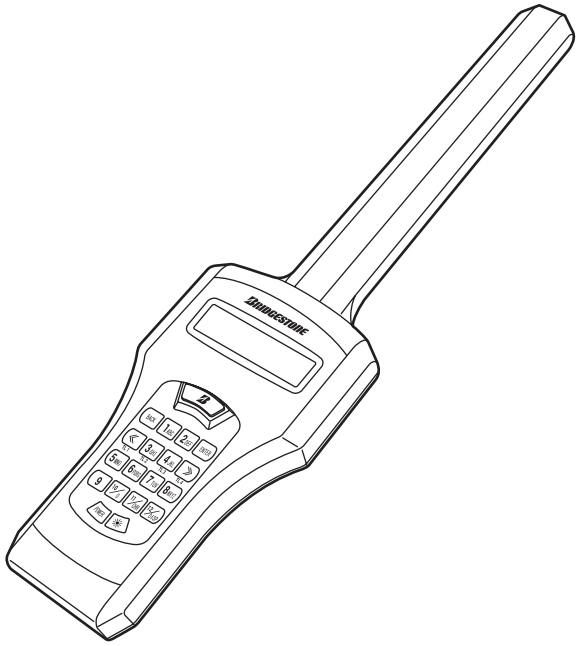
For truck and bus
For use only in Europe (model:H212) or U.S.A. (model:H211)

BRIDGESTONE

Tire-Pressure Monitoring System

Hand Reader Operation Guide



What is a Tire-Pressure Monitoring System?

Tire-pressure monitoring system is an advanced system that measures the tire pressure and temperature with sensors mounted inside the tire and enables vehicle management using the measured data.

⚠ Notice to user

- This product is designed exclusively for trucks and buses.
- This product has two design for use within Europe and USA. It cannot be used other country due to difference in radio wave regulations. Attention for product model number.
  For Europe ..... model H212
  For USA ..... model H211
- Be sure to read and understand the content of the operation guide before installing or removing.
- Keep this guide in a safe place and refer to it as necessary.

Viewing Saved Data

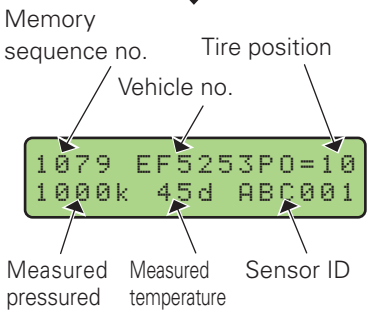
You can view measurement data (vehicle no. and pressure, temperature, and sensor ID at the specified tire position) saved in the hand reader for up to 90 vehicles (1080 tires or 90 vehicles x 12 per vehicle for 12 wheeler).

- The data can be viewed in REG mode. It can be viewed from any screen in REG mode.

1. Select REG mode.
▸ See section "2-4 Selecting operation mode" (page 11)

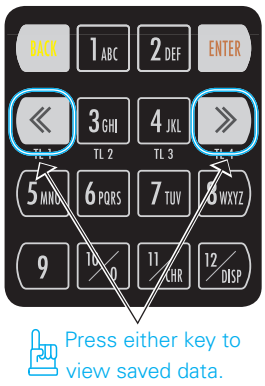
2. Press the **[DISP]** key for at least 2 seconds.

3. An alarm (0.5 sec) sounds once and the Saved Data Display screen appears.



4. Press the **[«]** or **[»]** key.

5. The memory sequence no. changes.
Memory sequence no. is assigned to the saved data in sequence.
Therefore, you can view all saved data regardless of the vehicle no.



When

You want to view by vehicle

1. Press the **[BACK]** or **[ENTER]** key and select the vehicle no. of the vehicle to view the saved data.
   - To select the vehicle registered prior to the displayed vehicle no.
     ... **[BACK]** Key
   - To select the vehicle registered after the displayed vehicle no.
     ... **[ENTER]** key
2. With the vehicle no. of the desired vehicle displayed, press the **[«]** or **[»]** key.
3. Saved data for the selected vehicle are displayed in order.
4. If you continue pressing the **[«]** or **[»]** key, the vehicle no. changes and the saved data for the next or previous vehicle is displayed.

You want to quit viewing

1. Press the **[DISP]** key for at least 2 seconds.
2. An alarm (0.5 sec) sounds once and the REG Mode screen appears.

Transferring Saved Data to PC

You can transfer the measurement data saved in hand reader memory to PC to store and REG data on your PC.

6-1 Installing the software

Copy the Data Transfer Tool in the included CD-ROM to your PC.
Have the icon displayed on the desktop after copying.

6-2 Transferring Data to PC

1. Connect the PC and hand reader using the included connection cable connected to the hand reader connector and PC serial connector.

- Check the operation manual of your PC for the location of the serial connector.

NOTE

- Check that the power of the hand reader and PC are off before connecting them. The hand reader or PC may be damaged if the power is not turned off before connecting.

2. Press the POWER switch of the hand reader to turn on the power.

3. Turn ON the PC power.

4. Double click the icon  on your PC desktop and start the Data Transfer Tool.

5. The Specify Communication Port screen appears.

Communication Port Setup screen

6. Click the pull down button by the Com Port No field to display the [Com Port No] dropdown list and select the serial port no. (COM1 to COM8) to which you connected the cable.

- If you are using a desktop PC, the serial port no. is normally COM1 or COM2.

7. Click the **[Enter]** button on the Communication Port Setup screen.

8. The Save As screen appears.

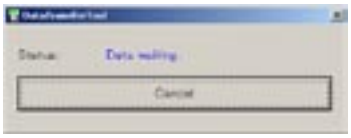
9. In the Save As screen, specify the location to save the transferred data and enter a file name in the file name field.

Save As screen

- If you do not enter the file name, the file name will be "(Transferred) date. time.csv" (Example: 20060523164020.csv). Change this file name as necessary.

10. Click the **[Save]** button.

11. The Data Waiting screen appears and the PC waits for data from the hand reader.



Data Waiting screen

12. Check that the Select Menu screen appears on the hand reader.

Select Menu screen

13. Press the **[BACK]** key of the hand reader for 2 seconds.

14. The following screens appear on the hand reader and PC and data transfer starts.

Transferring Data screen (Flashes)

Receiving Data screen

NOTE

- The power does not go off while sending data to PC.

When

Error screen is displayed

If you select a non-existing serial port, the following Error screen appears.

Error screen

1. Click the **[OK]** button to close the Error screen.
2. Check the serial port no. and retry.

When

You want to cancel save

Click the **[Cancel]** button to cancel saving when the Specify Save File screen is displayed.

When

You want to cancel save

Click the **[Cancel]** button to cancel saving when the Data Input Wait screen is displayed. If you click the **[Cancel]** button, an empty file is created with the name specified in step **9**.

When

You want to cancel data transfer

Press the **[Cancel]** button on the Receiving Data screen of your PC to cancel data transfer.

15. The following screens appear on the hand reader and PC when data transfer completes.

Hand Reader

Data Transfer Complete screen

PC

Data Transfer Complete screen

16. Click the **[Exit]** button on the Data Transfer Complete screen of your PC to close the Data Transfer Tool.

17. Check that the file is saved at the location specified in step **9**.

18. Open the saved file and check that CSV format data is transferred.

19. Erase the data saved in the hand reader.

▸ See "6-3 Erasing data saved in hand reader" (page 33).

6-3 Erasing data saved in hand reader

After confirming that the save data is transferred to PC, you can erase unnecessary data in the hand reader.

1. Move the cursor to [Y] in the Data Transfer Complete screen displayed after data transfer.
Move the cursor with **[«]** or **[»]** key.

Data Transfer Complete screen

2. Press the **[ENTER]** key.

3. The data is erased and screen returns to the Select Menu screen.

When

Data Transfer Error screen appears on your hand reader during data transfer

If the error persists after repeating the procedure from the beginning, contact the dealer where you purchased the hand reader.

Data Transfer Error screen

When

You do not want to erase data

Move the cursor to [N] on the Data Transfer Complete screen and press the **[ENTER]** key.
The screen returns to the Main Menu screen without erasing data.

When

You want to erase saved data from hand reader without transferring to PC

If there is no need to transfer the data saved in hand reader to PC and you want to just erase the data in the hand reader, do as follows:
The connection cable is not used.

1. Turn on the hand reader.
2. Check that the Select Menu screen is displayed.
3. Press the **[BACK]** key for approximately 2 seconds.
4. Null transfer of the saved data starts.
5. Wait few seconds or few minutes for the null transfer to end.
6. When null transfer ends, the Data Transfer Complete screen appears.
7. Move the cursor to [N] on the Data Transfer Complete screen and press the **[ENTER]** key.
8. The data is erased and screen returns to the Select Menu screen.

Appendix

7-1 Specification

Product	Specification	
Hand reader	Power supply voltage	3.8 Vdc to 6.5 Vdc (four AAA batteries)
	Usage environment temperature	-20°C to +50°C
	Usage environment humidity	95% RH or less (no condensation)
	External dimension	94 x 405 x 46 mm (W x H x D)(excluding protrusions)
	Applicable radio law	H211:FCC/IC H212:R&TTE
	Weight	560g
	Transmitting frequency	125 MHz

The specifications may change without prior notice for product improvement.

7-2 Compensated pressure calculation

This section describes how to calculate the compensated pressure described in "2-9 Viewing the measured data" (page 16).

- Calculation of compensated pressure is performed automatically by the hand reader. There is no need for you to perform calculation.

Compensated pressure

The tire pressure changes with tire internal temperature. If it is measured after driving, the tire will be warm and the pressure will be higher than before driving.

Therefore, this product compensates the measured tire pressure with the measured temperature and calculates the estimated tire pressure under constant temperature condition (20°C). This is the compensated pressure. Using this value enables you to better REG the tire pressure even though the temperature before and after driving is different.

The compensated pressure (tire pressure temperature compensated to 20°C) is calculated as follows:

$$P_{20} = \frac{293}{273 + T}(P + 100) - 100$$

P_{20} :Compensated pressure (tire pressure compensated to 20°C)

P :Tire pressure measured with sensor

T :Tire internal temperature measured with sensor

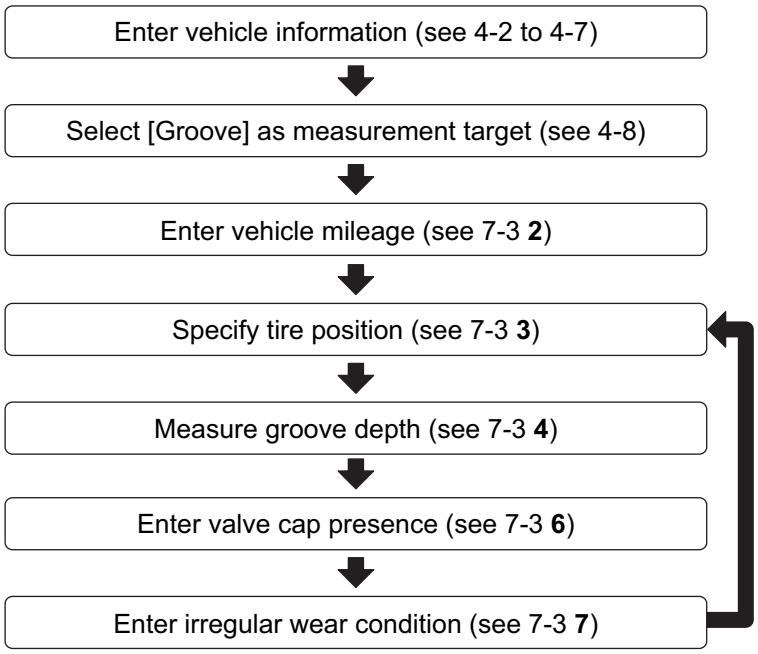
For example, when the tire pressure measured with sensor is 855 kPa and tire internal temperature is 65°C, the compensated pressure is calculated as follows:

$$P_{20} = \frac{293}{273 + 65}(855 + 100) - 100 = 728 \text{ kPa}$$

7-3 Measuring groove depth and entering other REG data

You can connect the custom depth gauge to the hand reader and measure the tire groove depth data for up to 8 locations and store them in hand reader memory. You can also save vehicle mileage, valve cap presence, and irregular wear information.

Depth gauge
(Option)



1. Connect the groove depth gauge to the PC connector of the hand reader.

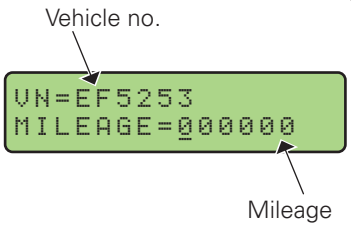
2. Enter the vehicle mileage.
The default vehicle mileage is set to 0 km.

When registering vehicle mileage
Press the number key of the hand reader and enter the mileage with a six digit number.

When not registering vehicle mileage
Press the **[ENTER]** key of the hand reader.

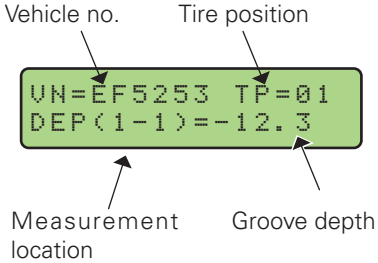
3. Specify the tire position.
With the Tire Position Input screen displayed, press the number key of the hand reader to specify the tire position.

4. Measure the groove depth.
The default measurement location is (1-1).
Connect the groove depth gauge in this condition and press the **B button** of the hand reader to display the measurement (value rounded to first decimal place) on the LCD panel.



Vehicle Mileage Input screen

Tire Position Input screen

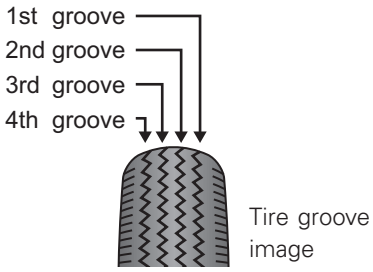


Groove Depth Measurement Result screen

Viewing the measured location

Measurement	Measurement location			
	1st groove	2nd groove	3rd groove	4th groove *2
First	(1-1)	(1-2)	(1-3)	(1-4)
Second *1	(2-1)	(2-2)	(2-3)	(2-4)

*1 Not entered if measurement is performed only once.
*2 Not entered if number of grooves is 3.



Tire groove image

When measuring continuously
The measurement location automatically changes as (1-1)→(1-2)→(1-3)→(1-4)→(2-1)→(2-2)→(2-4)→(1-1), each time the **B button** of the hand reader is pressed.

When measuring specific location
Determine the measurement location with the **[«]** or **[»]** key of the hand reader and press the **B button**.
You can also confirm the measured data by pressing the **[«]** or **[»]** key.

5. End groove depth measurement.
Press the **[ENTER]** key of the hand reader.

6. Enter valve cap presence.

When valve cap is present
With the Valve Cap Presence Input screen displayed, press the **[1]** key of the hand reader and press the **[ENTER]** key.

When valve cap is not present
With the Valve Cap Presence Input screen displayed, press the **[2]** key of the hand reader and press the **[ENTER]** key.

When not registering valve cap presence
With the Valve Cap Presence Input screen displayed, press the **[0]** key of the hand reader and press the **[ENTER]** key.

7. Enter irregular wear condition.
With the Irregular wear Condition Input screen displayed, press the number key of the hand reader, judging the irregular wear condition with levels 1 to 4, and press the **[ENTER]** key.

When not registering irregular wear condition
With the Irregular wear Input screen displayed, press the **[0]** key of the hand reader and press the **[ENTER]** key.

8. Select whether to measure the next tire or end measurement.

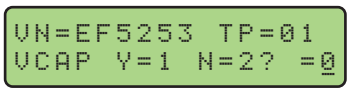
When measuring next tire
With the Operation Selection screen displayed, press the [1] key of the hand reader and press the **[ENTER]** key.
Repeat steps **3** to **7** when the Tire Position Input screen appears.

When ending measurement
With the Operation Selection screen displayed, press the **[2]** key of the hand reader and press the **[ENTER]** key.

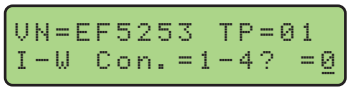
When

Measurement is not updated and an alarm sounds when you press the B button

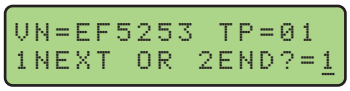
The power of the depth gauge is not on or the hand reader and the depth gauge may not be connected correctly.



Valve Cap Presence Input screen



Irregular Tread Wear Condition Input screen



Operation Selection screen

Troubleshooting

8-1 When battery is low

The following symptoms appear when the battery voltage becomes low.

Symptom	Action
Nothing appears on the LCD panel when the POWER switch is pressed.	Replace with new battery.
Power goes off suddenly.	

8-2 Unable to receive data from sensor

The possible causes are as follows.

Cause	Remedial Action
You may be measuring a tire with no sensor installed or with other manufacturer's sensor installed.	Check the presence of valve mark and the check sheet to determine whether a sensor is installed.
The sensor has become loose inside the tire and has dropped to the bottom of the tire.	Position the tire so that the valve is on the top side and measure by positioning the hand reader antenna at the bottom of the tire. If there is response at the bottom of the tire, the sensor may have become loose and dropped. Remove the rim and check the sensor. If the sensor is damaged, replace it with a new one.
The mounting band was not sufficiently tightened during installation and the sensor has moved from the position of the valve.	Position the hand reader antenna at several spots around the tire and measure. If there is a response at position not near the valve, remove the rim and tighten the mounting band once more.
The sensor was damaged when rimming.	Remove the rim and check the sensor. If the sensor is damaged, replace it with a new one.
The hand reader is damaged or is not used properly.	• Check the measurement procedure once more and check whether measurement cannot be obtained with any tire. • The battery of the hand reader may be low. Replace it with a new one. If still there is no response, ask the dealer where you purchased it.
The sensor battery has expired	If some sensors respond but a specific sensor does not, remove the rim, place the hand reader antenna directly against the non-responding sensor and measure. If there is no response, the sensor may be damaged. Replace it with a new one.

8-3 No response when pressing number keys

The possible causes are as follows.

Cause	Remedial Action
Key not associated with the displayed mode is pressed.	Some numeric keys are not valid as tire position. Check that you are pressing the correct key.
Number key is not working.	Enter number in the DATE or USER field of the REG mode Date, Customer No. Input screen and check that the number is displayed. Also check whether **[«], [»]**, **[BACK]** and **[ENTER]** keys work in the same manner.

8-4 Nothing appears on the LCD panel

The possible causes are as follows.

Cause	Remedial Action
Battery voltage is low or there is no battery.	Make sure the positive and negative poles of the battery are set correctly. If the battery is low, replace with new one.

8-5 LCD backlight does not turn on

If the LCD backlight does not turn on when you press the LCD backlight switch (☼), the backlight may not be working. Contact the dealer where you purchased the hand reader.

8-6 Power does not go OFF

The hand reader has no power off switch. The power turns off automatically if there is no action for approximately 3 minutes.
If the power does not go off when left alone for more than 3 minutes, it may be a malfunction. Contact the dealer where you purchased the hand reader.

8-7 Checking the software version

When you turn on the power by pressing the POWER switch, the software version of the hand reader appears on the second line of the LCD panel for 2 seconds.

You may be asked for the software version when requesting repair. Check the software version by the above method.

Software Version Display screen

Service and Repair

If there is any problem during usage, stop using the sensor immediately.

⚠ WARNING	
⃠	• If the problem cannot be solved after taking the action described in this guide, contact the dealer where you purchased the hand reader.

9-1 Requesting repair

When requesting repair, you may be asked for the content of the check sheet during installation of the sensor and for the following information. Check the necessary information.

Symptom	Nothing appears on the LCD panel / No response from the sensor / Connector is broken / Others (Select)
Last date normal operation was confirmed	Date (mm/dd/yyyy):
Date when problem occurred	Date (mm/dd/yyyy):
Software version	Ver. Rev.
Detail symptom	

9-2 Periodic maintenance

Correct operation and periodic maintenance are necessary to use this product safely.
Be sure to measure the tire pressure with a normal pressure gauge during routine maintenance. Compare those results with the tire pressure displayed by this system and check that the system is functioning properly.

9-3 Disposal of the product

Your dealer where you purchased the hand reader will salvage it when you no longer need it. When disposing the hand reader, please take it back to the dealer where you purchased it.

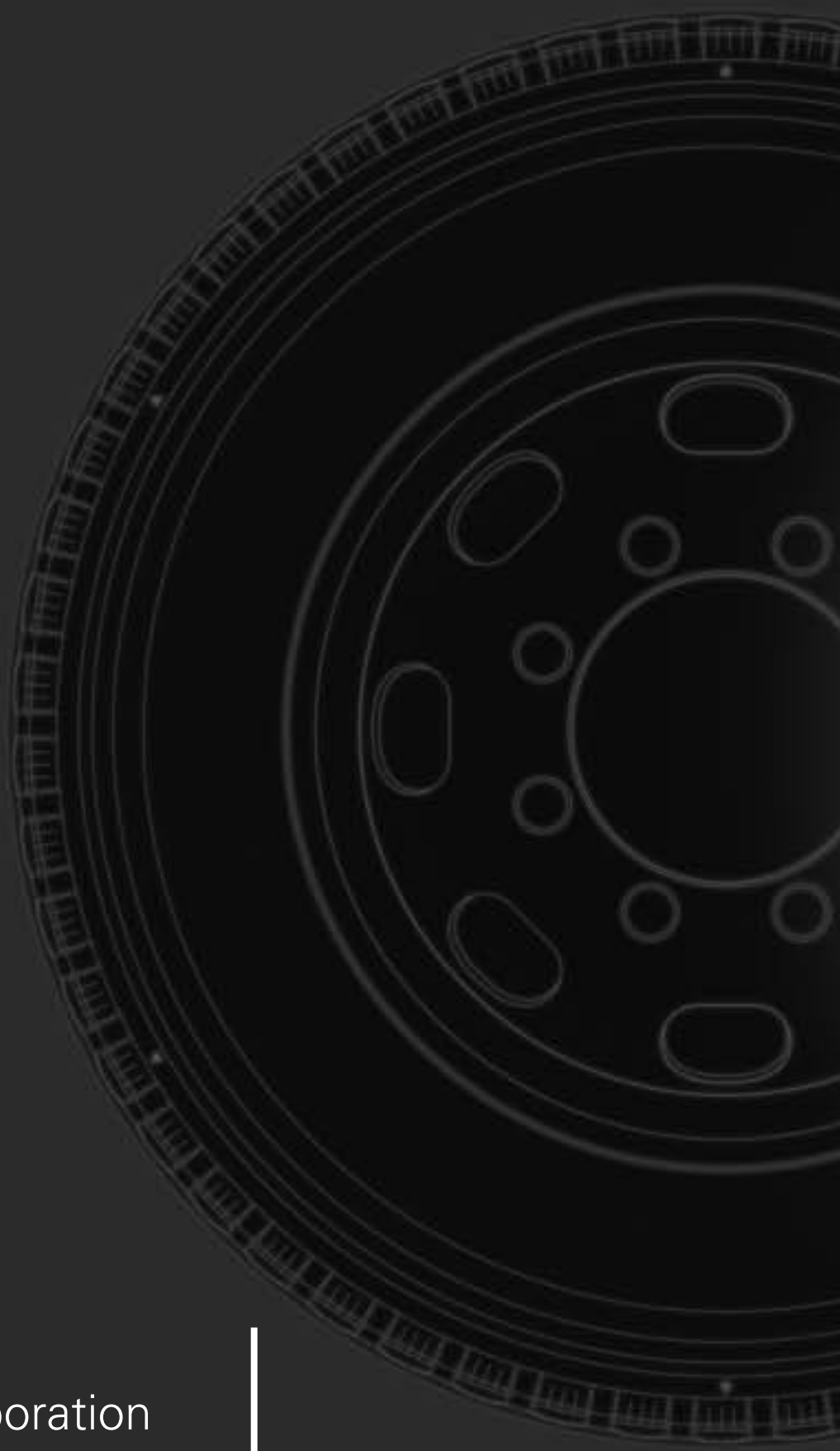
9-4 Contact

This product has been manufactured with utmost care, but please contacts the dealer where you purchased it if there is any problem.

Index

memo

memo



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