■SEQUENTIAL MANUAL TRANSAXLE

1. General

In the new MR2 has been changed from the C56M 5-speed sequential manual transaxle to the C65M type 6-speed sequential manual transaxle. These sequential manual transaxles are based on the C56M type with a 6th gear added.

- The 6th gear is added to reduce noise when driving at high speed and increase fuel economy. The gear train part has the same basic construction and operation as the C56M 5-speed manual transaxle.
- Changes to the components of the sequential manual transaxle are shown below.

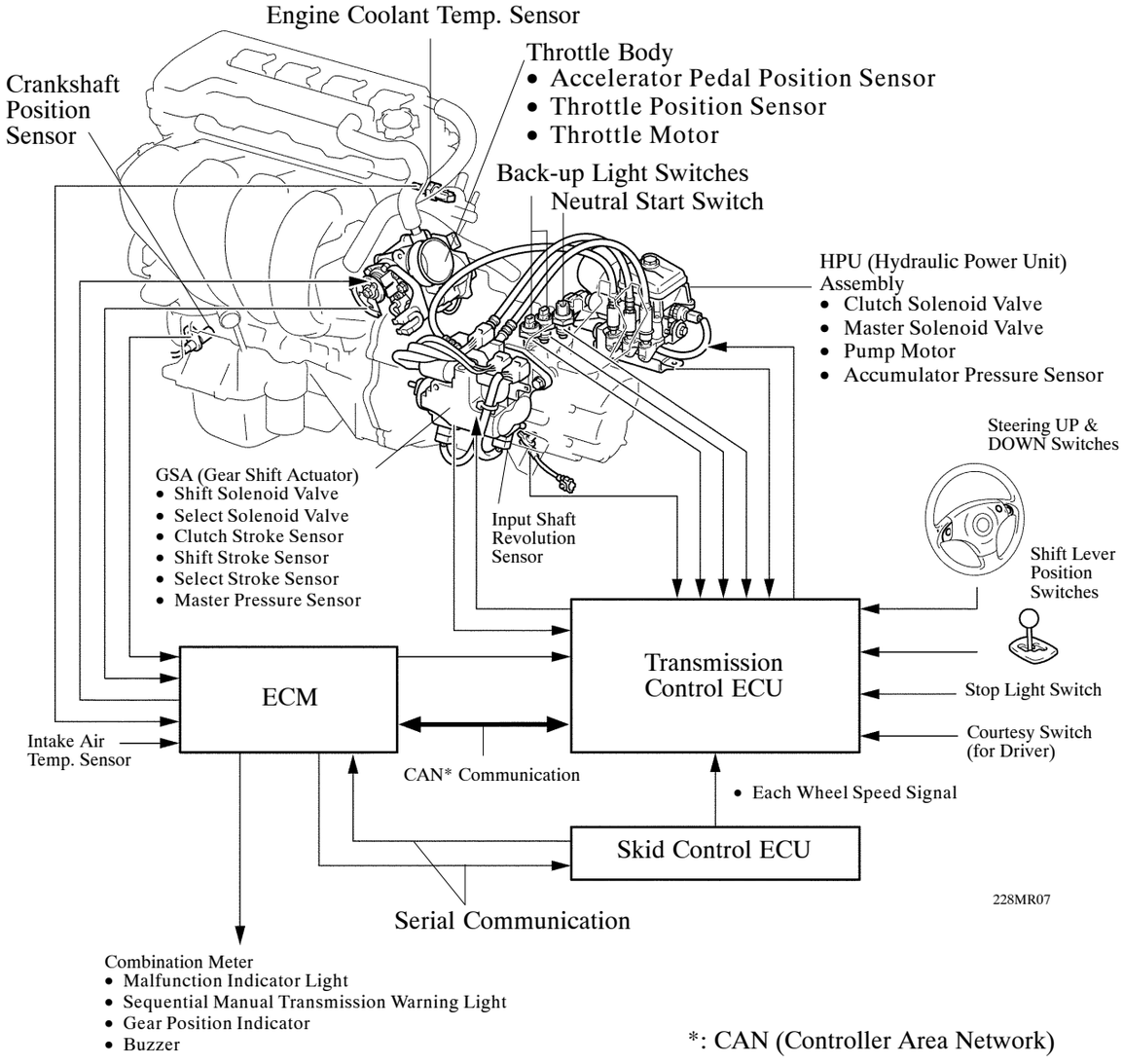
Component Parts	Changed
Shift and Select Mechanism	Comply with the 6-speed
Transmission Control ECU	• With the change to 6-speed, the soft logic of the transmission control ECU for shifting control of the gear shift actuator has been changed. • To increase drivability in low speed ranges, a 2nd coast down control has been added. • DTC (Diagnostic Trouble Code) is changed.
Others	Configuration and structure are the same as '02 MR2.

▶ Specification ◀

Model		'03 MR2	'02 MR2
Transaxle Type		C65M (6-speed)	C56M (5-speed)
Gear Ratio	1st	3.166	←
	2nd	1.904	←
	3rd	1.392	←
	4th	1.031	←
	5th	0.815	←
	6th	0.725	—
	Reverse	3.250	←
Differential Gear Ratio		4.312	
Oil Capacity Liters (US qts, Imp. qts)	without LSD	2.3 (2.4, 2.1)	1.9 (2.0, 1.7)
	with LSD	2.1 (2.2, 1.9)	1.8 (1.9, 1.6)
Oil Viscosity		SAE 75W-90	←
Oil Grade		API GL-4 or GL-5	←
Weight (Reference)* kg (lb)	without LSD	44.5 (98.0)	41.5 (91.5)
	with LSD	46.0 (101.4)	43.0 (94.8)

*: Weight shows the figure with the oil fully filled.

▶ System Diagram ◀



*: CAN (Controller Area Network)

2. Transmission Control ECU

2nd Coast Control

The 2nd coast down control is a control to shift down to 2nd gear or 1st gear to ensure drivability when driving at a fixed vehicle speed as shown in the table below.

Gear Position	Vehicle Speed
6th → 2nd	18 mph (28 km/h) less than
5th → 2nd	15 mph (24 km/h) less than
4th → 2nd	11 mph (18 km/h) less than
3rd → 2nd	10 mph (16 km/h) less than
2nd → 1st	5 mph (8 km/h) less than

Self-Diagnosis

In order to comply with the OBD-II regulation, the DTC (Diagnostic Trouble Codes) of the sequential manual transaxle have been changed to match the SAE control codes.

DTC No.		Detection Item	DTC No.		Detection Item
New	Old		New	Old	
P0562	P1600	ECU BATT Malfunction	P0910	P1868	Select Solenoid Malfunction
P0703	P1520	Stop Light Switch Malfunction	P0915	P1882	Gear Shift Position Sensor Malfunction Output Error
P0715	P0715	Input Shaft Revolution Sensor Malfunction	P0916	P1870	Shift Stroke Sensor Malfunction/ Low Voltage
P0725	P0335	Engine Revolution Sensor Malfunction	P0917		Shift Stroke Sensor Malfunction/ High Voltage
P0807	P1855	Clutch Stroke Sensor Malfunction/ Low Voltage	P0919	P1873	Shift and Select Stroke Control System Malfunction
P0808		Clutch Stroke Sensor Malfunction/ High Voltage	P0920	P1866	Shift Solenoid Malfunction
P0810	P1857	Clutch Control System Malfunction	P0934	P1851	Accumulator Pressure Sensor Malfunction/ Low Voltage
P0812	P1881	Transmission Reverse Switch Malfunction	P0935		Accumulator Pressure Sensor Malfunction/ High Voltage
P0820	P1781	Shift Lever Switch Malfunction	P0942	P1880	HPU Pressure Control System Malfunction
P0847	P1860	Master Pressure Sensor Malfunction/ Low Voltage	P0945	P1854	Motor Relay Malfunction
P0848		Master Pressure Sensor Malfunction/ High Voltage	P1735	P1835	Right Front Wheel Speed Sensor Malfunction
P0850	P1780	Transmission Neutral Switch Malfunction	P1740	P1840	Left Front Wheel Speed Sensor Malfunction
P0863	P1810	CAN Communication Malfunction	P1839	P1839	Right Rear Wheel Speed Sensor Malfunction
P0896	P0780	Shift Change Malfunction	P1844	P1844	Left Rear Wheel Speed Sensor Malfunction
P0900	P1878	Clutch Solenoid Malfunction	P2716	P1853	Master Solenoid Malfunction
P0905	P1883	Gear Select Position Sensor Malfunction Output Error	droppe d	P1863	Master Pressure Control Malfunction
P0906	P1874	Select Stroke Sensor Malfunction/ Low Voltage	—	—	—
P0907		Select Stroke Sensor Malfunction/ High Voltage			