

# SUPER FIRE RACING COIL PRO

## INSTRUCTION MANUAL



NAME OF PRODUCT	SUPER FIRE RACING COIL PRO	
USAGE	Automotive parts	
MANUAL NUMBER	E05341-N20010-00	
PART NUMBER	43005-AN004	43005-AN005
APPLICATION	NISSAN SILVIA(E-KPS13、E-PS13、E-S14、E-CS14) NISSAN 180sx(E-RPS13、E-KPS13)	NISSAN SILVIA(GF-S15)
ENGINE	SR20DET ※Cannot be installed except for vehicles equipped with SR20DET. ※If the installed engine is replaced, it matches the actual installed engine. Please select the product you want. If the engine has been replaced, make sure that the harness has also been replaced.	
REMARKS	<ul style="list-style-type: none"> <li>•This instruction manual is for using F-CON V Pro 3.4 for the ECU. When using other ECUs, please refer to the instruction manual of the ECU to be used for installation and setting.</li> <li>•This Product was designed by a JDM vehicle and has not been tested with other market model yet.</li> <li>•After installing this product, the genuine plug cover cannot be installed.</li> </ul> Do not allow the ignition coil to be exposed to rain or water directly. •Use with HKS spark plug is recommended.	

### REVISION OF MANUAL

Ver.	Date	Details
3-1.01	2022/4	1st Edition

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## NOTICE

This manual assumes that you have and know to use the tools san equipment necessary to safety perform service operations on your vehicle.

This manual assumes that you are familiar with typical automotive systems and basic service and repair Procedures. Do not attempt to carry out the operations shown in this manual unless these assumptions are correct.

Always have access to a factory repair manual. To avoid injury, follow the safety precautions contained in the factory repair manual.

## IN REGARD TO MANUAL AND PRODUCT

- This manual indicates items that require careful attention in order to install this Product safety, and lists precautions to avoid any possible damage and/or accidents.
- 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.
- HKS will not be held responsible for any damage caused by faulty installation, mishandling, nor for damages caused by modifications to or dismantling of this Product.
- This specification 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.

SAFTY INSTRUCTIONS



**Warning** Indicates risk of serious injury and/or possible death.



**Caution** Indicates risk of serious injury or property damage.

## Parts List

No.	Description	Qty	Remarks	
			43005-AN004	43005-AN005
1	SR Ignition coil	4		
2	Ignition coil harness	1		
3	Bracket fixing bolt	4	Red M5×15	
4	Coil Bracket	1		
5	Hexagon bolt with flange	4	M6×40	
6	Hex high nut	4		
7	Hex nut with flange	4		
8	Bracket fixing hexagon support bolt	1	Red M6×15	
9	Hexagonal support	1	Short×1	Long×1
10	Coil Spacer	4	Large×4	Small×4
11	O-RING	4	Large×4	Small×4
12	Tie wrap	3		
13	Manual	1		
14	Power transistor conversion harness	1	43005-AN004 only included	

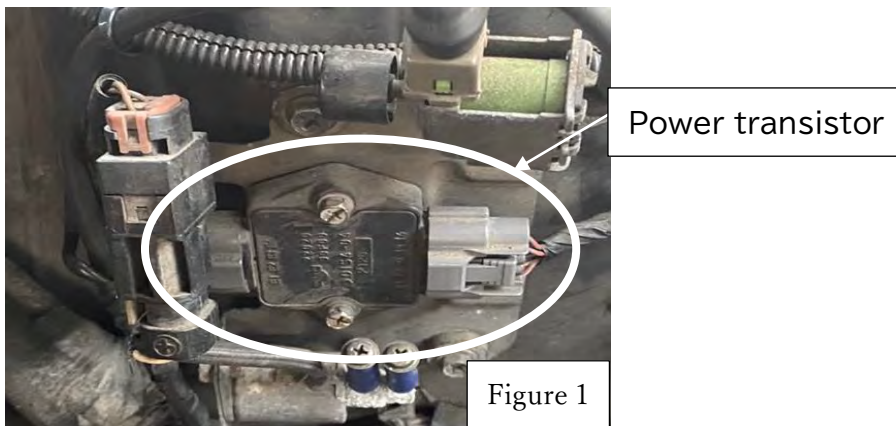
# 1. Installation



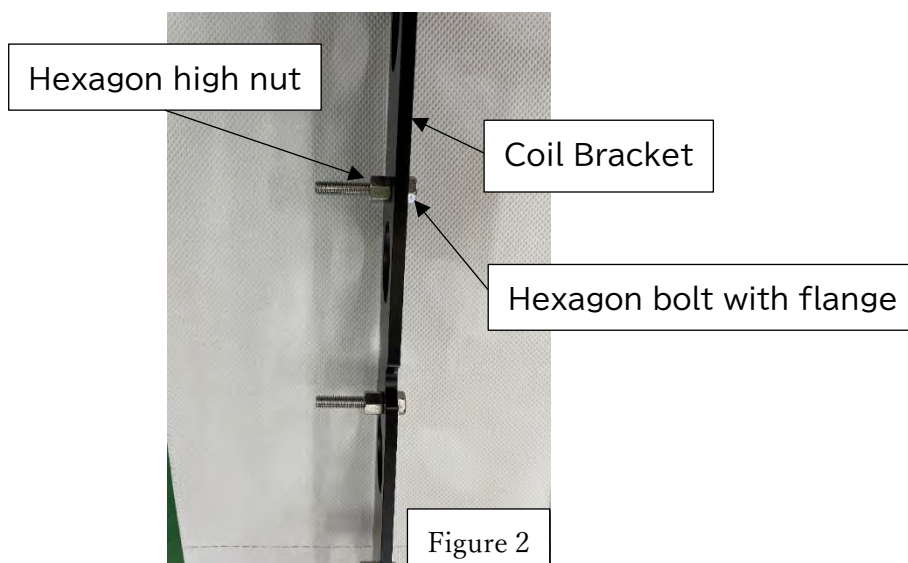
## Caution

·Be sure to perform the work according to the service manual and the instructions issued by the manufacturer.

- (1) Disconnect the cable terminal from the negative terminal of the battery.
- (2) Remove the genuine timing belt cover, ignition coil harness, and ignition coil.
- (3) For vehicles with S13 and S14 engines, remove the power transistor. (Figure 1)  
Then attach the power transistor conversion harness.  
Insert it firmly until the connector clicks.



- (4) Attach the flanged bolt (M6 x 40) and hexagonal high nut to the coil bracket. (Figure 2) (Tightening torque  $11.3 \pm 1.2$  N·m)



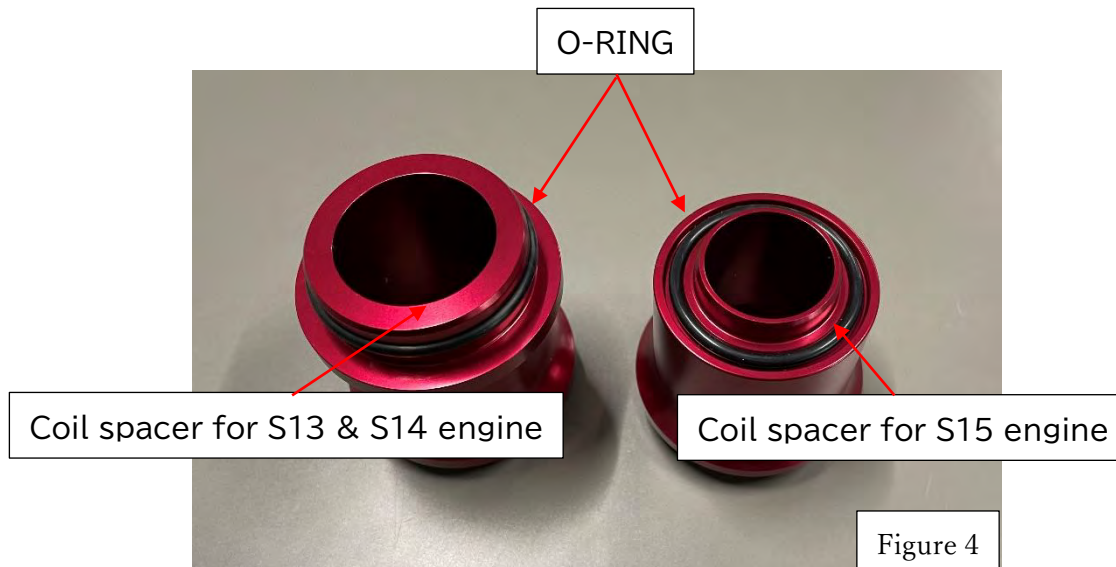
(5) Fix the hexagonal column to the engine head. (Figure 3)

(Tightening torque  $5.1 \pm 0.5 \text{N}\cdot\text{m}$ )



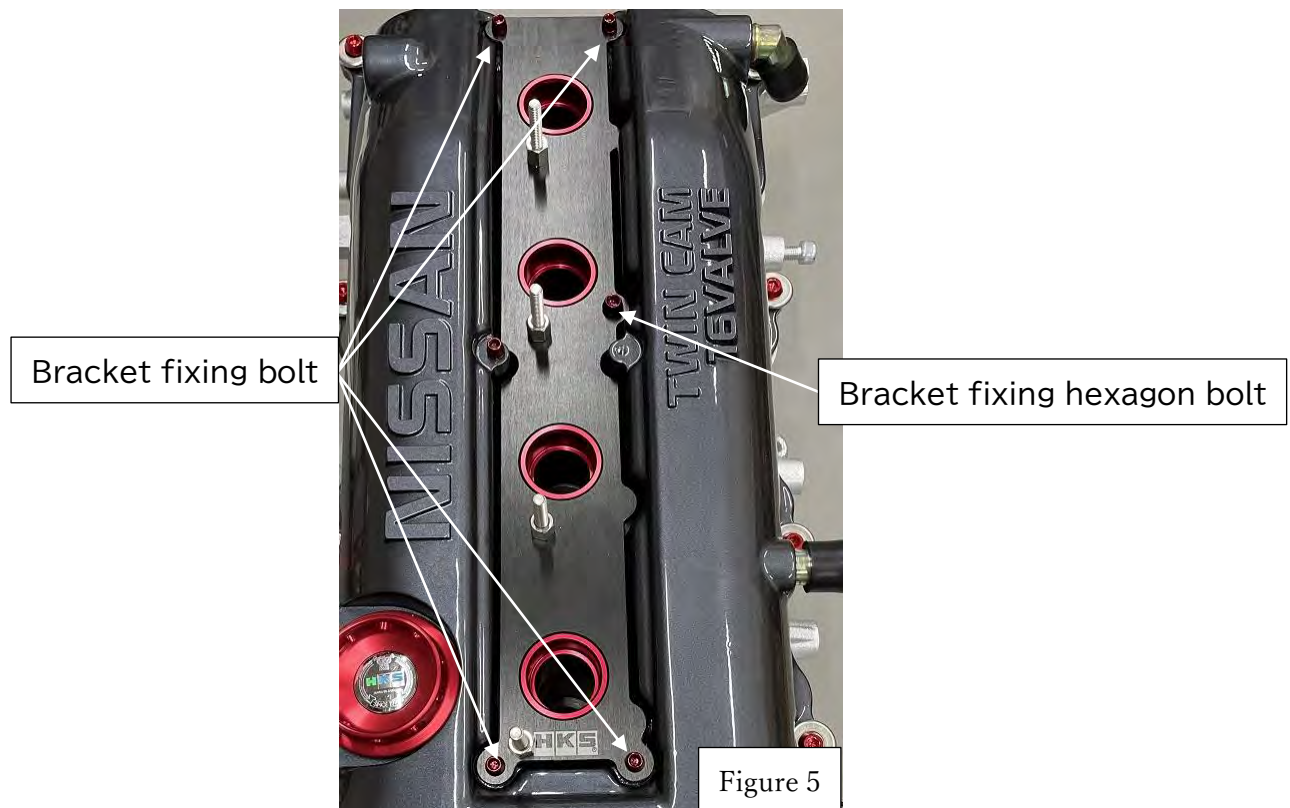
(6) Apply silicone grease to the O-RING and attach it to the coil spacer. (Figure 4)  
Then attach it to the engine head. At this time, attach it straight to the engine head.

If it is not installed properly, the waterproof effect will be impaired.



- (7) Temporarily tighten the coil bracket from the bracket fixing hexagonal support bolt, and then fix it with the bracket fixing bolt (M5 x 15) so that the bracket can be attached horizontally little by little. (Figure. 5)

(Tightening torque  $3.5 \pm 0.3 \text{N}\cdot\text{m}$ )

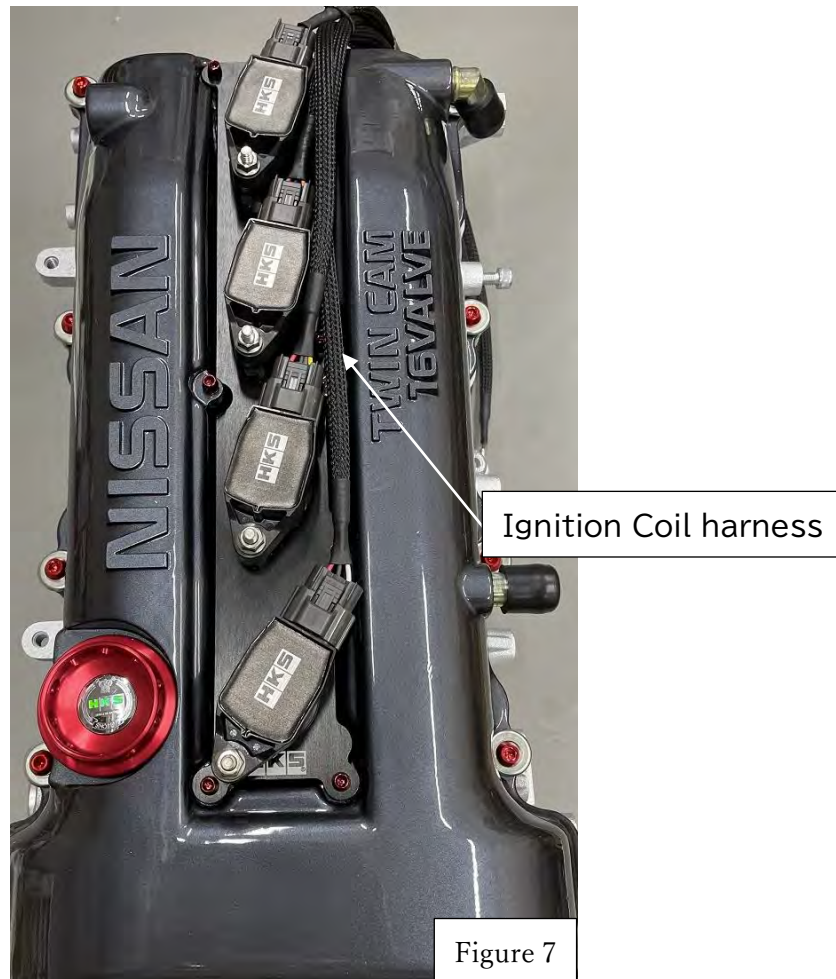


- (8) Secure the ignition coil with a flanged hex nut. (Figure. 6)

(Tightening torque  $7.0 \pm 0.7 \text{N}\cdot\text{m}$ )

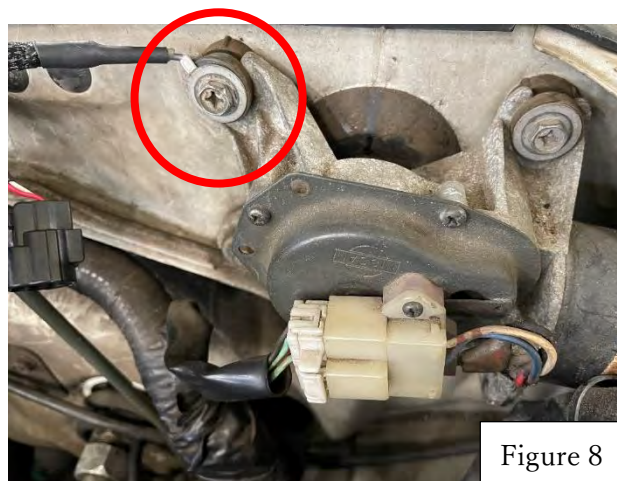


- (9) Attach the ignition coil harness to the ignition coil and the engine harness of the vehicle body. The one with the shortest harness is the bulkhead side of the vehicle. Firmly until the connector clicks Please plug it in. Secure the harness with a tie wrap. (Figure 7)



(10) Ground the ground wire of the ignition coil harness at a place where it can be reliably grounded. (Figure. 8)

The recommended grounding position for HKS is the wiper motor mounting part shown in the photo. Depending on the vehicle, it may be painted, so remove the paint or extend the ground wire. Also, fix the ignition coil harness using the attached tie wrap so that it does not touch the exhaust manifold.



## Caution

- If the ignition coil harness is incompletely grounded, it may lead to misfire, etc., and the original performance of the ignition coil cannot be exhibited. Do not go to the engine head, but to a place where the vehicle can be reliably grounded.
- When grounding to the negative side of the battery, it is necessary to extend the harness, but use a splice or the like to extend it. Also, since wiring is done near the exhaust manifold, be sure to fix it as well.
- Check that each harness is not pulled excessively and that each connector is securely inserted all the way.

(11) Make sure that the installation work is correct, and then install the negative terminal of the battery.



## 2. Dwell Time (Recommendation) & F-CON setting



### Caution

- Be sure to set the dwell time with a specialist and check that the engine is properly controlled. There is a risk of misfire.
- Do not set a value greater than the recommended dwell time. The ignition coil may be damaged.

(1) Set the IG signal voltage of the engine ECU to 5V.

For an ECU whose IG signal voltage cannot be adjusted, check with the manufacturer of the ECU to see what V control the signal voltage is. Those that are not controlled by 5V cannot be used.

V Pro Setting

**Parameter Setting**

**Ignition 1**

**Ignition Control Type**

Port 1	Main x1
Port 2	Main x1
Port 3	Main x1
Port 4	Main x1
Port 5	Main x1
Port 6	Main x1

**Ignition Group Distribution**

Port 1	Group1
Port 2	Group1
Port 3	Group1
Port 4	Group1
Port 5	Group1
Port 6	Group1

[ How to use 1  
Please make  
"Output Func  
page.

**Ignition Control Voltage**  5V  12V

**Ignition Control Logic**  Normal  Reverse

**Start Ignition Timing** 0.0 [BTDC]

**Deceleration Fuel Cut Time Out Coefficient** 0.0 [%]

<b>Air Conditioner Trim</b>	Trim Value	0.0 [degree]	Decrement Coefficient	100 [%]
<b>Load 1 Trim</b>	Trim Value	0.0 [degree]	Decrement Coefficient	100 [%]

- (2) Set the dwell time (energization time) for each engine speed by referring to the recommended values below.

V Pro Setting																
File 34 [F5] Ignition Control - Main Close Angle Time																
RPM	0	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500
Time	4000	4000	4000	4000	4000	4000	3700	3600	3600	3600	3600	3600	3600	3600	3600	3600

For general-purpose ECU

Engine RPM[rpm]	0	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000
Dwell time[ $\mu$ sec]	4000	4000	4000	4000	4000	4000	3700	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600



## Caution

Set the dwell time according to the specifications and characteristics of each engine.

- (3) The recommended dwell time (energization time) for each power supply voltage is as follows. (Reference rotation speed 3600 rpm, reference voltage 13 V)

V Pro Setting																
•In the case of F-CON, the “Main Close Angle Time Trim” has to follow below.																
File 34 [F5] Ignition Map 1 - Main Close Angle Time Trim																
Voltage	8.0	9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	15.5	16.0
Trim Value	100.0	95.0	88.0	81.0	63.0	45.0	29.5	14.0	7.0	0.0	-5.5	-11.0	-15.0	-19.0	-23.0	-27.0

For general-purpose ECU

Voltage[V]	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0
Correction ratio[%]	200	195	181	145	114	100	89	81	73

### 3. The checklist before starting the engine

Description	Check
Make sure ignition coils are plugged.	
Make sure connectors and harnesses are routed and connected Properly.	
Make sure bracket is fixed.	
Make sure all installed components and harnesses do not come in contact with other parts.	
Make sure two O-RINGS are attached.	
Make sure there are no tools in the engine room.	
Make sure reconnect the negative cable onto the battery.	
Make sure that all bolts and nuts are tightened.	



#### Caution

- Incomplete installation of connectors/harnesses may indicate the check engine light.
- Use without setting may lead to engine damage/failure.

### 4. The checklist after starting the engine

Description	Check
Make sure all installed components and harnesses do not come in contact with other parts.	
Make sure harness is not strongly twisted.	
Make sure are not made interference sounds.	



#### Caution

- To be routed the harness away from any other parts such as the hood, sharp edges, and pipes, etc.

## 5. Troubleshooting

○If this Product is not working Properly, check the list below and take necessary measures.

Symptoms	Cause	Measurements
<ul style="list-style-type: none"> <li>·Engine does not start</li> <li>·Unstable idling</li> </ul>	Spark plugs did not completely installed. Coil is not inserted Properly. Harness is not connected. Plug is passed its lifespan. Grounding Issue.	<ul style="list-style-type: none"> <li>·Make sure connector</li> <li>·Make sure plug and ignition coil</li> <li>·Check engine ground.</li> </ul>
Misfire under high rpm, heavy load.	Plug is not inserted Properly. Coil is not inserted Properly. Plug is passed its lifespan.	<ul style="list-style-type: none"> <li>·Make sure connector</li> <li>·Make sure plug and ignition coil</li> </ul>

If the above guidelines doesn't solve the issue, please contact a HKS authorized dealer/distributor in your area.

## 6. Operation



### Warning

- If the vehicle gets damaged, have the repairs performed by a professional.
- If you experience any abnormal noises, scents, or vibrations from the vehicle while driving, reference the factory service manual.

- In case of accident or other issue, do not try to solve the issue and contact HKS authorized dealer/distributor.
- If you experience any abnormal noises, scents, or vibrations from the vehicle while driving, reference the factory service manual.

## 7. After-sales service

For inquiries about this Product, please contact a Professional dealer or the store where you purchased the Product.

Contractor	
Phone number	
Person in charge name	
Customer name	



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