HKS ELECTRONICS TECHNOLOGY

EVC

ELECTRONIC VALVE CONTROLLER

Instruction Manual

Installation should be performed by a professional. Prior to installation and use, thoroughly read the instruction manual. Retain this instruction manual for later reference.

45003-AK005
HKS USA Inc
Ver.111506

Introduction

ＨＫＳ ＥＶＣ

Read this instruction manual prior to installation to ensure safe and correct usage and optimal product performance,

Product	ＥＶＣ
Use	Boost Controller- Automotive Turbocharged Engine
Application	Vehicle that operates on a DC 12V negative ground.
Part No.	４５００３－ＡＫ００５
Remarks	・A fuel controller (e.g. F-CON, AIC, etc) may be needed when raising boost pressure with the EVC Boost Controller. ・Some vehicles have a fuel cut function when boost is raised. To bypass the fuel cut function, a unit such as the HKS FCD can be used. When using an HKS FCD, a fuel controller may be required for additional fuel tuning.

The HKS EVC enables the adjustment of the boost setting from inside the vehicle. Utilizing a stepping motor, it stimulates boost increase and attains the designated boost value without over-shooting.

This product was developed to improve engine output and was designed to be used for racing in a closed circuit. Improving engine output may affect oil and/or water temperature and oil pressure. To preserve engine performance, regularly monitor engine conditions before driving.

To use this product on public roads, follow the necessary procedures if there are any regulations for a tuned/modified vehicle.

●Compact Design

Its compact designed display and stepping motor enables a versatile installation into the vehicle interior and the engine compartment.

●Wide Boost Range

The boost level can be controlled from baseline boost to 250kPa (36.0PSI).

●Simple Boost Setting

Just directly input the desired boost value to modes A and B, and let HKS EVC control the boost.

●Return Function

Once EVC is turned off, the boost level returns to the baseline value. For some vehicles, the boost may become lower than the the stock settings after EVC is off.

●Scramble Function

With the scramble function, the boost can be increased by a designated value above the set boost value. The increase in boost is obtained while pressing botton① of the display or the optional external scramble switch (using the provided harness). The time span of the boost increase after the release of the botton can also be set.

●Dual Boost Mode Settings

Ａ Mode & Ｂ Mode are the 2 user specified preset boost level selections. Each mode can be used for a different purpose or situation.

●Dual Offset Mode Settings

If the desired set boost and the actual boost levels do not match, the offset function can be used to adjust for the difference. The offset of both A Mode & B Mode can be set individually; therefore, more precise results can be obatined.

●Warning Function

If the boost exceeds the user selectable warning value, the EVC notifies the user with an audiable beep and visable warning display. Simultaneously, it lowers the boost to the baseline boost value or by a user preset value. This function prevents damage to the engine and/or the turbine due to over-boost.

●Throttle Position Input

With the throttle position sensor signal input, boost characteristics can be tuned in relation to throttle percentage.

●RPM Signal Input

With the engine RPM signal input, boost characteristics can be tuned in relation to RPM level.This feature works on engines from 1 to 8 cylinders and operates up to 12,000 RPM.

●Speed Signal Input

With the vehicle speed signal input, boost characteristics can be tuned in relation to vehicle speed. This feature works on applications that utilize speed pulses between 2 to 16 and has a maximum speed capacity of 500km/h.

●Map Adjustment Function

Input of the throttle signal and the engine RPM or vehicle speed signals can draw a 3D map by using 2 these signals as axes. Using the 3D map enables the easy control of the boost characteristics.(The setting range must be within +/-120kPa [17.0PSI] to the baseline boost setting.) This function is user selectable to be on or off.

●Digital Triple Data Meter

3 digital data readings of surge tank pressure, throttle percentage, and engine RPM or vehicle speed can be displayed.

●Bar Graph Selection

The bar graph display can be set for boost, throttle percentage, engine RPM and vehicle speed.

●Bar Graph Peak Hold Function

The peak hold function of the bar graph displays and holds the maximum value achieved for easy instant recognition.

●After Image Display Function

When the boost changes from positive pressure to negative pressure, the maximum positive boost value is displayed for a few seconds. This function is user selectable to be on or off.

●Data Memory Function

All set values are saved in the internal memory of the EVC. Therefore, these settings are not lost when the ignition is off or if the battery is disconnected.

●Exhaust Bypass (wastegate type) Selection

The EVC can work with both internal and external wastegate types.

●Pressure Unit of Measure Selection

The unit for of measure for pressure can be selected between kPa or PSI.。

●Dimmer Function

The brightness of the display unit is adjustable.

●Data Lock Function

To prevent accidental change of data settings, the unit can be locked with a code

●Large Multi-Display

Utilizing a large positive display enables clear day and night viewing. The multi-display also enables simultaneous data recognition.

●Digital and Analog Boost Monitoring

The digital data and the bar graph can allow the driver to read and understand the boost conditions intuitively and visually.

●This manual indicates items you need to pay attention to in order to install this product safely and lists precautions to avoid any possible damage and/or accidents.
●Please contact your dealer for purchasing consumable parts and lost or missing part.
●To use this product on the public road, follow the necessary procedures if there are any regulations for a tuned vehicle.
●HKS will not be responsible for any damage caused by incorrect use or use after modification and/or dismantling of this product.
●To use this product on the public road, follow the necessary procedures if there are any regulations for a tuned vehicle.
●This product was designed for installation and use on a factory vehicle or a vehicle using other HKS products. The performance and/or safety cannot be guaranteed if this product is installed onto other vehicles than mentioned above.
●This product is applicable for any vehicle that operates on a DC12V negative ground.
●The specifications of this product, including installation are subject to change without prior notice.
●This manual is subject to revise without prior notice.

Index

Safety Precautions

Below are symbols used in this manual to highlight areas where .

⚠ Warning -Risk of severe injury or death may result if warning is not acknowledged or followed.

⚠ Caution -Risk of injury to self, damage to vehicle or property may result if caution is not taken.

⚠ Warning

- ●Make sure to work on the vehilce in a well-ventilated area to prevent possible explosion or fire.
- ●Do not mount the unit where it can distract driving.
- ●Do not install this product on a 24V vehicle. It is designed for use on a 12V vehicle.
- ●Make sure to remove the cable from the negative terminal of the battery to avoid possible damage to other electronics during installation.
- ●Make sure to hold connectors when removing them to avoid possible damage to other electronic parts caused by disconnections or by a short circuit.
- ●Stop using the product if any unusual conditions are noticed; it may cause a fire or an electrical shock. Consult an authorized dealer immediately.
- ●Do not operate the EVC while driving to avoid the possiblity of an accident.

⚠ Caution

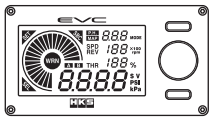
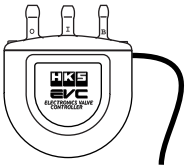
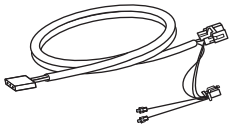
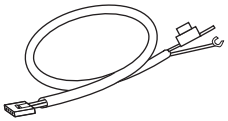
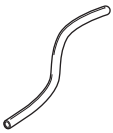
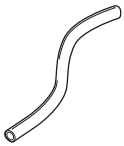
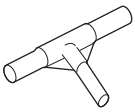
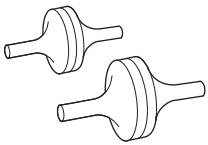
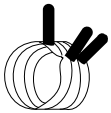
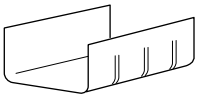
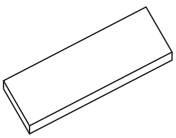
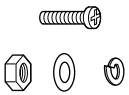
- ●Do not install this product by yourself unless you know how to use the tools and equpiment necessary to safely perform service operations on your vehicle
- ●Do not modify, disassemble and/or remodel this product and any of its attached parts.
- ●Handle the parts with caution at all times.
- ●Avoid allowing oil and/or water from entering the unit. It may cause damage to the engine.
- ●Prior to installation, make sure that the engine bay temperature has cooled. Failure to let the engine cool can lead to severe burns.
- ●Select the appropriate exhaust bypass type. Selecting the wrong type may cause damage to the vehicle.
- ●Install the unit away from excessive heat or water to avoid possible malfunction and damage to the engine.
- ●Do not tie or bundle a vehicle fuel line with any of the other hoses and/or harnesses. It may cause severe damage to the vehicle.
- ●Make sure all connections and wiring are not disconnected, short circuited or incorrect. It may cause an electrical shock or damage to the vehicle.
- ●Used the provided splices and install them to the correct positions. If not, it may cause serious damage to the vehicle.
- ●Connect the ground wire onto a good chassis ground. If not, it may cause damage to the vehicle.
- ●Insert the vacuum filter and replace it at regular intervals. If not, it may cause damage to the vehicle.
- ●When installing the vacuum filter, make sure no oil or lubricants are existant to cause the hose to come off. If a hose comes off, it may cause damage to the vehicle.
- ●Replace the vacuum filter earlier than the regular interval if there is excessive build up. Dirt build up may cause an inability to control boost, which may cause damage to the engine.
- ●Install the air relief valve of the stepping motor downward to avoid allowing oil and/or water from entering the valve. It may cause damage to the vehicle.

⚠ Caution

- **Do not raise the boost excessively. It may cause damage to the engine and/or the turbocharger.**
- **The warning function must be activated to prevent any damage to the engine caused by over-boosting.**
- **Do not test the product on the vehicle on a public road.**
- **If this product or the vehicle does not perform properly, consult your authorized dealer immediately.**
- **Do not repair the product by yourself.**
- **If an unusual noise, smell and/or vibration is noticed, take the necessary measurements referring to the user's manual.**
- **Insulate wires left on the vehicle after removal of the product. It may cause damage to the electronic parts.**

- Daily check-up of the vehicle must be done by the owner.
- This manual shows a typical installation. Actual installations may vary depending on the vehicle application.
- Refer to the factory manual when removing the factory parts.
- Make sure all connections and wiring are correct.
- Do not lose and/or damage any removed parts.
- Use the appropriate tools to tighten bolts and nuts with the correct torque specs to avoid damage.
- Make sure not to disconnect any wiring from the vehicle when installing the product.
- For a vehicle equipped with a boost control solenoid valve, remove the connector or hose to deactivate its function.

Parts List

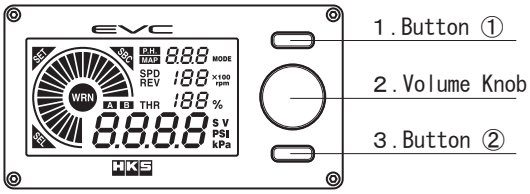
		 1．5m	 2．7m
1 ＥＶＣ Display Unit 1	2 ＥＶＣ Stepping Motor 1	3 Main Harness 1	4 Extension Harness 1
 1．0m	 1．5m	 1m (1 for Speed & RPM, 1 for Throttle signal)	 1m
5 Power Harness 1	6 Scramble Harness 1	7 Input Signal Harness 2	8 4mm Hose 1801-SA033 1
 1m	 4-4-4mm	 4mm，6mm 1 each	 φ6用
9 6mm Hose 1801-SA004 1	10 T-Fitting 1	11 Vacuum Filter 6mm……4599-RA016 4mm……4599-RA017 1Set	12 Hose Clamp 2
		 M6Bolt and Nut M6Flat Washer M6Lock Washer 1 each	 100mm……Qty. 5
13 Splice 3	14 Double-Sided Tape 1	15 Hardware Set 1Set	16 Tie Wrap 1Set
			
17 Instruction Manual 1	18 Connecting Manual 1	19 Quick Manual 1	20 Function Manual 1

- Tools required for installation: Test Light or Volt Meter, Screwdriver, Socket Wrench, Wire Cutters, Hose Cutters and Pliers.
- Retain all unused parts.

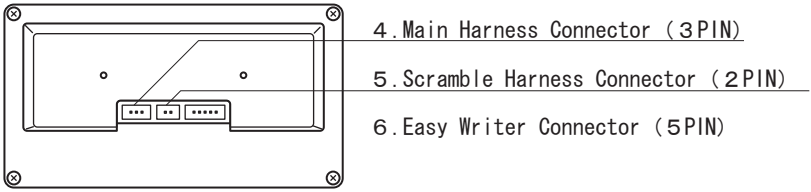
Features and Functions

1. Features

Front Panel



Rear Panel



1.Button ①

Use this button to activate the scramble function in the standard mode. While pressing this button, the scramble function is activated. When the scramble function's timer is set,the function starts working when the button is released. If the set value is blinking in the speed axis set mode, RPM axis set mode, throttle axis set mode, map correction boost A/B set mode, or map offset A/B set mode, this button is used to select between the set axis and the set value.

2.Volume Knob

In the standard mode, pressing the volume knob for more than 1 second resets the peak value. Turn the knob left to switch to boost mode A and turn right to the mode B. Pressing the volume button in each mode makes the set value blink or turn it on. When the set value is blinking, turning the volume knob to the right increases the value; and turning it to the left decreases the value. In other modes (aside from standard mode), when the value is blinking, turning the button switches the modes in each mode group.

3.Button ②

In the standard mode (when the A/B boost value is not being set) press this button for more than 1 second to switch the EVC on or off. When the power is on, the EVC control becomes active. When the power is off, the vehicle returns to the standard boost value which is not controlled by the EVC. When the set value in each mode is blinking, pressing this button switches the mode group.

4.Main Harness Connector

This main harness connects the power harness, extension harness, and each signal harness.

5.Scramble Harness Connector

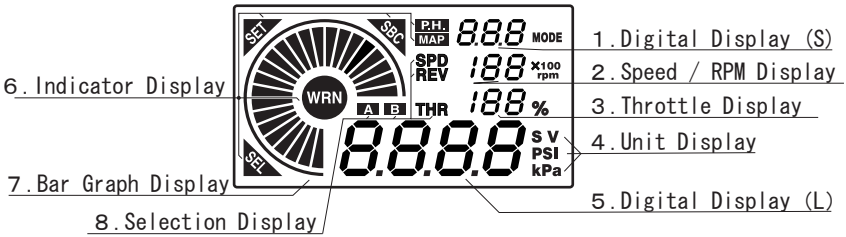
This scramble harness connects the optional external scramble switch.

6.Easy Writer Connector

This connector is for PC communication to make settings with the HKS Easy Writer. (Optional)

2. Display

2. 1. Digital Display



1.Digital Display (S)

In this display, the preset warning value, preset A/B boost values, scramble countdown time, mode name, or wastegate type is shown. The pressure is shown as ○○○(kPa) or ○○.○(PSI), the scramble countdown time is shown as ○○(Sec), the mode name is shown as ○○○(MODE), and the wastegate type is shown as －○－.

Standard Mode・ : Set Warning Value
Standard Mode(A/BBoost Settings)・ : Preset A/BBoost Values
Standard Mode(Scramble Function)・ : Scramble Countdown Time
Each Setting Mode・ : Mode Name
Opening Screen・ : Wastegate Type

2.Speed / RPM Display

In this display, the value for each axis of the following mode is shown; Speed Axis Set Mode, RPM Axis Set Mode, Map Correction Boost A/B Set Mode and Map Offset A/B Set Mode.

3.Throttle Display

In this display, the value for each axis of the following mode is shown; Throttle Axis Set Mode, Map Correction Boost A/B Set Mode, and Map Offset A/B Set Mode.

4.Unit Display

In this display, the 4 units of measure(kPa, PSI, S, V) are shown for each mode:

kPa is displayed for manifold pressure
PSI is displayed for manifold pressure
S is displayed in the Scramble Time Set Mode
V is displayed in the Full Throttle Voltage Set & Closed Throttle Voltage Set Modes

5.Digital Display(L)

In this display, the manifold pressure, set value, or name is shown as ○○○(kPa) or ○○.○(PSI):

In the Standard Mode the boost value is shown
In each Set Mode, the set value or mode name is shown

6.Indicator Display

This display shows the following:

In the Standard Mode and the peak value is displayed, "P.H." is iluminated.
In the Standard Mode and the map function is being used or in the Map Set Group, "MAP" is illuminated.
In each mode where the set value is being changed, "SET" is illuminated.
In each mode where the set value is being selected, "SEL" is illuminated.
In the Scramble Boost Set Mode, Scramble Time Set Mode, or if the scramble function is activated, "SBC" is illuminated.
In the Warning Boost Set Mode, Drop Boost Set Mode, or if the warning function is activated, "WRN" is illuminated.

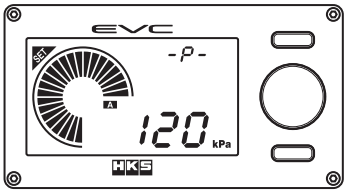
7.Bar Graph Display

In this display, a bar graph of the following can be shown: manifold pressure, speed, RPM, throttle percentage opening, set value, or axis number. In the Standard Mode, you can select between the manifold pressure, speed, RPM, and throttle percentage opening for real-time display.

8.Selection Display

The indicators of A and B show the selected preset boost setting in the Standard Mode. In the Offset A/B Set Mode, Map Boost A/B Set Mode and Map Offset A/B Set Mode, the current preset value is shown. The indicator of SPD, REV, and THR show the input signal currently used for the correction map in the Standard Mode, Map Boost A/B Set Mode and Map Offset A/B Set Mode. In the Speed Axis Grid Point Set Mode, RPM Axis Grid Point Mode and Throttle Axis Grid Point Set Mode, each corresponding signal is shown.

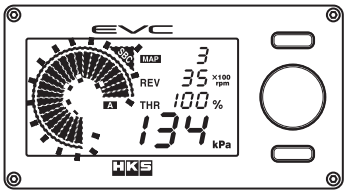
2. 2. Start-Up



Beep

After the unit beeps once, the wastegate type appears on the digital display (S), and the preset boost value appears on the digital display (L).

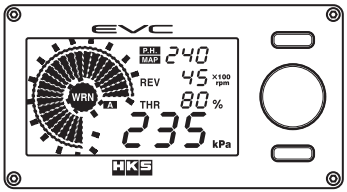
2. 3. Scramble Boost Activated



Beeeeeeep....

After the unit beeps, the bar graph and the SBC indicator will blink.

2. 4. Warning Function Triggered



BeepBeepBeep....

After the unit beeps, the bar graph and the WRN indicator will blink.

Note

・The LCD of the display unit may have a black line. This is caused by static electricity, and it does not affect the functions or performance of the unit. To remove the line, wipe the display with an antistatic cloth or a cloth with the antistatic solution.

Installation

⚠ Warning

●This product was designed to be used with vehicles using a ＤＣ１２Ｖ negative ground. Do not use on a vehilce with a ２４Ｖ ground.

●This manual shows a typical installation. Actual installation may vary depending on the vehicle application.

1. Removal of Battery Terminal

(1)Disconnect the negative terminal from the battery.

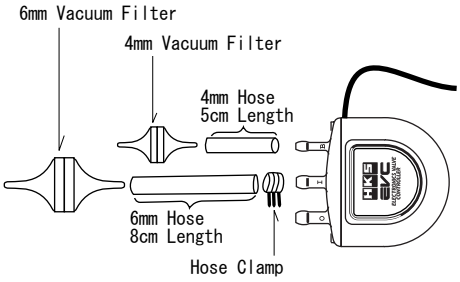
2. Hose Connection Layout

(1)With consideration to the hose and harness lengths, determine the appropriate hose connection layout and mounting in regards to the display unit and stepping motor.

Advice

・Leave some slack for the harness & hoses to avoid tension during engine movement.
・Do not install any components in high temperature areas.

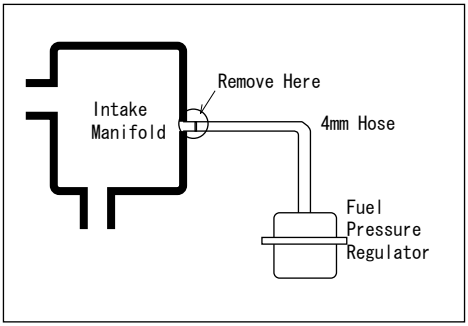
2. 1. Stepping Motor and 4mm Hose



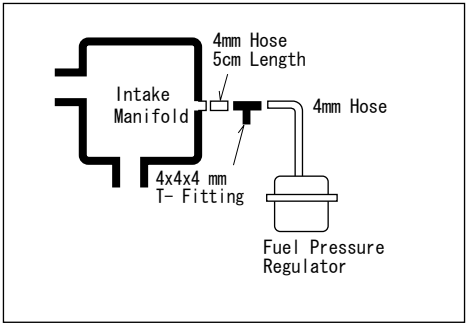
(1)Cut the 4mm and 6mm Hose and connect them to the respective 4mm and 6mm vacuum filters as shown in the diagram on the left.

Advice

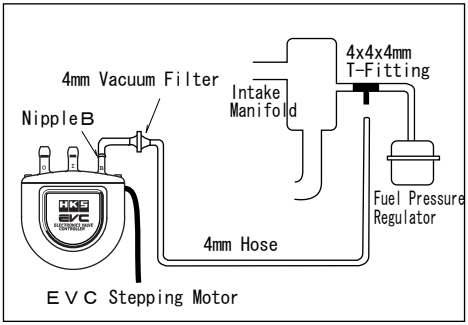
- Cut the 4mm and 6mm hose to different lengths so that the vacuum filters are not in contact with each other.
- Do not pu any oil and/or lubricants on or in the hose and vacuum filter.



(2)Remove the hose that connects the intake manifold and the fuel pressure regulator from intake manifold side.



(3)Cut a 5cm length portion of the included 4mm hose and connect it the the T-Fitting as shown in the diagram on the left.



(4)Use the remaining 4mm hose to connect the T-Fitting to 4mm vacuum filter on Nipple B of the EVC Stepping Motor.

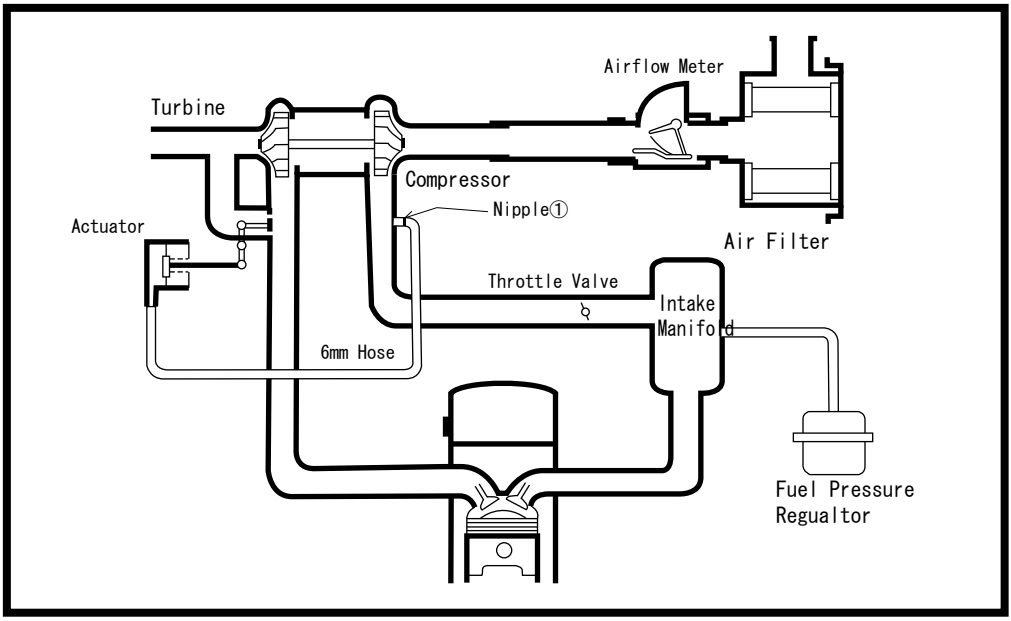
Advice

- Make the hose length short as possible
- Do not put and oil and/or lubricants on or in the hose and vacuum filter
- Nipples of the EVC stepping motor must be facing upward to avoid any oil or water from entering.

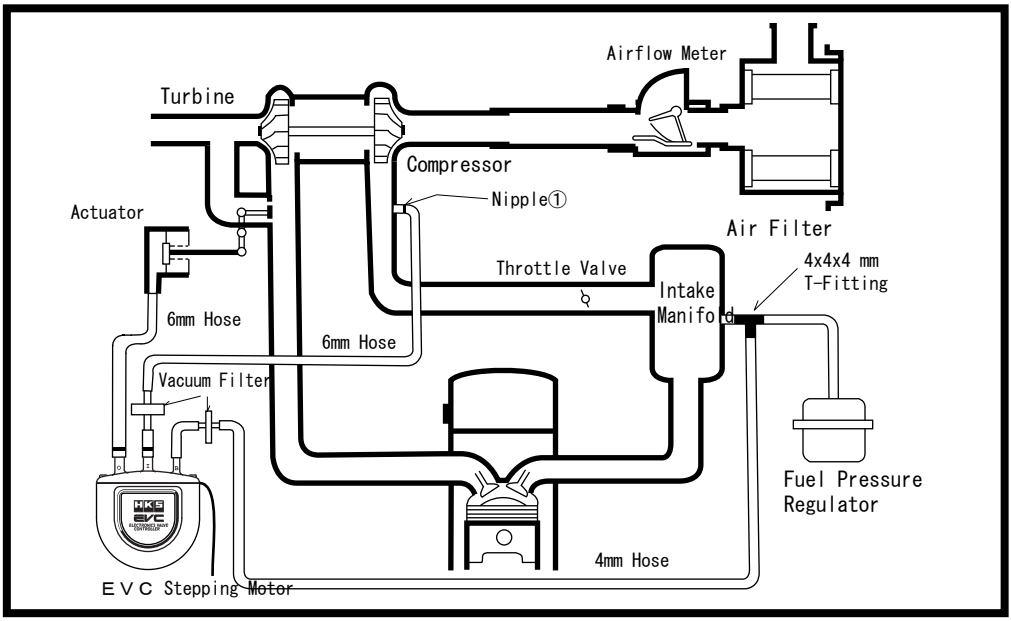
2．2．Swing Valve Type

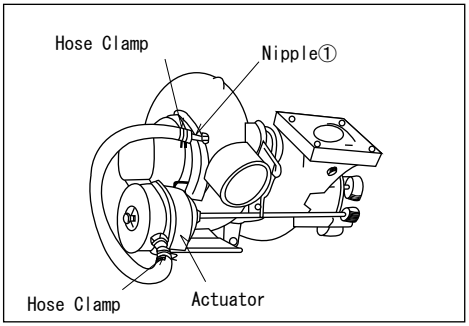
2．2．1．For Applications without a Boost Solenoid Valve

Before Installation (Basic Connection Layout)



After Installation

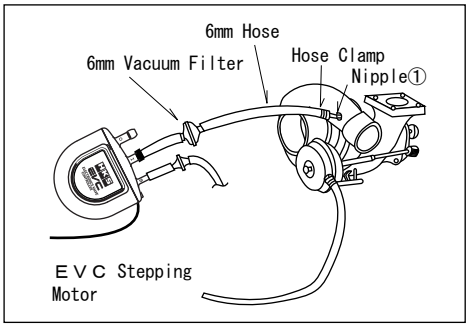




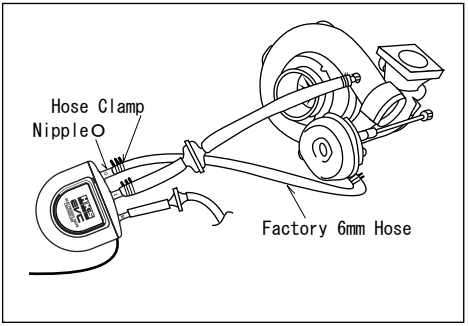
(1)Remove the hose which connects the actuator and Nipple① from the compressor side.

Note

・The position of Nipple① on the compressor may vary depending on vehicle.
・Reuse the factory hose clamp.



(2)Connect Nipple① and the EVC Stepping Motor's 6mm vacuum filter using the included 6mm hose.



(3)Connect the factory hose, which is still connected to the actuator, to the EVC Stepping Motor's NippleO.

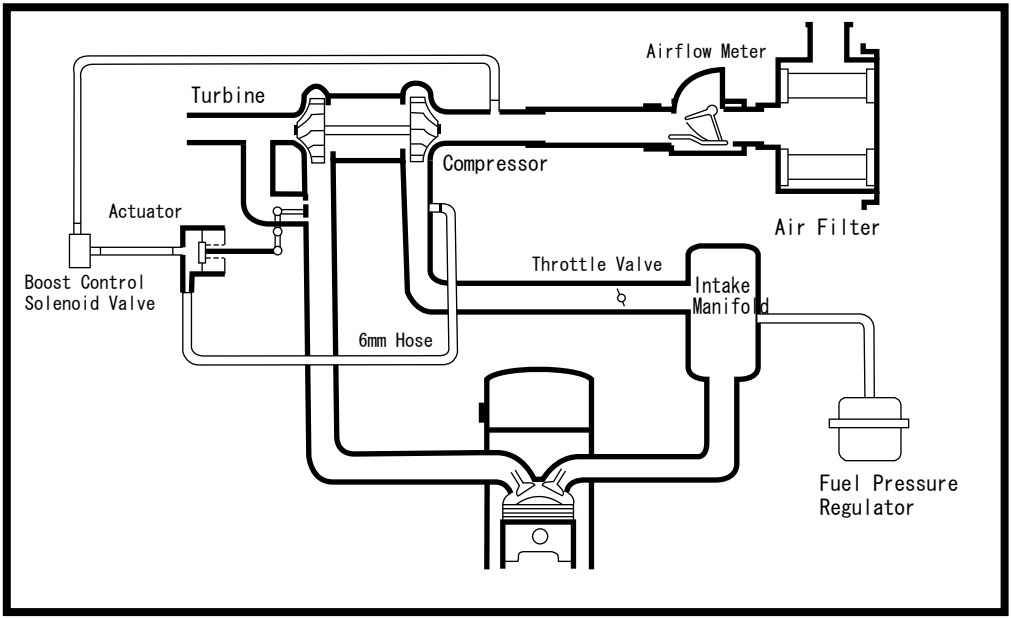
Advice

・Do not put any oil and/or lubricants on or in the hose and vacuum filter.
・Use the hose clamp to connect the 6mm hose and the 6mm vacuum filter.
・If the factory hose's length is not long enough to connect, use the optional oil-resistant hose. This optional oil-resistant hose is available separately. (Refer to the Optional Parts list in this manual)

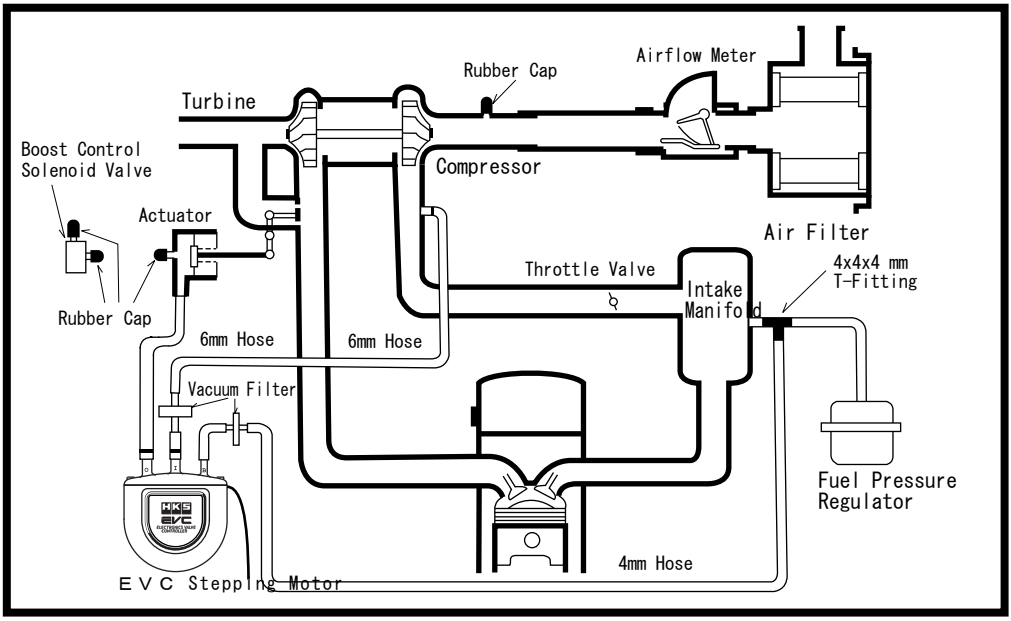
2. 2. 2. For Applications with a Boost Control Solenoid - 1

●Bypass the function of the boost control solenoid valve by removing the connector or hose.

Before Installation (Basic Connection Layout)



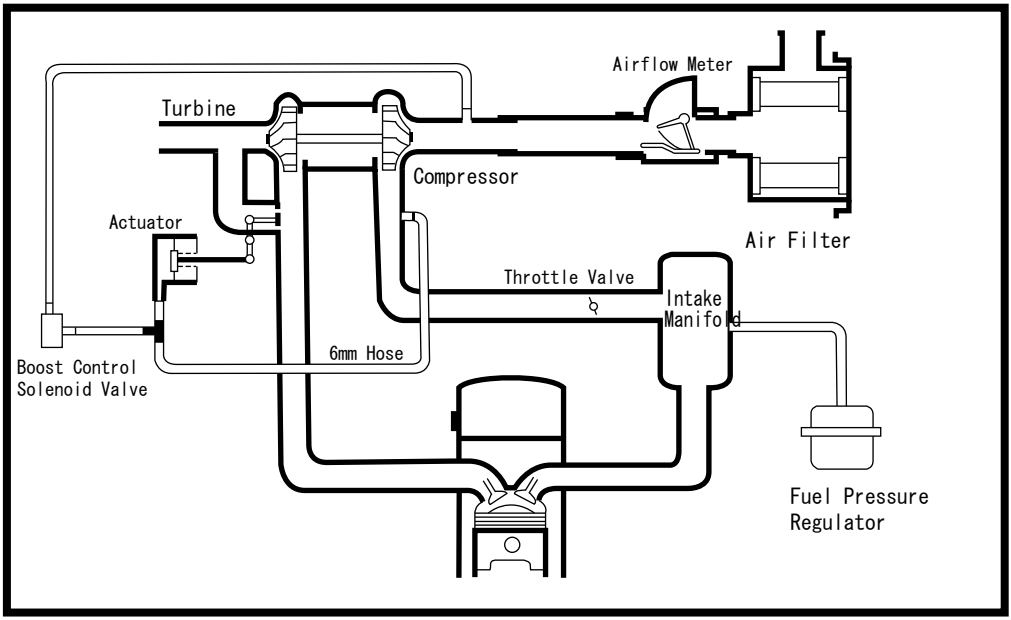
After Installation



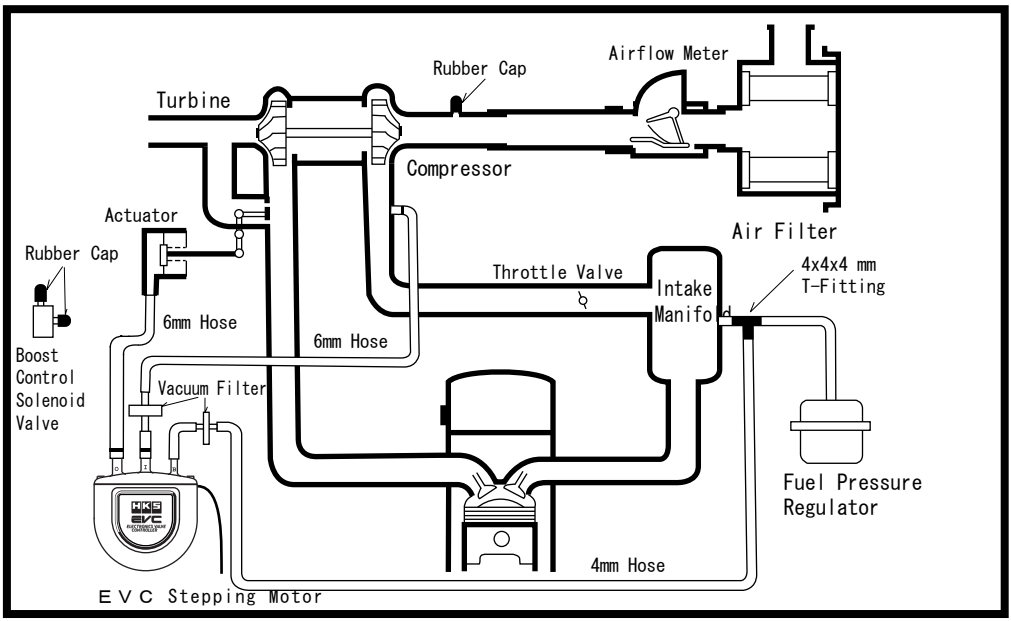
2．2．3．For Applications with a Boost Control Solenoid Valve - 2

●Bypass the function of the boost control solenoid valve by removing the connector or hose.

Before Installation (Basic Connection Layout)



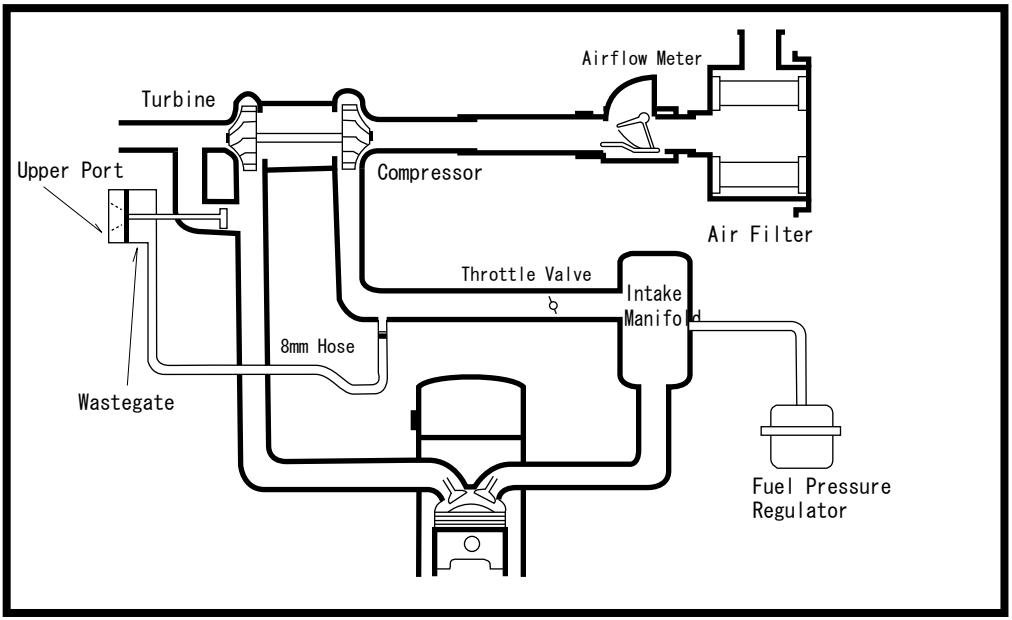
After Installation



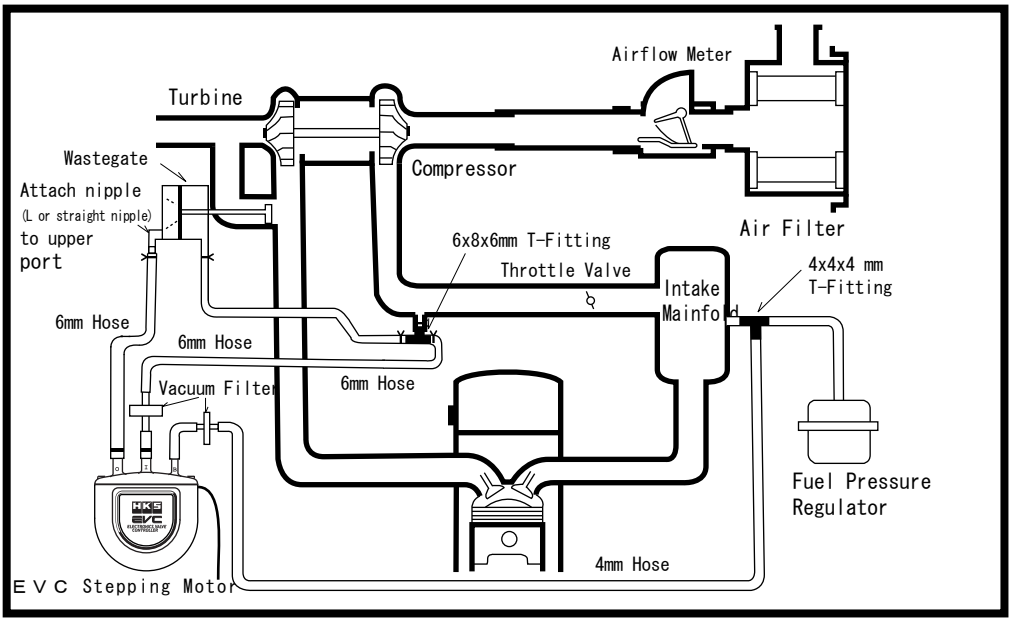
2．3．Poppet Valve Type

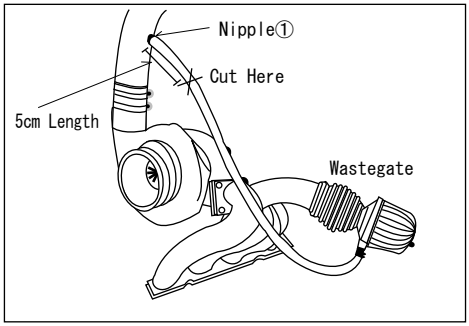
To install this unit on to a poppet valve equipped vehicle, the hose set for the poppet type is necessary.

Before Installtion



After Installation

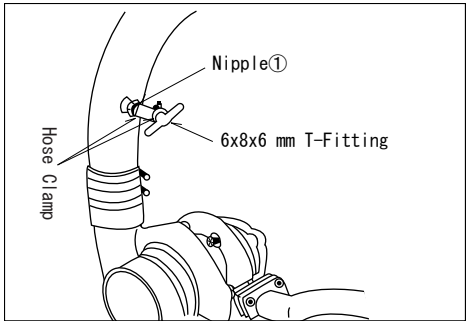




(1)Cut the 8mm hose at the point of 5cm from the compressor's Nipple①. Remove the remaining 8mm hose and 8mm nipple from the wastegate.

Note

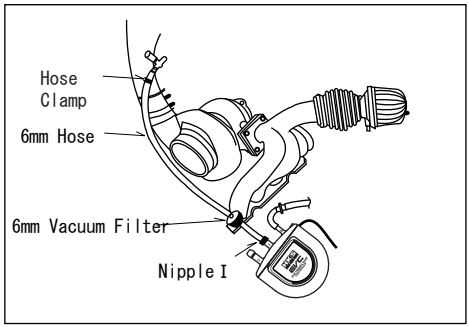
・The position of Nipple① on the compressor may vary depending on the vehicle.



(2)Install the 6x8x6mm T-Fitting using the 8mm Hose Clamp.

Note

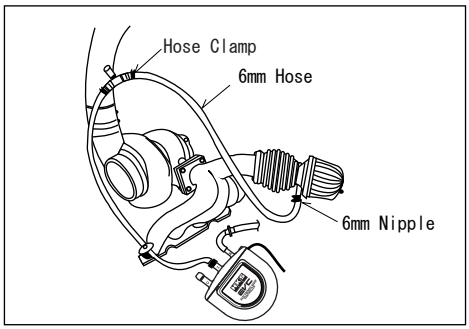
・Use the 6x8x6mm T-Fitting and 8mm Hose Clamp included in the hose kit for the poppet valve type applications.



(3)Connect the 6mm Vacuum Filter of the EVC Stepping Motor's Nipple I to the T-Fitting using the 6mm hose.

Advice

・Do not put any oil and/or lubricants on or in the hose or vacuum filter.

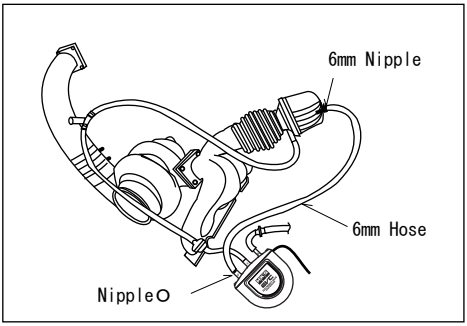


(4)After removing the 8mm nipple from the wastegate, install the 6mm nipple (straight or L-Shaped).

(5)Install the included 6mm hose as shown in the diagram on the left.

Note

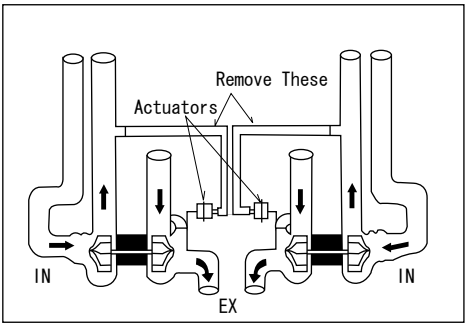
・Use the hose clamp to connect the 6mm hose and the 6mm nipple.



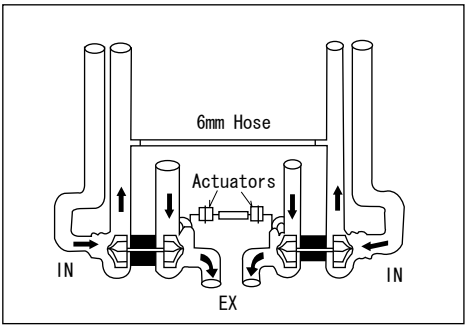
(6)Install the 6mm nipple to the wastegate's upper port.
(7)Using 6mm Hose, connect the EVC Stepping Motor's NippleO to the 6mm nipple installed on the wastegate in step #(6).

2. 5. Twin Turbo Applications (Swing Valve Type)

To install this unit on to a twin turbo vehicle, the hose set for the twin turbo vehicle is needed. The basic hose layout procedure is similar as the swing valve.

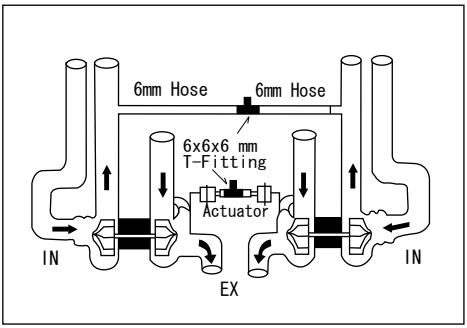


(1)Remove the factory hoses between each turbocharger's compressor and actuators.



(2)Connect the actuators of each of the two turbochargers using 6mm hose.
(3)Connect each compressor of the two turbochargers using 6mm hose.

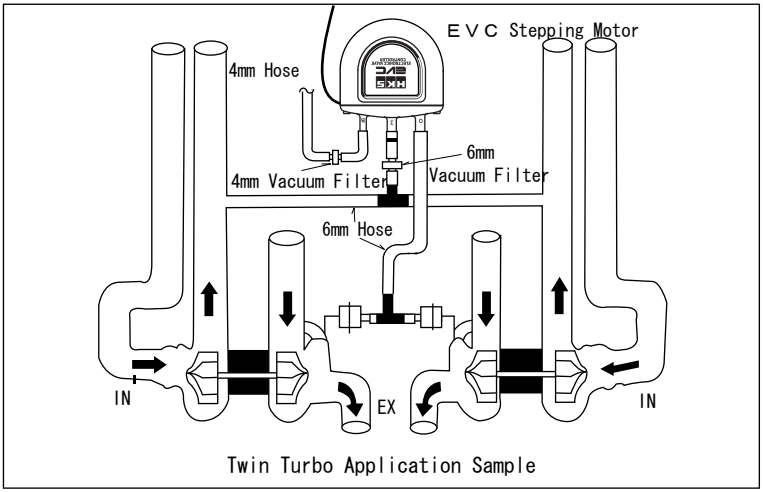
Advice
・Use the 6mm hose and 6mm hose clamps.



(4)Cut the center of each of the 6mm hoses and and insert a 6x6x6 T-Fitting in each.

Advice
・Use 6mm hose clamps to secure hoses.

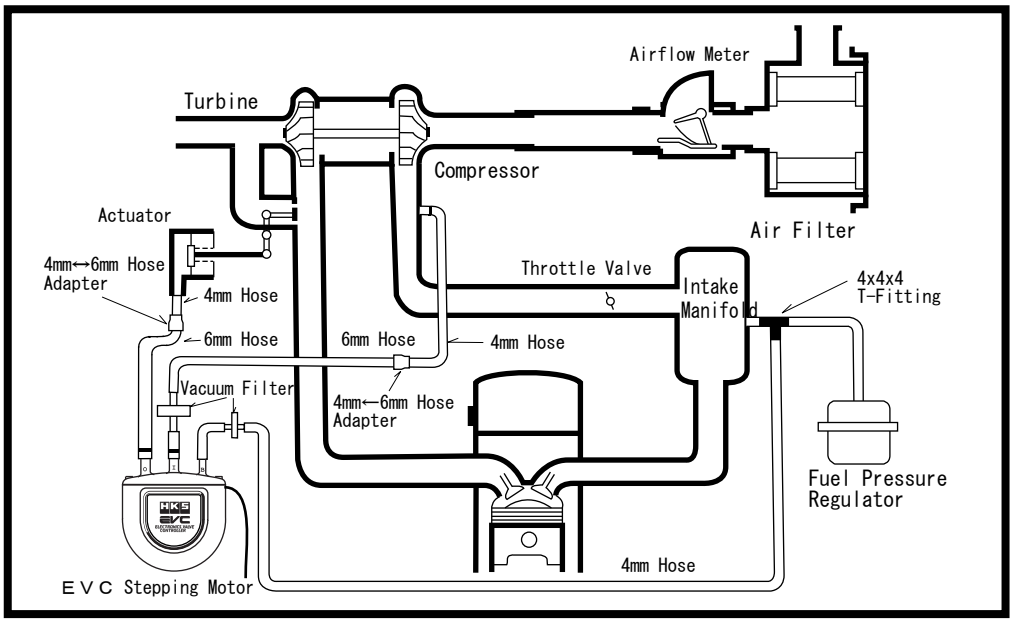
(5)Follow the instructions of Section 2.2 Swing Valve Type for remaining steps.



Twin Turbo Application Sample

2. 5. 4mm Hose Layout Application

To install this unit on a 4mm hose equipped vehicle, the 4mm hose set is needed.
The basic hose layout procedure is the same as for the swing valve type.



(1)Use the 4mm hose included in the 4mm hose set instead of the included 6mm hose on points where the 6mm hoses are supposed to be used.

(2)Connect the 6mm hose to the 6mm vacuum filter using the 4mm-6mm adpater included included in the 4mm hose set.

Advice

・Use the 6mm hose included in this product.

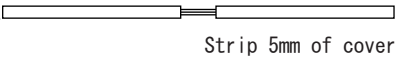
・Do not put any oil and/or lubricant on or in the hose and the vacuum filter.

～MEMO～

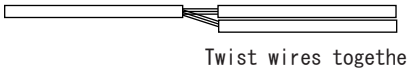
3. Wiring

3. 1. Installing Splices

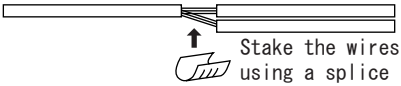
①Strip 5mm of the wiring insulator for wiring.



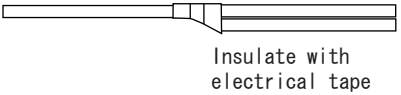
②Connect another wire to the uncovered portion by twisting the wires together.



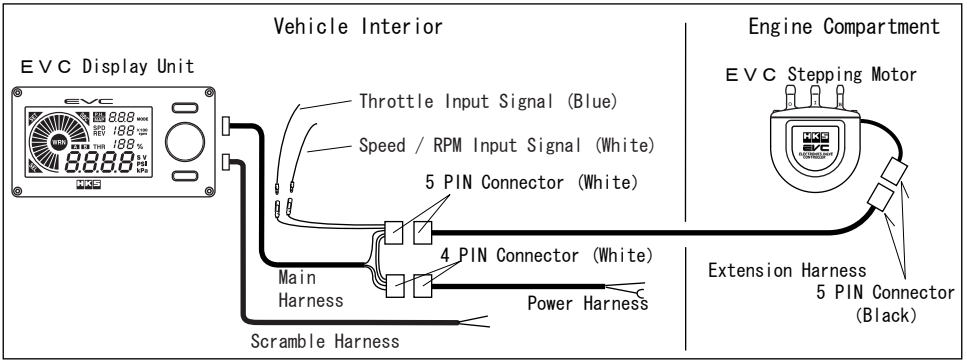
③Stake the twisted wires using a splice.



④Cover the splice and wires with electrical tape to insulate.



3. 2. Wiring



(1)Pull the white connector of the Extension Harness from the engine compartment into the vehicle interior and connect it to the 5 PIN connector of the EVC Main Harness.
(2)Connect the Extension Harness to the 5 PIN Connector of the EVC Stepping Motor.
(3)Connect the EVC Main Harness to the 3 PIN Connector of the Display Unit.
(4)Connect the red wire of the Power Harness to the ignition wire using a splice.
  (a) Reconnect the negative battery cable to the battery terminal.
  (b) Turn the ignition switch on and find the wire generating 12v using a test light.
  (c) Remove the negative battery cable from the terminal of the battery.
(5)Confirm the locations of the throttle signal line and the engine RPM signal line or the speed signal line of the vehicle's harness that connects to the ECU. Connect the blue wire of the Input Signal Harness to the throttle signal line, and the white wire to the engine RPM signal line or the speed signal line using splices. Refer to the factory service manual for signal line locations.

Advice

・If a speed limiter release device such as the HKS SLD is already installed on the vehicle, connect the white wire of the input signal harness to the side towards the vehicle's harness from the device.
・Do not connect unused signal lines.

(6)Connect each input signal wire to the same colored wires on the Main Harness.
(7)Connect the ground wire (Black).

Advice

・Rub off any paint and/or rust of the surface where the ground wire is connected.

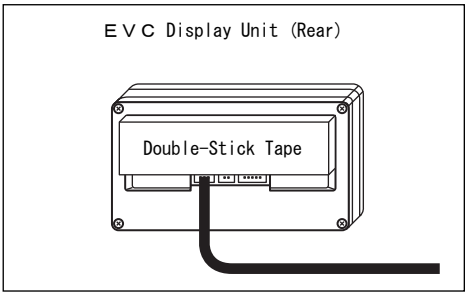
(8)Connect the 4 PIN Connector of the Main Harness to the Power Harness.

Note

・When utilizing an external switch for the Scramble Boost activation, connect the two wires (blue and white) of the scramble harness to a momentary switch in the form that when the switch is triggered a closed-circuit is made.

4. Mounting of Components

4. 1. Mounting the Display Unit



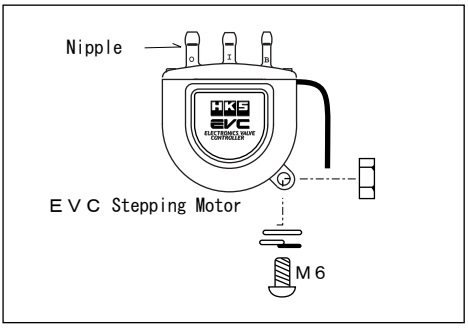
(1)Remove any dirt, dust and/or oil from the area the unit is going to be mounted to.

(2)Secure the display unit using the included double-side tape.

Advice

・The display was designed to have the best visibility when it is looked at downward. It is recommended to mount the display unit to a position where it is lower than your eyes or mount the unit facing upwards.

4. 2. Mounting the Stepping Motor



(1)Mount the Stepping Motor using the M6 bolt and nut.

4. 3. Securing the Hose and Harness

(1)Secure hoses and harnesses using the included tie-wraps.

Advice

・Leave slack in the hose and harness to absorb engine vibration and movement.

5. Post Installation

(1)Reinstall all removed factory parts.

(2)Reconnect the negative battery cable to the battery terminal.

Post Installation Checks

Check the following after the installation processs is complete.

1. Check the following BEFORE starting the engine

Items to check	Checked
Make sure all hoses are routed and connected correctly.	
Make sure all hoses do not have too much slack.	
Make sure all hoses are not damaged.	
Make sure all hose clamps are secure and tight	
Make sure all bolts and nuts are properly tightend.	
Make sure hoses, harnesses & installed components do not contact other parts.	
Make sure hoses and harnesses are secured properly.	
Make sure wiring is done correctly.	
Make sure all connectors and splices are connected securely.	
Make sure all splices are the included ones and stalked properly.	
Make sure the unit or components are mounted securely and dont disturb driving.	
Make sure the negative cable terminal is securely attached to the battery.	
Make sure the boost control solenoid valve is bypassed.	

2. Check the following AFTER starting the engine

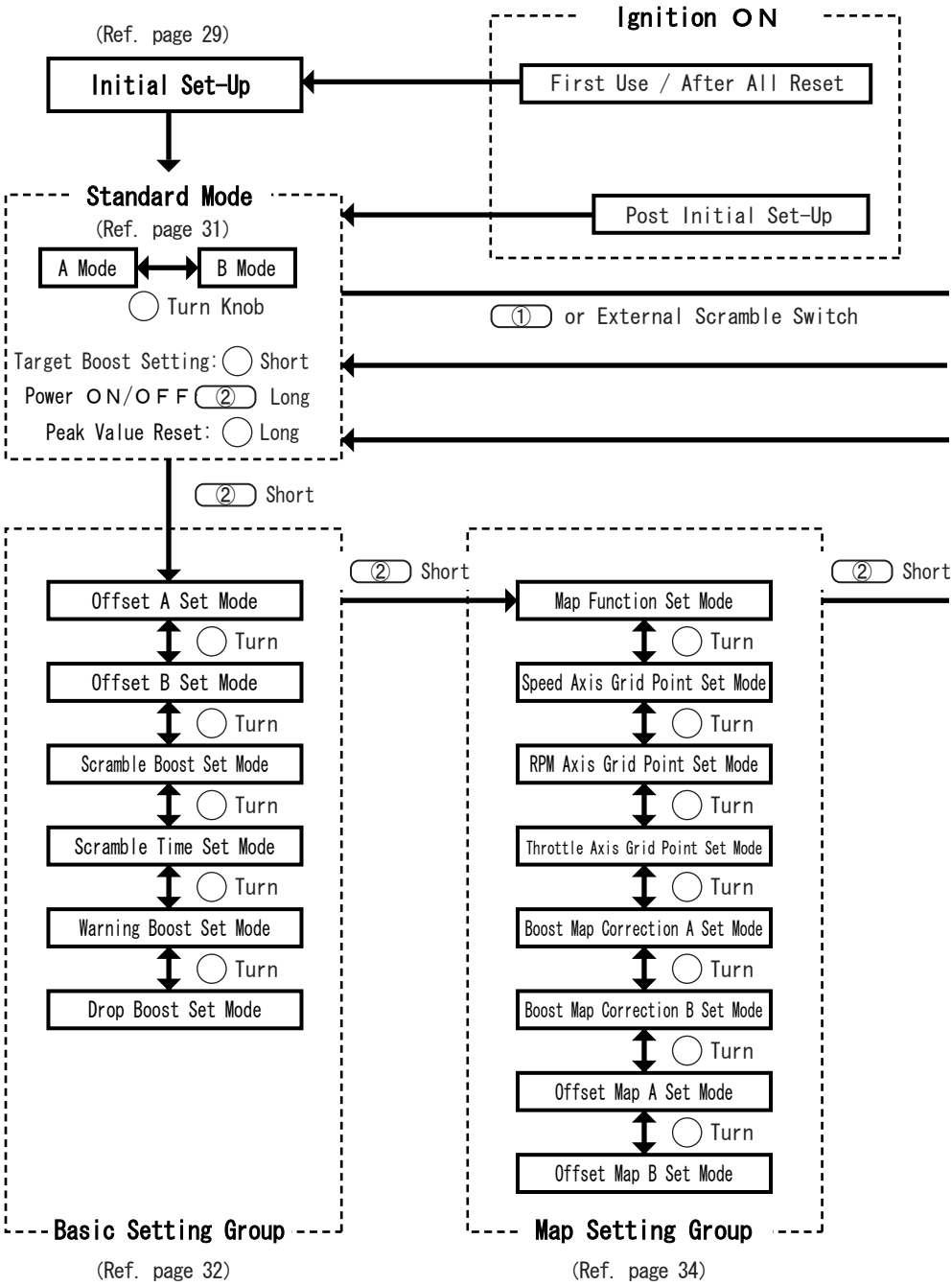
Advice

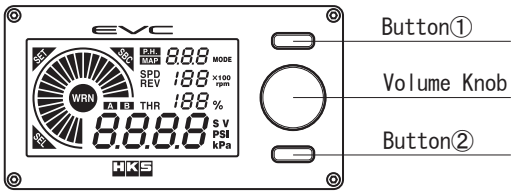
・Do not raise the engine RPM right after staring engine. (Let it idle)

Items to check	Checked
Make sure there is no air leakage.	
Make sure there is no air leakage after revving the engine in neutral 2-3 times.	
Make sure installed parts are not in contact with each other.	
Make sure there is no excessive stress on hoses or harnesses.	
Make sure there are no parts that have loosened after stopping the engine.	

Operation

1. Operation Outline





※Operational Diagram

① : Button①

② : Button②

◯ : Volume Knob

Scramble

After Scramble Countdown

② Short

② Short

Bar Graph Function Set Mode

◯ Turn

Bar Graph Max Value Set Mode

◯ Turn

Backlight Brightness Set Mode

◯ Turn

After Image Set Mode

◯ Turn

Bar Graph Peak Set Mode

◯ Turn

Data Lock Set Mode

Cylinder # Set Mode

◯ Turn

Speed Pulse Set Mode

◯ Turn

Throttle-Off Set Mode

◯ Turn

Full Throttle Set Mode

◯ Turn

Sampling Rate Set Mode

◯ Turn

All Reset Mode

Function Setting Group

(Ref. page 38)

Vehicle Setting Group

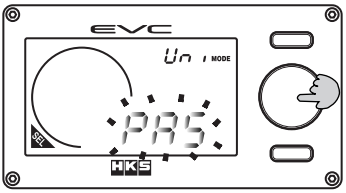
(Ref. page 41)

2. Initial Set-Up

Initial Set-Up Configuration: unit of measure for pressure, wastegate type,and target boost. The characteristics of the boost change for each vehicle can be memorizedby the EVC. When using the EVC for the first time (or after a reset) the initial set-up will be automatically started. Follow the procedure below for the initial setting.

Action Key : Press : Turn Volume : Press and hold for 1 sec.

2. 1. Setting the Pressure Unit of Measure

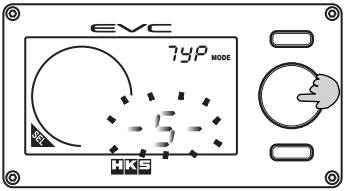


(1)Turn the volume knob and select the pressure unit of measure from "PAS (kPa)" or "PSI."
・The digital display (S) will display "Un i".

(2)Press the volume knob after selecting the unit, Go to 2.2 for setting the exhaust bypass (wastegate) type.

2. 2. Setting the Exhaust Bypass Type

For most factory turbo applications, the actuator type is used; therefore, the exhaust bypass type is the swing valve type. For most large capacity turbo applications, the external wastegate is used; therefore, the exhaust bypass type is the poppet valve type.

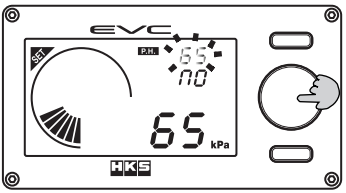


(1)Turn the volume knob and select the exhaust bypass type from "-S-" for the swing valve type or "-P-" for the poppet valve type.
・The digital display (S) shows "TYP".

(2)Press the volume knob after selecting the exhaust bypass type. Go to 2.3 for setting the standard max boost setting.

2. 3. Setting the Standard Maximum Boost Setting

The maximum baseline/default boost after installing the EVC.

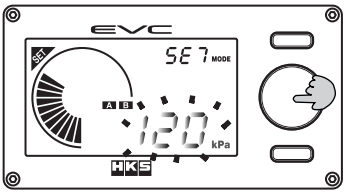


(1)Turn the volume knob and set the max baseline / default boost value if the boost value is known. If not, drive the vehicle under load to achieve the maximum boost value. The value will then be shown in the digital display (S).
・The speed/RPM display shows "NO".
・The digital display (L) shows the current boost value.
・Enter the max boost value that is stable.

(2)Press the volume knob when the digital display (S) is showing the max baseline/default boost value. Go to 2.4 for setting the target boost.

2．4．Setting the Target Boost

Set the target boost level desired

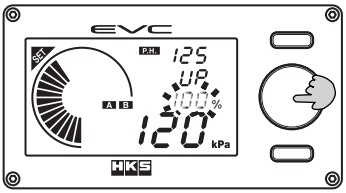


(1)Turn the volume knob to select the desired target boost value.
- The digital display (S) shows "SET".
- The target value is for both A & B boost settings.
- Changes to target boost for both A & B modes can made in the Standard Mode after completing the initial setting.

(2)Press the volume knob after setting the target boost.
Go to 2.5 for setting the correction coefficient.

2．5．Setting the Correction Coefficient

If the target cannot be achieved, increase or decrease the correction coefficient to adjust the boost to the target value.



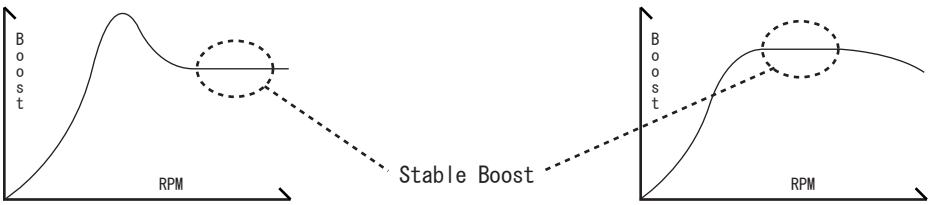
(1)Ensure the display is as shown in the illustration on the left. Drive the vehicle to reach the max boost. If the target boost and the actual max boost do not match, turn the volume until the actual max boost reaches to the target boost.
- The speed/RPM display shows "UP".
- Increasing the correction coefficient raises boost and decreasing the coefficient reduces boost.
- The digital display(S) shows the peak hold value and the digital display (L) shows the current boost value.

(2)Press the volume knob after setting the coefficient.
This completes the initial setting.
Go to 3 for the standard mode.

Note

- For the vehicle equipped with the boost solenoid valve, after installing the EVC, the standard max boost will be lower than the boost before installing the EVC.
- In the below cases, the max boost cannot reach 250kPa:
  (a)The set load (spring's force) of the wastegate's valve or actuator is too low.
  (b)The exhaust back pressure is creating a resistance.
- In the below cases, the boost cannot be stabilized:
  (a)Wastegate's valve area and/or its stroke in not sufficent. Or, the boost creep or drop is due to the actuator incapacity.
  (b)Turbo air volume is not sufficent for the engine displacement. Or, the boost creep or drop is due to an increase in the exhaust pressure.

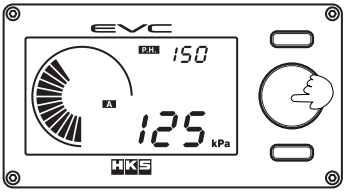
  Therefore, conditions and specifications of the vehicle must be examined carefully before installing the EVC.
- Refer to the following procedures for the setting range of each value.



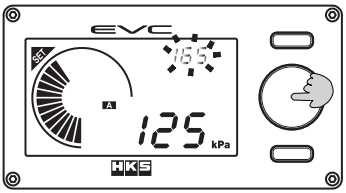
3. Standard Mode

3. 1. Boost Control

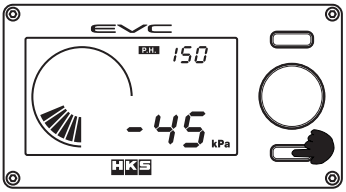
Set the boost values for A/B modes in the Standard Mode.



(1)In the Stanards Mode, press the volume knob to set
- The EVC will beep and P.H. will illuminate; the digital display (S) changes from peak hold display to the blinking target boost value.
- "SET" will also illuminate.
- To set value for B Mode, select B Mode with the volume knob (turn right), then press knob.



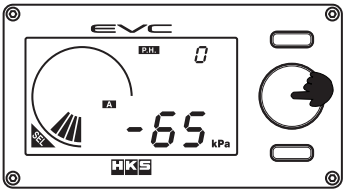
(2)Turn the volume knob to set the target boost value. When the value is selected, press the volume knob again.
- The EVC will beep and the displays returns to peak hold display.
- The selection range is from baseline boost to 250kPa / 36.0 PSI.
- The target boost value set in the initial setting is the default value for booth A & B Modes.



(3)To turn the EVC off, press Button② for more than 1 second. Repeat set to turn the EVC on.
- An audible beep will be emitted to confirm action.
- When the EVC is off, the current boost reading and the Peak Hold value will be the only data displayed.

3. 2. Peak Hold

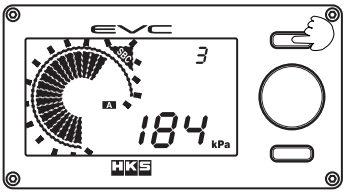
While the EVC is in the Standard Mode, the maximum boost is displayed and automatically updated in the digital display (S), denoted with the P.H illumination. To reset value:



(1)Press the volume knob for more than 1 second
- The peak hold value will cleared and reset to 0 kPa or 0.0 PSI accordingly.

3. 3. Scramble

Activate the Scramble boost function by pressing Button① or the external scramble switch.

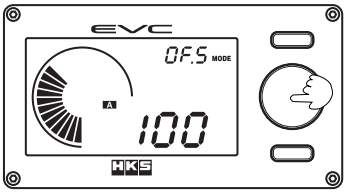


(1)After pressing Button① or the external scramble to trigger its activation, the EVC will.
- Beep to indicate that the function is active.
- The bar graph and "SBC" will blick and the remaining time of the scramble will be displayed on the digital display (S).
- When using the user preset time function of the Scramble, the countdown does not begin until the release of the button or external switch.

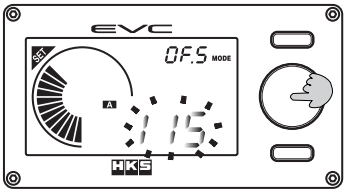
4. Basic Settings Group

4. 1. Offset A Set Mode / Offset B Set Mode

Adjust the boost's gain or stability for both A and B Modes.



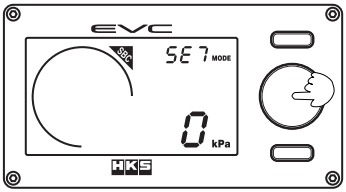
(1)Press the volume knob in the Offset A Set Mode or Offset B Set Mode.
- The digital display (S) will display [OFS].
- The EVC will beep and the digital display (L) blinks.
- "ＳＥＴ" will appear in the display.
- The left illustration references Offset A Set Mode.



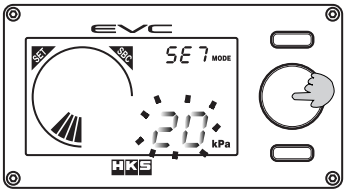
(2)Turn the volume knob and set the Offset A and B value. When the settings are done, press the volume knob.
- The setting range is between 1-199% in 1% increments.
- The default setting value is 100%.
- The boost will rise when the set value is increased and vice versa. This applies to both wastegate type selections.

4. 2. Scramble Boost Set Mode

Set the boost value to be added to the target boost when the Scramble function is triggered.



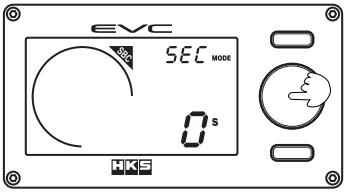
(1)Press the volume knob while in the Scramble Boost Set Mode.
- Digital Display (S) will illuminate [SET].
- "ＳＢＣ" will be illuminated on the display.
- The EVC will beep and the digital display (L) blinks.
- "ＳＥＴ"will be illuminated on the display.



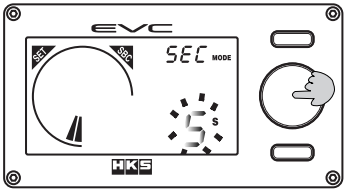
(2)Turn the volume knob to select the amount of additional boost for the Scramble function. After the selection, press the volume knob to set.
- The setting range is between 0-120 kPa or 0.0-17.0 PSI respectively for the unit of measure selected.
- The default setting is 0 kPa or 0 PSI.

4. 3. Scramble Time Set Mode

Set the time duration of the added Scramble boost for when the Scramble is triggered.



(1)Press the volume knob while in the Scramble Time Set Mode.
- The digital display (S) will illuminate [SEC]
- "ＳＢＣ" will be illuminated on the display.
- The EVC will beep and the digital display (L) blinks.
- "ＳＥＴ"will be illuminated on the display.



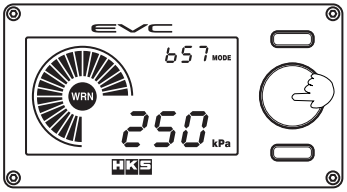
(2)Turn the volume knob to select the duration of Scramble Time. After selection is done, press the volume knob.
- The setting range is between 0-60 seconds in 1 second increments.
- The default setting is 0 seconds.

Note

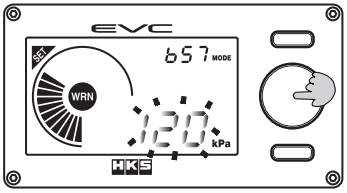
・While pressing Button①, the Scramble function is activated. However, the Scramble timer function will not countdown until after the release of the button. When the Scramble time is set to 0 second, the Scramble function is only active when the button is pressed.

4. 4. Warning Boost Set Mode

The warning function is activated when the manifold pressure goes exceeds the user preset boost value. The EVC will drop boost to baseline boost or by a user set amount of boost.



(1)While in the Warning Boost Set Mode, press the volume knob.
- The digital display (S) will illuminated [bST].
- "WRN" will be illuminated on the display.
- The EVC will beep and the digital dusplay (L) blinks.
- "SET" will be illuminated on the display.



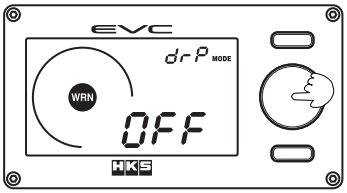
(2)Turn the volume knob to select the warning boost value. After value has been selected, press the volume knob.
- The setting range is 0-250 kPa or 0.0-36 PSI in increments of 1kPa or 0.1 PSI respectively.
- The default setting value is 250 kPa or 36.0 PSI.

Note

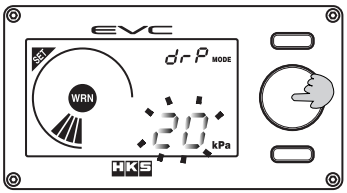
・The warning function is reset when the manifold pressure drops below 5 kPa.

4. 5. Drop Boost Set Mode

Set the amount of boost to drop when the warning function is triggered.



(1)While in the Drop Boost Mode, press the volume knob.
- The digital display (S) will illuminated [drP].
- "WRN" will illuminate on the display
- The EVC will beep and the digital display (L) blinks.
- "SET" will illuminate on the display.

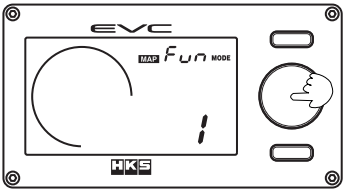


(2)Turn the volume knob to select the value amount of boost drop. After selections, press volume knob.
- The setting range is 1-120 kPa or 0.1-17.0 PSI in increments of 1kPa or 0.1 PSI respectively
- The default setting is "OFF". (Drops boost to the baseline boost value)

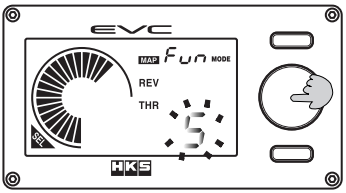
5. Map Setting Group

5. 1. Map Functions Set Mode

Select the input signal(s) for the Boost Correction Map.



(1)Press the volume knob while in the Map Function Set Mode.
- The digital display (S) will illuminate [Fun].
- The EVC will beep and the digital display (L) blinks.
- "ＳＥＬ" will illuminate on the display.



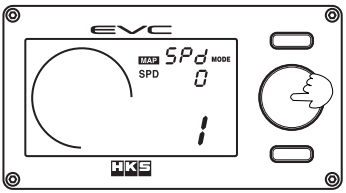
(2)Turn the volume knob to select input signal function. After selectioning, press the volume knob.
- １:OFF (No Map)　　２:Throttle Correction(ＴＨＲ)
  ３:RPM Correction(ＲＥＶ)　４:Speed Correction(ＳＰＤ)
  ５:ＲＥＶ+ＴＨＲ　　６:ＳＰＤ+ＴＨＲ
- The default setting is 1
- The illustration on the left shows setting 5:REV +THR

Note

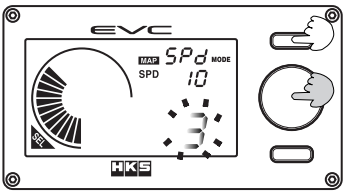
- In the Standard Mode display, only the selected input signal is shown.

5. 2. Speed Axis Grid Point Set Mode

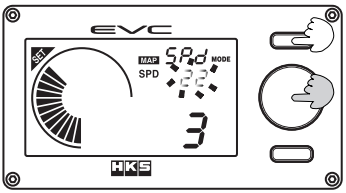
Change the speed axis grid point (division point of the map by speed) for the map.



(1)Press the volume knob while in the speed axis grid point set mode.
- The digital display (S) will illuminate [SPd].
- The EVC will beep and the digital display (L) blinks.
- "ＳＥＬ" will illuminate on the display.
- The displayed speed value is 1/10th of actual speed.
- There are 5 sequential grid points; "1" is the lowest and "5" is the highest.



(2)Turn the volume knob to select the grid point to change.　Press the Button① to change the speed value.
- When the grid point is changed, the speed setting display is also changed.
- Pressing Button① advances to step(３). "ＳＥＬ" will disappear as "ＳＥＴ" will appear. The digital display (L) stops blinking and the speed display will then blink.



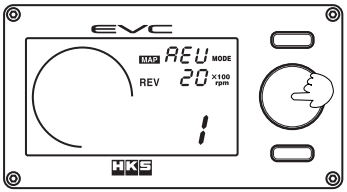
(3)Turn the volume knob and change the speed corresponding to the grid point.　When the setting is done, press the volume knob again.
- To change other speed settings, press Button① and go back to step(２) and repeat procedure.

Note

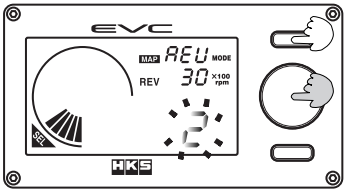
- The default grid point settings are as follows: 1: 0 km/h, 2: 50km/h, 3: 100km/h, 4: 150km/h and 5: 200km/h.
- The value setting range is between 0-500km/h. Each grid point setting value should be +10 km/h of the previous grid point and -10km/h of the next point.

5. 3. RPM Axis Grid Point Set Mode

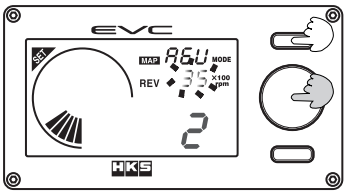
Change the RPM axis grid point (division point of the map by RPM) for the map.



(1)Press the volume knob while in the RPM axis grid point set mode.
- The digital display (S) will illuminate [REV].
- The EVC will beep and the digital display (L) blinks.
- "ＳＥＬ" will illuminate.
- The displayed RPM value is 1/100 of the actual RPM.
- There are 5 sequential grid points; "1" is the lowest and "5" is the highest.



(2)Turn the volume knob to select the grid point to change. Press Button① to change the RPM.
- When the grid point is changed, the RPM setting display is also changed.
- Pressing Button① advances to step(3). "ＳＥＬ" will disappear as "ＳＥＴ" will appear. The digital display (L) stops blinking & the RPM setting display will blink.



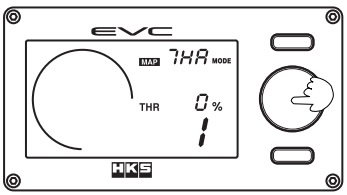
(3)Turn the volume knob and change the RPM corresponding to the grid point. When the setting is done, press the volume knob again.
- To change the other RPM settings, press Button① and go back to step(2) and repeat procedure.

Note

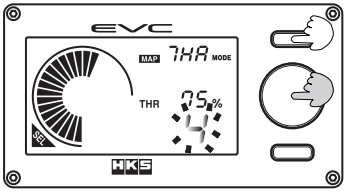
- The default grid point settings are as follows: 1: 2000rpm, 2: 3000rpm, 3: 4000rpm, 4: 5000rpm, 5: 6000rpm.
- The RPM setting range is between 0-12000rpm. Each grid point setting value should be +100rpm of the previous grid point and -100rpm of the next point.

5. 4. Throttle Axis Grid Point Set Mode

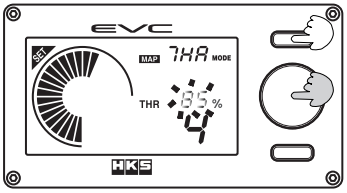
Change the throttle axis grid point (division point of the map by throttle opening %) for the map.



(1)Press the volume knob while in the RPM axis grid point set mode.
- The digital display (S) will illuminate [THR].
- The EVC will beep and the digital display (L) blinks.
- "ＳＥＬ" will illuminate.
- There are 5 sequential grid points; "1" is the lowest and "5" is the highest.



(2)Turn the volume knob to select the grid point to change. Press Button① to change the throttle opening ratio.
- When the grid point is changed, the throttle setting display is also changed.
- Pressing Button① advnaces to step(3)."ＳＥＬ" will disappear as "ＳＥＴ" appears on the display. The digital display (L) stops blinking and the throttle setting will blink.

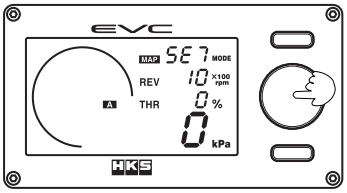


(3)Turn the volume knob and change the throttle opening % corresponding to the grid point. When the setting is done, press the volume knob again.
- To change other throttle seetings, press Button① and and go back to step(2) and repeat procedure.

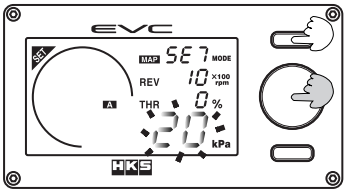
Note
- The default grid point settings are as follows: 1: 0%, 2: 25%, 3: 50%, 4: 75%, 5: 100%
- The throttle % setting range is between 0-100%. Each grid point setting value should be +1% of the previous grid point and -1% of the next grid point.

5．5．Boost Map Correction A Set Mode / Boost Map Correction B Set Mode

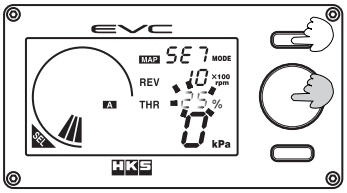
Set the boost map correction value to calculate the correction boost corresponding to the throttle and speed or RPM input for both Boost A/B modes.



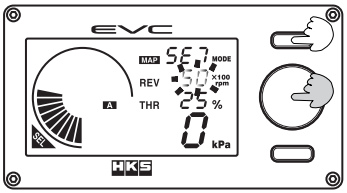
(1)Press the volume knob in the boost map correction A set mode or B set mode.
- The digital display (S) will illuminate [SET].
- The EVC will beep and the digital display (L) blink.
- "ＳＥＴ" will illuminate.
- The image on the left represents the map offset A mode when the map function mode "5" (REV=THR) is selected.



(2)Turn the volume knob to set the correction boost. When settings are complete, press the volume knob again.
- Press Button① to change the correction boost value for other axes.
- Pressing Button① advances to step(3). "ＳＥＬ" will appear as "ＳＥＴ" disappears. The digital display (L) stops blinking and the throttle % value blinks.



(3)Turn the volume knob to move the throttle opening axis. Pressing Button① will move to the RPM Axis
- Pressing Button① advances to step(4). The throttle % value turns constant and the RPM value blinks.



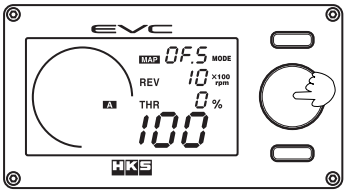
(4)Turn the volume knob to move the RPM axis. Pressing Button① will return to the correction boost default.
- Pressing Button① will revert to step(2). The RPM value will become constant and the digital display (L) will then blink.
- When all settings are done, press the volume knob.

Note

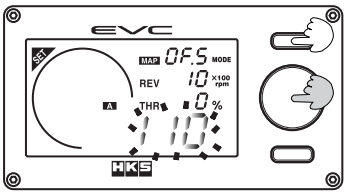
- The default correction boost value for all map grid points is ±0 kPA or ±0 PSI.
- The setting range must be within -120 kPa ～ 120 kPa or -17.0 PSI ～ 17.0 PSI.
- Avoid large value gaps between the sequential map grid points to prevent boost control instability.

5. 6. Offset Map A Set Mode / Offset Map B Set Mode

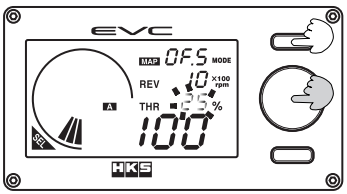
Generally not need, but precise adjustments for the set boost value of each A/B set modes corresponding to the throttle opening % and the engine RPM or speed can be done here.



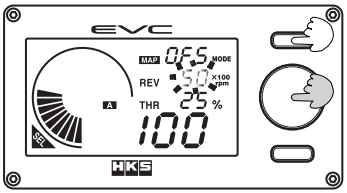
(1)Press the volume knob in the offset map A set mode or B set mode.。
- The digital display (S) will illuminate [OFS].
- The EVC will beep and the digital display (L) blinks.
- "ＳＥＴ" will illuminate
- The image on the left represents the map offset A mode when the map function mode "5" (REV=THR) is selected.



(2)Turn the volume knob to set the map offset value. When the setting is done, press the volume knob again.
- Press Button① to change the map offset value for other axes.
- Pressing Button① advances to step(3). "ＳＥＴ" will appear as "ＳＥＬ" disappears. The digital display (L) will stop blinking and the throttle display blinks.



(3)Turn the volume knob to move the throttle axis. Pressing Button① moves the RPM axis.
- Press Button① to advance to step(4). The throttle display becomes constant and the RPM value will blink



(4)Turn the volume knob to move the RPM axis. Pressing Button① will return you to the default map offset mode
- Pressing Button① will revert to step(2). The RPM value will become constant and the digital display (L) will then blink.
- When all settings are done, press the volume knob

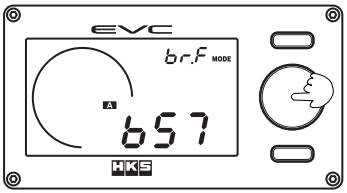
Note

- The default value for all map grid points are 100%.
- The setting range must be within 1-199%
- Avoid large value gaps between the sequential map grid points to prevent boost control instability.

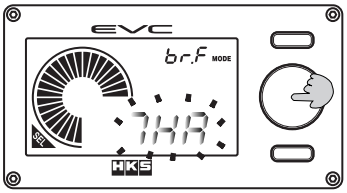
6. Function Setting Group

6. 1. Bar Graph Function Set Mode

Select the data to be displayed in the bar graph while in the standard mode.



(1)Press the volume knob in the bar graph function set mode.
- The digital display (S) will illuminate [brF].
- The EVC will beep and the digital display (L) Blinks
- "ＳＥＬ" will illuminate.



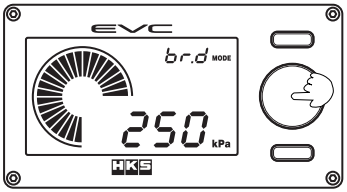
(2)Turn the volume knob to select the data function to be displayed. Press volume knob to complete setting.
- Select from the following 5 data functions:
  ｂＳＴ A / ｂＳＴ B / ＳＰｄ / ＲＥＶ / ＴＨＲ
- The default setting is ｂＳＴ A .

Note

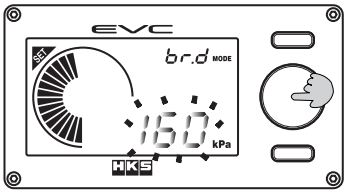
- ｂＳＴ A : Boost Display Ａ - Bar graph display range is between -100 to 250 kPA or -14.0 to 36.0 PSI.
- ｂＳＴ B : Boost Display Ｂ - Bar graph display range is between -100 to 250 kPA or -14.0 to 36.0 PSI.
- ＳＰｄ: Speed Display - Bar graph display is between 0 to 50 x 10km/h.
- ＲＥＶ: Engine RPM Display - Bar graph display range is between 0 to 120 x 100rpm.
- ＴＨＲ: Throttle % Opening Display - Bar graph display range is between 0 to 100%.

6. 2. Bar Graph Maximum Value Set Mode

Set the maximum value of the bar graph in the standard mode.



(1)Press the volume knob in the bar graph max value set mode.
- The digital display (S) will illuminate [brd].
- The EVC will beep and the digital display (L) Blinks
- "ＳＥＴ" will illuminate.



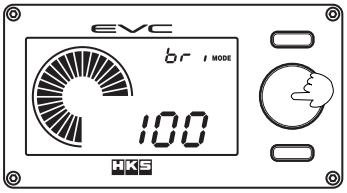
(2)Turn volume knob and select the max value to be displayed on the bar graph. When selection is done, press the volume knob again.
- The image on the left represents the ｂＳＴ setting with 160 kPa selected.

Note

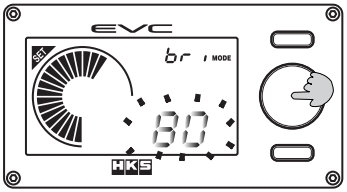
・The maximum values for each selection are as follows:
ｂＳＴ Ａ/ｂＳＴ Ｂ- 250kPa or 36.0 PSI、ＳＰｄ- 50x 10km/h、ＲＥＶ- 120x 100rpm、
ＴＨＲ- 100%.
・The minimum value of the bar graph function set mode is "0"
・The default setting is the maximum value of each respective selection.

6. 3. Backlight Brightness Set Mode

Setting the backlight's brightness.



(1)Press the volume knob while in the backlight brightness set mode.
・The digital display (S) will illuminate [br '].
・The EVC will beep and the digital display (L) blinks.
・"ＳＥＴ" will illuminate on the display.



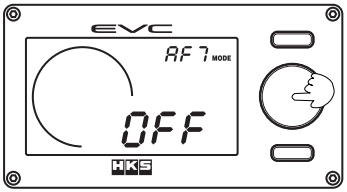
(2)Turn the volume knob to set the backlight's brightness. After your selection, press the volume knob again.
・The setting range is between 1-100% in 1% increments.
・The default setting is 100%.
・The lower the %, the dimmer the text will display.

Note

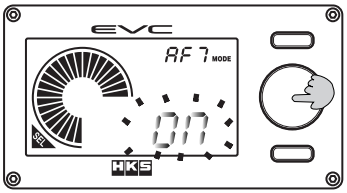
・This function is not linked to the vehicle's headlight illumination or dimmer system.

6. 4. After Image Set Mode

This mode is to set the digital display (L) to blink and show the max boost achieved for 3 seconds when the boost changes from positive pressure to negative pressure.



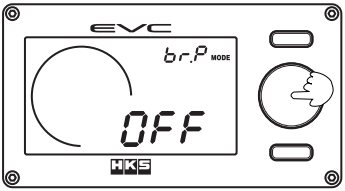
(1)Press the volume knob while in the after image set mode.
・The digital display (S) will illuminate [AF7].
・The EVC will beep and the digital display (L) blinks.
・"ＳＥＬ" will illuminate on the display.



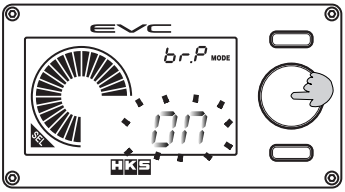
(2)Turn the volume knob to set the function ON or OFF. When the selection has been made, press the volume knob.
・The default setting is OFF.

6. 5. Bar Graph Peak Set Mode

Set the bar graph to display the peak value.



(1)Press the volume knob while in the bar graph peak set mode.
- The digital display (S) will illuminate [brP].
- The EVC will beep and the digital display (L) blinks.
- "SEL" will illuminate on the display.

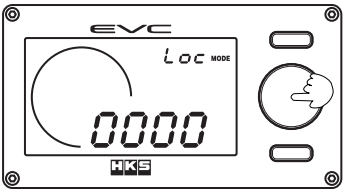


(2)Turn the volume knob to set the function ON or OFF. When the selection has been made, press the volume knob.
- The default setting is OFF.

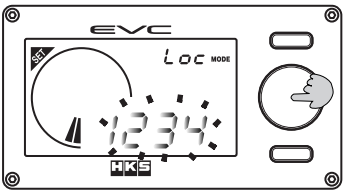
Note
- When the bar graph display value decreses, the bar point of the maximum value remains.
- When bST A or bST B is selected, only the maximum positive pressure bar point is lit.

6. 6. Data Lock Set Mode.

Set the data lock function with a personal code number to prevent any changes to the settings.



(1)Press the volume knob while in the data lock set mode.
- The digital display (S) will illuminate [Loc].
- The EVC will beep and the digital display (L) blinks.
- "SEL" will illuminate on the display.
- The digital display (L) will display the following:
  "OOOO" : No lock number is set.
  "----" : Lock number is set.



(2)Turn the volume knob to set the code number. When the code is selected, press the volume knob again to set.
- Enter the 4 digit number you would like as the code.
- To unlock, enter in the 4 digit code.
- The default setting is OOOO.

Note
- The data lock function pertains to set data in the basic setting, the map setting, and the vehicle setting groups.
- If the code number is lost for forgotten, you will need to reset the EVC accordinly to the procedures in 7.5 All Reset Mode. Please note that an All Reset will clear all inputted settings and the EVC's initial setup will need to be redone.

7. Vehicle Setting Group

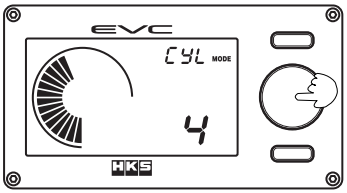
For optimum performance of the EVC, select the appropriate selects for the application.

⚠ CAUTION

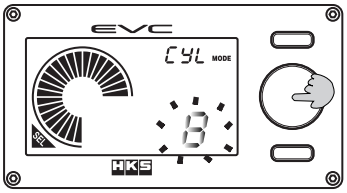
●Settings must be done with the engine OFF.

7. 1. Cylinder # Set Mode

Set the amount for the number of cylinders of engine. (For use for the RPM signal input)



(1)Press the volume knob while in the cylinder # set mode.
- The digital display (S) will illuminate [CYL].
- The EVC will beep and the digital display (L) blinks.
- "SEL" will illuminate on the display.



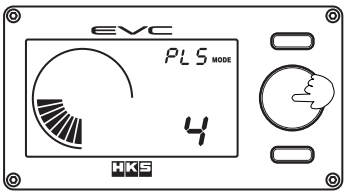
(2)Turn the volume knob to select the number of cylinders. Press the volume knob after the selection.
- Select from: 1・2・3・4・6・8 of cylinders.
- The default setting is "4" for 4 cylinders.

Note

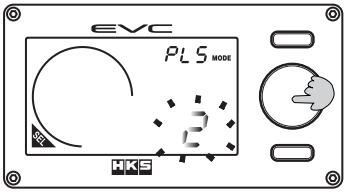
・For rotary engines, select "4" for 2rotor engines and "6" for 3rotor engines.

7. 2. Speed Pulse Set Mode

Set the speed pulse for the speed signal input.



(1)Press the volume knob while in the speed pulse set Mode.
- The digital displau (S) will illuminate [PLS].
- The EVC will beep and the digital display (L) blinks.
- "SEL" will illuminate on the display.



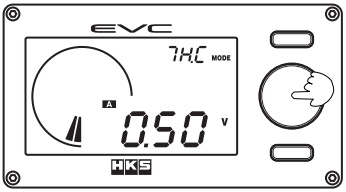
(2)Turn the volume knob to select the speed pulse setting. Press the volume knob after the selection.
- Select from: 2・4・8・16 pulses.
- The default setting is "4" pulses.

Note

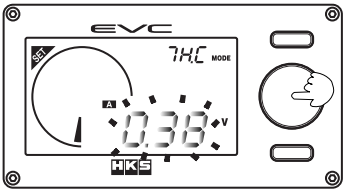
・For Nissan Y32 Gloria / Cedric use setting 16, for Y32 Cima use setting 8 and for all other Nissan vehicles use setting 2. For other JDM vehicles use setting 4.

7．3．Throttle-Off Voltage Set Mode

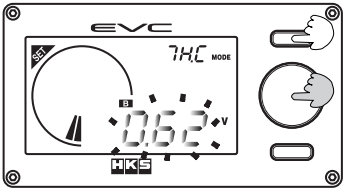
To use the throttle signal input of the EVC, you must set the Throttle-Off voltage value.



(1)Press the volume knob while in the Throttle-Off set mode.
- The digital display (S) will illuminate [THC].
- The EVC will beep and the digital display (L) blinks.
- "ＳＥＴ" will illuminate on the display.



(2)The current throttle voltage is displayed. When the **A** icon is illuminated, the voltage will be automatically determined. To ensure that the throttle is completely closed, step on the accelerator pedal and then release. After confirming that it is closed, press the volume knob to set the value.
- The EVC will beep and the voltage value is now set.

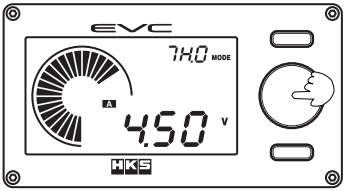


(3)The throttle-off voltage value can also be manually inputted. Press Button① and the **B** icon will now illuminate, indicating you are in manual mode. Turn the volume knob to select the closed voltage and press the volume knob to set.
- The EVC will beep and the voltage value is now set.

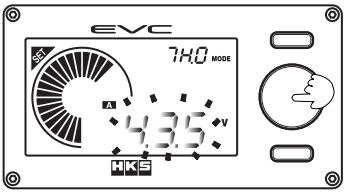
Note
- The default value is ０．５０Ｖ.

7．4．Full Throttle Voltage Set Mode

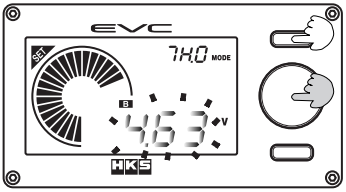
To use the throttle signal input of the EVC, you must set the Full Throttle voltage value



(1)Press the volume knob while in the Full Throttle set mode.
- The digital display (S) will illuminate [THO].
- The EVC will beep and the digital display (L) blinks.
- "ＳＥＴ" will illuminate on the display.



(2)The current throttle voltage is displayed. When the **A** icon is illuminated, the voltage will be automatically determined. With the engine OFF, firmly step on the accelerator pedal until it reaches the stopper. After confirming that it is fully open, press the volume knob to set the value.
- The EVC will beep and the voltage value is now set.

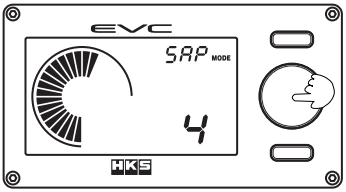


(3)The full throttle voltage value can also be manually inputted. Press Button① and the B icon will now illuminate, indicating you are in manual mode. Turn the volume knob to select the open voltage and press the volume knob to set.
・The EVC will beep and the voltage calue is now set.

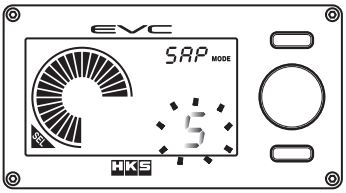
Note
・The default value is ４.５０Ｖ.

７. ５. Sampling Rate Set Mode

Generally not needed, but the sampling rate mode of the stepping motor can be adjusted if boost value is unstable and fluctuating above and below the target boost value.



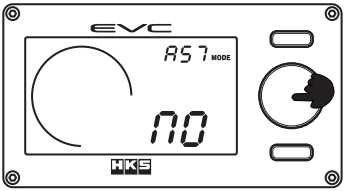
(1)Press the volume knob while in the Sampling Rate Set Mode.
・The digital display (S) will illiminate [SAP].
・The EVC will beep and the digital display will blink.
・"ＳＥＬ" will illuminate on the display.



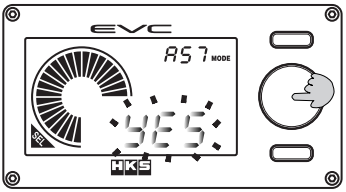
(2)Turn the volume knob to select the sampling rate value. After selection has been made, press the volume knob to set value.
・Select from １・２・３・４・５ sampling rates.
・The default setting is sampling rate ４.

７. ６. All Reset Mode

Reset all user set values to the default setting values.



(1)Press the volume knob for more than 1 second while in the all reset mode.
・The digital display (S) will illuminate [RST].
・The EVC will beep and the digital display (L) blinks.
・"ＳＥＬ" will illuminate on the display.



(2)Turn the volume knob to select "ＹＥＳ" or "ＮＯ". When the selection is made, press the volume knob to set.
・When selecting "ＮＯ", reset is NOT done and the digital display (L) stops blinking.
・When selecting "ＹＥＳ", all user set values are reset to default setting values. Following this step, go back to section 2 to redo the intial setup.

Note
・Use this mode to reset initial settings or when the lock code is lost or forgotten.

Optional Parts List

Below is a list of universal option parts. For additional items and vehicle specific EVC install kits, contact your authorized HKS dealer or www.hksusa.com/evccomponents.

No.	Part No.	Description	Remarks
1	TBA	HKS Easy Writer Software	
2	90461-010004	6mm Hose	1 ft. increments
3	90461-010006	4mm Hose	1 ft. increments
4	4599-RA011	Swing Value Hose Set	Required for Swing Valve install *Included with EVC
5	1499-RA069	4mm Rubber Cap	each
6	1499-RA070	6mm Rubber Cap	each
7	53002-AK001	Display Stand	
8			

Maintenance

⚠ Caution

●Do not operate this unit in any manner not desribed in the user manual. Consult and HKS Dealer if you are unsure.

●Replace the vacuum filter before the regular interval if the dirt build up is excessive. Dirt build up in the air filter can cause unstable boost control which may lead to engine damage.

●Inspect the vehilce daily for optium operating conditions.

●Clean hands and remove any oil or dirt before handling the product to prevent any possible discoloration of the outer case.

●To clean the EVC, do not use solvents such as alcohol, thinner, benzene, glass cleaner or oil. Clean the unit with a dry soft cloth.

●If dirt in the vacuum filter builds up in an extremely short period of time, replace the hose outlet on the vehicle side.

●If the vacuum filter still becomes dirty easily after replacement of the hose outlet it may be a result of an issue with turbo or engine.

Trouble Shooting

Refer to the below trouble shooting guide to remedy any issues that you may have.

Symptoms	Cause	Solution
No power; EVC doesn't turn on	Bad 12V connection	Check for correct power and ground points
	Bad ground connection	Check wire connections and ground surface
Error message on display	Bad unit communication(１) (Err Ｎｏ.００１)	Turn ignition ＯＦＦ. Check valve and harnesses are connected properly and then turn the ignition ＯＮ again
	Bad unit communication(２) (Err Ｎｏ.１００)	Check that each harness is connected properly and not effected by vibration
Boost can not be stabilized / Boost can not reach target boost	Actuator incapacity Insufficent valve area/stroke Insufficent turbo output capacity	Check the vehicle / engine's specifications and charateristics and set the appropriate data settings
	Only the primary turbo is operating (sequential twins)	Check the operation of the secondary turbocharger
Uncontrollable boost	Incorrect initial setup	Do a Reset All and redo the Initial Setup
	Incorrect exhaust bypass valve type selected	With the EVC display ＯＮ,check that the correct exhaust bypass valve type is selected
	Hose is cracked or come off	Check hoses, replace if necessary
	Vacuum filter is blocked	Replace the vacuum filter
Warning function works improperly in scramble	Warning value is lower than set boost	Adjust warning set value accordingly
	Scramble value is too high	Decrease the scramble set value
Set values can not be changed	Data lock function is active	Unlock the data lock function

Product Specifiations

●Operating Voltage……ＤＣ１１～１６Ｖ
●Pressure Control Capacity……Baseline Boost～２５０ｋＰａ
●Operating Temperature
・　・　Display Unit……－１０℃～７０℃
　　Stepping Motor……－３０℃～８０℃
●Max. Electrical Power Consumption ……５.０Ｗ

～MEMO～

EVC Set-Up Sheet

Set-Up Date:

Make / Model :	Chassis :	Year :	Engine Code :
Vehicle Notes:			

Initial Set-Up

Unit of Measure	kPa・PSI	Exhaust Bypass Type	SW・PO
Max. Standard Boost	kPa/PSI	Target Boost	kPa/PSI
Correction Coefficient	%		

Boost Mode Values

A Mode Boost	kPa/PSI	B Mode Boost	kPa/PSI

Basic Settings

Offset A	%	Offset B	%
Scramble Boost	kPa/PSI	Scramble Time	S
Warning Boost	kPa/PSI	Boost Drop	kPa/PSI

Map Settings

Map Function	1・2・3・4・5・6

1:Off (No Map)／2:Throttle Correction／3:RPM Correction／4:Speed Correction
5:RPM + Throttle Correction／6:Speed + Throttle Correction

Boost Map Correction A

RPM or Speed Input / Throttle % Input		1	2	3	4	5
		rpm km/h	rpm km/h	rpm km/h	rpm km/h	rpm km/h
1	%	kPa/PSI	kPa/PSI	kPa/PSI	kPa/PSI	kPa/PSI
2	%	kPa/PSI	kPa/PSI	kPa/PSI	kPa/PSI	kPa/PSI
3	%	kPa/PSI	kPa/PSI	kPa/PSI	kPa/PSI	kPa/PSI
4	%	kPa/PSI	kPa/PSI	kPa/PSI	kPa/PSI	kPa/PSI
5	%	kPa/PSI	kPa/PSI	kPa/PSI	kPa/PSI	kPa/PSI

Boost Map Correction B

	1	2	3	4	5
1	kPa/PSI	kPa/PSI	kPa/PSI	kPa/PSI	kPa/PSI
2	kPa/PSI	kPa/PSI	kPa/PSI	kPa/PSI	kPa/PSI
3	kPa/PSI	kPa/PSI	kPa/PSI	kPa/PSI	kPa/PSI
4	kPa/PSI	kPa/PSI	kPa/PSI	kPa/PSI	kPa/PSI
5	kPa/PSI	kPa/PSI	kPa/PSI	kPa/PSI	kPa/PSI

Offset Map A

	1	2	3	4	5
1	%	%	%	%	%
2	%	%	%	%	%
3	%	%	%	%	%
4	%	%	%	%	%
5	%	%	%	%	%

Offset Map B

	1	2	3	4	5
1	%	%	%	%	%
2	%	%	%	%	%
3	%	%	%	%	%
4	%	%	%	%	%
5	%	%	%	%	%

Function Settings

Bar Graph Function	bST A bST B SPd ▪▪ REV ▪▪ THR
bST A :Boost Mode A ／ bST B :Boost Mode B	
SPd:Vehicle Speed／REV:Engine RPM／THR:Throttle Position %	

Bar Graph Max Value		Backlight Brightness	%
After Image	ON・OFF	Bar Graph Peak	ON・OFF
Data Lock Code			

Vehicle Settings

# of Cylinders	Cylinders	Vehicle Speed Pulse	Pulses
Throttle-Off Voltage	V	Full-Throttle Voltage	V
Sampling Rate			

～MEMO～

Pursuing the Ultimate in Engine Performance and Efficiency.
Produced by HKS Company Limited.