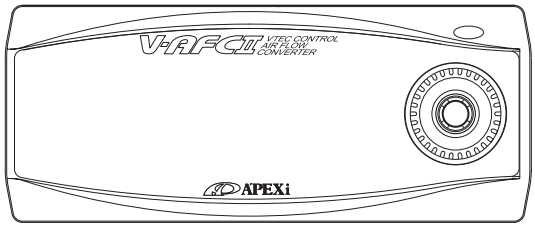
V-AFC II VTEC CONTROL AIR FLOW CONVERTER

VTEC AIR FLOW CONVERTER II WIRING DIAGRAM BY MODEL



This document describes car models to which the VTEC Airflow Converter II (Product code: 401-A915/401-A815) is applicable, and ECU terminal arrangement drawings. For the operating method and precautions for the VTEC Airflow Converter II, refer to the Instruction Manual.
For installing the VTEC Airflow Converter II, both this document and the Instruction Manual are required.
Even if the car model and manufacturing year coincide with the contents described in this document, this product may not be installed in a special specification vehicle or remodeled vehicle. The manufacturing years of applicable vehicles are as of March 2005. For application to vehicles released after that, consult the respective APEXERA business office for information.

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■Contents

■Introduction

"Safety precautions" are described in the Instruction Manual. Please read them before starting the installation work.
"Signal words and their meanings" are described in the Instruction Manual for this product.
The "Engine Control Unit" is abbreviated as "ECU" in this document.

⚠CAUTION

●Regarding the installation of this product, be sure that it is installed by an experienced professional.
After completion of the installation, hand over this document, Instruction Manual, and Warranty to the customer (user).

●Do not pull the harness of the vehicle and the harness of this product,
Wire breaking or a short circuit may occur, thereby giving damage to this product and the vehicle.

●When removing or connecting a connector, be sure to unlock the locked (claw) status beforehand.
When the connector is provided with a fixing bolt, loosen this bolt completely before pulling out the connector.
The connector may be damaged.

●Arrange the harness of this product and the harness of the vehicle in portions that are not at a high temperature or are not movable. Arrange them so that water may not be splashed over them.
Wire breaking or a short circuit may occur, thereby giving damage to this product and the vehicle.

●Do not arrange the harness of this product and the harness of the vehicle near a sharp-edged material. Do not put the harness between materials by applying pressure to it.
Wire breaking or a short circuit may occur, thereby giving damage to this product and the vehicle.

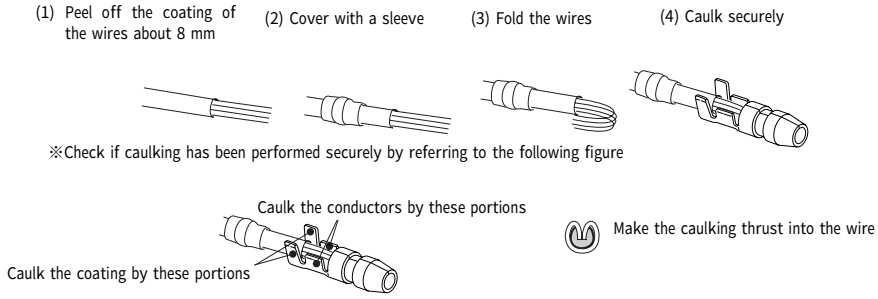
■Precaution on Installation

●When installing this product, do not use any electro-tap in any case.

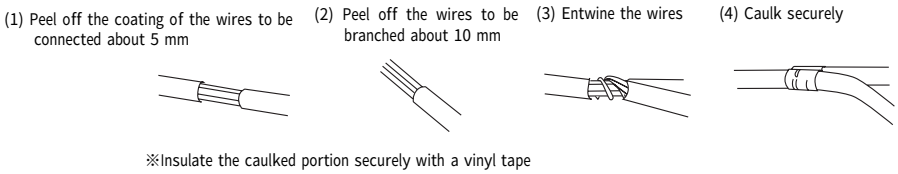
Using the electro-tap makes the contact status unstable. Its contact defect may causes a malfunction to the product and damage to this product and the vehicle.
Be sure to use the attached splice and dedicated tools such as cutting pliers for electric work to install the product securely.

●Insulate the metallic portion of the harness securely with a vinyl tape.

●Caulking the plug



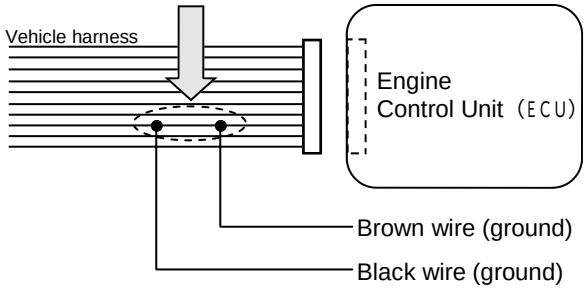
●Caulking the splice



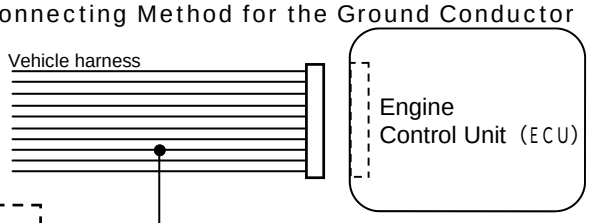
●The ground conductor of this product has two branches (black and brown). This has a very important significance to secure the voltage conversion accuracy. Connect the ground conductor by referring to the following figure. Installing the ground conductor in a different way from the connecting method specified by A'PEX will give damage to this product and the mounted car engine.

Correct Connecting Method for the Ground Conductor

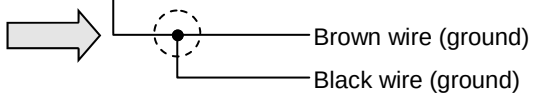
Connect the ground conductor to two positions of the same line.
Be sure to connect the brown wire to the ECU side.
Allow a space of 1 cm or more between the connecting point of the black wire and the connecting point of the brown wire.

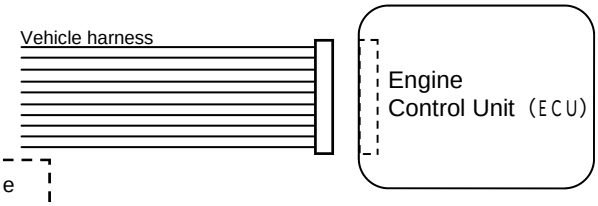


Wrong Connecting Method for the Ground Conductor

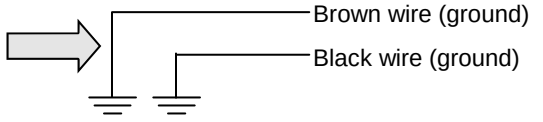


Unite the ground wires into a single line.





Do not connect the ground conductor to any position (e.g. chassis ground) other than the specified position.



The above figure explains only the connection of the ground conductor. For the other signal lines, refer to page 6 and page 7. Be sure to wire the power cable, ground conductor and other signal lines to the positions specified by A'PEX.

■Installation

●Connecting the VAFC II

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

advice!

There is some setting data on car audio, car navigation, etc. that is backed up by battery power supply. We recommend you to take a note of the data beforehand lest they should be lost.

⚠CAUTION

●Before starting the wiring work, remove the negative terminal of the battery.

If not, a fire will be caused by short circuit, thereby giving damage to electric parts. If the ECU connector is removed while the battery is connected, the engine warning lamp may light up continuously regardless of whether the VAFC II is installed or not. At this time, you must ask the distributor of each car model to perform maintenance and inspection.

●We shall not take all responsibility for damage of the vehicle or related devices that may be caused by installation error.

2.Locate the Engine Control Unit (hereafter referred to as ECU) of the vehicle by referring to the Wiring Diagram by Model.

3.Connect the harness attached to the V-AFC II securely to the power cable of the vehicle harness, grounding conductor, engine revolution signal wire, throttle signal wire, and TDC signal wire, VTC signal wire, and VTM signal wire that are connected to the ECU, by referring to the Wiring Diagram by Model. (Refer to page 7.)

Connect the red wire to the IG power.
Connect the green wire to the engine revolution signal wire.
Connect the gray wire to the throttle signal wire.
Connect the black wire to the grounding conductor.
Connect the brown wire to the grounding conductor.
Connect the orange wire to the VTC cam signal wire ※
Connect the light blue wire to the TDC signal wire. ※
Connect the blue wire to the VTM signal wire. ※

※The RDC signal wire and the TCC cam signal wire are limited to vehicles with an i-VTEC.
※The VTM signal wire is limited to vehicles with a V type engine and some car models.
※For the details of the above TDC signal, VTC cam signal, and VTM signal, refer to the terminal arrangement drawings on and after page

■Installation (cont.)

⚠CAUTION

●Be sure to connect the black wire and the brown wire of the harness attached to the VAFC II to the ground conductor.
This product may not function normally, thereby giving damage to the product and the engine.

●When locating each wire, take special care not to cause a short circuit.
A fire may be caused or electric devices may be damaged.

●Install the splice for branching securely without any contact defect.
A fire may be caused or electric devices may be damaged.

4.Cut the pressure signal wire or VTEC solenoid signal wire of the vehicle harness connected to the ECU and install a plug by referring to the Wiring Diagram by Model. For some applicable models, cut the VTM signal wire and install a plug.

Pressure sensor signal	Plug receptacle: Pressure sensor side Plug: ECU side
VTEC solenoid signal	Plug receptacle: ECU side Plug: VTEC solenoid side
VTM signal	Plug receptacle: ECU side

5.Connect the harness attached to the V-AFC II to the plug installed in 4.

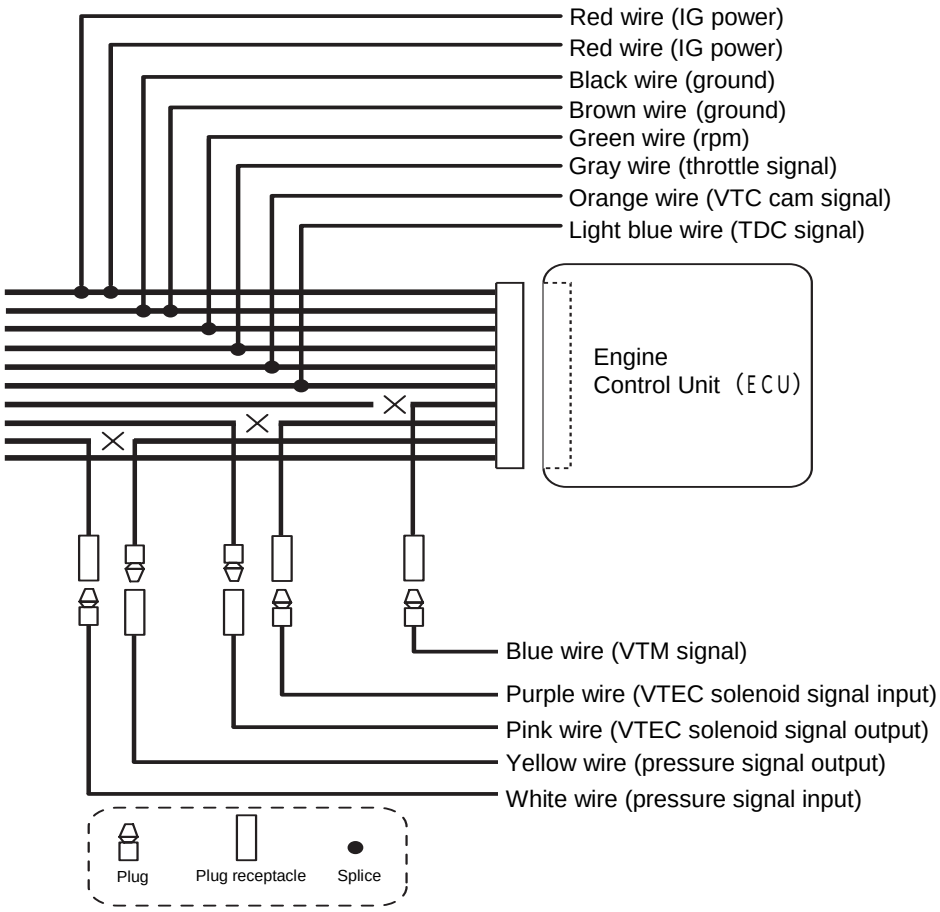
Pressure sensor signal	Plug receptacle: White wire Plug: Yellow wire
VTEC solenoid signal	Plug receptacle: Purple wire Plug: Pink wire
VTM signal	Plug receptacle: Blue wire

6.Make sure to insulate the unused wires and plugs with a vinyl tape.
※Poor insulation may result in short-circuit, which leads to a danger.

7.Connect the negative (-) terminal of the battery.

■Installation (cont.)

●Wire connecting method



⚠CAUTION

●Be sure to connect the brown wire to the ECU side from the black wire.

This product may not function normally, thereby giving damage to the product and the engine.

●Be sure to connect the two wires of the IG power supply.

⚠ WARNING

●Install the V-AFC II so that it may not interfere with driving.

Normal driving operations may be prevented, resulting in an accident.

●Do not install the V-AFC II in a high-temperature place or a place exposed to direct water.

An electric shock or fire may be caused or electric parts may be damaged. A malfunction may be caused, thereby giving damage to the vehicle.

●When passing the connecting harness of the V-AFC II, arrange the harness so as not to touch the moving portion.

The connecting harness may be cut or short-circuited. The V-AFC II will be damaged, thereby giving damage to the vehicle and electric parts.

●Checking after installation

After installing the V-AFC II, check the following items once again.

- Check if the harness attached to the V-AFC II is securely connected.
- Check if the harness is not unnaturally arranged.
- Check if the V-AFC II is securely fixed.
- Check if the negative (-) terminal of the battery is securely connected.

●Turn on the ignition switch. (Do not start the engine in any case.)

Check the following contents after turning on the ignition switch.

- Check if characters are correctly displayed on the display part of the V-AFC II.

  If the display of this product is not made correctly, stop using the product immediately and make contact with the distributor or your nearest A'PEX business office.

- Check if any abnormal noise or offensive small is produced from the V-AFC II and the vehicle.

  If any abnormal noise or offensive smell is sensed, stop using this product immediately and make contact with the distributor or your nearest A'PEX business office.

●Initial setup

- If no abnormality is found with the ignition switch ON, perform initial setup for the V-AFC II.
- Perform sensor number setting, number-of-cylinders setting, VTEC type setting, throttle sensor voltage checking, throttle sensor type setting, and throttle opening learning according to "Initial Setup" on page 13 in the separate Instruction Manual. And set the reference cam angle for vehicles with an i-VTEC.

When the engine is ready to start after initial setup, the installation work is completed.

⚠ CAUTION

●Do not start the engine in any case before the initial setup is performed.

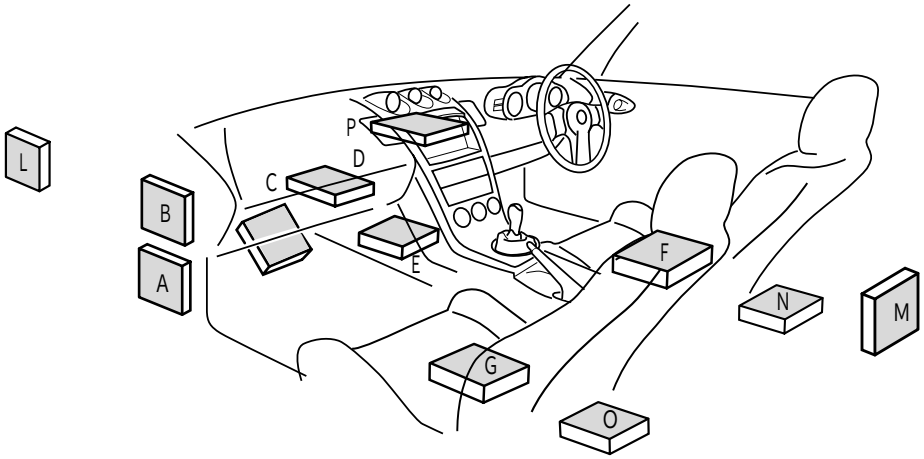
If the engine is started without initial setup, the engine may be damaged. Set the corresponding items by referring to page 13 in the Chapter pertaining to “Initial Setup” in the separate Instruction Manual with regard to the initial setup method.

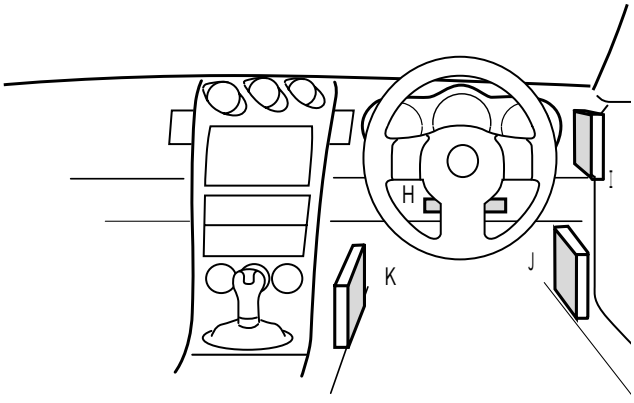
⚠ WARNING

●When the engine warning lamp in the meter comes on, you must ask the distributor of the model for inspection. If the vehicle is driven at a high speed with the engine warning lamp ON, the engine may be damaged, leading to an unexpected accident. Do not drive the vehicle in this status in any case.

■ECU Arrangement Drawing

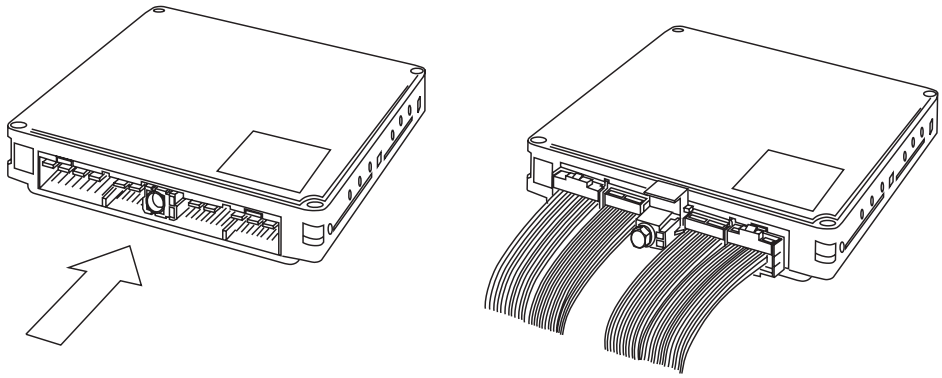
●Perform operations by referring to the symbols in the corresponding columns of the tables of applicable models on and after page 12.





A : Lower part of the passenger seat dash side
B : Right side of the glove box
C : Foot position of the passenger seat
D : Inner part of the glove box
E : Inner part of the center console
F : Under the driver's seat
G : Under the passenger seat
H : Near the steering column
I : Left side of the meter panel
J : Lower part of the driver's seat dash side
K : Left side of the center console
L : Engine room
M : Before the rear trunk
N : Behind after the driver's seat
O : Behind the passenger seat
P : Upper inner part of the center console

■How to Refer to the ECU Terminal Arrangement Drawing



This ECU terminal arrangement drawing is on the assumption that the connector is viewed from the direction of the arrow.

The direction of the ECU varies depending on each vehicle. Perform the installation work after confirming the connector shape and the number of pins carefully.

⚠WARNING

- If any abnormal noise or offensive smell is sensed during the installation work of this product, stop the work immediately and make contact with the distributor or your nearest A'PEX business office.
  Continuing the work in such a condition may cause an electric shock or fire or give damage to electric devices.

■Table of Applicable Models

※Excluding VTEC 3 cars

Car name	Car model	Engine model	Manufacturing year	ECU position	Remarks	Terminal drawing	VTEC No.	Sensor type
S2000	AP1	F20C	'99.4～'03.9	A		H6-a	1	PR-6
INTEGRA (including the '98 specification)	DC5	K20A	'01.7～'03.8	D	Type R※1 (220ps)	H7-a	1	
					iS ※1		3	
					160ps ※2	H7-b	3	
	DC2 DB8	B18C	'95.9～'01.6	A	M/T	H4-a	1	
					A/T	H2-c		
			'93.5～'95.8		M/T	H3-a		
					A/T	H2-b		
	DA8 DA6	B16A	'89.4～'93.5	C		H1-a		
CIVIC	EP3	K20A	'01.12～※	D	Type R※1 (220ps)	H7-a	1	
					Si ※2	H7-b	3	
	EU4 EU3	D17A	'00.10～'03.8			H8-a	3	
	EU2 EU1	D15B			Excluding lean-burn cars			
	EK9	B16B	'00.8～'00.9	A		H6-a	1	
			'98.9～'00.7			H5-a		
			'97.6～'98.8			H4-a		
	EK4	B16A	'98.9～'00.7			H5-a		
			'95.9～'98.8			H4-a		
	EG6		'91.9～'95.8			H3-a		
	EG4	D15B			Excluding carburetor cars		2	
	EF9	B16A	'89.9～'91.8	C		H1-a	1	
CIVIC FERIO	ES4 ES3	D17A	'00.10～'03.8	D		H8-a	3	
	ES2 ES1	D15B			Excluding lean-burn cars			
	EK4	B16A	'98.9～'00.7	A		H5-a	1	
			'95.9～'98.8			H4-a		
	EG9		'91.9～'95.8			H3-a	1	
	EG8	D15B					2	
CIVIC COUPE	EJ1	D16A	'92.10～'95.8	A		H3-a	1	

※1 Japanese model only.
※2 USA model only.

Car name	Car model	Engine model	Manufacturing year	ECU position	Remarks	Terminal drawing	VTEC No.	Sensor type
CR-X	EG2	B16A	'92.3～'95.10	A		H3-a	1	PR-6
	EG1	D15B					2	
	EF8	B16A	'89.9～'92.2	C		H1-a	1	
PRELUDE	BB8	H22A	'96.12～'00.9	C		H4-a	1	
	BB6							
	BB4 BB1		'91.9～'96.11		Without TRC	H3-a		
					With TRC	H2-a		
ACCORD EURO R	CL1	H22A	'00.6～'02.9	E		H6-a	1	
ACCORD	CL9	K24A	'02.12～※	E		H9-c	1	
	CL3	F20B	'00.6～'02.9		M/T	H6-a	3	
					A/T	H5-a		
	CF5		'97.9～'02.9					
	CF4				M/T	H6-a		
					A/T	H5-a		
	CF3	F18B						
	CD6	H22A	'93.9～'97.8	C		H3-a		
	CD5	F22B						
ACCORD WAGON	CM2	K24A	'02.11～※	E	Type 24T	H9-c	1	
	CM3							
	CL2	H23A	'00.6～'02.10			H5-a		
	CH9		'99.1～'02.10					
	CF7 CF6	F23A	'97.10～'02.10				3	
	CF2	H22A	'96.9～'97.9			H3-a		
	CE1	F22B	'94.3～'97.9	C				
FIT	GD4 GD3	L15A	'02.9～'03.9	B	Load Sensing	H8-a	3	
MOBILIO SPIKE	GK2 GK1	L15A	'02.9～※	B		H8-a	3	
AVANCIER	TA4	J30A	'00.2～'03.12	E		H5-b	2	
	TA3		'99.9～'03.12					
	TA2 TA1	F23A				H5-a	3	

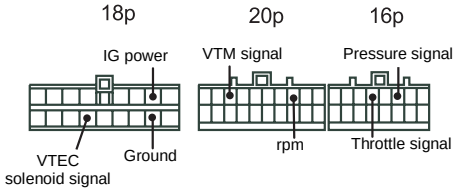
Car name	Car model	Engine model	Manufacturing year	ECU position	Remarks	Terminal drawing	Vehicle No.	Sensor type
TORNEO EURO R	CL1	H22A	'00.6～'02.9	E		H6-a	1	PR-6
TORNEO	CL3	F20B	'00.6～'02.9	E	M/T	H6-a	3	
					A/T	H5-a		
	CF5		'97.9～'02.9					
	CF4				M/T	H6-a		
					A/T	H5-a		
	CF3	F18B						
LAGREAT	RL1	J35A	'99.6～'04.4	E		H5-b	2	
ODYSSEY	RB2 RB1	K24A	'03.10～※	B	160ps	H9-d	3	PR-11 ※1
	RA9 RA8	J30A	'00.1～'03.9	E		H5-b	2	PR-6
	RA7 RA6	F23A	'99.12～'03.9			H5-a	3	
	RA5	J30A	'97.10～'99.11	C		H4-b	2	
	RA4 RA3	F23A	'97.8～'99.11			H5-a	3	
STEP WAGON	RF4 RF3	K20A	'01.4～'03.5	E		H9-a	3	
STREAM	RN4	K20A	'01.1～※	D		H9-a	3	
	RN3		'00.10～※					
	RN2 RN1	D17A				H9-b		
CR-V	RD5 RD4	K20A	'01.9～'04.8	D		H9-a	3	
INSPIRE SAVER	UA5	J32A	'98.10～'03.5	E		H5-b	2	
	UA4	J25A						

※1 Program Version 2.05a after.

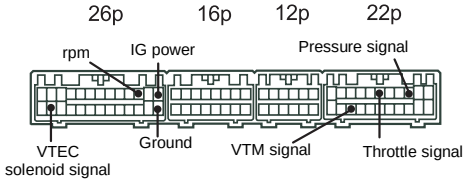
■ECU Terminal Arrangement Drawing

※It is not necessary to wire for the vehicle without the VTM signal

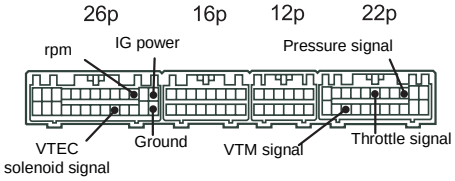
H1-a



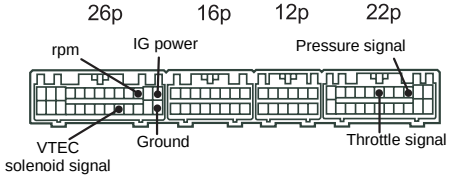
H2-a



H2-b

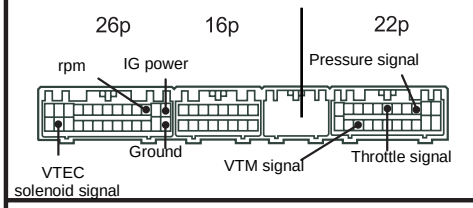


H2-c

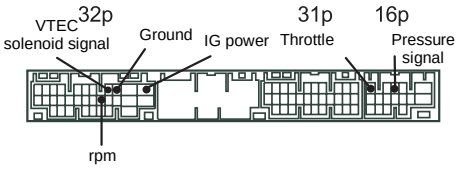


H3-a

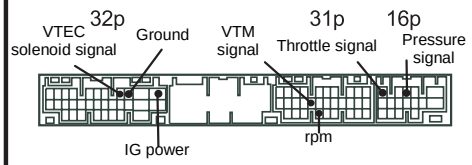
※There might not be free space of connector



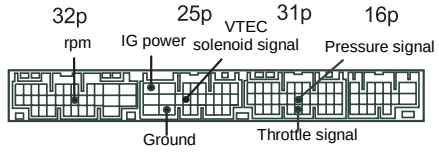
H4-a



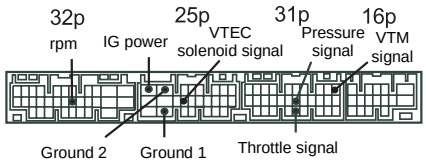
H4-b



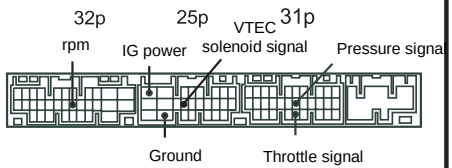
H5-a



H5-b



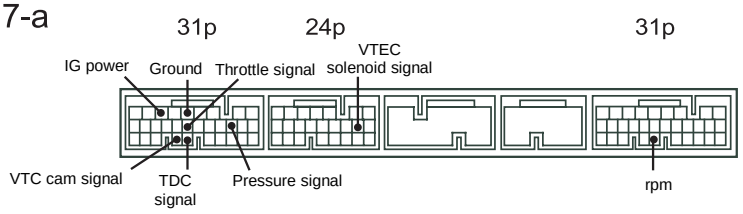
H6-a



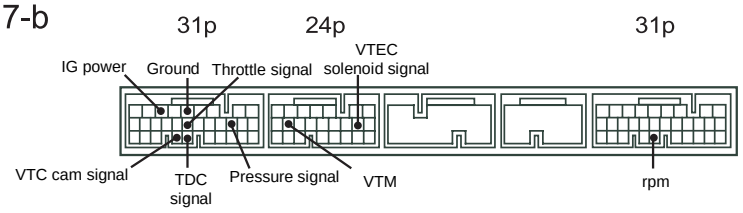
※Please select either ground 1 or ground 2.

※It is not necessary to wire for the vehicle without the VTM signal

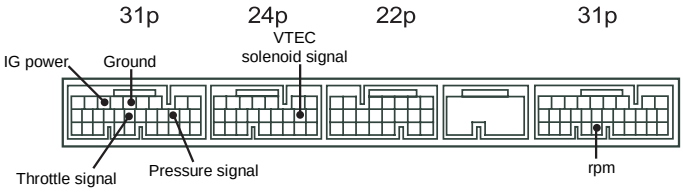
H7-a



H7-b



H8-a



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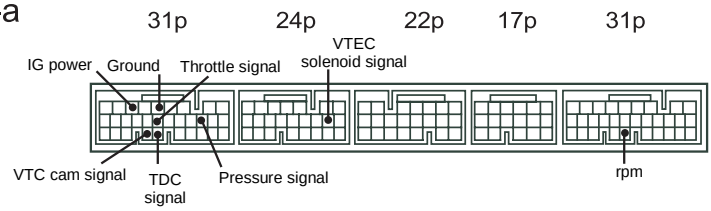
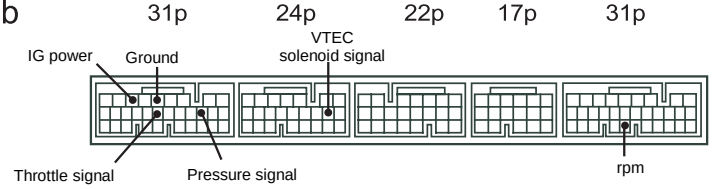
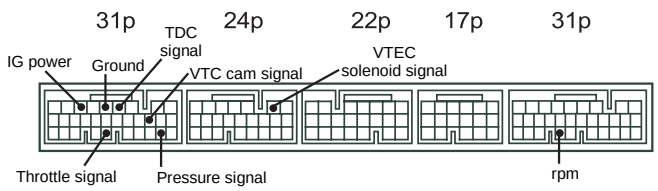


H9-b



※It is not necessary to wire for the vehicle without the VTM signal

H9-c



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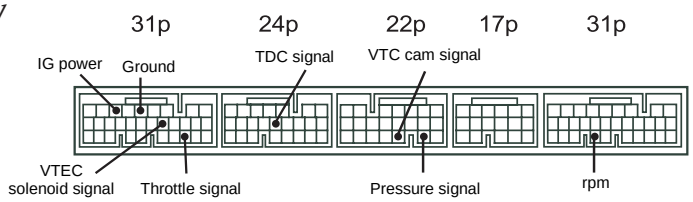

Notes

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■Revision Record

No,	Date of issue	Part No. of Wiring Diagram by Model	Edition	Change of description
1	May. 20, 2003	7107-0300-00	First edition	
2	Aug.1, 2003	7107-0300-01	Second edition	
3	Dec.26, 2003	7107-0300-02	Third edition	
4	Jun.10, 2004	7107-0300-03	Fourth edition	
5	Apr.1, 2005	7107-0300-04	Fifth edition	

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