Here's the information we spoke about. If you have any questions, please call us.

Jim Wolf Technology
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(619) 579-8160 24 hour fax

BASIC UPGRADES FOR THE 81-83 280ZX-T, and 84-89 300ZX-T

Stock 280ZX-T HP = 180 @ ~ 6 - 7 PSI
Stock 300ZX-T HP = 200 @ ~ 6 – 7 PSI
Add JWT upgraded ECU can run about 11 PSI = ~ 225 HP $595.00 exchange (core deposit $500.00)
(Must use a boost controller to go higher than 6 - 7 PSI)

Manual boost controller kit $149.00 ($100.00 w/ECU purchase)
Greddy Profec B electronic boost controller $420.00
HKS standard compressor bypass valve (recirculation valve) comes w/weld flange $100.00

Add your own 2.5"-3" exhaust system and an intercooler system (see HKS for the 280ZX-T,) will allow you to run ~ 14 -14.5 PSI = ~ 260 HP.

Spearco intercooler system for 1984-89 300ZX-T (this is a complete kit, 88-89 requires some modifications.) $1195.00

The original factory injectors will allow a maximum of ~ 260HP due to their 259cc flow rate.

For more horsepower than the above system upgrades can do, use our 450HP Control System Upgrade. See the following information sheets on our 450HP Control System for more info on this system.
Purpose: This conversion is required when horsepower requirements exceed the limits of the stock injectors and flow meter. Note that a working knowledge of the control system is required before attempting this conversion. This conversion is not intended for applications subject to specific emission control requirements and should not be used for such applications.

Parts needed:
1. We supply 420cc injectors. On 1986-89 300ZX-T you will need a fuel rail set from a 1984-85 model that uses top feed injectors.
2. We supply 6 dropping resistors. Note: 1981 already has dropping resistors and doesn’t need them.
3. We supply the Ford Mustang Cobra MAF and harness adapter plug.
4. We supply the MSD 43 GPH inline fuel pump for 81-83 ZX-Ts. Use 90+ 300ZX-T for other Zs.
5. We supply a note sheet along with the conversion parts to explain the steps of installing some of the parts and some other required changes.

A few of the following parts must be obtained on your own:
1. You supply an ECU from a 1988-89 300ZX. See additional info. page for useable part numbers.
2. If you have a 1982-83 280ZX-T, you supply an “encoder disc” from a 1984-89 VG30 Distributor. (This is under the distributor cap and dust cover. Mark which side is up before removing.)
3. If you have a 1981, you must also convert to a 1982-83 distributor and drive.

Additional Parts Recommended to Obtain the Best Power Gains:
1. Turbocharger upgrade: The Wolftech Sport 350 (350 HP potential,) is a bolt on. The Wolftech Sport 400 (400 HP potential,) is a bolt on and requires a larger inlet hose. We now have a Wolftech Sport 450 Turbo (450 HP potential,) call for current price.
2. Boost controller: We have a basic manual boost controller or an electronic boost controller.
3. Intercooler kit.
4. Free flowing exhaust system.

<table>
<thead>
<tr>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>Part No.</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Upgrade and convert your 88-89ECU core</td>
<td>IZ314-40000</td>
<td>$595.00 exchange</td>
</tr>
<tr>
<td>6</td>
<td>420cc injector</td>
<td>IZ314-40000</td>
<td>$100.00 each</td>
</tr>
<tr>
<td>6</td>
<td>Dropping resistor (6.8 ohm/10 watt)</td>
<td>IRES6-6OHMS</td>
<td>$3.00 each</td>
</tr>
<tr>
<td>1</td>
<td>Ford Mustang Cobra MAF w/harness adapter</td>
<td>IMAFC-COBRA</td>
<td>$325.00</td>
</tr>
<tr>
<td>1</td>
<td>MSD 43 GPH fuel pump (use on 81-83 Zs)</td>
<td>IPUMP-MSD43</td>
<td>$168.80</td>
</tr>
<tr>
<td>1</td>
<td>Manual boost controller kit ($100 w/ECU purchase)</td>
<td>BMADJ-10000</td>
<td>$149.00</td>
</tr>
<tr>
<td>1</td>
<td>Optional) Greedy Profec “B” electronic boost controller</td>
<td>BCONT-PROFB</td>
<td>$420.00</td>
</tr>
<tr>
<td>1</td>
<td>Optional) Wolftech Sport 350 turbocharger</td>
<td>W4450-S3076</td>
<td>$795 exchange</td>
</tr>
<tr>
<td>1</td>
<td>Optional) Wolftech Sport 400 turbocharger</td>
<td>W4554-S3090</td>
<td>$895 exchange</td>
</tr>
<tr>
<td>1</td>
<td>84-89 300ZX-T Intercooler kit</td>
<td></td>
<td>$1195</td>
</tr>
</tbody>
</table>
1 Confirm that you have the correct ECU for the upgrade using the table below. If your car is a 1984-87 you will need to obtain a good 1988-89 ECU of the correct part number found in the table. It is important to confirm the type of O2 sensor now being used in your car. This can be quickly checked by measuring the wrench size used to remove it and confirm that it is the same as the size in the second column below. Once you have the correct ECU to be upgraded, it must be reprogrammed by Jim Wolf Technology before it will work with this upgrade.

2 If your car is a 1986-89 you will need a fuel rail set from a 84-85 model that uses top feed injectors. The part numbers are 17521-V5220 for the left fuel rail and 17522-V5220 for the right fuel rail. This will convert your bottom feed injector (2 hoses to each injector) system to accept the 420cc top feed injectors.

3 Install dropping resistors (see diagram at lower right) by cutting each injector signal wire near the ECU connector and solder a resistor inline with each wire. Use shrink tubing to insulate all bare wire and solder joints. Arrange the resistors so the wires are relaxed and are not squashed into the other wires. The injector wires are the 6 wires connected to the ECU at pins #101 thru 106. These are located on the lower connector (as seen mounted in the car), it has 3 rows of pins. Pins #101 thru 106 are the 6 pins in the row opposite the connector lock tab. This step is necessary because the 420cc injectors are low impedance and need resistors to lower the current flowing through them.

4 To install the 93 Cobra Mustang MAF sensor refer to the page on installation of the MAF sensor.

5 If your car has had the Nissan factory injector recall, refer to the page on this subject.

### INJECTOR WIRE COLOR CHART

<table>
<thead>
<tr>
<th>INJ #</th>
<th>ECU PIN #</th>
<th>V- (FROM ECU)</th>
<th>V+ (FROM BAT.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>101</td>
<td>GRN</td>
<td>RED</td>
</tr>
<tr>
<td>2</td>
<td>102</td>
<td>GRN/BLK</td>
<td>RED</td>
</tr>
<tr>
<td>3</td>
<td>103</td>
<td>GRN/BLU</td>
<td>RED</td>
</tr>
<tr>
<td>4</td>
<td>104</td>
<td>GRN/YEL</td>
<td>RED</td>
</tr>
<tr>
<td>5</td>
<td>105</td>
<td>GRN/RED</td>
<td>RED</td>
</tr>
<tr>
<td>6</td>
<td>106</td>
<td>GRN/WHT</td>
<td>RED</td>
</tr>
</tbody>
</table>

**Inj #**

- **17mm**
- **22mm**
- **23mm**
- **24mm**
- **25mm**
- **26mm**

**ECU(S) THAT CAN BE USED FOR THE UPGRADE**

- **23710-25P01**
- **23710-25P00**
- **23710-25P11**
- **23710-25P10**
- **23710-25P06**
- **23710-25P05**
- **23710-25P16**
- **23710-25P15**
- **23710-26P01**
- **23710-26P00**
- **23710-26P11**
- **23710-26P10**
- **23710-26P06**
- **23710-26P05**
- **23710-26P16**
- **23710-26P15**
To insure precise fuel control when performing power upgrades on 84-89 300ZX turbo models, please inspect the injector wire looms to see if Nissan has performed the injector recall modifications. During this recall, the injector wires are replaced. To reduce the labor cost of the recall, all three injectors on each side of the engine are wired together to the center injectors original wires (SEE PICTURE BELOW). The 300ZX turbo uses a group mode injection timing (cyl. 1,2,3 and cyl. 4,5,6 are injected as alternating groups) that is adversely effected by the recall modification. If you find this recall modification was performed, the injector wires must be restored to their stock configuration. This can be done as follows.

1. Disconnect the battery as the ECU may be damaged.
2. Carefully cut back the tape and covering material on the injector wires.
3. Cut the injector wires going to injectors on cyl. 1,5,2, and 6 (all except the middle injectors). The cut should leave the maximum length on the injector side so cut them as close to the junction in the loom as possible. Tape off the wire ends on the loom side to prevent electrical shorting of the wires.
4. By cutting back the tape added during the recall, find the original injector wire pairs for the #1,5,2, and 6 injectors. See below for wire colors.
5. Using solder and shrink tubing, connect the injector leads you cut off in step 3 to the wires you located in step 4. Retape the loom and connect the injectors and battery.

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### RIGHT SIDE SUB-HARNESS ADDED BY NISSAN DURING INJECTOR RECALL

<table>
<thead>
<tr>
<th>INJ #</th>
<th>ECU PIN #</th>
<th>V- (FROM ECU)</th>
<th>V+ (FROM BAT.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>101</td>
<td>GRN</td>
<td>RED</td>
</tr>
<tr>
<td>2</td>
<td>102</td>
<td>GRN/BLK</td>
<td>RED</td>
</tr>
<tr>
<td>3</td>
<td>103</td>
<td>GRN/BLU</td>
<td>RED</td>
</tr>
<tr>
<td>4</td>
<td>104</td>
<td>GRN/YEL</td>
<td>RED</td>
</tr>
<tr>
<td>5</td>
<td>105</td>
<td>GRN/RED</td>
<td>RED</td>
</tr>
<tr>
<td>6</td>
<td>106</td>
<td>GRN/WHT</td>
<td>RED</td>
</tr>
</tbody>
</table>

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84-89 INJECTOR RECALL "QUICK FIX LOOM"

NOTE THAT ALL 3 INJECTORS ARE NOW CONNECTED TO THE WIRES THAT ORIGINALLY POWERED ONLY THE CENTER INJECTOR ON EACH SIDE OF THE ENGINE.
ADAPTING A FORD MAF SENSOR F1SZ-12B579-A (93 FORD COBRA MUSTANG) INTO A NISSAN CONTROL SYSTEM

Use ford connector kit F43Z-14A411-A to replace the original Nissan MAF wire loom connector. The kit contains solder and shrink tubing to make solid water tight splices. Cut the wires and solder them to the correct Ford connector wires (see chart below). This conversion will only work with a JWT ECU programmed specifically for this MAF sensor.

**FORD MAF**

<table>
<thead>
<tr>
<th></th>
<th>12 V+</th>
<th>12 VOLTS</th>
<th>GROUND</th>
<th>GROUND</th>
<th>SIGNAL 0-5V.</th>
<th>0-5V SIGNAL OUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>GROUND</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>GROUND</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>SIGNAL 0-5V.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Due to the variations of Nissan wiring between models, this may not be the correct Nissan MAF sensor pins for the model you are working on. You must confirm that Ford pin “A” is connected to 12v+. Ford pins “B” and “C” are connected to the Nissan ground wire. Ford pin “D” must be connected to the Nissan 0-5V MAF signal wire.*

**CONFIRM THE CONNECTIONS USING THE FACTORY MANUAL**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>12 VOLT</th>
<th>0-5V SIGNAL OUT</th>
<th>GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td>91-94 SER (SR20)</td>
<td>ORANGE /BLUE STRIP</td>
<td>ORANGE</td>
<td>WHITE</td>
</tr>
<tr>
<td>95-98 SER (SR20)</td>
<td>WHITE / RED STRIP</td>
<td>ORANGE</td>
<td>WHITE</td>
</tr>
<tr>
<td>89-98 240SX</td>
<td>BLACK/WHITE STRIP</td>
<td>WHITE</td>
<td>BLACK</td>
</tr>
<tr>
<td>81-83 280ZXT</td>
<td>YEL / BLUE STRIP</td>
<td>YEL / RED STRIP</td>
<td>BLACK</td>
</tr>
<tr>
<td>84-89 300ZXT</td>
<td>BLACK / WHT STRIP</td>
<td>BLACK SHIELDED</td>
<td>BLACK (BOTH)</td>
</tr>
</tbody>
</table>

ANY WIRES THAT ARE NO LONG USED IN THE WIRE LOOM, SHOULD BE TAPED UP TO AVOID SHORTING.
450 HP ENGINE CONTROL SYSTEM UPGRADE FOR
1981-89 280ZX/300 TURBO
Additional Steps For 280ZX Turbo Only

This conversion is required when horsepower requirements exceed the limits of the stock injectors and restriction of the original "flopper door" flow meter. Note that a full knowledge of both systems is required before attempting this conversion. We assume no responsibility for the content of these notes and their use for this modification. A logical pin by pin inspection is required by the technician to establish that all systems will function correctly and safely for the intended use and application. This conversion is not intended for applications subject to specific emission control requirements and should not be used for such applications.

1. If conversion is being done to a 1981 280ZX turbo with crank triggered ignition, a distributor and drive from a '82 or later is needed.
2. Install the encoder disc from a Z31 300ZX (anyone will work) in to the 280ZX turbo distributor. Mark which side is up and install in same direction.
3. Unplug and discard the VCM (vacuum control module) it is not compatible with the Z31 ECU. Idle must be adjusted by adjusting the throttle stop or by adding an adjustable air bypass valve.
4. Follow the diagram for the MAF / Flow Meter plug conversion on next page.
5. 82-83 ONLY: Unplug the Fuel Pump Module. Fuel pump control is now done inside the Z31 ECU and the module is not needed. Also ground the fuel pump ground wire direct to a good ground, as the pump no longer has a ground with the module removed.
6. At the Fuel Pump Relay connector, cut the black wire about 2" below the relay and solder the black 2" end at the relay to the white wire with a black strip (see note below) at the relay (do not cut this wire), you are simply tapping into this wire to get 12V+ to the black wire at the relay. The harness side of the black wire can be taped up as it is no longer used here.
7. Disconnect the detonation sensor, as it is not tuned to the Z31 ECU and won't function correctly.
8. Install the Jim Wolf Technology modified 300ZX ECU.
9. Six dropping resistors need to be installed on the injector wires coming from the ECU to the injectors (1981 already has dropping resistors and does not need them). Because of the improved injector timing on the later ECU, the injector wires going to cyl #2 and #5 from the ECU must be cut and switched with each other (wires from pins #102 and #105 from the ECU). This can be done as you add the dropping resistors.
10. 1981 only: add a wire with unswitched 12v to pin #114 at the ECU. This retains ECU learned information after the key is turned off.

- Note:
  - This may actually be a black w/white strip in some cars, it is incorrectly stated in the Nissan factory manual.
  - If it’s White with a black strip, it is 12v+.
  - If it’s Black with a white strip, it’s switched 12v+

![Checking Fuel Pump Relay Diagram](image)