

# ENGINE <4G6>

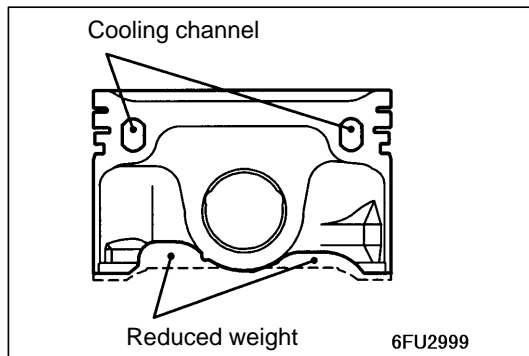
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## OVERVIEW

The engine of the EVOLUTION-VI is based on the 4G63 DOHC turbocharged unit used in the EVOLUTION-V. It incorporates the revisions shown below for more steady rotations in the high speed range and better responsiveness, offering higher reliability.

- Pistons provided with cooling channels and reduced in weight
- Baffle plate in oil pan improved
- Nozzle shape of oil jets optimized
- Eye bolt for oil cooler at oil filter bracket increased in diameter (from M16 to M18)
- Coolant temperature control method changed from inlet control to outlet control
- Turbocharger compressor inlet enlarged in bore diameter
- Turbocharger turbine wheel replaced by one made of titanium-aluminum <RS>
- Fan motor relay control revised
- Alternator control revised (only FR terminal used)



## MAIN UNIT

### PISTONS

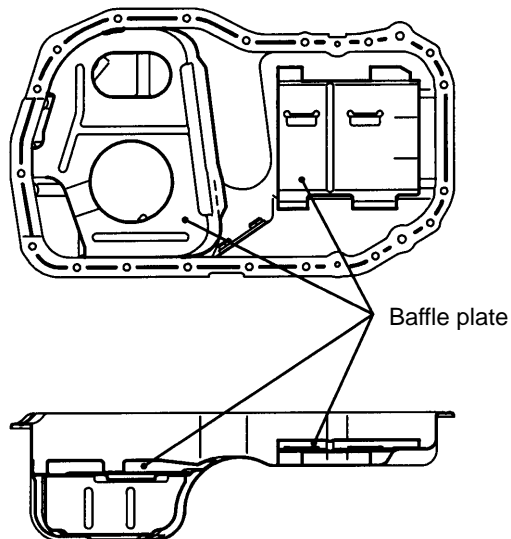
- (1) The cooling channel added improves the cooling characteristics.
- (2) Reduced weight enhances the performance in the high speed range.

## LUBRICATION SYSTEM

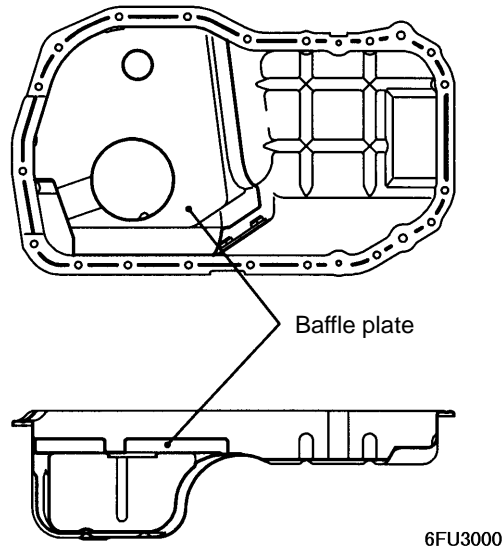
### OIL PAN

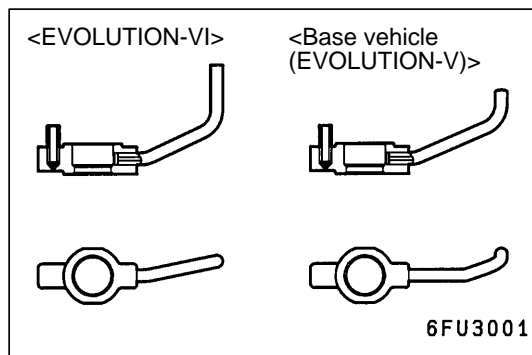
The baffle plate has been improved for higher cooling performance.

<EVOLUTION-VI>



<Base vehicle (EVOLUTION-V)>





### OIL JET

The nozzle configuration has been revised in accordance with the cooling channel incorporated in the piston.

### OIL FILTER BRACKET

The diameter of the eye bolt for the oil cooler has been changed (from M16 to M18) to increase the oil flow to the oil cooler for better cooling.

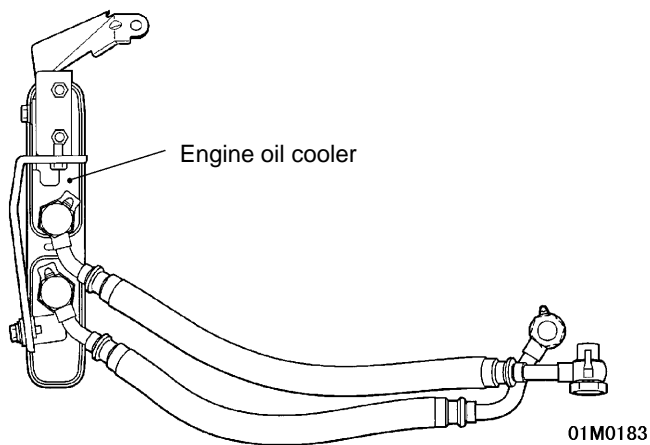
## ENGINE OIL COOLER

The oil cooler core size (depth) has been increased to enhance the cooling capacity.

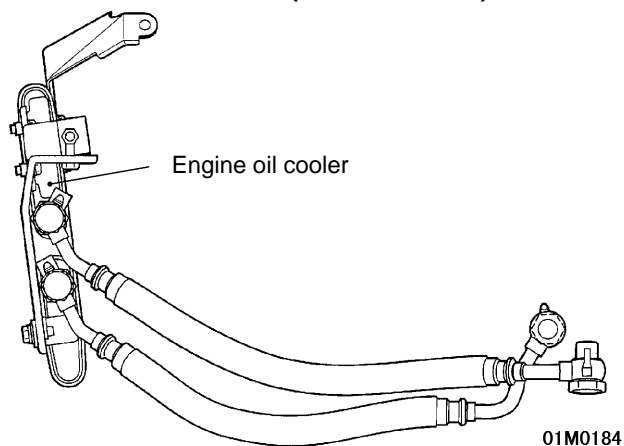
### Specifications

Item	EVOLUTION-VI	Base vehicle (EVOLUTION-V)
Type	Drawn-cup	Drawn-cup
Core dimensions (width × height × depth) (mm)	200 × 130 × 49	200 × 130 × 32
Engine oil cooler oil capacity (cc)	300	210
Heat release kW	7.2	5.8

#### <EVOLUTION-VI>



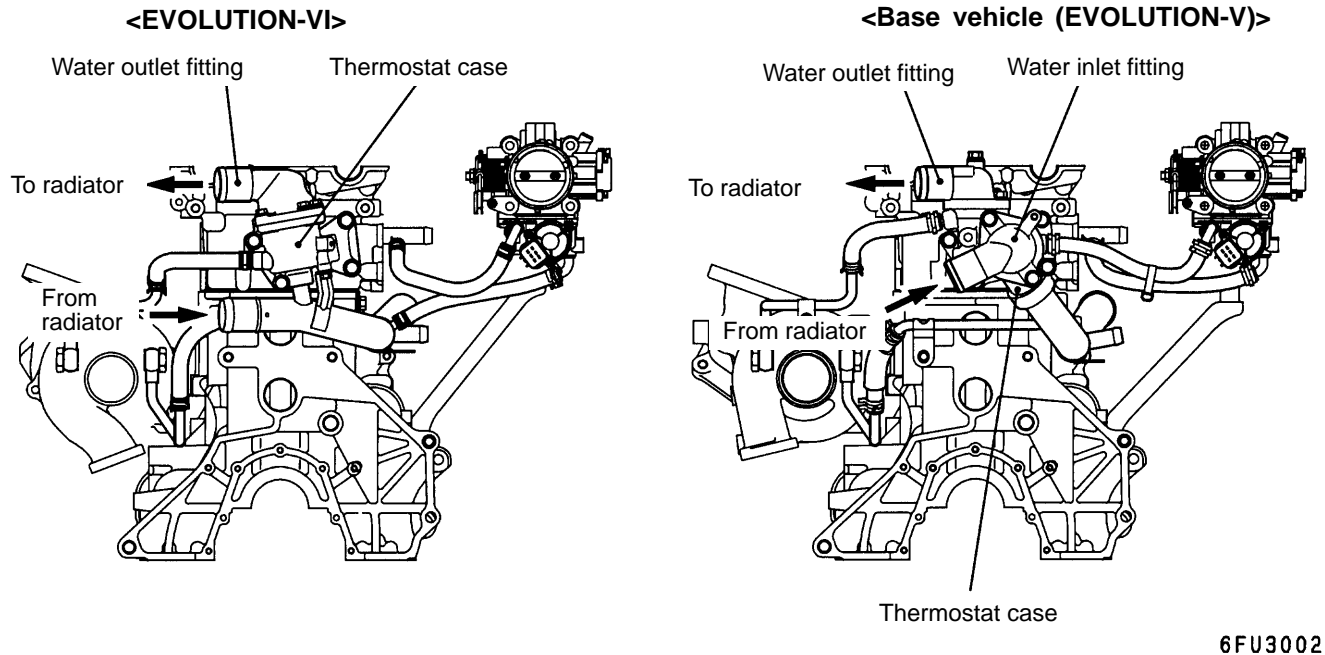
#### <Base vehicle (EVOLUTION-V)>



## COOLING SYSTEM

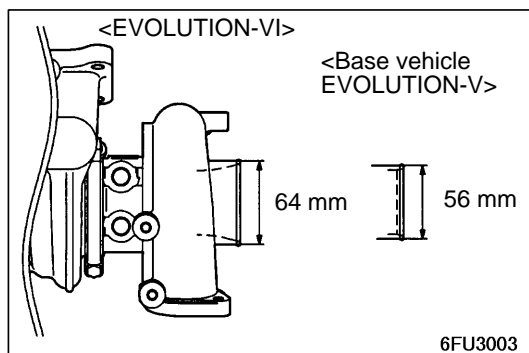
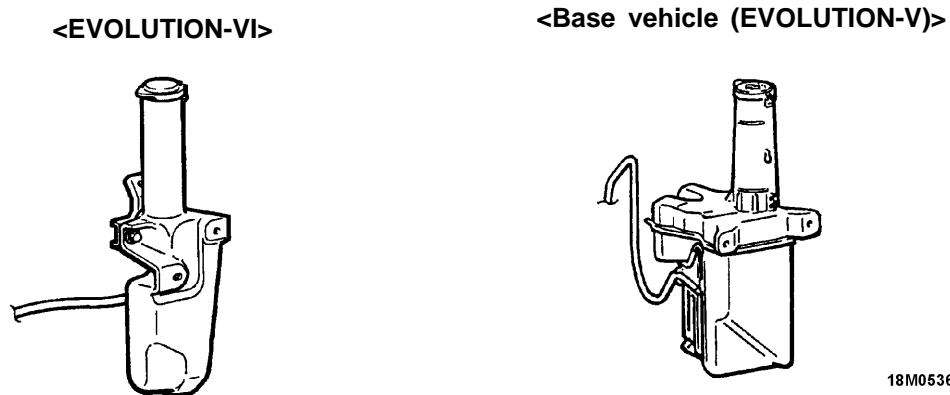
The coolant control system has been changed from the inlet control type to the outlet control type to protect the system against cavitation which could generate during high speed rotation and thus to enhance its reliability. The system has also been increased in the coolant flow rate.

### Construction



## INTERCOOLER AND RADIATOR WATER SPRAY SYSTEM

The intercooler & radiator water spray system had a dedicated tank provided since the washer tank for the windshield and rear window washers was relocated to the luggage compartment.



## INTAKE AND EXHAUST SYSTEMS

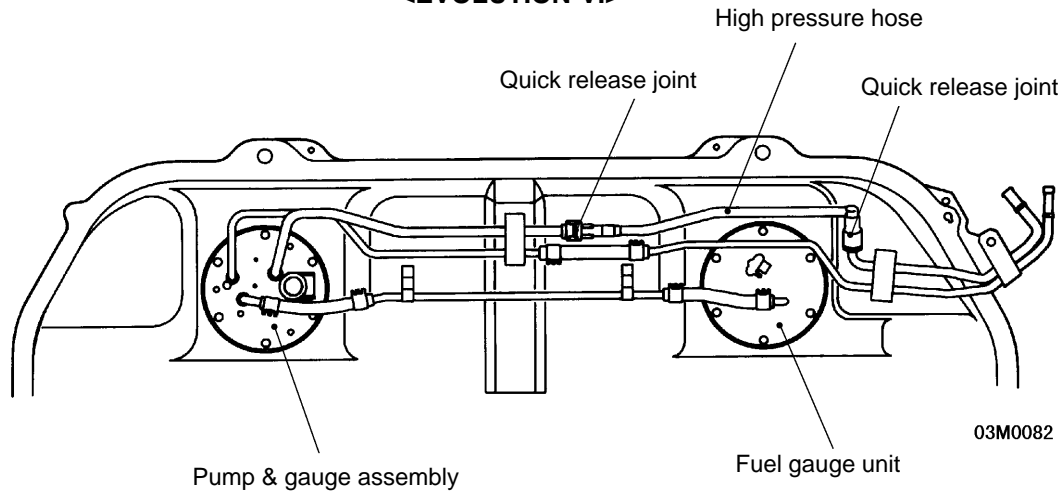
### TURBOCHARGER

- (1) The compressor inlet has been enlarged in the bore diameter to enhance the boost performance in the high speed range.
- (2) The turbine wheel has been replaced by one made of titanium-aluminum for better responsiveness <RS>.

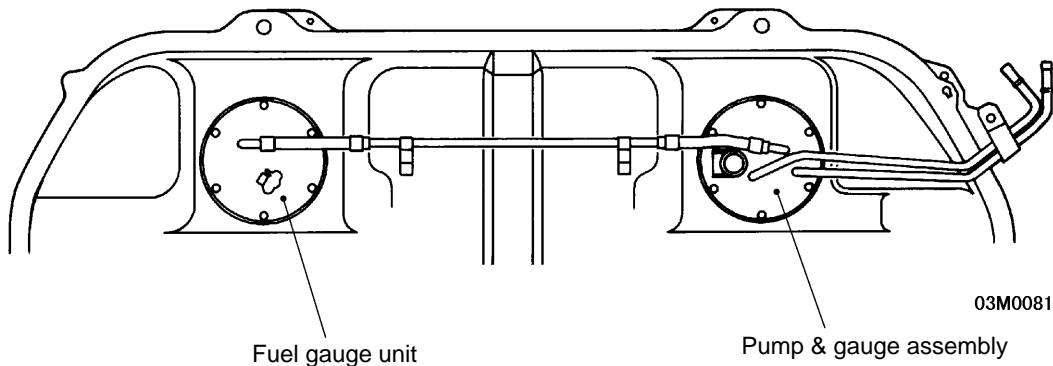
## FUEL SYSTEM

The fuel tank has been revised in the arrangement of the pump & gauge assembly and the fuel gauge unit so that a sufficient amount of fuel supply might be assured even during sporty driving. Further, the high pressure hose connecting the pump & gauge assembly to the main pipe has been provided with quick release joints for improved workability.

### <EVOLUTION-VI>



### <Base vehicle (EVOLUTION-V)>



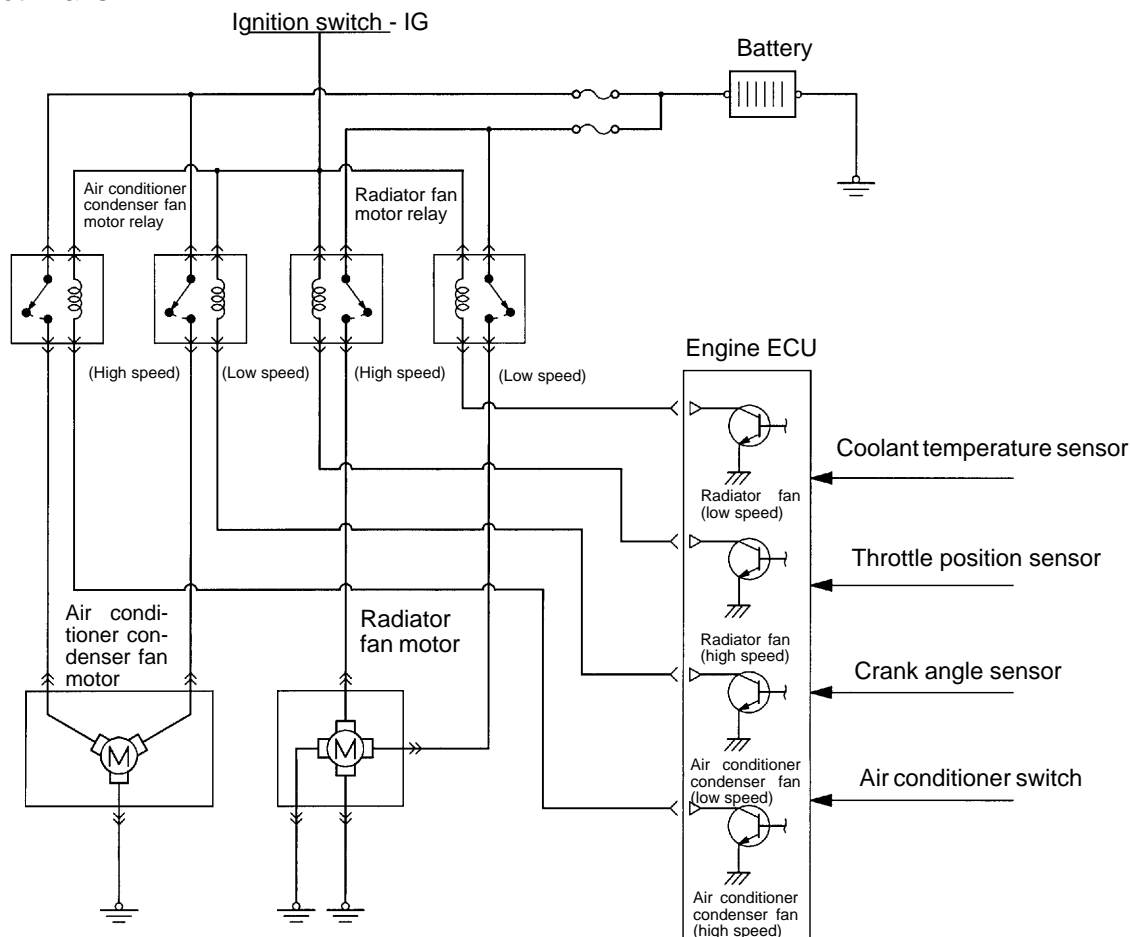
## CONTROL SYSTEM

### FAN MOTOR CONTROL

The radiator fan motor relay (high/low speeds) and the air conditioner condenser fan motor relay (high/low speeds) have been arranged in separate circuits so that they could be controlled independently by the engine ECU.

The operating principle of the fan motor is basically the same as that of conventional one. However, the control mode is different:

it is so performed that the air conditioner condenser fan may begin to operate with a certain time of delay after the radiator fan is operated in order to prevent sharp voltage drop which can be caused by simultaneous operation of both fans.



6FU3004

Fan	Air conditioner switch	Engine coolant temperature (°C)	Power transistor (low speed)	Power transistor (high speed)	Fan operation
Radiator fan	OFF	Lower than approx. 95	OFF	OFF	Stopped
		95 to 105	ON	OFF	Low speed
		Higher than approx. 105	ON	ON	High speed
	ON	Lower than approx. 105	ON	OFF	Low speed
		Higher than approx. 105	ON	ON	High speed
Air conditioner condenser fan	OFF	Lower than approx. 105	ON	OFF	Stopped
		Higher than approx. 105	ON	ON	Low speed
	ON	Lower than approx. 105	ON	OFF	Low speed
		Higher than approx. 105	ON	ON	High speed