

Here are the instructions for your chip-upgrade kit.

FPR - Fuel Pressure Regulator

The FPR goes on the back of the fuel-rail near the firewall/battery. Undo two bolts holding it to the rail. Unclamp the hose clamps. Place some rags underneath and pull it off the rail and remove the hoses. Install the new one in reverse order. If you have an adjustable FPR, set it to 3.0-bar/43.5psi at idle with the vacuum line disconnected

CHIPS - Installation

To install the chips, remove DME/KLR boxes, take off cover and install the chips. More detailed procedure with photos on my 951 RacerX website: http://members.renlist.com/951_racerx/ChipsInstall.html .

Be very careful of the chip's orientation when you're installing it in the socket. The notch on the chip should be facing the notch on the socket. Also with the computer boards unfolded, the KLR chip will point in a different direction than the DME even though both labels are right side up.

SELECT INJECTOR SIZE

The GURU Racing chips have selectable injector sizes and ignition maps. It uses the FQS switch to select injector-sizing and adjusts ignition retard. The FQS switch is the 8-position one on the DME, you can get instructions on how to adjust it here: http://members.renlist.com/951_racerx/FQS-adjust.html

FQS	FQS switch settings	
	INJECTORS	IGNITION
#0-stk	34.6#	0
#1	55.0#	0
#2	65.0#	0
#3	75.0#	0
#4	34.6#	2.0 degrees retard
#5	55.0#	2.0 degrees retard
#6	65.0#	2.0 degrees retard
#7	75.0#	2.0 degrees retard

SELECT IGNITION MAPS

The GURU chips contains 3 distinct ignition maps for use with street-gas, 100-octane race-gas (110RON).

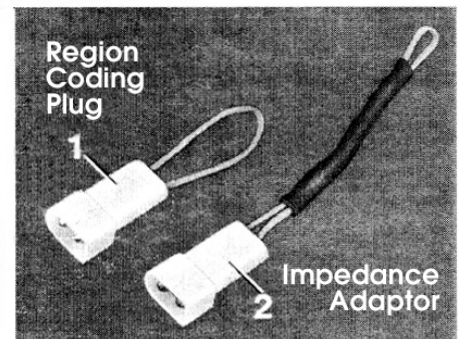
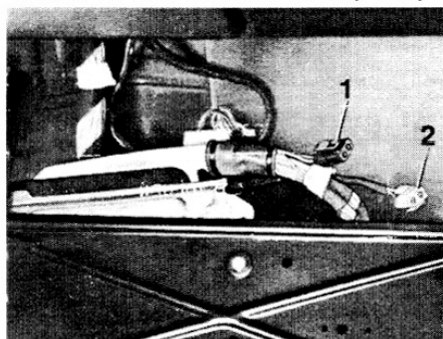
These maps are:

1. GURU optimized 18psi street-gas
2. GURU optimized 15psi street-gas
3. GURU optimized **18psi with** higher-ignition for 100-oct. race-gas

The #1 & #2 maps are for street-gas 91-octane in US, 96-octane ROW Upon special request, the stock Porsche maps can be put into map#3 for emissions purposes. However, the GURU mappings have had no problem passing emissions.

To select one of these three maps, you use combinations of the RCP-Region Coding Plug and IA-Impedance adaptors based upon model-year of the DME computer in your car.

CODING OF DEE CONTROL UNITS, 944, '88 MODELS ONWARD



'86-87 24-pin DME Ignition Maps		
MAP	RCP	IA
1	OFF	OFF
2	OFF	ON
3	ON	ON

'88-91 28-pin DME Ignition Maps		
MAP	RCP	IA
1	OFF	OFF
2	ON	OFF
2	OFF	ON
3	ON	ON

Please note that USA cars do not have the impedance-adaptor plug. That's because the impedance-adaptor line is used for the altitude-compensator in the USA cars. Thus '86-87 cars are limited to ignition-map #1 only. However, the '88+ cars can pick map #2 with the region-coding plug.

IGNITION SETTINGS: 4 possible combinations

Using a combination of the Region Coding Plug and FQS switch, you can pick from one of four distinct ignition settings for the available octane in your gasoline as well as the level of boost you'd like to run:

1. **MAP-1 + FQS#0-3** = GURU optimized 91-oct. (R+M/2) pump gas up to 18psi boost
2. **MAP-3 + FQS#0-3** = 4- degree advanced ignition map for 100-octane race gas up to 18psi boost
3. **MAP-3 + FQS#4-7** = 2-degree advanced ignition map for 96-octane 50/50% race-gas/street gas blend
4. **MAP-1 + FQS#4-7** = 2-degree retarded ignition map for 19-25psi boost

NOTE: his kit raises your boost-level and increases ignition advance. **ALWAYS** use at least 91-octane (R+M/2) or higher gasoline in your car when using this upgrade. **DO NOT** get tempted to use the race-gas ignition setting without adequate high-octane fuel. It's only worth about 3-5hp anyway.

WASTEGATE SHIMS

Wastegate shims require you to remove the wastegate. Crawl in from under the passenger door (after the car's cool off for 30-minutes). Undo the short 6" section between the wastegate and crossover pipe (if you have the 2-piece crossover). Unclamp the wastegate's exit/dump pipe from the Y-connection at the back. Unbolt the wastegate hanger from the torque-tube (you'll need small hands to reach around). The hanger bolts can be reached with a series of long extensions & U-joints from the back of the car going forwards. Now you should be able to remove the wastegate with the dump pipe attached.

Remove three allen-bolts used to hold the wastegate-diaphragm to the body. Use a small chisel and pry the diaphragm upwards and insert shims. Drop a bolt in to hold in place. Repeat for other two shims.

Photo here: <http://www.gururacing.net/Manuals/ShimmedWastegate.jpg>

When everything's lined up, tighten down the allen bolts. Re-install wastegate in car.

NOTE: Depending up on the wastegate version, you may need to get 2 longer bolts in order to accommodate the thickness of the shims.

RELIABOOST-1 CONTROLLER

1. Locate banjo-bolt on intercooler pipe and remove. Verify that this is the original stock bolt with fully open innards. If not, remove the restrictor jet inside.
2. Follow hose from banjo-fitting and disconnect from hard-pipe under intake-manifold.
3. Attach end of hose to INLET end of ReliaBoost controller (short hex end label BOTTOM above)
4. Attach hose supplied with ReliaBoost to OUTLET of controller. This is the end with the round knurled adjustment knob.
5. Attach remaining free hose end to hard-pipe under intake-manifold.
6. Re-install banjo-bolt on intercooler pipe. Aim the banjo-fitting away to the left so that the hose can take as large of a loop around to the controller as possible to minimize kinking.
7. Disconnect the RETURN line from the CV-cycling-valve from the other 1/4" hard-pipe under the intake-manifold. This is the hose returning boost-pressure back to the inlet J-boot.

You may wish to cut off the stock hose from the banjo-bolt and use the remaining silicone hose. This would require cutting off the crimped-on hose end with a hacksaw or Dremel cutting disk. This is not necessary if the stock hose is OK.
8. Cap off the Cycling-Valve return hose. This comes from the 1/4" hard-pipe under the inlet manifold and goes into the rubber-J-boot in front of the turbo. Remove the hose, cap off the 1/4" hard-pipe and plug the hole in the rubber J-boot.

NOTE: The above procedure is the quick and simple way to install, but it leaves the stock CV-cycling valve in-line with the ReliaBoost. This may cause boost spikes and inaccurate control of boost. Best performance can be had with running a new hose from the outlet of the ReliaBoost directly to the wastegate. Additional discussion and photos may be found here: <http://forums.gururacing.net/viewtopic.php?t=9>

TROUBLESHOOTING

- Make sure the chips' orientation is correct, the notch will face in opposite directions even though both labels will be right-side up.
- On the DME, verify that the FQS switch is set to the proper position for your injector size.
- The extra boost may cause hoses and clamps that are already marginal to slip and leak. Common source is big rubber hose coming out of turbo and short sections holding the intercooler pipes to intercooler. Also the conical hose going into throttle-body can slip a well.
- Due to the increased boost and power generated by this kit, it's imperative that you use the highest octane gas available (typically R+M/2= 91-92 octane in US, RON=96-87 octane in Europe).
- Use one-range colder spark-plugs: NGK-BPR7ES, ND-W22EPR-U, Bosch-WR6DC, Beru-S9

Have fun !!!