Own the Competition

ProMax Progressive Controller Installation and Operation Instructions

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NITROUS OUTLET

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These instructions will guide you through the setup, installation, and use of the Nitrous Outlet ProMax Progressive Controller. If you have questions about the ProMax, please call our Teach Help Line at (254) 848-4300 or email us at CustomerService@NitrousOutlet.com. We are open Monday-Friday, 8:30-5:30CST.

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www.nitrousoutlet.com



(254) 848-4300



INSTALLATION INSTRUCTIONS

INSTALLATION NOTE:

Before beginning the installation or programming of the ProMax, you must first decide the configuration in which you will be operating it in.

- 2-Output mode will allow progressive operation of two individual stages of nitrous.
- AFR mode will allow progressive control of a single stage of nitrous, with closed loop fueling control, based on wide band 02 input.

It is required you make this decision from the start, as it will affect the wiring of the system and the overall programming of the controller.



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INSTALLATION INSTRUCTIONS

IMPORTANCE OF WIRING CONNECTIONS

Use quality copper wire and quality connectors. Speaker wire and wire nuts have no place here!

ProMax has a 10ga primary ground wire. You need a minimum of a 10ga wire running from battery ground to the ProMax. The further the ProMax is from the battery, the larger the wire gauge needs to be. You may end up with 8ga or 6ga.

We suggest running a minimum 10ga power wire, fused for the needed amp load, direct to the battery positive for the solenoids. Whatever gauge you run for ground, also run for the power.

Nitrous and Fuel Pressure Sensors Shield Wire

On the connector pigtail provided with the ProMax pressure sensors, there is a bare, stranded wire. This is the shield wire and is intended to dissipate any electrical "noise." These shield wires need to go directly to the battery ground ideally, but a dedicated independent chassis ground will suffice.



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INSTALLATION INSTRUCTIONS

ProMax Wiring Layout:



Promax Controller Wire Color Location

Black	Main Controller Ground	Connect directly to battery negative. Prov
Green	Stage 1 (2-stage) or N2O Solenoid (AFR)	Connects to the ground side of both stage 1
Yellow	Stage 2 (2-stage) or Fuel Solenoid (AFR)	Connects to the ground side of both stage 2

Connect directly to battery negative. Provides primary ground for all controller functions. Connects to the ground side of both stage 1 solenoids in 2-Output Mode or to the ground of the N2O solenoid for AFR Mode. Connects to the ground side of both stage 2 solenoids in 2-Output Mode or to the ground of the Fuel solenoid for AFR Mode.

Connector Wire Color Location

1. 2. 3.	Purple/White OPEN OPEN	Tach Signal Input	This is the RPM Input wire. Common locations for rpm signal are: Coil, Fuel injector, RPM output for aftermarket ignition.
4.	Blue/White	Input from N2O Sensor 2	Reference signal for Nitrous Pressure. We recommend PN: 00-61002-NPS Nitrous Outlet ProMax Progressive Controller Nitrous Pressure Sensor
5.	Green	12v Signal from Trans Brake Button	This is the trans brake input. Can be used to interrupt all nitrous activation with 12v applied.
6.	White/Red	0-5V Analog Output	This is a reference wire for solenoid duty cycle. This can be hooked to an input on an aftermarket ECU to reference solenoid duty cycle for fuel enrichment on dry nitrous systems.
7.	Grey	CAN Bus HI	High side CAN Bus network wire. Used for external modules.
8.	Grey/White	CAN Bus LOW	Low side CAN Bus network wire. Used for external modules.
9.	Lt. Green/Black	5v Sensor Supply	5v supply voltage for N2O and Fuel Pressure Sensors.
10.	Brown	Sensor Ground	Ground supply for N2O and Fuel Pressure Sensors.
11.	Grey/Black	Input from Vehicle Speed Sensor	This can be utilized with your vehicles factory two-wire or hall effect speed sensor.
12.	White/Black	Output to Stage 1 Ignition Retard Box	Can be set as a 12v+ or ground output.
13.	Blue/Red	Output to Stage 2 Ignition Retard Box	Can be set as a 12v+ or ground output.
14.	Blue	Input from N2O Sensor 1	Reference signal for Nitrous Pressure. We recommend PN: 00-61002-NPS Nitrous Outlet ProMax Progressive Controller Nitrous Pressure Sensor
15.	Blue/Black	Manifold Absolute Pressure (MAP) Input	Can be configured for 1-Bar, 2-Bar and 3 Bar GM MAP sensors.
16.	White/Blue	Input from Fuel Pressure Sensor Input	Reference signal for Fuel Pressure. We recommend PN: 00-61002-FPS Nitrous Outlet ProMax Progressive Controller Fuel Pressure Sensor
17.	Pink/Black	Wideband 1 Input	0-5v input for Air/Fuel ratio. Requires use of Wideband O2 sensor controller with 0-5V analog output.
18.	Pink	Wideband 2 Input	0-5v input for Air/Fuel ratio. Requires use of Wideband O2 sensor controller with 0-5V analog output.
19.	Green/White	Throttle Position Input	This can be configured to monitor throttle percentage via a TPS sensor or via a WOT switch tied to a 12v signal.
20.	Orange	12v Switched Power from Arm Switch	This is the keyed 12v power from your system arm switch to power the ProMax controller.

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Basic Installation - AFR Wiring Diagram:



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Basic Installation - 2 Stage Wiring Diagram:



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Software Installation on PC:

Included in the box with the ProMax controller is a USB flash drive. Insert the flash drive into one of your PC/laptop USB ports. When the windows wizard popup window appears, select open folder to view files. Double click ProMax Installer icon. The setup wizard will guide you through the rest of the install process. **Apple computers are not supported.** Windows 7, 8, 10 compatible.



<Back Next > Cancel

Advanced Installe

Ready to Install

< Back 🛛 🖓 Install Cancel

Installation Complete

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< Back Finish Cancel

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INSTALLATION INSTRUCTIONS

Updating Firmware to Your ProMax Controller:

NOTE: We recommend updating firmware out of the box to ensure you are loaded with the latest release.

For future firmware updates, this is how you'll install them to the ProMax controller and/or the Display Screen. Firmware updates will be made available on our website and be sent out via mass email. Complete the following steps:

← → × ↑ 🔝 > Control Panel	 All Control Panel Items 		✓ Č Search Control Panel	,P	🗧 🔶 👻 🛧 🖬 > Control P	anel > All Control Panel Items > Programs and Features			~	Search Program	ns and Features
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						ProMax v1.09 by Nitrous Outlet	Nitrous Outlet	3/13/2018	3.96 MB	1.06	
						PuTTY release 0.70 (64-bit)	Simon Tatham	9/13/2017	7.20 MB	0.70.0.0	
						QuickBooks Enterprise Solutions: Mfg and Whsle Edit	Intuit Inc.	3/5/2018		28.0.4005.2806	
						B QuickBooks Runtime Redistributable	Intuit Inc.	1/3/2017	12.1 MB	1.00.0000	
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						SCTDriversV1011x64	SCT Performance LLC	2/8/2018	1.68 MB	12.0.0	
						Skype version 8.17	Skype Technologies S.A.	3/13/2018	173 MB	8.17	
						TeamViewer 12	TeamViewer	3/8/2018		12.0.95388	
						UPS WorldShip	UPS	2/16/2018		21.0	

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Control Panel Screen

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Uninstall Program List Screen

1. Go to your control panel, and uninstall any previous ProMax software as shown in the above illustrations.



- 2. Download the latest ProMax Installer at http://www.nitrousoutlet.com/media/tech docs/promax/ProMax Installer v1.10.exe. It is also available on the ProMax Controller product page on nitrousoutlet.com. See illustration above.
- 3. If you get this popup, click More Info and then click Run Anyway. See illustration above.
- Follow the setup prompts as on the previous page of this manual. 4.
- Once loaded, ensure the ProMax software is closed. 5.

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INSTALLATION INSTRUCTIONS

Updating ProMax ECU Box:

- Start with ProMax software closed. 1.
- If you have a touch screen, disconnect it from the ProMax at this time. 2.
- 3. Power up the controller box and connect it to your PC/Laptop using the USB cord provided with your ProMax unit.
- 4. Wait 10 seconds then open the ProMax software by double clicking the icon on your desktop.



Click yes on the popup box asking if it should search for controller. 5.



- A popup will appear saying controller not found. This is normal 7. and is not an issue. Click Ok.
- 8. Click the Wrench Icon on the software screen.

Nitrous Outlet ProMax File Help ProMax × Controller Found! NITROUS Incorrect Firmware Version! STREE Expecting v1.10 Found: v1.06 Ok RETARD RETARD 2 PRESET TUNE-UPS 🐻 CONNECTED ProMax Controller Screen Illustration 6

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Another popup will appear stating the controller is found, but that 6. the firmware is different. Click Ok.



9. Then click Firmware Update.

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INSTALLATION INSTRUCTIONS

ProMax Firmware Update	×
ProMax Update	
Select Firmware File:	
Please select firmware file	
Update Display Update ECU	
	^
	× .

ϟ Open				X
← → · · ↑ 📙 « Program Files (x86) → Nitrous Outlet → ProMax v1.10	ٽ ~	Search ProMax v	1.07 🌙	D
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File name:		 Firmware Files (* 	*.nofw)	~
		Open 🗸	Cancel	

Illustration 11

Firmware Update Screen

Illustration 10

Firmware Update Screen

 The firmware update window will appear. Click the box with 3 dots on the right of the window.

C:\Program Files (x8	6)\Nitrous Outlet\ProMax v1.10\Pro_Max_Firmware_109.nofw	
Update Display	Update ECU	
Check binary file Check binary file Check for ECU Start Wait for erase		0
Sending File		
		-
		-
Upload Success!		

Illustration 12

Firmware Update Screen

12. Then click Update ECU.

11. It will navigate to the ProMax folder on your computer. Select the firmware version and click open.

- 14. It will take several minutes for the update process to complete.
- 15. Once the update window shows Update Success, close the window.
- 16. Close the ProMax software, power off the controller, and unplug the USB from the ProMax controller.

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INSTALLATION INSTRUCTIONS

Updating Your ProMax Touch Screen:

1. Connect the screen to the controller, power on the controller, connect the screen to the USB cable and your laptop, and wait 10 seconds.



Illustration 2

ProMax Touch Screen Firmware Update

2. Once powered, the screen will show that the Firmware is the incorrect version. Click Update Firmware.



Illustration 3

ProMax Touch Screen Firmware Update

- 3. On the next screen, click update. The screen will go dark. This is normal and not an issue.
- 4. Open the ProMax software by double clicking the icon on your desktop. Click No when asked to search for the controller.



Illustration 5

ProMax Menu Screen

- 5. On your PC/Laptop, click the wrench icon and then click Firmware Update.
- 6. The firmware update window will appear. Click the box with 3 dots on the right of the window.
- 7. It will navigate to the ProMax folder on your computer. Select the firmware version and click open



Illustration 8

Display Update Screen

- 8. Then click Update Display.
- 9. It will take several minutes for the update process to complete.
- 10. Once the update window shows Update Success, close the window.
- 11. Close the ProMax software, power off the controller, and unplug the USB from the ProMax Screen.

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PC Interface/Screen Layout:

The PC Interface/Display shows 5 configurable windows (A), 5 preset progressive tunes (T1-T5) (B), Activation % of stages or operation % of nitrous and fuel (depending on what output type is selected) (C), N20 lcon (nitrous activation parameters) (D), Wrench lcon (main controller setup) (E), and 3 status lights for transbrake and timing retards (F).



AFR (Air Fuel Ratio) Mode

2-Stage Mode

Controller Setup - Section 1:

Begin controller setup by selecting the Wrench Icon. Then click sensor setup.

This is where all of your Controller Inputs will be configured. Each Input option screen will have an Enable Checkbox in the upper left corner. The checkbox must be checked to make the input active. If you do not wish to utilize an input option, simply leave the box unchecked.



Main Screen

Menu Screen

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1. Select RPM Setup:

Check the RPM Enabled Checkbox if you want this input active. Select your number of cylinders from the menu using the up or down arrow. You can choose between 1 and 12 cylinders. Select your coil type using the up or down arrows. You can select Distributor, Coil on Plug (COP), or Waste Spark. With the vehicle running, the RPM will be displayed on the right allowing you to verify the correct Coil Type. For example, LS engines are COP. Use the Back Arrow in the lower right of the screen to return to the Sensor Setup Menu.



Sensor Setup Screen



2. Select Speed Sensor:

Check the Speed Enabled Checkbox if you want this input active. Select your Units from the menu using the up or down arrow. You can choose from Miles per Hour (MPH) or Kilometers per Hour (KPH). Determine what type of speed sensor your vehicle has by looking at the connector on the speed sensor itself. If it has two wires, select Two Wire on the Sensor Type, if it has more than two wires, select Hall. Finally set your Pulses Per Mile using the up or down arrows. The easiest way to do so is to drive the vehicle and change the Pulses Per Mile until the speed displayed on the controller matches the vehicle speedometer. If your speedometer is incorrect or you don't have one, you can download a free GPS App for your phone and adjust the Pulses Per Mile until the speed displayed on the controller matches the GPS. Use the Back Arrow in the lower right of the screen to return to the Sensor Setup Menu.

NITROUS OUTLET	MAX SENS	NITROUS OUTLET PROMAX	
PM SETUP	SPEED SENSOR	SPEED ENABLED	
N20 PRESSURE 1	N20 PRESSURE 2		
WIDEBAND 1	WIDEBAND 2	PULSES PER MILE 80000 MPH	
FUEL PRESSURE	TPS	SENSOR TYPE TWO WIRE	
В МАР		FREQUENCY	

Sensor Setup Screen

Speed Sensor Setup Screen

2015 and newer Dodge/Chrysler/Jeep vehicles will need to install an aftermarket stand alone speed sensor as the ProMax will not read the factory speed sensors.

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3. Select Nitrous Pressure 1:

Check the N2O Pressure 1 Enabled Checkbox if you want this input active. Select your Units from the menu using the up or down arrow. You can choose from Pounds per Square Inch (PSI) or Kilopascal (KPA). If using the Nitrous Outlet N2O Pressure Sensor (PN: 00-61002-NPS), set the N2O PSI at 4.5v to 1600 and the N2O PSI at 0.5v to 0. To set the N2O PSI at 4.5v and N2O PSI at 0.5v for another brand sensor, you'll need to reach out to the manufacturer for proper settings. Once PSI at 0.5v and 4.5v is set, use the Back Arrow in the lower right of the screen to return to the Sensor Setup Menu.



Sensor Setup Screen



Nitrous Pressure 1 Setup Screen



4. Repeat step 3 to setup Nitrous Pressure 2:

Sensor Setup Screen



Nitrous Pressure 2 Setup Screen

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5. Select Wideband 1:

Check the Wideband 1 Enabled Checkbox if you want this input active. This would connect to an analog output from an external wideband controller. Select your Units from the menu using the up or down arrow. You can choose from Lambda or Air Fuel Ratio (AFR). Select your Fuel Type using the up or down arrow. You can choose from Gasoline, Liquified Petroleum Gas (LPG), Methanol, Compressed Natural Gas (GNG), E100, E90, E85, or E70. Set the Lambda at 5v and Lambda at 0v. The manufacturer of the wideband controller may have this information available for the sensor they use. If not, you can monitor the analog output of the wideband controller and input the corresponding Lambda at 5v and Lambda at 0v in to ProMax. Both Lambda and Volts are displayed to the right so you can make minor adjustments to make the ProMax readout match your wideband controller. Once the Lambda at 5v and Lambda at 0v are set, use the Back Arrow in the lower right of the screen to return to the Sensor Setup Menu.



Sensor Setup Screen

Sensor Setup Screen



Wideband 1 Setup Screen



6. Repeat step 5 for Wideband 2:

VIDEBAND 2 ENABLED

NITROUS OUTLET

Wideband 2 Setup Screen

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7. Select Fuel Pressure:

Check the Fuel Pressure Enabled Checkbox if you want this input active. Select your Units from the menu using the up or down arrow. You can choose from Pounds per Square Inch (PSI) or Kilopascal (KPA). If using the Nitrous Outlet Fuel Pressure Sensor, set the Fuel PSI at 4.5v to 100 and the Fuel PSI at 0.5v to 0. To set the Fuel PSI at 4.5v and Fuel PSI at 0.5v for another brand sensor, you'll need to reach out to the manufacturer for proper settings. Once PSI at 0.5v and 4.5v is set, use the Back Arrow in the lower right of the screen to return to the Sensor Setup Menu.



Sensor Setup Screen

Fuel Pressure Setup Screen

8. Select TPS:

Check the TPS Enabled Checkbox if you want this input active, If you are using a WOT Switch instead of TPS, simply check the WOT Switch Box (the enabled checkbox needs to remain checked). If using the Throttle Position Sensor (TPS), select your TPS Closed and TPS Open Voltage using the up or down arrow. On a cable driven throttle body, you can read voltage with the key on/engine off. On drive by wire/electronic throttle, you may have to have the engine running. Set the TPS Arm Percent using the up or down arrow. This is the throttle percentage you want the programmer to allow system operation. Once set, use the Back Arrow in the lower right of the screen to return to the Sensor Setup Menu.

NITROUS OUTLET	SENS	NITROUS OUTLET	TPS
	SPEED SENSOR	TPS ENABLED TPS CLOSED 0.5	
WIDEBAND 1	WIDEBAND 2	TPS OPEN VOLTAGE 4.5	TPS %
FUEL PRESSURE	TPS		VOLTS

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Sensor Setup Screen

Throttle Position Sensor Setup Screen



9. Select MAP

- 1. Check the MAP Enabled Checkbox if you want this input active
- 2. Select your Units from the menu using the up or down arrow. You can choose from:
 - **PSI** This is Absolute Pressure, meaning that the ProMax would read 14.7psi at perfect sea level and the engine not running. On a street car with the engine at idle it would read about 5psi. At 6lb of boost, it would read about 20.7psi.
 - **KPA** This is Absolute Pressure, meaning that the ProMax would read 101.4kpa at perfect sea level and the engine not running. On a street car with the engine at idle it would read about 35kpa. At 6lb of boost, it would read 143kpa.
 - inHG (VAC) This will display engine vacuum and read 0 at perfect sea level and the engine not running. On a street car with the engine at idle it would read about 19inHG. At 6lb of boost, it would read about -12inHG.
 - PSI (BST) This will display boost pressure is PSI and will read 0 at perfect sea level and the engine not running. On a street car with the engine at idle it would read about -9psi. At 6lb of boost, it would read 6psi.
- 3. This controller was based around using a GM MAP sensor as they are cost effective and readily available. The following are our suggested baseline settings, but may need to be adjusted slightly based on your altitude for a more accurate reading.
 - For GM 1-Bar MAP sensor, set MAP PSI at 4.5v to 14.0 (96kpa) and MAP PSI at 0.5v to 2.9 (20kpa).
 - For GM 2-Bar MAP sensor, set MAP PSI at 4.5v to 27.3 (188kpa) and MAP PSI at 0.5v to 4.1 (28kpa).
 - For GM 3-Bar MAP sensor, set MAP PSI at 4.5v to 41.4 (285kpa) and MAP PSI at 0.5v to 4.8 (33kpa).
- 4. To calibrate the ProMax select the PSI Unit and plug in the suggested numbers above for your MAP sensor. Then if you want the ProMax to display vacuum or boost, simply change the Units to the desired setting and you're done!





Map Screen

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INSTALLATION INSTRUCTIONS

Controller Setup - Section 2:

Output Setup:

- 1. Click output setup.
- 2. Select the desired Output Type.
- 3. Output will allow progressive operation of two individual stages of nitrous. AFR mode will allow progressive control of a single stage of nitrous with closed loop fueling control based on wideband O2 input.
 - If Selecting 2-Output, set the Stage 1 and Stage 2 Frequency. We suggest the following starting points for Nitrous Outlet Solenoids
 – For .112 and .122 orifice nitrous solenoids, set the Frequency to 20Hz. For .178 orifice nitrous solenoids, start at 15Hz. If
 starting your progressive ramp below 40%, you may find that lowering the frequency will help smooth solenoid operation, especially
 on the larger .178 orifice unit. Testing will be required to find the right frequency for your setup.
 - If Selecting AFR, set the Nitrous and Fuel Frequency. On nitrous frequency, we suggest the following starting points for Nitrous Outlet Solenoids For .112 and .122 orifice nitrous solenoids, set the Frequency to 20Hz. For .178 orifice nitrous solenoids, start at 15Hz. If starting your progressive ramp below 40%, you may find that lowering the frequency will help smooth solenoid oper ation, especially on the larger .178 orifice unit. For fuel frequency, use the same frequency as the nitrous solenoid as a starting point. Based on your datalogs you can adjust the fuel frequency to help smooth out your air fuel ratio while progressing solenoids. You'll likely find that the Fuel Frequency will be different than the Nitrous Frequency.
- 4. Set the Retard 1 Activate % using the up or down arrow. This is the percentage in the progressive ramp the timing retard output will activate. It's hard to suggest a starting point as it is very dependent on the aggressiveness of your N/A timing curve. The more aggressive your timing curve, the sooner you want to engage the timing retard. The less aggressive your timing curve, you can engage the retard at a higher percentage. Regardless, by 30%, you'll want the retard engaged.
- 5. For Retard 1 Type, choose Pull to BAT for a 12v output signal or choose Pull to GND for a ground output signal. Once set, use the Back Arrow in the lower right of the screen to return to the Setup Menu.



Menu Screen



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Controller Setup - Section 3:

About and Diagnostics Screens:

The About Screen shows the Monitor Version, ECU Version, Boot Version, and Hardware Version.

The Diagnostics Screen shows any active programmer errors.



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INSTALLATION INSTRUCTIONS

Controller Setup - Section 4:

Screen Display

This is where you select the data displayed on the Home Screen in the five configurable windows. Use the up or down arrow to select from: RPM, Speed, N2O Pressure 1, N2O Pressure 2, Wideband 1, Wideband 2, Fuel Pressure, TPS, MAP, Time 1, Time 2, Gear 1, Gear 2, Battery Voltage, Stage 1 % (or N2O % in AFR mode), Stage 2 % (or Fuel % in AFR mode), Lockouts, or leave it set to Blank to display nothing. Once set, use the Back Arrow in the lower right of the screen to return to the Setup Menu.



Menu Screen

Screen Display Screen

Controller Setup - Section 5:

Data Acquisition Screen

This is your datalogging! There are four trigger types which are inputs that will start the datalog for the run – RPM, TPS, MAP, and Transbrake. Trigger logic is the range in which the trigger will function and the Trigger Value is the point at which the trigger will engage.

- For RPM, Trigger Logic can be greater than or less than. The Trigger value is the RPM from 0 to 10,000RPM in 100RPM increments.
- For TPS, Trigger Logic can be greater than or less than. The Trigger value is the TPS percentage from 0 to 100% in 1% increments.
- For MAP, Trigger Logic can be greater than or less than. The Trigger value is the PSI or KPA from 0 to 125psi (0 to 862kpa) in 0.1 increments.
- For Transbrake, the Trigger logic either enables or Disables the log based on the 12v input from the transbrake button.

Once set, use the Back Arrow in the lower right to return to the Setup Menu and again to the main display. This completes initial sensor and output setup.



Diagnostics Screen

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INSTALLATION INSTRUCTIONS

Controller Setup - Section 6:

Managing Datalogs:

Datalogs cannot be viewed on the handheld display, only via PC.

Viewing Datalogs:

To view datalogs, power on the ProMax and connect it to the PC via USB cable. Wait 10 seconds and open the ProMax software and click the Wrench lcon(1) and then click Data Acquisition(2). Click View Data(3). The Select Run window will appear and any logs saved to the controller will be listed in the window. Highlight the log you wish to view and click View Run(4). This will open the run log in a new window(5). You can view as many inputs as you want by checking or unchecking the boxes on the View Run Data window.



View Run Screen

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INSTALLATION INSTRUCTIONS



Run Data Screen

Saving Datalogs to PC:

To save datalogs, power on the ProMax and connect it to the PC via USB cable. Wait 10 seconds and open the ProMax software and click the Wrench lcon(1) and then click Data Acquisition(2). Click View Data(3). The Select Run window will appear and any logs saved to the controller will be listed in the window. Highlight the log or logs you wish to Save and click Save Run(4). Another popup will appear allowing you to save the Datalogs wherever you want on your PC(5).



Main Screen

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Menu Screen



INSTALLATION INSTRUCTIONS

NITROUS OUTLET	
TRIGGER TYPE	
TRIGGER LOGIC	VIEW DATA
TRIGGER VALUE	
	Diagnostics Scree

5elect Run X Select Run Number Duration (s) 24 10s \checkmark \checkmark 25 14s 26 12s \checkmark View Run View Saved Clear All Save Run(s) Select run to view or save

View Run Screen



Save As Screen

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Viewing Datalogs Saved to PC:

Open the ProMax software and click the Wrench Icon(1) and then click Data Acquisition(2). Click View Data(3). The Select Run window will pop up, Click View Saved(3). The Select Run window will appear and allow you to navigate to the logs saved to the PC(4). Double click the log you wish to view and the run log will open in a new window(5). You can view as many inputs as you want by checking or unchecking the boxes on the View Run Data window.



Menu Screen

		Duration (s)	
	24	10s	

View Run Screen

N20021519

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TRIGGER LOGIC

CREATER THAN

TRIGGER VALUE

100

Diagnostics Screen

Main Screen



INSTALLATION INSTRUCTIONS



Run Data Screen

Nove As			×
← → 🕐 🔂 > This PC > Desktop > Sample Datalogs	5 v	Search Sample Datalogs	Q
Organize 🔻 New folder			?
 OneDrive This PC USB Drive (G:) Clear DONT USE Save View PC View PM Zoom Network ANDYPC FILESERVER 			
File name: 🗧			~
Save as type: nodata Files (*.nodata)			~
∧ Hide Folders		Save Cance	el

Save As Screen

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Clearing All Datalogs Saved to Controller:

Be sure to save any datalogs you want to view later to your PC!! To clear datalogs saved to the ProMax, power on the ProMax and connect it to the PC via USB cable. Wait 10 seconds and open the ProMax software and click the Wrench lcon(1) and then click Data Acquisition(2). Click View Data(3). The Select Run window will pop up, Click Clear All(4). Another popup will appear asking if you really want to clear all(5). All logs have been erased from the ProMax.



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How to Zoom In / Out on Datalog:

If there is an area of the log file that you would like to inspect more closely, move your "A" and "B" lines to the area you want by simply clicking and dragging(1). On the upper bar in the Run Data window, right click anywhere on the bar and then click Zoom In(2). This will zoom to the area you moved the "A" and "B" lines around(3). To zoom out, right click anywhere on the upper bar and then click Zoom Out(4).





Zoom In Dialog Box



Zoom Area Screen

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INSTALLATION INSTRUCTIONS



Zoom Out Dialog Box

Screen Backlighting - Section 7:

Backlight Screen Brightness:

Within the Setup Menu Window choose Backlight. This will bring up the Backlight Screen Brightness adjustment window. Use the minus symbol (-) to reduce the brightness or use the Plus symbol (+) to brighten the display. This adjustment can only be viewed on the handheld display, **NOT** on the PC. When complete use the Back Arrow in the lower right to return to the Setup Menu and again to the main display.



Menu Screen

Backlight Brightness Adjustment Screen

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INSTALLATION INSTRUCTIONS

PROMAX PROGRESSIVE CONTROLLER **N20 Setup - Section 1** 2-STAGE MODE

2-Output Mode allows the ProMax to independently and progressively control two separate stages of nitrous. The controller will handle up to 70 amps per stage. You can select from five different Ramp Types:

• Time

Time is the most popular ramp type. Not only does it allow you to set your progression over a specific time frame, it allows you an option to HOLD or RESET. Should you have to pedal the car and the TPS/WOT goes out of range, the HOLD option will start the ramp where it left off once the TPS/WOT comes back in range, or the RESET option will start the ramp over at the beginning.

• RPM

An RPM based ramp allows you to set your ramp to spray less nitrous at lower RPM and more at higher RPM.

• TPS

A TPS based ramp should not be used with a WOT switch. The TPS ramp will allow you to set your ramp to spray less nitrous at lower throttle opening/TPS percentage and increase along with throttle opening/TPS percentage.

• MAP

The MAP based ramp is most popular with Boost, especially turbos and centrifugal superchargers. It allows you to spray more nitrous at low/no boost and progressively remove nitrous as boost pressure comes up.

• Speed

The Speed based ramp allows you to spray less nitrous at lower speeds where traction is limited and more at higher speeds.

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INSTALLATION INSTRUCTIONS

N20 Setup - Section 1:

2-Stage Mode

1. To set up the Nitrous operation parameters, click the N2O icon on the top right of the main display screen. Under the Stage 1 setup column, go to the bottom and click the wrench icon for Stage Setup.



Main Screen



On the right you'll see T1 thru T5; these are five different Progressive Tunes you can set up independently of each other. Make sure you are on the Progressive Tune you wish to be working with, we start at T1. Check the Stage 1 enable checkbox to enable the stage within your selected Progressive Tune. Then move to the right and select the Ramp Type. Each Progressive Tune can have a different Ramp Type if you desire. Once selected, choose your Start and Stop Point for the Ramp. The Ramp Type and Start/Stop Points are the beginning and end of the ramp you'll build for solenoid duty cycle in Step 2.

Your Start and Stop points are not how long the nitrous will stay engaged! The ending point on the ramp graph is where the stage will remain for the remainder of the pass. For example, if you set up a time ramp starting at 0.0 and stopping at 10.0 and you are at 100% by 1.8 seconds, you are wasting 2/3 of your available graph! If you plan to be at 100% before 2 seconds, set your start point at 0.0 and the end point at 2.0 and now you have 12 points in that 2 second window to really fine tune your progressive ramp.



Stage 1 Setup Screen

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INSTALLATION INSTRUCTIONS

Your Choices for Ramp Type Are:

- RPM
 - Start RPM can be as low as 1000rpm, but we do not suggest starting the nitrous below 3000rpm if you are not enabling the RPM Lockout in Step 3.
 - Stop RPM can be as high as 10,000rpm.
- Time
 - Start Time can be as low as 0 seconds.
 - Stop Time can be as high as 60 seconds.
 - You can choose if your Time Ramp Resets to the beginning if the TPS goes out of range (example: you have to pedal the car due to traction issues) or if the Time Ramp Holds and restarts where it left off.
- TPS
 - Start TPS can be as low as 0 percent, but we do not suggest starting the nitrous below 80 percent if you are not enabling the TPS Lockout in Step 3.
 - Stop TPS can be as high as 100 percent.
- MAP
 - MAP will display in the units you selected in sensor setup.
- Speed
 - Start Speed can be as low as 10 MPH.
 - Stop Speed can be as high as 400 MPH.

After Ramp Type and Start/Stop have been set, set the Trans Brake option. This determines whether the 12v input from the Trans Brake Button will Enable the stage of nitrous or Disable the stage of nitrous. We suggest Disable. If you don't have a Trans Brake, simply leave the setting on the 3 dots (…). Repeat these steps for T2 thru T5 if desired. Click the back arrow in the lower right to return to the Stage Setup Screen.



Stage 1 Setup Screen

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INSTALLATION INSTRUCTIONS

2. Select Ramp Setup from the Stage 1 column on the Stage Setup Screen. On the right you'll see T1 thru T5; these are five different Progressive Tunes you can set up independently of each other. Make sure you are on the Progressive Tune you wish to be working with, we start at T1. You have 12 independently adjustable points on the graph to completely customize the progressive ramp for the stage. We give several Progressive Tune options so that you can have Ramps set up for both high and low traction situations. Once you have the ramp built, you can smooth it by clicking the button with the two "waves" on it at the top of the screen.

Repeat the above for T2 thru T5 if desired. Click the back arrow in the lower right to return to the Stage Setup Screen.



Stage 1 Setup Screen



3. Select System Lockouts from the Stage 1 column on the Stage Setup Screen. These are your parameters that will allow activation or deactivation of the nitrous stage. For each Lockout type (RPM, TPS, etc.) you will need to check the Lockout Enable Checkbox if you want that particular lockout to be active. You can have as many lockouts enabled as you wish – the more you have active, the safer you'll be. The Low Limit and High Limit are the "window in which the lockout will allow the system to operate. Your Lockout choices are on the next page.



Stage 1 Setup Screen

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Stage 1 System Lockouts Screen



INSTALLATION INSTRUCTIONS

Your Lockout choices are:

- RPM
 - Low Limit can be as low as 0 RPM, but we do not suggest starting the nitrous below 3000rpm.
 - High Limit can be as high as 10,000rpm. We suggest stopping the nitrous a few hundred RPM before your rev limiter.
- Speed
 - Low Limit can be as low as 0 MPH/KPH.
 - High Limit can be as high as 400mph (644 KPH).
- N20 Press 1
 - Low Limit can be as low as 0 PSI/KPA. Your setting will be dependent on the bottle pressure your tuneup is built around. A good starting point for an off the shelf application would be 800 PSI (5516 KPA).
 - High Limit can be as high as 4,000 PSI (27,579 KPA). Your setting will be dependent on the bottle pressure your tuneup is built around. A good starting point for an off the shelf application would be 950 PSI (6550 KPA).

• N20 Press 2

- Low Limit can be as low as 0 PSI/KPA. Your setting will be dependent on the bottle pressure your tuneup is built around. A good starting point for an off the shelf application would be 800 PSI (5516 KPA).
- High Limit can be as high as 4,000 PSI (27,579 KPA). Your setting will be dependent on the bottle pressure your tuneup is built around. A good starting point for an off the shelf application would be 950 PSI (6550 KPA).

MAP

• MAP will display in the units you selected in sensor setup.

• Fuel Press

- Low Limit can be as low as 0 PSI/KPA. Your setting will be dependent on the fuel pressure your tuneup is built around. A good starting point would be 5 PSI (34 KPA) lower than your engine running flowing fuel pressure for high pressure applications and 1 PSI (7 KPA) lower than your engine running flowing fuel pressure for low pressure applications.
- High Limit can be as high as 100psi (689.5 KPA). Your setting will be dependent on the fuel pressure your tuneup is built around. A good starting point would be 5 PSI (34 KPA) higher than your engine running flowing fuel pressure for high pressure applications and 1 PSI (7 KPA) higher than your engine running flowing fuel pressure applications.
- Wideband 1
 - Low Limit can be as low as 0 AFR/Lambda. Your setting will be entirely dependent on your current engine operating tuneup.
 - High Limit can be as high as 44.1 AFR (3 Lambda). Your setting will be entirely dependent on your current engine operating tuneup. For example, if your AFR on nitrous is 12.8:1, your high limit will need to be slightly above that for the system to engage.
- Wideband 2
 - Low Limit can be as low as 0 AFR/Lambda. Your setting will be entirely dependent on your current engine operating tuneup.
 - High Limit can be as high as 44.1 AFR (3 Lambda). Your setting will be entirely dependent on your current engine operating tuneup. For example, if your AFR on nitrous is 12.8:1, your high limit will need to be slightly above that for the system to engage.

Once complete, hit the back arrow in the lower right corner to return to the Stage Setup Screen.

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INSTALLATION INSTRUCTIONS

- 4. Select Gear Lockouts from the Stage 1 column on the Stage Setup Screen. This option will keep the nitrous from activating for up to 3 gears. The controller is looking for an RPM sweep up to or over the set shift RPM and a minimum of at least the set RPM drop. On the right you'll see T1 thru T5; these are five different Progressive Tunes you can set up independently of each other. Make sure you are on the Progressive Tune you wish to be working with, we start at T1. Check the Gear Lockout Enable checkbox if you wish to make gear lockouts active. You can choose to have up to 3 Active Gears. The Shift RPM is the RPM at which your shift takes place. The RPM Drop is the RPM difference from the shift point to the engagement of the next gear. You can determine this by simply watching the tach on a gear change. It just needs to be close, not exact. Repeat this for T2 thru T5 if desired. Once complete, hit the back arrow in the lower right corner to return to the Stage Setup Screen.
- 5. Repeat Steps 1 thru 4 for Stage 2 if desired. Once finished, your controller setup is complete!



Stage 1 Setup Screen



Stage 1 System Lockouts Screen

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1.

PROMAX PROGRESSIVE CONTROLLER

INSTALLATION INSTRUCTIONS

How to Control Stage 2 on a Button 2-Output Mode

If you wish to have your 2nd Stage activated by a push button, but still have all the safety and functionality of the ProMax, we have a solution.

The wiring diagram below illustrates how to wire the button. One side of the button will connect to the Light Green/Black 5v Sensor Supply from the ProMax. The other side of the button will connect to the Light Blue/Black MAP Input to the ProMax.





Menu Screen

From the Home Screen, click the Wrench Icon

Main Screen

Click Sensor Setup

2.

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INSTALLATION INSTRUCTIONS



Click MAP

3.

NITROUS OUTLET MAP ENABLED UNITS \sim PSI MAP PSI AT 4.5V $\overline{\mathbf{v}}$ \uparrow 14.7 PS MAP PSI AT 0.5V \land 0.0 VOLTS

Map Screen

- Make sure the MAP Enabled Box is checked. Set the Units to PSI, 4. set the MAP at 4.5v to 14.7, and set MAP at 0.5v to 0.0.
- Back out to the Home Screen 5.



Stage 2 Setup Screen

- 7. Click System Lockouts in the Stage 2 column
- Select MAP and click the Lockout Enable box. 8.
- Set the Low Limit to 15 and the High Limit to 18. 9.

The setup above will allow the 2nd Stage to only activate when you push the button.





Sensor Screen

NITROUS OUTLET **STAGE 2 SYSTEM LOCKOUTS** \sim MAP $\left[\wedge \right]$ LOCKOUT ENABLE \checkmark LOW LIMIT \sim 15 $(\land$ HIGH LIMIT 18 \land \sim

Click the N20 Icon

6.

Stage 2 System Lockout Screen

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INSTALLATION INSTRUCTIONS

PROMAX PROGRESSIVE CONTROLLER **N20 Setup - Section 2 AFR MODE**

IMPORTANT DISCLAIMER: AFR Mode is not a substitute for a correct tuneup. It is solely intended to help maintain a target AFR by helping compensate for slight variations in bottle pressure and flowing fuel pressure.

AFR Mode allows the ProMax to independently and progressively control the Nitrous and Fuel solenoids for one single stage of nitrous. It will also allow optional Closed Loop operation based on optional Wideband O2 inputs. The controller will handle up to 70 amps per channel. You can select from five different Ramp Types:

• Time

Time is the most popular ramp type. Not only does it allow you to set your progression over a specific time frame, it allows you an option to HOLD or RESET. Should you have to pedal the car and the TPS/WOT goes out of range, the HOLD option will start the ramp where it left off once the TPS/WOT comes back in range, or the RESET option will start the ramp over at the beginning.

• RPM

An RPM based ramp allows you to set your ramp to spray less nitrous at lower RPM and more at higher RPM.

• TPS

A TPS based ramp should not be used with a WOT switch. The TPS ramp will allow you to set your ramp to spray less nitrous at lower throttle opening/TPS percentage and increase along with throttle opening/TPS percentage.

• MAP

The MAP based ramp is most popular with Boost, especially turbos and centrifugal superchargers. It allows you to spray more nitrous at low/no boost and progressively remove nitrous as boost pressure comes up.

• Speed

The Speed based ramp allows you to spray less nitrous at lower speeds where traction is limited and more at higher speeds.

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INSTALLATION INSTRUCTIONS

N20 Setup - Section 2:

AFR Mode

1. To set up the Nitrous operation parameters, click the N2O icon on the top right of the main display screen. Go to the bottom and click the wrench icon for Stage Setup.







On the right you'll see T1 thru T5; these are five different Progressive Tunes you can set up independently of each other. Make sure you are on the Progressive Tune you wish to be working with, we start at T1. Check the AFR enable checkbox to enable the stage within your selected Progressive Tune. Then move to the right and select the Ramp Type. Each Progressive Tune can have a different Ramp Type if you desire. Once selected, choose your Start and Stop Point for the Ramp. The Ramp Type and Start/Stop Points are the beginning and end of the ramp you'll build for solenoid duty cycle in Step 2.

Your Start and Stop points are not how long the nitrous will stay engaged! The ending point on the ramp graph is where the stage will remain for the remainder of the pass. For example, if you set up a time ramp starting at 0.0 and stopping at 10.0 and you are at 100% by 1.8 seconds, you are wasting 2/3 of your available graph! If you plan to be at 100% before 2 seconds, set your start point at 0.0 and the end point at 2.0 and now you have 12 points in that 2 second window to really fine tune your progressive ramp.



Stage 1 Setup Screen

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INSTALLATION INSTRUCTIONS

On the right you'll see T1 thru T5; these are five different Progressive Tunes you can set up independently of each other. Make sure you are on the Progressive Tune you wish to be working with, we start at T1. Check the AFR Enable checkbox and the Closed Loop Enable checkbox to enable the stage within your selected Progressive Tunes. Now, select the Ramp Type. Each Progressive Tune can have a different Ramp Type if you desire. Once selected, choose your Start and Stop Point for the Ramp. The Ramp Type and Start/Stop Points are the beginning and end of the ramp you'll build for solenoid duty cycle in Steps 2 and 3. This is not a window switch function - that will be set in the Lockout Section Step 4. Your choices for Ramp Type are:

- RPM
 - Start RPM can be as low as 1000rpm, but we do not suggest starting the nitrous below 3000rpm if you are not enabling the RPM Lockout in Step 3.
 - Stop RPM can be as high as 10,000rpm. We suggest stopping the ramp a few hundred RPM before your rev limiter if you are not enabling the RPM Lockout in Step 3.
- Time
 - Start Time can be as low as 0 seconds.
 - Stop Time can be as high as 20 seconds.
 - You can choose if your Time Ramp Resets to the beginning if the TPS goes out of range (example: you have to pedal the car due to traction issues) or if the Time Ramp Holds and restarts where it left off.
- TPS
 - Start TPS can be as low as 0 percent, but we do not suggest starting the nitrous below 80 percent if you are not enabling the TPS Lockout in Step 3.
 - Stop TPS can be as high as 100 percent.
- MAP
 - MAP will display in the units you selected in sensor setup.
- Speed
 - Start Speed can be as low as 10 MPH.
 - Stop Speed can be as high as 400 MPH.

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INSTALLATION INSTRUCTIONS

Closed Loop Control REQUIRES the use of at least one Wideband O2 input! Checking the Closed Loop Enable Checkbox allows the ProMax to pulse the solenoids to target a set AFR or Lambda based on wideband input. This is a safety feature and not a bandaid for a bad tune! We strongly suggest not enabling this function until your engine tuneup on nitrous is good to go. Then you use the Closed Loop Control to adjust for drops in bottle pressure, fuel pressure fluctuations, etc.

Once the checkbox is enabled, use the Sensor Select to determine how the ProMax will use the input data. You can select Wideband 1, Wideband 2, Minimum reading of 2 widebands, Maximum reading of 2 widebands, or the Average of 2 widebands. If using both wideband inputs, we suggest using Average.

Then select Wideband Setpoint. This is the AFR or Lambda you want the controller to target on nitrous. You should monitor your AFR while tuning so you know where to set it at.

The Sensitivity selection allows you to set how fast the controller reacts to the changes in AFR input. We've found 4 to be a good starting point.

After Ramp Type and Start/Stop have been set, set the Trans Brake option. This determines whether the 12v input from the Trans Brake Button will Enable the stage of nitrous or Disable the stage of nitrous. We suggest Disable. If you don't have a Trans Brake, simply leave the setting on the 3 dots (...). Repeat these steps for T2 thru T5 if desired. Click the back arrow in the lower right to return to the AFR Setup Screen.



AFR Setup Screen

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INSTALLATION INSTRUCTIONS

2. Select Ramp Setup from AFR Setup Screen. This is the ramp that controls the nitrous solenoid. On the right you'll see T1 thru T5; these are five different Progressive Tunes you can set up independently of each other. Make sure you are on the Progressive Tune you wish to be working with, we start at T1. You have 12 independently adjustable points on the graph to completely customize the progressive ramp for the stage. We give five Progressive Tune options so that you can have Ramps set up for both high and low traction situations. Once you have the ramp built, you can smooth it by clicking the button with the two "waves" on it at the top of the screen.

Repeat the above for T2 thru T5 if desired. Click the back arrow in the lower right to return to the AFR Setup Screen.







3. Select Fuel Correction from AFR Setup Screen. This is the ramp that controls the fuel solenoid. It is set up as a percentage of correction in reference to the Nitrous Ramp (Fuel Ramp = N20 Ramp x Fuel Correction Factor Ramp). For example, if you have the first point on the nitrous ramp set to 20% and the first point of the Fuel Correction ramp set to 100%, then the fuel solenoid will match the same 20% ramp of the nitrous solenoid. On the right you'll see T1 thru T5; these are five different Progressive Tunes you can set up independently of each other. Make sure you are on the Progressive Tune you wish to be working with, we start at T1. You have 12 independently adjust able points on the graph to completely customize the progressive ramp for the stage. Once you have the ramp built, you can smooth it by clicking the button with the two "waves" on it at the top of the screen. Repeat the above for T2 thru T5 if desired. Click the back arrow in the lower right to return to the AFR Setup Screen.



AFR Screen



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INSTALLATION INSTRUCTIONS

- 4. Select System Lockouts from the AFR Setup Screen. These are your "window switches" and define the parameters that will allow activation or deactivation of the nitrous stage. For each Lockout type (RPM, TPS, etc.) you will need to check the Lockout Enable Check box if you want that particular lockout to be active. You can have as many lockouts enabled as you wish the more you have active, the safer you'll be. The Low Limit and High Limit are the "window in which the lockout will allow the system to operate. Your Lockout choices are:
 - RPM
 - Low Limit can be as low as 0 RPM, but we do not suggest starting the nitrous below 3000rpm.
 - High Limit can be as high as 10,000rpm. We suggest stopping the nitrous a few hundred RPM before your rev limiter.
 - Speed
 - Low Limit can be as low as 0 MPH/KPH.
 - High Limit can be as high as 400mph (644 KPH).
 - N20 Press 1
 - Low Limit can be as low as 0 PSI/KPA. Your setting will be dependent on the bottle pressure your tuneup is built around. A good starting point for an off the shelf application would be 800 PSI (5516 KPA).
 - High Limit can be as high as 4,000 PSI (27,579 KPA). Your setting will be dependent on the bottle pressure your tuneup is built around. A good starting point for an off the shelf application would be 950 PSI (6550 KPA).
 - N20 Press 2
 - Low Limit can be as low as 0 PSI/KPA. Your setting will be dependent on the bottle pressure your tuneup is built around. A good starting point for an off the shelf application would be 800 PSI (5516 KPA).
 - High Limit can be as high as 4,000 PSI (27,579 KPA). Your setting will be dependent on the bottle pressure your tuneup is built around. A good starting point for an off the shelf application would be 950 PSI (6550 KPA).
 - MAP
 - MAP will display in the units you selected in sensor setup.
 - Fuel Press
 - Low Limit can be as low as 0 PSI/KPA. Your setting will be dependent on the fuel pressure your tuneup is built around. A good starting point would be 5 PSI (34 KPA) lower than your flowing fuel pressure for high pressure applications and 1 PSI (7 KPA) lower than your flowing fuel pressure for low pressure applications.
 - High Limit can be as high as 100psi (689.5 KPA). Your setting will be dependent on the fuel pressure your tuneup is built around. A good starting point would be 5 PSI (34 KPA) higher than your flowing fuel pressure for high pressure applications and 1 PSI (7 KPA) higher than your flowing fuel pressure for low pressure applications.
 - Wideband 1
 - Low Limit can be as low as 0 AFR/Lambda. Your setting will be entirely dependent on your non-nitrous engine operating tuneup.
 - High Limit can be as high as 44.1 AFR (3 Lambda). Your setting will be entirely dependent on your non-nitrous engine operating tuneup.

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INSTALLATION INSTRUCTIONS

- Wideband 2
 - Low Limit can be as low as 0 AFR/Lambda. Your setting will be entirely dependent on your non-nitrous engine operating tuneup.
 - High Limit can be as high as 44.1 AFR (3 Lambda). Your setting will be entirely dependent on your non-nitrous engine oper ating tuneup.

Once complete, hit the back arrow in the lower right corner to return to the AFR Setup Screen.

NIT	ROUS OUTLET PROMAX	RFR	NITROUS OUTLET PROMAKE	F
AFR			SYSTEM LOCKOUTS	
	RAMP SETUP			
	SYSTEM LOCKOUTS			
‡	GEAR LOCKOUTS			
	STAGE SETUP			

AFR Screen



5. Select Gear Lockouts from the Stage 1 column on the Stage Setup Screen. This option will keep the nitrous from activating for up to 3 gears. The controller is looking for an RPM sweep up to or over the set shift RPM and a minimum of at least the set RPM drop. On the right you'll see T1 thru T5; these are five different Progressive Tunes you can set up independently of each other. Make sure you are on the Progressive Tune you wish to be working with, we start at T1. Check the Gear Lockout Enable checkbox if you wish to make gear lockouts active. You can choose to have up to 3 Active Gears. The Shift RPM is the RPM at which your shift takes place. The RPM Drop is the RPM difference from the shift point to the engagement of the next gear. You can determine this by simply watching the tach on a gear change. It just needs to be close, not exact. Repeat this for T2 thru T5 if desired. Once complete, hit the back arrow in the lower right corner to return to the AFR Setup Screen.

Your controller setup is complete!



AFR Screen

AFR Gear Lockout Screen

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