

POWER DOOR LOCK CONTROL SYSTEM

730EH-01

ON-VEHICLE INSPECTION

1. DOOR LOCK FAIL-SAFE

- (a) When a malfunction in the door control switch (manual switch, interlocked with key operation) has been detected, door lock/unlock operation becomes disabled.

2. INSPECT ELECTRICAL DOOR LOCK OPERATION

NOTICE:

The initial condition that the customizing function by the hand-held tester is not chosen is shown.

- (a) Check the basic function.
- (1) Check that all doors lock when the door control switch (for manual operation) is turned to LOCK and all doors unlock when turned to UNLOCK.
 - (2) Check that all doors lock when the driver door lock key cylinder is turned to LOCK using the key.
 - (3) Check that only the driver side door unlocks when the driver side door lock key cylinder is turned to UNLOCK and all doors unlock when turned to UNLOCK once again within 3 seconds using the key (2-step unlocking function).
- (b) Check the key confinement prevention function.

NOTICE:

In order to prevent the key from being locked-in, the inspection should be made with the driver side door glass open.

- (1) Have the ignition key inserted into the ignition key cylinder.
 - (2) With the driver side door open, check that all doors unlock immediately after the door lock knob for the driver side door is turned to LOCK.
 - (3) With the driver side door open, check that all doors unlock immediately after the door control switch (for manual operation) is turned to LOCK.
 - (4) With the driver side door open, turn the driver side door lock knob to LOCK and hold it for 2 seconds or more, and then close the driver side door. Then check that all doors unlock.
- (c) Check the security function.
- (1) Close all doors with the driver side door glass open so that the door control switch can be operated from outside the vehicle
 - (2) Pull out the key, open the driver side door and then close and lock the door without using the key. Under this condition, check that all doors do not unlock when the door control switch (for manual operation) is turned to UNLOCK from outside the vehicle.
 - (3) Pull out the key, close and lock the driver side door by key operation. Under this condition, check that all doors do not unlock when the door control switch (for manual operation) is turned to UNLOCK from outside the vehicle.
 - (4) Pull out the key, close the driver side door and lock the door by wireless door lock operation. Under this condition, check that all doors do not unlock when the door control switch (for manual operation) is turned to UNLOCK from outside the vehicle.

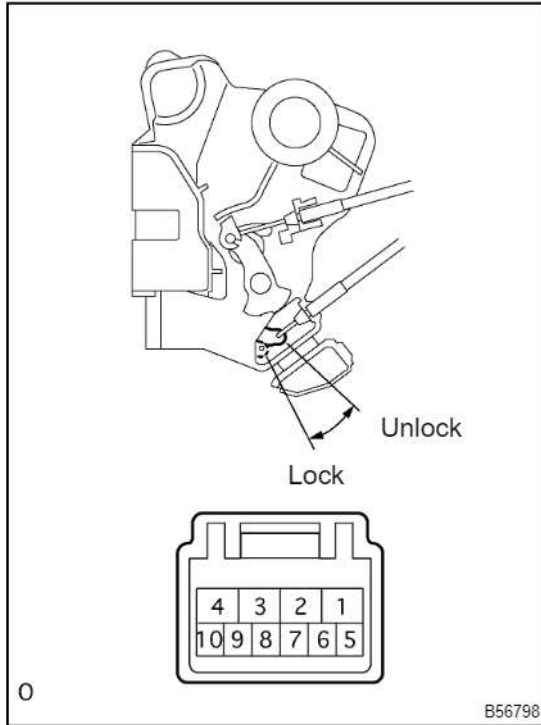
HINT:

Check that the security function is canceled under the following conditions.

- The ignition switch is turned ON.
- The driver side door is unlocked using the key.
- The door control switch (for manual operation) is turned to UNLOCK after the door control knob is turned to UNLOCK manually.
- The doors are unlocked with wireless operation.

- (d) Check the illumination function.
 - (1) Set the room light switch in the DOOR position.
 - (2) With all doors locked, check that all doors unlock when the driver side door lock cylinder is turned to UNLOCK using the key. At the same time, the room light comes on.
 - (3) The room light goes off in approximately 15 seconds if doors have not been opened for a while.
- (e) Check the automatic locking function interlocked with the shift lever.
 - (1) When any door is unlocked with all doors closed and the engine started, check that all doors automatically lock when the shift lever is moved into any position from the P position
 - (2) When any door is unlocked after all doors automatically lock, check that all doors attempt to automatically lock once again (re-try function). The re-try function is canceled when any of the following conditions is fulfilled:
 - All doors are locked.
 - Any door is opened.
 - The shift lever is moved into the P position.
 - The doors are locked or unlocked by the user.
 - The ignition switch is turned OFF.
 - The engine is stopped.

INSPECTION

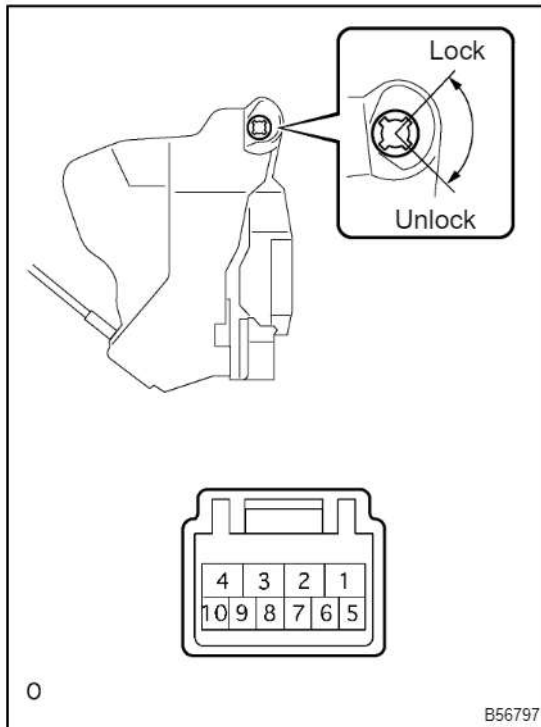


1. **INSPECT FRONT DOOR W/MOTOR LOCK ASSY LH**
 - (a) Apply battery voltage and inspect operation of the door lock motor.

Standard:

Measurement Condition	Specified Condition
Battery positive (+) $\Rightarrow$ Terminal 4 Battery negative (-) $\Rightarrow$ Terminal 1	Lock
Battery positive (+) $\Rightarrow$ Terminal 1 Battery negative (-) $\Rightarrow$ Terminal 4	Unlock

If operation is not as specified, replace the door lock assy.



- (b) Inspect the door lock and unlock switch continuity.

Standard:

Terminal No.	Door Lock Position	Specified Condition
7 $\Rightarrow$ 9	Lock	Continuity
—	OFF	—
7 $\Rightarrow$ 10	Unlock	Continuity

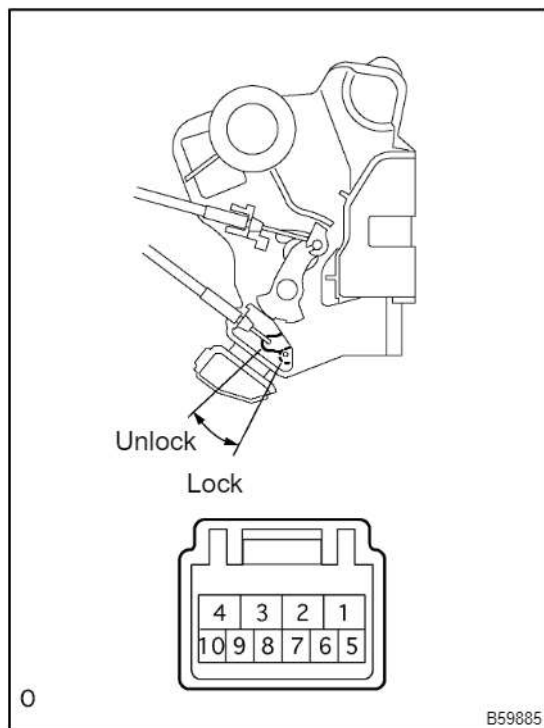
If the continuity is not as specified, replace the door lock assy.

- (c) Inspect the position switch continuity.

Standard:

Terminal No.	Door Lock Position	Specified Condition
7 $\Rightarrow$ 8	Lock	No continuity
	Unlock	Continuity

If the continuity is not as specified, replace the door lock assy.



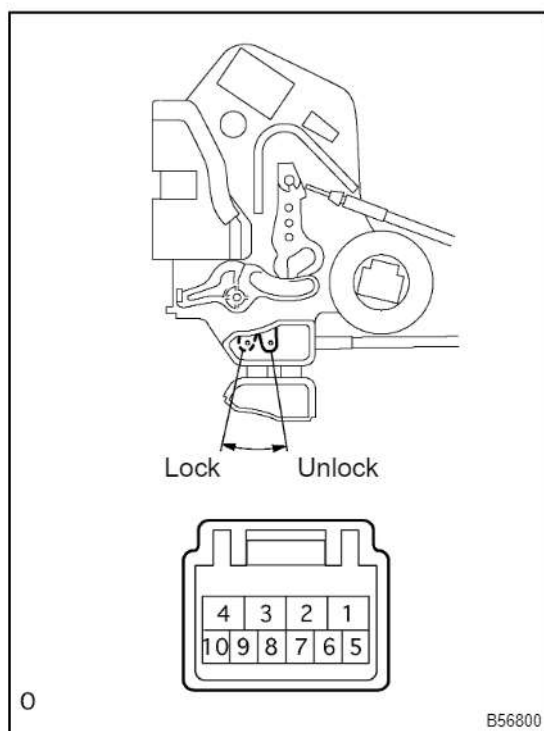
2. INSPECT FRONT DOOR W/MOTOR LOCK ASSY RH

- (a) Apply battery voltage and inspect operation of the door lock motor.

Standard:

Measurement Condition	Specified Condition
Battery positive (+) $\Rightarrow$ Terminal 4 Battery negative (-) $\Rightarrow$ Terminal 1	Lock
Battery positive (+) $\Rightarrow$ Terminal 1 Battery negative (-) $\Rightarrow$ Terminal 4	Unlock

If operation is not as specified, replace the door lock assy.



3. INSPECT REAR DOOR W/MOTOR LOCK ASSY LH

- (a) Apply battery voltage and inspect operation of the door lock motor.

Standard:

Measurement Condition	Operation
Battery positive (+) $\Rightarrow$ Terminal 4 Battery negative (-) $\Rightarrow$ Terminal 1	Lock
Battery positive (+) $\Rightarrow$ Terminal 1 Battery negative (-) $\Rightarrow$ Terminal 4	Unlock

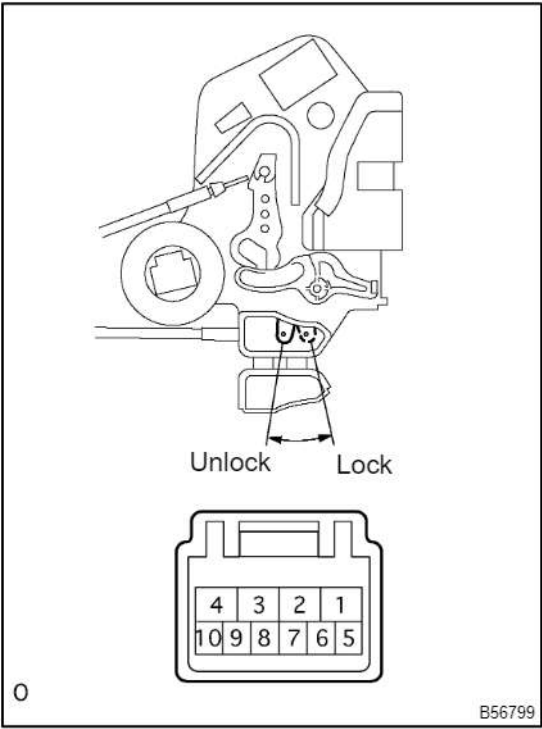
If the operation is not as specified, replace the door lock assy.

- (b) Inspect the position switch continuity.

Standard:

Terminal No.	Door Lock Position	Specified Condition
6 $\Leftrightarrow$ 9	Lock	No continuity
	Unlock	Continuity

If the continuity is not as specified, replace the door lock assy.



4. INSPECT REAR DOOR W/MOTOR LOCK ASSY RH

- (a) Apply battery voltage and inspect operation of the door lock motor.

Standard:

Measuring Condition	Operation
Battery positive (+) $\Rightarrow$ Terminal 4 Battery negative (-) $\Rightarrow$ Terminal 1	Lock
Battery positive (+) $\Rightarrow$ Terminal 1 Battery negative (-) $\Rightarrow$ Terminal 4	Unlock

If operation is not as specified, replace the door lock assy.

- (b) Inspect the position switch continuity.

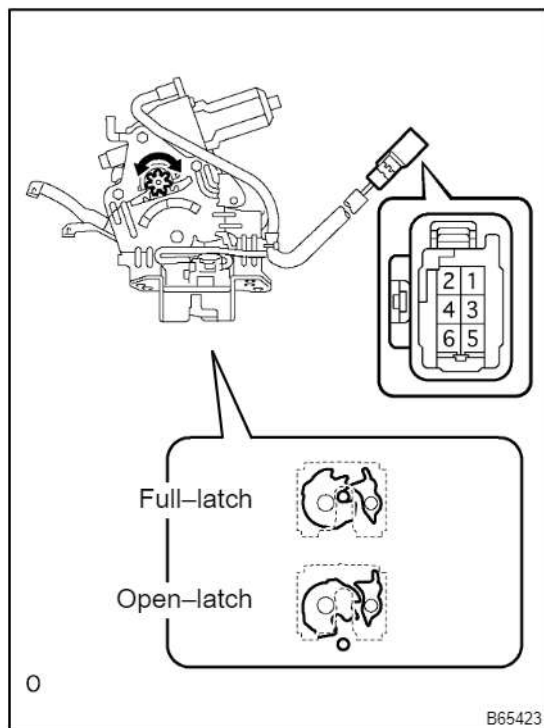
Standard:

Terminal No.	Door Lock Position	Specified Condition
6 $\Leftrightarrow$ 9	Lock	No continuity
	Unlock	Continuity

If the continuity is not as specified, replace the door lock assy.

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5. INSPECT W/MOTOR BACK DOOR LOCK ASSY

(a) Check operation of the door lock.

- (1) Using a screwdriver, push the latch in order to put the back door lock in the locked condition (full-latch position).
- (2) Connect the positive (+) lead to terminal 1 and the negative (-) lead to terminal 2. Then, check operation of the latch.

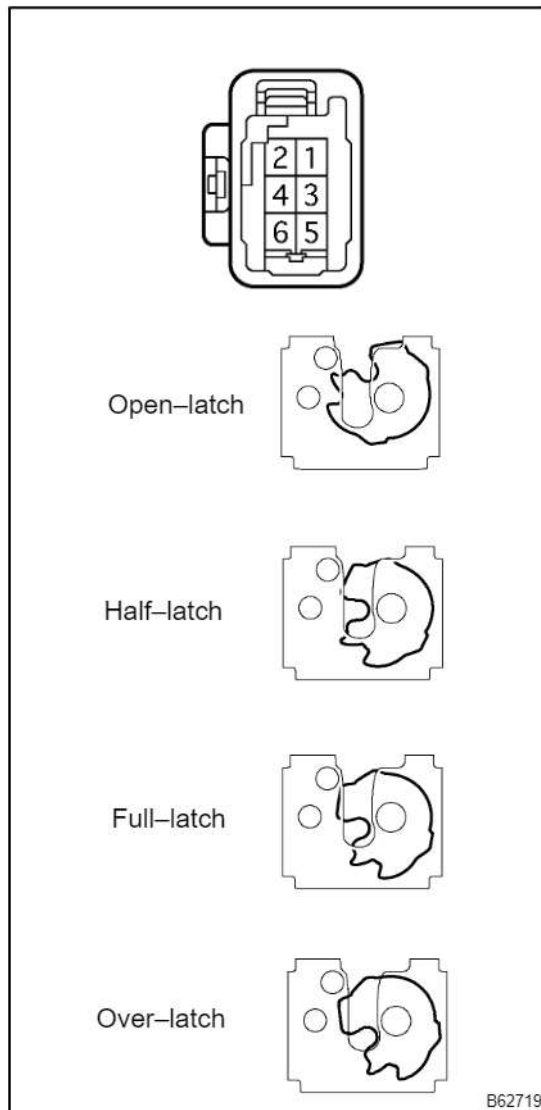
Standard: The latch turns to the open-latch position

- (3) Inspect motor operation when battery voltage is applied to the terminals.

Standard:

Measurement Condition	Specified Condition
Battery positive (+) ⇔ Terminal 2 Battery negative (-) ⇔ Terminal 1	Clockwise (Motor in normal rotation)
Battery positive (+) ⇔ Terminal 1 Battery negative (-) ⇔ Terminal 2	Counterclockwise (Motor in reverse rotation)

If the operation is not as specified, replace the door lock assy.



(b) Check the back door courtesy switch continuity.

- (1) Check the continuity between the terminals of the courtesy switch.

Standard:

Door Lock Latch Position	Terminal No.	Specified Condition
Open-latch position, Half-latch position	4 ⇔ 5	Continuity
Full-latch position, Over-latch position	4 ⇔ 5	No continuity

If the continuity is not as specified, replace the door lock assy.

(c) Check the back door latch switch continuity.

- (1) Check the continuity between the terminals of the latch switch.

Standard:

Door Lock Latch Position	Terminal No.	Specified Condition
Open-latch position, Over-latch position	4 ⇔ 6	Continuity
Half-latch position, Full-latch position	4 ⇔ 6	No continuity

If the continuity is not as specified, replace the door lock assy.

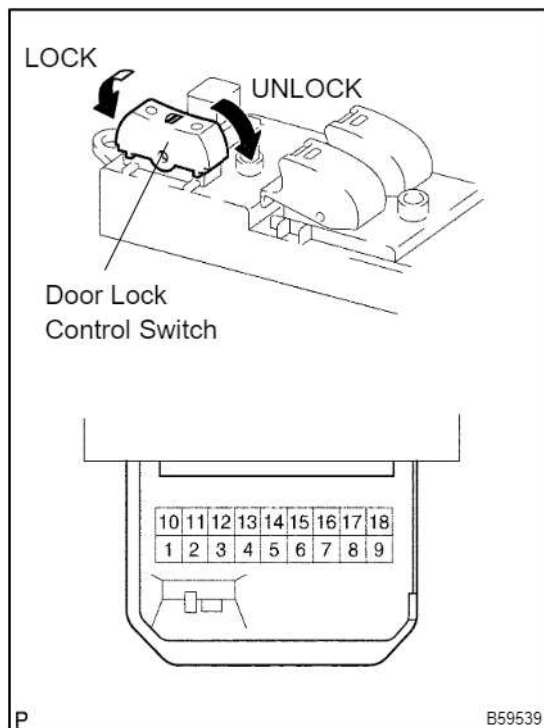
(d) Check the position switch continuity.

- (1) Connect the battery positive (+) lead to connector terminal 1 and the negative (–) lead to connector terminal 2.

Standard:

Door Lock Latch Position	Terminal No.	Specified Condition
Any position other than motor stop position (Motor in operation)	3 ⇔ 4	Continuity
Motor stop position (Gear in original position)	3 ⇔ 4	No continuity

If the continuity is not as specified, replace the door lock assy.



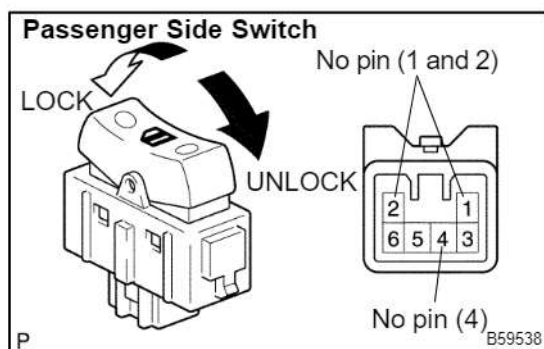
6. INSPECT POWER WINDOW REGULATOR MASTER SWITCH ASSY

- (a) Inspect the door lock control switch continuity.

Standard:

Terminal No.	Switch Position	Specified Condition
1 ⇌ 5	Lock	Continuity
—	OFF	No continuity
1 ⇌ 8	Unlock	Continuity

If the result is not as specified, replace the switch assy.



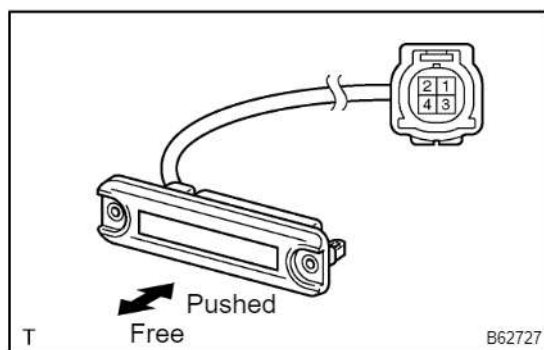
7. INSPECT DOOR CONTROL SWITCH ASSY

- (a) Passenger side switch:
Inspect the door lock control switch continuity.

Standard:

Terminal No.	Switch Position	Specified Condition
3 ⇌ 6	Lock	Continuity
—	OFF	No continuity
3 ⇌ 5	Unlock	Continuity

If the result is not as specified, replace the switch assy.



8. INSPECT BACK DOOR OPENER SWITCH ASSY

- (a) Inspect the back door opener switch continuity.

Standard:

Terminal No.	Condition	Specified Condition
1 ⇌ 2	Free	No continuity
	Pushed	Continuity

If the result is not as specified, replace the switch assy.

BACK DOOR CLOSER SYSTEM

730EJ-01

ON-VEHICLE INSPECTION

1. INSPECT BASIC OPERATION

- (a) When the back door is partially closed, check that the motor operates so that the back door is fully closed (locked).
- (b) After the above step, check that the back door can be opened.
- (c) When the back door is partially closed and then the motor starts normal operation, push the back door opener switch and pull up the back door to open it. At this time, check that the motor starts reverse operation and then stops.
- (d) Immediately after the back door is partially closed (the motor has not started operation yet), push the back door opener switch to open the back door. Check that the motor does not operate at this time.

WIRELESS DOOR LOCK CONTROL SYSTEM

730E5-01

PRECAUTION

1. NOTICES WHEN CHECKING

- (a) The wireless door lock remote control function operates only when the following 3 conditions are satisfied.
- (1) All the doors are closed.
 - (2) No key is inserted in the ignition key cylinder.
 - (3) The power door lock system and the back door power window control system operate normally.

HINT:

- The UNLOCK, BACK WINDOW and PANIC functions operate even when a door is open.
 - The UNLOCK, BACK WINDOW and PANIC functions operate even when the key is in the ignition key cylinder. However, these functions are disabled when the ignition switch is turned ON.
- (b) The wireless door lock remote control operational area differs depending on the situation.
- (1) The operational area differs depending on the operators and the ways the transmitter is held.
 - (2) In some places, the operational area will be reduced due to the vehicle body shape and the influence of the surrounding environment, or the remote control function will only operate partially.
 - (3) Since the transmitter uses faint electric waves, strong electric waves or noise in the frequency used may reduce the operational area or the remote control may not function.
 - (4) When the battery weakens, the operational area is reduced or the remote control may not operate.

HINT:

If the door control transmitter has been left in a place that is exposed to direct sunlight, such as on the instrument panel, it may cause the battery to weaken or other trouble.

ON-VEHICLE INSPECTION

1. CHECK WIRELESS DOOR LOCK CONTROL FUNCTIONS

HINT:

The switch described in this text is a switch for transmitting signals (LOCK switch, UNLOCK switch, BACK WINDOW switch and PANIC switch), which is built into the door control transmitter.

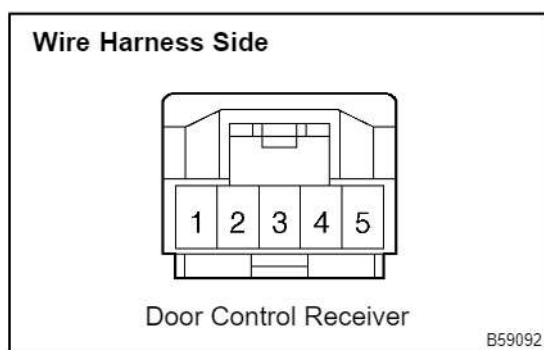
- (a) Put the vehicle under the conditions that allow the wireless control function to be operated (See PRECAUTION on page 73-10).
- (b) Check the basic function.
 - (1) In the remote control operational area, check that all the doors lock when the LOCK switch is pressed (However, this will not happen when the key is in the ignition key cylinder or any door is open).
 - (2) In the remote control operational area, check that only the driver side door unlocks when the UNLOCK switch is pressed once and the other doors unlock when the UNLOCK switch is pressed again within 3 seconds (However, this will not happen when the ignition switch is turned ON).
 - (3) In the remote control operational area, check that the back window opens when the BACK WINDOW switch has been pressed for 0.8 second (However, this will not happen when the ignition switch is turned ON).

HINT:

The UNLOCK and BACK WINDOW functions operate even when a door is open.

- (c) Check the chattering prevention function.
 - (1) Check that the corresponding operation occurs only once, and is not repeated continuously while the switch is held. However, when the switch is operated repeatedly at 1 second intervals, check that the corresponding operation is carried out.
- (d) Check the automatic locking function.
 - (1) Check that all the doors lock automatically as long as none of the doors have been opened or all the doors have not been locked within approximately 30 seconds after all the doors are unlocked by pressing the switch.
 - (2) Check that the automatic locking function does not operate when any door has been opened or all the doors have been locked within approximately 30 seconds after all the doors are unlocked by pressing the switch.
- (e) Check the switch operation fail-safe function.
 - (1) Check that the doors can not be locked by the switch while the key is in the ignition key cylinder. However, this does not apply when the system is in the recognition code registration mode.
- (f) Check the operation stop function when a door is open or not completely closed.
 - (1) Check that the doors are not locked by the switch while any door is open or not completely closed, and the buzzer sounds for 10 seconds.
- (g) Check the repeat function.
 - (1) Check that all the doors attempt to automatically lock once again, 1 second after the LOCK switch has been pressed while the movement of the driver side door control knob, which is in the unlocked state, is being restricted.
- (h) Check the hazard warning lamps flashing and wireless door lock buzzer sounding function (answer-back).
 - (1) When the LOCK switch is pressed, check that the hazard warning lamps flash once and the buzzer sounds once, simultaneously with locking operation of all the doors.
 - (2) When the UNLOCK switch is pressed once, check that the hazard warning lamps flash twice, the buzzer sounds twice, simultaneously with the unlocking operation of the driver side door.
 - (3) When the UNLOCK switch is pressed again within 3 seconds, check that the hazard warning lamps flash twice, the buzzer sounds twice, simultaneously with the unlocking operation of all the doors.

- (4) When the BACK WINDOW switch is pressed for 0.8 second, check that the buzzer sounds once, simultaneously with the opening operation of the back window.
- (i) Check the remote panic function.
 - (1) Check that the horn sounds, the headlights and taillights flash and the interior light remains on for 60 seconds by the theft alarm function, when the PANIC switch is pressed. Also, check that the horn stops sounding and lamps stop flashing when either of the PANIC, LOCK, UNLOCK or BACK WINDOW switch is pressed (However, this will not happen when the ignition switch is turned ON).



2. CHECK DOOR CONTROL RECEIVER

- (a) Disconnect the receiver connector.
- (b) Check the voltage or continuity between the receiver wire harness side connector and body ground.

Standard:

Symbols (Terminal No.)	Condition	Specified Condition
+B (5) – Body ground	Constant	10 – 14 V
E (1) – Body ground	Constant	Continuity

If the result is not as specified, there may be a malfunction on the wire harness side.

- (c) Reconnect the connector and check the voltage between the terminal and the body ground.

Standard:

Symbols (Terminal No.)	Condition	Specified Condition
RDA (2) – Body ground	Ignition switch OFF, no key in ignition key cylinder, all doors closed and each transmitter switch OFF → ON	Below 1 V → Approx. 6 – 7 V → Below 1 V

If the result is not as specified, the receiver may have a malfunction.

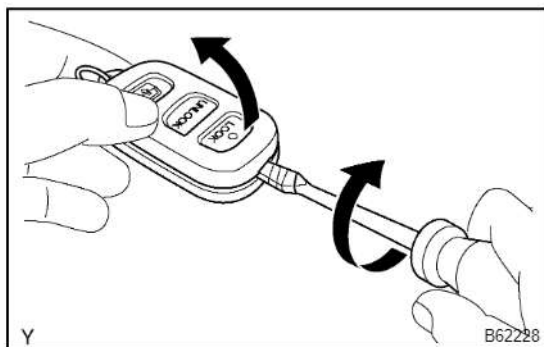
TRANSMITTER BATTERY REPLACEMENT

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1. REMOVE TRANSMITTER BATTERY

NOTICE:

Special caution should be taken for handling each component as they are precision electronic components.



(a) Using a screwdriver, pry out the transmitter case.

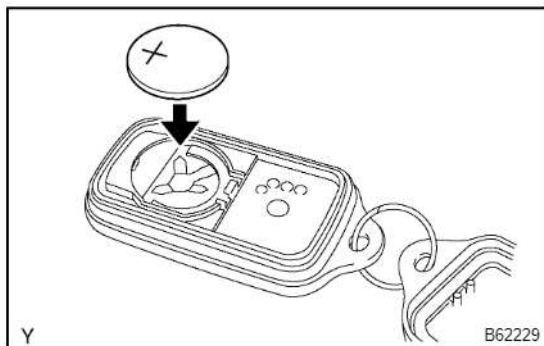
NOTICE:

Do not forcibly pry out the case.

(b) Remove the battery (lithium battery).

NOTICE:

- Do not push the terminals with your finger.
- Prying up the battery (lithium battery) to forcibly remove it will cause deformation of the terminals.
- Do not touch the battery with wet hands. Water may cause unexpected rust.
- Do not touch or move any components inside the transmitter, or it may interfere with the proper operation.



2. INSTALL TRANSMITTER BATTERY

(a) Install a new battery (lithium battery) with the positive (+) side up, as shown in the illustration.

NOTICE:

- Be sure that the positive side and the negative side of the transmitter battery are faced correctly.
- Be careful not to bend the electrode of the transmitter battery insertion.
- Be careful that no dust or oil adheres to the transmitter case.

(b) Install the case.

DOOR CONTROL TRANSMITTER

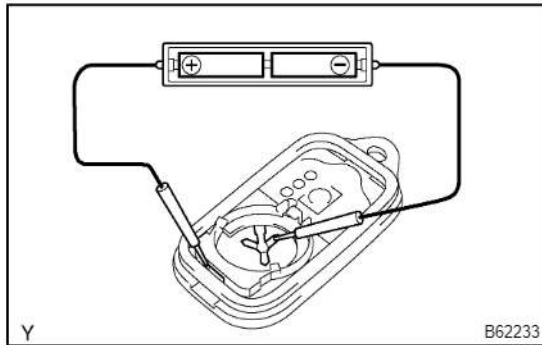
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INSPECTION

1. INSPECT DOOR CONTROL TRANSMITTER

(a) Inspect operation of the transmitter.

- (1) Remove the battery (lithium battery) from the transmitter (See page 73-13).
- (2) Install a new or normal battery (lithium battery).



HINT:

When a new or normal battery is not available, connect 2 new 1.5 V batteries in series, connect the battery positive (+) to the battery receptacle side terminal and battery negative (-) to the bottom terminal, then apply 3 V voltage to the transmitter.

- (3) In a location that is approx. 1 m (3.28 ft) away from the driver side outside door handle in the right direction, point the key plate of the transmitter at the vehicle, and check operation of the transmitter by pressing a transmission switch on the transmitter body.

Standard:

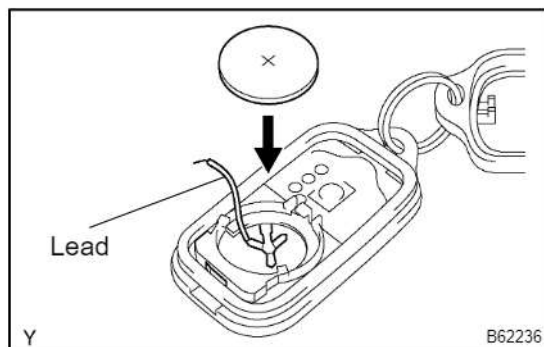
The door lock can be operated via the remote control.

HINT:

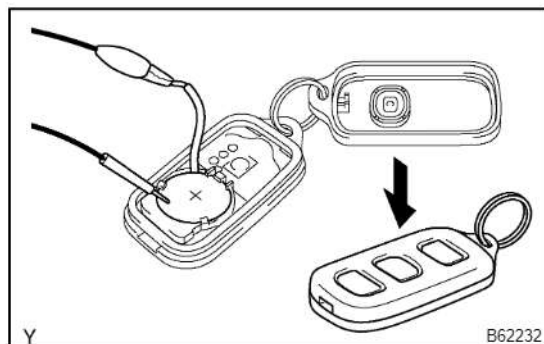
- The minimum operational distance differs, depending on the operator, the way the transmitter is held, and the location.
 - Since the transmitter uses faint electric waves, the operational distance might be shortened if noise or strong electric wave occurs in the area where the frequency is used.
- (4) Install the battery (lithium battery).
- (b) Inspect the battery capacity.

HINT:

- The capacity of the battery can be determined only when the battery is installed in the transmitter. For a lithium battery used in the transmitter, a voltage of more than 2.5 V is shown on the tester until the energy is completely consumed, while no battery is installed in the transmitter. Therefore, it is necessary to measure the voltage while the battery is installed in transmitter (a resistance of 1.2 kΩ is applied to the battery) when checking the amount of energy left in the battery.
 - If the transmitter is faulty, the amount of energy left in the battery might not be checked correctly.
- (1) Remove the battery (lithium battery) from the transmitter (See page 73-13).



- (2) Connect the lead to the negative (–) terminal of the transmitter and install the battery.



- (3) Connect the tester positive (+) probe to the positive (+) battery (lithium battery) and the tester negative (–) probe to the lead respectively.
- (4) Press one of the transmission switches on the transmitter for approx. 1 second.
- (5) Press the transmission switch on the transmitter again to check the voltage.

Standard: 2.2 V or more

HINT:

- When the temperature of the battery is low, the inspection can not be made correctly. When the outcome of the test is less than 2.2 V, conduct the test again after leaving the battery in a place at 18°C (64°F) for more than 30 minutes.
 - The automatic power-off function causes the voltage of the battery to be 2.5 V or more (a voltage with no resistance applied to the battery) when 0.8 seconds have passed after the switch is pressed. Therefore, make sure to read the voltage just after the switch is pressed.
 - Since high voltage might be shown once or twice after the battery returns to the specified temperature, the inspection should be made with the voltage shown after the switch is pressed at least 3 times.
- (6) Disconnect the lead.
 - (7) Set the battery (lithium battery) in the transmitter.

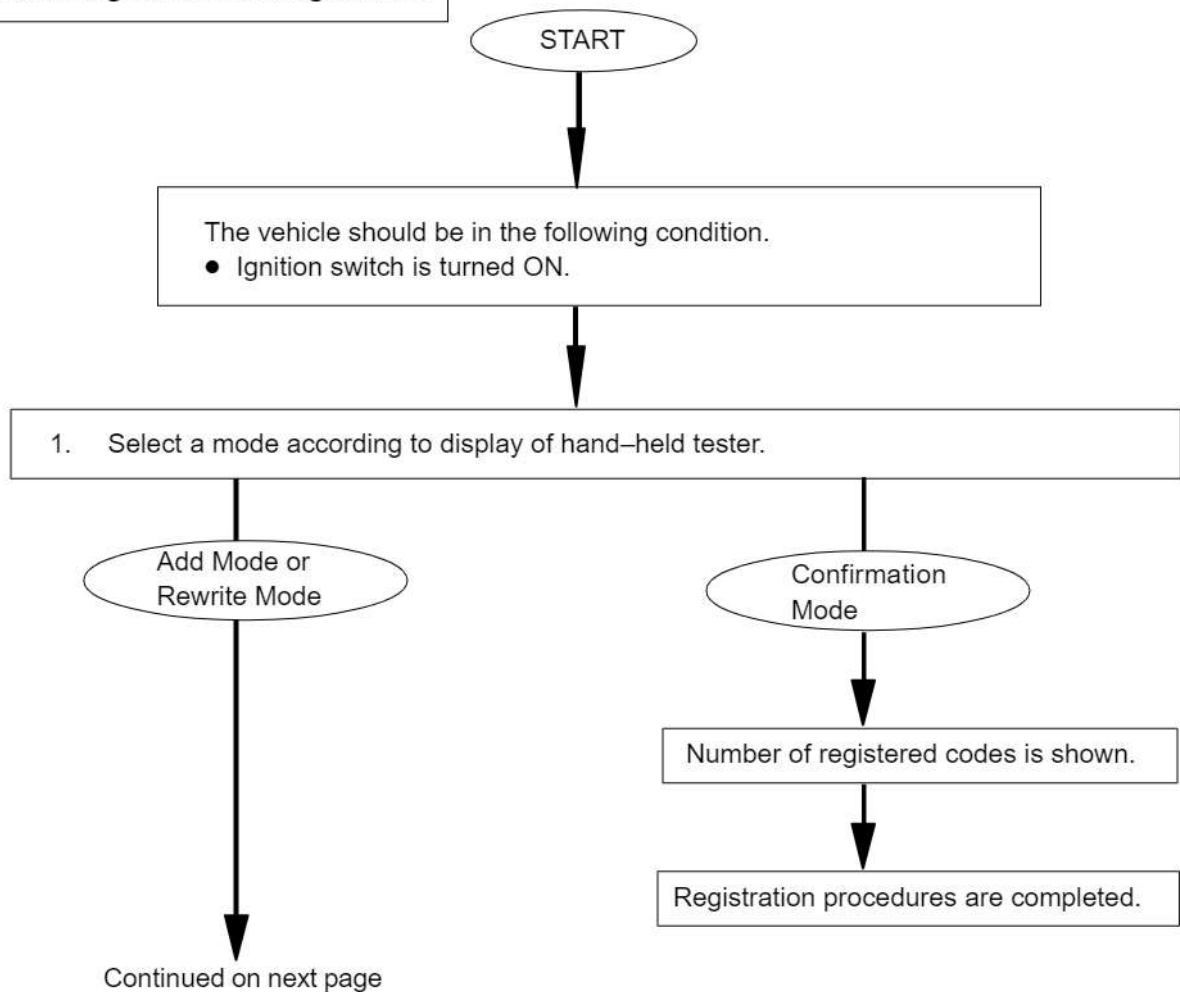
REGISTRATION

HINT:

- If replacing the door control transmitter or the door control receiver, register the recognition code.
- The add mode is used to register new recognition codes while still retaining codes already registered. This mode is used when a new transmitter is added. If the number of registered codes exceeds 4, the previously registered codes will be erased in order, starting from the first registered code.
- The rewrite mode is used to erase all the previously registered recognition codes in order to register all new recognition codes. This mode is used when the transmitter or the door control receiver is exchanged for a new one.
- The confirmation mode is used to confirm how many recognition codes have already been registered before an additional registration of the recognition codes.
- The all clear mode is used to erase all the registered codes and disables the wireless door lock function. This mode is used when the transmitter is lost.
- All the following registration procedures must be performed in order continuously.

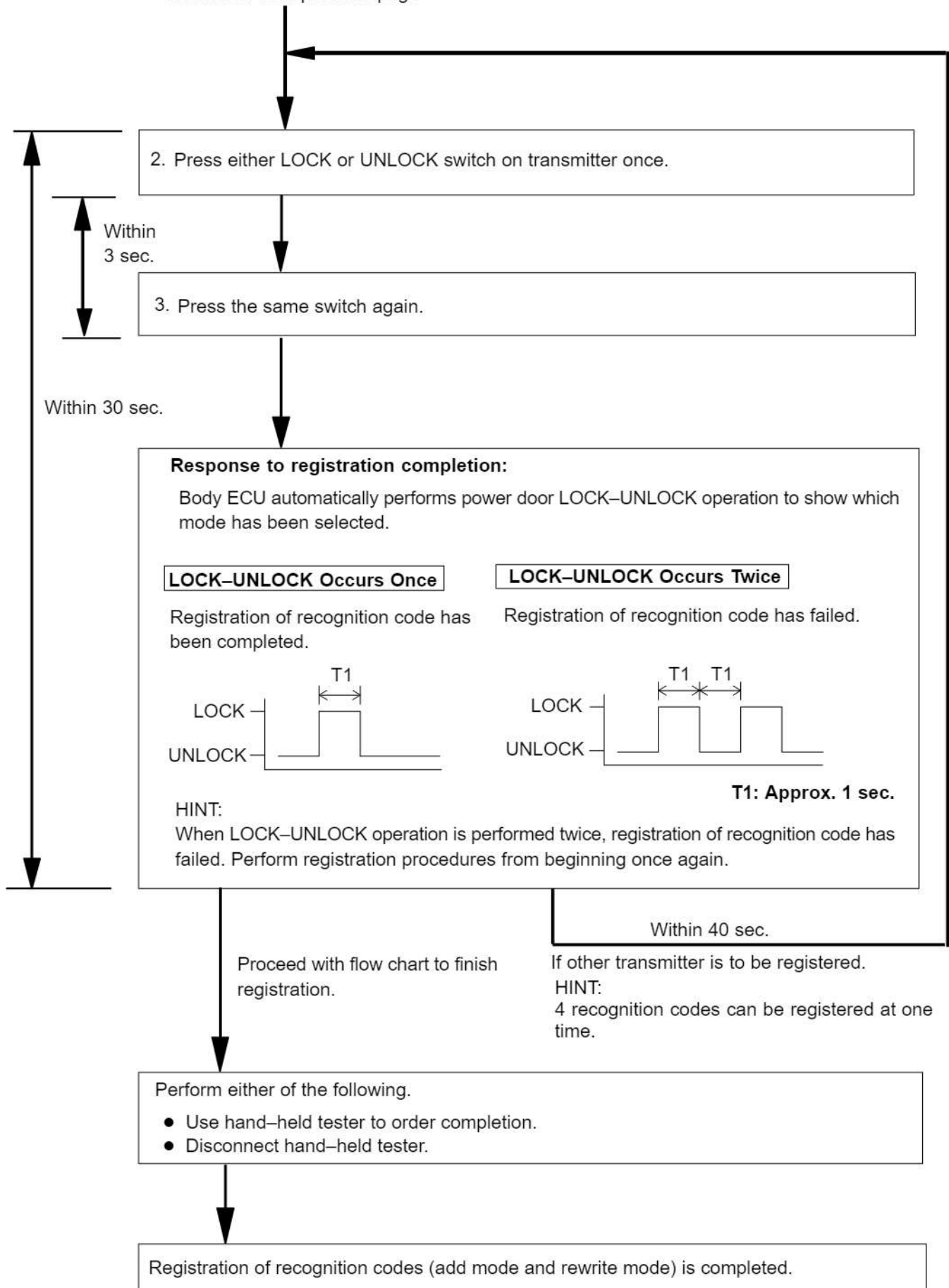
1. When using the hand-held tester: REGISTER RECOGNITION CODE

Flow Chart of Recognition Code Registration



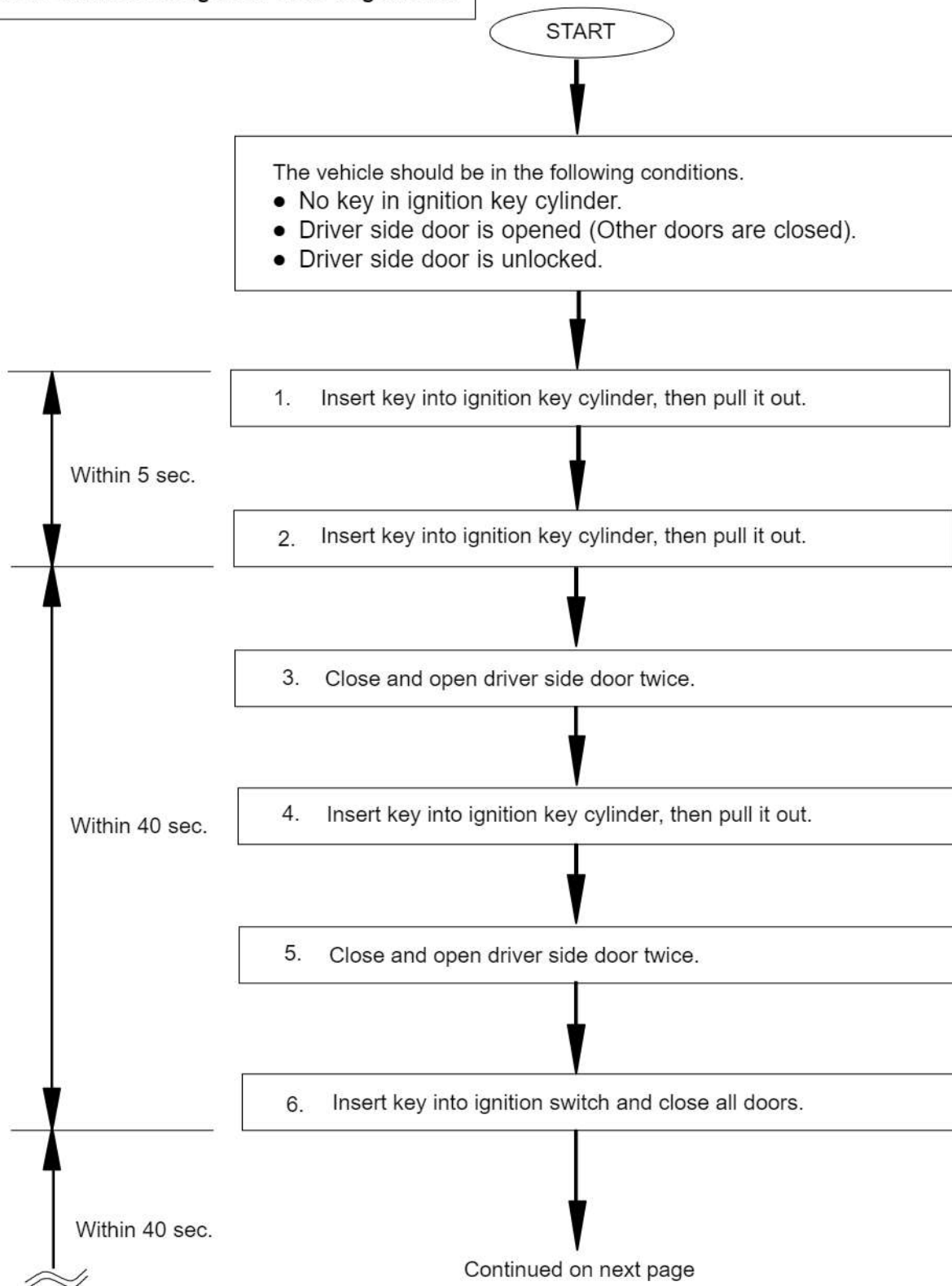
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2. When not using the hand-held tester: REGISTER RECOGNITION CODE

Flow Chart of Recognition Code Registration



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Mode Selection:

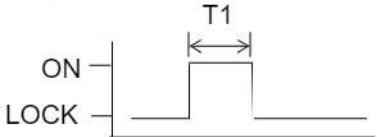
7. Turn ignition switch from LOCK to ON and back to LOCK at approximately 1 second intervals according to the number of times shown below.

Number of ON-LOCK operation of ignition switch:

Add Mode

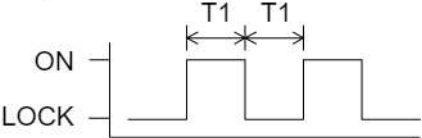
ON-LOCK operation: 1 time

T1: Approx. 1 sec.



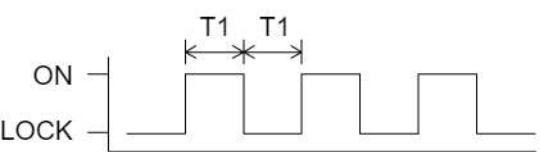
Rewrite Mode

ON-LOCK operation: 2 times



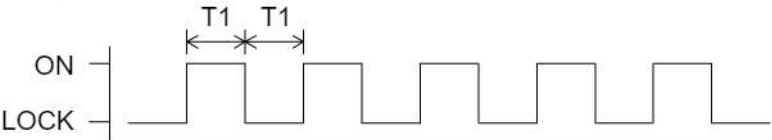
Confirmation Mode

ON-LOCK operation: 3 times



All Clear Mode

ON-LOCK operation: 5 times



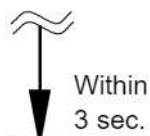
If the number of the ON-LOCK operation of the ignition switch is 0, 4 or 6 or more, there will be no response (power door lock and unlock operation) to show which mode has been selected.

8. Remove key from ignition key cylinder.

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Within 40 sec.

Within 3 sec.



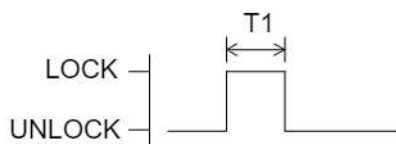
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Response to selected mode (Power door lock operation):

Body ECU automatically performs power door LOCK-UNLOCK operation to show which mode has been selected.

Add Mode

LOCK-UNLOCK operation: 1 time

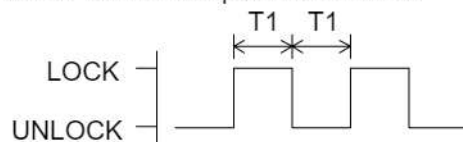


T1: Approx. 1 sec.

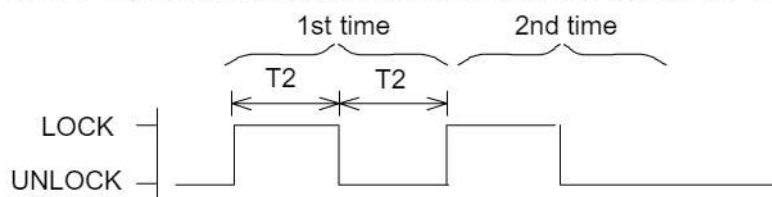
T2: Approx. 2 sec.

Rewrite Mode

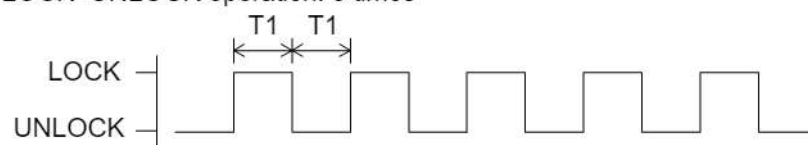
LOCK-UNLOCK operation: 2 times

**Confirmation Mode**

LOCK-UNLOCK operation: The number of registered codes (1 - 5 times)

**All Clear Mode**

LOCK-UNLOCK operation: 5 times

**HINT:**

- In the confirmation mode, when LOCK-UNLOCK operation is performed twice, the number of registered recognition codes is 2.
- In the confirmation mode, when 0 codes are registered, LOCK-UNLOCK operation is automatically performed 5 times.

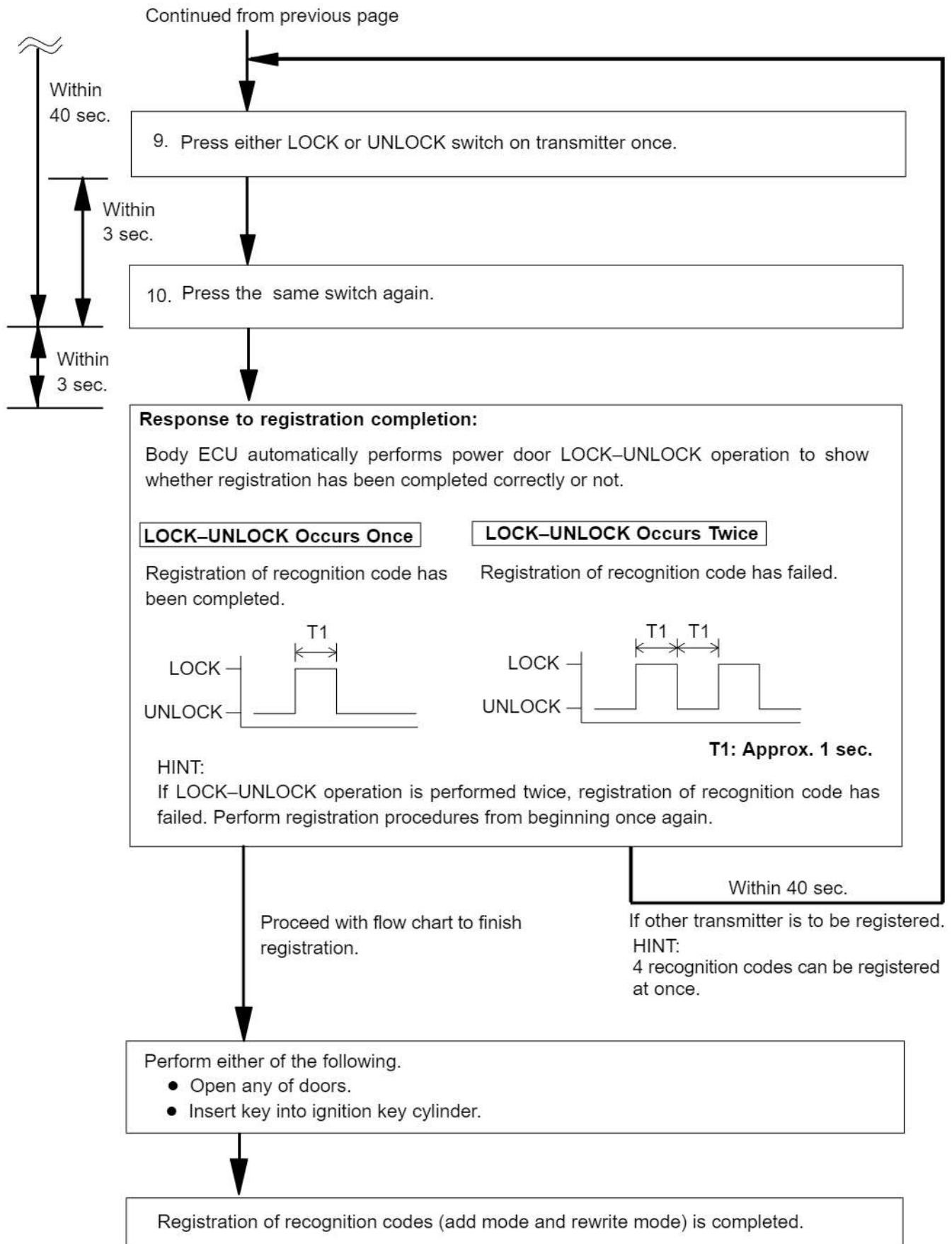
Within
40 sec.

Add Mode or
Rewrite Mode

Confirmation Mode and
All Clear Mode

Continued on next page

Registration procedures are completed.



KEY REMINDER WARNING SYSTEM

730EE-01

ON-VEHICLE INSPECTION

1. CHECK FUNCTION

- (a) Check that the key reminder warning buzzer sounds.
 - (1) With the driver side door closed, insert the key into the ignition key lock cylinder, and then turn the key to LOCK or ACC.
 - (2) Then, check that the buzzer sounds intermittently if the driver side door is opened.
- (b) Check that the key reminder warning buzzer stops.
 - (1) Check that the buzzer stops sounding if any of the following operations is performed while the buzzer is sounding:
 - Close the driver side door (front door courtesy lamp switch is off).
 - Turn the ignition switch ON.
 - Pull out the key from the ignition key cylinder.

ENGINE IMMOBILISER SYSTEM

REGISTRATION

730RY-01

1. DESCRIPTION OF CODE REGISTRATION

(a) When adding master keys and sub-keys (Additional registration).

(1) Register the key code (immobiliser code) to the transponder key ECU.

Target ECU	See step
Transponder key ECU	3.

(b) When replacing the transponder key ECU (New registration).

(1) Register the key code (immobiliser code) in the transponder key ECU.

Target ECU	See step
Transponder key ECU	2.

(2) Register the ECU COMMUNICATION ID between the ECM and the transponder key ECU.

Target ECU	See step
ECM	5.

(c) When replacing the ECM.

(1) Register the ECU COMMUNICATION ID between the ECM and the transponder key ECU.

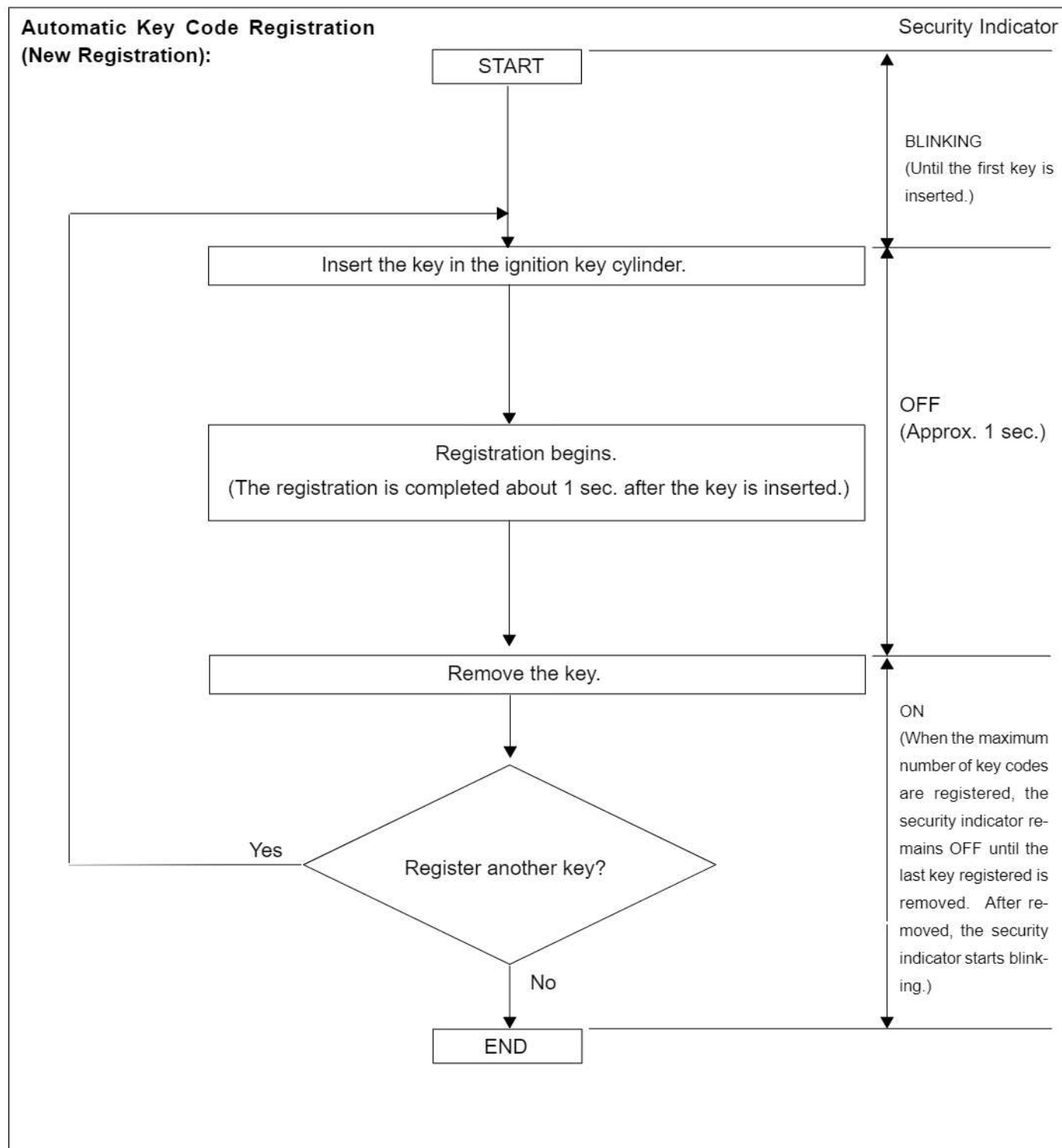
Target ECU	See step
Transponder key ECU	5.

2. KEY REGISTRATION IN AUTOMATIC REGISTRATION (New Registration)

(a) The new registration of the key codes (immobiliser codes) is made automatically.

HINT:

- When you install a new transponder key ECU, the key codes (immobiliser codes) must be registered.
- A new transponder key ECU starts in the automatic key code registration mode. In this mode, a maximum of 4 key codes for 3 master keys and 1 sub-key can be registered. Since the transponder key ECU can distinguish types of keys, the registration order is not specified.

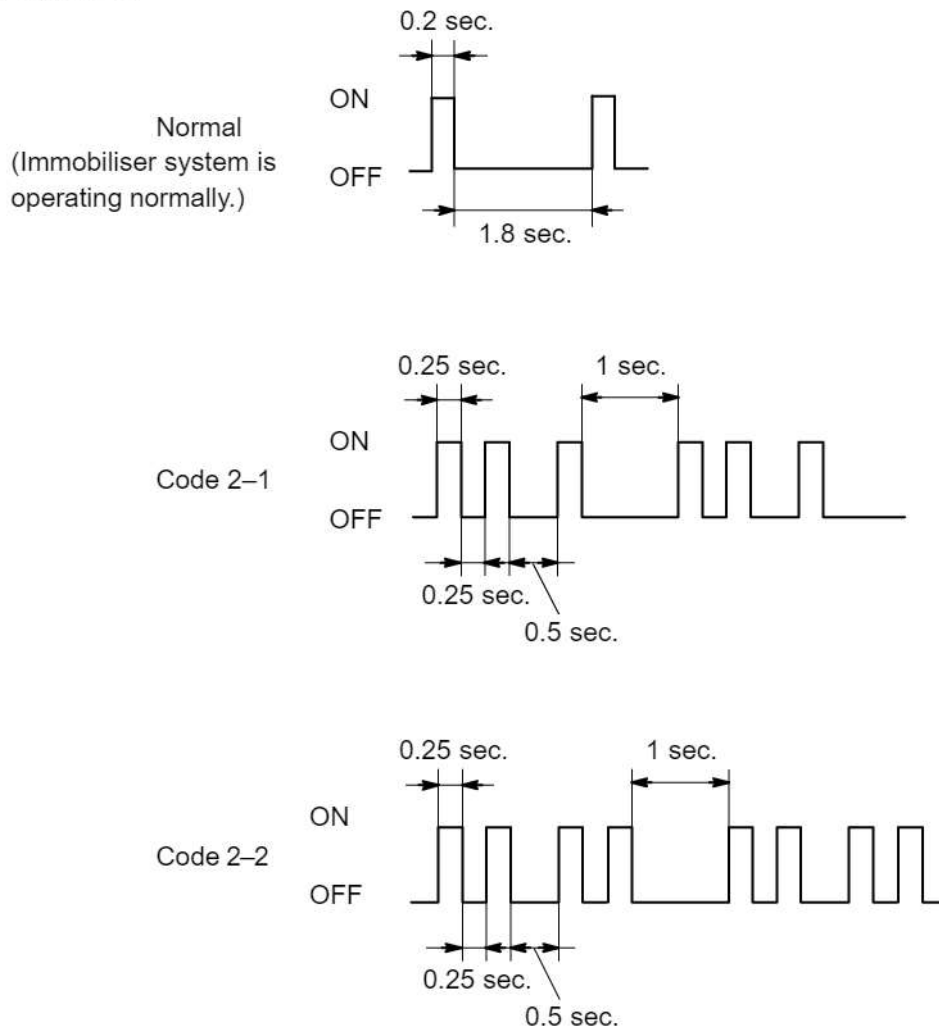


HINT:

- When no key is inserted in the ignition key cylinder in the automatic key code registration mode, the security indicator remains on.
- When the immobiliser system operates normally and the key is pulled out, the security indicator blinks.

NOTICE:

If the key code registration has failed in the automatic key code registration mode, code 2-1 will be output from the security indicator. Trying to re-register an already registered key will cause code 2-2 to be output when the key is inserted. The output details are shown below.

Security Indicator:

- (b) Finish the automatic key code registration mode.

The automatic key code registration mode can be forced to end when at least 1 key code (immobiliser code) for the master key has been registered.

- (1) Turn the ignition switch ON/OFF alternately 5 times within 10 seconds using the already registered master key.

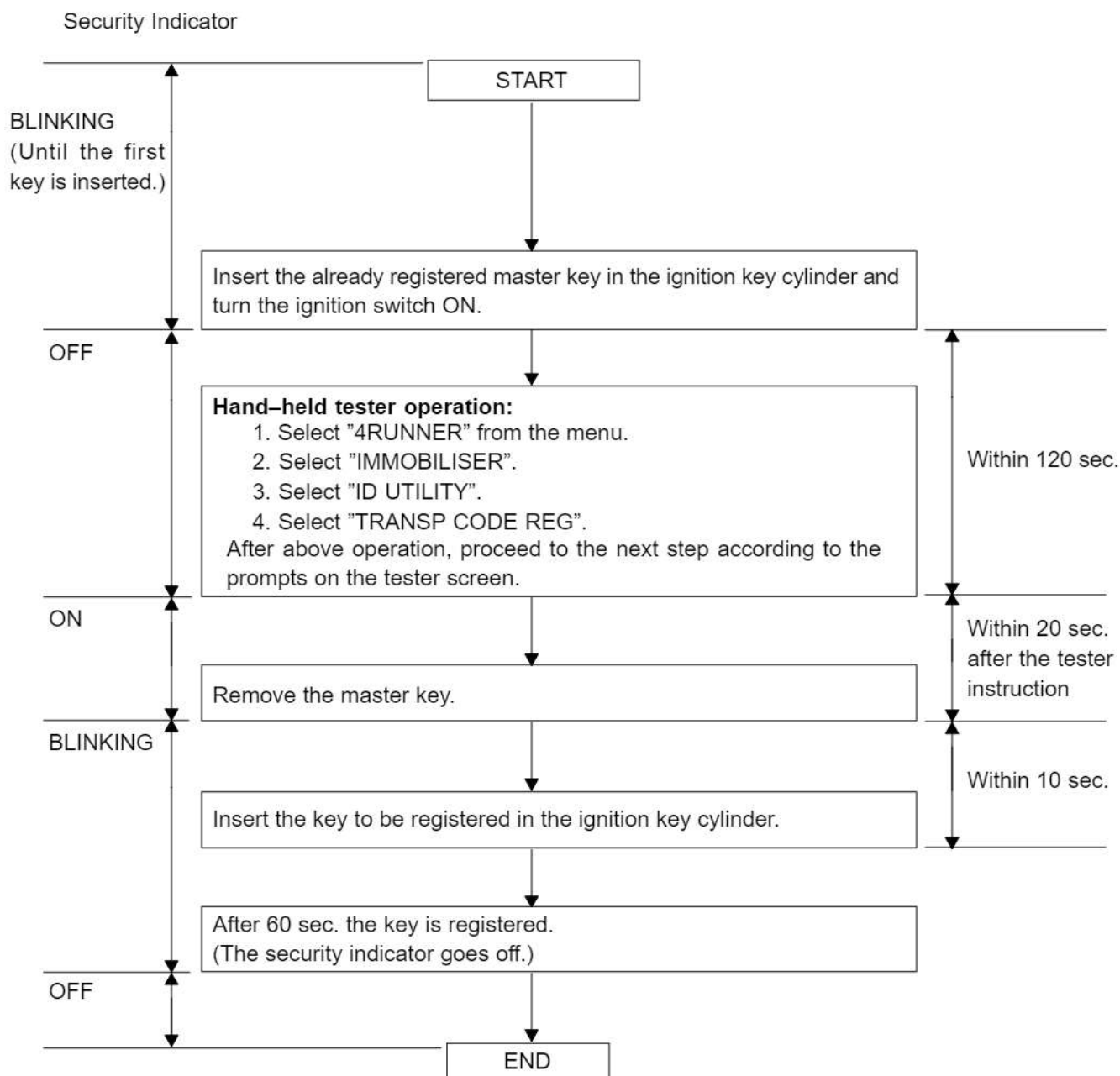
3. REGISTRATION OF ADDITIONAL KEY (Additional Registration)

HINT:

- A maximum of 5 master key codes and 3 sub-key codes can be registered.
- Registration mode will end if each step is not completed within the specified time.
- When the ignition cylinder or the key cylinder set is replaced, remove the transmitter module from the original master key in which a transmitter built. Then install this transmitter module to a new key and use it as a master key. If necessary, use this master key to register other keys.

By using the hand-held tester:

Additional Registration (Hand-held Tester):



HINT:

- A brief outline of procedures for key code registration is shown on this page. For detailed information, please refer to the prompts on the screen of the hand-held tester.
- When the immobiliser system operates normally and the key is pulled out, the security indicator blinks.

NOTICE:

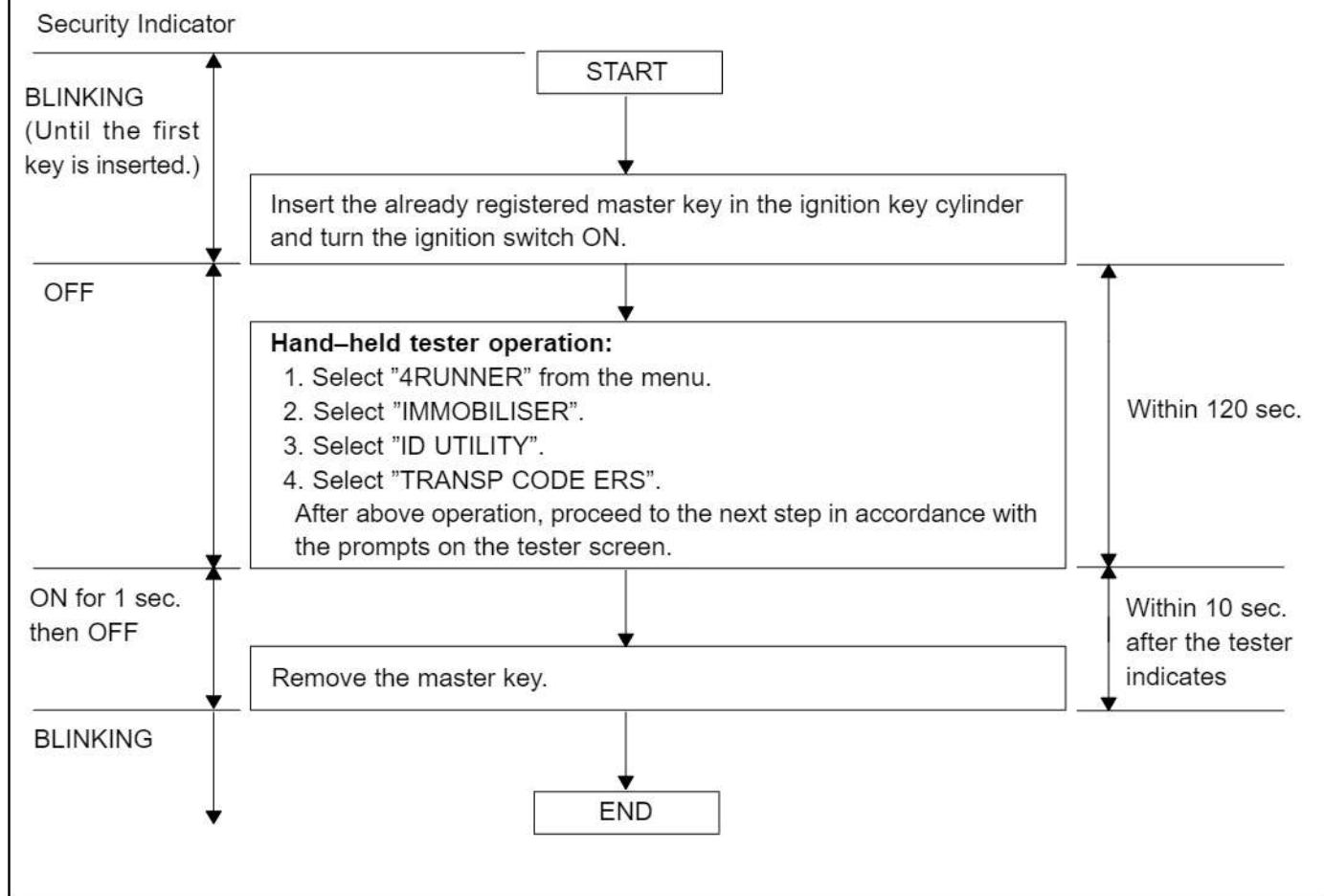
If the key code registration has failed in the automatic key code registration mode, code 2-1 will be output from the security indicator. Trying to re-register an already registered key will cause code 2-2 to be output when the key is inserted. The output details are shown in step 2 (New Registration).

4. ERASURE OF KEY CODE

HINT:

- All key codes are erased except for the master key which is used for erasure operation.
In order to use a key for which the code has been erased, it is necessary to register the key code again.
- Registration operation will be cancelled if each step is not completed within the specified time.
By using the hand-held tester:

Erasing Key Code (Hand-held Tester):



HINT:

- A brief outline of procedures for key code registration is shown on this page. For detailed information, please refer to the prompts on the screen of the hand-held tester.
- When the immobiliser system operates normally and the key is pulled out, the security indicator blinks.

5. ECU COMMUNICATION ID REGISTRATION

NOTICE:

- The ECU communication ID should be registered when the transponder key ECU and/or the ECM is replaced, in order to match these ECM COMMUNICATION ID.
 - The engine cannot be started unless the ECM COMMUNICATION ID matches.
- (a) Register the ECU communication ID.
- (1) After the transponder key ECU and/or the ECM is replaced, turn the ignition switch ON (the engine is not running).
 - (2) Short the Tc and CG terminals of the DLC3 and leave it as is for 30 minutes.
 - (3) Check that the engine starts.

THEFT DETERRENT SYSTEM

730EP-01

ON-VEHICLE INSPECTION

1. OUTLINE OF THEFT DETERRENT SYSTEM

- (a) When the theft deterrent system detects that the vehicle is being tampered with, the system sets off the alarm, causing the horns to sound and the lights to light up or blink in order to alert people around the vehicle to the theft.
- (b) The theft deterrent system has 2 modes; one is active arming mode and the other is passive arming mode. Passive arming mode can be switched ON/OFF by the specified method (See step 4).
- (c) Each mode has 4 states; disarmed state, arming preparation state, armed state, alarm sounding state.
 - (1) Disarmed state:
 - The alarm function is not operating.
 - The theft deterrent system is not operating.
 - (2) Arming preparation state:
 - The time until the system goes into the armed state.
 - The theft deterrent system is not operating.
 - (3) Armed state:
 - The theft deterrent system is operating.

HINT:

If the vehicle remains in a condition that sets off the alarm (any door remains open, engine hood remains open, ignition switch remains directly connected) after the alarm ends, the alarm will be set off repeatedly a maximum of 10 times for every one of the above specified conditions.

Alarm time: (60 ± 5 sec.) x 10

(4) Alarm sounding state:

When the theft deterrent system detects that the vehicle is being tampered with while in the armed state, the system causes the horns to sound and the lights to light up or blink in order to alert people around the vehicle to the theft.

Refer to the table below for the alarm method and time:

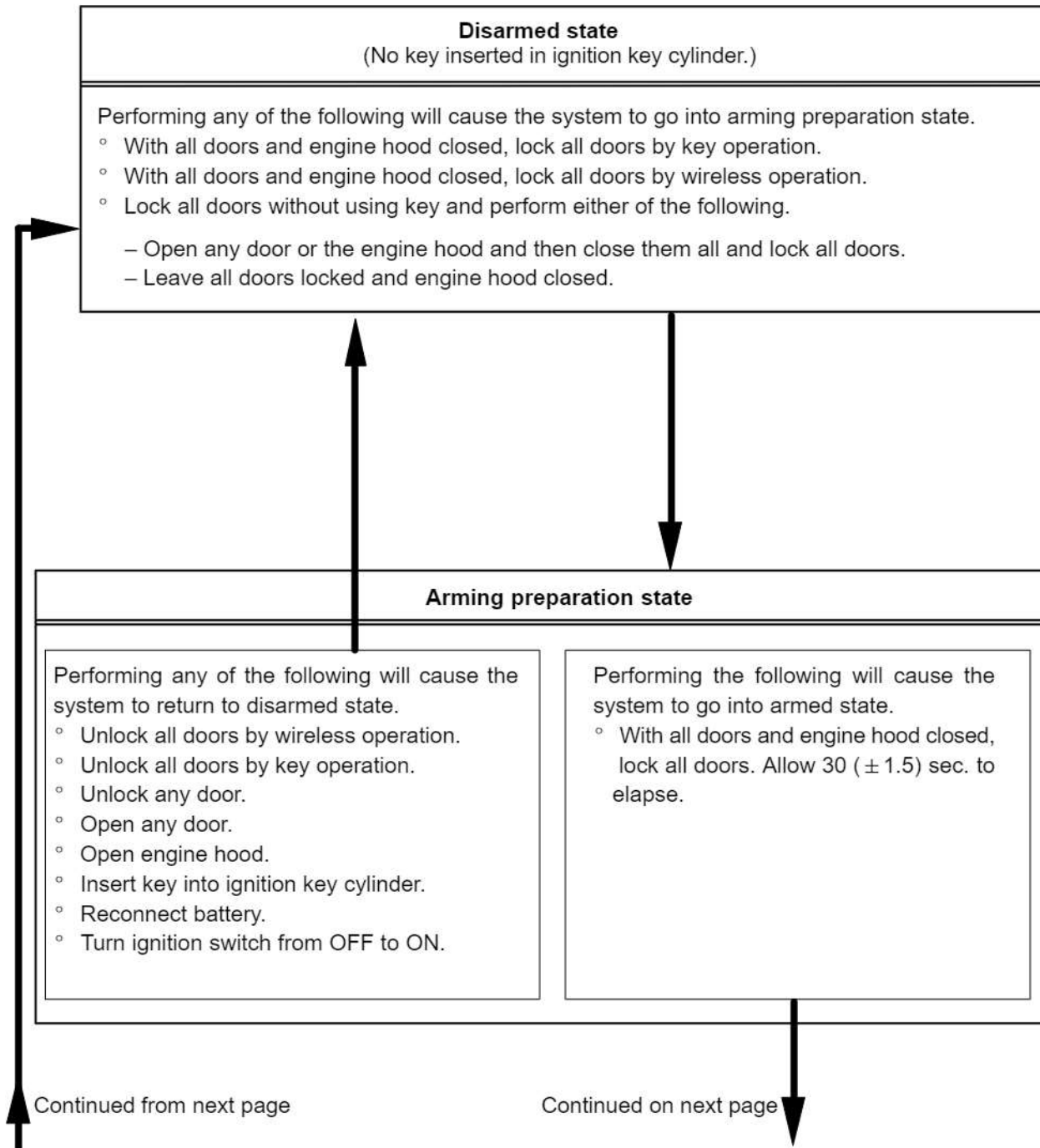
Alarm Method	Headlight	Blinking (cycle of 0.4 sec.)
	Taillight	Blinking (cycle of 0.4 sec.)
	Hazard Warning Light	Blinking (cycle of flasher relay)
	Room Light	Illuminating
	Vehicle Horn	Sounding (cycle of 0.4 sec.)
	Theft Deterrent Horn	Sounding (cycle of 0.4 sec.)
Alarm Time	60 ± 5 sec. (maximum 10 times)	

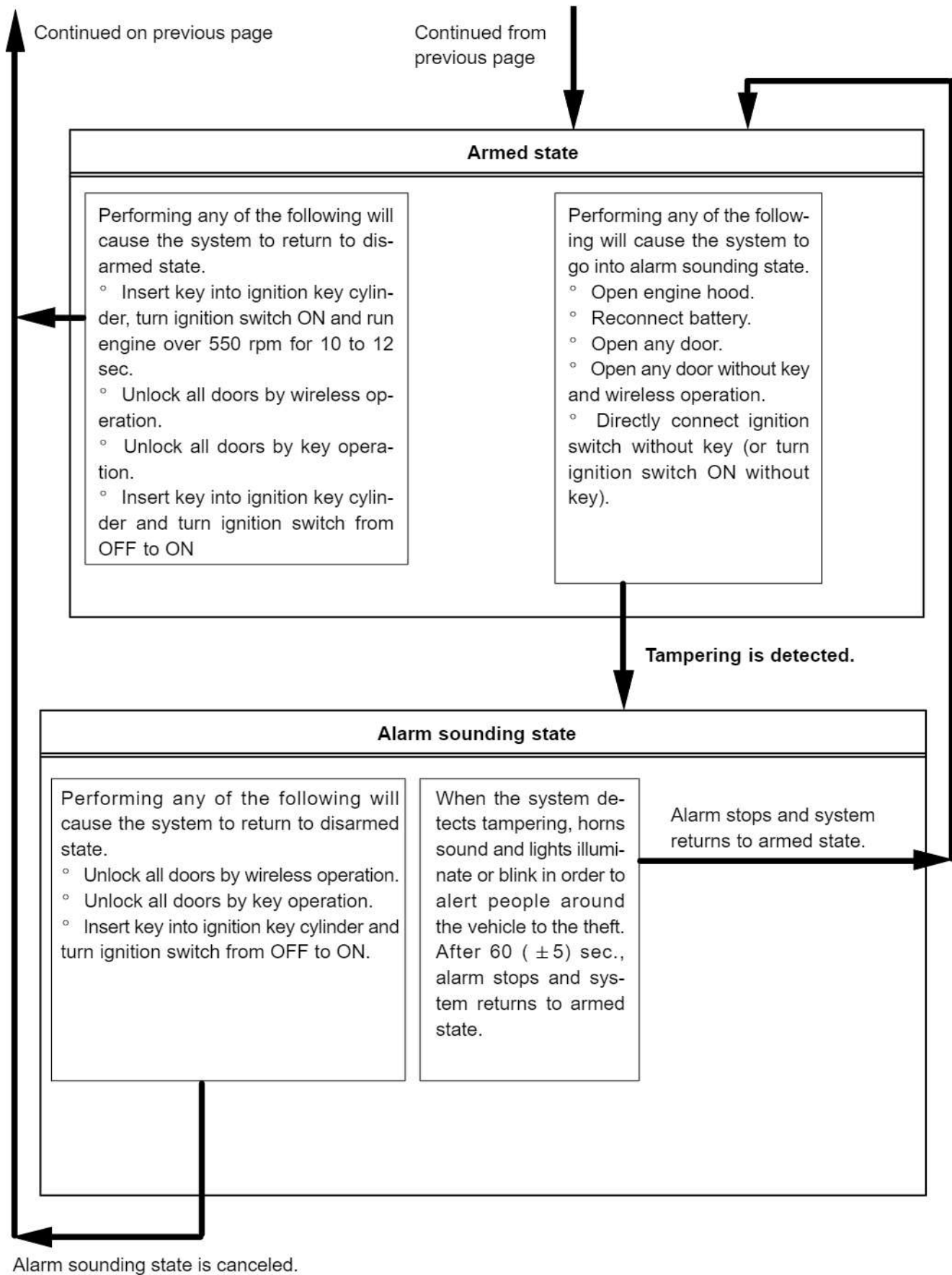
HINT:

If any of the doors is unlocked and there is also no key in the ignition key cylinder during the armed state, a forced door lock signal will be output (See step 5).

2. ACTIVE ARMING MODE

Active arming mode starts the alarm control right when the doors are locked.





3. PASSIVE ARMING MODE

Passive arming mode can be switched ON/OFF by the specified method (See step 4).

The mode set initially (shipped from factory) is 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.

Passive arming mode starts the alarm control after the key is removed from the ignition key cylinder and the doors are closed.

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 step 5).

When the theft deterrent system detects that the doors are opened during passive arming mode, the alarm is not set off immediately because an entry delay time is set.

If any of the following conditions is fulfilled during passive arming mode, the theft deterrent system will switch to active arming mode.

- With all doors and engine hood closed, lock all doors by key operation.

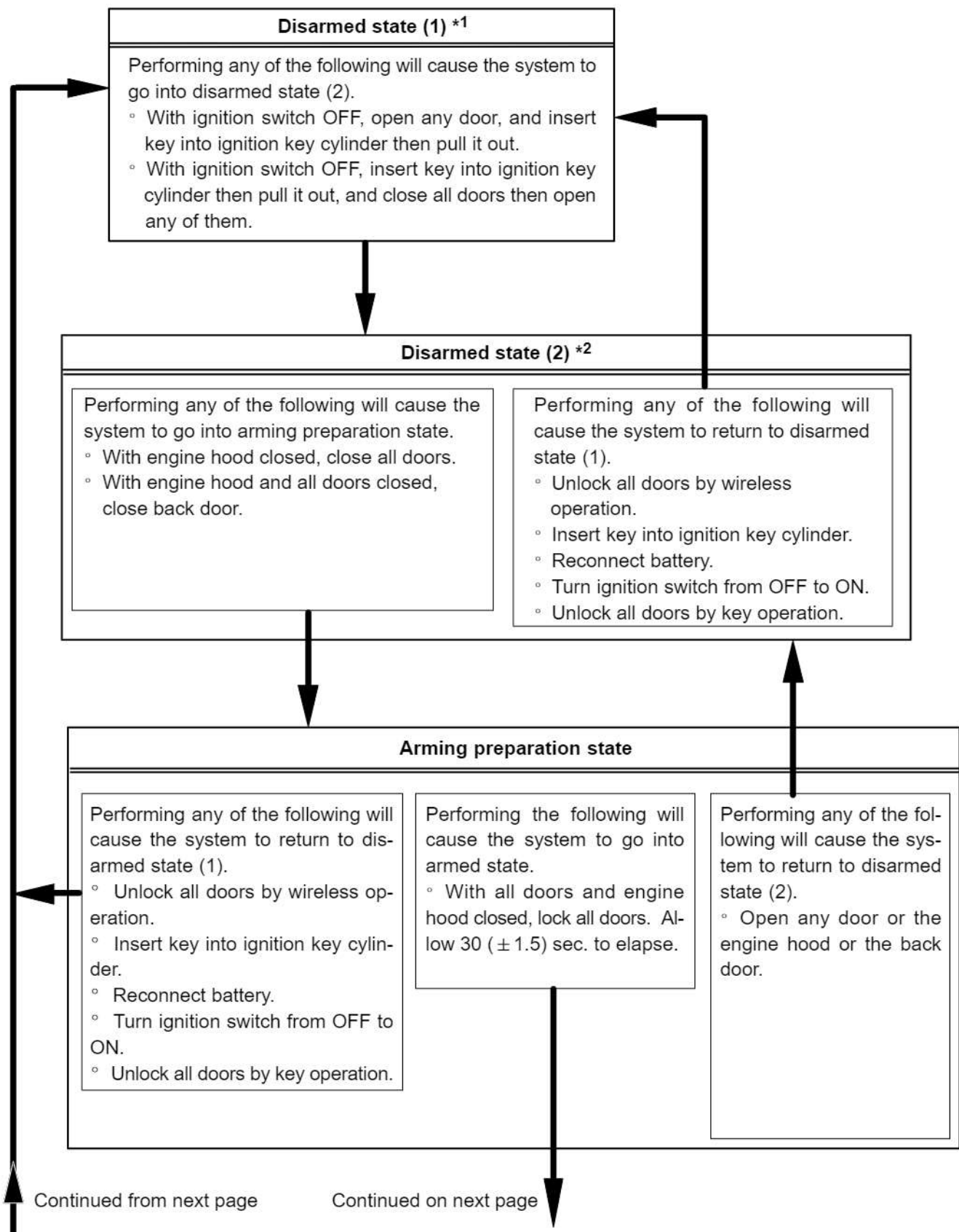
- With all doors and engine hood closed, lock all doors by wireless operation.

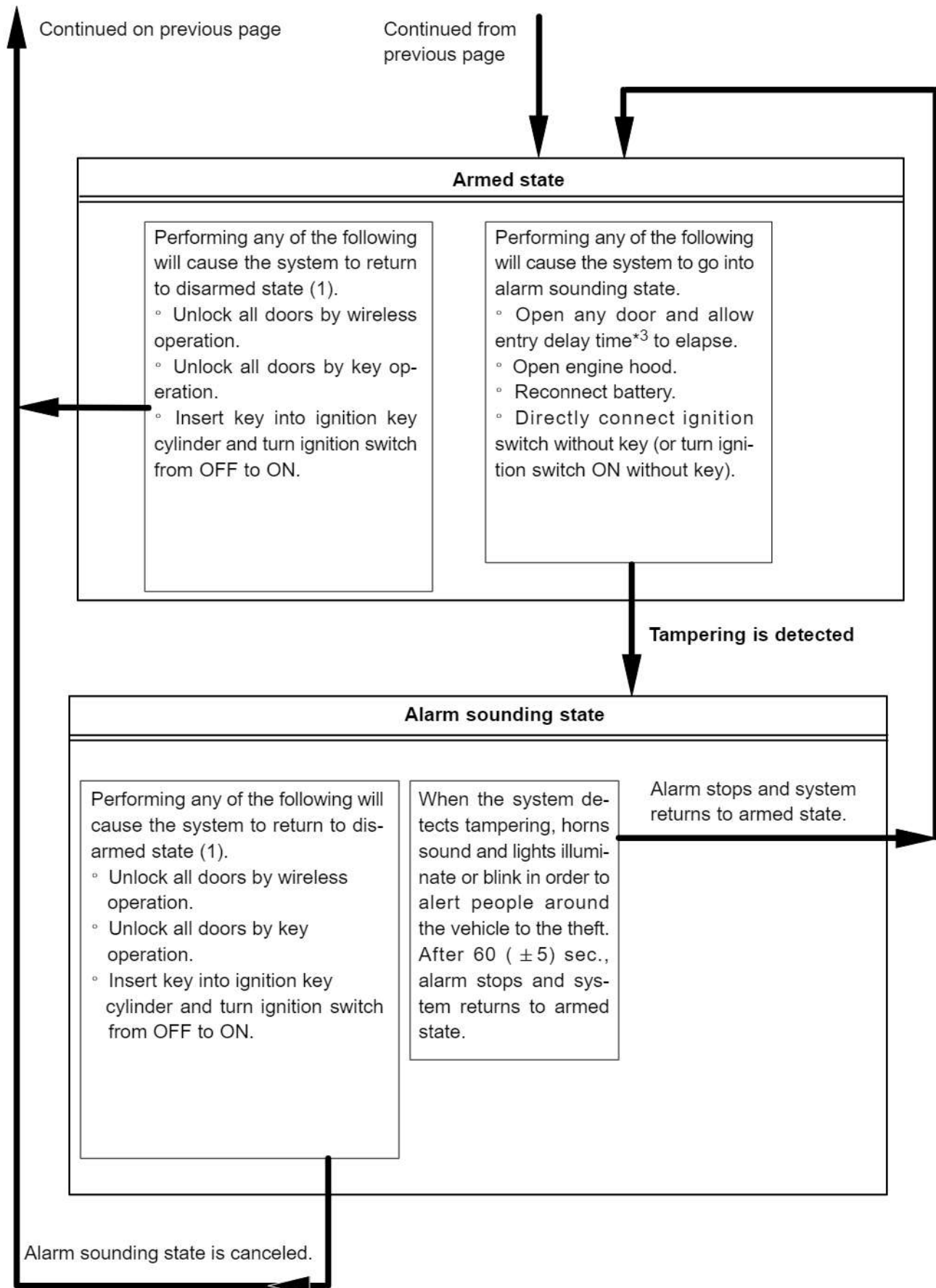
- Lock all doors without using key and perform either of the following.

- Open any door or the engine hood and then close them all and lock all doors. / Leave all doors locked and engine hood closed.

*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.

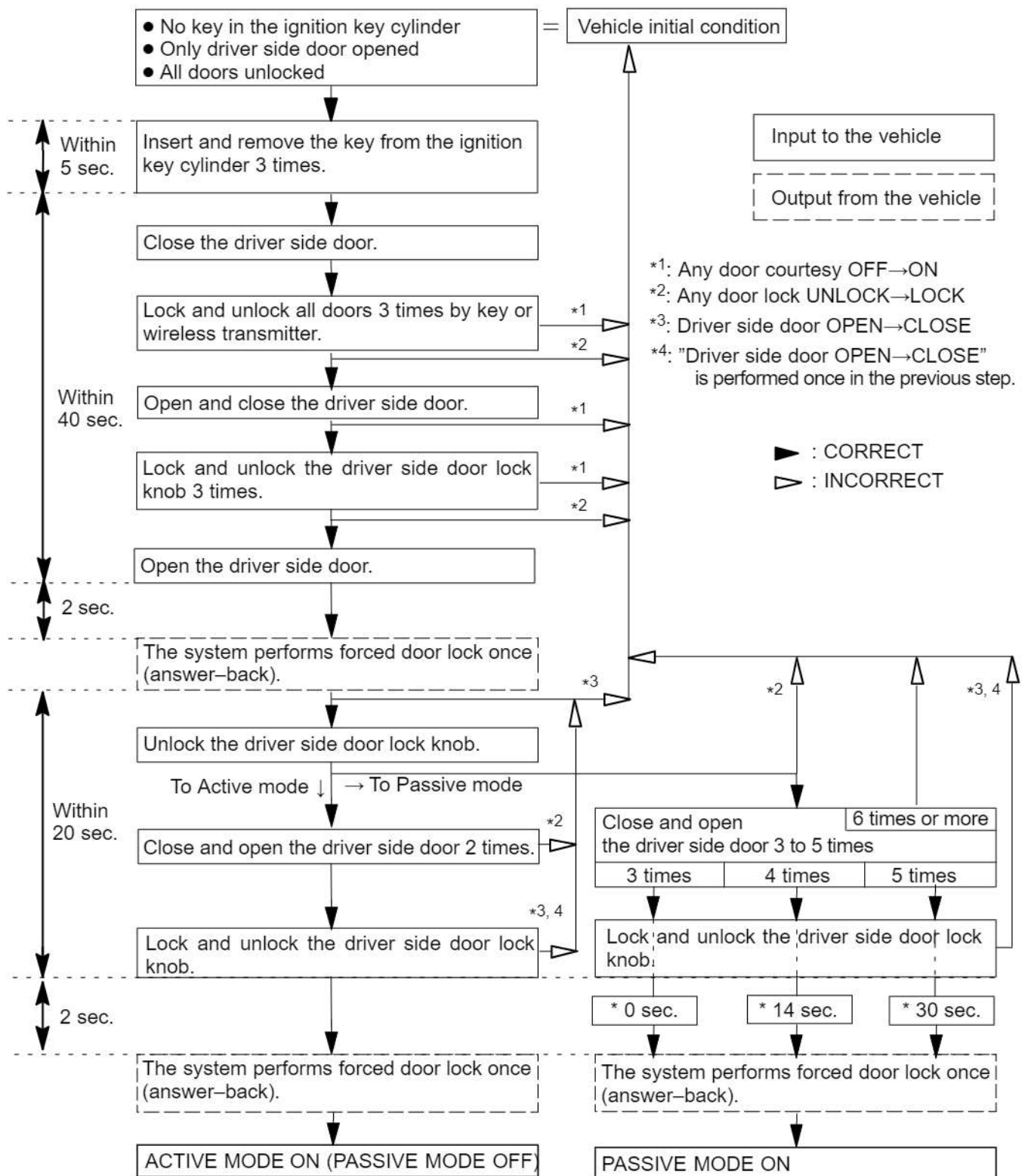




*3: When any door is opened while all the doors are closed during the armed state in passive arming mode, the entry delay time starts. If the switch condition (armed state → disarmed state (1) or (2)) is fulfilled during the entry delay time, the theft deterrent system will return to the disarmed state (1) or (2). However, if the switch condition to the disarmed state (1) or (2) is not fulfilled, the theft deterrent system will recognize it as a theft and go into the alarm sounding state.

Entry delay time of 0, 14 or 30 sec. can be selected by the customizing function.

4. CHANGING METHOD OF PASSIVE MODE (ON or OFF)



HINT:

- Initial mode is PASSIVE MODE OFF.
- If the ignition switch is turned ON, changing operation will be cancelled.

*: Entry delay time

5. 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 no key is in the ignition key cylinder and 0.4 second has elapsed after the previous output of a forced door lock signal, the doors will be forced to lock if any of the following conditions is fulfilled.
- The theft deterrent system is in the armed state of active arming mode.
 - All the doors are locked. ☐ Any door is unlocked.
 - Any door is unlocked state.

6. ALARM MEMORY FUNCTION

- (a) If the alarm is set off (tampering is detected) while the theft deterrent system is set, the alarm memory function will record it. Whenever you cancel the theft deterrent system, the alarm memory function causes the taillights to light up for 2 seconds in order to inform you that the alarm has been set off.
- (1) Conditions of the alarm memory function that cause the taillights to light up:
- When the theft deterrent system has entered into the alarm sounding state (tampering has been detected) even once, the taillights will light up for 2 seconds if any of the following conditions is fulfilled.
- Switched to the disarmed state from the armed state during active arming mode.
 - Switched to the disarmed state (1) from the armed state during passive arming mode.
 - Switched to the disarmed state (2) from the armed state during passive arming mode.

HINT:

Active arming mode: See step 2

Passive arming mode: See step 3

7. PANIC ALARM CONTROL

- (a) The panic alarm control makes it possible for you to voluntarily set off the panic alarm by pressing the PANIC (LOCK) switch on the wireless transmitter. However, this control operates apart from the alarm control by the theft deterrent system (switched to the alarm sounding state from the armed state).
- (1) Conditions that cause the panic alarm control to set off the panic alarm:
- The panic alarm control sets off the panic alarm by pressing the PANIC (LOCK) switch on the wireless transmitter over 2.4 seconds under the following conditions.
- The ignition switch is OFF.
 - The theft deterrent system is not in the alarm sounding state (common to active arming mode and passive arming mode).
 - The panic alarm control is not operating (the alarm is not set off).
- (2) Conditions that causes the panic alarm control to stop the alarm:
- The panic alarm control stops the panic alarm when any of the following conditions is fulfilled during panic alarm operation.
- The ignition switch is turned ON.
 - Either of the switches on the wireless transmitter (LOCK/UNLOCK) is pressed.
 - The panic alarm ends (60 ± 5 sec. have passed).
 - The theft deterrent system switches to the alarm sounding state (common to active arming mode and passive arming mode). However, the alarm is still sounding, because the theft deterrent system has switched to the alarm sounding state. Conditions for canceling the panic alarm are the same as for the alarm control.

HINT:

Active arming mode: See step 2

Passive arming mode: See step 3

8. SECURITY INDICATOR LIGHT OUTPUT

- (a) The theft deterrent ECU outputs a signal to light up the security indicator light, according to the state of the theft deterrent system. However, some of the actual lighting conditions of the security indicator light are different from the outputs of the theft deterrent ECU.

State of theft deterrent system*	Security indicator light	
	Output signals from theft deterrent ECU	Actual lighting condition
Disarmed state	OFF	OFF (Immobiliser system unset) BLINKING (Immobiliser system set)
Arming preparation state	ON	ON
Armed state	OFF	BLINKING
Alarm sounding state	ON	ON

*: Common to active arming mode and passive arming mode

Blinking cycle:

Time	Security indicator light
0.2 sec.	ON
1.8 sec.	OFF

HINT:

When the immobiliser system is set, the security indicator light blinks during the disarmed state and the armed state, due to the output signals from the immobiliser system.