

PULSE ENGINE HOURMETER PET-3200R

● Be sure to read all instructions before use and handle this product properly.
Keep this manual at hand for future reference.

⚠ DANGER !

- Turn off the engine before installing this unit. Installing it with the engine running may result in death or injury.
- Install this unit after the engine engine oil and coolant have cooled down. Otherwise, you may get burn.

⚠ CAUTION !

- Keep this unit out of reach of children to avoid accidental ingestion.
- Do not perform wiring with wet hands so as not to get an electric shock.
- Do not burn in an incinerator to avoid the risk of rupture.

- ◎ Please note that we are not responsible for any damages or lost earnings caused by this manual or by using this unit, or any claims made by third parties.
- ◎ The contents of this manual and the details of this unit are subject to change without notice for improvement.
- ◎ This manual has been created with utmost care to ensure its quality. However, if you have any questions or find any mistakes, please contact us.

● Handling instructions

- 1 Use this unit by winding an antenna lead around an ignition cable.
- 2 Install this unit such that the distance between the unit and the ignition cable is less than 50 cm.
- 3 Install this unit at a place where the temperature is below 60cm.
- 4 Install this unit at a place free from rain and rain drops to avoid malfunctions.
- 5 Avoid severe shocks.
- 6 This unit cannot be disassembled.
- 7 The battery cannot be replaced.
- 8 Note that we are not responsible for any accidents caused by improper use or any leakage such as caused by disassembly.
- 9 Do not wipe this unit with organic solvent such as thinner.
- 10 Install this unit at a place free from gasoline, oil, etc.

● Specifications

Measurable engine type	Gasoline						
Measuring method	Pulse detection system						
Indication of cumulative operating time : 0 to 9999 hours and 59 minutes	<table border="1"> <tr> <td>Ch. (hr.)</td> <td>0000</td> <td>00</td> <td>→</td> <td>9999</td> <td>59</td> </tr> </table>	Ch. (hr.)	0000	00	→	9999	59
Ch. (hr.)	0000	00	→	9999	59		
Reset function	Available (by using exclusive reset tool)						
Battery life	Approx. 5 years (after shipment from the factory)						
Operating temperature	-10°C ~ +60°C						
Storage temperature	-10°C ~ +60°C						
Water resistance	Splash-proof						
Dimensions (L×W×H)	30×30×15mm						
Main body weight	15 g						
Accessories	Antenna lead (50cm), Reset tool, Velcro Tapes A & B, Bundling band, Bundling band base, Rubber sheet, and instruction manual						

※ Do not use this unit on diesel engines or direct ignition engines.

● Features

This hourmeter counts and records cumulative operating time actuated by induction pulses from the ignition cable of engines.
You can easily measure the time simply by winding the antenna lead around the ignition cable.
If necessary, you can reset the measured data with the attached reset tool.

● Purpose of use

The unit can be used to judge the approximate timing of regular inspections and maintenance as well as for record-keeping. Also, it can be used for management of time such as the operating time of rental/lease products and endurance time of engine. Do not use this unit for improper purposes.

● How to install

- Using velcro tapes
 - 1 Connect one end of the antenna lead only to this unit, as shown in Figure 1.
 - 2 Remove any oil from the back surface of this unit with mild detergent, etc., and attach a velcro tape A (notched) to the back surface, as shown in figure 2.
 - 3 Attach a velcro tape A without covering the reset pins.
 - 4 Remove any oil from the adhering surface of this unit with mild detergent, etc., and attach a velcro tape B to a flat surface of the engine or the neighboring part.
 - 5 Select an installation location that leaves enough length for the antenna lead.

Install this unit preferably on a horizontal place, free from both vibration and high temperature. Otherwise, the unit may drop off.

- Using a bundling band (with velcro tapes)
 - 1 Connect one end of the antenna lead only to this unit, as shown in Figure 1.
 - 2 Remove any oil from the back surface of this unit with mild detergent, etc., and attach a velcro tape A (notched) to the back surface, as shown in Figure 2.
 - 3 Attach a velcro tape A without covering the reset pins.
 - 4 Remove any oil from the adhering surface of this unit with mild detergent, etc., and attach a velcro tape B to a flat surface of the engine or the neighboring part.
 - 5 Select an installation location that leaves enough length for the antenna lead.

- ③ Wind the attached rubber sheet around a pipe or other items (ignition cable, engine frame) by one or two turns, as shown in Figure 3, and cut off any excess.

- ④ Lace the bundling band through the rubber sheet to stop the bundling band slipping.
- 3. Set the bundling band over the rubber sheet on the pipe to be used, and tighten it to fix the bundling band base. (Make sure to check it is securely fixed. Also, cut off any excess.)
- ※ Select an installation location that leaves enough length for the antenna lead.
- ※ Install this unit preferably on a horizontal place, free from both vibration and high temperature. Otherwise, the unit may drop off.
- 5 Peel off the release paper from the bundling base and a velcro tape B, and stick them together.
- 6 Attach a velcro tape A of this unit to a mating velcro tape B.

● How to install

Figure 1.

- Using a bundling band (without velcro tapes)
 - 1 Connect one end of the antenna lead only to the unit, as shown in Figure 1.
 - 2 Wind the attached rubber sheet around a pipe or other items (ignition cable, engine frame) by one or two turns, as shown in Figure 3, and cut off any excess.
 - 3 Make sure to use the rubber sheet to stop the bundling band slipping.
 - 4 Lace the bundling band through the bundling band base, as shown in Figure 3. Set the bundling band over the rubber sheet on the pipe to be used, and tighten it to fixed. Also, cut off any excess.)
 - 5 Select an installation location that leaves enough length for the antenna lead.
 - 6 Remove any oil from the back of the unit with mild detergent, etc., peel off the release paper from the bundling band base and attach the unit to it.
 - 7 To reset the unit, you need to detach the bundling band from the unit, which means you will have to buy a new bundling band / bundling band base. (Once it is detached, the adhesive force of the bundling band base is weakened significantly.)

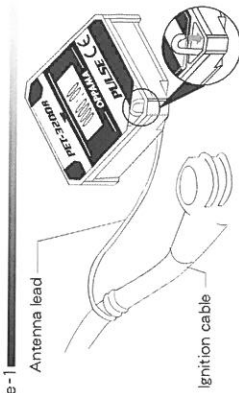


Figure-1

- How to use
 - 1 Wind the other end of the antenna lead around the ignition cable by three turns and fix it temporarily, as shown in Figure 1.
 - 2 Once the engine is started, a colon (:) on the LCD panel starts blinking to show that the unit is in operation.
 - 3 When the engine is shut off, the colon also stops blinking to show that the unit is out of operation.
 - 4 The unit counts cumulative operating time 0000:00 to 9999:59 and automatically returns to 0000:00.
 - 5 If the remaining battery level becomes low, the left most number (thousand's digit) starts blinking, indicating that the battery will run out after approximately 3 months (Example: 234:56). At that time, replace the unit with a new one.

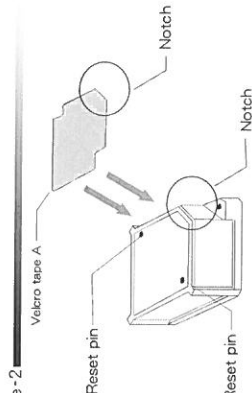


Figure-2

- Operation check
 - 1 Start the engine and check whether colon (:) on the LCD panel blinks with the engine idling (low speed) and at high-speed rotation. If the colon does not blink, wind the antenna lead around the ignition cable by a few more turns. (This will increase the intensity of the pulse signals.)
 - 2 Once the normal performance is confirmed, use insulating tape, etc. to fix the antenna lead around the ignition cable.
 - 3 As an initial check, compare the time displayed on the LCD panel with the actual

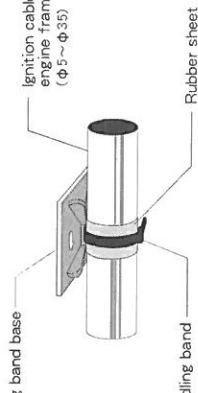


Figure-3

- How to reset
 - 1 Bring the reset tool into contact with the two reset pins on the back of the unit simultaneously, as shown in Figure 4.
 - 2 This will reset the indication to 0000:00.
 - 3 Save the data before you reset.

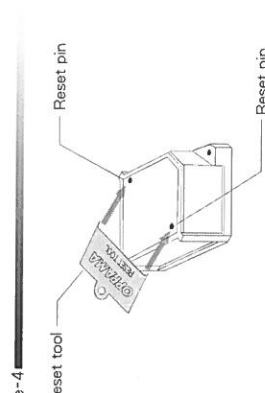


Figure-4

OPPAMA INDUSTRY CO., LTD.

1-4-2 Natsushima-cho, Yokosuka, Kanagawa
237-0061, JAPAN
phone : 81-46-866-2139
http : // www.oppama.co.jp
E-mail : info@oppama.co.jp
Fax : 81-46-866-3090

