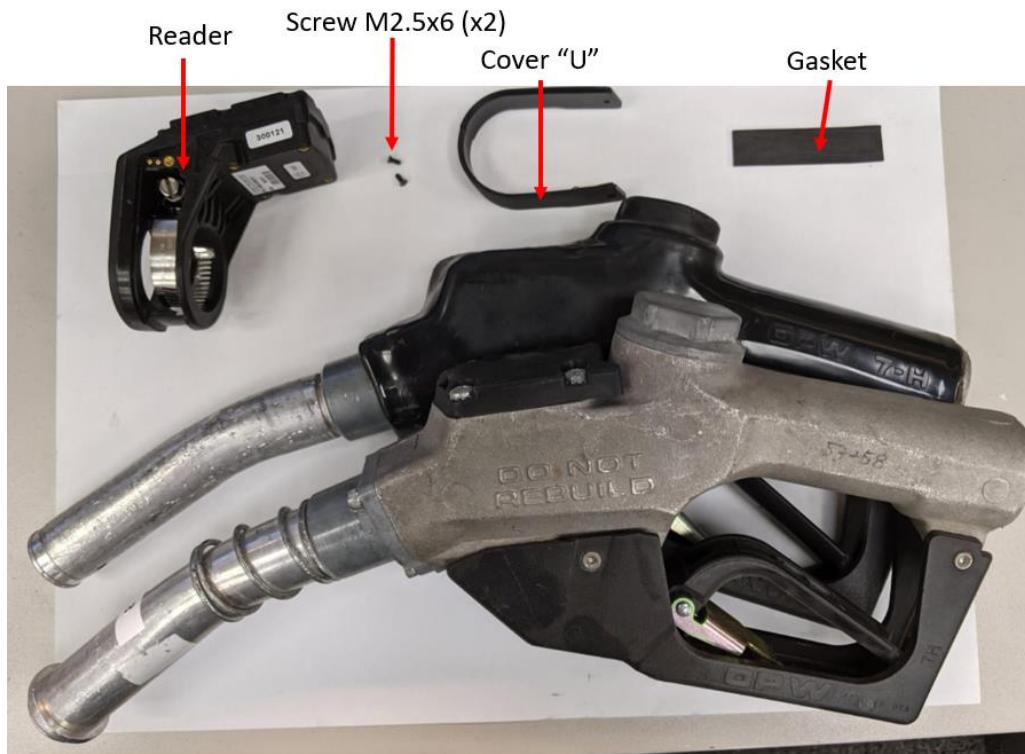
4.5.5.2 Insert the reader all the way to the end of the fuel nozzle and make sure the reader is aligned and center then close the screw of the hose clamp using an 7 mm socket until the reader is fasten with the appropriate torque according to the table - **Do not work with electric tools.**



4.5.5.3 Close the cover using one M2.5x6 screw on each side according to a torque of 1.3 Nm (0.96 ft\*lb) with a tolerance of Nm  $\pm 0.2$  (0.15 ft\*lb) - **Do not use an electric tool but a hand tool only.**

## 4.5.6 Fuel Nozzle OPW model 7H/7HB Diesel

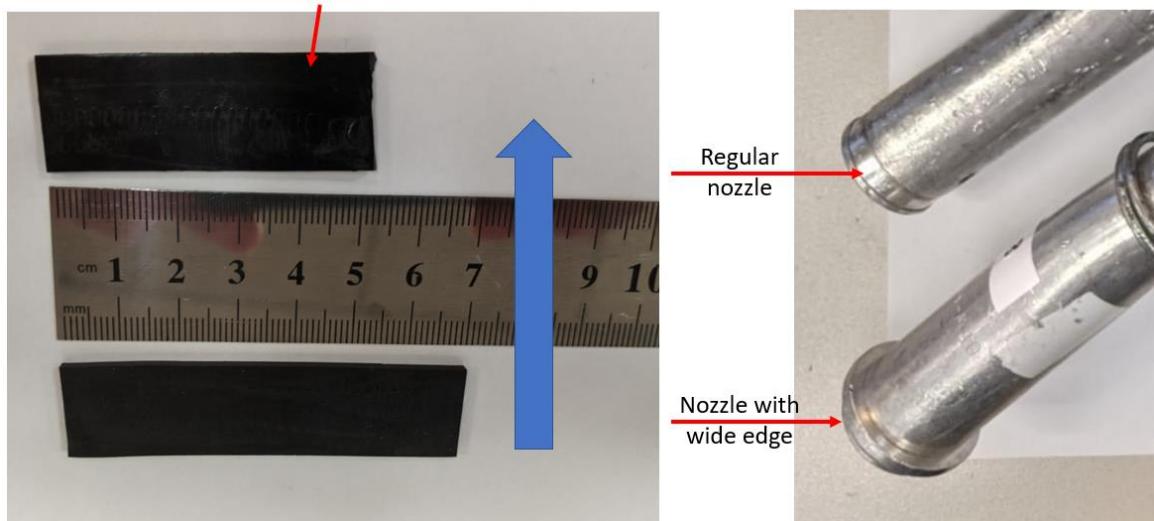
## 4.5.6.1 The system components.



Fuel Nozzle OPW model 7H/7HB Diesel

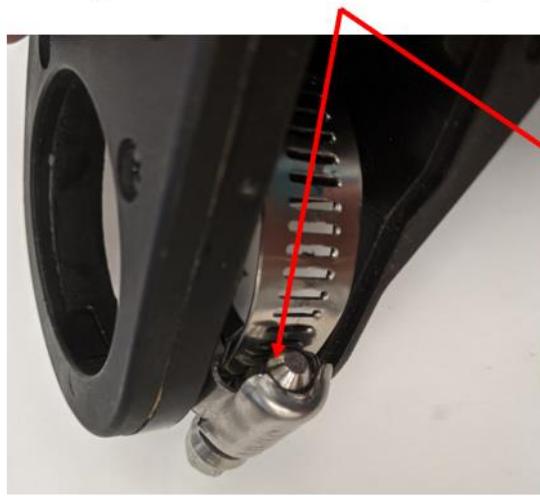
## 4.5.6.2 In a fuel nozzle with a wide disk as shown bellow, the gasket must be cut to a measurement of 5 cm (2 inch).

Cut the gasket to 5 cm / 2 inch



4.5.6.3 Open the hose clamp up to the last tooth and insert the gasket P/N: PLS-NRD-02 into the inner gap so that it is under the plastic line in order that it does not interfere and move when inserting the reader onto the nozzle.

Open the hose clamp up to the last tooth and inserts gasket so it will be under the plastic line



4.5.6.4 Insert the reader all the way to the end of the fuel nozzle and make sure the reader is aligned and center then close the screw of the hose clamp using an 7 mm socket until the reader is fasten with the appropriate torque according to the table - **Do not work with electric tools.**

Fasten the Hose clamp with required torque

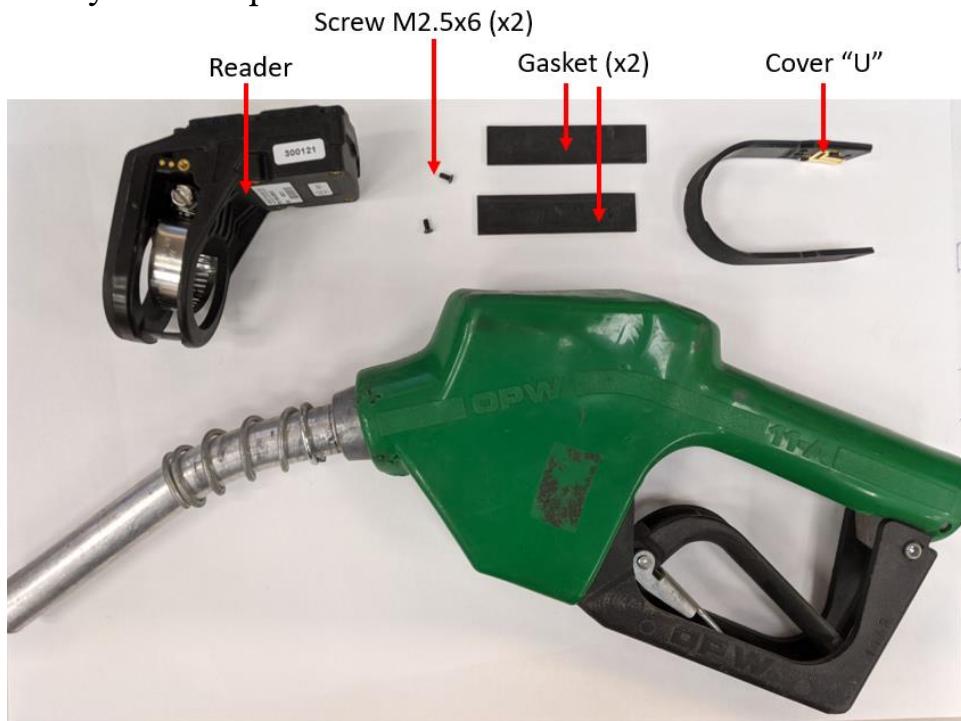
Reader is Centered with  
Fuel nozzle



4.5.6.5 Close the cover using one M2.5x6 screw on each side according to a torque of 1.3 Nm (0.96 ft\*lb) with a tolerance of Nm  $\pm 0.2$  (0.15 ft\*lb) - **Do not use an electric tool but a hand tool only.**

## 4.5.7 Fuel Nozzle OPW model 11-A Gasoline

## 4.5.7.1 The system components.



Fuel Nozzle OPW model 11-A Gasoline

4.5.7.2 Insert the reader all the way to the end of the fuel nozzle and make sure the reader is aligned and center then close the screw of the hose clamp using an 7 mm socket until the reader is fasten with the appropriate torque according to the table - **Do not work with electric tools.**



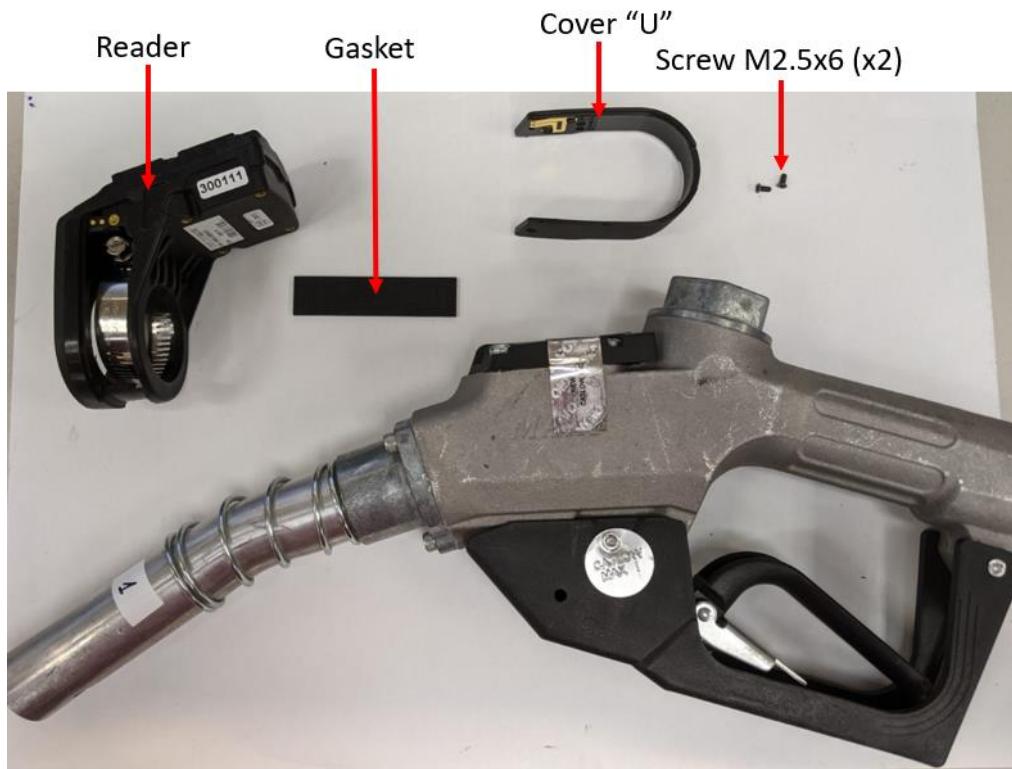
4.5.7.3 Bend the end of the Hose clamp to the insde so ut will not interfere with closing the "U" cover.



4.5.7.4 Close the cover using one M2.5x6 screw on each side according to a torque of 1.3 Nm (0.96 ft\*lb) with a tolerance of Nm  $\pm 0.2$  (0.15 ft\*lb) - **Do not use an electric tool but a hand tool only.**

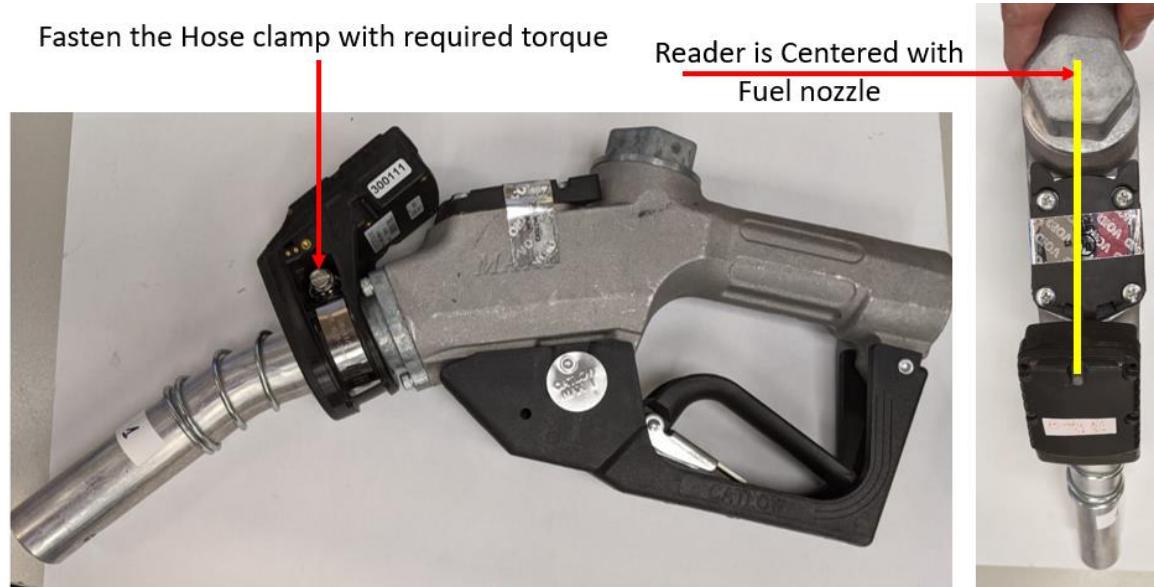
#### 4.5.8 Fuel Nozzle CATLOW model MAX1 Diesel

4.5.8.1 The system components.



Fuel Nozzle CATLOW model MAX1 Diesel

4.5.8.2 Insert the reader all the way to the end of the fuel nozzle and make sure the reader is aligned and center then close the screw of the hose clamp using an 7 mm socket until the reader is fasten with the appropriate torque according to the table - **Do not work with electric tools.**



4.5.8.3 Close the cover using one M2.5x6 screw on each side according to a torque of 1.3 Nm (0.96 ft\*lb) with a tolerance of Nm  $\pm 0.2$  (0.15 ft\*lb) - **Do not use an electric tool but a hand tool only.**

## 5. Installation procedure for vehicle TAG

5.1 Installation should be carried according to the document P/N: **DOC-IG-CAR-001**. verify the latest version of the document with Roseman company.

The document describes the types of installations in vehicle and trucks as well according to the 6200 (Israel standard). .

## 6. Maintenance and battery replacement

6.1 The nozzle reader does not require any special maintenance such as: cleaning or lubrication beside a visual inspection for breakage or damage to the plastic parts.

6.2 Battery replace:

**Warning:**

Battery replacement will carried out by a licensed and qualified installer and will be done in a non-explosive area such as laboratory or an office at a gas station.

6.2.1 Unscrew the two screws of the "U" cover one on each side.



6.2.2 Carefully remove the "U" cover using a flat-head screwdriver.

Carefully use flat-head screwdriver to remove cover



## 6.2.3 Unfatten the hose clamp using an 7 mm socket.

Open the hose clamp



6.2.4 The reader must be removed from the fuel nozzle and moved to a non-explosive environment.

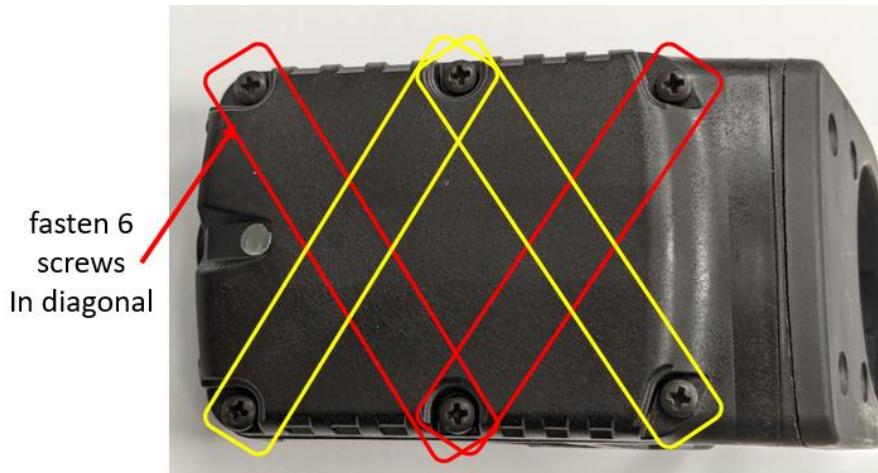
6.2.5 Unscrew the cover 6 screws and remove the cover.



## 6.2.6 Disconnect the battery and replace it .



## 6.2.7 Place the cover on the unit and fasten the 6 screws back in digonal order.



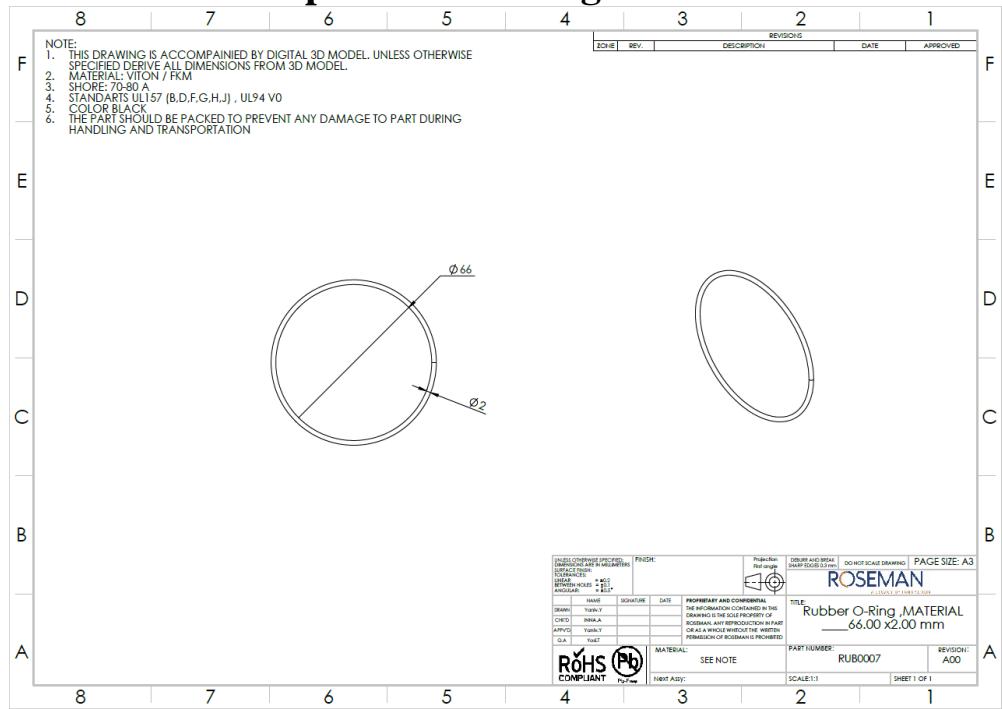
## 6.2.8 Mount the reader on the fuel nozzle as shown in the instructions above.

## 7. List of replaceable components

### 7.1 List of product components

No.	Description	Roseman P/N
1	RUB0007	Rubber O-Ring ,MATERIAL <u>66.00 x2.00 mm</u>
2	PLS-NRD-02	Rubber 70x17x2mm for Nozzle Adapter Black
3	SCW0294	DIN 7985 BLACK M2.5 L=8 mm PAN PHL SST
4	SCW0292	SCREW BLACK M2.5X0.48 L=6mm DIN965A FLAT PHL SST
5	PLS-2000-004-SET	Assembly of Tamper plate
6	GNR0707	Battery Pack for Dual/Universal Nozzle Reader
7	MPC0038	Hose Clamp, ABA Original 26-38mm, SST 304 W=12 mm
	MPC0043	Hose Clamp, ABA Original 32-44mm, SST 304 W=12 mm
8	LBL-2000-001-A	LBL, Universal Reader Product Label 19x8mm
9	LBL-2000-006-A	Label, FCC Homologation Universal reader Tag No. JAKNR-G5
10	CAR0035	Carton Box 100x100x55hmm White Color

### 7.2 Mechanical components: O-ring cover seal

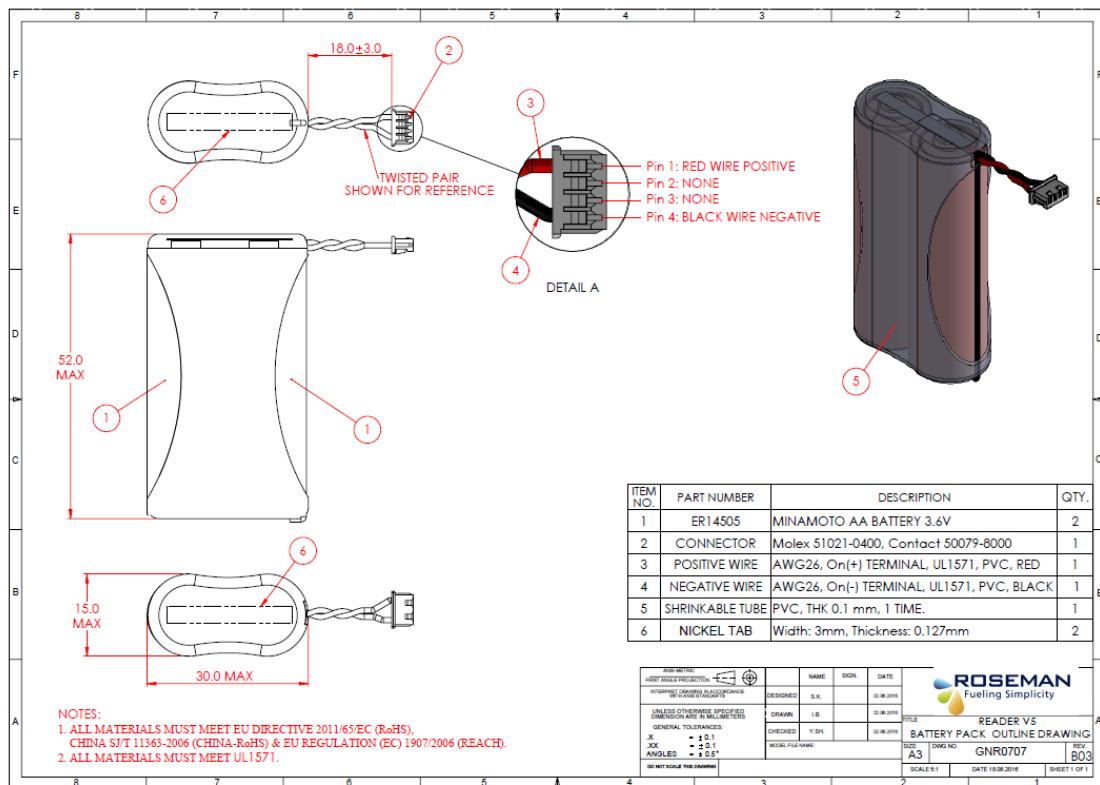


## 7.2.1 Hose Clamp



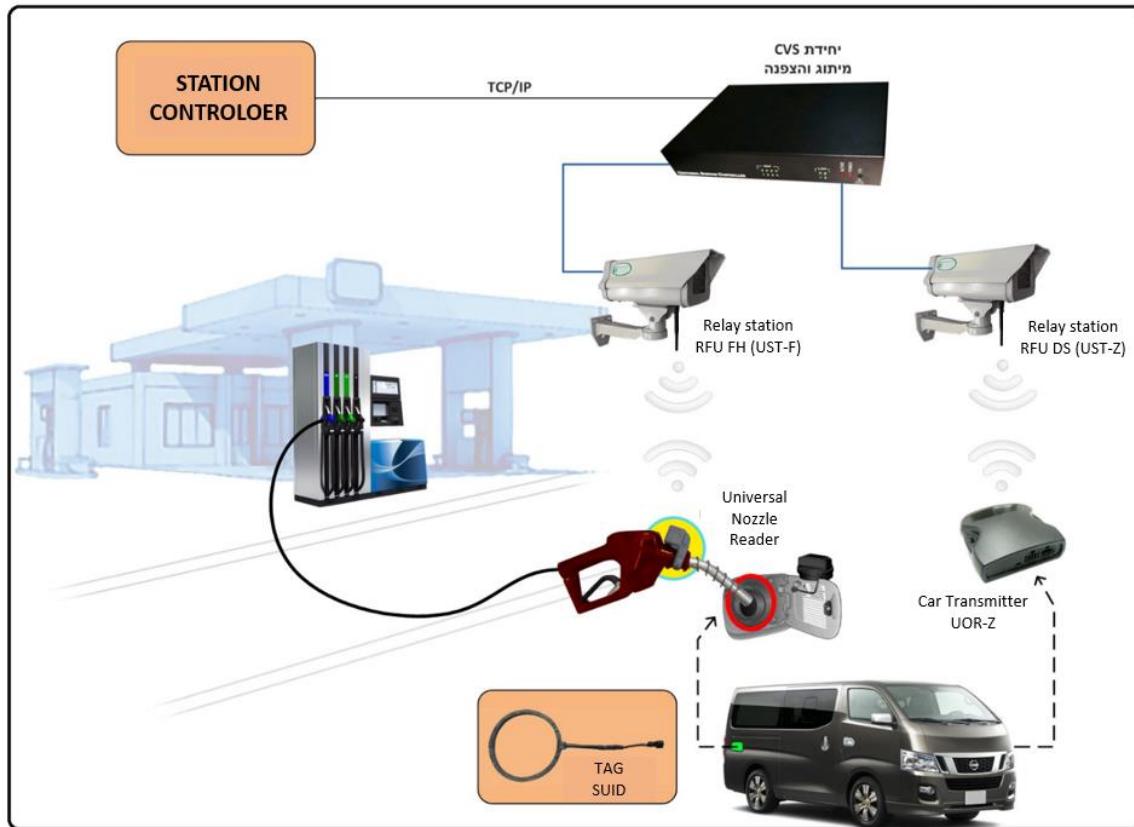
## 7.3 Electrical components:

7.3.1 Battery - only batteries approved by the manufacturer should be used.



## 8. system description and drawing

- 8.1 The universal nozzle reader (UNR) is an active independent device mounted on the fuel nozzle in gas stations. It has a strong plastic construction that allows it to survive in the harsh environment. The universal nozzle reader can read all vehicle identification devices including a universal secure identification device.
- 8.2 When the gun is inserted into the fuel tank for refueling. The UNR reads the data of the vehicle's identification device and transmits the command signal to the UST unit to start the refueling process and at the end of refueling, it transmits a command to stop refueling.
- 8.3 During refueling, UNR sends signals to the WAF unit that refueling is still in progress until it is completed. At the end of refueling, the data is sent to the universal station controller (USC), which is used as a central processing device for managing and analyzing data from fueling devices. The unit is installed in the fuel station and operates all the time. The unit communicate via RF to the reader and trthe ansmitter in the vehicle.
- 8.4 The universal nozzle reader is based on electromagnetic identification technology. This technology provides reliable and stable communication for several years without any interference with related devices, and it is equipped with an internal battery that lasts up to 2 years.



## 9. Programming instructions for UGR

9.1 Before installing the Universal nozzle reader programming of the UNG will be done in an area that in a safe enviornment and in explosive zone.

## 10. Station Test card

### 10.1 General background:

Following the preparation of the infrastructure at the stations to work with fueling devices, a test card will be sent to the station to solve problems (Example problems with the client's device or a problem with the equipment installed at the station). The test card is programmed to allow use of one liter for a single refueling and up to 5 attempts per day. There is no need to actually take fuel out of the nozzle, it is enough to bring the device close to the UNG and see that the pump resets. If the pump resets, the specific UNG is working

### 10.2 Warranty use Test Card:

- The test card shoud be in the responsibility of the station manager!
- Do not transfer the testing card to customers or third party.

- The use of the testing card is intended solely for testing the equipment's integrity and is not intended to refuel vehicles.

### 10.3 When to use

- A customer vehicle enters with the device and fails to fuel.

### 10.4 How to use

- The station manager takes the testing card, lifts a handle and attaches the card to the UNG, after a few seconds (detection of the device) the pump should reset and start fueling.

### 10.5 How to identify a problem

- If the fuel pump been reset and the UNG for this pump is working properly, in this case it is recommended to check the customer's vehicle with another pump.

### 10.6 If the vehicle fails to refuel at an additional pump.

- Please record all vehicle details (Number, Hour, antenna size, model location) on the breakdown fill a form/mail and send to Roseman.
- Call to service and check if the customer is open to fuel or system blocked.

## 11. FCC Label for Universal nozzle reader

