

## SHIFT POINT CONTROL (MANUAL SHIFT CONTROL) [GW6A-EL, GW6AX-EL]

id0517i2362200

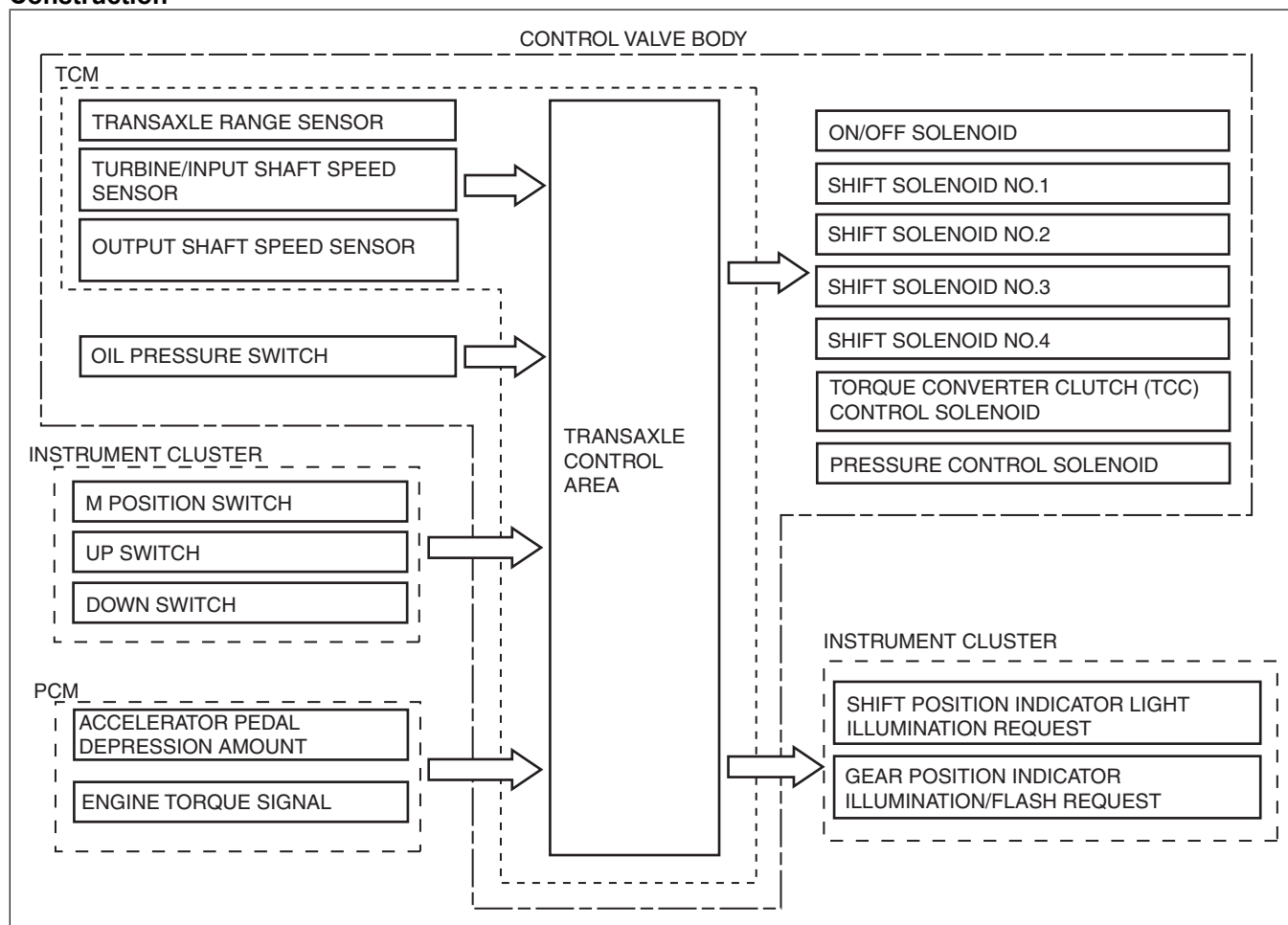
### Caution

- Vehicle specifications differ depending on the vehicle identification number (VIN).
  - TypeA VIN:
    - JM0 KE\*\*\*\*\* 100001—
    - JM6 KE\*\*\*\*\* 100001—
    - JM8 KE\*\*\*\*\* 100001—
    - JMZ KE\*\*\*\*\* 100001—
  - TypeB VIN:
    - JM0 KE\*\*\*\*\* 200001—
    - JM6 KE\*\*\*\*\* 200001—
    - JM8 KE\*\*\*\*\* 200001—
    - JMZ KE\*\*\*\*\* 200001—

### Outline

- The TCM operates the manual shift control when the M position is selected.
- If the M position is selected, manual shifting is prioritized according to the driver's shift up/shift down operation. However, to assure driving safety and protect the ATX, minimum automatic shifting may occur.

### Construction



ac5wzn00000916

### Operation

#### TypeA VIN

- Gears can be selected by moving the selector lever back and forth while driving in the M position.
- When shifting the selector lever from the D to M position while driving, the gear being used while driving in the D position is maintained. For driving in D position 6th gear, however, when shifting the selector lever from the D to M position with the accelerator pedal not depressed, the gear shifts from 6th to 5th gear. For driving in 5th gear, when shifting the selector lever from the D to M position with the accelerator pedal not depressed, the gear shifts from 5th to 4th gear.

- When a shift down is performed using the selector lever with the accelerator pedal not depressed and the selector lever in the M position, blipping control (synchronization to engine speed) is performed.
- If the ATF temperature exceeds the specified temperature while in manual mode, the TCM switches control to automatic shift control and turns the gear position indicator off to reduce the transaxle load. When the ATF temperature decreases to the appropriate temperature, the TCM enables driving in manual mode and re-illuminates the gear position indicator.
- During manual shift control, in every gear speed, engine brake force can be obtained corresponding to the gear ratio. In addition, if the vehicle speed reaches a constant speed or less, shift-down is performed automatically.

#### Shifting operation and manual transmission

Shift operation		Gear	Gear shift enabled/disabled
Shift-up operation	Operates once	1GR to 2GR	Enabled when both driving and stopped
		2GR to 3GR	Enabled when driving at specified vehicle speed or more
		3GR to 4GR	
		4GR to 5GR	
		5GR to 6GR	
	Operates 2 times consecutively	1GR to 3GR	
		2GR to 4GR	
		3GR to 5GR	
	Operates 3 times consecutively	4GR to 6GR	
		1GR to 4GR	
		2GR to 5GR	
	Operates 4 times consecutively	3GR to 6GR	
		1GR to 5GR	
Shift-down operation	Operates once	2GR to 6GR	Enabled when driving at specified vehicle speed or less
		6GR to 5GR	
		5GR to 4GR	
		4GR to 3GR	
		3GR to 2GR	
	Operates 2 times consecutively	2GR to 1GR	
		6GR to 4GR	
		5GR to 3GR	
	Operates 3 times consecutively	4GR to 2GR	
		3GR to 1GR	
		6GR to 3GR	
	Operates 4 times consecutively	5GR to 2GR	
		4GR to 1GR	
		6GR to 2GR	
		5GR to 1GR	

- The gear shifting operation may cancel depending on the vehicle speed. If a shift-down operation is canceled, the gear position indicator illuminates to alert the driver.
- If the engine reaches a high engine speed, the following controls are performed to protect the engine:
  1. The throttle valve is squeezed so that the engine speed does not exceed the excess speed range and the engine speed is stabilized at a lower speed than the excess speed range.
  2. If the high engine speed condition continues, the engine speed is lowered by a forced shift-up of the gears.

#### 2nd gear fixed mode

- When the vehicle is stopped or the vehicle speed is extremely low, the selector lever is moved to the + side and the transaxle is in 2nd gear.
- On slippery surfaces such as snow-bound roads, forward acceleration and driving is facilitated. While in 2nd gear fixed mode and the selector lever is shifted to gears other than 2nd gear, the 2nd gear fixed mode is canceled.

#### Operation

##### TypeB VIN

- Gears can be selected by moving the selector lever back and forth while driving in the M position.
- When shifting the selector lever from the D to M position while driving, the gear being used while driving in the D position is maintained. For driving in D position 6th gear, however, when shifting the selector lever from the D to M position with the accelerator pedal not depressed, the gear shifts from 6th to 5th gear. For driving in 5th gear, when shifting the selector lever from the D to M position with the accelerator pedal not depressed, the gear shifts from 5th to 4th gear.
- When a shift down is performed using the selector lever with the accelerator pedal not depressed and the selector lever in the M position, blipping control (synchronization to engine speed) is performed.
- When the accelerator pedal is fully depressed while driving in the M position, kickdown shifting is performed.

- If the ATF temperature exceeds the specified temperature while in manual mode, the TCM switches control to automatic shift control and turns the gear position indicator off to reduce the transaxle load. When the ATF temperature decreases to the appropriate temperature, the TCM enables driving in manual mode and re-illuminates the gear position indicator.
- During manual shift control, in every gear speed, engine brake force can be obtained corresponding to the gear ratio. In addition, if the vehicle speed reaches a constant speed or less, shift-down is performed automatically.

#### Shifting operation and manual transmission

Shift operation		Gear	Gear shift enabled/disabled
Shift-up operation	Operates once	1GR to 2GR	Enabled when both driving and stopped
		2GR to 3GR	Enabled when driving at specified vehicle speed or more
		3GR to 4GR	
		4GR to 5GR	
		5GR to 6GR	
	Operates 2 times consecutively	1GR to 3GR	
		2GR to 4GR	
		3GR to 5GR	
		4GR to 6GR	
	Operates 3 times consecutively	1GR to 4GR	
		2GR to 5GR	
		3GR to 6GR	
	Operates 4 times consecutively	1GR to 5GR	
		2GR to 6GR	
Shift-down operation	Operates once	6GR to 5GR	Enabled when driving at specified vehicle speed or less
		5GR to 4GR	
		4GR to 3GR	
		3GR to 2GR	
		2GR to 1GR	
	Operates 2 times consecutively	6GR to 4GR	
		5GR to 3GR	
		4GR to 2GR	
		3GR to 1GR	
	Operates 3 times consecutively	6GR to 3GR	
		5GR to 2GR	
		4GR to 1GR	
	Operates 4 times consecutively	6GR to 2GR	
		5GR to 1GR	

- The gear shifting operation may cancel depending on the vehicle speed. If a shift-down operation is canceled, the gear position indicator illuminates to alert the driver.
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  1. The throttle valve is squeezed so that the engine speed does not exceed the excess speed range and the engine speed is stabilized at a lower speed than the excess speed range.
  2. If the high engine speed condition continues, the engine speed is lowered by a forced shift-up of the gears.

#### 2nd gear fixed mode

- When the vehicle is stopped or the vehicle speed is extremely low, the selector lever is moved to the + side and the transaxle is in 2nd gear.
- On slippery surfaces such as snow-bound roads, forward acceleration and driving is facilitated. While in 2nd gear fixed mode and the selector lever is shifted to gears other than 2nd gear, the 2nd gear fixed mode is canceled.
- If the accelerator pedal is fully depressed in 2nd gear fixed mode, kickdown shifting is performed and the 2nd gear fixed mode is cancelled.