SECTION WHEELS & TIRES

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WT

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SERVICE DATA AND SPECIFICATIONS
(SDS)

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INFOID:000000003070192

< BASIC INSPECTION >

BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW

Repair Work Flow

WORK FLOW



>> GO TO 2

2. PRELIMINARY CHECK

Perform preliminary check. Refer to WT-5, "Preliminary Check"

>> GO TO 3

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

3.self-diagnosis

Perform SELF-DIAGNOSIS. Refer to <u>WT-11, "Self-Diagnosis"</u> (with CONSULT-III) or <u>WT-21, "Flash Code</u> <u>Chart"</u> (without CONSULT-III).

>> GO TO 4

4.SYMPTOM

Check for symptoms. Refer to <u>WT-23, "Symptom Table"</u>.

>> GO TO 5

5.MALFUNCTIONING PARTS

Repair or replace the applicable parts.

>> GO TO 6

6.DRIVE TEST

1. Perform a drive test.

2. Check the low tire pressure warning lamp.

>> GO TO 7

7.SELF-DIAGNOSIS

Perform SELF-DIAGNOSIS. Refer to <u>WT-20, "Self-Diagnosis"</u> (with CONSULT-III) or <u>WT-21, "Flash Code</u> <u>Chart"</u> (without CONSULT-III).

Are any DTC's displayed?

- YES >> GO TO 5
- NO >> INSPECTION END

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >	
INSPECTION AND ADJUSTMENT	Δ
Preliminary Check	A
1. TIRE PRESSURE	В
Check all tire pressures. Refer to <u>WT-38, "Tire"</u> .	
Do tire pressures match specification? YES >> GO TO 2. NO >> Adjust tire pressures to specified value.	С
2.LOW TIRE PRESSURE WARNING LAMP	D
Check low tire pressure warning lamp activation.	
YES >> GO TO 3. NO >> Proceed TO <u>WT-24, "Low Tire Pressure Warning Lamp Does Not Come On When Ignition Switch</u> Is Turned On".	WT
3.BCM CONNECTOR	F
 Disconnect BCM harness connectors. Check terminals for damage or loose connections. Reconnect harness connectors. 	G
<u>Are BCM connectors damaged or loose?</u> YES >> Repair or replace damaged parts. NO >> GO TO 4.	Н
4. TRANSMITTER ACTIVATION TOOL	
Check battery in transmitter activation tool. <u>Is transmitter activation tool battery fully charged?</u>	I
 YES >> Perform self-diagnosis. Refer to <u>WT-20, "Self-Diagnosis"</u>. NO >> Replace battery in transmitter activation tool. 	J
Transmitter Wake Up Operation	
NOTE	K

This procedure must be done after replacement of a low tire pressure warning transmitter or BCM. New replacement transmitters are provided "asleep" and must first be "woken up" using Transmitter Activation Tool J-45295 before ID registration can be performed.

1. Turn ignition switch ON. Push the transmitter activation tool against the tire near the front left transmitter. Press the button for 5 seconds. The hazard warning lamps flash per the following diagram.

Tool number : (J-45295)



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2. Repeat this procedure for each tire in the following order: FL, FR, RR, RL.

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

3. When the BCM finishes assigning each tire ID, the BCM flashes the hazard warning lamps and sends flashing indicator status by CAN according to the following time chart.



4. After completing wake up of all transmitters, make sure low tire pressure warning lamp goes out.

ID Registration Procedure

ID REGISTRATION WITH TRANSMITTER ACTIVATION TOOL **NOTE**:

This procedure must be done after replacement of a low tire pressure warning transmitter or BCM. New replacement transmitters are provided "asleep" and must first be "woken up" using Transmitter Activation Tool J-45295 before ID registration can be performed.

- 1. Connect CONSULT-III.
- 2. Select "ID REGIST" under BCM.
- 3. Push the transmitter activation tool against the tire near the front left transmitter. Press the button for 5 seconds.

Tool number : (J-45295)



INFOID:000000003070195

4. Register the IDs in order from FR LH, FR RH, RR RH and RR LH. When ID registration of each wheel has been completed, the hazard warning lamps flash.

Step	Activation tire position	Hazard warning lamp	CONSULT-III
1	Front LH		
2	Front RH	2 times flashing	"YET"
3	Rear RH		"DONE"
4	Rear LH		

5. After completing all ID registrations, press "END" to complete the procedure.

NOTE:

Be sure to register all of the IDs in order from FR LH, FR RH, RR RH, to RR LH, or the self-diagnostic results display will not function properly.

ID REGISTRATION WITHOUT TRANSMITTER ACTIVATION TOOL **NOTE**:

WT-6

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

This procedure must be done after replacement of a low tire pressure warning transmitter or BCM. New replacement transmitters are provided "asleep" and must first be "woken up" using Transmitter Activation Tool J-45295 before ID registration can be performed.

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- 1. Connect CONSULT-III.
- 2. Select "ID REGIST" under BCM.
- 3. Adjust the tire pressures to the values shown in the table and drive the vehicle at 40 km/h (25 MPH) or more for a few minutes.

0		
	Tire pressure kPa (kg/cm ² , psi)	Tire position
	250 (2.5, 36)	Front LH
D	230 (2.3, 33)	Front RH
	210 (2.1, 30)	Rear RH
W/T	190 (1.9, 27)	Rear LH

4. After completing all ID registrations, press "END" to complete the procedure.

Activation tire position	CONSULT-III	F
Front LH		
Front RH	"YET"	0
Rear RH	"DONE"	G
Rear LH		

5. Inflate all tires to proper pressure. Refer to WT-38, "Tire".

< FUNCTION DIAGNOSIS >

FUNCTION DIAGNOSIS

System Diagram

INFOID:000000003070196



System Description

BODY CONTROL MODULE (BCM)

The BCM is shown with the instrument panel LH removed. The BCM reads the air pressure signal received by the tire pressure receiver, and controls the low tire pressure warning lamp as shown below. It also has a self-diagnosis function to detect a system malfunction.

Condition	Low tire pressure warning lamp
System normal	On for 1 second after ignition ON
Tire pressure less than 174.1 kPa (1.775 kg/cm ² , 25.25 psi)	ON
Tire pressure monitoring system malfunc- tion	After key ON, flashes once per sec- ond for 1 minute, then stays ON



TRANSMITTER

A sensor-transmitter integrated with a valve is installed in each wheel. It transmits a detected air pressure signal in the form of a radio wave when the vehicle is moving. The radio signal is received by the tire pressure receiver.

Nut (pressure sensor) sensor) outer Outer Wheel Wheel Wheel Wheel

TIRE PRESSURE RECEIVER

The tire pressure receiver (1) is located next to the steering column assembly (2) and is shown with the lower instrument panel LH removed. The tire pressure receiver receives the air pressure signal transmitted by the transmitter in each wheel.

INFOID:000000003070197

< FUNCTION DIAGNOSIS >

✓⊃ Vehicle front.





COMBINATION METER

The combination meter receives tire pressure status from the BCM using CAN communication. When a low tire pressure condition is sensed by the BCM, the low tire pressure warning lamp is activated.

TIRE PRESSURE WARNING CHECK CONNECTOR

The tire pressure warning check connector can be grounded in order to initiate self-diagnosis without a CON-SULT-III. The tire pressure warning check connector is located behind the lower portion of the instrument panel LH. Refer to PG-33, "Harness Layout".

System Components



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INFOID:000000003070198

TPMS

< FUNCTION DIAGNOSIS >

- 1. Tire pressure receiver M70
- 4. Combination meter M24
- Tire pressure warning check connec- 3. Transmitters tor M62
 BCM M16, M17, M18, M19

DIAGNOSIS SYSTEM (BCM)

< FUNCTION DIAGNOSIS >

DIAGNOSIS SYSTEM (BCM)

CONSULT-III Function (BCM)

CONSULT-III can display each diagnostic item using the diagnostic test modes shown following.

Diagnostic mode	Description	
WORK SUPPORT	Supports inspections and adjustments. Commands are transmitted to the BCM for setting the status suitable for required operation, input/output signals are received from the BCM and received data is displayed.	С
DATA MONITOR	Displays BCM input/output data in real time.	D
ACTIVE TEST	Operation of electrical loads can be checked by sending drive signal to them.	-
SELF-DIAG RESULTS	Displays BCM self-diagnosis results.	
CAN DIAG SUPPORT MNTR	The result of transmit/receive diagnosis of CAN communication can be read.	W
ECU PART NUMBER	BCM part number can be read.	-
CONFIGURATION	Performs BCM configuration read/write functions.	F

Self-Diagnosis

INFOID:000000003070200

DESCRIPTION

During driving, the tire pressure monitoring system receives the signal transmitted from the transmitter installed in each wheel, and turns on the low tire pressure warning lamp when the tire pressure becomes low. The control unit (BCM) for this system has pressure judgement and self-diagnosis functions.

FUNCTION

When the tire pressure monitoring system detects low inflation pressure or an internal malfunction, the low tire pressure warning lamp in the combination meter comes on. The malfunction is indicated by the low tire pressure warning lamp flashing.

CONSULT-III Application to Tire Pressure Monitoring System

ITEM	SELF-DIAGNOSTIC RESULTS	DATA MONITOR	
Front - Left transmitter	×	×	
Front - Right transmitter	×	×	
Rear - Left transmitter	×	Х	
Rear - Right transmitter	×	×	
Warning lamp	_	Х	
Vehicle speed	×	Х	
CAN Communication	×	×	

×: Applicable

- : Not applicable

Data Monitor Mode

MONITOR	CONDITION	SPECIFICATION	0
VHCL SPEED	Drive vehicle.	Vehicle speed (km/h or MPH)	_
AIR PRESS FL AIR PRESS FR AIR PRESS RR AIR PRESS RL	 Drive vehicle for a few minutes. or Ignition switch ON and activation tool is transmitting activation signals. 	Tire pressure (kPa or psi)	P

INFOID:000000003070199

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DIAGNOSIS SYSTEM (BCM)

< FUNCTION DIAGNOSIS >

MONITOR	CONDITION	SPECIFICATION
ID REGST FL1 ID REGST FR1 ID REGST RR1 ID REGST RL1	Ignition switch ON	ID not registered: YET ID registered: DONE
WARNING LAMP		Low tire pressure warning lamp on: ON Low tire pressure warning lamp off: OFF

NOTE:

Before performing the self-diagnosis, be sure to register the ID, or the actual malfunction location may be different from that displayed on CONSULT-III.

C1708 - C1711 DATA FROM TRANSMITTER NOT BEING RECEIVED	
< COMPONENT DIAGNOSIS >	
COMPONENT DIAGNOSIS	Δ
C1708 - C1711 DATA FROM TRANSMITTER NOT BEING RECEIVED	~
Data from Transmitter Not Being Received	В
MALFUNCTION CODE NO. 21, 22, 23 or 24	
1.снеск всм	С
Drive for several minutes. Check all tire pressures with CONSULT-III.	
Are all tire pressures displayed as 0 kPa?	D
YES >> GO TO 2	
2. CHECK TIRE PRESSURE RECEIVER CONNECTOR	\A/T
Check tire pressure receiver connector for damage or loose connection	VVI
Is tire pressure receiver connector damaged or loose?	
YES >> Repair or replace tire pressure receiver connector. NO >> Replace BCM, then GO TO 3. Refer to <u>BCS-85, "Removal and Installation"</u> .	F
3. PERFORM ID REGISTRATION	0
Carry out ID registration of all transmitters. Refer to WT-6, "ID Registration Procedure".	G
Is there a tire that cannot register ID?	
 YES >> Replace malfunctioning transmitter, then GO TO 5. Refer to <u>WT-36, "Removal and Installation"</u>. NO >> GO TO 4 	Н
4.DRIVE VEHICLE	
 Drive at a speed of 40 km/h (25 MPH) or more for several minutes without stopping. Check all tire pressures with CONSULT-III within 15 minutes after vehicle speed becomes 17 km/h (11 MPH). 	
Does "DATA MONITOR ITEM" display tire pressure as normal without any warning lamp?	J
YES >> Inspection End. NO >> GO TO 5	
5.ID REGISTRATION AND VEHICLE DRIVING	K
 Carry out ID registration of all transmitters. Drive at a speed of 40 km/h (25 MPH) or more for 3 minutes, and then drive the vehicle at any speed for 10 minutes. 	L
Check all tire pressures with CONSULT-III within 5 minutes.	
Does "DATA MONITOR ITEM" display tire pressure as normal without any warning lamp?	M
YES >> Inspection End. NO >> Proceed to the inspection applicable to DTC.	
	NI
	I N
	_
	0

C1712 - C1715, C1720 - C1723, C1724 - C1727 TRANSMITTER MALFUNCTION < COMPONENT DIAGNOSIS >

C1712 - C1715, C1720 - C1723, C1724 - C1727 TRANSMITTER MALFUNC-TION

Transmitter Malfunction

INFOID:000000003070202

MALFUNCTION CODE NO. 31 - 34, 41 - 44, 45 - 48

1.PERFORM ID REGISTRATION

- 1. Carry out ID registration of all transmitters. Refer to <u>WT-6, "ID Registration Procedure"</u>.
- 2. Drive at a speed of 40 km/h (25 MPH) or more for 3 minutes, and then drive the vehicle at any speed for 10 minutes.

>> GO TO 2

2.REPLACE TRANSMITTER

- Check low tire pressure warning lamp again for flashing, replace malfunctioning transmitter. Refer to <u>WT-</u> <u>36, "Removal and Installation"</u>.
- 2. Carry out ID registration of all transmitters.

Can ID registration of all transmitters be completed?

YES >> GO TO 3

NO >> Proceed TO <u>WT-13</u>, "Data from Transmitter Not Being Received".

3.DRIVE VEHICLE

2. Check all tire pressures with CONSULT-III within 5 minutes.

Does "DATA MONITOR ITEM" display tire pressure as normal without any warning lamp?

- YES >> Inspection End.
- NO >> Replace malfunctioning transmitter, and perform Step 3 again.

^{1.} Drive at a speed of 40 km/h (25 MPH) or more for 3 minutes, and then drive the vehicle at any speed for 10 minutes.

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< COMPONENT DIAGNOSIS >	
C1716 - C1719 TRANSMITTER PRESSURE MALFUNCTION	
Transmitter Pressure Malfunction	A
MALFUNCTION CODE NO. 35 - 38	В
1.CHECK ALL TIRE PRESSURES	
Check all tire pressures. Refer to WT-38, "Tire".	С
Are there any tires with pressure of 64 psi or more?	
YES >> Adjust the pressure to specified value. NO >> GO TO 2	D
2. ID REGISTRATION AND VEHICLE DRIVING	D
1. Carry out ID registration of all transmitters. Refer to WT-6, "ID Registration Procedure".	\
 Drive at a speed of 40 km/h (25 MPH) or more for several minutes without stopping. Check all tire pressures with CONSULT-III within 15 minutes after vehicle speed becomes 17 km/h (11 MPH). 	VVI
Does "DATA MONITOR ITEM" display 64 psi or more?	F
YES >> Replace transmitter. Refer to <u>WT-36, "Removal and Installation"</u> . GO TO 3. NO >> GO TO 3	
3.ID REGISTRATION AND VEHICLE DRIVING	G
 Carry out ID registration of all transmitters. Drive at a speed of 40 km/h (25 MPH) or more for 3 minutes, and then drive the vehicle at any speed for 10 minutes. 	Η
3. Check all tire pressures with CONSULT-III within 5 minutes.	
YES >> Inspection End.	
NO >> Proceed to the inspection applicable to DTC.	
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< COMPONENT DIAGNOSIS >

C1729 VEHICLE SPEED SIGNAL

Vehicle Speed Signal

INFOID:000000003070204

MALFUNCTION CODE NO. 52

1.CHECK SELF-DIAGNOSTIC RESULTS

On "SELECT DIAG MODE", select the "SELF-DIAG RESULT" screen.
 Check display contents on "SELF DIAG RESULT" screen.

Is the "CAN COMM CIRCUIT" displayed in the self-diagnosis display?

>> Perform trouble diagnosis for CAN communication system. Refer to XX-XX, "*****". YES

NO >> Check combination meter. Refer to XX-XX, "*****".

< COMPONENT DIAG	NOSIS >				-				
Diagnosis Procedu				INFO ID-00000000077000	A				
				INFOID:000000000000000000000000000000000000	1				
I.SELF-DIAGNOSTIC	RESULTS				В				
1. On "SELECT DIAG	" mode, select the "S ents on "SELF-DIAG	SELF-DIAG RESULT" RESULT"	screen for BCM.						
Does self-diagnostic res	sults indicate any DT	C other than C1734?			С				
YES >> Perform tro NO >> GO TO 2.	uble diagnosis for D	TC. Refer to <u>BCS-81,</u>	"DTC Index".						
2.CHECK BCM HARN	ESS CONNECTORS	6			D				
Check BCM harness co	nnectors for damage	e or loose connections	3.						
Are the BCM harness c	onnectors damaged	or loose?			WT				
YES >> Repair or re	eplace damaged part	S.							
3.BCM POWER SUPF	PLY AND GROUND				F				
Check BCM power supp	oly and ground. Refe	er to <u>BCS-41, "Diagno</u>	osis Procedure".						
Are the power supply a	nd grounds normal?				G				
YES >> GO TO 4.	er supply or arounds								
4. CHECK HARNESS	BETWEEN BCM AN	D TIRE PRESSURE	RECEIVER		Ц				
1 Turn ignition switch "OEE"									
2. Disconnect BCM h	arness connector M	18 (A) and tire press							
Check continuity between BCM barness connector and tire									
pressure receiver h	arness connector.								
			47 46 45		J				
			45,46,47	$\underbrace{1,2,4}{1}$					
			l I	Ω	К				
				ALEIA0013ZZ					
BCM	1	Tire press	ure receiver						
Connector	Terminal	Connector	Terminal	Continuity	L				
	45		1						
M18	46	M70	4	YES	\mathbb{N}				
	47		2						
Does continuity exist?					Ν				
NO >> Repair circu	uits as necessarv.								
5.BCM INPUT/OUTPL	IT SIGNALS				0				
Check BCM input/output	t signals. Refer to B	CS-46, "Reference V	alue".		0				
Are the inputs and outp	uts normal?								
YES >> Inspection NO >> Replace BC	End. CM. Refer to <u>BCS-85</u>	, "Removal and Insta	llation".		Ρ				

< ECU DIAGNOSIS >

ECU DIAGNOSIS

BCM (BODY CONTROL MODULE)

Terminals and Reference Values (BCM)

Refer to BCS-46, "Reference Value".

Wiring Diagram

■ : DATA LINE

INFOID:000000003070207

INFOID:000000003070206

COMBINATION METER M24 53 UNIFIED METER CONTROL UNIT (WITH INFORMATION DISPLAY) 4 TO CAN SYSTEM) TIRE PRESSURE M5 c FUSE BLOCK (J/B) M3 (M19 DATA LINE DATA LINE 10A M18 (M17) TIRE PRESSURE WARNING CHECK CONNECTOR (M62) ε BCM (BODY CONTROL MODULE) (M16), 10A Ľ 5 IGNITION SWITCH ON OR START 10A 3 č 9 TIRE PRESSURE RECEIVER M70 WI E30 40A BATTERY ų

AWEWA0013G

< ECU DIAGNOSIS >

А В Connector Name TIRE PRESSURE WARNING CHECK CONNECTOR Signal Name Signal Name С I I -Connector Color WHITE D M62 Color of Wire Color of Wire W/B ≥ Connector No. Terminal No. WT Terminal No. 82G -H.S. E F G
 1
 2
 3
 4
 5
 6
 7
 8
 9
 10
 11
 12
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 14
 15
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 31
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 33
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 36
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 40
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 Connector Name COMBINATION METER Signal Name 356 356 376 356 356 406 416 416 426 436 446 456 506 206 216 226 236 246 256 286 186 195 276 286 296 306 316 205 336 346 51G 50G 50G 54G 58G 60G 57G 58G 2 84G 85G 73G 74G 75G 76G 77G 78G 77G 88G 80G CAN-H CAN-L BATT GND GND GND 96 ßЛ Connector Name WIRE TO WIRE ŝ Н 3G 4G 5G 6G 7G 8G 1 1G 2G 100 116 120 136 14G 156 1 82G Connector Color WHITE Connector Color WHITE 81G E30 M24 Color of Wire W/L ш ш ۲ 0 _ ш Connector No. Connector No. Terminal No. J ŝ ო 4 2 52 23 H.S. H.S. E F Κ
 79
 78
 77
 76
 73
 72
 71
 70
 69
 68
 67
 66
 65
 64
 63
 62
 61
 60

 99
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 97
 96
 98
 87
 86
 85
 84
 83
 82
 81
 80
 Connector Name TIRE PRESSURE RECEIVER BCM (BODY CONTROL MODULE L Signal Name Signal Name POWER SIGNAL CAN-H CAN-L GND 1 2 3 4 Μ Connector Color WHITE BLACK M19 M70 Color of Wire Color of Wire 0/0 // ٩ _ ٩ Connector Name Connector Color Ν Connector No. Connector No. Terminal No. Terminal No. 78 79 N 4 Ŧ H.S. AHS. E E Ο

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INFOID:000000003070208

FUNCTION

Self-Diagnosis

< ECU DIAGNOSIS >

Self-Diagnostic Results Mode

WT-20

< ECU DIAGNOSIS >

Diagnostic item	Diagnostic item is detected when …	Reference page	А
LOW - PRESSURE - FL [C1704] LOW - PRESSURE - FR [C1705] LOW - PRESSURE - RR [C1706] LOW - PRESSURE - RL [C1707]	Tire pressures dropped below specified value. Refer to <u>WT-8.</u> <u>"System Description"</u> .	_	В
[NO-DATA] - FL [C1708] [NO-DATA] - FR [C1709] [NO-DATA] - RR [C1710] [NO-DATA] - RL [C1711]	Data from FL transmitter cannot be received. Data from FR transmitter cannot be received. Data from RR transmitter cannot be received. Data from RL transmitter cannot be received.	<u>WT-13</u>	С
[CHECKSUM- ERR] - FL [C1712] [CHECKSUM- ERR] - FR [C1713] [CHECKSUM- ERR] - RR [C1714] [CHECKSUM- ERR] - RL [C1715]	Checksum data from FL transmitter is malfunctioning. Checksum data from FR transmitter is malfunctioning. Checksum data from RR transmitter is malfunctioning. Checksum data from RL transmitter is malfunctioning.	<u>WT-14</u>	D
[PRESSDATA- ERR] - FL [C1716] [PRESSDATA- ERR] - FR [C1717] [PRESSDATA- ERR] - RR [C1718] [PRESSDATA- ERR] - RL [C1719]	Air pressure data from FL transmitter is malfunctioning. Air pressure data from FR transmitter is malfunctioning. Air pressure data from RR transmitter is malfunctioning. Air pressure data from RL transmitter is malfunctioning.	<u>WT-15</u>	F
[CODE- ERR] - FL [C1720] [CODE- ERR] - FR [C1721] [CODE- ERR] - RR [C1722] [CODE- ERR] - RL [C1723]	Function code data from FL transmitter is malfunctioning. Function code data from FR transmitter is malfunctioning. Function code data from RR transmitter is malfunctioning. Function code data from RL transmitter is malfunctioning.	<u>WT-14</u>	G
[BATT - VOLT - LOW] - FL [C1724] [BATT - VOLT - LOW] - FR [C1725] [BATT - VOLT - LOW] - RR [C1726] [BATT - VOLT - LOW] - RL [C1727]	Battery voltage of FL transmitter drops. Battery voltage of FR transmitter drops. Battery voltage of RR transmitter drops. Battery voltage of RL transmitter drops.	<u>WT-14</u>	Н
VHCL_SPEED_SIG_ERR [C1729]	Vehicle speed signal is in error.	<u>WT-16</u>	
CONTROL MODULE [C1734]	TPMS malfunction in BCM	<u>WT-17</u>	1

NOTE:

Before performing the self-diagnosis, be sure to register the ID or else the actual malfunction location may be different from that displayed on CONSULT-III.

Flash Code Chart

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Flash Code	Malfunction part	Reference page		
15 16	Tire pressure dropped below specified value. Refer to <u>WT-8, "System</u>	_		
17 18	Description".			
21	Transmitter no data (FL)			
22 23	Transmitter no data (FR) Transmitter no data (RR)	<u>WT-13</u>		
24	Transmitter no data (RL)			
31	Transmitter checksum error (FL)			
32 33	Transmitter checksum error (FR)	<u>WT-14</u>		
34	Transmitter checksum error (RL)			
35	Transmitter pressure data error (FL)			
36 37	Transmitter pressure data error (FR)	<u>WT-15</u>		
38	Transmitter pressure data error (RL)			
41	Transmitter function code error (FL)			
42 43	Transmitter function code error (FR) Transmitter function code error (RR)	<u>WT-14</u>		
44	Transmitter function code error (RL)			

WT-21

< ECU DIAGNOSIS >

Flash Code	Malfunction part	Reference page
45 46 47 48	Transmitter battery voltage low (FL) Transmitter battery voltage low (FR) Transmitter battery voltage low (RR) Transmitter battery voltage low (RL)	<u>WT-14</u>
52	Vehicle speed signal	<u>WT-16</u>
53	TPMS malfunction in BCM	<u>WT-17</u>

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS TPMS

Symptom Table

INFOID:000000003070210

Reference
<u>WT-24</u>
<u>WT-25</u>
<u>WT-26</u>
<u>WT-27</u>
<u>WT-28</u>

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LOW TIRE PRESSURE WARNING LAMP DOES NOT TURN ON < SYMPTOM DIAGNOSIS >

LOW TIRE PRESSURE WARNING LAMP DOES NOT TURN ON

Low Tire Pressure Warning Lamp Does Not Come On When Ignition Switch Is Turned On INFOID:000000003070211

DIAGNOSTIC PROCEDURE

1.SELF-DIAGNOSTIC RESULT CHECK

Using CONSULT-III, check display contents of BCM in SELF-DIAGNOSIS.

Is "CAN COMM CIRCUIT" displayed in the self-diagnosis display items?

>> Malfunction in CAN communication system. Refer to LAN-27, "CAN System Specification YES Chart".

NO >> GO TO 2

2. CHECK COMBINATION METER

Check combination meter operation. Refer to MWI-35, "CONSULT-III Function (METER/M&A)".

Inspection results OK?

YES >> GO TO 3

NO >> Replace combination meter. Refer to MWI-135, "Removal and Installation".

 ${f 3.}$ CHECK LOW TIRE PRESSURE WARNING LAMP

Disconnect BCM harness connector.

Does the low tire pressure warning lamp activate?

- >> Replace BCM. Refer to BCS-85, "Removal and Installation". YES
- >> Check combination meter operation. NO

LOW TIRE PRESSURE WARNING LAMP STAYS ON < SYMPTOM DIAGNOSIS >	
LOW TIRE PRESSURE WARNING LAMP STAYS ON	Δ
Low Tire Pressure Warning Lamp Stays On When Ignition Switch Is Turned On	A
DIAGNOSTIC PROCEDURE	В
1.BCM CONNECTORS	
1. Turn ignition switch OFF.	С
 Disconnect BOM namess connectors. Check terminals for damage or loose connections. 	
Are any of the BCM connectors loose or damaged?	D
NO >> GO TO 2	
2.BCM POWER SUPPLY AND GROUND CIRCUITS	WT
Check BCM power supply and ground circuits. Refer to <u>BCS-41, "Diagnosis Procedure"</u> .	_
YES >> Replace BCM. Refer to <u>BCS-85, "Removal and Installation"</u> .	F
NO >> Repair BCM circuits.	
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LOW TIRE PRESSURE WARNING LAMP BLINKS

< SYMPTOM DIAGNOSIS >

LOW TIRE PRESSURE WARNING LAMP BLINKS

Low Tire Pressure Warning Lamp Flashes When Ignition Switch Is Turned On

INFOID:000000003070213

NOTE:

If low tire pressure warning lamp flashes as shown, the system is normal. Flash Mode A

• This mode shows transmitter status is OFF-mode. Carry out transmitter wake up operation. Refer to <u>WT-5, "Transmit-ter Wake Up Operation"</u>.



DIAGNOSTIC PROCEDURE

1.CHECK BCM CONNECTORS

- 1. Turn ignition switch OFF.
- 2. Disconnect BCM harness connectors.
- 3. Check terminals for damage or loose connections.

Inspection results OK?

YES >> GO TO 2

NO >> Repair or replace damaged parts.

2.check tire pressure warning check connector circuit

Check continuity between BCM harness connector M18 terminal 57 and ground.

Continuity should not exist.

Does continuity exist?

- YES >> Repair circuit for short to ground.
- NO >> Replace BCM. Refer to <u>BCS-85, "Removal and Installa-</u> tion".



< SYMPTOM DIAGNOSIS >						
HAZARD WARNING LAMPS FLASH		Λ				
Hazard Warning Lamps Flash When Ignition Switch Is Turned On						
DIAGNOSTIC PROCEDURE						
1.CHECK BCM GROUND CIRCUIT						
Check BCM ground circuit. Refer to BCS-41, "Diagnosis Procedure".		С				
Is BCM ground circuit OK?		0				
YES >> Replace BCM. Refer to <u>BCS-85, "Removal and Installation"</u> .						
NO >> Repair BCM ground circuit.		D				

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< SYMPTOM DIAGNOSIS >

ID REGISTRATION CANNOT BE COMPLETED

ID Registration Cannot Be Completed

INFOID:000000003070215

DIAGNOSTIC PROCEDURE

1.PERFORM ID REGISTRATION OF ALL TRANSMITTERS

Carry out ID registration of all transmitters. Refer to WT-6, "ID Registration Procedure".

Can ID registration of all transmitters be completed?

YES >> Inspection End.

NO >> GO TO <u>WT-13</u>, "Data from Transmitter Not Being Received".

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING < SYMPTOM DIAGNOSIS >

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

NVH Troubleshooting Chart

INFOID:000000003070216

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Use chart below to help you find the cause of the symptom. If necessary, repair or replace these parts.

Reference page		<u>WT-32</u>	<u>WT-32</u>	<u>WT-32</u>	<u>WT-38</u>	<u>WT-32</u>	I	I	<u>WT-38</u>	FAX-2, "NVH Troubleshooting Chart", FSU-2, "NVH Troubleshooting Chart"	RAX-2, "NVH Troubleshooting Chart", RSU-2, "NVH Troubleshooting Chart"	Refer to TIRES in this chart.	Refer to ROAD WHEEL in this chart.	FAX-2, "NVH Troubleshooting Chart"	BR-3, "NVH Troubleshooting Chart"	ST-2, "NVH Troubleshooting Chart"	C D WT	
Possible cause and SUSPECTED PARTS		Improper installation, looseness	Out-of-round	Imbalance	Incorrect tire pressure	Uneven tire wear	Deformation or damage	Non-uniformity	Incorrect tire size	FRONT AXLE AND FRONT SUSPENSION	REAR AXLE AND REAR SUSPENSION	TIRES	ROAD WHEELS	DRIVE SHAFT	BRAKE	STEERING	G H J	
		Noise	×	×	×	×	×	×	×		×	×		×	×	×	×	
		Shake	×	×	×	×	×	×		×	×	×		×	×	×	×	K
		Vibration				×				×	×	×			×		×	
	TIRES	Shimmy	×	×	×	×	×	×	×	×	×	×		×		×	×	L
		Shudder	×	×	×	×	×	×		×	×	×		×		×	×	
Symptom		Poor quality ride or handling	×	×	×	×	×	×		×	×		×	×				M
		Noise	×	×	×			×			×	×	×		×	×	×	
	POAD	Shake	×	×	×			×			×	×	×		×	×	×	
	WHEEL	Shimmy, Shudder	×	×	×			×			×	×	×			×	×	Ν
		Poor quality ride or handling	×	×	×			×			×	×	×					<u> </u>

 \times : Applicable

< PRECAUTION >

PRECAUTION PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the SR and SB section of this Service Manual.

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SR section.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

Precaution for work

INFOID:000000003070218

- After removing and installing the opening/closing parts, be sure to carry out fitting adjustments to check their operation.
- Check the lubrication level, damage, and wear of each part. If necessary, grease or replace it.

PREPARATION

< PREPARATION > PREPARATION

PREPARATION

Special Service Tool

The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

Tool number (Kent-Moore No.) Tool name		Description	С
KV991B1000 (J-45295) Transmitter activation tool		Transmitter wake up operationID registration procedure	D
			WT
	WEIA0144E		F

Commercial Service Tools

INFOID:000000003070220

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Tool name		Description	
Power tool		Loosening bolts and nuts	
			I
	PBIC0190E		

< ON-VEHICLE MAINTENANCE > ON-VEHICLE MAINTENANCE > ROAD WHEEL

Inspection

INFOID:000000003070221

- 1. Check tires for wear and improper inflation.
- 2. Check wheels for deformation, cracks and other damage. If deformed, remove wheel and check wheel runout.
- a. Remove tire from aluminum wheel and mount on a tire balance machine.
- b. Set dial indicator as shown in the figure.

Wheel runout (Dial indicator value) : Refer to <u>WT-38</u>.



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ON-VEHICLE REPAIR TIRE PRESSURE RECEIVER

Removal and Installation

REMOVAL

- Remove instrument driver lower panel and locate tire pressure receiver (1) to the right of the steering clumn (2). Refer to <u>IP-11.</u> <u>"Removal and Installation"</u>.
- 2. Disconnect tire pressure receiver electrical connector, then remove tire pressure receiver (1) from bracket using a suitable tool to release the bracket.

INSTALLATION	
Installation is the reverse order of removal.	

< ON-VEHICLE REPAIR >

ROAD WHEEL TIRE ASSEMBLY

Adjustment

INFOID:000000003070223

WHEEL BALANCE

- 1. Remove inner and outer balance weights from the wheel. CAUTION:
 - Be careful not to scratch the wheel during removal procedures.
- 2. Using releasing agent, remove double-faced adhesive tape from the wheel. **CAUTION:**
 - Be careful not to scratch the wheel during removal.
 - After removing double-faced adhesive tape, wipe clean traces of releasing agent from the wheel.
- 3. Set wheel on wheel balancer using the center hole as a guide. Start the tire balance machine.
 - If a tire balance machine has adhesion balance weight mode settings and drive-in weight mode setting, select and adjust a drive-in weight mode suitable for wheels.
- 4. When inner and outer unbalance values are shown on the wheel balancer indicator, multiply outer unbalance value by 1.6 to determine balance weight that should be used. Select the outer balance weight with a value closest to the calculated value and install it to the designated outer position of, or at the designated angle in relation to the road wheel. CAUTION:
 - Do not install the inner balance weight before installing the outer balance weight.
 - Before installing the balance weight, be sure to clean the mating surface of the wheel.

Indicated unbalance value \times 5/3 = balance weight to be installed Calculation example:

23 g (0.81 oz.) \times 5/3 = 38.33 g (1.35 oz.) = 40 g (1.41 oz.) balance weight (closer to calculated balance weight value)

Note that balance weight value must be closer to the calculated balance weight value. Example:

37.4 g = 35 g (1.23 oz.) 37.5 g = 40 g (1.41 oz.)

- a. Install balance weight in the position shown.
- b. When installing balance weight to wheels, set it into the grooved area on the inner wall of the wheel as shown so that the balance weight center is aligned with the wheel balancer indication position (angle).

CAUTION:

- Always use genuine NISSAN adhesion balance weights.
- Balance weights are not reusable; always replace with new ones.
- Do not install more than three sheets of balance weight.





ROAD WHEEL TIRE ASSEMBLY

< ON-VEHICLE REPAIR >

 c. If calculated balance weight value exceeds 50 g (1.76 oz.), install two balance weight sheets in line with each other as shown.
 CAUTION:

Do not install one balance weight sheet on top of another.

- 5. Start wheel balancer again.
- Install drive-in balance weight on inner side of road wheel in the wheel balancer indication position (angle).
 CAUTION:

Do not install more than two balance weights.

7. Start wheel balancer. Make sure that inner and outer residual unbalance values are 5 g (0.18 oz.) each or below.

• If either residual unbalance value exceeds 5 g (0.18 oz.), repeat installation procedures. Wheel balance (Maximum allowable unbalance):

Maximum allowable un- balance	Dynamic (At rim flange)	5 g (0.18 oz.) (one side)
	Static	10 g (0.35 oz.)

TIRE ROTATION

- Follow the maintenance schedule for tire rotation service intervals. Refer to <u>MA-4</u>, "Explanation General <u>Maintenance</u>".
- Do not include the T-type spare tire when rotating the tires. CAUTION:
- When installing wheels, tighten them diagonally by dividing the work two to three times in order to prevent the wheels from developing any distortion.
- Be careful not to tighten wheel nut at torque exceeding the criteria for preventing strain of disc rotor.

Tightening torque of : 112 N·m (11 kg-m, 83 ft-lb) wheel nut



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< REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION TRANSMITTER

Removal and Installation

INFOID:000000003070224

REMOVAL

- 1. Deflate tire. Unscrew transmitter retaining nut and allow transmitter to fall into tire.
- 2. Gently bounce tire so that transmitter falls to bottom of tire. Place on tire changing machine and break both tire beads ensuring that the transmitter remains at the bottom of the tire.

- Turn tire so that valve hole is at bottom and bounce so that transmitter is near valve hole. Carefully lift tire onto turntable and position valve hole (and transmitter) 270 degree from mounting/ dismounting head.
- 4. Lubricate tire well and remove first side of the tire. Reach inside the tire and remove the transmitter.





INSTALLATION

1. Put first side of tire onto rim.



 Mount transmitter on rim and tighten nut.
 CAUTION: Speed for tightening nut should be less than 10 rpm.

Transmitter nut : 7.65 N·m (0.78 kg-m, 68 in-lb)



TRANSMITTER

< REMOVAL AND INSTALLATION >

 Place wheel on turntable of tire machine. Ensure that transmitter is 270 degree from mounting head when second side of tire is fitted.
 NOTE:

Do not touch transmitter at mounting head.

- 4. Lubricate tire well and fit second side of tire as normal. Ensure that tire does not rotate relative to rim.
- 5. Inflate tire and fit to appropriate wheel position.



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SERVICE DATA AND SPECIFICATIONS (SDS)

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SERVICE DATA AND SPECIFICATIONS (SDS) SERVICE DATA AND SPECIFICATIONS (SDS)

Road Wheel

INFOID:000000003070225

Standard item		Allowable value	
Maximum radial runout limit	Lateral deflection	Less than 0.3 mm (0.012 in)	
	Radial deflection	Less than 0.3 mm (0.012 in)	
Maximum allowable unbalance	Dynamic (At rim flange)	Less than 5 g (0.18 oz) (one side)	
	Static (At rim flange)	Less than 10 g (0.35 oz)	

Tire

INFOID:000000003070226

Unit: kPa (kg/cm², psi)

	Air pressure	
	Front tire	Rear tire
215/60R16	240 (2.45, 34.8)	240 (2.45, 34.8)
T135/90R16	420 (4.2, 60)	420 (4.2, 60)