SYSTEM OUTLINE

1. MANUAL DOWN OR UP OPERATION

The signal is input to **TERMINAL MDN** of the driver door ECU while the power window master SW is kept pressed one step. This activates the driver door ECU to flow the current from **TERMINAL DN** into the power window motor front LH to **TERMINAL UP** of the driver door ECU to **GROUND**, to rotate the motor and open the window.

The signal is input to **TERMINAL MUP** of the driver door ECU while the power window master SW is kept pulled one step. This activates the driver door ECU to flow the current from **TERMINAL UP** into the power window motor front LH to **TERMINAL DN** of the driver door ECU to **GROUND**, to reversely rotate the motor and close the window. For other windows, as the power window master SW or each power window SW is operated, the window of the relevant door is opened or closed.

2. AUTO DOWN OR UP OPERATION

The signals are input to **TERMINALS MDN** and **AUTO** of the driver door ECU when the power window master SW is pressed two steps. According to these signals, it is determined that the driver door ECU is in the auto mode. The current flows from **TERMINAL DN** into the power window motor front LH to **TERMINAL UP** of the driver door ECU to **GROUND**, to rotate the motor and automatically open the window. Accordingly, when each window switch of the power window master SW is pressed, the window of the relevant door is automatically opened through communication control of the body ECU and door ECU etc.

The signals are input to **TERMINALS MUP** and **AUTO** of the driver door ECU when the power window master SW is pulled two steps. According to these signals, it is determined that the driver door ECU is in the auto mode. The current flows from **TERMINAL UP** into the power window motor front LH to **TERMINAL DN** of the driver door ECU to **GROUND**, to rotate the motor and automatically close the window. Accordingly, when each window switch of the power window master SW is pressed, the window of the relevant door is automatically closed through communication control of the body ECU and door ECU etc.

For other windows, as each power window control SW is operated, the window of the relevant door is automatically opened or closed.

3. POWER WINDOW OPERATION LINKED WITH DOOR KEY LOCK AND UNLOCK SW

When the ignition key is inserted into the door key cylinder on the driver or passenger side and kept turned to the lock or unlock position for approximately **1.5** sec. or longer, all the door windows can be opened or closed.

* Power window close operation
  When the ignition key is inserted into the door key cylinder and kept turned to the lock position for **1.5** sec. or longer, the signal from the door key lock and unlock SW is input to **TERMINAL KL** of the driver door ECU or front passenger door ECU. Through communication control of the body ECU and door ECU etc. , the current flows from **TERMINAL UP** of each door ECU into the power window motor to **TERMINAL DN** of the each door ECU to **GROUND**, to close all the door windows.
* Power window open operation
  When the ignition key is inserted into the door key cylinder and kept turned to the unlock position for **1.5** sec. or longer, the signal from the door key lock and unlock SW is input to **TERMINAL KUL** of the driver door ECU or front passenger door ECU. Through communication control of the body ECU and door ECU etc. , the current flows from **TERMINAL DN** of each door ECU into the power window motor to **TERMINAL UP** of the each door ECU to **GROUND**, to close all the door windows.

  If any of the following conditions is detected, the power window operation is stopped.
  Approximately **10** sec. or longer has elapsed after starting open/close operation. Catching prevention function is activated.

4. POWER WINDOW OPERATION LINKED WITH TRANSMITTER

(Europe)

When the lock or unlock SW on the transmitter of the ignition key is kept pressed for **1** sec. or longer, all the door windows can be opened or closed.

* Power window close operation

  When the lock SW of the ignition key is kept pressed for **1** sec. or longer, the frequency received from the wireless door lock control ECU is input to the body ECU No.1. Through communication control of the body ECU and door ECU etc. , the current flows from **TERMINAL UP** of each door ECU into the power window motor to **TERMINAL DN** of the each door ECU to **GROUND**, to close all the door windows.

* Power window open operation

  When the unlock SW of the ignition key is kept pressed for **1** sec. or longer, the frequency received from the wireless door lock control ECU is input to the body ECU No.1. Through communication control of the body ECU and door ECU etc. , the current flows from T**ERMINAL DN** of each door ECU into the power window motor to **TERMINAL UP** of the each door ECU to **GROUND**, to open all the door windows.

  If any of the following conditions is detected, the power window operation is stopped.

  Approximately **10** sec. or longer have elapsed after starting open/close operation.

  The lock or unlock switch on the transmitter is released.

  Catching prevention function is activated.

(Australia)

When the unlock SW on the transmitter of the ignition key is kept pressed for **1** sec. or longer, all the door windows can be opened.

* Power window open operation

  When the unlock SW of the ignition key is kept pressed for **1** sec. or longer, the frequency received from the wireless door lock control ECU is input to the body ECU No.1. Through communication control of the body ECU and door ECU etc. , the current flows from **TERMINAL DN** of each door ECU into the power window motor to **TERMINAL UP** of the each door ECU to **GROUND**, to open all the door windows.

  If any of the following conditions is detected, the power window operation is stopped.

  Approximately **10** sec. or longer have elapsed after starting open/close operation.

  The lock or unlock SW on the transmitter is released.

  Catching prevention function is activated.

5. CATCHING PREVENTION FUNCTION

If any foreign matter is caught in the window while it is rising, the pulse sensor installed in the power window motor detects changes in the number of motor rotations, forcibly lowers the door window **50** mm or if the door window opening amount is **200** mm or less, the window is lowered so that the opening amount is **200** mm.

6. KEY OFF POWER WINDOW OPERATION

The power window can be operated for approximately **45** seconds, when the ignition SW is turned from ON to OFF with all doors closed. However, when the driver side door or front passenger side door is opened during this time, the operation is canceled. (If the door is opened during auto operation, the operation will stop after it is completed.)

SERVICE HINTS

B6 BODY ECU NO.2

1–GROUND : Approx. **12** volts with ignition SW at **ON** or **ST** position
8–GROUND : Always approx. **12** volts
11–GROUND : Always continuity

B5 (A) BODY ECU NO.1

1–GROUND : Approx. **12** volts with ignition SW at **ON** or **ST** position
8–GROUND : Always approx. **12** volts
11–GROUND : Always continuity
4–GROUND : Always approx. **12** volts
(A)15–GROUND : Approx. **12** volts with ignition SW at **ACC** or **ON** position

D18 (A), D20 (C) DRIVER DOOR ECU

(A) 1–GROUND : Always approx. **12** volts
(C) 3–GROUND : Always approx. **12** volts
(C) 2–GROUND : Approx. **12** volts with ignition SW at **ON** or **ST** position
(C)12–GROUND : Always continuity

F11 (A), F13 (C) FRONT PASSENGER DOOR ECU

(A) 2–GROUND : Approx. **12** volts with ignition SW at **ON** or **ST** position
(A) 3–GROUND : Always approx. **12** volts
(A)12–GROUND : Always continuity
(C) 1–GROUND : Always approx. **12** volts

R13 REAR DOOR LH ECU

9–GROUND : Approx. **12** volts with ignition SW at **ON** or **ST** position
14–GROUND : Always approx. **12** volts
15–GROUND : Always approx. **12** volts
25–GROUND : Always continuity

R14 REAR DOOR RH ECU

9–GROUND : Approx. **12** volts with ignition SW at **ON** or **ST** position
15–GROUND : Always approx. **12** volts
14–GROUND : Always approx. **12** volts
20–GROUND : Always continuity
25–GROUND : Always continuity

P11 POWER WINDOW MASTER SW

15–6 : Closed with power window master SW at **MANUAL UP** position
15–18 : Closed with power window master SW at **MANUAL DOWN** position
15–6, 7 : Closed with power window master SW at **AUTO UP** position
15–18, 7 : Closed with power window master SW at **AUTO DOWN** position

P7, P9, P10 POWER WINDOW CONTROL SW FRONT LH, REAR LH, REAR RH

3–6 : Closed with power window SW at **MANUAL UP** operation
3–4 : Closed with power window SW at **MANUAL DOWN** operation
3–6, 5 : Closed with power window SW at **AUTO UP** operation
3–4, 5 : Closed with power window SW at **AUTO DOWN** operation

WINDOW LOCK SW

Closed with window lock SW at **LOCK** position

: PARTS LOCATION

Code	See Page	Code	See Page	Code	See Page
A16	86 (RHD)	F11 A	90 (RHD)	P9	92 (RHD)
B5 A	86 (RHD)	F12 B	90 (RHD)	P10	92 (RHD)
B6 A	86 (RHD)	F13 C	90 (RHD)	P11	92 (RHD)
C12	86 (RHD)	J31	88 (RHD)	P12	92 (RHD)
D8	90 (RHD)	J32	88 (RHD)	P13	92 (RHD)
D9	90 (RHD)	J37	88 (RHD)	P19	94 (RHD)
D16	90 (RHD)	J38	88 (RHD)	R13	92 (RHD)
D17	90 (RHD)	J41	88 (RHD)	R14	92 (RHD)
D18 A	90 (RHD)	J42	88 (RHD)	T5	88 (RHD)
D19 B	90 (RHD)	J45	90 (RHD)	W6	92 (RHD)
D20 C	90 (RHD)	M2	88 (RHD)		
E5	82 (RHD)	P7	92 (RHD)		

: RELAY BLOCKS

Code	See Page	Relay Blocks (Relay Block Location)
1	54 (RHD)	Engine Room No.1 R/B (Engine Compartment Left)

: JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

Code	See Page	Junction Block and Wire Harness (Connector Location)
1E	58 (RHD)	Floor No.1 Wire and Driver Side J/B (Right Kick Panel)
1F	58 (RHD)	Cowl Wire and Driver Side J/B (Right Kick Panel)
1G	59 (RHD)	
1H		
2B	60 (RHD)	Engine Room Main Wire and Passenger Side J/B (Left Kick Panel)
2E	60 (RHD)	Floor No.2 Wire and Passenger Side J/B (Left Kick Panel)
2F	60 (RHD)	Cowl Wire and Passenger Side J/B (Left Kick Panel)
2G	61 (RHD)	
2H		

: CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

Code	See Page	Joining Wire Harness and Wire Harness (Connector Location)
IB1	108 (RHD)	Front Door LH Wire and Cowl Wire (Left Kick Panel)
IC2	108 (RHD)	Floor No.2 Wire and Cowl Wire (Left Kick Panel)
IC3		
ID1	108 (RHD)	Instrument Panel Wire and Cowl Wire (Right Side of the Blower Unit)
IJ1	110 (RHD)	Instrument Panel Wire and Cowl Wire (Right Side of the Steering Column)
IL1	110 (RHD)	Front Door RH Wire and Cowl Wire (Right Kick Panel)
IM1	110 (RHD)	Floor No.1 Wire and Cowl Wire (Right Kick Panel)
IM3		
BA1	112 (RHD)	Rear Door LH Wire and Floor No.2 Wire (Under the Center Pillar LH)
BB1	112 (RHD)	Rear Door RH Wire and Floor No.1 Wire (Under the Center Pillar RH)
BC1	114 (RHD)	Floor No.2 Wire and Front Seat LH Wire (Under the Front Passenger's Seat)
BD1	114 (RHD)	Floor No.1 Wire and Front Seat RH Wire (Under the Driver's Seat)

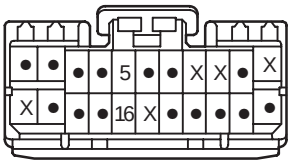
: GROUND POINTS

Code	See Page	Ground Points Location
IF	108 (RHD)	Left Kick Panel
IG	108 (RHD)	Behind the Combination Meter
II	108 (RHD)	Cowl Side Panel RH
BJ	112 (RHD)	Rear Floor Partition Panel LH
BL	112 (RHD)	Rear Floor Partition Panel RH
BM	112 (RHD)	Quarter Panel RH

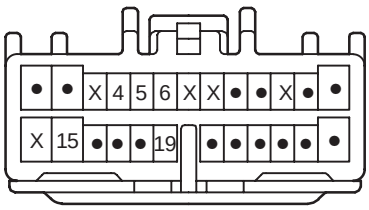
: SPLICE POINTS

Code	See Page	Wire Harness with Splice Points	Code	See Page	Wire Harness with Splice Points
I1	110 (RHD)	Cowl Wire			

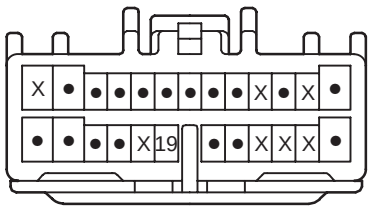
A16



B5 (A)



B6 (A)



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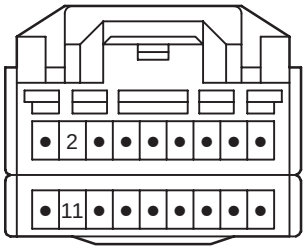

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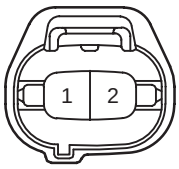

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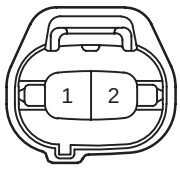

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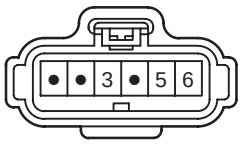

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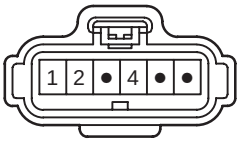
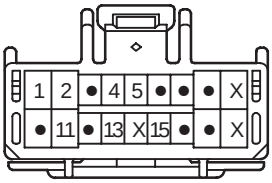
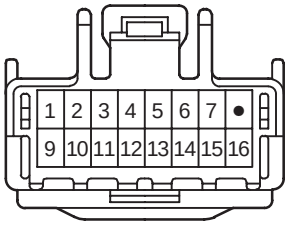


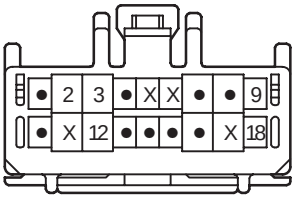
D18 (A) GRAY



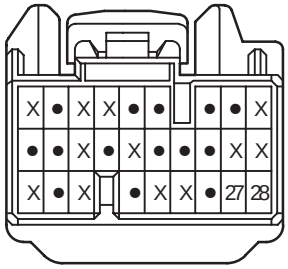
D19 (B) GRAY



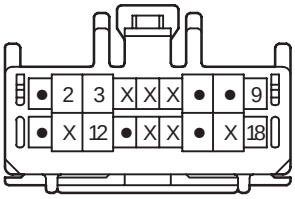
D20 (C) GRAY



E5



F11 (A) GRAY



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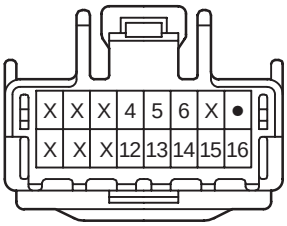

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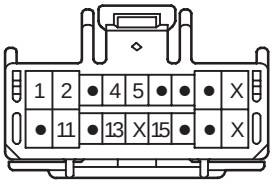

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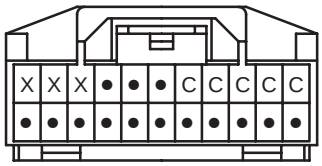
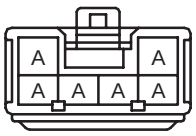


(Hint : See Page 7, 23, 39)

J32

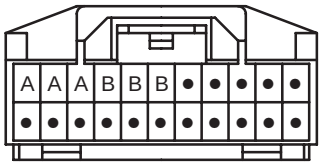


(Hint : See Page 7, 23, 39)

J37

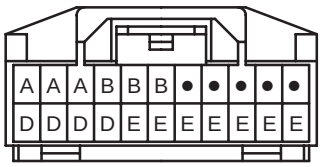
(Hint : See Page 7, 23, 39)

J38



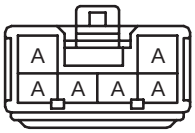
(Hint : See Page 7, 23, 39)

J41



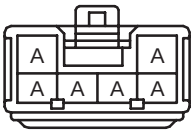
(Hint : See Page 7, 23, 39)

J42



(Hint : See Page 7, 23, 39)

J45



(Hint : See Page 7, 23, 39)

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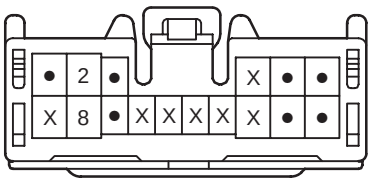
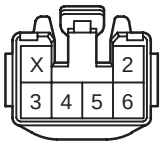


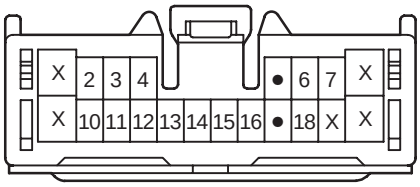
P7

P9



P10

P11



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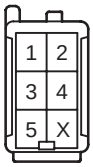

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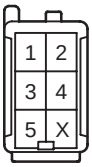

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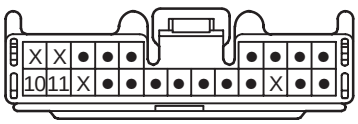
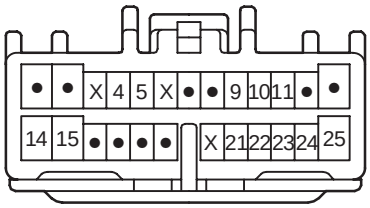


R13



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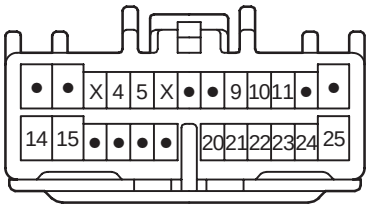
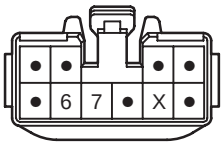


T5 GRAY



W6