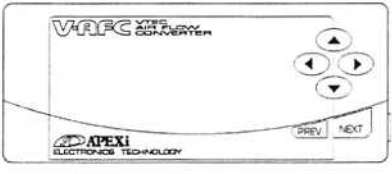
VTEC AFC

VTEC AIR FLOW CONVERTER

Instruction Manual

Thank you for purchasing this unit.
Please read this manual to ensure proper use of this product.
Also, be sure to keep this manual in a safe place for future reference.
Be sure to include this instruction manual when transferring ownership of this product.



Product Name	VTEC AFC
Product Code	401-A008
Vehicle	Listed in Application Charts
Function	VTEC Solenoid Control and Pressure Sensor Control

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SAFETY PRECAUTIONS

Please be sure to read the Safety Precautions
Please keep this manual in a readily accessible location for future reference

Signal Words and their Meanings

We have included warnings throughout this manual to protect both the user and others from harm and injury.
These key words are called "Signal Words"
Please carefully read the cautions before reading the rest of this manual.

Explanation of Signal Words

DANGER	Failure to obey this warning will likely result in DEATH or severe injury to the user and third parties.
WARNING	Failure to obey this warning may cause DEATH or severe injury to the user and third parties.
CAUTION	Failure to obey this warning will likely result in injury to the user, product damage, or damage to the surrounding area.

▪ WARNING

● **Never install this product on a vehicle that is not listed in this manual**

We do not guarantee product operation on non-listed vehicle applications. Failure to follow instructions may cause unexpected accidents.

● **Discontinue use of this product immediately if there is smoke or a burning odor.**

Failure to do so may result in engine or vehicle fire. Please take the unit back to the place of purchase for further assistance.

● **Only use this product for the intended purposes listed within this manual.**

A'PEX is not responsible for any harm or accidents caused by the improper use of this product.

● **Never operate this unit while driving.**

Failure to do so may result in injury or accident.

● **Securely mount this unit away from any area that may affect driving.**

● **This unit is designed for DC12V type vehicles with a negative ground.**

Do not install on big trucks, refridgerated trucks, or diesel trucks with 24V. This could lead to engine or electrical fire.

● **Be sure to disconnect the negative terminal of the battery before proceeding with installation.**

Faiulure to do so may result in vehicle fire, electrical shortage, electrical system damage, and product damage.

● **Be sure to securely hold the connector when disconnecting.**

Failure to do so may result in electrical shortage and damage the unit.

● **Always connect the wiring EXACTLY as shown in the instruction manaul.**

Failure to do so may result in product failure and engine damage

● **Do not adjust the unit while driving. Obey all of the rules and regulations of the highway while driving**

SAFETY PRECAUTIONS (Cont'd)

CAUTION

Installation should only be performed by an experienced installer.

Installation requires experience and skill. To the installer: Please install the product in a professional and functionally correct manner.

Never disassemble, modify, or tamper with this unit.

Failure to do so may lead to electrical fire, vehicle fire, and engine damage.

Do not drop or expose this unit to excessive shock.

This may damage the unit and cause damage to the engine.

Keep this unit away from direct sunlight and water.

Failure to do so may cause product failure eventually leading to electrical fire, vehicle fire, and engine damage.

TO BEGIN

Thank you for purchasing the V-AFC fuel controller.
Please read these instructions to ensure proper product usage.

The VTEC AFC is a high precision tuning instrument designed to allow the user to change the VTEC engagement point on VTEC equipped vehicles. The VAFC allows fuel enrichment correction by manipulating the pressure sensor signal of the vehicle. By utilizing the VFD (Vacuum Fluorescent Display,) the unit is able to display engine RPM, intake air pressure, and throttle position.

~ Features ~

① Adjusts VTEC engagement point between 3000 ~ 7000rpm.
② Low cam/ High cam specific fuel enrichment control
③ Low and High cam fuel settings available in 100rpm increments at 8 points.
④ By using the throttle position specific fuel correction, can adjust fuel enrichment according to load.
⑤ Compensates for V-AFC and VTEC control system differences in the ECU
⑥ VFD display screen allows many parameters to be displayed at once.

• Caution

- Do not use this product on any vehicle that is not specified on our vehicle specific application guide.
- Do not use this product for any other purpose than its original intent
- Installation of this unit MAY cause radio noise or TV interference depending upon installation position and method
- Mild heat caused by the unit is not unusual
- Please do not use this unit under extremely hot or cold conditions

Product Name	VTEC AFC
Product Code	401－A008
Vehicle	Listed in Application Charts
Function	VTEC Solenoid Control

PART NAMES AND FUNCTIONS

● Parts List

1. Unit · · · · · · · 1	2. Instruction Manual · · 1
	This manual
3. Warranty Card · · · 1	4. Signal Harness · · · 1
5. Male Fitting · · · 2	6. Female Fitting · · · 3
7. Male Sleeve · · 2	8. Female Sleeve · · 3
9. Splice · · · 6	10. Double Sided Tape · 4
11. Mounting Bracket · 1	

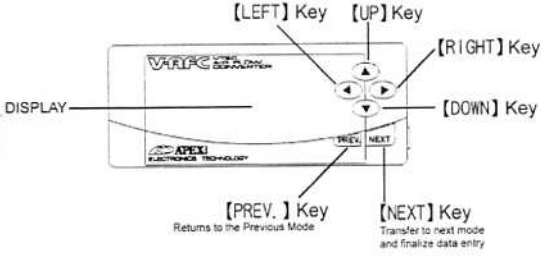
· CAUTION

● Be sure to check the contents of the box BEFORE attempting installation. Please contact your local dealer if there is any missing or broken parts. (Please contact your dealer of purchase for more information)

● Please contact your dealer of purchase for more instruction manuals or misc. parts.

■ PART NAMES AND FUNCTIONS

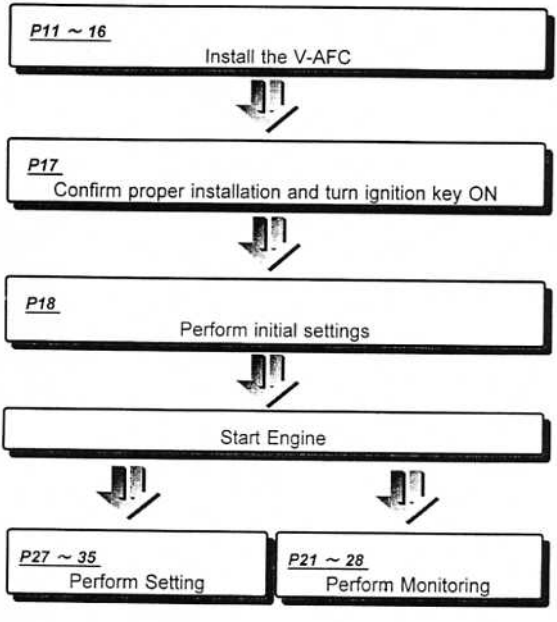
● Product



• CAUTION

● **Be sure to double check for proper vehicle application and installation before use.**
Installation of the V-AFC on a non- listed vehicle may lead to severe engine damage

■ V－A F C Setup Procedures



advice !

"Perform Setting" and "Perform Monitoring" can be done while the ignition key is ON.

■ INSTALLATION

● VTEC AFC Installation

1 *Remove the negative terminal (-) of the battery*

advice!

Disconnecting the negative terminal of the battery may erase memory settings of car audio and navigation components. Please be sure to write down the settings before disconnecting the battery.

• CAUTION

- **Disconnect the negative terminal of the battery BEFORE proceeding with installation.** Electrical shorts may cause severe damage to the unit and engine.
- **We are not responsible for any damages to the engine, vehicle or unit caused by improper installation.**

2 *Find the appropriate ECU (Electronic Control Unit) wiring diagram from P15 of this manual.*

3 *Use the Vehicle Specific Wiring Diagram on P16 to splice into the power wire,ground wire, engine RPM signal wire、throttle signal wire of the ECU harness and securely connect the VTEC AFC harness.*

Red Wire — IG Power
Orange Wire — IG Power
Green Wire — Engine RPM
Gray Wire — Throttle
Black Wire — Ground
Brown Wire — Ground

※ Refer to diagram on P11

• Caution

- **Be sure to connect the brown and black wire of the VTEC AFC to a ground.** Failure to do so may result in product malfunction and may damage the engine.
- **Be sure to connect the brown wire CLOSER to the ECU than the black wire.** Failure to do so MAY HIGHLY result in improper product operation and engine damage.

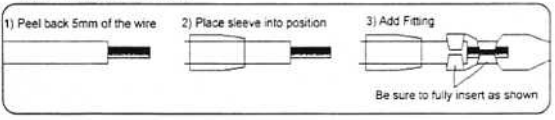
■ INSTALLATION

▪ CAUTION

● **Be sure not to short any wire when looking for the proper connection.**
This could lead to electrical fire and damage to the vehicle.

● **Be sure to securely fasten the splitting taps and avoid all loose connections.**
Loose electrical wires can cause product failure and vehicle damage.

HOW TO MOUNT FITTINGS



4 *Refer to the Vehicle Specific Wiring Diagram on P16, and cut the pressure sensor signal wire going to the ECU and add the connectors.*

■ Pressure sensor wire connection
male fitting — ECU side
female fitting — Pressure Sensor side

5 *Connect the VTEC AFC harness wire to the connector in #4.*

■ VAFCHarness(Press. Sensor Wire)
Yellow wire — ECU side
White wire — Press. Sensor Side

6 *Refer to the Vehicle Specific Wiring Diagram on P16 and cut the VTEC solenoid signal wire going to the ECU and add the connectors.*

■ VTECSolenoid wire connection
male fitting — Solenoid (Vehicle side) side
female fitting — ECU side

7 *Connect the VTEC AFCharness wire to the connector in #6.*

■ VAFC Harness (VTEC solenoid signal)
purple wire — ECU side
pink wire — Solenoid (vehicle side) side

• CAUTION

● For vehicles without a VTM signal, there is no need to follow steps 8 and 9.

8 *For vehicles equipped with a VTM signal, refer to the vehicle specific wiring diagram on P16 and cut the VTM signal wire and add the fittings.*

■ VTMSignal wire connection
insulate — Vehicle side
female fitting — ECU side

9 *Connect the VAFC harness to the fitting from #8 for VTM equipped vehicles*

■ VAFC Harness (VTM signal)
Blue wire — ECU side

10 *Insulate all unused fittings and spliced connections with electrical tape*

11 *Connect the negative terminal (-) of the battery*

• CAUTION

● **Be sure not to short any wire when looking for the proper connection.**
This could lead to electrical fire and damage to the vehicle.

● **Be sure to securely fasten the splitting taps and avoid all loose connections.**
Loose electrical wires can cause product failure and vehicle damage.

●V-AFCApplication List

V-AFC Application List

Vehicle Name	Chassis	Engine	Year	Diagram to use	Sensor Type
Integra GS-R	DA6	B17A1	92-93	H2-a	PR-6
Integra GS-R	DC2	B18B/B18C	94-95	H2-a	PR-6
			96-98	H6-a	PR-6
Prelude	BB1	H22A	92-96	H2-a	PR-6
	BB6	H22A	97-	H6-a	PR-6
Accord	CD5	F22B1	94-97	H2-a	PR-6
	CG3	F23A1	98-	H7-a	PR-6
Accord V6 2/4dr.	CG1/2	J30A1	98-	H7-a	PR-6
Civic EX, Si	EJ1	D16Z6	92-95	H2-a	PR-6
	EJ8	D16Y8	96-98	H6-a	PR-6
	EJ9/EM1	D16/B16	99-	H7-a	PR-6

Use the table above to locate ECU location and wiring.

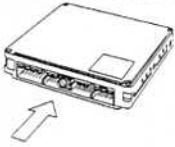
■ ECU Location Diagram

a Lower Passenger Side Dash

c Passenger Side Foot Rest

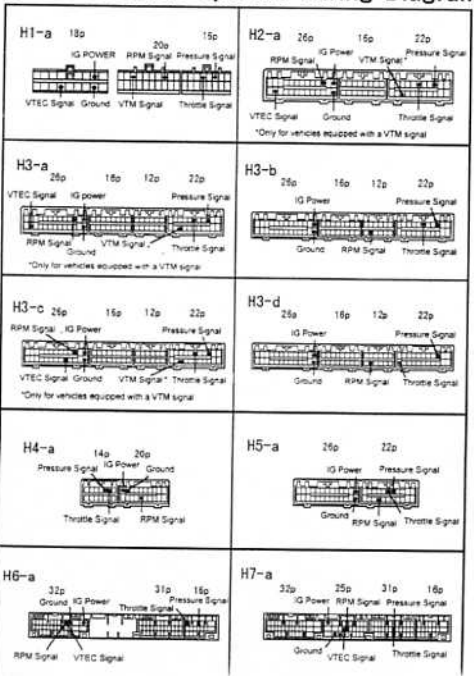
Use the Vehicle Specific Wiring Diagrams on the next page for wiring diagrams. US spec vehicles with left hand drive configurations may differ. Please refer to the vehicle service manual for more information.

■ INSTALLATION



■ View the ECU wiring Diagram from this angle. Some vehicles may have the ECU mounted backwards. Please be sure to count the number of pins before proceeding with installation.

●V-AFCVehicle Specific Wiring Diagrams



● Checkpoints After Installation

Please check the following points after installation

- Has the VTEC AFC harness been properly connected?
- Is there excessive strain on the harness?
- Has the VTEC AFC been securely mounted?
- Has the negative terminal (-) of the battery been properly connected?

● When the Igntion Key is ON · · ·

· CAUTION

Do not start the engine until the Initialization Setting has been performed.

Failure to do so may lead to engine damage.
Follow the steps on P18 to perform the Initialization Settings

Please check the following points when the ignition key is ON

- Does the V-AFC screen properly illuminate?

If the screen does not display properly, please discontinue use immediately and kindly repack ALL the contents of this unit and return the unit to the dealer of purchase.

- Is there any unusual odor or noise coming from the unit?

If there is any unusual odor or noise coming from the unit, please discontinue use immediately and kindly pack ALL the contents of this unit and return the unit to the dealer of purchase.

■ INITIAL STG

Be sure to perform the steps below BEFORE starting the engine

Below are the steps to perform the initial setting procedures.
Detailed instructions can be found on the corresponding pages

```
e t c
1.Sensor Type
2.Car  Select
3.Grph  Scale
4.Sensor  chk
5.VFD  Bright
6. Initialize
```

1 《etc.Mode Selection》 ·····P36

Select【etc.】(Other Mode) from the VTEC AFC Main Menu when the ignition key is ON

advice!!
Do NOT start the engine at this time.

```
sens. no
In    Out
06    06
```

2 《Sensor Number Setting》 ·····P37

While in the【etc.】(Other Mode) mode, select【Sensor Type】and select the sensor number.

```
car sel.
Cyl   Thr
 4
```

3 《Cylinder Number Setting》 ·····P38

While in【etc.】(Other Mode) mode, select【Car Select】and select the cylinder number setting

```
sens.check
Pres :  1.234V
Thrt :  1.254V
CDS  :  4.075V
```

4 《Sensor Voltage Check》 ·····P40

While in the【etc.】(Other mode) mode, select【Sensor chk】and check the sensor voltage for wide open and closed throttle positions.

```
car sel.
Cyl   Thr
 4
```

5 《Throttle Sensor Type Setting》 ·P38

While in the【etc.】(Other mode) mode, select【Car Select】and select the throttle sensor type setting.

6 《Throttle Position Self Learning》

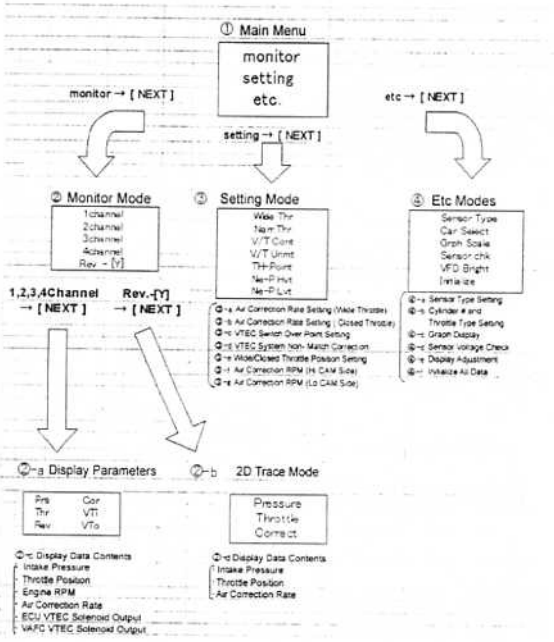
Perform the Throttle position Self Learning. Leave the throttle fully closed for 10 seconds, then leave the throttle wide open for 10 seconds.

7 《Initial Setting complete》

Turn the ignition key OFF to complete the initial setup process.

FUNCTION and OPERATION

Operation Topics



• CAUTION

- ***When setting the V-AFC, be sure to take the engine capabilities into account.***
  Improper tuning may cause severe engine and vehicle damage.
- **Be sure to contact an experienced tuner before changing the settings on the V-AFC.**
  Failure to do so may result in engine damage.

■ main《Main Menu Selection》

The VTEC AFC can modify the pressure sensor voltage output.
The modified data will remain within the V-AFC memory until the initialization process is performed. Removing the ignition key or disconnecting the negative terminal of the battery will not affect the memory data.

・WARNING

● **Do not operate this unit while driving.**
Operating this unit while driving may interfere with normal driving procedure and be the cause of accidents.

・CAUTION

● **Never start the engine or turn the ignition key OFF/ON while the V-AFC is in use.**
Failure to do so may cause improper operation and damage the engine.

① Main Menu Selection

This is the basic Main Menu selection of the VTEC AFC

[monitor] ····· *P21*
Monitors various sensor values and correction values.

[setting] ····· *P29*
Sets the sensor type and checks various sensor conditions.

[e t c] ····· *P36*
Modifies the data settings.

main
1 .Monitor
2 .Setting
3 . etc.

Main Menu

1 *《Select》*
【▲】 up key ／【▼】 down key
Use these keys to select parameter
The selected parameter will illuminate

2 *《Enter》*
【next】 key
Use this key to select parameter
The selected parameter will display

Pressing the【NEXT】key【PREV.】key at the same time for longer than 0.5 sec. will allow the user to toggle between Monitor Mode and Setting Mode.

② Monitor Mode Select 【monitor】

Selecting【monitor】on the menu will activate the display selection mode.

monitor
1 Channel
2 Channel
3 Channel
4 Channel
Rev.— [Y]

1 *《Select》*

【▲】up key / 【▼】down key

Use these keys to select parameter
The selected parameter will illuminate

2 *《Enter》*

【next】key

Use this key to select parameter
The selected parameter will display

Selecting【 1 channel 】・・・will display 1 parameter of data
Selecting【 2 channel 】・・・will display 2 parameter of data
Selecting【 3 channel 】・・・will display 3 parameter of data
Selecting【 4 channel 】・・・will display 4 parameter of data
Selecting【 Rev. — [Y] 】・・・will display engine RPM on the horizontal scale of the 2D Trace Mode

①-a Selecting Display Parameters 【monitor】→【1,2,3,4Channel】

Select display parameters after choosing display channels.
The user can select from channels 1,2,3,4 and choose parameters from the list below.

● Display Data Information

1. Prs ・・・ Intake Pressure
2. Thr ・・・ Throttle Position
3. Rev ・・・ Engine RPM
4. Cor ・・・ Air Correction Rate
5. VTi ・・・ ECU VTEC solenoid output
6. VTo ・・・ V-AFC VTEC solenoid output

■ monitor 《Data Display》

● If selecting [1channel]

```
select
 Prs  1Cor
 Thr   VTi
 Rev   VTo
```

1 *《Display Parameter Selection》*

【▲】 up key / 【▼】 down key

Use these keys to select

The selected parameter will illuminate. The corresponding channel assignment will appear next to the parameter.

2 *《Display Parameter Entry》*

【NEXT】 Key

Use this key to select

The selected parameter will illuminate

● If selecting [2channel] ~ [4channel]

```
select
 1Prs   Cor
 2Thr   VTi
  Rev   VTo
```

1 *《Channel Selection》*

【▲】 up key / 【▼】 down key

Use these keys to select

the selected parameter will illuminate.

2 *《Channel Entry》*

【▶】 right key

Press this key to move the display parameter selection.

The display parameter and channel will illuminate.

```
select
 1Prs   Cor
 2Thr   VTi
  Rev   VTo
```

3 *《Display Parameter Selection》*

【▲】 up key / 【▼】 down key

Use these keys to select desired parameter.

The selected parameter will illuminate.

> ***advice !***
>
> Channels that have already been selected cannot be selected again.

4 *《Display Parameter Entry》*

【NEXT】 key

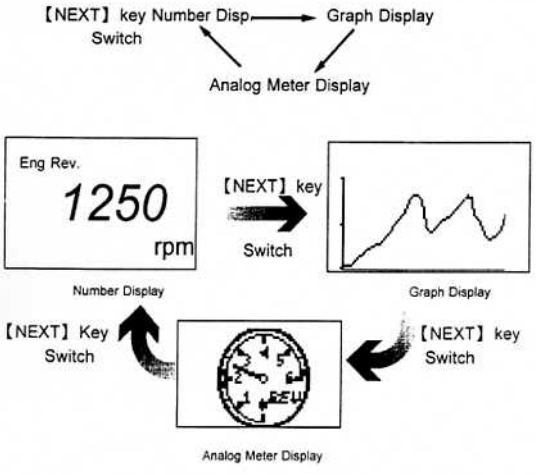
Use this key to enter

Selected parameter will display.

■ monitor 《Data Display》

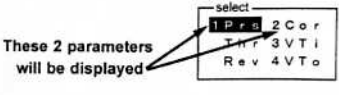
a Real Time Display

②- a The data parameters selected in the previous menu can be displayed in numbers, graph, or analog formats.



※ The Analog Meter Display mode can only display 2 parameters at a time.

IF [3channel] [4channel] has been selected, only parameter 1 and 2 will appear.

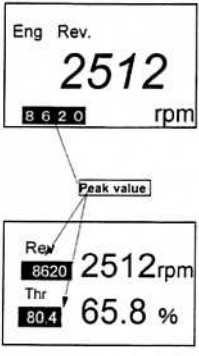


■ monitor 《Data Display》

b.Peak hold Function

The peak hold function may be used in numerical and analog meter display modes.
The COR parameter cannot be used in peak hold mode.

※ In Numerical Display



1 *《Peak Hold Setting》*

※ During Real Time mode

【▲】 up key

Use this key to show peak hold
The value will illuminate
If in 3ch/4ch mode, real time display will not appear along with the peak hold values.

2 *《Peak Hold Value Reset》*

※ During Peak hold

【▶】 right key

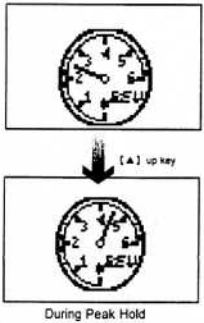
Use this key to release the peak hold value

3 *《Releasing the Peak Hold 》*

【▼】 down key

Use this key to release the peak hold value

※ During Analog Meter Display Mode



During Peak Hold

1 *《Peak Hold Setting》*

※ During Real Time

【▲】 up key

Use this key to display Peak Hold

2 *《Peak Hold Reset》*

※ During Peak hold

【▶】 right key

Use this key to reset Peak Hold

3 *《Releasing Peak Hold》*

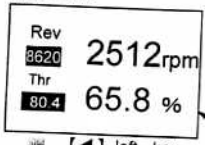
【▼】 down key

Use this key to release Peak Hold

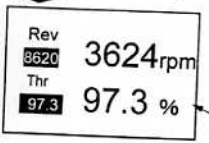
■ monitor (Data Display)

◎Hold Function

It is possible to freeze the data on screen while in Numerical or Analog Meter Mode.



【◀】left key



1 《Data Hold Setting》

※ During Numerical or Analog Meter Mode

【◀】left key

Use this key to Hold data.

2 《Releasing Data Hold》

※ During Hold

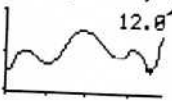
【◀】left key

Use this key to return to normal mode.

◎Memory Replay Function

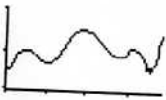
It is possible to record data for a certain amount of time and replay the data while in graph mode.

During Memory



【▼】down key

Memory Stop



1 《Graph Display Memory

※ During Real Time Display

【▲】up key

Use this key to memorize the data.

Memory times are as follows:

[1channel] ・・・・ 60 sec

[2channel] ・・・・ 30 sec

[3channel] ・・・・ 20 sec

[4channel] ・・・・ 15 sec

2 《Graph Mode Memory Termination》

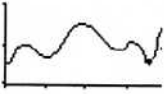
※ During Graph Display Memory

【▼】down key

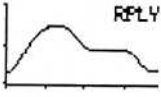
Use this key to terminate memory function.

■ monitor 《Data Display》

During Real Time Display



【▶】 right key



3 《Graph Display Replay》

※ During Real Time Display

【▶】 right key

Use this key to start the replay to the left of the screen. If you push the following keys during the replay;

【▶】 right key

The replay will stop.

Also,

【◀】 left key

Use this key to start the replay to the right of the screen. If you push the following key during the replay,

【◀】 left key

The replay will stop.

4 《Ending graph Display Replay》

※ During Graph Display Replay

【▼】 down key

this will end the graph display replay

②-b 2 Dimensional Trace Mode 【monitor】 → 【Rev.- 【Y】 】

Horizontal scale is Engine RPM, vertical scale can be selected from one of the following parameters

● Display Data Information

1. Prssure	· · ·	Intake Pressure
2. Thrrottle	· · ·	Throttle Position
3. Correct.	· · ·	Air Correction Rate

■ monitor (2D Trace Mode)

```
select
  1. Pressure
  2. Throttle
  3. Correct.
```

1 *《Display Parameter Selection》*

【▲】 up key ／ 【▼】 down key

Use these keys to select.

The selected parameter will illuminate.

2 *《Display Parameter Entry》*

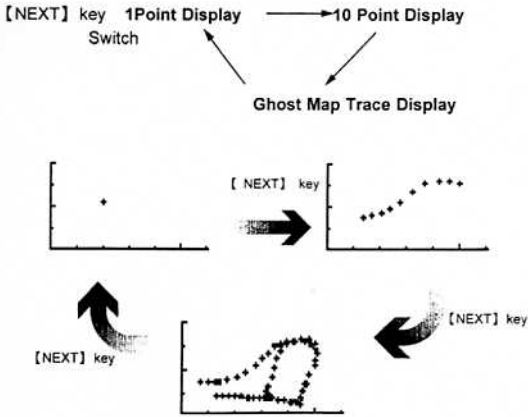
【NEXT】 key

Use this key to enter.

The selected parameter will illuminate.

a Real Time Display

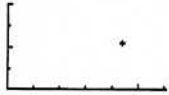
②-b The selected data can be displayed in graph form with the horizontal scale being engine RPM and the vertical scale being the selected parameter.



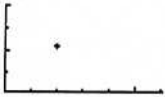
■ monitor (2D Trace Mode (cont'd))

b.Hold Function

Allows the user to stop the 2D Trace Mode display function.



During Hold
【◀】 left key



Hold Release

1 《*Hold Setting*》

※ During 1 point, 10 point, and ghost map tracing

【◀】 left key

Use this key to hold the graph.

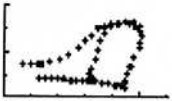
2 《*Releasing the Hold*》

※ During Hold

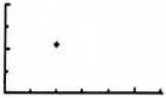
【◀】 left key

Use this key to return to normal mode.

c.Clearing Ghost Map



【▶】 right key



1 《*Ghost Map Clear*》

※ During Ghost Map Trace Mode

【▶】 right key

Use this key to clear.

■ setting (Setting Mode)

③ Setting Mode 【setting】

Selecting【setting】mode on the Main Menu will activate this feature.

● Setting Parameters

③-a[Wide Thr]···Fuel enrichment setting (Wide open throttle)
③-b[Narr. Thr]···Fuel enrichment setting (Partial throttle)
③-c[V/T Cont]···VTEC engagement point setting
③-d[V/T Unmt]···Compensation when ECU and VAFC VTEC control differ
③-e[TH-Point]···Setting for wide open and partial throttle
③-f[Ne-P:Hvt]···Fuel correction rpm setting (Hi camside)
③-g[Ne-P:Lvt]···Fuel correction rpm setting (Lo cam side)

setting
1. Wide Thr
2. Narr. Thr
3. V/T Cont
4. V/T Unmt
5. TH-Point
6. Ne-P:Hvt
7. Ne-P:Lvt

main
1 .Monitor
2 .Setting
3 . etc.

1 *《Setting Parameter Selection》*

【▲】up key / 【▼】down key

Use these keys to select parameter
Selected parameter will illuminate.

2 *《Setting Parameter Entry》*

【NEXT】key

Use this key to enter.
Selected parameter will display.

3 *《Ending Setting Parameter》*

【PREV.】key

Exits current mode.
After the setting parameter selection,
the screen will go to the setting parameter selection menu.
After the setting parameter selection menu
The screen will go to the main menu.

※【PREV.】key returns to the previous menu.

Pressing the【NEXT】key【PREV.】key at the same time for longer than 0.5 sec. will allow the user to toggle between Monitor Mode and Setting Mode.

・WARNING

● **Be sure to consult an experienced tuner before adjusting settings**
Improper settings may damage the engine and vehicle.
● **Never adjust this unit while driving.**
Failure to do so could lead to fatal accidents.

■ setting

It is possible to tune the VTEC AFC for a variety of uses.
Please refer to the pages listed below for further details.

● Change the VTEC engagement point.

【setting】 → 【V/T Cont】 ·····P32

● Perform Fuel Enrichment Control

~ Fuel Enrichment according to Throttle Position ~

【setting】 → 【WideThr】
【setting】 → 【Narr.Thr】 ·····P31
For both 【WideThr】 and 【Narr.Thr】
enter correction values for both the LO cam ／H i cam

※ To control fuel without throttle position, enter 【 * * 】 into the throttle sensor type setting
Please refer to P38 for Throttle Sensor Type Setting

~ Fuel Control when the ECU and V-AFC VTECcontrol differ.~

【setting】 → 【V/T Unmt】 ·····P33
Enter correction value

● Setting the Fuel Correction Points.

~ Correcting fuel according to desired throttle points.~

【setting】 → 【TH-Point】 ·····P34
Sets the throttle points for partial and wide open fuel correction.

~ Fuel correction at desired RPM points ~

・H i cam side setting points
【setting】 → 【Ne-P:Hvt】 ·····P35
・L o cam side setting points
【setting】 → 【Ne-P:Lvt】 ·····P35
Enter your desired engine RPM points

■ setting《Wide Thr》《Narr.Thr》

③-a Fuel Correction Rate Setting（Wide Open Throttle）
【setting】→【Wide Thr】

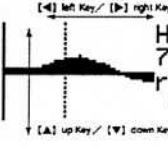
③-b Fuel Correction Rate Setting (Partial Throttle)
【setting】→【Narr.Thr】

※ Set the throttle points on P34 ③－e .

This unit takes the intake air pressure signal and converts that signal into absolute pressure.It modifies this signal by using the Air Correction Rate value. The output signal is then converted back into a pressure signal and output to the ECU.

The Air Correction Rate Setting has a total of 16 engine rpm points of adjustment with 8 each on the Hi cam and Lo cam.

The unit can also adjust fuel according to partial or wide open throttle points.



The dotted line represents the VTEC engagement point. Fuel settings to: the left side of the dotted line for Hi cam, right side of the dotted line for Lo cam, will have no effect on fuel correction.

1 *《Engine RPM selection》*

【◀】 left key ／【▶】 right key

Use these keys to select engine rpm

The selected graph will illuminate

To change the setting points,

Hi cam side・・・P35 ③－f

Lo cam side・・・P35 ③－g

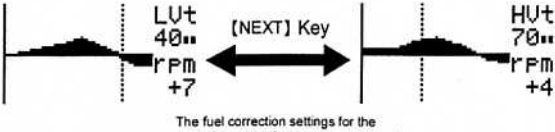
2 *《Increasing/Decreasing Values》*

【▲】 up key ／【▼】 down key

Use these keys to adjust values.

Adjustment range is ＋50%～－50% in 1% increments

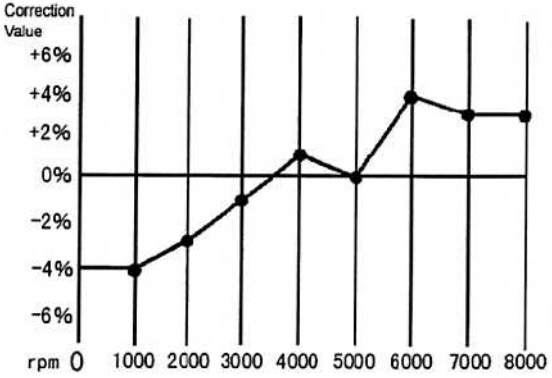
【NEXT】 key 【Lo cam side】←→【Hi cam side】 switch



The fuel correction settings for the Lo CAM and Hi CAM can be adjusted

■ setting 《V/T Cont》

When the desired engine RPM adjustment point is between setting points, adjust the two points before and after the desired point to compensate.



③-c Setting the VTEC Engagement Point

【setting】→【V/T Cont】

V / T cnt
L - H : 5800rpm
H - L : 5400rpm

1 *《L → H, H → L Selection》*

【▲】up key ／【▼】down key
and select L → H・H → L
After selecting press
【▶】right key
to select engine rpm

・What is L → H?
The point when the Lo cam switches over to the Hi cam.
(When the engine rpm is rising)

・What is H → L ?
The point when the Hi cam switches over to the Lo cam.
(When the engine rpm is decreasing)

2 *《Engagement Point Setting》*

【▲】up key ／【▼】down key
Use these keys to select engagement point.
※ Adjustment range is between 3000 ~ 7000rpm in 100rpm increments.

The H → Lengine rpm cannot be set higher than the L → H setting.
The L → H engine rpm cannot be set lower than the H → L setting.

③-d VTEC Unmatch Fuel Correction

【setting】→【V/T Unmt】

This function performs correction for when the ECU and VAFC VTEC control systems differ.

```
V / T unmt
Hi<<L :  ± 0%

Lo<<H :  ± 0%
```

・What is Hi<<L?

This is when the V-AFC turns the VTEC Hi (on) but the ECU sets the VTEC Lo (off.) (The engine will actually be set to the Hi cam.)

・What is Lo<<H?

This is when the V-AFC turns the VTEC Lo (off) but the ECU sets the VTEC Hi (on.) (The engine will actually be set to the Lo cam.)

1 *《Hi<<L,Lo<<H Selection》*

【▲】up キー／【▼】down key

Use these keys to select Hi<<L,Lo<<H

After selecting,

【▶】right key

Use this key to select the fuel correction rate.

2 *《Fuel Correction Rate Setting》*

【▲】up key／【▼】down key

Use these keys to select the engagement point.

※ Setting range is ± 50%
in 1% increments.

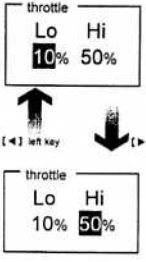
A higher level of tuniability can be achieved by utilizing this correction setting.

This function will supplement the RPM specific correction settings.

■ setting《Th-Point》

③-e Throttle Position Wide/ Narrow Setting

【setting】→【TH-Point】



1 *《Lo・Hi Selection》*

【◀】left key ／【▶】right key

Use these keys to select Lo・Hi throttle position

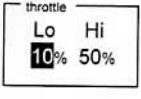
2 *《Throttle Position Setting》*

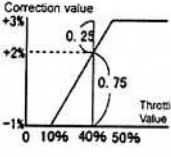
【▲】up key ／【▼】down key

Use these keys to select throttle position.

※ Adjustment range is 0%～100% in 1% increments.

Setting the throttle position like below will affect the air correction rates as follows.





Ex.) At any given RPM;
Wide Thr correction is + 3%。
Narr.Thr correction is − 1%。

In this example,

- If the throttle position is over 50% the Wide Thr correction is + 3%
- If the throttle position is under 10% the Narr.Thr correction is − 1%
- If throttle position is 40%,

$$\frac{(3\%-(-1\%))\times(40\%-10\%)}{50\%-10\%}+(-1\%)=2\%$$

■ setting《Ne-Point》

③-f Fuel Correction Point Settings【setting】→【Ne-P:Hvt】
③-g Fuel Correction Point Settings【setting】→【Ne-P:Lvt】

This function allows the setting of the air correction points for the Hi cam side, and Lo ca side. (The example below is for【Ne-P:Hvt】)

Ne point
Ne1 : 3 0 0 0 rpm
Ne2 : 4 5 0 0 rpm
Ne3 : 5 0 0 0 rpm
Ne4 : 5 5 0 0 rpm
Ne5 : 6 0 0 0 rpm
Ne6 : 7 0 0 0 rpm
Ne7 : 8 0 0 0 rpm
Ne8 : 9 0 0 0 rpm

1 *《Engine RPM Selection》*

【▲】up key / 【▼】down key

Use these keys to select.
Selected parameter will illuminate.

2 *《Point Selection》*

【▶】right key

Use this key to select RPM to be modified.
Selected parameter will illuminate.

Ne point
Ne1 : 4 0 0 0 rpm
Ne2 : 4 5 0 0 rpm
Ne3 : 5 0 0 0 rpm
Ne4 : 5 5 0 0 rpm
Ne5 : 6 0 0 0 rpm
Ne6 : 7 0 0 0 rpm
Ne7 : 8 0 0 0 rpm
Ne8 : 9 0 0 0 rpm

3 *《Changing Engine RPM》*

【▲】up key / 【▼】down key

Use these keys to select desired engine RPM.

【Ne-P:Hvt】RPM Setting Range
- maximum 9 0 0 0 rpm
- minimum 3 0 0 0 rpm
- increments 1 0 0 rpm

【Ne-P:Lvt】RPM Setting Range
- maximum 7 0 0 0 rpm
- minimum 1 0 0 0 rpm
- increments 1 0 0 rpm

The engine RPM's for Ne1 ~ Ne8 can only be adjusted under the following circumstances.

Ne1 < Ne2 < Ne3 < Ne4 < Ne5 < Ne6 < Ne7 < Ne8

※ Ne : ENGINE RPM

■ etc. 《Other》

④ Other 【etc.】

Selecting【etc.】in the Main Menu will allow the setting of the following topics.

● ETC. Menu

```
④-a[Sensor Type]···Sensor Type Setting
④-b[Car  Select]···Cylinder Setting, Throttle Type Setting
④-c[Grph  Scale]···Graph Scale Setting
④-d[Sensor  chk]···Input Signal Check Display
④-e[VFD  Bright]···Display Brightness
④-f[Initialize ]···Initialize All Data to Default
```

```
etc
1.Sensor Type
2.Car  Select
3.Grph  Scale
4.Sensor  chk
5.VFD  Bright
6.Initialize
```

1 *《Etc Parameter Selection》*

【▲】up key ／【▼】down key

Use these keys to select parameter.
The selected parameter will illuminate.

2 *《Etc Parameter Entry》*

【NEXT】key

Use this key to enter.
Display will change to selected parameter.

```
main
1.Monitor
2.Setting
3.etc.
```

※【PREV.】key to return to the previous menu

3 *《Ending Etc Parameter》*

【PREV.】key

Use this key to exit the current mode.
If Etc selection is finished
the display will show the Etc Menu Selection Screen.
If in the Etc Menu Selection Screen,
the screen will return to the Main Menu.

④-a Sensor type Setting 【etc.】 → 【Sensor Type】

This will allow for Sensor Type Setting

Selecting **【etc.】 → 【Sensor Type】** will display the following screen.

```
etc
1.Sensor Type
2.Car Select
3.Grph Scale
4.Sensor chk
5.VFD Bright
6. Initialize
```

【NEXT】 key

```
sens.no
In    Out
06    06
```

1 *《Sensor type Selection》*

【▲】 up key / 【▼】 down key

Use these keys to select sensor type.

The selected parameter will illuminate.

2 *《Sensor Type Entry》*

【NEXT】 key

Use this key to finalize sensor type.

3 *《Sensor Number Entry》*

【▲】 up key / 【▼】 down key

Use these keys to increase or decrease the se number values.

Please set the V-AFC

In 0 6 Out 0 6

to the values on the left diagram.

4 *《Ending Sensor Type Setting 》*

【PREV.】 key

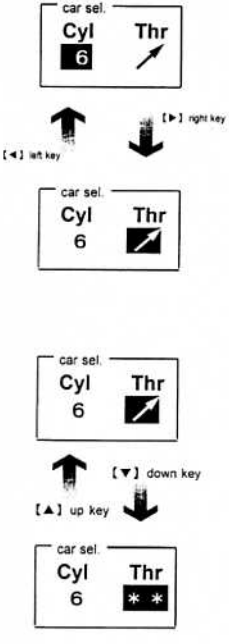
Use this key to exit current mode.

If currently in the sensor type selection mode, 【PREV.】 will return to Main Menu.

■ etc. 《Cylinder・Throttle Type Setting》

④-b Cylinder・Throttle Type Setting

【etc.】→【Car Select】



1 *《Cylinder Setting》*

【▲】up key ／【▼】down key

Use this key to select cylinder setting.
Cylinder setting ranges from 1~16.

2 *《Cyl・Thr Switch Over》*

【◀】left key ／【▶】right key

These keys will allow toggling between cylinder setting and throttle setting.
The adjustable parameter will illuminate.

3 *《Throttle Sensor Type Setting》*

【▲】up key ／【▼】down key

Use these keys to select Throttle Sensor Type

↗ ・・・ if throttle is fully closed 0 V ~ 1 V
if throttle is wide open 3 V ~ 5 V

↙ ・・・ if throttle is fully closed 3 V ~ 5 V
if throttle is wide open 0 V ~ 1 V

* * ・・・ When there is no throttle signal.

※ Be sure to check the wide open and fully closed voltage in ④-d 《Sensor Voltage Check》 before performing the Throttle Sensor Type Setting.

■ etc. 《Graph Scale Setting》

④-c Graph Scale Setting 【etc.】→【Grph Scale】

Allows setting of Monitor Mode Graph Display, Analog Meter Mode, and 2D Trace Mode

```
grph scl
Pr   760mmHg
Ne:  6000rpm
Cr:  ± 3 %
```

1 《Setting Parameter Selection》

【▲】 up key ／ 【▼】 down key

Use these keys to select desired parameter.
The selected parameter will illuminate.

```
grph scl
Pr:  760mmHg
Ne:  6000rpm
Cr:  ± 3 %
```

2 《Setting Parameter Entry》

※ After Setting Parameter Selection

【▶】 right key

Use this key to enter.
The selected parameter will illuminate.
Press

【▲】 up key ／ 【▼】 down key

to adjust value.

	Setting Range
Pr : Intake Pressure	-760mmHg ~ 0mmHg
	-760mmHg ~ +1.0kg/cm²
	-760mmHg ~ +2.0kg/cm²
Ne : Engine RPM	0rpm ~ 6000rpm
	0rpm ~ 7000rpm
	0rpm ~ 8000rpm
	0rpm ~ 9000rpm
	0rpm ~ 10000rpm
Cr : Air Correction Rate	± 3 % : ± 6 % : ± 9 % : ± 15 %
	± 30 %

```
etc
1.Sensor Type
2.Car  Select
3.Grph  Scale
4.Sensor  chk
5.VFD  Bright
6.Initialize
```

3 《End Setting》

【PREV.】 key

This key will store the data and return to the previo
menu.

■ etc. 《Sensor Voltage Check》

④-d Sensor Voltage Check 【etc.】→【Sensor chk】

This will perform the pressure sensor voltage check and throttle sensor voltage check.This is to check if the sensors have been properly wired.
This function is also necessary to perform the throttle sensor type selection in section ④-b .
Please refer to ④-b Throttle Sensor Type Setting for more information

```
sens.check
Pres :  1.234V
Thrt :  1.254V
CDS  :  4.075V
```

Pres : Pressure Sensor Voltage
Thrt : Throttle Sensor Voltage
(When throttle sensor is available.)
CDS : Light Sensor Voltage
(insideV-AFC)

④-e Display Brightness 【etc.】→【VFD Bright】

Adjusts the brightness of the VFD (Vacuum Fluorescent Display)

```
VFD bright
Day Dim Nig
90  50  10
```

1 *《Setting PArameter Selection》*
【◀】 left key ／【▶】 right key
Use this key to select setting parameter.
The selected parameter will illuminate.

```
VFD bright
Day Dim Nig
90  49  10
```

2 *《Changing Setting Parameter》*
【▲】 up key ／【▼】 down key
Use these keys to change the value.
Day : Afternoon
Dim : Sunset
Nig : Night
Please use this as a reference.

```
etc
1.Sensor Type
2.Car Select
3.Grph Scale
4.Sensor chk
5.VFD Bright
6.Initialize
```

3 *《End Setting》*
【PREV.】 key

This key will store the data and return to the previous menu.

④-f Initializing All Data 【etc.】 → 【Initialize】

This will restore all data to factory default settings. All previously saved data will be lost.

initialize
Init.All?
[Yes / No]

1 *《Initialization Selection》*
【◀】 left key
Select [Yes]

2 *《Proceed to Initialize》*
【NEXT】 key
This will setup initialization.
Then,
IGNITION SWITCH OFF → ON
will finalize all initialization of data.

initialize
Init.All?
[Yes / No]

In case of malfunction

▪ CAUTION

● **In case of malfunction, do not attempt to repair the unit yourself.**

This may lead to electrical shorts and cause severe engine damage.

▪ WARNING

● **If there is any unusual odor or noise coming from the unit, please discontinue use immediately and kindly repack ALL the contents of this unit and return the unit to the dealer of purchase.**

Failure to do so may result in engine fire and electrical shorts.

● We reserve the right to change the contents, price, packaging, and other aspects of this product without prior notification.

● The contents of this manual may change without prior notification.

This product has been designed originally for Japanese market use. Vehicle specifications may differ in foreign countries. This unit is only to be used in countries with authorized APEX sales offices or distributors.

Product Specifications

● Operational Voltage DC8V ~ DC16V

● Operational Temperatures -20 ℃ ~ +60 ℃

About the Warranty

This product does not carry any warranty outside of the Japanese market unless otherwise specified.

Manual Information

No.	Print Date	Product Number	Version
1	Feb. 1, 2000	K7107-0100-00	ver.1

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