12oclockLabs

Gear Position Indicator Features

Works for any speed transmission, up to 9 gears.

14 Super bright LED's for excellent direct sunlight visibility.

Auto-dimming for great night time visibility.

Over 200 automatic dimming levels to compensate for any ambient light condition.

Automatic learning mode for easy gear teaching setup.

Fast internal processing for immediate gear detection and display.

Compact 20mm x 20mm x 13mm size.

Why 12oclockLabs?

Cost Effective:
Feature rich cost effective engineering with solid reliability.

Simple:
Easy to setup, easy to use, easy to install.

Tiny:
Many Features packed into a small and compact size.

Quality:
Only the highest quality components have been selected, to ensure stable long life operation.

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3 Year Limited Warranty
www.12oclockLabs.com

MADE IN U. S. A.

12oclockLabs

Gear Position Indicator

Model: **GPI-G01**

Honda CRF250L (2017-2019)
Honda CRF250L Rally (2017-2019)
Honda Grom (2017-2019)
Honda CB1000R (2008-2016)
Kawasaki Ninja 1000 (2011-2013)

Also Fits...
Any motorcycle with a speed signal wire and tachometer signal wire going to the gauge cluster.

Gear Indicator

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GPI User Manual v1.0 f1.095 r180815

Installation (Step 1):

Make sure vehicle ignition switch is OFF before proceeding. Remove necessary parts from motorcycle to gain access to gauge cluster wiring. Use a factory wiring diagram or service manual to see what color wires you will need to connect to on your motorcycle. Use the provided posi-tap connectors for install, they require no special tools and no manually wiring splicing is needed. Stagger the posi-tab connectors during install so they consume less space. Use the double sided foam tape to securely mount the GPI somewhere on your motorcycle.

CB1000R Wire Colors	GPI Wire Colors	Description
Black / Brown Tracer	YELLOW	Ignition Switched 12v Source
Green / Black Tracer	GREEN	GROUND
Yellow / Green Tracer	BROWN	RPM / Tachometer Signal
Pink / Blue Tracer	WHITE	Speed Signal
	GRAY	Programming Wire

GPI Setup (Step 2):

1. Turn on the ignition switch (Do NOT start engine). You will see a 'P' on the screen. (Note: If the 'P' is upside down, see "Setup Menu" section on next page to change the Screen Flip setting.)
2. If you roll the vehicle, the P should change to a '||' symbol, this indicates the Speed wire is connected correctly. If you do not see the '||' you are not rolling quick enough or your wiring needs checked.
3. Now start the engine while in neutral and vehicle is NOT moving. The screen will show 'H', this indicates the RPM wire is connected correctly. If you do not see the 'H', check your wiring.
4. If your transmission is NOT a 6 speed, see "Setup Menu" section on next page to change the Transmission gear setting.

Learning Mode (Step 3):

1. Make sure to pay attention to the road at ALL TIMES during learning mode. It's best to find a road clear of traffic and at least a mile long. You could also use a rear stand if you have one.
2. Turn on the ignition switch, after the boot-up pattern you will see a 'P' on the screen. Start your engine, then shift into first gear and start driving, try to drive steady and smooth, you have 3 full seconds to stabilize your speed before the device starts learning the gear data. While the gear data is being learned you will see a triple equal sign, it takes up to 10 seconds to learn a gear.
3. After the gear is learned you will see L on the screen for 'Learned', now you can shift into the next gear. Repeat until all gears are learned.
4. If you must stop the vehicle during learning mode, learning automatically restarts, and an H is displayed on the screen. You must then start at 1st gear again.
5. Once learning mode has learned the last gear, the device will exit learning mode and start displaying gear positions. You can continue riding, setup is complete.
6. Once you come to a complete stop, you must use your Ignition switch to turn off the bike, Do NOT use the kill-switch. Otherwise learning mode might restart.
7. If you need to restart learning mode during your test ride, you can pull over, and use the Kill-Switch to stop the engine (make sure the ignition switch remains ON). Roll the motorcycle with the engine off until you see a '||' symbol on the screen, you can then stop rolling. You will now see a 'P' on the screen, learning mode has been reactivated. Start the engine and proceed with learning mode again.
8. If you need to restart learning mode and you accidentally turned off your ignition switch after your test drive, see "Setup Menu" section on next page to set the Transmission gear setting. Once you select how many gears your transmission has, learning mode will automatically reactivate, and remain activated (even if the device loses power) until learning mode has completed.

Learning Mode Info: *Display Character Descriptions*

L Learned gear OK; the device is ready for you to shift into the next gear.

H Bike has halted while in learning mode. Engine is Running. Learning mode has reset, and ready to start from first gear again.

≡ The device is learning your gear ratio, try to drive steady and smooth.

|| Engine is NOT running, ignition switch is ON, and vehicle is moving.

Rules for Learning Mode:

- Do not start engine until you are ready to drive normally, walking the vehicle while engine is running can cause learning mode to begin learning incorrect data.
- Do not pull in the clutch and rev the motorcycle engine during learning mode, only use the clutch to change gears. Try to release clutch as quickly as possible, do not "ride the clutch".
- Do not shift back down into the lower gears until learning is complete, do not skip gears when shifting.
- You must stay in each gear until **L** is displayed on the gear indicator, it typically takes about 10 seconds for a gear to be learned.
- If the bike stops moving during learning mode, 'H' will be displayed on the screen and learning automatically restarts, you must start over at 1st gear again if this happens.

Normal Gear Display Mode Info: *Display Character Descriptions*

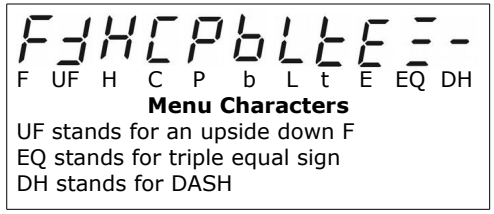
- (dash) means the bike is not moving, or motor is not running.
(blank screen) means the device is searching for a gear ratio

1 (any digit) device is displaying what gear it detected your vehicle is in.

SEUP MENU

To enter a specific setup mode...

1. Make sure ignition switch is OFF
2. Hold programming wire to ground
3. Turn ignition switch ON (do not start engine)
4. Continue holding wire to ground even during the boot pattern.
5. When letter on the screen matches desired setup mode, release the programming wire from ground.



Menu Characters

UF stands for an upside down F
EQ stands for triple equal sign
DH stands for DASH

(see setup mode descriptions below, and see matching character screen representations in upper right of page.)

F Screen Flip Normal: set display readout to normal orientation.

UF Screen Flip Upside Down: set display readout to upside down orientation.

H Hard Reset: reset to factory defaults, and enter into learning mode for 6 gears.

C Check Settings: display the current **t** value, **P** value, **L** value, and **b** value.

P Percentage Ratio: adjusts gear detection ratio sensitivity in learning mode. [default is 2]
0 being most sensitive [1% ratio change detection]
9 being least sensitive [10% ratio change detection]

L Lock Measure: Adjust how many milliseconds of measurements are required before we determine what gear we are in. [default is 3] [0=100ms, 9=1000ms]

b Lock-Break: Milliseconds of dis-agreeing measurements required before we determine we have lost gear lock. [default is 4] [0=100ms, 9=1000ms]

t Transmission: select how many gears your vehicle transmission has.

E Exit the setup menu.

Notice: For modes **P**, **L**, **b** and **t**. The number zero will automatically start flashing once one of these modes are entered, this means the device is ready for a number selection, hold the programming wire to ground and the numbers will begin incrementing, release the programming wire from ground to select a desired number. If you miss the number continue holding the wire and the counting will recycle.

Advanced Menu Features: *Percentage Ratio, Lock Measures, and Lock-Break,* are advanced features, and should normally not be modified by the end user. Customized applications of the GPI device may require adjusting these parameters, which is why they are supplied. The default value for both of these features is **P**=2, **L**=3, **b**=4.

Automatic Screen Brightness: Each time the screen state changes (screen state changes when you change gears), a light level sensor inside the screen measures the ambient light outside, and will automatically adjust the screen brightness. There over 200 levels of automatic brightness adjustment, to compensate for very bright sunlight viewing or dark night viewing.

Normal Operation: This device measures the Speed and RPM of the motorcycle to detect what Gear you are driving in. For this reason it is required for the motorcycle to be moving, the clutch lever to be released, and the transmission to be shifted into a gear in order for the device to detect and display what gear you are in. Once you shift into a gear and release the clutch lever the device will calculate and display the gear typically within a fraction of a second. At times during shifting or while the clutch is pulled in, the device will either display a blank screen, or it may display various gear numbers until you release the clutch and allow the device to calculate a gear lock.

Troubleshooting: If the device is not performing as expected, wiring problems is the most common cause, double check all wiring connections, vehicle vibrations could cause a loose connection to becoming intermittent during a ride, causing strange effects. If you have having trouble entering into the programming menu, find a better ground connection for your programming wire. If you are coasting or revving the engine with the clutch pulled in (not considered normal operation), be advised this could cause the GPI device to find a ratio match and display an incorrect gear position; this is not a malfunction. When the clutch lever is released while driving the device will always show the correct gear position.

CB1000R (2008-2016) Install Instructions

1. Watch the 3 install videos at 12oClockLabs.com/gpi_install.htm
2. Remove the HeadLight shroud.
3. Clean the top of your Honda logo which is in the middle of your handlebar clamp. Use the double sided tape to attached your GPI device over top of the Honda logo. Make sure the wires are protruding downward from the GPI device during mounting.
4. Run the GPI wire harness to the headlight area where the Gauge cluster connector is located. Install the posi-tap connectors using the wiring information below. It is typically a good idea to stagger the posi-tap connectors as you install them on each wire in the harness, so they are not bunched together consuming more space than necessary. After all the posi-taps are installed, wrap them with electrical tape to for added protection from weather.

```
GPI Wire YELLOW -> Gauge Cluster Harness Wire Black/Brown Tracer
GPI Wire GREEN  -> Gauge Cluster Harness Wire Green/Black Tracer
GPI Wire WHITE  -> Gauge Cluster Harness Wire Pink/Blue Tracer
GPI Wire BROWN  -> Gauge Cluster Harness Wire Yellow/Green Tracer
GPI Wire GRAY   -> programming wire, tape off until needed
```

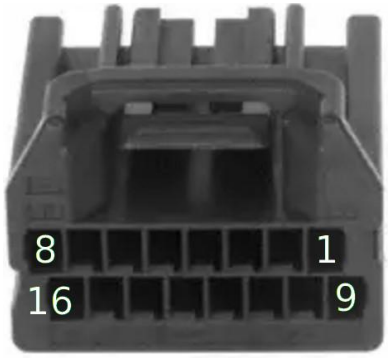
5. You can now proceed with learning mode.... IMPORTANT NOTE: NEVER turn your ignition switch OFF until you have confirmed ALL gears have been learned and are working correctly!! You can restart leaning mode by using the Kill-Switch, and rolling the motorcycle until you see "**||**" on the screen. If you accidentally turn the ignition switch off and learning mode completed but a mistake was made and not all gears are correctly learned, you should drive back to your garage and access the programming wire to perform a "hard reset" to get the device back into learning mode.

Install Instructions
CRF250L & Rally (2017-2019) / Grom (2017-2019)

1. Watch the 3 install videos at **12oClockLabs.com/gpi_install.htm**
2. Remove the HeadLight shroud.
3. Clean the bottom middle of your speedometer gauge using alcohol and a paper towel. Use the provided double sided foam tape to attached your GPI device under the speedometer gauge (see picture below). Make sure the wires are protruding downward from the GPI device during mounting.
4. If your kit contains an in-line Gauge Connector, unplug your speedometer gauge connector and plug-in the in-line gauge connector. Plug the GPI wire harness into the in-line gauge connector. If your kit contains posi-taps install the posi-tap connectors using the wiring information below. It is typically a good idea to stagger the posi-tap connectors as you install them on each wire in the harness, so they are not bunched together consuming more space than necessary. You will need to unwrap some of the factory electrical tape to access the wires on the gauge connector. Refer to the picture diagram on the connector below to location pin slots, this pictures show the back of the connector where the wires would go in (although there are no wires in the pictured connector). After all the posi-taps are installed, wrap them with electrical tape for added protection from weather.

```
GPI Wire YELLOW -> Gauge Cluster Connector Pin10 Black Wire
GPI Wire GREEN  -> Gauge Cluster Connector Pin15 Green Wire
GPI Wire WHITE  -> Gauge Cluster Connector Pin1 Black wire
GPI Wire BROWN  -> Gauge Cluster Connector Pin6 Black/Yellow Tracer
GPI Wire GRAY   -> programming wire, tape off until needed
```

5. You can now proceed with learning mode... IMPORTANT NOTE: NEVER turn your ignition switch OFF until you have confirmed ALL gears have been learned and are working correctly!! You can restart leaning mode by using the Kill-Switch, and rolling the motorcycle until you see "**||**" on the screen. If you accidentally turn the ignition switch off and learning mode completed but a mistake was made and not all gears are correctly learned, you should drive back to your garage and access the programming wire to perform a "hard reset" to get the device back into learning mode.



Ninja 1000 (2011-2013) Install Instructions

1. Watch the 3 install videos at 12oClockLabs.com/gpi_install.htm
2. Remove the windscreen and shroud covering the gauge cluster, see lower left picture.
3. Mount the GPI screen using the double sided 3M mounting adhesive, recommend location is seen in lower right picture, remember to clean the mount location first to ensure a reliable mount. Make sure the wires are protruding downward from the GPI device during mounting.
4. Run the GPI wire harness to the Gauge cluster connector location. Install the posi-tap connectors using the wiring information below. It is typically a good idea to stagger the posi-tap connectors as you install them on each wire in the harness, so they are not bunched together consuming more space than necessary. After all the posi-taps are installed, wrap them with electrical tape to for added protection from weather.

```
GPI Wire YELLOW -> Gauge Cluster Harness Wire Brown / White tracer
GPI Wire GREEN  -> Gauge Cluster Harness Wire Black / Yellow tracer
GPI Wire BROWN  -> Gauge Cluster Harness Wire Red / Yellow tracer
GPI Wire WHITE  -> Gauge Cluster Harness Wire Pink
GPI Wire GRAY   -> programming wire, tape off until needed
```

5. You can now proceed with learning mode.... IMPORTANT NOTE: NEVER turn your ignition switch OFF until you have confirmed ALL gears have been learned and are working correctly!! You can restart leaning mode by using the Kill-Switch, and rolling the motorcycle until you see "||" on the screen. If you accidentally turn the ignition switch off and learning mode completed but a mistake was made and not all gears are correctly learned, you should drive back to your garage and access the programming wire to perform a "hard reset" to get the device back into learning mode.

COLOR VERSION OF THIS MANUAL AVALIABLE AT:
12oclocklabs.com/manuals

Example Install Instructions for all other motorcycles
(your motorcycle must have a speedometer signal wire and tachometer signal wire going to your gauge cluster)

1. Watch the 3 install videos at 12oClockLabs.com/gpi_install.htm
2. Normally you would need to remove the windscreen and shroud covering the gauge cluster, see an example in lower left picture, your motorcycle may vary.
3. Mount the GPI screen using the double sided 3M mounting adhesive, example mount location is seen in lower right picture, remember to clean the mount location first to ensure a reliable mount. Make sure the wires are protruding downward from the GPI device during mounting.
4. Run the GPI wire harness to the Gauge cluster connector location. Install the posi-tap connectors using the wiring information below. It is typically a good idea to stagger the posi-tap connectors as you install them on each wire in the harness, so they are not bunched together consuming more space than necessary. After all the posi-taps are installed, wrap them with electrical tape to for added protection from weather.

```
GPI Wire YELLOW -> Gauge Cluster Harness (Ignition Switched 12v)
GPI Wire GREEN  -> Gauge Cluster Harness (Ground)
GPI Wire WHITE  -> Gauge Cluster Harness (Speedometer Pulse Signal)
GPI Wire BROWN  -> Gauge Cluster Harness (Tachometer Pulse Signal)
GPI Wire GRAY   -> programming wire, tape off until needed
```

5. You can now proceed with learning mode.... IMPORTANT NOTE: NEVER turn your ignition switch OFF until you have confirmed ALL gears have been learned and are working correctly!! You can restart leaning mode by using the Kill-Switch, and rolling the motorcycle until you see "||" on the screen. If you accidentally turn the ignition switch off and learning mode completed but a mistake was made and not all gears are correctly learned, you should drive back to your garage and access the programming wire to perform a "hard reset" to get the device back into learning mode.