

# MANUAL MODE SHIFT CONTROL OPERATION

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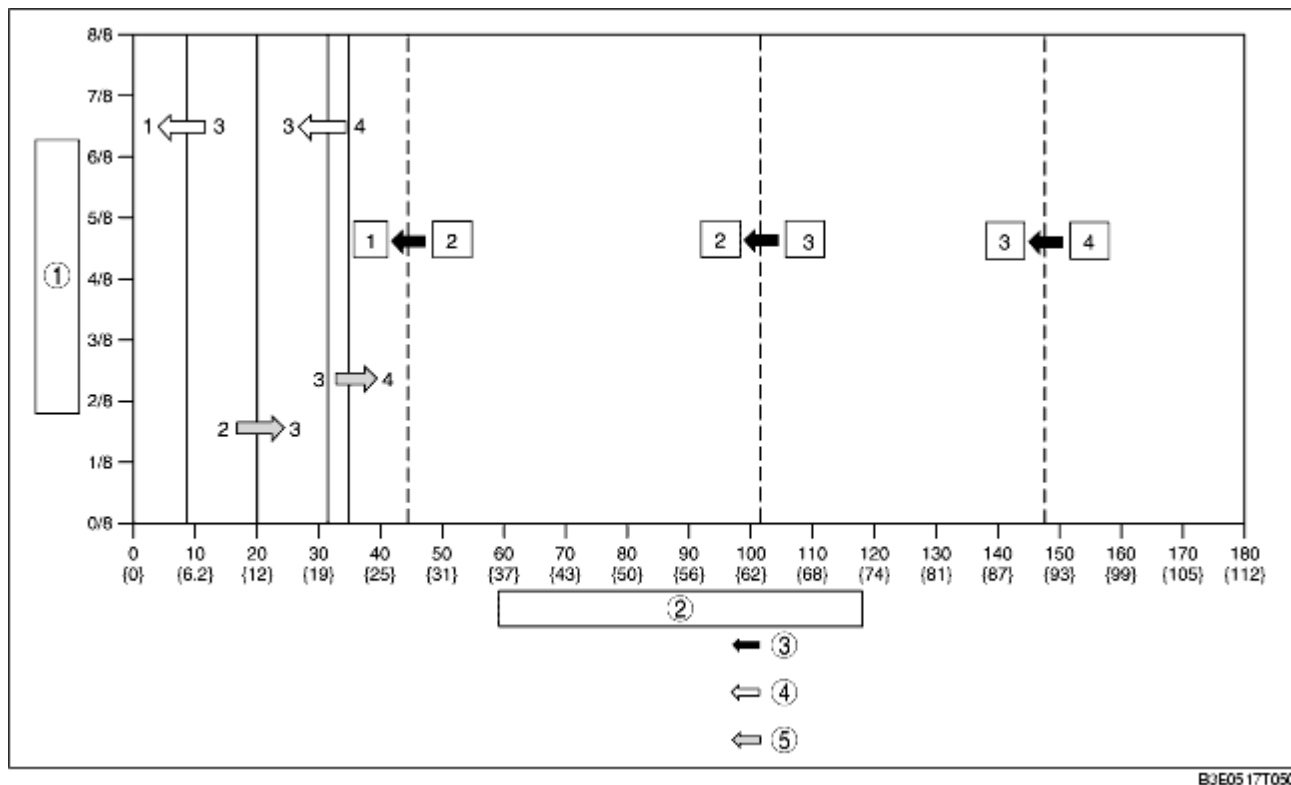
## Manual mode shift

- When the selector lever is shifted over from the D to M range position, the M range switch in the selector lever component turns on, sending a manual mode command signal to the PCM which activates the manual mode shift control.
- When in manual mode and the selector lever is operated in the back (+) direction, the up switch in the selector lever component is turned on and an up-shift command signal is input to the PCM.
  - The PCM, triggered by the up-shift command signal, carries out shifting by outputting an operation signal to the shift solenoid if the ATF temperature is not low (for 3GR only), vehicle speed is higher than the set speed and the gear position is 3GR or lower.
- Conversely, when the selector lever is operated in the forward (-) direction, the down switch in the selector lever component turns on, and a down-shift command signal is input to the PCM.
  - The PCM, triggered by the down-shift command signal, carries out shifting by outputting an operation signal to the shift solenoid if the vehicle speed is less than the set speed and the gear position is 2GR or above.
- The PCM utilizes a specialized M range automatic shift diagram. Due to this, restriction of manual shift demand and automatic control of downshifting is carried out, reducing load on the ATX, preventing engine over-rev and ensuring drive stability.

| Condition   | Shift control   | Note  |
|---|---|---|
| 2GR→3GR up-shift command at low speed   | • To reduce load on the ATX, upshifting is inhibited until vehicle reaches speed possible for upshifting      |   |
| 3GR→4GR up-shift command at low speed   |   |   |
| 3GR→4GR up-shift command, low ATF temperature   | • To reduce load on the ATX, upshifting to 4GR is inhibited   |   |
| 4GR→3GR down-shift command, above set speed   | • To prevent engine over-rev, downshifting is inhibited until vehicle reaches speed possible for downshifting | • Gear position indicator light flash to alert driver |
| 3GR→2GR down-shift command, above set speed   |   |   |
| 2GR→1GR down-shift command, above set speed   |   |   |
| In 4GR deceleration, speed goes below coast-down set speed (deceleration down- shift) | • To assure drive stability, automatically downshifts from 4GR to 3GR   |   |
| In 3GR deceleration, speed goes below coast-down set speed (deceleration down- shift) | • To assure drive stability, automatically downshifts from 3GR to 1GR   |   |

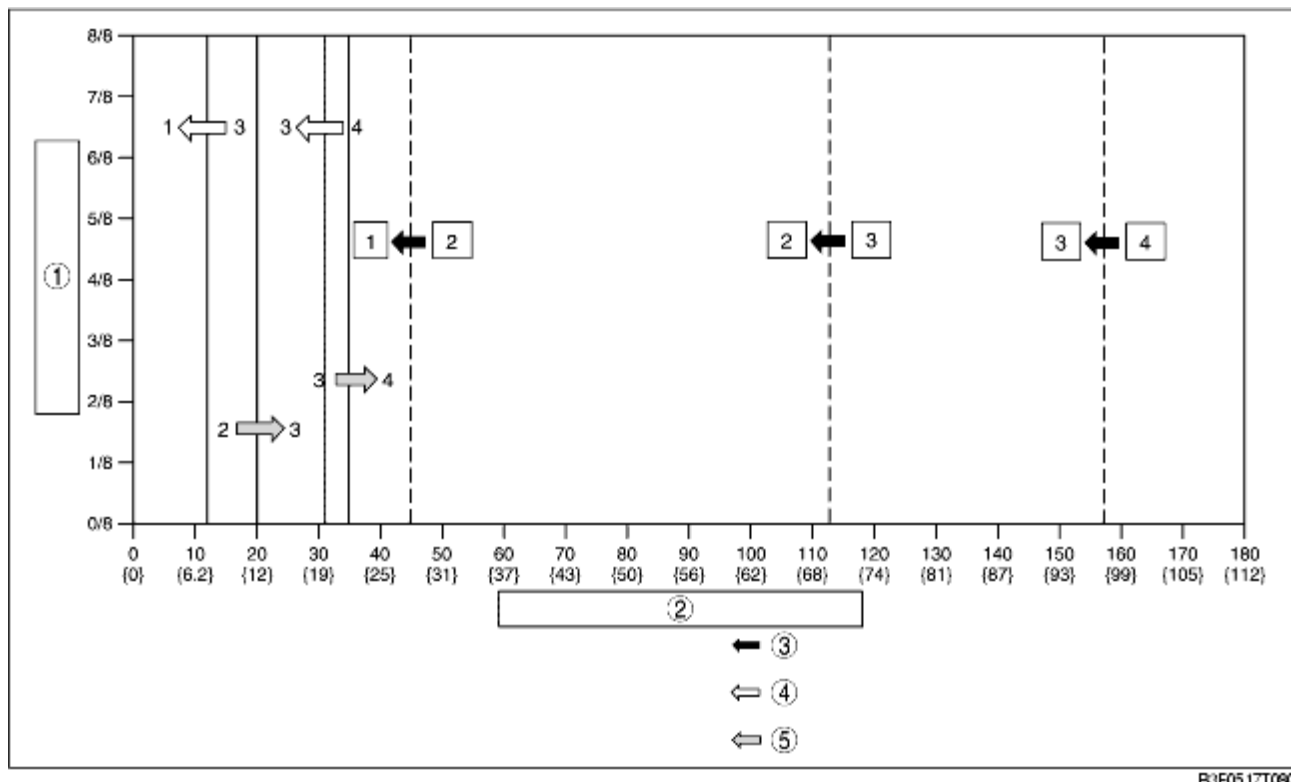
## Shift diagram

Z6



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## LF



B3E05 17T050

|   |   |
|---|---|
| 1 | Throttle opening  |
| 2 | Vehicle speed km/h {mph}  |
| 3 | Downshifting is inhibited until vehicle reaches speed possible for downshifting |

|   |   |
|---|---|
| 4 | When decelerating below set vehicle speed, executes automatic downshifting  |
| 5 | Upshifting is inhibited until vehicle reaches speed possible for upshifting |