
FRONT COMBINATION LIGHT

id091800010200

Purpose

- The front combination light groups and houses together the parts related to the front exterior lights such as the headlight, parking light, front turn light, headlight leveling actuator, wiring harnesses, and connectors.
- Energy consumption reduction and maintenance-free design been achieved with the adoption of LEDs on the headlight HI/LO.
- Visibility of road signs positioned higher up has been improved by blurring the cut lines of the headlights between light and dark to the extent possible.
- Visibility of pedestrians and roadside zones has been improved by expanding the light distribution of the headlights.

Function

- Each light illuminates or flashes when the light switch, turn switch, or hazard warning switch is operated.

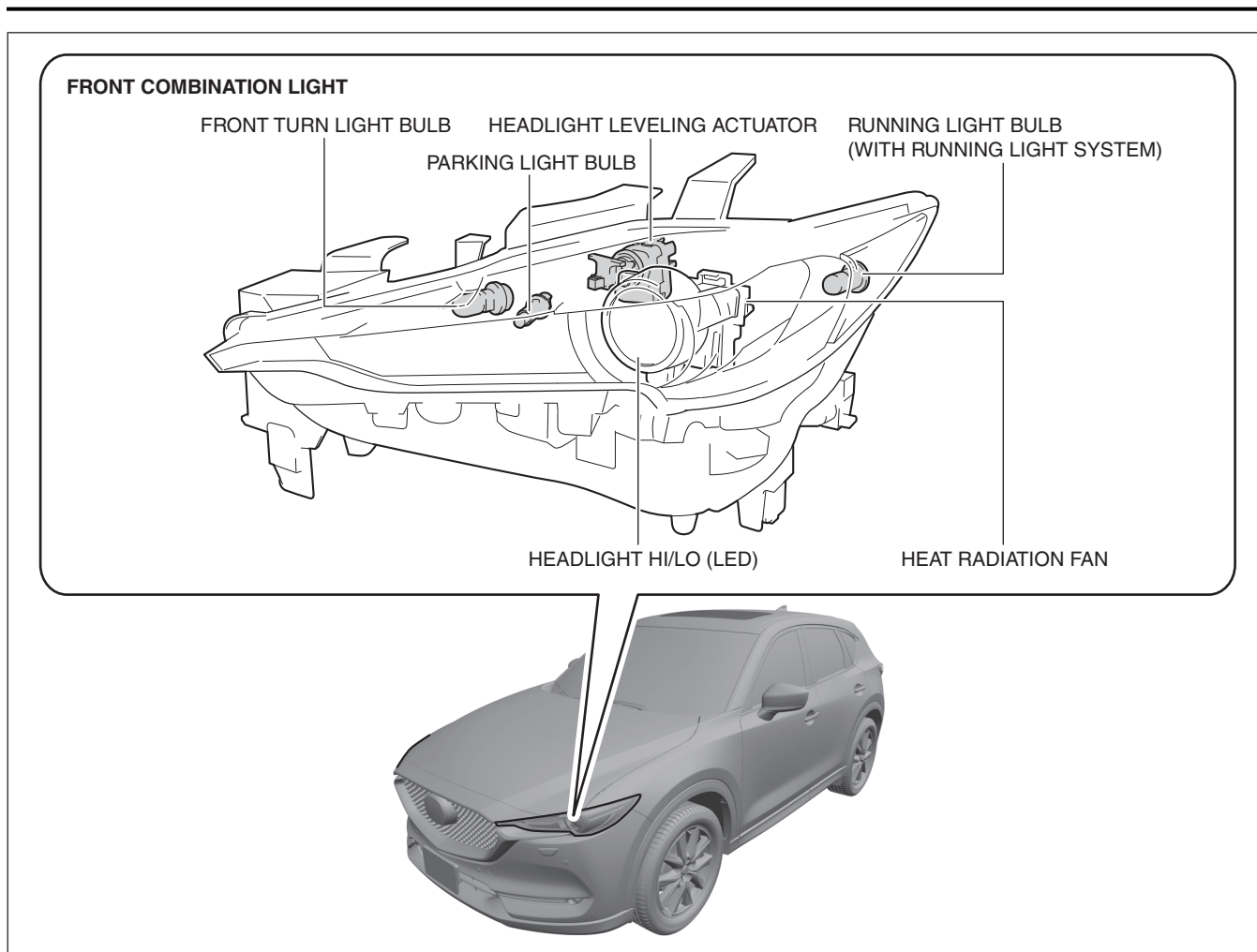
Structure/Construction

With parking light (bulb type)

- The front combination light groups the following parts:
 - Front turn light bulb
 - Parking light bulb
 - Running light bulb (with running light system)
- The front combination light is integrated with the following parts:
 - Headlight HI/LO (LED)
 - Headlight leveling actuator
- A projector type headlight has been adopted for the headlight HI/LO.
- Heat generated by the illumination of the LEDs is absorbed and dispersed by the heat radiation fan installed to the back of the headlight HI/LO reflector.

Note

- Fogging or condensation on the inside of the front combination lights may occur, however, it is a natural phenomenon occurring as a result of a temperature difference between the interior and exterior of the front combination lights and has no effect on the light performance.
- Fogging or condensation occurring as a natural phenomenon will dissipate when the temperature inside the front combination lights rises after the headlights are illuminated and a period of time has elapsed.



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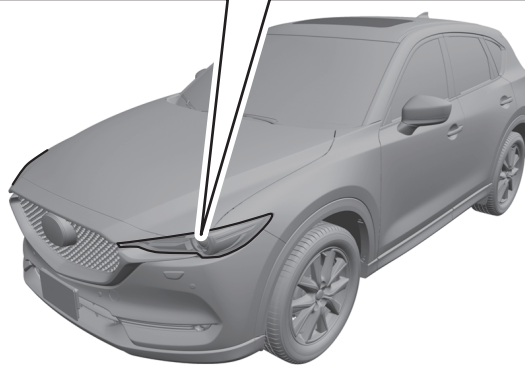
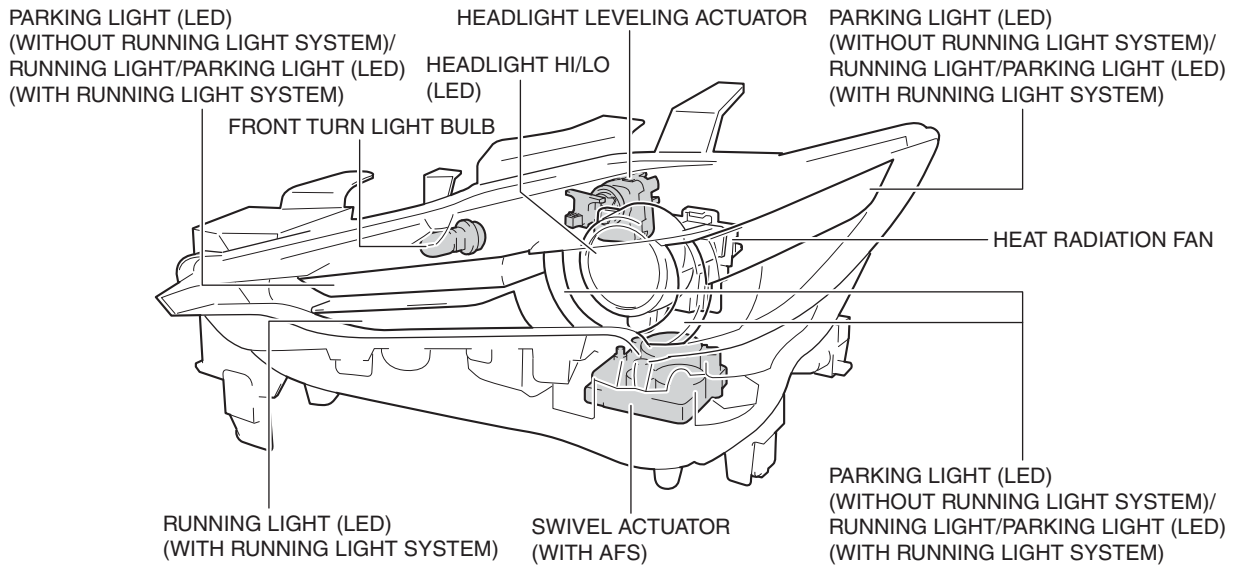
With parking light (LED type) and without adaptive LED headlights

- The front combination light groups the front turn light bulb.
- The front combination light is integrated with the following parts:
 - Headlight HI/LO (LED)
 - Running light (LED)(with running light system)
 - Parking light (LED)(without running light system)
 - Running light/parking light (LED)(with running light system)
 - Headlight leveling actuator
 - Swivel actuator (with adaptive front lighting system (AFS))
- A projector type headlight has been adopted for the headlight HI/LO.
- Heat generated by the illumination of the LEDs is absorbed and dispersed by the heat radiation fan installed to the back of the headlight HI/LO reflector.

Note

- Fogging or condensation on the inside of the front combination lights may occur, however, it is a natural phenomenon occurring as a result of a temperature difference between the interior and exterior of the front combination lights and has no effect on the light performance.
- Fogging or condensation occurring as a natural phenomenon will dissipate when the temperature inside the front combination lights rises after the headlights are illuminated and a period of time has elapsed.

FRONT COMBINATION LIGHT



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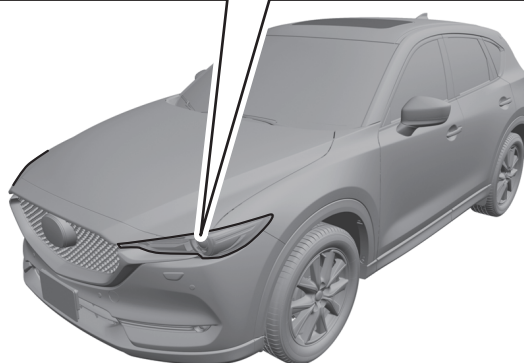
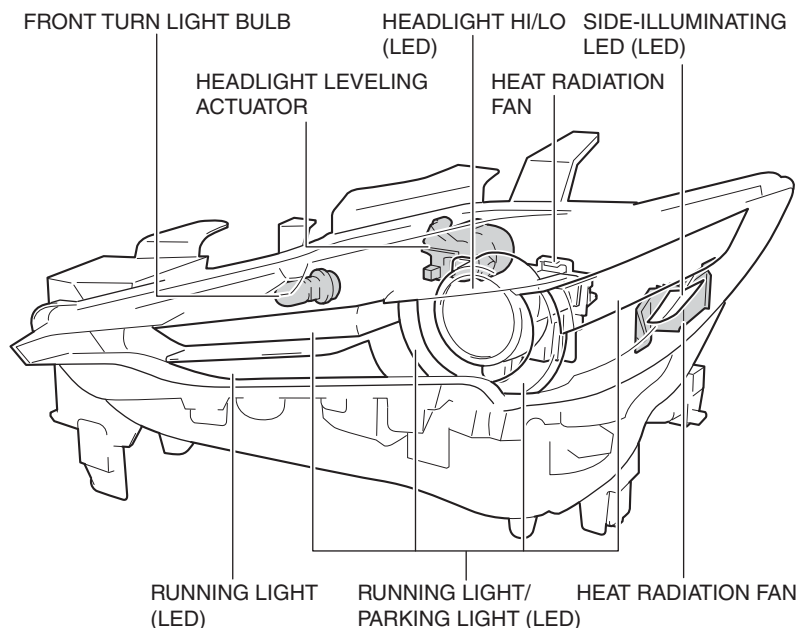
With adaptive LED headlights

- The front combination light groups the front turn light bulb.
- The front combination light is integrated with the following parts:
 - Headlight HI/LO (LED)
 - Running light (LED)
 - Running light/parking light (LED)
 - Headlight leveling actuator
 - Side-illuminating LED (LED)
- A projector type headlight has been adopted for the headlight HI/LO.
- Heat generated by the illumination of the LEDs is absorbed and dispersed by the heat radiation fan installed to the back of the headlight HI/LO reflector.

Note

- Fogging or condensation on the inside of the front combination lights may occur, however, it is a natural phenomenon occurring as a result of a temperature difference between the interior and exterior of the front combination lights and has no effect on the light performance.
- Fogging or condensation occurring as a natural phenomenon will dissipate when the temperature inside the front combination lights rises after the headlights are illuminated and a period of time has elapsed.

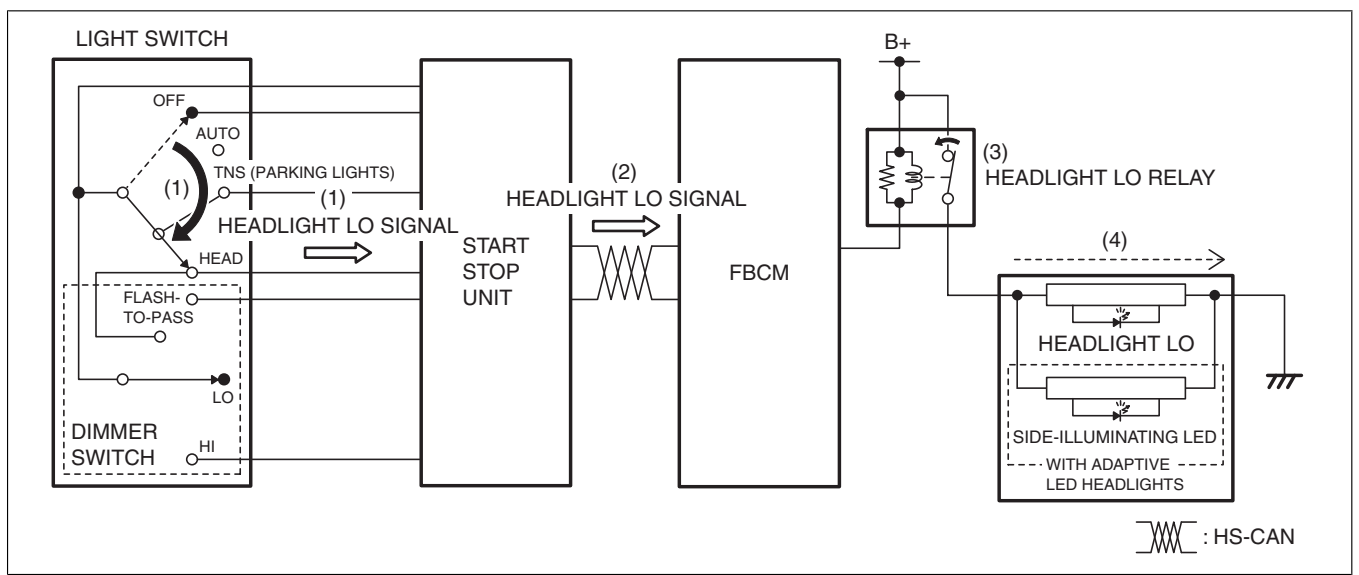
FRONT COMBINATION LIGHT



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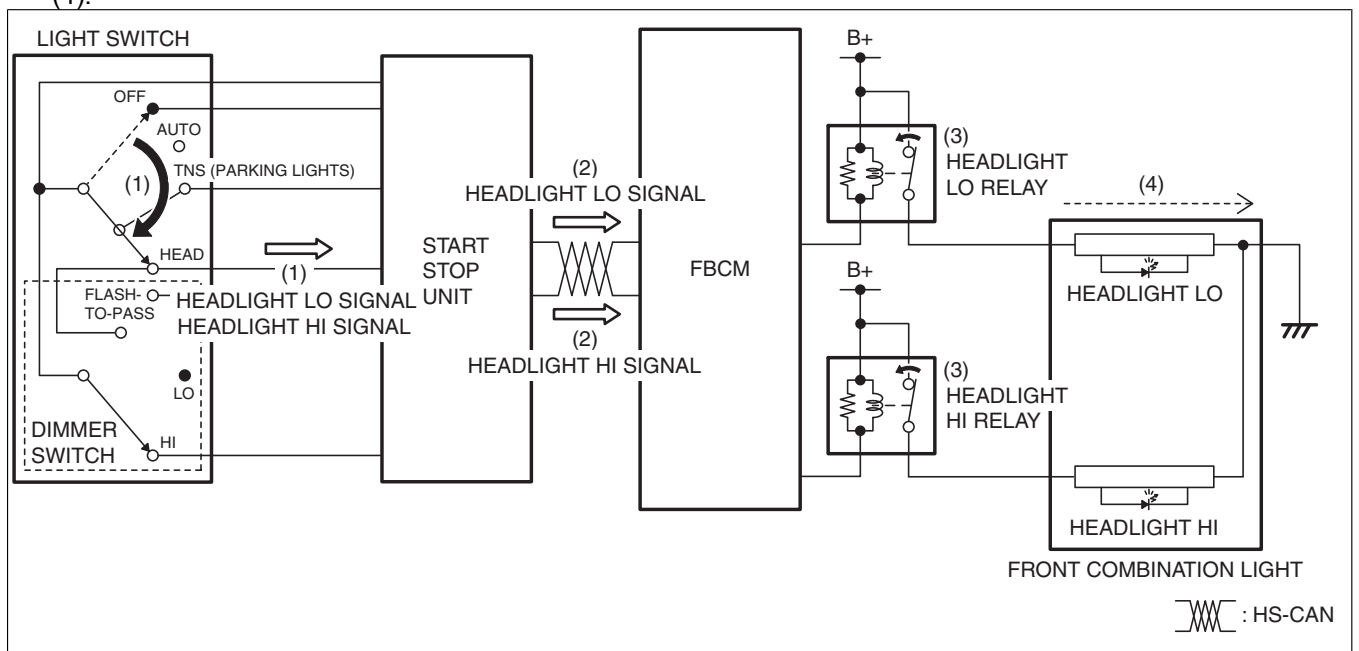
Operation Headlight LO

1. When the light switch is moved to the HEAD position and the dimmer switch is moved to the LO position, the start stop unit detects (1) a headlight LO signal.
2. The start stop unit sends (2) the headlight LO signal to the front body control module (FBCM) via CAN communication.
3. When the front body control module (FBCM) receives the headlight LO signal with the ignition switched ON (engine off or on), it turns (3) the headlight LO relay on.
4. When the headlight LO relay turns on, the headlight LO and side-illuminating LED (with adaptive LED headlights) are illuminated (4).



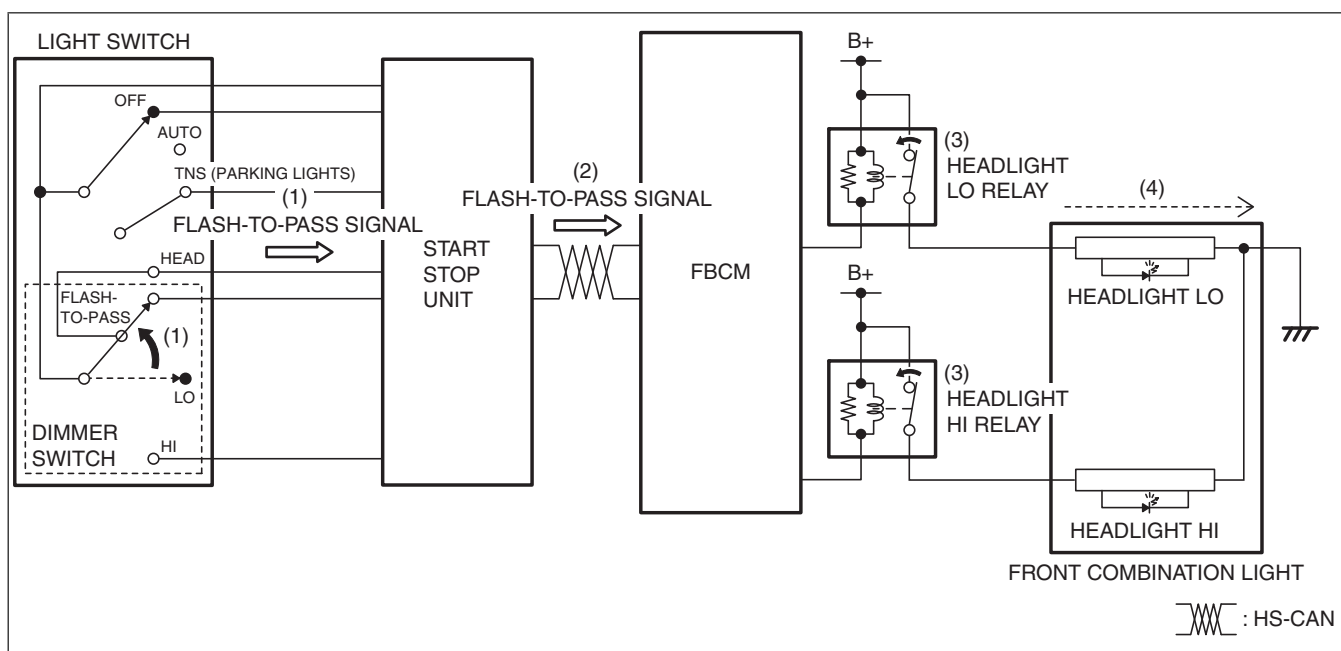
Headlight HI

1. When the light switch is moved to the HEAD position and the dimmer switch is moved to the HI position, the start stop unit detects (1) a headlight LO signal and headlight HI signal.
2. The start stop unit sends (2) the headlight LO signal and headlight HI signal to the front body control module (FBCM) via CAN communication.
3. When the front body control module (FBCM) receives the headlight LO signal and headlight HI signal with the ignition switched ON (engine off or on), it turns (3) the headlight LO relay and headlight HI relay on.
4. When the headlight LO relay and headlight HI relay turn on, the headlight LO and headlight HI are illuminated (4).



Flash-to-pass

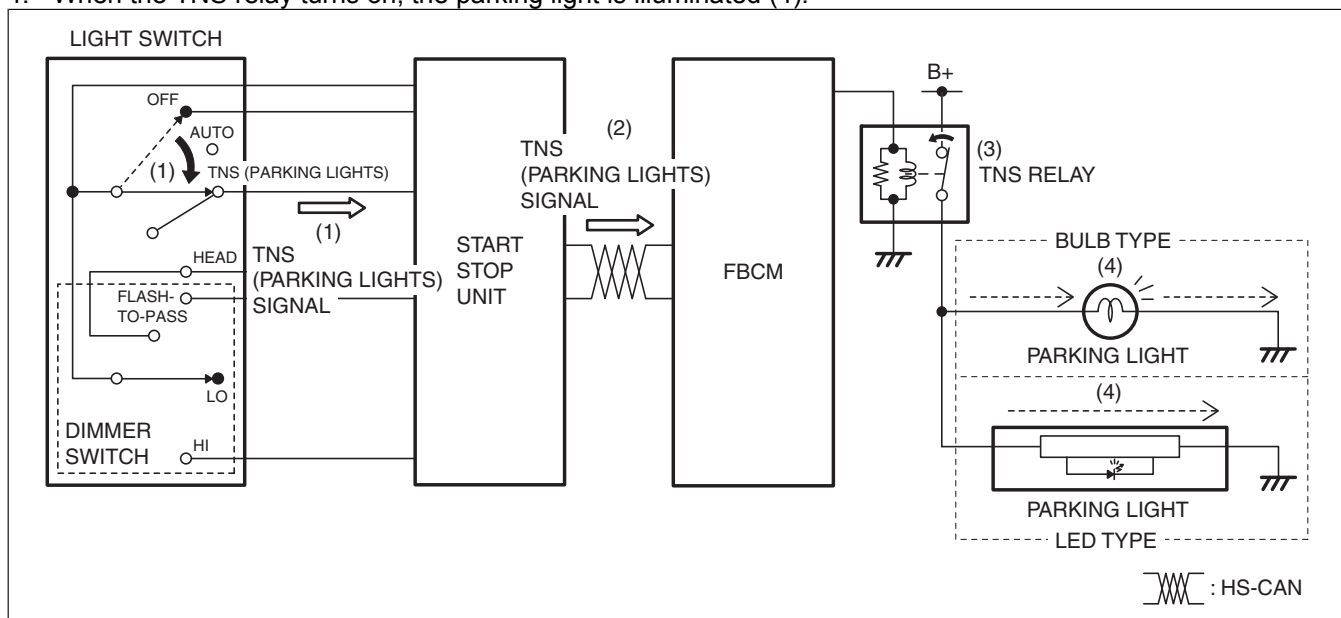
1. When the dimmer switch is moved to the FLASH-TO-PASS position, the start stop unit detects (1) a FLASH-TO-PASS signal.
2. The start stop unit sends (2) the FLASH-TO-PASS signal to the front body control module (FBCM) via CAN communication.
3. When the front body control module (FBCM) receives the FLASH-TO-PASS signal with the ignition switched ON (engine off or on), it turns (3) the headlight LO relay and headlight HI relay on.
4. When the headlight LO relay and headlight HI relay turn on, the headlight LO and headlight HI are illuminated (4).



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Parking light

1. When the light switch is moved to the TNS (parking lights) position, the start stop unit detects (1) a TNS (parking lights) signal.
2. The start stop unit sends (2) the TNS (parking lights) signal to the front body control module (FBCM) via CAN communication.
3. When the front body control module (FBCM) receives the TNS (parking lights) signal, it turns (3) the TNS relay on.
4. When the TNS relay turns on, the parking light is illuminated (4).

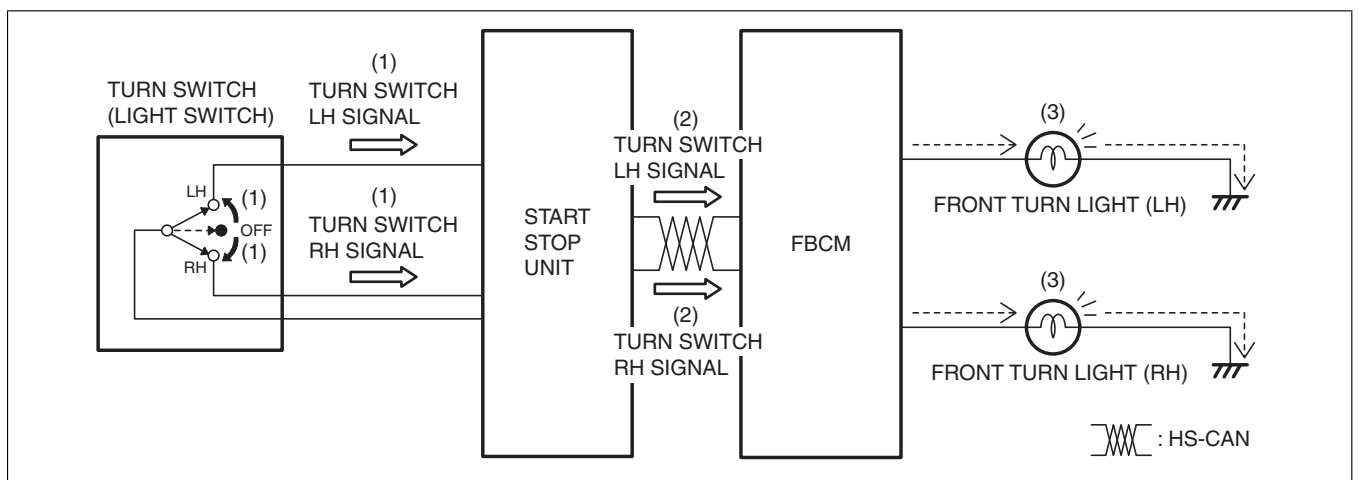


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Front turn light

Turn light system

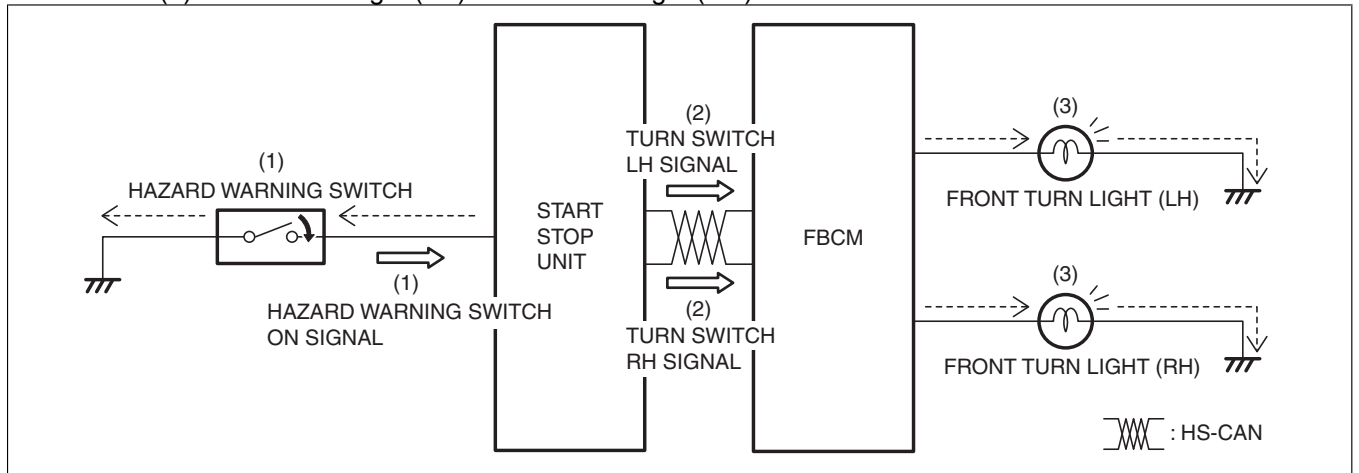
1. When the turn switch is moved to the LH or RH position, the start stop unit detects (1) a turn switch LH signal or turn switch RH signal.
2. The start stop unit sends (2) the turn switch LH signal or turn switch RH signal to the front body control module (FBCM) via CAN communication.
3. When the front body control module (FBCM) receives the turn switch LH signal or turn switch RH signal with the ignition switched ON (engine off or on), it flashes (3) the front turn light (LH) or front turn light (RH).



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Hazard warning system

1. When the hazard warning switch is turned on, the start stop unit detects (1) a hazard warning switch on signal.
2. The start stop unit sends (2) the hazard warning switch on signal to the front body control module (FBCM) via CAN communication as a turn switch LH signal and turn switch RH signal.
3. When the front body control module (FBCM) receives the turn switch LH signal and turn switch RH signal, it flashes (3) the front turn light (LH) and front turn light (RH).



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Headlight leveling actuator

- Refer to the [HEADLIGHT LEVELING ACTUATOR]. (See HEADLIGHT LEVELING ACTUATOR.)

Running light system (with running light system)

- Refer to the [RUNNING LIGHT SYSTEM]. (See RUNNING LIGHT SYSTEM.)

Swivel actuator (with adaptive front lighting system (AFS))

- Refer to the [SWIVEL ACTUATOR]. (See SWIVEL ACTUATOR.)

Fail-safe

- Not applicable