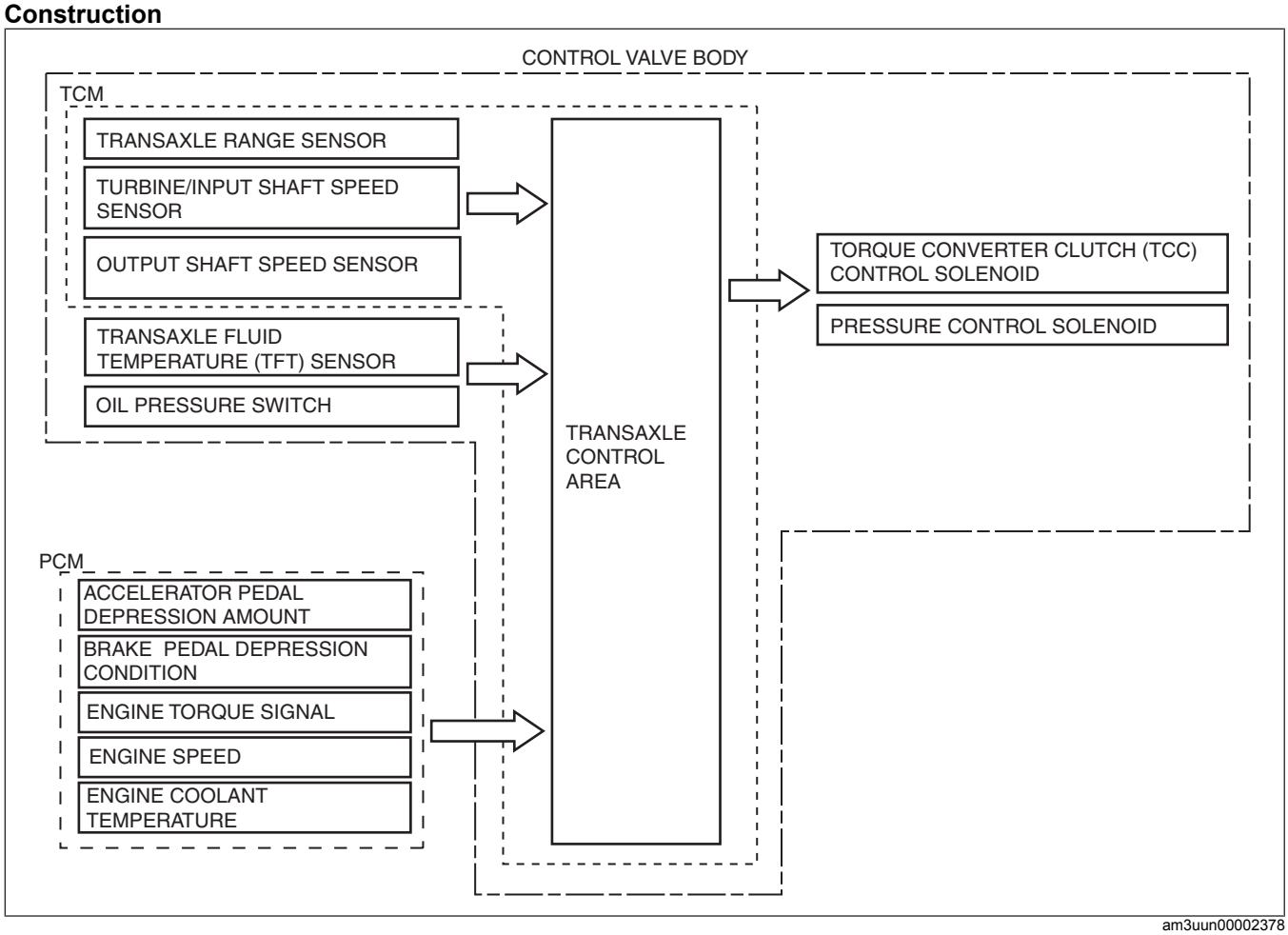
TORQUE CONVERTER CLUTCH (TCC) CONTROL [FW6A-EL, FW6AX-EL]

id0517h2362300

Outline

- For TCC control, a newly developed, full range TCC control has been adopted. The TCC range has been significantly widened by having the smoothness unique to the torque converter during acceleration from a stop take precedence and actively controlling TCC directly after acceleration from a stop. Therefore, a contribution to low fuel consumption and vehicle operability with a direct feel have been achieved.
- Lower fuel consumption and improved emission performance have been achieved by performing the TCC control during deceleration with the accelerator pedal fully closed and by fuel-cut during TCC.

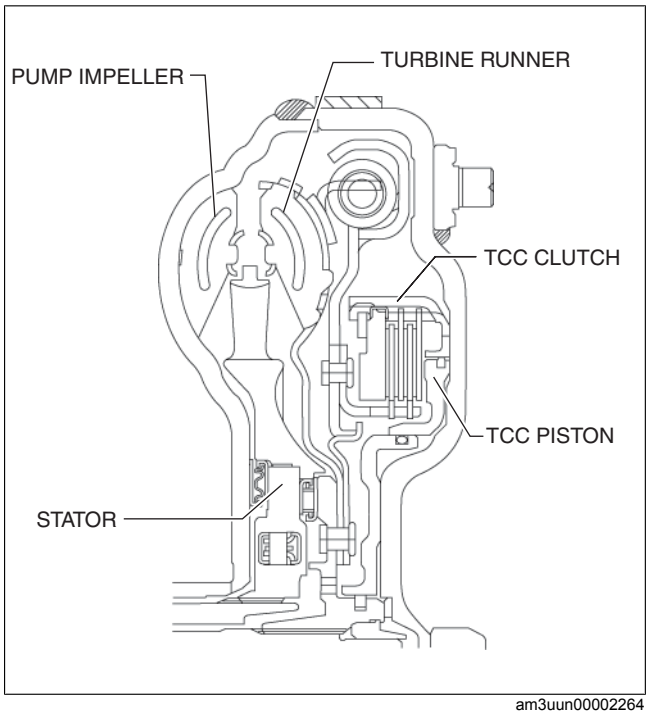
Construction



am3uun00002378

- The TCC mechanism consists of a torque converter clutch, TCC piston, and a damper which are installed inside the torque converter.
- A multi-plate type torque converter clutch has been adopted for improved durability. Also, by reducing the size of the clutch diameter, improved handling is achieved by the ability to respond to the precise control by the full range TCC.

- Vibration during TCC engagement is suppressed by the improved damper performance.



am3uun00002264

Operation

TCC engagement

- A current signal is sent from the TCM to the TCC control solenoid during TCC engagement. At the same time, the TCC piston engagement pressure is gradually increased.
- As a result, the TCC piston is pressure-bonded to the TCC clutch slowly to perform smooth TCC engagement.

TCC release

- A current signal is sent from the TCM to the TCC control solenoid during TCC release. At the same time, the TCC piston engagement pressure is gradually drained.
- As a result, the TCC piston releases the TCC clutch slowly to release the TCC smoothly.

Inhibition of TCC control

- If any one of the following conditions is met, the torque converter clutch control is inhibited.
  - — TCC solenoid malfunction
  - — ATF temperature is specified value or less
  - — Engine speed signal is specified value or less
  - — Turbine shaft speed is specified value or less
  - — Other than D/M position