



1483 POINSETTIA AVE., STE. #101
VISTA, CA 92081 USA

miniWIPER for miniDOT Maintenance Kit

USER'S MANUAL

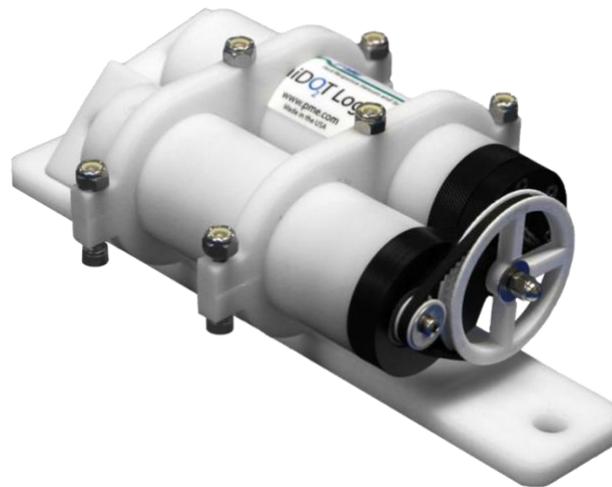


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WARRANTY

Limited Warranty

Precision Measurement Engineering, Inc. (“PME”) warrants the following products to be, as of the time of shipment, free from defects in materials or workmanship under normal use and conditions for the period indicated below corresponding to the product. The warranty period commences on the original date of purchase of the product.

Product	Warranty Period
Aquasend Beacon	1 year
miniDOT Logger	1 year
miniDOT Clear Logger	1 year
miniWIPER	1 year
miniPAR Logger (Logger only)	1 year
Cyclops-7 Logger (Logger only)	1 year
C-FLUOR Logger (Logger only)	1 year
T-Chain	1 year
MSCTI (excludes CT/C-sensors)	1 year
C-Sense Logger (Logger only)	1 year

For valid warranty claims made and covered defects existing during the applicable warranty period, PME will, at PME’s option, repair, replace (with the same or then most similar product) or repurchase (at purchaser’s original purchase price), the defective product. This warranty extends solely to the original end-user purchaser of the product. PME’s entire liability and the sole and exclusive remedy for product defects is limited to such repair, replacement or repurchase in accordance with this warranty. **This warranty is provided in lieu of all other warranties express or implied, including, but not limited to warranties of fitness for a particular purpose and warranties of merchantability.** No agent, representative, or other third party has any authority to waive or alter this warranty in any way on behalf of PME.

WARRANTY EXCLUSIONS

The warranty does not apply in any of the following circumstances:



- I) The product has been altered or modified without PME's written authorization,
- II) the product has not been installed, operated, repaired, or maintained in accordance with PME's instructions, including, where applicable, use of proper grounding to an earth ground source,
- III) the product has been subjected to abnormal physical, thermal, electrical, or other stress, internal liquid contact, or misuse, neglect, or accident,
- IV) the product failure occurs as a result of any cause not attributable to PME,
- V) the product is installed with ancillary devices such as flow sensors, rain switches, or solar panels that are not listed as compatible with the product,
- VI) the product is installed in a non-PME specified enclosure or with other incompatible equipment,
- VII) to address cosmetic issues such as scratches or surface discoloration,
- VIII) operation of the product in conditions other than that for which the product was designed,
- IX) the product has been damaged due to events or conditions such as caused by lightning strikes, power surges, unconditioned power supplies, floods, earthquakes, hurricane, tornados, vermin such as ants or slugs or intentional damage, or
- X) products provided by PME, but manufactured by a third-party company, which products are subject to the applicable warranty extended by their manufacturer, if any.

There are no warranties that extend beyond the above limited warranty. In no event is PME responsible or liable to purchaser or otherwise for any indirect, incidental, special, exemplary, or consequential damages, including, but not limited to, lost profits, loss of data, loss of use, business interruption, loss of good will, or cost of procuring substitute products, arising out of or in relation to the product, even if advised of the possibility of such damages or losses. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

WARRANTY CLAIM PROCEDURES

A warranty claim must be initiated within the applicable warranty period by first contacting PME at info@pme.com to obtain an RMA number. The purchaser is responsible for proper packaging and return shipment of the product to PME (including shipping expense and any related duties or other costs). The issued RMA number and purchaser's contact information must be included with the returned product. PME is NOT liable for loss or damage of the product in return transit and recommends that the product be insured for its full replacement value.

All warranty claims are subject to PME's testing and examination of the product to determine if the warranty claim is valid. PME may also require additional documentation or information from the purchaser to evaluate the warranty claim. Products repaired or replaced under a valid warranty claim will be shipped back to the original purchaser (or its designated distributor) at PME's expense. If the warranty claim is found to be not valid for any reason, as determined by PME in its sole discretion, PME will notify the purchaser at the contact information provided by the purchaser.



SAFETY INFORMATION

Bursting Hazard

Should water enter the miniWIPER and come into contact with the enclosed batteries, the batteries may generate gas causing the internal pressure to increase. This gas will likely exit via the same location where the water entered, but not necessarily. The miniWIPER is designed to release internal pressure as the end cap is unscrewed and prior to the disengagement of the end cap threads. If internal pressure is suspected, then treat the miniWIPER with extreme caution.



CHAPTER 1: OVERVIEW

Your miniWIPER will provide a gentle brush action across the miniDOT's oxygen-sensitive membrane, which is intended to reduce or eliminate fouling organisms. This wiper is an accessory for the miniDOT that can be added at any time. Over time, the miniWIPER's brush, timing belt, or o-rings can be worn down with use. The miniWIPER Maintenance Kit provides easy-to-replace parts for the end user.

Included in the miniWIPER Maintenance Kit are the following:

- Wrench
- Timing Belt
- Pulley with brush
- Washers
- Endcap o-rings
- Synthetic oil

The following sections will describe each of the above and provide instructions for each.



CHAPTER 2: EXTERNAL PARTS

2.1 Overview

This section describes the replacement of external parts that do not require the user to open the miniWIPER pressure case.



2.2 Belt Installation

The timing belt rotates the pulley with brush across the face of the miniDOT. Should the belt break, a new one can be installed.

To install the new belt, the pulley with brush must be removed from the miniWIPER. Use the wrench to do this. The wrench provided will secure the flat nut while a user-provided wrench will loosen the

'acorn' nut at the top of the bolt going through the pulley. Remove both the nuts, the washer, and the pulley from the bolt. Leave the spacer (and if there is a second washer below the spacer) in place.

Place the new timing belt on the pulley such that the teeth of the belt are properly lined up with the grooves in the pulley. If this is not done correctly, the belt cannot stretch enough for installation onto the driveshaft pulley.

Holding the belt taut with the pulley, the brush facing downward, slide the excess part of the belt over the driveshaft pulley, making sure the teeth of the belt align with the grooves in the driveshaft pulley. Slide the pulley onto the bolt with spacer. Install the washer and flat nut. Tighten the flat nut by hand against the washer. Hold the flat nut in place with the provided wrench and tighten the acorn nut against it with another wrench.

2.3 Brush Installation

The brush is the most likely part of the miniWIPER to wear down. For ease of use, PME has provided a pulley with the brush already glued in place.

The wrench provided will secure the flat nut and a user-provided wrench will loosen the 'acorn' nut at the top of the bolt going through the pulley. Remove the two nuts, washer, and pulley from the bolt. Leave the spacer (and if there is a washer below the spacer) in place.

Place the timing belt on the new pulley such that the teeth of the belt are properly lined up with the grooves in the pulley. If this is not done correctly, the belt cannot stretch enough for installation onto the driveshaft pulley.

Holding the belt taut with the pulley, the brush facing downward, slide the excess part of the belt over the driveshaft pulley, making sure the teeth of the belt align with the grooves in the driveshaft



pulley. Slide the pulley onto the bolt with spacer. Install the washer and flat nut. Tighten the flat nut by hand against the washer. Hold the flat nut in place with the provided wrench and tighten the acorn nut against it with another wrench.

2.4 Washer Installation

Older miniWIPER units may not have a washer underneath the spacer to prevent wear down of the spacer against the black plastic. PME has provided two washers should the washer wear down over time.

The wrench provided will secure the flat nut and a user-provided wrench will loosen the 'acorn' nut at the top of the bolt going through the pulley. Remove the two nuts, washer, pulley, and spacer from the bolt.

Place the washer on the bolt such that the flat side without markings is against the black plastic.

Place the timing belt on the new pulley such that the teeth of the belt are properly lined up with the grooves in the pulley. If this is not done correctly, the belt cannot stretch enough for installation onto the driveshaft pulley.

Holding the belt taut with the pulley, the brush facing downward, slide the excess part of the belt over the driveshaft pulley, making sure the teeth of the belt align with the grooves in the driveshaft pulley. Slide the pulley onto the bolt with spacer. Install the washer and flat nut. Tighten the flat nut by hand against the washer. Hold the flat nut in place with the provided wrench and tighten the acorn nut against it with another wrench.



CHAPTER 3: INTERNAL PARTS

3.1 Overview

This section describes the replacement of internal parts that requires the user to open the miniWIPER pressure case. To do so, hold the black end cap where the pulleys are located and unscrew the white pressure case.

3.2 Endcap o-ring replacement

Located in a groove in the endcap is an o-ring that prevents water from entering the pressure case. Over time this o-ring can wear down if it is not cleaned and oiled. Note the location of the o-ring such that the new one is installed in the exact location.

The o-ring should be easy to remove from the endcap by stretching it past retaining portion of the endcap. Carefully slide it along with circuit board such that no oil gets on the circuit board.

Clean out the o-ring groove such that there is no debris within it. Clean the endcap threads until they are free of debris. Clean and lightly oil the new o-ring. Slide it along the circuit board and then stretch it into place in the o-ring groove. Check for any debris. Add more oil if needed.

Clean the inside of the pressure case where the o-ring will be located. Make sure it is free of debris. Screw the pressure case back onto the endcap.

Enjoy your new miniWIPER for miniDOT Maintenance Kit!

