

Target Tune

Installation and User Guide for:
Harley-Davidson

PARTS LIST

- | | | | |
|---|--------------------|---|-------------------|
| 1 | TARGET TUNE MODULE | 2 | O2 SENSOR BUNGS* |
| 3 | 8" CABLE TIES | 1 | ADAPTER CABLE** |
| 2 | DUAL LOCK STRIPS | 2 | 18MM O2 SENSORS* |
| 1 | ALCOHOL SWAB | 2 | O2 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.

Parts shown with two asterisks (**) are only used on 2021+ models with the 3-pin accessory port.

PLEASE READ ALL DIRECTIONS BEFORE STARTING INSTALLATION

IMPORTANT NOTE

The Target Tune module requires the use of two (2) 18mm O2 sensors. If your bike's exhaust system does not 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.

You must be using the latest WinPV or C3 software along with Power Vision firmware to use Target Tune. Be sure to update your software and firmware from the PV Update Client program with an internet connected computer before programming the bike for Target Tune.

Visit www.flashyourharley.com for additional software and technical information.

INTRODUCTION

Thank you for purchasing the Power Vision from Dynojet Research. At Dynojet, our mission is to make every ride the ultimate ride. 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.

For state of the art technical support, please visit www.dynojet.zendesk.com.

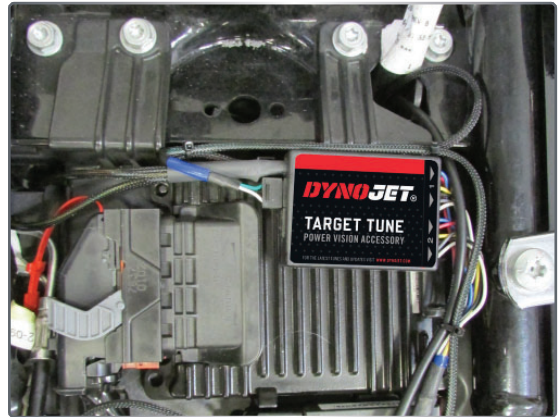
APPLICATION GUIDE

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-adapter (PN: 76950389) and a 6-pin to 4-pin adapter (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	2012-2017 V-Rod	4-pin stock O2 connectors (1 long leg and 1 short leg), 4-pin diagnostic connector
TT-4 & TT-4X	2012-2017 Softail 2012-2017 Dyna	4-pin stock O2 connectors (1 long leg and 1 short leg), 6-pin diagnostic connector
TT-5 & TT-5X	2014-2020 Touring	4-pin stock O2 connectors (2 short legs), 6-pin diagnostic connector
TT-6 & TT-6X	2015-2020 Street 500/750	4-pin stock O2 connectors (special length), 6-pin diagnostic connector
TT-7 & TT-7X	2014-2021 Sportster 2020 Softail	4-pin stock O2 connectors (special length), 6-pin diagnostic connector
TT-8 & TT-8X	2021-2023 Touring	4-pin stock O2 connectors (2 short legs), 6-pin Euro diagnostic connector
TT-10	2021-2023 Softail	4-pin stock O2 connectors (1 long leg and 1 short leg), 6-pin Euro diagnostic connector with power adapter cable

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.

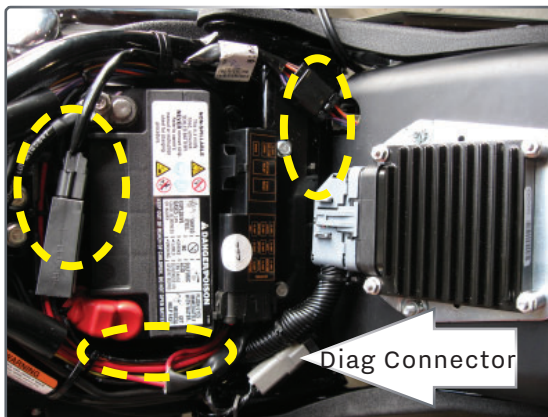
INSTALLATION

- 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 side cover to mount it. Be sure to choose a location within the harnesses reach of the diagnostic connector and stock O2 sensor connectors.



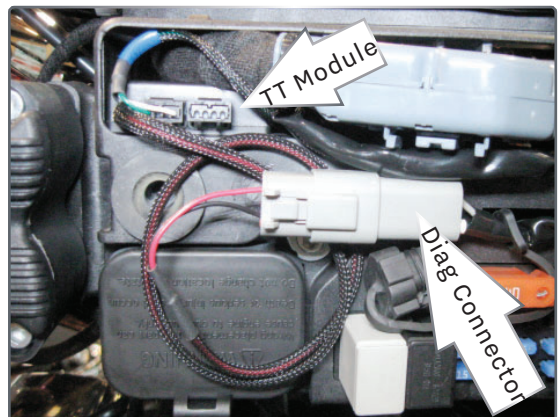
Touring Models

The top of the ECM is typically a good mounting location for most touring models.



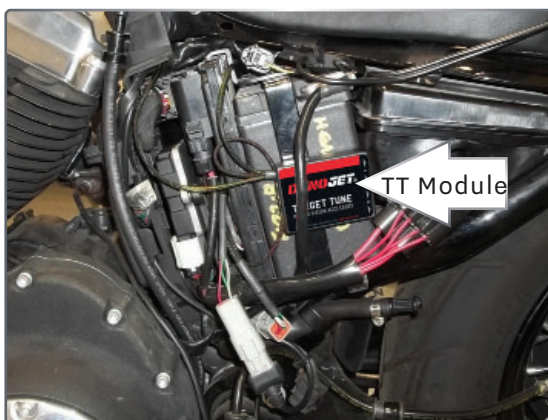
Softail Models

On many Softail models you can typically find a place under the seat to store the module. 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.



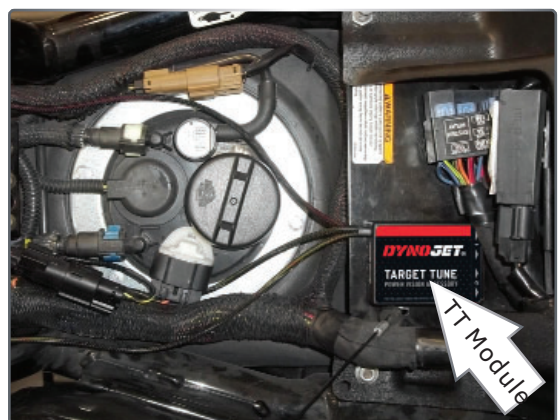
Dyna Models

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



Sportster Models

On Sportster models, the left side of the battery is usually the best location to secure the module.

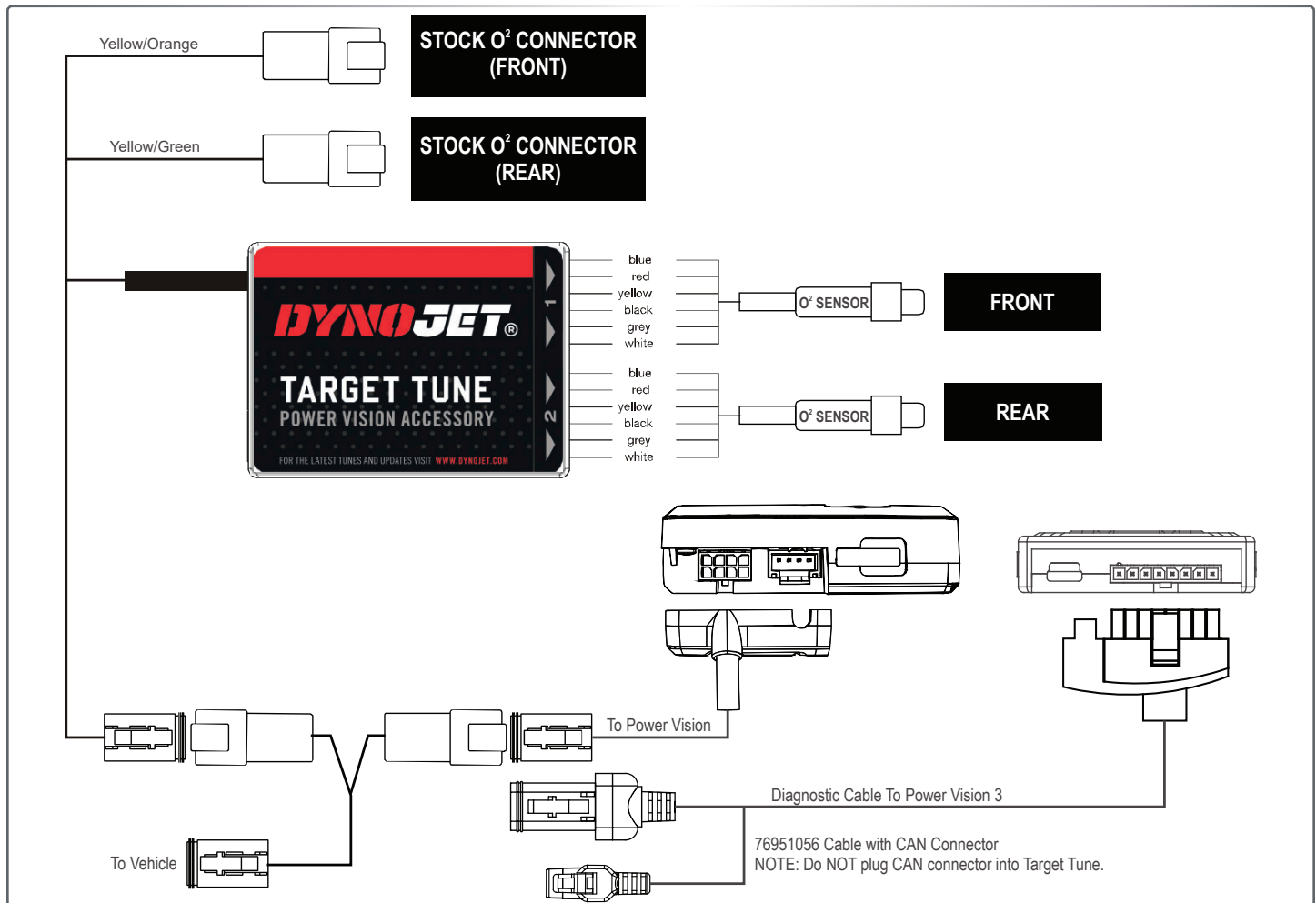


V-Rod Models

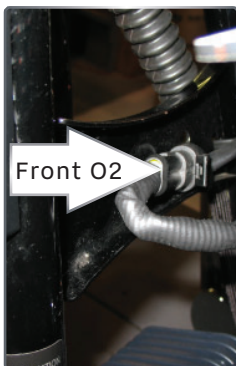
On V-Rod models, the best location is to secure the module is directly under the seat.

INSTALLATION CONTINUED

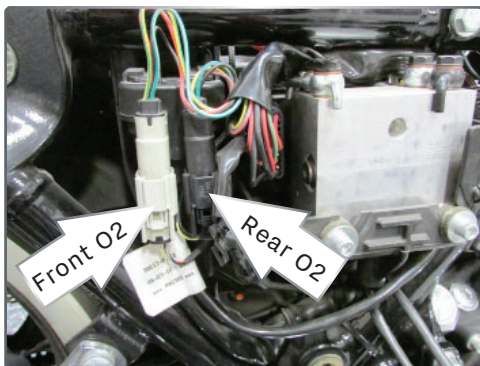
- 2 Install both of the supplied 18mm wideband O2 sensors into the exhaust system. Refer to [“O2 Sensor Bung Installation”](#) for guidelines if 18mm x 1.5 bungs need to be welded.
- 3 Connect an O2 sensor cable to the front cylinder O2 sensor and route harness along the frame or stock wiring harness going towards the Target Tune module.
- 4 Connect the other O2 sensor harness to the rear cylinder O2 sensor and route harness along the frame or stock wiring harness 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 as shown.
- 6 Connect the rear cylinder O2 sensor harness to Target Tune module input #2 as shown.
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.
- 7 Locate and unplug the stock O2 sensor connections. You can trace the cables from the stock O2 sensors in the exhaust to these connectors.
- 8 Plug the connectors from the Target Tune into the stock O2 sensors connectors.
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.



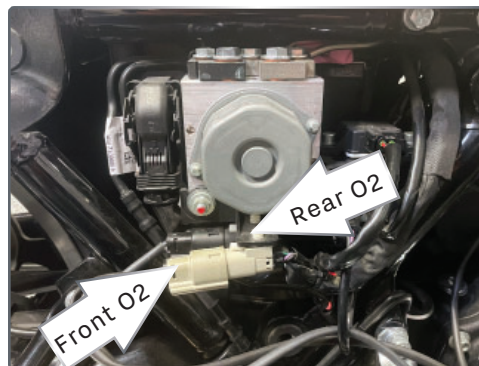
INSTALLATION CONTINUED



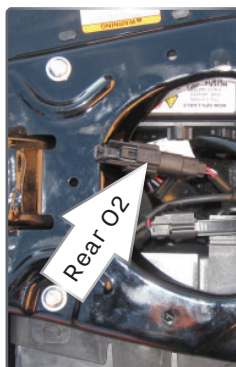
2007-2009 Touring and 2007-2011 Softail Models
The stock O2 connectors for the front cylinder are found at the front of the engine near the voltage regulator. The stock O2 connectors for the rear cylinder are found at the rear of the engine near the oil tank.



2010-2019 Touring Models
The stock O2 connectors are found behind the right-hand side cover.



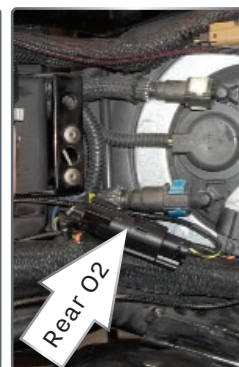
2020-2023 Touring Models
The stock O2 connectors are found behind the right-hand side cover.



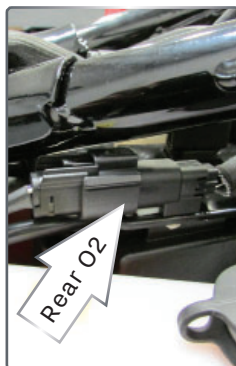
2006-2015 Dyna Models
The stock O2 connectors for the front cylinder are found at the front of the engine near the voltage regulator. The stock O2 connectors for the rear cylinder are found under the seat.



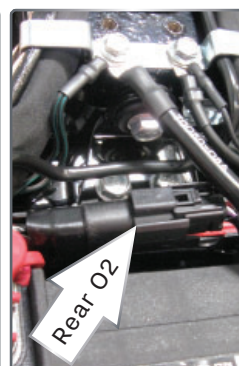
Sportster Models
The stock O2 connectors for the front cylinder are always at the front of the engine on the left side near the oil filter. The stock O2 connectors for the rear cylinder are above the battery on 2014-2015 models or just rear of the engine on 2007-2013 models (not shown).



V-Rod Models
The stock O2 connectors for the front cylinder are always on the left side of the radiator. You may need to loosen the radiator shroud to gain access to it. The stock O2 connectors for the rear cylinder are found under the seat near the fuel filler.



Street Models (500 and 750)
The stock O2 connectors for the front cylinder are located on the right side of the bike between the swing-arm pivot shaft and the engine case. The stock O2 connectors for the rear cylinder are behind the left hand side cover above the coolant reservoir.



2012-2023 Softail Models
The stock O2 connectors for the front cylinder are found at the front of the engine near the voltage regulator. The stock O2 connectors for the rear cylinder are found under the seat near the battery.

INSTALLATION CONTINUED

9 Connect the supplied Y-adapter to the diagnostic port on the motorcycle. (Refer to “Diagnostic Connector Locations” in the [Power Vision Quick Start guide](#) for model specific diagnostic connector locations.) Not needed on 2021 + models.

10 Route the connect the power lead from the Target Tune (TT) module to one side of the Y-adapter.

- 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 Softtail 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 adapter, 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.

11 Connect the Power Vision diagnostic cable to the other side of the Y-adapter.

Note: PV3 cable PN: 76951056 includes a CAN connector. Make sure you do not connect the CAN connector to the Target Tune.

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

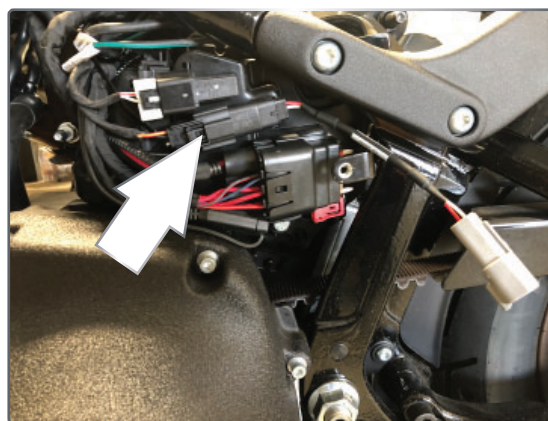


Connect the Power Vision cable to the other side of the Y-adaptor.



2021+ Touring Models

Plug the supplied power cable into the 3-pin accessory port on the right hand side of the motorcycle and then into the Target Tune module.

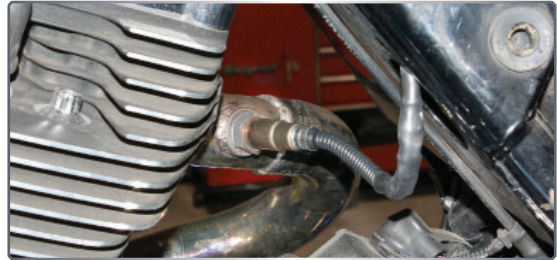


2021+ Softtail Models

Plug the supplied power cable into the 3-pin accessory port on the left hand side of the motorcycle and then into the Target Tune module.

02 SENSOR BUNG INSTALLATION

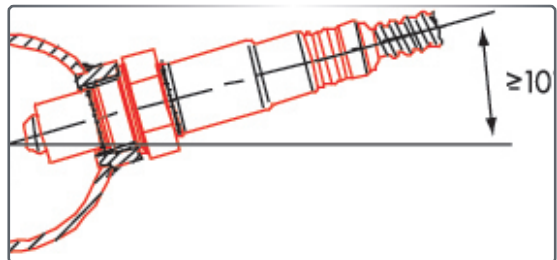
- 1 Find a suitable location to install the included M18 x 1.5mm bungs on the exhaust system.
Note: Suitable locations may vary depending on exhaust system.
- 2 Mount the bungs in a manner that reduces the risk of moisture contamination to the sensor, as condensation can build up in the exhaust system. 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.
- 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.



REAR LOCATION



FRONT LOCATION

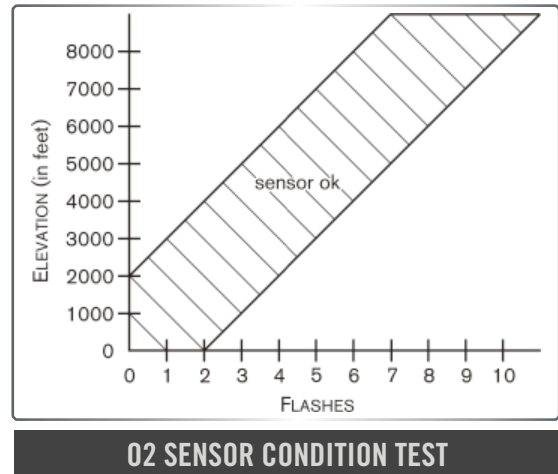


10° MINIMUM INCLINE

02 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 pytech@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

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 AutoTune Pro tuning methods on most models.

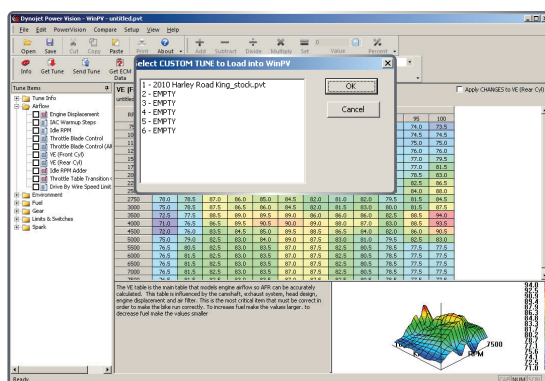
READING THE ECM-POWER VISION

Use the following instructions to use the tune currently flashed to 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 From the Power Vision Main Menu, select **Program Vehicle>Load Tune>Load Copy**.
- 4 Select **Load Copy of Current**. Follow the prompts to read the ECM.
- 5 Select a custom tune slot on the Power Vision to save the "Copy of Current" tune.
- 6 Once saved, turn the key OFF.
- 7 Remove the Power Vision and bring it to a computer with Dynojet WinPV software installed.
- 8 Connect a USB cable to the Power Vision.
- 9 After the Power Vision boots up and says "PC Link Mode Active," launch the WinPV software.
- 10 In the WinPV software, click **Get Tune** and retrieve the "Copy of Current" file from the custom tune slot of the Power Vision.
- 11 After retrieving the tune from the Power Vision, save it to your personal computer for safe keeping. You should assign a filename to it at this point.
- 12 E-mail the saved file to pvtech@dynojet.com.

Note: For the latest Target Tune instructions and software, please visit <http://www.dynojet.com/powervision>.

Note: You must use WinPV software 2.0.18 and Power Vision firmware 2.0.19 or newer with Target Tune.



WinPV-GET TUNE

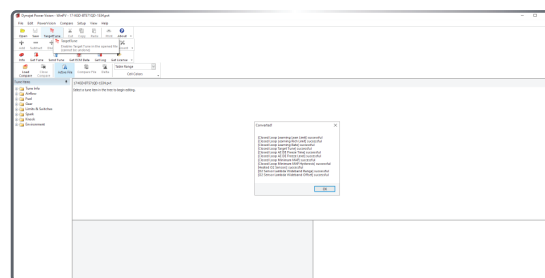
WINPV SOFTWARE-TARGET TUNE

Skip the wait and apply the Target Tune values right in WinPV Software using Target Tune.

- 1 Open WinPV Software.
- 2 Click **Open**.
- 3 Browse to your .pvt file.
- 4 Select the file and click **Open**.
- 5 Click **Target Tune**.

Note: This feature is not available for all Harley-Davidson software levels.

- 6 Save your new file as a .pvt.
- 7 Save this new file to your device.
- 8 Flash the new file to your bike.

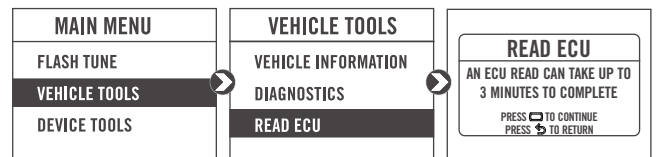


WinPV SOFTWARE-TARGET TUNE

READING THE ECU-POWER VISION 3

Use the following instructions to use the tune currently flashed to your ECU. This process takes about fifteen minutes.

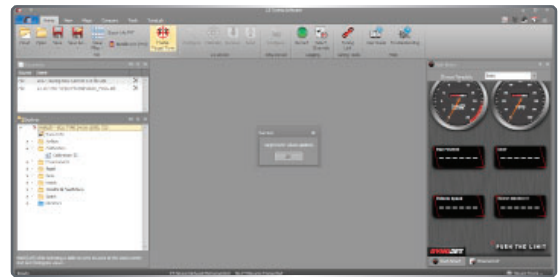
- 1 Connect the Power Vision 3 to the vehicle diagnostic port.
- 2 Turn the key on.
- 3 Select **Vehicle Tools>Read ECU**. This process takes a few minutes.
- 3 Remove the Power Vision 3 from the bike and connect the Power Vision 3 to your computer using the included USB cable. The Power Vision 3 will automatically enter USB Mode.
- 4 Transfer the stock tune from the Power Vision 3 to your computer.
- 5 Email the tune to pv3hdtech@dynojet.com.



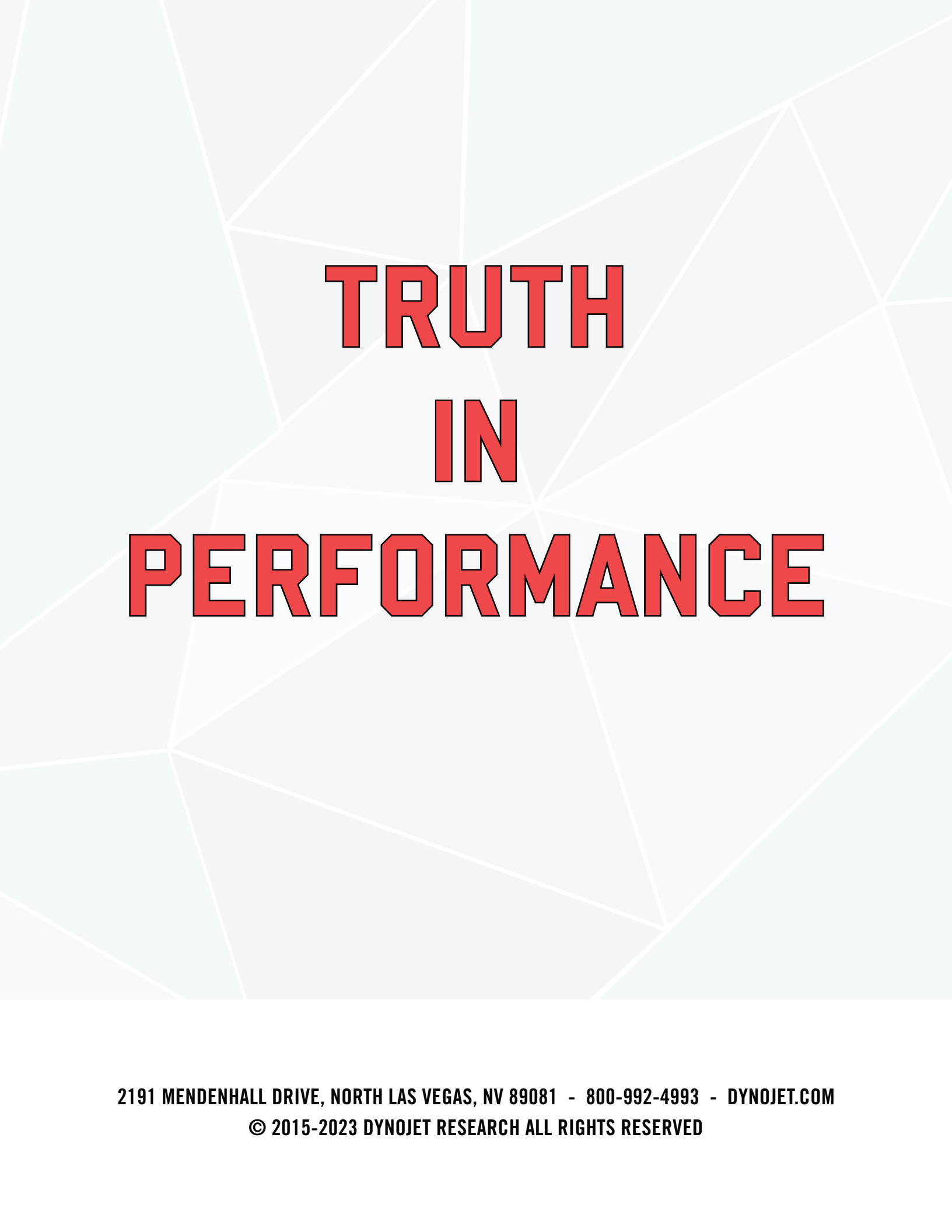
C3 SOFTWARE-ENABLE TARGET TUNE

Skip the wait and apply the Target Tune values right in C3 Tuning Software using Enable Target Tune.

- 1 Open C3 Tuning Software.
- 2 From the Home ribbon, click **Open**.
- 3 Browse to your .stk file.
- 4 Select the file and click **Open**.
- 5 Click **Enable Target Tune** 
Note: This feature is not available for all Harley-Davidson software levels.
- 6 If you are using the Power Vision 3, save your new file as a .djt. If you are using the Power Vision, click **Export as PVT**.
- 7 Save this new file to your device.
- 8 Flash the new file to your bike.



C3 SOFTWARE-ENABLE TARGET TUNE



TRUTH IN PERFORMANCE

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