



## SR20 Hall Sensor Kit

Part #200008v2

**WARNING!** Please read the whole guide before installing this part.

### **Legals:**

TAARKS hall sensor kit has been designed and is intended for off-road use only. The installation of this part on a vehicle intended for use on public roads may violate laws and regulations in your country/state. Additionally, this part is sold with a LIMITED warranty that only covers defects in manufacturing. This warranty does not cover any damage incurred by using this part. The installation of this part may also void any vehicle warranties. Refer to a performance specialist for proper installation.

After opening the packaging please check to see if any parts are missing or damaged. If something is missing or damaged please contact us immediately. Do not install the product.

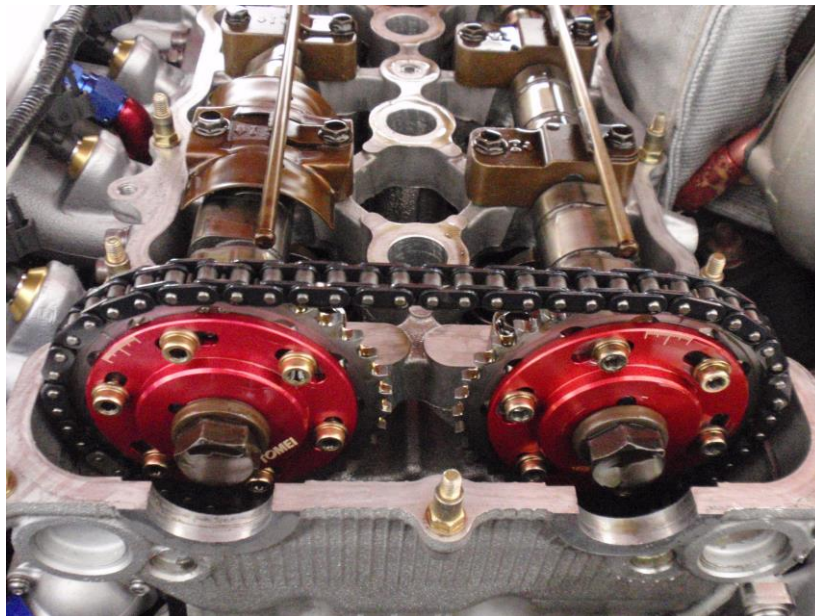
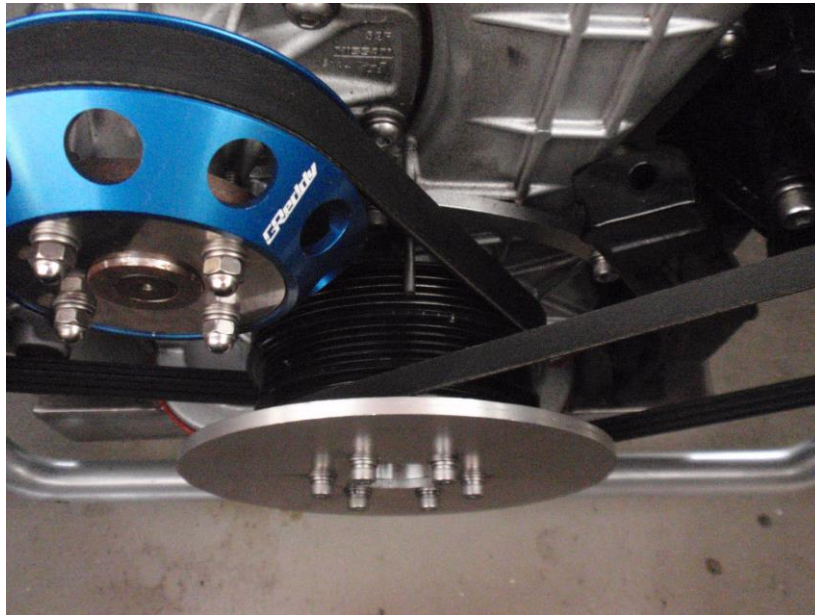
Do not modify this part in any way. Modifying the part may result in failure of the part and voids all possible warranties.

### **Installation Guide**

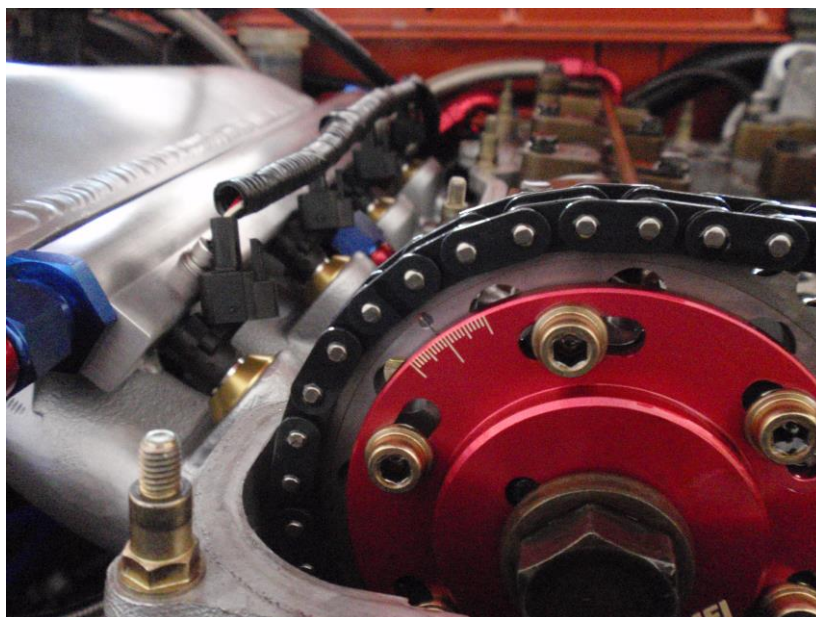
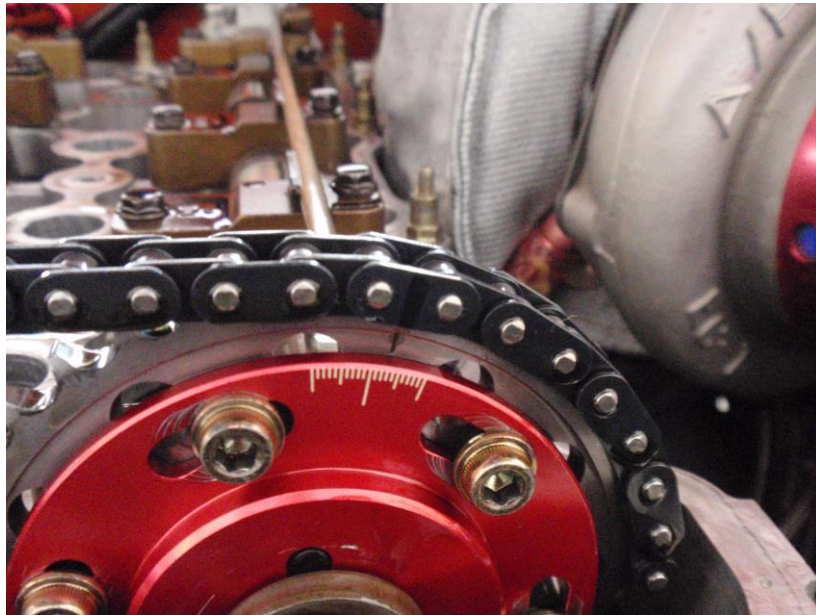
Remove the rocker cover and everything attached to the rocker cover.



Set the motor to TDC on cylinder one. The lobes on the camshafts for cylinder one will face away from each other.



Mark the timing chain with a marker at the timing marks on the cams gears.



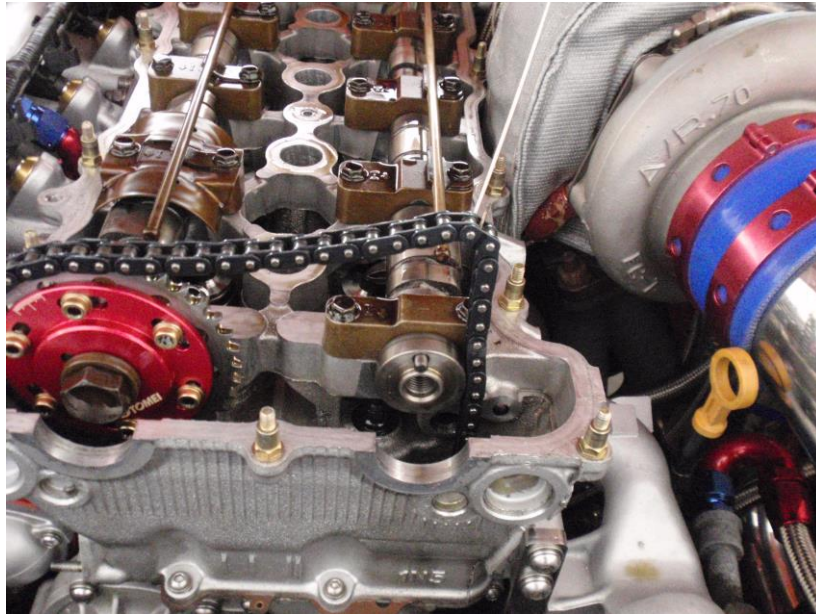


Remove the timing chain tensioner.



Remove the 24mm bolt from the front of the exhaust camshaft.

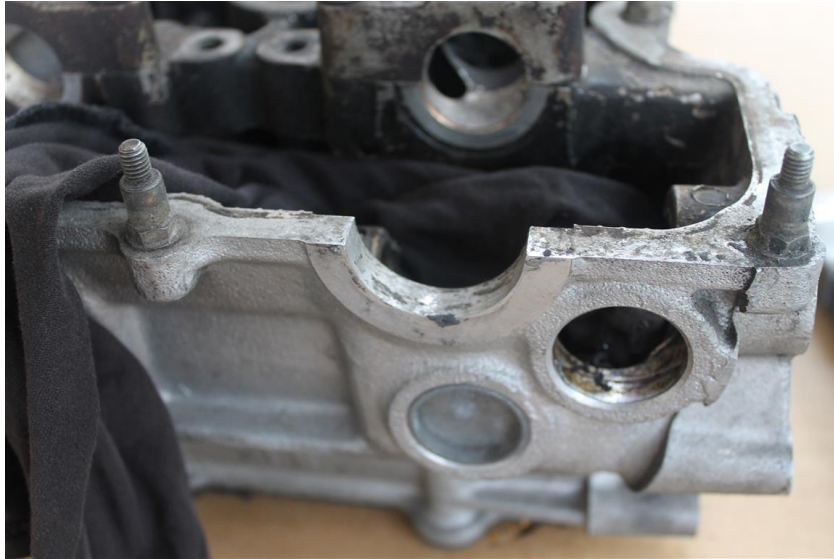
Remove the exhaust cam gear and support the chain. Do not let the chain drop.



Remove the worm gear from the cam gear.



Remove the 30mm welsh plug from the front of the head. The plug needs to be pushed from the rear. This can be done very gently with large screwdriver (or similar) and a rubber mallet.



Once the plug has been removed use some 1000 or 1200 grit sand paper to clean any residue out of the hole. Place a rag at the back to stop any dust or debris from falling into the motor.

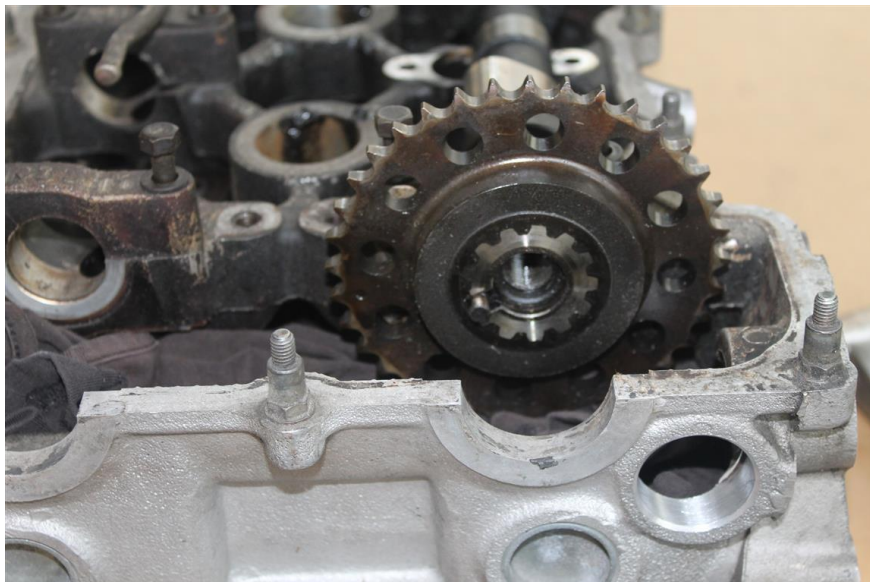




Clean.



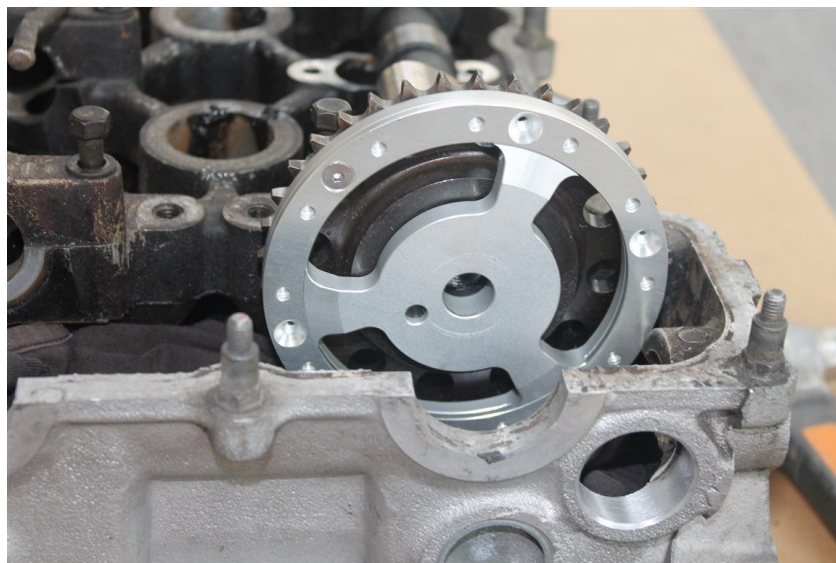
Install the cam gear & timing chain. Remember to line the timing marks up.



The hall wheel has 6 dowel pin locations. This is so you can change when TDC offset of the home signal occurs. Some ECU's require the home/sync signal to occur in a particular window in the engine cycle. If you plan to use the provided ECU settings at the end of this guide you will need to use the dowel hole circled below. Make sure the home magnet (circled) is as pictured in the photo.



Install the supplied hall wheel. Gently tap the hall wheel onto the dowel if needed.

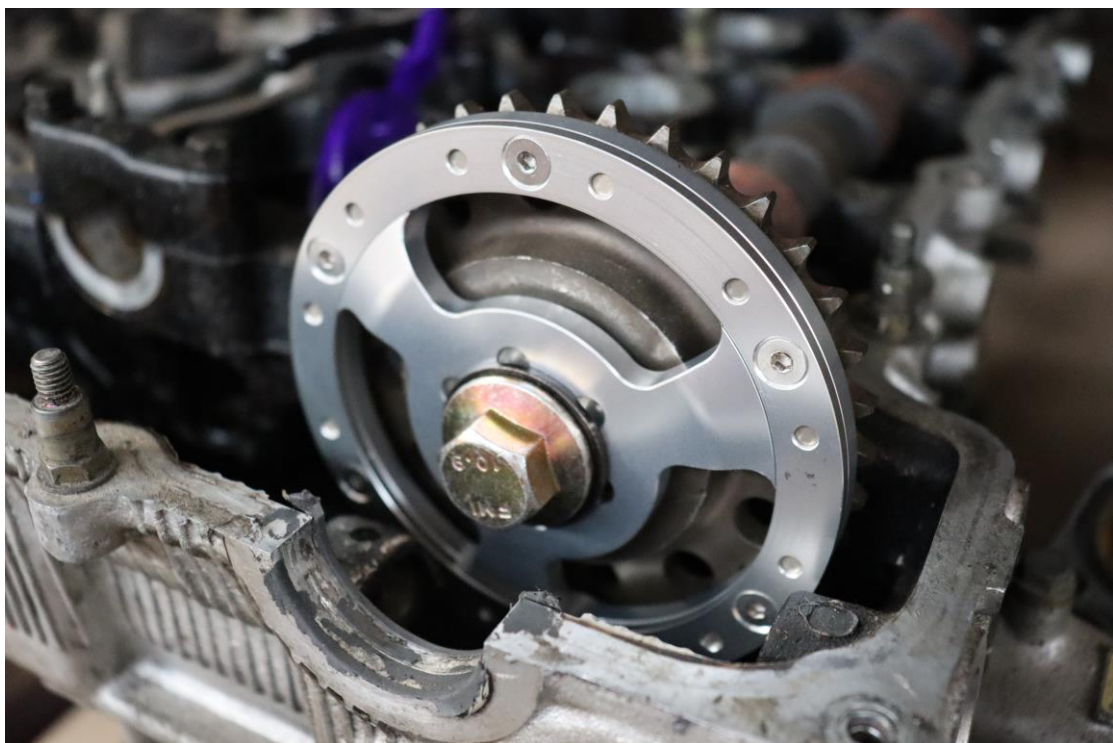




Check for any clearance issues. Some aftermarket cam gears may push the hall wheel further forward, some material may need to be removed from where the old CAS mount protrudes into the head.



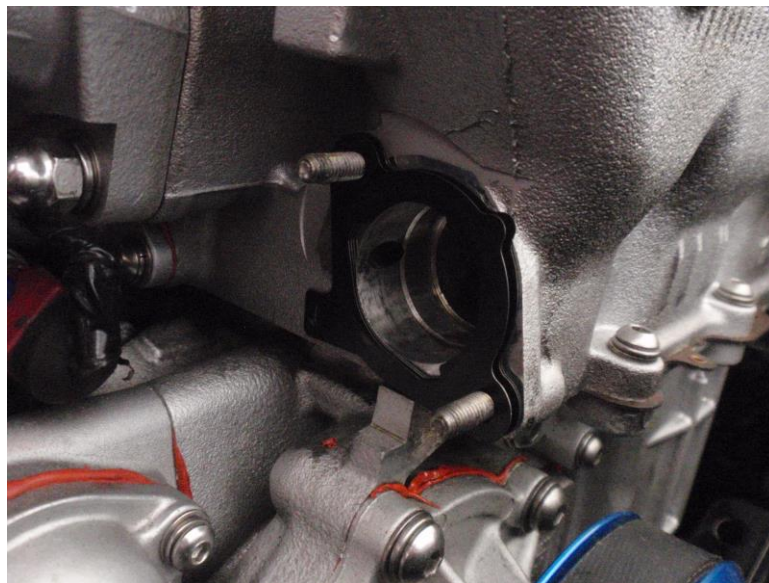
Using the factory cam bolt washer and supplied flanged bolt gently tighten the bolt to pull the hall wheel up against the cam gear.



Push the tensioner piston in and re-clip.



Install a new tensioner gasket.



Install the tensioner.

Wind the motor backwards by hand from the crank bolt until the tensioner catch drops.

Wind the motor forward by hand until the tensioner is extended.



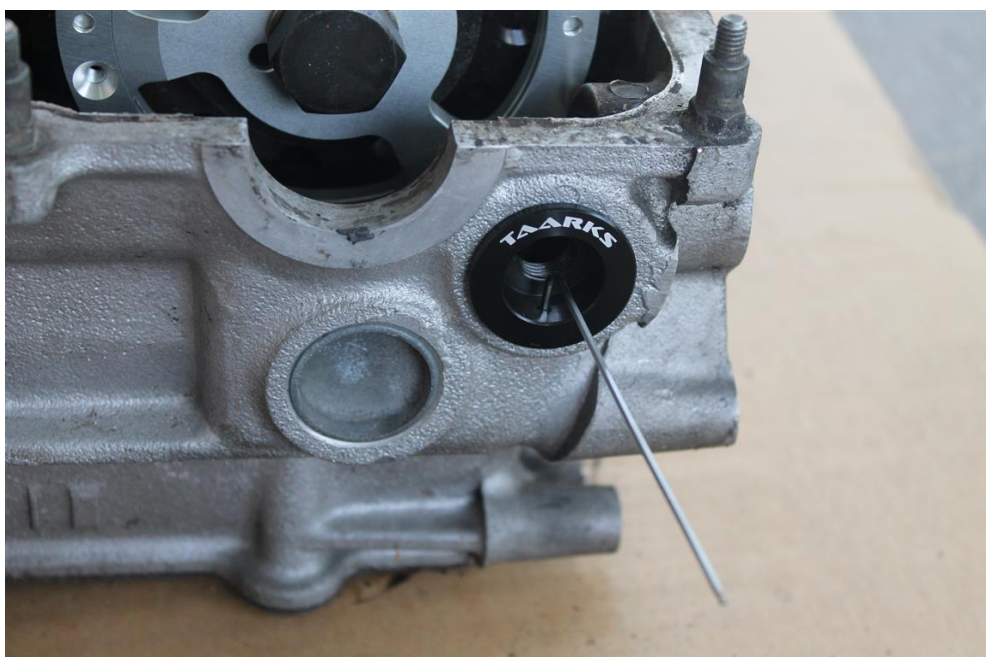
Install the 3 small grub screws into the hall sensor holder ensuring they do not protrude outside the holder.

Install the larger o-ring onto the hall sensor holder sensor holder and apply a small amount of oil to the o-ring on the hall sensor holder and slide into the head with the logo facing up.



Make sure the holder is pushed in as far as it will go into the head.

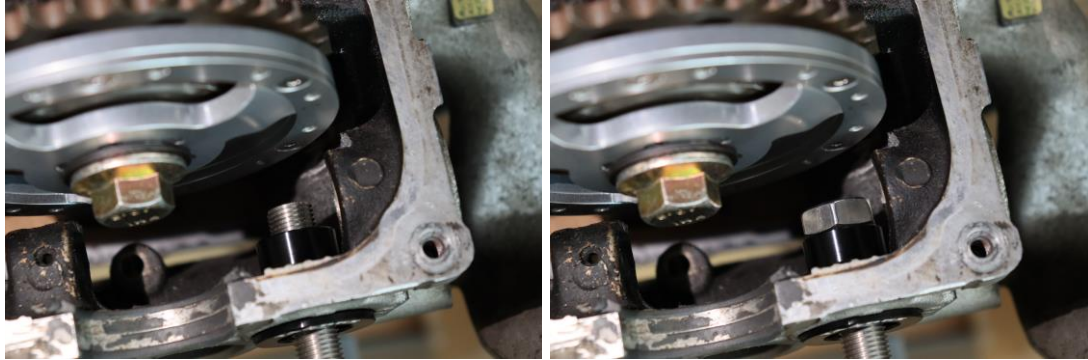
Use a 1.5mm allen key to tighten all 3 of the small grub screws.



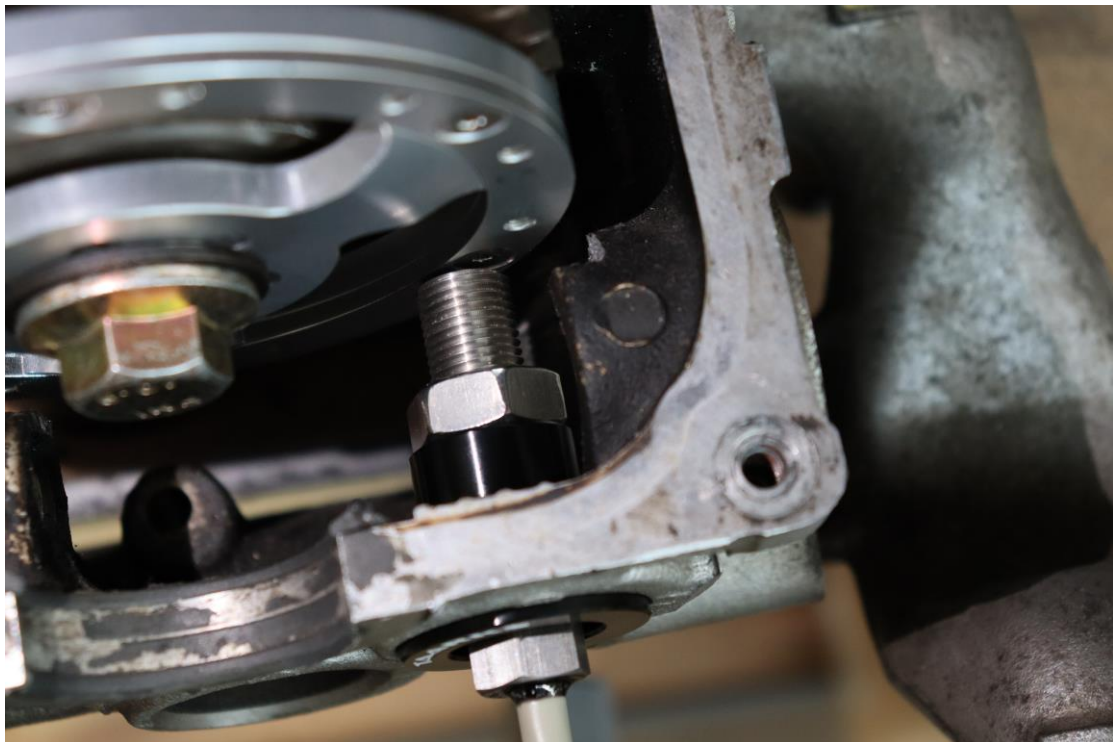


Apply 3-4 turns of thread tape around the hall sensor close to the hex.

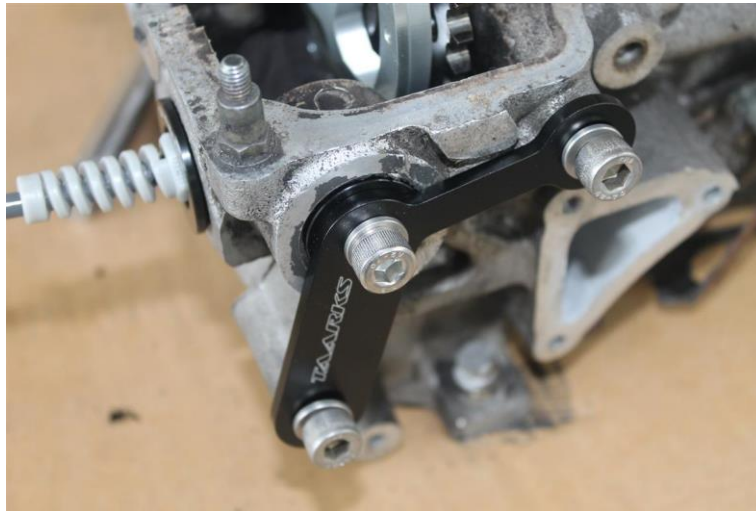
Wind the hall sensor into the holder so the tip of the sensor protrudes around 10mm, wind the supplied nut onto the sensor.



Wind the sensor in until the end of the sensor is 1mm away from the hall wheel. Use a feeler gauge to check the distance, rotate the engine and check the distance at several points around the hall wheel. (This distance may need to be adjusted once the motor is up and running, a gap no smaller than 0.5mm may be used). Once the sensor is in position apply some Loctite to the thread of the sensor just after the holder and wind the nut hard up against the holder and tighten. (the cam bolt may be removed for better access when tightening the sensor nut)



Install the 2 smaller o-rings onto the CAS block off. Install the CAS block off plug using the supplied stainless bolts. A small amount of oil on the o-rings will help it slide in.

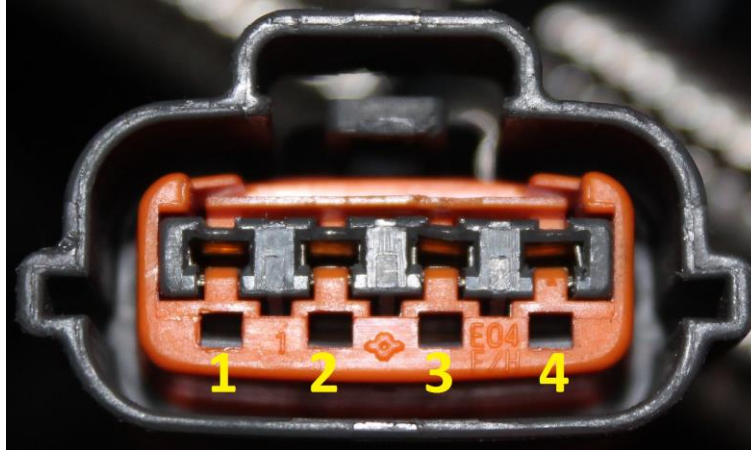


Wiring diagram and ECU settings can be found below.

And that's it... You're all done. Enjoy & and thank you for supporting TAARKS.

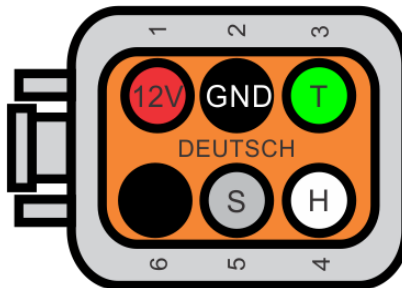
## Wiring Diagram

Looking into the SR CAS connector:



1. Ground
2. 12v+
3. Trigger
4. Home

Looking into the back of the engine loom side Hall Sensor connector:



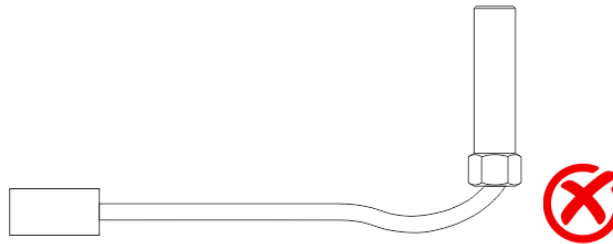
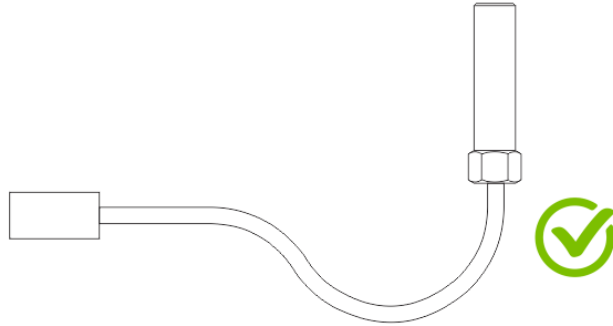
- Pin 1/Red = 12v+ (Filtered from ECU)
- Pin 2/Black = Sensor GND (from ECU)
- Pin 3/Green = Trigger (North Pole)
- Pin 4/White = Home/Sync (South Pole)
- Pin 5/Raw = Shield
- Pin 6 = Not Used

\*\*Using an un-filtered power source and ground can damage the sensor.



## **Cable Routing**

DO NOT pull the wiring tight from the sensor, this coupled with engine vibration will cause the sensor wiring to fail! Leave a nice loop to allow for movement.



# ECU Setup Guide

These settings are provided as a guide only.

## Haltech Platinum Sport

Main Setup - Platinum Sport 1000 1.13

Basic  
Advanced  
Outputs  
Inputs  
Devices  
Data Logging

Main Trigger Fuel Ignition

Trigger Type: Multitooth General

Trigger Angle: 102.0 °

☐ Variable Trigger Angle

Tooth Offset: 3

Trigger Edge: Falling

Home Edge: Falling

Trigger Sensor Type: Hall Effect

Home Sensor Type: Hall Effect

Trigger Pull Up: Enabled

Home Pull Up: Enabled

Home Window: 16

Number Of Teeth: 12

Trigger Filter Level: None

Home Filter Level: None

☒ Trigger ~ve GND

☒ Home ~ve GND

Select the type of trigger that your engine uses from the options in the drop down menu.

OK Cancel Apply

## Haltech Elite

Main Setup - Elite 1500 ECU 2.17.1 - Release

Engine  
Functions  
Devices  
Datalog

Main Trigger Fuel Ignition

**Trigger Configuration**

Trigger Type: Generic - Multi-tooth - Single Tooth Home

Trigger Signal Location: On Cam

Number Of Teeth: 12

Number Of Missing Teeth: 0

TDC Offset Angle: 292.0 °

☐ TDC Offset Angle Table Enable

RPM Filter Level: 1

Quick Start: Enable

**Trigger Signal**

Sensor Type: Hall Effect

Edge: Falling Edge

Filter Level: 0

Pull Up: Disabled

Ground Reference: Disable

Digital Reference: Disable

Signal Coupling: DC

Edge Rejection Ratio Enable: Disable

Edge Rejection Ratio: 20.0 %

**Home Signal**

Sensor Type: Hall Effect

Edge: Falling Edge

Filter Level: 0

Pull Up: Disabled

Ground Reference: Disable

Digital Reference: Disable

Signal Coupling: DC

Minimum RPM: 1000 RPM

Profile: NISSAN S15 E1500

View I/O Report... OK Cancel Apply

Link G4+

Trigger Setup	
Trigger Mode	Multi-Tooth
Trigger Priority	Trig 1
RPM Filtering	1 - Default

Trigger 1	
Trigger 1 Type	Optical/Hall
Trigger 1 Filtering	Level 1 (Low)
Trigger 1 Pullup	ON
Trig 1 Edge	Falling
Multi-Tooth Posn	Cam
Tooth Count	12

Trigger 2	
Trigger 2 Type	Optical/Hall
Trigger 2 Filtering	Level 1 (Low)
Trigger 2 Pullup	ON
Trig 2 Edge	Falling
Sync Mode	Cam Pulse 1x



## RPM signal

## RPM sensor

## RPM sensor type

- ☒ Hall/VR with pull-up  
☐ VR internal reference  
☐ VR differential

## RPM sensor edge

Falling

## Crank trigger pattern

## Crank trigger wheel

6 (at crank) or 12 (at cam)

## Crank index position

180.0 3 teeth 0.0°

## Crank trigger type

No missing tooth

## Crank trigger number of teeth

6

## Number of missing teeth

0

## Additional tooth angle

0.0

## Gap duration time

0.00

## Custom crank trigger settings

GAP	Number of missing teeth	Teeth to next GAP	GAP threshold
0	0	0	0.000
1	0	0	0.000
2	0	0	0.000
3	0	0	0.000
4	0	0	0.000
5	0	0	0.000
6	0	0	0.000
7	0	0	0.000

## Cam sync sensor

## Sensor type

- ☐ Not used  
☒ Hall / VR with pull-up  
☐ VR (Variable Reluctance)  
☐ VR differential (FT600)  
☐ Random Hall - Diagnostic  
☐ Random VR - Diagnostic  
☐ Random VR differential - Diagnostic (FT600)

## Cam sync edge

Falling

## Cam sync sensor for synchronization only

☐ Enabled

Cam sync sensor will be used only after engine starts for 10 revolutions of the engine and then disconsidered for engine synchronization, but will continue to be record in datalogger.

## Cam Sync Position

## Cam Sync position angle

328.5 °BTDC

Engine position angle (BTDC) when the cam sync sensor is over the cam sync teeth. This information is used to improve noise rejection and prevent cam sync errors and doesnt require precise number since it doesnt affect timing precision.

## Cam sync window filter detection angle

## Window filter detection angle

360 °

The cam sync detection window restricts the reading of signals around the angle of the cam sync position, discarding any signals outside this window. This option makes possible to use multi-teeth cam sync triggers.