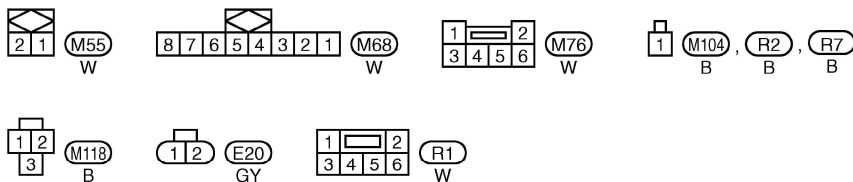
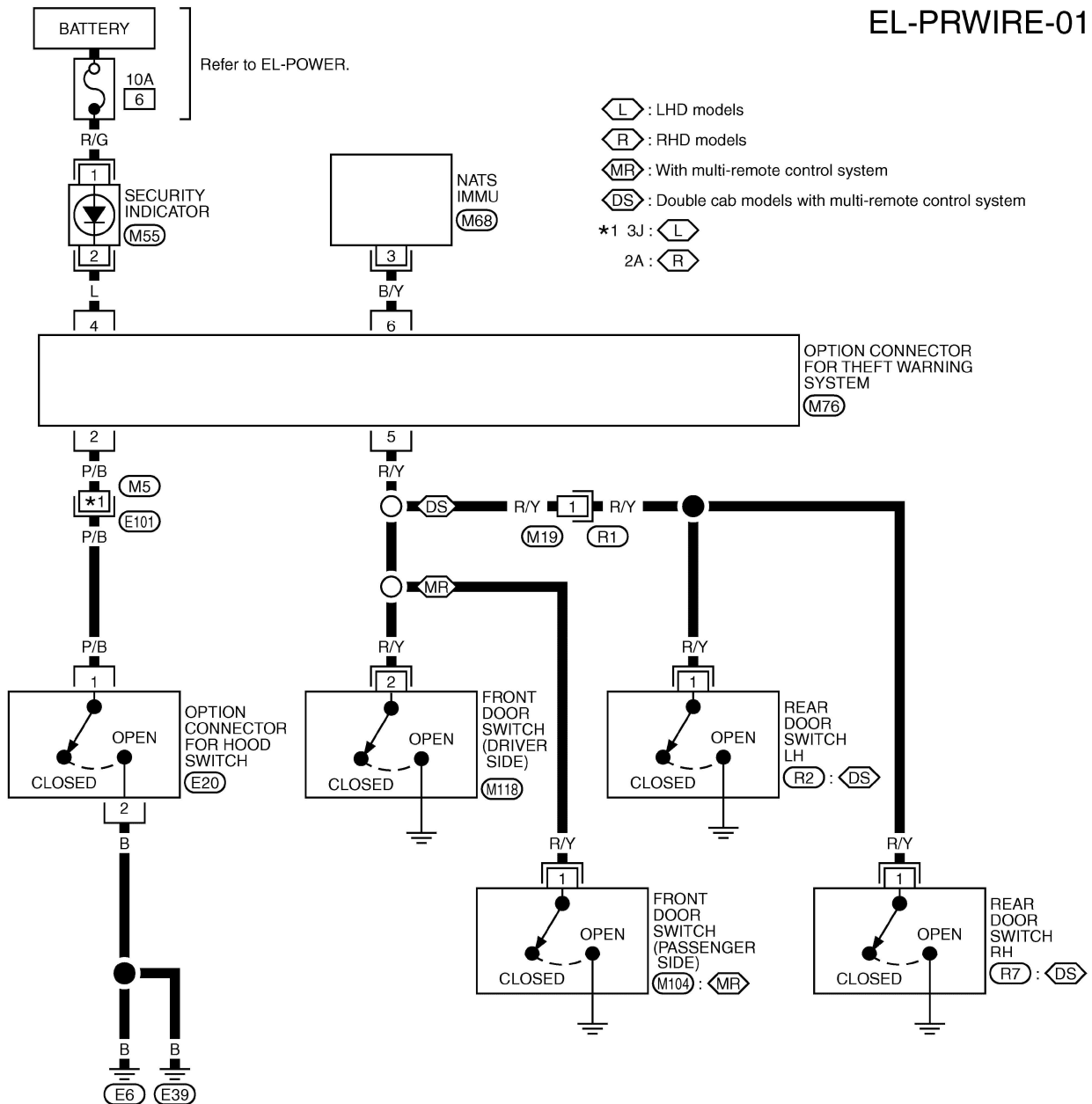


# THEFT WARNING SYSTEM

## Wiring Diagram — PRWIRE —

EL-PRWIRE-01

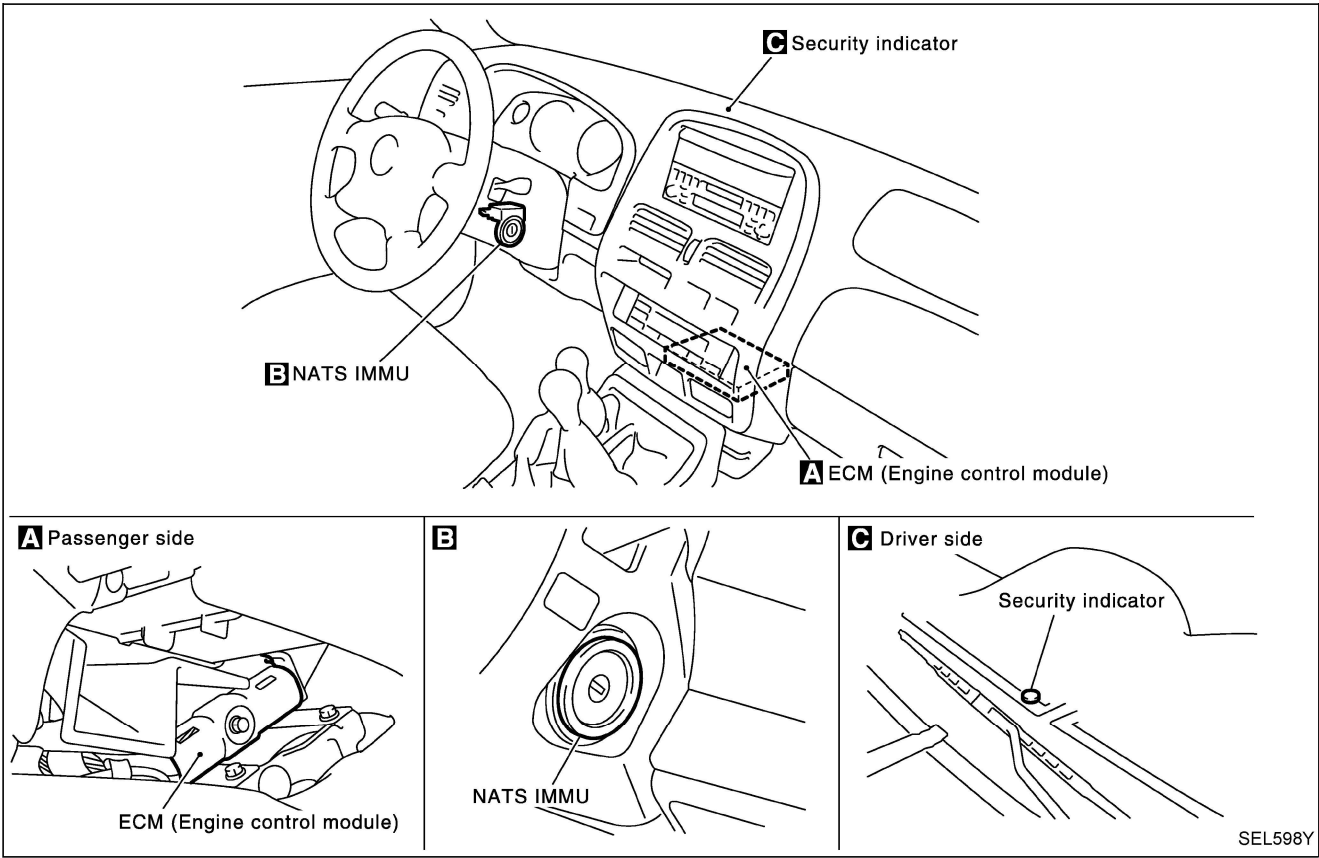


Refer to last page (Foldout page).

(M5), (E101)

NATS (Nissan Anti-Theft System)

Component Parts and Harness Connector Location



**NOTE:**  
If customer reports a “No Start” condition, request ALL KEYS to be brought to the Dealer in case of a NATS malfunction.

## NATS (Nissan Anti-Theft System)

### System Description

NATS has the following immobilizer functions:

- Since only NATS ignition keys, whose ID nos. have been registered into the ECM and IMMU of NATS, allow the engine to run, operation of a stolen vehicle without a NATS registered key is prevented by NATS. That is to say, NATS will immobilize the engine if someone tries to start it without the registered key of NATS.
- This version of NATS has dongle unit to improve its anti-theft performance (RHD models for Europe). Dongle unit has its own ID which is registered into NATS IMMU. So if dongle unit is replaced, initialization must be carried out.
- When malfunction of dongle unit is detected:
  - The security indicator lamp illuminates for about 15 minutes after ignition switch is turned to ON.
  - When dongle unit has a malfunction and the indicator lamp is illuminated, engine can not be started. However, engine can be started only one time when security indicator turns off in about 15 minutes after ignition switch is turned to ON.
- Both of the originally supplied ignition key IDs have been NATS registered. If requested by the vehicle owner, a maximum of five key IDs can be registered into the NATS components.
- The NATS security indicator (NATS security ind.) blinks when the ignition switch is in “OFF” or “ACC” position. Therefore, NATS warns outsiders that the vehicle is equipped with the anti-theft system.
- When NATS detects trouble, the security indicator lamp lights up as follows.

| Condition<br>IGN ON and                                   | With Dongle                                                                | Without Dongle     |
|-----------------------------------------------------------|----------------------------------------------------------------------------|--------------------|
|                                                           | Security Indicator                                                         | Security Indicator |
| NATS malfunction (except dongle unit) is detected         | 1. 6 times blinking<br>2. Staying ON after ignition switch is turned ON    | Staying ON         |
| Only malfunction of dongle unit is detected.              | Staying ON <b>for about 15 minutes</b> after ignition switch is turned ON. | —                  |
| Malfunction of NATS and engine related parts are detected | 1. 6 times blinking<br>2. Staying ON after ignition switch is turned ON    | Staying ON         |
| Just after initialization of NATS                         | 6 times blinking                                                           | —                  |

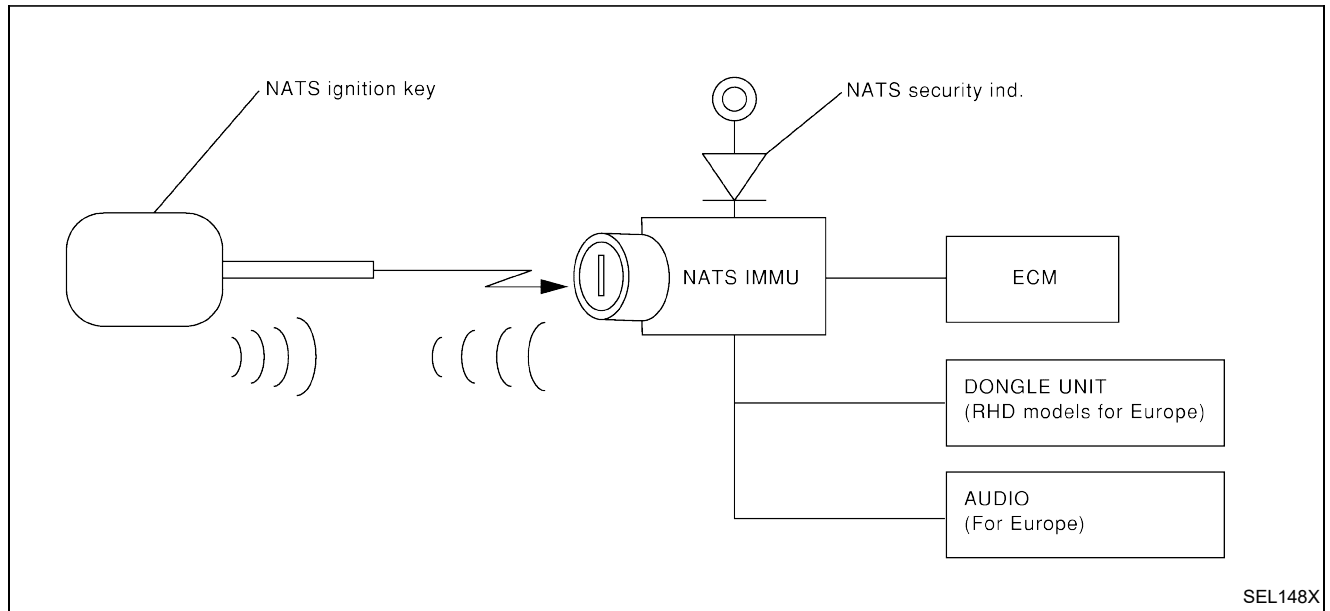
- NATS trouble diagnoses, system initialization and additional registration of other NATS ignition key IDs must be carried out using CONSULT-II hardware and CONSULT-II NATS software. Regarding the procedures of NATS initialization and NATS ignition key ID registration, refer to CONSULT-II operation manual, NATS.
- **When servicing a malfunction of the NATS (indicated by lighting up of security Indicator Lamp) or registering another NATS ignition key ID no., it is necessary to re-register original key identification. Therefore, be sure to receive ALL KEYS from vehicle owner.**

## NATS (Nissan Anti-Theft System)

### System Composition

The immobilizer function of the NATS consists of the following:

- NATS ignition key
- NATS immobilizer control unit (NATS IMMU), located in the ignition key cylinder
- Engine control module (ECM)
- Dongle unit (RHD models for Europe)
- NATS security indicator



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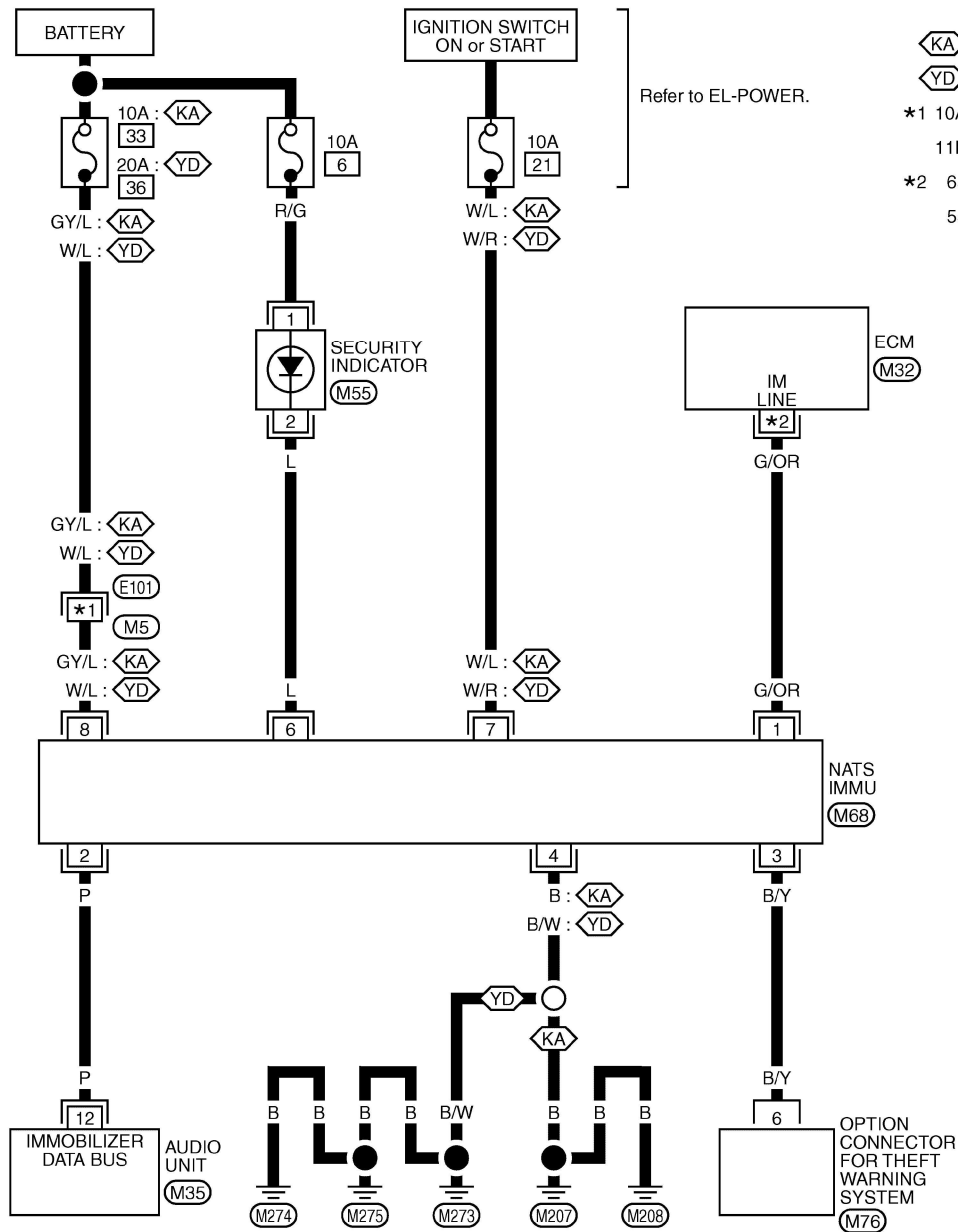
EL

IDX

# NATS (Nissan Anti-Theft System)

## Wiring Diagram — NATS —/LHD Models

### EL-NATS-01



KA : KA24DE engine models

YD : YD25 engine models

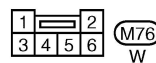
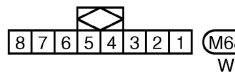
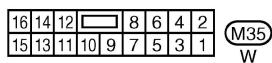
\*1 10A : KA

11E : YD

\*2 65 : KA

55 : YD

Refer to EL-POWER.



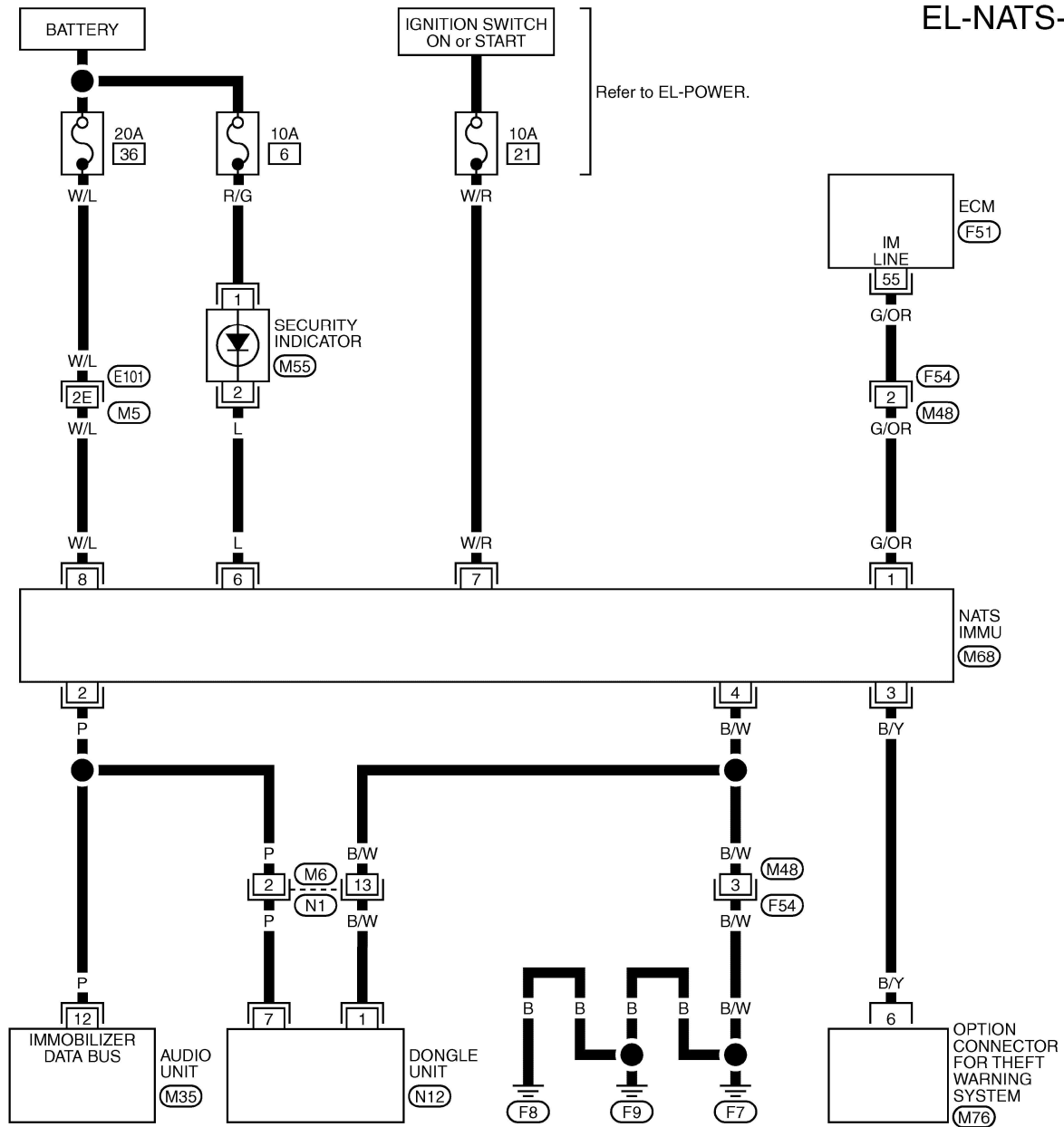
Refer to last page (Foldout page).

M5, E101, M32

# NATS (Nissan Anti-Theft System)

## Wiring Diagram — NATS —/RHD Diesel Engine Models

EL-NATS-02



|    |    |    |    |   |   |   |   |   |
|----|----|----|----|---|---|---|---|---|
| 16 | 14 | 12 |    | 8 | 6 | 4 | 2 |   |
| 15 | 13 | 11 | 10 | 9 | 7 | 5 | 3 | 1 |

M35

W

(M35)  
W

|   |   |
|---|---|
| 2 | 1 |
|---|---|

(M55)  
W

|   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|---|

(M68)  
W

|   |   |   |   |
|---|---|---|---|
| 1 |   |   | 2 |
| 3 | 4 | 5 | 6 |

M76

W

(M76)  
W

|    |    |    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1  | 2  | 3  | 4  | 5  | 6  |    |    | 7  | 8  | 9  | 10 | 11 |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |

(N1) , (F54)  
W W

|   |   |   |   |   |
|---|---|---|---|---|
| 3 | 2 |   | 1 |   |
| 8 | 7 | 6 | 5 | 4 |

N12

BB

(N12)  
BR

Refer to last page (Foldout page).

(M5) , (E101)  
(F51)

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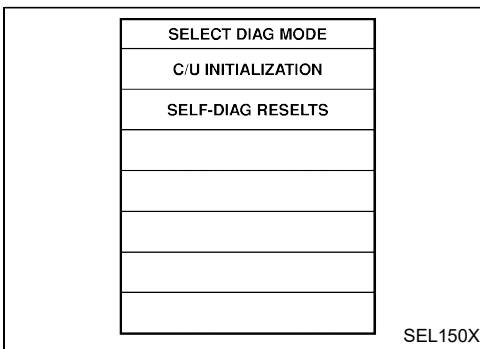
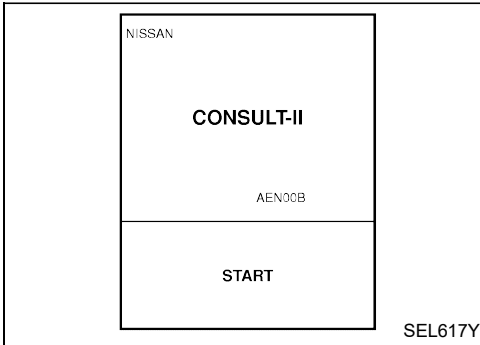
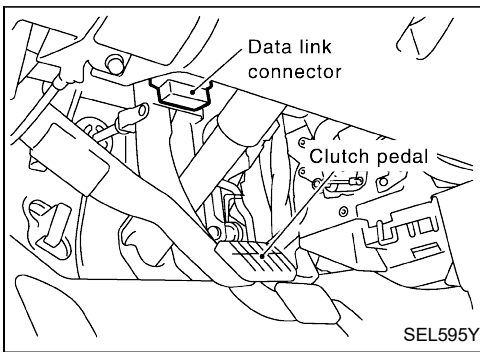
BT

HA

EL

IDX

## NATS (Nissan Anti-Theft System)



### CONSULT-II

#### CONSULT-II INSPECTION PROCEDURE

1. Turn ignition switch OFF.
2. Insert NATS program card into CONSULT-II.

#### Program card

##### AEN00A/B

3. Connect CONSULT-II to Data link connector which is located behind the fuse box cover.

4. Turn ignition switch ON.
5. Touch "START".

6. Perform each diagnostic test mode according to each service procedure.

**For further information, see the CONSULT-II Operation Manual, NATS.**

# NATS (Nissan Anti-Theft System)

## CONSULT-II (Cont'd)

### CONSULT-II DIAGNOSTIC TEST MODE FUNCTION

| CONSULT-II DIAGNOSTIC TEST MODE | Description                                                                                                                  |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| C/U INITIALIZATION              | When replacing any of the following components, C/U initialization is necessary.<br>[NATS ignition key/IMMU/ECM/Dongle unit] |
| SELF-DIAG RESULTS               | Detected items (screen terms) are as shown in the chart below.                                                               |

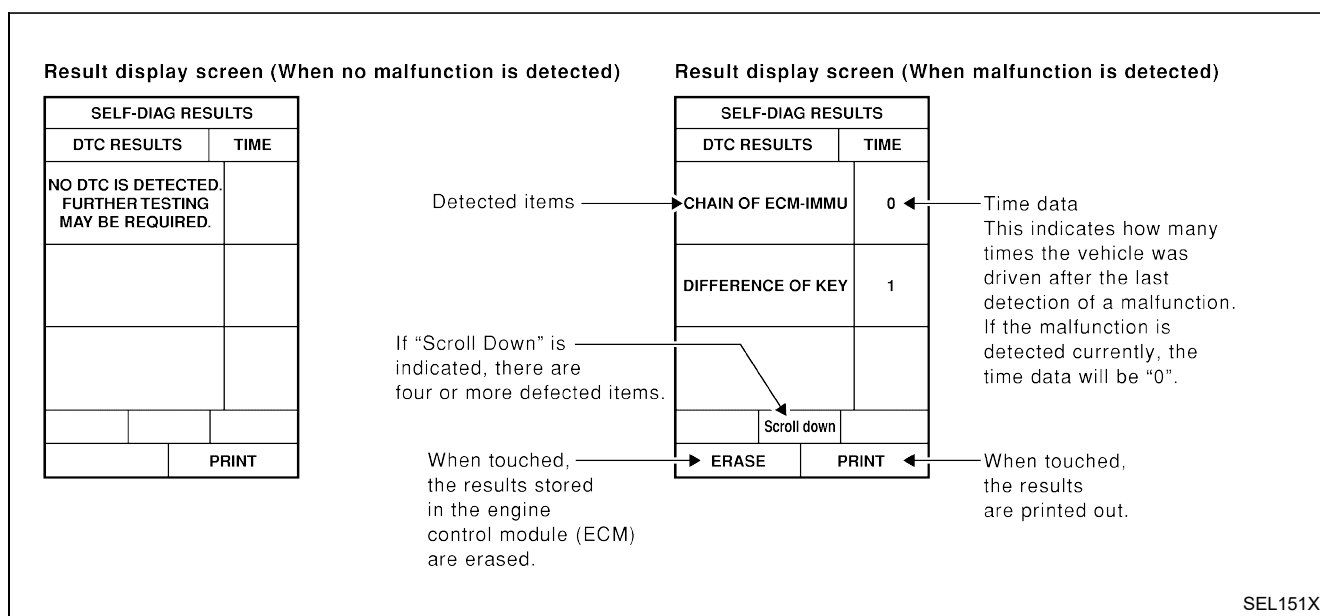
#### NOTE:

When any initialization is performed, all ID previously registered will be erased. So all NATS ignition keys must be registered again.

The engine cannot be started with an unregistered key. In this case, the system may show "DIFFERENCE OF KEY" or "LOCK MODE" as a self-diagnostic result on the CONSULT-II screen.

When initialization is performed (for RHD models for Europe), security indicator will flash six times to demonstrate recognition of dongle unit ID.

### HOW TO READ SELF-DIAGNOSTIC RESULTS



### SELF-DIAGNOSTIC RESULTS ITEM CHART

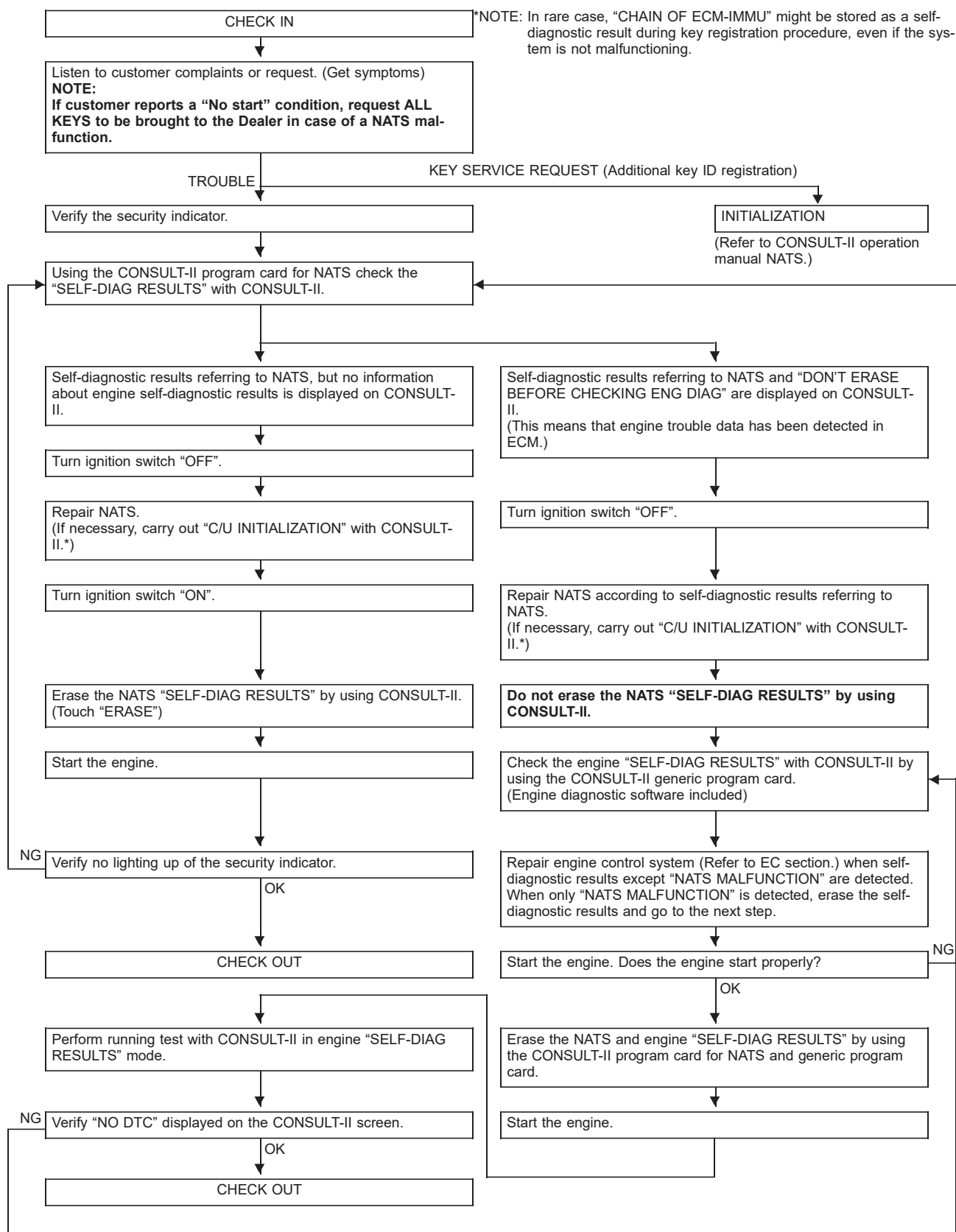
| Detected items (Screen terms)        | Description                                                                                                                                                                                                                                                   | Reference page |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| ECM INT CIRC-IMMU                    | The malfunction of ECM internal circuit of IMMU communication line is detected.                                                                                                                                                                               | EL-167         |
| CHAIN OF ECM-IMMU                    | Communication impossible between ECM and IMMU.<br>(In rare case, "CHAIN OF ECM-IMMU" might be stored during key registration procedure, even if the system is not malfunctioning.)                                                                            | EL-168         |
| DIFFERENCE OF KEY                    | IMMU can receive the key ID signal but the result of ID verification between key ID and IMMU is NG.                                                                                                                                                           | EL-170         |
| CHAIN OF IMMU-KEY                    | IMMU cannot receive the key ID signal. Otherwise, the registered ID signal from dongle unit cannot be received when the IMMU requests the ID.                                                                                                                 | EL-171         |
| ID DISCORD, IMM-ECM                  | The result of ID verification between IMMU and ECM is NG. System initialization is required.                                                                                                                                                                  | EL-172         |
| DON'T ERASE BEFORE CHECKING ENG DIAG | Engine trouble data and NATS trouble data have been detected in ECM.                                                                                                                                                                                          | EL-164         |
| LOCK MODE                            | When the starting operation is carried out 5 or more times consecutively under the following conditions, NATS will shift the mode to one which prevents the engine from being started.<br>• unregistered ignition key is used<br>• IMMU or ECM malfunctioning | EL-173         |



# NATS (Nissan Anti-Theft System)

## Trouble Diagnoses

### WORK FLOW



# NATS (Nissan Anti-Theft System)

## Trouble Diagnoses (Cont'd)

### SYMPTOM MATRIX CHART 1 (Self-diagnosis related item)

| SYMPTOM                                                                                                          | Displayed "SELF-DIAG RESULTS" on CONSULT-II screen. | DIAGNOSTIC PROCEDURE<br>(Reference page) | SYSTEM<br>(Malfunctioning part or mode)                                                                                       | REFERENCE PART NO.<br>OF ILLUSTRATION ON<br>DIAGNOSTIC SYSTEM<br>DIAGRAM |
|------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Security indicator lighting up*</li> <li>Engine does not start</li> </ul> | ECM INT CIRC-IMMU                                   | PROCEDURE 1<br>(EL-167)                  | ECM                                                                                                                           | B                                                                        |
|                                                                                                                  | CHAIN OF ECM-IMMU                                   | PROCEDURE 2<br>(EL-168)                  | In rare case, "CHAIN OF ECM-IMMU might be stored during key registration procedure, even if the system is not malfunctioning. | —                                                                        |
|                                                                                                                  |                                                     |                                          | Open circuit in battery voltage line of IMMU circuit                                                                          | C1                                                                       |
|                                                                                                                  |                                                     |                                          | Open circuit in ignition line of IMMU circuit                                                                                 | C2                                                                       |
|                                                                                                                  |                                                     |                                          | Open circuit in ground line of IMMU circuit                                                                                   | C3                                                                       |
|                                                                                                                  |                                                     |                                          | Open circuit in communication line between IMMU and ECM                                                                       | C4                                                                       |
|                                                                                                                  |                                                     |                                          | Short circuit between IMMU and ECM communication line and battery voltage line                                                | C4                                                                       |
|                                                                                                                  |                                                     |                                          | Short circuit between IMMU and ECM communication line and ground line                                                         | C4                                                                       |
|                                                                                                                  |                                                     |                                          | ECM                                                                                                                           | B                                                                        |
|                                                                                                                  |                                                     |                                          | IMMU                                                                                                                          | A                                                                        |
|                                                                                                                  | DIFFERENCE OF KEY                                   | PROCEDURE 3<br>(EL-170)                  | Unregistered key                                                                                                              | D                                                                        |
|                                                                                                                  |                                                     |                                          | IMMU                                                                                                                          | A                                                                        |
|                                                                                                                  | CHAIN OF IMMU-KEY                                   | PROCEDURE 4<br>(EL-171)                  | Malfunction of key ID chip                                                                                                    | E                                                                        |
|                                                                                                                  |                                                     |                                          | IMMU                                                                                                                          | A                                                                        |
|                                                                                                                  |                                                     |                                          | Open circuit in ground line of dongle unit circuit                                                                            | C6                                                                       |
|                                                                                                                  |                                                     |                                          | Open or short circuit in communication line between IMMU and dongle unit                                                      | C5                                                                       |
|                                                                                                                  |                                                     |                                          | Dongle unit                                                                                                                   | G                                                                        |
| <ul style="list-style-type: none"> <li>Security indicator lighting up*</li> <li>Engine hard to start</li> </ul>  | ID DISCORD, IMM-ECM                                 | PROCEDURE 5<br>(EL-172)                  | System initialization has not yet been completed.                                                                             | F                                                                        |
|                                                                                                                  |                                                     |                                          | ECM                                                                                                                           | B                                                                        |
|                                                                                                                  | LOCK MODE                                           | PROCEDURE 6<br>(EL-173)                  | LOCK MODE                                                                                                                     | D                                                                        |

\*: When NATS detects trouble, the security indicator lights up while ignition key is in the "ON" position.

\*: When the vehicle is equipped with dongle unit, the security indicator blinks 6 times just after ignition switch is turned to ON. Then the security indicator will light up while ignition key is in the ON position.

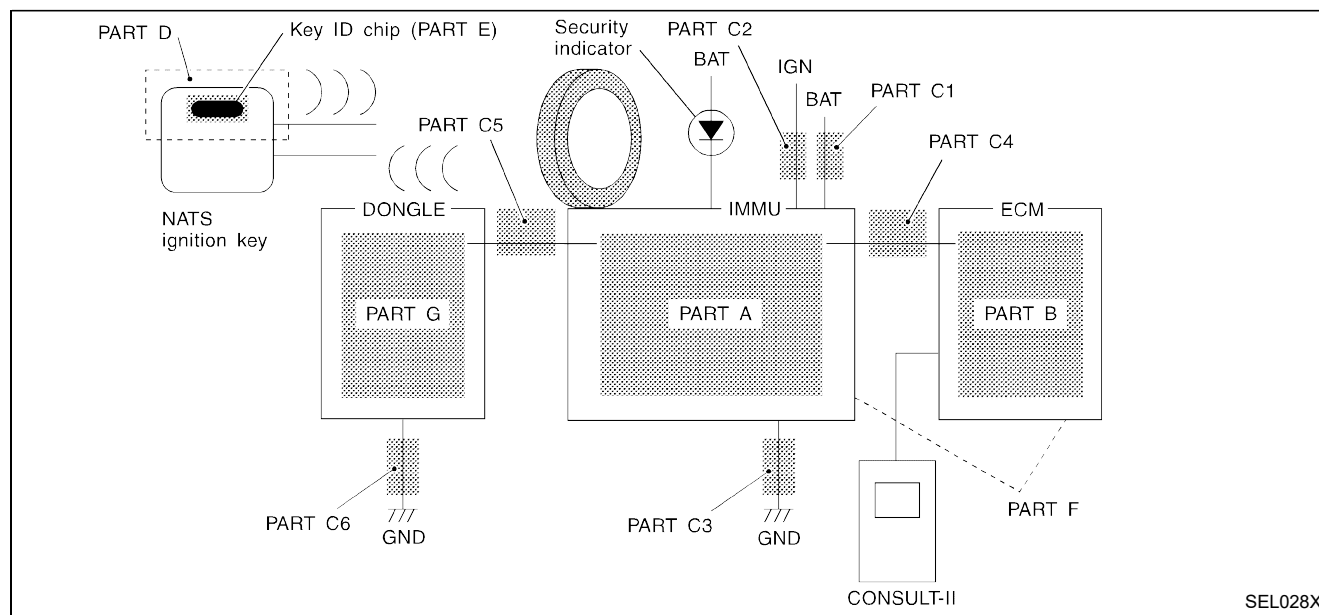
# NATS (Nissan Anti-Theft System)

## Trouble Diagnoses (Cont'd)

### SYMPTOM MATRIX CHART 2 (Non self-diagnosis related item)

| SYMPTOM                                                                                                                                                                      | DIAGNOSTIC PROCEDURE<br>(Reference page) | SYSTEM<br>(Malfunctioning part or mode)                            | REFERENCE PART NO. OF<br>ILLUSTRATION ON DIAG-<br>NOSTIC SYSTEM DIAGRAM |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|--------------------------------------------------------------------|-------------------------------------------------------------------------|
| Security ind. does not light up.                                                                                                                                             | PROCEDURE 7<br>(EL-174)                  | Security ind.                                                      | —                                                                       |
|                                                                                                                                                                              |                                          | Open circuit between Fuse and NATS IMMU                            | —                                                                       |
|                                                                                                                                                                              |                                          | Continuation of initialization mode                                | —                                                                       |
|                                                                                                                                                                              |                                          | NATS IMMU                                                          | A                                                                       |
| Security ind. does not blink just after initialization even if the vehicle is equipped with dongle unit.                                                                     | PROCEDURE 8<br>(EL-175)                  | NATS might be initialized without connecting dongle unit properly. | —                                                                       |
| Open circuit in ground line of dongle unit circuit                                                                                                                           |                                          | C6                                                                 |                                                                         |
| Open or short circuit in communication line between IMMU and dongle unit                                                                                                     |                                          | C5                                                                 |                                                                         |
| Security ind. does not blink just after ignition switch is turned to ON when some mal-function related to NATS is detected even if the vehicle is equipped with dongle unit. |                                          | Dongle unit                                                        | G                                                                       |

### DIAGNOSTIC SYSTEM DIAGRAM



SEL028X

## NATS (Nissan Anti-Theft System)

### Trouble Diagnoses (Cont'd)

#### DIAGNOSTIC PROCEDURE 1

Self-diagnostic results:

“ECM INT CIRC-IMMU” displayed on CONSULT-II screen

| <b>A</b> | SELF-DIAG RESULTS |      |
|----------|-------------------|------|
|          | DTC RESULTS       | TIME |
|          | ECM INT CIRC-IMMU | 0    |
|          |                   |      |
|          |                   |      |

SEL152X

**A**



Confirm SELF-DIAGNOSTIC RESULTS “ECM INT CIRC-IMMU” displayed on CONSULT-II screen.  
Ref. part No. B.



Replace ECM.



Perform initialization with CONSULT-II.  
For the operation of initialization, refer to “CONSULT-II operation manual NATS”.

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# NATS (Nissan Anti-Theft System)

## Trouble Diagnoses (Cont'd)

### DIAGNOSTIC PROCEDURE 2

Self-diagnostic results:

"CHAIN OF ECM-IMMU" displayed on CONSULT-II screen

**A**

| SELF-DIAG RESULTS |      |
|-------------------|------|
| DTC RESULTS       | TIME |
| CHAIN OF ECM-IMMU | 0    |
|                   |      |
|                   |      |

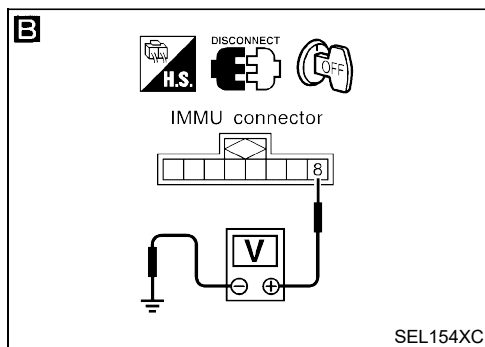
SEL153X

**A**

Confirm SELF-DIAGNOSTIC RESULTS "CHAIN OF ECM-IMMU"\* displayed on CONSULT-II screen.

\*: In rare case, "CHAIN OF ECM-IMMU" might be stored during key registration procedure, even if the system is not malfunctioning.

OK



#### CHECK POWER SUPPLY CIRCUIT FOR IMMU.

Check voltage between IMMU connector (M68) terminal ⑧ (W/L) and ground.

**Voltage: Battery voltage**

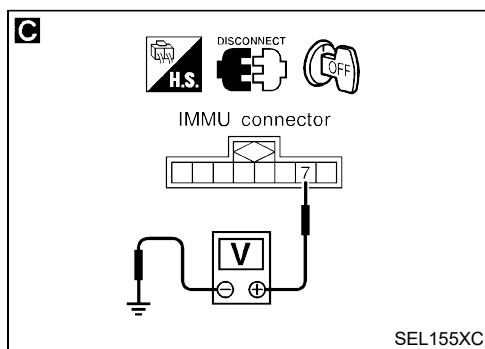
NG

Check the following:

- 20A fuse (No. 36), located in the fuse and fusible link box) (Diesel engine models)
- 10A fuse (No. 33), located in the fuse and fusible link box) (Gasoline engine models)
- Harness for open or short between fuse and IMMU connector

**Ref. part No. C1**

OK



#### CHECK IGN SW. ON SIGNAL.

Check voltage between IMMU connector (M68) terminal ⑦ (W/R) and ground while ignition switch is in the "ON" position.

**Voltage: Battery voltage**

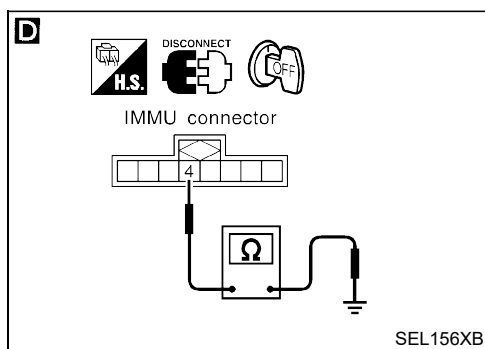
NG

Check the following:

- 10A fuse [No. 21], located in the fuse block (J/B)]
- Harness for open or short between fuse and IMMU connector

**Ref. part No. C2**

OK



#### CHECK GROUND CIRCUIT FOR IMMU.

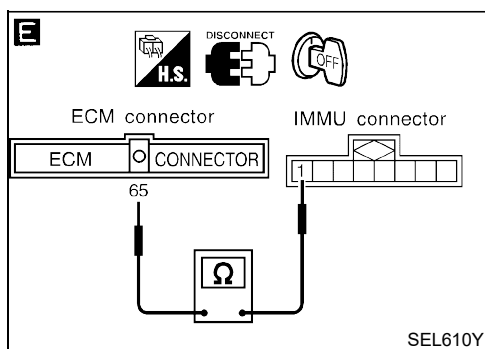
Check harness continuity between IMMU connector (M68) terminal ④ (B) and ground.

**Continuity should exist.**

NG

Repair harness.  
**Ref. part No. C3**

OK



#### CHECK COMMUNICATION ON OPEN CIRCUIT.

Check harness continuity between the following ECM terminal and IMMU terminal.

ECM connector (M32) terminal ⑥ (G/OR) or IMMU connector (M68) terminal ① (G/OR)

**Continuity should exist.**

NG

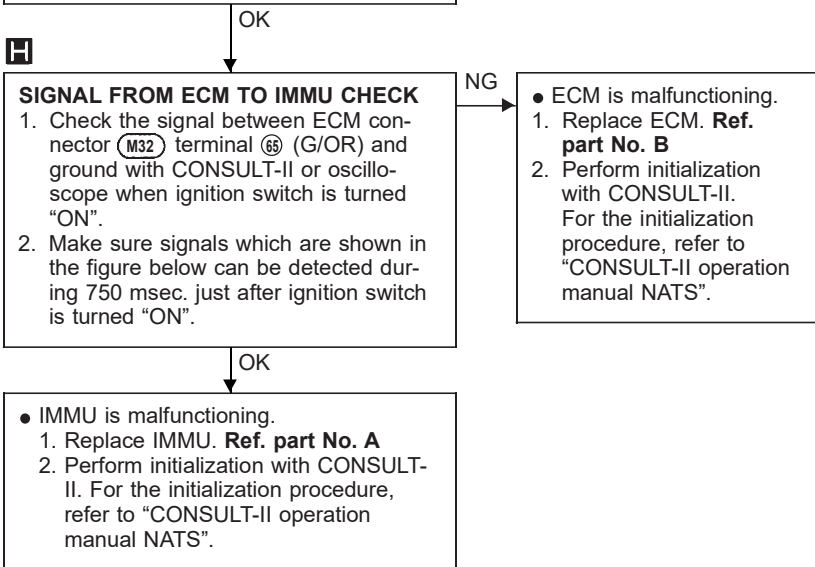
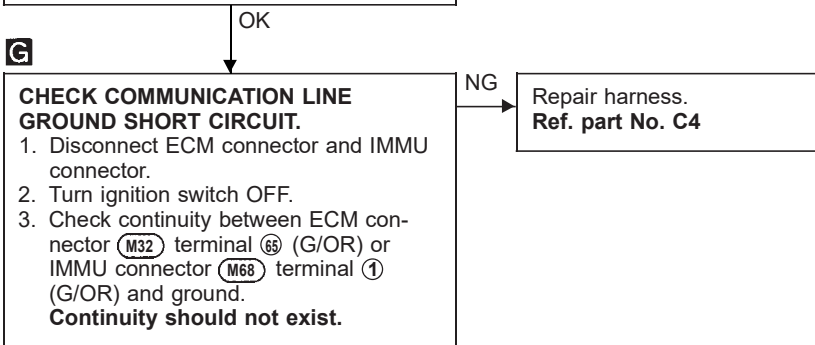
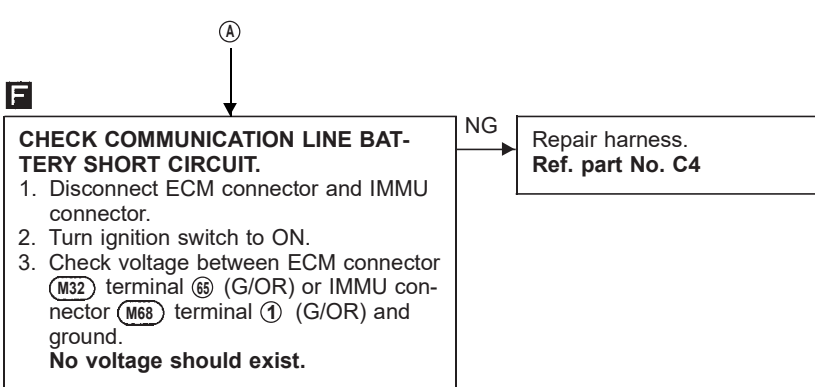
Repair harness.  
**Ref. part No. C4**

OK

Ⓐ

## Trouble Diagnoses (Cont'd)

(A)



## NATS (Nissan Anti-Theft System)

### Trouble Diagnoses (Cont'd)

#### DIAGNOSTIC PROCEDURE 3

Self-diagnostic results:

"DIFFERENCE OF KEY" displayed on CONSULT-II screen

**A**

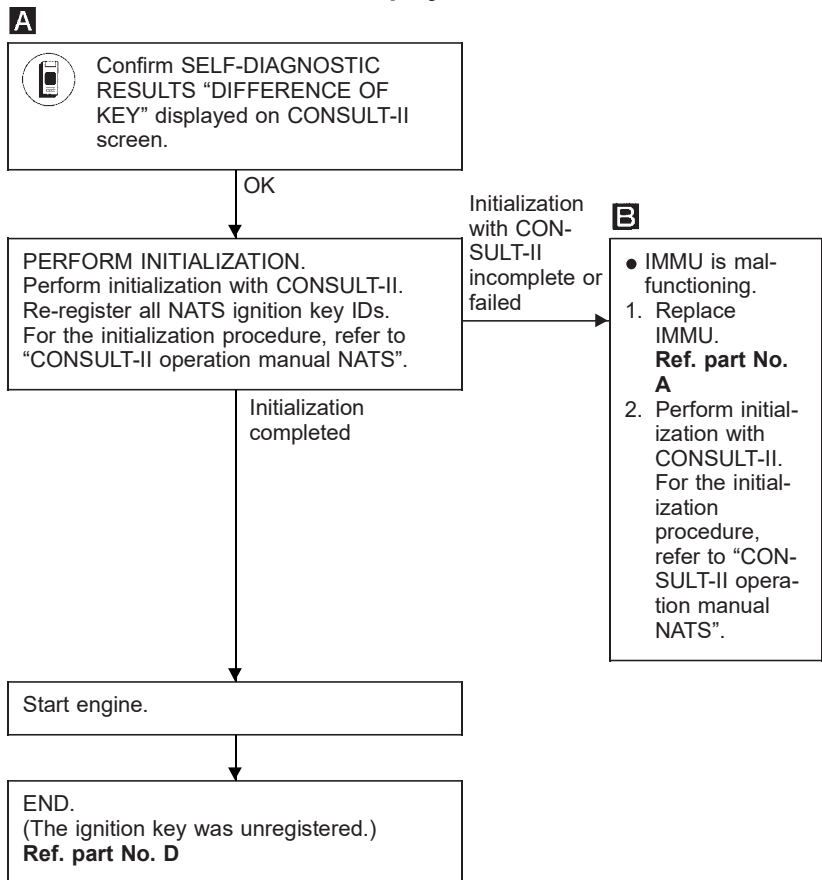
| SELF-DIAG RESULTS |      |
|-------------------|------|
| DTC RESULTS       | TIME |
| DIFFERENCE OF KEY | 0    |
|                   |      |
|                   |      |

SEL163X

**B**

| IMMU INITIALIZATION                                                                                                    |
|------------------------------------------------------------------------------------------------------------------------|
| INITIALIZATION<br>FAIL                                                                                                 |
| THEN IGN KEY SW 'OFF' AND<br>'ON', AFTER CONFIRMING<br>SELF-DIAG AND PASSWORD,<br>PERFORM C/U INITIALIZATION<br>AGAIN. |

SEL566W



# NATS (Nissan Anti-Theft System)

## Trouble Diagnoses (Cont'd)

### DIAGNOSTIC PROCEDURE 4

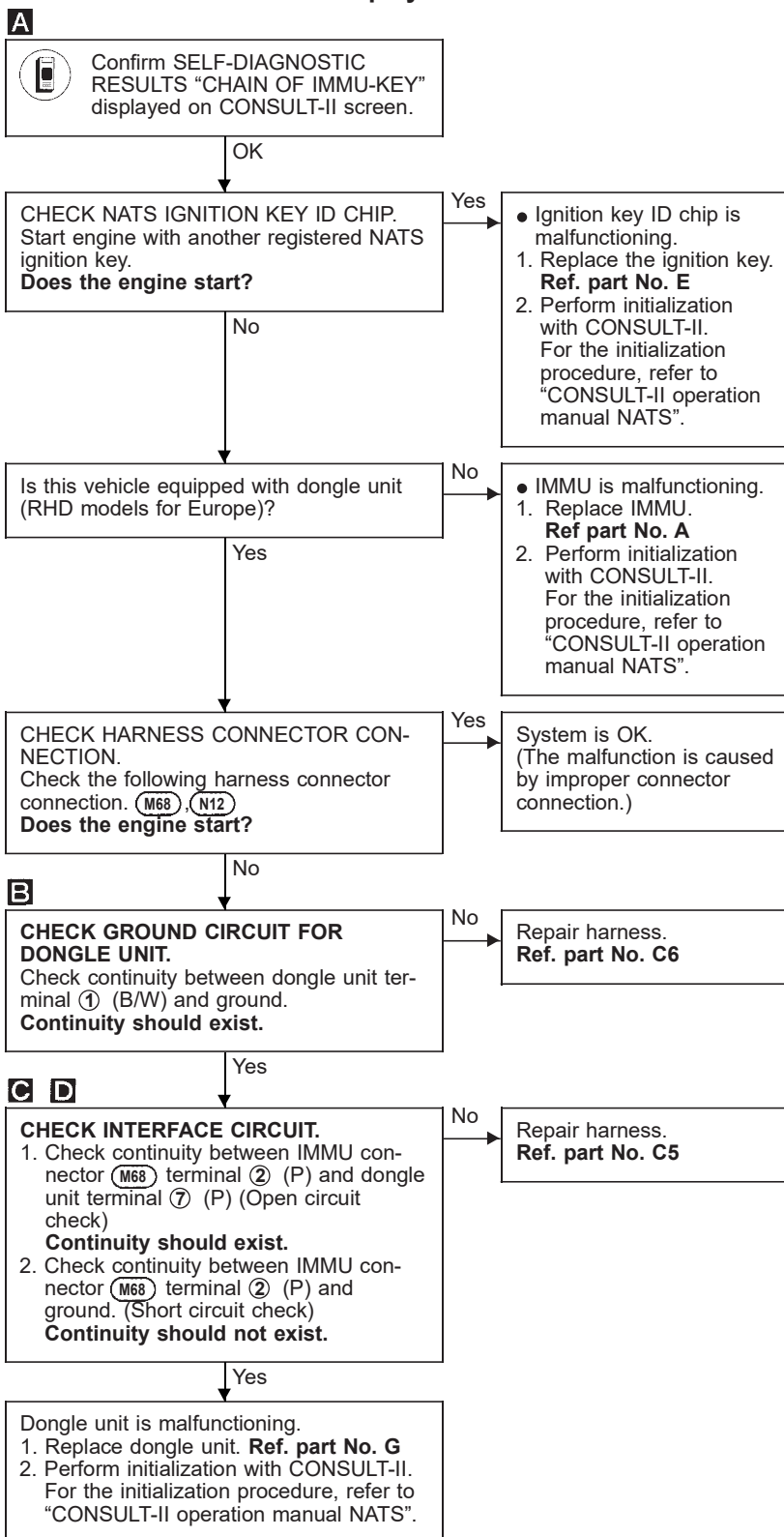
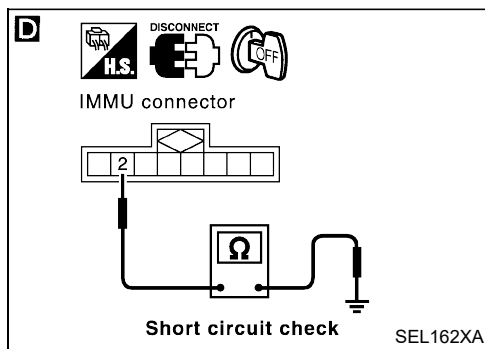
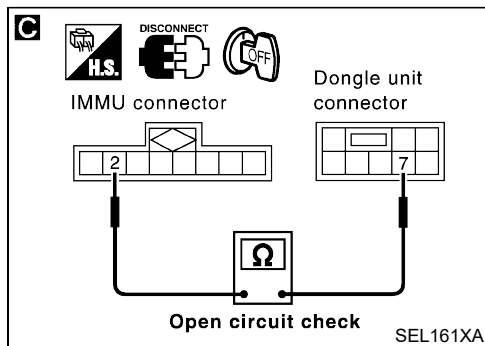
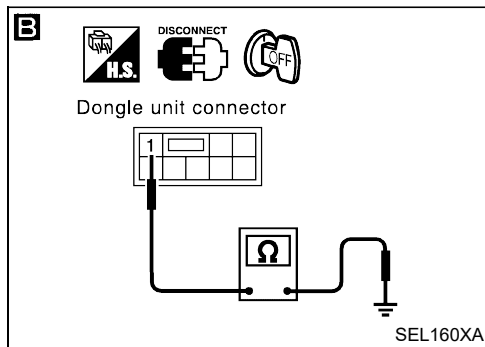
Self-diagnostic results:

"CHAIN OF IMMU-KEY" displayed on CONSULT-II screen

**A**

| SELF-DIAG RESULTS |      |
|-------------------|------|
| DTC RESULTS       | TIME |
| CHAIN OF IMMU-KEY | 0    |
|                   |      |
|                   |      |

SEL165X





## NATS (Nissan Anti-Theft System)

### Trouble Diagnoses (Cont'd)

#### DIAGNOSTIC PROCEDURE 5

Self-diagnostic results:

"ID DISCORD, IMM-ECM" displayed on CONSULT-II screen

**A**

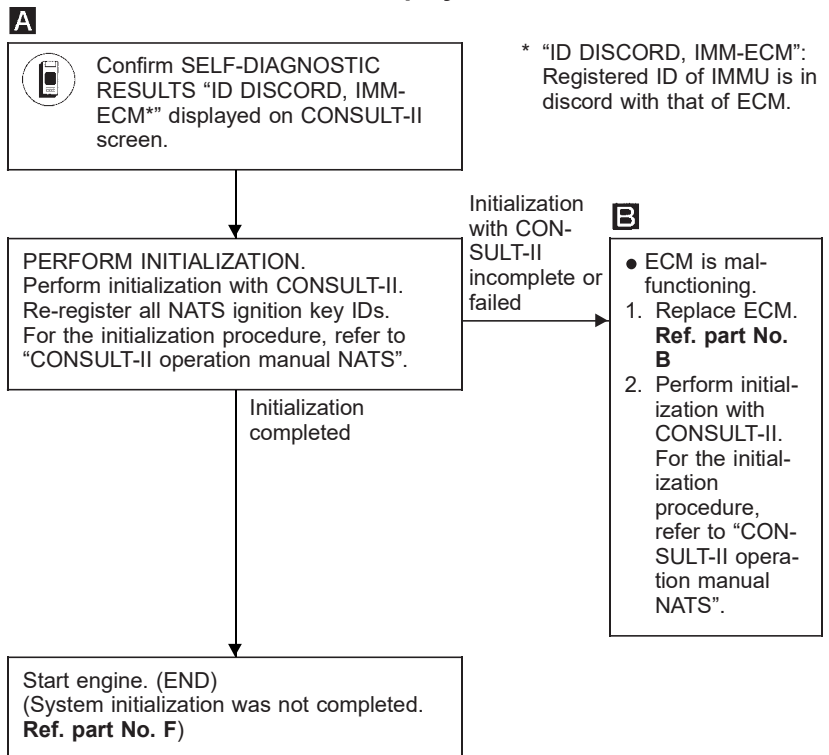
| SELF-DIAG RESULTS   |      |
|---------------------|------|
| DTC RESULTS         | TIME |
| ID DISCORD, IMM-ECM | 0    |
|                     |      |
|                     |      |

SEL166X

**B**

| IMMU INITIALIZATION                                                                                                    |
|------------------------------------------------------------------------------------------------------------------------|
| INITIALIZATION<br>FAIL                                                                                                 |
| THEN IGN KEY SW 'OFF' AND<br>'ON', AFTER CONFIRMING<br>SELF-DIAG AND PASSWORD,<br>PERFORM C/U INITIALIZATION<br>AGAIN. |

SEL566W



# NATS (Nissan Anti-Theft System)

## Trouble Diagnoses (Cont'd)

### DIAGNOSTIC PROCEDURE 6

#### Self-diagnostic results:

"LOCK MODE" displayed on CONSULT-II screen

**A**

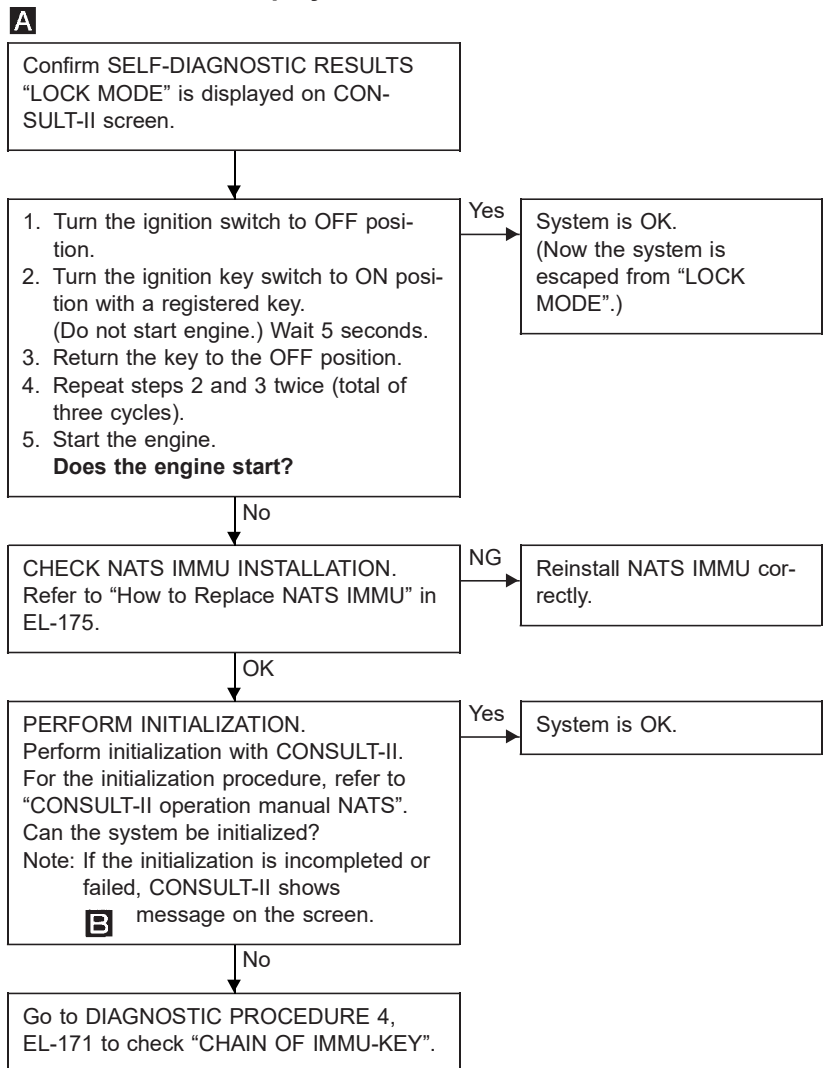
| SELF-DIAG RESULTS |      |
|-------------------|------|
| DTC RESULTS       | TIME |
| LOCK MODE         | 0    |
|                   |      |
|                   |      |

SEL167X

**B**

| IMMU INITIALIZATION                                                                                                    |
|------------------------------------------------------------------------------------------------------------------------|
| INITIALIZATION<br>FAIL                                                                                                 |
| THEN IGN KEY SW 'OFF' AND<br>'ON', AFTER CONFIRMING<br>SELF-DIAG AND PASSWORD,<br>PERFORM C/U INITIALIZATION<br>AGAIN. |

SEL566W



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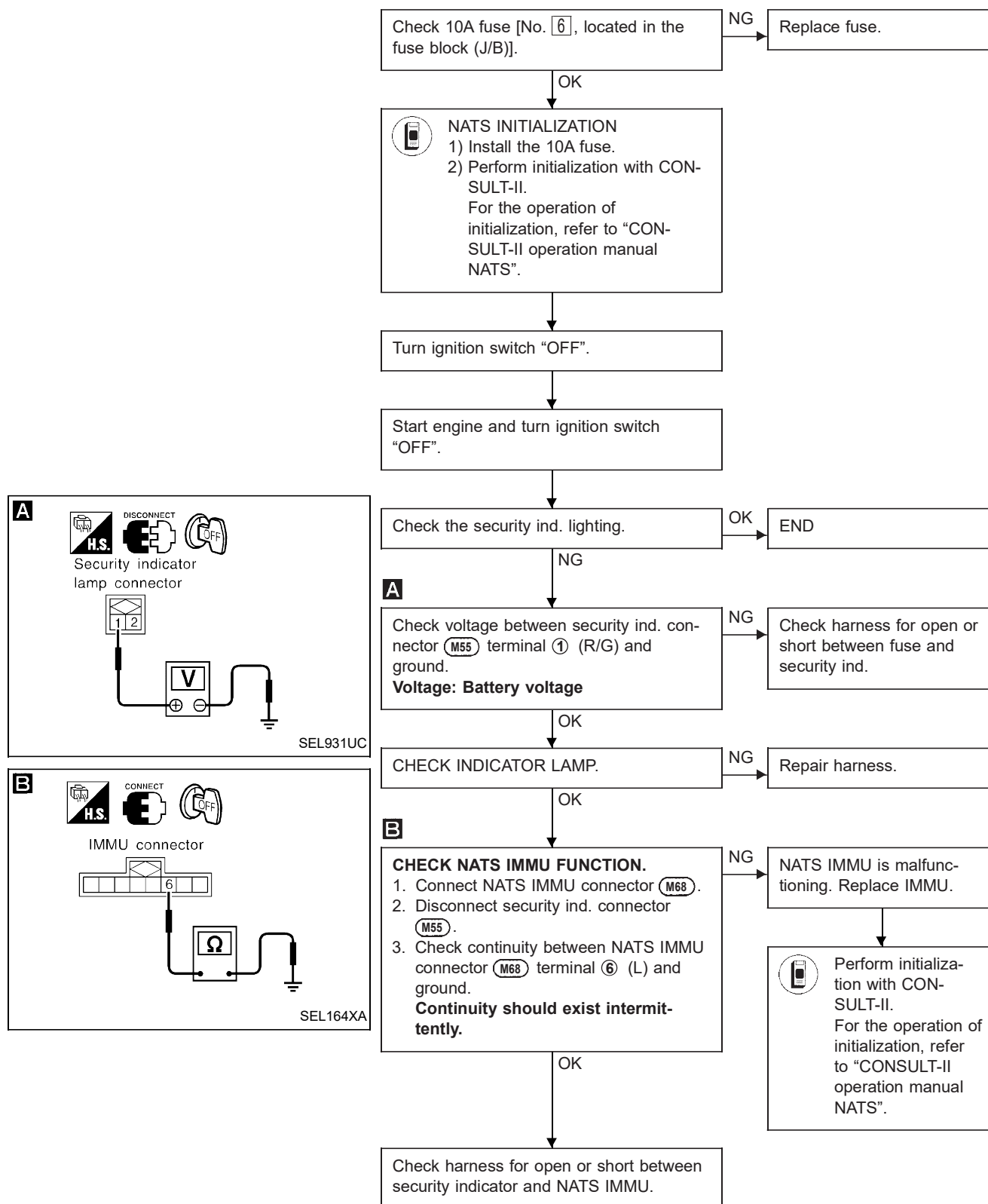
IDX

# NATS (Nissan Anti-Theft System)

## Trouble Diagnoses (Cont'd)

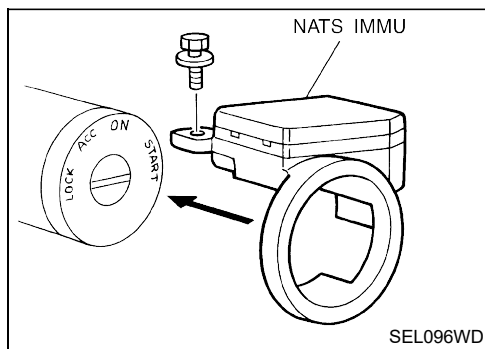
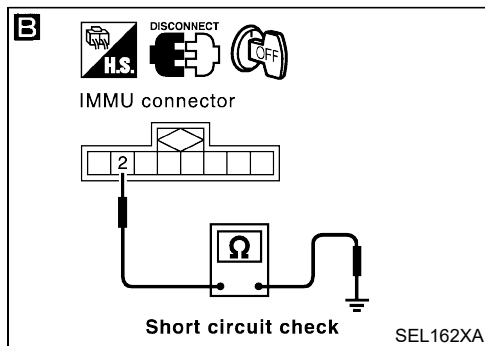
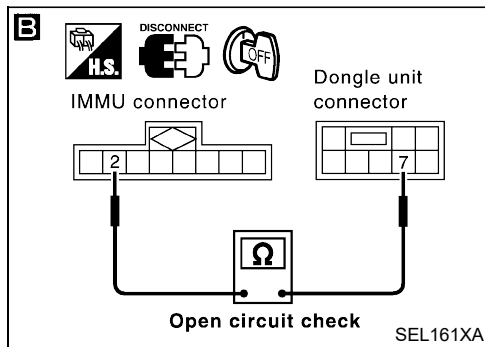
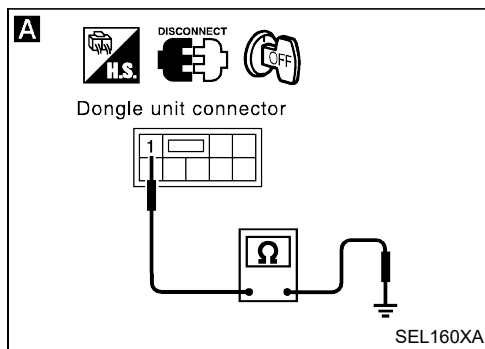
### DIAGNOSTIC PROCEDURE 7

#### "SECURITY IND. DOES NOT LIGHT UP"



# NATS (Nissan Anti-Theft System)

## Trouble Diagnoses (Cont'd) DIAGNOSTIC PROCEDURE 8



**A**

**CHECK GROUND CIRCUIT FOR DONGLE UNIT.**  
Check continuity between dongle unit connector (N12) terminal ① (B/W) and ground.  
**Continuity should exist.**

No → Repair harness.  
Ref. part No. C6

**B**

**CHECK INTERFACE CIRCUIT.**  
1. Check continuity between IMMU connector (M68) terminal ② (P) and dongle unit connector (N12) terminal ⑦ (P). (Open circuit check)  
**Continuity should exist.**  
2. Check continuity between IMMU connector (M68) terminal ② (P) and ground. (Short circuit check)  
**Continuity should exist.**

No → Repair harness.  
Ref. part No. C5

Yes

Dongle unit is malfunctioning.  
1. Replace dongle unit.  
**Ref. part No. G**  
2. Perform initialization with CONSULT-II.  
For the initialization procedure, refer to "CONSULT-II operation manual NATS".

## How to Replace NATS IMMU

### NOTE:

- If NATS IMMU is not installed correctly, NATS system will not operate properly and SELF-DIAG RESULTS on CONSULT-II screen will show "LOCK MODE".

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