



## INSTALLATION / USER'S GUIDE

**THIS GUIDE COVERS THE INSTALLATION AND USE OF THE  
TARGET TUNE ACCESSORY FOR DYNOJET POWER VISION**



### **PARTS LIST**

- 1 - Target Tune Module**
- 1 - Installation Guide**
- 3 - 8" Cable Ties**
- 2 - Dual Lock strips**
- 1 - Alcohol Swab**
- 2 - O<sup>2</sup> Sensor Bungs \***
- 1 - Y-Adapter Cable \***
- 2 - 18mm O<sup>2</sup> Sensors \***
- 2 - O<sup>2</sup> Sensor Cables \***

Parts shown with an asterisk (\*) are excluded in Target Tune kits that have a part number ending in "X." These kits are intended for users that are upgrading from PV Auto Tune to PV Target Tune. These users should already have these specific parts installed from the previous PV Auto Tune kit.

### **!!! IMPORTANT PLEASE READ FIRST !!!**

The Target Tune module requires the use of (2) 18mm O<sup>2</sup> sensors. If your bike's exhaust system doesn't have bungs pre-installed, bungs will have to be welded into the header pipes to use this module.

Your bike's ECM will need to be flashed by the Power Vision with a tune that enables Target Tune.

SOFTWARE AND OTHER TECHNICAL INFORMATION ARE AVAILABLE ONLINE AT:  
**WWW.FLASHYOURHARLEY.COM.**



## APPLICATION GUIDE

| Target Tune Part Number | Application                         | Description   |
|-------------------------|-------------------------------------|---|
| TT-1 & TT-1X            | 2007-2011 Softail *                 | 2-pin stock O2 connectors (1 long leg and 1 short leg), 4-pin diagnostic connector  |
|                         | 2007-2009 Touring                   | * 2011 Softail models will require splicing of the TT module's power and ground supply wires; or for a cleaner install with OEM style connections a 6-pin Y-adaptor (PN: 76950389) and a 6-pin to 4-pin adaptor (PN: 76950664) can be purchased separately. |
|                         | 2008-2011 V-Rod **                  |   |
|                         | 2006-2011 Dyna                      | ** 2008-2011 V-Rod models will require splicing of the TT module's power and ground supply wires; or for a cleaner install with OEM style connections a power extension lead (PN: 76950159) can be purchased separately.                                    |
|                         | 2007-2013 Sportster                 |   |
| TT-2 & TT-2X            | 2010-2013 Touring                   | 4-pin stock O2 connectors (2 short legs), 4-pin diagnostic connector  |
| TT-3 & TT-3X            | 2012-2015 V-Rod                     | 4-pin stock O2 connectors (1 long leg and 1 short leg), 4-pin diagnostic connector  |
| TT-4 & TT-4X            | 2012-2015 Softail<br>2012-2015 Dyna | 4-pin stock O2 connectors (1 long leg and 1 short leg), 6-pin diagnostic connector  |
| TT-5 & TT-5X            | 2014-2015 Touring                   | 4-pin stock O2 connectors (2 short legs), 6-pin diagnostic connector  |
| TT-6 & TT-6X            | 2015 Street 500/750                 | 4-pin stock O2 connectors (special length), 6-pin diagnostic connector  |
| TT-7 & TT-7X            | 2014-2015 Sportster                 | 4-pin stock O2 connectors (special length), 6-pin diagnostic connector  |

**Note:** Target Tune kits that have a part number ending in "X" contain Target Tune modules only. There is no O2 sensor hardware or Y-adapters supplied in these kits. These are intended for users that are upgrading from PV Auto Tune to PV Target Tune. These users should already have wideband O2 sensor hardware and Y-adapters installed from the previously installed PV Auto Tune kit.

## PRODUCT OVERVIEW

The Dynojet Target Tune accessory for Power Vision is a product that can add a new dimension to your Harley-Davidson's® ECM.

When paired with a Target Tune specific calibration flashed by a Power Vision, your ECM will run closed loop fuel control based on wideband O2 sensors installed into the exhaust, rather than the stock narrowband O2 sensors. The Power Vision delivered calibration changes the coding in the ECM to “understand” the wideband signal (from Target Tune) and allows the ECM to accurately achieve the target AFR specified in the commanded air/fuel ratio table of your ECM's tune. The ECM also does this at all available engine ranges (not just light throttle cruising speeds). Dynojet has evolved the OEM closed loop, adaptive fuel control system on your Harley to meet the needs of performance enthusiasts.

### Key Features:

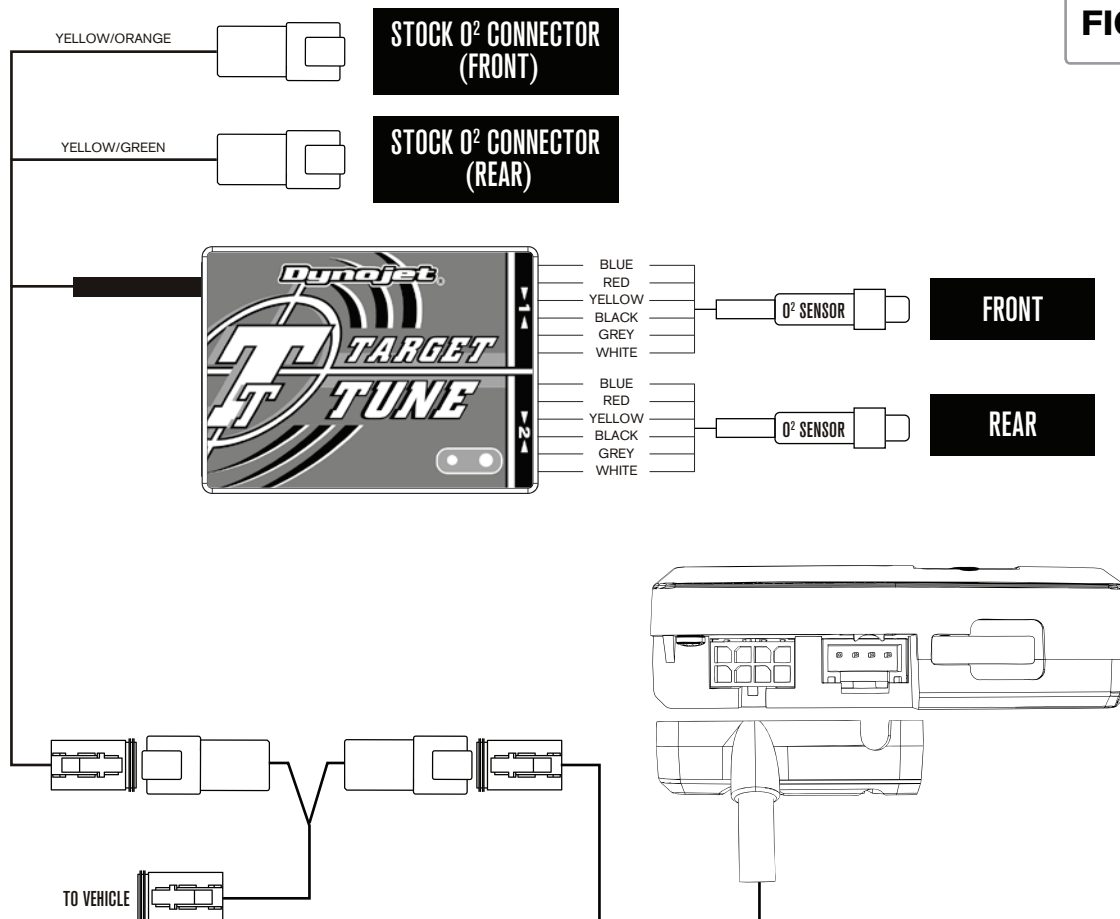
- Allows the factory ECM to interpret and use wideband O2 sensor signals\*
- Target fuel table from the calibration / tune is achieved in real time
- Retains OEM closed loop, adaptive fuel control strategy
- Learns and uses VE table corrections as you ride
- Does NOT interfere with dealer diagnostic / service tools
- Includes OEM style connectors to plug into factory O2 harness, either 2-pin or 4-pin versions
- Fits 2006 and newer Harley Davidson® Bikes\*\*

*\* Requires Power Vision Target Tune specific calibration*

*\*\* ECM must be “closed loop capable” and have OEM wiring for O2 sensor circuitry.*

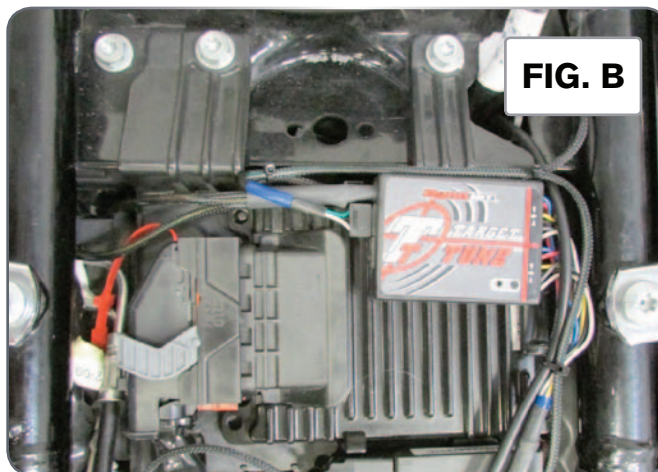
## HARDWARE INSTALLATION

**FIG. A**



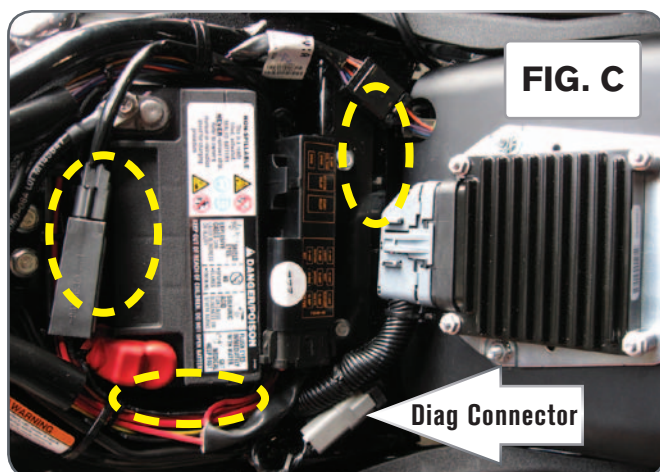
**FIG. B**

1. Find a location to mount the Target Tune module and secure it with the supplied Dual Lock strips. You can typically find a place under the bike's seat or behind a sidecover to mount it. Be sure to choose a location within the harnesses' reach of the diagnostic connector and stock O<sub>2</sub> sensor connectors.

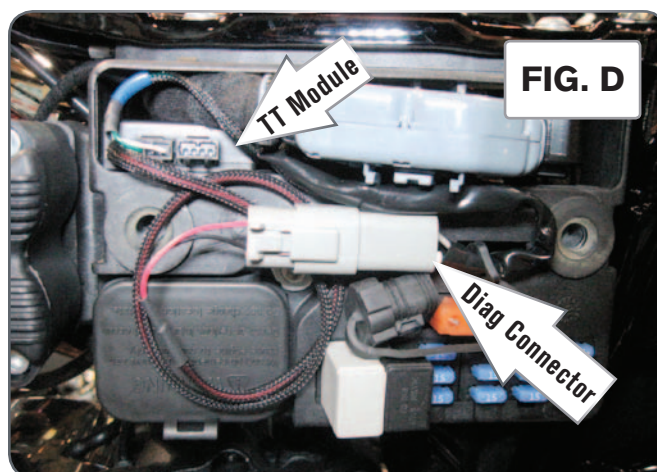


*The top of the ECM is typically a good mounting location for most Touring models (Fig. B).*

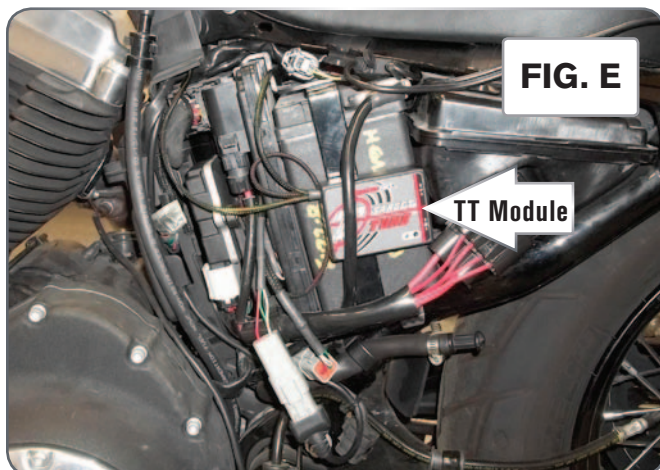




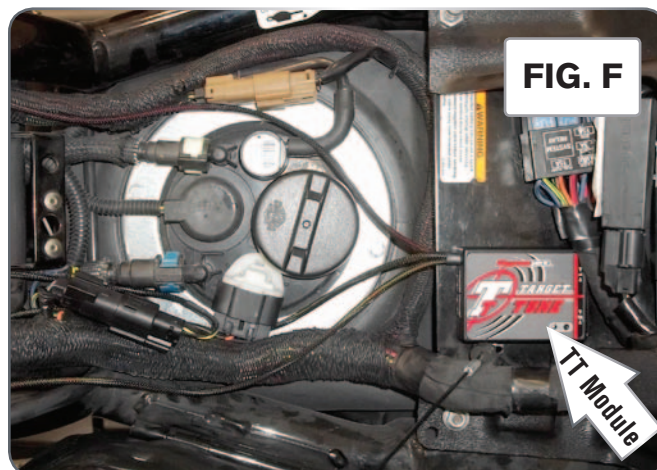
On many Softail models you can typically find a place under the seat to store the module (Fig. C). It could go in the recess at the top of the battery, on the side of the battery, on the relay bracket, or even directly on the rear fender.



On Dyna models you can typically fit the Target Tune module inside the electrical box next to the ECM (Fig. D).



On Sportsters, the left side of the battery is usually the best location to secure the module (Fig. E).



On V-Rod models, the best location to secure the module is directly under the seat (Fig. F).

2. Install both of the supplied 18mm wideband O2 sensors into the exhaust system. (See "O2 Sensor Bung Installation" section for guidelines if 18mm x 1.5 bungs need to be welded.)
3. Connect an O2 sensor cable to the front cylinder O2 sensor and route harness along the frame or stock wiring harnesses going towards the Target Tune module.
4. Connect the other O2 sensor harness to the rear cylinder O2 sensor and route the harness along the frame or stock wiring harnesses going towards the Target Tune module.

**Note:** Keep harnesses away from HOT and/or moving parts to prevent damage.

**Note:** If the supplied cables have different lengths, the longer cable should go to the front cylinder.

5. Connect the front cylinder O2 sensor harness to Target Tune module input #1 per Fig. A.  
Connect the rear cylinder O2 sensor harness to Target Tune module input #2 per Fig. A.

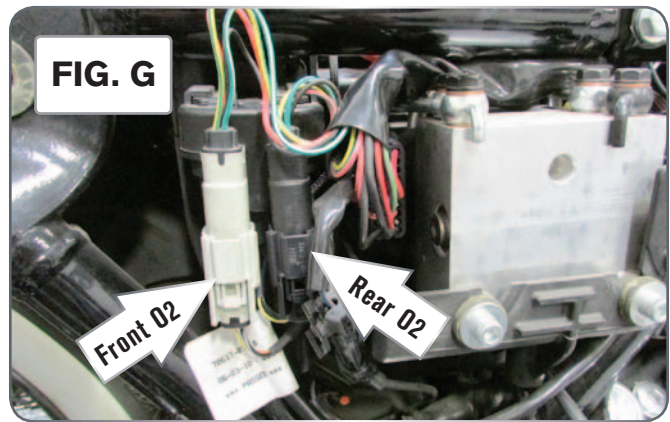
**Note:** The harness can be cut to length if desired.

**Note:** To make inserting the wires into the module easier, first poke the hole with a paperclip or similar device. Also tinning the bare wire ends with solder can help.

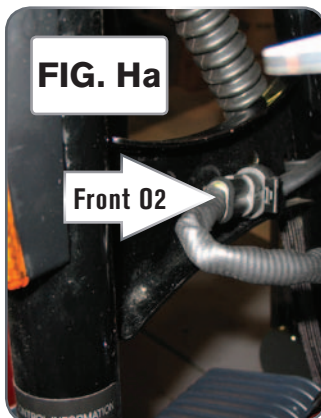


6. Locate and unplug the stock O2 sensor connections. You can trace the cables from the stock O2 sensors in the exhaust to these connectors.
  7. Plug the connectors from the Target Tune into the stock O2 sensor connectors (Fig. A).
- Plug the Target Tune lead with the YELLOW/ORANGE wire into the FRONT cylinder stock O2 connector.
  - Plug the Target Tune lead with the YELLOW/GREEN wire into the REAR cylinder stock O2 connector.

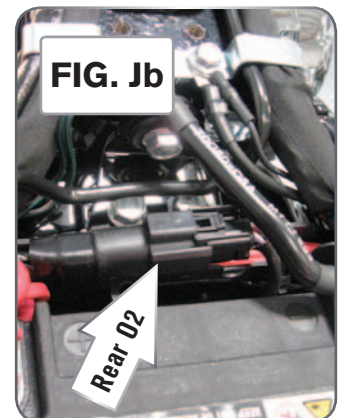
**Note:** The stock O2 sensors will no longer be connected to anything and can be removed from the exhaust if desired, and if you have a way to plug the holes in the exhaust.



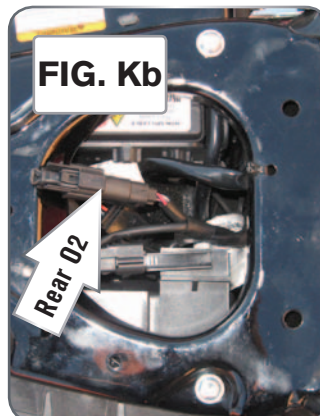
On 2010-2015 Touring models the stock O2 connectors are found behind the right-hand side cover (Fig. G).



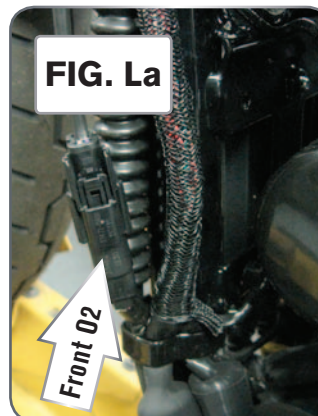
On 2007-2009 Touring models and 2007-2011 Softails the stock O2 connectors for the front cylinder are found at the front of the engine near the voltage regulator (Fig. Ha), and the rear cylinder O2 sensors connectors are found at the rear of the engine near the oil tank (Fig Hb).



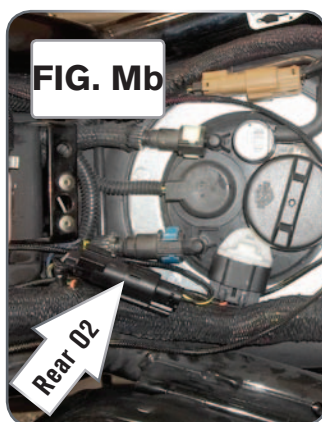
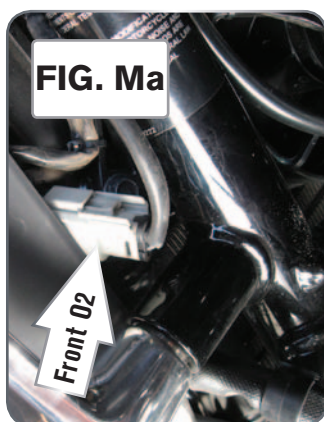
On 2012-2015 Softails the stock O2 connectors for the front cylinder are found at the front of the engine near the voltage regulator (Fig. Ja), and the rear cylinder O2 sensor connectors are found under the seat near the battery (Fig Jb).



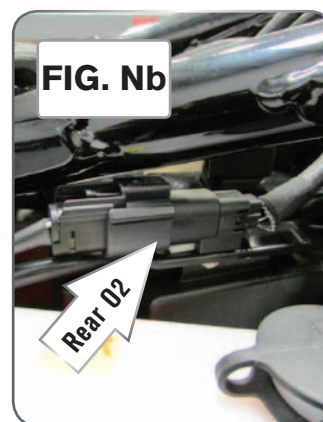
On 2006-2015 Dyna models the stock O2 connectors for the front cylinder are found at the front of the engine near the voltage regulator (Fig. Ka), and the rear cylinder O2 sensor connectors are found under the seat (Fig Kb).



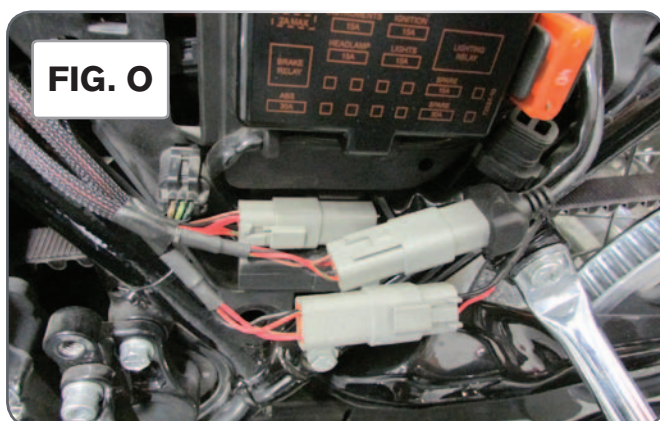
On Sportsters the front O2 connection is always at the front of the engine on the left side near the oil filter (Fig. La). The rear O2 connection is above the battery on 2014-2015 models (Fig. Lb) or just rear of the engine on 2007-2013 models (not pictured).



On V-Rods the front O2 connection is always on the left side of the radiator (Fig. Ma). You may need to loosen the radiator shroud to gain access to it. The rear O2 connection is under the seat near the fuel filler (Fig. Mb).



On Street models (500 and 750), the front O2 connector is located on the right side of the bike between the swingarm pivot shaft and the engine case (Fig. Na). The rear O2 connector is behind the left hand sidecover above the coolant reservoir (Fig. Nb).



8. Connect the supplied Y-Adaptor to the Diagnostics port on the motorcycle. (See "Diagnostic Connector Locations" of the PV Quick Start guide for model specific diagnostic connector locations.)

9. Route and connect the power lead from the Target Tune module to one side of the Y-adaptor.

- 2008-2011 V-Rod models will require splicing of the TT module's power and ground supply wires; or for a cleaner install with OEM style connections a power extension lead (PN: 76950159) can be purchased separately. If you are splicing the power supply, the TT's BLACK wire can go to a constant chassis ground source such as the frame or the engine case. The TT's RED wire will need to go to a key-switched 12v power source.

- 2011 Softail models will require splicing of the TT module's power and ground supply wires; or for a cleaner install with OEM style connections a 6-pin Y-adapter, PN: 76950389, and a 6-pin to 4-pin adaptor, PN: 76950664, can be purchased separately. If you are splicing the power supply, the TT's BLACK wire can go to a constant chassis ground source such as the frame or the engine case. The TT's RED wire will need to go to a key-switched 12v power source.

10. Connect the Power Vision cable to the other side of the Y-adaptor (Fig. O).

11. Tie up and secure any loose sections of the wiring with the supplied zip-ties and verify wiring is free and clear of abrasion and heat sources.



## O2 SENSOR BUNG INSTALLATION

1. Find a suitable location to install the included M18 x 1.5mm bungs on the exhaust system.

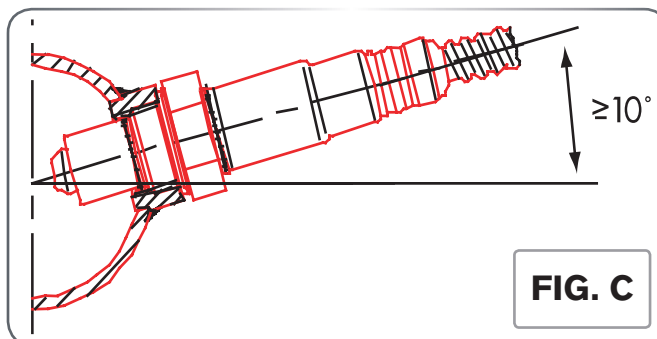
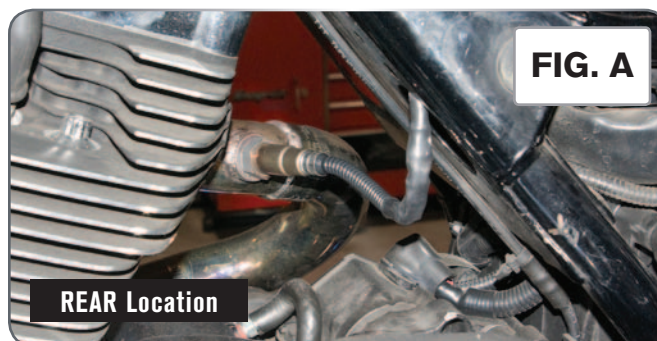
**Note:** Suitable locations may vary depending on exhaust system. (See Fig. A and B)

2. Mount the bungs in a manner that reduces the risk of moisture contamination to the sensor, as condensation can build up in the exhaust system. Ideally, the sensor should be between the 10 o'clock and 2 o'clock position on the pipe. A 10° incline of the sensor above the horizon line should be considered a minimum. (See Fig. C)

3. Mark the pipe where bungs will be mounted.

**Note:** Adequate room will be needed for the sensor body and wiring.

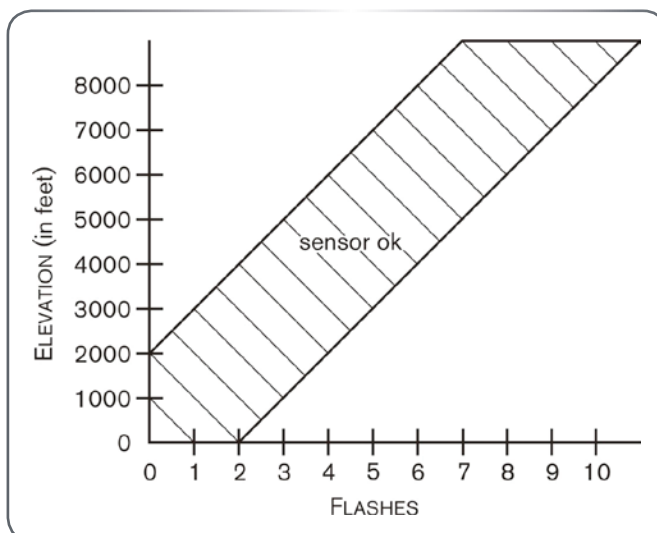
4. Remove the exhaust system.
5. Drilling and welding of the exhaust system should be done by an experienced welder/fabricator.
6. Reinstall the exhaust system.



## O2 SENSOR CONDITION TEST

The Target Tune kit has a built in function which allows you to test the sensor accuracy and condition.

1. Remove the sensors from the exhaust system and hold in ambient air.
2. Verify the Target Tune kit has been powered up for at least 1 minute and has a solid light.
3. Press and hold the function button on the front of the Target Tune kit for 3 seconds to initiate the test on sensor #1 and release the button once the light begins to blink rapidly.
4. The LED light will blink rapidly, pause for a moment, and then begin to flash a series of long blinks before going back to solid. (You may get zero blinks before going completely solid, which would indicate a perfect condition if at or near sea-level.)
5. Count the number of long blinks and refer to the chart.
6. Initiate the test a second time to get results for sensor #2.
7. Retest the sensors if there is any question as to the purity of the air during the test.





## PROGRAMMING THE ECM

Target Tune requires a special calibration to be flashed to your ECM in order to function properly. You will need to send an e-mail request to [targettune@dynojet.com](mailto:targettune@dynojet.com). Calibrations submitted to make the Target Tune function properly can be:

- Copy of original or current tune
- Custom tunes
- Pre-configured tunes from Dynojet

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The original tune that is being modified to work with Target Tune should be as optimal as possible for the engine and modifications that you are using. This means if you have a very unique or radical engine build, you may need to have a more optimal starting point tune developed by other means before Target Tune can work effectively. This might be a tune developed by a professional dyno tuner, a tune custom made by Dynojet staff, or a tune developed by Auto-tune Basic or Auto-tune Pro methods.

**Note:** *The Target Tune module can be utilized for Auto-tune Pro tuning methods.*

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If you'd like to use the tune that's currently flashed to your ECM please follow these steps in order to read it from your ECM:

1. Plug the Power Vision into the bike's diagnostic port.
2. Turn the bike to the ON position (key ON, Run/Stop switch to "Run", engine stalled).
3. Go to Vehicle Tools on the Power Vision.
4. Select Read ECM. Follow the prompts to read the ECM.
5. Turn the key OFF.
6. Remove the Power Vision and bring it to a computer with Dynojet WinPV software installed.
7. Connect a USB cable to the Power Vision.
8. After the Power Vision boots up and says "PC Link Mode Active," launch the WinPV software.
9. On the menu bar, go to "Power Vision", and choose "Diagnostic Test functions > Get ECM Data from PV".
10. Look for the ".stk" file (something like this.....10-FB4-JHMKORL.stk ).
11. Select the file and save it to your Personal Computer for safe keeping. (WinPV may have already done this for you.)
12. E-mail the original .stk file to [targettune@dynojet.com](mailto:targettune@dynojet.com).

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**Note:** The latest instructions and software pertaining to Target Tune, please visit:

<http://www.dynojet.com/powervision>