Lambda Engine

Specification

Items	Lambda (λ) 3.3	Lambda (λ) 3.8
Displacement (cc)	3,342	3,778
Bore x Stroke	92 x 83.8	96 x 87
Compression Ratio	10.4	10.4
Max. Power (PS/rpm)	268/6,200	294/6,200
Max. Torque (kg·f/rpm)	32.2/4,500	36.5/4,500
Idle Speed (rpm)	650±50	650±50
Valve adjuster	MLA(Shimless)	MLA(Shimless)
CVVT	DUAL CVVT	DUAL CVVT
Firing Order	1-2-3-4-5-6	1-2-3-4-5-6
Ignition Timing (Idle)	10±5°	10±5°
Engine Oil Capacity	5.5ℓ	5.5ℓ
Fuel Tank Capacity	73ℓ	73ℓ

Engine Room

ECM

Battery adaptor

OCV

Engine Front View

ETC

Water Pump

Sonic Chamber

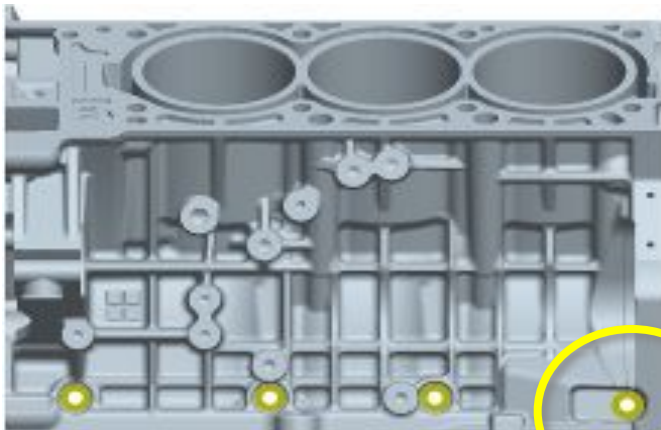Serpentine Belt

Alternator
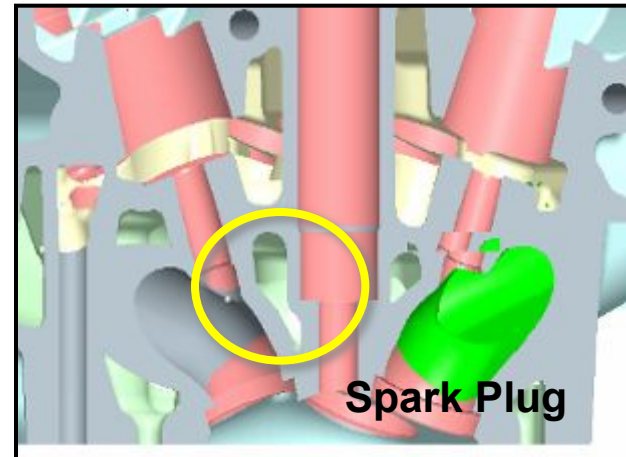
Auto-tensioner

P/S Pump

A/C Compressor
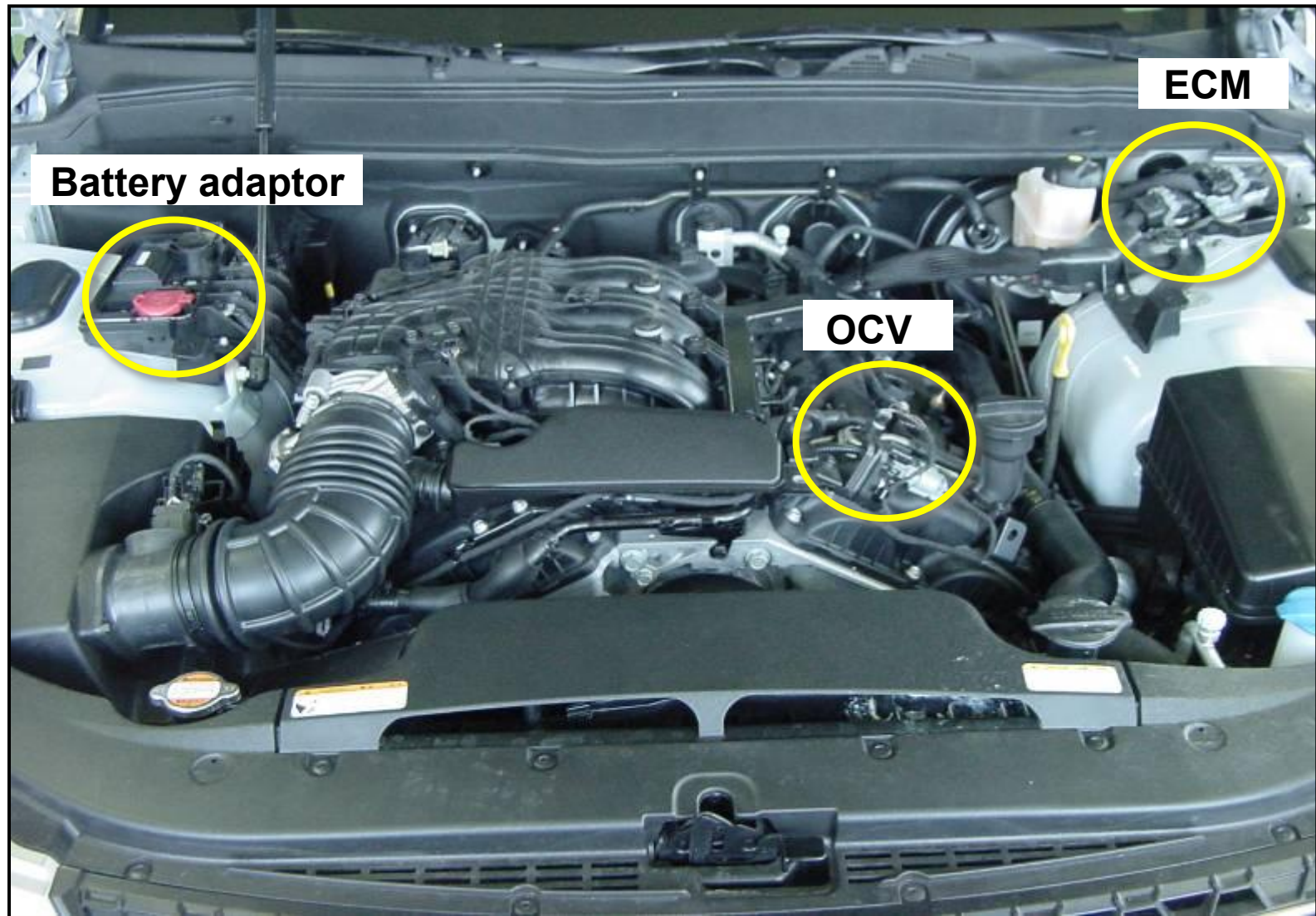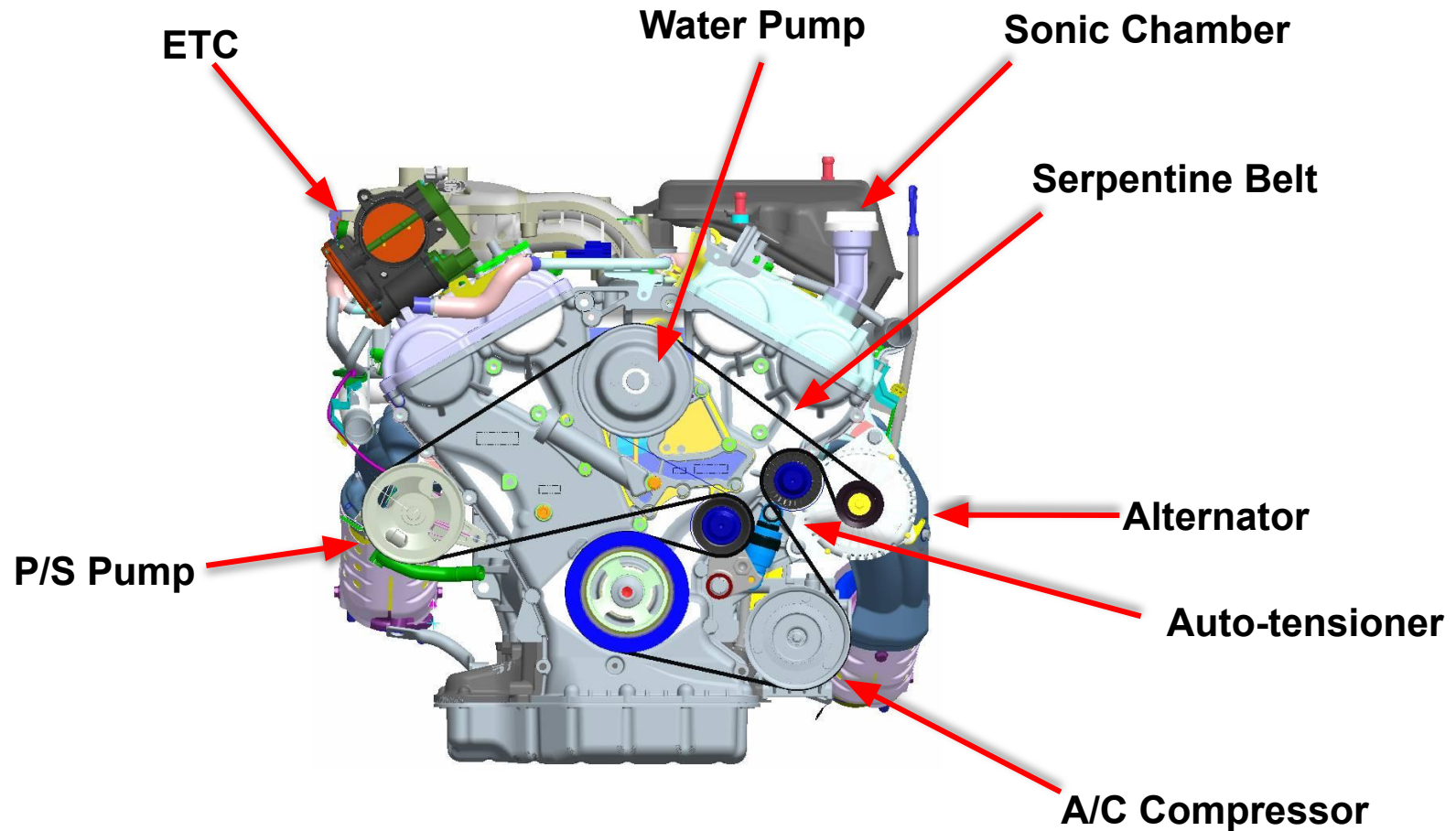
Changing Item – Cylinder Block, Cylinder Head

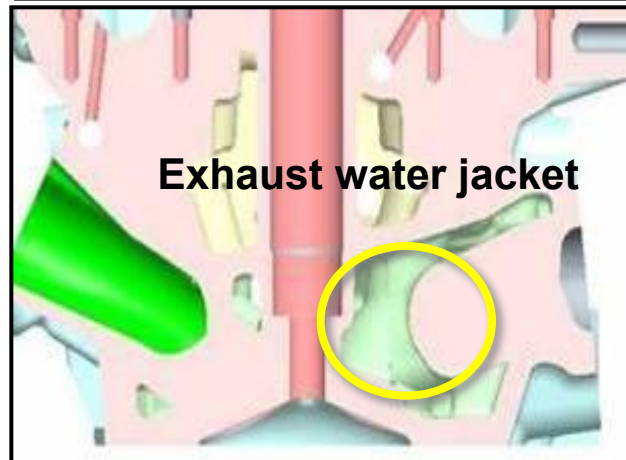▶ **It is impossible to interchange with lambda I**

▶ **Added #4 Side Bolt**

#4 Side bolt

▶ **It is impossible to interchange with lambda I**
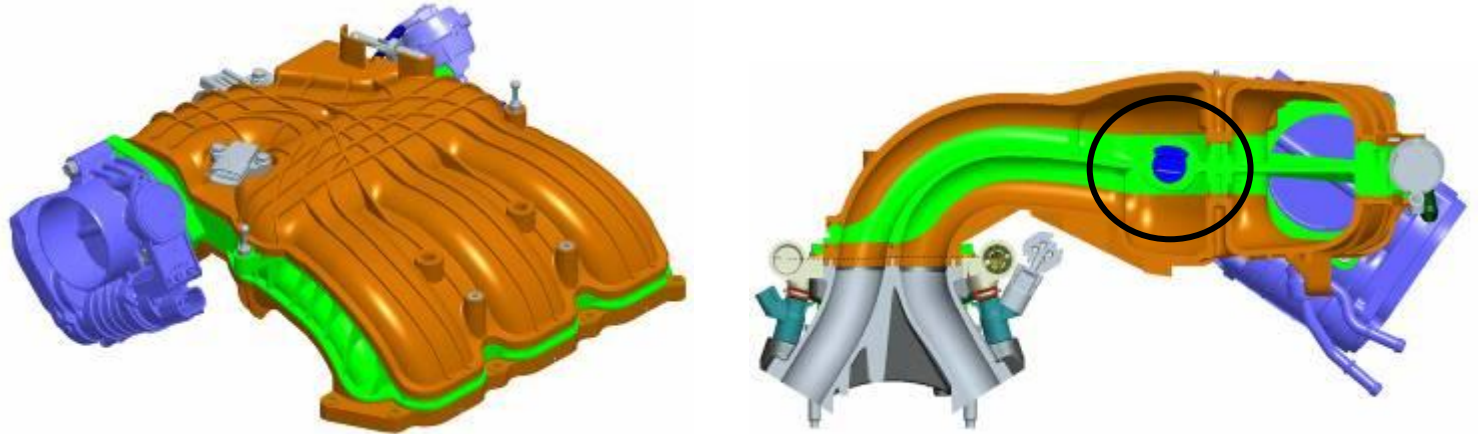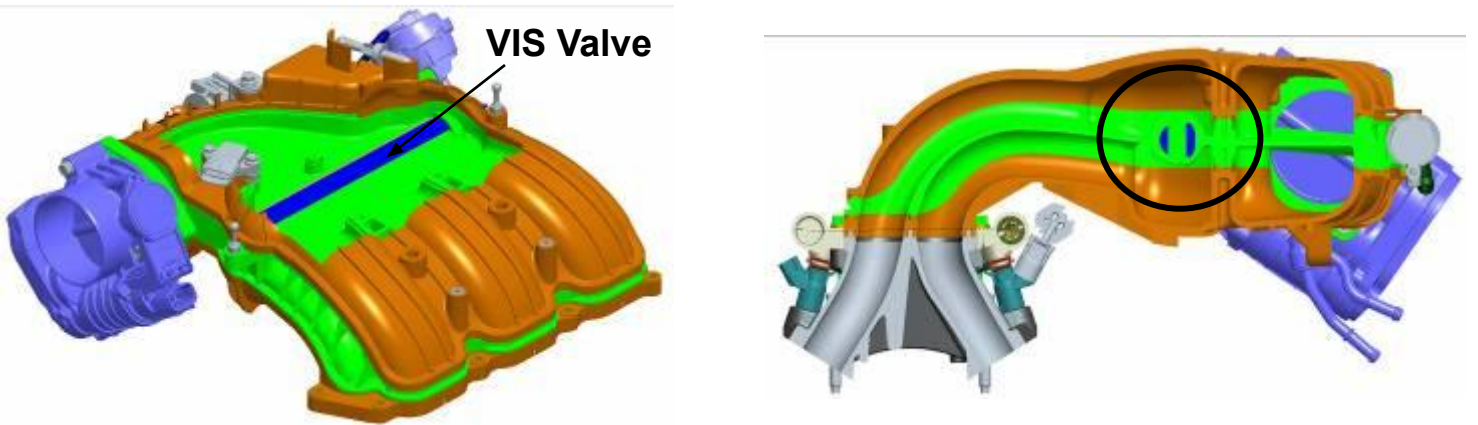
▶ **M14 Long Reach Spark Plug applied**

Spark Plug

Exhaust water jacket

VIS (Variable Intake System)

VIS Valve Close		
VIS Valve Open	 VIS Valve	

Alternator and Battery system - Concept

conventional engine
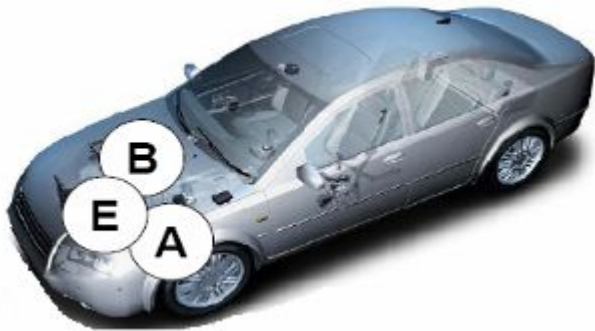
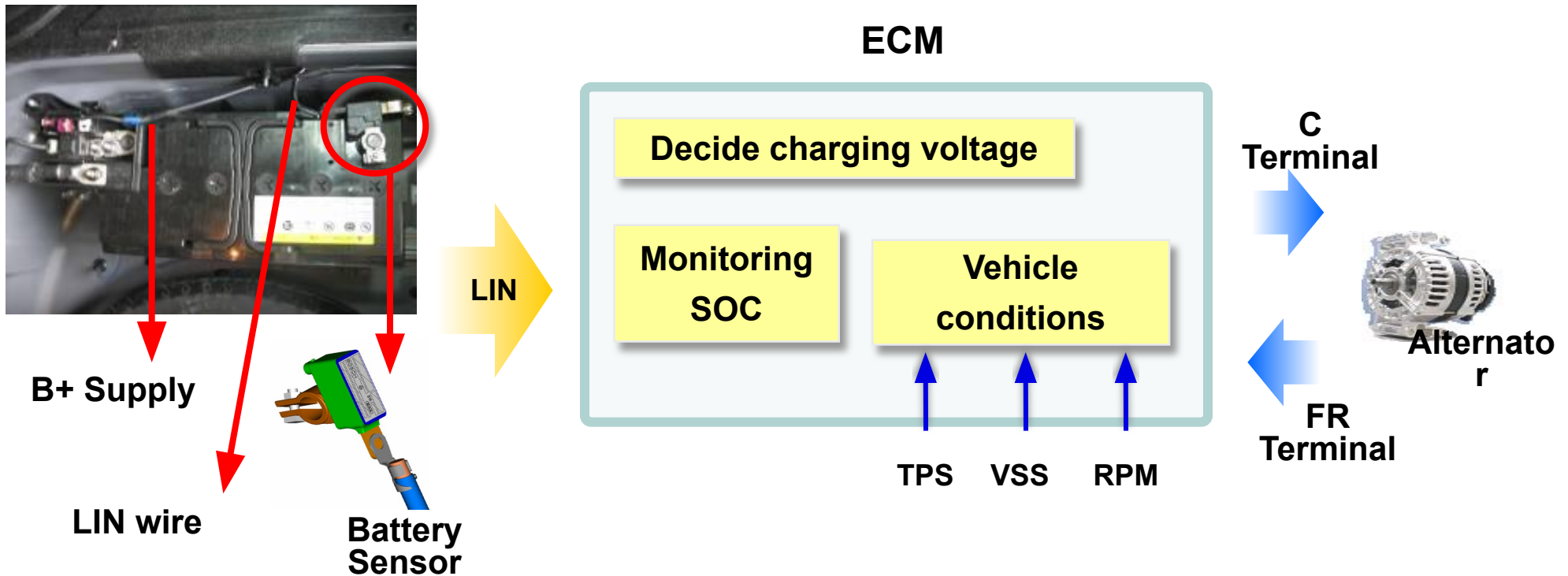| BH (Lambda engine) |
| --- |

Battery Temp. ≈ Engine Room Temp.

Battery Voltage ≈ Alternator Voltage
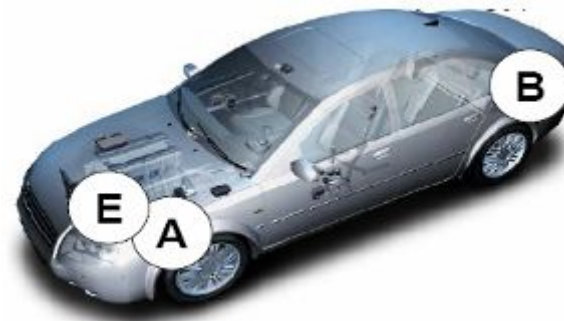
Battery Temp. ≠ Engine Room Temp.

Battery Voltage < Alternator Voltage

Battery Sensor

▶ Battery Sensor : Measure Temperature, Voltage, Current

▶ SOC (State Of Charge)

B+ Supply

LIN wire

Battery Sensor

LIN

ECM

Decide charging voltage

Monitoring SOC

Vehicle conditions

TPS   VSS   RPM

C Terminal

Alternator

FR Terminal

※C - Terminal : Communication with alternator
FR - Terminal : Field Coil Reflector.
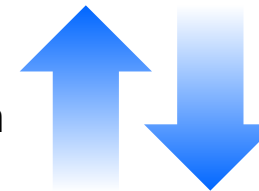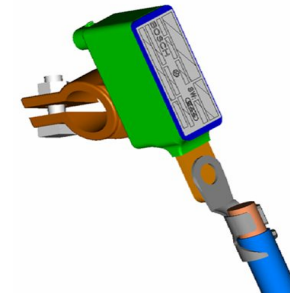
System Component

▶ Alternator : 4 Pins

IG Terminal   **C Terminal**

L Terminal   **FR Terminal**
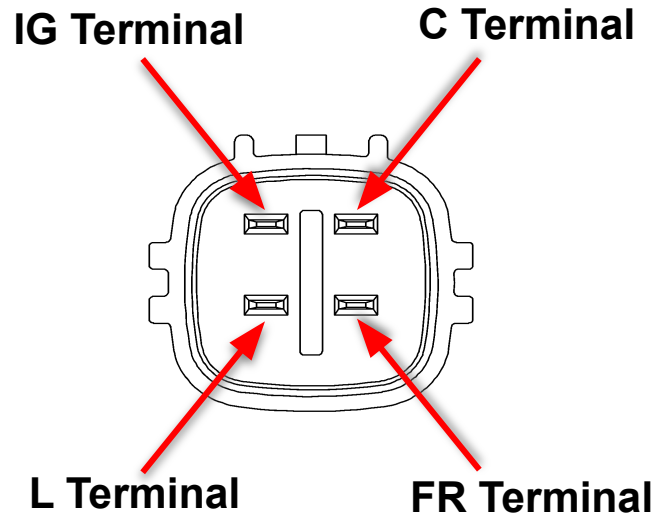
▶ **Calculate SOC**

▶ **Wake-up Mode (each 8 hours)**
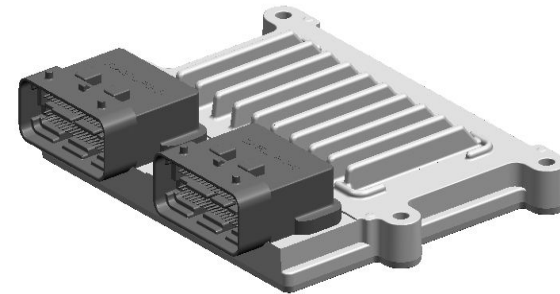
Send SOC information   **Request SOC information**

Diagnosis

ⓗ

ECM

ⓔ

C ⓑ **PWM**
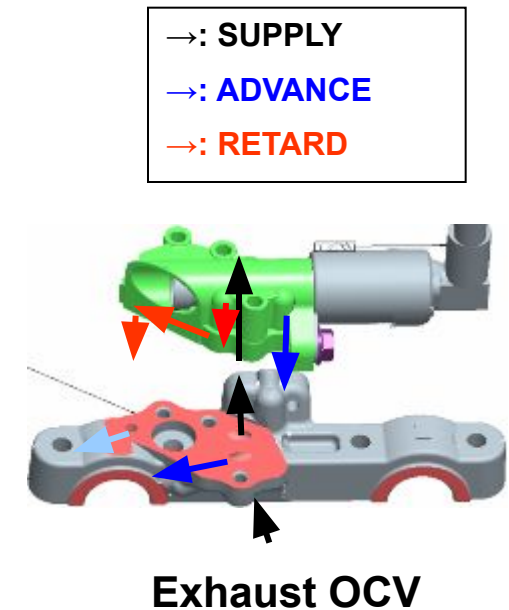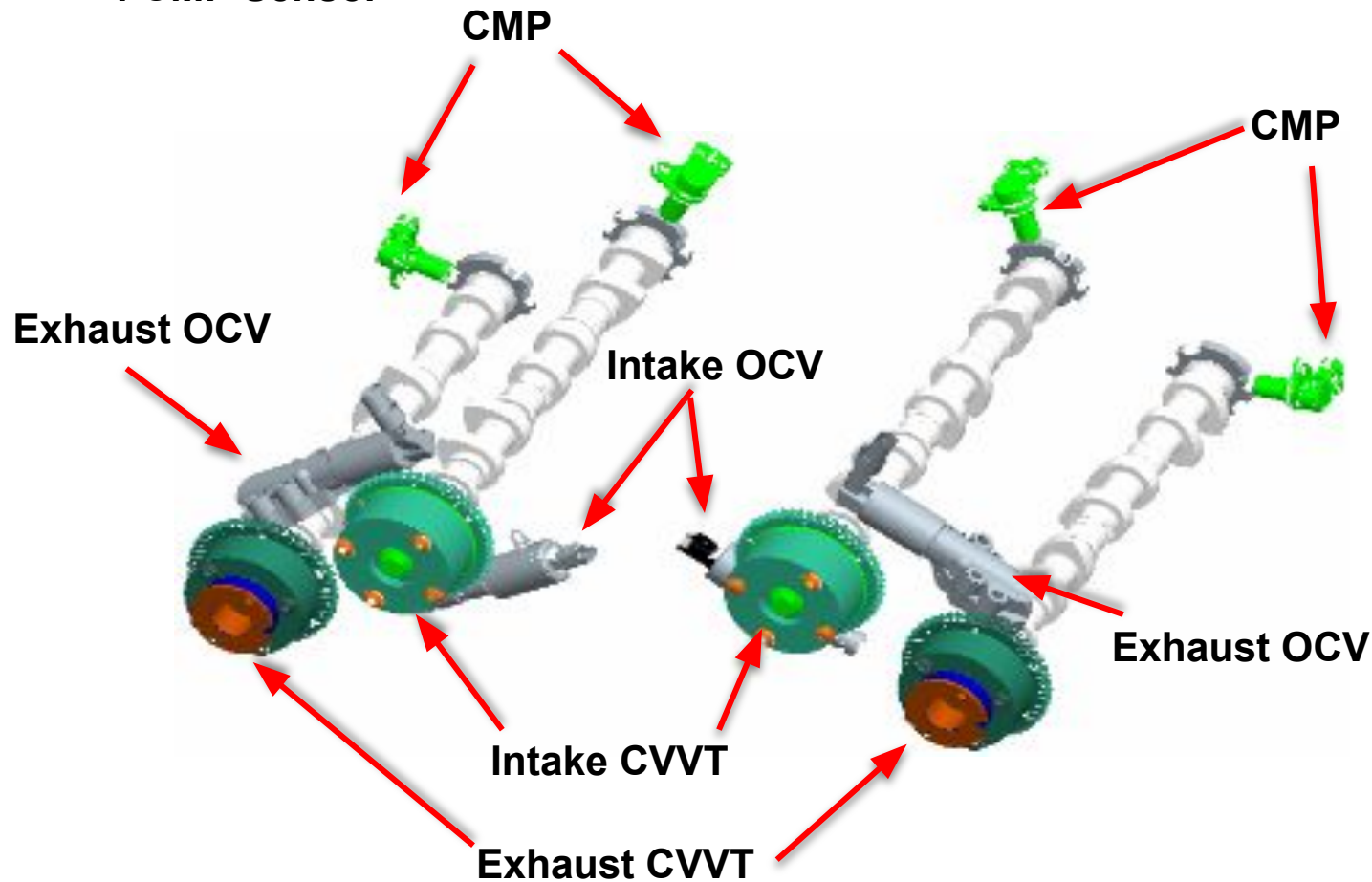
A-15

ⓐ
LIN BUS

A-45

Battery Sensor ⓖ

FR ⓒ **PWM**

A-36

ⓕ
Battery

ⓓ **B+**
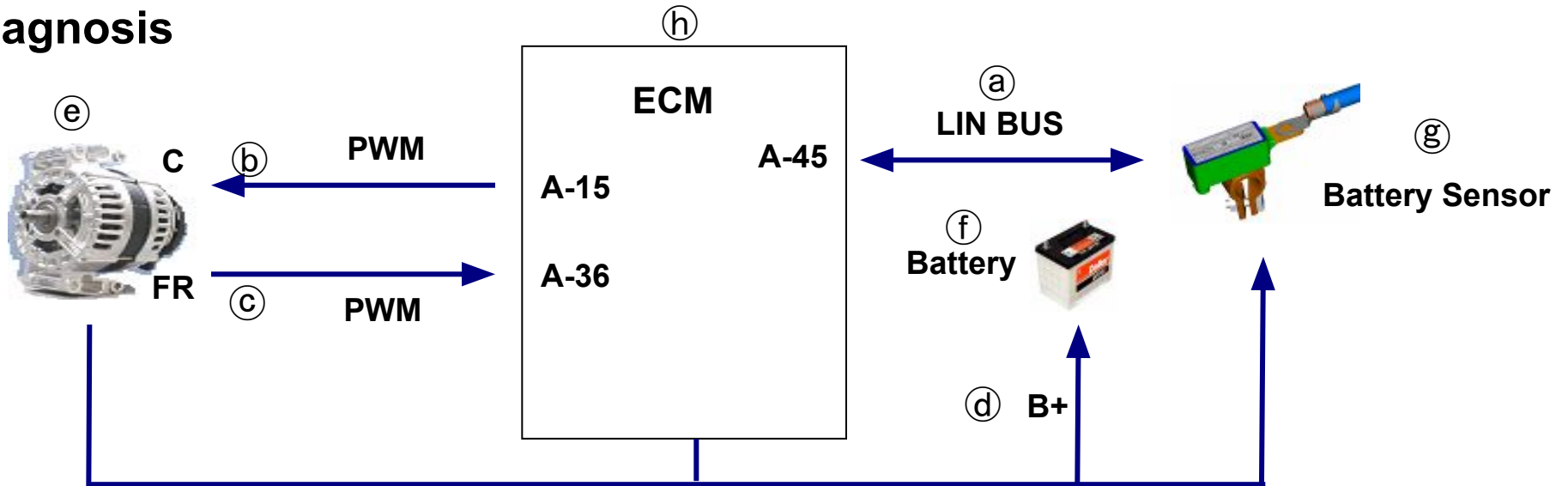
※ **Generation of ampere after starting**

AH

120~150 sec.

1560 sec.

**Control target SOC,
Feed back target voltage**

Charging

Discharging
(Deceleration, Constant Speed)
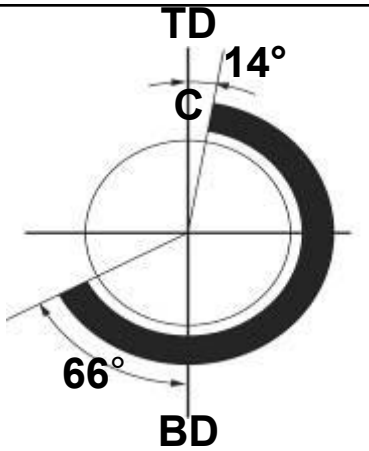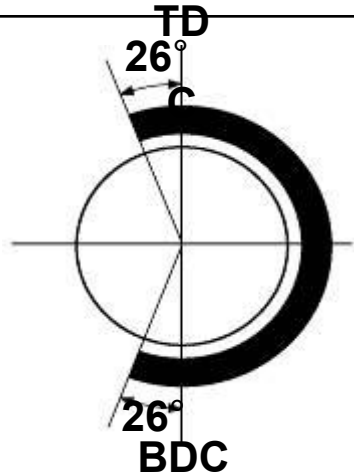
Control target SOC
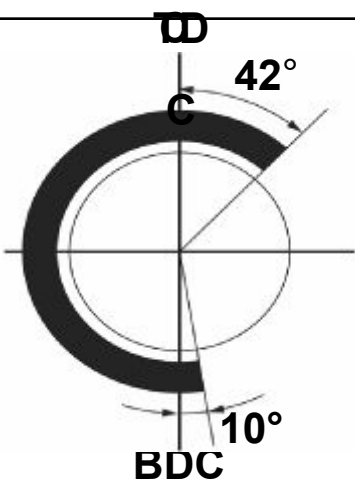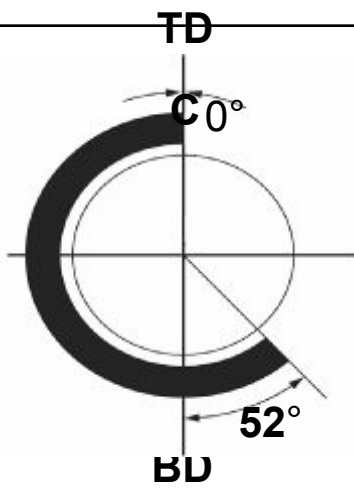(Acceleration, Deceleration, Constant speed)
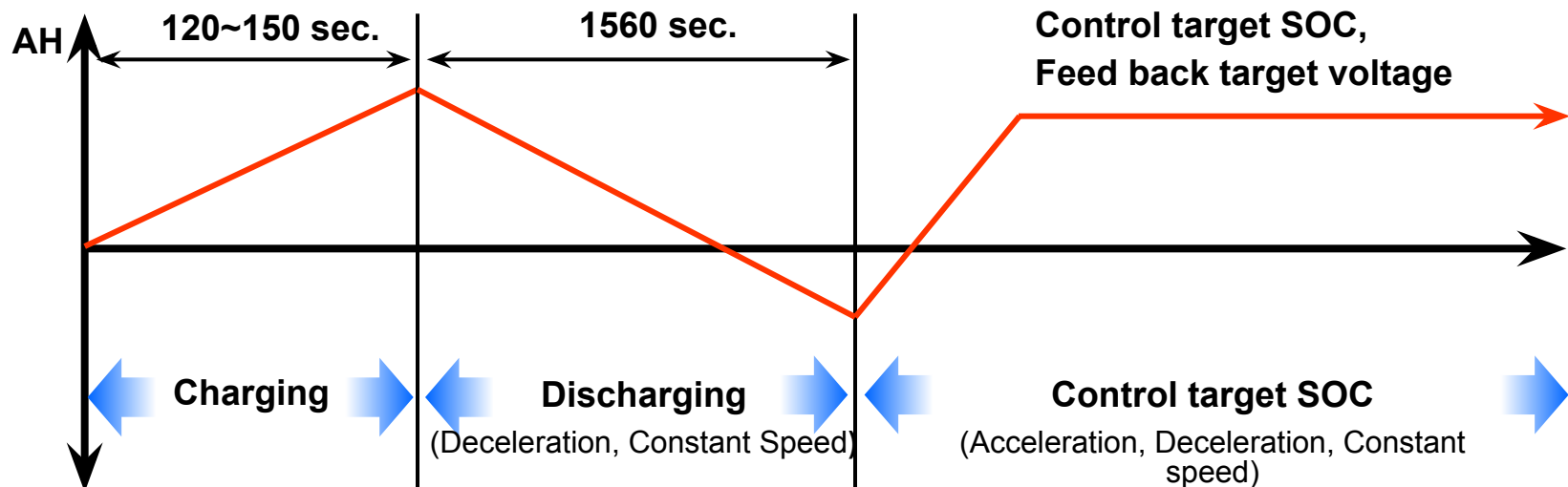
Dual CVVT

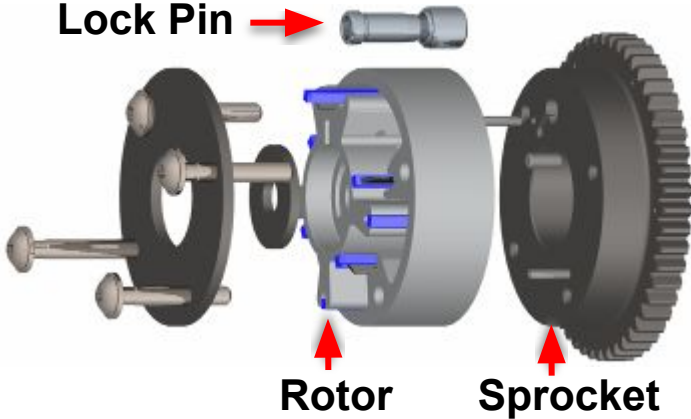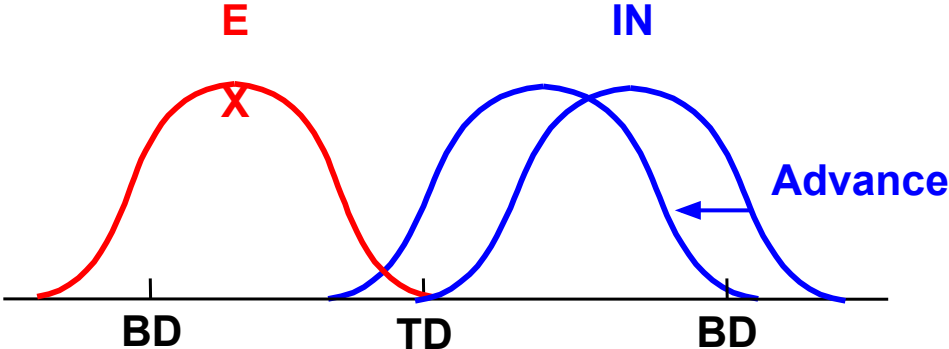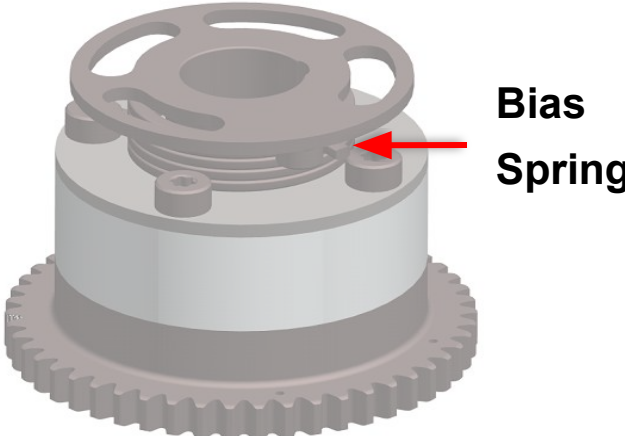▶ **2 Exhaust CVVT and OCV, 2 Intake CVVT and OCV**

▶ **4 CMP Sensor**

→: SUPPLY
→: ADVANCE
→: RETARD
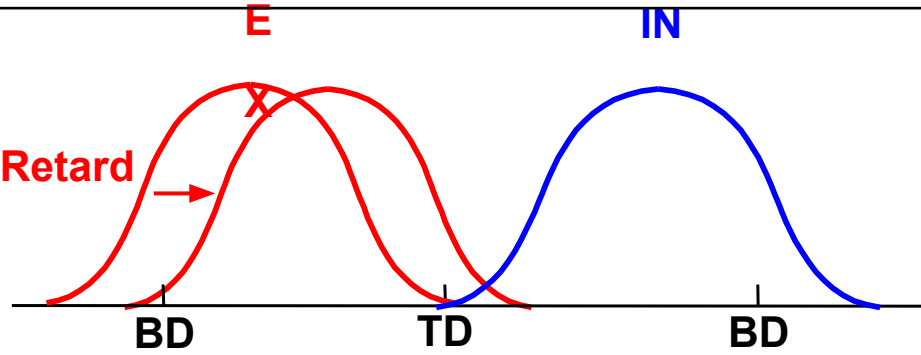
Valve Timing (3.3L)

	Max. Retard	Max. Advance
Intake	TD 14° C 66° BD	TD 26° C 26° BDC
Exhaust	TD C 42° 10° BDC	TD C 0° 52° BD C

CVVT operations

CVVT Assembly

Intake	Lock Pin → Rotor Sprocket	E IN X Advance ← BD TD BD ► Initial position : Max. Retard
Exhaust	Bias Spring	E IN Retard → X BD TD BD C C C ► Initial position : Max. Advance