



HONDATA

ROM EDITOR



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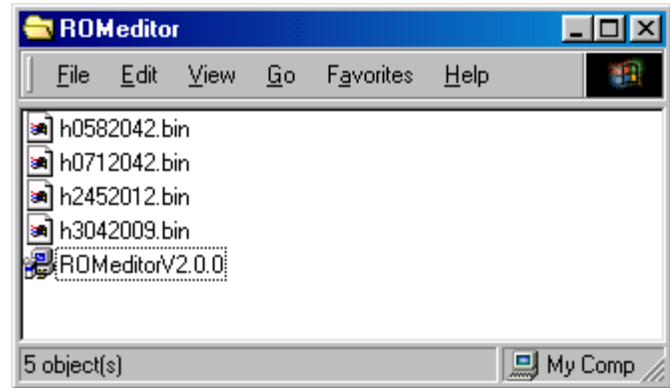
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Installation

On the floppy disk supplied is the ROMeditor installation program and a number of ROM files for a variety of Honda ECUs.

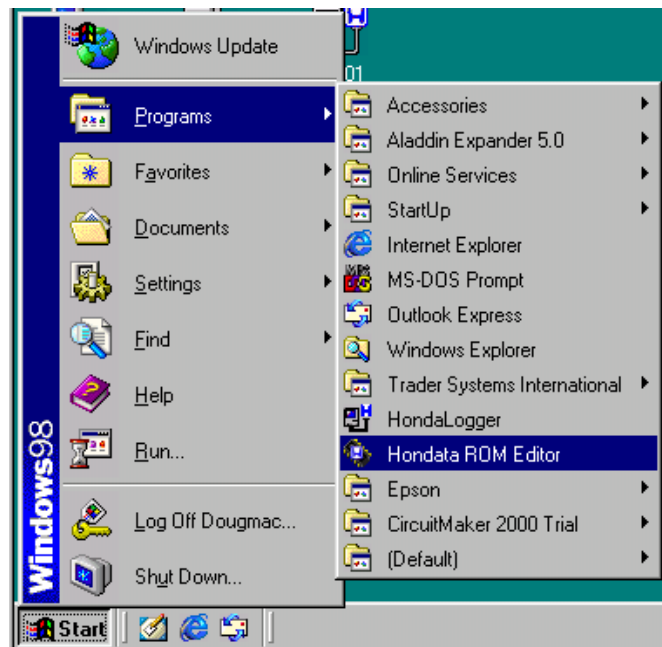
Double click on Romeditor icon to begin the installation process and follow the instructions.



Floppy Drive contents

ROMeditor is added to the Programs part of the start menu.

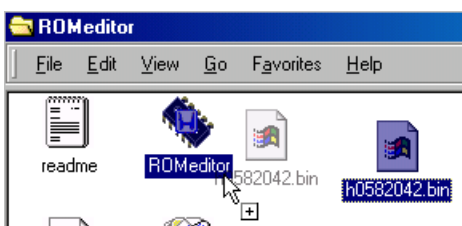
Check www.hondata.com/downloads.html for updates and a color version of this manual you can print if you have a color printer.



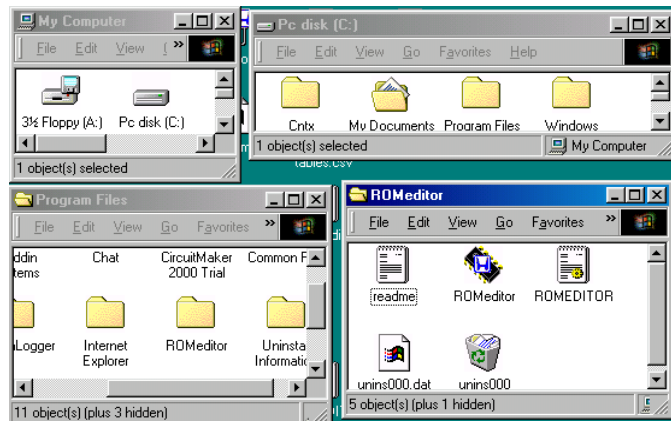
Launching ROMeditor from the Start Menu

The ROMeditor folder is located by default in the Program Files folder of Drive C unless you specify elsewhere. Copy the ROM files here or to a folder on your desktop for quick access.

To quickly open a ROM file, drag the file to ROMeditor program Icon or into an open ROMeditor Window.



Opening a ROM file by Dragging



Default installation location for ROMeditor

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ROM file naming

Hondata ROM files are named in the form **hiii2vvv** where

- h = Hondata,
- iii = ROM number,
- 2 = stage 2 and higher (Stage 1 cannot be edited)
- vvv = 3 digit version number

h0582042	PR3	JDM	JDM B16A Integra 89-91
h0712042	PWO	JDM	JDM CRX & Civic 89-91
h2452012	P30	JDM	Civic B16A 92-95
h3042009	P28	USDM	Civic EX 92-95
h3052012	P30	USDM	CRX Del Sol 92-95

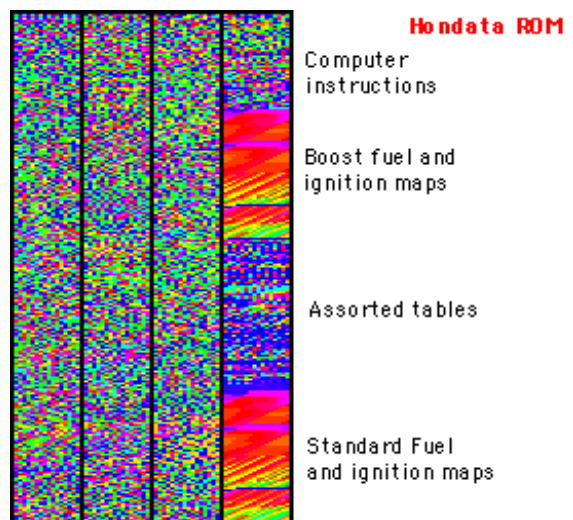
Definitions

ROM	Read Only Memory (This is what Honda supplies with their computer)
EPROM	Erasable Programmable Read Only Memory (This is a cheap replacement)
EEPROM	Electrically Erasable Programmable Read Only Memory

In the early computers (most computers before '92 and some OBD I computers) the ROM is a 28 pin chip normally having the numbers 256 on it. The ROM contains data, like ignition timing values and fuel injector opening times. It also contains instructions on how to process that information for different throttle positions, temperatures, and revs, etc. Hondata ROMeditor software intelligently interprets that data, allowing changes to be easily and quickly made.

For most of OBD I (except Accord and Prelude) Honda combined their ROM with the microprocessor to reduce costs. The processor is an Oki 66207. The large two or three digit number on this processor is the Honda ROM number, the version of the software Honda uses for that car and engine computer.

OBD I computers have a blank space on the circuit board to install an external ROM. This ROM becomes active when the jumper J1 is installed (see Hondata Installation manual). To return a computer to its stock operation remove J1.



Hondata ROM contents

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Programming chips

Steps:

- 1) Open the ROM file with ROMeditor
- 2) Make changes
- 3) Save changes under a different file name
- 4) Launch your EPROM programming software and write to a blank chip
- 5) Place that chip in the car and test.
- 6) Go to step 1

What kind of blank ROM chip can I use?

The Hondata Stage 4 system is supplied with an EEPROM which allows rapid reprogramming by simply placing it back into the EPROM programmer. Hondata can also supply additional EEPROMs for under \$25.

Blank PROMs are supplied for stages 2 and 3. A PROM can only be used once and not erased. Hondata can also supply additional PROMs for under \$3.00.

Once common, but now a little difficult to find are EPROMs with a quartz window in the center of the chip. The EPROM chips to use are 32K by 8 bit 27256. For example Shand Thomson makes the blank EPROM ST M27C256B 15F1. Anything compatible with this will do. EPROMs have a quartz window on the top of the chip. The inconvenience with EPROMs is the difficulty in erasing them, which requires they be placed under an ultraviolet light of the right frequency. (Available for less than \$80).

OBD II

96-98 Hondas mostly use an Oki 66507 based ECU. Blank OKI 66507 chips are like a PROM and can only be used once. They can be programmed from a standard EPROM programmer using an optional adaptor (worth about \$500). At \$100 each (they also contain a microprocessor), it becomes expensive to make a lot of changes, so an OBD I conversion may be quite economical if you plan a lot of re-tuning.

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ECU swap table

ECU	VTEC control	Knock Sensor	Intake runner
PR3	Yes	Yes	No
PWO	Yes	Yes	No
(these ECUs need a 16 tooth distributor)			
P72	Yes	Yes	Yes
P30	Yes	Yes	No
P28	Yes	No	No
P06	No	No	No
P74/P75	No	No	No
(these ECUs need a 24 tooth distributor found in all later model Hondas)			

The intake runner refers to the ECU's ability to switch the length of the intake runner from long to short. Commonly found in the GSR, Prelude and some Accords. If you have swapped to a Type R manifold, then a P30 computer will work fine. The top two ECUs are interchangeable.

General rule of thumb is that in using ROMeditor, an ECU from our conversion table can be adapted to drive any other Honda up to the current models. For example a P28 ECU from a 94 SOHC Civic EX can be adapted to drive a '93 VTEC Accord, 99 Civic Si (B16A) 2000 Type R Integra or Prelude all up to 12Lb boost if necessary. See the conversion chart below for the major features offered by each Honda ECU.

1990-1995 Accord and 92-95 Prelude

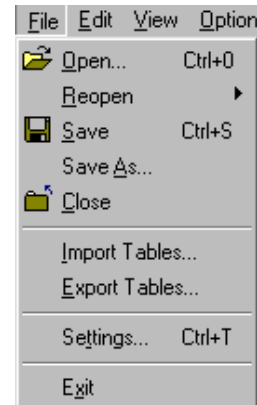
These computers use an OKI 66911 processor which is different in function from the OKI 66207 processor uses on the other OBD one computers. Hondata can do custom fuelling, ignition, RPM and VTEC changes to these ECUs. If you want a Hondata stage 2, 3 or 4 for one of these cars, you will need to substitute the stock ECU with an ECU listed above on our conversion table above.

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The File menu

Occasionally, Hondata will provide upgraded ROM files with additional capabilities. These ROM files come with a stock tune. To update, export your custom tables - the fuel and ignition tables. Open the new Hondata ROM and import the tables. The exported tables may be edited by a standard spreadsheet program if you wish. Hondata Rom Editor supports drag and drop in which a ROM file may be dropped onto the Hondata ROM editor icon to open. Alternatively a ROM file may be dragged into an open ROMeditor Window.

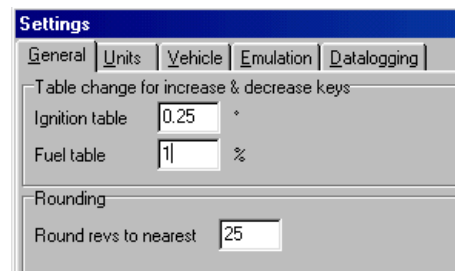


File Menu

Settings

General

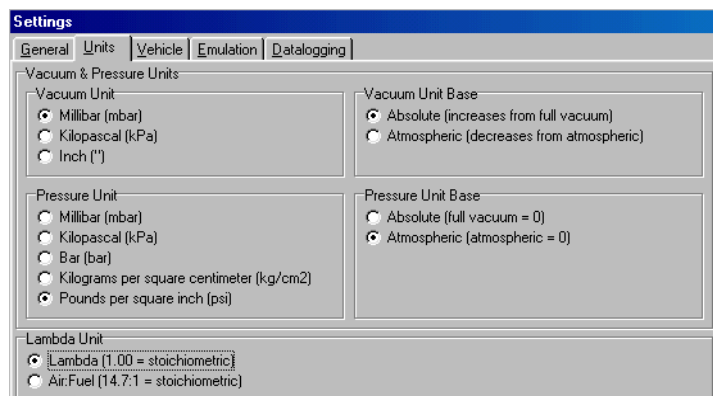
When the tables are viewed, Pressing I or D increases or decreases the values. By default these are set to 0.25 (the smallest available) for ignition and 1% for fuelling.



General Settings

Units

This allows choice of air pressure units as measured by the MAP sensor. With the new datalogging features of ROMeditor, air-fuel ratios can now be measured and displayed. See the datalogging section for more information



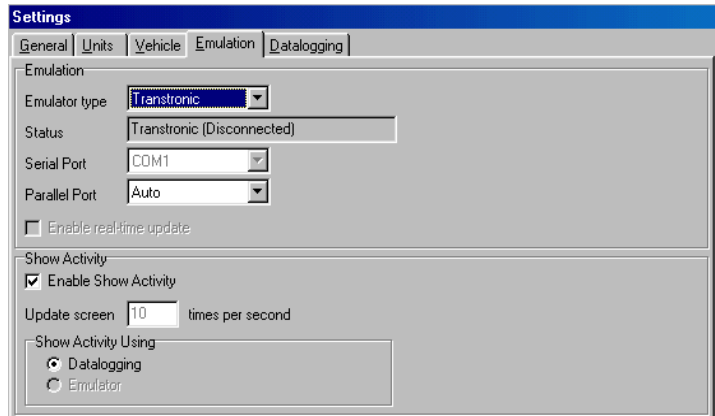
Units settings

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Emulation

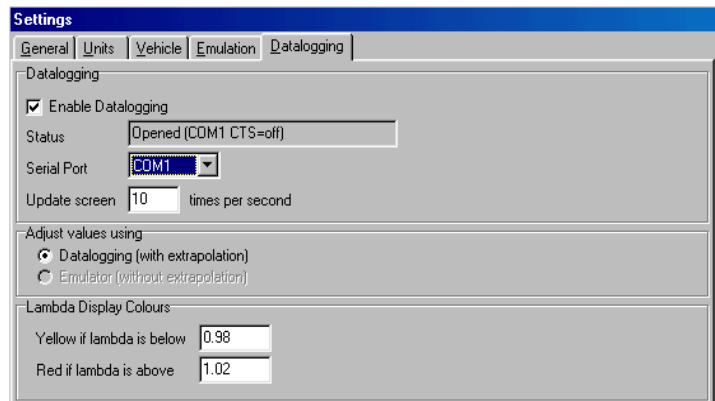
Emulation is a process in which the ECU can be run from an external device with RAM rather than a chip. This enables rapid changes of fuel or ignition without “reburning” a chip. Hondata Rom editor supports two emulators directly, the Transtronics Pocket Programmer with emulator adaptor (parallel port) , and the Racelogic emulator (serial port). It is recommended that the Racelogic Emulator be run with a second serial port if datalogging is also needed.



Emulation Settings

Datalogging

With a serial cable connected to the Hondata interface box ROMeditor can read the row and column used for fuelling, ignition and revs and display the values being accessed. With the Racelogic Emulator installed select the emulator option. See the Emulation and datalogging sections for more information



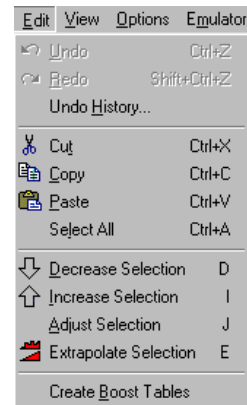
Datalogging Settings

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The Edit menu

Hondata Rom editor can only open one ROM file at a time. However if two copies of the Rom Editor are opened then sections may be cut and pasted between them. Decrease or Increase when applied to a selected area of the fuel maps changes the value by 1%. Due to the representation of numbers inside the ROM, a decrease followed by an increase may not always show the original number - but it will be very close. When applied to the ignition maps, Increase or Decrease changes the ignition by 0.25 of a degree unless altered in the settings.



Edit Menu

Undo history

This shows a list of changes since the ROM file was opened for editing.

No	Time	Description
0	1/16/01 12:47:40 PM	ROM as loaded
1	1/16/01 1:00:19 PM	Create boost tables (all tables)
2	1/16/01 1:44:46 PM	Table low speed ignition edited
3	1/16/01 1:44:50 PM	Table high speed ignition edited
4	1/16/01 1:44:58 PM	Table low speed fuel edited
5	1/16/01 1:45:39 PM	Injector multiplier changed from 1.000 to 0.545

Undo History

Adjust

For larger changes Adjust is used. For example:

Percentage

50 entered increases the values by 50%.

-50 entered halves the selected values.

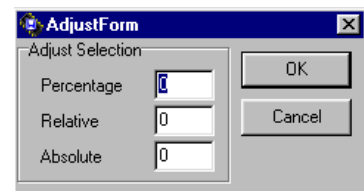
Relative

50 entered adds 50 to the selected value

-50 entered subtracts the selected values.

Absolute

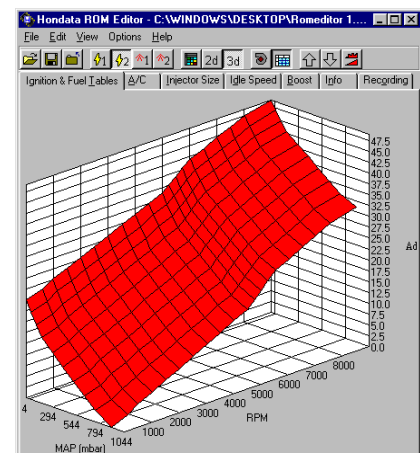
20 entered makes all the values selected 20.



Adjust options

Extrapolate

This function smooths a selected area making it as flat as possible between the 4 corner most selected values. To the right is an example of the entire high speed ignition map after being extrapolated.



Ignition map after extrapolation

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Boost

Boosted cars need less ignition advance because the charge burns faster. If you do not reduce your ignition advance the faster burning flame front meets the top of the piston while it is still rising. The result is tremendous cylinder pressure, lifting the head and loading the conrods and bearings. Retarding the ignition by resetting the distributor's base timing may give you the correct ignition advance when under boost in some parts of the rev range, Everywhere else in the rev and load range you will be losing power. With the Hondata Boost ROM option, timing is left at stock for good off-boost throttle response. When on boost the Hondata modified ROM just supplies the correct advance value for the amount of boost from the table columns B11 and above. (See editing fuel and ignition tables)

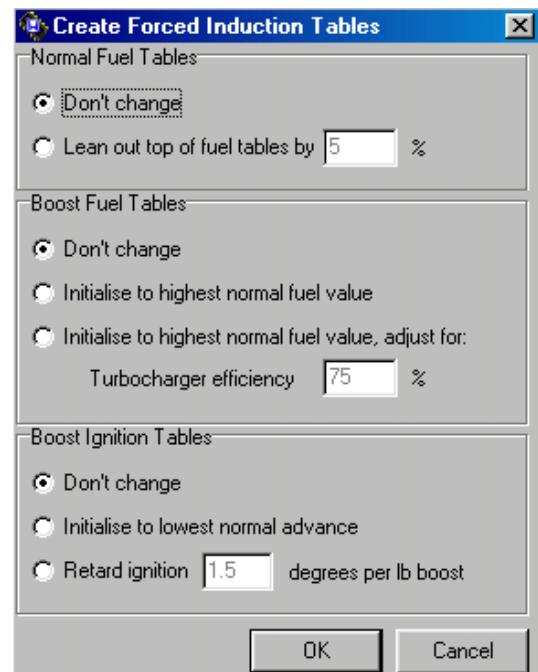
Create boost tables

The Boost tables are the additional columns Hondata added to the stock fuel and ignition maps. (See boost tables from the main menu.) You may need to contact your turbocharger/supercharger supplier for the efficiency rating. This makes a good starting point for further tuning.

Getting ignition table values correct is critical for maximum power. There is also quite a variation between different turbo setups. In this example the ignition is set to retard by 1.5 ° per lb of boost.

Boost tables are created in columns 11 and above and are viewed by pressing the show/hide boost tables button.

Hondata ROMS are supplied with starter boost tables.



Forced induction tables

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View menu and button explanations

VTEC Hondas have two ignition tables and two fuel tables, one each for the low speed and high speed cams. The easiest way to edit is with the Table displayed. Switching to 3D helps to visualize any data points that may be incorrect.

View	Options	Emulator	Help
1	Ignition (low speed)	F1	
2	Ignition (high speed)	F2	
1	Fuel (low speed)	F3	
2	Fuel (high speed)	F4	
	Table	F5	
2d	2D Graph	F6	
3d	3D Graph	F7	



- Open file
- Save file
- Close file
- F1 : Low speed Ignition Map
- F2 : High speed Ignition Map
- F3 : Low speed Fuel Map
- F4 : High speed Fuel Map
- F5 : View map as Grid
- F6 : View map as 2D
- F7 : View map as 3D
- Show/hide Boost tables
- Colourize the 2d Grid
- I Increase by 1% or 0.25°
- D Decrease by 1% or 0.25°
- Extrapolate the selection

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Editing Tables

VTEC Hondas have two ignition and two fuel tables, one each for the low speed and high speed cams. This is the table giving all the ignition advance values for the high speed ignition cam for all available RPM and MAP values. Editing is easy. Just select the area you wish to change with the mouse then press I for increase or D for decrease. Ignition is changed in 0.25 degree increments and fuelling in 1 % increments. Above 9000 RPM the Honda ECU uses the values on the last row of the table. Hondadata supplies ROM files with the stock ignition and fuelling values.

Col	1	2	3	4	5	6	7	8	9	10	B11	B12	B13	
mBar	134	306	420	535	650	764	879	936	994		Boost psi			
psi	Vacuum					Atmospheric					0.5	3.8	7.8	11.3
0	22.50	22.50	22.50	22.50	12.25	6.50	3.00	0.00	0.00	0.00	0.00	0.00	0.00	
600	22.50	22.50	22.50	22.50	14.25	8.75	5.25	1.50	0.00	0.00	0.00	0.00	0.00	
975	27.75	27.75	27.75	27.75	22.50	16.00	11.75	8.75	6.75	5.75	5.00	4.25	3.50	
1525	37.75	37.75	37.75	32.25	27.75	24.00	19.00	15.50	13.50	12.50	11.75	11.00	10.25	
2000	42.25	42.25	42.25	35.00	29.75	27.50	24.50	21.25	18.75	17.50	16.75	16.00	15.25	
2500	43.00	43.00	43.00	36.25	31.50	29.50	27.00	24.50	21.50	20.50	19.75	19.00	18.25	
3000	44.75	44.75	44.75	38.75	34.50	32.50	29.50	26.25	23.00	22.00	21.25	20.50	19.75	
3525	46.00	46.00	46.00	42.75	39.25	36.25	32.50	29.00	26.25	25.25	24.50	23.75	23.00	
4000	48.00	48.00	48.00	45.25	41.50	38.25	34.50	31.00	28.25	27.25	26.50	25.75	25.00	
4500	48.50	48.50	48.50	45.75	42.00	38.75	36.00	33.25	30.75	29.75	29.00	28.25	27.50	
5000	48.50	48.50	48.50	46.00	42.25	39.00	36.00	33.75	31.25	30.25	29.50	28.75	28.00	
5250	48.50	48.50	48.50	46.00	42.25	39.00	36.00	33.75	31.25	30.25	29.50	28.75	28.00	
5500	48.75	48.75	48.75	46.25	42.50	39.00	36.00	33.75	31.25	30.25	29.50	28.75	28.00	
5725	49.00	49.00	49.00	46.50	42.75	39.00	36.00	33.75	31.25	30.25	29.50	28.75	28.00	
6025	49.00	49.00	49.00	46.50	42.75	39.00	36.00	33.75	31.25	30.25	29.50	28.75	28.00	
6500	49.00	49.00	49.00	46.50	42.75	40.50	38.00	35.50	33.00	32.25	31.50	30.75	30.00	
7000	49.00	49.00	49.00	46.50	42.75	40.75	38.25	36.25	33.75	32.75	32.00	31.25	30.50	
7500	49.00	49.00	49.00	46.50	42.75	40.00	37.25	34.25	31.50	30.50	29.75	29.00	28.25	
8025	49.00	49.00	49.00	46.50	42.75	40.00	37.00	34.00	31.25	30.25	29.50	28.75	28.00	
8975	49.00	49.00	49.00	46.50	42.75	40.25	38.00	35.00	32.25	31.25	30.50	29.75	29.00	

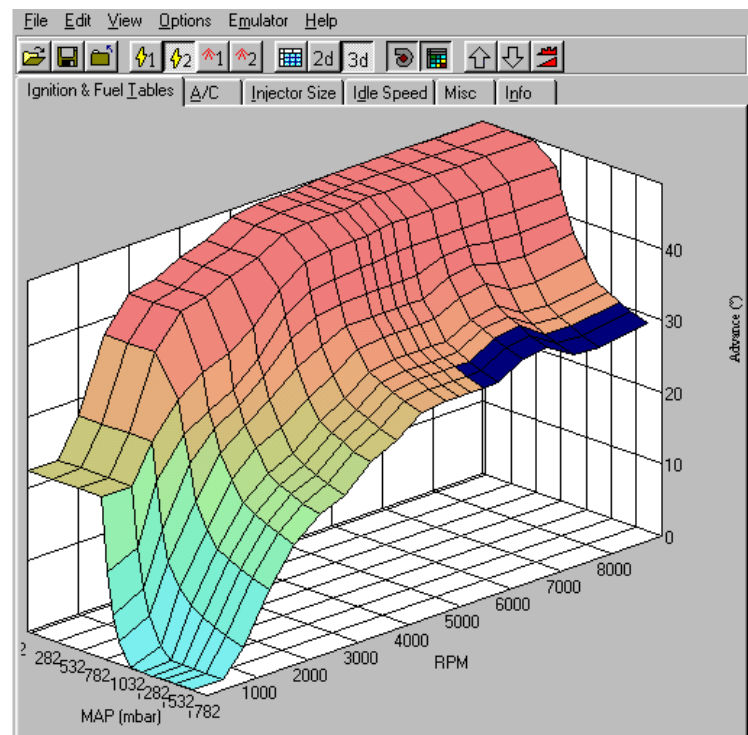
Highspeed ignition table. Advance for 6 -9000 RPM 8 -12 psi boost

Relationship between Table values and actual ignition advance.

Testing with a timing light on the US OBD I ecus seems to indicate the following formula.

$$Advance^{\circ} = Table\ value^{\circ} + Base\ timing^{\circ} - 20^{\circ}.$$

For example if the base timing is 12 degrees, and the table value is 29 degrees actual ignition advance will be 29+12-20 or 21 degrees btdc. So if the distributor is set to 20 degrees btdc all values in the ignition table correspond directly to the measured ignition.



Highspeed 3D ignition table. Advance for 6 -9000 RPM 8 -12 psi boost

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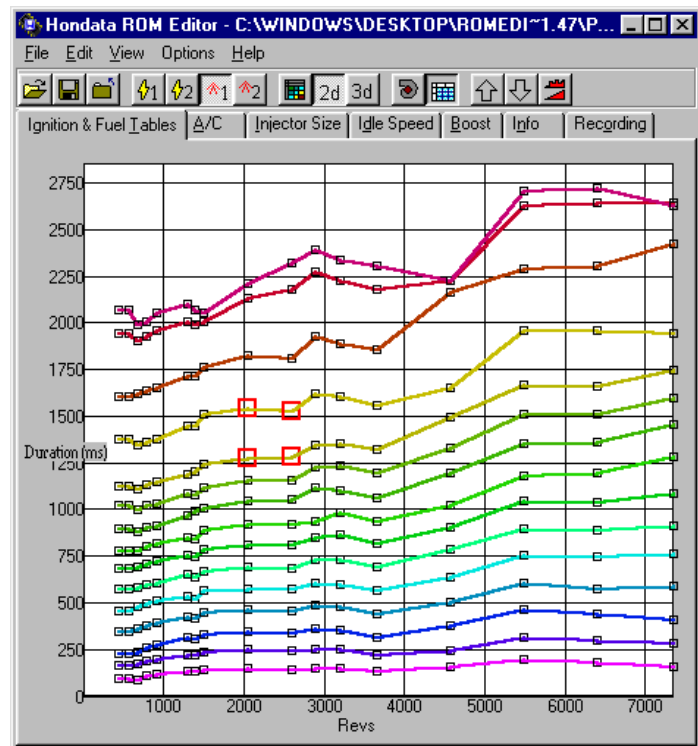
Interpolation

What if the revs of the engine are 1750 RPM or the MAP sensor value is in between the fixed points? How does the computer determine the correct fuelling or advance.

The technique used is called interpolation. The computer draws a straight line between the lower value of 2000 and the higher value of 2600. A similar calculation is done for the MAP value.

The ECU takes the 4 fuel (or ignition) values that border this particular RPM and MAP value and apply a weighted average to arrive at the most appropriate value.

When you adjust a single fuel or ignition value on the maps all surrounding fuel or ignition values up to the next closest RPM and Map values are affected.



2D timing map, showing advance curves for each RPM and load position (Map sensor value)

Closed and Open Loop

Closed loop operation is when the ECU reads the oxygen sensor to determine the fuel content of the exhaust gases. Too much or too little fuel, and the computer will override the values in the fuel maps by as much as 30% - all in the name of economy. This is why external add-on devices that adjust fuelling do not work effectively at part throttle. The computer overrides them. From about column 7 and higher, or after a certain small period of time, the computer goes “open loop”, ignoring the oxygen sensor readings and using the exact values from the tables.

For example, if you replace 240cc injectors with 310cc injectors (29 % larger) using a stock ECU, you are just on the limit of the ability of the computer to control fuelling in closed loop. Any increase in fuel pressure and you are likely to get engine check lights from overfuelling.

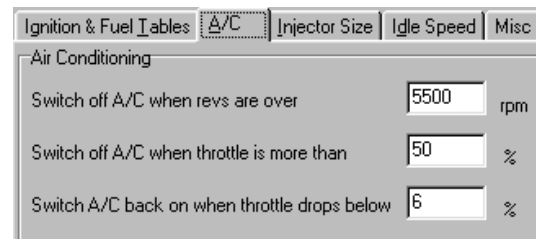
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Features specific to the PR3 and PWO ECUs

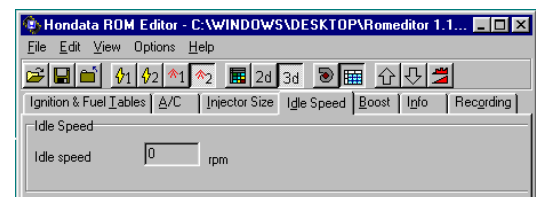
Air Conditioning

A/C cutoff: It can be disruptive when the A/C, cuts in just before you want to overtake, especially on the open road when you are in a higher gear. Hondata modifies the ECU to switch the A/C clutch off when the revs are above a certain value (e.g. 5000 rpm) or throttle is opened more than half way for that extra horsepower when you need it.



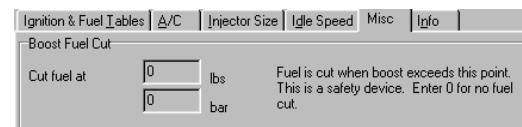
Idle Speed

Modifications like lumpy cams, bored throttle bodies, and retarded ignition can affect the idle speed. With this value the computer will try and maintain the idle speed, all other factors (such as temperature and cam profiles) permitting.



Boost cut

As a safety feature, Hondata ROMs can cut the fuel when the boost exceeds a certain level. This is useful in the case where boost may spike past your preset level and lean out your mixture.



It is envisaged that these features will be added to the rest of the Hondata ROM range in time.

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What you need in terms of injector size and fuel pressure to get more power.

Injector sizing becomes important when power is increased over 20-25%. Your stock injectors with the stock fuel pressure will not supply enough fuel to generate maximum power.

If you intend on doubling your horsepower, then expect to supply double the fuel. Make sure your fuel pump is up to the task and that your fuel filter is clean.

Bigger injectors

Injectors are rated to flow at a certain pressure. For example at 43 psi Prelude injectors flow 310cc per minute. 620cc injectors will flow double that. In the car, however, injectors need time to open and close. For example a 40ms (millisecond) injector pulse can flow more than double that of a 20ms pulse when opening and closing times are taken into consideration. Running very large injectors on a highly boosted car could cause idling overfuelling problems because the injectors cannot be opened for a short enough time. RC Engineering's high impedance 440 cc injectors have been tested on a stock NA Civic to give good idle quality.

More fuel pressure

Increasing your fuel pressure will also help increase the fuel flow. For example if injectors flow 310cc/minute at 40 psi, increasing the fuel pressure to 60 psi will make them flow 380 cc. Measure the fuel pressure with the ignition on but without the car running as some cars have a regulator that reduces fuel pressure at part throttle. Honda uses a variety of pressures on their engines ranging from 35 - 54 psi. Consider fixing the fuel pressure a little higher if you boost your car. If your fuel pressure is 20 psi and your boost pressure is 20 psi you are not going to inject any fuel.

When you do install larger injectors or increase fuel pressure you need to tell the engine computer of the changes so it can reduce the injector pulse width to allow idle without overfuelling.

For stock the injector multiplier is 1. If, in this example you double the injector size to 480cc and press calculate, the injector multiplier will change to 0.5. The 2D and 3D map values will not change, as the computer multiplies each value on the map by the injector multiplier after it has read the map value.

Injector Fuel pressure and engine capacity recalibration

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Duty Cycle

Duty cycle is measured as percentage. It is the percentage of time the injector is held open between successive injector pulses. As engine revs rise, there is less time to deliver the correct amount of fuel to the cylinder - and the duty cycle rises. 100% duty cycle is where the injector is held open all the time. You cannot accurately deliver fuel at 100% duty cycle. 80% is a commonly regarded maximum. When you get close to or pass this number consider upgrading your fuel injectors or increasing your fuel pressure. Honda drives their injectors hard and at high RPM on mildly worked motors over 90% duty cycle is commonly seen with the stock injectors.

Honda injector sizing and fuel pressure

This information is only provided as a guide and has not been verified. If you are not sure measure your injectors with a multimeter. Most Hondas that run low impedance injectors also run a resistor pack, so that the ECU sees a total of about 12 ohms impedance.

Specific model fuel pressure information is not available, but in general most Hondas run 37-45 PSI with the Type R at 52 psi.

Honda VTEC JDM B16A 240cc low resistance (2 ohms)

Honda Accord 2.2i VTEC and non VTEC- 240cc/min, 92-95 low resistance

Honda Prelude 2.2 DOHC VTEC- 92-96 340cc/min, low resistance

Honda Prelude 2.2 DOHC VTEC- 97+ 280cc/min, low resistance

Honda Civic EX- 240cc/min, high resistance (12 ohms)

Honda Civic Si coupe- 240cc/min, high resistance

Honda CRX Del sol (B16A engine)- 240cc/min, high resistance

Integra GSR B18b, B18C and Type R engines- 240cc/min, high resistance

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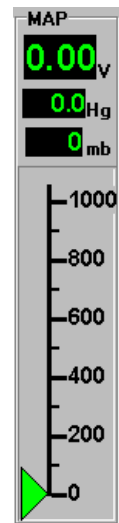


Altitude

As the Honda uses a MAP sensor, the higher the altitude you run your Honda, the lower the MAP value will be at full throttle. This means that wide open throttle may not correspond to column 10 but column 9, or lower. To find out what the map sensor value will be at wide open throttle, switch on, but do not start the car. Hondalogger will then display the MAP sensor value.

Ignition & Fuel Tables	Rev Limits	A/C	Injector Size	Idle Speed	Mis					
Col	1	2	3	4	5	6	7	8	9	10
mBar	134	306	420	535	650	764	879	936	994	
mBar										1044

RomEditor MAP values



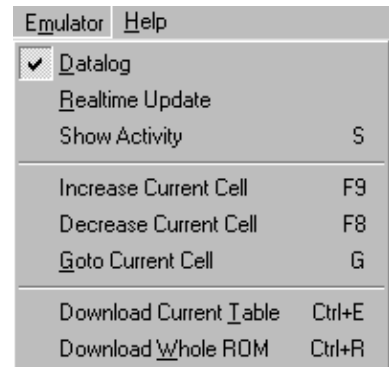
Hondalogger MAP sensor display

HONDATA ROM EDITOR



Datalogging

Version 2 of ROMeditor incorporates some basic Datalogging functions listed at the bottom of this screen shot. While the car is running, ROMeditor displays fuelling, timing and RPM information. In addition ROMeditor displays the two by two area on the MAP in which the car is running. In this example columns 2 and 3, and rows 4 and 5 - a typical idle position.



Emulator and datalogging menu

Choose *Show activity* from the Emulator menu. Rev the car and the highlighted area moves to the right and down. This display feature is very useful in conjunction with a constant load dyno to accurately see what fuel and ignition values the car is using.

Hondallogger cannot be run at the same time the ROMeditor is datalogging.

Col	1	2	3	4	5	6	7	8	9	10	B11	B12	B13
mBar	134	306	420	535	650	764	879	936	994				
psi										0.5	3.8	7.8	11.3
450	25.50	25.50	25.50	25.50	17.75	14.75	11.00	7.25	5.25	4.25	3.50	2.75	2.00
550	25.50	25.50	25.50	25.50	18.25	15.75	13.00	9.00	7.00	6.00	5.25	4.50	3.75
650	25.50	25.50	25.50	25.50	18.75	16.75	14.75	11.00	8.75	7.75	7.00	6.25	5.50
725	25.50	25.50	25.50	25.50	19.75	17.75	16.25	12.75	10.50	9.50	8.75	8.00	7.25
925	27.75	27.75	27.75	27.75	24.25	21.50	19.25	16.25	14.25	13.25	12.50	11.75	11.00
1150	35.00	35.00	35.00	30.75	26.25	24.00	22.25	19.25	17.50	16.50	15.75	15.00	14.25
1375	37.75	37.75	37.75	32.25	27.75	26.00	24.50	21.75	20.00	19.00	18.25	17.50	16.75
1600	40.25	40.25	40.25	33.75	28.75	27.50	25.75	23.50	21.25	20.25	19.50	18.75	18.00
1825	42.25	42.25	42.25	35.00	29.75	28.25	26.75	25.00	22.50	21.50	20.75	20.00	19.25
2050	42.75	42.75	42.75	35.50	30.50	29.00	27.50	26.00	23.50	22.50	21.75	21.00	20.25
2300	43.00	43.00	43.00	36.25	31.50	30.00	28.50	27.00	24.50	23.50	22.75	22.00	21.25
2750	44.75	44.75	44.75	38.75	34.50	32.75	31.00	29.00	26.00	25.00	24.25	23.50	22.75
2925	45.25	45.25	45.25	40.50	36.75	34.50	32.25	30.00	27.25	26.25	25.50	24.75	24.00
3200	46.00	46.00	46.00	42.75	39.25	36.50	34.25	31.75	29.25	28.25	27.50	26.75	26.00
3650	48.00	48.00	48.00	45.25	41.50	38.25	35.50	33.25	31.25	30.25	29.50	28.75	28.00
4125	48.50	48.50	48.50	45.75	42.00	38.75	36.00	33.75	31.25	30.25	29.50	28.75	28.00
4575	48.50	48.50	48.50	46.00	42.25	39.00	36.00	33.75	31.25	30.25	29.50	28.75	28.00
5500	49.00	49.00	49.00	46.50	42.75	39.00	36.00	33.75	31.25	30.25	29.50	28.75	28.00
6400	49.00	49.00	49.00	46.50	42.75	39.00	36.00	33.75	31.25	30.25	29.50	28.75	28.00
7350	49.00	49.00	49.00	46.50	42.75	39.00	36.00	33.75	31.25	30.25	29.50	28.75	28.00

Datalogging active with car idling

Computer Requirements

Pentium PC running Windows 95, 98 or NT with 16Mb Ram (32 or more recommended).
 PowerMac with Virtual PC 2.1.3 with 64 Mb ram (G3 processor recommended)
 Keyspan USB-D9 PDA serial connector for iMac or later CPU for serial eeprom programmers. (Parallel programmer not tested.)

HONDATA ROM EDITOR



Emulation (optional)

Setting up the Transtronic Pocket programmer and emulator Adaptor.

Plug the parallel cable into the PC and emulator adaptor into the top of the Pocket Programmer. You must have a constant 12V supply to the emulator before switching on the PC. (A cigarette lighter adapter is not suitable)

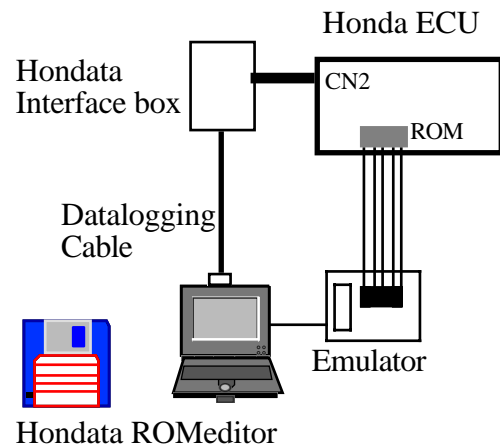
Open Hondata ROM editor and under *File* go to settings. Select Transtronics as the emulator type. If an error message says cannot open emulator, then remove the emulator adaptor from the top of the Pocket programmer and try again. Once the connection is established, then re-insert the emulator adaptor. This only needs to be done once.

The Transtronic emulator adaptor allows you to make very quick changes to the ignition and fuelling values between dyno runs. Changes to ignition and fuelling must be made while the car is switched off. It normally takes less than 3 seconds under Windows 98 to download the entire ROM and all tables. This emulator adaptor cannot make changes in real time, but the Racelogic emulator can. Once all your changes have been made you can then remove the emulator adaptor and use the programmer to write an Eprom. (See Appendix 1.)

Racelogic

The Racelogic Emulator operates off a serial port. If you want to datalog at the same time you will need two serial ports.

The Racelogic emulator is a realtime emulator, where changes made on the screen are instantly made in the computer. It is not able to program EPROMs.



Emulator setup

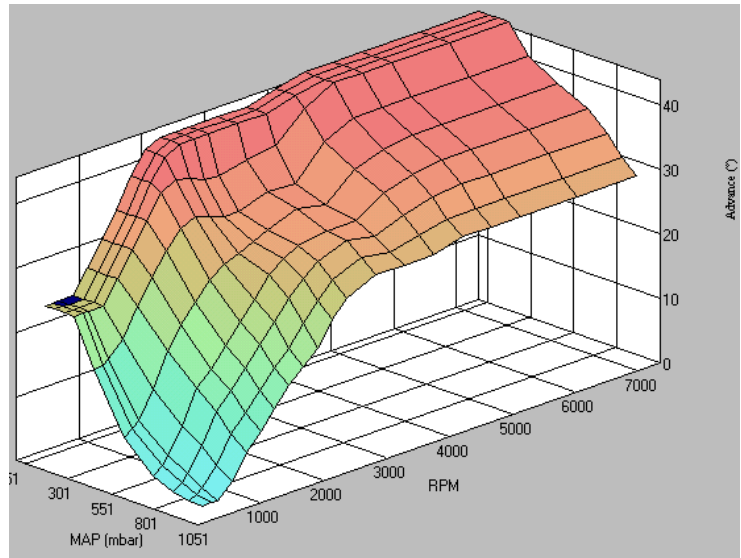
HONDATA ROM EDITOR



Rom 273 '92-95 P72 B18c US GSR

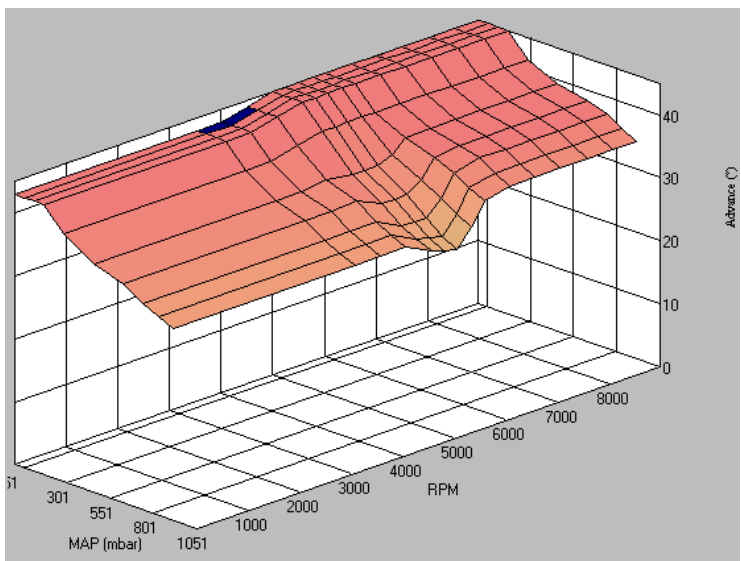
IGNITION

Col	1	2	3	4	5	6	7	8	9	10
mBar	134	220	306	420	592	764	879	936	994	
mBar										1051
450	22.50	22.50	22.50	22.50	15.25	6.25	2.00	0.50	0.00	0.00
600	22.50	22.50	22.50	22.50	15.50	7.25	3.25	1.50	0.50	0.00
675	22.50	22.50	22.50	22.50	16.25	8.25	4.50	2.75	1.25	0.00
925	22.50	22.50	22.50	22.50	18.50	12.25	8.25	6.25	4.00	2.25
1150	26.00	26.00	26.00	26.00	22.75	17.50	13.25	10.75	8.00	6.00
1375	29.75	29.75	29.75	29.75	26.50	20.75	15.50	13.25	10.50	8.50
1600	33.50	33.50	33.50	33.50	29.75	23.50	18.25	16.00	13.25	11.25
1825	38.00	38.00	38.00	37.00	32.50	26.25	21.25	18.75	16.00	14.00
2050	41.25	41.25	41.25	38.25	33.50	27.75	24.00	21.50	18.25	16.25
2300	42.50	42.50	42.50	37.75	32.75	28.75	27.00	24.50	21.25	18.25
2525	42.50	42.50	42.50	36.75	32.00	29.75	28.75	26.75	24.00	22.00
2750	42.50	42.50	42.50	36.50	32.00	30.75	30.00	28.50	26.50	24.50
3200	42.50	42.50	42.50	37.50	33.50	32.50	30.75	30.25	28.50	26.50
3650	42.50	42.50	42.50	38.00	33.25	31.50	30.75	29.25	27.75	26.50
4125	43.75	43.75	43.75	42.25	38.25	35.50	33.50	31.00	28.75	26.50
4575	44.75	44.75	44.75	44.75	40.25	37.00	34.75	32.25	29.75	27.75
5025	44.75	44.75	44.75	44.75	40.50	37.75	35.50	32.75	29.75	27.75
5500	44.75	44.75	44.75	44.75	40.50	37.75	35.50	32.75	29.75	27.75
6400	44.75	44.75	44.75	44.75	40.50	37.75	35.50	32.75	29.75	27.75
7350	44.75	44.75	44.75	44.75	40.50	37.75	35.50	32.75	29.75	27.75



Low speed Ignition

Col	1	2	3	4	5	6	7	8	9	10
mBar	134	220	306	420	592	764	879	936	994	
mBar										1051
0	43.00	43.00	43.00	43.00	39.50	36.25	34.75	32.75	31.50	30.50
3525	43.00	43.00	43.00	43.00	39.50	36.25	34.75	32.75	31.50	30.50
4000	43.00	43.00	43.00	43.00	39.50	36.25	34.75	32.75	31.50	30.50
4500	44.00	44.00	44.00	44.00	40.50	36.75	35.00	32.75	31.50	30.50
5000	45.00	45.00	45.00	45.00	41.50	36.25	33.25	30.75	29.50	28.50
5250	45.00	45.00	45.00	45.00	41.50	36.25	33.25	30.75	29.00	27.75
5500	45.00	45.00	45.00	45.00	41.50	36.25	33.25	30.75	28.50	27.25
5775	45.00	45.00	45.00	45.00	41.50	37.25	34.75	33.00	31.25	30.00
6025	45.00	45.00	45.00	45.00	41.50	39.25	37.75	36.25	34.75	33.50
6500	45.00	45.00	45.00	45.00	41.50	39.25	38.25	37.25	35.75	34.50
7000	45.00	45.00	45.00	45.00	41.50	39.25	38.25	37.25	35.75	34.50
7500	45.00	45.00	45.00	45.00	41.50	39.25	38.25	37.25	35.75	34.50
8025	45.00	45.00	45.00	45.00	41.50	39.25	38.25	37.25	35.75	34.50
8525	45.00	45.00	45.00	45.00	41.50	39.25	38.25	37.25	35.75	34.50
8975	45.00	45.00	45.00	45.00	41.50	39.25	38.25	37.25	35.75	34.50



High speed Cam Ignition

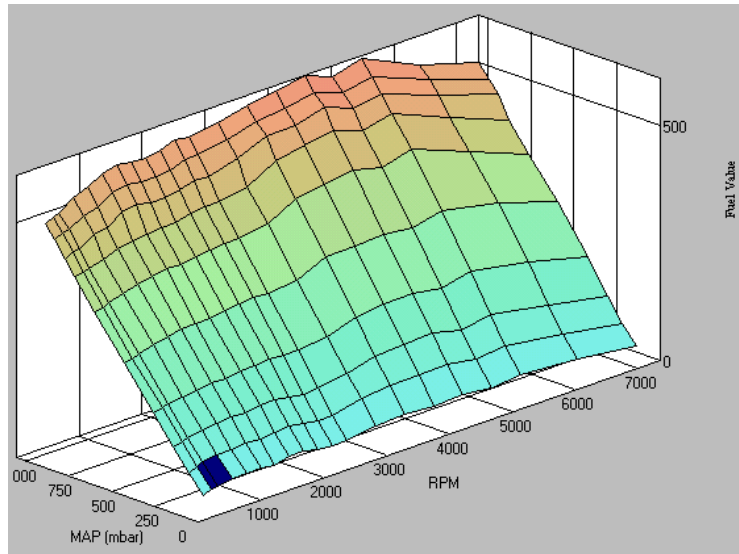
HONDATA ROM EDITOR



Rom 273 '92-95 P72 B18c US GSR

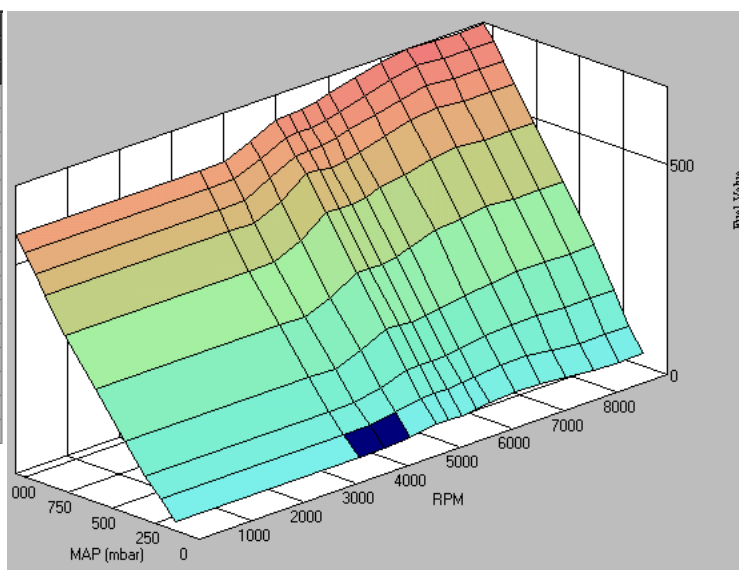
FUEL

Col	1	2	3	4	5	6	7	8	9	10
mBar	134	220	306	420	592	764	879	936	994	
mBar										1051
450	16	52	98	155	238	326	386	416	450	478
600	22	60	101	159	242	329	388	425	457	485
675	25	66	106	163	248	336	394	428	461	488
925	30	70	111	168	256	343	402	448	479	510
1150	32	72	115	171	262	352	414	452	488	522
1375	32	73	118	177	270	359	420	475	508	540
1600	28	70	116	175	268	366	422	479	513	550
1825	34	76	122	180	272	364	426	472	508	542
2050	36	78	122	182	276	369	428	472	511	542
2300	28	72	118	183	279	373	436	479	513	548
2525	26	68	112	182	284	376	440	486	524	560
2750	28	70	116	182	280	374	438	486	524	555
3200	36	83	127	190	286	385	450	502	533	562
3650	40	90	141	211	316	416	484	529	551	578
4125	35	91	144	216	318	425	494	531	558	588
4575	39	91	147	218	321	436	504	547	572	600
5025	32	82	134	206	314	420	484	524	549	575
5500	38	88	146	221	328	438	498	533	562	592
6400	30	70	122	199	302	388	448	488	513	538
7350	13	48	98	167	261	341	398	446	470	498



Low speed Cam Fuel

Col	1	2	3	4	5	6	7	8	9	10
mBar	134	220	306	420	592	764	879	936	994	
mBar										1051
0	21	63	104	169	268	372	450	495	536	569
3525	21	63	104	169	268	372	450	495	536	569
4000	21	63	104	169	268	372	450	495	536	569
4500	26	73	119	190	291	402	477	528	564	597
5000	34	84	139	219	330	448	524	558	594	627
5250	33	84	139	218	328	448	522	560	594	627
5500	33	85	138	216	326	446	515	560	594	630
5775	35	86	140	218	334	450	522	568	602	638
6025	40	90	145	223	345	464	531	575	610	646
6500	45	98	154	233	364	472	547	590	627	663
7000	45	98	158	242	370	488	565	602	644	676
7500	37	90	159	250	380	496	572	618	657	688
8025	30	82	155	247	374	488	565	610	649	682
8525	30	82	155	246	374	488	565	610	649	682
8975	30	82	155	247	374	488	565	610	649	682



High speed Cam Fuel

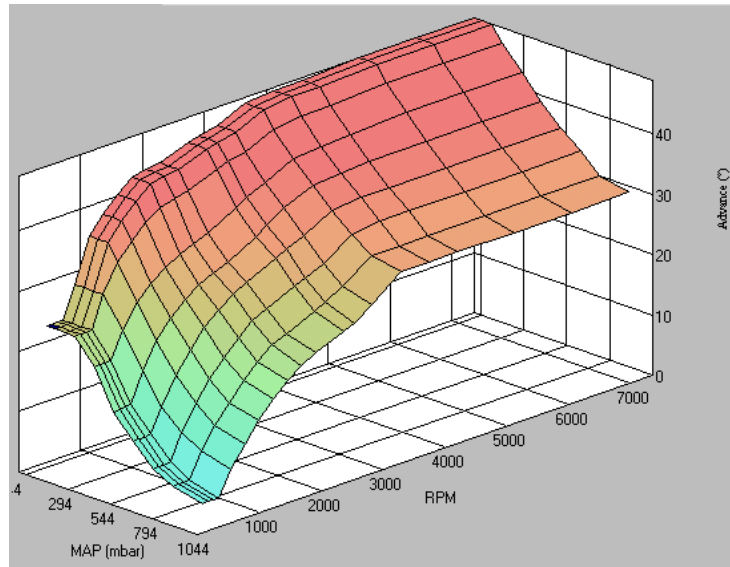
HONDATA ROM EDITOR



Rom 305 '92-95 P30 B16A US Del Sol

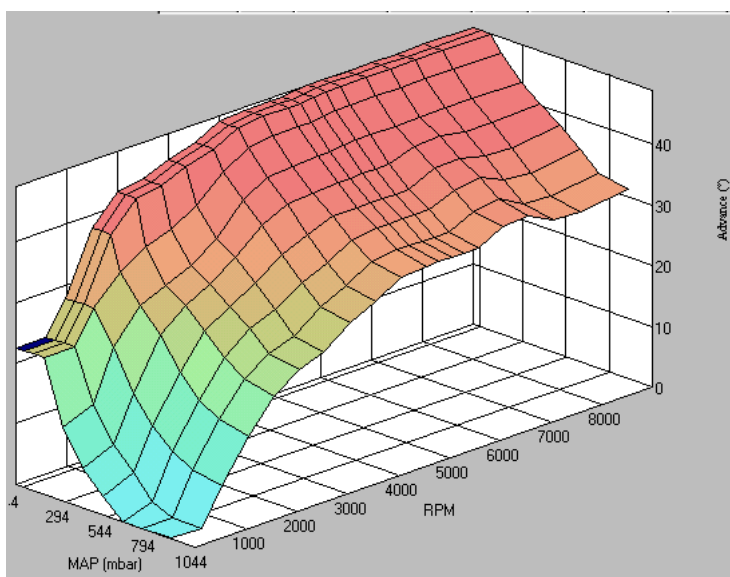
IGNITION

Col	1	2	3	4	5	6	7	8	9	10
mBar	134	306	420	535	650	764	879	936	994	
mBar										1044
450	22.50	22.50	22.50	22.50	18.50	12.00	8.50	5.00	3.25	2.00
550	22.50	22.50	22.50	22.50	18.50	12.25	8.50	5.00	3.25	2.00
650	22.50	22.50	22.50	22.50	18.50	12.25	8.50	5.00	3.25	2.00
725	22.50	22.50	22.50	22.50	18.50	12.50	8.75	5.25	3.25	2.00
925	27.75	27.75	27.75	27.75	23.00	17.25	12.50	9.50	7.50	6.00
1150	35.00	35.00	35.00	32.25	26.75	21.50	17.00	13.50	10.75	9.50
1375	37.75	37.75	37.75	35.00	29.00	24.50	20.25	16.50	13.75	12.50
1600	40.25	40.25	40.25	37.25	31.00	26.75	23.25	19.25	16.75	15.25
1825	42.25	42.25	42.25	38.75	32.25	28.25	25.25	21.75	19.00	17.50
2050	42.75	42.75	42.75	39.50	33.25	29.50	27.00	23.75	21.00	19.25
2300	43.00	43.00	43.00	40.00	34.25	30.50	28.25	25.00	22.00	20.50
2750	44.75	44.75	44.75	42.00	36.75	33.00	30.50	27.00	24.00	22.50
2925	45.25	45.25	45.25	42.75	37.75	34.25	31.50	27.75	25.00	23.25
3200	46.00	46.00	46.00	43.25	39.25	36.25	32.75	29.25	26.50	25.25
3650	48.00	48.00	48.00	45.25	41.50	38.25	35.25	32.50	30.00	29.00
4125	48.50	48.50	48.50	45.75	42.00	38.75	35.75	33.00	30.00	29.00
4575	48.50	48.50	48.50	46.00	42.25	39.00	35.75	33.00	30.00	29.00
5500	49.00	49.00	49.00	46.50	42.75	39.00	35.75	33.00	30.00	29.00
6400	49.00	49.00	49.00	46.50	42.75	39.00	35.75	33.00	30.00	29.00
7350	49.00	49.00	49.00	46.50	42.75	39.00	35.75	33.00	30.00	29.00



Low speed Ignition

Col	1	2	3	4	5	6	7	8	9	10
mBar	134	306	420	535	650	764	879	936	994	
mBar										1044
0	22.50	22.50	22.50	22.50	12.25	6.50	3.00	0.00	0.00	0.00
600	22.50	22.50	22.50	22.50	14.25	8.75	5.25	1.50	0.00	0.00
975	27.75	27.75	27.75	27.75	22.50	16.00	11.75	8.75	6.75	5.75
1525	37.75	37.75	37.75	32.25	27.75	24.00	19.00	15.50	13.50	12.50
2000	42.25	42.25	42.25	35.00	29.75	27.50	24.50	21.25	18.75	17.50
2500	43.00	43.00	43.00	36.25	31.50	29.50	27.00	24.50	21.50	20.50
3000	44.75	44.75	44.75	38.75	34.50	32.50	29.50	26.25	23.00	22.00
3525	46.00	46.00	46.00	42.75	39.25	36.25	32.50	29.00	26.25	25.25
4000	48.00	48.00	48.00	45.25	41.50	38.25	34.50	31.00	28.25	27.25
4500	48.50	48.50	48.50	45.75	42.00	38.75	36.00	33.25	30.75	29.75
5000	48.50	48.50	48.50	46.00	42.25	39.00	36.00	33.75	31.25	30.25
5250	48.50	48.50	48.50	46.00	42.25	39.00	36.00	33.75	31.25	30.25
5500	48.75	48.75	48.75	46.25	42.50	39.00	36.00	33.75	31.25	30.25
5725	49.00	49.00	49.00	46.50	42.75	39.00	36.00	33.75	31.25	30.25
6025	49.00	49.00	49.00	46.50	42.75	39.00	36.00	33.75	31.25	30.25
6500	49.00	49.00	49.00	46.50	42.75	40.50	38.00	35.50	33.00	32.25
7000	49.00	49.00	49.00	46.50	42.75	40.75	38.25	36.25	33.75	32.75
7500	49.00	49.00	49.00	46.50	42.75	40.00	37.25	34.25	31.50	30.50
8025	49.00	49.00	49.00	46.50	42.75	40.00	37.00	34.00	31.25	30.25
8975	49.00	49.00	49.00	46.50	42.75	40.25	38.00	35.00	32.25	31.25



High speed Cam Ignition

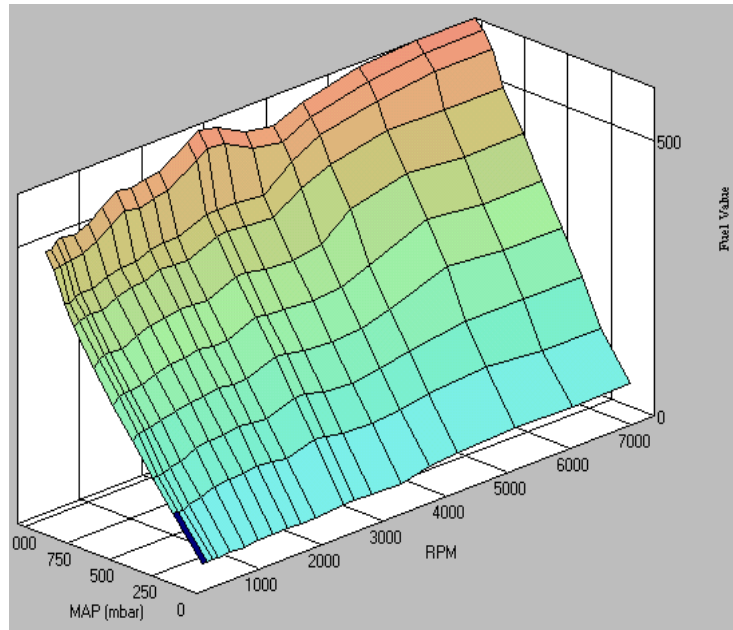
HONDATA ROM EDITOR



Rom 305 '92-95 P30 B16A US Del Sol

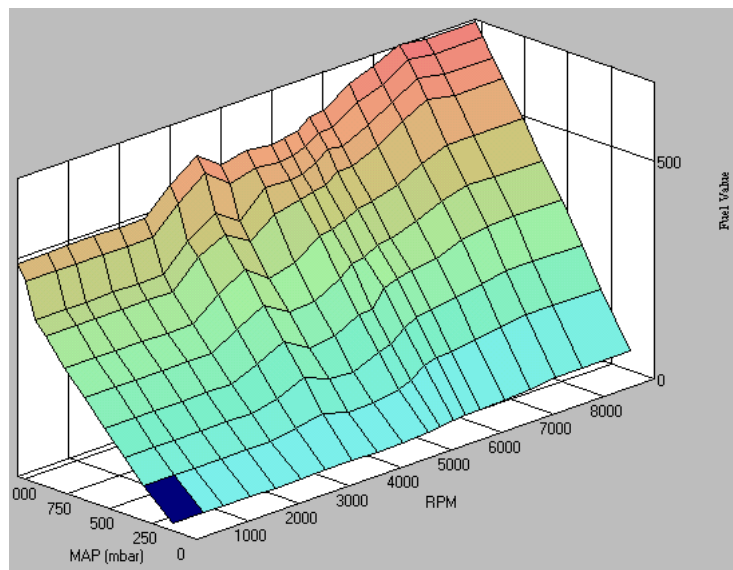
FUEL

Col	1	2	3	4	5	6	7	8	9	10
mBar	134	306	420	535	650	764	879	936	994	
mBar										1044
450	15	87	137	190	242	296	356	392	448	472
550	16	85	135	200	254	308	362	389	448	472
650	15	84	138	202	255	312	366	394	450	485
725	15	90	144	204	256	313	368	398	452	488
925	16	95	148	208	258	310	366	398	458	482
1150	17	106	161	215	267	324	380	412	468	495
1375	20	110	166	220	276	332	388	416	488	515
1600	20	109	165	222	278	336	390	418	505	532
1825	21	113	171	229	284	343	400	430	498	528
2050	20	110	167	224	279	340	398	432	505	535
2300	20	107	165	224	279	338	398	434	510	538
2750	24	120	183	244	303	362	420	454	545	572
2925	24	120	182	241	298	362	424	454	560	585
3200	23	113	174	234	297	355	420	454	555	580
3650	23	110	170	231	291	352	416	448	528	550
4125	33	114	176	236	296	360	448	490	518	542
4575	38	124	190	250	316	404	472	518	542	565
5500	42	133	203	288	360	429	494	540	568	590
6400	42	122	203	278	348	420	490	554	580	598
7350	42	122	203	278	348	420	490	554	580	598



Low speed Cam Fuel

Col	1	2	3	4	5	6	7	8	9	10
mBar	134	306	420	535	650	764	879	936	994	
mBar										1044
0	16	80	129	180	234	286	345	375	454	490
600	16	80	129	180	234	286	345	375	454	490
975	16	80	129	180	234	286	345	375	454	490
1525	16	80	129	180	234	286	345	375	454	490
2000	16	80	129	180	234	286	345	375	454	490
2500	16	80	129	180	234	286	345	375	454	490
3000	16	88	140	204	268	334	405	432	512	547
3525	16	101	169	237	303	370	435	475	561	594
4000	16	84	146	201	266	328	400	438	514	550
4500	16	85	140	207	273	344	440	495	531	566
5000	22	96	166	237	304	388	455	492	525	558
5250	24	108	174	240	327	392	462	495	531	564
5500	28	130	201	278	334	402	468	512	542	569
5725	31	140	215	290	352	418	488	532	561	591
6025	31	141	224	296	354	424	490	528	564	597
6500	32	148	231	303	374	442	515	555	600	635
7000	39	158	241	326	401	470	552	588	622	657
7500	46	165	251	339	416	494	582	622	657	685
8025	46	165	251	339	413	494	570	610	649	676
8975	46	165	251	339	413	494	570	610	649	676



High speed Cam Fuel

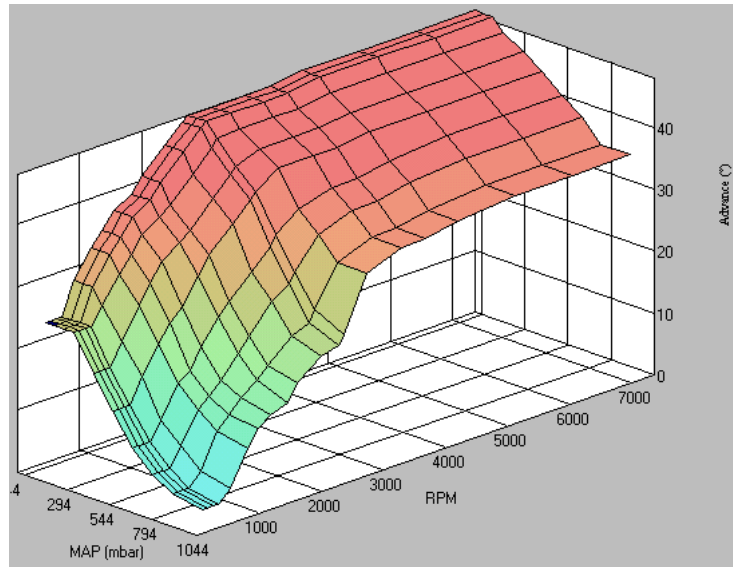
HONDATA ROM EDITOR



Rom 304 '92-95 P28 US Civic EX

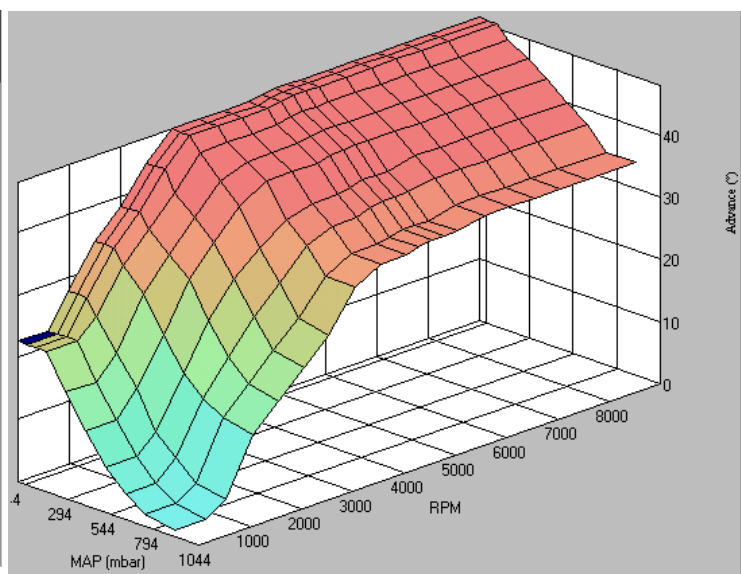
IGNITION

Col	1	2	3	4	5	6	7	8	9	10
mBar	134	306	420	535	650	764	879	936	994	
mBar										1044
450	22.50	22.50	22.50	22.50	17.00	12.00	7.25	4.00	2.00	1.00
550	22.50	22.50	22.50	22.50	17.00	12.00	7.25	4.00	2.00	1.00
650	22.50	22.50	22.50	22.50	17.00	12.00	7.25	4.00	2.00	1.00
725	22.50	22.50	22.50	22.50	17.00	12.00	7.25	4.00	2.00	1.00
925	27.75	27.75	27.75	25.25	20.50	16.00	10.00	7.00	4.00	3.00
1175	32.00	32.00	32.00	29.25	25.50	20.25	15.25	12.00	9.50	8.50
1375	34.25	34.25	34.25	32.00	28.50	23.00	16.50	13.50	11.50	11.00
1550	36.75	36.75	36.75	34.50	31.25	25.00	19.75	15.50	13.75	12.50
1825	38.50	38.50	38.50	36.25	33.25	29.00	23.50	18.75	15.50	13.50
2000	40.75	40.75	40.75	37.75	34.75	32.00	25.50	21.00	17.25	16.25
2375	44.50	44.50	44.50	41.25	38.50	35.50	29.00	25.25	20.75	19.25
2650	47.25	47.25	47.25	44.75	41.50	38.50	32.00	27.00	22.00	20.00
2750	48.00	48.00	48.00	45.75	42.50	39.50	33.75	28.75	23.75	21.25
3125	48.00	48.00	48.00	46.00	44.00	42.00	36.50	33.50	30.00	30.00
3650	48.00	48.00	48.00	46.00	44.00	42.00	38.00	35.50	32.25	32.25
4050	48.00	48.00	48.00	46.00	44.00	42.00	38.00	35.50	32.25	32.25
4575	48.75	48.75	48.75	46.75	44.75	42.75	39.00	36.75	33.25	33.25
5500	48.75	48.75	48.75	46.75	44.75	42.75	40.00	37.50	34.25	34.25
6400	48.75	48.75	48.75	46.75	44.75	42.75	40.00	37.50	34.25	34.25
7350	48.75	48.75	48.75	46.75	44.75	42.75	40.00	37.50	34.25	34.25



Low speed Ignition

Col	1	2	3	4	5	6	7	8	9	10
mBar	134	306	420	535	650	764	879	936	994	
mBar										1044
0	22.50	22.50	22.50	22.50	17.00	12.00	7.25	4.00	2.00	1.00
600	22.50	22.50	22.50	22.50	17.00	12.00	7.25	4.00	2.00	1.00
975	27.75	27.75	27.75	25.25	20.50	16.00	10.00	7.00	4.00	3.00
1525	34.25	34.25	34.25	32.00	28.50	23.00	18.00	15.00	13.00	12.00
2000	38.50	38.50	38.50	36.25	33.25	30.50	25.00	20.25	17.00	16.00
2500	44.00	44.00	44.00	40.75	38.00	35.00	30.25	25.25	21.00	20.00
3000	48.00	48.00	48.00	45.75	42.50	39.50	33.75	29.25	24.75	23.75
3525	48.00	48.00	48.00	46.00	44.00	42.00	36.75	33.75	30.00	30.00
4000	48.00	48.00	48.00	46.00	44.00	42.00	38.00	35.50	32.25	32.25
4500	48.00	48.00	48.00	46.00	44.00	42.00	38.00	35.50	32.25	32.25
4750	48.50	48.50	48.50	46.50	44.50	42.50	38.50	36.25	32.75	32.75
5000	48.75	48.75	48.75	46.75	44.75	42.75	39.00	36.75	33.25	33.25
5250	48.75	48.75	48.75	46.75	44.75	42.75	39.00	36.75	33.25	33.25
5500	48.75	48.75	48.75	46.75	44.75	42.75	39.00	36.75	33.25	33.25
6025	48.75	48.75	48.75	46.75	44.75	42.75	40.00	37.50	34.25	34.25
6500	48.75	48.75	48.75	46.75	44.75	42.75	40.00	37.50	34.25	34.25
7000	48.75	48.75	48.75	46.75	44.75	42.75	40.00	37.50	34.25	34.25
7500	48.75	48.75	48.75	46.75	44.75	42.75	40.00	37.50	34.25	34.25
8025	48.75	48.75	48.75	46.75	44.75	42.75	40.00	37.50	34.25	34.25
8975	48.75	48.75	48.75	46.75	44.75	42.75	40.00	37.50	34.25	34.25



High speed Cam Ignition

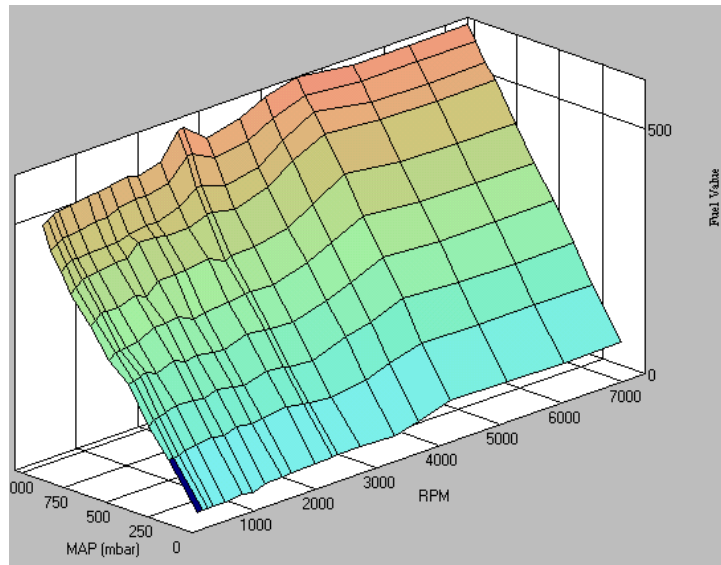
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Rom 304 '92-95 P28 US Civic EX

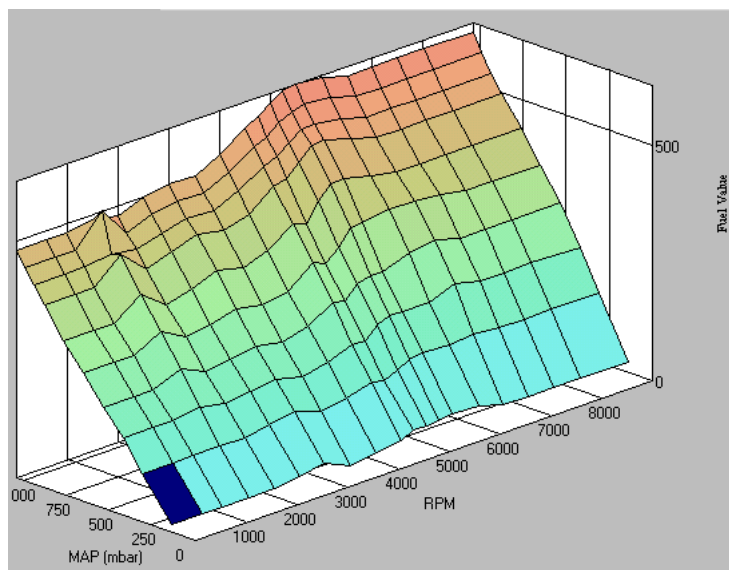
FUEL

Col	1	2	3	4	5	6	7	8	9	10
mBar	134	306	420	535	650	764	879	936	994	
mBar										1044
450	4	89	145	215	252	306	358	396	434	478
550	4	89	154	219	262	315	368	405	443	485
650	4	89	155	224	262	326	380	412	450	492
725	4	96	161	229	267	324	380	412	450	495
925	4	98	166	219	268	324	384	414	454	498
1175	8	104	166	232	286	336	390	416	461	505
1375	4	99	159	222	286	326	390	416	461	505
1550	14	110	172	226	291	352	414	423	470	510
1825	16	104	163	220	274	352	414	430	477	518
2000	17	106	159	219	279	354	408	430	475	510
2375	18	113	172	234	286	360	408	446	486	522
2650	20	107	169	230	288	343	422	470	529	572
2750	20	105	165	230	290	350	424	472	529	578
3125	20	101	161	225	286	352	414	454	506	540
3650	20	110	186	246	310	366	436	470	518	555
4050	32	130	200	265	333	397	472	506	544	582
4575	50	148	226	295	364	436	504	542	569	600
5500	48	146	216	288	352	420	494	522	558	585
6400	47	144	215	288	351	418	492	520	558	585
7350	48	144	217	289	351	418	494	522	558	585



Low speed Cam Fuel

Col	1	2	3	4	5	6	7	8	9	10
mBar	134	306	420	535	650	764	879	936	994	
mBar										1044
0	16	102	162	213	271	326	387	423	450	480
600	16	102	162	213	271	326	387	423	450	480
975	16	102	162	213	271	326	387	423	450	480
1525	16	102	171	237	303	368	436	430	515	490
2000	16	102	162	213	271	326	387	423	450	480
2500	24	112	168	220	278	342	405	436	470	500
3000	32	122	174	230	296	362	423	450	480	510
3525	8	102	160	219	284	348	412	448	478	508
4000	16	112	172	234	294	366	428	470	502	535
4500	24	128	192	267	336	404	468	504	538	572
4750	36	120	190	260	326	396	477	518	550	588
5000	36	132	214	286	350	434	500	536	570	608
5250	40	148	225	294	382	460	529	554	585	622
5500	44	152	224	294	385	462	531	556	592	628
6025	40	149	225	315	394	450	513	547	585	622
6500	24	154	244	324	390	438	497	533	570	608
7000	24	148	232	309	387	438	497	533	570	608
7500	24	148	232	310	376	438	497	533	570	608
8025	24	149	233	310	376	438	497	533	570	608
8975	24	148	230	309	374	438	497	533	570	608



High speed Cam Fuel

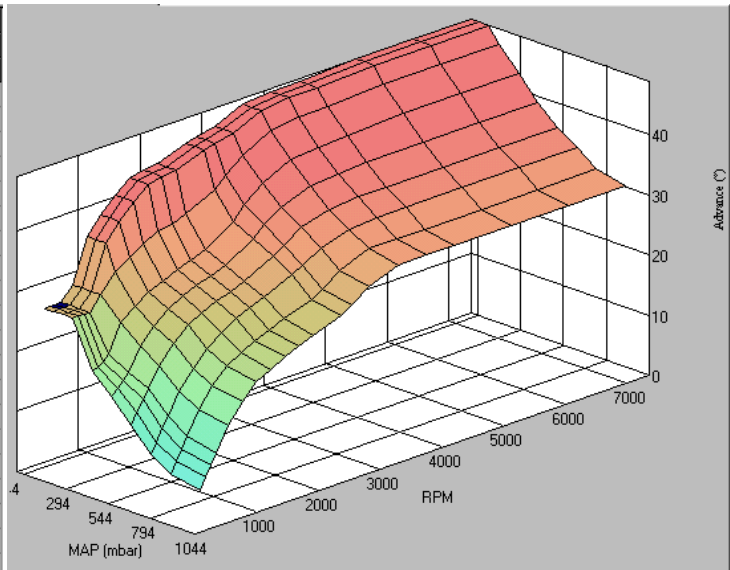
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Rom 245 '92-95 P30 JDM B16A Civic

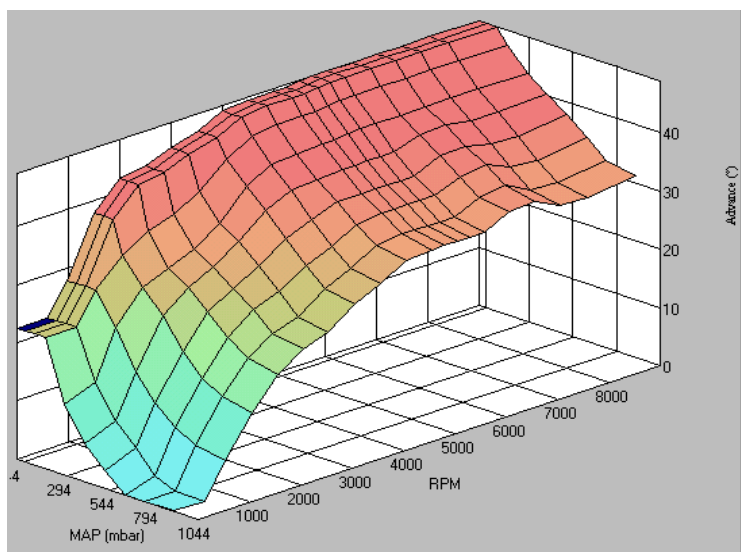
IGNITION

Col	1	2	3	4	5	6	7	8	9	10
mBar	134	306	420	535	650	764	879	936	994	
mBar										1044
450	25.50	25.50	25.50	25.50	17.75	14.75	11.00	7.25	5.25	4.25
550	25.50	25.50	25.50	25.50	18.25	15.75	13.00	9.00	7.00	6.00
650	25.50	25.50	25.50	25.50	18.75	16.75	14.75	11.00	8.75	7.75
725	25.50	25.50	25.50	25.50	19.75	17.75	16.25	12.75	10.50	9.50
925	27.75	27.75	27.75	27.75	24.25	21.50	19.25	16.25	14.25	13.25
1150	35.00	35.00	35.00	30.75	26.25	24.00	22.25	19.25	17.50	16.50
1375	37.75	37.75	37.75	32.25	27.75	26.00	24.50	21.75	20.00	19.00
1600	40.25	40.25	40.25	33.75	28.75	27.50	25.75	23.50	21.25	20.25
1825	42.25	42.25	42.25	35.00	29.75	28.25	26.75	25.00	22.50	21.50
2050	42.75	42.75	42.75	35.50	30.50	29.00	27.50	26.00	23.50	22.50
2300	43.00	43.00	43.00	36.25	31.50	30.00	28.50	27.00	24.50	23.50
2750	44.75	44.75	44.75	38.75	34.50	32.75	31.00	29.00	26.00	25.00
2925	45.25	45.25	45.25	40.50	36.75	34.50	32.25	30.00	27.25	26.25
3200	46.00	46.00	46.00	42.75	39.25	36.50	34.25	31.75	29.25	28.25
3650	48.00	48.00	48.00	45.25	41.50	38.25	35.50	33.25	31.25	30.25
4125	48.50	48.50	48.50	45.75	42.00	38.75	36.00	33.75	31.25	30.25
4575	48.50	48.50	48.50	46.00	42.25	39.00	36.00	33.75	31.25	30.25
5500	49.00	49.00	49.00	46.50	42.75	39.00	36.00	33.75	31.25	30.25
6400	49.00	49.00	49.00	46.50	42.75	39.00	36.00	33.75	31.25	30.25
7350	49.00	49.00	49.00	46.50	42.75	39.00	36.00	33.75	31.25	30.25



Low speed Ignition

Col	1	2	3	4	5	6	7	8	9	10
mBar	134	306	420	535	650	764	879	936	994	
mBar										1044
0	22.50	22.50	22.50	22.50	12.25	6.50	3.00	0.00	0.00	0.00
600	22.50	22.50	22.50	22.50	14.25	8.75	5.25	1.50	0.00	0.00
975	27.75	27.75	27.75	27.75	22.50	16.00	11.75	8.75	6.75	5.75
1525	37.75	37.75	37.75	32.25	27.75	24.00	19.00	15.50	13.50	12.50
2000	42.25	42.25	42.25	35.00	29.75	27.50	24.50	21.25	18.75	17.50
2500	43.00	43.00	43.00	36.25	31.50	29.50	27.00	24.50	21.50	20.50
3000	44.75	44.75	44.75	38.75	34.50	32.50	29.50	26.25	23.00	22.00
3525	46.00	46.00	46.00	42.75	39.25	36.25	32.50	29.00	26.25	25.25
4000	48.00	48.00	48.00	45.25	41.50	38.25	34.50	31.00	28.25	27.25
4500	48.50	48.50	48.50	45.75	42.00	38.75	36.00	33.25	30.75	29.75
5000	48.50	48.50	48.50	46.00	42.25	39.00	36.00	33.75	31.25	30.25
5250	48.50	48.50	48.50	46.00	42.25	39.00	36.00	33.75	31.25	30.25
5500	48.75	48.75	48.75	46.25	42.50	39.00	36.00	33.75	31.25	30.25
5725	49.00	49.00	49.00	46.50	42.75	39.00	36.00	33.75	31.25	30.25
6025	49.00	49.00	49.00	46.50	42.75	39.00	36.00	33.75	31.25	30.25
6500	49.00	49.00	49.00	46.50	42.75	40.50	38.00	35.50	33.00	32.25
7000	49.00	49.00	49.00	46.50	42.75	40.75	38.25	36.25	33.75	32.75
7500	49.00	49.00	49.00	46.50	42.75	40.00	37.25	34.25	31.50	30.50
8025	49.00	49.00	49.00	46.50	42.75	40.00	37.00	34.00	31.25	30.25
8975	49.00	49.00	49.00	46.50	42.75	40.25	38.00	35.00	32.25	31.25



High speed Cam Ignition

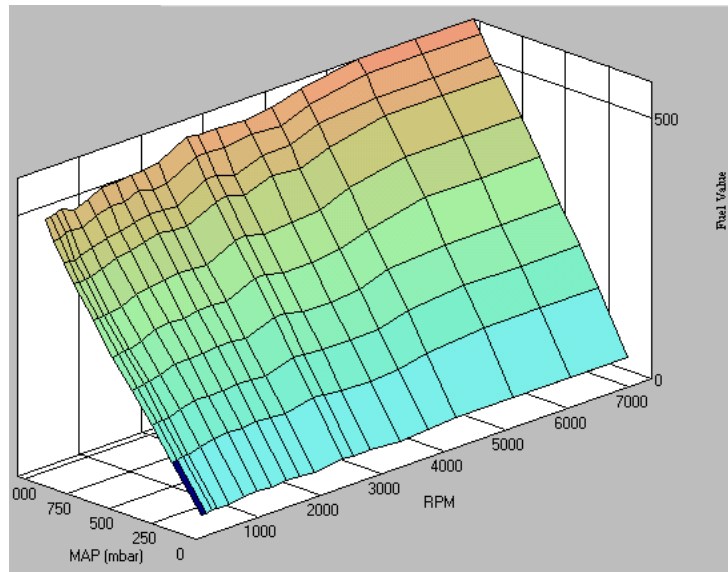
HONDATA ROM EDITOR



Rom 245 '92-95 P30 JDM B16A Civic

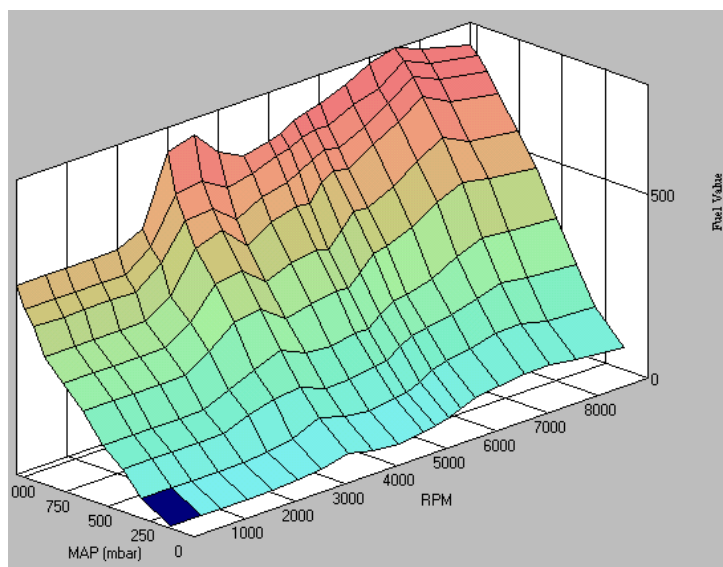
Fuel

Col	1	2	3	4	5	6	7	8	9	10
mBar	134	306	420	535	650	764	879	936	994	
mBar										1044
450	10	92	150	204	255	312	368	402	439	472
550	10	92	150	204	255	312	368	402	439	475
650	12	95	153	208	258	312	370	398	446	477
725	12	96	153	209	258	313	370	404	448	482
925	12	103	161	214	266	320	378	412	443	472
1150	16	108	169	225	280	332	390	420	459	484
1375	19	112	169	228	282	336	394	424	466	497
1600	16	110	168	226	282	341	400	432	464	497
1825	20	112	171	230	286	346	408	438	477	502
2050	19	112	171	231	288	343	404	436	468	502
2300	17	110	167	226	285	341	402	436	472	506
2750	22	121	186	248	309	369	430	466	504	536
2925	20	120	184	249	310	371	436	468	504	533
3200	21	116	180	240	302	362	424	456	504	533
3650	18	113	179	240	303	368	442	474	508	529
4125	21	118	181	245	309	371	436	476	506	536
4575	25	129	198	264	327	396	460	498	529	554
5500	27	140	208	274	351	416	482	510	549	572
6400	27	140	208	274	351	416	482	510	549	572
7350	27	140	208	274	351	416	482	510	549	572



Low speed Cam Fuel

Col	1	2	3	4	5	6	7	8	9	10
mBar	134	306	420	535	650	764	879	936	994	
mBar										1044
0	6	52	115	160	236	292	346	417	455	514
600	6	52	115	160	236	292	346	417	455	514
975	6	52	115	160	236	292	346	417	455	514
1525	6	52	115	160	236	292	346	417	455	514
2000	6	52	115	160	236	292	346	417	455	514
2500	10	59	140	192	278	338	390	471	504	546
3000	17	70	160	222	334	418	498	564	624	731
3525	34	104	170	249	344	430	522	570	637	754
4000	19	86	140	220	296	375	456	519	595	682
4500	14	74	142	214	310	402	498	555	611	650
5000	23	88	154	226	324	415	517	570	634	666
5250	28	92	158	225	318	405	512	588	644	676
5500	38	107	184	252	350	448	556	609	660	699
5725	52	128	201	278	388	485	578	627	670	708
6025	68	137	210	280	396	482	569	615	666	722
6500	74	149	221	303	424	518	610	651	702	748
7000	85	166	244	338	466	560	649	690	722	780
7500	86	170	262	364	498	600	696	738	774	800
8025	73	150	250	360	482	565	654	708	741	774
8975	61	146	242	348	466	548	630	684	718	738



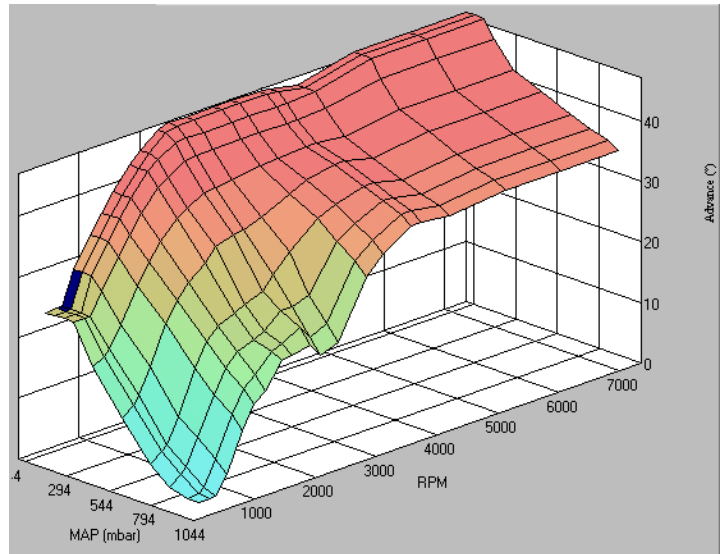
High speed Cam Fuel

HONDATA ROM EDITOR



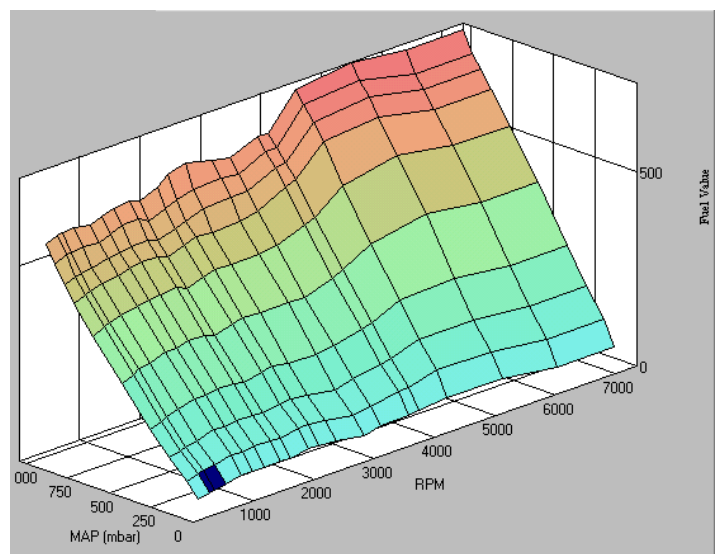
Rom 274 '92-95 Integra LS/GS Ignition

Col	1	2	3	4	5	6	7	8	9	10
mBar	134	198	306	420	592	764	879	936	994	
psi										0.5
450	13	49	94	148	242	335	402	443	487	531
650	19	59	100	159	254	351	415	454	503	546
725	19	62	105	166	266	358	422	459	503	546
925	28	67	111	175	270	367	430	462	509	549
1175	36	78	125	188	284	376	435	473	503	540
1375	33	75	123	186	284	380	445	476	517	555
1550	35	81	130	195	292	385	450	481	528	564
1825	35	80	127	191	290	389	450	484	531	567
2000	34	76	123	185	280	376	440	473	514	558
2300	42	85	132	196	294	389	452	487	531	579
2450	42	86	134	202	301	398	468	498	544	603
2750	37	82	128	195	298	398	462	514	556	615
3200	26	68	118	192	299	398	468	520	561	597
3500	36	76	130	199	299	405	478	520	556	588
3950	39	90	143	218	322	434	515	553	588	618
4125	42	92	149	225	334	443	522	558	588	618
4575	49	110	175	256	374	500	598	638	674	705
5500	48	109	173	262	404	529	610	652	688	726
6400	29	91	160	248	385	504	580	624	654	708
7350	29	91	161	248	385	504	580	624	654	708



Rom 274 '92-95 Integra LS/GS Fuel

Col	1	2	3	4	5	6	7	8	9	10
mBar	134	198	306	420	592	764	879	936	994	
psi										0.5
450	22.50	22.50	22.50	22.50	16.25	9.50	3.50	0.75	0.00	0.00
650	22.50	22.50	22.50	22.50	17.25	11.00	5.00	2.25	0.25	0.00
725	22.50	22.50	22.50	22.50	18.25	12.25	5.75	3.25	1.00	0.00
925	28.00	28.00	28.00	26.00	21.50	16.25	9.75	7.50	5.00	3.00
1175	32.75	32.75	32.75	30.75	27.00	22.50	16.75	13.50	11.25	9.25
1375	35.75	35.75	35.75	33.75	30.25	25.75	20.50	17.25	15.00	13.00
1550	38.50	38.50	38.50	36.50	33.00	28.00	22.50	19.25	16.50	14.50
1825	42.00	42.00	42.00	39.75	36.00	30.25	23.50	20.25	19.50	18.50
2000	43.75	43.75	43.25	41.00	37.00	32.25	24.50	21.25	20.00	18.75
2300	46.25	46.25	45.00	42.75	38.50	33.25	25.50	23.50	21.75	19.50
2450	46.75	46.75	45.25	43.00	38.75	33.50	27.75	23.50	19.50	17.25
2750	46.75	46.75	45.25	43.00	39.00	34.50	30.50	24.50	20.75	18.25
3200	46.75	46.75	45.25	43.00	39.75	36.75	34.50	31.75	29.50	27.50
3500	46.75	46.75	45.25	43.00	40.00	38.00	35.75	33.75	32.00	30.25
3950	46.75	46.75	45.25	43.00	40.25	39.00	37.00	35.75	34.50	33.25
4125	46.50	46.50	45.25	43.00	40.25	39.00	37.00	35.75	34.50	33.25
4575	45.50	45.50	45.50	43.25	39.75	37.75	36.00	34.75	33.75	32.75
5500	47.75	47.75	47.75	45.00	41.00	39.00	37.00	35.75	34.75	33.75
6400	47.75	47.75	47.75	45.00	41.00	39.00	37.00	35.75	34.75	33.75
7350	47.75	47.75	47.75	45.00	41.00	39.00	37.00	35.75	34.75	33.75



APPENDIX 1



Transtronics Programmer Instructions

Programming Guide for the ATMEL AT29C256 EEprom

INITIAL SETUP

Click on “Start,” then “Programs” and select “Windows Explorer”. Click on “Drive C.” Move over to the next screen and right click on any blank space. Select “New” and “Folder”. It will automatically create a new folder called “New Folder” Type in “xtronics” to name that folder.

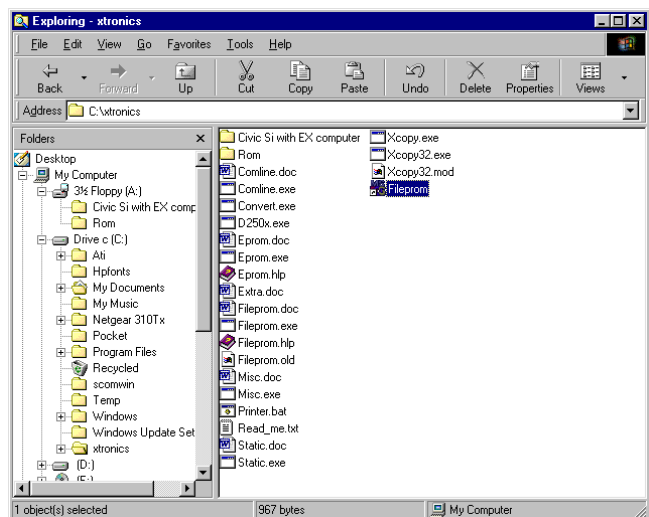
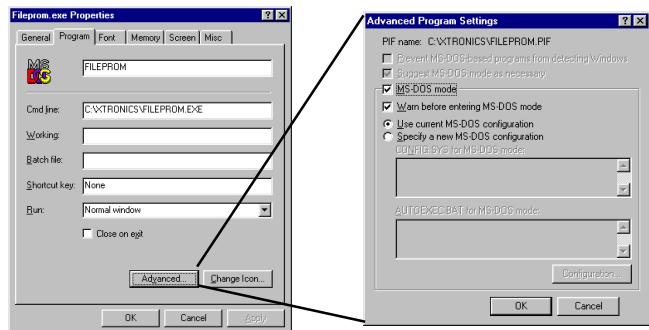
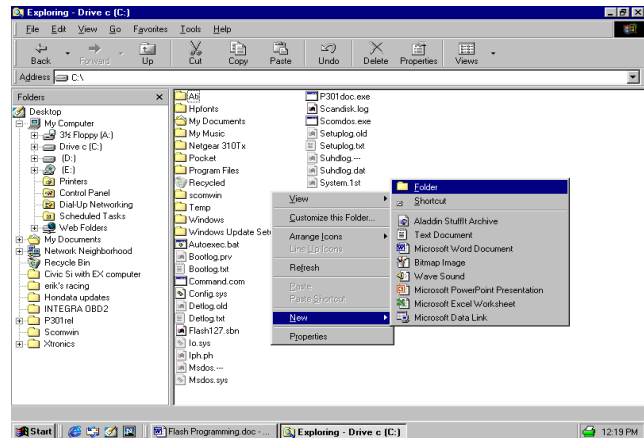
Now, click on the “3-1/2 floppy”. Highlight all files from the floppy drive , directories included, (Ctrl A) and drag them over to the new folder “xtronics”.

After you have copied all the files from Drive A to the folder “xtronics,” click on the “xtronics” folder on the left side and select “fileprom.exe” on the right side. Right click on the file and select “Properties.” Select the “Program” tab and select “Advanced..”

Next, click on “MS-DOS mode” and click OK. Windows will then create an icon with the MSDOS logo in front of the file “fileprom.” This is the file you will be using to start your programmer.

Copy the engine computer files you wish to program into the xtronics folder.

At the time of writing a Windows version of this software was under development.



APPENDIX 1

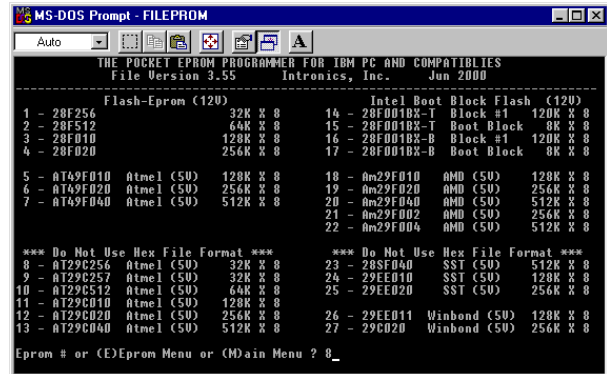


Transtronics Programmer Instructions

Programming

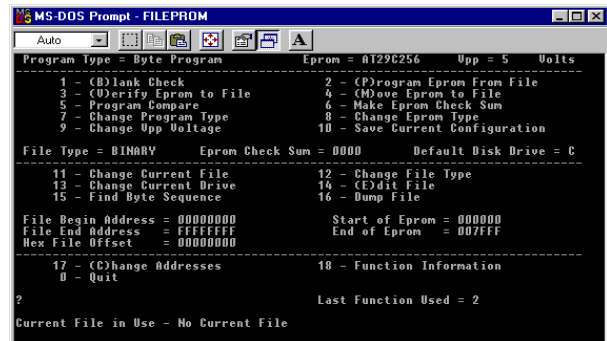
Start the EEPROM program by double clicking the MSDOS icon *fileprom*.

Next select “F” for Flash. You’ll then be brought to the next screen where you must select a chip. The chip supplied with the Hondata system Stage 4 is the ATMEL AT29C256, which is item number 8. This chip is quickly reprogrammed without needing UV erasing like EPROMs.



You’ll be brought to the main menu.

Select 12 and set File type to binary. Select 2 for “Program EPROM from file.”



Type in the directory “\xtronics\” (you must put in the slashes) and press Enter. Or if “\xtronics\” is already shown press Enter to list all files. Next type in the file name you wish to program and press Enter. You should then see some number appear on the bottom right of your screen followed by “EPROM is programmed”

