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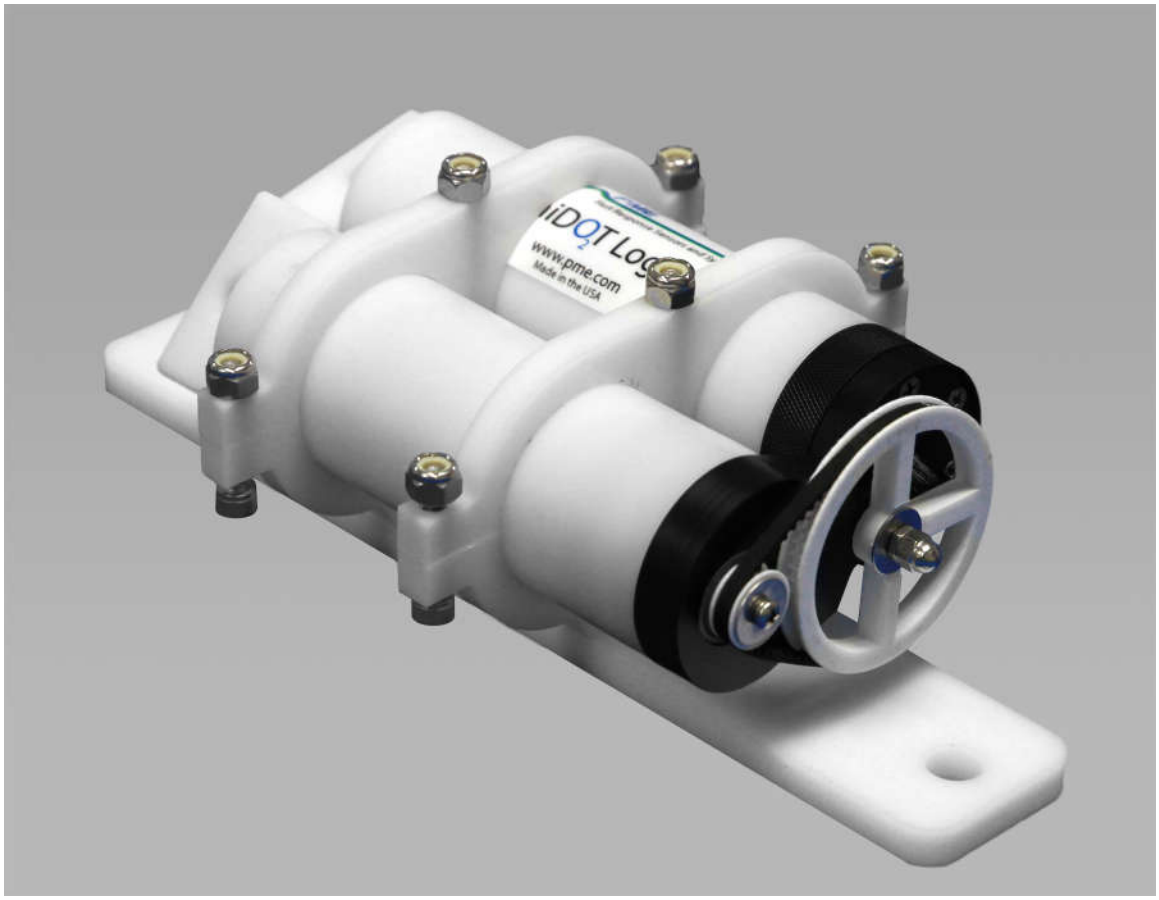
miniWIPER Maintenance Kit User's Manual



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.

Revision History

Date	Revision Description
2016JUL19	Initial document
2016AUG02	Added picture of the kit
2018FEB22	Added description of washer installation
2019JUL11	Removed information not needed

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Chapter 1: Overview

Your miniWIPER will provide a gentle brush action across the miniDOT 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

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

2.1 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, washer, and 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 taught with the pulley with 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.

2.2 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 both the 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 taught with the pulley with 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 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 both the 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 taught with the pulley with 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

This section describes the replacement of internal parts that require 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.

3.1 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 such that 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.

END OF DOCUMENT