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WT

SECTION

ROAD WHEELS & TIRES

CONTENTS

WT

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PREPARATION

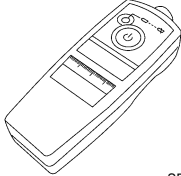
PREPARATION

PF0:00002

Special Service Tools

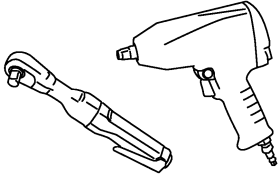
EES000CZ

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
(J45295) Transmitter activation tool  SEIA0462E	ID registration

Commercial Service Tools

EES000N6

Tool name	Description
Power tool  PBIC0190E	Removing wheel nuts

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

PPF:00003

NVH Troubleshooting Chart

EES000D6

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

Reference page		WT-4	—	—	—	—	—	—	NVH in PR section.	NVH in RFD section.	NVH in FAX and FSU sections.	NVH in RAX and RSU sections.	Refer to TIRES in this chart.	Refer to ROAD WHEEL in this chart.	NVH in RAX section.	NVH in BR section.	NVH in PS section.	
Possible cause and SUSPECTED PARTS		Out-of-round	Imbalance	Incorrect tire pressure	Uneven tire wear	Deformation or damage	Non-uniformity	Incorrect tire size	PROPELLER SHAFT	DIFFERENTIAL	FRONT AXLE AND FRONT SUSPENSION	REAR AXLE AND REAR SUSPENSION	TIRES	ROAD WHEEL	DRIVE SHAFT	BRAKE	STEERING	
Symptom	TIRES	Noise	x	x	x	x	x		x	x	x	x		x	x	x	x	
		Shake	x	x	x	x	x		x	x	x	x		x	x	x	x	
		Vibration			x				x	x		x	x			x		x
		Shimmy	x	x	x	x	x	x	x			x	x		x		x	x
	Judder	x	x	x	x	x		x			x	x		x		x	x	
	Poor quality ride or handling	x	x	x	x	x		x			x	x		x				
	ROAD WHEEL	Noise	x	x			x			x	x	x	x	x		x	x	x
		Shake	x	x			x			x		x	x	x		x	x	x
Shimmy, judder		x	x			x					x	x	x			x	x	
Poor quality ride or handling		x	x			x					x	x	x					

x: Applicable

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ROAD WHEEL

ROAD WHEEL

PFP:40300

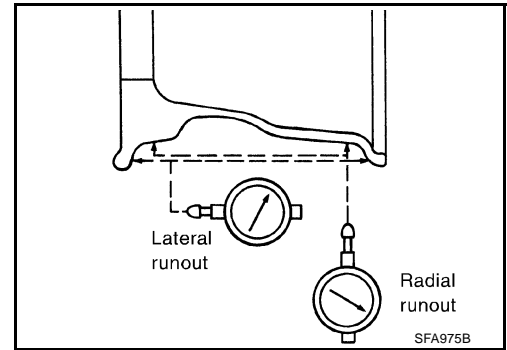
Inspection ALUMINUM WHEEL

EES000D1

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 illustration.

Wheel runout (Dial indicator value):

Refer to [WT-28, "SERVICE DATA"](#)



STEEL WHEEL

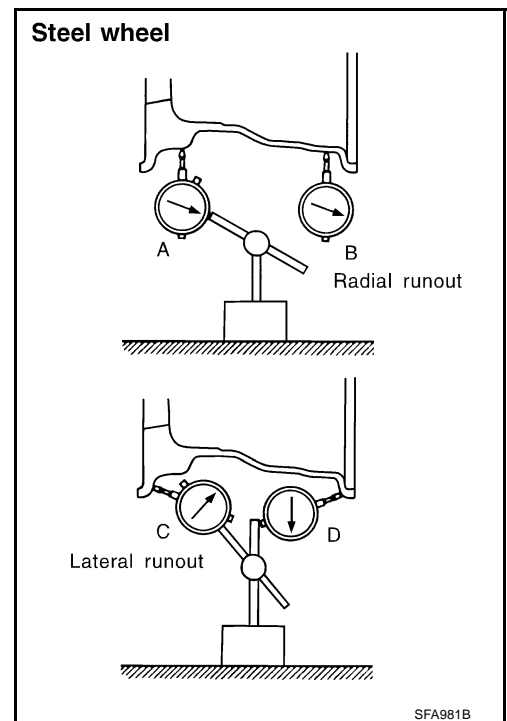
1. Check tires for wear and improper inflation.
2. Check wheels for deformation, cracks and other damage. If deformed, remove wheel and check wheel runout.
 - a. Remove tire from steel wheel and mount wheel on a tire balance machine.
 - b. Set two dial indicators as shown in the illustration.
 - c. Set each dial indicator to 0.
 - d. Rotate wheel and check dial indicators at several points around the circumference of the wheel.
 - e. Calculate runout at each point as shown below.

Radial runout = (A+B)/2

Lateral runout = (C+D)/2

- f. Select maximum positive runout value and the maximum negative value. Add the two values to determine total runout. In case a positive or negative value is not available, use the maximum value (negative or positive) for total runout. If the total runout value exceeds the limit, replace steel wheel.

Wheel runout : Refer to [WT-28, "SERVICE DATA"](#)



ROAD WHEEL TIRE ASSEMBLY

ROAD WHEEL TIRE ASSEMBLY

PPF:40300

Balancing Wheels (Bonding Weight Type) REMOVAL

EES000W3

1. Remove inner and outer balance weights from the road wheel.

CAUTION:

Be careful not to scratch the road wheel during removal.

2. Using releasing agent, remove double-faced adhesive tape from the road wheel.

CAUTION:

- **Be careful not to scratch the road wheel during removal.**
- **After removing double-faced adhesive tape, wipe clean traces of releasing agent from the road wheel.**

WHEEL BALANCE ADJUSTMENT

- 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 road wheels.

1. Set road wheel on wheel balancer using the center hole as a guide. Start the tire balance machine.
2. When inner and outer unbalance values are shown on the wheel balancer indicator, multiply outer unbalance value by $5/3$ to determine balance weight that should be used. Select the outer balance weight with a value closest to the calculated value above 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 road wheel.**

Indicated unbalance value $\times 5/3$ = balance weight to be installed

Calculation example:

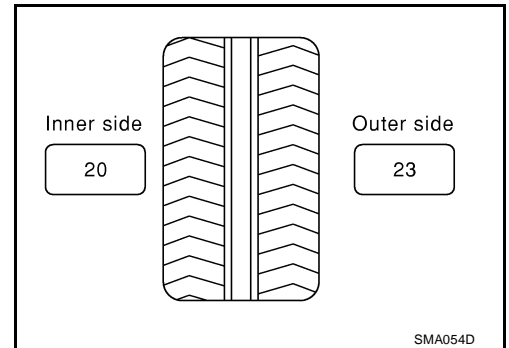
$23 \text{ g (0.81 oz)} \times 5/3 = 38.33 \text{ g (1.35 oz)} = 40 \text{ g (1.41 oz)}$ balance weight (closer to calculated balance weight value)

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

Example:

$37.4 = 35 \text{ g (1.23 oz)}$

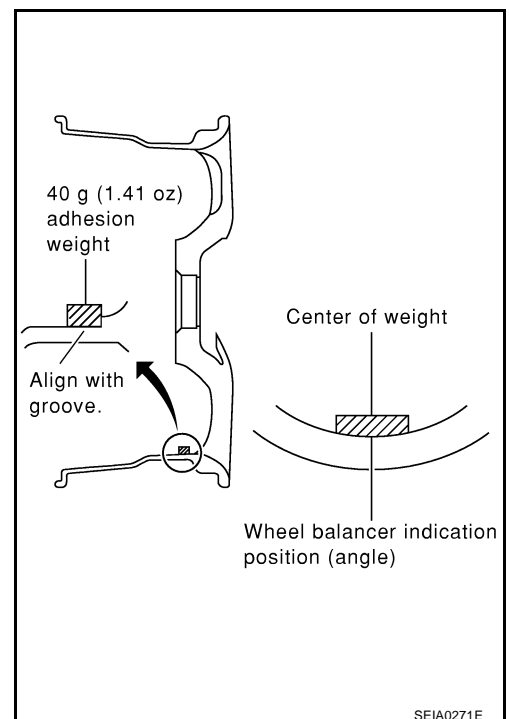
$37.5 = 40 \text{ g (1.41 oz)}$



- a. Install balance weight in the position shown in the figure at left.
- b. When installing balance weight to road wheels, set it into the grooved area on the inner wall of the road wheel as shown in the figure 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 non-reusable; always replace with new ones.**
- **Do not install more than three sheets of balance weight.**



ROAD WHEEL TIRE ASSEMBLY

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

CAUTION:

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

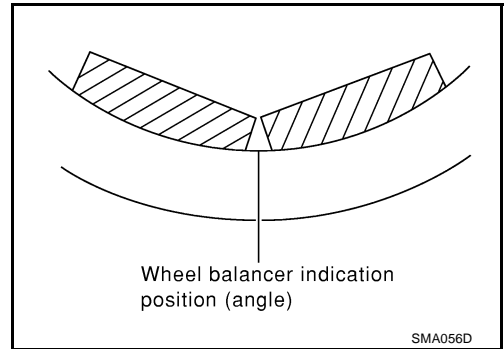
3. Start wheel balancer again.
 4. Install drive-in balance weight on inner side of road wheel in the wheel balancer indication position (angle).

CAUTION:

Do not install more than two balance weights.

5. Start wheel balancer. Make sure that inner and outer residual unbalance values are 10 g (0.35 oz) each or below.
- If either residual unbalance value exceeds 10 g (0.35 oz), repeat installation procedures.

Wheel balance (Maximum allowable unbalance):



Maximum allowable unbalance	Dynamic (At rim flange)	10 g (0.35 oz) (one side)
	Static	20 g (0.71 oz)

Rotation

EES000D5

- Do not include the 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.

Tightening torque of wheel nut :98 - 118 N-m (10 - 12 kg-m, 72 - 87 ft-lb)

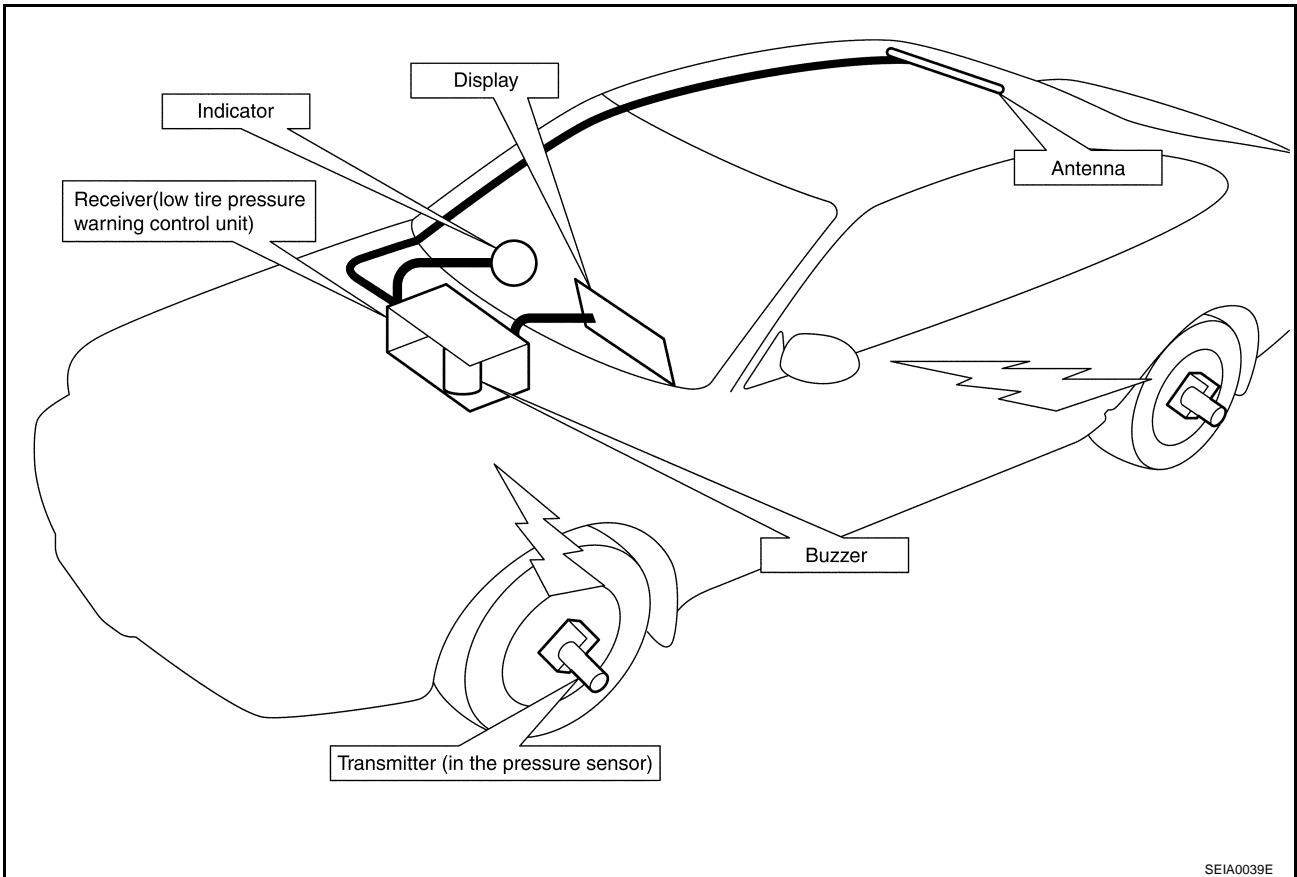
LOW TIRE PRESSURE WARNING SYSTEM

LOW TIRE PRESSURE WARNING SYSTEM

PFP:40300

System Components

EES000DB

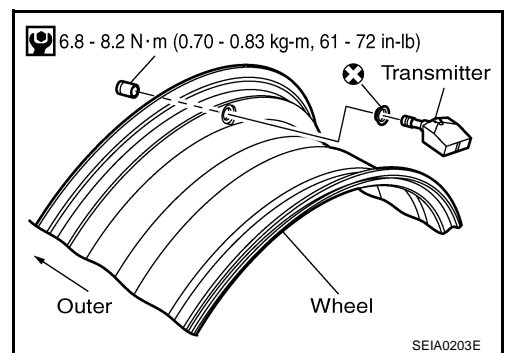


SEIA0039E

System Description TRANSMITTER

EES000DC

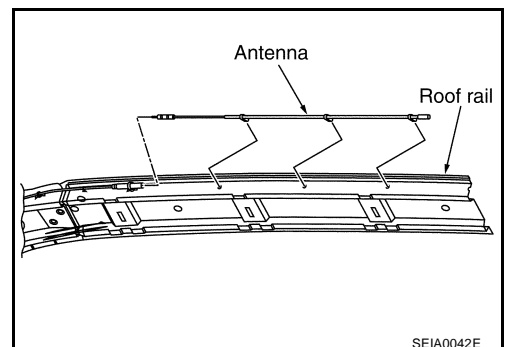
A sensor-transmitter integrated with a valve is installed on a wheel, and transmits a detected air pressure signal in the form of a radio wave.



SEIA0203E

ANTENNA

Receives the radio wave signal transmitted by the transmitter.



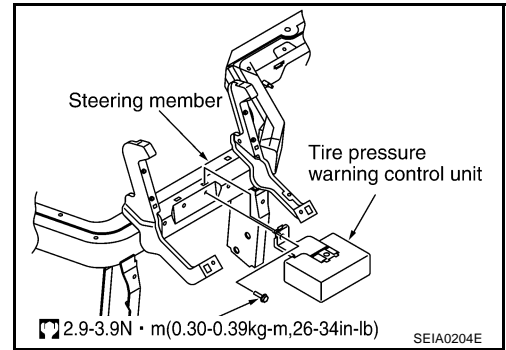
SEIA0042E

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LOW TIRE PRESSURE WARNING SYSTEM

TIRE PRESSURE WARNING CONTROL UNIT

Reads the radio wave signal received by the antenna, and controls the warning lamp and the buzzer operations as shown below. It also has a judgement function to detect a system malfunction.

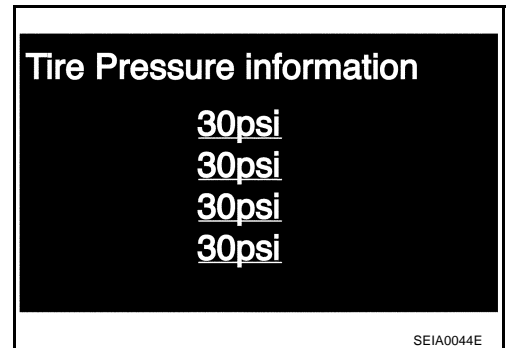


Condition	Warning lamp	Buzzer
Less than 190 kPa (1.9 kg/cm ² , 27 psi) [Flat tire]	ON	Sounds for 10 sec.
System malfunction	ON	OFF

VEHICLE INFORMATION DISPLAY

Displays the air pressure of each tire.

- After the ignition switch is turned ON, the pressure values are not be displayed until the data of all four wheels stabilizes.



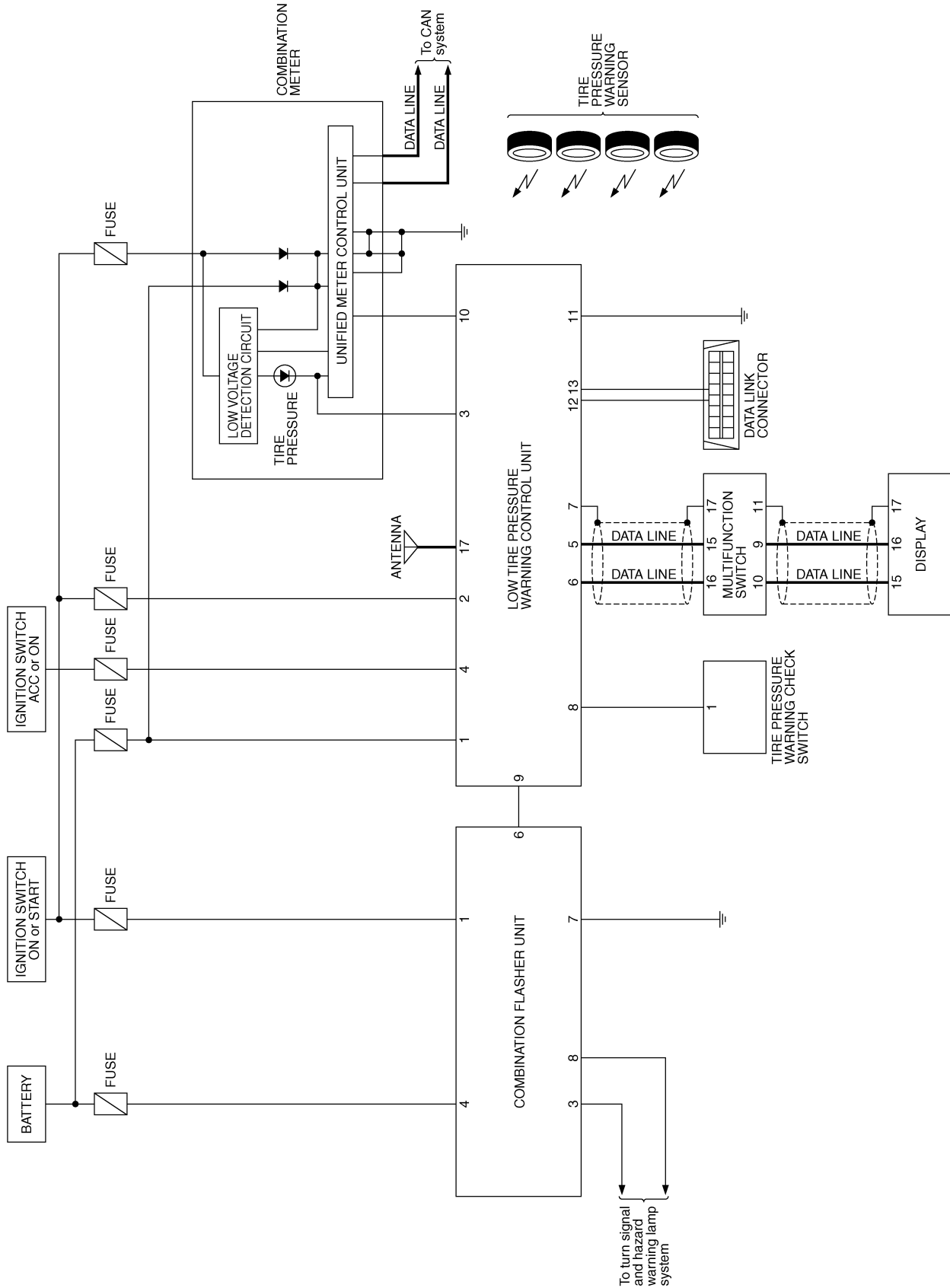
TROUBLE DIAGNOSES

TROUBLE DIAGNOSES

Wiring Diagram

PFP:00004

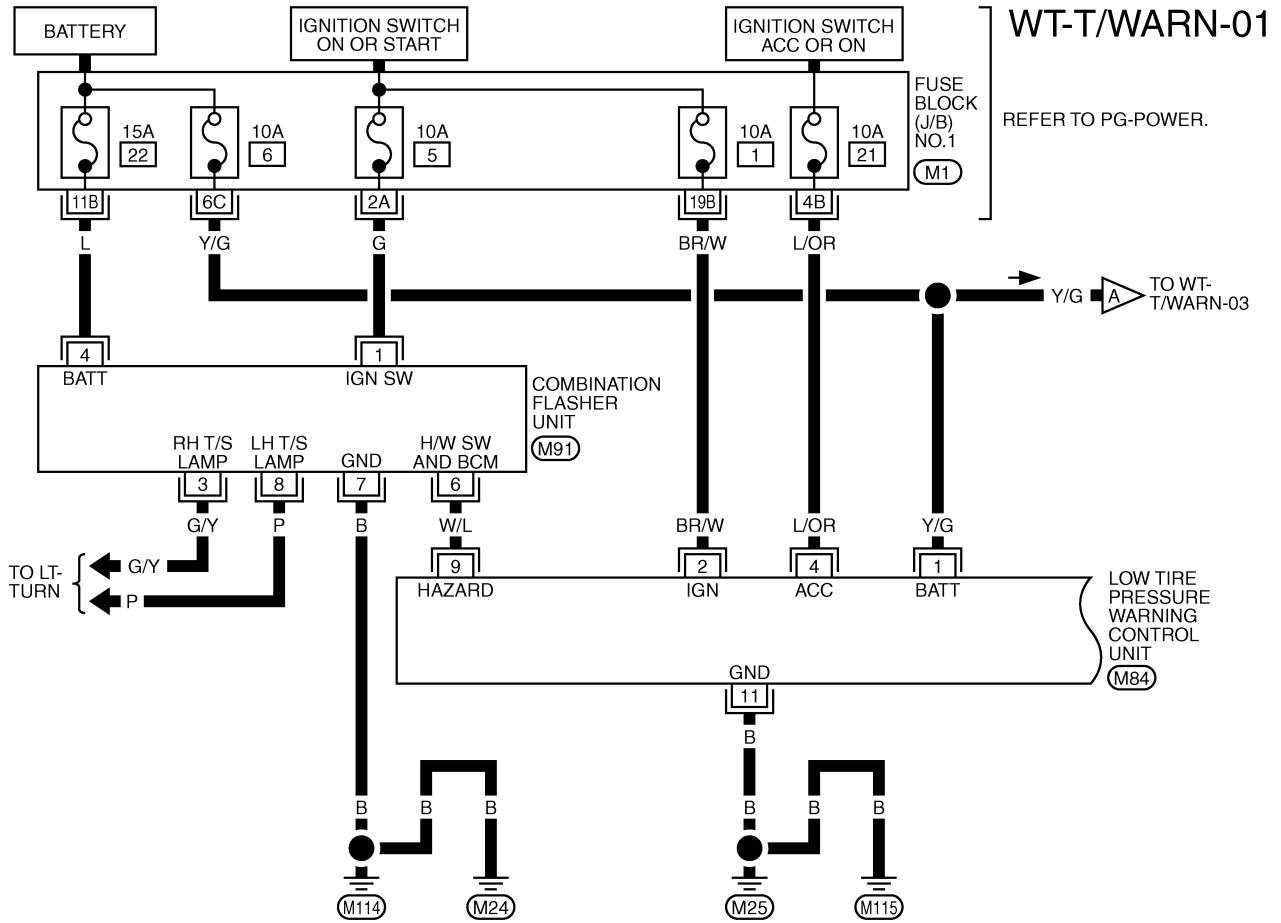
EES000EN



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TEWM0092E

TROUBLE DIAGNOSES



7	6	5	4	3	2	1
16	15	14	13	12	11	10

(M84) W

3	2	1
8	7	6

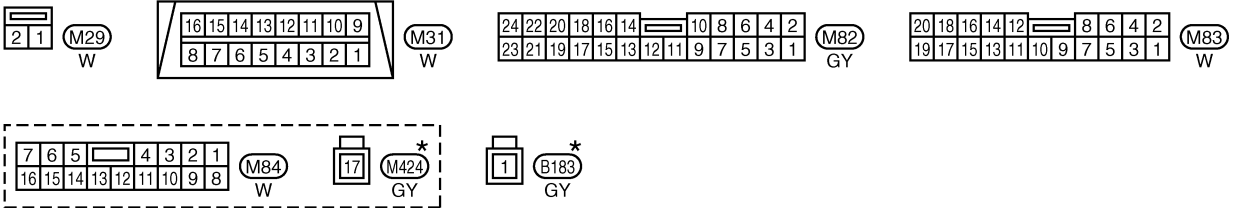
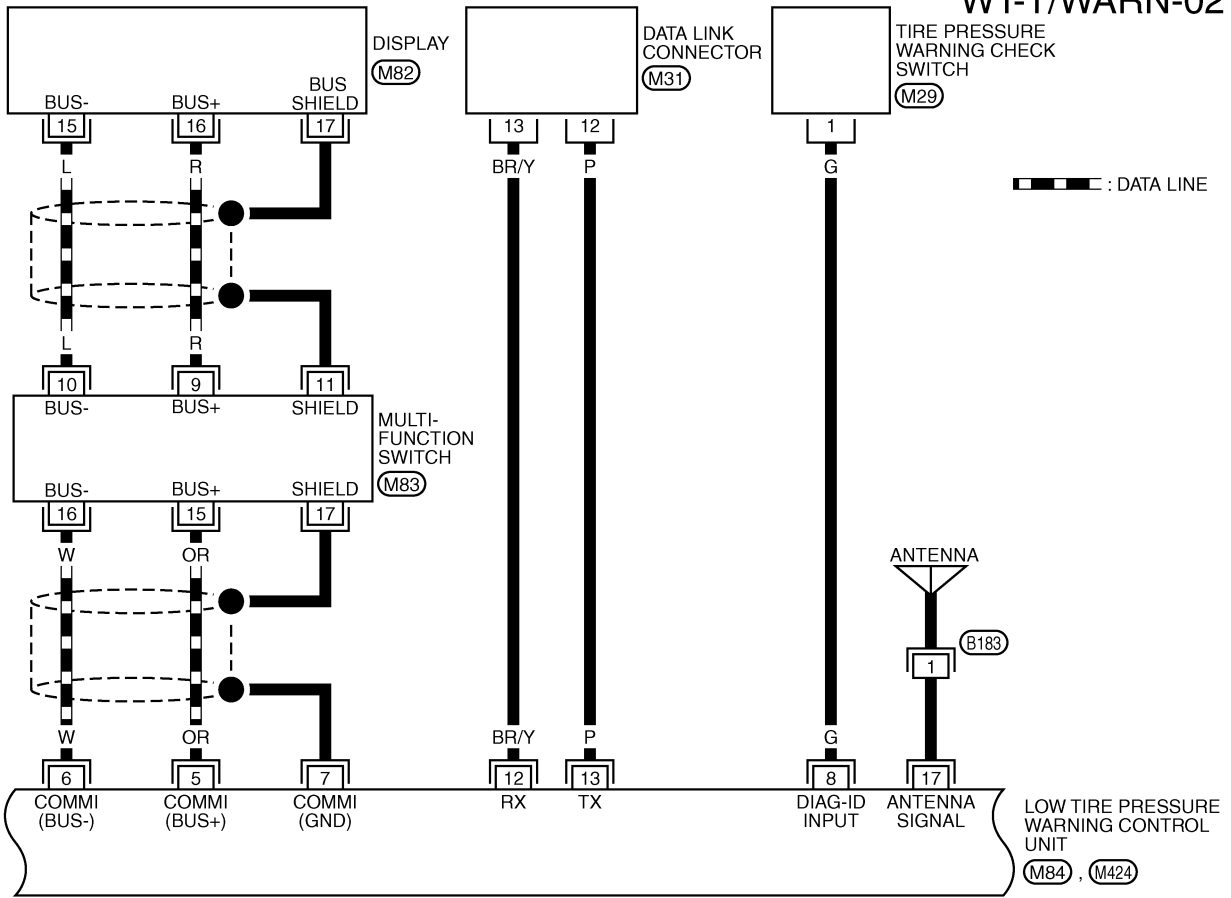
(M91) W

REFER TO THE FOLLOWING.
(M1) - FUSE BLOCK-JUNCTION BOX (J/B) NO.1

TEWM0080E

TROUBLE DIAGNOSES

WT-T/WARN-02

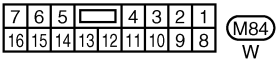
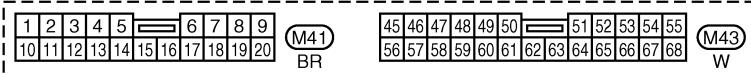
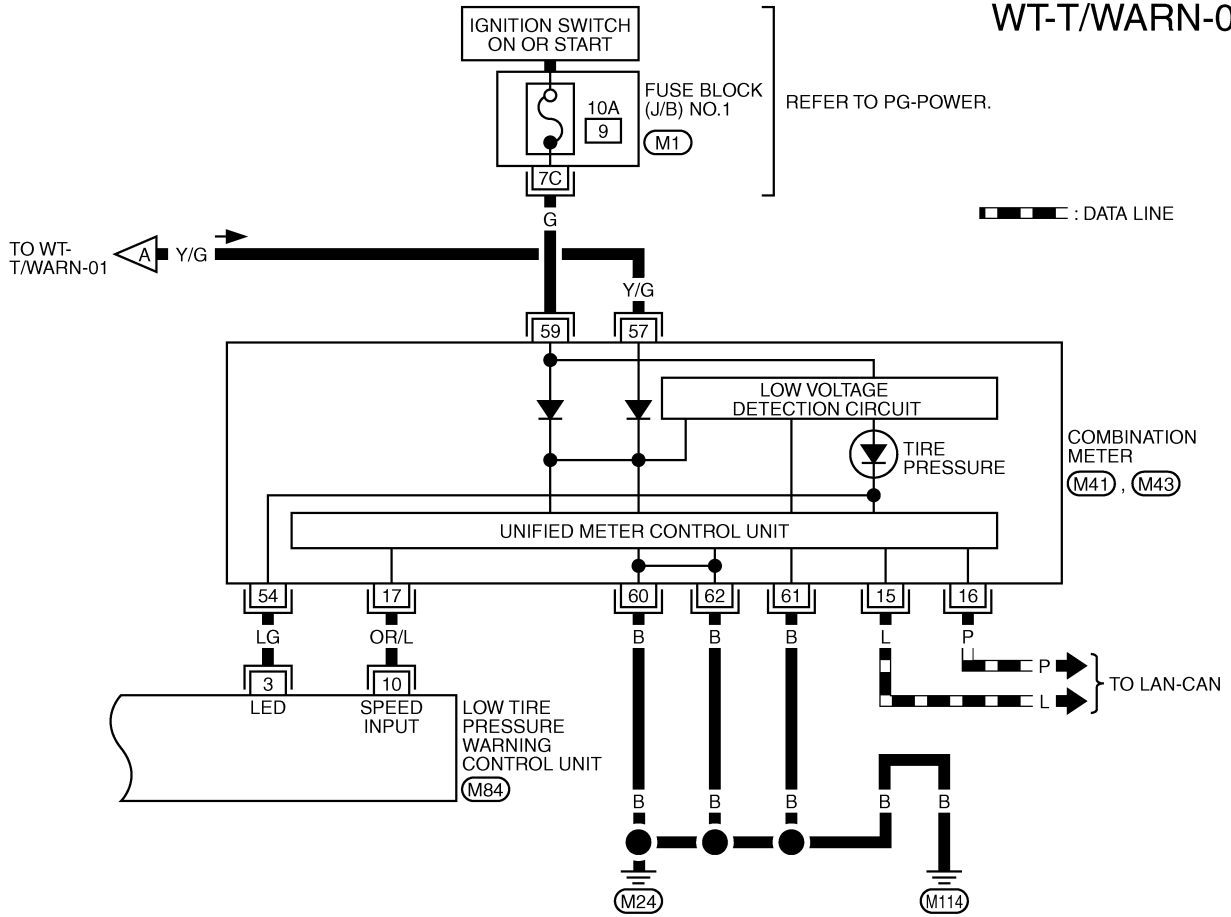


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TEWM0081E

TROUBLE DIAGNOSES

WT-T/WARN-03



REFER TO THE FOLLOWING.

(M1) - FUSE BLOCK-JUNCTION BOX (J/B) NO.1

TEWM0082E

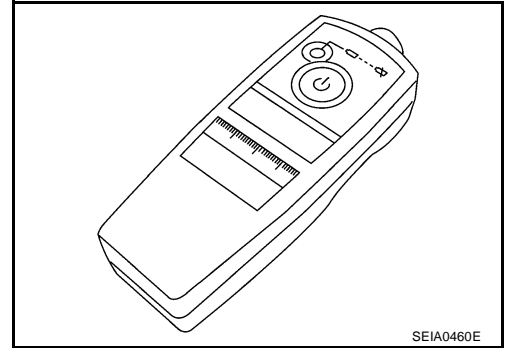
TROUBLE DIAGNOSES

ID Registration Procedure

EES000EO

ID REGISTRATION WITH TRANSMITTER ACTIVATION TOOL

1. Turn ignition switch "OFF".
2. Connect CONSULT-II to data link connector.
3. Touch "START", "AIR PRESSURE MONITOR", "WORK SUPPORT" and "ID REGIST".
4. With the transmitter activation tool (J-45295) pushed against the front-left transmitter, press the button then keep 5 seconds.



5. Register the IDs in order from FR LH, FR RH, RR RH, to RR LH. When ID registration of each wheel has been completed, a buzzer sounds and hazard warning lamp blinks.

Activation tire position	Buzzer	Hazard warning lamp	CONSULT-II
1 FR LH	Once	2 times flashing	"YET" ↓ "DONE"
2 FR RH	2 times		
3 RR RH	3 times		
4 RR LH	4 times		

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

NOTE:

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

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TROUBLE DIAGNOSES

ID REGISTRATION WITHOUT TRANSMITTER ACTIVATION TOOL

1. Turn ignition switch "OFF".
2. Connect CONSULT-II to data link connector.
3. Touch "START", "AIR PRESSURE MONITOR", "WORK" SUPPORT" and "ID REGIST".
4. Adjust the tire pressure to the values shown in the table below for ID registration, and drive the vehicle at 15 km/h (9.4 MPH) or more for a few minutes.

Tire position	Tire pressure kPa (kg/cm ² , psi)
Front-Left	250 (2.5, 36)
Front-Right	230 (2.3, 33)
Rear-Right	210 (2.1, 30)
Rear-Left	190 (1.9, 27)

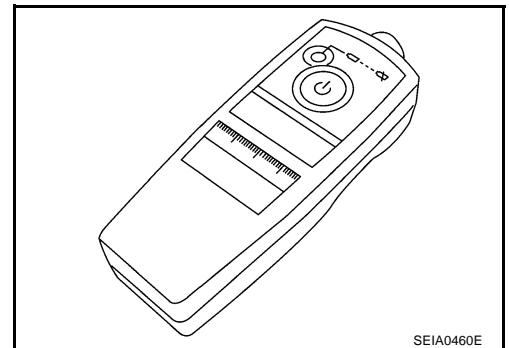
5. After completing all ID registrations, press "END" to complete the procedure.

Activation tire position	CONSULT-II
FR LH	"YET" ↓ "DONE"
FR RH	
RR RH	
RR LH	

Transmitter Wake Up Operation WITH TRANSMITTER ACTIVATION TOOL

EES000W2

1. With the transmitter activation tool (J-45295) pushed against the front-left transmitter, press the button then keep 5 seconds.
 - When ignition switch ON, then warning lamp is blinks as follow diagram transmitter must be waken up.



2. Register the IDs in order from FR LH, FR RH, RR RH or RR LH. When ID registration of each wheel has been completed, a hazard warning lamp blinks.

	Warning lamp blinking timing	Need to activation tire position	Hazard warning lamp
1		a : 0.3sec b : 1.3sec	2 time flashing
2		a : 0.3sec b : 1.3sec	
3		a : 0.3sec b : 1.3sec	
4		a : 0.3sec b : 1.3sec	
5		a : 2sec b : 0.2sec	

SEIA0351E

3. After completing wake up of all transmitters, make sure tire pressure warning lamp go out.

TROUBLE DIAGNOSES

EES000EP

Self-Diagnosis

DESCRIPTION

During driving, the low tire pressure warning system receives the signal transmitted from the transmitter installed in each wheel, and gives alarms when the tire pressure becomes low. The control unit of this system has pressure judgement and trouble diagnosis functions.

FUNCTION

When the low tire pressure warning system detects low inflation pressure or another unusual symptom, the warning lamps on the instrument panel comes on. To start the self-diagnostic results mode, ground the self-diagnostic (check) terminal. The malfunction location is indicated by the warning lamp flashing and the buzzer sounds.

CONSULT-II

CONSULT-II Application to Low Tire Pressure Warning System

ITEM	SELF-DIAGNOSTIC RESULTS	DATA MONITOR
Front - Left transmitter	×	×
Front - Right transmitter	×	×
Rear - Left transmitter	×	×
Rear - Right transmitter	×	×
Warning lamp	—	×
Vehicle speed	—	×
Buzzer (in control unit)	—	×

×: Applicable

—: Not applicable

Self-Diagnostic Results Mode

Diagnostic item	Diagnostic item is detected when ...
FLAT - TIRE - FL FLAT - TIRE - FR FLAT - TIRE - RR FLAT - TIRE - RL	Front-left tire pressure drops to 190kPa(1.9kg/cm ² , 27psi) or less Front-right tire pressure drops to 190kPa(1.9kg/cm ² , 27psi) or less Rear-right tire pressure drops to 190kPa(1.9kg/cm ² , 27psi) or less Rear-left tire pressure drops to 190kPa(1.9kg/cm ² , 27psi) or less
[NO-DATA] - FL [NO-DATA] - FR [NO-DATA] - RR [NO-DATA] - RL	Data from front-left transmitter cannot be received. Data from front-right transmitter cannot be received. Data from rear-right transmitter cannot be received. Data from rear-left transmitter cannot be received.
[CHECKSUM- ERR] - FL [CHECKSUM- ERR] - FR [CHECKSUM- ERR] - RR [CHECKSUM- ERR] - RL	Checksum data from front-left transmitter is malfunctioning. Checksum data from front-right transmitter is malfunctioning. Checksum data from rear-right transmitter is malfunctioning. Checksum data from rear-left transmitter is malfunctioning.
[PRESSDATA- ERR] - FL [PRESSDATA- ERR] - FR [PRESSDATA- ERR] - RR [PRESSDATA- ERR] - RL	Air pressure data from front-left transmitter is malfunctioning. Air pressure data from front-right transmitter is malfunctioning. Air pressure data from rear-right transmitter is malfunctioning. Air pressure data from rear-left transmitter is malfunctioning.
[CODE- ERR] - FL [CODE- ERR] - FR [CODE- ERR] - RR [CODE- ERR] - RL	Function code data from front-left transmitter is malfunctioning. Function code data from front-right transmitter is malfunctioning. Function code data from rear-right transmitter is malfunctioning. Function code data from rear-left transmitter is malfunctioning.
[BATT - VOLT - LOW] - FL [BATT - VOLT - LOW] - FR [BATT - VOLT - LOW] - RR [BATT - VOLT - LOW] - RL	Battery voltage of front-left transmitter drops. Battery voltage of front-right transmitter drops. Battery voltage of rear-right transmitter drops. Battery voltage of rear-left transmitter drops.
RECEIVER - ID - NO - REG	No ID registration has been made to the low tire pressure warning control unit.

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-II.

TROUBLE DIAGNOSES

Data Monitor Mode

MONITOR	CONDITION	SPECIFICATION
VEHICLE SPEED	Drive vehicle.	Vehicle speed (km/h or MPH)
PRESSURE FL PRESSURE FR PRESSURE RR PRESSURE RL	<ul style="list-style-type: none"> ● Drive vehicle for a few minutes. or ● Ignition switch ON and activation tool is transmitting activate signals. 	Tire pressure (kPa or Psi)
ID FL ID FR ID RR ID RL	Ignition switch ON	Registration ID: DONE No registration ID: YET
WARNING LAMP		Warning lamp on: ON Warning lamp off: OFF
BUZZER		Buzzer in Low tire pressure warning control unit on: ON Buzzer in Low tire pressure warning control unit 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-II.

TROUBLE DIAGNOSES

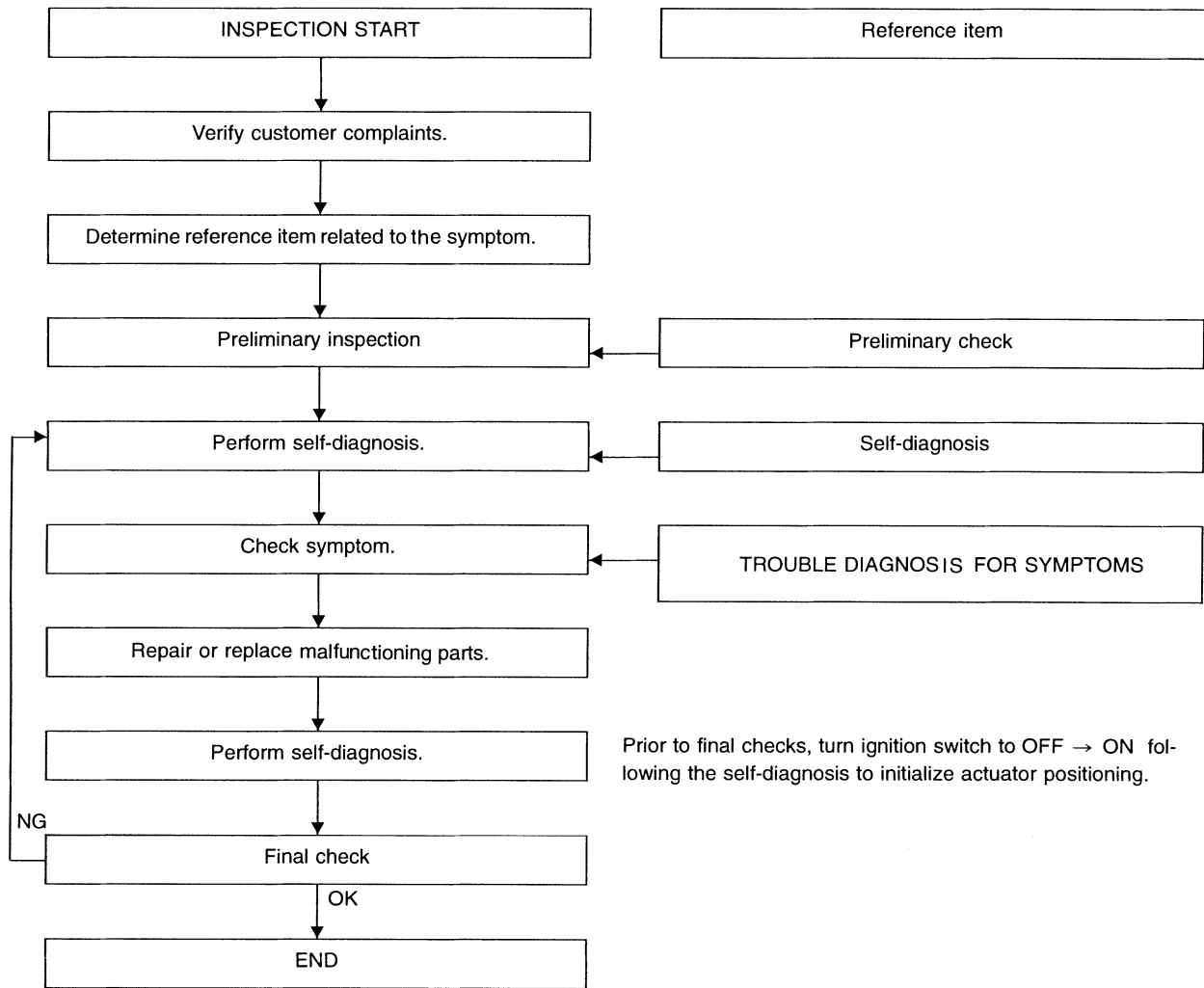
How to Perform Trouble Diagnosis for Quick and Accurate Repair

EES000DF

INTRODUCTION

- Before troubleshooting, verify customer complaints.
- If a vehicle problem is hard to reproduce, harnesses, harness connectors or terminals may often be malfunctioning. Hold and shake these parts by hand to make sure they are securely connected.
- When using a circuit tester to measure voltage or resistance of each circuit, be careful not to expand connector terminals.

WORK FLOW



SEIA0100E

Preliminary Check

BASIC INSPECTION

1. CHECK ALL TIRES PRESSURES

- Check all tires pressures.

Tire pressure: **230 kPa (2.3 kg/cm² , 33 psi)**

Tire pressure is OK?

OK >> GO TO 2.

NG >> Adjust tire pressure to specified value. GO TO 2.

2. CHECK WARNING LAMP ACTIVATION

- Check warning lamp activation.
- Does warning lamp activate for 1 second when ignition switch is turned "ON"?

OK or NG?

OK >> GO TO 3.

NG >> Check fuse and combination meter. Then repair or replace malfunctioning parts.

3. CHECK CONNECTOR

1. Disconnect low tire pressure warning control unit harness connector.
2. Check pin terminals for damage.
3. Reconnect harness connector.

Inspection results OK?

OK >> GO TO 4.

NG >> Repair or replace damaged parts.

4. CHECK TRANSMITTER ACTIVATION TOOL

- Check transmitter tool battery.

Inspection results OK?

OK >> Carry out self-diagnosis.

NG >> Replace transmitter activation tool battery.

TROUBLE DIAGNOSES

Malfunction Code/Symptom Chart

EES000ER

Code/Symptom	Malfunction part	Reference page
21	Transmitter no data (front - left)	WT-20
22	Transmitter no data (front - right)	
23	Transmitter no data (rear - right)	
24	Transmitter no data (rear - left)	
31	Transmitter checksum error (front - left)	WT-20
32	Transmitter checksum error (front - right)	
33	Transmitter checksum error (rear - right)	
34	Transmitter checksum error (rear - left)	
35	Transmitter pressure data error (front - left)	WT-21
36	Transmitter pressure data error (front - right)	
37	Transmitter pressure data error (rear - right)	
38	Transmitter pressure data error (rear - left)	
41	Transmitter function code error (front - left)	WT-20
42	Transmitter function code error (front - right)	
43	Transmitter function code error (rear - right)	
44	Transmitter function code error (rear - left)	
45	Transmitter battery voltage low (front - left)	WT-20
46	Transmitter battery voltage low (front - right)	
47	Transmitter battery voltage low (rear - right)	
48	Transmitter battery voltage low (rear - left)	
51	Low tire pressure warning control unit	WT-21
Warning lamp does not come on when ignition switch is turned on.	Fuse or combination meter Low tire pressure warning control unit connector or circuit Low tire pressure warning control unit	WT-22
Warning lamp stays on when ignition switch is turned on.	Fuse or combination meter Low tire pressure warning control unit connector or circuit Low tire pressure warning control unit	WT-23
Warning lamp blinks when ignition switch is turned on.	Low tire pressure warning control unit harness connector or circuit Low tire pressure warning control unit Transmitter's mode off ID registration not yet	WT-24
Hazard warning lamp blinks when ignition switch is turned on.	Low tire pressure warning control unit harness connector or circuit Low tire pressure warning control unit	WT-24
"TIRE PRESSURE" information in display does not exist.	Fuse Display Low tire pressure warning control unit	WT-24
ID registration can not be operated.	Transmitter Antenna harness connector or circuit Antenna	WT-25

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TROUBLE DIAGNOSIS FOR SELF-DIAGNOSTIC ITEMS

TROUBLE DIAGNOSIS FOR SELF-DIAGNOSTIC ITEMS

PFP:00000

Inspection 1: Transmitter or Low Tire Pressure Warning Control Unit MALFUNCTION CODE NO. 21, 22, 23 OR 24

EES0012G

1. CHECK CONTROL UNIT

- Drive for several minutes. Check all tires' pressure with CONSULT-II "DATA MONITOR ITEM".

Are all tires' pressure displayed 0 kPa?

- YES >> GO TO 2.
NO >> GO TO 3.

2. CHECK ANTENNA CONNECTOR

- Check antenna and feeder connector M424 for damage or loose connections.

OK or NG

- OK >> Replace control unit, then GO TO 3.
NG >> Repair or replace antenna or feeder connector.

3. ID REGISTRATION

- Carry out ID registration of all transmitters.

Is there a tire that cannot register ID?

- YES >> Replace transmitter of the tire, then GO TO 5.
NO >> GO TO 4.

4. VEHICLE DRIVING

- Drive at a speed of 40 km/h (25 MPH) or more for several minutes without stopping.
Check all tires' pressure with CONSULT-II "DATA MONITOR ITEM" within 15 minutes after vehicle speed becomes 17 km/h (11 MPH).

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

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

5. ID REGISTRATION AND VEHICLE DRIVING

1. Carry out ID registration of all transmitters.
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. Then check all tires' pressure with CONSULT-II "DATA MONITOR ITEM" within 5 minutes.

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

- YES >> INSPECTION END.
NO >> GO TO the inspection applicable to DTC.

Inspection 2: Transmitter - 1

MALFUNCTION CODE NO. 31, 32, 33, 34, 41, 42, 43, 44, 45, 46, 47 OR 48

EES0012H

1. ID REGISTRATION (CORRECTION OF TRANSMITTER LOCATION)

1. Carry out ID registration of all transmitters.
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. Then check all tires' pressure with CONSULT-II "DATA MONITOR ITEM" within 5 minutes.

>> GO TO 2.

TROUBLE DIAGNOSIS FOR SELF-DIAGNOSTIC ITEMS

2. REPLACE TRANSMITTER

1. Check warning lamp for blink again, replace malfunctioning transmitter.
2. Carry out ID registration of all transmitter.

Can ID registration of all transmitters be completed?

- YES >> GO TO 3.
NO >> GO TO the inspection 1.

3. VEHICLE DRIVING

- 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. Then check all tires' pressure with CONSULT-II "DATA MONITOR ITEM" within 5 minutes.

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

- YES >> INSPECTION END.
NO >> Replace malfunctioning transmitter, and perform "Step 3" again.

Inspection 3: Transmitter - 2 MALFUNCTION CODE NO. 35, 36, 37 OR 38

EES0012I

1. CHECK ALL TIRE PRESSURE

- Check all tire pressures.

Tire pressure : 230 kPa (2.3 kg/m² , 33 psi)

Are there any tires' which pressure is "64 psi" or more?

- YES >> GO TO 2.
NO >> Adjust tire pressure to specified value.

2. VEHICLE DRIVING

1. Carry out ID registration of all transmitters.
2. Drive at a speed of 40 km/h (25 MPH) or more for several minutes without stopping. Check all tires' pressure with CONSULT-II "DATA MONITOR ITEM" within 15 minutes after vehicle speed become 17 km/h (11 MPH).

>> Replace transmitter with new one if "DATA MONITOR ITEM" displayed 64 psi or more. Then GO TO 3.

3. ID REGISTRATION AND VEHICLE DRIVING

- 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. Then check all tires' pressure with CONSULT-II "DATA MONITOR ITEM" within 5 minutes.

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

- YES >> INSPECTION END.
NO >> GO TO the inspection applicable to DTC.

Inspection 4: Low Tire Pressure Warning Control Unit MALFUNCTION CODE NO. 51

EES0012J

1. ID REGISTRATION

1. Carry out ID registration of all transmitters.

Does warning lamp still activate?

- YES >> Replace low tire pressure warning control unit.
NO >> Inspection END.

TROUBLE DIAGNOSIS FOR SYMPTOMS

TROUBLE DIAGNOSIS FOR SYMPTOMS

PFP:00007

Inspection 1: Warning Lamp Does Not Come On When Ignition Switch Is Turned On.

EES000DL

DIAGNOSTIC PROCEDURE

1. CHECK COMBINATION METER

- Check combination meter operation.

Inspection results OK?

OK >> GO TO 2.

NG >> Check combination meter.

2. CHECK WARNING LAMP

- Disconnect low tire pressure warning control unit connector.

Does the warning lamp activate?

YES >> Replace combination meter.

NO >> GO TO 3.

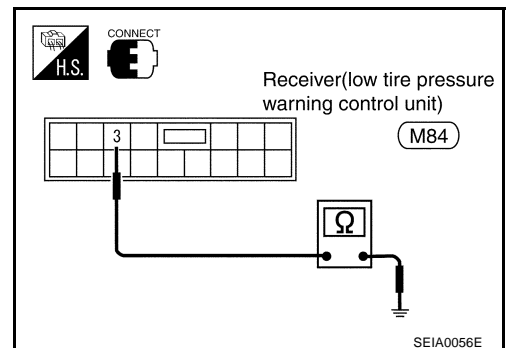
3. CHECK COMBINATION METER CIRCUIT

- Check continuity between low tire pressure warning control unit connector (unit side) terminal 3 and ground.

Does continuity exist?

YES >> Repair or replace harness connector.

NO >> Check combination meter.



TROUBLE DIAGNOSIS FOR SYMPTOMS

Inspection 2: Warning Lamp Stays On When Ignition Switch Is Turned On. EES000DM

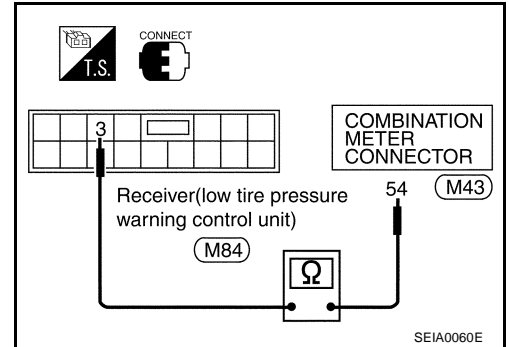
DIAGNOSTIC PROCEDURE

1. CHECK CIRCUIT

- Disconnect combination meter connector M43.
- Check continuity between low tire pressure warning control unit connector (body side) terminal No.3 and combination meter connector (body side) terminal No.54.

OK or NG?

- OK >> GO TO 2.
NG >> Repair or replace harness connector.

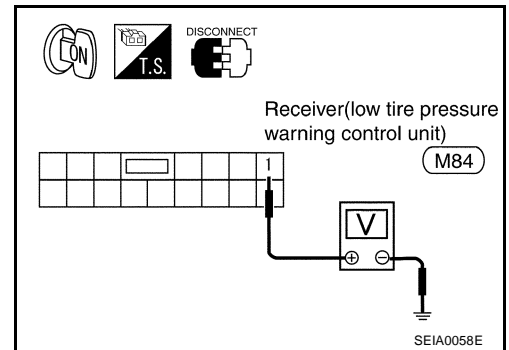


2. CHECK POWER SUPPLY CIRCUIT

- Check voltage between low tire pressure warning control unit terminal No.1 and ground.
- Carry out self-diagnosis again.

Does battery voltage exist when ignition switch is turned "ON"?

- YES >> GO TO 3.
NO >> Repair or replace power supply harness connector.



3. CHECK POWER SUPPLY CIRCUIT

1. Ignition switch is turned "ON".
2. Check voltage between low tire pressure warning control unit terminal 2 and ground.

2 - Ground: Battery voltage

Does battery voltage exist?

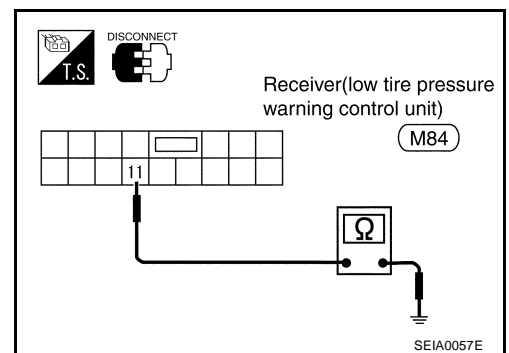
- YES >> GO TO 4.
NO >> Repair or replace harness connector.

4. CHECK GROUND CIRCUIT

- Check continuity between low tire pressure warning control unit terminal No.11 and ground.
- Carry out self-diagnosis again.

Does continuity exist?

- YES >> Replace low tire pressure warning control unit.
NO >> Repair or replace ground circuit harness connector.



TROUBLE DIAGNOSIS FOR SYMPTOMS

Inspection 3: Warning Lamp Blinks When Ignition Switch Is Turned On.

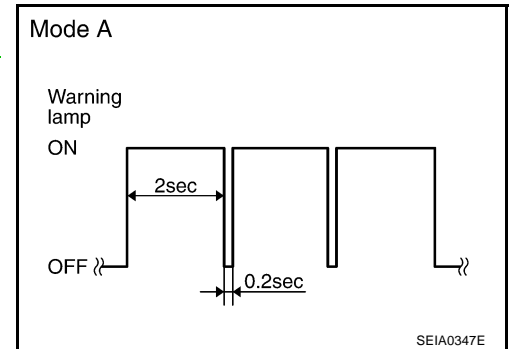
EES000DN

NOTE:

If warning lamp blink below, the system is normal.

Blink Mode A

- This mode shows transmitter status is OFF-mode. Carry out transmitter wake up operation. Refer to [WT-14](#), "[Transmitter Wake Up Operation](#)".



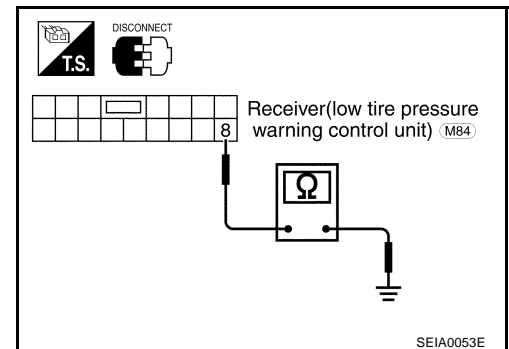
DIAGNOSTIC PROCEDURE

1. CHECK CIRCUIT

- Disconnect low tire pressure warning control unit connector.
- Check continuity between low tire pressure warning control unit connector (body side) terminal No.8 and ground.

Does continuity exist?

- YES >> Repair or replace harness connector.
NO >> Replace low tire pressure warning control unit.



Inspection 4: Hazard Warning Lamp Blinks When Ignition Switch Is Turned On.

EES000DO

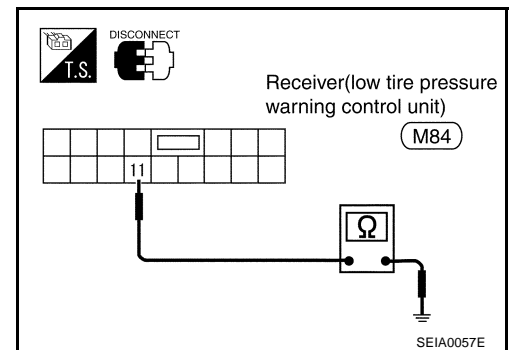
DIAGNOSTIC PROCEDURE

1. CHECK GROUND CIRCUIT

- Check continuity between low tire pressure warning control unit terminal No.11 and ground.
- Carry out self-diagnosis again.

Does continuity exist?

- YES >> Replace low tire pressure warning control unit.
NO >> Repair or replace ground circuit harness connector.



Inspection 5: "TIRE PRESSURE" Information In Display Does Not Exist.

EES000DP

DIAGNOSTIC PROCEDURE

1. CHECK FUSE

- Check 10A fuse No. 21 for low tire pressure warning control unit.

Is fuse OK?

- OK >> GO TO 2.
NG >> Replace fuse.

TROUBLE DIAGNOSIS FOR SYMPTOMS

2. CHECK CIRCUIT

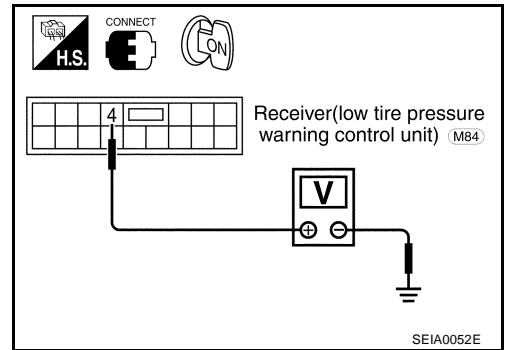
- Ignition switch is turned "ON".
- Check voltage between low tire pressure warning control unit connector M84 terminal 4 and ground.

4 - Ground: Battery voltage

Does battery voltage exist?

YES >> GO TO 3.

NO >> Check tire pressure warning control unit power supply circuit for open or short.



3. CHECK CONTROL INPUT SIGNAL

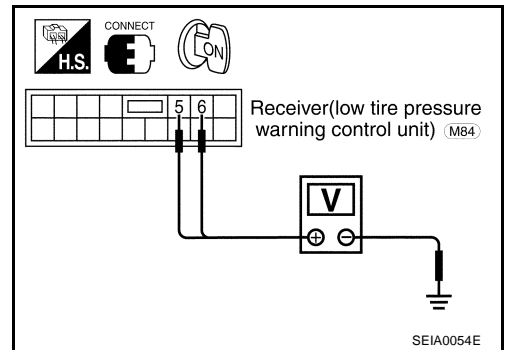
- Ignition switch is turned "ON".
- Check voltage between low tire pressure warning control unit terminal 5 or 6 and ground.

5, 6 - Ground : 0V (Min.) and 5V (Max.) are alternately repeated

Inspection results OK?

OK >> Check multi function switch.

NG >> Check harness for open or short between low tire pressure control unit and multi function switch.



Inspection 6: ID Registration Can Not Be Completed

DIAGNOSTIC PROCEDURE

1. ID REGISTRATION (ALL)

- Carry out ID registration of all transmitter.
- Can ID registration of all transmitter be completed?

YES or NO?

YES >> INSPECTION END.

NO >> Go To Inspection 1: Transmitter or Low Tire Pressure Warning Control Unit.

REMOVAL AND INSTALLATION

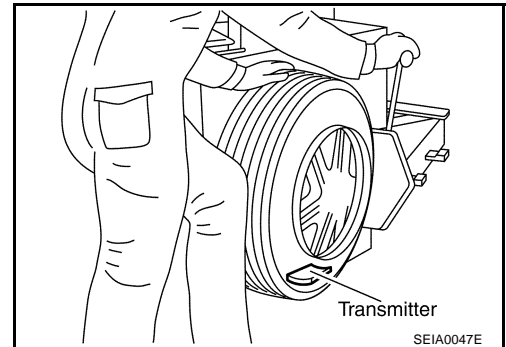
REMOVAL AND INSTALLATION

PFP:00000

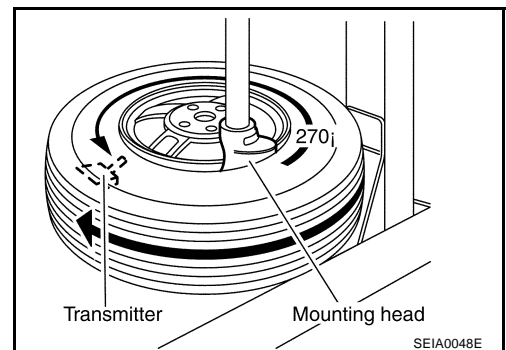
Transmitter REMOVAL

EES000DS

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.

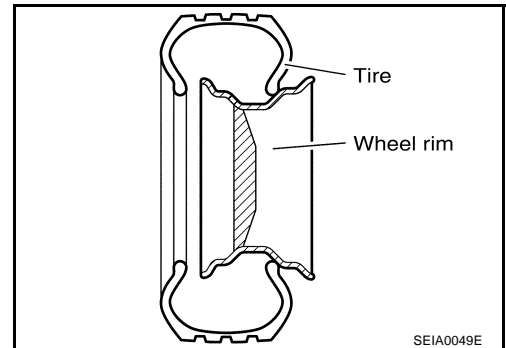


3. Turn tire so that valve hole is at bottom and bounce so that transmitter is near valve hole. Carefully lift tire onto turntable and position valve hole (and transmitter) 270 degree from mounting/dismounting head.
4. Lubricate tire well and remove first side of the tire. Reach inside the tire and remove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

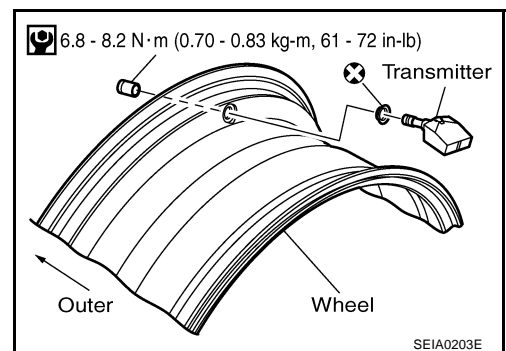


INSTALLATION

1. Put first side of tire onto rim.



2. Mount transmitter on rim and tighten nut.

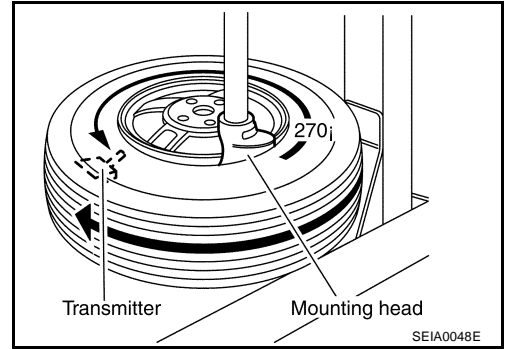


REMOVAL AND INSTALLATION

- 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.



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

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SERVICE DATA

SERVICE DATA

PFP:00030

Road Wheel

EES000DT

Kind of wheel		Aluminum	Steel for emergency use
Deflection limit	Lateral deflection	Less than 0.3 mm (0.012 in)	Less than 1.0 mm (0.039in)
	Vertical deflection	Less than 0.3 mm (0.012in)	Less than 1.2 mm (0.047in)
Allowable quantity of residual unbalance	Dynamic (On the ear part)	Less than 10g (0.35oz) (per side)	
	Static (On the ear part)	Less than 20g (0.70oz)	

Tire

EES000DU

Unit: kPa (kg/cm², psi)

Tire size	Air pressure	
	Front wheel	Rear wheel
225/55R17 245/45R18	230 (2.3, 33)	230 (2.3, 33)
T145/90D16	420 (4.2, 60)	420 (4.2, 60)