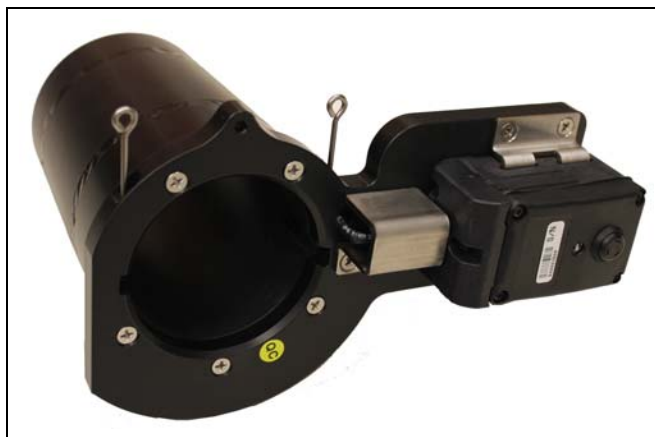


## Introduction

### Purpose

This manual provides installation and maintenance instructions for the nano Nozzle Reader-T (nNR-T) that will be installed on Wiggins nozzles.

**Figure 1: nNR-T for Wiggins**



### Intended Users

This manual is intended for Gilbarco®-trained and certified Authorized Service Contractors (ASCs).

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### Required Tools

The following tools are required to install the nano Nozzle Reader-T on Wiggins nozzles:

- Pliers
- 2-mm T-Handle Allen® Key (not ball ended)  
*Note: This will be used to replace the nNR-T battery.*

## Parts List

The following table lists the parts included in the nNR-T Wiggins Assembly:

Item	Description	Part Number	Quantity
1	nano Nozzle Reader-T Wiggins	M09677B049	1

## Related Documents

Document Number	Title	GOLD <sup>SM</sup> Library
MDE-4851	Gasboy Fuel Point Plus Station Equipment Manual	<ul style="list-style-type: none"> <li>Passport<sup>®</sup></li> <li>Gasboy Fleet PLUS System</li> </ul>

## Abbreviations and Acronyms

Term	Description
ASC	Authorized Service Contractor
ESD	Electrostatic Discharge
GOLD	Gilbarco Online Documentation
nNR-T	nano Nozzle Reader-T
OSHA	Occupational Safety and Health Administration
RMA	Return Merchandise Authorization
WGT	Wireless Gateway Terminal

## Technical Specifications

The following table lists technical specifications of the nNR-T:

Parameter	Value
Supply Voltage	3.6 internal battery pack, P/N M09680B148
Power Consumption	Active Mode: 160mA Standby Mode 20 $\mu$ A
Operating Temperature	-40°C to +60°C
Storage Temperature	-40°C to +85°C
IP Rating	IP 67
Dimensions (H x W x D)	180 x 194 x 126 mm
Weight	864 grams
Communication Interface	RF to WGT: 2.405-2.480GH Typical transmission power: 3dbm (2mW) RFID to FuelOpass: 108-131 kHz
Hazardous Area	Zone 1 Explosive atmosphere (Ex) Exi/Exia: Intrinsically Safe/Sécurité Intrinsèque Group IIB type product Temperature Class: T3 Rated Temperatures: -40°C ≤ T <sub>amb</sub> ≤ +60°C

# Important Safety Information

**Notes:** 1) Save this Important Safety Information section in a readily accessible location.

2) Although DEF is non-flammable, Diesel is flammable. Therefore, for DEF cabinets that are attached to Diesel dispensers, follow all the notes in this section that pertain to flammable fuels.




This section introduces the hazards and safety precautions associated with installing, inspecting, maintaining, or servicing this product. Before performing any task on this product, read this safety information and the applicable sections in this manual, where additional hazards and safety precautions for your task will be found. Fire, explosion, electrical shock, or pressure release could occur and cause death or serious injury, if these safe service procedures are not followed.

## Preliminary Precautions

You are working in a potentially dangerous environment of flammable fuels, vapors, and high voltage or pressures. Only trained or authorized individuals knowledgeable in the related procedures should install, inspect, maintain, or service this equipment.

## Emergency Total Electrical Shut-Off

The first and most important information you must know is how to stop all fuel flow to the pump/dispenser and island. Locate the switch or circuit breakers that shut off all power to all fueling equipment, dispensing devices, and Submerged Turbine Pumps (STPs).

	<b>WARNING</b>
	The EMERGENCY STOP, ALL STOP, and PUMP STOP buttons at the cashier's station WILL NOT shut off electrical power to the pump/dispenser. This means that even if you activate these stops, fuel may continue to flow uncontrolled.
	You must use the TOTAL ELECTRICAL SHUT-OFF in the case of an emergency and not the console's ALL STOP and PUMP STOP or similar keys.

## Total Electrical Shut-Off Before Access

Any procedure that requires access to electrical components or the electronics of the dispenser requires total electrical shut off of that unit. Understand the function and location of this switch or circuit breaker before inspecting, installing, maintaining, or servicing Gilbarco equipment.

## Evacuating, Barricading, and Shutting Off

Any procedure that requires access to the pump/dispenser or STPs requires the following actions:



- An evacuation of all unauthorized persons and vehicles from the work area
- Use of safety tape, cones, or barricades at the affected unit(s)
- A total electrical shut-off of the affected unit(s)

## Read the Manual

Read, understand, and follow this manual and any other labels or related materials supplied with this equipment. If you do not understand a procedure, call the Gilbarco Technical Assistance Center (TAC) at 1-800-743-7501. It is imperative to your safety and the safety of others to understand the procedures before beginning work.

## Follow the Regulations

Applicable information is available in National Fire Protection Association (NFPA) 30A; Code for Motor Fuel Dispensing Facilities and Repair Garages, NFPA 70; National Electrical Code (NEC), Occupational Safety and Health Administration (OSHA) regulations and federal, state, and local codes. All these regulations must be followed. Failure to install, inspect, maintain, or service this equipment in accordance with these codes, regulations, and standards may lead to legal citations with penalties or affect the safe use and operation of the equipment.

## Replacement Parts

Use only genuine Gilbarco replacement parts and retrofit kits on your pump/dispenser. Using parts other than genuine Gilbarco replacement parts could create a safety hazard and violate local regulations.

## Federal Communications Commission (FCC) Warning

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.

## Safety Symbols and Warning Words

This section provides important information about warning symbols and boxes.

### Alert Symbol



This safety alert symbol is used in this manual and on warning labels to alert you to a precaution which must be followed to prevent potential personal safety hazards. Obey safety directives that follow this symbol to avoid possible injury or death.

### Signal Words

These signal words used in this manual and on warning labels tell you the seriousness of particular safety hazards. The precautions below must be followed to prevent death, injury, or damage to the equipment:



**DANGER:** Alerts you to a hazard or unsafe practice which will result in death or serious injury.



**WARNING:** Alerts you to a hazard or unsafe practice that could result in death or serious injury.



**CAUTION** with Alert symbol: Designates a hazard or unsafe practice which may result in minor injury.

**CAUTION** without Alert symbol: Designates a hazard or unsafe practice which may result in property or equipment damage.

## Working With Fuels and Electrical Energy

### Prevent Explosions and Fires

Fuels and their vapors will explode or burn, if ignited. Spilled or leaking fuels cause vapors. Even filling customer tanks will cause potentially dangerous vapors in the vicinity of the dispenser or island.

DEF is non-flammable. Therefore, explosion and fire safety warnings do not apply to DEF lines.

## Important Safety Information

### No Open Fire



Open flames from matches, lighters, welding torches, or other sources can ignite fuels and their vapors.

### No Sparks - No Smoking



Sparks from starting vehicles, starting, or using power tools, burning cigarettes, cigars, or pipes can also ignite fuels and their vapors. Static electricity, including an electrostatic charge on your body, can cause a spark sufficient to ignite fuel vapors. Every time you get out of a vehicle, touch the metal of your vehicle, to discharge any electrostatic charge before you approach the dispenser island.

### Working Alone

It is highly recommended that someone who is capable of rendering first aid be present during servicing. Familiarize yourself with Cardiopulmonary Resuscitation (CPR) methods, if you work with or around high voltages. This information is available from the American Red Cross. Always advise the station personnel about where you will be working, and caution them not to activate power while you are working on the equipment. Use the OSHA Lockout/Tagout procedures. If you are not familiar with this requirement, refer to this information in the service manual and OSHA documentation.

### Working With Electricity Safely

Ensure that you use safe and established practices in working with electrical devices. Poorly wired devices may cause a fire, explosion, or electrical shock. Ensure that grounding connections are properly made. Take care that sealing devices and compounds are in place. Ensure that you do not pinch wires when replacing covers. Follow OSHA Lockout/Tagout requirements. Station employees and service contractors need to understand and comply with this program completely to ensure safety while the equipment is down.

### Hazardous Materials

Some materials present inside electronic enclosures may present a health hazard if not handled correctly. Ensure that you clean hands after handling equipment. Do not place any equipment in the mouth.

#### WARNING

The pump/dispenser contains a chemical known to the State of California to cause cancer.

#### WARNING

The pump/dispenser contains a chemical known to the State of California to cause birth defects or other reproductive harm.

## In an Emergency

### Inform Emergency Personnel

Compile the following information and inform emergency personnel:

- Location of accident (for example, address, front/back of building, and so on)
- Nature of accident (for example, possible heart attack, run over by car, burns, and so on)
- Age of victim (for example, baby, teenager, middle-age, elderly)
- Whether or not victim has received first aid (for example, stopped bleeding by pressure, and so on)
- Whether or not a victim has vomited (for example, if swallowed or inhaled something, and so on)

#### WARNING



Gasoline/DEF ingested may cause unconsciousness and burns to internal organs. Do not induce vomiting. Keep airway open. Oxygen may be needed at scene. Seek medical advice immediately.

#### WARNING

DEF generates ammonia gas at higher temperatures. When opening enclosed panels, allow the unit to air out to avoid breathing vapors. If respiratory difficulties develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention.

#### WARNING



Gasoline inhaled may cause unconsciousness and burns to lips, mouth, and lungs. Keep airway open. Seek medical advice immediately.

#### WARNING



Gasoline/DEF spilled in eyes may cause burns to eye tissue. Irrigate eyes with water for approximately 15 minutes. Seek medical advice immediately.

#### WARNING



Gasoline/DEF spilled on skin may cause burns. Wash area thoroughly with clear water. Seek medical advice immediately.

#### WARNING

DEF is mildly corrosive. Avoid contact with eyes, skin, and clothing. Ensure that eyewash stations and safety showers are close to the work location. Seek medical advice/recommended treatment if DEF spills into eyes.

**IMPORTANT:** Oxygen may be needed at scene if gasoline has been ingested or inhaled. Seek medical advice immediately.

### Lockout/Tagout

Lockout/Tagout covers servicing and maintenance of machines and equipment in which the unexpected energization or start-up of the machine(s) or equipment or release of stored energy could cause injury to employees or personnel. Lockout/Tagout applies to all mechanical, hydraulic, chemical, or other energy, but does not cover electrical hazards. Subpart S of 29 CFR Part 1910 - Electrical Hazards, 29 CFR Part 1910.333 contains specific Lockout/Tagout provision for electrical hazards.

## Before You Begin

Before you begin, read and understand all safety information.

### CAUTION



A properly grounded Electrostatic Discharge (ESD) wrist strap must be worn while servicing any electronic devices or components. Failure to use electrostatic precautions may damage electronic components and void warranty.

- 1 Inform the manager.
- 2 Barricade the unit to be worked on.
- 3 Remove power to the unit at the breaker panel. Follow OSHA lockout/tagout procedures.



### WARNING

Failure to turn off the unit during kit installation may cause injury or bodily harm from electrical shock. Ensure that all power to the unit is switched off before opening the door to the unit and during installation of the kit.

- 4 Match the parts received in the kit with [“Parts List”](#) on [page 2](#).

## Installing nano Nozzle Reader-T on Wiggins Nozzles

### **WARNING**

The unit should be serviced only by authorized service personnel. DO NOT open the unit at the location of installation. When replacing the battery, use 3.6 V Battery Pack (M09680B148) only.

To install the nano Nozzle Reader-T on Wiggins nozzles, proceed as follows:

*Note: The nNR-T is provided with two pins, which are already located in their slots ready to be secured.*

- 1 Pull the two pins upwards from the Wiggins nozzle cover using a pair of pliers (see [Figure 2](#)).  
*Note: Some force may be required to pull the pins.*

**Figure 2: Removing the Pins from the Wiggins Cover**



- 2 Slide and remove the original cover from the Wiggins nozzle (see [Figure 3](#)).

**Figure 3: Removing the Original Wiggins Cover**



- 3 Slide the nNR-T assembly onto the Wiggins nozzle (see [Figure 4](#)).

**Figure 4: Placing the nNR-T on Wiggins Nozzle**



- 4 Secure the nNR-T by applying pressure on the two pins, which are already located in their slots (see [Figure 5](#)).

**Figure 5: Securing the nNR-T**



## LED Indications

The following table details the LED indications for nNR-T units:

LED Indication	nNR-T Status
1 Blink	nNR-T is in wake-up state
2 Blinks	nNR-T has read vehicle and is transferring the data to the Wireless Gateway Terminal (WGT)
3 Blinks	nNR-T is blocked and needs to be reactivated
5 Fast Blinks	nNR-T has low battery. The battery needs to be replaced as soon as possible.

## nNR-T Maintenance


This section provides general maintenance guidelines for the nNR-T units.

### General Inspection

- The nNR-T does not require any cleaning or lubrication.
- Inspect regularly for any visible damages.
- Verify that all screws are tight and that there are no loose parts.
- Ensure that the unit is installed tightly on the spout and cannot move.
- Observe and verify if the nNR-T's LED blinks once when the unit is tilted.

### Replacing nNR-T Battery

To replace the battery pack, proceed as follows:

 **WARNING**

Replacing the nNR-T battery must be done in a non-hazardous area only. Use the M09680B148 battery only. The use of different batteries other than the one specified can cause a great safety hazard. Orpak™ does not warranty the nano Nozzle Reader, or provide Return Merchandise Authorization (RMA) service, if non- approved batteries are used.

- 1 Remove the nNR-T unit from the Wiggins nozzle by pulling the two pins upwards, and then sliding the nNR-T assembly off the nozzle.

*Note: DO NOT open the unit at the location of installation.*



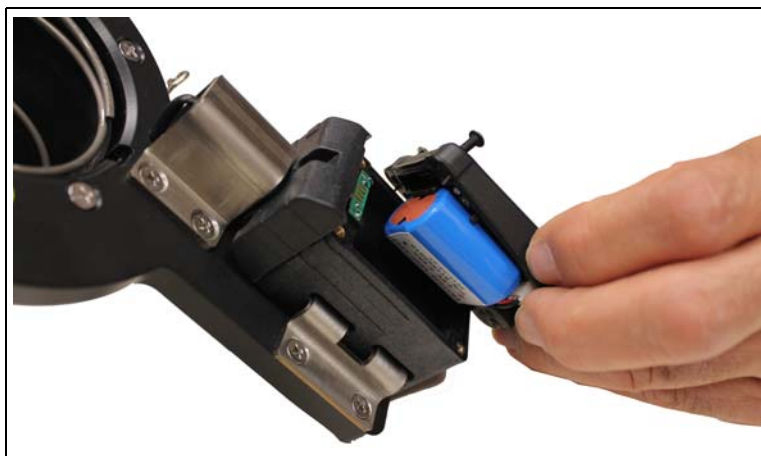
- 2 Remove the four M3 screws that secure the top cover of the nNR-T assembly (see [Figure 6](#)).

**Figure 6: Removing the Top Cover Screws**



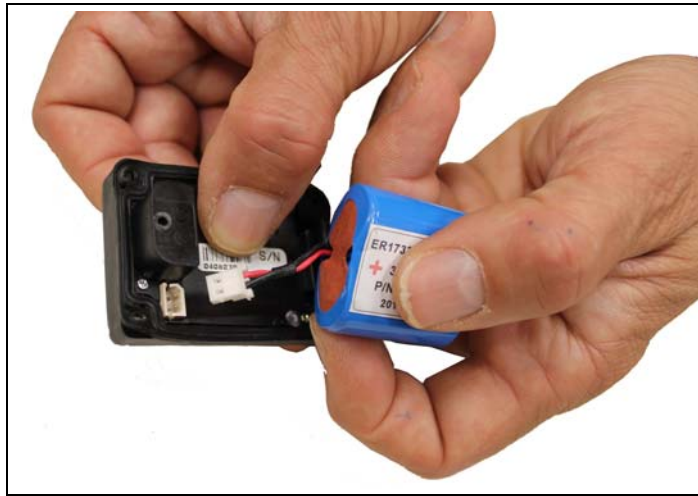
- 3 Remove the cover. The battery pack is located on the inner side of the top cover (see [Figure 7](#)).

**Figure 7: Removing the Top Cover**



- 4 Disconnect the battery pack and remove the seal cover (see [Figure 8](#)).

**Figure 8: Disconnecting the Battery Pack**



*Note: Discharged Lithium and Lithium Ion batteries are currently designated to be disposed of in normal trash. However, you should contact your municipal waste disposal facility prior to discarding any used battery in normal trash.*

- 5 Connect the new battery pack. Place it in the inner side of the top cover and push the cable in between the battery pack and the plastic piece as shown below (see [Figure 9](#)).

**Figure 9: Connecting a New Battery**



- 6 Place the top lid back onto the nNR-T assembly. Verify that the seal cover is in place.
- 7 Secure the top lid with the four M3 screws using the 2-mm Long T-Handle Allen Key.
- 8 Reinstall the unit onto the nozzle (refer to [“Installing nano Nozzle Reader-T on Wiggins Nozzles”](#) on page 6).

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