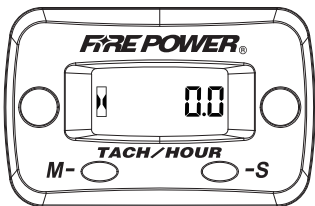


SELF POWERED DIGITAL TACH / MAINTENANCE / HOUR METER



Please read and understand the following notices carefully, and correctly install and operate the product before using.



1. Do not pull the wiring when using it to prevent it from falling off or poor contact affecting the operation.
2. Please install the product in a location prevents damage to the product.
3. The product should not be submerged in water for a long time. This may cause product failure.
4. Please use the product at the specified temperature, high temperature environment may cause damage to the product.

PRODUCT ACCESSORIES LIST

1 Product*1	2 3M adhesive velcro*2
	 3M Hook&Loop Loop side(Black)*1 3M Hook&Loop Hook side(Black)*1
3 User manual*1	4 Cable tie*2
5 Screws*2	6 Screwdriver*1
7 Inductive cable*1	

PRODUCT INSTALLATION

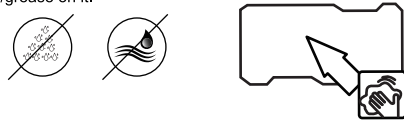
Product Installation

This product can be installed with double-sided tape or screws, the installation method is as follows:

1. Double-sided tape installation:

a) Clean the surfaces properly.

Note: Make sure the surface is flat and does not have oil/grease on it.

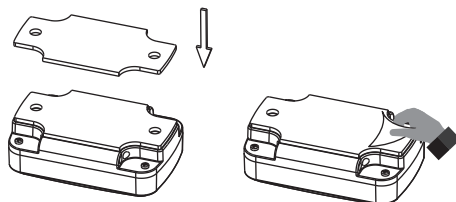


b) Remove protection from the double-sided tape.

Note: When removing the double-sided tape protector, make sure the double-sided tape is not exposed to water or oil/grease on either side.

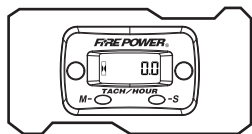
c) Stick the double-sided tape on the back of the product.

Note: Before pasting the double-sided tape, please make sure the back of the product is clean without moisture or oil/grease.

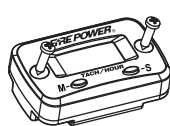


d) Fix the tach hour meter in the proper position.

Note: Before pasting the double-sided tape, please confirm that the mounting location is clean with no moisture or oil/grease.



2. Screw installation:



a) The design allows for surface mount.

b) Choose a location where the pick-up wire (included) will reach the meter and the spark plug.

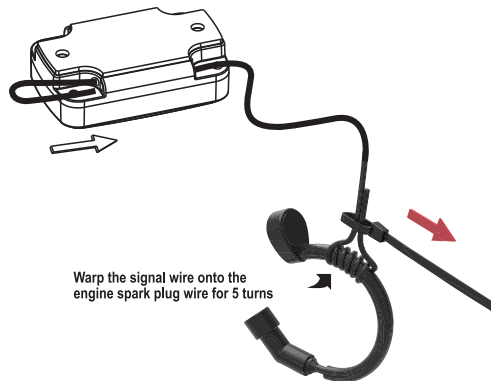
c) Install with the screws per the below diagram.

Note: Proper position requirement: No moisture, no grease, on a flat surface, no violent vibration, and the temperature must not exceed 125° F. Do not drill into the gas tank, engine crankcase oil reservoir, or other items which affect operation of the vehicle

3. Signal wire installation:

a) **Connecting wire to the meter:** Pass one end of the single wire through one of the sensing holes and insert the sensing wire into the other sensing hole.

b) **Signal wire connection:** Wrap the other end of signal wire around the spark plug wire, cap, or coil. Wrap it 4 to 5 turns, and fasten it with a cable tie to ensure it is effectively fixed and will not loosen. (If the connection is not strong, the tachometer will get insufficient signal, then the RPM and hour values will be inaccurate.)



Wrap the signal wire onto the engine spark plug wire for 5 turns

Note:

a) For traditional ignition modes, wrap signal wire 4 to 5 turns tightly around the engine spark plug wire.

b) For coil on plug ignition, wrap signal wire around the plastic coil above the spark plug.

c) The spark plug signal will be different for different types of engines. By adjusting the turns of winding, the appropriate adjustment can be made to improve the accuracy of the RPM and timing data.

d) Under normal conditions, if the RPM is a little low, you can increase the winding turns, if the RPM is a little high, you can reduce the winding turns.

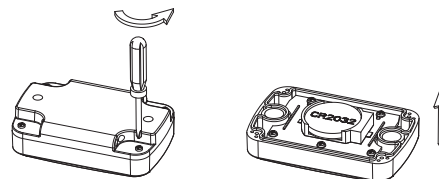
4. The test after the connection:

Start the engine, the LCD of the tach hour meter displays the RPM and timing, which means the connection is correct. If the RPM is inaccurate, adjust the turns of the winding, or set the type of the engine (more information will be provided in the following instructions).



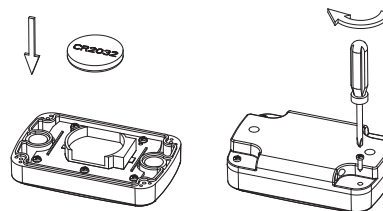
5. Battery replacement

- a) Use a screwdriver to open the back cover.
- b) Install a new battery.



c) Install or check that the seal is good.

d) Secure the back cover with a screwdriver.



PRODUCT USAGE

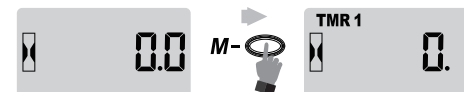
1. Hours— Total hours of operation.

- TOT time can not be reset.
- The TOT time max value is 99999; When the total timing range is 0.0-9999.9H, the timing accuracy is 0.1H; When the total timing exceeds 9999.9H, the timing accuracy is 1H.
- When the total time exceeds 99999 hours, the timing will restart from 0.



2. TMR1— Hours of operation since the timer was reset.

- To view "TMR1" time: Press the "M" button once to view the TMR1 time.

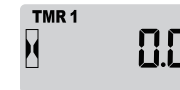


Press the button once

- To reset "TMR1" time: Press and hold the "S" button until display shows "00000", then release the button, the "TMR1" display will reset to "0.0", and you will begin to record the next job interval.



Press and hold the button



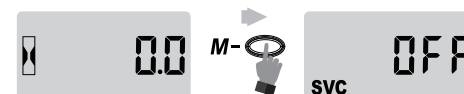
3. SVC— Maintenance interval time.

Note: Timing is countdown.

- When the maintenance interval time is reached, the LCD display is flashing, press the button to clear the status, then the next maintenance interval time starts.

■ Programming SVC time:

- a) Press the "M" button twice to get the "SVC OFF" display.



Press the button twice

b) Press and hold the "S" button until the display shows the "OFF" icon and it starts flashing, release and press "M" or "S" button until you get desired numerical value.

c) Release the button and wait for 10 seconds. The display will return to total hours (The setting of the SVC timer is completed).

d) The SVC time setting range is 0-2000H. If the time is set to OFF, which means the SVC function OFF.



Press and hold the button

4. RPM—Typical RPM display during operation of the engine.

- When the tach hour meter detects the engine spark plug signal for more than 1s continuously the LCD will display the current RPM of the engine.
- The RPM will be refreshed every 0.5s.
- The RPM can be programmed for different pulses per revolution; Different programming setting will change the RPM.

- **Programmable firing patterns**— Determined the amount of sparks per engine revolution.

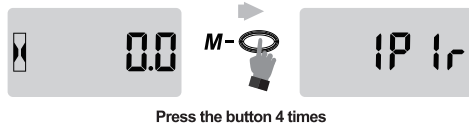
This product provides 9 programmable firing patterns, which can be selected according to the corresponding relationship in the form below.

Engine firing patterns	Engine type	Spark plug firing and engine rotate laps	RPM Capacity
1P1R	4 stroke 2 cylinder	1 spark per revolution	25000
	2 stroke 1 cylinder		
1P2R	4 stroke 1 cylinder	1 spark 2 revolution	25000
2P1R	4 stroke 4 cylinder	2 spark per revolution	15000
	2 stroke 2 cylinder		
3P1R	4 stroke 6 cylinder	3 spark per revolution	10000
	2 stroke 3 cylinder		
3P2R	4 stroke 3 cylinder	3 spark 2 revolution	20000
4P1R	4 stroke 8 cylinder	4 spark per revolution	7500
5P2R	4 stroke 5 cylinder	5 spark 2 revolution	12000
6P1R	4 stroke 12 cylinder	6 spark per revolution	5000
	2 stroke 6 cylinder		
8P1R	4 stroke 16 cylinder	8 spark per revolution	3750

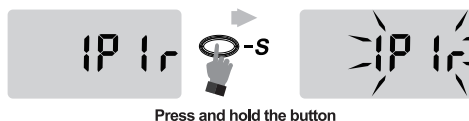
Note: Some 4 stroke 1 cylinder engine is 1P1R, the setting is the same way as the 2 stroke 1 cylinder engine.

- **To set the tachometer (Spark plug firing revolution):**

- a) Press the "M" button 4 times until display shows "1P1r" icon.



- b) Press and hold the "S" button until the display shows "1P1r" icon and starts flashing, release and press the "M" or "S" button to toggle through all engine firing patterns.
c) Stop at the correct firing pattern setting for your engine.
d) Wait for 10 seconds and the display will return to display total hours. (The setting of firing patterns is completed)



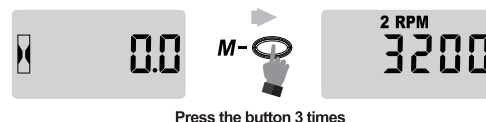
Note: If the obtained RPM is not accurate, for example, the RPM is half of the actual RPM, you can adjust it by programming the firing patterns.

5. 2 RPM—Display the maximum RPM recorded.

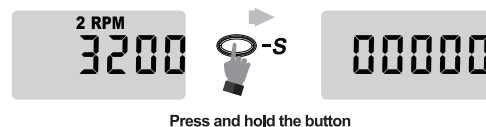
During the last period of operation.

- a) **To view MAX RPM:** Press the "M" button 3 times until the display shows "2 RPM".

Note: After the external signal is cut off, the Display will showed historic MAX RPM value 5S, then return to display total hours.

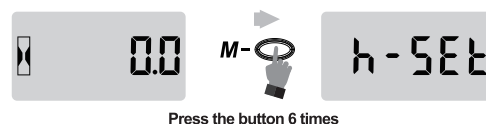


- b) **To reset MAX RPM:** Press and hold the "S" button until the display shows RPM "00000", MAX RPM is reset.

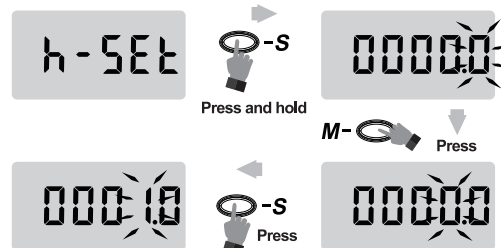


6. Hour meter initial time setting- You can program the start hours (old hour meter data) to replace an old hour meter.

- a) Press the "M" button 6 times until the display shows "h-SEt" icon.



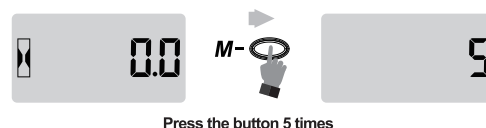
- b) Press and hold the "S" button until the last digit in "0000.0" starts to flash, release and press "S" button to get the number you want, then press the "M" button, the next digit will start to flash, press the "S" button to get the number you want, repeat this operation until the setup is complete.
c) Release the button and wait for 10 seconds and the display will return to total hours. (The setting of the hour meter initial time is completed)



Note: The initial time setting will not be set again after 1 hour of engine operation.

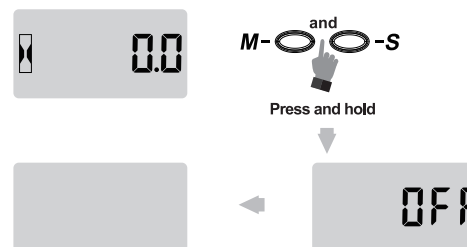
7. Record the times of engine starts.

- Press the "M" button 5 times to get the number on the display screen to indicate the number of engine starts



8. To shut down LCD display.

- a) Press the "M" and "S" button at the same time until the "OFF" icon is displayed on the screen, then release the button and the LCD display will shut down automatically
b) Once the product detects continuous engine signals within 8 seconds press the "M" or "S" button again, the LCD screen will be displayed.
c) When LCD screen is closed, the historical data will be retained and will not be cleared.



9. Replace battery reminder.

- When the flashing "bl-Lo" icon appears on the display screen, it indicates low battery.
- After replacing the battery, the previous data will be retained.



10. Extend the service life of the product.

- **To extend the life of your product, you can apply these activities**

- a) Minimize prolonged exposure to an extremely humid environment— there is a risk of moisture intruding inside the product, causing the product to consume more electricity.
b) Avoid installation of the product in a high temperature environment (exceeds 125°F) high temperature environment will increase the risk of increasing the discharge rate of the internal battery CR2032.
c) Minimize the frequency of button operations— continuous button operation and function switching, will increase the power consumption.
d) Minimize the measurement at high speed (more than 15000RPM)— ultra-high engine RPM requires Significant calculations for the meter which will increase the power consumption.

PRODUCT ACESSORIES LIST

ITEM NAME	PARAMETERS
Product model	RL-HM068
Product type	Inductive Tach Hour Meter
TOT hours range	0-99999H
TOT initial time range	0-99999.9H
TMR1 hours range	0-99999H
SVC hours range	0-2000H
RPM range	0-25000RPM
Firing patterns	1P1R 1P2R 2P1R 3P1R 3P2R 4P1R 5P2R 6P1R 8P1R
Working times range	0-99999
Battery type & capacity	CR2032 210mAh
Display window size (viewable)	25x12.7mm
Housing material	ABS
External dimensions	57x36.5x17.3mm
Weight	57g
Waterproof rate	IP67

TROUBLESHOOTING

