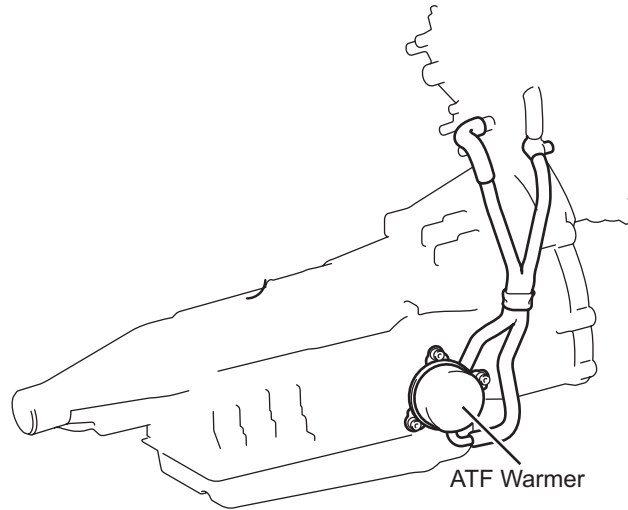


ATF Warmer

- An automatic transmission fluid (ATF) warmer is used on the models equipped with the 3GR-FSE and 3GR-FE engine.
- Because this construction does not use the ordinary oil cooler that is built into the radiator, it accelerates the warming of ATF when it is cold, thus shortening the time in which the flex lockup control starts. During normal operation, the ATF warmer keeps the ATF oil temperature high to reduce friction loss. Thus, it ensures superior fuel economy characteristics.



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Effect

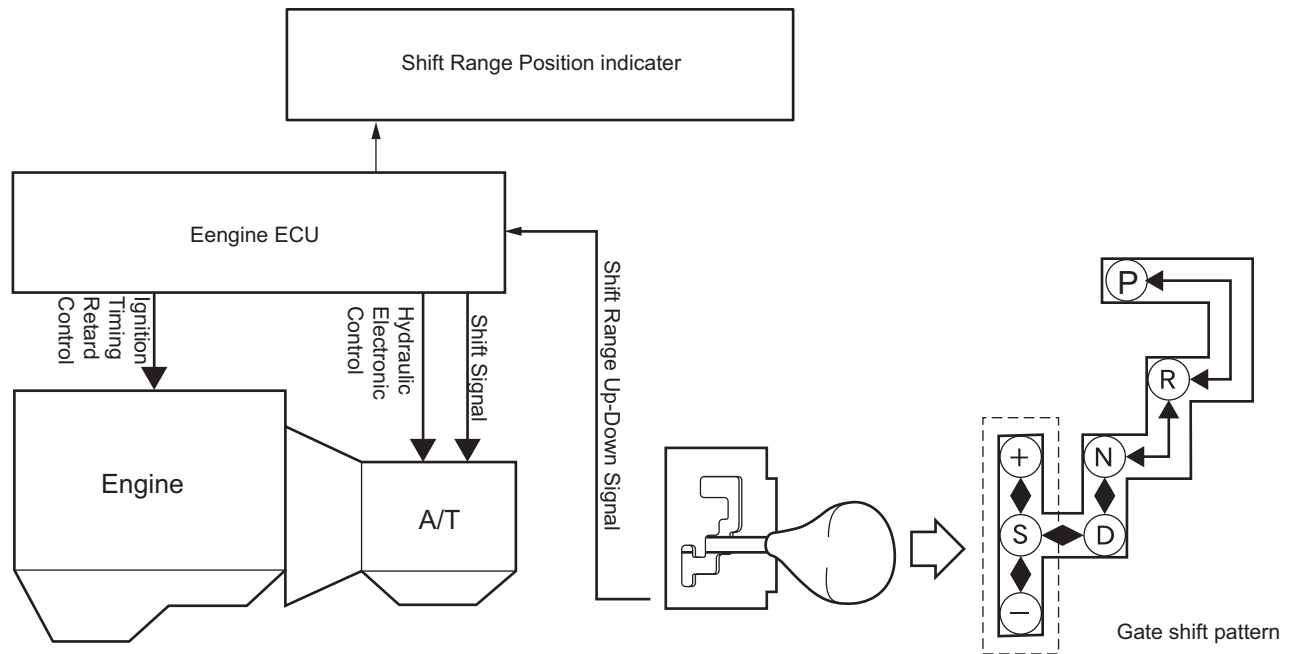
State of ATF		Heat Exchange Method	Effect
Warming Up		Coolant → ATF	Accelerates the warming of ATF and shortens the flex lockup starting time. Accelerates the reduction of the friction loss of the automatic transmission.
After Warm-Up	Low- to Medium-Load	Coolant ↔ ATF	Maintains the ATF at a higher temperature than an oil cooler that is built into the radiator, thus reducing friction loss.
	High Load	Coolant ← ATF	Uses the same heat exchanger to cool the ATF if it is necessary to cool the ATF, thus reducing the deterioration of the ATF.

Specifications

Core Type	Multiplate Aluminum Water-Cooled Type
Core specification	φ 90×6 gears
Oil Capacity [L]	0.06
Dry Weight [Kg(lb)]	0.48 (1.05)

Muti-mode Automatic Transmission

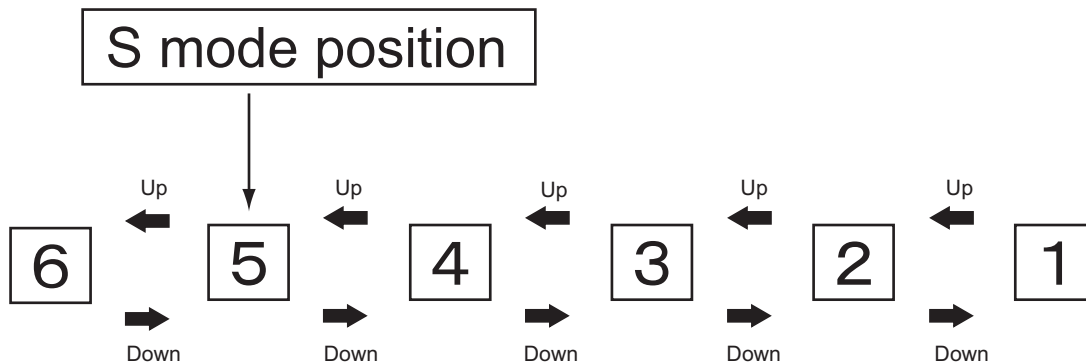
- When the driver moves the shift lever to the S position, the Multi-mode transmission changes the transmission from the automatic shift mode to the multi-mode. This enables the driver to operate the vehicle in the shift range that the driver has selected with the shift lever. In addition, this mechanism enables the vehicle to provide an engine brake force that suits all shift ranges.



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Change The Multi-mode Automatic Transmission

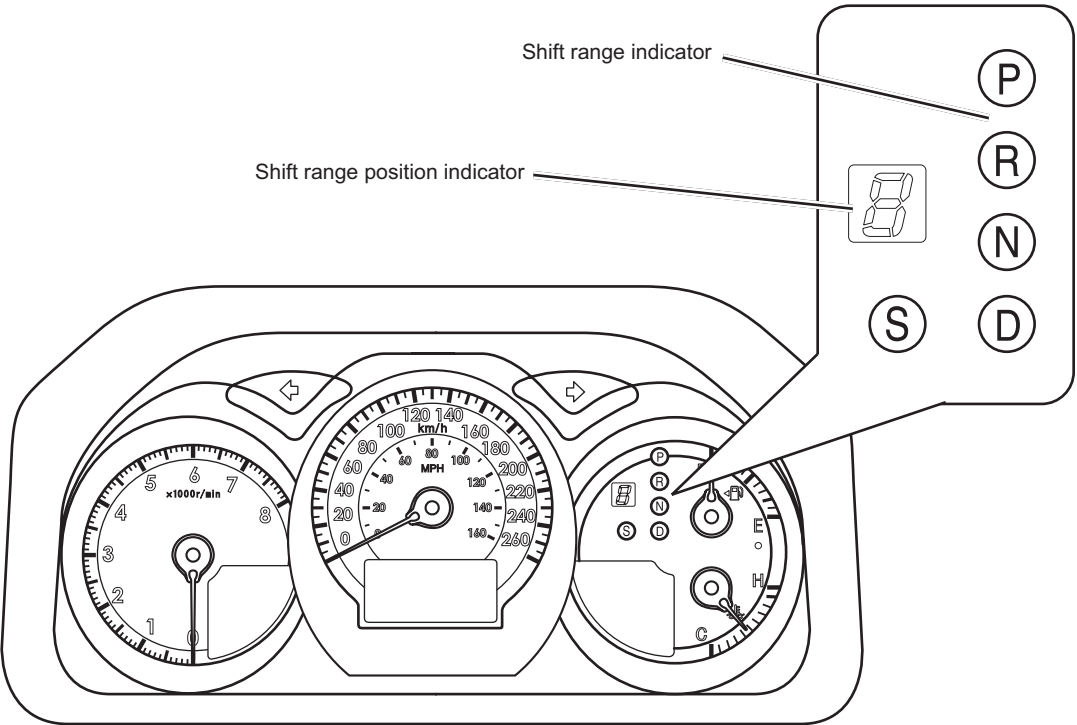
- The driver can operate the multi-mode automatic transmission by moving the shift lever to the S position. At the same time, this movement causes the transmission to engage in the 5th range. (During AI-Shift control, the display will show the maximum range that is being controlled.)
- When the driver operates the shift lever, the shift up switch or the shift down switch (the "+" or "-" switch in the shift lever assembly) turns ON. This causes a shift signal to be transmitted to the engine ECU (with built-in transmission ECU), thus changing the shift ranges within the 6th to 1st range.



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Multi-mode Automatic Transmission Indicator

- Shift range position indicator and a shift range indicator are provided in the combination meter.
- Shift range position indicator illuminates when the driver moves the shift lever to the S position.
- When the shift lever is in the S position, the shift range indicator shows the shift range that is selected at that time. It does not appear in the P, R, N, or D range.



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Shift Gears That Can Use the Multi-mode Automatic Transmission

- When the shift lever is in the S mode position, the transmission fixes the gear to the selected shift range. Thus, the driver will be able to operate the vehicle with a manual transmission-like feel.

Shift Range Operation

Shift lever position	Shift operation	Shift range position indicator	Shift range
D	Impossible	Putting out lights	6,5,4,3,2,1(Automatic)
S	Possible	6	6,5,4,3,2,1(Automatic)
		5	5,4,3,2,1(Automatic)
		4	4,3,2,1(Automatic)
		3	3,2,1(Automatic)
		2	2,1(Automatic)
		1	1(Automatic)