



NOTICE

Thank you for purchasing the HKS VALCON type RB26. For safe usage and understanding of functions of the product, read operation and installation manuals before installation and use.

PRODUCT	VALCON type RB26			
USE	HKS RB26 V CAM SYSTEM CONTROL DEVICE.			
PART No.	45011-AN001			
APPLICATION	Vehicle	Engine	Model	Year
	SKYLINE GT-R	RB26DETT	BNR32	1989.08 - 1994.12
			BCNR33	1995.01 - 1998.12
			BNR34	1999.01 - 2002.08
REMARKS	<ul style="list-style-type: none"> The HKS Pressure Sensor Super Wide Range and HKS Pressure Sensor + Intake Air Temperature Sensor Harness and PowerWriter Communication Cable are available separately. The following is required to use this product: PC that meets the minimum requirements for the VALCON EasyWriter software, access to the internet, and PowerWriter Communication Cable. 			

VALCON type RB26 is a device to control the variable valve timing function of HKS RB26 V CAM SYSTEM. This device allows valve timing settings to be made via an internal 3D map. Setting the valve timing in accordance with the vehicle specifications can improve engine response and output. The VALCON included in the HKS RB26 V CAM SYSTEM has data that is preprogrammed using an optional HKS Pressure Sensor Super Wide Range which uses a 3D map with the vertical axis as the pressure value. This operation manual explains how to install the VALCON using the HKS Pressure Sensor and how to edit the VALCON settings using the EasyWriter software. If a non HKS Pressure Sensor is used or the 3D map's vertical axis is not a pressure value. The optional HKS Pressure Sensor Super Wide Range is available separately. The optional HKS Pressure Sensor Super Wide Range and Pressure Sensor Harness (Pressure Sensor + Intake Air Temperature Sensor Harness) must be purchased if a pressure sensor was not previously installed.

- This manual indicates items that require careful attention in order to install this product safely, and lists precautions to avoid any possible damage and/or accidents.
- For any lost, defective and/or damaged parts, contact your retailer/dealer to order.
- HKS will not be held responsible for any damage caused by incorrect installation, mishandling, and/or misuse, nor for damages caused by modifications to or dismantling of this product.
- HKS will not be held responsible for any damage caused by the removal of the vehicle's interior, exterior, electric parts or modification for installation.
- This product was designed for and tested on a factory-spec vehicle or a vehicle equipped with other HKS products. Performance and/or safety cannot be guaranteed if this product is installed onto other inapplicable vehicles.
- This product will only operate on a Japanese vehicle with DC12V negative ground.
- The specifications of this product are subject to change without notice.
- This manual is subject to be revised without notice.
- This product is designed for use in Japan only. It must not be used in any other country.

INDEX

Notice	1	After Installation	6
Index	2	Control State	7
Safety Instructions	2	Setting	7
Parts List	2	After Starting the Engine	8
Name & Functions	3	Option Parts List	8
Downloading from the HKS website	3	Maintenance	8
Installation	3	Troubleshooting	8
Vehicle Specified	3	Repair Service	8
Wiring Diagram	6	Product Specifications	8
		Instruction Manual Revision History	8

SAFETY INSTRUCTIONS

- WARNING**
- Make sure to work on the vehicle in a well-ventilated area to prevent possible explosion or fires.
 - To avoid possible accidents, do not mount the unit in areas where the driver may become distracted during driving.
 - Do not install this product on a 24V vehicle. It may cause a fire.
 - Make sure to disconnect the cable from the negative terminal of the battery to avoid possible damage to other electronics parts and/or a fire caused by a short circuit.
 - Make sure to hold and remove wiring connectors properly to avoid possible damage to other electronic parts and/or a fire caused by disconnection or a short circuit.
 - Cease use of the product if any unusual situation is noticed. Consult your retailer/dealer immediately.
 - Do not operate this product while driving to avoid possible accident.

CAUTIONS

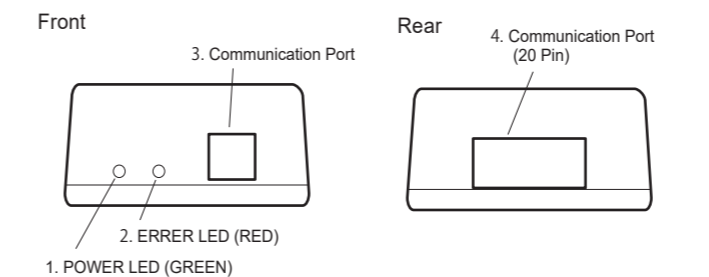
- Do not install this product by yourself unless you have and know how to use the tools and equipment necessary to safely perform service operations on your vehicle.
- Do not modify, disassemble, and/or repair the product and supplied parts to avoid any damage to the unit and/or wiring harness.
- Handle the parts with extra care at all times.
- Avoid allowing oil and/or water from entering the unit. It may cause damage to the engine.
- To avoid possible malfunction and damage to the engine, install the unit away from areas of excessive heat or water/moisture.
- Make sure all connections and wiring are not disconnected, short circuited, or incorrect. If so, it may cause an electric shock, short, or damage to the vehicle.
- Do not test the product on a public road.
- If the product or the vehicle with the product does not operate properly, consult your retailer/dealer immediately.
- Do not try to repair the product by yourself.
- If unusual noises, scents, and/or vibration is noticed, consult your retailer/dealer immediately.
- Make sure all connections and wiring are correct. Incorrect connections and wiring may lead to product malfunction and damage to the engine.

PARTS LIST

1 CONTROL UNIT 1	2 MAIN HARNESS 1	3 SENSOR HARNESS 1	4 SPLICE 8
5 TIE WRAP 5	6 OPERATION MANUAL 1		

NAMES & FUNCTIONS

1. NAMES



- POWER LED (GREEN)**
ON: Camshaft is controlled by the target valve timing.
Blink: Camshaft is controlled by the most retard angle, or stop the engine.
OFF: Error LED blinks or the ignition is off.
- ERROR (RED)**
Blink: Error occurs.
OFF: Normal operation or the ignition is off.
- Communication Port**
Connector to connect a PC and main unit when editing data using VALCON EasyWriter installed to a PC.
- Connector (20 Pin)**
Connector to connect a main harness and main unit.

DOWNLOADING FROM HKS WEBSITE

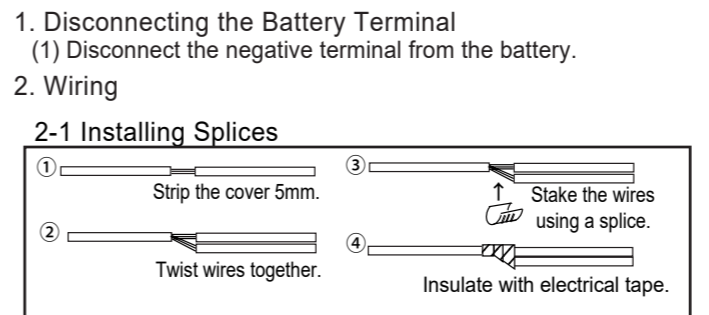
Download the following file from the HKS website : (<http://www.hks-power.co.jp>)

- VALCON2 EasyWriter (EasyWriter)
- VALCON2 Instruction Manual (EW Manual)
- VALCON RB26 Data (STEP1, STEP2, STEP Pro)

Install the EasyWriter software referring to the EasyWriter's manual.

INSTALLATION

- WARNING**
- Do not use for an engine, which piston and valve contact in the camshaft variable range. The vehicle may be damaged.
 - The camshaft provided with the HKS RB26 V CAM SYSTEM must be used with the VALCON. If any other camshaft is used, it may cause damage to the engine.

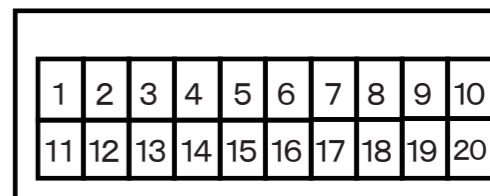


- Strip 5mm of the wire cover for wiring as shown above.
- Connect another wire to the uncovered portion, and twist the wires together.
- Stake the twisted wires using a splice.
- Cover the spliced wires with electrical tape to insulate.

3. VALCON Input And Output Signal

3.1 Connectors of VALCON Unit

Figure of VALCON Unit connector from pin inserted side.



20 pin connector (Wire colors of Main Harness)

No.	Description	Color	Description
1	IG	Red	Ignition power supply
2	+5V	Yellow/White	5V power supply for pressure sensor
3	1°	Gray	1° signal input
4	V CAM +	Yellow	V CAM signal input
5			Not used
6	AFM/OP IN	Purple	Air flow sensor input / Option input
7	BOOST	Blue	Pressure sensor input
8			Not used
9	SOL	Green	Solenoid output
10			Not used
11	GND	Black	Control ground
12	GND	Green	Pressure sensor ground
13	120°	Orange/White	120° signal input
14	V CAM -	Yellow/Black	V CAM signal ground
15			Not used
16	THROTTLE	Pink	Throttle sensor input
17	WATER	Light Blue	Water temperature sensor input
18			Not used
19	SOL GND	Green/Black	Solenoid ground
20	POWER GND	Black/White	Power ground

3.2 Sensor Harness 6pin connector

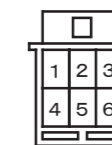


Figure of Sensor Harness 6pin connector from pin inserted side.

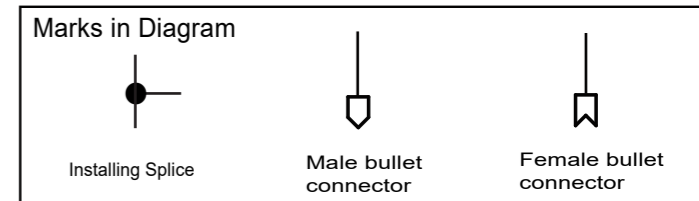
6 pin connector (Wire colors of Sensor Harness)

No.	Description	Color	Description
1	V CAM +	Yellow	V CAM signal input
2			Not used
3	SOL	Green	Solenoid output
4	V CAM -	Yellow/Black	V CAM signal ground
5			Not used
6	SOL GND	Green/Black	Solenoid ground

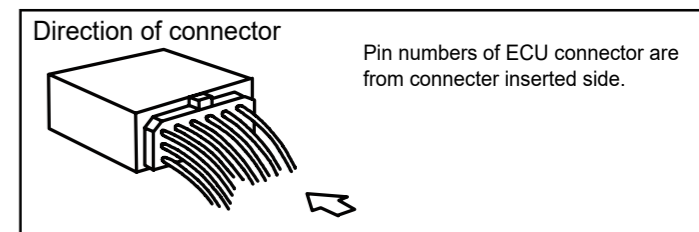
4. Wiring Diagram

4.1 Marks in Diagram

Following marks are used in wiring diagram.

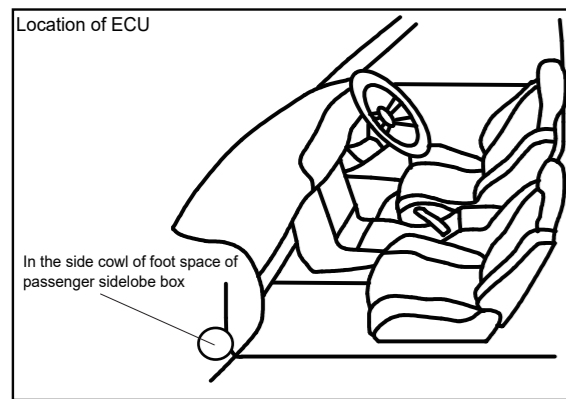


4.2 Diagram of connector



5. Location of ECU

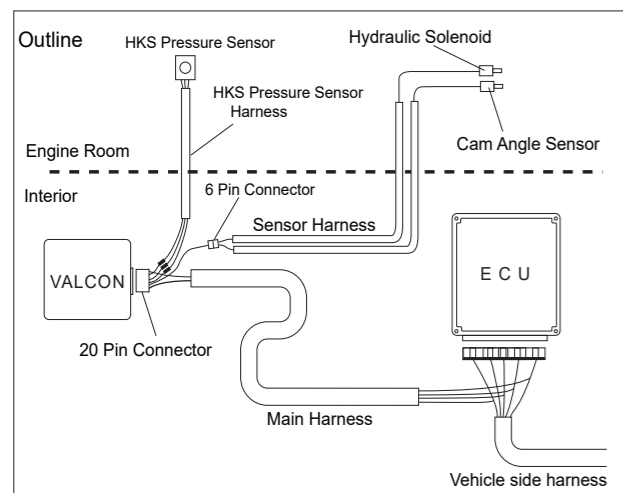
Refer to the figure below to confirm location of the ECU.



6. Wiring

Connect the Universal Harness 1 using splices and bullet connector.

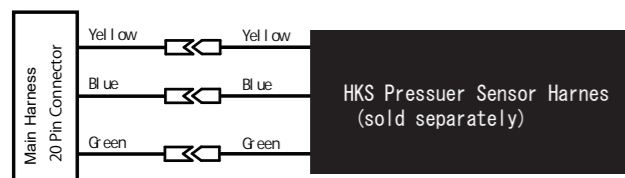
6.1 Wiring Outline



6.2 Wiring

- Connect the sensor harness connector to the hydraulic solenoid and the camshaft angle sensor which are installed onto the engine.
- Route the 6 pin connector side of the sensor harness from the engine compartment to the vehicle's interior.
- When securing wires in the engine room with a tie wrap, leave extra slack for wiring to absorb the engine vibration.
- Refer to "5. Location of ECU" and make sure the location.
- Refer to the wiring diagram and connect with splice or solder.
 - If hand tool to clamp splice is not available, clamp with needle nose pliers and solder the splice and the wire. Then, make sure that the wire does not come out from the splice.
- Insulate the connected portions with tape to prevent short circuit.
- Connect the yellow, blue and green wires from the HKS Pressure Sensor Harness to the corresponding wires of the Universal Harness 1. If the HKS Pressure Sensor has already been installed, or if a non HKS Pressure Sensor is used, connect the blue wire of the Universal Harness 1 to the output signal of the pressure sensor.

※When the optional HKS Pressure Sensor Super Wide Range + Intake Air Temperature Sensor Harness is used, the gray wire of the intake Air Temperature Sensor is not used. Insulate the gray wire if it's not used for any other purpose.



- Insulate unused wires with tape to prevent short circuit.
- Connect 6 pin connector of Sensor Harness to Main Harness.
- Connect 20 pin connector of Main Harness to VALCON unit.

7. Mounting the Unit

- Decide mounting position of VALCON with consideration of length of the harness.
- Fix harness with tie wraps.

8. Complete the Installation

- Reinstall all removed factory parts.
- Reconnect the negative terminal to the battery.

VEHICLE SPECIFIED WIRING DIAGRAM

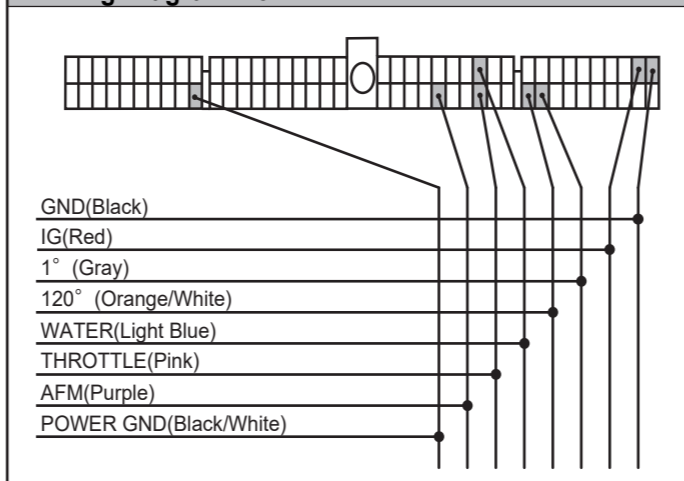
Reference the appropriate wiring diagram for your vehicle by using the table below.

The diagram below is the view of the vehicle's ECU connector from the side of the terminal inserts.

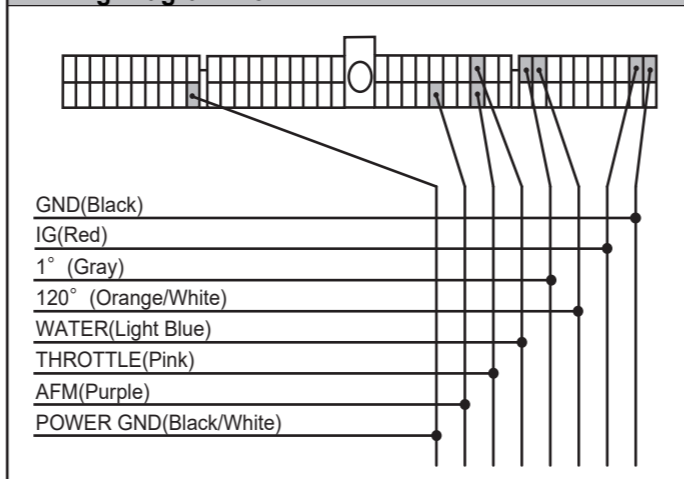
Wiring Diagram No. list

Maker	Vehicle	Model	Year	Diagram No.
NISSAN	SKYLINE GT-R	BNR32	1989.08 - 1994.12	N1
		BCNR33	1995.01 - 1998.12	N1
		BNR34	1999.01 - 2002.08	N2

Wiring Diagram No. N1



Wiring Diagram No. N2



AFTER INSTALLATION

1. Check the following before starting the engine:

CHECK POINTS	CHECK
Make sure all wiring is correct.	
Make sure splices are connected securely.	
Make sure connectors are connected securely.	
Make sure insulation is done properly.	
Make sure the harness is not pinched at any place.	
Make sure the wiring harnesses and installed components do not disturb the driver.	
Make sure the wiring harnesses and installed components are not in contact with other parts of the vehicle.	
Make sure all removed factory parts are reinstalled.	
Make sure the negative cable terminal is securely attached to the battery.	

CONTROL STATUS

The status of the camshaft control such as the most retard angle, target valve timing, and error is indicated by LED.

LED is mounted in the case. Check the LED from the front side.

- Most Retard Angle Control**

Green power LED blinks every second.

The most retard angle control is performed when one or more conditions below are established:

 - Engine stops.
 - The first 10 seconds after the engine starts.
 - Water temperature is lower than the set temperature to start controlling. (Initial set temperature is 60°C.)
- Target Valve Timing Control**

Green power LED comes on.

All of the following conditions are established.

 - 10 seconds or more after the engine starts.
 - Water temperature is higher than the set temperature to start controlling.
- Error Control**

Red error LED start blinking ever 0.5 second after it is off for 2 seconds. The number of blinking times indicates the error detected.

 - 1° No signal input
 - 120° No signal input
 - V CAM No signal input
 - Solenoid abnormal current

Number of blinking time	Error	Items to check
1	1° No signal input	1° signal disconnected, improper connection
2	120° No signal input	120° signal disconnected, improper connection
3	V CAM No signal input	V CAM signal disconnected, improper connection
4	Solenoid abnormal current	Solenoid output disconnected, improper connection

SETTING

Use EasyWriter to write the downloaded data to VALCON. Turn off the IG power once, turn on the IG power again, Read the data using the EasyWriter to confirm if the VALCON's map and parameter settings are correct for the vehicle. If the data is not correct, edit the map and/or parameter settings based on the vehicle's specification(s).

- Always have a professional edit the map and/or parameter settings.
- Read the manual on how to use the EasyWriter software.

WARNING

- If the VALCON map and/or the parameter settings are not appropriate, the vehicle may become damaged.

1. VALVE TIMING VARIABLE RANGE SETTING

Input the most retard and advance angle of the intake map using the EasyWriter.

- Enter the valve timing value at the most retard angle that is obtained by the actual measurement.
- Input the value that is subtracted from the variable angle of the most retard angle on the map to the most advance angle on the map.
 - Variable Angle 30°: RB26 STEP1
 - Variable Angle 50°: RB26 STEP2 / RB26 STEP Pro

2. VALVE TIMING INDICATOR ADJUSTMENT

Adjust the Valve Timing indicator at idle after the engine has reached its normal operating temperature.

- Set the water temperature to start controlling to 150°C, and select the most retard angle control using EasyWriter.
- Check the Valve Timing value on the monitor using the EasyWriter. If the value is out of the range(±3°), adjust the Valve Timing value by inputting or changing the Offset value.
- Set the water temperature to start controlling to the initial temperature (60°C) or optional controllable temperature using EasyWriter.

AFTER STARTING THE ENGINE

Do not raise engine RPM right after starting the engine. Let the engine idle and warm up to standard operating temperature.

CHECK POINTS	CHECK
Make sure the POWER LED is steadily lit or blinking.	
Make sure the installed parts are not coming into contact with each other.	
Make sure there is no excessive stress on harnesses.	
Make sure there are no loose parts after turning off the engine.	

OPTION PARTS LIST

PART No.	PRODUCT
4299-RA008	Press.Sensor Super Wide Rang
4299-RA016	Press.Sensor+Intake Air Temp.Sensor Harness
42999-AK010	PowerWiter Communication Cable

MAINTENANCE

CAUTION

- Inspect the vehicle daily for optimal driving condition.
- Consult an expert to carry out the operations not shown in this manual.

- Clean your hands and remove dirt and oil before handling this product. It may cause discoloration to the case.
- When cleaning this product, do not use solvents such as alcohol, thinner, benzene, glass cleaner, and oil. Wipe off dirt with a dry soft cloth.

TROUBLESHOOTING

SYMPTOM	CAUSE	COUNTERMEASURE
The unit does not turn on.	Bad Connection.	Make sure each connector is connected properly.
Engine does not start smoothly.	Incorrect wiring.	Make sure all wiring is done correctly.
Idling unstable.	Bad contact.	Make sure wiring connections.

WARNING

- Do not use this product if any unusual noises or scents are detected. Consult your Authorized HKS Dealer immediately. Otherwise, it may cause electric shock or fire.

CAUTION

- Do not try to repair the product by yourself. Consult your Authorized HKS Dealer.
- If any unusual noises, scents, and/or vibrations are noticed while driving, please refer to the factory repair manual.

REPAIR SERVICE

- For questions about this product or for any optional, lost, defective and/or damaged parts, please contact your Authorized HKS Dealer.

PRODUCT SPECIFICATIONS

- Operating Voltage..... DC10~16V
- Operating Temperatures..... -10~70°C
- Maximum Electrical Power Consumption..... 1.2W

INSTRUCTION MANUAL REVISION HISTORY

Ver.	DATE	CONTENT
3-1.01	2022/7	1st Edition