PUSH BUTTON START SYSTEM [KEYLESS ENTRY SYSTEM]

id0914001116b3

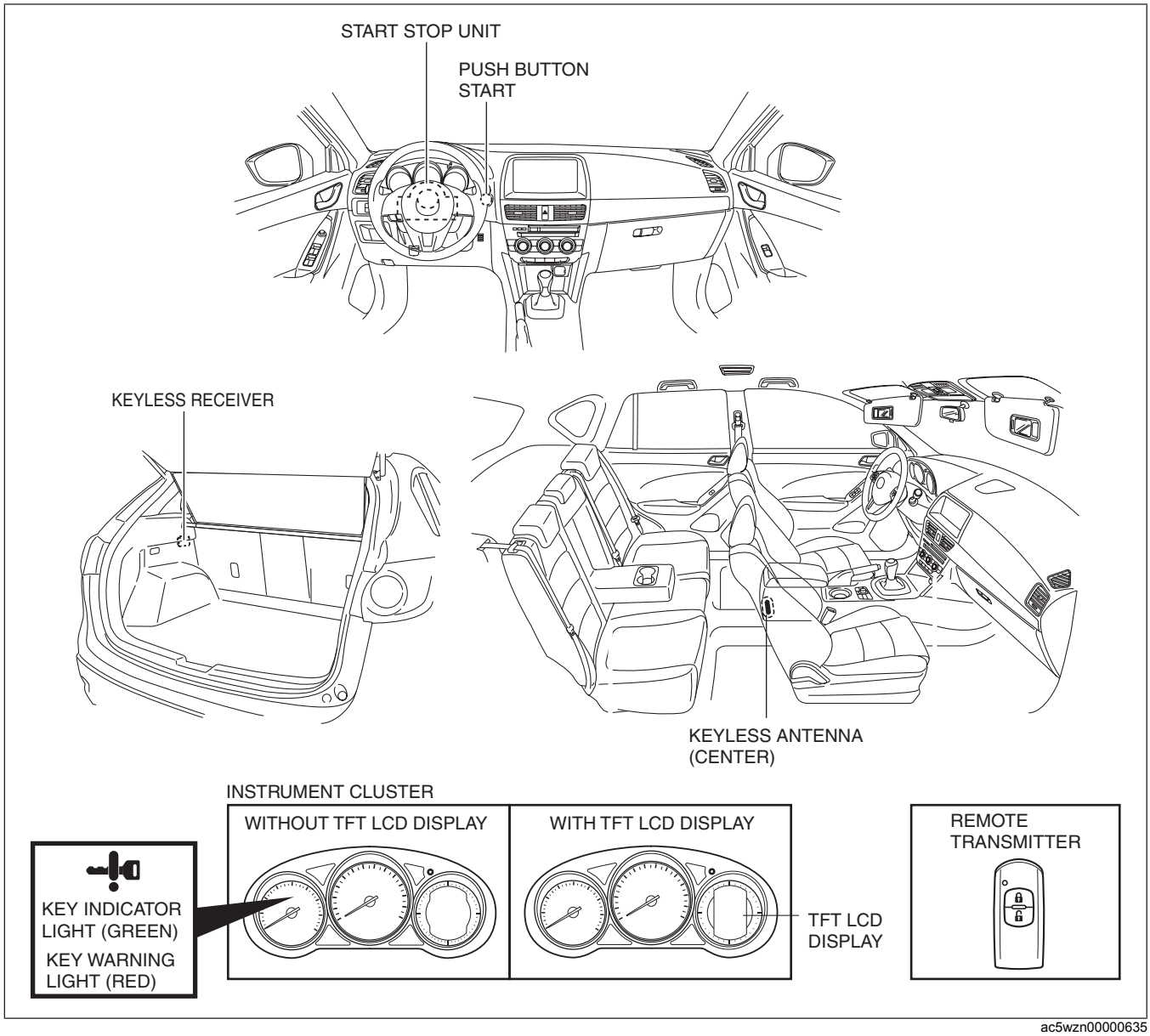
Outline

- A push button start system has been adopted that automatically performs authorization of the remote transmitter being brought within the request signal output range of the keyless antennas.
- The start stop unit performs push button start system fail-safe. (See START STOP UNIT.)

Function

- When the push button start is pressed, the push button start system performs authorization of the remote transmitter that is within the request signal output range of the keyless antennas.
  - — Engine start: When the remote transmitter authorization is performed while the engine starting conditions are met, the engine starts.
  - — Power supply switching: When the remote transmitter authorization is performed, the ignition can be switched between OFF, ACC, and ON (engine on).
- The guidance function displays methods of resolving issues, such as insufficient conditions for starting the engine, or remote transmitter authorization issues or the inability to release the steering lock, in the TFT LCD display (with TFT LCD display).

Structural View



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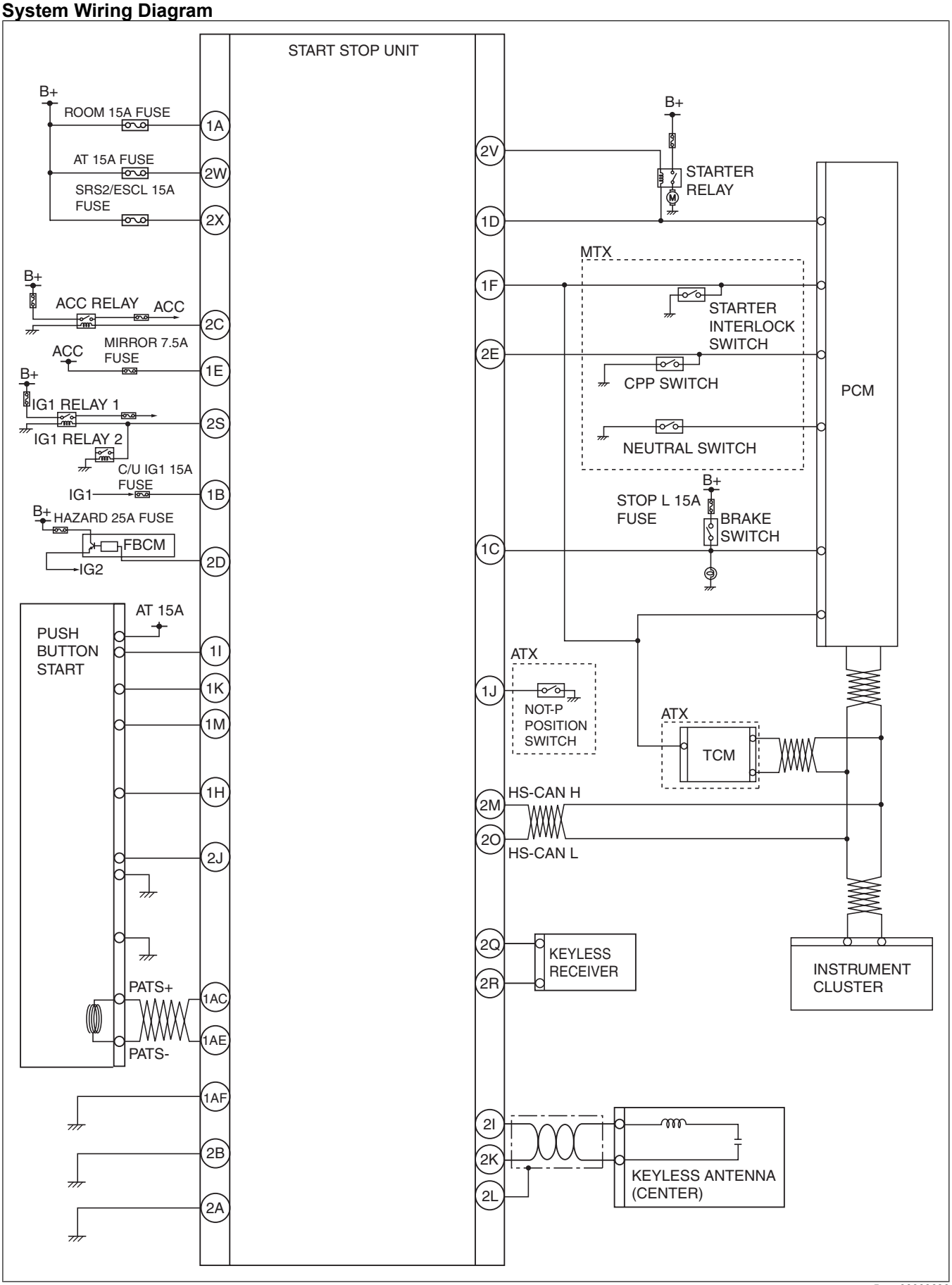
System Wiring Diagram



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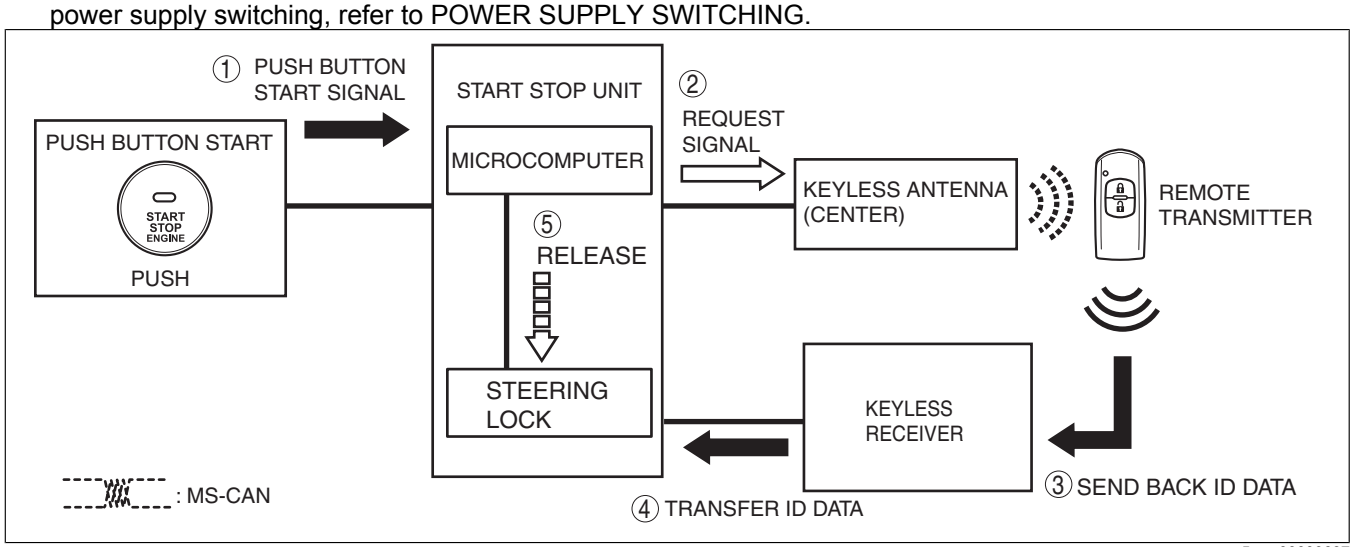
Operation

Remote transmitter verification

1. When the push button start is pressed, a push button start signal is input to the start stop unit.
2. When the start stop unit detects a push button start signal, it sends a request signal via the keyless antennas.
3. The remote transmitter receives the request signal from the keyless antennas, and transmits ID data to the keyless receiver.
4. The keyless receiver transmits the received ID data to the start stop unit.
5. The start stop unit verifies the ID data and if it matches the steering lock in the module is released and the power supply is switched simultaneously to illuminate the push button start indicator light (amber). For details on the power supply switching, refer to POWER SUPPLY SWITCHING.



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Engine-start operation

- The remote transmitter authorization is performed and the engine starts by pressing the push button start when all the following conditions are met:

  Engine start conditions

  — Clutch pedal is depressed (MTX)
  — Brake pedal is depressed (ATX)
  — Selector lever is in P or N position (ATX)
  — Remote transmitter is within request signal output range of keyless antennas in vehicle interior

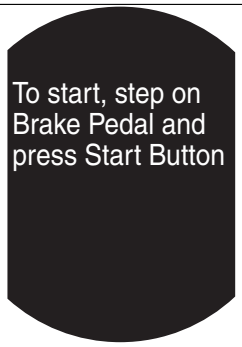
Back-up mode (MTX) for engine-start

- If the start stop unit determines that either the clutch pedal position switch or clutch cut switch is malfunctioning, the system switches to back-up mode.
- If the push button start is pressed when all the following conditions are met while in the back-up mode, the remote transmitter authorization is performed and the engine starts.
  — Start stop unit detects that either clutch pedal position switch or clutch cut switch is on
  — Neutral switch signal is received via CAN communication from PCM
  — Remote transmitter is within request signal output range of keyless antennas in vehicle interior

Guidance function

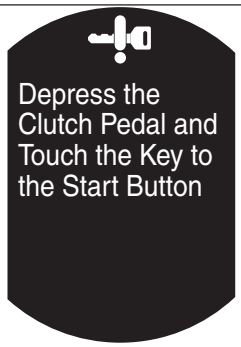
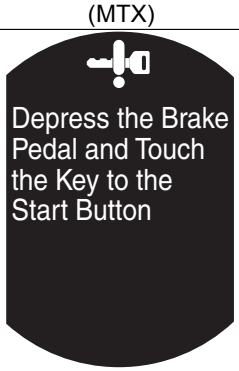
Advice display for engine-start

- If all of the engine-start conditions are met, the key indicator light (green) in the instrument cluster and the push button start indicator (green) illuminate.
- Under the following conditions, the start stop unit sends an advice request signal via CAN transmission to the instrument cluster.
- When the instrument cluster receives an advice request signal, it displays the conditions which have not been met in order to start the engine in the TFT LCD display (with TFT LCD display).

Condition	TFT LCD display
Ignition is switched ON (engine off) from OFF (LOCK) without depressing clutch pedal (MTX)	
Ignition is switched ON (engine off) from OFF (LOCK) without depressing brake pedal (ATX)	
Ignition is switched ON (engine off) and selector lever is not in P position when pressing push button (ATX)	

Display of methods for resolving issues

- Under the following conditions, the start stop unit sends a warning request signal via CAN transmission to the instrument cluster to flash the push button start indicator (green).
- When the instrument cluster receives the warning request signal, it displays the method for resolving an issue in the TFT LCD display (with TFT LCD display).

Condition	Instrument cluster			Push button start
	Keyless warning alarm	KEY warning light (red)	TFT LCD display	Indicator light (green)
ID data cannot be verified	—	Flashes	 (MTX)  (ATX)	—
Steering lock cannot be released	Pattern C*1	—		Flashes for 10 s

*1 : For the keyless warning alarm sound pattern, refer to the keyless warning alarm. (See KEYLESS WARNING ALARM.)