

Needless Torque Calibrations

Basic Instructions for Export/Loading tunes and Datalogging.

Note: These instructions will NOT cover COM port setup or general PC skills ☹

Basic custom tune instructions: *Predator/Trinity*

1) Getting your original backup or last tune written from your *Predator/Trinity* to your PC.

(NOTE: This will only copy the files from the tool, it will not transfer them, and so you will always have your original backup intact)

a) Getting your original backup file (Your tool must have taken a backup before this step can be done)

Click "Get Tune File from Tool" in DS Downloader and then click "Yes". Make sure you pay attention to where this file is saved as well, keep the name or rename it, your choice, just keep the file extension intact.

b) Getting your Last tune written file (Your tool must have written a tune file to your vehicle for this step to work)

Click "Get Tune File from Tool", and then click "No". Make sure you pay attention to where this file is saved as well, keep the name or rename it, your choice, just keep the file extension intact.

c) Attach either or both files to an e-mail and send it to your tuner **and please include a COMPLETE list of modifications.**

2) Installing one (1) custom CMR tune into your *Predator/Trinity*.

a) Save your tune file from your tuner somewhere you will remember and do not change the file extension.

b) Make sure you have your original backup file saved on your PC as well and know its location.

c) Click on "Send Tune File to Tool", and then select the tune file from your tuner. You will then be asked for a base file, (this is your original backup file) so pick your original backup file.

d) You should see a quick progress bar, and then a "Download Complete" box, click "OK", that's it, now when you go to your vehicle you will have an additional Custom tune menu inside the Performance Tune menu.

3) Installing two to five custom CMR tunes into your Predator/Trinity.

a) Save your tune files from your tuner somewhere you will remember and do not change the file extension.

b) Make sure you have your original backup file saved on your PC as well and know its location.

c) Click on the "Advanced Tuning" tab in DS Downloader

d) Click on "Add Tune", and then select the first tune file from your tuner. You will then be asked for a base file, (this is your original backup file) so pick your original backup file.

e) Click on "Add Tune" for each additional file you want to load, you will only be asked for the base file for the very first tune file you select.

f) Once desired tune files are added, click "Send to Tool", you should see a quick progress bar, then a "Download Complete" box, click "OK", that's it, now when you go to your vehicle you will have an additional Custom tune menu inside the Performance Tune menu.

Basic custom tune instructions for your *InTUNE*

1) Getting your original backup or last tune written from *InTUNE* to your PC

- a. The InTune acts just like a flash drive once it's connected to your PC with its USB cable.

- b. Browse to the "**Tunes**" folder and COPY/PASTE your "Original Backup" tune onto your PC. From there you can attach it to an email

2) **Installing a CMR tune into your *InTUNE***

- a. Simply COPY/PASTE your custom tune into the InTune's "**Tunes**" folder. The InTune will automatically confirm that the tune was uploaded.

Basic datalog instructions:

This will NOT cover the regular operation on how to select the PIDS and start and stop the data logs.

Using the Predator/Trinity or the Dataviewer software, select the following PID's :

Ambient Temperature-->

AMB TEMP--Outside Air temp

Knock control-->

KnK ST Retard--show amount of timing retarded for PCM's instant response to Knock

KNK LT Retard--show amount of timing retarded for PCM's long term or learned response to Knock. If the PCM sees a consistent amount of ST KR, it will use LT KR to try to keep ST at 0.

Spark-->

Actual Spark Cy1(you can do Cyl 2,3,4 also but there's *USUALLY* little difference)--Final timing advance after all modifiers.

EPDSS-->

RPM

Foundation inputs-->

MPH--Car's speed

Injector Control→

AVG TOTAL WORKING PW

Throttle Sensor Input--> *More clearly IDs WOT

THR POSN---Throttle position sensor voltage--~3.6-3.9v = WOT

Map-->

AV MAP TO USE--Absolute pressure inside your intake manifold(Boost = MAP - BARO)

AV TIP TO USE--use min TIP psi as "Baro"

FUEL FLOWS--->

1/1 LONG TERM ADAP--How much your PCM is adjusting the fuel table--Usually under 15% is fine, Over 20% is borderline, more than 25% is not fine

1/1 SHORT TEM ADAP--Show instantaneous Upstream O2 sensor adjustment to fuel table

BARO-- Barometric pressure--Needed for boost calc(Boost = MAP - BARO)

PRATIO ---MAP/BARO

TOTAL VE BANK1---% Volumetric Efficiency—main fuel table

TURBO TOTAL AIR PORT MASS FLOW S---Actual Mass flow through engine

COOLANT TEMP-->

ECT--Engine Coolant Temperature

CHARGE TEMP-->

ACT--Air Charge Temperature--Measured by ACT sensor in cold pipe right before throttle body

DESIRED FUEL AIR-->

OPEN LOOP FA--Commanded A/F that the PCM is trying to reach. 93tune=11.77:1. THIS IS NOT YOUR TRUE A/F!! You need a wideband to measure your actual A/F. OLFA is usually anywhere from .2 to 3 points or more different from TRUE A/F.

Torque Management-->

TURBO TOTAL TRQ DESIRED = Desired Torque table value (TURBO TRQ POTENTIAL STP) minus most, but not all of the PCM's Torque limits on ECT/Gear/MPH/RPM ect.

Wastegate Control-->

TURBO WG DC--Final WG solenoid duty cycle

TURBO TRQ POTENTIAL STP--Desired Torque value from DT table BEFORE and modifiers. Changing "Boost" on your DSP will change this value

TURBO TOTAL AF DES FILTD--Airflow calculation used to determine what row of the WG DC table to use

TURBO AF ERR—Difference in **TURBO TOTAL AF DES vs TURBO TOTAL AIR PORT MASS FLOW**

TURBO WG RPM TERM-----Actual Wg DC% from your PCM WG DC table

TURBO WG BASE---Base WG DC% = RPM TERM +ACT + AMB + Baro

Datalog driving instructions:

NOTE: Unless instructed otherwise, **always allow your vehicle to fully warm up before doing any logging, min recommended ECT temp 176 deg F.**

NOTE: After installing tune, **allow roughly a day for the vehicle to fully go through it's learn cycles before datalogging** unless otherwise instructed.

IDLE, CRUISE AND WOT can all be contained on ONE continuous datalog

1) Idle (mainly for head/cam and vehicles with large injectors)

a) 30-60 seconds in Neutral then 30-60 seconds in Drive(automatics), do it all in one log. Do not touch the throttle!

2) Cruise (mainly for head/cam and vehicles with aftermarket injectors)

a) Daily driving, try to drive normal and allow vehicle to shift through all the gears while recording.

b) Steady cruise, allow vehicle a steady cruise (cruise control can be used if the roads are fairly flat) at about 55-60mph for 30-60 seconds.

3) WOT

- a. Try to perform the WOT logs when your IAT/ACT have come up to normal operating temps. The temps should be pretty close to ambient. 10-20 deg F over or so.
- b. Do 2 or 3 **CONSECUTIVE** 3rd gear pulls at WOT **ON ONE LOG**. Start at ~3000rpm and stop at redline.
- C. Record A/F **SIMULTANEOUSLY** with the Diablo logs.

NOTE: Include the Tune name in the Log file name.

Attach the log files to an e-mail and name the properly and send them to your tuner for review.

Make sure to tell your tuner about any condition that you feel noteworthy mentioning, idle surge, stumble etc etc...

And always obey posted speed limits ☺

