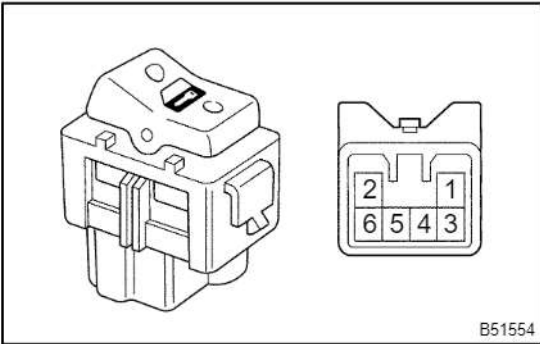


INSPECTION

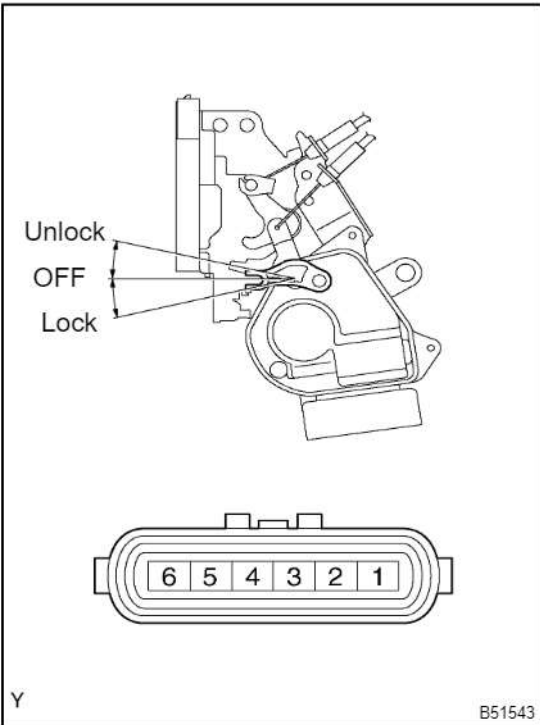


1. INSPECT DOOR CONTROL SWITCH ASSY

(a) Inspect the door control switch continuity.

Switch position	Tester connection	Specified condition
Lock	3 - 6	Continuity
OFF	-	No continuity
Unlock	3 - 5	Continuity

If the continuity is not as specified, replace the switch.

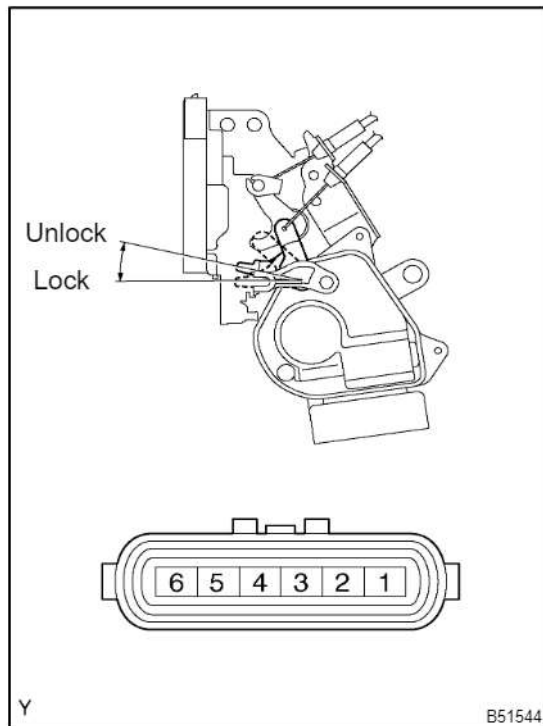


2. INSPECT FRONT DOOR LOCK ASSY RH

(a) Inspect the door lock assembly continuity.

Switch position	Tester connection	Specified condition
Lock	3 - 5	Continuity
OFF	-	No continuity
Unlock	4 - 5	Continuity

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



(b) Inspect operation of the door lock motor.

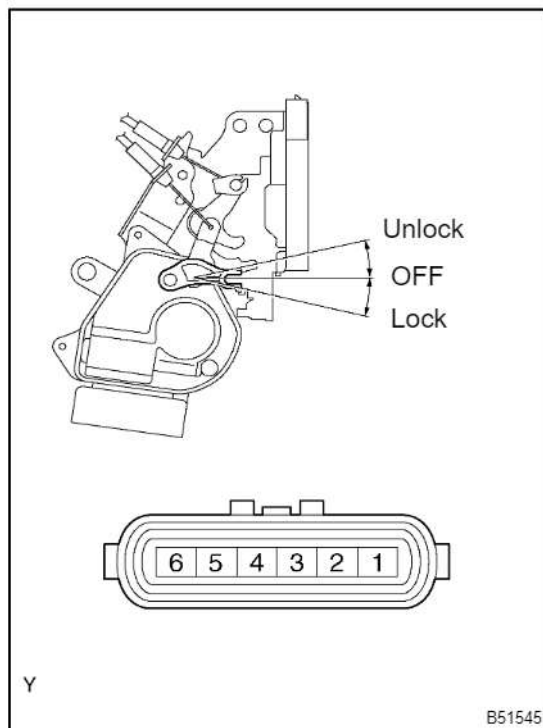
Measurement condition	Operation
Battery positive - Terminal 1 Battery negative - Terminal 2	Lock
Battery positive - Terminal 2 Battery negative - Terminal 1	Unlock

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

(c) Inspect the position switch continuity.

Measurement condition	Tester connection	Specified condition
Battery positive - Terminal 2 Battery negative - Terminal 1	5 - 6	Continuity

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

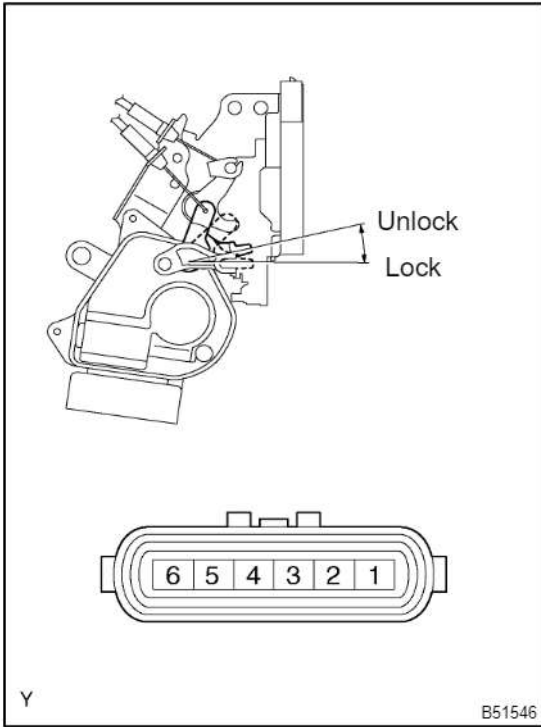


3. INSPECT FRONT DOOR LOCK ASSY LH

(a) Inspect the door lock assembly continuity.

Switch position	Tester connection	Specified condition
Lock	2 - 4	Continuity
OFF	-	No continuity
Unlock	2 - 3	Continuity

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



(b) Inspect operation of the door lock motor.

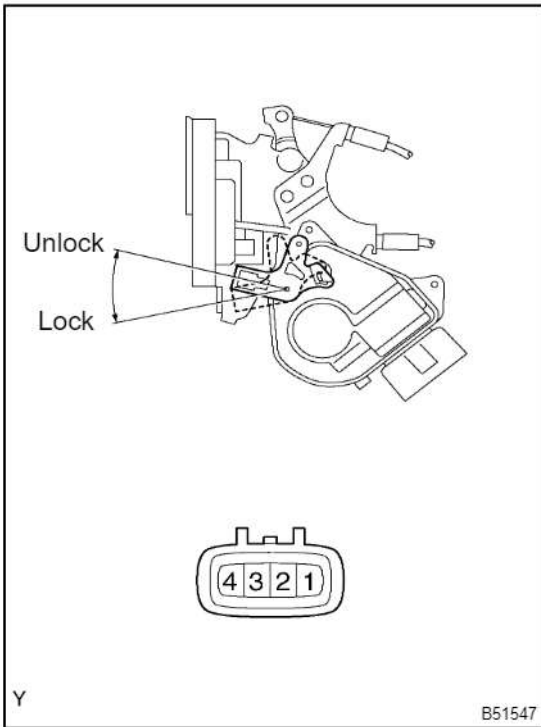
Measurement condition	Operation
Battery positive - Terminal 5 Battery negative - Terminal 6	Lock
Battery positive - Terminal 6 Battery negative - Terminal 5	Unlock

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

(c) Inspect the position switch continuity.

Measurement condition	Tester connection	Specified condition
Battery positive - Terminal 6 Battery negative - Terminal 5	1 - 2	Continuity

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



4. INSPECT REAR DOOR LOCK ASSY RH

(a) Inspect operation of the door lock motor.

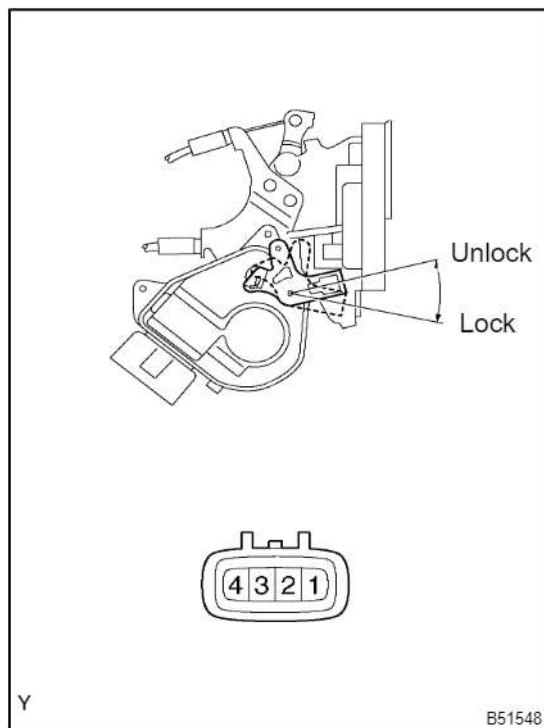
Measurement condition	Operation
Battery positive - Terminal 1 Battery negative - Terminal 2	Lock
Battery positive - Terminal 2 Battery negative - Terminal 1	Unlock

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

(b) Inspect the position switch continuity.

Measurement condition	Tester connection	Specified condition
Battery positive - Terminal 2 Battery negative - Terminal 1	3 - 4	Continuity

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



5. INSPECT REAR DOOR LOCK ASSY LH

(a) Inspect the operation of door lock motor.

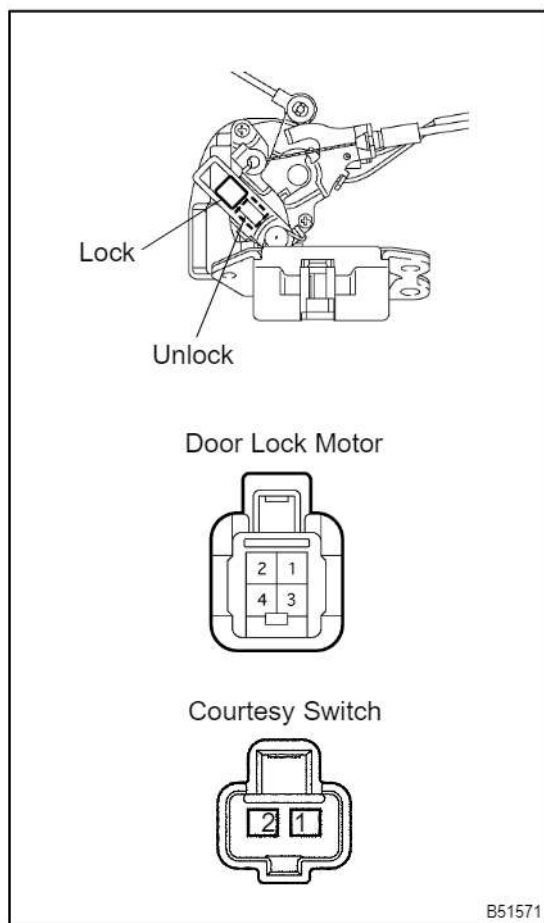
Measurement condition	Operation
Battery positive - Terminal 1 Battery negative - Terminal 2	Lock
Battery positive - Terminal 2 Battery negative - Terminal 1	Unlock

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

(b) Inspect the position switch continuity.

Measurement condition	Tester connection	Specified condition
Battery positive - Terminal 2 Battery negative - Terminal 1	1 - 2	Continuity

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



6. INSPECT BACK DOOR LOCK ASSY

(a) Inspect operation of the door lock motor.

Measurement condition	Operation
Battery positive - Terminal 4 Battery negative - Terminal 3	Lock
Battery positive - Terminal 3 Battery negative - Terminal 4	Unlock

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

(b) Inspect the back door courtesy switch continuity.

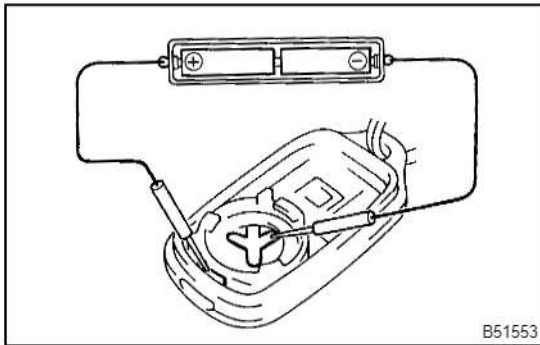
Door lock latch position	Specified condition
Open or Half Lock	Continuity
Closed	No continuity

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

INSPECTION

1. INSPECT DOOR CONTROL TRANSMITTER

- (a) Check operation of the registration of recognition code (See page 73-1 1).
- (b) Inspect operation of the transmitter.
 - (1) Using a screwdriver, remove the cover.
 - (2) Remove the battery (lithium battery).
 - (3) 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, and then apply 3 V to the transmitter.

- (4) In the location which is approximately 1 m away from the driver's outside handle in the right direction, check transmitter operation when pressing transmission switch on the transmitter.

Standard: Remote control of vehicle door lock can be operated.

HINT:

- The minimum operation distance differs depending on to the operator, the way the transmitter is held, and location.
- Because 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.
- Install the battery (lithium battery).
- Install the cover.

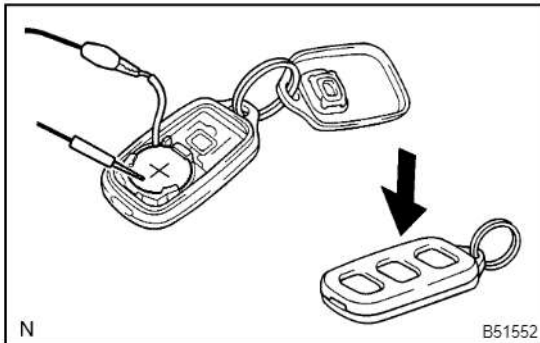
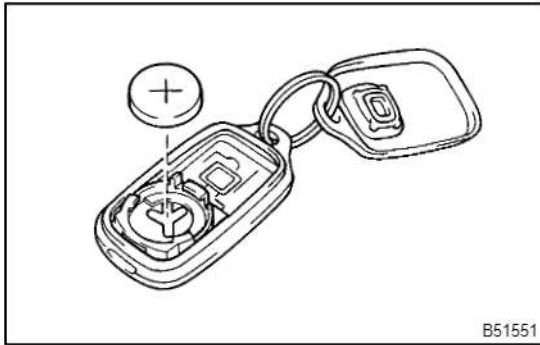
- (c) Check the battery capacity.

HINT:

- Make sure to use the TOYOTA electrical tester.
- With the battery unloaded, whether the battery is available or not can not be judged by the test.
- If the transmitter is faulty, the energy amount left in the battery might not be checked correctly.
- On the lithium battery used for the transmitter, the voltage more than 2.5 V with the battery unloaded is shown on the tester until the energy is completely consumed.

Therefore, when inspecting the energy amount left in the battery, it is necessary to measure the voltage when the battery is loaded (1.2 kΩ).

- (1) Using a screwdriver, remove the screw and cover.



- (2) Remove the battery (lithium battery) from the transmitter.
- (3) Connect the lead to the negative (-) terminal of the transmitter and install the battery.

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

Standard: 2.1 V or more

HINT:

- When the temperature of the battery is low, the judgement can not be made correctly.
When the outcome of the test is less than 2.1V, conduct the test again after leaving the battery in a place at 18°C for more than 30 minutes.
 - By automatic power-off function, the voltage becomes no load voltage (more than 2.5 V) condition after 20 seconds from the switch has pressed. Make sure to read the voltage before it.
 - High voltage might be shown 1 or 2 times after leaving the battery, judgement should be made with the voltage shown at the 3rd time or later.
- (7) Disconnect the lead.
 - (8) Set the battery (lithium battery) in the transmitter.
 - (9) Install the cover, so that the O-ring is not distorted or slipped off.
 - (10) Using a screwdriver, tighten the screw.

ON-VEHICLE INSPECTION

1. DOOR LOCK FAIL-SAFE

- (a) When a malfunction in the door control switch (manual switch, operation interlocked with key) has been detected, door LOCK/UNLOCK operation become disabled.

2. CHECK ELECTRICAL DOOR LOCK OPERATION

- (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 side door lock key cylinder is turned to LOCK and all doors unlock when turned to UNLOCK from outside the vehicle.
- (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) Insert the key 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 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 conditions below:

- 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 by 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.

ON-VEHICLE INSPECTION

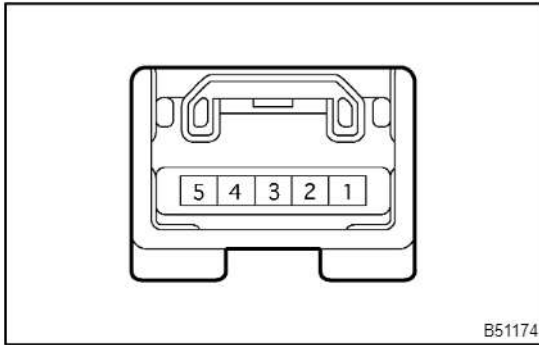
1. INSPECT WIRELESS DOOR LOCK CONTROL FUNCTION

- (a) Check the basic function.
 - (1) In the remote control operational area, check that all the doors lock or unlock when the switch has been pressed for approximately 1 second. However, this will not happen when the key is in the ignition key cylinder or any of the doors is open.
- (b) Check the automatic locking function.
 - (1) Check that all doors lock automatically as long as none of the doors have been opened or all doors have not been locked within approximately 30 seconds after all doors are unlocked by pressing the switch.
 - (2) Under the above condition, check that the automatic locking function does not operate when any of the doors has been opened or all doors have been locked within approximately 30 seconds after all doors are unlocked by pressing the switch.
- (c) Check the switch operation fail-safe function.
 - (1) Check that doors can not be locked or unlocked 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.
 - (2) Check that doors can not be locked or unlocked by the switch of an unregistered transmitter.
- (d) Check the chattering prevention function.
 - (1) Check that the corresponding operation occurs only once, and not repeated continuously while the switch is kept pressed. However, when the switch is operated repeatedly at one second intervals, check that the corresponding operation is carried out.
- (e) Check the repeat function.
 - (1) Check that all doors attempt to automatically lock once again, 2 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.
- (f) Check the operation stop function when a door is open or not completely closed.
 - (1) Check that doors are not locked or unlocked by the switch while the doors are open or not completely closed.
- (g) Check the hazard flashing and buzzer sounding function (answer-back).
 - (1) Check that the hazard lights flash and also the buzzer sounds once (when locked) or twice (when unlocked) simultaneously with locking or unlocking operation of all doors, when the switch is pressed.
- (h) Check the room light on function.

HINT:

Move the room light switch in the DOOR position before the check.

- (1) Check that the room light will be on simultaneously with the unlocking operation when the switch has been pressed for 1 second
- (2) Check that the room light will be off in approximately 15 seconds if doors have not been opened after the unlocking operation.



2. CHECK WIRELESS CONTROL RECEIVER

- (a) Disconnect the receiver connector and check that the connector on the wire harness side.

Continuity and Voltage:

Tester connection	Condition	Specified condition
1 - Body ground	Constant	Continuity
5 - Body ground	Constant	10 - 14 V

HINT:

If the value is not as specified the vehicle's side may be defective.

- (b) Connect the receiver connector and check that the voltage using an oscilloscope.

Voltage:

Tester connection	Condition	Specified condition
1 - Body ground	All door is closed → Door control transmitter ON	0 V → 6 V → 0 V

HINT:

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

POWER DOOR LOCK CONTROL SYSTEM

7302B-02

PRECAUTION

1. NOTICES FOR REMOVAL AND INSTALLATION OPERATION

- (a) When performing operation related to the door lock system and door lock key cylinder, be sure to disconnect the battery terminal or the connector of the window regulator motor.

CAUTION:

Operation is performed with the connectors being connected, the door control switch inside the door lock might be activated, which results in unexpected injury.

WIRELESS DOOR LOCK CONTROL SYSTEM

7302E-02

PRECAUTION

HINT:

The switch described in this text indicates the switch for transmitting signals, which is built in the door control transmitter.

1. NOTE WHEN CHECKING

- (a) The wireless door lock remote control function operates only when the following 4 conditions are satisfied.
 - (1) All the doors are closed.
 - (2) No key is inserted in the ignition key cylinder.
 - (3) The power door lock operates normally.
 - (4) The receiving function is not cancelled by the security function.
- (b) The wireless door lock remote control function operational area.
 - (1) The operational area differs depending on the operator and the way 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) Because 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 be operated.

HINT:

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

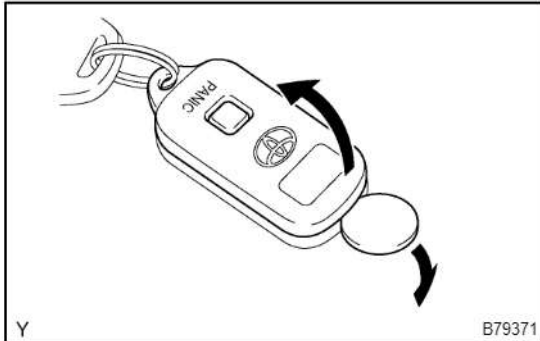
TRANSMITTER BATTERY REPLACEMENT

730K01-01

1. REMOVE TRANSMITTER BATTERY

NOTICE:

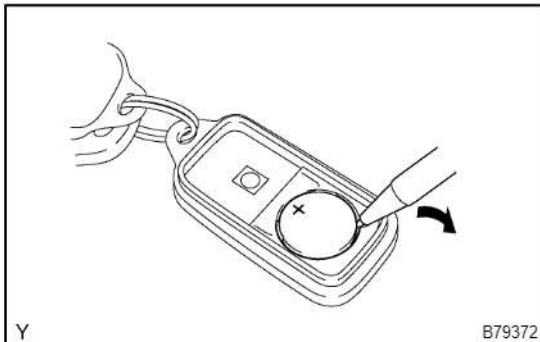
Special caution should be taken when handling each component as they are precise electronic components.



(a) Using a coin or equivalent, open the transmitter case.

NOTICE:

Do not forcibly apart the cover.

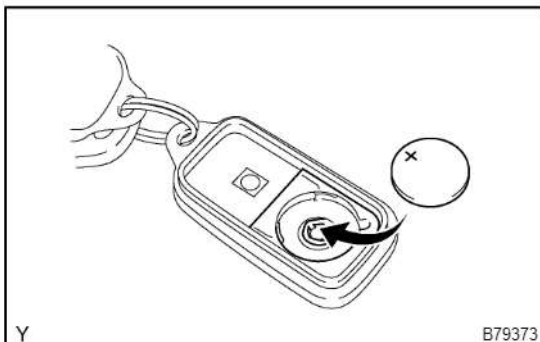


(b) Remove the discharged transmitter battery by ballpoint pen. Insert the tip of ballpoint pen at the guide groove and lift as shown in the left illustration.

NOTICE:

- Do not push the terminals with your finger.
- Do not forcibly pry up the battery (lithium battery). The terminals may become damaged.
- Do not touch the battery with wet hands. Water may cause rust.
- Do not touch or move any components inside the transmitter, as it may cease to work.

2. INSTALL TRANSMITTER BATTERY



(a) Put a new transmitter battery with positive (+) side up. Close the transmitter case securely.

NOTICE:

- Be sure that the positive side and the negative side of the transmitter battery are matched up correctly.
- Be careful not to bend the transmitter battery electrode during insertion.
- Keep the transmitter case interior free of dust and oil.

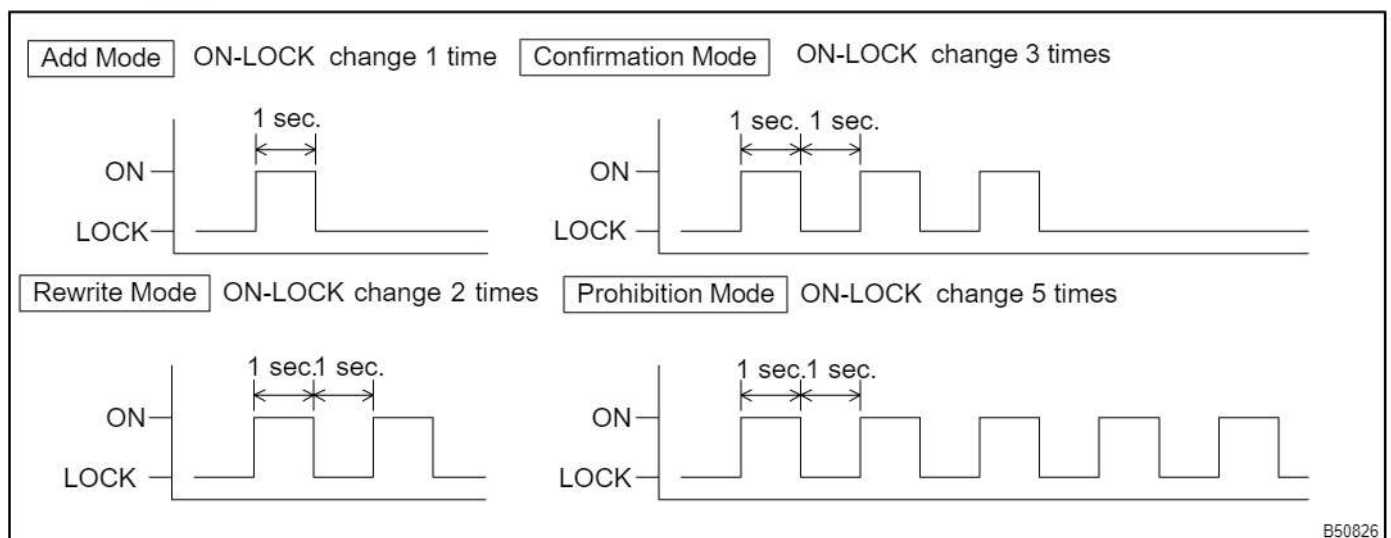
DOOR CONTROL TRANSMITTER REPLACEMENT

730211-02

1. REGISTRATION OF RECOGNITION CODE

HINT:

- The add mode is used to register a new recognition codes while still retaining codes already registered. This mode is used to add a new transmitter. 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 codes in order to register all new recognition codes. This mode is used to exchange the transmitter or the door control receiver for a new one.
 - The prohibition mode is used to erase all the registered codes and disables the wireless door lock function. Use this mode when the transmitter is lost.
 - The confirmation mode is used to confirm how many recognition codes have already been registered before an additional registration of the recognition codes.
- (a) Make sure that the vehicle fulfills the following conditions.
- (1) No key is inserted in the ignition key cylinder.
 - (2) The driver side door is opened (The other doors are closed).
 - (3) The driver side door is unlocked.
- (b) Select a mode.
- (1) Insert the key into the ignition key cylinder, then pull it out (Perform this operation once again within 5 seconds).
 - (2) Close and open the driver side door twice.
 - (3) Insert the key into the ignition key cylinder, then pull it out.
 - (4) Close and open the driver side door twice.
 - (5) Insert the key into the ignition key cylinder, then close the door.
 - (6) To select a mode, turn the ignition switch from ON to LOCK at approximately 1 second intervals according to the number of times shown below. Then remove the key from the ignition key cylinder.



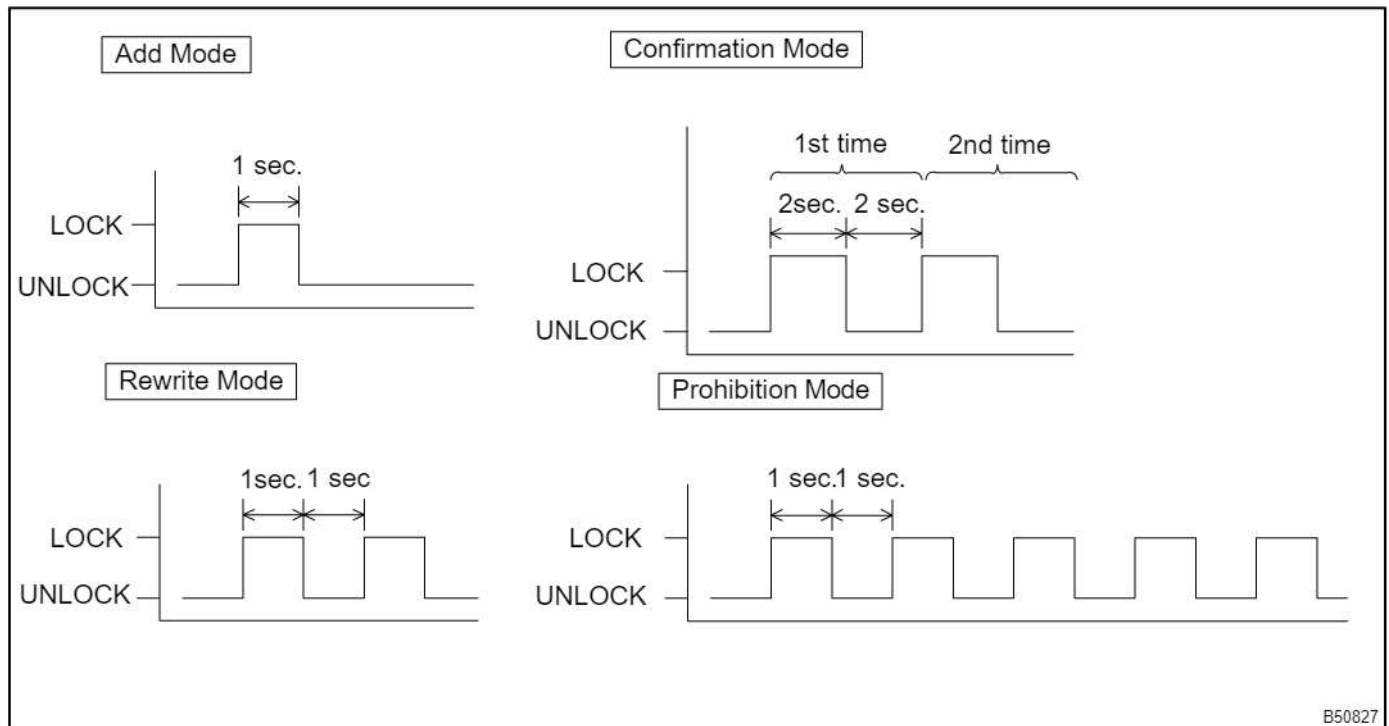
NOTICE:

- If the number of ON-LOCK operations of the ignition switch is 4 or more than 5, the registration will end without any signs.

- (7) Within 3 seconds after a mode has been selected, the MPX ECU automatically performs LOCK-UNLOCK operation to inform the operator which mode has been selected.

HINT:

- When the confirmation mode has been selected and 0 codes are registered, LOCK-UNLOCK operation is automatically performed 5 times.
- When the confirmation mode has been selected and LOCK-UNLOCK operation has been performed twice as shown in the illustration below, the number of the registered recognition codes is 2.



HINT:

When the prohibition mode or the confirmation mode is selected, the registration mode ends.

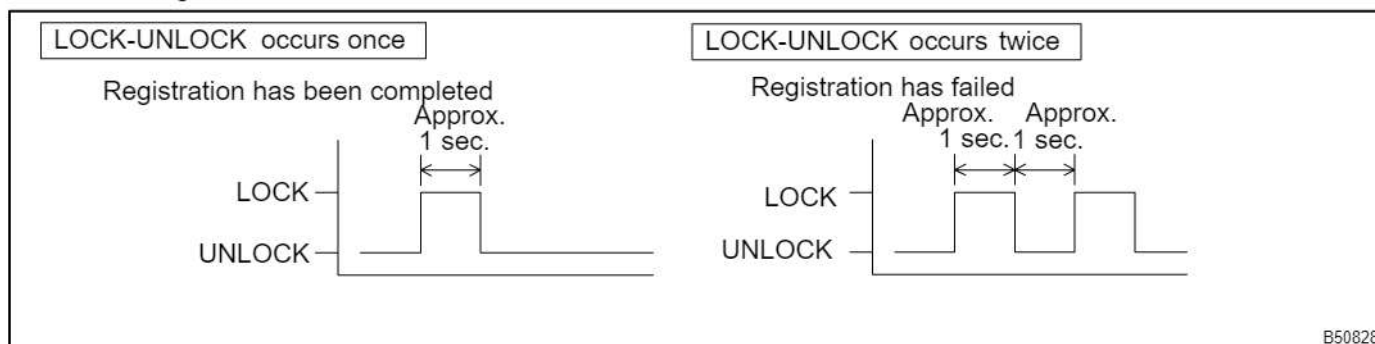
(c) Register the transmitter.

- (1) Within 40 seconds after the add mode or the rewrite mode has been selected, simultaneously press the LOCK and UNLOCK switches for 1.0 to 1.5 seconds. Then press either one of the switches for more than 1.0 second.

NOTICE:

Press and hold both switches for 1 second or more during each press. However, the time between the 1st press and the 2nd press must be under 3 seconds.

- (2) LOCK-UNLOCK operation is automatically performed once within 3 seconds after above operation (step 1), when the recognition code of the transmitter has been registered correctly. If the LOCK-UNLOCK operation is performed twice, the registration of the recognition code has failed. In this case, register the recognition code from the beginning of the registration procedures once again.



- (3) In order to continue in registration mode, start the next registration within 40 seconds after the previous one.

HINT:

The maximum number of the recognition codes that can be registered is 4.

- (d) If even one of the following conditions is satisfied, the registration mode will end.
 - (1) 40 seconds have elapsed under the condition that the registration mode is ready.
 - (2) The driver side door is opened.
 - (3) The key is inserted in the ignition key cylinder.
 - (4) 4 recognition codes are registered at once.

ENGINE IMMOBILIZER SYSTEM

REGISTRATION

730KQ-01

1. DESCRIPTION OF CODE REGISTRATION

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

(1) Register the key code (immobilizer code) in 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 (immobilizer 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.

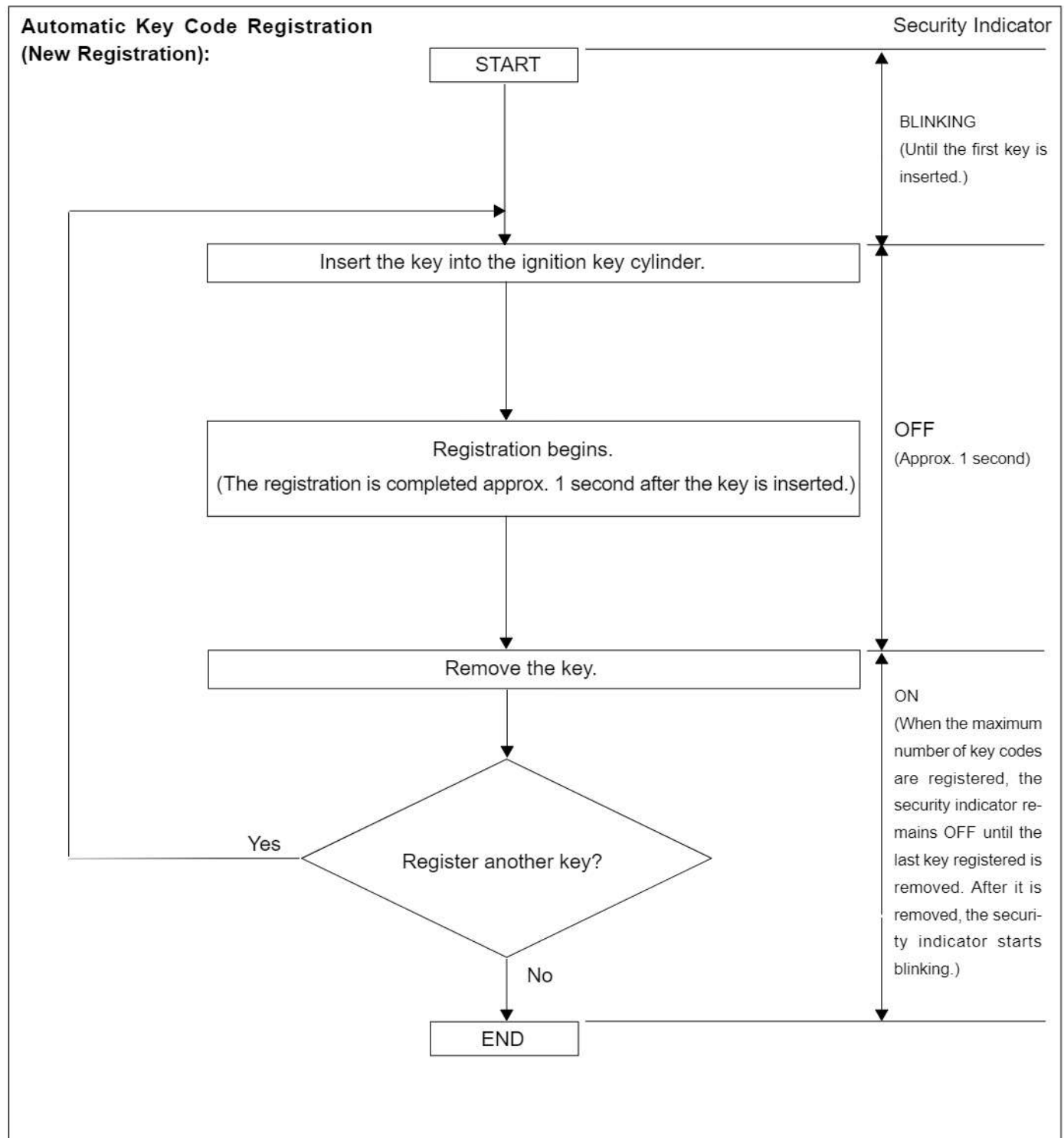
Target ECU	See step
Transponder key ECU	5

2. KEY REGISTRATION IN AUTOMATIC REGISTRATION (NEW REGISTRATION)

- (a) When an ignition key is inserted into the ignition cylinder, the key code (immobilizer code) registration is automatic. In this mode, a maximum of 4 key codes for 3 master keys and 1 sub-key can be registered. Any order of registration for the master keys and sub-keys is fine because the transponder key ECU can distinguish between different types of keys.

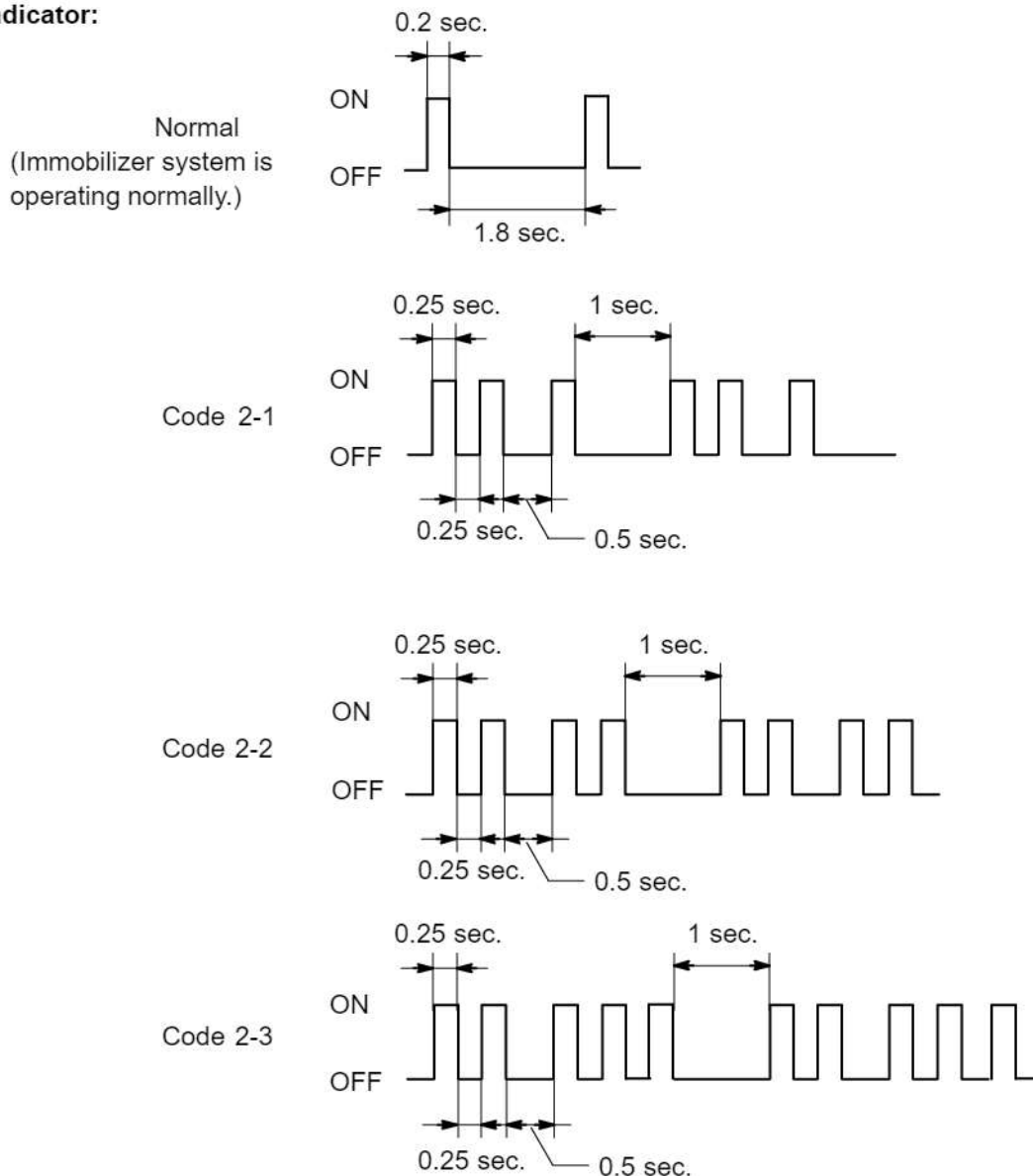
HINT:

- When a new transponder key ECU is installed, key codes (immobilizer codes) must be registered with ignition keys.
- New transponder key ECUs are automatically set to automatic key code registration mode.



HINT:

- When no key is inserted in the ignition key cylinder in automatic key code registration mode, the security indicator remains on.
- When the immobilizer system is operating normally and the key is pulled out, the security indicator blinks continuously.
- If the key code registration has failed in 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. If the number of registered key codes exceeds the limit, code 2-3 will be output from the security indicator. 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 and OFF 5 times within 10 seconds using the already registered master key.

3. REGISTRATION OF ADDITIONAL KEY (ADDITIONAL REGISTRATION)

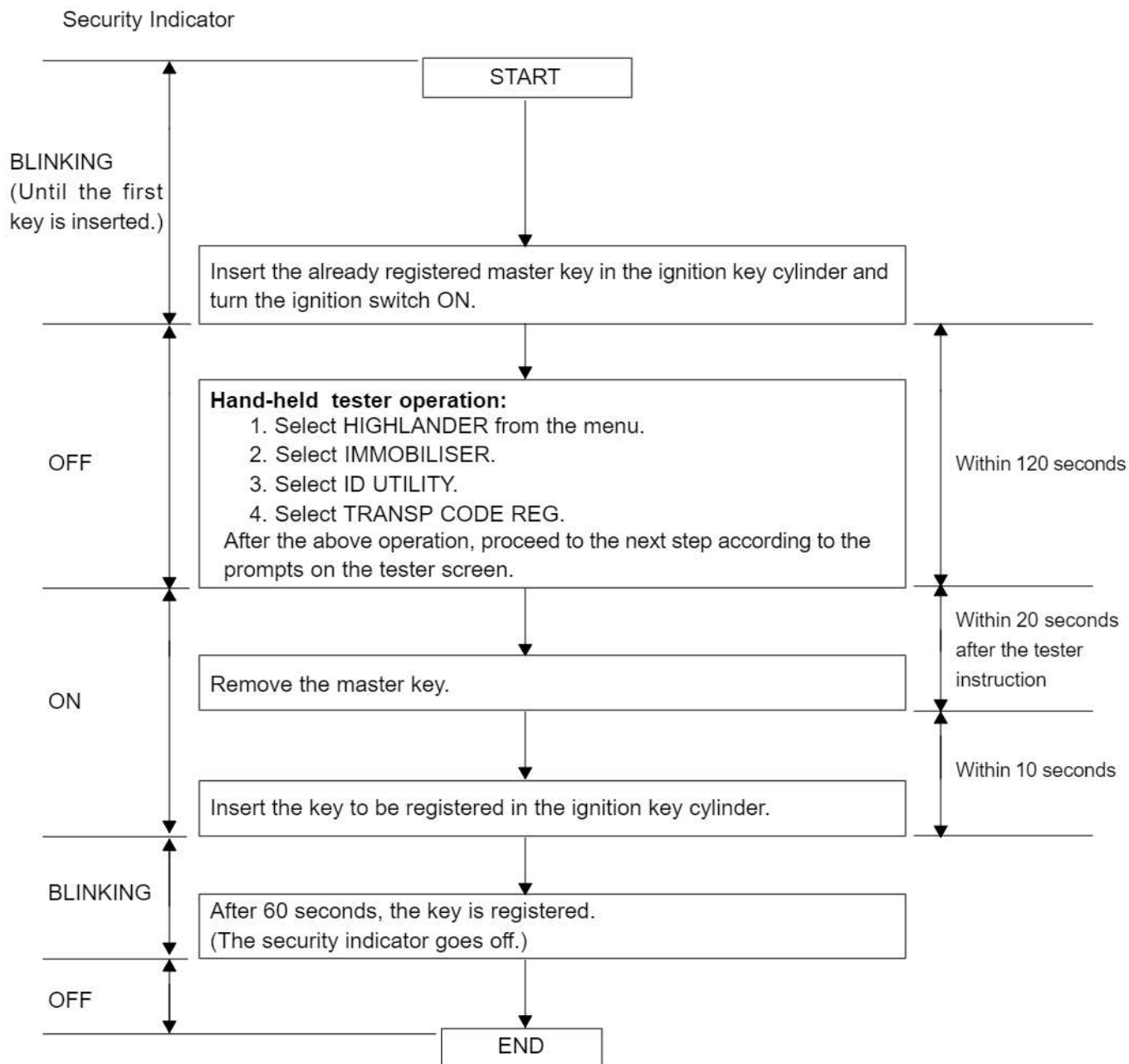
(a) Register an additional key by using the hand-held tester.

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. Then install this transmitter module to a new key and use the new key as the master key. If necessary, use this master key to register other keys.

NOTICE:

When the ignition key cylinder has been replaced, locking and unlocking doors is possible with the new master key's transmitter module (taken from the original master key). However, the new master key will not be able to lock and unlock doors through the door key cylinder. Keep the original master key. If the new master key's transmitter module's battery fails, the original master key can be used to lock and unlock doors through the door key cylinder.

Additional Registration

HINT:

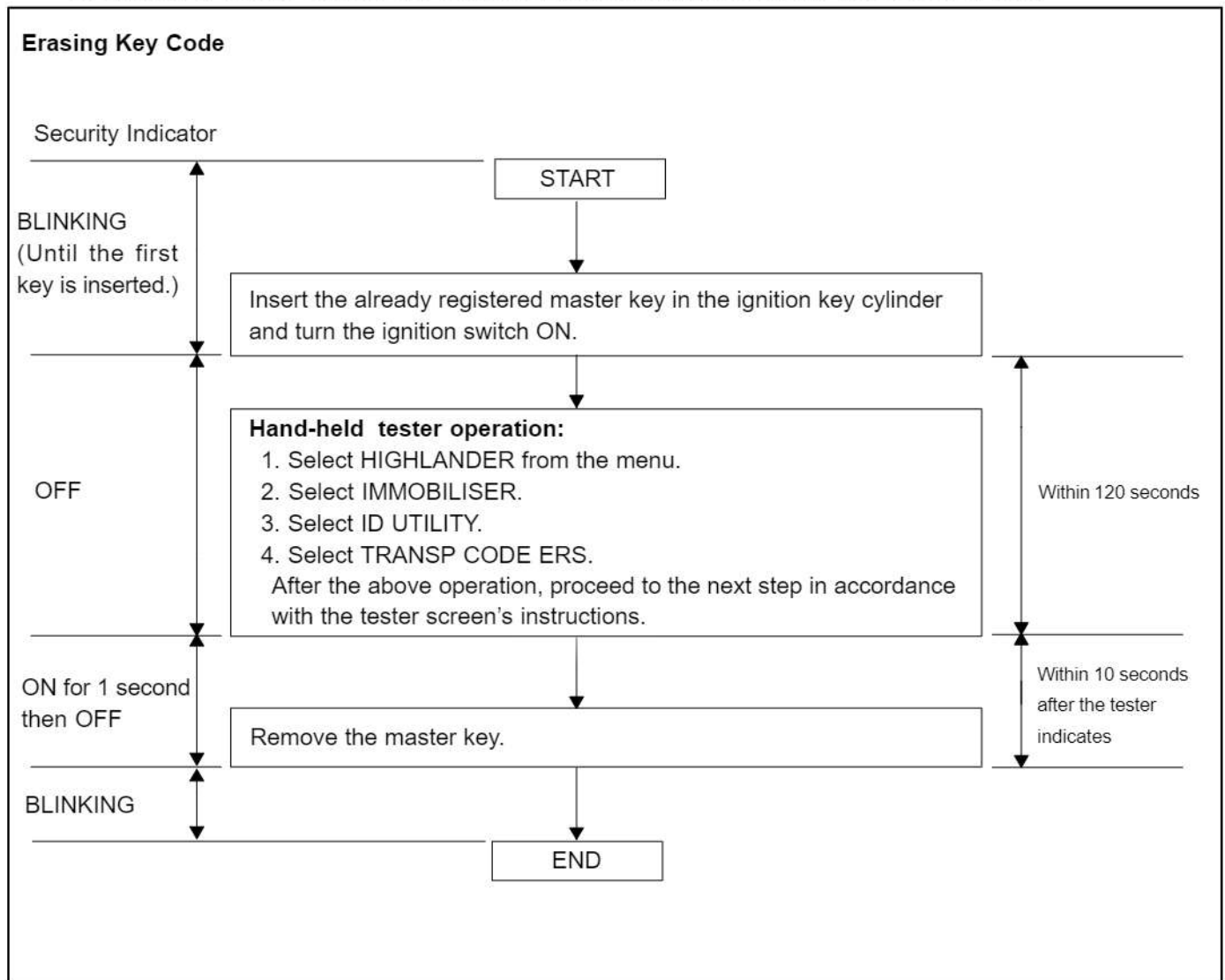
- A brief outline of procedures for key code registration is shown on the previous page. For more detailed information, please refer to the hand-held tester screen's instructions.
- When the immobilizer system is operating normally and the key is pulled out, the security indicator blinks continuously.
- If the key code registration has failed in 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. If the number of registered key codes exceeds the limit, code 2-3 will be output from the security indicator. The output details are shown in step 2 (new registration).

4. ERASURE OF KEY CODE

(a) Erase key codes using the hand-held tester.

HINT:

- All key codes are erased except for the master key, which is used for erasing the key codes. In order to use a key whose code has been erased, a new key code must be registered.
- Registration will be cancelled if each step is not completed within the specified time.



HINT:

- A brief outline of procedures for key code registration is shown on this page. For more detailed information, please refer to the hand-held tester screen's instructions.
- When the immobilizer system is operating normally and the key is pulled out, the security indicator blinks continuously.

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 the ECM COMMUNICATION ID.
 - The engine cannot be started unless the ECM COMMUNICATION ID matches.
- (a) Register the ECU communication ID.
- (1) Using SST, connect terminals TC and CG of the DLC3.
 - (2) Turn the ignition switch ON (do not start the engine) and leave it as is for 30 minutes.
 - (3) Turn the ignition switch OFF and disconnect terminals TC and CG.
 - (4) Check that the engine starts.