

SYSTEM DESCRIPTION

1. OUTLINE OF TOYOTA VEHICLE INTRUSION PROTECTION SYSTEM

HINT:

- The vehicle intrusion protection system has 2 modes:
1) active arming mode, which is the default mode, and
2) passive mode, which can be turned ON/OFF (See CHANGING METHOD OF PASSIVE MODE).
- Toyota Vehicle Intrusion Protection System is referred to as TVIP in the troubleshooting section.

- (a) When the system detects a vehicle intrusion, the system will sound the horns and flash the lights to alert the people around the vehicle to the intrusion.

HINT:

Each mode (active and passive) has 4 states: disarmed state, arming preparation state, armed state, and alarm sounding state.

(1) Disarmed state:

- The user is near the vehicle.
- The alarm function does not operate.
- The theft deterrent function does not operate.

(2) Arming preparation state:

- Time from when the user locks the doors to when the user leaves the vehicle.
- Time for transferring to the armed state.
- The theft deterrent function does not operate.

(3) Armed state:

- The user leaves the vehicle completely.
- The theft deterrent function operates.

(4) Alarm sounding state:

While in the armed state, if a vehicle intrusion is detected, the system enters the alarm sounding state and the alarm function is activated.

Refer to the table for the alarming method and time:

Alarming method	Interior light	Illuminating (turn on)
	Headlight	Flashing at a cycle of approx. 0.4 sec.
	Hazard warning light	Flashing at a cycle of flasher relay
	Vehicle horn	Sounding at a cycle of approx. 0.4 sec.
Alarming time	Approx. 60 sec.	

HINT:

In the alarm sounding state, when either of the front doors is unlocked and no key is inserted in the ignition key cylinder, a forced door lock signal is output.

2. ACTIVE ARMING MODE

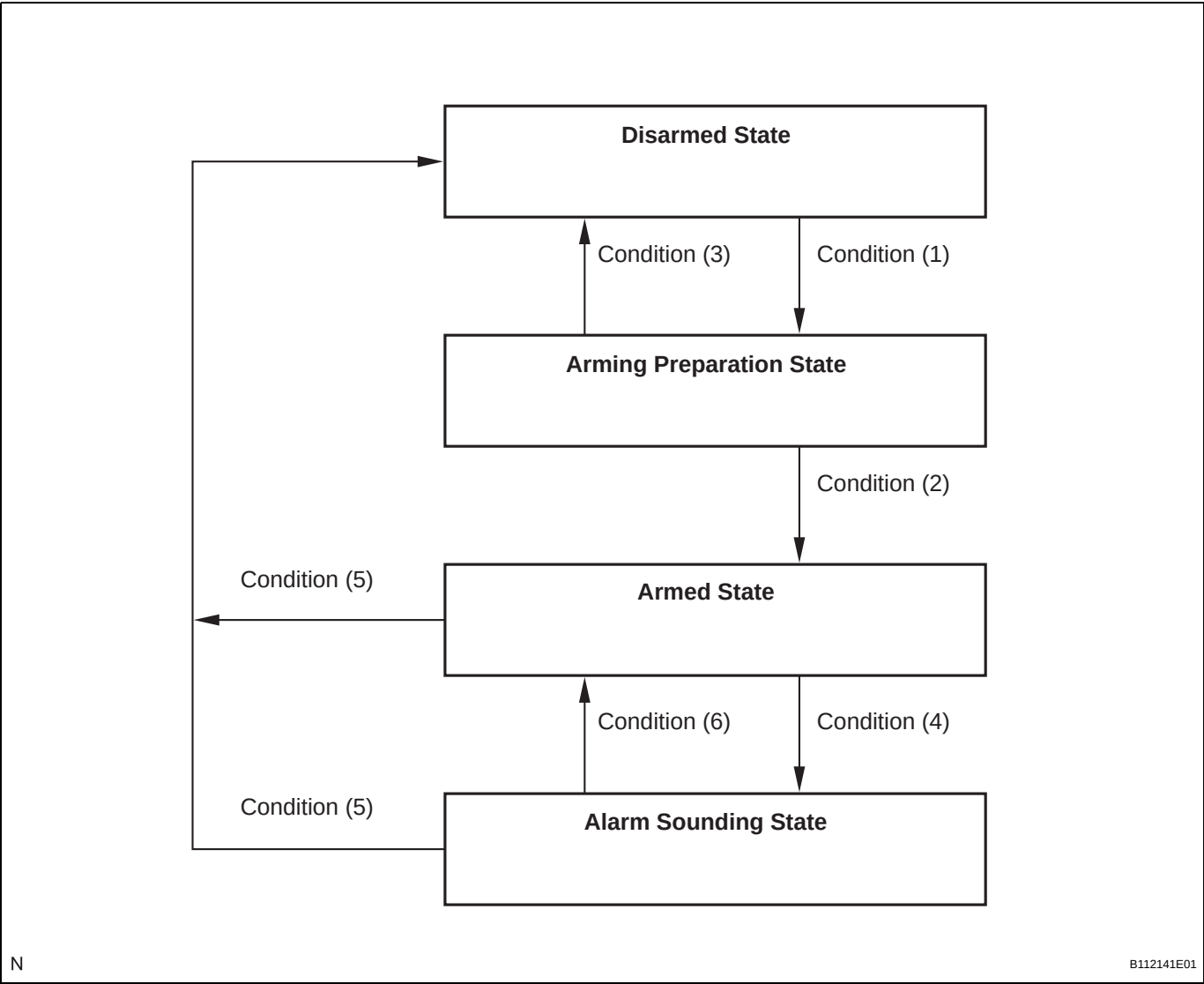
HINT:

- Active arming mode starts the alarm control immediately after the doors are locked.
- This system activates as described in the diagram below when one of items for each condition is met.

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(a) Active arming mode



Condition	Item
Condition (1)	In the disarmed state, when the key is not in the ignition key cylinder, the system state is switched if one of the following conditions is met. 1. With all doors and back door closed, lock all doors with key. 2. With all doors and back door closed, lock all doors by the wireless door lock operation. 3. With all doors and back door closed, open and close either of doors or back door, and then close and lock all doors and back door.
Condition (2)	Allow approx. 30 sec. to elapse.
Condition (3)	1. Open either of the closed doors or back door. 2. Unlock either of the locked front doors. 3. Insert the key in the ignition key cylinder. 4. Disconnect the battery once, and then reconnect it.
Condition (4)	1. Open either of the closed doors. 2. Unlock either of the locked front doors in any way other than the key and the wireless door lock operations. 3. Open the closed back door. 4. Reconnect the battery terminal. 5. Turn the ignition switch ON without using the key. 6. Intrusion is detected by the glass breakage sensor.
Condition (5)	1. Unlock the locked doors by the wireless door lock operation. 2. Unlock the locked doors with key (except the back door). 3. Insert the key into the ignition key cylinder and turn the ignition switch ON.
Condition (6)	After approx. 60 sec., alarm stops and system returns to armed state.

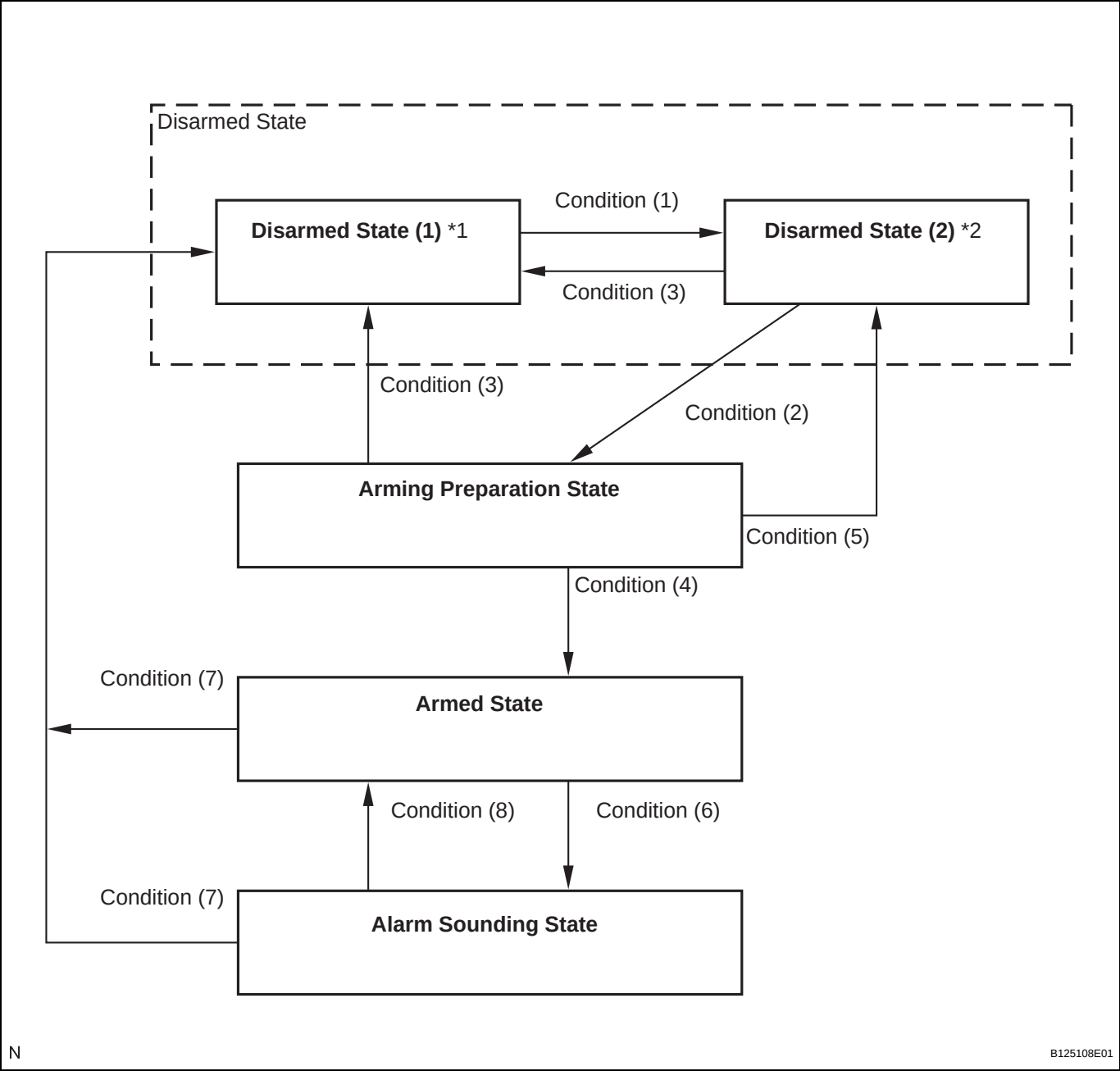
3. PASSIVE ARMING MODE

HINT:

- Passive arming mode starts the alarm control after the key is out of the actuation area and doors are closed.
- Passive arming mode can be switched ON/OFF by the specified method.
- The alarm is initially set (when shipped from factory) to active arming mode (not passive arming mode).
- During passive arming mode, the theft deterrent system goes into the armed state even if the doors are not locked.
- Detecting that the doors are unlocked does not set off the alarm during passive arming mode.
- A forced door lock signal is not output during passive arming mode (see FORCED DOOR LOCK CONTROL).
- Although the theft deterrent system detects that the doors are opened during passive arming mode, the alarm will not go off immediately because an entry delay time is set.
- This system activates as described in the diagram below when one of items for each condition is met.

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(a) Passive arming mode



- HINT:
- *1: Disarmed state 1 is the normal disarmed state.
 - *2: Disarmed state 2 is set from either the disarmed state 1 or the arming preparation state.

Condition	Item
Condition (1)	Insert and remove the key from the ignition key cylinder, and then open and close the driver's door.
Condition (2)	Close all doors and back door.
Condition (3)	1. Push the unlock switch on the transmitter. 2. Inset the key in the lock cylinder on the driver's or passenger's door and turn it to unlock. 3. Insert the key in the ignition key cylinder. 4. Reconnect the battery terminal.
Condition (4)	Allow approx. 30 sec. to elapse.
Condition (5)	Open either of the closed doors or back door.

Condition	Item
Condition (6)	1. Open either of the closed doors and allow the entry delay time (see ENTRY DELAY FUNCTION) to elapse. 2. Open the closed back door. 3. Reconnect the battery terminal. 4. Turn the ignition ON without using the key.
Condition (7)	1. Push the unlock switch on the transmitter. 2. Insert the key in the lock cylinder on the driver's or passenger's door and turn it to unlock. 3. Insert the key into the ignition key cylinder and turn the ignition switch ON.
Condition (8)	After approx. 60 sec., alarm stops and system returns to armed state.

(b) Comparison with state of passive mode and state of active mode:

State of Passive Mode	State of Active Mode
Disarmed state	Disarmed state
Arming preparation state	Disarmed state
Armed state (Entry delay time)	Armed preparation state
Armed state	Armed state
Alarm sounding state	After sounding state

HINT:

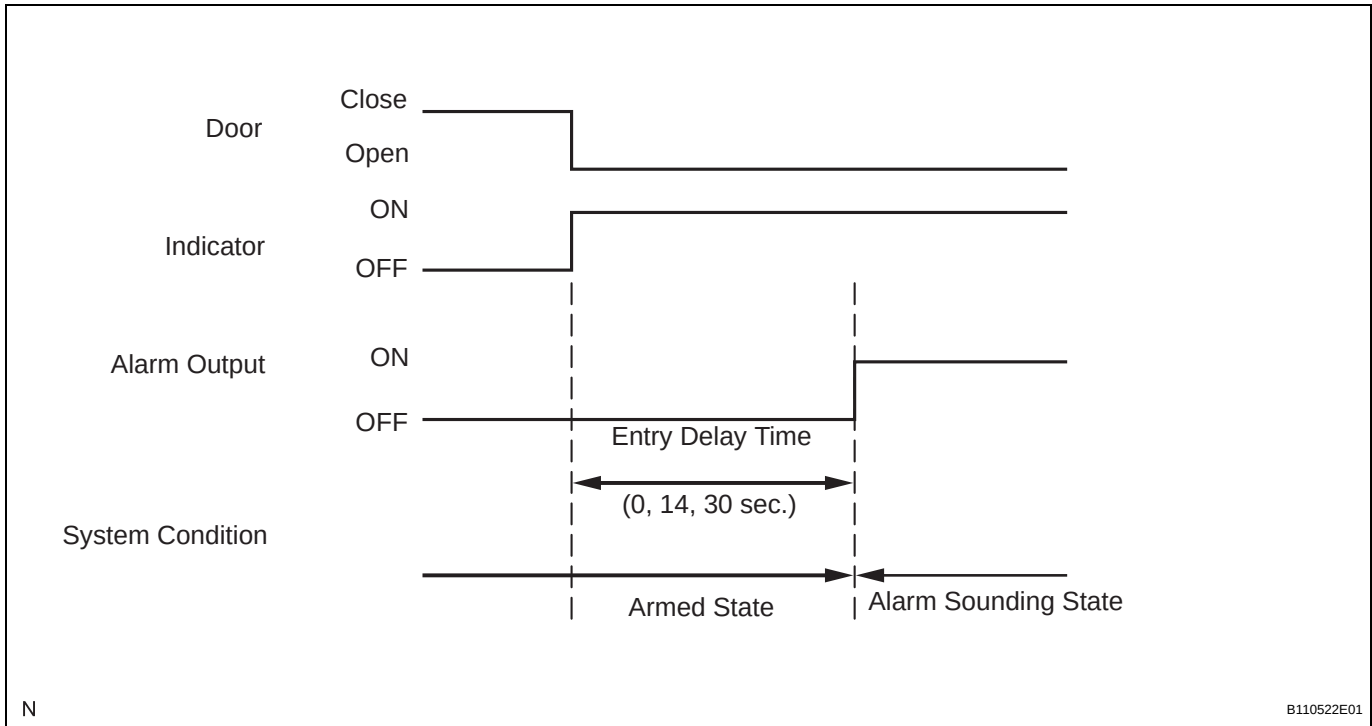
If closing all doors and lock them with a key or wireless operation in the passive mode, the system functions in active mode. If the state is charged into the disarmed state, the system returns to the passive mode.

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4. ENTRY DELAY FUNCTION

- (a) In the armed state, if either closed door is opened, the entry delay time will start. If the transferring condition (Armed state → Disarmed state) is satisfied during this entry delay time, the system will transfer to the disarmed state. However if the condition is not satisfied, the system will judge it to be an intrusion, and then the system will transfer to the alarm sounding state.

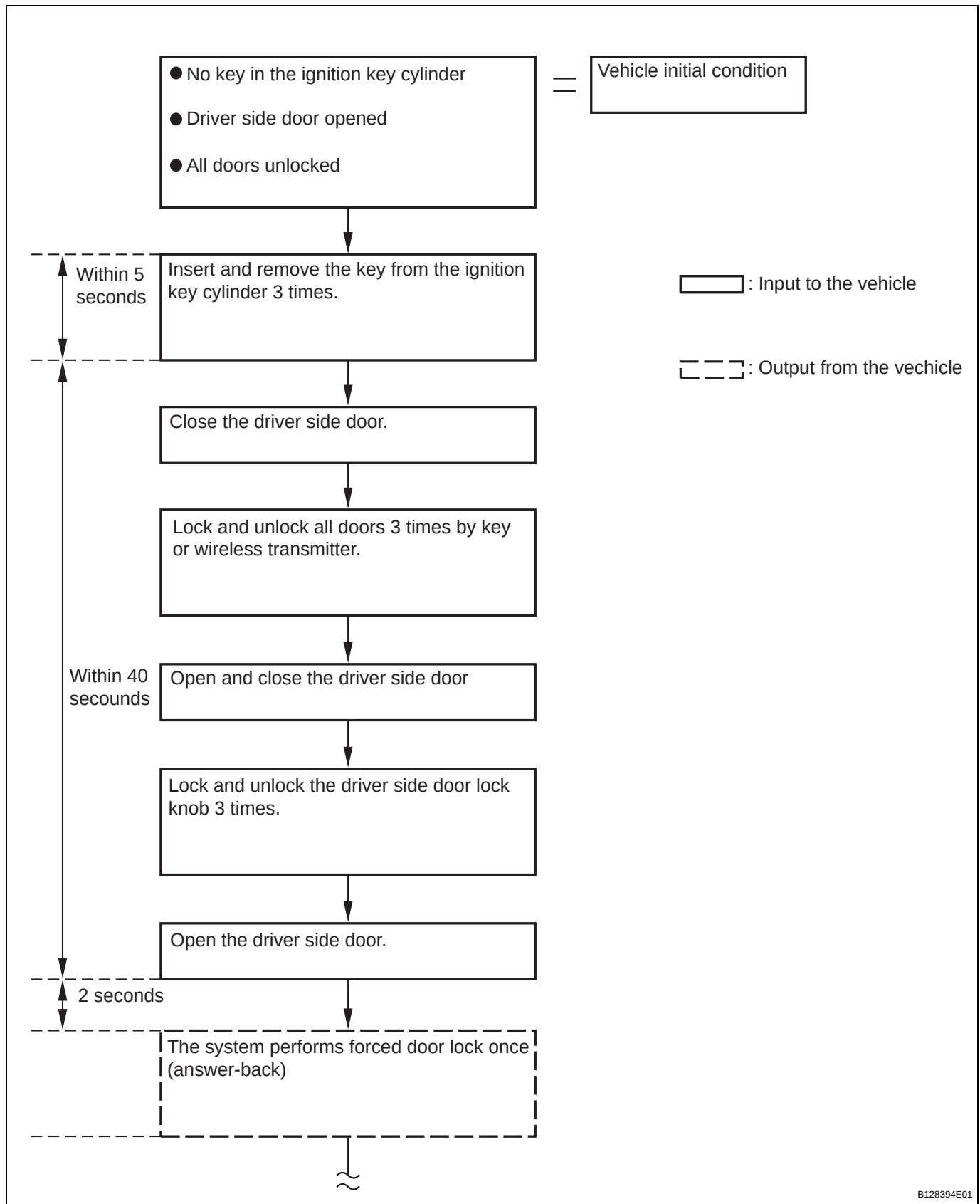
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**HINT:**

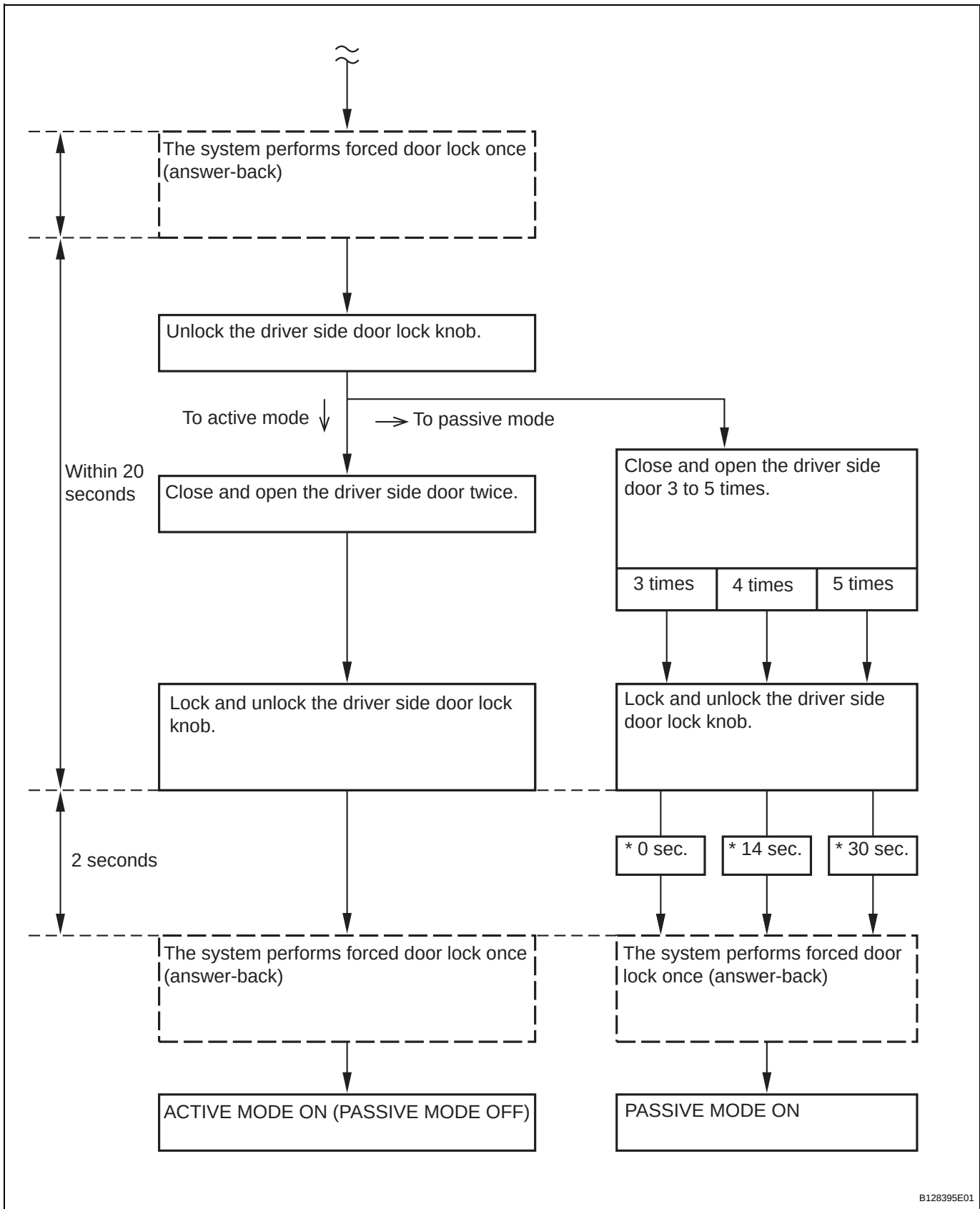
The entry delay time can be selected among 0, 14, 30 seconds by the customizing function.

5. CHANGING METHOD OF PASSIVE MODE (ON OR OFF)

(a) Procedure for changing of passive mode (ON or OFF)



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6. SECURITY INDICATOR OUTPUT

Condition	Indicator Light
Disarmed state	OFF
Arming preparation state	ON
Armed state (Entry delay time)	BLINK (ON)
Alarm sounding state	ON

HINT:

Blinking frequency:

0.2 seconds (ON)

1.8 seconds (OFF)

7. FORCED DOOR LOCK CONTROL

- (a) The forced door lock control prevents the vehicle from being tampered with. Immediately after a door is unlocked (alarm starts), the door is forced to lock by a forced door lock signal.

- (1) Conditions that force the doors to lock:

When the key is not in the ignition key cylinder and both of the following conditions are met.

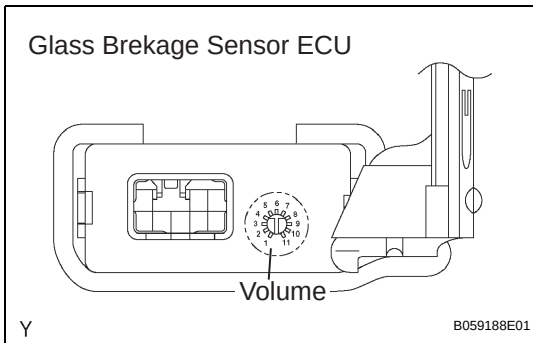
- The theft deterrent system is in the alarm sounding state of active arming mode.
- Any of the front door is unlocked.
- Since the previous forced door lock, 0.38 seconds or more have elapsed.

8. GLASS BREAKAGE SENSOR

- (a) If the glass breakage sensor detects the glass is broken (1st time), the sensor will issue an alarm for 20 seconds (pre-alarming). If the glass breakage sensor detects the glass is broken further more (2nd time), the sensor will issue an alarm for 60 seconds.
- (b) The sensitivity of the glass breakage sensor can be adjusted by the volume switch in the glass breakage sensor ECU.

HINT:

The glass breakage sensor may issue a false alarm if the sensor's sensitivity is set too high.



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