

# FLAT

FULL AUTO TURBO TIMER

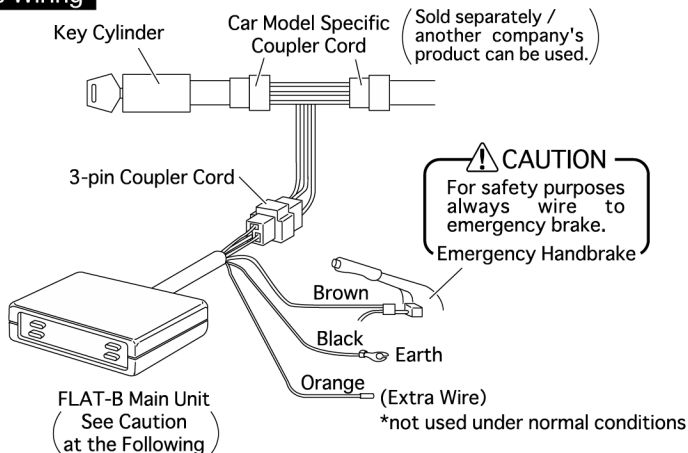
## (FLAT-B) User's Guide

Thank you for purchasing our Turbo Timer. Please carefully read this user's guide before installing the device. PIVOT CORP does not accept any responsibility for damage or malfunction caused by the installation of this product.

<b>KIT CONTENTS</b>	<ul style="list-style-type: none"> <li>• FLAT-B (Main Unit) × 1</li> <li>• Wire Connector × 1</li> <li>• Double-sided Tapes × 2</li> </ul>	<ul style="list-style-type: none"> <li>• User's guide</li> </ul>
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### Installation Instructions

#### Basic Wiring



#### Explanation of Wires from Main Unit

- |                                  |                               |
|----------------------------------|-------------------------------|
| Red= key switch off ⊕ 12V        | Black= body earth             |
| Yellow= ignition switch on ⊕ 12V | Brown= Emergency Brake Switch |
| Blue= ACC or Ignition 2 ⊕ 12V    | Orange= extra wire            |

#### CAUTION

Before installing the unit make sure it works well in Full Auto Mode and make any necessary adjustments.

#### Installation Procedure

\*\* When installing use a coupler cord specific for you model car.

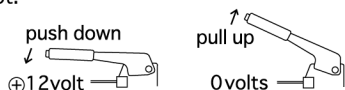
#### CAUTION

1. For safety purposes disconnect the ⊖ terminal of the battery while installing.
2. When checking the connection, be sure to reconnect the terminal.
3. Make sure to securely connect any coupler cord or wire connector to prevent any bad connections or shorts.

1. Disconnect the coupler cord that runs to the key cylinder and between the two cords; connect the new car model specific cord.
2. Connect that new cord to the 3-pin coupler cord coming out from the FLAT-B Main Unit.
3. Connect the black wire to the earthing screw in the car body.
4. Connect the brown wire to the handbrake; make sure to securely fasten it either by soldering or by using the wire connector included in the kit.

#### ● Checking the handbrake connection spot.

With the key switch on (but not the engine) pull up to cut voltage and push down to engage 12V power.



**CAUTION** If for some reason it is impossible to connect to the handbrake make sure to earth the brown wire.

To help prevent accidental movement of the car while the timer is running make sure to connect to the handbrake switch. If the connection is not done or not done properly, the timer may not work and the display will appear as at right.

- P -

**CAUTION** After finishing all of the wiring and before you install the main unit with the double-sided tape, make sure to carry out the steps outlined in [Full Auto Mode Check and Adjustments]

#### How to use the Wire Connectors

※ If soldering is possible, please do so.

##### Method 1 Connecting a new wire to the middle of another wire.

- ① Peel off about 10mm of the vinyl cover at connection.
- ② Peel off about 10mm of the vinyl cover at the end of the wire to be connected.
- ③ Twist the uncovered wires.
- ④ Close tightly with wire connector.

##### Method 2 Connecting two wires at their ends.

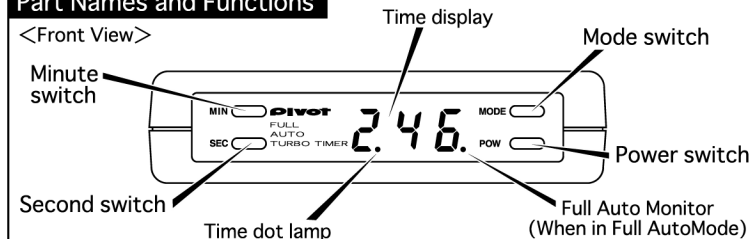
- ① Twist the uncovered wires.
- ② Twist the uncovered wires.
- ③ Close tightly with wire connector.

※ Use a crushing tool to press the wire connector. If you do not have such a tool, use pliers or such to fold and crush the connector together for a secure contact.

※ Loose connections can cause wire to come apart, so please make sure the connection is secure.

Be sure to insulate and secure with vinyl electrical tape.

#### Part Names and Functions

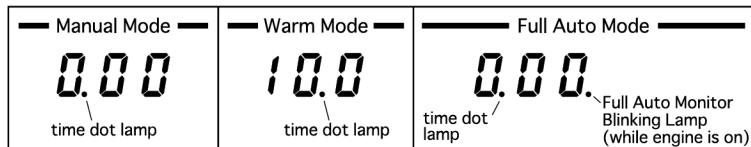


- Power Switch- Turn On and Off
- Auto Switch- Manual Mode (0~9m50sec)/Warm Mode (10min~19m50sec) Switch for all modes in Full Auto (Pressing switches mode)
- Minute Switch- For setting minutes in Manual Mode (0~9m50sec) and Warm Mode (10min~19m50sec)
- Second Switch- For setting seconds Manual Mode(0~9m50sec)/Warm Mode (10min~19m50sec)
- Time Display- Displays time settings for each mode. Countdown function when timer is running.

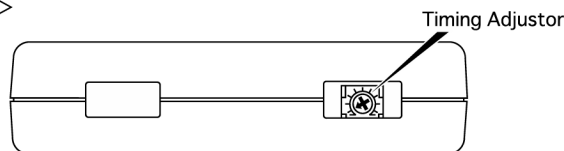
#### ABOUT COUNTDOWN FUNCTION

In Full Auto and Manual modes display is in 1 second units. In Warm mode and set over 10 minutes the countdown display is in 10 second units; from 9min 50 sec it counts down in 1 second units.

- Time dot- Position changes in different modes. (See diagram below.)



#### <Rear View>



- Timing Adjustor= Used to ensure proper functioning in Full Auto Mode

**NOTE** Under normal conditions there is no need to touch this.

#### WARNINGS FOR USING TURBO TIMER

To ensure safe use of our product please be careful about the following

##### STEERING WHEEL LOCK

Be careful to turn off power switch of timer before locking the steering wheel. Using the timer with the lock on could be dangerous, if the car begins to move.



##### DO NOT USE IN CONFINED SPACES

Do not use in areas where exhaust may cause poisoning or in areas where things may become inflamed easily.



##### TURN OFF POWER SWITCH IF OTHERS WILL BE USING VEHICLE

To ensure that no accidents occur while others are using your car, be sure to turn off the power switch of the timer.



##### DO NOT USE IF PEOPLE ARE REMAINING IN CAR WHILE PARKED

Especially do not use if small children may be left alone in car while parked.



**FULL AUTO MODE**

In Full Auto Mode idle time is automatically calculated to match driving conditions. In traffic jams, waiting for traffic lights or driving at slow speeds the timing will be adjusted to be slower and the display will appear less. At high speeds or in mountain roads where rpm is higher the display will appear more. Even when not set for Full Auto Mode or when the power switch is off, idling time will be calculated automatically.

- ① Press in **POW** to turn on. (Time display will appear.)
- ② Press in **AUTO** to switch into Full Auto Mode.  
Each press of the button will result in a switch of modes. Manual- Warm- Full Auto- Manual, etc... In Full Auto Mode the Full Auto Monitor Lamp will blink.
- ③ Put car in motion. According to driving conditions the best idling time will be automatically calculated and adjusted. The display will reflect this calculation.
- ④ Stop the car, pull on handbrake and turn off key switch.
  - If a time is displayed it means the timer is still working (countdown will be displayed), once displayed time has elapsed engine will turn off.
  - If display is 0.00 and key is turned off engine will be turned off.

**MANUAL / WARM MODE**

- ① Press in **POW** to turn on. (Time display will appear)
- ② Press **AUTO** to switch to desired mode. (Check position of time dot lamp)
- ③ In Manual Mode settings can be made in 10-second intervals from 0 ~ 9m 50sec.  
Select desired timing by pressing in **MIN** and **SEC**.  
In Warm Mode settings can be made in 10-second intervals from 10 minutes to 19m 50sec. Select desired timing by pressing in **MIN** and **SEC**.
- ④ Stop the car, pull on handbrake and turn off key switch.  
If a time is displayed it means the timer is still working (countdown will be displayed), once displayed time has elapsed engine will turn off.

**CAUTION**

1. When activating timer, after placing manual transmission cars in neutral or making sure automatic transmission cars are in neutral or park, pull on handbrake and then activate.
2. If timer is running and handbrake is put down (released) the safety mechanism will be activated stopping the timer and the display at right will appear.
3. When wanting to cut the engine while the timer is running, press POW to turn off timer.

Depending on Handbrake position Displayed when stopped.



**Troubleshooting** \*\*Please make the following checks before seeking repair.

Trouble	Possible Cause
With key on, power switch was pressed, but no display appears.	*Check black wire (earth) connection. *The wrong Model Specific Coupler Cord has been used.
The timer works but the engine stalls.	*The wrong Model Specific Coupler Cord has been used. (See NOTE below)
The timer display reads -P- and doesn't work.	*The handbrake has not been pulled up far enough. *Check brown wire connection.
In the FULL AUTO MODE, the FULL AUTO MONITOR LAMP does not blink.	*Check mode switch to make sure it is in Full Auto Mode. *Engine is turned off.
Full Auto Mode is not working properly.	*The auto detection signal is too weak for auto calculation function. See [Full Auto Mode Check and Adjustments].

**NOTE**

This unit has an automatic re-set function that is activated to protect the unit when there is an unusual overflow of voltage from the battery. Sometimes this will cause settings to return to 0 in Manual and Warm Modes. If this occurs please check car battery.

**Cars with Automatic Light Controller**

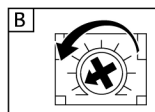
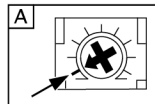
In some cars which have an automatic light controller when the lights are on (in automatic control mode), after having used the main unit and the timer has finished the lights will remain on even after the engine has stopped. Please be sure to turn off headlights when using the main unit.

**CHECK STEP 1** Leave car in parked position with car at 2500-3000rpm for 1-3 minutes. If the timing display goes up it is working properly.

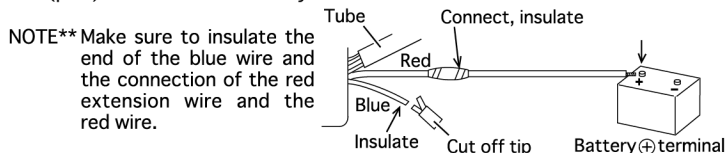
**1 If rpm's increase but timing does not.**

If after checking as above and the timing does not increase, the detection signal may be too weak and must be adjusted as follows:

- ① Check the Timing Adjustor at back of the Main Unit.
  - a. If the adjustor is turned all the way to the left try moving it one notch to the right (Figure A see arrow) and try checking again. (This is the best position for checking the detection level.)
  - b. If the adjustor is turned to the right side, slowly turn to the left and stop when idling time is increased. (Figure B)



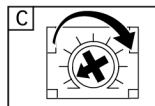
- ② If nothing changes after carrying out the above, take the red and blue loop wire from black tube that holds all the wires. Cut off tip, use an extension cable about the same diameter as the red cable and connect it directly to the + (plus) terminal of the battery.



NOTE\*\* Make sure to insulate the end of the blue wire and the connection of the red extension wire and the red wire.

**2 If the idling display increases too much.**

Slowly turn the adjustor at back of Main Unit to the right and stop when idling level is correct. (Figure C)

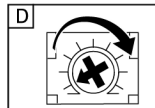


**CHECK STEP 2** After the display has increased, leave car in idling position. If after a short time the display returns to 0.00, the unit is working properly.

**3 If the display does not return to 0.00**

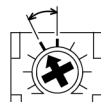
Slowly turn the adjustor at back of Main Unit to the right and stop when display returns to 0.00. (Figure D)

NOTE\*\* If an adjustment has been made please carry out CHECK STEP 1 again.



**ADJUSTMENTS FOR SUBARU CARS**

If the main unit has been installed in a SUBARU car, in most cases the display will not return to 0.00. If this occurs try adjusting to position as in figure to right. This will usually work. (If display does return to 0.00 do not worry about adjusting in this method.)



**NOTE**

1. Be careful not to turn the adjustor too far to the right; it may cause a lack of increase in the timing when the car is moving.
2. For some models of car, the automatic choke, air conditioner, or fan being on may cause an increase in the timing. This is not a malfunction.