

A  
B  
C

# WT

## SECTION

### ROAD WHEELS & TIRES

## CONTENTS

WT

<p><b>PREPARATION</b> ..... 2</p> <p style="padding-left: 20px;">Special Service Tools ..... 2</p> <p style="padding-left: 20px;">Commercial Service Tools ..... 2</p> <p><b>NOISE, VIBRATION AND HARSHNESS (NVH)</b></p> <p><b>TROUBLESHOOTING</b> ..... 3</p> <p style="padding-left: 20px;">NVH Troubleshooting Chart ..... 3</p> <p><b>ROAD WHEEL</b> ..... 4</p> <p style="padding-left: 20px;">Inspection ..... 4</p> <p style="padding-left: 40px;">ALUMINUM WHEEL ..... 4</p> <p style="padding-left: 40px;">STEEL WHEEL ..... 4</p> <p><b>ROAD WHEEL TIRE ASSEMBLY</b> ..... 5</p> <p style="padding-left: 20px;">Balancing Wheels (Bonding Weight Type) ..... 5</p> <p style="padding-left: 20px;">REMOVAL ..... 5</p> <p style="padding-left: 20px;">WHEEL BALANCE ADJUSTMENT ..... 5</p> <p style="padding-left: 20px;">Rotation ..... 6</p> <p><b>LOW TIRE PRESSURE WARNING SYSTEM</b> ..... 7</p> <p style="padding-left: 20px;">System Components ..... 7</p> <p style="padding-left: 20px;">System Description ..... 7</p> <p style="padding-left: 40px;">TRANSMITTER ..... 7</p> <p style="padding-left: 40px;">ANTENNA ..... 7</p> <p style="padding-left: 40px;">TIRE PRESSURE WARNING CONTROL UNIT.... 8</p> <p style="padding-left: 40px;">DISPLAY ..... 8</p> <p><b>TROUBLE DIAGNOSES</b> ..... 9</p> <p style="padding-left: 20px;">Wiring Diagram ..... 9</p> <p style="padding-left: 20px;">ID Registration Procedure ..... 13</p> <p style="padding-left: 40px;">ID REGISTRATION WITH TRANSMITTER</p> <p style="padding-left: 60px;">ACTIVATION TOOL ..... 13</p> <p style="padding-left: 60px;">ID REGISTRATION WITHOUT TRANSMITTER</p> <p style="padding-left: 60px;">ACTIVATION TOOL ..... 13</p> <p style="padding-left: 20px;">Self-Diagnosis ..... 14</p> <p style="padding-left: 40px;">DESCRIPTION ..... 14</p> <p style="padding-left: 40px;">FUNCTION ..... 14</p> <p style="padding-left: 40px;">CONSULT-II ..... 14</p> <p style="padding-left: 20px;">How to Perform Trouble Diagnosis for Quick and Accurate Repair ..... 15</p>	<p style="padding-left: 20px;">INTRODUCTION ..... 15</p> <p style="padding-left: 20px;">WORK FLOW ..... 16</p> <p style="padding-left: 20px;">Preliminary Check ..... 17</p> <p style="padding-left: 20px;">Malfunction Code/Symptom Chart ..... 18</p> <p><b>TROUBLE DIAGNOSIS FOR SELF-DIAGNOSTIC ITEMS</b> ..... 19</p> <p style="padding-left: 20px;">Inspection 1: Transmitter or Low Tire Pressure Warning Control Unit ..... 19</p> <p style="padding-left: 40px;">MALFUNCTION CODE NO. 21, 22, 23 OR 24 ... 19</p> <p style="padding-left: 20px;">Inspection 2: Transmitter ..... 19</p> <p style="padding-left: 40px;">MALFUNCTION CODE NO. 31, 32, 33, 34, 35, 36, 37, 38, 41, 42, 43, 44, 45, 46, 47 OR 48 ..... 19</p> <p style="padding-left: 20px;">Inspection 3: Low Tire Pressure Warning Control Unit ..... 19</p> <p style="padding-left: 40px;">MALFUNCTION CODE NO. 51 ..... 19</p> <p><b>TROUBLE DIAGNOSIS FOR SYMPTOMS</b> ..... 20</p> <p style="padding-left: 20px;">Inspection 1: Warning Lamp Does Not Come On When Ignition Switch Is Turned On. .... 20</p> <p style="padding-left: 20px;">Inspection 2: Warning Lamp Stays On When Ignition Switch Is Turned On. .... 20</p> <p style="padding-left: 20px;">Inspection 3: Warning Lamp Blinks When Ignition Switch Is Turned On. .... 21</p> <p style="padding-left: 20px;">Inspection 4: Hazard Warning Lamp Blinks When Ignition Switch Is Turned On. .... 22</p> <p style="padding-left: 20px;">Inspection 5: "TIRE PRESSURE" Information In Display Does Not Exist. .... 22</p> <p style="padding-left: 20px;">Inspection 6: ID Registration Can Not Be Completed.. 23</p> <p><b>REMOVAL AND INSTALLATION</b> ..... 24</p> <p style="padding-left: 20px;">Transmitter ..... 24</p> <p style="padding-left: 40px;">REMOVAL ..... 24</p> <p style="padding-left: 40px;">INSTALLATION ..... 24</p> <p><b>SERVICE DATA</b> ..... 26</p> <p style="padding-left: 20px;">Road Wheel ..... 26</p> <p style="padding-left: 20px;">Tire ..... 26</p>	<p>F</p> <p>G</p> <p>H</p> <p>I</p> <p>J</p> <p>K</p> <p>L</p> <p>M</p>
--	--	---

# PREPARATION

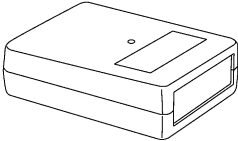
## PREPARATION

PFP:00002

### Special Service Tools

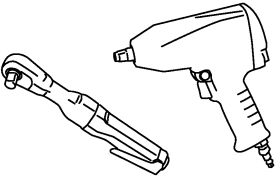
EES000CZ

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  SEIA0051E	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

PFP: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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
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	Noise	Shake	Vibration	Shimmy	Judder	Poor quality ride or handling	Noise	Shake	Shimmy, judder	Poor quality ride or handling	Noise	Shake	Shimmy, judder	Poor quality ride or handling	Noise	Shake	Shimmy, judder	Poor quality ride or handling	
Tires	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Road Wheel	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

x: Applicable

A  
B  
C  
D  
WT  
F  
G  
H  
I  
J  
K  
L  
M

# ROAD WHEEL

PFP:40300

EES000D1

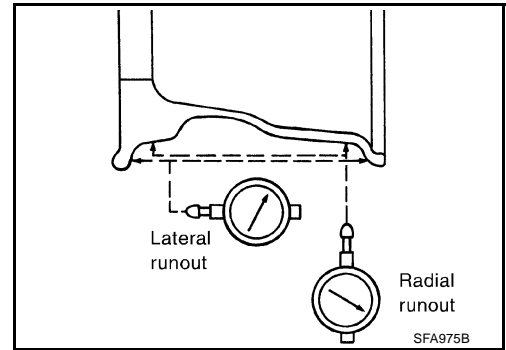
## ROAD WHEEL

### Inspection ALUMINUM 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 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-26, "SERVICE DATA"](#)**



### STEEL WHEEL

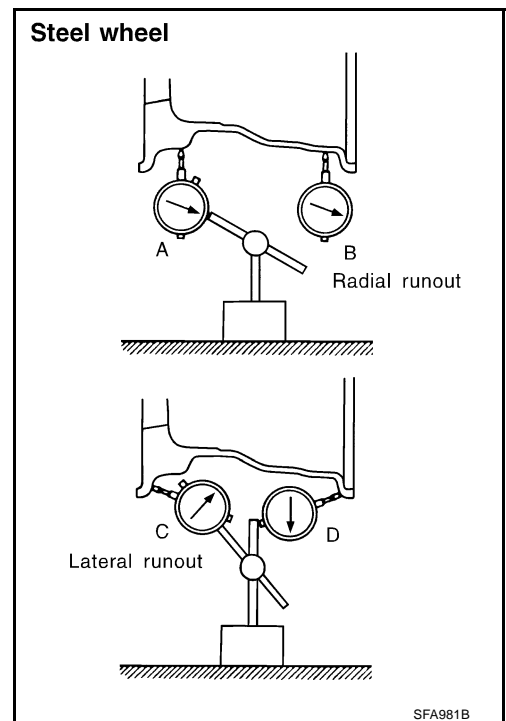
1. Check tires for wear and improper inflation.
2. Check wheels for deformation, cracks and other damage. If deformed, remove wheel and check wheel runout.
  - a. Remove tire from steel wheel and mount wheel on a tire balance machine.
  - b. Set two dial indicators as shown in the illustration.
  - c.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

$$\text{Radial runout} = (A+B)/2$$

$$\text{Lateral runout} = (C+D)/2$$

- 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-26, "SERVICE DATA"](#)**



# ROAD WHEEL TIRE ASSEMBLY

## ROAD WHEEL TIRE ASSEMBLY

PPF:40300

### Balancing Wheels (Bonding Weight Type) REMOVAL

EES000QX

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:

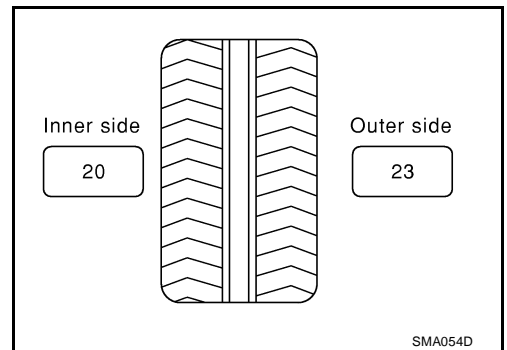
$23 \text{ g (0.81 oz)} \times 5/3 = 38.33 \text{ g (1.35 oz)} = 40 \text{ g (1.41 oz)}$  balance weight (closer to calculated balance weight value)

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

Example:

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

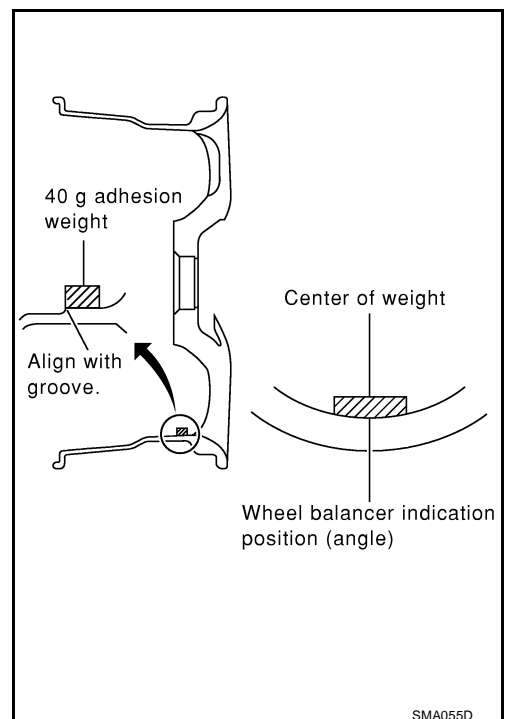
$37.5 = 40 \text{ g (1.41 oz)}$



- 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 un 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).

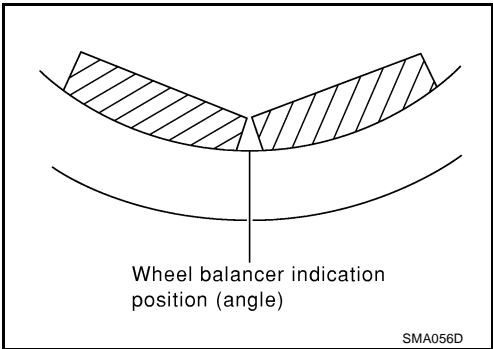
**CAUTION:**

**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 (at rim flange)	20 g (0.71 oz)



## Rotation

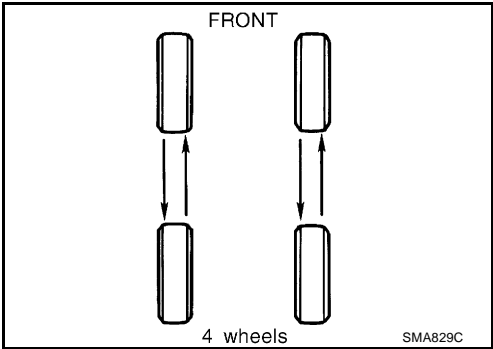
- Do not include the T-type spare tire when rotating the tires.

**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.**

**Tightening torque of wheel nut:**

**98 - 118 N-m (10 - 12 kg-m, 72 - 87 ft-lb)**



EES000D5

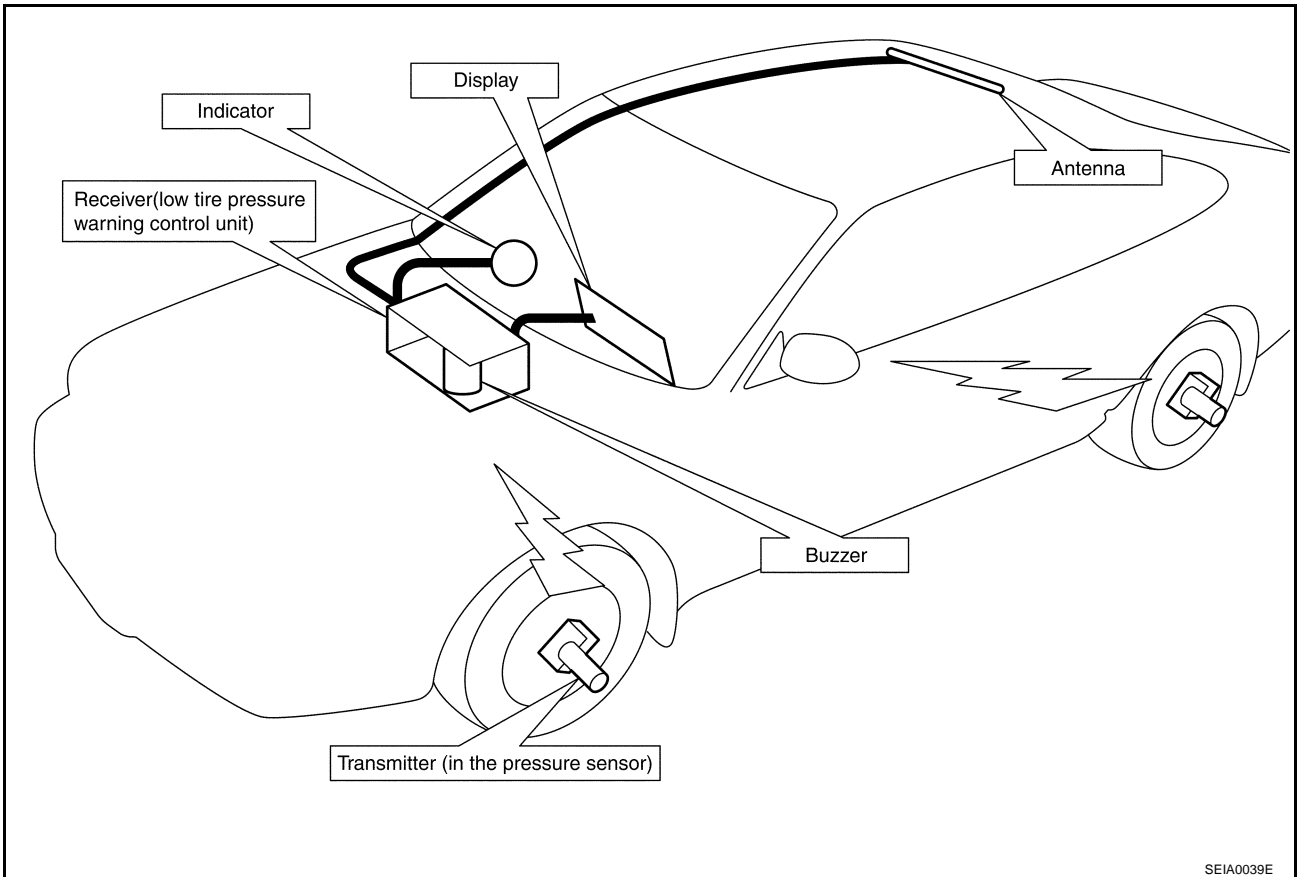
# LOW TIRE PRESSURE WARNING SYSTEM

## LOW TIRE PRESSURE WARNING SYSTEM

PPF:40300

### System Components

EES000DB

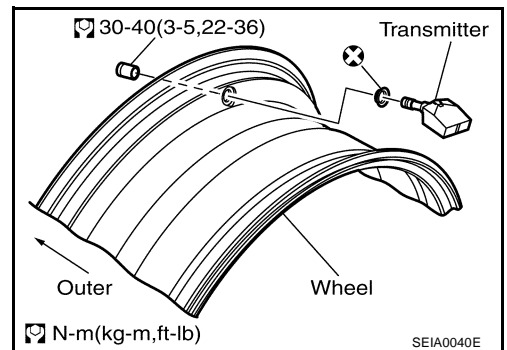


SEIA0039E

### System Description TRANSMITTER

EES000DC

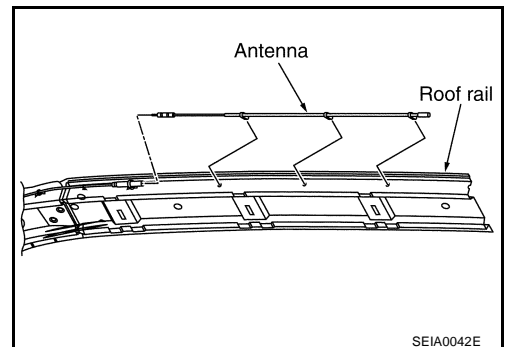
A sensor-transmitter integrated with a valve is installed on a wheel, and transmits a detected air pressure signal in the form of a radio wave.



SEIA0040E

### ANTENNA

Receives the radio wave signal transmitted by the transmitter.



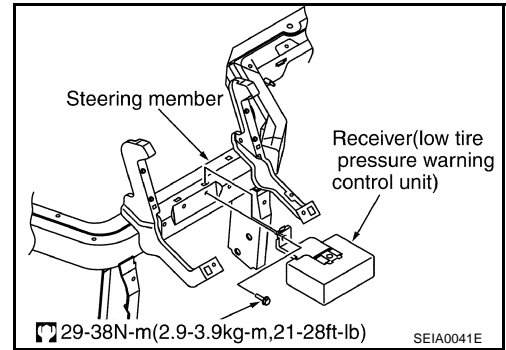
SEIA0042E

A  
B  
C  
D  
WT  
F  
G  
H  
I  
J  
K  
L  
M

# 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.

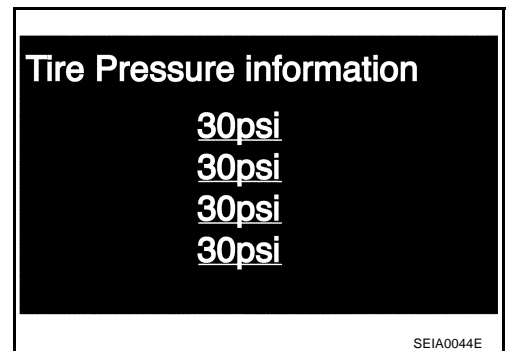


Condition	Warning lamp	Buzzer
Less than 180 kPa (1.8 kg/cm <sup>2</sup> , 26 psi) [Low pressure]	0.2 sec. OFF 0.2 sec. ON	OFF
Less than 70 kPa (0.7 kg/cm <sup>2</sup> , 10 psi) [Flat tire]	ON	Sounds for 10 sec.
System malfunction	ON	OFF

## 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

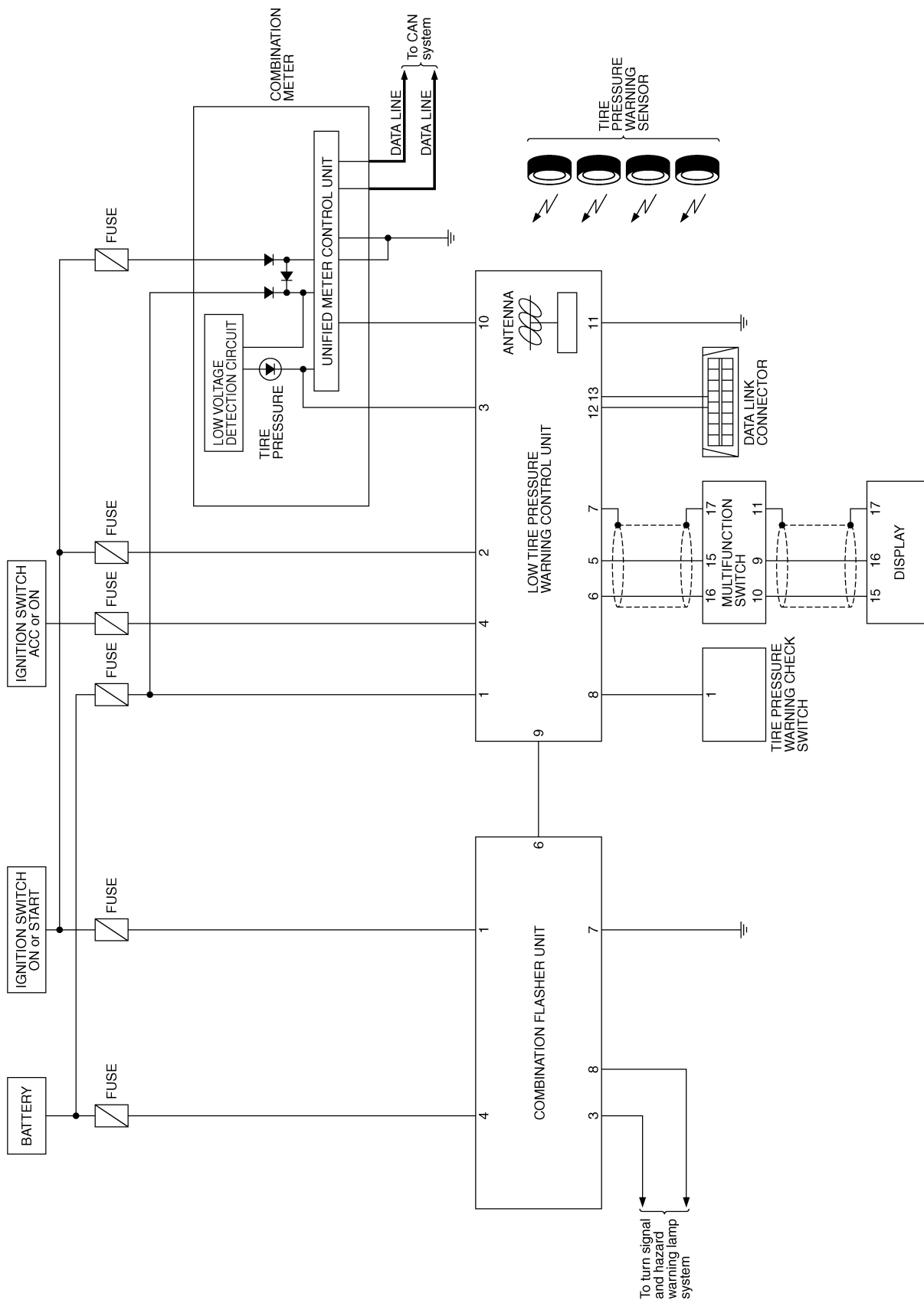
## TROUBLE DIAGNOSES

### Wiring Diagram

PF0:00004

EES000EN

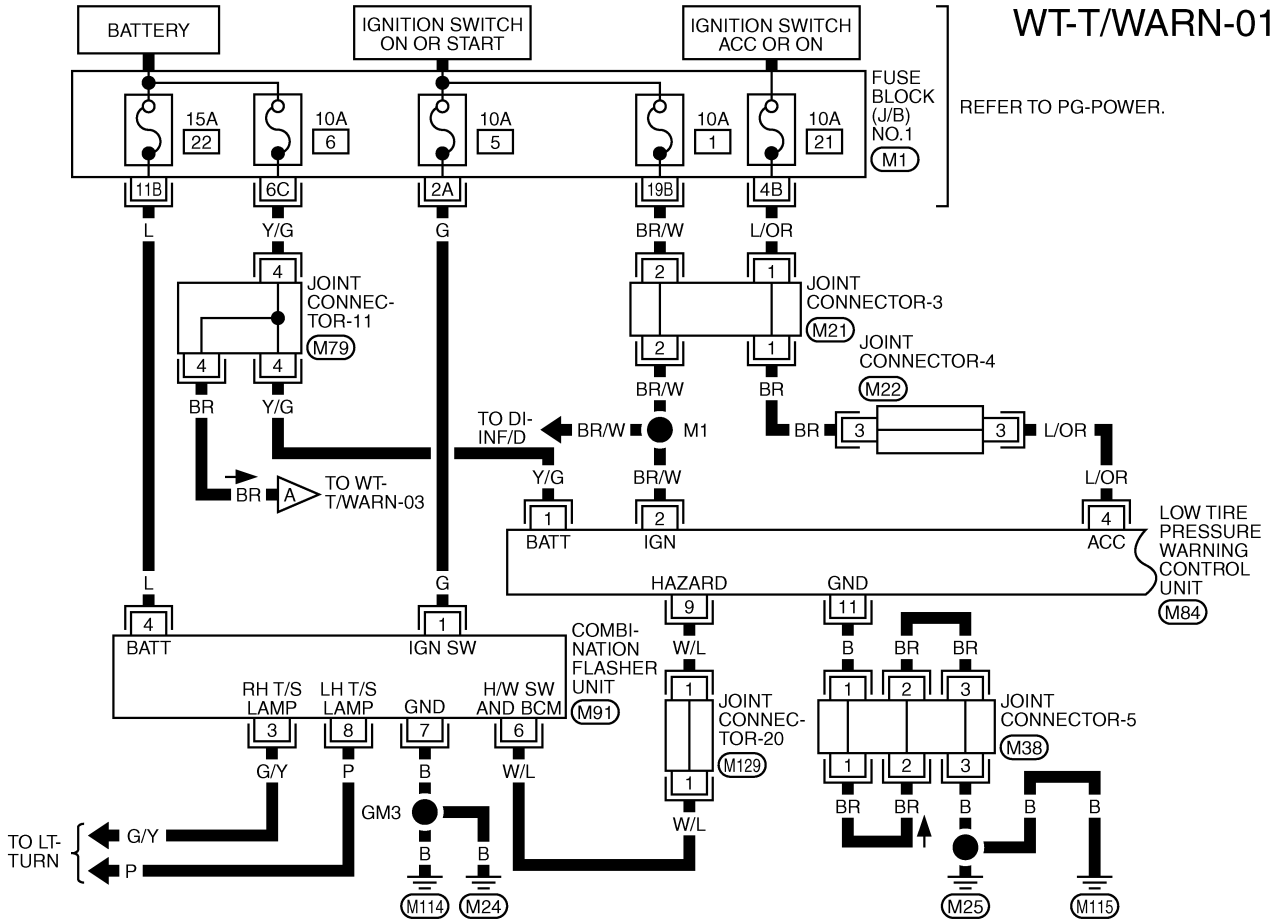
A  
B  
C  
D  
WT  
F  
G  
H  
I  
J  
K  
L  
M



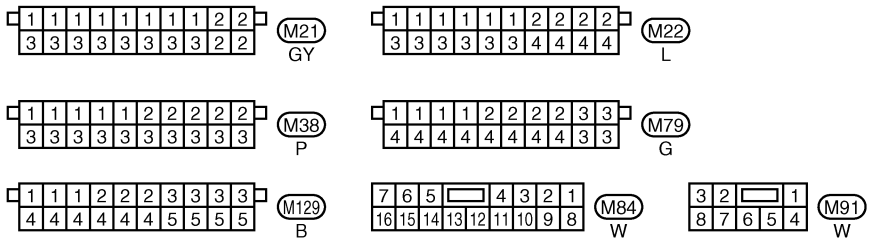
TEWM0001E

# TROUBLE DIAGNOSES

## WT-T/WARN-01



REFER TO PG-POWER.



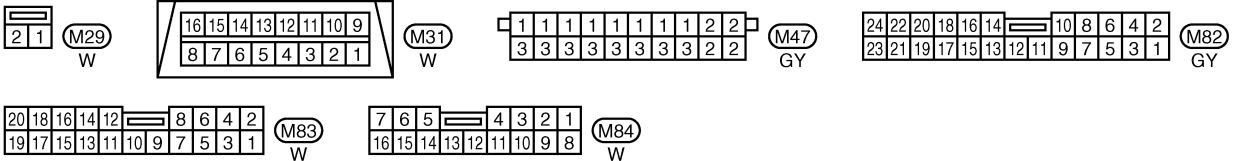
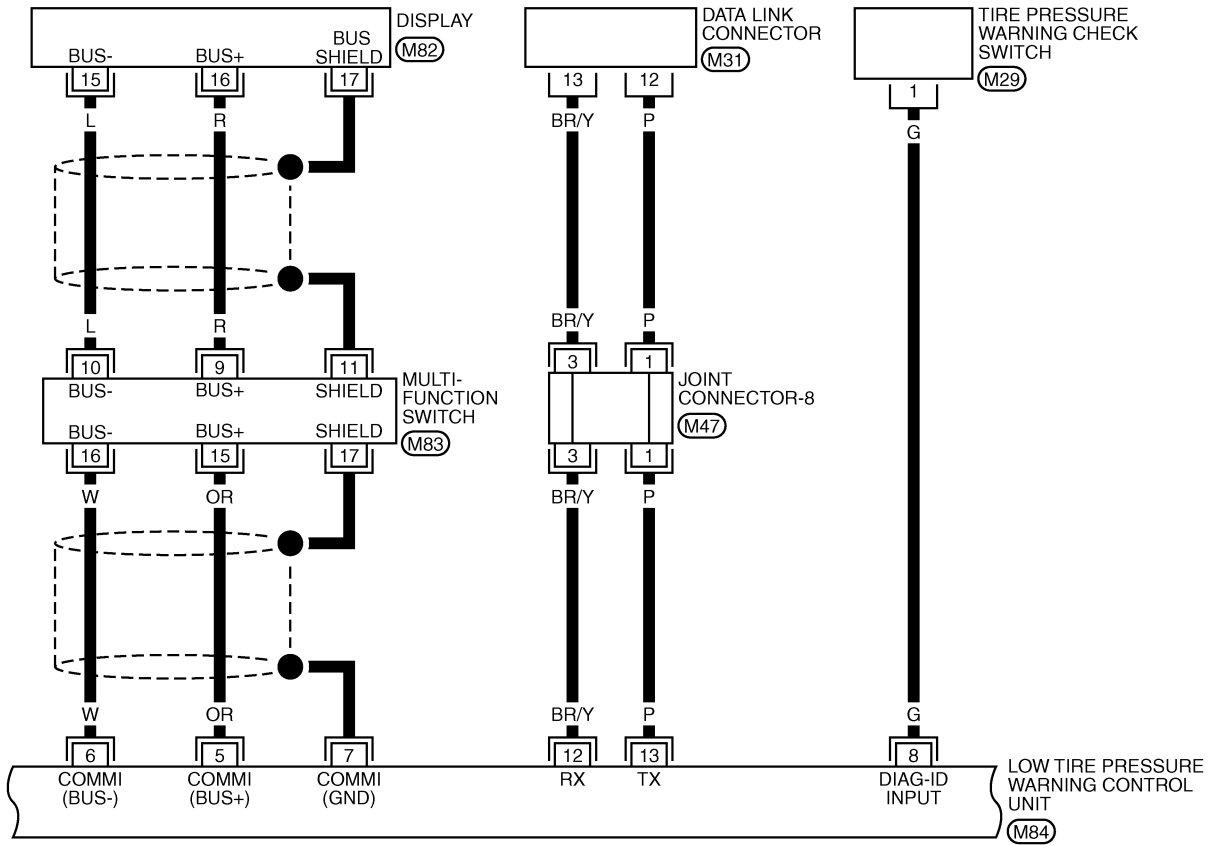
REFER TO THE FOLLOWING.

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

TEWM0002E

# TROUBLE DIAGNOSES

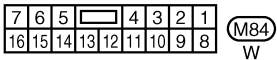
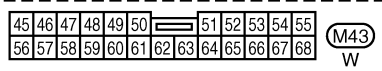
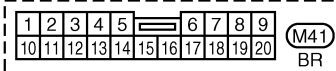
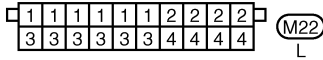
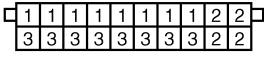
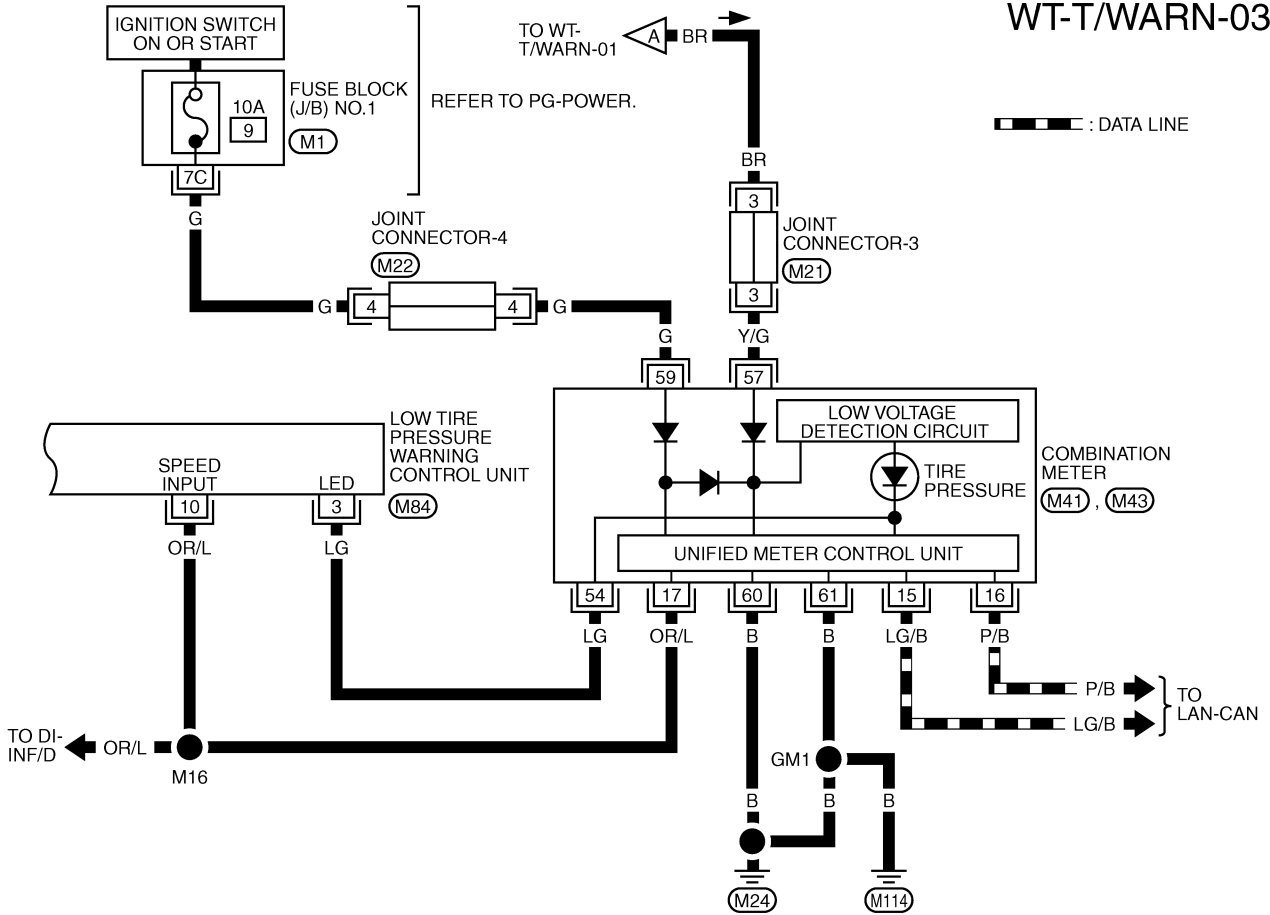
## WT-T/WARN-02



TEWM0003E

# TROUBLE DIAGNOSES

## WT-T/WARN-03



REFER TO THE FOLLOWING.

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

TEWM0004E

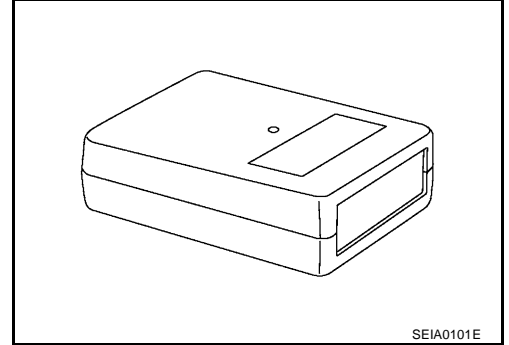
# TROUBLE DIAGNOSES

EES000EO

## ID Registration Procedure

### ID REGISTRATION WITH TRANSMITTER ACTIVATION TOOL

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



6. 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		

7. 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.

### ID REGISTRATION WITHOUT TRANSMITTER ACTIVATION TOOL

1. Turn ignition switch "OFF".
2. Connect CONSULT-II to data link connector.
3. Start engine.
4. Touch "START", "AIR PRESSURE MONITOR", "WORK" SUPPORT" and "ID REGIST".
5. Adjust the tire pressure to the values shown in the table below for ID registration, and drive the vehicle at 32 km/h (20 MPH) or more for a few minutes.

Tire position	Tire pressure kPa (kg/cm <sup>2</sup> , 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)

6. 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		

# TROUBLE DIAGNOSES

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

## Self-Diagnosis DESCRIPTION

EES000EP

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 ...
LOW - AIR PRESS - FL LOW - AIR PRESS - FR LOW - AIR PRESS - RR LOW - AIR PRESS - RL	Front-left tire pressure drops to 180kPa(1.8kg/cm <sup>2</sup> , 26psi) or less Front-right tire pressure drops to 180kPa(1.8kg/cm <sup>2</sup> , 26psi) or less Rear-right tire pressure drops to 180kPa(1.8kg/cm <sup>2</sup> , 26psi) or less Rear-left tire pressure drops to 180kPa(1.8kg/cm <sup>2</sup> , 26psi) or less
FLAT - TIRE - FL FLAT - TIRE - FR FLAT - TIRE - RR FLAT - TIRE - RL	Front-left tire pressure drops to 70kPa(0.7kg/cm <sup>2</sup> , 10psi) or less Front-right tire pressure drops to 70kPa(0.7kg/cm <sup>2</sup> , 10psi) or less Rear-right tire pressure drops to 70kPa(0.7kg/cm <sup>2</sup> , 10psi) or less Rear-left tire pressure drops to 70kPa(0.7kg/cm <sup>2</sup> , 10psi) 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.

# TROUBLE DIAGNOSES

Diagnostic item	Diagnostic item is detected when ...
[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.

## Data Monitor Mode

MONITOR	CONDITION	SPECIFICATION
VEHICLE SPEED	Drive vehicle.	Vehicle speed (km/h or MPH)
PRESSURE FL PRESSURE FR PRESSURE RR PRESSURE RL	1. Drive vehicle for a few minutes. or 2. 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.

## How to Perform Trouble Diagnosis for Quick and Accurate Repair

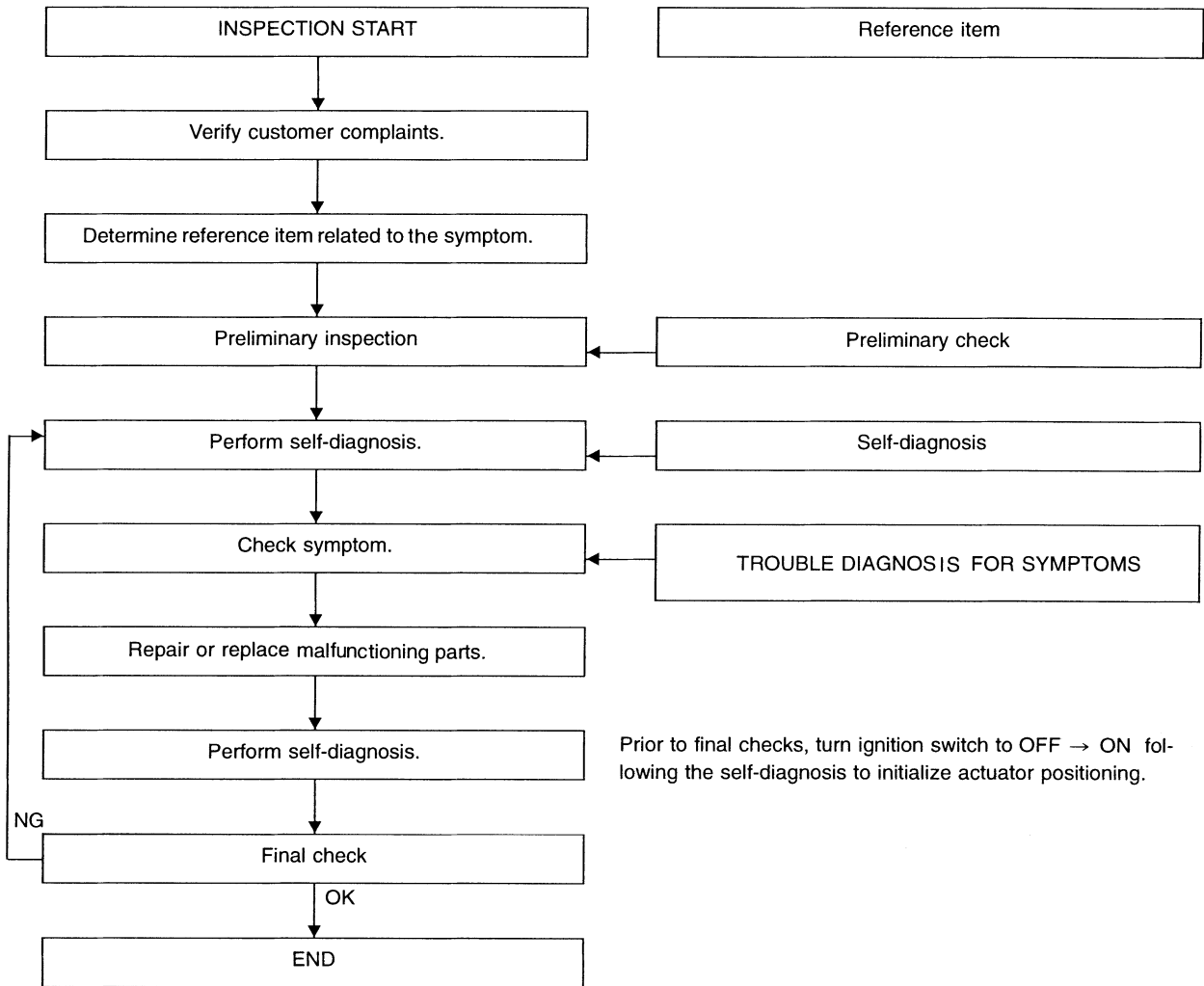
EES000DF

### 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.

# TROUBLE DIAGNOSES

## WORK FLOW



SEIA0100E



# TROUBLE DIAGNOSES

## Preliminary Check

EES000EQ

### BASIC INSPECTION

#### 1. CHECK ALL TIRES PRESSURES

- Check all tires pressures.

**Tire pressure : 230 kPa (2.3 kg/cm<sup>2</sup> , 33 psi)**

Tire pressure is OK?

YES >> GO TO 2.

NO >> 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 >> ● Warning lamp turns off. GO TO 4

- Warning lamp turns off. 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.

OK or NG

OK >> GO TO 4.

NG >> Repair or replace damaged parts.

#### 4. CHECK TRANSMITTER ACTIVATION TOOL

- Check transmitter tool battery.

OK or NG

OK >> Carry out self-diagnosis.

NG >> Replace transmitter activation tool battery.

A

B

C

D

WT

F

G

H

I

J

K

L

M

# TROUBLE DIAGNOSES

## Malfunction Code/Symptom Chart

EES000ER

Code/Symptom	Malfunction part	Reference page
21 22 23 24	Transmitter no data (front - left) Transmitter no data (front - right) Transmitter no data (rear - right) Transmitter no data (rear - left)	<a href="#">WT-19</a>
31 32 33 34	Transmitter checksum error (front - left) Transmitter checksum error (front - right) Transmitter checksum error (rear - right) Transmitter checksum error (rear - left)	<a href="#">WT-19</a>
35 36 37 38	Transmitter pressure data error (front - left) Transmitter pressure data error (front - right) Transmitter pressure data error (rear - right) Transmitter pressure data error (rear - left)	<a href="#">WT-19</a>
41 42 43 44	Transmitter function code error (front - left) Transmitter function code error (front - right) Transmitter function code error (rear - right) Transmitter function code error (rear - left)	<a href="#">WT-19</a>
45 46 47 48	Transmitter battery voltage low (front - left) Transmitter battery voltage low (front - right) Transmitter battery voltage low (rear - right) Transmitter battery voltage low (rear - left)	<a href="#">WT-19</a>
51	Low tire pressure warning control unit	<a href="#">WT-19</a>
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	<a href="#">WT-20</a>
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	<a href="#">WT-20</a>
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	<a href="#">WT-21</a>
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	<a href="#">WT-22</a>
"TIRE PRESSURE" information in display does not exist.	Fuse Display Low tire pressure warning control unit	<a href="#">WT-22</a>
ID registration can not be operated.	Transmitter Antenna harness connector or circuit Antenna	<a href="#">WT-23</a>

# 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

EES000DI

#### 1. CHECK CONNECTOR

- Disconnect low tire pressure warning control unit connector. Check terminals for damage or loose connections. Then reconnect connector.
- Carry out self-diagnosis again.

#### OK or NG

- OK >> INSPECTION END.  
NG >> GO TO 2.

#### 2. CHECK ANTENNA CONNECTOR

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

#### OK or NG

- OK >> GO TO 3.  
NG >> Repair or replace antenna or feeder connector.

#### 3. CHECK ANTENNA CIRCUIT

- Check antenna circuit continuity.

#### Does continuity exist?

- YES >> Check transmitter and transmitter activation tool.  
NO >> Replace antenna circuit.

### Inspection 2: Transmitter

#### MALFUNCTION CODE NO. 31, 32, 33, 34, 35, 36, 37, 38, 41, 42, 43, 44, 45, 46, 47 OR 48

EES000DJ

#### 1. ID REGISTRATION

- Carry out ID registration.
- Drive the vehicle for 5 minutes or longer for malfunction codes No. 31, 32, 33, 34, 35, 36, 37, 38, 41, 42, 43, or 44, for 20 minutes or longer for malfunction codes No. 45, 46, 47, or 48.

#### Does warning lamp activate?

- YES >> GO TO 2.  
NO >> INSPECTION END.

#### 2. REPLACE TRANSMITTER

- Replace the transmitter of malfunctioning part.

#### Does warning lamp still activate again?

- YES >> GO TO 1.  
NO >> INSPECTION END.

### Inspection 3: Low Tire Pressure Warning Control Unit

#### MALFUNCTION CODE NO. 51

EES000DK

#### 1. SELF-DIAGNOSIS

- Carry out self-diagnosis.

#### Does warning lamp still activate again?

- 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.

OK or NG

OK >> GO TO 2.

NG >> Check combination meter and repair or replace.

#### 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.

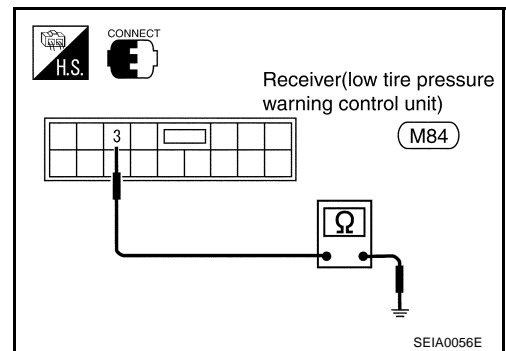
#### 3. CHECK COMBINATION METER CIRCUIT

- Check continuity between low tire pressure warning control unit connector M48 (unit side) terminal 3 and ground.
- Carry out self-diagnosis again.

Does continuity exist?

YES >> Repair or replace harness connector.

NO >> Check combination meter.



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

EES000DM

#### DIAGNOSTIC PROCEDURE

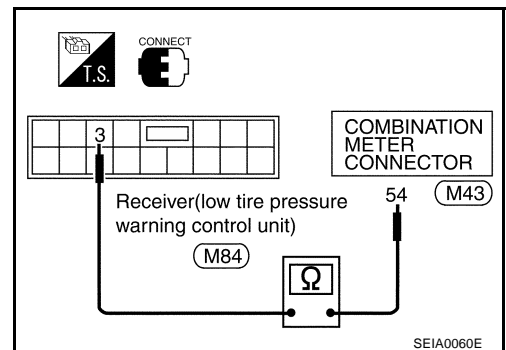
#### 1. CHECK CIRCUIT

- 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.

Does continuity exist?

YES >> Check combination meter.

NO >> Repair or replace harness connector.



# TROUBLE DIAGNOSIS FOR SYMPTOMS

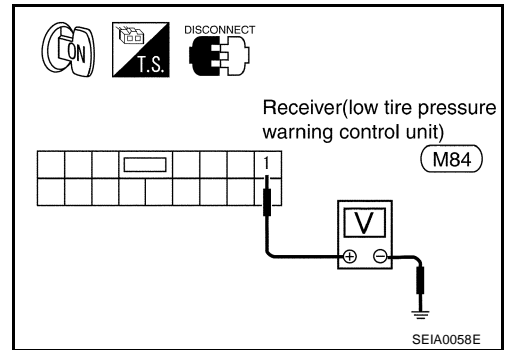
## 2. CHECK POWER SUPPLY CIRCUIT

- 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

- 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.

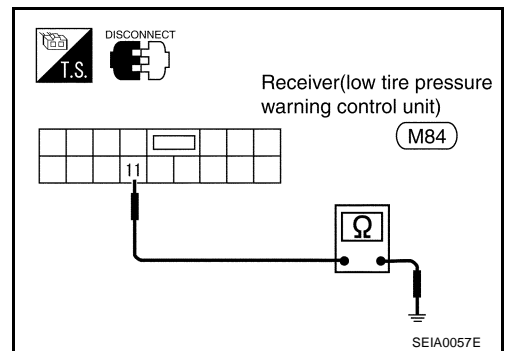
## 4. CHECK GROUND CIRCUIT

- 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.



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

EES000DN

DIAGNOSTIC PROCEDURE

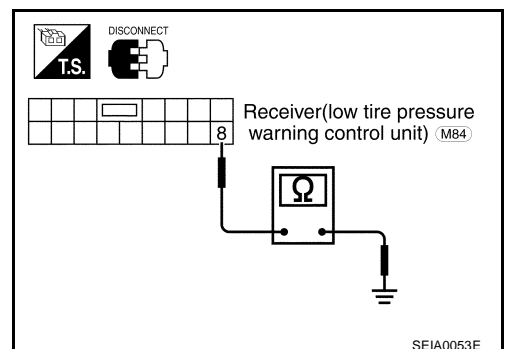
### 1. CHECK CIRCUIT

- 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.



# TROUBLE DIAGNOSIS FOR SYMPTOMS

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

EES000DO

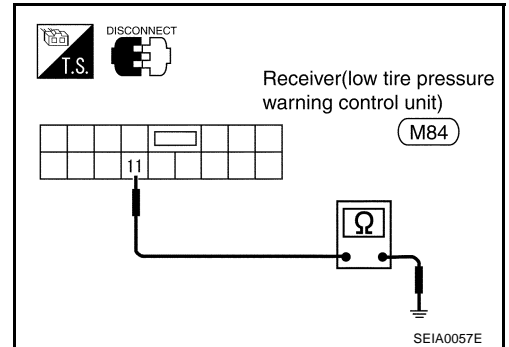
### DIAGNOSTIC PROCEDURE

#### 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.

##### OK or NG

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

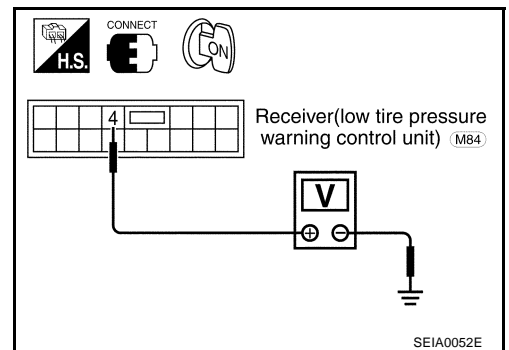
#### 2. CHECK CIRCUIT

- 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 >> Check display. [DI-68. "VEHICLE INFORMATION AND INTEGRATED SWITCH SYSTEM"](#)  
NO >> GO TO 3.



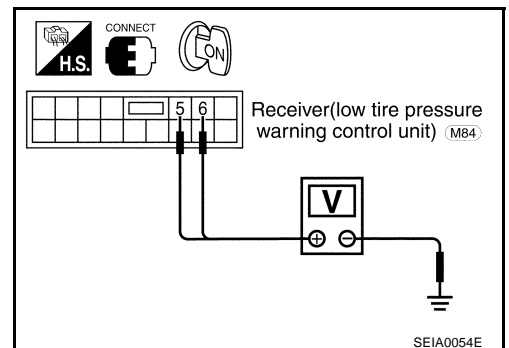
#### 3. CHECK CONTROL INPUT SIGNAL

- 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**

##### OK or NG

- OK >> Check combination meter.  
NG >> Replace harness connector between low tire pressure warning control unit and multi function switch.



# TROUBLE DIAGNOSIS FOR SYMPTOMS

## Inspection 6: ID Registration Can Not Be Completed

EES000DQ

### 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.

A

B

C

D

WT

F

G

H

I

J

K

L

M

# REMOVAL AND INSTALLATION

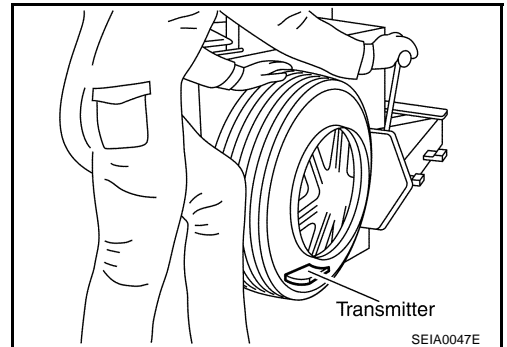
PFP:00000

EES000DS

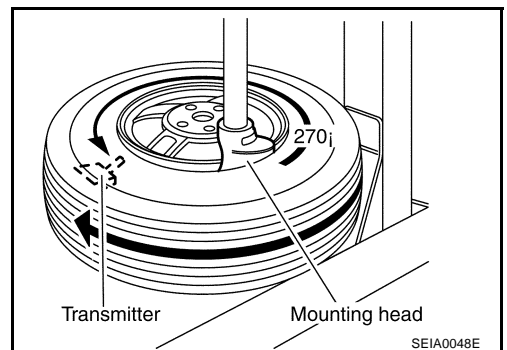
## REMOVAL AND INSTALLATION

### Transmitter 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.

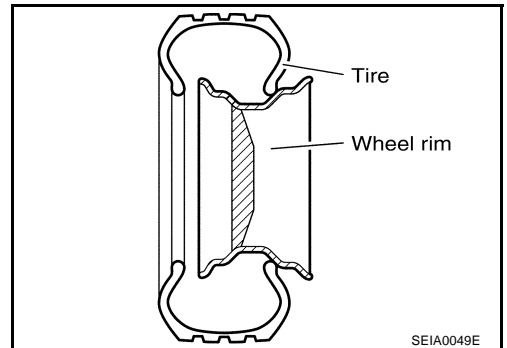


3. Turn tire so that valve hole is at bottom and bounce so that transmitter is near valve hole. Carefully lift tire onto turntable and position valve hole (and transmitter) 270 degree from mounting/dismounting head.
4. Lubricate tire well and remove first side of the tire. Reach inside the tire and remove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

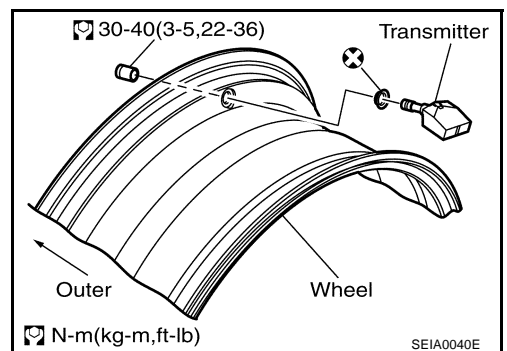


### INSTALLATION

1. Put first side of tire onto rim.



2. Mount transmitter on rim and tighten nut.



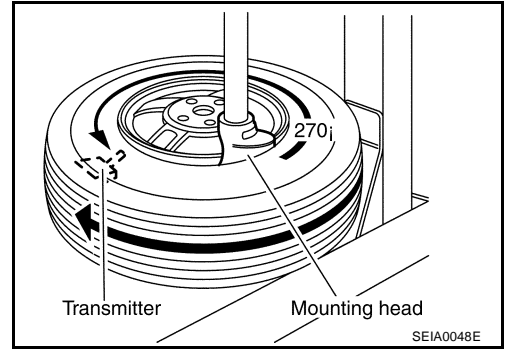


## REMOVAL AND INSTALLATION

- 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.

A  
B  
C  
D

WT

F  
G  
H  
I  
J  
K  
L  
M

# 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 (0.039 in)
	Vertical deflection	Less than 0.3 mm (0.012 in)	Less than 1.2 mm (0.047 in)
Allowable quantity of residual unbalance	Dynamic (at rim flange)	Less than 10g (0.35oz) (per side)	
	Static (at rim flange)	Less than 20g (0.70 oz)	

### Tire

EES000DU

Unit: kPa (kg/cm<sup>2</sup>, 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)