■ CRUISE CONTROL SYSTEM

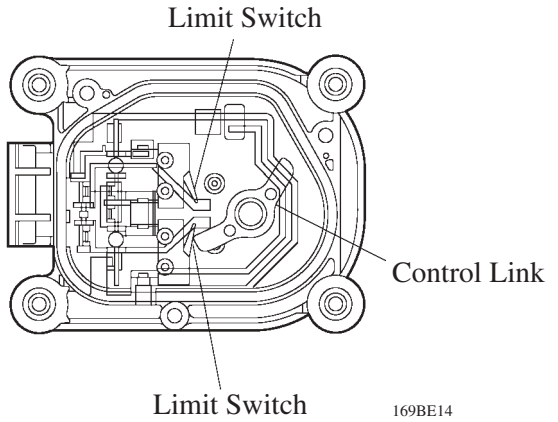
1. General

The new CELICA has adopted a cruise control system, as in the previous model. However, the new model has adopted a compact ECU and a motor-type, lightweight actuator, and the routing of its system control cable has been changed.

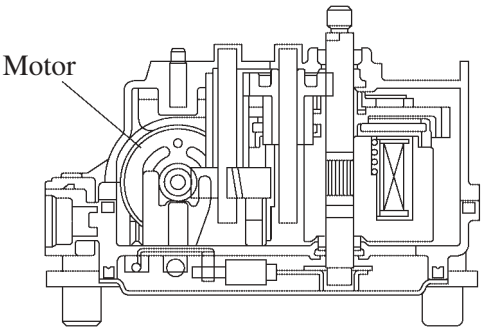
2. Construction and Operation

Actuator

The new CELICA has adopted a new type actuator. The new motor type actuator consists mainly of a motor, control link and limit switch, as shown below.
The potentiometer that measured the opening angle of the control link and transmitted the signals to the cruise control ECU has been discontinued in the new actuator. The new actuator is equipped it with a compact motor. As a result, the new actuator is made both lightweight and simple in construction.
Without the potentiometer, the new actuator continuously regulates the opening angle of the control link. This is made possible by the ECU, which compares the current vehicle speed input with the desired vehicle speed that is stored in memory, and the result of that comparison is transmitted to the actuator.



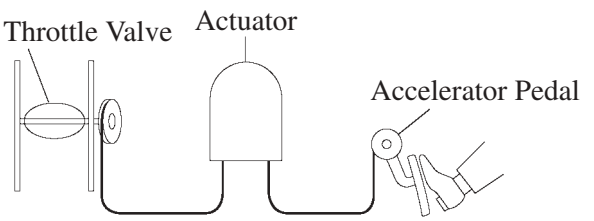
169BE14



169BE12

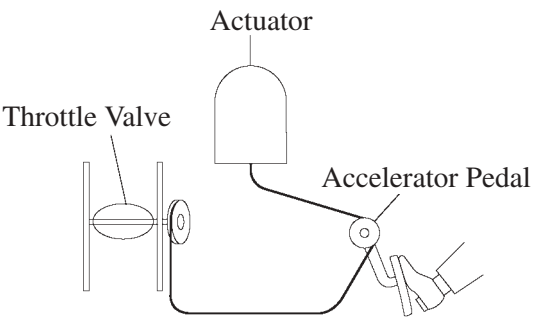
Control Cable

On the previous model, the actuator controlled the throttle valve via the accelerator pedal. However, on the new model, the actuator directly controls the throttle valve. As a result, while the cruise control system is in operation, the movement of the actuator is not transmitted to the accelerator pedal, which improves the operation feel.



169BE15

New



169BE16

Previous

Cruise Control ECU

1) Auto Cancel Function

When the vehicle is being driven under cruise control, if any of the conditions listed below is present, the vehicle speed stored in memory is deleted, the control is lifted, the current to the actuator is disrupted, and the power indicator light is made to flash. The methods to reactivate the cruise control at that time, in accordance with that particular condition (malfunction category A or B), are classified in the chart below.
Other auto cancel functions are basically the same as those of the previous model.

Condition	Malfunction Category	How to reactivate
● Continuous current applied to the motor's acceleration output. ● The motor did not move.	A	Turn off the ignition switch, and turn it back on. Then turn on the main switch.
● Excessive current flowed to the motor or magnetic clutch drive transistor. ● Open circuit in magnetic clutch. ● The vehicle speed signal is not sent for a predetermined period of time (approx. 140 msec.) ● The vehicle speed is equal to the set speed minus approximately 16 km/h (10 mph) or below. ● Short circuit in the control switch. ● An open circuit malfunction of the "decrease" side of the motor (including open circuit in the motor). ● Abnormal vehicle speed signal.	B	Turn the main switch back on.

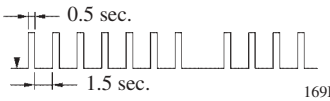
2) Diagnosis Function

a. Warning Indication

The cruise control ECU immediately blinks the power indicator light in the combination meter on and off repeatedly to alert the driver of a system malfunction.
When the power indicator light is flashing, and the cruise control is released by pressing on the main switch, the power indicator light will be turned off. When the main switch is turned back on, the power indicator light blinking pattern as shown on the next page outputs according to the malfunction categories A or B. When a category A malfunction is occurring, the power indicator light will flash again. This indicates that the system cannot operate. But if it is a category B malfunction, the indicator light will remain on indicating that the system is operating.

▶ Power Indicator Light Blinking Pattern ◀

▼ : Malfunction Occurred

Condition / Operation Method			Actuator power source is off.	Actuator power source is on.
Main Switch		ON	 169BE17	 169BE20
		OFF		
Power Indicator Light	A*	ON	 0.5 sec. 1.5 sec. 169BE18	 169BE21
		OFF		
	B*	ON	 169BE19	 169BE22
		OFF		

*: "A" and "B" Indicate the Malfunction Categories.

b. Diagnostic Trouble Code Indication

The diagnostic trouble codes have been modified in the new model. For details of inspection, diagnostic trouble codes and repair procedures, see the CELICA Chassis & Body Repair Manual (Pub. No. RM734E).